

Change 216876 on 2005/04/08 by vromaker@MA\_VIC\_P4  
updated overview, removed some out-of-data info

Change 216874 on 2005/04/08 by vromaker@MA\_VIC\_P4  
update

Change 191268 on 2004/10/12 by rramsey@rramsey\_xenos\_win\_orl  
Add a page for newCurCnt table

Change 138248 on 2004/09/17 by lsciler@lsciler\_win\_1\_r400  
Fixed a minor bug in the stencil function table

Change 149989 on 2004/02/19 by lsciler@lsciler\_r400\_win\_marlboro1  
Fixed bug in Zplane figure

Change 138566 on 2003/12/19 by flijero@fl\_frnk  
Added 3 new packets for improved type-0 packet processing:  
Incremental\_Update\_State/Const/Instr

Change 137750 on 2003/12/16 by flijero@fl\_frnk  
Added optimized Event\_Write\* packets & new opcodes

Change 137101 on 2003/12/12 by flijero@fl\_frnk  
Added Wait\_Reg\_Eq & Wait\_Reg\_Gte PM4 packet descriptions

Change 137025 on 2003/12/11 by flijero@fl\_frnk  
updated documentation on error checking and removed reference to type-1 packet.

Change 136800 on 2003/12/10 by flijero@fl\_frnk  
Updated description for MEM\_WRITE\_CNTR to include how to change the core clock interval from 1 <-> 16.

Change 136780 on 2003/12/10 by flijero@fl\_frnk  
Updated Me\_Init packet for Header Dumps & Error checking...added note about recompiling microcode to enable these debug only features.

Change 136762 on 2003/12/10 by flijero@fl\_frnk

Page 1 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Updates related to CP\_MEQ

Change 136302 on 2003/12/08 by flijero@fl\_frnk  
Updates to MEQ related registers & busy signals

Change 135746 on 2003/12/05 by flijero@fl\_knarf  
Updated CP Interrupt packet for performance

Change 134564 on 2003/12/01 by flijero@fl\_knarf  
Max Buffer Size in Indirect Buffer Packets is [19:0]...Spec had [22:0]

Change 133990 on 2003/11/25 by jhoule@jhoule\_doc\_It  
v1.80 - Indicated that NO\_ZERO srl mode is unsupported for Xenos (will currently only work in the VC path)

Change 133807 on 2003/11/25 by alleng@alleng\_r400\_win\_marlboro\_8200  
Deleting old files...

Change 133806 on 2003/11/25 by alleng@alleng\_r400\_win\_marlboro\_8200  
Deleted old files...

Change 133805 on 2003/11/25 by alleng@alleng\_r400\_win\_marlboro\_8200  
Deleted old files...

Change 132833 on 2003/11/19 by flijero@fl\_knarf  
changed R400 reference to Xenos

Change 131864 on 2003/11/13 by frising@frising\_r400\_win\_marlboro  
-For cube instruction SrcA swizzle is now zxy. Also tried to clarify the differences between what's shown in the numerics doc and what actually happens in the HW for cube instruction.

Change 130982 on 2003/11/10 by mpersaud@mpersaud\_r400\_win\_tor  
Submit delta doc for R400\_R500 tvout changes

Change 130037 on 2003/11/04 by flijero@fl\_knarf  
Added registers and PM4 packet changes related to the Software Managed Instruction Store...

Page 2 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 129511 on 2003/10/30 by tien@ma\_spinach  
Some additional info on perf and debug regs

Change 128832 on 2003/10/27 by tien@ma\_spinach  
Added info to perf and debug regs..

Change 127821 on 2003/10/22 by bbuchner@fl\_bbuchner\_r400\_win  
Updates

Change 127682 on 2003/10/21 by tien@ma\_spinach  
A little more one perf regs  
New debug regs doc

Change 127599 on 2003/10/21 by tien@ma\_spinach  
Added some info the the perf counters for TP/TPC  
This is tough :- ) but kinda fun :- )

Change 127541 on 2003/10/21 by tien@ma\_spinach  
Filled in results for all cases  
Added tri\_juice cases  
Added mip\_frac = 0 case  
Added z\_frac = 0 case  
Will define perf counters for TPC/TP here for the heck of it..

Change 126714 on 2003/10/15 by jayw@ma\_jayw\_It  
old update with John's change

Change 126588 on 2003/10/14 by tien@ma\_spinach  
Filled in numbers for a bunch of cases

Change 126058 on 2003/10/10 by frising@frising\_r400\_win\_marlboro  
-update scalar mova instructions to return MAX\_S(SrcC)

Change 125972 on 2003/10/09 by frising@frising\_r400\_win\_marlboro  
-update vector mova instruction to be two operand with result to GPR being max of operands. Scalar mova instructions were updated to always return srcC.w.

Change 125952 on 2003/10/09 by beiwang@bei\_pc

Page 3 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Added description and restrictions on RB->MH and MH->RB requests routed through MCCT.

Change 125904 on 2003/10/09 by jhoule@jhoule\_doc\_It  
v1.79  
- Added stack map support  
- Changed SIZE packing for 2D to allow for common decoding between stack maps and 2D maps  
- Stated that SIZE values must contain w-1, h-1, and d-1  
- Added "Stack" line to the maximum texture sizes

Change 125618 on 2003/10/08 by jiezhou@jiezhou\_r400\_win  
small updating

Change 125614 on 2003/10/08 by jiezhou@jiezhou\_r400\_win  
fix Hyperlink, add DTO description, Test counter description

Change 124923 on 2003/10/03 by jhoule@jhoule\_doc\_It  
v1.78  
TFetchInstr:  
- Removed unsupported opcodes for the sake of clarity  
TFetchConst:  
- Moved DIM field to last DWORD (kept the old one temporarily)  
- Added ANISO\_BIAS field  
Formats:  
- Added FMT\_DXT3A\_AS\_1\_1\_1\_1  
Deprecated the ARBITRARY\_FILTER fields from TFetch instr+const.

Change 124599 on 2003/10/02 by flijero@fl\_knarf  
no change

Change 124344 on 2003/10/01 by lsciler@lsciler\_r400\_win\_marlboro  
Changes to depth formats to make HW more efficient

Change 124325 on 2003/10/01 by flijero@fl\_knarf  
added 2nd interrupt from MC to RBBM

Page 4 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

ATI 2050  
LG v. ATI  
IPR2015-00325

AMD1044\_0016343

ATI Ex. 2009  
IPR2023-00922  
Page 1 of 111



Change 124280 on 2003/10/01 by flijero@fl\_knarf  
added MC0MC1\_RBBM\_int signals

Change 123990 on 2003/09/30 by flijero@fl\_knarf  
added changes to set\_state and load\_constant\_context

Change 123796 on 2003/09/29 by vbhatia@vbhatia\_r400\_win\_marlboro  
Slight update of fnt49, to reflect changes in tp\_fnt\_encode hardware

Change 123793 on 2003/09/29 by tien@ma\_spinach  
First check-in

Change 123764 on 2003/09/29 by vgoel@fl\_vgoel2  
closed bug 104

Change 123315 on 2003/09/25 by flijero@fl\_knarf  
Updated Const\_Prefetch packet to issue only once per LCC packet. When the LCC ordinals repeat, they also repeat in the Const\_Prefetch packet. Formerly, there was a new Const\_Prefetch packet for each repeat of the ordinals.

Change 123064 on 2003/09/24 by flijero@fl\_knarf  
Updated Subblk\_Prefetch packet to send the Header only once, followed optionally by each ordinal on a mismatch.

Change 123059 on 2003/09/24 by ashish@fl\_ashish\_r400\_win  
closing bug 40 and 116

Change 123057 on 2003/09/24 by tien@ma\_spinach  
Upadted for the week 9/24

Change 123011 on 2003/09/24 by csampayo@fl\_csampayo\_r400  
Closed bug #s 121, 123

Change 122955 on 2003/09/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Closed bugs 90 and 91...

Change 122800 on 2003/09/23 by flijero@fl\_knarf

Page 5 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

made drawing change to reflect changes to SRC0 & SRC1 removal of MICROM, MRL & MRM as possible sources. also removed the BOOLEANS as a possible source for SRC1.

Change 122794 on 2003/09/23 by jhoule@jhoule\_doc\_it  
Update for the new Ws which has 11b mantissa (12b total)

Change 122741 on 2003/09/23 by csampayo@fl\_csampayo\_r400  
Closed bug# 117. Some housekeeping

Change 122572 on 2003/09/22 by efong@efong\_r400\_win\_tor\_doc  
added in dglen

Change 121971 on 2003/09/18 by efong@efong\_r400\_win\_tor\_doc  
New update to remove people who have left and new PEYS

Change 121907 on 2003/09/17 by alleng@alleng\_r400\_win\_marlboro\_8200  
Minor fixes, rearranged, added SC efficiency, vector ratios, etc...

Change 121820 on 2003/09/17 by vliu@vliu\_r400\_cnmbdv3\_win\_cvd  
Initial revision

Change 121788 on 2003/09/17 by tien@ma\_spinach  
Updates for the week

Change 121752 on 2003/09/17 by koyu@kyu  
added SQ spreadsheet, added -optimize to pm4opt redundant LCC and SET\_CONST pkts

Change 121616 on 2003/09/16 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added new perl script to go direct from phantom.csv to the file.xls file.  
Currently need to take this file, phantom\_template.xls (in pv), and the phantom.csv and test\_sum.txt files created by running the test in one directory and execute this script (perl perf2xls.pl).

Cannot be run on linux and requires the OLE32 perl module installed...

Change 121318 on 2003/09/15 by ctaylor@fl\_ctaylor\_r400\_win\_marlboro  
Removed as these were redundant drawings.

Page 6 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 121306 on 2003/09/15 by vliu@vliu\_r400\_cnmbdv3\_win\_cvd  
Test tiling library

Change 120795 on 2003/09/11 by flijero@fl\_knarf  
added zpass\_done info to the event\_write packet

Change 120701 on 2003/09/11 by lkang@lkang\_r400\_win\_tor  
deletion

Change 120508 on 2003/09/10 by tien@ma\_spinach  
More updates afetr email from JOccelyn

Change 120486 on 2003/09/10 by tien@ma\_spinach  
Updates for the week

Change 120303 on 2003/09/09 by flijero@fl\_knarf  
added predicated bin test results (RT/NRT) to State Management register w/index=0xD

Change 120271 on 2003/09/09 by flijero@fl\_knarf  
Update Event Write packet for new functionality for the zpass\_done event ... clears the context valid flag, which in turn will cause the context to be rolled on the next state packet.

Change 120048 on 2003/09/08 by jayw@ma\_jayw\_it  
changed pmask order in cache for 4-sample  
John found better arrangement. one read for pmask and stencil  
no ram line overlap.

Change 119978 on 2003/09/08 by fghodrat@ma\_fghodrat  
moved to xenos tree

Change 119939 on 2003/09/08 by flijero@fl\_knarf  
added 128-bit write enable to the MH field to the CP\_DEBUG register.

Change 119760 on 2003/09/05 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added new tests to pv\_results  
Added VGT and PA rates to the phantom template

Page 7 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 119726 on 2003/09/05 by flijero@fl\_knarf  
added predicate\_disable bit to CP\_DEBUG

Change 119667 on 2003/09/05 by flijero@fl\_knarf  
removed DATA ordinal from the MEM\_WRITE\_CNTR packet description

Change 119663 on 2003/09/05 by flijero@fl\_knarf  
added MEM\_WRITE\_CNTR opcode  
moved SET\_BIN\_MASK/SELECT opcodes to unused locations

Change 119540 on 2003/09/04 by tien@ma\_spinach  
Updated some missing fields

Change 119483 on 2003/09/04 by frising@frising\_r400\_win\_marlboro  
v1.77  
-Added new compressed texture formats: FMT\_DXT3A, FMT\_DXT5A and FMT\_CTX1  
along with associated documentation.  
-all these formats support degamma  
-DXN now also supports degamma  
-removed some cruft :)  
-closed open question on supporting color keying

Change 119460 on 2003/09/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Branching example slides.

Change 119373 on 2003/09/04 by fghodrat@ma\_fghodrat  
update todo list

Change 119321 on 2003/09/03 by tien@ma\_spinach  
MOre changes

Change 119315 on 2003/09/03 by tien@ma\_spinach  
Something wacky with the clientspec, need to check in to re-update, plus some more updates from mtg.

Change 119301 on 2003/09/03 by flijero@fl\_knarf  
made updates to the event write packet and added new associated register:  
CP\_ME\_CF\_EVENT\_SRC

Page 8 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 119277 on 2003/09/03 by fghodrat@ma\_fghodrat  
Rename cg\_pm\_r500.doc To cg\_pm\_xenos.doc

Change 119259 on 2003/09/03 by tien@ma\_spinach  
Updated for this week

Change 119253 on 2003/09/03 by bbloemer@ma\_bbloemer  
Added new document.

Change 119223 on 2003/09/03 by filijero@fl\_knarf  
added CP\_PROG\_COUNTER,  
related update to CP\_ME\_CNTRL,  
related update to EVENT\_WRITE packet, &  
related new PM4 packet MEM\_WRITE\_CNTR

Change 119196 on 2003/09/03 by fghodrat@ma\_fghodrat  
cg and pm spec for xenos

Change 118796 on 2003/08/29 by keli@keli\_r400\_win\_tor  
updates

Change 118786 on 2003/08/29 by keli@keli\_r400\_win\_tor  
Toronto Virage Memories Generation

Change 118771 on 2003/08/29 by llefebvr@llefebvr\_r400\_montreal  
Fixing number of bits in the auto-count.

Change 118731 on 2003/08/29 by keli@keli\_r400\_win\_tor  
Document for Code coverage, formal verification, leda and synthesis report and web page generation

Change 118709 on 2003/08/29 by filijero@fl\_filijeros  
added real-time versions of the predicate registers: BIN\_MASK & BIN\_SELECT

Change 118570 on 2003/08/28 by kryan@kryan\_r400\_win\_marlboro\_DOCS  
- Clean up  
- Update some references and outdated facts.

Page 9 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 118408 on 2003/08/27 by filijero@fl\_knarf  
updated/added coherency registers and interface  
updated/added predicate registers and description

Change 118393 on 2003/08/27 by tien@ma\_spinach  
Updated the list  
Merged c1 and non-c1 rtl tasks

Change 118362 on 2003/08/27 by filijero@fl\_knarf  
added type-3 predicated packet related information

Change 117997 on 2003/08/25 by lkang@lkang\_r400\_win\_tor  
incremental update for physical partition

Change 117602 on 2003/08/21 by tien@ma\_spinach  
Updated

Change 117591 on 2003/08/21 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Slides for Perforce Branching presentation.

Change 117496 on 2003/08/21 by frising@frising\_r400\_win\_marlboro  
v1.76  
-changed polarity of INDEX\_ROUND bit in vertex fetch instruction

Change 117394 on 2003/08/20 by tien@ma\_spinach  
Gradient task added

Change 117320 on 2003/08/20 by jyarasca@jyarasca\_r400\_win\_cvd  
Updated scheduling information on 247 Linux and 247 Chip Linux

Change 117312 on 2003/08/20 by tien@ma\_spinach  
...

Change 117236 on 2003/08/20 by tien@ma\_spinach  
Added some more tasks to list

Change 117002 on 2003/08/18 by tien@ma\_spinach

Page 10 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Added to Perforce so I can edit it on multiple machines :-)

Change 116974 on 2003/08/18 by tien@ma\_spinach  
Fixed the encoding. 16\_EXPAND are going to need their own :-)

Change 116968 on 2003/08/18 by tien@ma\_spinach  
Describes how DATA\_FORMAT is encoded to reduce logic after walker.

Change 116959 on 2003/08/18 by tien@ma\_spinach  
Filled in more stuff for test list  
Added to-do list

Change 116958 on 2003/08/18 by ctaylor@fl\_ctaylor\_r400\_win\_marlboro  
Added SC block diagrams from Mike Mantor

Change 116957 on 2003/08/18 by jayw@MA\_JAYW  
updated pmask and stencil

Change 116952 on 2003/08/18 by beiwang@bei\_pc  
Added reminder for tPDEX test during Dynamic CKE test

Change 116866 on 2003/08/18 by jayw@ma\_jayw\_it  
no change

Change 116789 on 2003/08/15 by jayw@MA\_JAYW  
1 and 4 sample cache line arrangement updated

Change 116785 on 2003/08/15 by tmartin@tmartin\_r400\_win  
added r400vc\_fetch\_mode\_01 and r400vc\_array\_size\_01

Change 116764 on 2003/08/15 by tien@ma\_spinach  
Added info

Change 116749 on 2003/08/15 by tien@ma\_spinach  
Added some info.

Change 116748 on 2003/08/15 by tien@ma\_spinach

Page 11 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Adding...

Change 116699 on 2003/08/15 by jayw@ma\_jayw\_it  
visio bugs present

Change 116634 on 2003/08/14 by ashish@fl\_ashish\_r400\_win  
updated the tracker with 5 more ALU instruction tests. Also updated the total count on ALU instructions thereby increasing the project overall % complete

Change 116622 on 2003/08/14 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update comment in \_11  
Copy \_11 to \_12 and use 144 vertices per packet  
Update test\_list and tracker accordingly.

Change 116617 on 2003/08/14 by csampayo@fl\_csampayo\_r400  
Renamend sheet1, updated schedule

Change 116407 on 2003/08/13 by jasif@jasif\_r400\_win\_tor  
Made some additions. Will add some more tomorrow.

Change 116385 on 2003/08/13 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
updated-pv results

Change 116378 on 2003/08/13 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
updated: performance excel sheets

Change 116369 on 2003/08/13 by frising@frising\_r400\_win\_marlboro  
no changes, just a test.

Change 116347 on 2003/08/13 by jimmylau@jimmylau\_r400\_win\_tor  
Add a section on clock muxing conditions to the R500 BIF implementation specs.  
Add a table of R500 pin and ROM straps.

Change 116338 on 2003/08/13 by jcox@FL\_JCOX3  
Make ready to post test plan status on web

Change 116194 on 2003/08/12 by tmartin@tmartin\_r400\_win

Page 12 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



added r400vc\_endian\_swap\_01 and r400vc\_endian\_swap\_02

Change 115764 on 2003/08/11 by ashishs@fl\_ashishs\_r400\_win updated

Change 115683 on 2003/08/08 by koyu@kyuCA added cycles/inst for vertex shader and pixel shader

Change 115607 on 2003/08/08 by mkelly@fl\_mkelly\_r400\_win\_laptop Negative ALU VS constant clamping, negative index clamping with negative stepping

Change 115561 on 2003/08/08 by fljiero@fl\_knarf renamed references from R400 to Crayola

Change 115547 on 2003/08/08 by fljiero@fl\_knarf  
Removed all references to PIO/Push mode and its associated registers:  
CP\_CSQ\_CNTL  
CP\_RING | INDIRECT1 | INDIRECT2 | REAL\_TIME | IB\_ST | RT\_ST\_PUSH

Change 115546 on 2003/08/08 by fljiero@fl\_knarf renamed to use Crayola rather than R400

Change 115480 on 2003/08/07 by mkelly@fl\_mkelly\_r400\_win\_laptop First test of series which checks positive alu constant index clamping.

Change 115463 on 2003/08/07 by fljiero@fl\_knarf Baseline for the PM4 Spec (after the start of Xcnos)

Change 115462 on 2003/08/07 by fljiero@fl\_knarf added note to cover to see PM4 Spec Crayola for the latest PM4 data

Change 115461 on 2003/08/07 by fljiero@fl\_knarf Baseline for Crayola CP Spec (after the start of Xcnos)

Change 115460 on 2003/08/07 by fljiero@fl\_knarf added note on cover to see CP Spec Crayola for the latest CP data.

Change 115388 on 2003/08/07 by ashishs@fl\_ashishs\_r400\_win2

Page 13 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

updating the tracker for all the tests added in last week and current week

Change 115373 on 2003/08/07 by csampayo@fl\_csampayo\_r400 Updated status for the test r400sx\_vtx\_export\_full\_sequential\_01

Change 115276 on 2003/08/06 by jhoule@jhoule\_doc\_it Changed the weights to give less pointy tents. This forces a multiplier instead of a shifter, but quality is deemed important enough to warrant those.

Change 115225 on 2003/08/06 by jhoule@jhoule\_doc\_it Document describing the new HiColor accumulation scheme

Change 115185 on 2003/08/06 by kevin@kevin\_r400\_win\_marlboro Updated document to reflect what is in RTL code for tca regs

Change 115176 on 2003/08/06 by mzhu@mzhu\_crayola\_win\_tor Add 3.4.9.21 for the cases right edge of icon/cursor is aligned with right edge of graphics window.

Change 115166 on 2003/08/06 by koyu@kyuCA added new fields for SQ

Change 115088 on 2003/08/05 by jimmylau@jimmylau\_r400\_win\_tor rename scan ports from \*BIF\_\* to \*BIF\_TOP\_\*

Change 114954 on 2003/08/05 by mkelly@fl\_mkelly\_r400\_win\_laptop Add 3 simple tests

Change 114824 on 2003/08/04 by alleng@alleng\_r400\_win\_marlboro\_8200 Fixed hyperlinks

Change 114814 on 2003/08/04 by alleng@alleng\_r400\_win\_marlboro\_8200 Updates...

Change 114724 on 2003/08/04 by llefebvr@llefebvr\_r400\_montréal Corrected the max number for mem exports to be 5 instead of 9.

Page 14 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 114564 on 2003/08/01 by aashkar@aashkar2\_crayola\_win Updated Spec with the addition of bit 19 in the interrupt registers for the software interrupt (SW\_INT). This interrupt is moving to the CP from the MH.

Change 114555 on 2003/08/01 by tmartin@tmartin\_r400\_win fixed the total test count because some tests were left out

Change 114550 on 2003/08/01 by tmartin@tmartin\_r400\_win added r400vc\_fetch\_mode\_01 and r400vc\_fetch\_mode\_02

Change 114343 on 2003/07/31 by csampayo@fl\_csampayo\_r400 Add memory export test, update test list and tracker

Change 114314 on 2003/07/31 by kryan@kryan\_r400\_win\_marlboro\_DOCS Update with latest changes to Shader Assembler

- Update CUBE Vector ALU operation opcode syntax to take two source operands.
- VFETCH instruction modifications
- . Update offset field in VFETCH instruction to be 23 bit signed value instead of unsigned 8 bits from previous definition.
- . Modified syntax to add FETCH\_TYPE (MEGA/MINI) and COUNT optional fields from VFetch instruction.

Change 114266 on 2003/07/31 by tmartin@tmartin\_r400\_win added r400vc\_addr\_spanning\_01

Change 114220 on 2003/07/31 by jiezhou@jiezhou\_r400\_win add description of fcp clock

Change 114162 on 2003/07/31 by alleng@alleng\_r400\_win\_marlboro\_8200

Page 15 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Run with updated hw

Change 114063 on 2003/07/30 by tmartin@tmartin\_r400\_win moved the section of the clamping test

Change 114059 on 2003/07/30 by jhoule@jhoule\_doc\_it Hardcoded weights for anisotropy fix (not yet official).

Change 114044 on 2003/07/30 by csampayo@fl\_csampayo\_r400 Updated description of section 1.2.7

Change 114018 on 2003/07/30 by tmartin@tmartin\_r400\_win added strides/offsets tests

Change 113992 on 2003/07/30 by csampayo@fl\_csampayo\_r400 Update individual requirements based on combined interaction

Change 113980 on 2003/07/30 by jimmylau@jimmylau\_r400\_win\_tor Remove ROM\_strap\_vcoref & ROM\_strap\_calref from the interface with strap block because they are shared with ROM\_strap\_pad\_rx\_manual\_impedance & ROM\_strap\_pad\_tx\_manual\_impedance.

Add ROM strap B\_PRX\_LBACK\_EN, which shares with bit 0 of ROM strap PAD\_CURRENT

Change 113956 on 2003/07/30 by jiezhou@jiezhou\_r400\_win Initial release

Change 113883 on 2003/07/29 by alleng@alleng\_r400\_win\_marlboro\_8200 Included initial idle and busy counts. Rearranged a bit...

Change 113792 on 2003/07/29 by csampayo@fl\_csampayo\_r400 Adjusted block schedules as per latest plan

Change 113761 on 2003/07/29 by mzhu@mzhu\_crayola\_win\_tor Test data clamping in test case 3 for fix point alpha format in 3.4.9.18 64bpp graphics with graphics and overlay alpha blending mode 1

Page 16 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history





Change 113507 on 2003/07/28 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 113483 on 2003/07/28 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 113282 on 2003/07/25 by csampayo@fl\_csampayo\_r400  
Updated status for tests r400sx\_vtx\_point\_size\_export\_01-04 and added them to test\_list

Change 113280 on 2003/07/25 by jayw@ma\_jayw\_lt  
Working document for register read allocation across RB and DBs.

Change 113262 on 2003/07/25 by tmartin@tmartin\_r400\_win  
no new tests just some updates

Change 113136 on 2003/07/25 by bbloemer@ma\_bbloemer  
Updated test descriptions.

Change 113130 on 2003/07/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 113128 on 2003/07/25 by kevin@kevin\_r400\_win\_marlboro  
updated tables with reg addresses

Change 112980 on 2003/07/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 112914 on 2003/07/24 by alleng@alleng\_r400\_win\_marlboro\_8200  
Bringing the R400 docs up to date and checking in pm4play.bat

Change 112872 on 2003/07/24 by tmartin@tmartin\_r400\_win  
added r400vc\_base\_addr\_range\_pci\_01

Change 112683 on 2003/07/23 by chwang@chwang\_r400\_doc\_win  
Update.

Page 17 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 112655 on 2003/07/23 by kevin@kevin\_r400\_win\_marlboro  
Made table titles captions and updated table of tables

Change 112640 on 2003/07/23 by kevin@kevin\_r400\_win\_marlboro  
Added fetch gen and TCD debug tables

Change 112628 on 2003/07/23 by efong@efong\_r400\_win\_tor\_doc  
updated visio diagrams

Change 112627 on 2003/07/23 by efong@efong\_r400\_win\_tor\_doc  
Updated the test\_control section of the document

Change 112623 on 2003/07/23 by jowang@jowang\_R400\_win  
submit for kaleidoscope snapshot

Change 112603 on 2003/07/23 by jimmylau@jimmylau\_r400\_win\_tor  
Elaborate when the strap valid signals should be asserted in the ROM straps section.

Change 112518 on 2003/07/22 by tmartin@tmartin\_r400\_win  
added r400vc\_base\_addr\_range\_asp\_01

Change 112513 on 2003/07/22 by cbrennan@cbrennan\_r400\_win\_marlboro  
Allocated most of Ray's ports.  
Added headings for more stuff to come.

Change 112496 on 2003/07/22 by brianf@ma\_bfavela  
Updated performance numbers with "better" architecture

Change 112470 on 2003/07/22 by paulv@MA\_PVELLA  
Fixed Table 22 to include the MH\_TC\_mcNsource bit.

Change 112465 on 2003/07/22 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 112329 on 2003/07/22 by jhoule@jhoule\_doc\_lt  
Updated notes below in order to explain the 16.2 and 32.2 precision decision.

Page 18 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 112321 on 2003/07/22 by jhoule@jhoule\_doc\_lt  
Updated with full channel separation, meaning that the 8b can now be OR'd together to create Mid and HiColor.

Change 112257 on 2003/07/21 by frising@frising\_r400\_win\_marlboro  
0.99n  
-fixed small typo in CUBE instruction comments

Change 112232 on 2003/07/21 by tmartin@tmartin\_r400\_win  
Added 5 tests. All test the dynamic addressing range of the VC when vertex buffers are stored in the frame buffer.

Change 112229 on 2003/07/21 by cbrennan@cbrennan\_r400\_win\_marlboro  
Add the beginnings of a TC debug registers document for review.

Change 112227 on 2003/07/21 by enewman@enewman\_r400\_linux\_marlboro  
fixed port\_matcher command line switches and p4 label command line switches

Change 112113 on 2003/07/21 by rthambin@rthambin\_r400\_win\_tor  
Modified top level diagram and added comments.

Change 112100 on 2003/07/21 by frising@frising\_r400\_win\_marlboro  
v.1.75  
-remove per-quad value for USE\_REG\_LOD since we can do it per-pixel full speed.  
Note that value 1 is now the only "Yes".

Change 112085 on 2003/07/21 by jyarasca@jyarasca\_r400\_win\_cvd  
Updated times

Change 112078 on 2003/07/21 by jimmylau@jimmylau\_r400\_win\_tor  
Updates on sections about slave interface changes and ROM strap location table, after specs review.

Change 112077 on 2003/07/21 by jasif@jasif\_r400\_win\_tor  
Updated schedules for simulation regressions.

Change 111975 on 2003/07/18 by csampayo@fl\_csampayo\_r400  
Adding point size export mode test. Updated test\_list and test tracker accordingly.

Page 19 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 111957 on 2003/07/18 by frising@frising\_r400\_win\_marlboro  
v.1.74  
-Give a real explanation of how FMT\_1\_REVERSE differs from FMT\_1

Change 111949 on 2003/07/18 by frising@frising\_r400\_win\_marlboro  
v.0.99m  
-fix MAX4 instruction. Had comparison order backwards.

Change 111666 on 2003/07/17 by jimmylau@jimmylau\_r400\_win\_tor  
Minor changes to fix typos and to reword some paragraphs slightly.

Change 111558 on 2003/07/16 by jimmylau@jimmylau\_r400\_win\_tor  
Initial Revision

Change 111554 on 2003/07/16 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 111517 on 2003/07/16 by lsciler@lsciler\_r400\_win\_marlboro  
Minor fixes, additional test routines

Change 111482 on 2003/07/16 by tmartin@tmartin\_r400\_win  
added r400vc\_addr\_alignment\_01

Change 111413 on 2003/07/16 by smburu@smburu\_r400\_win\_marlboro  
tp\_ch\_blend update.

Change 111386 on 2003/07/16 by frising@frising\_r400\_win\_marlboro  
v.0.99l  
-add scalar sin and cos instructions

Change 111385 on 2003/07/16 by frising@frising\_r400\_win\_marlboro  
v.1.99  
-add scalar sin and cos instructions

Change 111285 on 2003/07/15 by gregs@regs\_r400\_win\_marlboro  
typo in a signal name - corrected

Page 20 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 111281 on 2003/07/15 by brianf@ma\_bfavela  
More changes

Change 111229 on 2003/07/15 by brianf@ma\_bfavela  
Updated summary to include MH.

Change 111206 on 2003/07/15 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added a couple more tidbits regarding capture

Change 111200 on 2003/07/15 by brianf@ma\_bfavela  
Fixed hyperlinks

Change 111187 on 2003/07/15 by ashishs@fl\_ashishs\_r400\_win  
updated test tracker

Change 111168 on 2003/07/15 by paulv@MA\_PVELLA  
Updates concerning the MHS.

Change 111147 on 2003/07/15 by ashishs@fl\_ashishs\_r400\_win  
updated tracker

Change 111109 on 2003/07/15 by brianf@ma\_bfavela  
More performance updates

Change 111030 on 2003/07/14 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added more data to the results tab...

Change 110917 on 2003/07/14 by mzhu@mzhu\_crayola\_win\_tor  
Add 3.4.9.20 Multiply overlay alpha with global alpha for per pixel overlay alpha blend mode

Change 110885 on 2003/07/14 by brianf@ma\_bfavela  
Fixed DC so it doesn't error

Change 110883 on 2003/07/14 by brianf@ma\_bfavela  
Updated performance

Page 21 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 110825 on 2003/07/14 by jacarey@fl\_jcarey2  
Fix Typo in RBBM Spec Diagram

Change 110516 on 2003/07/11 by jiezhou@jiezhou\_r400\_win  
Update PLL dividers' values

Change 110504 on 2003/07/11 by jiezhou@jiezhou\_r400\_win  
update pll divider's value

Change 110337 on 2003/07/10 by vbhatia@vbhatia\_r400\_win\_marlboro  
Updated tp and vc path formatter status

Change 110255 on 2003/07/10 by lseiler@lseiler\_r400\_win\_marlboro2  
Minor text edits, updated pdf version

Change 110230 on 2003/07/10 by mzhu@mzhu\_crayola\_win\_tor  
Add Multiplying overlay alpha with global alpha in 11.10 Overlay Keyer. It is used for overlay per-pixel alpha blending mode.

Change 110173 on 2003/07/10 by dglen@dglen\_r400  
Deleted file  
Superseded by R500 Display Colour Spaces.xls

Change 110159 on 2003/07/10 by dglen@dglen\_r400  
Spreadsheet for matrix, gamma and color conversions in R500 display path (DCP and TV out)

Change 109959 on 2003/07/09 by jimmylau@jimmylau\_r400\_win\_tor  
Update to the BIF slave interface specs after the review meeting

Change 109954 on 2003/07/09 by llefebvr@llefebvr\_r400\_montreal  
Fixing VC table.

Change 109817 on 2003/07/08 by rthambim@rthambim\_r400\_win\_tor  
Fixed naming convention.

Change 109812 on 2003/07/08 by jhoule@jhoule\_doc\_ll

Page 22 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Major change, with left-alignment instead of right shifts.

Change 109715 on 2003/07/08 by rthambim@rthambim\_r400\_win\_tor  
Updated the spec with review feedback.

Change 109709 on 2003/07/08 by rthambim@rthambim\_r400\_win\_tor  
updated the spec with review feedback - included ordering info to read req; modified timing diag; added comments to unused ports.

Change 109670 on 2003/07/08 by jimmylau@jimmylau\_r400\_win\_tor  
Fix typo in the MH-BIF signal in the master specs

Change 109493 on 2003/07/07 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 109402 on 2003/07/06 by gregs@laptop1  
...

Change 109352 on 2003/07/04 by jimmylau@jimmylau\_r400\_win\_tor  
Update the section on strap interface after the review meeting.

Change 109187 on 2003/07/03 by jowang@jowang\_R400\_win  
Includes 30bpps for twin single and dual-link TMDs

Change 109175 on 2003/07/03 by ashishs@fl\_ashishs\_r400\_win  
updated test\_list and trackers

Change 109106 on 2003/07/03 by alleng@alleng\_r400\_win\_marlboro\_8200  
Removed one of the RB tabs

Change 109104 on 2003/07/03 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added a few minor updates from Ko...

Change 109094 on 2003/07/03 by moev@moev  
updates to the status of the tests.

Change 108965 on 2003/07/02 by alleng@alleng\_r400\_win\_marlboro\_8200

Page 23 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated with specific registry settings for capture

Change 108939 on 2003/07/02 by ashishs@fl\_ashishs\_r400\_win  
corrected small error with SU

Change 108933 on 2003/07/02 by ashishs@fl\_ashishs\_r400\_win  
updated the tracker to include author for CL/VTE tests so that its easy for debugging the number of tests in each block

Change 108927 on 2003/07/02 by ashishs@fl\_ashishs\_r400\_win  
updated tracker to include this weeks PA tests

Change 108905 on 2003/07/02 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: Test list for Perfsuite performance tests

Change 108866 on 2003/07/02 by ashishs@fl\_ashishs\_r400\_win  
updated for some bugs

Change 108861 on 2003/07/02 by rthambim@rthambim\_r400\_win\_tor  
Added source/frequency information for clock signals.

Change 108824 on 2003/07/02 by jacarey@fl\_jcarey\_desktop  
Update Min / Max functions in emulator to match hardware.  
Hardware produces a 32-bit signed extended result of 16-bit comparison value.

Change 108746 on 2003/07/01 by smburu@smburu\_r400\_win\_marlboro  
tp\_hicolor update.

Change 108740 on 2003/07/01 by paulv@MA\_PVELLA  
Fixed a mistake about the size of the RB queue. It is 2, not 4.

Change 108736 on 2003/07/01 by smburu@smburu\_r400\_win\_marlboro  
tp\_hicolor update.

Change 108702 on 2003/07/01 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added RB(C1) tab, added tests to vtx tab, et al

Change 108692 on 2003/07/01 by georgev@devel\_georgevh2\_r400\_win\_marlboro

Page 24 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Added bsub run options

Change 108680 on 2003/07/01 by jacarey@fl\_jicarey\_desktop

Add section documenting CP Idling before writing certain control registers.

Change 108579 on 2003/06/30 by jasif@jasif\_r400\_win\_tor

Updated.

Change 108520 on 2003/06/30 by ashishs@fl\_ashishs\_r400\_win

updated the tracker

Change 108516 on 2003/06/30 by frising@frising\_r400\_win\_marlboro

v.0.99k  
-remove references to R400\_TP\_NAN

Change 108514 on 2003/06/30 by gregs@gregs\_r400\_win\_marlboro

new

Change 108418 on 2003/06/27 by jiezhou@jiezhou\_r400\_win

major updating for DC split

Change 108407 on 2003/06/27 by frising@frising\_r400\_win\_marlboro

-fixed small typo, no version bump

Change 108406 on 2003/06/27 by frising@frising\_r400\_win\_marlboro

v.1.73  
-Add FMT\_32\_32\_FLOAT vertex only format  
-remove fast float stuff  
-remove TP NAN support

Change 108359 on 2003/06/27 by gregs@gregs\_r400\_win\_marlboro

added CG\_VC\_pm\_cnb register bit

Change 108350 on 2003/06/27 by sbagshaw@sbagshaw

minor updates to contents & table of contents

Change 108338 on 2003/06/27 by frising@frising\_r400\_win\_marlboro

Page 25 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

v.1.98  
-show scalar instructions SUB\_CONST\_0 and SUB\_CONST\_1 as negated adds to be consistent with other subtraction instructions.

Change 108325 on 2003/06/27 by frising@frising\_r400\_win\_marlboro

v.0.99j  
-misc updates and clean-up

Change 108322 on 2003/06/27 by rthambim@rthambim\_r400\_win\_tor

Initial revision for R500.

Change 108317 on 2003/06/27 by brianf@ma\_bfavela

MCMH Performance Spreadsheet

Change 108311 on 2003/06/27 by rthambim@rthambim\_r400\_win\_tor

Added pci-express changes. Initial revision for R500.

Change 108284 on 2003/06/27 by gregs@gregs\_r400\_win\_marlboro

fixed bug in PMESTBCLY macro

Change 108282 on 2003/06/27 by jiezhou@jiezhou\_r400\_win

add pclk as a slave mode for one-shot debug control

Change 108273 on 2003/06/27 by jimmylau@jimmylau\_r400\_win\_tor

Update BIF slave interface specs for R500.

Change 108167 on 2003/06/26 by vbhatia@vbhatia\_r400\_win\_marlboro

Update status for addresser and formatter

Change 108103 on 2003/06/26 by sbagshaw@sbagshaw

Programming Guide updated for R500.  
Includes information on the Scaler

Change 107862 on 2003/06/25 by smburu@smburu\_r400\_win\_marlboro

tp\_hicolor update.

Change 107724 on 2003/06/24 by csampayo@fl\_csampayo\_r400

Add footer (this time saved update)

Page 26 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 107722 on 2003/06/24 by csampayo@fl\_csampayo\_r400

Added footer

Change 107709 on 2003/06/24 by frising@frising\_r400\_win\_marlboro

0.99i  
-fix typos with set\* scalar instructions  
-document correct behavior with not equal predicate instructions and NaNs

Change 107687 on 2003/06/24 by frising@frising\_r400\_win\_marlboro

0.99h  
-add cube instruction updates (two operand, etc)

Change 107637 on 2003/06/24 by moev@moev

update to current state of testing

Change 107634 on 2003/06/24 by bbuchner@fl\_bbuchner\_r400\_win

updated slides

Change 107630 on 2003/06/24 by frising@frising\_r400\_win\_marlboro

v.1.97  
-update cube instruction to take two operands. Output produced in a different order too.

Change 107622 on 2003/06/24 by smburu@smburu\_r400\_win\_marlboro

hicolor status update.

Change 107617 on 2003/06/24 by georgev@devel\_georgevh2\_r400\_win\_marlboro

Added "nodump" message to instructions.

Change 107537 on 2003/06/23 by georgev@devel\_georgevh2\_r400\_win\_marlboro

Added new way of doing things.

Change 107536 on 2003/06/23 by bbuchner@fl\_bbuchner\_r400\_win

added review  
updated block diagram of cache

Change 107479 on 2003/06/23 by bbuchner@fl\_bbuchner\_r400\_win

added RP block diagrams for L1 and L2 request processing

Page 27 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 107419 on 2003/06/23 by ashishs@fl\_ashishs\_r400\_win

updating trackers and test\_list

Change 107282 on 2003/06/20 by moev@moev

Status as of 6/20/03

Change 107253 on 2003/06/20 by llefebvr@llefebvr\_r400\_montreal

Backup, no major changes.

Change 107197 on 2003/06/20 by vbhatia@vbhatia\_r400\_win\_marlboro

Status update for formatter

Change 107080 on 2003/06/19 by bbuchner@fl\_bbuchner\_r400\_win

ADDED MI block diagram and description. Minor fixes.

Change 106800 on 2003/06/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

First VC test documented..

Change 106777 on 2003/06/18 by smburu@smburu\_r400\_win\_marlboro

tp\_hicolor status update.

Change 106696 on 2003/06/18 by smburu@smburu\_r400\_win\_marlboro

Update of tp\_hicolor tests.

Change 106645 on 2003/06/17 by csampayo@fl\_csampayo\_r400

Updated FC column to contain selected test counter

Change 106643 on 2003/06/17 by csampayo@fl\_csampayo\_r400

Added full chip column

Change 106642 on 2003/06/17 by csampayo@fl\_csampayo\_r400

Updated schedule, added full chip column

Change 106640 on 2003/06/17 by csampayo@fl\_csampayo\_r400

Added full chip column

Page 28 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 106634 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Updated schedule, added full chip column

Change 106631 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Updated schedule, added full chip column

Change 106623 on 2003/06/17 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Added changes from TP meeting.

Change 106525 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Update header

Change 106524 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Update header

Change 106523 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Update header take 2

Change 106521 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Header update

Change 106519 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Header update

Change 106516 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 106509 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 106493 on 2003/06/17 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 106436 on 2003/06/16 by ashish@fl\_ashish\_r400\_win  
minor updates

Change 106410 on 2003/06/16 by alleng@alleng\_r400\_win\_marlboro\_8200

Updates to standalone playback info

Change 106395 on 2003/06/16 by jasif@jasif\_r400\_win\_tor  
DAC Report.

Change 106329 on 2003/06/16 by alleng@alleng\_r400\_win\_marlboro\_8200  
Initial submission

Change 106294 on 2003/06/16 by ashish@fl\_ashish\_r400\_win  
updated

Change 106291 on 2003/06/16 by ashish@fl\_ashish\_r400\_win  
updated

Change 105958 on 2003/06/12 by vbhatia@vbhatia\_r400\_win\_marlboro  
Updated weekly regression status for deriv and aniso

Change 105882 on 2003/06/12 by jbrady@jbrady\_r400\_win  
Remove border color, add thread\_type.

Change 105862 on 2003/06/12 by jbrady@jbrady\_r400\_win  
Update to reflect current vcr partitioning.  
Added clamp module.

Change 105849 on 2003/06/12 by ashish@fl\_ashish\_r400\_win  
adding place holder for some of the tests that will be planned for later

Change 105838 on 2003/06/12 by ashish@fl\_ashish\_r400\_win  
added 2 bugs that were currently found in SQ waterfalling

Change 105834 on 2003/06/12 by alleng@alleng\_r400\_win\_marlboro\_8200  
Added miscellaneous test, added results column for a couple of sheets

Change 105776 on 2003/06/12 by smburu@smburu\_r400\_win\_marlboro  
tp\_hicolor status.

Change 105768 on 2003/06/12 by sbagshaw@sbagshaw

Presentation for R500 DCDO Debug bus included.  
Changes started to R400 Debug Bus specification document to describe changes to debug required for DCDO split.

Change 105676 on 2003/06/11 by csampayo@fl\_csampayo\_r400  
Update tests reqs and to include more functionality

Change 105633 on 2003/06/11 by jowang@jowang\_R400\_win  
programming guide: bypass mode only

Change 105615 on 2003/06/11 by beiwang@bei\_pc  
Added items left from line coverage.

Change 105476 on 2003/06/10 by csampayo@fl\_csampayo\_r400  
Initial check in

Change 105436 on 2003/06/10 by bbuchner@fl\_bbuchner\_r400\_win  
removed null request from L2A FIFO when clamping is true

Change 105426 on 2003/06/10 by bbuchner@fl\_bbuchner\_r400\_win  
updated all external I/O  
modified clamping

Change 105407 on 2003/06/10 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Added things to check test descriptions.

Change 105349 on 2003/06/10 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: excel perf results template

Change 105347 on 2003/06/10 by mzhu@mzhu\_crayola\_win\_tor  
Add 3.4.9.19 data clamping in LUT PWL mode

Change 105335 on 2003/06/10 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
testing auto update for web

Change 105333 on 2003/06/10 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
removed auto update

Change 105310 on 2003/06/10 by moev@moev  
Updated tested blocks

Change 105299 on 2003/06/10 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
updated:pv Xsheet

Change 105286 on 2003/06/10 by pmitchel@pmitchel\_entire\_depot\_win  
moving results to doc\_lib/pv\_results

Change 105058 on 2003/06/09 by csampayo@fl\_csampayo\_r400  
Updated header. Some housekeeping

Change 105039 on 2003/06/09 by ashish@fl\_ashish\_r400\_win  
updated

Change 105017 on 2003/06/09 by mzhu@mzhu\_crayola\_win\_tor  
Update clamping and rounding for PWL LUT mode in 11.8

Change 104949 on 2003/06/09 by mzhu@mzhu\_crayola\_win\_tor  
Update floating point LUT fill pattern in 3.4.4.

Change 104946 on 2003/06/09 by bbloemer@ma\_bbloemer  
Updated test descriptions.

Change 104736 on 2003/06/06 by ashish@fl\_ashish\_r400\_win  
updated the tracker and test\_list for the newly added 4 tests

Change 104633 on 2003/06/06 by jacarey@fl\_jcarey\_desktop  
Document resetting of read registers to zero on reset.

Change 104629 on 2003/06/06 by paulv@MA\_PVELLA  
Updates to the MHS.

Change 104557 on 2003/06/06 by efong@efong\_r400\_win\_tor\_doc  
Updated Linux machines assignments



Change 104473 on 2003/06/05 by jowang@jowang\_R400\_win  
added/modified after test plan review

Change 104460 on 2003/06/05 by vbhata@vbhata\_r400\_win\_marlboro  
Update LodDeriv and LodAniso status of 06/05/03  
Also added latest tcd status as mentioned by Kevin O.

Change 104360 on 2003/06/05 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: new pv sheet

Change 104355 on 2003/06/05 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
relocated: pef excel sheets

Change 104347 on 2003/06/05 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
relocating files

Change 104338 on 2003/06/05 by moev@moev  
changed WSO connectivity to WSO\_P

Change 104330 on 2003/06/05 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
fixed:link

Change 104325 on 2003/06/05 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: performance excel sheets to perforce

Change 104324 on 2003/06/05 by jacarey@fl\_jcarey\_desktop  
Reset VS & PS De-alloc fifos when ME overwrites the \*\_Avail\_Count counters

Change 104320 on 2003/06/05 by smburu@smburu\_r400\_win\_marlboro  
Updated status fot tp\_hicolor.

Change 104298 on 2003/06/05 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
documented change in DC tag definition - increased request sequence field

Change 104273 on 2003/06/05 by jmarsano@MA\_JMARSANO  
Added ATPG and DBIST sections

Page 33 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 104244 on 2003/06/05 by mzhu@mzhu\_crayola\_win\_tor  
Update alpha pattern in 3.4.9.18

Change 104156 on 2003/06/04 by ashishs@fl\_ashishs\_r400\_win  
updated the tracker

Change 104154 on 2003/06/04 by bbuchner@fl\_bbuchner\_r400\_win  
updated L1 and L2 request fifo contents

Change 104036 on 2003/06/04 by rfevreau@rfevreau\_r400\_win  
Updates

Change 104014 on 2003/06/04 by jacarey@fl\_jcarey\_desktop  
Documentation for new debug bit in the CP.

Change 103838 on 2003/06/03 by mzhu@mzhu\_crayola\_win\_tor  
Rename 2 LUT modes: 256-entry table mode and piece wise linear mode  
Add clamping and rounding for PWL LUT mode

Change 103836 on 2003/06/03 by mzhu@mzhu\_crayola\_win\_tor  
Rename 2 LUT modes: 256-entry table mode and piece wise linear mode

Change 103818 on 2003/06/03 by jhoule@jhoule\_doc\_ll  
Updated RF expand table.  
Negative indices indicate added precision (8.8 -> 7.-8, 16.8 -> 15.-8, 32.8 -> 31.-8).

Change 103794 on 2003/06/03 by tien@ma\_spinach  
Added a litte bit more info

Change 103783 on 2003/06/03 by tien@ma\_spinach  
Initial Checkin

Change 103568 on 2003/06/02 by mzhu@mzhu\_crayola\_win\_tor  
Update 3.4.9.18 for 64bpp graphics with graphics and overlay alpha blending mode 1 (per pixel graphics alpha mode)

Change 103567 on 2003/06/02 by mzhu@mzhu\_crayola\_win\_tor

Page 34 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Update for 64 bpp graphics bit depth and graphics/overlay blend using per-pixel alpha from graphics channel (chapter 11.9 Graphic Keyer).

Change 103433 on 2003/05/30 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 103432 on 2003/05/30 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 103380 on 2003/05/30 by omesh@ma\_omesh  
Mostly complete spreadsheet. What is missing is:  
1) Tests yet to be written: HIC and RB Register Read tests.  
2) The correct test writer information for some of the tests.  
3) Filenames and testcases for some of Frank Hsien's tests.  
  
However, I believe the counts are accurate of the existing tests.

Change 103349 on 2003/05/30 by khabbari@khabbari2\_r400\_win  
test plan updated

Change 103343 on 2003/05/30 by gregs@gregs\_r400\_win\_marlboro  
added two signals for DC/DO debug bus connections

Change 103310 on 2003/05/30 by llefebvr@llefebvr\_r400\_montreal  
Added comments about address register.

Change 103185 on 2003/05/29 by khabbari@khabbari2\_r400\_win  
r500 test plan added

Change 103148 on 2003/05/29 by kmahler@kmahler\_r400\_doc\_lib  
Updates for Random Shader Generator

Change 103144 on 2003/05/29 by omesh@ma\_omesh  
Made some more updates to reflect current status. Still need to update Frank Hsien and Mark's tests into the spreadsheet, along with Hier Stencil and Hier Z tests. Other categories to add include the ZPASS counter tests, etc.

Change 103099 on 2003/05/29 by jacarey@fl\_jcarey\_desktop  
Added oper=comp to document.

Page 35 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 103063 on 2003/05/29 by csampayo@fl\_csampayo\_r400  
Updated status for r400sq\_const\_index\_03.

Change 103060 on 2003/05/29 by csampayo@fl\_csampayo\_r400  
Added max constant memory addr reg indexing test. Updated test\_list and test tracker accordingly.

Change 103041 on 2003/05/29 by ashishs@fl\_ashishs\_r400\_win  
updated some description as well as TBD's

Change 103035 on 2003/05/29 by ashishs@fl\_ashishs\_r400\_win  
added the r400sq\_trunc\_01 test bug

Change 103033 on 2003/05/29 by ashishs@fl\_ashishs\_r400\_win  
added r400sq\_floor\_01 test to the tracker

Change 103025 on 2003/05/29 by ashishs@fl\_ashishs\_r400\_win  
corrected the schedule. Had incorrectly put the new 7 tests under APril20 when they were supposed to be in May25

Change 103018 on 2003/05/29 by ashishs@fl\_ashishs\_r400\_win  
added 6 new tests to the tracker

Change 102980 on 2003/05/28 by jowang@jowang\_R400\_win  
add dual-link TMDS tests (not complete)

Change 102957 on 2003/05/28 by gregs@gregs\_r400\_win\_marlboro  
new part

Change 102954 on 2003/05/28 by omesh@ma\_omesh  
Updated atleast some more of the RB Test plan spreadsheet. Will try to finish by tomorrow.

Change 102893 on 2003/05/28 by mdesai@MA\_MDESAI  
Added status for week ending 5/30

Change 102744 on 2003/05/27 by jiezhou@jiezhou\_r400\_win

Page 36 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



new fb divider slip test

Change 102708 on 2003/05/27 by snburu@snburu\_r400\_win\_marlboro  
First tp\_ch\_blend status report.

Change 102686 on 2003/05/27 by mpersaud@mpersaud\_r400\_win\_tor  
Rev 0.2 Mahendra Persaud  
Date: May 27, 2003  
Update test flow section plus other general clean up.

Change 102623 on 2003/05/26 by mpersaud@mpersaud\_r400\_win\_tor  
Added new tests for R500.

Change 102613 on 2003/05/26 by mpersaud@mpersaud\_r400\_win\_tor  
Initial Rev.

Change 102612 on 2003/05/26 by rfevreau@rfevreau\_r400\_win  
Updated with due dates

Change 102610 on 2003/05/26 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 102608 on 2003/05/26 by chwang@chwang\_r400\_doc\_win  
Latest update.

Change 102603 on 2003/05/26 by mpersaud@mpersaud\_r400\_win\_tor  
Initial Rev.

Change 102413 on 2003/05/23 by mzhu@mzhu\_crayola\_win\_tor  
Update 3.4.9.17 for 8K virtual desktop support

Change 102406 on 2003/05/23 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Documented gzip feature for mcmt test bench.

Change 102376 on 2003/05/23 by enewman@enewman\_r400\_linux\_marlboro  
initial p4 submission

Page 37 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 102326 on 2003/05/23 by mdesai@MA\_MDESAI  
Added addresser section

Change 102323 on 2003/05/23 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated for R500

Change 102292 on 2003/05/23 by mzhu@mzhu\_crayola\_win\_tor  
Add GRPH/OVL\_SURFACE\_OFFSET programming in 3.4.9.17 for 8K virtual desktop support

Change 102205 on 2003/05/22 by mzhu@mzhu\_crayola\_win\_tor  
Add 3.4.9.17 for 8K virtual desktop support  
Add 3.4.9.18 for 64bpp graphics with graphics and overlay alpha blending mode 1 (per pixel graphics alpha mode)

Change 102146 on 2003/05/22 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Final, 4 textures on an RT rectangle...

Change 102113 on 2003/05/22 by rfevreau@rfevreau\_r400\_win  
Updates

Change 102018 on 2003/05/21 by csampayo@fl\_csampayo\_r400  
Updated test description, test\_list and test tracker

Change 102016 on 2003/05/21 by mzhu@mzhu\_crayola\_win\_tor  
Add support for 64 bpp graphics bit depth and graphics/overlay blend using per-pixel alpha from graphics channel (chapter 11.9 Graphic Keyer).  
Increase GRPH/OVL\_X/Y\_END from 13 bits to 14 bits to support 8K virtual desktop

Change 102014 on 2003/05/21 by mzhu@mzhu\_crayola\_win\_tor  
Increase GRPH/OVL\_X\_END registers from 13 bits to 14 bits to support 8K virtual desktop  
Add registers DxGRPH\_16BIT\_ALPHA\_MODE and DxGRPH\_16BIT\_FIXED\_ALPHA\_RANGE for 64 bpp graphics bit depth and graphics/overlay blend using per-pixel alpha from graphics channel.

Change 102004 on 2003/05/21 by vbhatia@vbhatia\_r400\_win\_marlboro  
TP/TC Standalone testbenches weekly progress spreadsheet.

Page 38 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 101984 on 2003/05/21 by llefebvr@llefebvre\_laptop\_r400  
more precisions on XYST generated register.

Change 101957 on 2003/05/21 by khabbari@khabbari2\_r400\_win  
r500 changes

Change 101939 on 2003/05/21 by bbuchner@fl\_bbuchner\_r400\_win  
cleaned up interface names  
added 8 Dword L1 changes

Change 101923 on 2003/05/21 by jacarey@fl\_jcarey\_desktop  
Clarification that Isync flushing occurs only before the first "draw" packet after the transition.

Change 101917 on 2003/05/21 by mzhu@mzhu\_crayola\_win\_tor  
Add a new test (test 28) in chapter 3.4.8.4 for the case moving cursor hot spot from outside of cursor image size to inside and only capture the second frame.

Change 101892 on 2003/05/21 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated R500D\work.xls

Change 101800 on 2003/05/20 by jacarey@fl\_jcarey\_desktop  
Correction to Gradfill prim type for rectangles.

Change 101688 on 2003/05/19 by csampayo@fl\_csampayo\_r400  
Added bug# 116

Change 101680 on 2003/05/19 by llefebvr@llefebvre\_laptop\_r400  
added arbiter to TP/VC output control flow machines.

Change 101645 on 2003/05/19 by mmantor@EL\_nmantorLT\_r400\_win  
minor changes to the sq\_vc interface drawing.

Change 101630 on 2003/05/19 by ashishs@fl\_ashishs\_r400\_win  
updated for the new perspective tests added...

Change 101625 on 2003/05/19 by jacarey@fl\_jcarey\_desktop

Page 39 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Miscellaneous Corrections to documents w.r.t. 2D Coherency Rectangle Updates.

Change 101602 on 2003/05/19 by bbuchner@fl\_bbuchner\_r400\_win  
added clamping logic

Change 101476 on 2003/05/17 by gregs@regs\_r400\_win\_cc  
memory interface changes

Change 101380 on 2003/05/16 by jacarey@fl\_jcarey\_desktop  
Clarifications to pre-write-timer and pre-write-limit usage.

Change 101350 on 2003/05/16 by bbuchner@fl\_bbuchner\_r400\_win  
update L2 drawing  
update snoop signals

Change 101317 on 2003/05/16 by csampayo@fl\_csampayo\_r400  
Update tests req counts

Change 101315 on 2003/05/16 by csampayo@fl\_csampayo\_r400  
Update test req counts

Change 101307 on 2003/05/16 by csampayo@fl\_csampayo\_r400  
Initial check-in

Change 101304 on 2003/05/16 by bbuchner@fl\_bbuchner\_r400\_win  
fixed L2 raddr and waddr signal names

Change 101278 on 2003/05/16 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 101259 on 2003/05/15 by ashishs@fl\_ashishs\_r400\_win  
updated for r400sq\_trunc\_01

Change 101256 on 2003/05/15 by csampayo@fl\_csampayo\_r400  
Updated status for test r400sq\_pressure\_context\_combo\_01

Change 101247 on 2003/05/15 by gabarca@gabarca\_crayola\_win\_cvd

Page 40 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Added clear to the new interface

Change 101236 on 2003/05/15 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 101225 on 2003/05/15 by bbuchner@fl\_bbuchner\_r400\_win  
Added C1 changes, modifications to drawings.  
Describe the RG index processor  
add L1 drawing  
add clamping interface

Change 101205 on 2003/05/15 by gregs@regs\_r400\_win\_marlboro  
update

Change 101188 on 2003/05/15 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 101155 on 2003/05/15 by ashishs@fl\_ashishs\_r400\_win  
labeled myself in the owner column of some tests

Change 101137 on 2003/05/15 by csampayo@fl\_csampayo\_r400  
Updated test status for tests:  
r400sq\_auto\_wrapping\_memories\_01  
r400sq\_vs\_memory\_wrap\_01  
Sorted test\_list

Change 101040 on 2003/05/14 by jasif@jasif\_r400\_win\_tor  
Added section on random delays

Change 101037 on 2003/05/14 by llefebvr@llefebvr\_r400\_montreal  
Fixing the spec some more to match R500. Added some diagrams (SQ internals)

Change 101033 on 2003/05/14 by chwang@chwang\_r400\_doc\_win  
Formatting update.

Change 100995 on 2003/05/14 by jasif@jasif\_r400\_win\_tor  
Updated state diagrams and errors that the model will print.

Change 100993 on 2003/05/14 by chwang@chwang\_r400\_doc\_win

Page 41 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

TMDS update spec.

Change 100991 on 2003/05/14 by chwang@chwang\_r400\_doc\_win  
Updated.

Change 100975 on 2003/05/14 by ashishs@fl\_ashishs\_r400\_win  
updated the tracker and test\_list

Change 100964 on 2003/05/14 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 100945 on 2003/05/14 by jacarey@fl\_jcarey\_desktop  
Clarifications to Set\_Constant and LCC packets w.r.t. write enables for each CONST\_ID type.

Change 100888 on 2003/05/14 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 100832 on 2003/05/13 by jasif@jasif\_r400\_win\_tor  
Updated request state machine diagram.

Change 100802 on 2003/05/13 by jasif@jasif\_r400\_win\_tor  
Expanded forcible signals section.

Change 100704 on 2003/05/13 by frising@frising\_r400\_win\_marlboro  
v.1.72  
-GRAD\_EXP\_ADJUST\_H|V only exists in texture constant now.  
-SetFilterWeights marked as not supported on r400  
-Add 1024 bit option to REQUEST\_SIZE for C1

Change 100627 on 2003/05/13 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
Fixed info field width and vc field width in TC/MH interface tables

Change 100583 on 2003/05/12 by gabarca@gabarca\_crayola\_win\_cvd  
R500 interface changes

Change 100549 on 2003/05/12 by jacarey@fl\_jcarey\_desktop

Page 42 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Microcode Update for 2D surface coherency

Change 100274 on 2003/05/09 by jowang@jowang\_R400\_win  
updated hot-plug detection logic to support dual-link

Change 100246 on 2003/05/09 by ashishs@fl\_ashishs\_r400\_win  
updated the excel tracker sheet and the test\_list up-to-date

Change 100222 on 2003/05/09 by gregs@regs\_r400\_win\_marlboro  
update

Change 100163 on 2003/05/09 by rramsey@RRAMSEY\_P4\_r400\_win  
drawing to describe instruction store address wrapping in the control\_flow\_seq and target\_instr\_fetch blocks

Change 100159 on 2003/05/09 by jacarey@fl\_jcarey\_desktop  
Document setting of bit 20 in 2D Booleans as Default\_Sel

Change 100132 on 2003/05/09 by alleng@alleng\_r400\_win\_marlboro\_8200  
Updated these two files with new information

Change 100004 on 2003/05/08 by llefebvr@llefebvr\_r400\_montreal  
Some interface updates.

Change 99995 on 2003/05/08 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Checkpoint...

Change 99985 on 2003/05/08 by lseiler@lseiler\_r400\_win\_marlboro2  
New 2D tiling formats

Change 99957 on 2003/05/08 by lseiler@lseiler\_r400\_win\_marlboro2  
Update HierStencil description

Change 99927 on 2003/05/08 by moev@moev  
Virage Star Memory System verification test plan (block level)

Change 99921 on 2003/05/08 by jmarsano@MA\_JMARSANO

Page 43 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Added SAMPLE instruction to list

Change 99916 on 2003/05/08 by bbuchner@fl\_bbuchner\_r400\_win  
added L1/L2 request processing description  
updated for 512 bit wide cache  
updated external interface signals

Change 99909 on 2003/05/08 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update with some more useful info on control flow looping...

Change 99782 on 2003/05/07 by mdoggett@mdoggett\_r400\_win\_platypus  
Format 22, 23 moved to 32BPP in format conversion table.  
Interface selection bit changed from Z0 to C0.  
Format 40 moved with Format 11 and 12 in format conversion table.  
SM4 removed.  
Completed updates to R500 version of TC.  
Many unlisted changes.

Change 99777 on 2003/05/07 by frising@frising\_r400\_win\_marlboro  
v.1.96  
-update rules for masking with Color/Fog export.

Change 99536 on 2003/05/07 by csampayo@fl\_csampayo\_r400  
Updated tests status

Change 99510 on 2003/05/07 by jacarey@fl\_jcarey\_desktop  
Updates to document for usage of "flush done" flag in the microcode.

Change 99502 on 2003/05/07 by jmarsano@MA\_JMARSANO  
TST validation documents

Change 99471 on 2003/05/06 by csampayo@fl\_csampayo\_r400  
Initial check-in

Change 99456 on 2003/05/06 by ashishs@fl\_ashishs\_r400\_win  
removed the modules from the excel sheet

Change 99452 on 2003/05/06 by frising@frising\_r400\_win\_marlboro  
v.1.95

Page 44 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



-Update spec to show that masking of exports is allowed for all exports now (possible only exception fog - TBD).

Change 99445 on 2003/05/06 by ashishs@fl\_ashishs\_r400\_win

removing the button from the sheet, since it wasn't enabled

Change 99433 on 2003/05/06 by csampayo@fl\_csampayo\_r400

Some housekeeping

Change 99386 on 2003/05/06 by jacarey@fl\_jcarey\_desktop

Update

Change 99385 on 2003/05/06 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update comments, new tests checking RT Constant indexing...

Change 99380 on 2003/05/06 by jacarey@fl\_jcarey\_desktop

Fix for 2D Coherency (Flushing TC)

Change 99190 on 2003/05/05 by gregs@gregs\_r400\_win\_marlboro

update

Change 99076 on 2003/05/05 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb

First update for R500. Includes changes to AIC and TC interface for R500 feature support.

Change 99068 on 2003/05/05 by mkelly@fl\_mkelly\_r400\_win\_laptop

SQ RT constants and flow control testing

Change 98890 on 2003/05/02 by gregs@gregs\_r400\_win\_marlboro

names changes again ..

Change 98760 on 2003/05/02 by llefebvr@llefebvr\_r400\_montreal

forgot to remove 1 waterfall signal.

Change 98670 on 2003/05/01 by jbrady@jbrady\_r400\_win

Add signals to SQ interface for flow control, count\_lo, fetch\_type. Add L1\_request signal first\_instr\_of\_vv.

Change 98628 on 2003/05/01 by frising@frising\_r400\_win\_marlboro

0.99g

-fixed typo in float16<->float32 conversion table

Change 98626 on 2003/05/01 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 98544 on 2003/05/01 by mkelly@fl\_mkelly\_r400\_win\_laptop

Added detail on loop

Change 98539 on 2003/05/01 by kmahler@kmahler\_r400\_doc\_lib

Some minor updates.

Change 98518 on 2003/05/01 by enewman@enewman\_r400\_linux\_marlboro

fixed typos, cleaned up some stuff

Change 98500 on 2003/05/01 by llefebvr@llefebvr\_r400\_montreal

Refreshing the interfaces per Andi's last mail.

Change 98409 on 2003/04/30 by gregs@gregs\_r400\_win\_marlboro

update

Change 98401 on 2003/04/30 by llefebvr@llefebvr\_r400\_montreal

Updated the SQ->SP interfaces for the R500.

Change 98394 on 2003/04/30 by bbloemer@ma\_bbloemer

Updated description of DRAM software command unit.

Change 98305 on 2003/04/30 by moev@moev

Updated Tile Enable control register to match verilog

Change 98296 on 2003/04/30 by jayw@ma\_jayw\_lt

minor updates

Change 98285 on 2003/04/30 by filijero@fl\_frnk

latest updates

Change 98162 on 2003/04/29 by mkelly@fl\_mkelly\_r400\_win\_laptop

Maximum pixel shader nested, control flow subroutines in RTS, with non-RTS in front and back containing simple pixel and vertex shaders.

Updated SQ doc with RTS tests needed.

Change 97906 on 2003/04/28 by ashishs@fl\_ashishs\_r400\_win

added a bug for the 2 failing CL tests

Change 97768 on 2003/04/25 by gregs@laptop1

all names on DC interface changed.

Change 97727 on 2003/04/25 by mzhu@mzhu\_crayola\_win\_tor

Update 11.2.1 DCP Window Controller for DCP\_DMIF\_SIZE

Change 97706 on 2003/04/25 by jacarey@fl\_jcarey\_desktop

Add RBBM\_DB\_soft\_reset to RBBM

Change 97673 on 2003/04/25 by mpersaud@mpersaud\_r400\_win\_tor

Rev 0.06 Mahendra Persaud  
Date: April 25, 2003  
Expanded CLIENT\_DCCIF\_wc?\_reg\_align64byte to 2 bits

Change 97672 on 2003/04/25 by mpersaud@mpersaud\_r400\_win\_tor

Rev 0.02 Mahendra Persaud  
Date: April 25, 2003  
Updated CLIENT\_DCCIF\_reg\_wc?\_align64byte functionality.  
Expanded on some block descriptions  
Updated diagrams

Change 97636 on 2003/04/25 by bbuchner@fl\_bbuchner\_r400\_win

added L2 cache drawing  
fixed cache tag size (stored) to 22 bits  
fixed memory request to include 26 bits of address and sec. mask

Change 97613 on 2003/04/25 by khabbari@khabbari2\_r400\_win

not\_last\_line\_pair is added

Change 97525 on 2003/04/24 by lkang@lkang\_r400\_win\_tor

dc split update

Change 97523 on 2003/04/24 by bbuchner@fl\_bbuchner\_r400\_win

added top level cache controller

Change 97450 on 2003/04/24 by llefebvr@llefebvre\_laptop\_r400

Updated stall conditions.  
Made swizzle changes.  
Added more R500 specifics.

Change 97441 on 2003/04/24 by mpersaud@mpersaud\_r400\_win\_tor

Rev 0.01 Mahendra Persaud  
Date: April 24, 2003  
Initial revision.

Change 97440 on 2003/04/24 by mpersaud@mpersaud\_r400\_win\_tor

Rev 0.05 Mahendra Persaud  
Date: April 24, 2003  
Added CLIENT\_DCCIF\_wc?\_reg\_align64byte signal to interface.  
Fixed some signal descriptions and updated some of the timing diagrams

Change 97403 on 2003/04/24 by jacarey@fl\_jcarey\_desktop

RBBM Document Updates for DB

Change 97280 on 2003/04/23 by jowang@jowang\_R400\_win

try to update diagram so that it looks nice after rotate.  
didn't work.

Change 97278 on 2003/04/23 by jowang@jowang\_R400\_win

modified after design review 04/23/03

Change 97277 on 2003/04/23 by jowang@jowang\_R400\_win

updated after the design review 04/23/03

Change 97272 on 2003/04/23 by frising@frising\_r400\_win\_marlboro

Spazzed out on that last check-in. Should have read that 1bpp textures are filterable. No version bump.

Change 97261 on 2003/04/23 by frising@frising\_r400\_win\_marlboro





v.1.71  
 -show that 1D textures formats are filterable  
 -remove REQUEST\_LATENCY fields  
 -misc clean-up

Change 97254 on 2003/04/23 by bbuchner@fl\_bbuchner\_r400\_win  
 added Request Generator Drawing

Change 97181 on 2003/04/23 by bbuchner@fl\_bbuchner\_r400\_win  
 0.1 of Vertex cache document

Change 97161 on 2003/04/23 by lilebvr@lilebvr\_laptop\_r400  
 interface name changes for the SQ->SP fetch swizzles.

Change 97140 on 2003/04/23 by csampayo@fl\_csampayo\_r400  
 Update using Laurent's inputs

Change 97092 on 2003/04/23 by lilebvr@lilebvr\_laptop\_r400  
 Added SP stall conditions to the SQ spec.

Change 97084 on 2003/04/23 by mpersaud@mpersaud\_r400\_win\_tor  
 Rev 0.04 Mahendra Persaud  
 Date: April 23, 2003  
 Fixed some of the port names to make them more consistent.

Change 97077 on 2003/04/23 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Update...

Change 97063 on 2003/04/23 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
 update MH\_TcN\_rtr signal description

Change 97033 on 2003/04/22 by frising@frising\_r400\_win\_marlboro  
 v.1.94  
 -update mova\* instructions to return SrcA (like a mov) on the vector side and SrcC.W replicated on the scalar side.  
 -update pred\* instructions to only use W channel of operands.  
 -update GPR write-back table to show that scalar component is used when both scalar and vector write masks are enabled.

Change 97032 on 2003/04/22 by frising@frising\_r400\_win\_marlboro

Page 49 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

v.0.99f  
 -misc updates/corrections/clean-up

Change 97009 on 2003/04/22 by lchen@lchen\_crayola0  
 update

Change 96906 on 2003/04/22 by bbuchner@fl\_bbuchner\_r400\_win  
 VC DOCS

Change 96888 on 2003/04/22 by jasif@jasif\_r400\_win\_tor  
 Keep track of R500 DV work.

Change 96884 on 2003/04/22 by jasif@jasif\_r400\_win\_tor  
 Keep track of outstanding DV work.

Change 96881 on 2003/04/22 by jiezhou@jiezhou\_r400\_win  
 dual link tmds clock.

Change 96875 on 2003/04/22 by filjero@fl\_frank  
 changed data from one pass to the next to better insure proper validation

Change 96872 on 2003/04/22 by jiezhou@jiezhou\_r400\_win  
 delete old diagram

Change 96860 on 2003/04/22 by mpersaud@mpersaud\_r400\_win\_tor  
 New delta doc.  
 Updated test list.

Change 96854 on 2003/04/22 by mpersaud@mpersaud\_r400\_win\_tor  
 Rev 0.03 Mahendra Persaud  
 Date: April 21, 2003  
 Update after interface review.

- general description cleanup
- update interface names
- moved surface number to address bits [5:4] during surface register write
- added functionality to rcd signal(not wired to zero anymore)
- removed client id's from read return interface.
- update timing diagrams

Page 50 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 96851 on 2003/04/22 by jacarey@fl\_jcarey\_desktop  
 1. Add detection of Type-0/1 Packets in IBs if Enabled in ME\_INIT Packet.  
 2. Uni-Level Test Added to verify.  
 3. Update to PM4 Spec to document addition.

Change 96715 on 2003/04/21 by jowang@jowang\_R400\_win  
 Rotate the diagram by 90 degrees for r500\_tmds\_dual\_link.doc

Change 96713 on 2003/04/21 by jowang@jowang\_R400\_win  
 updated dataSynchronizer document for R500

Change 96699 on 2003/04/21 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Test all 32 RTS boolean bits in the pixel shader...

Change 96592 on 2003/04/20 by gregs@gregs\_r400\_win\_cc  
 update

Change 96572 on 2003/04/19 by lilebvr@lilebvr\_r400\_montreal  
 Documentation changes for R500.

Change 96524 on 2003/04/18 by jhoule@jhoule\_doc\_it  
 Changed GetCompTexLOD and SetTexLOD opcodes to work with a single LOD component.  
 Removed 1D restriction for FMT\_1\* formats.  
 Indicated that arbitrary filters are now unsupported.  
 Realigned every row with auto-fit to fix incomplete last lines.

Change 96500 on 2003/04/18 by filjero@fl\_frank  
 latest updates

Change 96403 on 2003/04/18 by jacarey@fl\_jcarey\_desktop  
 Type 0/1 Error Checking in IBs (ME\_INIT, Interrupt Registers)  
 Un-Link Diagrams from PM4 Spec

Change 96286 on 2003/04/17 by jacarey@fl\_jcarey\_desktop  
 1. Add INVALID\_TAG to bit 31 of CP\_MIU\_TAG\_STAT2 register  
 2. Added enumeration for the performance counter selects in the CP and RBBM

Page 51 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 96284 on 2003/04/17 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
 Added MCMH coverage.

Change 96130 on 2003/04/17 by mpersaud@mpersaud\_r400\_win\_tor  
 Update port names to match R500 naming convention.

Change 96064 on 2003/04/16 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 95964 on 2003/04/16 by jacarey@fl\_jcarey\_desktop  
 Add new debug registers that record when read tags are outstanding to the CP.

Change 95946 on 2003/04/16 by jacarey@fl\_jcarey2  
 Removed Snooping Connections to DMA Engine from Diagram

Change 95802 on 2003/04/16 by mpersaud@mpersaud\_r400\_win\_tor  
 Add to source control

Change 95773 on 2003/04/15 by jowang@jowang\_R400\_win  
 First rev of dual link TMDS block diagram

Change 95760 on 2003/04/15 by sbagshaw@sbagshaw  
 added detail that power management for DC block must be enabled to use "one shot" clock or clock branch stopping feature of test debug circuitry

Change 95740 on 2003/04/15 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 95666 on 2003/04/15 by csampayo@fl\_csampayo\_r400  
 Some housekeeping

Change 95655 on 2003/04/15 by csampayo@fl\_csampayo\_r400  
 Add "Owner" column

Change 95625 on 2003/04/15 by jacarey@fl\_jcarey2  
 Updates to Document

Page 52 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 95606 on 2003/04/15 by jacarey@fl\_jcarey2  
 Baseline of Ideas for Pre-emptive Ring Hardware in CP

Change 95542 on 2003/04/14 by sbagshaw@sbagshaw  
 Changed references to PIXCLK to refer to pixel PLL source clock branch instead of a particular display controller's pixel clock branch.  
 Changed all references of DISP1\_PCLK to PIX1CLK.  
 Changed all references of DISP2\_PCLK to PIX2CLK.  
 All prior references to "Primary display controller pixel clock" changed to "Primary pixel PLL source clock". Similarly, all prior references to "Secondary display controller pixel clock" changed to "Secondary pixel PLL source clock".

Change 95512 on 2003/04/14 by jacarey@fl\_jcarey2  
 Miscellaneous Updates

Change 95471 on 2003/04/14 by jacarey@fl\_jcarey2  
 Added some packet restrictions for BitBlt and HostDataBlt:  
 For HostData\_Blt: Never identify a brush even though the ROP code is set to 0xCC  
 For BitBlt: Never do a simple BitBlt with a mono opaque source, SRC\_TYPE=0, or a mono transparent source, SRC\_TYPE=1, and a ROP code set to source copy, 0xCC.

Change 95460 on 2003/04/14 by frising@frising\_r400\_win\_marlboro  
 v.1.69  
 -Add fields to vertex fetch instruction to support mega/mini fetches.

Change 95443 on 2003/04/14 by jasif@jasif\_r400\_win\_tor  
 Fixed section on integration.

Change 95223 on 2003/04/11 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 95214 on 2003/04/11 by jacarey@fl\_jcarey2  
 Baseline CP Review Slides

Change 95139 on 2003/04/11 by jiezhou@jiezhou\_r400\_win  
 for sclk\_r\_vga\_rst

Change 95109 on 2003/04/11 by mkelly@fl\_mkelly\_r400\_win\_laptop

Page 53 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Test smallest Z offset and scale to produce a discernable difference in the Zbuffer (1 lsb).

Change 95068 on 2003/04/10 by gregs@laptop1  
 update

Change 95039 on 2003/04/10 by gabarca@gabarca\_crayola\_win\_cvd  
 Fixed case c6 of crtc display parameters tests

Change 95022 on 2003/04/10 by khabbari@khabbari2\_r400\_win  
 r500 changes

Change 94731 on 2003/04/09 by rfevreau@rfevreau\_r400\_win  
 Took out disout\_gpios from block level regression

Change 94703 on 2003/04/09 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 94683 on 2003/04/09 by jasif@jasif\_r400\_win\_tor  
 Updated

Change 94680 on 2003/04/09 by jasif@jasif\_r400\_win\_tor  
 Added section on managing devel and dcsplit branch.

Change 94556 on 2003/04/08 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 94544 on 2003/04/08 by rfevreau@rfevreau\_r400\_win  
 Updates to xls files and Makefile

Change 94458 on 2003/04/08 by jasif@jasif\_r400\_win\_tor  
 Describes how to use perforce branching mechanism for dc split changes.

Change 94419 on 2003/04/08 by jacarey@fl\_jcarey2  
 Proposal #2 for test interface

Change 94395 on 2003/04/08 by rramsey@RRAMSEY\_P4\_r400\_win

Page 54 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

update

Change 94342 on 2003/04/07 by sbagshaw@sbagshaw  
 Added new test, "DISPOUT\_INTERFACES\_powerstate", to verify the Display Output data output interfaces function properly in different power states.

Change 94201 on 2003/04/07 by jacarey@fl\_jcarey2  
 Test Bus Proposal

Change 94195 on 2003/04/07 by ashishs@fl\_ashishs\_r400\_win  
 closed a bug

Change 94183 on 2003/04/07 by vgoel@fl\_vgoel2  
 updated bug status

Change 94179 on 2003/04/07 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 94030 on 2003/04/04 by paulv@MA\_PVELLA  
 Updates to the MHS section.

Change 93969 on 2003/04/04 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 93958 on 2003/04/04 by sbagshaw@sbagshaw  
 R400 DC Test Debug document put into proper documentation template. Section explaining how to specify clock domain for each bit of DC\_TEST\_DEBUG\_DATA added.

Change 93898 on 2003/04/04 by jacarey@fl\_jcarey\_desktop  
 Updated Documentation for addition of Pre-Fetch Matching for Loop and Boolean Constants

Change 93733 on 2003/04/03 by vgoel@fl\_vgoel2  
 closed a bug

Change 93664 on 2003/04/03 by fltjero@fl\_frnk  
 latest passing updates

Page 55 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 93520 on 2003/04/02 by jowang@jowang\_R400\_win  
 no dithering done in blank pixel for DVOA

Change 93501 on 2003/04/02 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 93481 on 2003/04/02 by csampayo@fl\_csampayo\_r400  
 Initial check-in

Change 93465 on 2003/04/02 by jacarey@fl\_jcarey\_desktop  
 1. Move RB\_CLRCMP\_MSK\_HI and RB\_CLRCMP\_DST\_HI initialization for 2D to the 2D Indirect Buffer  
 2. Mask for RB\_CLRCMP\_MSK\_LO is dependant on the pixel type  
 3. Updated PM4 Spec Accordingly  
 4. Updated CP Unit-Level Tests Accordingly

Change 93456 on 2003/04/02 by llefebvr@llefebvr\_r400\_montréal  
 update to the control flow instruction.  
 Adding timing diagram for the SQ->VC/TP transfers.

Change 93409 on 2003/04/02 by ysiang@ysiang\_r400\_win\_marlboro\_p4  
 updated sp test excel sheet

Change 93373 on 2003/04/02 by ashishs@fl\_ashishs\_r400\_win  
 filed bug for SQ tests failing due to Laurent's change # 92966

Change 93269 on 2003/04/01 by gabarca@gabarca\_crayola\_win\_cvd  
 fixed horz parameters cases c8, c9, still don't know why c7 does not emulate properly

Change 93211 on 2003/04/01 by paulv@MA\_PVELLA  
 Initial version.

Change 93199 on 2003/04/01 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 93176 on 2003/04/01 by gregs@gregs\_r400\_win\_marlboro  
 first power estimate

Page 56 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 93130 on 2003/04/01 by nbarbier@nbarbier\_r400\_win\_tor  
Updated Power Management Section.

Change 93121 on 2003/04/01 by vgoel@fl\_vgoel2  
updated to remove bug 788

Change 93110 on 2003/04/01 by jiezhou@jiezhou\_r400\_win  
updating table

Change 93065 on 2003/04/01 by jiezhou@jiezhou\_r400\_win  
updating in pclk src selection

Change 92948 on 2003/03/31 by jiezhou@jiezhou\_r400\_win  
take debug\_test out from test plan.

Change 92850 on 2003/03/31 by efong@efong\_r400\_win\_tor\_doc  
Added in Verdi Training docs

Change 92846 on 2003/03/31 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 92637 on 2003/03/28 by filijero@fl\_fränk  
added dummy writes to instruction memory so that it does not return unknowns when read

Change 92627 on 2003/03/28 by alleng@alleng\_r400\_win\_marlboro\_S200  
Initial submit

Change 92587 on 2003/03/28 by lfebevr@lfebevr\_laptop\_r400  
added swizzle codes to the spec.

Change 92433 on 2003/03/27 by mpersaud@mpersaud\_r400\_win\_tor  
Rev 0 98 Mahendra Persaud  
Date: March 26, 2003  
Update section 4.1 with new display parameters and formulas.

Change 92425 on 2003/03/27 by jiezhou@jiezhou\_r400\_win

Page 57 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

initial release

Change 92381 on 2003/03/27 by dwong@cndwong2  
Added CP\_RBBM\_dma\_busy to Bit 2 of the RT discrete signals

Change 92378 on 2003/03/27 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Add test requirement...

Change 92370 on 2003/03/27 by jacarey@fl\_jcarey\_desktop  
Fix typo in RB\_BUFSSZ equation in the CP\_RB\_CNTL register

Change 92347 on 2003/03/27 by jiezhou@jiezhou\_r400\_win  
update

Change 92330 on 2003/03/27 by ashishs@fl\_ashishs\_r400\_win  
filed bug for the hang caused by Laurent's change #92184

Change 92325 on 2003/03/27 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
updated address translation diagram for rom reads, removed summary of registers in favor of a reference to the block file

Change 92272 on 2003/03/26 by rfevreau@rfevreau\_r400\_win  
Updated numbers

Change 92265 on 2003/03/26 by jimmylau@jimmylau\_r400\_win\_tor  
Initial revision of BIF test plan.

Change 92238 on 2003/03/26 by jiezhou@cn\_jiezhou  
updating

Change 92204 on 2003/03/26 by ashishs@fl\_ashishs\_r400\_win  
documented the SQ bug by Laurent

Change 92175 on 2003/03/26 by gregs@laptop1  
reverted ROM\_AP\_SIZE definition

Change 92174 on 2003/03/26 by mkelly@fl\_mkelly\_r400\_win\_laptop

Page 58 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update with SC test coverage...

Change 92165 on 2003/03/26 by jacarey@fl\_jcarey\_desktop  
Visio Updates to Scratch Register Interrupt Function in the CP

Change 92090 on 2003/03/25 by rfevreau@rfevreau\_r400\_win  
Submitted

Change 92030 on 2003/03/25 by abeaudin@abeaudin\_r400\_win\_marlboro  
added build sequence

Change 91961 on 2003/03/25 by tbbloemer@ma\_bbloemer  
Updated test plan with more test description and effort estimate.

Change 91878 on 2003/03/24 by jacarey@fl\_jcarey\_desktop  
Add Test\_Select to R400 documentation for the scratch register compare interrupt

Change 91821 on 2003/03/24 by jacarey@fl\_jcarey\_desktop  
Scratch Register Interrupt

Change 91812 on 2003/03/24 by mzhu@mzhu\_crayola\_win\_tor  
Double MCLK frequency to reduce MH latency to less than 40% of HTOTAL for MH\_DC\_LATENCY1 test  
Set SCLK to 440MHz for all MH\_DMIF\_DCP tests  
Force dmif model its delay signals to 0 on block level simulation for all MH\_DMIF\_DCP tests

Change 91806 on 2003/03/24 by jacarey@fl\_jcarey\_desktop  
Fix typo in section 7.2

Change 91790 on 2003/03/24 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 91783 on 2003/03/24 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
Update to reflect changes to address decision tree and that primary target is now pci-express

Change 91625 on 2003/03/21 by nbarbier@nbarbier\_r400\_win\_tor

Page 59 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Made additional change to tmds hpd override test.

Change 91582 on 2003/03/21 by gregs@regs\_r400\_win\_marlboro  
various minor changes

Change 91540 on 2003/03/21 by jacarey@fl\_jcarey2  
Scratch Compare Interrupt Diagram for R400  
This is the same logic that is being added for R390 as requested by Jeffrey Cheng. The difference from R390 is the location of the interrupt control and status bits. This is indicated on the diagram.

Change 91514 on 2003/03/21 by abeaudin@abeaudin\_r400\_win\_marlboro  
added directory description

Change 91495 on 2003/03/21 by csampayo@fl\_csampayo\_r400  
Updated status for the following tests:  
r400sq\_flow\_control\_02  
r400sq\_flow\_control\_03

Change 91489 on 2003/03/21 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 91474 on 2003/03/21 by jacarey@fl\_jcarey\_desktop  
1. Removed PREFETCH\_DISABLE\_OVERRIDE from CP\_DEBUG register in CP Spec.  
2. Updated PFP pseudocode for Indirect\_Buffer and Indirect\_Buffer\_PFD packets.

Change 91438 on 2003/03/20 by csampayo@fl\_csampayo3  
VGT output path stress tests

Change 91354 on 2003/03/20 by dwong@cndwong2  
include descriptions on FDCT compression

Change 91347 on 2003/03/20 by mdoggett@mdoggett\_r400\_win\_platypus  
Major change to cache design. Partial spec update to new design.  
L1 removed, L2 replaced with 4 read port 128 word memories.  
Added new Set, Halfline, Slice creation in Cacheline Formats section, removed old L1 Tags.

Page 60 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



3D 64BPP and 128BPP special cases removed.

Change 91332 on 2003/03/20 by jhoule@jhoule\_doc\_it

Minor correction to the Numbers table.  
u1NT gamma'd gave values from 0 to 15, but the 'range' entry was [-8..8] instead of [0, 16].  
(reported by Daniel Willhite)  
No version bump.

Change 91280 on 2003/03/20 by abeaudin@abeaudin\_r400\_win\_marlboro

added gfx engine description

Change 91277 on 2003/03/20 by gregs@gregs\_r400\_win\_marlboro

iodft insertion complete

Change 91262 on 2003/03/20 by dajen@dajen\_r400

Updated with R500 line buffer size and core clock speed

Change 91227 on 2003/03/20 by mzhu@mzhu\_crayola\_win\_tor

For MH\_DC\_LATENCY tests in chapter 3.3, force\_read\_delay\_busy is forced to be less than or equal to force\_read\_delay\_idle. This makes dmif model to send overlay data not later than graphics data for the first chunk of each line

Change 91209 on 2003/03/20 by jacarey@fl\_jcarey\_desktop

- Updated bit width of Non-Prefetch counters in the CP\_Non\_Prefetch\_Cntrs register in CP Spec.
- Addition of INDIRECT\_BUFFER\_PFD packet to the PM4 Spec.

Change 91124 on 2003/03/19 by gregs@laptop1

differential pads dft + clean-up

Change 90952 on 2003/03/19 by sbagshaw@sbagshaw

DMIF tests clarified to use maximum pixel clock of 400 MHz. MH-DMIF latency tests modified so some use graphics & overlay surfaces whereas others only use a graphics surface  
Details and procedure for CRTIC interrupt test clarified.

Change 90883 on 2003/03/19 by mkelly@fl\_mkelly\_r400\_win\_laptop

SC debug register coverage...

Change 90874 on 2003/03/19 by abeaudin@abeaudin\_r400\_win\_marlboro

more emulator information

Change 90871 on 2003/03/19 by abeaudin@abeaudin\_r400\_win\_marlboro

remove doc

Change 90870 on 2003/03/19 by abeaudin@abeaudin\_r400\_win\_marlboro

new emulator emulator information

Change 90869 on 2003/03/19 by abeaudin@abeaudin\_r400\_win\_marlboro

remove doc

Change 90785 on 2003/03/18 by sbagshaw@sbagshaw

DMIF System and Stress tests (section 3.3 and 4.3) modified to utilize real display mode timings and clock speeds.

Change 90763 on 2003/03/18 by abeaudin@abeaudin\_r400\_win\_marlboro

answers to software questions

Change 90744 on 2003/03/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

Test para\_enable bit, update register coverage...

Change 90739 on 2003/03/18 by jacarey@fl\_jcarey\_desktop

Add stall conditions for IB2D init w.r.t. in-flight indirect buffer inits.

Change 90715 on 2003/03/18 by vgoel@fl\_vgoel2

added r400vgt\_hos\_pnt\_adaptive\_complex bug

Change 90699 on 2003/03/18 by gregs@gregs\_r400\_win\_marlboro

DRAM\_RST, TEST\_YCLK, TEST\_MCLK pads

Change 90670 on 2003/03/18 by mdoggett@MA\_MDOGETT\_IT

some modifications towards version 0.5.  
version 0.5 not yet completed.

Change 90659 on 2003/03/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 90613 on 2003/03/17 by csampayo@fl\_csampayo\_r400

Control flow, predicate and multi-context and multi-prim test. Upfdated test\_list accordingly

Change 90606 on 2003/03/17 by gabarca@gabarca\_crayola\_win\_cvd

added timin lines

Change 90592 on 2003/03/17 by moev@moev

updates to include dbist

Change 90492 on 2003/03/17 by khabbari@khabbari\_r400\_win

r400 last release

Change 90257 on 2003/03/14 by gregs@gregs\_r400\_win\_marlboro

memory strobe signals' names back to MnWDQSn and MnRQDSn

Change 90251 on 2003/03/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

sc\_sp centers/centroids parameters 13, 14, 15

Change 90225 on 2003/03/14 by rthambim@rthambim\_r400\_win\_tor

Added pci/agg address expansion, initiator register list.

Change 90161 on 2003/03/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

sc\_sp sample control parameters 8 - 13

Change 90160 on 2003/03/14 by jacarey@fl\_jcarey\_desktop

Another Stall Condition for Indirect\_Buffer packet

Change 90158 on 2003/03/14 by jacarey@fl\_jcarey\_desktop

Updated Pseudocode for PREFETCH\_DISABLE mode.

Change 90122 on 2003/03/13 by gregs@laptop1

update

Change 90107 on 2003/03/13 by georgev@devel\_georgevh2\_r400\_win\_marlboro

Fix \_ to / typo.

Change 90102 on 2003/03/13 by georgev@devel\_georgevh2\_r400\_win\_marlboro

Updated sheets.

Change 90076 on 2003/03/13 by gregs@gregs\_r400\_win\_marlboro

update

Change 90033 on 2003/03/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

sc\_sp sampling through interpolators, parameters 3 - 8

Change 90005 on 2003/03/13 by jacarey@fl\_jcarey\_desktop

Updates for Prefetch-Disable Mode to Fetching Indirect Buffers

Change 89973 on 2003/03/13 by georgev@devel\_georgevh2\_r400\_win\_marlboro

First Revision.

Change 89959 on 2003/03/13 by georgev@ma\_georgev

Empty for first rev.

Change 89951 on 2003/03/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Prim type detection on gpr position 0, and 9 - 15

Change 89899 on 2003/03/12 by gregs@laptop1

parallel ROM supports 2 and 4Mbit parts.

Change 89876 on 2003/03/12 by jimmylau@jimmylau\_r400\_win\_tor

Add details for the following R400 changes :

- BIF coherency
- 64-byte PCI and AGP writes
- BIF performance counter
- FW splitter that splits 128-bit data from FW to 64-bit data to HDP
- Bug fix for AGP8x AD calibration

Change 89800 on 2003/03/12 by mkelly@fl\_mkelly\_r400\_win\_laptop

Primtype detection in the pixel shader, gpr positions 2 - 8

Change 89764 on 2003/03/12 by gregs@laptop1

update



Change 89759 on 2003/03/12 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Added some more description.

Change 89756 on 2003/03/12 by mdoggett@MA\_MDOGGETT\_LT  
Minor modifications

Change 89739 on 2003/03/12 by jacarey@fl\_jcarey\_desktop  
Update to proposal.

Change 89737 on 2003/03/12 by gregs@laptop1  
strap for "rom on vip" is 0001 now.

Change 89729 on 2003/03/12 by sbagshaw@sbagshaw  
Sections 3.1 and 4.1 for DCCIF tests updated with new parameters from Mahendra's testing.

Change 89601 on 2003/03/11 by jacarey@fl\_jcarey2  
Proposal for Pre-Fetch Disabling

Change 89596 on 2003/03/11 by gregs@regs\_r400\_win\_marlboro  
update

Change 89577 on 2003/03/11 by tien@ma\_spinach  
Added extra location for SAMPLE\_LOCATION bit

Change 89569 on 2003/03/11 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Check POLY, POINT, LINE prim type detection in SP on parameter 0

Change 89556 on 2003/03/11 by gregs@regs\_r400\_win\_marlboro  
update

Change 89544 on 2003/03/11 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 89501 on 2003/03/11 by jiezhou@cn\_jiezhou  
update from testplan review

Change 89429 on 2003/03/10 by csampayo@fl\_csampayo\_r400  
Updated VGT tests status to 100% for all tests that pass hardware compare

Change 89424 on 2003/03/10 by csampayo@fl\_csampayo\_r400  
Update VGT and SU sections

Change 89384 on 2003/03/10 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 89375 on 2003/03/10 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
updated: sp verification spreadsheet

Change 89331 on 2003/03/10 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 89313 on 2003/03/10 by csampayo@fl\_csampayo\_r400  
Some housekeeping updates.

Change 89312 on 2003/03/10 by csampayo@fl\_csampayo\_r400  
Housekeeping schedule

Change 89118 on 2003/03/07 by csampayo@fl\_csampayo\_r400  
New test checking single/dual vertex vectors of various sizes. Updated test\_list and test tracker accordingly

Change 89108 on 2003/03/07 by omesh@ma\_omesh  
Updated the spreadsheet to some extent, but still haven't finished...

Change 89075 on 2003/03/07 by flijero@fl\_frank  
latest pass/fail results

Change 89066 on 2003/03/07 by moev@moev  
r400 structure test

Change 89032 on 2003/03/07 by csampayo@fl\_csampayo\_r400

Added pass-thru test with large (>64 indices) vertex vectors. Updated test\_list and test tracker accordingly

Change 89021 on 2003/03/07 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 88919 on 2003/03/06 by jiezhou@cn\_jiezhou  
update

Change 88913 on 2003/03/06 by csampayo@fl\_csampayo\_r400  
Adding mixed VGT 2/1 output vectors tests

Change 88910 on 2003/03/06 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 88905 on 2003/03/06 by gabarca@gabarca\_crayola\_win\_cvd  
updated reg table adding timing calcs

Change 88847 on 2003/03/06 by jacarey@fl\_jcarey\_desktop  
Fix typo in pm4 spec.

Change 88832 on 2003/03/06 by gregs@regs\_r400\_win\_marlboro  
update

Change 88766 on 2003/03/06 by ashishs@fl\_ashishs\_r400\_win  
updated for texture wrap bug which has been closed now

Change 88746 on 2003/03/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Completes initial check of prim type detection in the pixel shader checking SQ POINT (r400sc\_sp\_sample\_cntl\_09), SQ LINE (r400sc\_sp\_sample\_cntl\_11) and SQ POLY (this checkin).

Change 88591 on 2003/03/05 by mzhu@mzhu\_crayola\_win\_tor  
Change overlay base address to be different with graphics base address in chapter 3.4.8.8.

Change 88577 on 2003/03/05 by gregs@regs\_r400\_win\_marlboro  
update

Change 88553 on 2003/03/05 by nbarbier@nbarbier\_r400\_win\_tor  
Updated section 9.4.

Change 88534 on 2003/03/05 by mkelly@fl\_mkelly\_r400\_win\_laptop  
MultiPass Indirect Buffer multiple looping...

Change 88515 on 2003/03/05 by mkelly@fl\_mkelly\_r400\_win\_laptop  
MultiPass Indirect Buffer / SC pixel LOOP interaction / 2 Segment / 2 Pass

Change 88445 on 2003/03/04 by csampayo@fl\_csampayo\_r400  
More VGT pass-thru tests checking grouper data types

Change 88405 on 2003/03/04 by mzhu@mzhu\_crayola\_win\_tor  
Add BASE\_ADDRESS = 384MB - 4KB case for graphics, overlay, icon and cursor in chapter 3.4.7.2, 3.4.7.3, 3.4.8.4 and 3.4.8.8.

Change 88370 on 2003/03/04 by gregs@regs\_r400\_win\_marlboro  
update

Change 88360 on 2003/03/04 by grayc@grayc\_r400\_win  
initial release of block validation blocks

Change 88347 on 2003/03/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 88327 on 2003/03/04 by flijero@fl\_frank  
added wait\_gfx\_idle(); to force synchronization

Change 88312 on 2003/03/04 by flijero@fl\_frank  
mem-mapped real-time SQ constant regs moved to a 16 word alignment - from 0x124a0 to 12500

Change 88220 on 2003/03/03 by jiezhou@cn\_jiezhou  
first testplan review

Change 88147 on 2003/03/03 by tien@ma\_spinach



Let's try this again. same as prev rev.

Change 88146 on 2003/03/03 by tien@ma\_spinach  
Updated to include new bits in r400TxVtxInstConstSqTp.xls

Change 88116 on 2003/03/03 by mzhu@mzhu\_crayola\_win\_tor  
Change overlay gamma correction register default values to be linear.

Change 88023 on 2003/03/03 by ashishs@fl\_ashishs\_r400\_win  
updated CL special cases %

Change 88004 on 2003/03/03 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Updated to reflect new tests.

Change 87906 on 2003/03/01 by gregs@gregs\_r400\_win\_cc  
CXTAL1SHV2, PGTMDSSHVA4

Change 87776 on 2003/02/28 by filijero@fl\_frnk  
update

Change 87764 on 2003/02/28 by smoss@smoss\_crayola\_win  
SU tests

Change 87762 on 2003/02/28 by lilefebvr@lilefebvr\_r400  
Added the new SX interface.

Change 87752 on 2003/02/28 by frising@frising\_r400\_win\_marlboro  
v.1.68  
-add CLAMP\_DISABLE to vertex fetch constant.

Change 87636 on 2003/02/28 by gregs@gregs\_r400\_win\_marlboro  
update

Change 87501 on 2003/02/27 by mzhu@mzhu\_crayola\_win\_tor  
Update 5.9.10

Change 87476 on 2003/02/27 by filijero@fl\_frnk

Page 69 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

excel spreadsheet to track progress of test run the the gc testbench

Change 87468 on 2003/02/27 by gregs@gregs\_r400\_win\_marlboro  
update

Change 87452 on 2003/02/27 by mzhu@mzhu\_crayola\_win\_tor  
Add 5.9.9 More tests to improve code coverage  
Add 5.9.10 Read F, V and H count when CRTIC is disabled

Change 87298 on 2003/02/27 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 87190 on 2003/02/26 by gregs@laptop1  
updated widths of new memory pads + initial distribution

Change 87189 on 2003/02/26 by gregs@laptop1  
<updated board straps + added TVDAC placement>

Change 87175 on 2003/02/26 by csampayo@fl\_csampayo\_r400  
Update test to use all 8 contexts, update test tracker accordingly

Change 87168 on 2003/02/26 by csampayo@fl\_csampayo\_r400  
Add new VGT pass-thru tests

Change 87160 on 2003/02/26 by sbagshaw@sbagshaw  
fixed some details of SCL\_CP\_coefficient\_ram SCL system test

Change 87131 on 2003/02/26 by sbagshaw@sbagshaw  
procedure and description for SCL\_CP\_coefficient\_ram system test changed to correct methods.

Change 86921 on 2003/02/25 by gregs@gregs\_r400\_win\_marlboro  
ESD power and ground pads for memory interface

Change 86915 on 2003/02/25 by gregs@gregs\_r400\_win\_marlboro  
new crayola memory pads (breaks, corners, dcap, etc.)

Change 86894 on 2003/02/25 by csampayo@fl\_csampayo\_r400

Page 70 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Closing Bug# 72

Change 86772 on 2003/02/25 by jiezhou@cn\_jiezhou  
update

Change 86764 on 2003/02/25 by nbarbier@nbarbier\_r400\_win\_tor  
More updates to the Code Coverage Section.

Change 86735 on 2003/02/25 by hdong@hdong\_r400\_win\_tor  
revert #11

Change 86713 on 2003/02/25 by ashishs@fl\_ashishs\_r400\_win  
updated for r400sq\_16tex\_interp\_combo\_01

Change 86709 on 2003/02/25 by jacarey@fl\_jcarey\_desktop  
Initial Baseline

Change 86701 on 2003/02/25 by hdong@hdong\_r400\_win\_tor  
delete disp1(2)\_x\_end, and disp1(2)\_y\_end.

Change 86691 on 2003/02/25 by donaldd@fl\_donaldd\_p4  
SC clock diagram

Change 86673 on 2003/02/25 by scamlin@scamlin\_crayola\_win  
sq clocks

Change 86661 on 2003/02/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Simple RTS for Christeen...

Change 86605 on 2003/02/24 by csampayo@fl\_csampayo\_r400  
Adding pass-thru tests with 32 bit indices

Change 86600 on 2003/02/24 by nbarbier@nbarbier\_r400\_win\_tor  
More updates to Code Coverage Section.

Change 86575 on 2003/02/24 by jacarey@fl\_jcarey2

Page 71 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Clarification of write confirm interval as experimental for R400 in the ME\_INIT packet.

Change 86490 on 2003/02/24 by jennho@jennho\_crayola0  
New schematics for NPL.

Change 86489 on 2003/02/24 by jennho@jennho\_crayola0  
Updated schematics based on the latest RTL changes.

Change 86488 on 2003/02/24 by gregs@gregs\_r400\_win\_marlboro  
update

Change 86444 on 2003/02/24 by nbarbier@nbarbier\_r400\_win\_tor  
Added section for additional tests required to satisfy code coverage (Section 9).

Change 86429 on 2003/02/24 by gabarca@gabarca\_crayola\_win\_cvd  
Fixed viewport x, y start because the surface also rotates

Change 86428 on 2003/02/24 by tshah@fl\_tshah  
Fixed wrong connection in VGT

Change 86415 on 2003/02/24 by jacarey@fl\_jcarey\_desktop  
Comment to cp\_int\_cntl register

Change 86414 on 2003/02/24 by tshah@fl\_tshah  
Clock diagram for KS tile (RBBM+VGT+IDCT)

Change 86410 on 2003/02/24 by rramsey@RRAMSEY\_P4\_r400\_win  
Add clock gating diagram for sc\_b

Change 86390 on 2003/02/24 by jacarey@fl\_jcarey\_desktop  
Fix typo in indirect\_buffer packet

Change 86374 on 2003/02/24 by jiezhou@cn\_jiezhou  
update

Change 86371 on 2003/02/24 by gabarca@gabarca\_crayola\_win\_cvd

Page 72 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Clarified 7.3.2: we want underline and blink at the same time

Change 86350 on 2003/02/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update SC status, re-assign most of the remaining cases to STRESS testing.

Change 86308 on 2003/02/23 by gregs@laptop1  
added DRAM\_SEL pins

Change 86288 on 2003/02/23 by gregs@gregs\_r400\_win\_cc  
new memory pads updated

Change 86181 on 2003/02/21 by gabarca@gabarca\_crayola\_win\_cvd  
after code coverage

Change 86144 on 2003/02/21 by nbarbier@nbarbier\_r400\_win\_tor  
Test Plan Update.

Change 86098 on 2003/02/21 by csampayo@fl\_csampayo\_r400  
Some housekeeping

Change 86022 on 2003/02/21 by sbagshaw@sbagshaw  
R400 DC test plan with updated numbers for CRTIC timings for most modes to account for latency from Memory Hub (MH) to Display Composite Pipe (DCP).

Change 86005 on 2003/02/21 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 85948 on 2003/02/21 by mdoggett@MA\_MDOGGETT\_LT  
Updated conditions for instruction and slice state transitions.

Change 85933 on 2003/02/21 by ashish@fl\_ashish\_r400\_win  
updated

Change 85893 on 2003/02/21 by mzhu@mzhu\_crayola\_win\_tor  
Update 3.4.9.13 and 3.4.9.14 to cover three cases in different display area, icon only, cursor only and icon is overlapped by cursor.

Change 85774 on 2003/02/20 by csampayo@fl\_csampayo\_r400

Page 73 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Adding point size clamping tests

Change 85692 on 2003/02/20 by mzhu@mzhu\_crayola\_win\_tor  
Set different surface address from 0 - 256MB for graphics, overlay, icon and cursor in chapter 3.4.7.2, 3.4.7.3, 3.4.8.4 and 3.4.8.8.

Change 85669 on 2003/02/20 by rfevreau@rfevreau\_r400\_win  
Added 3 new tests for code coverage: 1) x2 on D2  
2) x2 with cursor codes 1, 2, 3

Change 85602 on 2003/02/20 by mzhu@mzhu\_crayola\_win\_tor  
Update tests in 3.4.9.13 and 3.4.9.14

Change 85539 on 2003/02/20 by mdoggett@MA\_MDOGGETT\_LT  
version 1.0 of out of order data return for TC. Will be eventually merged into TC spec.

Change 85504 on 2003/02/20 by gregs@gregs\_r400\_win\_marlboro  
update

Change 85486 on 2003/02/20 by gregs@gregs\_r400\_win\_marlboro  
update

Change 85475 on 2003/02/20 by mkelly@fl\_mkelly\_r400\_win\_laptop  
RTS rectangle walk direction x\_dir = 0, y\_dir = 1

Change 85417 on 2003/02/19 by csampayo@fl\_csampayo\_r400  
Some format cleanup

Change 85416 on 2003/02/19 by csampayo@fl\_csampayo\_r400  
Some schedule update

Change 85411 on 2003/02/19 by smoss@smoss\_crayola\_win  
update

Change 85403 on 2003/02/19 by gregs@gregs\_r400\_win\_marlboro  
minor update

Page 74 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 85397 on 2003/02/19 by ashish@fl\_ashish\_r400\_win  
updated

Change 85388 on 2003/02/19 by ashish@fl\_ashish\_r400\_win  
updated for the week of Feb 22nd

Change 85360 on 2003/02/19 by ashish@fl\_ashish\_r400\_win  
updated for 3 tests (need to be updated for 7 more)

Change 85345 on 2003/02/19 by ashish@fl\_ashish\_r400\_win  
updated

Change 85340 on 2003/02/19 by jiezhou@cn\_jiezhou  
Change FRC crtc from interlaces mode to progress mode

Change 85335 on 2003/02/19 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Updated.

Change 85316 on 2003/02/19 by tshah@fl\_tshah  
clock diagram for the PD team

Change 85294 on 2003/02/19 by fltjero@fl\_fltjeros  
changed name of regclk\_active signal coming from RBBM.  
divided logic cloud into 2 separate clouds for the enables since they do not use the same logic to generate the enables.

Change 85269 on 2003/02/19 by frising@ma\_frising  
v.1.67  
-FMT\_10\_11\_11\_AS\_16\_16\_16 and FMT\_11\_11\_10\_AS\_16\_16\_16 are not degammable.

Change 85204 on 2003/02/19 by jacarey@fl\_jacarey\_desktop  
Fix typo for trans\_bitblt for clr\_cmp\_src fields

Change 85203 on 2003/02/19 by csampayo@fl\_csampayo\_r400  
More format updates

Change 85182 on 2003/02/19 by bhanks@fl\_bhanks\_r400\_win

Page 75 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Initial checkin

Change 85164 on 2003/02/19 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 85140 on 2003/02/18 by csampayo@fl\_csampayo\_it\_r400  
Added charts

Change 85126 on 2003/02/18 by gregs@laptop1  
DRENB for dvo clock and control is high

Change 85118 on 2003/02/18 by jling@jling\_crayola0  
Added OE signal from Strobe to data nearpad in visio diagram

Change 85008 on 2003/02/18 by scamlin@scamlin\_crayola\_win  
renamed and added stuff based on PD feedback

Change 84981 on 2003/02/18 by jiezhou@cn\_jiezhou  
updating test plan to reflect hardware changes.

Change 84967 on 2003/02/18 by gregs@laptop1  
update

Change 84922 on 2003/02/18 by csampayo@fl\_csampayo\_r400  
Initial checkin

Change 84920 on 2003/02/18 by mzhu@mzhu\_crayola\_win\_tor  
Correct register setting in 3.4.9.13 and 3.4.9.14

Change 84914 on 2003/02/18 by mzhu@mzhu\_crayola\_win\_tor  
Add 3.4.9.16 Data pattern for Graphics and Overlay Keyer Code Coverage

Change 84903 on 2003/02/18 by gregs@laptop1  
improvements

Change 84807 on 2003/02/17 by mzhu@mzhu\_crayola\_win\_tor

Page 76 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Add 3.4.9.13 Test YCbCr -> sRGB -> YCbCr  
 Add 3.4.9.14 Icon and Cursor Data Clamping  
 Add 3.4.9.15 Color Space Conversion Data Clamping

Change 84773 on 2003/02/17 by jiezhou@cn\_jiezhou  
 updating for the second review

Change 84568 on 2003/02/14 by jhoule@MA\_JHOULE  
 v 1.66:

Changed FMT\_24\_8\* formats to only fetch the Z value, as this was the original scheme.  
 Stencil reads can be done by using FMT\_8\_8\_8 using another constant.

Updated degamma comments to account for the fact that NUM\_FORMAT\_ALL must be set to RF, since degamma only makes sense on uRF source.

Change 84541 on 2003/02/14 by jiling@jiling\_crayola0

Removed VMODE0/1 from memory section

Change 84535 on 2003/02/14 by vgoel@fl\_vgoel2

updated register coverage

Change 84527 on 2003/02/14 by jiling@jiling\_crayola0

R400 io pad drawing (preliminary)

Change 84505 on 2003/02/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Real Time Stream Line List Primitive

Change 84420 on 2003/02/14 by csampayo@fl\_csampayo\_r400

Added multi context tests

Change 84336 on 2003/02/13 by jowang@jowang\_R400\_win

updated after code coverage review

Change 84290 on 2003/02/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

RTS intertwined with Hi-Z viz query

Change 84278 on 2003/02/13 by georgev@devel\_georgevh2\_r400\_win\_marlboro

Updated with new tests.

Page 77 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 84270 on 2003/02/13 by gabarca@gabarca\_crayola\_win\_cvd  
 Fixed

Change 84264 on 2003/02/13 by alleng@alleng\_r400\_win\_marlboro

Initial submission of R400 notes

Change 84235 on 2003/02/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Checkpoint...

Change 84122 on 2003/02/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 83959 on 2003/02/12 by ygiang@ygiang\_r400\_win\_marlboro\_p4

updated: cp cntl reg for perf counters

Change 83839 on 2003/02/12 by mdoggett@mdoggett\_r400\_win\_platypus

Changed all Two Layer L2 Block Offsets.  
 Changed SM3.  
 Added formats 54,55,56 changed 7,16, 17.  
 Updated top level to reflect block split.

Change 83798 on 2003/02/12 by mdoggett@MA\_MDOGGETT\_LT

Changed all Two Layer L2 Block Offsets.  
 Changed SM3.  
 Added formats 54,55,56 changed 7,16, 17.  
 Updated top level to reflect block split.

Change 83705 on 2003/02/11 by jiezhou@cn\_jiezhou

updating from the design review

Change 83646 on 2003/02/11 by jiezhou@cn\_jiezhou

update

Change 83605 on 2003/02/11 by ashish@fl\_ashish\_r400\_win

updated

Change 83597 on 2003/02/11 by jhoule@MA\_JHOULE

Page 78 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Final description of mipfilter point (potential reuse of trijuice)

Change 83555 on 2003/02/11 by jiezhou@cn\_jiezhou

clock diagram for design review

Change 83549 on 2003/02/11 by jacarey@fl\_jacarey\_desktop

Allow SRC\_H/W != DST\_H/W for all AlphaBlend OPs in Microcode  
 Updated associated documents.

Change 83530 on 2003/02/11 by jhoule@MA\_JHOULE

0.9.20

Added mip rounding in LOD computation pseudo-code

Change 83515 on 2003/02/11 by jiezhou@cn\_jiezhou

Increase H-total in DMIF stress tests.

Change 83493 on 2003/02/11 by jimmylau@jimmylau\_r400\_win\_tor

Update the table for AP\_SIZE in section 6.1 because AP\_SIZE is the same for a particular aperture size strap, regardless of multifunction.

Change 83389 on 2003/02/10 by nbarbier@nbarbier\_r400\_win\_tor

Updated document with list of signals in DC/IO interface that don't go through DCIO block.

Change 83328 on 2003/02/10 by jhoule@MA\_JHOULE

Updated replication table

Change 83253 on 2003/02/10 by csampayo@fl\_csampayo\_r400

Housekeeping SU section

Change 83238 on 2003/02/10 by csampayo@fl\_csampayo\_r400

Update real time parameter registers

Change 83233 on 2003/02/10 by mkelly@fl\_mkelly\_r400\_win\_laptop

Use all 4 SQ parameters for RT streams...

Change 83130 on 2003/02/09 by gregs@laptop1

update for netlist rev4.

Page 79 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 83084 on 2003/02/08 by jimmylau@jimmylau\_r400\_win\_tor

Modify diagram on section 6.1 to illustrate change of HDP/VGA/RBBM interface  
 Add tables in section 6.1 to illustrate the new strap settings for memory/register/ROM aperture size  
 Add description to the PCI spec. Rev2.3 support

Change 83080 on 2003/02/08 by gregs@laptop1

MC\_IO\_wr\_strb + DRAM\_SEL + VREFs

Change 82947 on 2003/02/07 by csampayo@fl\_csampayo\_r400

Updates to SQ\_PROGRAM\_CNTL

Change 82944 on 2003/02/07 by jacarey@fl\_jacarey2

Update Spec

Change 82939 on 2003/02/07 by jowang@jowang\_R400\_win

added Early1 and Early2 states

Change 82927 on 2003/02/07 by nbarbier@nbarbier\_r400\_win\_tor

Minor changes.

Change 82845 on 2003/02/07 by csampayo@fl\_csampayo\_r400

Add missing sq\_basic\_test test case

Change 82838 on 2003/02/07 by llefebvr@llefebvr\_r400

small update regarding the implementation change for the Pos Allocated / PC allocated bits.

Change 82808 on 2003/02/07 by mkelly@fl\_mkelly\_r400\_win\_laptop

Validate dummy quad deallocation in pixel vector buffer is good.

Change 82734 on 2003/02/06 by gregs@laptop1

added VREFs

Change 82699 on 2003/02/06 by csampayo@fl\_csampayo\_r400

Remove non-existing tests (randomized)

Page 80 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history





Change 82684 on 2003/02/06 by nbarbier@nbarbier\_r400\_win\_tor  
Updated Section 8.

Change 82683 on 2003/02/06 by csampayo@fl\_csampayo\_r400  
Adding Mar1 test list tracker

Change 82639 on 2003/02/06 by georgev@devel\_georgevh2\_r400\_win\_marlboro  
Really SQ, that's why it's deleted.

Change 82560 on 2003/02/06 by ashishs@fl\_ashishs\_r400\_win  
updated to CL/VTE to 99% . Changed the %formula to account for the CL\_POINT\_SIZE register not being used.

Change 82554 on 2003/02/06 by rfevreau@fevreau\_r400\_win  
First test using ico file for data

Change 82543 on 2003/02/06 by dwong@cndwong2  
added details on reset schemes

Change 82508 on 2003/02/06 by jacarey@fl\_jcarey\_desktop  
Update NQ Flag for Micro Engine's DMA Engine

Change 82497 on 2003/02/06 by gregs@gregs\_r400\_win\_marlboro  
update

Change 82489 on 2003/02/06 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 82429 on 2003/02/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Simplified version of r400sc\_rts\_12 for regress\_e

Change 82426 on 2003/02/06 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 82278 on 2003/02/05 by csampayo@fl\_csampayo\_r400  
Update to better see register coverage

Change 82256 on 2003/02/05 by csampayo@fl\_csampayo\_r400  
Add field to PA\_CL\_ENHANCE

Change 82239 on 2003/02/05 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 82235 on 2003/02/05 by gregs@gregs\_r400\_win\_marlboro  
netlist revision 4

Change 82213 on 2003/02/05 by jacarey@fl\_jcarey\_desktop  
Correct miscellaneous typo's in the document

Change 82184 on 2003/02/05 by csampayo@fl\_csampayo\_r400  
Increase max memory size for tests. Update spreadsheet

Change 82156 on 2003/02/05 by georgev@ma\_georgev  
Renamed file.

Change 82059 on 2003/02/05 by gregs@gregs\_r400\_win\_marlboro  
revision 4 netlist release

Change 81881 on 2003/02/04 by llefebvr@llefebvr\_r400  
added some more comments in the spreadsheet.

Change 81860 on 2003/02/04 by jacarey@fl\_jcarey\_desktop  
Miscellaneous Documentation Updates

Change 81791 on 2003/02/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
RTS intertwined with Viz Query and kill\_pix\_post\_detail\_mask.

Change 81731 on 2003/02/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Viz Query intertwined with RT streams, complete...

Change 81712 on 2003/02/04 by jacarey@fl\_jcarey\_desktop  
Update write-only status of microcode read address registers.

Change 81667 on 2003/02/03 by gregs@laptop1

fixed bug introduced earlier

Change 81620 on 2003/02/03 by gregs@gregs\_r400\_win\_marlboro  
cleaned JTAG interface

Change 81538 on 2003/02/03 by llefebvr@llefebvr\_r400  
Missed bits 41 and 42 in the SQ\_EXEC instruction format. Those are RESERVED as well.

Change 81486 on 2003/02/03 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: sp coverage

Change 81412 on 2003/02/03 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 81401 on 2003/02/03 by llefebvr@llefebvr\_r400  
refined the interfaces to the SP to specify wich signals should or shouldn't be pipelined.

Change 81382 on 2003/02/03 by jacarey@fl\_jcarey\_desktop  
Add clock gating diagram to spec.  
Add note that debug data I/O is asynchronous.

Change 81347 on 2003/02/02 by gregs@laptop1  
update

Change 81312 on 2003/02/02 by gregs@gregs\_r400\_win\_cc  
update

Change 81261 on 2003/02/01 by gregs@gregs\_r400\_win\_cc  
added note that debug bus is asynchronous and there shoudld be no registers on inputs or outputs.

Change 81219 on 2003/01/31 by lchen@lchen\_crayola0  
MEM IO schematics and netlist

Change 81215 on 2003/01/31 by lchen@lchen\_crayola0  
version 4

Change 81159 on 2003/01/31 by vgoel@fl\_vgoel2  
updated VGT register coverage from TE setup

Change 81126 on 2003/01/31 by fliljero@fl\_frnk  
new drawing for PD team

Change 81080 on 2003/01/31 by jacarey@fl\_jcarey\_desktop  
Fix Typo in ME\_INIT packet.

Change 81008 on 2003/01/31 by jacarey@fl\_jcarey\_desktop  
1. Correct Width of Microcode RAM read and write registers.  
2. Fix re-ordering queue data available determination  
3. Document updates for #1.

Change 80832 on 2003/01/30 by llefebvr@llefebvre\_laptop\_r400  
wording change for the predicate override bit.

Change 80785 on 2003/01/30 by jacarey@fl\_jcarey\_desktop  
Clarify that ME\_INIT invalidates pointers only if processed in a non-real-time stream.  
This does not happen if it is processed in a real-time stream.

Change 80783 on 2003/01/30 by georgev@ma\_georgev  
First part of register list for tests. Not finished due to pending changes.

Change 80707 on 2003/01/30 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update comments, RTS with SC quad order enable toggling...

Change 80686 on 2003/01/30 by mkelly@fl\_mkelly\_r400\_win\_laptop  
RTS and SC FIFO sizing combinations...

Change 80682 on 2003/01/30 by jacarey@fl\_jcarey\_desktop  
Pseudocode Update #2 for today

Change 80680 on 2003/01/30 by jacarey@fl\_jcarey\_desktop  
Update ME\_INIT in Pseudocode Land

Change 80679 on 2003/01/30 by mkelly@fl\_mkelly\_r400\_win\_laptop



RTS combinations with Vtx and Pix pipes 0/2 disabled with SC one quad per clock toggled, shader back pressure, interpolator shading toggling

Change 80664 on 2003/01/30 by jacarey@fl\_jcarey\_desktop

- 1. Reserved bits in CP\_DEBUG register are preserved.
- 2. Added default for CP\_INT\_STAT register.
- 3. Add number\_dword=0 check for PolyScanLines and HostData\_Bit packets.
- 4. Associated documentation updates for above items.
- 5. Update full chip tests for above items.

Change 80503 on 2003/01/29 by csampayo@fl\_csampayo\_r400

Updated VGT section

Change 80479 on 2003/01/29 by mkelly@fl\_mkelly\_r400\_win\_laptop

Vtx and pix pipes 2 and 3 disabled with RTS triangles and rectangles and non-RTS stipple lines, complete

Change 80426 on 2003/01/29 by rfevreau@rfevreau\_r400\_win

Changed tests to use bitmaps for cursor data

Change 80422 on 2003/01/29 by jacarey@fl\_jcarey\_desktop

Add note to spec regarding the preservation of "reserved" bits in the cp\_debug register.

Change 80420 on 2003/01/29 by jennho@jennho\_crayola0

Added ADDR/Command/RD\_DATA/DIM signals floorplan.

Change 80401 on 2003/01/29 by csampayo@fl\_csampayo\_r400

Update VGT section

Change 80398 on 2003/01/29 by csampayo@fl\_csampayo\_r400

Adding new VGT test for missing reg coverage

Change 80305 on 2003/01/29 by mkelly@fl\_mkelly\_r400\_win\_laptop

Check stippled line integrity with real time streams, complete.

Change 80022 on 2003/01/28 by nkociuk@ma\_nkociuk

update TP perfcounter events

Change 79996 on 2003/01/28 by gregs@regs\_r400\_win\_marlboro  
first release of the new memory pads.

Change 79984 on 2003/01/28 by mkelly@fl\_mkelly\_r400\_win\_laptop

Polymode RTS test

Change 79957 on 2003/01/28 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb

edited hi interface description

Change 79899 on 2003/01/28 by hartogs@fl\_hartogs

Updated VGT\_SQ interface description.

Change 79824 on 2003/01/27 by csampayo@fl\_csampayo\_r400

Updated VGT status

Change 79818 on 2003/01/27 by csampayo@fl\_csampayo\_r400

Adding new VGT fifo tests

Change 79762 on 2003/01/27 by tshah@fl\_tshah

added RBBM\_CGM\_soft\_reset (hardware+emulator+tests+doc)

Change 79738 on 2003/01/27 by llefebvre@llefebvre\_laptop\_r400

some updates.

Change 79725 on 2003/01/27 by gregs@regs\_r400\_win\_marlboro

mem interface tests PASSED.

Change 79674 on 2003/01/27 by georgev@ma\_georgev

First revision.

Change 79649 on 2003/01/27 by lchen@lchen\_crayola0

checked in the shivah NPL schematics

Change 79613 on 2003/01/27 by ashishs@fl\_ashishs\_r400\_win

added test description and updated tracker

Change 79549 on 2003/01/26 by gregs@laptop1

update

Change 79547 on 2003/01/26 by gregs@laptop1

update

Change 79527 on 2003/01/26 by gregs@laptop1

mem interface clean (except address from MCs)

Change 79368 on 2003/01/24 by gregs@regs\_r400\_win\_marlboro

update

Change 79284 on 2003/01/24 by georgev@ma\_georgev

Added a few tests. Yung needs file for his nefarious purposes.

Change 79270 on 2003/01/24 by jimmylau@jimmylau\_r400\_win\_tor

First draft of BIF coherency test cases for R400

Change 79256 on 2003/01/24 by ashishs@fl\_ashishs\_r400\_win

updated

Change 79235 on 2003/01/24 by mkelly@fl\_mkelly\_r400\_win\_laptop

RT provoking vertex looking good through interpolator on one parameter.

Change 79191 on 2003/01/24 by efong@efong\_r400\_win\_tor\_doc

moved gord to ltisl88 and syang to ltisl86

Change 79181 on 2003/01/24 by csampayo@fl\_csampayo\_r400

Updated VGT section

Change 79176 on 2003/01/24 by jhoule@MA\_JHOULE

Changed DXT from 5/6 to 8 always.  
Only kept first 2 sheets (should be enough).

Change 79174 on 2003/01/24 by mkelly@fl\_mkelly\_r400\_win\_laptop

Add modified and shortened version of r400sc\_its\_09 (back face check on nonRT vs RT prims) to regress\_e

Change 79161 on 2003/01/24 by mkelly@fl\_mkelly\_r400\_win\_laptop

Final, validating Pixel Shader face bit detection from sc\_sp with nonRT and RT primitives

Change 79155 on 2003/01/24 by jacarey@fl\_jcarey\_desktop

Clarify update of constant write enables for LCC packet.

Change 79094 on 2003/01/23 by ashishs@fl\_ashishs\_r400\_win

updated to remove the clip error detect 0%

Change 79063 on 2003/01/23 by csampayo@fl\_csampayo\_r400

Initial checkin

Change 78984 on 2003/01/23 by llefebvre@llefebvre\_r400

small correction on memory export buffer sizes.

Change 78972 on 2003/01/23 by khabbari@khabbari\_r400\_win

changed the syncgen test list

Change 78962 on 2003/01/23 by mzhu@mzhu\_crayola\_win\_tor

Update for MH-DC latency tests in chapter 3.3

Change 78947 on 2003/01/23 by jimmylau@jimmylau\_r400\_win\_tor

Update after review on Jan 23, 03

Change 78917 on 2003/01/23 by jacarey@fl\_jcarey\_desktop

Fix LCC and Set Constant for incremental register updates.

Change 78913 on 2003/01/23 by efong@efong\_r400\_win\_tor\_doc

Added in Project linux assignments excel spreadsheet

Change 78876 on 2003/01/23 by mkelly@fl\_mkelly\_r400\_win\_laptop

Validate face bit in pixel shader for multi-tile coverage prims

Change 78874 on 2003/01/23 by ashishs@fl\_ashishs\_r400\_win

updated to have percentages for the CL/VTE registers with comments



Change 78771 on 2003/01/22 by jennho@jennho\_crayola0  
 Preliminary r400 MEM IO ring visio diagram.

Change 78733 on 2003/01/22 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 78717 on 2003/01/22 by jimmylau@jimmylau\_r400\_win\_tor  
 Initial Action items for BIF

Change 78693 on 2003/01/22 by gregs@gregs\_r400\_win\_cc  
 update

Change 78663 on 2003/01/22 by gregs@gregs\_r400\_win\_cc  
 update

Change 78658 on 2003/01/22 by jacarey@fl\_jcarey\_desktop  
 Update for AlphaBlend for ARGB1555 and Alpha\_Source Blending

Change 78557 on 2003/01/22 by jhoule@MA\_JHOULE  
 Changed \* FLOAT formats to have fast path available under VFetch only.  
 This means TFetches only do 32b/clock.  
 Corrected cycle multiplier for FMT\_32\_32\_32 (was set to x3 instead of x4).  
 Added REQUEST\_LATENCY field to constants. Controls out-of-order behavior.

Change 78432 on 2003/01/22 by jacarey@fl\_jcarey\_desktop  
 Fix Typo in Boolean Descriptions

Change 78374 on 2003/01/21 by lkang@lkang\_r400\_win\_tor  
 update

Change 78369 on 2003/01/21 by gregs@gregs\_r400\_win\_cc  
 Tuesday

Change 78345 on 2003/01/21 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 78304 on 2003/01/21 by frising@ma\_frising  
 v.1.93  
 -Z export from pixel shader now in X channel.  
 -updated mova, kill and predicate instructions coissue rules now that we have a separate bus for mova results.  
 -add note saying input modifiers do not apply to PreviousScalar.  
 -show not used opcodes.  
 -add clamping to mova result sent to SQ.  
 -add 6 new scalar instructions that operate on a constant and GPR and associated documentation.

Change 78286 on 2003/01/21 by grayc@grayc\_r400\_win  
 connections of gfx pipeline

Change 78267 on 2003/01/21 by jennho@jennho\_crayola0  
 Preliminary NPL schematics, not simulated yet.

Change 78098 on 2003/01/21 by gregs@gregs\_r400\_win\_cc  
 Monday update

Change 78045 on 2003/01/20 by alleng@alleng\_r400\_win\_marlboro  
 Added updated information regarding the RB performance counters...

Change 77987 on 2003/01/20 by csampayo@fl\_csampayo\_r400  
 Initial checkin

Change 77984 on 2003/01/20 by mzhu@mzhu\_crayola\_win\_tor  
 Update DMIF model force signal names for MH-DC latency tests in chapter 3.3

Change 77922 on 2003/01/20 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 77916 on 2003/01/20 by jacarey@fl\_jcarey\_desktop  
 1. Pixel Shader and Microcode to Set B6 for AAFONT packets.  
 2. Vertex Shader to ignore B10 for packets with Embedded Source.  
 3. Updated RB\_BlendControl Settings for AlphaBlend Packet.  
 4. Associated Documentation for above changes.

Change 77910 on 2003/01/20 by mzhu@mzhu\_crayola\_win\_tor

Add MH-DC latency tests in chapter 3.3

Change 77887 on 2003/01/20 by csampayo@fl\_csampayo\_r400  
 Some CL housekeeping

Change 77866 on 2003/01/20 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 77848 on 2003/01/20 by jacarey@fl\_jcarey\_desktop  
 Note to Ply\_NextScan and NextChar packets about required preceding packets.

Change 77665 on 2003/01/17 by jennho@jennho\_crayola0  
 <Preliminary R400 MEM IO timing spreadsheet.>

Change 77661 on 2003/01/17 by jennho@jennho\_crayola0  
 <Preliminary R400 MEM IO timing spreadsheet.>

Change 77619 on 2003/01/17 by gregs@gregs\_r400\_win\_marlboro  
 Friday update

Change 77558 on 2003/01/17 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Update...

Change 77554 on 2003/01/17 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Rectangle and triangle real time stream initial functional

Change 77520 on 2003/01/17 by jacarey@fl\_jcarey2  
 Miscellaneous Comments to Registers

Change 77493 on 2003/01/17 by georgev@ma\_georgev  
 Added descriptions of SQ\_TESTS.

Change 77490 on 2003/01/17 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 77459 on 2003/01/17 by lchen@lchen\_crayola0  
 initial release of the MEM IO schematics and spice netlist

Change 77457 on 2003/01/17 by jacarey@fl\_jcarey\_desktop  
 1. Updated RB\_BlendControl for AlphaBlend Packet  
 2. Added Microcode for Source Rotation for 2D.  
 3. Updated Documentation for Source Rotation and RB\_BlendControl

Change 77306 on 2003/01/16 by gregs@gregs\_r400\_win\_marlboro  
 fixed AGP clock layer (damaged by accident...)

Change 77297 on 2003/01/16 by gregs@gregs\_r400\_win\_marlboro  
 Thursday update

Change 77273 on 2003/01/16 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 77174 on 2003/01/16 by georgev@ma\_georgev  
 Added new list of SQ tests for Florida.

Change 77167 on 2003/01/16 by jennho@jennho\_crayola0  
 <rv350 mem IO timing spreadsheet.>

Change 77102 on 2003/01/16 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Update

Change 77097 on 2003/01/16 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
 Fixed error in mhr\_mhs\_word, mhb\_mhs\_word (made description match hardware).  
 Updated update path to read cache from merge logic.

Change 77093 on 2003/01/16 by lfebev@lfebev\_r400  
 Modified the alloc instruction to include a no-serial bit.

Change 77086 on 2003/01/16 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 12 non real time packets of one triangle, each with 16 real time rectangle streams...

Change 77014 on 2003/01/15 by gregs@laptop1  
 updated address and CKE pads.

Change 77001 on 2003/01/15 by lfebev@lfebev\_r400



Interface change from the SX (alloc dealloc bus) and interface change from the SP (predicates and kill mask).

Change 76917 on 2003/01/15 by mzhu@mzhu\_crayola\_win\_tor

Add test 3 for full width icon and cursor at 3.4.9.12

Change 76894 on 2003/01/15 by ashishs@fl\_ashishs\_r400\_win

removed vap\_vte\_vec0\_13 since redundant with vap\_vte\_vec0\_05

Change 76893 on 2003/01/15 by ashishs@fl\_ashishs\_r400\_win

updated

Change 76880 on 2003/01/15 by vgoel@fl\_vgoel2

updated bug report to date

Change 76868 on 2003/01/15 by lseiler@lseiler\_r400\_win\_marlboro

Fixed a bug in the 3D tiling equation

Change 76849 on 2003/01/15 by gregs@laptop1

updated MCLK templates, macros, connections.

Change 76833 on 2003/01/15 by frising@ma\_frising

v.1.64
-no functional changes just clean-up.
--make description of unused field in texture fetch instruction state that it is unused.
--add a missing outline border to above unused field.
--merge comments 14.) and 16.) in R400\_DATA\_FORMAT table section.
--make texture constant fields fit on to two pages.

Change 76816 on 2003/01/15 by ashishs@fl\_ashishs\_r400\_win

updated

Change 76812 on 2003/01/15 by ashishs@fl\_ashishs\_r400\_win

updated

Change 76807 on 2003/01/15 by ashishs@fl\_ashishs\_r400\_win

removed r400vte\_pos\_neg\_combo\_04 since redundant with r400vte\_pos\_neg\_combo\_01

Change 76746 on 2003/01/14 by gregs@laptop1

updated DIM pads and macro.

Change 76730 on 2003/01/14 by gregs@laptop1

Tuesday (01-14-03) work in progress

Change 76723 on 2003/01/14 by ashishs@fl\_ashishs\_r400\_win

updated

Change 76708 on 2003/01/14 by jhoule@MA\_JHOULE

1.63
FMT\_2\_10\_10\_10 was wrongly set as degamma'able.
The new FMT\_2\_10\_10\_10\_AS\_16\_16\_16\_16 must be used instead.

Change 76701 on 2003/01/14 by jiezhou@cn\_jiezhou

updating frc settings

Change 76644 on 2003/01/14 by csampayo@fl\_csampayo\_r400

Updated HOS status

Change 76582 on 2003/01/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update plan chart...

Change 76578 on 2003/01/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update SC...

Change 76576 on 2003/01/14 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb

Added position of 3 bit endian field in Tag Buffer Contents table.
Changed mhr\_mhs interface definition to support 128 bit transfers.
Fixed a couple of typos.

Change 76557 on 2003/01/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

OGL Rasterization validation...

Change 76417 on 2003/01/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Simple test, validate DX rasterization rules...

Change 76391 on 2003/01/13 by grayc@grayc\_r400\_win

updated for read test

Change 76388 on 2003/01/13 by gregs@laptop1

work in progress on memory interface.
Monday 01-13-03.
data and strobe templates + data PadList

Change 76366 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

CL/VTE final synch complete

Change 76364 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

added 3 tests (2 barycentric and 1 DX/OGL space test to individual submission count)

Change 76361 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

CL/VTE are perfectly updated after this submission

Change 76311 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

updated

Change 76298 on 2003/01/13 by jiezhou@cn\_jiezhou

update dto increment (13bits frac represents 20bits frac)

Change 76290 on 2003/01/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 76278 on 2003/01/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 76269 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

updated for r400vte\_coverage\_02(removed)

Change 76263 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

updated for r400vte\_coverage\_02 since that test is deleted. Just decreased the count from the VT coverage.

Change 76199 on 2003/01/13 by jacarey@fl\_jacarey\_desktop

Documentation for the 2D Endian Mode Programming

Change 76196 on 2003/01/13 by jhoule@MA\_JHOULE

1.62:
- Added formats FMT\_2\_10\_10\_10\_AS\_16\_16\_16\_16,
FMT\_10\_11\_11\_AS\_16\_16\_16\_16, and FMT\_11\_11\_10\_AS\_16\_16\_16\_16, which is
equivalent to the old FFetch values.
- Changed FMT\_2\_10\_10\_10, FMT\_10\_11\_11, and FMT\_11\_11\_10 to be fast and
unfilterable (equivalent
to the old VFetch).
- Added Filterable? column.
- Added comments regarding undefined behavior when filter is not set to Point.

Change 76174 on 2003/01/13 by jhoule@MA\_JHOULE

1.61:
Single LOD\_BIAS, located where LOD\_BIAS\_H was.
Added GRAD\_EXP\_ADJUST\_{H|V} which should achieve the intended functionality of
the dual-bias scheme (non-square-pixel resolve, and scanline-interleaved rendering under multi-
chip).

Corrected minor typo (performace -> performance) on Features page.

Change 76169 on 2003/01/13 by csampayo@fl\_csampayo\_r400

Revised plan for the VGT and SU and updated status for the following tests:
r400vgt\_dma\_index\_primitives\_02
r400vgt\_real\_time\_events\_07

Change 76117 on 2003/01/13 by ashishs@fl\_ashishs\_r400\_win

updated

Change 76067 on 2003/01/12 by gregs@laptop1

update - pad ring - work in progress

Change 76066 on 2003/01/12 by jiezhou@cn\_jiezhou

Initial release

Change 75932 on 2003/01/10 by gregs@regs\_r400\_win\_marlboro

update

Change 75926 on 2003/01/10 by therrick@ma\_therrick\_crayola

Implemented DC Urgent latency checker... Also implemented parser hooks to support
Bandwidth checking parameters.



Change 75914 on 2003/01/10 by jiezhou@cn\_jiezhou  
make tests smaller

Change 75815 on 2003/01/10 by jacarey@fl\_jacarey\_desktop  
Update equation used by micro engine for 1D sources for the SRC\_X / Y terms.

Change 75811 on 2003/01/10 by rfevreau@rfevreau\_r400\_win  
Cursor test fixes

Change 75642 on 2003/01/09 by csampayo@fl\_csampayo\_r400  
Added 1 VGT performance and 1 VGT debug case, updated test\_list and tracker accordingly

Change 75512 on 2003/01/09 by jacarey@fl\_jacarey\_desktop  
1. Add level of indirection to the And\_Mask and Or\_Mask in the Reg\_RMW packet.  
2. Updated Associated Unit Test.  
3. Updated PM4 Spec Accordingly.  
4. Added Note to Polyline packet, that the scan\_count needs to be 1 or greater.

Change 75356 on 2003/01/08 by hartogs@fl\_hartogs  
See version update info in document.

Change 75303 on 2003/01/08 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Stress vtx and pix pipe disable combinations with stippled LINE\_LIST

Change 75236 on 2003/01/08 by ashishs@fl\_ashishs\_r400\_win  
updated for clip disable count

Change 75232 on 2003/01/08 by ashishs@fl\_ashishs\_r400\_win  
updated for new tests. Also reduced the count for clip disable tests from 4 to 1

Change 75199 on 2003/01/08 by ashishs@fl\_ashishs\_r400\_win  
updated(removed r400cl\_ucp\_pointlist\_01)

Change 75197 on 2003/01/08 by jacarey@fl\_jacarey\_desktop  
1. Reduction of queue sizes in CP for area savings.

Page 97 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 75191 on 2003/01/08 by jhoule@MA\_JHOULE  
Added TC/TP replication table and associated explanation.  
Added a few tables to table of content.

Change 75183 on 2003/01/08 by vromaker@MA\_VIC\_P4  
latest version of sq top level block diagram

Change 75173 on 2003/01/08 by csampayo@fl\_csampayo\_r400  
Added new VGT pass-thru block test, updated test\_list and test tracker accordingly.

Change 75002 on 2003/01/07 by gregs@regs\_r400\_win\_marlboro  
DDC1 data, DDC1 clk, VSYNCA, HSYNCA, VSYNCB, and HSYNCB now included in DFT chain.

Change 74942 on 2003/01/07 by llefevtr@llefevtr\_laptop\_r400  
New revision of the spec.

Change 74928 on 2003/01/07 by jiezhou@cn\_jiezhou  
update FRC DTO\_INC parameters

Change 74922 on 2003/01/07 by jiezhou@cn\_jiezhou  
See the reversion description

Change 74919 on 2003/01/07 by mdoggett@mdoggett\_r400\_win\_platypus  
Fixed figure for TCA

Change 74887 on 2003/01/07 by gregs@regs\_r400\_win\_marlboro  
update

Change 74783 on 2003/01/06 by gregs@regs\_r400\_win\_marlboro  
added bad pipe disable register drawing.

Change 74742 on 2003/01/06 by ashishs@fl\_ashishs\_r400\_win  
updated comments for r400cl\_ucp\_cube\_01

Change 74715 on 2003/01/06 by jacarey@fl\_jacarey\_desktop  
Clarification of Invalidate\_State packet w.r.t. use of Mem\_Write

Page 98 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 74689 on 2003/01/06 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 74686 on 2003/01/06 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 74684 on 2003/01/06 by jacarey@fl\_jacarey\_desktop  
Update width of brush offset to reflect 24 bits supported by the VGT.

Change 74668 on 2003/01/06 by goel@fl\_goel2  
added bug 1040

Change 74619 on 2003/01/06 by sbagshaw@sbagshaw  
completed subsections of section 7 regarding the DAC output interface and DAC automatic device detection circuit

Change 74589 on 2003/01/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 74510 on 2003/01/04 by gregs@laptop1  
added BAD\_PIPE\_DISABLE\_REGISTER logic diagram

Change 74357 on 2003/01/03 by mkelly@fl\_mkelly\_r400\_win\_laptop  
256 points per packet, all 15 legal combinations of vtx pipe disable

Change 74351 on 2003/01/03 by rfevreau@rfevreau\_r400\_win  
New goldens, put rg files back to 31 tests

Change 74331 on 2003/01/03 by csampayo@fl\_csampayo\_r400  
Closed bugs# 102 and 103

Change 74279 on 2003/01/03 by smoss@smoss\_crayola\_win  
gave credit to vivian for her three read tests

Change 74201 on 2003/01/02 by jiezhou@cn\_jiezhou  
update for frame rate conversion SCL\_VIDCAP\_frame\_rate\_conv

Page 99 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 74196 on 2003/01/02 by frising@ma\_frising  
v.0.99e  
-MUL\_PREV2 scalar instruction now checks if PreviousScalar or input1.x is a NaN and returns -MAX\_FLOAT if so.

Change 74194 on 2003/01/02 by frising@ma\_frising  
v.1.92  
-MUL\_PREV2 scalar instruction now checks if PreviousScalar or SrcC.X is a NaN and returns -MAX\_FLOAT if so.

Change 74184 on 2003/01/02 by csampayo@fl\_csampayo\_it\_r400  
Updated test and test\_list for test r400vgt\_real\_time\_events\_06 and updated description/status on the test tracker for tests:  
r400vgt\_real\_time\_events\_04  
r400vgt\_real\_time\_events\_05  
r400vgt\_real\_time\_events\_06

Change 74154 on 2003/01/02 by gregs@regs\_r400\_win\_marlboro  
update

Change 74152 on 2003/01/02 by gregs@regs\_r400\_win\_marlboro  
update

Change 74142 on 2003/01/02 by gregs@regs\_r400\_win\_marlboro  
update

Change 74133 on 2003/01/02 by gregs@regs\_r400\_win\_marlboro  
update

Change 74124 on 2003/01/02 by gregs@regs\_r400\_win\_marlboro  
< ROM straps re-arranged >

Change 74109 on 2003/01/02 by csampayo@fl\_csampayo\_it\_r400  
Some housekeeping

Change 74083 on 2003/01/02 by sbagshaw@sbagshaw

Page 100 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Added description of Scaler double buffered registers in section 9.5, section 7 started with description of functionality and controls of DAC output interface

Change 74027 on 2003/01/01 by gregs@laptop1

update

Change 73990 on 2003/01/01 by gregs@gregs\_r400\_win\_cc

xyz

Change 73877 on 2002/12/31 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 73655 on 2002/12/29 by nbarbier@nbarbier\_r400\_win\_tor

Added Stress test for dispout.

Change 73552 on 2002/12/27 by lchen@chen\_crayola0

fix a typo

Change 73548 on 2002/12/27 by lchen@chen\_crayola0

update the r400 MEM IO spec based on latest info

Change 73425 on 2002/12/26 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 73424 on 2002/12/26 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update tracker...

Change 73328 on 2002/12/24 by gregs@gregs\_r400\_win\_cc

added idoft modules configuration in column AC+ modifications in VBA write pad\_data routine.

Change 73234 on 2002/12/23 by enewman@enewman\_r400\_linux\_marlboro

updated for NL 3.0

Change 72971 on 2002/12/20 by jhoule@MA\_JHOULE

Minor corrections and additions to the LOD calculation

Change 72964 on 2002/12/20 by jhoule@MA\_JHOULE

Page 101 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

v0.9.16

Better description of LOD computation.

Updated pseudo-code.

Update TP\_TC interface (pitches).

Change 72948 on 2002/12/20 by nbarbier@nbarbier\_r400\_win\_tor

Added Genlocking test to dispout stress test section.

Change 72807 on 2002/12/20 by gabarca@gabarca\_crayola\_win\_cvd

fixed viewport start spec

Change 72717 on 2002/12/20 by gregs@gregs\_r400\_win\_marlboro

rev 3 netlist

Change 72710 on 2002/12/20 by smoss@smoss\_crayola\_win

SU tests

Change 72657 on 2002/12/19 by csampayo@fl\_csampayo\_r400

Updated status for tests:  
r400vgt\_real\_time\_events\_04  
r400vgt\_real\_time\_events\_05

Change 72591 on 2002/12/19 by beivwang@bei\_depot

Copied over white box testing item from testenv/verification/MC MH Test Plan.doc

Added in color preliminary thoughts of how to implement these tests/checks/monitors.

Change 72541 on 2002/12/19 by ashishs@fl\_ashishs\_r400\_win

update

Change 72527 on 2002/12/19 by smoss@smoss\_crayola\_win

SU tests

Change 72526 on 2002/12/19 by jasif@jasif\_r400\_win\_tor

Added mono\_colour\_reg\_test, misc\_reg\_test, ovsc\_col\_sel1, ovsc\_col\_sel2, and ovsc\_col\_sel3.

Change 72483 on 2002/12/19 by jiezhou@cn\_jiezhou

Page 102 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

small update

Change 72481 on 2002/12/19 by mdoggett@mdoggett\_r400\_win\_platypus

Changed formats 50, 51, 52, 53 in format conversion table. Added format 51 to source address table.

Added 3D linear L1 Tag, removed 3D noise L1 Tag.

Change 72477 on 2002/12/19 by jhoule@MA\_JHOULE

Renamed lod to lod\_comp in the pseudocode

Change 72429 on 2002/12/19 by csampayo@fl\_csampayo\_it\_r400

Closed bug# 70

Change 72392 on 2002/12/19 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb

updated implementation description

Change 72323 on 2002/12/18 by gregs@laptop1

added speed sensor register

Change 72297 on 2002/12/18 by gregs@laptop1

re-arranged analog and other display pads

Change 72284 on 2002/12/18 by jacarey@fl\_jacarey\_desktop

AlphaBlend PM4 Packet Update

1. Microcode Updates
2. Documentation Updates
3. Unit Test

Change 72262 on 2002/12/18 by jhoule@MA\_JHOULE

LOD computation update, with more complete anisotropy. Explanation of clamping, which must be done after LOD biases are applied, itself done after all of the specified pseudo-code.

Also updated some Visio links, but some are screwed up =(

Change 72248 on 2002/12/18 by jacarey@fl\_jacarey\_desktop

Add note for holding "event triggered" on the visio diagram.

Change 72164 on 2002/12/18 by jacarey@fl\_jacarey\_desktop

Page 103 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Add register to arm signal to mask false falling/rising edge triggering.

Change 72149 on 2002/12/18 by smoss@smoss\_crayola\_win

SU tests

Change 72082 on 2002/12/18 by csampayo@fl\_csampayo\_r400

Updated test status and test\_list for the following tests:  
r400cl\_clip\_edgelflags\_frustum\_corners\_01  
r400cl\_clip\_edgelflags\_frustum\_corners\_02

Change 72057 on 2002/12/18 by jasif@jasif\_r400\_win\_tor

Updated.

Change 71957 on 2002/12/17 by gregs@gregs\_r400\_win\_marlboro

new order of Toronto pads

Change 71955 on 2002/12/17 by gregs@gregs\_r400\_win\_marlboro

added DEBUG\_legacy\_test\_en signal

Change 71837 on 2002/12/17 by gregs@gregs\_r400\_win\_marlboro

update

Change 71819 on 2002/12/17 by smoss@smoss\_crayola\_win

SU tests

Change 71728 on 2002/12/17 by lseiler@lseiler\_r400\_win\_marlboro

Fixed a bug in address.c for computing 3D tiled addresses (the spec had it right) and in finding the 3d Y address for a device address (both address.c and the spec were wrong)

Change 71718 on 2002/12/17 by csampayo@fl\_csampayo\_r400

Some housekeeping

Change 71667 on 2002/12/17 by jacarey@fl\_jacarey\_desktop

Add AA\_Font Microcode  
Add associated unit-level test  
Update PM4 Spec for AA\_Font and AlphaBlend PM4 Packets

Change 71577 on 2002/12/16 by vgoel@fl\_vgoel2

Page 104 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



added bug 957

Change 71575 on 2002/12/16 by scroce@scroce\_r400\_win\_marlboro  
Updated for new tests written

Change 71562 on 2002/12/16 by gregs@gregs\_r400\_win\_marlboro  
update

Change 71536 on 2002/12/16 by csampayo@fl\_csampayo\_r400  
Added Bug# 101 and 102

Change 71459 on 2002/12/16 by jiezhou@cn\_jiezhou  
make the viewport size smaller

Change 71390 on 2002/12/16 by rbell@rbell\_crayola\_win\_cvd  
More updates for full chip sims

Change 71336 on 2002/12/15 by scroce@scroce\_r400\_home  
Updated tests that were recently written

Change 71334 on 2002/12/15 by gregs@laptop1  
fixed DEF file generation

Change 71291 on 2002/12/15 by gregs@laptop1  
added fake connections to memory pads

Change 71194 on 2002/12/13 by ashish@fl\_ashish\_r400\_win  
updated for change # 71014 by mmang

Change 71184 on 2002/12/13 by csampayo@fl\_csampayo\_it\_r400  
Updated status for the following tests:  
r400su\_polymode\_culling\_face\_01  
r400su\_polymode\_culling\_face\_02  
r400su\_polymode\_lines\_degen\_triangle\_03

Change 71169 on 2002/12/13 by rfisette@rfisette  
Updated TST block spec to reflect ports in the IODFT block

Page 105 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 71138 on 2002/12/13 by gregs@gregs\_r400\_win\_marlboro  
IO<->MC interface cleaned (the interface is not functional).

Change 71137 on 2002/12/13 by gregs@gregs\_r400\_win\_marlboro  
< ROM\_ON\_VIP straps changed >

Change 70998 on 2002/12/13 by rherick@ma\_rherick\_crayola  
New deposit... Turning over to Steve for an edit...

Change 70939 on 2002/12/13 by jiezhou@cn\_jiezhou  
Add in SCL stress tests

Change 70929 on 2002/12/13 by jacarey@fl\_jcarey\_desktop  
Clarify that "dummy" dwords in the ib\_prefetch\* packets are set to 0xdeadbeef by the Pre-Fetch Parser.  
The emulator is being updated to match the RTL.

Change 70842 on 2002/12/12 by csampayo@fl\_csampayo3\_r400  
Some housekeeping

Change 70691 on 2002/12/12 by smoss@smoss\_crayola\_win  
update for new tests

Change 70670 on 2002/12/12 by jiezhou@cn\_jiezhou  
Add detailed discription for Frame rate conversion test "SCL\_VIDCAP\_frame\_rate\_conv"

Change 70564 on 2002/12/11 by gregs@laptop1  
ROM\_ON\_VIP straps changed to 0011

Change 70479 on 2002/12/11 by mzhu@mzhu\_crayola\_win\_tor  
Add description for CRTM\_TRIG\_OCCURRED and CRTM\_TRIG\_INTERRUPT

Change 70453 on 2002/12/11 by vgoel@fl\_vgoel2  
added bug 928 and closed bug 898

Page 106 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 70436 on 2002/12/11 by jhoule@MA\_JHOULE  
Described serialize heuristic for both ALU and TEX instructions.

Change 70411 on 2002/12/11 by rbell@rbell\_crayola\_win\_cvd  
Added EXCLUDE\_PRIMLIB for primlib tests

Change 70337 on 2002/12/11 by rbell@rbell\_crayola\_win\_cvd  
Removed HDCP env var settings

Change 70324 on 2002/12/11 by mdoggett@mdoggett\_r400\_win\_platypus  
Updated format 29 in L2 cacheline format conversion table required adding new SM10 and SM11.

Change 70285 on 2002/12/11 by ashish@fl\_ashish\_r400\_win  
updated count for frustum clip block. CHECKPOINT for test tracker for CL/VTE

Change 70281 on 2002/12/11 by ashish@fl\_ashish\_r400\_win  
updated the test tracker. Increased the count for blocks where new tests were added. As of this checking the tests required match up the tests required in the approach plan.

Change 70269 on 2002/12/11 by rherick@ma\_rherick\_crayola  
Updated Register Write section...

Change 70230 on 2002/12/10 by gregs@gregs\_r400\_win\_marlboro  
update

Change 70229 on 2002/12/10 by gregs@gregs\_r400\_win\_marlboro  
<ROM\_ON\_VIP strap is 0101 >

Change 70221 on 2002/12/10 by csampayo@fl\_csampayo\_r400  
Updated status of VGT tests r400vgt\_real\_time\_events\_02\_03  
Some housekeeping

Change 70128 on 2002/12/10 by gregs@gregs\_r400\_win\_marlboro  
update

Change 69936 on 2002/12/10 by jowang@jowang\_R400\_win

Page 107 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

1 test in manual ratio / accum init  
2 tests in CRC generation  
1 test in mode change  
1 test in black pixel / line generation

Change 69929 on 2002/12/10 by scroce@scroce\_r400\_win\_marlboro  
Added test lists

Change 69887 on 2002/12/10 by rherick@ma\_rherick\_crayola  
Turning it over to Steve for the next update...

Change 69867 on 2002/12/10 by moev@P4CLIENT=moev\_r400\_sun\_marlboro  
Spread sheet describing port interfaces between system blocks, TST block and IO.

Change 69865 on 2002/12/10 by rherick@ma\_rherick\_crayola  
New update including Multiple Client random test coverage

Change 69847 on 2002/12/10 by scroce@scroce\_r400\_home  
Added some test names

Change 69780 on 2002/12/09 by rherick@ma\_rherick\_crayola  
More details included... Still missing multiple client random section and a review of the DRAM/RBBM features...

Change 69736 on 2002/12/09 by scroce@scroce\_r400\_win\_marlboro  
Added test tallies

Change 69684 on 2002/12/09 by rthambim@rthambim\_r400\_win\_tor  
Initial revision.

Change 69683 on 2002/12/09 by rthambim@rthambim\_r400\_win\_tor  
Updated the strap table.

Change 69583 on 2002/12/09 by rherick@ma\_rherick\_crayola  
Checkpoint on the MC testplan for Steve Croce to use...

Change 69544 on 2002/12/08 by gregs@laptop1

Page 108 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



removed MODE\_DDC2CLK

Change 69460 on 2002/12/07 by gregs@laptop1  
added comments on ROM\_PORT usage.

Change 69270 on 2002/12/06 by mdoggett@mdoggett\_r400\_win\_platypus  
Table of contents, figures and tables updated.

Change 69217 on 2002/12/06 by gregs@laptop1  
added delay chains

Change 69208 on 2002/12/06 by mdoggett@mdoggett\_r400\_win\_platypus  
Version 0.36.  
Corrected labeling of SA10 to SA9.  
Corrected positions of sectors for SM7 and SM8.  
Updated TCA, TCB and TCO block diagrams and descriptions to match current hardware.

Change 69151 on 2002/12/06 by rherrick@ma\_rherrick\_crayola  
Update environment spec to be closer to reality... Included randomization controls section...

Change 69066 on 2002/12/06 by jacarey@fl\_jcarey2  
Clarify Ring Buffer Size in DWORDS.

Change 68997 on 2002/12/05 by gregs@regs\_r400\_win\_marlboro  
update

Change 68985 on 2002/12/05 by vgoel@fl\_vgoel2  
added bug 898

Change 68982 on 2002/12/05 by rthambim@rthambim\_r400\_win\_tor  
Initial revision.

Change 68965 on 2002/12/05 by lchen@lchen\_crayola0  
fix the DIFFSTR name

Change 68962 on 2002/12/05 by lchen@lchen\_crayola0

Page 109 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

update the spec based on discussions with BOB

Change 68961 on 2002/12/05 by jasif@jasif\_r400\_win\_tor  
Updated register settings of vcountBy2 and seqpclkby2 testcases.

Change 68928 on 2002/12/05 by ashishs@fl\_ashishs\_r400\_win  
added bug for r400cl\_edgelflags\_05/06/07

Change 68917 on 2002/12/05 by vgoel@fl\_vgoel2  
updated to added bug 897

Change 68908 on 2002/12/05 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 68825 on 2002/12/05 by dglen@dglen\_r400  
Added 30 bpp option to progressive YPbPr timings

Change 68775 on 2002/12/05 by ashishs@fl\_ashishs\_r400\_win  
cancelled 2 tests from the Approach plan and updated tracker since were redundant tests:  
1. r400cl\_frustum\_simple\_01(tcl\_clip\_frustum\_simple\_01)  
2. r400cl\_frustum\_simple\_02(tcl\_clip\_frustum\_simple\_02)

Change 68762 on 2002/12/05 by scamlin@scamlin\_crayola\_win  
12/4/2002 area update for orlando blocks

Change 68506 on 2002/12/04 by rherrick@ma\_rherrick\_crayola  
I hope I waited long enough for the file to write out before submitting... (I didn't last time)...

Change 68503 on 2002/12/04 by rherrick@ma\_rherrick\_crayola  
Updated Table of Contents...

Change 68499 on 2002/12/04 by rherrick@ma\_rherrick\_crayola  
First pass at permutations of surface accesses...

Change 68439 on 2002/12/04 by rherrick@ma\_rherrick\_crayola  
Beginning of MH Testplan... NOT READY FOR CONSUMPTION!!

Page 110 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 68428 on 2002/12/04 by jacarey@fl\_jcarey\_desktop  
Fix Typo in Cond\_Write Packet in PM4 Spec.

Change 68327 on 2002/12/04 by jacarey@fl\_jcarey\_desktop  
Update Alignment of the Ring, Indirects, and Real-Time Bases

Change 68323 on 2002/12/04 by rherrick@ma\_rherrick\_crayola  
Further described the DC client characterization with the MH queues and RB queues...

Change 68322 on 2002/12/04 by rherrick@ma\_rherrick\_crayola  
Feedback from Testplan review (December 3, 2002) incorporated into document... Sections still needing detail include the DRAM Tuning register verification support, power management verification support, and IKOS parameter verification support..

Change 68167 on 2002/12/03 by frising@ma\_frising  
v.0.99d  
-Update FLOOR opcodes to match r400 shaders.doc v.1.91.  
-Updated LIT macro

Change 68164 on 2002/12/03 by marklee@marklee\_crayola  
2nd attempt at changing permissions

Change 68162 on 2002/12/03 by marklee@marklee\_crayola  
delete

Change 68160 on 2002/12/03 by marklee@marklee\_crayola  
attempt to change permissions

Change 68148 on 2002/12/03 by gregs@regs\_r400\_win\_marlboro  
update

Change 68144 on 2002/12/03 by frising@ma\_frising  
v.1.91  
-FLOOR opcode was not producing correct results for negative 'integer' inputs.  
Changed from:

Page 111 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

FLOOR:  
If (SrcA < 0.0f)  
Result = TRUNC(SrcA) + -1.0f;  
Else  
Result = TRUNC(SrcA)

To:  
FLOOR:  
Result = TRUNC(SrcA)  
If ( (SrcA < 0.0f) && (SrcA != Result) )  
Result += -1.0f;

-Note that emulator was calling math library floor function so this should not be an emulation issue.

Change 68140 on 2002/12/03 by marklee@marklee\_crayola  
check in global\_clocks diagram for Eric N.

Change 68139 on 2002/12/03 by marklee@marklee\_crayola  
check in this file for Eric N.

Change 68133 on 2002/12/03 by gregs@regs\_r400\_win\_marlboro  
update

Change 68062 on 2002/12/03 by jiezhou@cn\_jiezhou  
change DMIF stress tests active size from 2560x64 to 2560x16

Change 68048 on 2002/12/03 by scroce@scroce\_r400\_win\_marlboro  
Added a line

Change 68034 on 2002/12/03 by rherrick@ma\_rherrick\_crayola  
Initial Deposit... Describes Black Box MC Verification requirements...

Change 67940 on 2002/12/02 by mearl@mearl\_r400\_win  
fixed the offset problem

Change 67933 on 2002/12/02 by frising@ma\_frising  
v.1.90

Page 112 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



-While we don't allow CLI relative addressing into the export file on r400, future chips based on r400 may. This check-in moves the export masking behavior bit (bit[6] of vector destination pointer) to bit[14] (bit[6] of scalar destination pointer). Bit[6] of vector destination pointer now controls logical vs. CLI relative addressing into the register or export file. When exporting, this is a Must Be Zero (logical) field for software on r400. This will provide binary compatibility.

-Software will need to coordinate this change with emulator release.

Change 67917 on 2002/12/02 by taylor@fl\_taylor\_r400\_win\_marlboro

Add Multipass Pixel Shader Description.

Change 67873 on 2002/12/02 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb

update, especially in the implementation section

Change 67866 on 2002/12/02 by jiezhou@cn\_jiezhou

initial release

Change 67842 on 2002/12/02 by mkelly@fl\_mkelly\_r400\_win\_laptop

Delete test requirement for rect\_v0-v3, covered in CP legacy tests

Change 67834 on 2002/12/02 by jacarey@fl\_jacarey\_desktop

Remove ME\_HALT and ALU\_COUT32 Booleans

Change 67779 on 2002/12/02 by ashish@fl\_ashish\_r400\_win

updated

Change 67702 on 2002/11/30 by gregs@gregs\_r400\_win\_cc

W45B512/012, SST45LF010, and ROM on VIP straps changed.

Change 67647 on 2002/11/30 by gregs@gregs\_r400\_win\_cc

updated memory clock domain - work in progress.

Change 67590 on 2002/11/29 by sbagshaw@sbagshaw

added new document sections and reorganized existing document to new section headings

Change 67572 on 2002/11/29 by dglen@dglen\_r400

Page 113 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Added some IBM Bertha panel cases

Change 67519 on 2002/11/28 by dglen@dglen\_r400

Added lots of detail for all TV timings, all panel and projector timings except IBM T221.

Change 67376 on 2002/11/27 by bbloemer@ma\_bbloemer

Update.

Change 67343 on 2002/11/27 by tshah@fl\_tshah

typo fix in EXTERN\_TRIG\_CNTL register

Change 67276 on 2002/11/27 by jhoule@MA\_JHOULE

Updated with more optimal values (easier precision to reach in hardware).

Change 67275 on 2002/11/27 by jhoule@MA\_JHOULE

Updated packing scheme.

Change 67273 on 2002/11/27 by mkelly@fl\_mkelly\_r400\_win\_laptop

Verify SU\_SC\_MODE persp corr disable

Change 67258 on 2002/11/27 by bbloemer@ma\_bbloemer

First draft of IO pad functional spec.

Change 67215 on 2002/11/27 by jowang@jowang\_R400\_win

updated start phase

Change 67172 on 2002/11/27 by smoss@smoss\_crayola\_win

update

Change 67066 on 2002/11/26 by gregs@gregs\_r400\_win\_marlboro

update

Change 67058 on 2002/11/26 by frising@ma\_frising

v1.60

-add MAG\_ANISO\_WALK and MIN\_ANISO\_WALK fields to texture constant to conform to D3D.

Here's how it works:

Page 114 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

MAG\_ANISO\_WALK controls if aniso walk is done when anisotropy filter is enabled and magnifying.

MIN\_ANISO\_WALK controls if aniso walk is done when anisotropy filter is enabled and minifying.

ANISO\_FILTER still controls if anisotropy is enabled. When enabled the min or axis controls the LOD calculation so having MAG\_ANISO\_WALK and MIN\_ANISO\_WALK disabled while having ANISO\_FILTER enabled is allowed. When ANISO\_FILTER is disabled, MAG\_ANISO\_WALK and MIN\_ANISO\_WALK are ignored.

This allows the anisotropy walk to be completely orthogonal to mag and min filters meaning we support anisotropy walking with point, linear and arbitrary filters min/mag filters.

This is actually more powerful than the D3D API. D3D drivers should program the HW as follows to be compliant with the refract:

```
if ( (mag==ansio) || (min==ansio) ) {
    ANISO_FILTER = enabled, max set as specified.
```

```
    if (mag==ansio) {
        MAG_ANISO_WALK = enabled;
        MAG_FILTER = linear;
    } else {
        MAG_ANISO_WALK = disabled;
        // program MAG_FILTER as usual
    }
}
```

```
    if (min==ansio) {
        MIN_ANISO_WALK = enabled;
        MIN_FILTER = linear;
    } else {
        MIN_ANISO_WALK = disabled;
        // program MIN_FILTER as usual
    }
}
```

```
} else {
    ANISO_FILTER = disabled;
    // program MAG_FILTER and MIN_FILTER as usual
}
```

--

Other notes:  
-MAG\_ANISO\_WALK and MIN\_ANISO\_WALK are not available in instruction word and must be programmed through constant.

-MAG\_ANISO\_WALK and MIN\_ANISO\_WALK are forced to 1 (enabled) when anisotropy is enabled for FetchMultiSample.

Change 66971 on 2002/11/26 by gabarca@gabarca\_crayola\_win\_cvd

Page 115 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

The prevention of negative overscan is only done if one or both displays are in VGA timing

Change 66688 on 2002/11/25 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update SC HW coords tests...

Change 66670 on 2002/11/25 by gabarca@gabarca\_crayola\_win\_cvd

VGA DISP interface signals change to avoid negative overscan

Change 66640 on 2002/11/25 by jasif@jasif\_r400\_win\_tor

Updated.

Change 66603 on 2002/11/25 by ashish@fl\_ashish\_r400\_win

updated

Change 66550 on 2002/11/24 by gregs@laptop1

update

Change 66367 on 2002/11/22 by csampayo@fl\_csampayo\_r400

Updated test list and test tracker for the following tests:  
r400vgt\_real\_time\_events\_01  
r400vgt\_real\_time\_events\_02

Change 66356 on 2002/11/22 by gregs@gregs\_r400\_win\_marlboro

Friday update

Change 66347 on 2002/11/22 by sbagshaw@sbagshaw

Revised 0.5 DC System testplan based on feedback from meetings and wrote detailed test descriptions and procedures for many tests.

Change 66283 on 2002/11/22 by jiezhou@cn\_jiezhou

Add two more tests and more parameter settings.

Change 66270 on 2002/11/22 by rfisette@rfisette\_r400\_san\_marlboro

Design specification for the Test Controller (TST) block.

Change 66256 on 2002/11/22 by gregs@gregs\_r400\_win\_marlboro

<fixed R300 number of instances value >

Page 116 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history





Change 65172 on 2002/11/19 by mpersaud@mpersaud\_r400\_win\_tor

Added DCCIF\_clk on description.

Change 65072 on 2002/11/18 by jowang@jowang\_R400\_win

update with interlaced nomenclature

Change 65066 on 2002/11/18 by gregs@gregs\_r400\_win\_marlboro

<rev 8.0 - dft >

Change 65042 on 2002/11/18 by imuskatb@imuskatb\_r400\_win\_cinimuskatb

updated test doc

Change 64983 on 2002/11/18 by jowang@jowang\_R400\_win

updated with more M3 tests and testlist

Change 64857 on 2002/11/18 by jacarey@fl\_jcarey\_desktop

RB\_BLENDCONTROL.Color\_Dither\_Mode is set to DITHER\_LUT for GradFill packets where the DST\_TYPE != 32bpp.

Change 64852 on 2002/11/18 by jasif@jasif\_r400\_win\_tor

Updated.

Change 64849 on 2002/11/18 by sbagshaw@sbagshaw

added new column for test type -- chip level or chip and block level added more test descriptions.

Change 64846 on 2002/11/18 by jasif@jasif\_r400\_win\_tor

Updated.

Change 64833 on 2002/11/18 by jacarey@fl\_jcarey\_desktop

Add note for ME\_RTS generation for read operations initiated by the micro engine.

Change 64829 on 2002/11/18 by ashish@fl\_ashish\_r400\_win

added triangles with edgeflags and texture test to the tracker

Change 64701 on 2002/11/16 by gregs@laptop1

Page 121 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

update

Change 64590 on 2002/11/15 by donald@fl\_donald\_p4

Added sc\_packer debug bus (DEBUG\_PKR\_0).

Change 64571 on 2002/11/15 by gregs@gregs\_r400\_win\_marlboro

update

Change 64546 on 2002/11/15 by sbagshaw@sbagshaw

Debug document modified to include interface to 12 bit debug bus value and enable directly from DC block.

Change 64447 on 2002/11/15 by vgoel@fl\_vgoel2

updated for HOS tests written so far

Change 64418 on 2002/11/15 by frising@ma\_frising

v.1.89

-show FRACT instructions being implemented as: SRC + -FLOOR(SRC)  
-This should now sync the instructions with v.0.99b of numerics doc.

Change 64403 on 2002/11/15 by frising@ma\_frising

v.0.99b

-checkpoint  
--implement shader pipe instructions is WZYX order.  
--fix a couple typos  
--start sync to v.1.89 of shader pipe spec.

Change 64389 on 2002/11/15 by jasif@jasif\_r400\_win\_tor

Updated.

Change 64381 on 2002/11/15 by frising@ma\_frising

v.1.88

-specify that Result.X of CUBE instruction returns 2.0f \* MajorAxis instead of max to avoid confusion. See numerics doc for details of CUBE instruction.

-specify function of all instructions in WZYX order. Nothing changing here; it's just for spec consistency (and happens to reflect the actual order of operations in the shader pipe hardware).

Page 122 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 64379 on 2002/11/15 by gabarca@gabarca\_crayola\_win\_cvd

Mode 13, mode 62, mode X have ATTR\_PCLKBY2 = 1

Change 64309 on 2002/11/15 by mkelly@fl\_mkelly\_r400\_win\_laptop

Log an SC bugzilla on color prob on prim edges...

Change 64144 on 2002/11/14 by jacarey@fl\_jcarey\_desktop

1. RTL Update to Set 2D Boolean B0 for LUT Color Sources  
2. CP Spec Updates for #1  
3. CP Spec Update for the CP\_DMA\_STAT Register

Change 64064 on 2002/11/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update local, Orlando bug tracking info...

Change 64050 on 2002/11/14 by vgoel@fl\_vgoel2

updated

Change 64022 on 2002/11/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Add textured line to regress\_e

Change 64000 on 2002/11/14 by gregs@gregs\_r400\_win\_marlboro

< fixed some wire in DVO interface >

Change 63978 on 2002/11/14 by jasif@jasif\_r400\_win\_tor

Updated.

Change 63959 on 2002/11/14 by gabarca@gabarca\_crayola\_win\_cvd

split the DisplayEnable test in three

Change 63920 on 2002/11/14 by grayc@grayc\_r400\_win

needs to be updated ... will add back in later

Change 63819 on 2002/11/13 by dglen@dglen\_r400\_dell

Major update to outline. VGA block spec is now best source for details.

Change 63811 on 2002/11/13 by csampayo@fl\_csampayo\_r400

Page 123 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Added bug# 87

Change 63793 on 2002/11/13 by gregs@gregs\_r400\_win\_marlboro

added CGM clock monitoring pin

Change 63776 on 2002/11/13 by csampayo@fl\_csampayo\_r400

Closed bug# 86

Change 63751 on 2002/11/13 by jasif@jasif\_r400\_win\_tor

Updated.

Change 63732 on 2002/11/13 by frising@ma\_frising

v.1.87

-when using absolute constant addressing all constants in instruction are absolute. This allows compiler to easily perform mov operations on absolute constants.

-Document instruction word in WZYX order (i.e. high bits to low bits). Documentation issue only.

-lots more work cleaning up instruction word documentation (please study).

-It may not have been clear in the past but indexing of exports is not permitted. This update should make that obvious.

-removed following export restriction which no longer applies: '1) When doing a Scalar export of 'pixels' or 'position', only the 'W' component will contain the scalar result. The other 3 components will be expanded to 0.0. When exporting to 'parameters' the scalar result is put into all 4 components.'

Users should just use the scalar and vector destination masks appropriately to achieve whatever result they want.

-when exporting, bit 6 in instruction word now controls masking behavior during parameter exports when both scalar and vector masks for a component are 0. See table 3.2.1.4

Change 63680 on 2002/11/13 by jacarey@fl\_jcarey\_desktop

Im\_Load and Im\_Load\_Immediate packets write the SQ\_PS\_PROGRAM register for real-time shader code updates. This is documented in the PM4 spec now.

Change 63675 on 2002/11/13 by gregs@gregs\_r400\_win\_marlboro

<TEST\_MCLK tst bug fixed >

Page 124 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 63654 on 2002/11/13 by beiwang@bei Depot  
 Updated for mc\_client\_infrc block AGP/Multi-Sample functionality as well as more details for Protocol engine

Change 63653 on 2002/11/13 by mzhu@mzhu\_crayola\_win\_tor  
 Update the 3rd milestone tests

Change 63604 on 2002/11/13 by donaldl@fl\_donaldl\_p4  
 Initial -- Debug bus, bit definitions.

Change 63562 on 2002/11/12 by gregs@laptop1  
 ccc

Change 63552 on 2002/11/12 by csampayo@fl\_csampayo\_lt\_r400  
 Updated test\_list and test tracker for the following tests:  
 r400vgt\_multi\_pass\_pix\_shader\_07  
 r400vgt\_multi\_pass\_pix\_shader\_08

Change 63509 on 2002/11/12 by frising@ma\_frising  
 v.1.86

- add note that Constant0 refers to the first constant in the instruction while Constant1 and Constant2 refer to the second and third constants in the instruction respectively.
- added note that the GPR write-back table rules only apply when the scalar and vector destination pointers are the same. This should be obvious, but clarity never hurts.
- when doing an export and both scalar and vector channels are masked a 0.0f is now generated.
- updated Exports Types and Addresses section to match what is in SQ doc.
- tried to clean-up export rules section.
- removed previous vector and previous scalar from source selects in instruction word.
- added clamping code to LOG\_CLAMPED instruction.
- fixed a bunch of typos and other misc clean-up including a couple places where I was mixing ABGRs with my WZYXs in the instruction definitions. Tried to be consistent when referring to bits in instruction word.

Page 125 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 63500 on 2002/11/12 by csampayo@fl\_csampayo\_lt\_r400  
 Some housekeeping

Change 63490 on 2002/11/12 by jacarey@fl\_jcarey\_desktop  
 Add Write Confirm Signals to CP\_STAT Register

Change 63478 on 2002/11/12 by rramsey@RRAMSEY\_P4\_r400\_win  
 Update quadorder drawing and add it to the sc spec

Change 63454 on 2002/11/12 by ashishs@fl\_ashishs\_r400\_win  
 update

Change 63447 on 2002/11/12 by mzhu@mzhu\_crayola\_win\_tor  
 Update 11.16 Cursor\_CntL

Change 63398 on 2002/11/12 by ctaylor@fl\_ctaylor\_r400\_win\_marlboro  
 Adding SC visio and xls files for documentation

Change 63336 on 2002/11/12 by jacarey@fl\_jcarey\_desktop  
 Baseline Debug Documents for the CP and RBBM

Change 63285 on 2002/11/11 by peterp@MA\_PETE\_LT  
 Added common format to CG, ROM, DBG

Change 63274 on 2002/11/11 by csampayo@fl\_csampayo\_r400  
 Closed bug# 83

Change 63262 on 2002/11/11 by gregs@regs\_r400\_win\_marlboro  
 backup of drawings

Change 63258 on 2002/11/11 by gregs@regs\_r400\_win\_marlboro  
 update

Change 63197 on 2002/11/11 by rramsey@RRAMSEY\_P4\_r400\_win  
 details intra-tile quad processing order when  
 pa\_su\_sc\_model\_cntl.QUAD\_ORDER\_ENABLE is set

Page 126 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 63189 on 2002/11/11 by peterp@MA\_PETE\_LT  
 Added common format for MC and MH

Change 63174 on 2002/11/11 by peterp@MA\_PETE\_LT  
 Added common format to cp and rbbm

Change 63155 on 2002/11/11 by jacarey@fl\_jcarey\_desktop  
 Add CP\_RT\_STAT register to spec.

Change 63149 on 2002/11/11 by jowang@jowang\_R400\_win  
 add full/empty tests

Change 63148 on 2002/11/11 by gabarca@gabarca\_crayola\_win\_cvd  
 Added VGA\_DISP\_sync\_en

Change 63098 on 2002/11/11 by jacarey@fl\_jcarey\_desktop  
 1. Performance Signals for RTEE  
 2. Split Busy Signal from the CSF into a real-time and non-real-time version

Change 63094 on 2002/11/11 by jacarey@fl\_jcarey\_desktop  
 1. Add register to micro engine guts for timing  
 2. Add FIFOs for Timing in the Synchronization Logic  
 3. Update CP's Performance Counter Selects in perfcount.doc

Change 63077 on 2002/11/11 by sbagshaw@sbagshaw  
 Revision 0.35 of R400 DC (Toronto) Test Plan for System and Stress tests

Change 63062 on 2002/11/11 by jasif@jasif\_r400\_win\_tor  
 Updated

Change 63053 on 2002/11/11 by mpersaud@mpersaud\_r400\_win\_tor  
 Added debug signals and WAIT/FREQUENCY/SIZE values to the dccif interface.

Change 62983 on 2002/11/09 by peterp@MA\_PETE\_LT  
 Added common format for Analog and BIF

Change 62925 on 2002/11/08 by jhoule@MA\_JHOULE

Page 127 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Latest uRF expand positionings for 16 or 32 bpp post-blender conversion (before fix2float convert, which happens on SP side).

First 2 sheets are current POR.  
 Others are dropped alternatives.

Change 62910 on 2002/11/08 by csampayo@fl\_csampayo\_lt\_r400  
 Updated status in test tracker and added to test\_list: r400vgt\_real\_time\_events\_01

Change 62909 on 2002/11/08 by bbloemer@ma\_bbloemer  
 Added MC MH Test Plan

Change 62868 on 2002/11/08 by csampayo@fl\_csampayo\_lt\_r400  
 Added bug# 86. Some housekeeping

Change 62857 on 2002/11/08 by mpersaud@mpersaud\_r400\_win\_tor  
 Added VIP block select and group debug signals.

Change 62813 on 2002/11/08 by jacarey@fl\_jcarey\_desktop  
 1. Update CP Spec for Debug Signals  
 2. Update One of the 2D Unit Tests to Read Back Debug Information

Change 62808 on 2002/11/08 by mzhu@mzhu\_crayola\_win\_tor  
 Update 3.4.9.4 Color Space Conversion

Change 62771 on 2002/11/08 by gregs@regs\_r400\_win\_marlboro  
 update

Change 62759 on 2002/11/08 by mzhu@mzhu\_crayola\_win\_tor  
 Add DxCRTC\_FLOW\_CONTROL\_POLARITY, DxCRTC\_TRIG\_INPUT\_STATUS  
 and  
 DxCRTC\_TRIG\_POLARITY\_STATUS register bits

Change 62748 on 2002/11/08 by ashishs@fl\_ashishs\_r400\_win  
 update

Change 62743 on 2002/11/08 by jacarey@fl\_jcarey\_desktop  
 Add RBBM\_BIF\_int to the RBBM's performance counters.  
 RTL and Spec Update.

Page 128 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 62732 on 2002/11/08 by mpersaud@mpersaud\_r400\_win\_tor  
 Added state machine diagrams.

Change 62711 on 2002/11/08 by ashishs@fl\_ashishs\_r400\_win  
 updated for last 3 vte tests viz r400vte\_pos\_neg\_combos\_01/02/03

Change 62511 on 2002/11/07 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
 updated

Change 62447 on 2002/11/07 by jacarey@fl\_jcarey\_desktop  
 Added note to RBBM spec regarding the performance counters.

Change 62444 on 2002/11/07 by jacarey@fl\_jcarey\_desktop  
 Updates for the CP\_STAT register

Change 62432 on 2002/11/07 by gabarca@gabarca\_crayola\_win\_cvd  
 added perf count signals

Change 62338 on 2002/11/07 by jasif@jasif\_r400\_win\_tor  
 Updated

Change 62301 on 2002/11/07 by csampayo@fl\_csampayo\_r400  
 Housekeeping update

Change 62266 on 2002/11/07 by jacarey@fl\_jcarey\_desktop  
 Updates for Soft Reset to Register Descriptions

Change 62198 on 2002/11/06 by gregs@laptop1  
 <enter description hupdate  
 ere>

Change 62131 on 2002/11/06 by gabarca@gabarca\_crayola\_win\_cvd  
 One test in each set of the VGA to CRTG parameters section should do display capture.  
 Tests in the display section normally do capture

Change 62066 on 2002/11/06 by mpersaud@mpersaud\_r400\_win\_tor

Page 129 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

added VIP\_DISP\_eof\_fcp and VIP\_DISP\_pol\_fcp to interface with DISP/CRTG

Change 62062 on 2002/11/06 by peterp@MA\_PETE\_LT  
 Added common synthesis report format to DC block. Combined DC and VIP results into the DC results.

Change 62055 on 2002/11/06 by mzhu@mzhu\_crayola\_win\_tor  
 Update 3.4.9.4 Color Space Conversion

Change 62037 on 2002/11/06 by mzhu@mzhu\_crayola\_win\_tor  
 Update constant matrix for TVRGB output in 11.18 Matrix Transform and Adjustment.

Change 62033 on 2002/11/06 by lkang@lkang\_r400\_win\_tor  
 update on SCLK dynamic clocking

Change 61984 on 2002/11/06 by beiwang@bei\_depot  
 Updated the bus interface to MH and RB

Change 61964 on 2002/11/06 by jacarey@fl\_jcarey\_desktop  
 Update Soft Reset Description

Change 61936 on 2002/11/06 by gabarca@gabarca\_crayola\_win\_cvd  
 clarified grph\_pack in spreadsheet

Change 61912 on 2002/11/06 by jacarey@fl\_jcarey\_desktop  
 Update to GradFill Description in PM4 Spec

Change 61857 on 2002/11/05 by jasif@jasif\_r400\_win\_tor  
 Change name of overscan test to overscanColourSelect.

Change 61850 on 2002/11/05 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 61843 on 2002/11/05 by gregs@gregs\_r400\_win\_marlboro  
 dft update

Change 61837 on 2002/11/05 by mzhu@mzhu\_crayola\_win\_tor

Page 130 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Update 3.4.9.4 Color Space Conversion

Change 61803 on 2002/11/05 by jacarey@fl\_jcarey\_desktop  
 Update format of the Grad\_Fill packet per discussion on 11-05-2002.

Change 61761 on 2002/11/05 by dwong@cndwong2  
 Added details on endian swap and an extra field for indirect buffer swap setting

Change 61728 on 2002/11/05 by gabarca@gabarca\_crayola\_win\_cvd  
 Added description of VESA mode tests

Change 61698 on 2002/11/05 by imuskatb@imuskatb\_r400\_win\_laptop  
 updated docs

Change 61664 on 2002/11/05 by gregs@gregs\_r400\_win\_marlboro  
 adding id module + new straps

Change 61642 on 2002/11/05 by mzhu@mzhu\_crayola\_win\_tor  
 Add one intermediate result fraction bit for Overlay Matrix Transform in chapter 11.6  
 and Matrix Transform and Adjustment in chapter 11.18

Change 61620 on 2002/11/05 by mzhu@mzhu\_crayola\_win\_tor  
 add "Out SRGB->YCbCr" and "Out sRGB->TVRGB" for overlay pixels

Change 61592 on 2002/11/05 by vgoel@fl\_vgoel2  
 updated to close bug 608

Change 61582 on 2002/11/05 by mpersaud@mpersaud\_r400\_win\_tor  
 Added to source control

Change 61541 on 2002/11/04 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 61526 on 2002/11/04 by rfevreau@rfevreau\_r400\_win  
 X2 Mag tests

Change 61518 on 2002/11/04 by jowang@jowang\_R400\_win

Page 131 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

added back-to-back writes to HOST

Change 61484 on 2002/11/04 by dwong@cndwong2  
 added in performance counter

Change 61480 on 2002/11/04 by jacarey@fl\_jcarey\_desktop  
 Fix Typo in MPEG\_INDEX packet documentation.

Change 61470 on 2002/11/04 by peterp@MA\_PETE\_LT  
 VGT, PA and SC updated with common format for area and synthesis date

Change 61467 on 2002/11/04 by grayc@grayc\_r400\_win  
 better debug statements

Change 61453 on 2002/11/04 by jacarey@fl\_jcarey\_desktop  
 Update MPEG Index Packet  
 1. Remove "Dummy" and "Mask" DWORDs  
 2. RectList printtype is assumed, so CP only outputs 3 indices (Original +2)

Change 61449 on 2002/11/04 by jasif@jasif\_r400\_win\_tor  
 Updated

Change 61444 on 2002/11/04 by peterp@MA\_PETE\_LT  
 Updated SQ with common format of reporting area and synthesis date

Change 61429 on 2002/11/04 by bbloemer@ma\_bbloemer  
 Improved figure insertion, I hope.

Change 61416 on 2002/11/04 by jacarey@fl\_jcarey\_desktop  
 Update the Microcode RAM Size(s)

Change 61403 on 2002/11/04 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 61360 on 2002/11/04 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
 updated

Change 61342 on 2002/11/04 by frising@ma\_frising

Page 132 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history



v.1.58  
 -At request of SW merged TYPE/STATE fields in constants. These are SW only bits used by PM4 capture utilities.  
 -Fixed 3D size typo, had width, height, height instead of width, height, depth  
 -Make addressing mode names consistent with SP; now have logical and current loop index relative addressing  
 -Mark R400\_DATA\_FORMAT 63 as reserved  
 -Clean up and clarify R400\_DATA\_FORMAT Notes sections based on feedback

Change 61310 on 2002/11/04 by jacarey@fl\_jcarey\_desktop  
 Update per Lili Sinclair's E-mail.

Change 61187 on 2002/11/01 by mdoggett@mdoggett\_r400\_win\_platypus  
 Added degamma dxt. Updated format table with new as 16\_16\_16\_16 formats. Updated L2 cacheline format conversion table. Added degamma dxt section with equations for calculating different dxt interpolations.

Change 61163 on 2002/11/01 by ashishs@fl\_ashishs\_r400\_win  
 updated

Change 61151 on 2002/11/01 by frising@ma\_frising  
 v.1.85  
 -clarified how constant and register addressing works. For nomenclature I settled on absolute, logical and relative addressing. New tables added.  
 -documented how constant2 works.  
 -Wrote a blurb and added a table on GPR write-back precedence.  
 -Cleaned up ALU instruction format table

Change 61074 on 2002/11/01 by vgoel@fl\_vgoel2  
 updated tracker for closed bugs

Change 61068 on 2002/11/01 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 61055 on 2002/11/01 by gabarca@gabarca\_crayola\_win\_cvd  
 Added viewport X and Y start

Change 61036 on 2002/11/01 by jacarey@fl\_jcarey2  
 Update RBBM's Performance Counter Signal List

Page 133 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 60996 on 2002/11/01 by nbarbier@nbarbier\_r400\_win\_tor  
 Updated GENERICA & GENERICB muxes.  
 Added GENERICC pad to interface.

Change 60992 on 2002/11/01 by peterp@MA\_PETE\_LT  
 Synthesis results from SP/SX

Change 60988 on 2002/11/01 by rthambim@rthambim\_r400\_win\_tor  
 Updated the strap table.

Change 60985 on 2002/11/01 by dwong@cndwong2  
 Added in xDCT performance counter details

Change 60981 on 2002/11/01 by rthambim@rthambim\_r400\_win\_tor  
 Added new clock enable signal - BIF\_VGA\_busy.

Change 60937 on 2002/11/01 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Broken out line list cases from parameterized test  
 Update tracker

Change 60934 on 2002/11/01 by mpersaud@mpersaud\_r400\_win\_tor  
 Rev 0.7 - Update port names to CP

Change 60913 on 2002/11/01 by peterp@MA\_PETE\_LT  
 Started entry of date field for synthesis results - corrected RB/RC area

Change 60910 on 2002/11/01 by jacarey@fl\_jcarey2  
 Update CP's Performance Monitoring Signals.

Change 60859 on 2002/10/31 by beiwang@bei\_depot  
 Updated Protocol Engine Drawing

Change 60850 on 2002/10/31 by vgoel@fl\_vgoel2  
 updated with new bugs and closed dates for some bugs

Change 60825 on 2002/10/31 by gregs@gregs\_r400\_win\_marlboro  
 update

Page 134 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 60810 on 2002/10/31 by csampayo@fl\_csampayo\_r400  
 Added new SU test, updated test\_list and test tracker accordingly

Change 60808 on 2002/10/31 by bbloemer@ma\_bbloemer  
 Updates for the design review.

Change 60786 on 2002/10/31 by mzhu@mzhu\_crayola\_win\_tor  
 Update for re-organizing the MH data in read\_buff module.  
 Add MH-DC interface signal list, MH return data format and DMIF output data format in Appendix

Change 60768 on 2002/10/31 by jacarey@fl\_jcarey\_desktop  
 Fix Name of Signal From the RBBM.

Change 60738 on 2002/10/31 by hartogs@fl\_hartogs  
 Added section for determining the required input data size based on the draw initiator and the grouper programming registers.  
 Added section on general sanity checks for grouper programming in major mode 1.  
 Updated event enumeration to match block file (added several events).  
 Added DI\_PT\_2D\_TRI\_STRIP to the prim type enumeration in the VGT\_DRAW\_INITIATOR register.  
 Added VGT\_GRP\_2D\_TRI enumeration to prim type field of VGT\_GROUP\_PRIM\_TYPE register (and deleted some unused prim type enumerations).  
 Updated Major Mode 0 settings table for 2D compound index changes. Added 2D\_TRI\_STRIP entry to this table.  
 Changed address of many of the GFX registers registers to match addresses in the block file.  
 Added VGT\_MULTI\_PRIM\_IB\_RESET\_INDX register with description.  
 Changed VGT\_VTX\_TIMEOUT\_REG to VGT\_VGT\_VTX\_VECT\_EJECT\_REG register  
 Added VGT\_DMA\_DATA\_FIFO\_DEPTH register. Added VGT\_DMA\_REQ\_FIFO\_DEPTH register  
 Added VGT\_DRAW\_INIT\_FIFO\_DEPTH register  
 Added VGT\_LAST\_COPY\_STATE register.  
 Added section called "Draw Initiator Programming" containing two subsections: "Number of Indices" and "Using the Multi-prim Index Buffer Reset Functionality"

Change 60701 on 2002/10/31 by georgev@ma\_georgev  
 Put in documentation for floating point numbers.

Change 60669 on 2002/10/31 by gabarca@gabarca\_crayola\_win\_cvd  
 v.1.85  
 -clarified how constant and register addressing works. For nomenclature I settled on absolute, logical and relative addressing. New tables added.  
 -documented how constant2 works.  
 -Wrote a blurb and added a table on GPR write-back precedence.  
 -Cleaned up ALU instruction format table

Page 135 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

ODD\_EVEN\_MD\_PGSEL is 1 in all modes

Change 60634 on 2002/10/31 by mpersaud@mpersaud\_r400\_win\_tor  
 Rev 1.1 Mahendra PersaudDate: Oct 31, 2002  
 Added VIP signals to CP  
 Moved and renamed document to ...doc\_lib/design/block/schip/R400 - DC\_CP Interface.doc

Change 60628 on 2002/10/31 by smoss@smoss\_crayola\_win  
 su tests

Change 60627 on 2002/10/31 by mzhu@mzhu\_crayola\_win\_tor  
 Add dual display tests in 3.4.9.12

Change 60624 on 2002/10/31 by khabbari@khabbari\_r400\_win  
 disp signals added to disp/cp interface doc

Change 60620 on 2002/10/31 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Update screen scissor and window scissor tests for tracking...

Change 60565 on 2002/10/30 by gregs@laptop1  
 update

Change 60393 on 2002/10/30 by jacarey@fl\_jcarey2  
 Fix Typo in CP\_PERFMON\_CNTRL register description

Change 60376 on 2002/10/30 by mpersaud@mpersaud\_r400\_win\_tor  
 Updated with Appendix A - MH\_DCC Interface

Change 60360 on 2002/10/30 by gregs@laptop1  
 added IO\_RBBM\_generic\_y signal

Change 60295 on 2002/10/30 by mzhu@mzhu\_crayola\_win\_tor  
 Update 3.4.9.4 Color Space Conversion  
 Add 3.4.9.10 double buffer registers  
 Add 3.4.9.11 DCP CRC

Change 60294 on 2002/10/30 by rbell@rbell\_crayola\_win\_cvd

Page 136 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history



updated

Change 60264 on 2002/10/30 by frising@ma\_frising

v.1.8  
-bring up to date with v.0.99a of R400numerics.doc. Includes adding new instructions, updating existing instructions, and moving to counter based predicate scheme.

Change 60178 on 2002/10/29 by frising@ma\_frising

v.0.99a  
-Sync up with v.1.8 of shaders.doc that I've been editing and will check-in soon.

Change 60167 on 2002/10/29 by gregs@gregs\_r400\_win\_marlboro

update

Change 60126 on 2002/10/29 by rbell@rbell\_crayola\_win\_cvd

Finished MS3 D2 tests

Change 60112 on 2002/10/29 by vgoel@fl\_vgoel2

added rpatch bug for tessellation 11.5

Change 60078 on 2002/10/29 by jowang@jowang\_R400\_win

added CRC generation

Change 59994 on 2002/10/29 by jacarey@fl\_jcarey2

Add registers for the CP Performance Counter

Change 59989 on 2002/10/29 by jacarey@fl\_jcarey2

RBBM Performance Counters

Change 59944 on 2002/10/29 by csampayo@fl\_csampayo\_r400

Added bug# 83

Change 59941 on 2002/10/29 by lfebvtr@lfebvtr\_laptop\_r400

backup and SQ->SP interface change.

Change 59932 on 2002/10/29 by nluu@nluu\_r400\_doctib\_cmb

- update interface to add start\_of\_cycle and op code signals

Page 137 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

- cycle is 1 clock shorter, strobe is asserted 1 clock after data is driven instead of 2 clocks

- decodes are don't cares when not in active cycle  
- ready should be high by default

Change 59930 on 2002/10/29 by gregs@gregs\_r400\_win\_marlboro

added Test Controller connections to IO DFT cells.

Change 59904 on 2002/10/29 by jacarey@fl\_jcarey\_desktop

Source clipping is only done by the CP for ROPs that include a source term.

Change 59873 on 2002/10/28 by gregs@gregs\_r400\_win\_marlboro

io dft cells inserted - fixes.

Change 59867 on 2002/10/28 by frising@ma\_frising

v.0.99  
-updated to counter based predicate instructions.  
-lots of work on 32-bit rounding issues. Still more to do especially for 16-bit FP and conversion between formats and things like RF expansions.

Change 59820 on 2002/10/28 by mzhu@mzhu\_crayola\_win\_tor

Add matrix transform constant in 11.18

Change 59816 on 2002/10/28 by rfevreau@rfevreau\_r400\_win

New goldens

Change 59789 on 2002/10/28 by jacarey@fl\_jcarey2

AlphaBlend, AAFONT and Load\_Execute marked as "Not Currently Supported"

Change 59706 on 2002/10/28 by csampayo@fl\_csampayo\_r400

Added bug# 82

Change 59693 on 2002/10/28 by jacarey@fl\_jcarey2

Swap bits for oper=gmcodecode flags

Change 59683 on 2002/10/28 by csampayo@fl\_csampayo\_r400

Try again

Change 59682 on 2002/10/28 by csampayo@fl\_csampayo\_r400

Page 138 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Added Bugzilla report# to bug# 81

Change 59681 on 2002/10/28 by csampayo@fl\_csampayo\_r400

Some housekeeping

Change 59677 on 2002/10/28 by jacarey@fl\_jcarey2

Add:  
1. ROP7:4 != ROP3:0 flag for oper=gmcodecode  
2. Src\_Clip\_Disable Flag for oper=gmcodecode

Change 59592 on 2002/10/27 by csampayo@fl\_csampayo\_it\_r400

Updated test\_list and test tracker status for the following tests:  
r400vgt\_multi\_pass\_pix\_shader\_01  
r400vgt\_multi\_pass\_pix\_shader\_02  
r400vgt\_multi\_pass\_pix\_shader\_03  
r400vgt\_multi\_pass\_pix\_shader\_04  
r400vgt\_multi\_pass\_pix\_shader\_05  
r400vgt\_multi\_pass\_pix\_shader\_06

Change 59437 on 2002/10/25 by ashishs@fl\_ashishs\_r400\_win

update

Change 59405 on 2002/10/25 by lseiler@lseiler\_r400\_win\_marlboro

Added a column for device address

Change 59397 on 2002/10/25 by gregs@gregs\_r400\_win\_marlboro

updated the buscfg strap encodings.

Change 59395 on 2002/10/25 by jacarey@fl\_jcarey2

Remove CP\_CONTEXT\_ID register it will be in the VGT

Change 59371 on 2002/10/25 by jacarey@fl\_jcarey2

Update Performance Connections.

Change 59342 on 2002/10/25 by jacarey@fl\_jcarey\_desktop

Document CP\_CONTEXT\_ID register.

Change 59317 on 2002/10/25 by jacarey@fl\_jcarey2

Page 139 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update RBBM Debug Register.

Change 59314 on 2002/10/25 by jacarey@fl\_jcarey2

Updates to RBBM spec to clarify wait\_until, nqwait, and Isync wait conditions.

Change 59255 on 2002/10/24 by grayc@grayc\_r400\_win

initial release

Change 59211 on 2002/10/24 by ashishs@fl\_ashishs\_r400\_win

update

Change 59151 on 2002/10/24 by frising@ma\_frising

v.1.57  
- Rework of degamma control to be more in line with hardware schedule :) Perhaps surprisingly, this resulted in a cleaner SW interface and easier HW implementation. This involved:  
- Removing of DEGAMMA\_CNTL\_ALL  
- Adding 4 new DATA\_FORMATS: FMT\_8\_8\_8\_AS\_16\_16\_16\_16, FMT\_DXT1\_AS\_16\_16\_16\_16, FMT\_DXT2\_3\_AS\_16\_16\_16\_16 and FMT\_DXT4\_5\_AS\_16\_16\_16\_16.  
- Updated DATA\_FORMAT table. This is now much cleaner. FOLKS SHOULD STUDY THIS CLOSELY.  
- FMT\_DNX is no longer a degammable format.  
- Update DATA\_FORMAT note 7.) to say:  
"7.) Channels being degamm'd remain unsigned repeating fraction after degamma. Enabling degamma in any channel does not change the format in which the data is stored in the L2 cache. This enables software to make trade-offs between high quality degamma and performance. Specifically, formats FMT\_8\_8\_8, FMT\_DXT1, FMT\_DXT2\_3, and FMT\_DXT4\_5 are stored in the L2 cache as 4x8 while their \*\_AS\_16\_16\_16\_16 counterparts are stored as 4x16."  
Change 59115 on 2002/10/24 by jacarey@fl\_jcarey2

RBBM Spec:  
1. Add Extern\_Trig\_Cntl Register and Diagram  
2. Update text for nqwait and gui\_active related items.

Change 59100 on 2002/10/24 by ashishs@fl\_ashishs\_r400\_win

update

Page 140 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 59060 on 2002/10/24 by tshah@fl\_tshah  
 included description for CP\_PIPE busy for Wait until condition. Hysteresis for GUI\_ACTIVE

Change 59054 on 2002/10/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Update screen scissor test name in works..

Change 59053 on 2002/10/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 SC Clip Rect tests, LINE\_LOOP, STIPPLE, FSAA permutations...

Change 58970 on 2002/10/23 by ashishs@fl\_ashishs\_r400\_win  
 Tests guard band clipping  
 4 primitives in 4 quadrants.  
 Each primitive has 6 vertices and first vert on vertical guard band.  
 Top Left Quadrant, gouraud shading  
 Top Right Quadrant, FLAT SHADING with START vertex as provoking vtx  
 Lower Right Quadrant, FLAT SHADING with END vertex as provoking vtx  
 Lower Left Quadrant, SIX TEXTURES, with COLOR0 as transparent  
 Method: 6 Vert Strip, first vert on vertical guard band  
 Expected Results: 4 primitives, four quadrants, no clipping, no discarding

Change 58948 on 2002/10/23 by rthambim@rthambim\_r400\_win\_tor  
 Initial revision.

Change 58906 on 2002/10/23 by mzhu@mzhu\_crayola\_win\_tor  
 Add in Colour Spaces.xls in perforce

Change 58841 on 2002/10/23 by frising@ma\_frising  
 v.1.56  
 -fix up mapping of YCrCb to GPR in DATA\_FORMAT table. Now Z(B)=Cb, Y(G)=Y, X(R)=Cr. (Cb are Cr were swapped before)  
 -coorespondingly rename border colors to ACbYCr Black and ACbCrY Black. Note this is just a rename and does not affect actual values since Cr and Cb use the same value.

Change 58817 on 2002/10/23 by vgoel@fl\_vgoel2  
 added vertex export bug report resulting from r400vgt\_hos\_PNT\_adaptive

Change 58806 on 2002/10/23 by rbell@rbell\_crayola\_win\_cvd  
 Page 141 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

updated

Change 58801 on 2002/10/23 by jacarey@fl\_jcarey2  
 Add ROP comment to GradFill Packet

Change 58743 on 2002/10/22 by frising@ma\_frising  
 0.98  
 -added cube instruction implementation  
 -misc clean-up.

Change 58728 on 2002/10/22 by gregs@gregs\_r400\_win\_marlboro  
 update

Change 58697 on 2002/10/22 by smoss@smoss\_crayola\_win  
 su tests

Change 58679 on 2002/10/22 by gregs@gregs\_r400\_win\_marlboro  
 fixed Generic pads

Change 58630 on 2002/10/22 by rbell@rbell\_crayola\_win\_cvd  
 Completed some more D2 tests

Change 58617 on 2002/10/22 by jacarey@fl\_jcarey2  
 Update for Clearing the Register Update Flag

Change 58615 on 2002/10/22 by jacarey@fl\_jcarey2  
 Document Updates for Incremental Register Updates

Change 58606 on 2002/10/22 by gregs@gregs\_r400\_win\_marlboro  
 <added CONFIG\_XSTRAP3 register and number of straps >

Change 58603 on 2002/10/22 by kmahler@kmahler\_r400\_doc\_lib  
 Added More details and added Proposal for new PM4 Library and Real-Time support.

Change 58563 on 2002/10/22 by lfebvrv@lfebvrv\_laptop\_r400  
 Defined the memory exports better.  
 Page 142 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 58562 on 2002/10/22 by lfebvrv@lfebvrv\_laptop\_r400  
 Updated the SX interfaces.

Change 58525 on 2002/10/22 by jowang@jowang\_R400\_win  
 Modified M3 Test Plan after the review

Change 58522 on 2002/10/22 by georgev@ma\_georgev  
 Updated to reflect changes and new stuff.

Change 58425 on 2002/10/21 by khabbari@khabbari\_r400\_win  
 added frame rate conv test list

Change 58419 on 2002/10/21 by frising@ma\_frising  
 0.97  
 -initial check-in.

Change 58369 on 2002/10/21 by frising@ma\_frising  
 v.1.55  
 - Added DEGAMMA\_CNTL\_ALL field to texture constant to indicate if degammed textures should be stored as 8-bit or 16-bit in TC. Noted that this field is not currently supported. Also noted what the default conversion are in lieu of this support along with bringing all the degamma documentation inline with the current degamma plans.  
 - Added REQUEST\_SIZE field to texture and vertex constant to indicate if read requests should be 256 or 512 bit.  
 - Defined R400\_TP\_NAN to be 0x7FE00000 (used for out of range vertex fetches)  
 - \*16\_EXPAND is converted to 16.16 signed fixed point now.  
 - \*MPEG is clamped to [-256..255] pre filter (was [-255..255])

Change 58350 on 2002/10/21 by rfereau@rfereau\_r400\_win  
 New goldens with PClk set to 165MHz  
 Test list update

Change 58329 on 2002/10/21 by mzhu@mzhu\_crayola\_win\_tor  
 Update DxGRPH\_PITCH and DxOVL\_PITCH

Change 58321 on 2002/10/21 by jowang@jowang\_R400\_win  
 Page 143 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

added M3 comments

Change 58318 on 2002/10/21 by mzhu@mzhu\_crayola\_win\_tor  
 Update interface signals: DCP\_DMIF\_grph1\_pitch, DCP\_DMIF\_grph2\_pitch, DCP\_DMIF\_ovl1\_pitch and DCP\_DMIF\_ovl2\_pitch.

Change 58308 on 2002/10/21 by paulv@MA\_PVELLA  
 Updated MHS portion of spec with latest and greatest features, info, etc.

Change 58307 on 2002/10/21 by csampayo@fl\_csampayo\_lt\_r400  
 Cleaned up tests, added 1 new VGT test to test\_list and updated the test tracker accordingly

Change 58257 on 2002/10/21 by khabbari@khabbari\_r400\_win  
 added frame rate conv

Change 58254 on 2002/10/21 by mzhu@mzhu\_crayola\_win\_tor  
 Update 11.1.2 and 11.1.3 for D1GRPH and D2GRPH double buffer register  
 Add 11.20 for DCP CRC

Change 58253 on 2002/10/21 by mzhu@mzhu\_crayola\_win\_tor  
 Add 8-bit 2101010 mode tests in 3.4.9.9

Change 58251 on 2002/10/21 by mzhu@mzhu\_crayola\_win\_tor  
 Update DxGRPH double buffer register  
 Add DCP CRC register

Change 58213 on 2002/10/20 by gregs@laptop1  
 update

Change 58161 on 2002/10/19 by gregs@laptop1  
 initial device id numbers

Change 58120 on 2002/10/18 by csampayo@fl\_csampayo\_r400  
 Added bug# 88

Change 58095 on 2002/10/18 by vgoel@fl\_vgoel2  
 Page 144 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history





updated for new bug

Change 58080 on 2002/10/18 by gregs@gregs\_r400\_win\_mariboro  
update

Change 58073 on 2002/10/18 by gregs@gregs\_r400\_win\_mariboro  
device\_id update

Change 58032 on 2002/10/18 by jacarey@fl\_jcarey2  
Update diagram for clock gating

Change 58003 on 2002/10/18 by jasif@jasif\_r400\_win\_tor  
Updated test names and status.

Change 57994 on 2002/10/18 by ashishs@fl\_ashishs\_r400\_win  
updated a comment

Change 57991 on 2002/10/18 by jacarey@fl\_jcarey2  
Update documents for Incremental Register Update

Change 57976 on 2002/10/18 by ashishs@fl\_ashishs\_r400\_win  
Highlighted the bug "r400cl\_bary\_texture\_08.cpp"

Change 57941 on 2002/10/18 by bbloemer@ma\_bbloemer  
Updated .doc file.

Change 57939 on 2002/10/18 by ashishs@fl\_ashishs\_r400\_win  
updated test\_list and Tracker for the corresponding change in file name viz  
r400cl\_gabnd\_04 to r400cl\_gband\_06

Change 57935 on 2002/10/18 by ashishs@fl\_ashishs\_r400\_win  
Deleted test r400cl\_gband\_04 and renamed it to r400cl\_gband\_06. Also updated the  
Validation\_Approach\_plan.doc since it had some errors with tests name and numberings.

Change 57933 on 2002/10/18 by jacarey@fl\_jcarey2  
1. Remove legacy versions of packets that were struck through  
2. Add Incremental Register Write Support

Page 145 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 57890 on 2002/10/18 by jacarey@fl\_jcarey2  
Added src\_data\_format to the alphablend packet.

Change 57866 on 2002/10/17 by grayc@grayc\_r400\_win  
for safekeeping ... expanded on test description

Change 57848 on 2002/10/17 by csampayo@fl\_csampayo\_r400  
Added bug# 78

Change 57834 on 2002/10/17 by gregs@gregs\_r400\_win\_mariboro  
added R300 power

Change 57824 on 2002/10/17 by gregs@gregs\_r400\_win\_mariboro  
scaled from R300 part - ready.

Change 57784 on 2002/10/17 by jacarey@fl\_jcarey2  
Refer to the PA register spec for the format of the destination clipping parameters in the  
PM4 spec.

Change 57667 on 2002/10/17 by gregs@gregs\_r400\_win\_mariboro  
update

Change 57661 on 2002/10/17 by gregs@gregs\_r400\_win\_mariboro  
added to the discription of ROM\_CLK register

Change 57576 on 2002/10/16 by gregs@laptop1  
work in progress

Change 57574 on 2002/10/16 by gregs@laptop1  
work in progress

Change 57527 on 2002/10/16 by llefebvre@llefebvre\_laptop\_r400  
Clarifications and minor updates. Version 2.08.

Change 57510 on 2002/10/16 by csampayo@fl\_csampayo\_r400  
Added 1 new HOS with index reset test, updated test\_list and test tracker

Page 146 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 57494 on 2002/10/16 by smoss@smoss\_crayola\_win  
update

Change 57475 on 2002/10/16 by ashishs@fl\_ashishs\_r400\_win  
updated

Change 57471 on 2002/10/16 by rbell@rbell\_crayola\_win\_cvd  
Completed host arbitration tests.

Change 57470 on 2002/10/16 by jacarey@fl\_jcarey2  
Documentation Updates for Programming Max Count while processing.

Change 57459 on 2002/10/16 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Add r400sc\_parameterized\_line\_list\_01 to tracker...

Change 57435 on 2002/10/16 by ashishs@fl\_ashishs\_r400\_win  
update

Change 57394 on 2002/10/16 by mzhu@mzhu\_crayola\_win\_tor  
Add 8-bit 2101010 graphics format  
Add PIX\_TYPE for selecting color space conversion parameters

Change 57382 on 2002/10/16 by jacarey@fl\_jcarey2  
Update to transfifo clock

Change 57363 on 2002/10/16 by efong@efong\_r400\_win\_tor\_doc  
Coverage Metrics Proposal and users guide

Change 57337 on 2002/10/16 by jacarey@fl\_jcarey2  
Update for scik\_reg

Change 57253 on 2002/10/15 by csampayo@fl\_csampayo\_r400  
VGT housekeeping

Change 57252 on 2002/10/15 by csampayo@fl\_csampayo\_r400  
Added bug# 77

Page 147 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 57247 on 2002/10/15 by csampayo@fl\_csampayo\_r400  
Added 5 new VGT index reset tests and updated test\_list and test tracker

Change 57202 on 2002/10/15 by csampayo@fl\_csampayo\_r400  
Updated test\_list and test tracker for the following VGT tests:  
r400vgt\_vtx\_export\_very\_very\_simple\_01  
r400vgt\_vtx\_export\_very\_very\_simple\_02  
r400vgt\_vtx\_export\_very\_very\_simple\_03

Change 57196 on 2002/10/15 by jacarey@fl\_jcarey2  
Update for SCLK\_REG

Change 57184 on 2002/10/15 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 57177 on 2002/10/15 by beiwang@bei\_depot  
Updated the MCCI block diagram with the latest AGP path

Change 57175 on 2002/10/15 by jacarey@fl\_jcarey2  
1. Add CP\_PERFMON\_CNTL to CP register set  
2. Documentation Updates for Clock Gating

Change 57165 on 2002/10/15 by jowang@jowang\_R400\_win  
updated test plan with M3 features for 20bpp and CRC

Change 57157 on 2002/10/15 by smorein@smorein\_r400  
updated with register names

Change 57146 on 2002/10/15 by kmahler@kmahler\_r400\_doc\_lib  
Added some minor details, but not sure what?

Change 57086 on 2002/10/15 by jhoule@MA\_JHOULE  
1.54:  
Added MIP\_PACKING bit allowing to disable packing of the mip tail.

Change 57052 on 2002/10/15 by jacarey@fl\_jcarey2  
Clarify the number of DWORDs for ALU and Texture constant updates.

Page 148 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 56993 on 2002/10/14 by csampayo@fl\_csampayo\_r400  
Closed bugs# 63,71,74. Added bug# 76

Change 56977 on 2002/10/14 by ashish@fl\_ashish\_r400\_win  
update

Change 56944 on 2002/10/14 by jacarey@fl\_jcarey2  
Update Diagram for Dynamic Clocking in the CP

Change 56936 on 2002/10/14 by csampayo@fl\_csampayo\_r400  
Added 3 new VGT tests, updated test\_list and test tracker

Change 56928 on 2002/10/14 by mkelly@fl\_mkelly\_r400\_win\_laptop  
update...

Change 56918 on 2002/10/14 by csampayo@fl\_csampayo\_lt\_r400  
Some VGT housekeeping

Change 56881 on 2002/10/14 by llefebvre@llefebvre\_laptop\_r400  
Loops, jumps and calls are now using a 13 bit address which allows to jump and call and loop around any control flow addresses (does not requires to be even anymore).

Change 56872 on 2002/10/14 by lseiler@lseiler\_r400\_win\_marlboro  
Updated Zplane format to include MultiSample bit

Change 56865 on 2002/10/14 by vgoel@fl\_vgoel2  
added frame buffer dump mismatch issue for tiled on and off mode.

Change 56855 on 2002/10/14 by smoss@smoss\_crayola\_win  
su tests

Change 56838 on 2002/10/14 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
update of MH document up to chapter 13

Change 56659 on 2002/10/11 by jayw@MA\_JAYW  
old needs updating

Change 56612 on 2002/10/11 by jacarey@fl\_jcarey2  
Update for DP\_SRC\_SOURCE

Change 56604 on 2002/10/11 by llefebvre@llefebvre\_laptop\_r400  
Revision 2.06 of the spec.

Change 56601 on 2002/10/11 by rbell@rbell\_crayola\_win\_cvd  
Completed b&w offset floating point tests

Change 56593 on 2002/10/11 by jacarey@fl\_jcarey2  
Make SQ\_CP\_\*\_eventid buses 5 bits to cover all defined events.

Change 56586 on 2002/10/11 by dwong@cndwong2  
changed the real-time signal names wired into CP (from overlay)  
bits 5 and 6 of connections to the CP\_rts\_discretes input bus are changed to DISPx\_CP\_flip\_proceed

Change 56581 on 2002/10/11 by tshah@fl\_tshah  
description of RBBM\_DEBUG register write - snoop in RBBM's BIF\_PIPE

Change 56579 on 2002/10/11 by kmahler@kmahler\_r400\_doc\_lib  
Some updates to support Random Shader Generator.

Change 56574 on 2002/10/11 by kmahler@kmahler\_r400\_doc\_lib  
Some more updates; This document is now mostly ready for the initial review to allow the first phase of development to begin.

Change 56558 on 2002/10/11 by jacarey@fl\_jcarey2  
B4 and B9 Booleans need to be set for NextChar

Change 56344 on 2002/10/11 by jhoule@MA\_JHOULE  
0.9.15:  
Various updates in descriptions.  
Updated TP\_TC interface to 9 bits of pitch everywhere.

Change 56495 on 2002/10/10 by csampayo@fl\_csampayo\_r400  
Added bug# 74

Change 56475 on 2002/10/10 by mzhu@mzhu\_crayola\_win\_tor  
Fix LUT fill for Floating point 16161616 mode - (0x0000 - 0x3BFF)

Change 56461 on 2002/10/10 by nbarbier@nbarbier\_r400\_win\_tor  
Added CRTCl & CRTc2 enable and freeze signals.  
Added CRTCl & CRTc2 interrupts.

Change 56403 on 2002/10/10 by jasif@jasif\_r400\_win\_tor  
Updated test names and status.

Change 56398 on 2002/10/10 by gray@gray\_r400\_win  
updates

Change 56386 on 2002/10/10 by rherick@ma\_rherick\_crayola  
Implement Multi-sample stimulus application by TC client...

Change 56354 on 2002/10/10 by gregs@gregs\_r400\_win\_marlboro  
added block\_busy\_extender

Change 56350 on 2002/10/10 by jacarey@fl\_jcarey2  
Update pseudocode for LCC packet as processed by Real-time

Change 56318 on 2002/10/10 by rfevreau@rfevreau\_r400\_win  
Added a sleep to the job file and added new DVO testlist

Change 56314 on 2002/10/10 by jacarey@fl\_jcarey2  
Clarification on ME\_INIT for Mask Bit 9

Change 56313 on 2002/10/10 by csampayo@fl\_csampayo\_r400  
Adeed bug# 73

Change 56303 on 2002/10/10 by jacarey@fl\_jcarey2  
Added Default Reset Control to ME init packet (bit 9 of mask)

Change 56213 on 2002/10/09 by gregs@laptop1  
update

Change 56212 on 2002/10/09 by csampayo@fl\_csampayo\_r400  
Some VGT housekeeping

Change 56171 on 2002/10/09 by csampayo@fl\_csampayo\_r400  
1. Updated tests r400vgt\_index\_min\_max\_01 and \_02 for multi-context  
2. Added new VGT tests r400vgt\_index\_min\_max\_03 and \_04  
3. Updated test\_list and the test tracker

Change 56126 on 2002/10/09 by mpersaud@mpersaud\_r400\_win\_tor  
Bumped document revision

Change 56123 on 2002/10/09 by mpersaud@mpersaud\_r400\_win\_tor  
Added TV\_DOUT\_interlace\_en and TV\_DOUT\_tvout\_en to interface.

Change 56082 on 2002/10/09 by jacarey@fl\_jcarey2  
Added VIP\_CP\_cof\_ack to list.

Change 56051 on 2002/10/09 by gregs@laptop1  
pin\_strap\_buscfig is 2 bits widw now (was 3 bits)

Change 56048 on 2002/10/09 by jacarey@fl\_jcarey2  
Invert polarity of the MH\_CP\_writclean signal

Change 56033 on 2002/10/09 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Packed color example usage for VFD

Change 56008 on 2002/10/09 by mkelly@fl\_mkelly\_r400\_win\_laptop  
\* Rasterize 256 triangles, 1 packet. Each triangle should hit 4 quads.  
The test moves the triangle 2 quads at a time in X and  
2 quads in increasing Y.  
\* Update test\_list  
\* Update test documentation in test tracker

Change 55960 on 2002/10/08 by nbarbier@nbarbier\_r400\_win\_tor  
Added description of 2nd DVO CRC.  
Added description of TMDS data synchronizer.

Change 55950 on 2002/10/08 by gregs@gregs\_r400\_win\_marlboro



< DEVICE\_ID - work in progress >

Change 55945 on 2002/10/08 by ashishs@fl\_ashishs\_r400\_win  
update

Change 55935 on 2002/10/08 by jacarey@fl\_jcarey2  
Update description of the B0 2D Boolean for monochrome sources.

Change 55922 on 2002/10/08 by jacarey@fl\_jcarey2  
Only Set B0 Boolean for solid brushes if SRC\_TYPE != Mono

Change 55904 on 2002/10/08 by bryans@bryans\_crayola\_doc  
Update schedule to minimize Linux usage after midnight

Change 55891 on 2002/10/08 by rherick@ma\_rherick\_crayola  
Removing FETCH\_SHADOW from queuemgr/checker... Implementing setting of SCLK period in parser... Changing IDLE to work on SCLK instead of MCLK... Beginning implementation Fetch Multisample in checker (wanted to regress and check this change in before heading forward from this point)...

Change 55869 on 2002/10/08 by smoss@smoss\_crayola\_win  
su tests

Change 55848 on 2002/10/08 by mpersaud@mpersaud\_r400\_win\_tor  
Update port names to match verilog implementation

Change 55816 on 2002/10/08 by jacarey@fl\_jcarey2  
Update spec for dst clip parameters to be positive only.

Change 55795 on 2002/10/08 by smoss@smoss\_crayola\_win  
su tests

Change 55763 on 2002/10/08 by grayc@grayc\_r400\_win  
initial release

Change 55758 on 2002/10/08 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Add Clay's multi-chip tests to SC special cases documentation

Page 154 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 55731 on 2002/10/07 by csampayo@fl\_csampayo\_r400  
Added bug# 72

Change 55727 on 2002/10/07 by csampayo@fl\_csampayo\_r400  
Added VGT index size test and updated test\_list and test tracker

Change 55696 on 2002/10/07 by gregs@gregs\_r400\_win\_marlboro  
AGP bug "AD\_20 stitch" - fixed

Change 55679 on 2002/10/07 by jacarey@fl\_jcarey2  
Added write confirm function for DMA engine at end of table.

Change 55669 on 2002/10/07 by rbell@rbell\_crayola\_win\_cvd  
Completed half res tests

Change 55570 on 2002/10/07 by csampayo@fl\_csampayo\_it\_r400  
Added bug# 71

Change 55555 on 2002/10/07 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 55544 on 2002/10/07 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 55527 on 2002/10/07 by smoss@smoss\_crayola\_win  
SU tests

Change 55513 on 2002/10/06 by ashishs@fl\_ashishs\_r400\_win  
update

Change 55506 on 2002/10/06 by lkang@lkang\_r400\_win\_tor  
updates

Change 55494 on 2002/10/05 by gregs@laptop1  
update - tests passed.

Page 154 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 55440 on 2002/10/04 by gregs@gregs\_r400\_win\_marlboro  
update

Change 55399 on 2002/10/04 by jacarey@fl\_jcarey2  
Miscellaneous Updates for New 2D Packets

Change 55398 on 2002/10/04 by jacarey@fl\_jcarey2  
1. Removed Width from compound indices  
2. Added 2D\_Tri\_Strip compound indice  
3. Misc. Comments.

Change 55342 on 2002/10/04 by gregs@gregs\_r400\_win\_marlboro  
update

Change 55332 on 2002/10/04 by lfebevr@lfebevr\_r400  
Small update regarding allocs.

Change 55327 on 2002/10/04 by alleng@alleng\_r400\_win\_marlboro  
Additional information regarding the color and depth cache tests...

Change 55302 on 2002/10/04 by jimmylau@jimmylau\_r400\_win\_tor  
Updates SCL-CRTC interface specs based on interface review on Sept 25, 02

Change 55285 on 2002/10/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Enter new SC perf test

Change 55209 on 2002/10/03 by csampayo@fl\_csampayo\_r400  
Added bug# 70

Change 55208 on 2002/10/03 by gregs@laptop1  
added issues/notes related to pad ring.

Change 55199 on 2002/10/03 by csampayo@fl\_csampayo\_r400  
Added 4 new DMA swap tests and updated test\_list and the test tracker

Change 55179 on 2002/10/03 by gregs@laptop1

Page 155 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

added DVO power pads + added ESD pads (not distributed yet) + equalized sides to approximately the same size + clean-up

Change 55164 on 2002/10/03 by mzhu@mzhu\_crayola\_win\_tor  
Modify the 3rd milestone tests

Change 55163 on 2002/10/03 by jacarey@fl\_jcarey2  
Updates to Gradfill packet  
Update to comment on setting the 2D B3 Boolean

Change 55162 on 2002/10/03 by jacarey@fl\_jcarey2  
Boolean B3 should be '0' for SRC\_TYPE=0.  
Mark Earl will check-in the emulator update.

Change 55136 on 2002/10/03 by mpersaud@mpersaud\_r400\_win\_tor  
Updated interface as per interface spec review on September 27.

Change 55094 on 2002/10/03 by kmahler@kmahler\_r400\_doc\_lib  
Another intermediate revision.... getting closer :)

Change 55083 on 2002/10/03 by smorein@smorein\_r400  
initial version of performance counter spec, block leads and arch need to view and edit

Change 55036 on 2002/10/03 by csampayo@fl\_csampayo\_r400  
VGT housekeeping

Change 54988 on 2002/10/03 by rbell@rbell\_crayola\_win\_cvd  
Completed digital output tests and teapot test.

Change 54971 on 2002/10/03 by jacarey@fl\_jcarey2  
Minor updates to register default values and minimal power-up sequence.

Change 54899 on 2002/10/02 by gregs@gregs\_r400\_win\_marlboro  
open issues update

Change 54893 on 2002/10/02 by gregs@gregs\_r400\_win\_marlboro  
Fixed the PadList name :)

Page 156 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 54882 on 2002/10/02 by gregs@gregs\_r400\_win\_marlboro  
DEF generator pages cleaned-up.

Change 54810 on 2002/10/02 by csampayo@fl\_csampayo\_r400  
Forgot to save previous updates

Change 54802 on 2002/10/02 by csampayo@fl\_csampayo\_r400  
Added 3 new VGT tests with negative index offsets and updated test\_list and the test tracker

Change 54725 on 2002/10/02 by kmahler@kmahler\_r400\_doc\_lib  
Another intermediate revision of the initial spec.

Change 54701 on 2002/10/01 by gregs@gregs\_r400\_win\_marlboro  
update (Tuesday)

Change 54679 on 2002/10/01 by tshah@fl\_tshah  
vgt skew count changes in decoument and code -- threshold must be a non-zero even number

Change 54634 on 2002/10/01 by smoss@smoss\_crayola\_win  
SU tests

Change 54610 on 2002/10/01 by mzhu@mzhu\_crayola\_win\_tor  
Add LUT and frame buffer fill pattern for digital output

Change 54584 on 2002/10/01 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update more stipple test documentation...

Change 54567 on 2002/10/01 by gregs@gregs\_r400\_win\_marlboro  
added mux for core\_voigt\_cnt[1:0] pins

Change 54550 on 2002/10/01 by jacarey@fl\_jcarey2  
Partial updates for new 2D packets

Change 54523 on 2002/10/01 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update new window offset tests.

Page 157 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 54518 on 2002/10/01 by mpersaud@mpersaud\_r400\_win\_tor  
Added to CRTV\_TV.doc

Change 54490 on 2002/10/01 by jacarey@fl\_jcarey\_desktop  
Miscellaneous clarifications to the RT event engine diagram.

Change 54476 on 2002/09/30 by kmahler@kmahler\_r400\_doc\_lib  
More updates to the initial design doc.

Change 54464 on 2002/09/30 by gregs@gregs\_r400\_win\_marlboro  
added DEBUG bus connections

Change 54447 on 2002/09/30 by gregs@gregs\_r400\_win\_marlboro  
closed ring with comers.

Change 54416 on 2002/09/30 by mdoggett@MA\_MDOGGETT\_LT  
Added FetchMultiSample.

Change 54370 on 2002/09/30 by jacarey@fl\_jcarey2  
Added compound index details for Stretch Blit Support.

Change 54347 on 2002/09/30 by jacarey@fl\_jcarey2  
Add register to the poll\_valid signal to align with data.

Change 54321 on 2002/09/30 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 54301 on 2002/09/30 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 54279 on 2002/09/30 by vgoel@fl\_vgoel2  
added bugzilla number 435

Change 54269 on 2002/09/30 by jcox@jcox\_r400  
fix size of chart

Page 158 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 54264 on 2002/09/30 by jcox@jcox\_r400  
Fix macro for dating chart

Change 54263 on 2002/09/30 by jcox@jcox\_r400  
Fix miscellaneous issues with Emulation regression summary and detail charts

Change 54261 on 2002/09/30 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update usage of regress\_r400

Change 54252 on 2002/09/29 by csampayo@fl\_csampayo\_it\_r400  
Updated status for the VGT tests:  
r400vgt\_index\_offset\_04  
r400vgt\_index\_offset\_05

Change 54248 on 2002/09/29 by gregs@laptop1  
Sunday update

Change 54184 on 2002/09/27 by rfevreau@rfevreau\_r400\_win  
Added new job file and rg files for VIP full chip run  
DVO Testlist update

Change 54165 on 2002/09/27 by jcox@jcox\_r400  
Add Emulator test plans to web

Change 54162 on 2002/09/27 by gregs@laptop1  
Friday update

Change 54124 on 2002/09/27 by jcox@web\_sync  
Changes to publish charts to web (add close workbook macro)

Change 54120 on 2002/09/27 by gabarca@gabarca\_crayola\_win\_cvd  
updated, still not with the meeting conclusions

Change 54118 on 2002/09/27 by jcox@fl\_jcox2\_web  
Add macros to output charts to web

Change 54069 on 2002/09/27 by csampayo@fl\_csampayo\_r400

Page 159 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated bug# 67

Change 54055 on 2002/09/27 by dougd@doug  
Updated area of sq block based on netlist submitted 9/27/02

Change 54049 on 2002/09/27 by csampayo@fl\_csampayo\_r400  
Some housekeeping...

Change 54045 on 2002/09/27 by kevin@kevin\_r400\_win\_marlboro  
latest

Change 54028 on 2002/09/27 by jacarey@fl\_jcarey2  
Clean Up Spec per actual connections.

Change 53988 on 2002/09/26 by gregs@gregs\_r400\_win\_marlboro  
update

Change 53953 on 2002/09/26 by smoss@smoss\_crayola\_win  
SU tests

Change 53900 on 2002/09/26 by jacarey@fl\_jcarey\_desktop  
Make 2D Default registers write only. Readable via the ME\_STATMUX

Change 53857 on 2002/09/26 by jacarey@fl\_jcarey\_desktop  
Update Event\_Write packet to include all events

Change 53850 on 2002/09/26 by nbarbier@nbarbier\_r400\_win\_tor  
Updated interface document after review meeting.

Change 53842 on 2002/09/26 by rfevreau@rfevreau\_r400\_win  
Docs updates

Change 53804 on 2002/09/26 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 53802 on 2002/09/26 by vgoel@fl\_vgoel2  
updated for closed bugs

Page 160 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 53795 on 2002/09/26 by prunstad@prunstad\_r400\_win\_marl  
Updated mh area.

Change 53760 on 2002/09/26 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Close out two bugs

Change 53709 on 2002/09/25 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
1st draft of sample counter test

Change 53699 on 2002/09/25 by gregs@gregs\_r400\_win\_marlboro  
update

Change 53678 on 2002/09/25 by csampayo@fl\_csampayo\_r400  
Closed bug# 66.

Change 53638 on 2002/09/25 by tien@ma\_spinach  
updated TP and TC areas

Change 53622 on 2002/09/25 by smoss@smoss\_crayola\_win  
update

Change 53614 on 2002/09/25 by jasif@jasif\_r400\_win\_tor  
Updated regression test names.

Change 53607 on 2002/09/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Poly offset / scale tests

Change 53556 on 2002/09/25 by jacarey@fl\_jcarey\_desktop  
Update CP's Buffer Sizes to a 2^20 DWORD limit.

Change 53534 on 2002/09/25 by csampayo@fl\_csampayo\_r400  
Added Bugzilla report# to bug# 67

Change 53531 on 2002/09/25 by tshah@fl\_tshah  
Logic for Field Affecting Operation (FAO)

Change 53503 on 2002/09/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Log potential bug

Change 53502 on 2002/09/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Log potential bug

Change 53499 on 2002/09/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Poly Offset combinations...

Change 53496 on 2002/09/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Document r400sc\_poly\_offset\_03 test

Change 53477 on 2002/09/24 by gregs@gregs\_r400\_win\_marlboro  
update

Change 53472 on 2002/09/24 by gregs@gregs\_r400\_win\_marlboro  
update

Change 53466 on 2002/09/24 by csampayo@fl\_csampayo\_r400  
Try again

Change 53464 on 2002/09/24 by csampayo@fl\_csampayo\_r400  
Added bug#67

Change 53454 on 2002/09/24 by efong@efong\_r400\_win\_tor\_doc  
Initial Leda Proposal

Change 53451 on 2002/09/24 by csampayo@fl\_csampayo\_r400  
Added new VGT test. Updated test\_list and test tracker

Change 53423 on 2002/09/24 by csampayo@fl\_csampayo\_r400  
Closed bug# 61 and added bug# 66

Change 53396 on 2002/09/24 by gregs@gregs\_r400\_win\_marlboro  
package.xls is now the official r400 spreadsheet.

Change 53395 on 2002/09/24 by gregs@gregs\_r400\_win\_marlboro

< NEW - using rv350 pads now >

Change 53382 on 2002/09/24 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
first pass for M3 test

Change 53372 on 2002/09/24 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated test lib

Change 53368 on 2002/09/24 by khabbari@khabbari\_r400\_win  
test plan for lb released

Change 53367 on 2002/09/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Log bug, rectangle list broken when CL clipping enabled and clipped

Change 53361 on 2002/09/24 by georgev@ma\_georgev  
Added PV to master document.

Change 53359 on 2002/09/24 by alleng@alleng\_r400\_win\_marlboro  
Initial checkin of Performance Verification test plan...

Change 53356 on 2002/09/24 by khabbari@khabbari\_r400\_win  
added HTOTAL\_BY\_8 to the interface

Change 53347 on 2002/09/24 by frivas@FL\_FRivas  
Update to HOS test description.

Change 53280 on 2002/09/24 by jacarey@fl\_jcarey\_desktop  
Add Fix2Fl\_Reg PM4 Packet for Video Fols.  
PM4 Spec Update for Packet  
Add Opcode to pm4\_fl\_opcodes  
New Unit Test Included

Change 53266 on 2002/09/24 by efong@efong\_r400\_win\_tor\_doc  
The Excel spreadsheet version of the R400 Regression milestones.doc

Change 53242 on 2002/09/24 by gabarca@gabarca\_crayola\_win\_cvd  
added blink\_sequence1 test

Change 53200 on 2002/09/23 by csampayo@fl\_csampayo\_r400  
Added new VGT index reset test. Updated test\_list and test tracker

Change 53167 on 2002/09/23 by jacarey@fl\_jcarey\_desktop  
1. Comment Only Correction to the Microcode  
2. Update Brush\_X and Brush\_Y pointers in PM4 spec to be of the range 0.0 to 7.0

Change 53165 on 2002/09/23 by frising@ma\_frising  
v.1.53  
Updates to FetchMultiSample:  
-Added Point Filter to MSA\_A\_FILTER\_FUNCTION. This will be used to return a specific sample.  
-OFFSET\_Z will be used to specify which sample to return.  
-For fetchmultisample constant, renamed OUT fields to RESULT and COLOR0 fields to MSA\_A. Also swapped their locations. This may be slightly unexpected for SW but makes RESULT\_FORMAT align with DATA\_FORMAT which is more consistent for TC/TP. Note these fields may go under an additional name change once the new MSA\_A registers had been named...all in the name of consistency.

Change 53162 on 2002/09/23 by jacarey@fl\_jcarey\_desktop  
Clarifications to LCC and Set\_Constant Packet

Change 53111 on 2002/09/23 by tshah@fl\_tshah  
Only CPQ\_DATA\_SWAP bit controls the CP\_PUSH\_\* data swap

Change 53072 on 2002/09/23 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 53056 on 2002/09/23 by jacarey@fl\_jcarey\_desktop  
Documented ROP3's that are supported in R400 for 2D.

Change 53020 on 2002/09/23 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 53019 on 2002/09/23 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Poly Offset, 8 MSA\_A, HOS

Change 53007 on 2002/09/23 by jacarey@fl\_jcarey\_desktop



- 1. Update for oper=clrrepack function for Dst\_Type==2
- 2. Update sizes for physical memories.

Change 52992 on 2002/09/23 by mpersaud@mpersaud\_r400\_win\_tor

Rev 0.7 Mahendra Persaud  
Added TV\_CRTC\_framestart\_freq[1:0] port.

Change 52951 on 2002/09/22 by rthambim@rthambim\_r400\_win\_tor

Expanded the address width from MH to BIF.

Change 52950 on 2002/09/22 by rthambim@rthambim\_r400\_win\_tor

Added status signals.

Change 52949 on 2002/09/22 by rthambim@rthambim\_r400\_win\_tor

Included Multi-Function changes.

Change 52866 on 2002/09/20 by csampayo@fl\_csampayo\_r400

Added 2 new VGT tests and updated test\_list and the test tracker accordingly

Change 52854 on 2002/09/20 by mzhu@mzhu\_crayola\_win\_tor

Add test plan for 3rd Milestone features

Change 52843 on 2002/09/20 by gregs@gregs\_r400\_win\_marlboro

Friday's update

Change 52804 on 2002/09/20 by mkelly@fl\_mkelly\_r400\_win\_laptop

Log potential texture / baryc bug

Change 52794 on 2002/09/20 by mkelly@fl\_mkelly\_r400\_win\_laptop

Review and update SC test validation tracking...

Change 52756 on 2002/09/20 by csampayo@fl\_csampayo\_it\_r400

Added bug# 63

Change 52730 on 2002/09/20 by rherrick@ma\_rherrick\_crayola

Implementing SWAP mode in parser through to client interface... Change all tests to include SWAP\_NONE required field...

Page 165 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Also implementing parts of RANDOM mode on address transactions...

Change 52722 on 2002/09/20 by rbell@rbell\_crayola\_win\_cvd

Updated

Change 52648 on 2002/09/19 by csampayo@fl\_csampayo\_r400

Added 1 new VGT event handling test and updated the test\_list and test tracker accordingly

Change 52615 on 2002/09/19 by mzhu@mzhu\_crayola\_win\_tor

Update test plan for third milestone

Change 52610 on 2002/09/19 by csampayo@fl\_csampayo\_it\_r400

Some VGT housekeeping

Change 52551 on 2002/09/19 by rramsey@RRAMSEY\_P4\_r400\_win

Clean up RTS data in the SC  
Change sc\_walker so that hw\_scissor is passed down instead of recalculated in the walker  
Remove registry check for covered edge bias fix, it's always on now  
Add covered edge bias fix to RTL (sc\_pipe)  
Clean up some compile warnings in the app  
Add some documentation on line\_stipple

Change 52531 on 2002/09/19 by gabarca@gabarca\_crayola\_win\_cvd

updated

Change 52506 on 2002/09/19 by mkelly@fl\_mkelly\_r400\_win\_laptop

Cycle SC\_SAMPLE\_CNTL permutations with all printrtypes  
Cycle MSAA, 192 packets

Change 52487 on 2002/09/19 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

updated test list

Change 52482 on 2002/09/19 by mkelly@fl\_mkelly\_r400\_win\_laptop

Primitive should be gouraud shaded, it is flat shaded.  
Related to PARAM\_GEN = true, CENTERS\_ONLY, and SAMPLE\_CENTER  
IF PARAM\_GEN = false, gouraud shading works as expected.

Change 52475 on 2002/09/19 by gregs@gregs\_r400\_win\_marlboro

Page 166 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

added default values for rom\_pads\_reg

Change 52449 on 2002/09/19 by kmahler@kmahler\_r400\_doc\_lib

Added Prmlib documents to doc\_lib.

Change 52431 on 2002/09/18 by gregs@gregs\_r400\_win\_marlboro

It passes read\_write test.

Change 52430 on 2002/09/18 by gregs@gregs\_r400\_win\_marlboro

added note about auto-increment of index register

Change 52429 on 2002/09/18 by csampayo@fl\_csampayo\_r400

Added 5 new VGT prim tests and updated test\_list and test tracker accordingly

Change 52426 on 2002/09/18 by gregs@gregs\_r400\_win\_marlboro

added ROM pads control register

Change 52411 on 2002/09/18 by bryans@bryans\_crayola\_doc

Update for 09/16

Change 52401 on 2002/09/18 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

updated test list and dates

Change 52388 on 2002/09/18 by gregs@gregs\_r400\_win\_marlboro

fixed couple of bit fields XSTRAP2 register

Change 52382 on 2002/09/18 by mdoggett@MA\_MDOGGETT\_LT

Added DXN

Change 52363 on 2002/09/18 by mzhu@mzhu\_crayola\_win\_tor

Add more description in 11.1.2 and 11.1.3 for double buffer in horizontal retrace

Change 52342 on 2002/09/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

close bug

Change 52334 on 2002/09/18 by mpersaud@mpersaud\_r400\_win\_tor

Added vsync and hsync going to dac capture model

Page 167 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 52324 on 2002/09/18 by jacarey@fl\_jcarey\_desktop

Intrinsic function for unpacking colors to 8888 format

Change 52300 on 2002/09/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

Cycle primitive types through all MSAA and JSS modes.

Change 52295 on 2002/09/18 by nbarbier@nbarbier\_r400\_win\_tor

Added DOUT\_I2C tests for M3.

Change 52294 on 2002/09/18 by jhoule@MA\_JHOULE

Adding it for Tien (he had problems)

Change 52268 on 2002/09/18 by csampayo@fl\_csampayo\_r400

Added bug# 61

Change 52265 on 2002/09/18 by jacarey@fl\_jcarey\_desktop

Update for Alpha Color Defaults for RGB565 brush color format.

Change 52257 on 2002/09/18 by rbell@rbell\_crayola\_win\_cvd

updated

Change 52230 on 2002/09/18 by jacarey@fl\_jcarey\_desktop

Update to SRC terms for small\_text and hostdata\_blt\* packets (i.e. 32-bit SRC\_OFFSET)  
Updated the fixed constants that are in the C7 vertex shader constant.

Change 52229 on 2002/09/18 by jacarey@fl\_jcarey\_desktop

Update for 32-bit SRC\_Offset term for Small\_Text and HostData\_Blt\* packets  
Clarification for Foreground and Background Colors = Dst\_Type Format

Change 52226 on 2002/09/18 by efong@efong\_r400\_win\_tor\_doc

Added in a whole bunch of visio diagrams for some of the models

Change 52221 on 2002/09/18 by jacarey@fl\_jcarey\_desktop

Update CP\_STQ\_AVAIL register fields

Change 52204 on 2002/09/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

Page 168 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

RB asserts when polygon with MSA = 0,1,2,3 followed by point list MSA = 5. If polygon MSA = 5 or 7 the test completes as expected.

\$r400/develop/test\_list/src/chip/gfx/pa/bugs

make r400sc\_sp\_sample\_cntl\_08\_bug\_emu

Assertion failed: (coverage&errmask) == 0, file .\..\..\emu\_lib\model\gfx\rb\rb\_color\_model.cpp, line 334  
make[2]: [run\_emu] Error 3 (ignored)

Change 52182 on 2002/09/17 by nbarbier@nbarbier\_r400\_win\_tor

Updated DAC, TMDS & DVO sections for M3 requirements.

Change 52181 on 2002/09/17 by csampayo@fl\_csampayo\_r400

Housekeeping update

Change 52180 on 2002/09/17 by csampayo@fl\_csampayo\_r400

Added 4 new VGT prim tests and updated test\_list and the test tracker accordingly.

Change 52165 on 2002/09/17 by sbagshaw@sbagshaw

modified to add additional details to one-shot mode renamed all of the registers to have a DC\_ prefix

Change 52045 on 2002/09/17 by kevin@kevin\_r400\_win\_marlboro

tcflux for texture offsets (sample shift)

Change 52031 on 2002/09/17 by vgoel@fl\_vgoel2

added bugs 385, 386

Change 52030 on 2002/09/17 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

update

Change 52025 on 2002/09/17 by smoss@smoss\_crayola\_win

bug in primlib

Change 52024 on 2002/09/17 by rfevreau@rfevreau\_r400\_win

Updates

Page 169 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 52020 on 2002/09/17 by chwang@chwang\_doc\_r400\_win\_cvd

Update.

Change 52018 on 2002/09/17 by csampayo@fl\_csampayo\_r400

Housekeeping update

Change 52009 on 2002/09/17 by mdoggett@MA\_MDOGGETT\_LT

Added L2 Block Offsets

Change 51990 on 2002/09/17 by frivas@FL\_FRivas

Update to status of a HOS test.

Change 51904 on 2002/09/16 by sbagshaw@sbagshaw

R400 Test Debug Bus for Toronto Crayola blocks

Change 51897 on 2002/09/16 by csampayo@fl\_csampayo\_r400

Added 3 new VGT prim tests and updated test\_list and the test tracker accordingly.

Change 51864 on 2002/09/16 by mpersaud@mpersaud\_r400\_win\_tor

Added Q\_DCCIF\_W256ONLY and Q\_DCCIF\_WC\_TIMEOUT[5:0] to interface

Change 51792 on 2002/09/16 by frising@ma\_frising

v1.52

-MSAA\_NUM\_SAMPLES now replaces ARBITRARY\_FILTER in FetchMultiSample constant. Users will be expected to set ARBITRARY\_FILTER via the instruction when/if needed. Use of constant value for this case will be undefined (and will likely result in MSA\_NUM\_SAMPLES being used).

Change 51786 on 2002/09/16 by kmahler@kmahler\_r400\_doc\_lib

Added description for using Control Flow Boolean Constants and Control Flow Loop Constants.

Change 51784 on 2002/09/16 by kmahler@kmahler\_r400\_doc\_lib

Changed format of Fetch Instruction that only perform "Set" type operations by removing the destination operand and the 'base' source operand (the constant register operand).

Added the following syntax changes:

Page 170 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

1) Predicate stack as a destination operand cannot be an export register, thus all predicate setting operation must have a GPR as the destination.

2) Predicate setting operations CANNOT specify clamp, negate and absolute modifiers.

3) Kill operations CANNOT specify CLAMP.

4) ALU instructions that export to Position, Color, or Fog cannot be predicated.

5) KILL, MOVA, and PRED\_SET type instructions may not be coissued with each other.

Added restriction that the shader program cannot use the Address Register Relative Mode within an exec\_end or a cexec\_end low-level control flow instruction.

Change 51767 on 2002/09/16 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 51748 on 2002/09/16 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 51741 on 2002/09/16 by vgoel@fl\_vgoel2

added potential bug with dumpview in displaying output of test with high tessellation level

Change 51672 on 2002/09/15 by gregs@laptop1

< added comments about TST.CG\_test\_sel signal >

Change 51561 on 2002/09/13 by gregs@regs\_r400\_win\_marlboro

Friday update

Change 51495 on 2002/09/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 51490 on 2002/09/13 by csampayo@fl\_csampayo\_lt\_r400

Added to test\_list and updated status for test: r400vgt\_multi\_prim\_reset\_index\_all\_01

Change 51449 on 2002/09/13 by gregs@regs\_r400\_win\_marlboro

<minor updates>

Change 51438 on 2002/09/13 by jacarey@fl\_jcarey\_desktop

Page 171 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Adjust Registers for Visibility

Change 51430 on 2002/09/13 by vgoel@fl\_vgoel2

updated bugs which are resolved

Change 51331 on 2002/09/13 by gregs@regs\_r400\_win\_marlboro

< SDI and SDP swapped >

Change 51314 on 2002/09/13 by jacarey@fl\_jcarey\_desktop

Removed ROP=0xCC note from PM4 spec for brush types 0x6 and 0x7

Change 51233 on 2002/09/12 by vgoel@fl\_vgoel2

added bug 365, PA hanging if vertex export is enabled.

Change 51228 on 2002/09/12 by whui@whui\_r400\_win\_tor

update idct\_status

Change 51201 on 2002/09/12 by csampayo@fl\_csampayo\_r400

1. Added 5 new VGT provoking vtx tests  
2. Updated test\_list and test tracker

Change 51196 on 2002/09/12 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

updated test after picasso change

Change 51090 on 2002/09/12 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 51069 on 2002/09/12 by jacarey@fl\_jcarey\_desktop

Update for oper=gmcodecode: Brush Type 0x6 and 0x7 set bit 15 of result

Change 51068 on 2002/09/12 by jacarey@fl\_jcarey\_desktop

32x1 Brush Types are not converted to 32bpp by the CP.

Change 51044 on 2002/09/12 by rbell@rbell\_crayola\_win\_cvd

updated

Change 51003 on 2002/09/12 by jowang@jowang\_R400\_win

Page 172 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



add large v downscale case to debug

Change 51001 on 2002/09/12 by jowang@jowang\_R400\_win  
added debug scaling tests

Change 50985 on 2002/09/12 by mzhu@mzhu\_crayola\_win\_tor  
Update STEREO SYNC algorithm

Change 50910 on 2002/09/11 by gregs@gregs\_r400\_win\_marlboro  
update

Change 50873 on 2002/09/11 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 50836 on 2002/09/11 by kmahler@kmahler\_r400\_doc\_lib  
Made the following changes:

- 1) Removed ALL references of clauses.
- 2) Moved Texture Instruction definitions from chapter 3 into Appendix.
- 3) Removed remaining portion of Chapter 3, since the information was duplicated in Chapter 4. Chapter 4 is now chapter 3.
- 4) Made major revisions to Chapter 8 "Programming Syntax And Usage".
  - Re-ordered sections to improve flow.
  - Updated the low-level control flow syntax.
  - Added details for the mid-level control flow syntax.
  - Updated predication instruction syntax and description.
  - Removed previous vector and previous scalar syntax from ALU source operands.
  - Enhanced register indexing.
  - Updated ALU instruction syntax to properly describe vector and scalar operations that do not conform to the general syntax; mova type, kill type, and predicate setting type operations.
  - Corrected the usage of 'instruction' where 'operation' was meant in the description of ALU instructions.
- 5) Removed chapter 10 "Program text file format" since it was redundant information.
- 6) Made minor enhancements to descriptions.
- 7) Added Cross-References where appropriate and started using a standard for these using the form:

Page 173 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

see section header\_number:"header\_text" on page #

This allows hardcopy readers the ability to easily locate a reference (see section 8.4.2.3.1 "Vector Operations" on page 38 for an example).

8) Modified the Appendix:

- Removed the following due to duplication:
  - Syntax Reference.
  - Control Flow from Instruction Reference.
- Moved BNF further down.
- Revised Instruction Reference.
- Updated examples to mid-level syntax.

Change 50802 on 2002/09/11 by jcox@jcox\_r400\_win  
Moving to r400/web directory

Change 50800 on 2002/09/11 by jcox@jcox\_r400\_win  
Initial Checkin of R400 Web

Change 50799 on 2002/09/11 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 50758 on 2002/09/11 by csampayo@fl\_csampayo\_r400  
Some housekeeping updates

Change 50728 on 2002/09/11 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Logged sq dump bug for record keeping

Change 50722 on 2002/09/11 by rfevreau@rfevreau\_r400\_win  
Test #7

Change 50707 on 2002/09/11 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Simple triangle, polymode back face tri fill

Change 50647 on 2002/09/10 by gregs@gregs\_r400\_win\_marlboro  
update (only 3 ERRORS in build\_io.log)

Change 50632 on 2002/09/10 by smoss@smoss\_crayola\_win

Page 174 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

bug fix

Change 50623 on 2002/09/10 by smoss@smoss\_crayola\_win  
su tests

Change 50615 on 2002/09/10 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 50605 on 2002/09/10 by subad@MA\_SUBA  
Updated Area numbers of TCD with the new code

Change 50578 on 2002/09/10 by jacarey@fl\_jcarey\_desktop  
Update POLYLINE pseudocode.

Change 50566 on 2002/09/10 by grayc@grayc\_r400\_win  
added minutes for last two meetings

Change 50539 on 2002/09/10 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Updates...

Change 50485 on 2002/09/10 by csampayo@fl\_csampayo\_r400  
Format update

Change 50456 on 2002/09/10 by llefevre@llefevre\_laptop\_r400  
New spin of the SQ spec including some interface changes and auto-counter architectural changes (for multipass pixel/vertex shaders).

Change 50441 on 2002/09/10 by jimmylau@jimmylau\_r400\_win\_tor  
Minor changes in CRTIC testplan document

Change 50413 on 2002/09/10 by jacarey@fl\_jcarey\_desktop  
Added Cache\_Flush\_and\_Invalidate\_TS to Event\_TimeStamp\_Write packet

Change 50403 on 2002/09/10 by jacarey@fl\_jcarey\_desktop  
Add Result Reuse to Diagram

Change 50398 on 2002/09/10 by jacarey@fl\_jcarey\_desktop

Page 175 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update Indice count for Polyline packet

Change 50347 on 2002/09/09 by csampayo@fl\_csampayo\_r400  
1. Added SU multi-context test  
2. Updated test\_list and test tracker accordingly

Change 50340 on 2002/09/09 by gabarca@gabarca\_crayola\_win\_cvd  
updated after meeting

Change 50339 on 2002/09/09 by gregs@gregs\_r400\_win\_marlboro  
update

Change 50332 on 2002/09/09 by gabarca@gabarca\_crayola\_win\_cvd  
added timing for each VGA mode

Change 50326 on 2002/09/09 by nbarbier@nbarbier\_r400\_win\_tor  
Updated DVO specs.

Change 50296 on 2002/09/09 by hartogs@fl\_hartogs  
Added section on determining the required amount of input data based on the draw initiator and the grouper registers.  
Added section on sanity checks for programming the grouper in major mode 1.

Change 50249 on 2002/09/09 by vgoel@fl\_vgoel2  
closed bug issue for PNTQL

Change 50246 on 2002/09/09 by mzhu@mzhu\_crayola\_win\_tor  
Update ICON and CURSOR X2 magnification algorithm.

Change 50213 on 2002/09/09 by frising@ma\_frising  
v1.51  
-Add in 32-bit clear color to texture constant layout for FetchMultiSample.  
This involved replacing CLAMP\_Z (which did nothing for FetchMultiSample) with FILTER\_FUNCTION. Note that FILTER\_FUNCTION is 3 bits (from 6).  
Drivers will be required to do a resolve pass when using fast color clear for multisample render targets > 32 bits prior to a multisample fetch. Currently we only have one such format (4x16).

Page 176 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



In the future (r1vH507), it may be desirable to fetch individual samples into the shader pipe. This might be accomplished by a FILTER\_FUNCTION opcode that usurps the clear color bits. In this case (low performance anyways) a fast color expand might always be required. But again, this has not yet been designed and is future looking...

- Change 50206 on 2002/09/09 by smoss@smoss\_crayola\_win  
su tests
- Change 50185 on 2002/09/09 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
change test to crtc2  
updated test list
- Change 50184 on 2002/09/09 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated
- Change 50171 on 2002/09/09 by efong@efong\_r400\_win\_tor\_doc  
Updated
- Change 50160 on 2002/09/09 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.
- Change 50156 on 2002/09/09 by csampayo@fl\_csampayo\_r400  
Updated status for bug# 48
- Change 50147 on 2002/09/09 by mzhu@mzhu\_crayola\_win\_tor  
Update STEREO SYNC algorithm
- Change 50142 on 2002/09/09 by grayc@grayc\_r400\_win  
update to add cp functions for mti\_ufi.dll compile
- Change 50127 on 2002/09/09 by efong@efong\_r400\_win\_tor\_doc  
Updated
- Change 50052 on 2002/09/06 by gregs@gregs\_r400\_win\_marlboro  
io\_internal.v ready - memory connection missing.
- Change 50032 on 2002/09/06 by kevin@kevin\_r400\_win\_marlboro

Updated to give more detail about which tests need to be covered for which tex dimensions

- Change 50014 on 2002/09/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Initial check of sc sample control for centers and centroids in the sc\_sp
- Change 50011 on 2002/09/06 by mzhu@mzhu\_crayola\_win\_tor  
Date: September 6, 2002  
Add more description for LUT BLACK\_OFFSET and WHITE\_OFFSET in chapter 11.8  
Change icon mix algorithm for data clamping in chapter 11.1.4  
Change cursor mix algorithm for data clamping in chapter 11.1.6
- Change 49997 on 2002/09/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update new stipple tests
- Change 49994 on 2002/09/06 by jacarey@fl\_jcarey\_desktop  
Correct booleans again for transbitblt
- Change 49991 on 2002/09/06 by jacarey@fl\_jcarey\_desktop  
Update boolean settings for
- Change 49986 on 2002/09/06 by gabarca@gabarca\_crayola\_win\_cvd  
updated after meeting
- Change 49983 on 2002/09/06 by rbell@rbell\_crayola\_win\_cvd  
updated for review
- Change 49982 on 2002/09/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update
- Change 49952 on 2002/09/06 by rbell@rbell\_crayola\_win\_cvd  
updated list (all tests should be done now)!
- Change 49943 on 2002/09/06 by vgoel@fl\_vgoel2  
entered bug 48
- Change 49938 on 2002/09/06 by csampayo@fl\_csampayo\_r400  
Updated Viz Query controls. Updated test status

- Change 49903 on 2002/09/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update with msaa tests from yesterday
- Change 49888 on 2002/09/06 by jacarey@fl\_jcarey\_desktop  
Document clearing of B4 and C2.x boolean if ROP[7:4] != ROP[3:0] for Blt and Text packets.
- Change 49883 on 2002/09/06 by jacarey@fl\_jcarey\_desktop  
Update for Timing
- Change 49873 on 2002/09/05 by gabarca@gabarca\_crayola\_win\_cvd  
updated disp doc
- Change 49860 on 2002/09/05 by csampayo@fl\_csampayo\_r400  
Added bug# 47
- Change 49850 on 2002/09/05 by vgoel@fl\_vgoel2  
added bugzilla bug 337
- Change 49832 on 2002/09/05 by csampayo@fl\_csampayo\_r400  
Added and closed bug# 45
- Change 49828 on 2002/09/05 by mpersaud@mpersaud\_r400\_win\_tor  
Updated interface and top level diagram net names to match code.
- Change 49822 on 2002/09/05 by csampayo@fl\_csampayo\_r400  
1. Added 1 new VGT test for event handling  
2. Updated test\_list and test tracker accordingly
- Change 49810 on 2002/09/05 by frising@ma\_frising  
v.1.50  
-Remove FMASK\_BASE from FetchMultiSample constant. Larry tells me this is now encoded at a fixed offset from COLOR0\_BASE.
- Change 49802 on 2002/09/05 by frivas@fl\_FRivas  
Added a HOS Tri-Patch test.

- Change 49786 on 2002/09/05 by askende@andi\_r400\_docs  
new rev. 1.7
- Change 49760 on 2002/09/05 by kcorrell@kcorrell\_r400\_docs\_marlboro\_nb  
updated version - submitted now to update gart documentation
- Change 49722 on 2002/09/05 by frivas@FL\_FRivas  
Added two HOS tests (Tri-Patch and Line-Patch).
- Change 49717 on 2002/09/05 by llefebvre@llefebvre\_laptop\_r400  
updated spec.
- Change 49704 on 2002/09/05 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Log a local sc bug
- Change 49698 on 2002/09/05 by bbuchner@fl\_bbuchner\_r400\_win  
updated spec to match changes made for TE timing
- Change 49695 on 2002/09/05 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update
- Change 49681 on 2002/09/05 by rbell@rbell\_crayola\_win\_cvd  
Added CSC tests, and updated LUT list (gamma 2.5 fill)
- Change 49595 on 2002/09/04 by csampayo@fl\_csampayo\_r400  
1. Added bug test case  
2. Updated bug# 43 on Bug Tracker
- Change 49594 on 2002/09/04 by vgoel@fl\_vgoel2  
added bug 32 to bugzilla (bug 333)
- Change 49574 on 2002/09/04 by smoss@smoss\_crayola\_win  
SU test
- Change 49572 on 2002/09/04 by efong@efong\_r400\_win\_tor\_doc  
Initial version



Change 49564 on 2002/09/04 by bryans@bryans\_crayola\_doc  
Update for new regression times

Change 49562 on 2002/09/04 by bbuchner@fl\_bbuchner\_r400\_win  
removed unused interfaces.  
fixed output unit data types for don't care data.

Change 49547 on 2002/09/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update to be current with Bugzilla

Change 49546 on 2002/09/04 by rfevreau@rfevreau\_r400\_win  
Minor fix

Change 49543 on 2002/09/04 by jowang@jowang\_R400\_win  
updated with testcase names

Change 49525 on 2002/09/04 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Change test name, update tracker...

Change 49479 on 2002/09/04 by mpersaud@mpersaud\_r400\_win\_tor  
Updated interface and top level diagram to reflect removal of hdslewifit and addition of syncgen.

Change 49477 on 2002/09/04 by jacarey@fl\_jcarey2  
Clarified Brush Expansion

Change 49462 on 2002/09/04 by bryans@bryans\_crayola\_doc  
Update as per status meeting

Change 49417 on 2002/09/03 by gabarca@gabarca\_crayola\_win\_cvd  
Finished cleaning up the test plan and gave a name to each test

Change 49374 on 2002/09/03 by mmantor@mmantor\_r400\_win  
added sc output of centers and xy data. Also passed the xy data on the ij bus between the SC and SQ

Change 49354 on 2002/09/03 by mkelly@fl\_mkelly\_r400\_win\_laptop

Initial check of MSA centermost determination.

Change 49340 on 2002/09/03 by efong@efong\_r400\_win\_tor\_doc  
Updated to the last review

Change 49336 on 2002/09/03 by bryans@bryans\_crayola\_doc  
Update

Change 49332 on 2002/09/03 by viiu@viiu\_r400\_cnviu100\_win\_cvd  
Update

Change 49306 on 2002/09/03 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 49296 on 2002/09/03 by jhoule@MA\_JHOULE  
Bringing back the PostJune15 into official location.  
Version is 1.49

Change 49290 on 2002/09/03 by jhoule@MA\_JHOULE  
Renamed SAMPLE\_POSITION to SAMPLE\_LOCATION in TFetchInstr.  
Helps to reduce confusion with TP loops (esp. anisotropy walk taking point/bilinear/arbitrary samples at different positions).

Change 49285 on 2002/09/03 by gregs@gregs\_r400\_win\_mariboro  
Update ROM/CG/CGM/DBG

Change 49282 on 2002/09/03 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 49267 on 2002/09/03 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 49244 on 2002/09/03 by llefebvre@llefebvre\_laptop\_r400  
new spec

Change 49234 on 2002/09/02 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 49232 on 2002/09/02 by askende@andi\_r400\_docs  
fixed a typo on MUL\_PREV2

Change 49141 on 2002/08/31 by askende@andi\_r400\_docs  
new rev of the spec ...rev.1.6

Change 49139 on 2002/08/30 by gabarca@gabarca\_crayola\_win\_cvd  
updated test names

Change 49133 on 2002/08/30 by csampayo@fl\_csampayo\_r400  
Revised tests requirements for VGT and SU

Change 49074 on 2002/08/30 by csampayo@fl\_csampayo\_r400  
Closed bug# 24

Change 49072 on 2002/08/30 by rfevreau@rfevreau\_r400\_win  
Updated to documentation

Change 49066 on 2002/08/30 by csampayo@fl\_csampayo\_r400  
Updated status for the following tests:  
r400vgt\_suppress\_eop\_01  
r400vgt\_suppress\_eop\_02  
r400vgt\_suppress\_eop\_03  
r400vgt\_suppress\_eop\_04

Change 49055 on 2002/08/30 by khabbari@khabbari\_r400\_win  
added start phase

Change 49040 on 2002/08/30 by grayc@grayc\_r400\_win  
added initial notes for running a chip level graphic tests

Change 49017 on 2002/08/30 by jayw@MA\_JAYW  
added 3d addressing to tile address

Change 48997 on 2002/08/30 by mzhu@mzhu\_r400\_win\_tor  
Update chapter 10.6 - 10.12

Change 48971 on 2002/08/30 by mkelly@fl\_mkelly\_r400\_win\_laptop

Potential bug in line texturing/window scissor

Change 48962 on 2002/08/30 by jacarey@fl\_jcarey\_desktop  
Removed StatMux Connections from Visio Diagram  
The connections are listed in the CP Spec.

Change 48937 on 2002/08/29 by gabarca@gabarca\_crayola\_win\_cvd  
assigned test names except render graphics text display

Change 48903 on 2002/08/29 by khabbari@khabbari\_r400\_win  
added urgency signal to lb/dcp interface

Change 48900 on 2002/08/29 by jacarey@fl\_jcarey\_desktop  
Updates for controlling queued vs. non-queued transactions from micro engine.

Change 48890 on 2002/08/29 by jayw@MA\_JAYW  
first try at fragment surface addresses and formats

Change 48888 on 2002/08/29 by jacarey@fl\_jcarey\_desktop  
Update sign extension note for the PLY\_NEXTSCAN packet.

Change 48882 on 2002/08/29 by gregs@gregs\_r400\_win\_mariboro  
<pad-ring in progress >

Change 48874 on 2002/08/29 by lkang@lkang\_r400\_win\_tor  
update

Change 48865 on 2002/08/29 by mkelly@fl\_mkelly\_r400\_win\_laptop  
\* Basic multi-texture tests  
\* 16 parameter, 64 dword texture test  
\* Expand VFD to handle up to 16 textures,  
see r400sc\_tri\_16\_par\_64\_dwords\_01.cpp for example useage

Change 48858 on 2002/08/29 by rbell@rbell\_crayola\_win\_cvd  
Finished more D2 tests

Change 48839 on 2002/08/29 by llefebvre@llefebvre\_laptop\_r400



Updated the SQ->SP interface. Added comment on the Constant load bus.

Change 48832 on 2002/08/29 by jacarey@fl\_jcarey\_desktop  
Remove direct access to the Ib1 and Ib2 base/size fetchers

Change 48824 on 2002/08/29 by jacarey@fl\_jcarey\_desktop  
Clarification for memory usage for Brush and Palette

Change 48814 on 2002/08/29 by mdoggett@MA\_MDOGGETT\_LT  
Updated L2 formats table. Added L2 sector address maps. Started adding new L1 block offset calcs per format.

Change 48813 on 2002/08/29 by kevin@kevin\_r400\_win\_marlboro  
added rb\_assert test case.

Change 48810 on 2002/08/29 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 48805 on 2002/08/29 by frivas@FL\_FRivas  
Update to HOS section for new RECT patch tests.

Change 48786 on 2002/08/29 by jacarey@fl\_jcarey2  
Micro Engine Updates for NQ Flag

Change 48778 on 2002/08/29 by jacarey@fl\_jcarey2  
Add NQ Flag Processing....

Change 48768 on 2002/08/29 by csampayo@fl\_csampayo\_r400  
Updated description for the following tests:  
r400vgt\_multi\_context\_04  
r400vgt\_multi\_context\_05  
r400vgt\_multi\_context\_06  
r400vgt\_multi\_context\_07  
r400vgt\_multi\_context\_08  
r400vgt\_multi\_context\_09  
r400vgt\_multi\_context\_10  
r400vgt\_multi\_context\_11

Change 48756 on 2002/08/29 by rbell@rbell\_crayola\_win\_cvd

Page 185 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

finished pre-multiplied alpha, some date changes

Change 48677 on 2002/08/28 by gabarca@gabarca\_crayola\_win\_cvd  
Updated the ATTR\_PPAN =8, 8 dot case

Change 48669 on 2002/08/28 by jowang@jowang\_R400\_win  
updated for tests and precision

Change 48668 on 2002/08/28 by jayw@MA\_JAYW  
frag in progress

Change 48649 on 2002/08/28 by vgoel@fl\_vgoel2  
entered non-reported bug reports to bugzilla and entered their bug number

Change 48638 on 2002/08/28 by vgoel@fl\_vgoel2  
added few more tests (hos and tone mapping, stereo vision)

Change 48623 on 2002/08/28 by jacarey@fl\_jcarey2  
Mono Brush Unpacking

Change 48596 on 2002/08/28 by khabbari@khabbari\_r400\_win  
tvout spec for standard tv released

Change 48557 on 2002/08/28 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
fixed contorl signal crc calculation  
updated quick\_dacb test  
added hpd to API  
added hpd test

Change 48547 on 2002/08/28 by georgev@ma\_georgev  
Better support for floats and ints in range.

Change 48537 on 2002/08/28 by mkelly@fl\_mkelly\_r400\_win\_laptop  
JSS 4x4 simple triangle

Change 48505 on 2002/08/28 by rbell@rbell\_crayola\_win\_cvd  
updates

Page 186 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 48487 on 2002/08/28 by ashish@fl\_ashish\_r400\_win  
CL tests: adding more UCP combo tests and updating tracker.

Change 48463 on 2002/08/28 by jacarey@fl\_jcarey\_desktop  
Miscellaneous Spec Updates  
Comments in Microcode for 2D Processing.

Change 48462 on 2002/08/28 by jacarey@fl\_jcarey\_desktop  
Add B19 Boolean and Remove SRC\_SC\_BOTTOM\_RIGHT\_GMC default value

Change 48429 on 2002/08/27 by tshah@fl\_tshah  
performance counters added with document changes

Change 48421 on 2002/08/27 by ashish@fl\_ashish\_r400\_win  
opened bug r400cl\_bary\_texture\_08\_bug.cpp again and modified description.

Change 48419 on 2002/08/27 by vgoel@fl\_vgoel2  
updated bug report

Change 48414 on 2002/08/27 by ashish@fl\_ashish\_r400\_win  
deleted a redundant row related with the bug test r400cl\_bary\_texture\_08\_bug.cpp

Change 48409 on 2002/08/27 by ashish@fl\_ashish\_r400\_win  
deleted a redundant row related with the bug test r400cl\_bary\_texture\_08\_bug.cpp

Change 48406 on 2002/08/27 by gregs@gregs\_r400\_win\_marlboro  
Based onb RV350 design - R400 package definition (FC BGA pinout done (first revision)).

Change 48402 on 2002/08/27 by csampayo@fl\_csampayo\_r400  
1. Updated test VFD for sourcing tex coord from vertex  
2. Updated Bug Tracker accordingly

Change 48389 on 2002/08/27 by mzhu@mzhu\_r400\_win\_tor  
Update description for overlay gamma correction

Change 48371 on 2002/08/27 by grayc@grayc\_r400\_win

Page 187 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

update for 8/23/2002 minutes

Change 48341 on 2002/08/27 by jacarey@fl\_jcarey2  
Final Update from Joe

Change 48327 on 2002/08/27 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: more sp tests

Change 48323 on 2002/08/27 by jacarey@fl\_jcarey2  
Update Foreground and Background Color Processing

Change 48322 on 2002/08/27 by ashish@fl\_ashish\_r400\_win  
update

Change 48290 on 2002/08/27 by jacarey@fl\_jcarey2  
Correction to CP\_STAT

Change 48289 on 2002/08/27 by bryans@bryans\_crayola\_doc  
Update status

Change 48284 on 2002/08/27 by gregs@gregs\_r400\_win\_marlboro  
< fixed PLL post divider control registers >

Change 48283 on 2002/08/27 by jacarey@fl\_jcarey2  
Update CP\_STAT register bits

Change 48267 on 2002/08/27 by jacarey@fl\_jcarey2  
Add Boolean 19 (Misc Command)

Change 48266 on 2002/08/27 by jacarey@fl\_jcarey2  
More Updates

Change 48264 on 2002/08/27 by csampayo@fl\_csampayo\_r400  
Bug test case

Change 48259 on 2002/08/27 by csampayo@fl\_csampayo\_r400  
1. Added 1 new SU point sprite test

Page 188 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



2. Updated test\_list and test tracker accordingly

Change 48244 on 2002/08/27 by tshah@fl\_tshah  
rbbm interrupt logic and few changes in documentation

Change 48235 on 2002/08/27 by jimmylau@jimmylau\_r400\_win\_tor  
Update CRTIC implementation specs :  
update section on forcing H\_COUNT & V\_COUNT

Change 48226 on 2002/08/27 by bryans@bryans\_crayola\_doc  
Update for arch/arch\_<archname>.h change

Change 48223 on 2002/08/27 by jacarey@fl\_jcarey2  
Updated Small\_Text Utility

Change 48218 on 2002/08/27 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Bug...

Change 48210 on 2002/08/27 by jacarey@fl\_jcarey2  
Utility to generate small\_text characters.

Change 48187 on 2002/08/26 by georgev@ma\_georgev  
Added a few more comments.

Change 48184 on 2002/08/26 by gabarca@gabarca\_crayola\_win\_cvd  
added actual VESA mode test

Change 48183 on 2002/08/26 by gabarca@gabarca\_crayola\_win\_cvd  
detailed VESA modes

Change 48179 on 2002/08/26 by rbell@rbell\_crayola\_win\_cvd  
Updated schedule (lut bypass, d2 tests).

Change 48168 on 2002/08/26 by gregs@gregs\_r400\_win\_marlboro  
update ...

Change 48155 on 2002/08/26 by mmantor@mmantor\_r400\_win

Page 189 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

updated 1st clk transfer of the sc to sq interface to define quad mask bits in the correct hardware/emulator order sp3 => sp0

Change 48144 on 2002/08/26 by csampayo@fl\_csampayo\_r400  
Expanded format to include Bugzilla report# and, sorted by date.

Change 48123 on 2002/08/26 by efong@efong\_r400\_win\_tor\_doc  
Updated with the chip level archs and configs

Change 48097 on 2002/08/26 by nbarbier@nbarbier\_r400\_win\_tor  
HPD Updates

Change 48096 on 2002/08/26 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 48092 on 2002/08/26 by llefevtr@llefevtr\_laptop\_r400  
Added the new SQ->SP instruction interface.

Change 48070 on 2002/08/26 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 48064 on 2002/08/26 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 48060 on 2002/08/26 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 48051 on 2002/08/26 by vliu@vliu\_r400\_cnviui00\_win\_cvd  
Update

Change 48043 on 2002/08/26 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 48042 on 2002/08/26 by ashishs@fl\_ashishs\_r400\_win  
update

Change 48039 on 2002/08/26 by mkelly@fl\_mkelly\_r400\_win\_laptop

Page 190 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Memory crash when shader file doesn't exist..

Change 48035 on 2002/08/26 by rfveureau@rfveureau\_r400\_win  
Update

Change 48028 on 2002/08/26 by tshah@fl\_tshah  
more description for rbbm\_int\_\* registers for reset condition

Change 48021 on 2002/08/26 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Textured line where ST are exported directly to RGBA to visualize texture coordinates in color. Current there is a bug in the LL\_C quad pixel ST value when the primitive is not quad-aligned.

Change 48009 on 2002/08/26 by rfveureau@rfveureau\_r400\_win  
Updates

Change 47998 on 2002/08/26 by kevin@kevin\_r400\_win\_marlboro  
Renamed TP to TPTC  
changed "L2 filter no grouping" to "64 unique probe addresses"

Change 47985 on 2002/08/26 by efong@efong\_r400\_win\_tor\_doc  
New version of it after review

Change 47982 on 2002/08/26 by efong@efong\_r400\_win\_tor\_doc  
Deleted User Simulation Model Guide because renamed to VideoP User Simulation Model Guide

Change 47981 on 2002/08/26 by efong@efong\_r400\_win\_tor\_doc  
Changed name from the R400 User Simulation Model guide to VideoP

Change 47968 on 2002/08/25 by gabarca@gabarca\_crayola\_win\_cvd  
updated list of tests

Change 47967 on 2002/08/25 by csampayo@fl\_csampayo\_r400  
1. Added 1 new SU point sprite tests  
2. Updated test\_list and the test tracker accordingly

Change 47954 on 2002/08/25 by gabarca@gabarca\_crayola\_win\_cvd

Page 191 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

changed mono\_reg\_test name with mono\_and\_memory\_mapped\_reg\_test

Change 47927 on 2002/08/23 by gabarca@gabarca\_crayola\_win\_cvd  
updated test plan

Change 47906 on 2002/08/23 by mzhu@mzhu\_r400\_win\_tor  
Add CRTIC Event Trigger Signal Generation  
Add Force V\_COUNT, H\_COUNT and field polarity now  
Add Force H\_COUNT now  
Update StereoSync  
Update digital TV timing  
Re-order chapter 10.6 - 10.10

Change 47895 on 2002/08/23 by mkelly@fl\_mkelly\_r400\_win\_laptop  
\* Line list, start vertex at -8190 in HW space, clipped at -4096 Screen Space  
\* Line list, textured

Change 47874 on 2002/08/23 by frising@ma\_frising  
-remove statement about always using centroid sampling with jittered super-sampling. We may give meaning to both. No version bump.

Change 47867 on 2002/08/23 by frising@ma\_frising  
v.1.48  
-Added SAMPLE\_POSITION to texture instruction.  
Specifies sampling position for gradient/LOD correction. Centroid of fragment should always be used with jittered super-sampling.  
0=Centroid of fragment  
1=Center of fragment

Change 47781 on 2002/08/23 by rbell@rbell\_crayola\_win\_cvd  
Some D2 updates

Change 47777 on 2002/08/23 by rbell@rbell\_crayola\_win\_cvd  
Completed B&W offset tests

Change 47775 on 2002/08/23 by kevin@kevin\_r400\_win\_marlboro  
Updates

Change 47774 on 2002/08/23 by omesh@ma\_omesh

Page 192 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



An upto date spreadsheet with accurate numbers showing RB directed tests status. This does not yet include tests for Gamma/Degamma and I also think Frank may need to update his section.

Change 47768 on 2002/08/23 by kevin@kevin\_r400\_win\_mariboro

1st cut at TP verification xls

Change 47743 on 2002/08/23 by csampayo@fl\_csampayo\_r400

Update format

Change 47741 on 2002/08/23 by vgoel@fl\_vgoel2

closed bug 6 and added bug 14

Change 47720 on 2002/08/23 by ygiang@ygiang\_r400\_win\_mariboro\_p4

update

Change 47717 on 2002/08/23 by mkelly@fl\_mkelly\_r400\_win\_laptop

Simple single line list

Change 47687 on 2002/08/22 by efang@efang\_r400\_win\_tor\_doc

Updated

Change 47632 on 2002/08/22 by vliu@vliu\_r400\_cnvlui100\_win\_cvd

Fixed colour space Excel sheet.

Change 47601 on 2002/08/22 by mzhu@mzhu\_r400\_win\_tor

Add 64bpp digital output format

Change 47595 on 2002/08/22 by tshah@tshah

typo fix for real time busy equation page-29

Change 47579 on 2002/08/22 by dglen@dglen\_r400\_dell

Adding new file

Change 47535 on 2002/08/22 by vgoel@fl\_vgoel2

updated status of bug reports

Change 47522 on 2002/08/22 by csampayo@fl\_csampayo\_r400

Page 193 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

- 1. Added 10 new VGT multi-context tests
- 2. Updated test\_list and the test tracker accordingly

Change 47517 on 2002/08/22 by dglen@dglen\_r400\_dell

Added CRTC snapshot description

Change 47509 on 2002/08/22 by mpersaud@mpersaud\_r400\_win\_tor

Removed some signals between disout, crtc and the tvout.  
Added interface with DCCG

Change 47491 on 2002/08/22 by mkelly@fl\_mkelly\_r400\_win\_laptop

Add two test descriptions, update comments in test

Change 47461 on 2002/08/21 by csampayo@fl\_csampayo\_r400

Updated for new vgt tests

Change 47454 on 2002/08/21 by ashish@fl\_ashish\_r400\_win

CL test:400cl\_ucp\_pointlist\_01  
64 point sprites with 6 textures and 6 ucp's enabled with point size set in PA\_SU state register and also in PA\_CL\_POINT registers for clipping. Point Sprite UCP mode set to '3' viz. always expand and clip.

Change 47447 on 2002/08/21 by efang@efang\_r400\_win\_tor\_doc

updated

Change 47434 on 2002/08/21 by dglen@dglen\_r400\_dell

Change in section 7.7

Change 47424 on 2002/08/21 by rbell@rbell\_crayola\_win\_cvd

Updated for blending tests

Change 47411 on 2002/08/21 by gregs@gregs\_r400\_win\_mariboro

<display names changes update ++ >

Change 47344 on 2002/08/21 by vgoel@fl\_vgoel2

added issue related with loading floating point texture image in local tone-mapping

Change 47336 on 2002/08/21 by askende@andi\_r400\_docs

Page 194 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

modified the instruction interface from SQ to SP

Change 47324 on 2002/08/21 by vgoel@fl\_vgoel2

vertex export bug related with number of position exports

Change 47305 on 2002/08/21 by jimmylau@jimmylau\_r400\_win\_tor

Make changes to CRTC Controller implementation specs  
modify sections on : Generation of V\_UPDATE  
add sections on : CRTC\_BLACK\_COLOUR  
disable CRTC in a safe place within the frame  
force VSYNC next line mode  
digital TV timings  
sample CRTC counts  
CRTC snapshots  
CRTC flow control

Change 47242 on 2002/08/21 by jacarey@fl\_jacarey\_desktop

Document Brush\_Decode\_Idle boolean

Change 47232 on 2002/08/21 by jacarey@fl\_jacarey\_desktop

- 1. Clarify clearing of 2D Allocation Flags
- 2. Added Brush\_Decode\_Busy boolean as bit 19...

Change 47229 on 2002/08/21 by vgoel@fl\_vgoel2

added bug report for vertex export instruction em0

Change 47219 on 2002/08/21 by jacarey@fl\_jacarey\_desktop

Fix order of background and foreground colors

Change 47176 on 2002/08/20 by frising@ma\_frising

v.1.47

-Make TRI\_JUICE field 2 bits (like r350) with values: 0=0, 1=1/6, 2=1/4, 3=3/8. Also noted that trilinear filtering remains piecewise linear and continuous.  
-Fix COLOR\_FORMAT\_OUT and COLOR\_NUMBER\_OUT fields in texture constant (used for fetchmultisample) that were accidentally munged in a prior check-in.

Change 47174 on 2002/08/20 by dglen@dglen\_r400\_dell

Minor fixes to section 7

Change 47173 on 2002/08/20 by mzhu@mzhu\_r400\_win\_tor

Page 195 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

update DxGRPH register double buffer with STEREO\_SELECT

Change 47131 on 2002/08/20 by frising@ma\_frising

v.1.46

-Updated descriptions of get opcodes. Most notably specified that GetWeights now returns a horizontal and vertical lerp factor.  
-Specified that the DATA\_FORMAT field in texture constant can use any of the data formats in the DATA\_FORMAT table while the corresponding field in the vertex instruction can only use data formats valid for vertex data (also documented in DATA\_FORMAT table).

Change 47120 on 2002/08/20 by mzhu@mzhu\_r400\_win\_tor

Update test plan for third milestone

Change 47113 on 2002/08/20 by rbell@rbell\_crayola\_win\_cvd

Completed alpha mode 2 tests

Change 47111 on 2002/08/20 by mpersaud@mpersaud\_r400\_win\_tor

Updated interface diagram and added hd slew filter as its own block.

Change 47099 on 2002/08/20 by mzhu@mzhu\_r400\_win\_tor

Add test plan for third milestone. Update black/white offset tests

Change 47065 on 2002/08/20 by mzhu@mzhu\_r400\_win\_tor

Add LUT floating point data process, update DxGRPH register double buffer with STEREO\_SELECT

Change 47061 on 2002/08/20 by dglen@dglen\_r400\_dell

Update to Display Outline for new CRTC features

Change 47035 on 2002/08/20 by rbell@rbell\_crayola\_win\_cvd

Added totals, first D2 test is done.

Change 47021 on 2002/08/20 by vliu@vliu\_r400\_cnvlui100\_win\_cvd

Initial revision

Change 47007 on 2002/08/20 by vliu@vliu\_r400\_cnvlui100\_win\_cvd

Update

Page 196 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 47004 on 2002/08/20 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Initial revision

Change 46950 on 2002/08/20 by mdoggett@MA\_MDOGGETT\_LT  
Updated DCC0 clients and GRB0 clients. Added separate VGA input to MHC.

Change 46945 on 2002/08/20 by jacarey@fl\_jcarey2  
Clarifications to Source and Destination formats for 2D.

Change 46924 on 2002/08/19 by gabarca@gabarca\_crayola\_win\_cvd  
updated registers

Change 46914 on 2002/08/19 by csampayo@fl\_csampayo\_r400  
1. Added 2 new VGT test for multi context coverage  
2. Updated test\_list and the test tracker appropriately

Change 46911 on 2002/08/19 by nluu@nluu\_r400\_doelib\_cnb  
- update forces

Change 46895 on 2002/08/19 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Primitiv utility to check for double hit pixels in sc\_quad\_pair\_proc\_out.dmp  
Concentric circle test to do a preliminary check on the new utility

Change 46891 on 2002/08/19 by lkang@lkang\_r400\_win\_tor  
updated for M2 & M3

Change 46883 on 2002/08/19 by nluu@nluu\_r400\_doelib\_cnb  
- update forces

Change 46851 on 2002/08/19 by rbell@rbell\_crayola\_win\_cvd  
Added double-buffer tests

Change 46850 on 2002/08/19 by rfveureau@rfveureau\_r400\_win  
Updated Status

Change 46847 on 2002/08/19 by csampayo@fl\_csampayo\_r400

Added instructions at the top

Change 46813 on 2002/08/19 by smoss@smoss\_crayola\_win  
Bug

Change 46778 on 2002/08/19 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 46777 on 2002/08/19 by csampayo@fl\_csampayo\_r400  
1. Added 4 new SU polymode degenerate tests  
2. Updated test\_list and test tracker accordingly

Change 46766 on 2002/08/19 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 46761 on 2002/08/19 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 46758 on 2002/08/19 by nluu@nluu\_r400\_doelib\_cnb  
- update

Change 46751 on 2002/08/19 by ashishs@fl\_ashishs\_r400\_win  
corrected last submission

Change 46750 on 2002/08/19 by ashishs@fl\_ashishs\_r400\_win  
Hardware Accuracy related bug reported and documented.  
(r400cl\_bary\_texture\_08\_bug.cpp, interpolator bug)

Change 46749 on 2002/08/19 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 46735 on 2002/08/19 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 46726 on 2002/08/19 by sbagshaw@sbagshaw  
R400 Programming Guide for Toronto R400 Blocks  
Kaleidoscope IP

Change 46724 on 2002/08/19 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 46695 on 2002/08/18 by csampayo@fl\_csampayo\_r400  
1. Added 8 new SU polymode tests  
2. Updated test\_list and the test tracker accordingly

Change 46651 on 2002/08/16 by gabarca@gabarca\_crayola\_win\_cvd  
Updated interface with display

Change 46594 on 2002/08/16 by grayc@grayc\_r400\_win  
doc to track minutes of validation meeting

Change 46565 on 2002/08/16 by petcrp@MA\_PETE\_LT  
Corrected SQ and TC "RV400 Qty" factors

Change 46560 on 2002/08/16 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 46559 on 2002/08/16 by vgoel@fl\_vgoel2  
updated the "bug closed" and "change number" for bugs 4 & 5

Change 46554 on 2002/08/16 by vgoel@fl\_vgoel2  
added bug report for multi-context HOS test (bug 8)

Change 46547 on 2002/08/16 by jacarey@fl\_jcarey2  
Update for 2D Constants

Change 46536 on 2002/08/16 by jacarey@fl\_jcarey2  
Miscellaneous

Change 46530 on 2002/08/16 by vgoel@fl\_vgoel2  
added description for fix for bug 5 and 6 reported and added bug 7 description

Change 46513 on 2002/08/16 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 46512 on 2002/08/16 by rbell@rbell\_crayola\_win\_cvd  
Updates

Change 46500 on 2002/08/16 by jacarey@fl\_jcarey2  
Updates for 2D Brush Decoding.

Change 46385 on 2002/08/15 by jowang@jowang\_R400\_win  
changed coefficient range tests

Change 46324 on 2002/08/15 by vgoel@fl\_vgoel2  
added black pixels in white triangle bug

Change 46270 on 2002/08/15 by gregs@gregs\_r400\_win\_mariboro  
< changed direction of analog ports in io.v >

Change 46269 on 2002/08/15 by gregs@gregs\_r400\_win\_mariboro  
< added scratch register >

Change 46267 on 2002/08/15 by jacarey@fl\_jcarey2  
Update for Immediate Data Writes

Change 46260 on 2002/08/15 by csampayo@fl\_csampayo\_r400  
Updated format

Change 46255 on 2002/08/15 by csampayo@fl\_csampayo\_r400  
1. Added 3 new SU tests  
2. Updated test\_list and the test tracker accordingly

Change 46243 on 2002/08/15 by ygiang@ygiang\_r400\_win\_mariboro\_p4  
update

Change 46239 on 2002/08/15 by vgoel@fl\_vgoel2  
reported two bugs

Change 46236 on 2002/08/15 by rbell@rbell\_crayola\_win\_cvd  
Updated schedule



Change 46206 on 2002/08/15 by jacarey@fl\_jcarey2

Update Description of Vertex and Pixel Constants for 2D Processing.

Change 46187 on 2002/08/14 by georgev@ma\_georgev

Updated spreadsheets.

Change 46183 on 2002/08/14 by gabarca@gabarca\_crayola\_win\_cvd

Added handshake section

Change 46163 on 2002/08/14 by mzhu@mzhu\_r400\_win\_tor

Update alpha blend and force graphics or overlay data to "0" for overlay-only or graphics-only case

Change 46138 on 2002/08/14 by lfebev@lfebev\_r400

Changed the MASK mnemonics to KILL.  
Added DST opcode.  
Added MUL\_PREV2 opcode.  
Reordered the opcodes in primlib and SP.  
Implemented the new KILL and SET SCALAR opcodes, they are now all comparing the ALPHA channel to 0.0f (instead of comparing against the RED channel).

Change 46126 on 2002/08/14 by efong@efong\_r400\_win\_tor\_doc

New document on chip integration tests

Change 46125 on 2002/08/14 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 46111 on 2002/08/14 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update...

Change 46099 on 2002/08/14 by askende@andi\_r400\_docs

new rev of the spec.

Change 46096 on 2002/08/14 by mpersaud@mpersaud\_r400\_win\_tor

Updated specs to match Xilleon's tvout.

Change 46024 on 2002/08/14 by mzhu@mzhu\_r400\_win\_tor

Update black/white offset

Page 201 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 46010 on 2002/08/14 by jacarey@fl\_jcarey2

Update Setting 2D Boolean B0 if Brush\_Type=0xF and SRC\_TYPE = Color

Change 45994 on 2002/08/14 by jhoule@MA\_JHOULE

TFetchInstr:  
Added SetGradientsH and SetGradientsV opcodes.  
Changed SetFilterWeights opcode number.  
LOD\_BIAS\_(H|V) are now 7 bits, range [-4, 4].  
Added USE\_REG\_GRADIENTS.

TFetchConst:  
Changed description of TRI\_JUICE.

Change 45907 on 2002/08/14 by bryans@bryans\_crayola\_doc

Updated...

Change 45889 on 2002/08/14 by jacarey@fl\_jcarey2

Updates to Diagrams for Timing...

Change 45888 on 2002/08/14 by jacarey@fl\_jcarey2

Update for Im\_Load

Change 45863 on 2002/08/13 by gabarca@gabarca\_crayola\_win\_cvd

put chapter 16 in a table

Change 45832 on 2002/08/13 by gabarca@gabarca\_crayola\_win\_cvd

updated list of functional changes respect to previous chips

Change 45810 on 2002/08/13 by gabarca@gabarca\_crayola\_win\_cvd

updated functional changes respect to previous chips

Change 45754 on 2002/08/13 by gregs@regs\_r400\_win\_marlboro

added examples of power state transitions programming via CP real time command streams + added description of spread spectrum circuits and registers.

Change 45743 on 2002/08/13 by jacarey@fl\_jcarey2

Correct SRC\_X calculation for HostData\* Packets

Page 202 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 45680 on 2002/08/13 by gabarca@gabarca\_crayola\_win\_cvd

Updated sec 16

Change 45674 on 2002/08/13 by gabarca@gabarca\_crayola\_win\_cvd

Added section 16 Changes respect to previous ATI chips

Change 45673 on 2002/08/13 by mkelly@fl\_mkelly\_r400\_win\_laptop

Expand line width basic functionality...

Change 45657 on 2002/08/13 by csampayo@fl\_csampayo\_r400

- 1. Started log for bug #3
- 2. Expanded format to include accounting of bugs

Change 45615 on 2002/08/13 by jhoule@MA\_JHOULE

Updated various TP/TC features.

Change 45512 on 2002/08/12 by askende@andi\_r400\_docs

new rev. 1.4

Change 45507 on 2002/08/12 by mzhu@mzhu\_r400\_win\_tor

Update alpha blend mode 1 and 3

Change 45462 on 2002/08/12 by chwang@chwang\_doc\_r400\_win\_cvd

Update.

Change 45423 on 2002/08/12 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 45420 on 2002/08/12 by chwang@chwang\_doc\_r400\_win\_cvd

Update.

Change 45414 on 2002/08/12 by csampayo@fl\_csampayo\_lt\_r400

Updated status for the following tests:  
r400su\_point\_sprite\_01  
r400su\_point\_sprite\_02  
r400su\_point\_sprite\_03  
r400su\_point\_sprite\_04  
r400su\_point\_sprite\_05

Page 203 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

r400su\_point\_sprite\_06

Change 45405 on 2002/08/12 by mzhu@mzhu\_r400\_win\_tor

Update for alpha blend key mode

Change 45398 on 2002/08/12 by imuskatb@imuskatb\_r400\_win\_cnimuskalb

Updated DISPOUT  
Added TAKEN to double buffer  
M2 Disput test  
Updated Quick Emu

Change 45391 on 2002/08/12 by tshah@fl\_tshah

typo - CP\_RBBM\_dma\_busy is used for one of the wait until conditions

Change 45379 on 2002/08/12 by ashish@fl\_ashish\_r400\_win

2nd bug tested and documented

Change 45364 on 2002/08/11 by ygiang@ygiang\_r400\_win\_marlboro\_p4

added: dot3 and dot4 shader tests

Change 45316 on 2002/08/09 by csampayo@fl\_csampayo\_r400

- 1. Updated image size for tests: r400su\_point\_sprite\_01 and \_02
- 2. Added 4 more SU point sprite tests
- 3. Updated test\_list and test tracker accordingly

Change 45308 on 2002/08/09 by tho@tho\_r400\_win

new doc'

Change 45305 on 2002/08/09 by tho@tho\_r400\_win

run regress docs

Change 45292 on 2002/08/09 by whui@whui\_r400\_win\_tor

update surface properties registers

Change 45262 on 2002/08/09 by georgev@ma\_georgev

Updated.

Change 45232 on 2002/08/09 by mkelly@fl\_mkelly\_r400\_win\_laptop

Page 204 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Update...

Change 45220 on 2002/08/09 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Nan retain/kill on 2 vector exports from shader bug...

Change 45195 on 2002/08/09 by nbarbier@nbarbier\_r400\_win\_tor  
Initial Revision

Change 45180 on 2002/08/09 by bryans@bryans\_crayola\_doc  
Update per last meeting

Change 45177 on 2002/08/09 by gregs@gregs\_r400\_win\_marlboro  
updated direct access to ROM pins (for writing).

Change 45156 on 2002/08/09 by dclifton@dclifton\_r400  
Updated zmin/zmax pinout info, updated area estimate

Change 45045 on 2002/08/08 by ashishs@fl\_ashishs\_r400\_win  
CL test:  
A test to determine if the clip guard band works properly and that trivial reject works.  
update to test tracker and test list.

Change 45021 on 2002/08/08 by nbarbier@nbarbier\_r400\_win\_tor  
Updated GENERICA & GENERICB inputs.

Change 45018 on 2002/08/08 by frivas@FL\_FRivas  
Update to HOS tests. Added edge detector test to "sheet 1" and accounted for it in the totals.

Change 44992 on 2002/08/08 by frivas@FL\_FRivas  
Updated status of different HOS tests.

Change 44907 on 2002/08/08 by csampayo@fl\_csampayo\_r400  
1. Initial check in of Bug Tracker  
2. Added bug test case

Change 44840 on 2002/08/08 by jacarey@fl\_jacarey2  
Correct note for vgt\_busy status signal.

Page 205 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 44839 on 2002/08/08 by jacarey@fl\_jacarey2  
Remove 3D from the GradFill and AlphaBlend 2D packets.

Change 44771 on 2002/08/07 by jacarey@fl\_jacarey2  
Corrections to Packet Pseudocode.

Change 44759 on 2002/08/07 by dclifton@dclifton\_r400  
Updated for clipped polymode lines and points and updated point-line geometry drawing.

Change 44741 on 2002/08/07 by csampayo@fl\_csampayo\_r400  
Updated status for the following tests:  
r400su\_point\_sprite\_01.cpp  
r400su\_point\_sprite\_02.cpp

Change 44684 on 2002/08/07 by lkang@lkang\_r400\_win\_tor  
2nd milestone review

Change 44680 on 2002/08/07 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
TMDS M2 Test  
Updated Test list

Change 44665 on 2002/08/07 by jacarey@fl\_jacarey2  
1. Specify limit of ordinal #3 and #4 replications for the LCC packet.

Change 44663 on 2002/08/07 by grayc@grayc\_r400\_win  
describes block owners/chip level verification

Change 44636 on 2002/08/07 by mkelly@fl\_mkelly\_r400\_win\_laptop  
More JSS coverage...

Change 44537 on 2002/08/06 by gregs@gregs\_r400\_win\_marlboro  
spread spectrum

Change 44519 on 2002/08/06 by jacarey@fl\_jacarey2  
1. Document oper=gmcode in instruction table  
2. Add 4 gprs to the micro engine

Page 206 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 44512 on 2002/08/06 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Textured pixel shader anti-aliased line example with VFD support.

Change 44469 on 2002/08/06 by jacarey@fl\_jacarey2  
Updated Interface from SQ for Events...4-bit event ID.  
CP can ignore events that it does nothing for...

Change 44458 on 2002/08/06 by ashishs@fl\_ashishs\_r400\_win  
update

Change 44454 on 2002/08/06 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 44416 on 2002/08/06 by tho@tho\_r400\_win  
updated

Change 44406 on 2002/08/06 by vliu@vliu\_r400\_cnvliu100\_win\_cvd  
Update

Change 44397 on 2002/08/06 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 44375 on 2002/08/06 by jacarey@fl\_jacarey2  
Update for oper=gmcode

Change 44372 on 2002/08/06 by cfong@cfong\_r400\_win\_tor\_doc  
Updated

Change 44358 on 2002/08/06 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated emulator to new crtc Block file  
Updated Picasso to new register names  
Updated Display Manager to handle TMDS stream  
Completed Tmds stream library  
Added one tmds test for M2

Change 44282 on 2002/08/05 by scroce@scroce\_r400\_win\_marlboro  
Update setup document

Page 207 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 44272 on 2002/08/05 by scroce@scroce\_r400\_win\_marlboro  
Some added info for the setup document

Change 44228 on 2002/08/05 by csampayo@fl\_csampayo\_r400  
Added section 1.8

Change 44211 on 2002/08/05 by jacarey@fl\_jacarey2  
Update CP\_STAT register and clarified that the CP\_RBBM\_rt\_busy signal is not active if the RTEE is just performing polling operations.

Change 44192 on 2002/08/05 by wlawless@wlawless  
new sample mask diagram

Change 44179 on 2002/08/05 by jacarey@fl\_jacarey2  
More Updates for Timing.

Change 44178 on 2002/08/05 by jcox@jcox\_r400\_win\_orlando  
added web macro

Change 44176 on 2002/08/05 by jacarey@fl\_jacarey2  
Shallow FIFOs Added Between PFP and Micro Engine for Timing..

Change 44096 on 2002/08/02 by mkelly@fl\_mkelly\_r400\_win\_laptop  
\* Implement vertex kill in the VFD for vertex buffer and constant  
\* Create a new class called PRIMITIVE\_AA for AA dump file analysis  
\* Update tracker / test list

Change 44081 on 2002/08/02 by cfong@cfong\_r400\_win\_tor\_doc  
updated

Change 44071 on 2002/08/02 by jayw@MA\_JAYW  
pre vacation check in.

Change 44063 on 2002/08/02 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Simple Poly offset check, needs SC fix to work...

Change 44053 on 2002/08/02 by jacarey@fl\_jacarey2

Page 208 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history





Update 2D Spec for SRC\_X pointer for small\_text and host\_data\_bit  
 Most of microcode for Hostdata\_Bit\* packets...  
 Bitblt packets share subroutine with hostdata\_bit packets...

Change 44048 on 2002/08/02 by gregs@gregs\_r400\_win\_marlboro

<updates>

Change 44021 on 2002/08/02 by lilefevtr@lilefevtr\_laptop\_r400

New parameter generation scheme included in the spec.

Change 43966 on 2002/08/02 by mkelly@fl\_mkelly\_r400\_win\_laptop

Run line and point prims through JSS and MSAA...

Change 43913 on 2002/08/02 by jacarey@fl\_jcarey2

Added oper=SIGNEXT for Micro Engine.

Change 43841 on 2002/08/01 by mzhu@mzhu\_r400\_win\_tor

Update alpha fill pattern

Change 43815 on 2002/08/01 by mzhu@mzhu\_r400\_win\_tor

Update LUT\_INC, add UPDATE\_TAKEN

Change 43814 on 2002/08/01 by scamlin@scamlin\_crayola\_win

orlando updates

Change 43779 on 2002/08/01 by jacarey@fl\_jcarey2

Update bit widths of texture constants that are written for Small\_Text and HostData\_Bit\* packets.

Change 43775 on 2002/08/01 by mkelly@fl\_mkelly\_r400\_win\_laptop

Bresenham Control, converted R200 test...

Change 43773 on 2002/08/01 by jacarey@fl\_jcarey2

Added Soft Reset control for the ROM block.

Change 43751 on 2002/08/01 by frivas@FL\_FRivas

Update to HOS tests. Added complex model tests to tracker.

Page 209 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 43728 on 2002/08/01 by vgoel@fl\_vgoel2

modified tracker to update hos status

Change 43710 on 2002/08/01 by mzhu@mzhu\_r400\_win\_tor

Update for color cursor mode 2, LUT\_BLACK\_OFFSET/LUT\_WHITE\_OFFSET and LUT\_INC implementation

Change 43706 on 2002/08/01 by csampayo@fl\_csampayo\_r400

Update

Change 43699 on 2002/08/01 by frivas@FL\_FRivas

Added two HOS tests for precision.

Change 43687 on 2002/08/01 by ashish@fl\_ashish\_r400\_win

update

Change 43685 on 2002/08/01 by rbagley@rbagley\_itxp

R400 Shader Programming Model

Checking in Laurent's revision of sequencer related updates. Also added initial specification of two language levels; this is out of date; updates in progress.

Change 43638 on 2002/08/01 by mkelly@fl\_mkelly\_r400\_win\_laptop

JSS 3x4 simple triangle

Change 43631 on 2002/08/01 by jacarey@fl\_jcarey2

Update pseudocode for the ME\_INIT packet.

Change 43571 on 2002/07/31 by csampayo@fl\_csampayo\_r400

Updates

Change 43543 on 2002/07/31 by gregs@gregs\_r400\_win\_marlboro

<added IO\_DC\_xtalin signal>

Change 43509 on 2002/07/31 by jacarey@fl\_jcarey2

Documentation Updates:  
 1. Viz Query  
 2. Memory Size Updates

Page 210 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

3. Jump Address Added to Micro Instruction Format

Change 43496 on 2002/07/31 by rherrick@ma\_rherrick\_crayola

Implement absolute register directives for INFINITE control over specifying register offset values.

Change 43493 on 2002/07/31 by mkelly@fl\_mkelly\_r400\_win\_laptop

Testing lots of SC features with stipple enabled...

Change 43483 on 2002/07/31 by peterp@MA\_PETE\_LT

Corrected excel cell definition used by "Top" from "SQ" tab to remove !REF error. Changed utilization factor to 70%.

Change 43423 on 2002/07/31 by jhoule@MA\_IHOULE

Renamed TX\_COORD\_NORM to a more accurate TX\_COORD\_DENORM, keeping values intact, but sense more consistent.

Change 43417 on 2002/07/31 by frising@ma\_frising

0.98 check-in

Change 43325 on 2002/07/31 by jacarey@fl\_jcarey2

Add 6 and Sub16 instructions sign-extend bit 13 (Used for 2D) Min/Max and SCOMP assume that sign bit is bit 13 (Used for 2D)

Change 43240 on 2002/07/30 by semara@semara\_r400\_win\_tor

add the smooth scrolling for the gfx

Change 43229 on 2002/07/30 by mkelly@fl\_mkelly\_r400\_win\_laptop

Line stipple variations...

Change 43220 on 2002/07/30 by jacarey@fl\_jcarey2

Update Which Booleans are Set for 2D Packets with Source Update Pitch = Pixels/32 in SRC/DST\_PITCH\_OFFSET values.

Change 43105 on 2002/07/30 by frivas@FL\_FRivas

Update to HOS auto indexing tests.

Change 43095 on 2002/07/30 by smoss@smoss\_crayola\_win

Page 211 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

SU tests

Change 43084 on 2002/07/30 by kcorrell@kcorrell\_r400\_docs\_marlboro

updated area estimate for MH

Change 43077 on 2002/07/30 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 43005 on 2002/07/29 by hartogs@fl\_hartogs

Updated register addresses.

Change 42958 on 2002/07/29 by inuskatb@inuskatb\_r400\_win\_cnimuskatb

Updated dc\_orc interface  
 Added some more M2 test to CRTC

Change 42949 on 2002/07/29 by mkelly@fl\_mkelly\_r400\_win\_laptop

128 packets, one triangle per packet, each hitting a subsample in one JSS pixel. For each JSS\_SAMPLE\_SEL, each of 16 JSS pixels are tested. JSS\_SAMPLE\_SEL is cycled from from 0 to 8. This test ensures the tested JSS\_SAMPLE\_SEL is a unique value when compared to all non-tested JSS\_SAMPLE\_SELs.

Change 42844 on 2002/07/29 by efong@efong\_r400\_win\_tor\_doc

updated

Change 42788 on 2002/07/26 by csampayo@fl\_csampayo\_r400

1. Added 2 new SU tests  
 2. Updated test\_list and tracker, accordingly

Change 42781 on 2002/07/26 by fhshien@fhshien\_r400\_win\_marlboro

Update Depth tests

Change 42737 on 2002/07/26 by scroce@scroce\_r400\_win\_marlboro

Forgot to update TOC

Change 42735 on 2002/07/26 by scroce@scroce\_r400\_win\_marlboro

Updating a bit to reflect changes in the release procedure and environment.

Change 42725 on 2002/07/26 by jasif@jasif\_r400\_win\_tor

Page 212 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Updated after Testlist review meeting.

Change 42718 on 2002/07/26 by semara@semara\_r400\_win\_tor  
fix the index

Change 42654 on 2002/07/26 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 42652 on 2002/07/26 by semara@semara\_r400\_win\_tor  
edit section 11 in the test plan  
edit section 4 in the display interface

Change 42596 on 2002/07/26 by rbell@rbell\_crayola\_win\_cvd  
test list for ms2

Change 42530 on 2002/07/25 by ashishs@fl\_ashishs\_r400\_win  
CL TESTS: testing guard band clipping of edgetags.

Change 42514 on 2002/07/25 by dougd@doug  
updated area for SQ based on synthesis results

Change 42504 on 2002/07/25 by jasif@jasif\_r400\_win\_tor  
Finished graphics section.

Change 42499 on 2002/07/25 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Basic MSA functional tests...

Change 42442 on 2002/07/25 by gabarca@gabarca\_crayola\_win\_cvd  
improved description of LUT and fixed test case

Change 42367 on 2002/07/25 by mzhu@mzhu\_r400\_win\_tor  
Update DCP\_tests\_ms2.xls from Richard

Change 42362 on 2002/07/25 by mzhu@mzhu\_r400\_win\_tor  
Update graphics and overlay alpha blending

Change 42269 on 2002/07/24 by jasif@jasif\_r400\_win\_tor  
Page 213 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Finished hdp section and revised text section.

Change 42258 on 2002/07/24 by semara@semara\_r400\_win\_tor  
adding section 7, 8, and 9

Change 42234 on 2002/07/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
\* Update to JSS tests  
\* New MSA test verifying all 8 subsamples in basic hit tests  
\* Update tracker  
\* Update SC test\_list

Change 42233 on 2002/07/24 by nlau@nlau\_r400\_doclib\_cmb  
- update specs for fast client protocol

Change 42140 on 2002/07/24 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated crtc.cpp to consider h\_sync\_start  
fixed crtc\_test.cpp  
wrap around center test in picasso  
updated test list

Change 42100 on 2002/07/23 by frising@ma\_frising  
v1.44  
-It just occurred to me that having just one bit is insufficient for this. You really need 3 (one each for x,y,z), otherwise you'd get the wrong results if, for example, the user set WRAP\_S to CLAMP and WRAP\_T to CLAMP\_TO\_BORDER. I don't want to use three bits, so I've reworked things. The bit is now called NEAREST\_CLAMP\_POLICY and has the following behavior when nearest filtering:  
Wrap/Repeat -> Wrap/Repeat  
Mirror -> Mirror  
Clamp to last texel -> Clamp to last texel  
MirrorOnce to last texel -> MirrorOnce to last texel  
Clamp half way to border color -> Clamp to last texel  
MirrorOnce half way to border color -> MirrorOnce to last texel  
Clamp to border color -> Clamp to border color  
MirrorOnce to border color -> MirrorOnce to border color  
This should allow D3D and OGL to set this bit 'once' and forget about it.

Change 42086 on 2002/07/23 by ashishs@fl\_ashishs\_r400\_win  
update  
Page 214 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 42033 on 2002/07/23 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update and corrected schedule test count versus sheet 1 counts.

Change 42000 on 2002/07/23 by gabarca@gabarca\_crayola\_win\_cvd  
added the VGA\_CURSOR\_BLINK\_INVERT register

Change 41983 on 2002/07/23 by smoss@smoss\_crayola\_win  
SU tests

Change 41973 on 2002/07/23 by jasif@jasif\_r400\_win\_tor  
Finished text mode testlist.

Change 41971 on 2002/07/23 by frising@ma\_frising  
v1.43  
-Add NEAREST\_NO\_BORDER bit to texture constant which controls if nearest filtering will every sample border color/texel. When this bit is asserted the mapping for the clamping policy when nearest filtering should be:  
Wrap/Repeat -> Wrap/Repeat  
Mirror -> Mirror  
Clamp to last texel -> Clamp to last texel  
MirrorOnce to last texel -> MirrorOnce to last texel  
Clamp half way to border color -> Clamp to last texel  
MirrorOnce half way to border color -> MirrorOnce to last texel  
Clamp to border color -> Clamp to last texel  
MirrorOnce to border color -> MirrorOnce to last texel

Change 41921 on 2002/07/23 by subad@MA\_SUBA  
updated area. Area decreased by re-structuring tx\_fint, oned and tiled muxes

Change 41905 on 2002/07/23 by ashishs@fl\_ashishs\_r400\_win  
update

Change 41898 on 2002/07/23 by smoss@smoss\_crayola\_win  
shortened tests

Change 41883 on 2002/07/22 by gabarca@gabarca\_crayola\_win\_cvd  
Updated as per Joveria's test list and last meetings

Change 41881 on 2002/07/22 by csampayo@fl\_csampayo\_r400  
Page 215 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

1. Added 2-D primitives to VGT section  
2. Various format updates

Change 41867 on 2002/07/22 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 41862 on 2002/07/22 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 41822 on 2002/07/22 by mkelly@fl\_mkelly\_r400\_win\_laptop  
\* Basic JSS functional coverage  
\* Update test list  
\* Update tracker  
\* Added Plan vs. Actual graph to tracker sheet "schedule"

Change 41808 on 2002/07/22 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 41784 on 2002/07/22 by gregs@gregs\_r400\_win\_marlboro  
<registers update>

Change 41781 on 2002/07/22 by frivas@FL\_FRivas  
Update. Changed name of a VGT HOS test to be completed.

Change 41778 on 2002/07/22 by vliu@vliu\_r400\_cnvliu00\_win\_cvd  
Update

Change 41774 on 2002/07/22 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated

Change 41756 on 2002/07/22 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 41743 on 2002/07/22 by tho@tho\_r400\_win  
updated

Change 41742 on 2002/07/22 by tien@ma\_spinach  
updated TP/TC area estimates  
Page 216 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 41731 on 2002/07/22 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 41730 on 2002/07/22 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Improve test description and conveyance of test purpose in the image

Change 41729 on 2002/07/22 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 41720 on 2002/07/22 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 41717 on 2002/07/22 by georgev@ma\_georgev  
First revision from verification spec.

Change 41663 on 2002/07/19 by jacarey@fl\_jcarey2  
Fix Number of Bits Needed in the Brush, Palette, and Immed Base Pointers.

Change 41654 on 2002/07/19 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 41643 on 2002/07/19 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 41620 on 2002/07/19 by mkelly@fl\_mkelly\_r400\_win\_laptop  
1. Re-wrote JSS test to match latest SC spec.  
2. Update test\_list  
3. Update tracker

Change 41600 on 2002/07/19 by lfebevr@lfebevr\_laptop\_r400  
SQ backup.

Change 41597 on 2002/07/19 by jhoule@MA\_JHOULE  
Pre-SIGGRAPH submit (since it's exclusive open)

Change 41582 on 2002/07/19 by dclifton@dclifton\_r400  
Page 217 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Added description of rectangle primitive output. Updated state register description.

Change 41550 on 2002/07/19 by smoss@smoss\_crayola\_win  
new x,y dim

Change 41531 on 2002/07/19 by bryans@bryans\_crayola\_doc  
Update

Change 41524 on 2002/07/19 by bryans@bryans\_crayola\_doc  
Minor changes to doc

Change 41450 on 2002/07/19 by jacarey@fl\_jcarey2  
Correct typo in diagram for write confirmation logic.

Change 41447 on 2002/07/19 by jacarey@fl\_jcarey2  
Write Confirmation Counter for CP/SC data coherency.

Change 41401 on 2002/07/18 by csampayo@fl\_csampayo\_r400  
1. Added 4 new SU edgeflag tests  
2. Updated framebuffer size for 2 tests  
3. Updated test\_list and test tracker accordingly

Change 41388 on 2002/07/18 by gabarca@gabarca\_crayola\_win\_cvd  
linked the test list excel into the "regression test table" icon at the end of the document

Change 41374 on 2002/07/18 by gabarca@gabarca\_crayola\_win\_cvd  
moved to the blocks/VGA directory

Change 41371 on 2002/07/18 by gabarca@gabarca\_crayola\_win\_cvd  
moved to the design/block/VGA directory

Change 41353 on 2002/07/18 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 41352 on 2002/07/18 by jasif@jasif\_r400\_win\_tor  
Format change only.  
Page 218 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 41332 on 2002/07/18 by jacarey@fl\_jcarey2  
Update Brush Address Range

Change 41330 on 2002/07/18 by jacarey@fl\_jcarey2  
Updates

Change 41321 on 2002/07/18 by jacarey@fl\_jcarey2  
Data written to Immd\_Write\_Confirm address generates a write confirmation.

Change 41308 on 2002/07/18 by bryans@bryans\_crayola\_doc  
Update...

Change 41298 on 2002/07/18 by mzhu@mzhu\_r400\_win\_tor  
update for 2nd milestone part

Change 41296 on 2002/07/18 by gregs@gregs\_r400\_win\_marlboro  
<fixing previous mistake>

Change 41294 on 2002/07/18 by gregs@gregs\_r400\_win\_marlboro  
<moving from parts\_lib to doc\_lib>

Change 41293 on 2002/07/18 by georgev@ma\_georgev  
Updated for new tests.

Change 41287 on 2002/07/18 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 41275 on 2002/07/18 by bryans@bryans\_crayola\_doc  
Document that explains the new Chip Init library (usage and organization)

Change 41267 on 2002/07/18 by jacarey@fl\_jcarey2  
Clarification to LCC packet on preservation/setting of valid flag.

Change 41260 on 2002/07/18 by jacarey@fl\_jcarey2  
Update pseudocode for the issuance of event initiators to the scan converter for write confirm.  
Page 219 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 41257 on 2002/07/18 by jayw@MA\_JAYW  
Thursday morning, minor updates

Change 41255 on 2002/07/18 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 41225 on 2002/07/18 by jacarey@fl\_jcarey2  
Revert Last Change

Change 41213 on 2002/07/18 by jacarey@fl\_jcarey2  
1. Update LCC and Constant\_Prefetch Packet formats  
2. Constant write enables cleared for incremental update of constants.

Change 41208 on 2002/07/18 by flijero@fl\_frank  
updated Load\_Constant\_Context write to BUFFER\_BASE to match latest spec

Change 41183 on 2002/07/17 by csampayo@fl\_csampayo\_r400  
1. Added 2 new tests to SU  
2. Updated SU test\_list  
3. Updated test tracker accordingly

Change 41155 on 2002/07/17 by jacarey@fl\_jcarey2  
Updates for interpreting the 2D constants in the GMC.

Change 41148 on 2002/07/17 by jacarey@fl\_jcarey2  
Describe how the 2D Default Values are Applied by the CP.

Change 41112 on 2002/07/17 by smoss@smoss\_crayola\_win  
SU Tests

Change 41107 on 2002/07/17 by jacarey@fl\_jcarey2  
1. Update Bit Width for Brush Address to HW support Logic  
2. Revise 2D Default Registers

Change 41083 on 2002/07/17 by ashish@fl\_ashish\_r400\_win  
update

Change 41075 on 2002/07/17 by jowang@jowang\_R400\_win  
Page 220 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



more complete test plan

Change 41032 on 2002/07/17 by jayw@MA\_JAYW  
adding tile doc and minor depth address correction.

Change 40985 on 2002/07/17 by rbell@rbell\_crayola\_win\_cvd  
initial release

Change 40978 on 2002/07/17 by gabarca@gabarca\_crayola\_win\_cvd  
updated new fields

Change 40950 on 2002/07/16 by csampayo@fl\_csampayo\_r400  
1. Added 2 new tests to SU  
2. Updated test\_list and test tracker

Change 40947 on 2002/07/16 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated test list for M2

Change 40929 on 2002/07/16 by jacarey@fl\_jcarey2  
Update text for 2D/3D transition determination.

Change 40885 on 2002/07/16 by jayw@MA\_JAYW  
fixed error in tile address

Change 40881 on 2002/07/16 by npersaud@mpersaud\_r400\_win\_tor  
Simplified write acknowledge return interface between dccif and client.

Change 40873 on 2002/07/16 by smoss@smoss\_crayola\_win  
update

Change 40854 on 2002/07/16 by fhsien@fhsien\_r400\_win\_mariboro  
Update for Z tests

Change 40782 on 2002/07/15 by efong@efong\_r400\_win\_tor\_doc  
Updated with M2 tests

Change 40771 on 2002/07/15 by csampayo@fl\_csampayo\_r400

Page 221 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

1. Added SU test to validate provoking vertex
2. Updated SU's test\_list accordingly
3. Updated the VGT test r400vgt\_provoking\_vtx\_all\_01
4. Updated test tracker with status for the test: r400su\_provoking\_vtx\_rectangle\_01

Change 40710 on 2002/07/15 by jayw@MA\_JAYW  
finished start of depth tile address calc

Change 40698 on 2002/07/15 by jacarey@fl\_jcarey2  
Update to ME\_INIT for Header Dump Function

Change 40697 on 2002/07/15 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 40693 on 2002/07/15 by tho@tho\_r400\_win  
updated

Change 40691 on 2002/07/15 by llefebvre@llefebvre\_laptop\_r400  
New sequencer spec.

Change 40666 on 2002/07/15 by jacarey@fl\_jcarey2  
Header Dump Can Be Used for Real-Time Streams

Change 40660 on 2002/07/15 by jacarey@fl\_jcarey2  
Update Header Dump Base Address Size

Change 40647 on 2002/07/15 by jasif@jasif\_r400\_win\_tor  
M2 VGA testlist.

Change 40632 on 2002/07/15 by jacarey@fl\_jcarey2  
Added a couple paragraphs to describe the Brush Decode support logic for the ME.

Change 40630 on 2002/07/15 by jacarey@fl\_jcarey2  
Added Local Addresses for Brush Decode Hardware

Change 40620 on 2002/07/15 by gregs@gregs\_r400\_linux\_mariboro  
<update>

Page 222 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 40609 on 2002/07/15 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 40605 on 2002/07/15 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 40600 on 2002/07/15 by jayw@MA\_JAYW  
Monday morning release.  
start of cam and non-cam tags and  
address generation

Change 40599 on 2002/07/15 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 40595 on 2002/07/15 by rbell@rbell\_crayola\_win\_cvd  
updated after test plan review

Change 40592 on 2002/07/15 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated

Change 40589 on 2002/07/15 by tho@tho\_r400\_win  
updated

Change 40582 on 2002/07/15 by tho@tho\_r400\_win  
update

Change 40574 on 2002/07/15 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 40571 on 2002/07/15 by nluu@nluu\_r400\_doclib\_cnfb  
- update

Change 40564 on 2002/07/15 by jacarey@fl\_jcarey2  
Updated Draw\_Indx

Change 40535 on 2002/07/15 by jacarey@fl\_jcarey2

Page 223 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

ME\_INIT side affect: Invalidates "valid flags" in the PFP.

Change 40473 on 2002/07/14 by vliu@vliu\_r400\_cnvtiul00\_win\_cvd  
Added conditional\_write(...) function.

Change 40132 on 2002/07/12 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 40121 on 2002/07/12 by jayw@MA\_JAYW  
Friday night checkin with template

Change 40120 on 2002/07/12 by fhsien@fhsien\_r400\_win\_mariboro  
Update for Z\_functions

Change 40039 on 2002/07/12 by efong@efong\_r400\_win\_tor\_doc  
Updated for VCD and FSDB and VPD support

Change 39993 on 2002/07/12 by frising@ma\_frising  
v.1.42  
-allow TP to use FORMAT\_COMP\_\* and related number format info for multisample  
fetches. Typically, the driver will want to make sure COLOR\_FORMAT\_OUT is consistent  
with these.

Change 39979 on 2002/07/12 by rbell@rbell\_crayola\_win\_cvd  
Secondary surface address test

Change 39977 on 2002/07/12 by rbell@rbell\_crayola\_win\_cvd  
updated for more milestone 2 and 3 tests

Change 39969 on 2002/07/12 by mzhu@mzhu\_r400\_win\_tor  
Update test plan for 2nd milestone

Change 39915 on 2002/07/12 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update CL status

Change 39912 on 2002/07/12 by lkang@lkang\_r400\_win\_tor  
update

Page 224 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 39862 on 2002/07/11 by gabarca@gabarca\_crayola\_win\_cvd  
t

Change 39847 on 2002/07/11 by csampayo@fl\_csampayo\_it\_r400  
Updated VGT section categories

Change 39830 on 2002/07/11 by csampayo@fl\_csampayo\_it\_r400  
Updated the HOS Primitive Tessellation sub-section of the VGT section

Change 39819 on 2002/07/11 by frising@ma\_frising  
v.1.41  
-multisample fetch basically done (note a few unused fields had to be moved in the tex constants)  
-updated note on how degamma'd textures are stored in L2 (always 16 bit urf)

Change 39812 on 2002/07/11 by jacarey@fl\_jcarey2  
Real-Time Micro Engine does not have the direct write-back path as the Non-RT micro engine.

Change 39809 on 2002/07/11 by jacarey@fl\_jcarey2  
1. Boolean B0 is set for trans\_bitblt packet  
2. ME\_INIT  
- Fixed typo of for vertex shader base size  
- Added note that pixel shader base must be greater than vertex shader base address.  
3. Added notes to set B0 boolean for some of the new 2D packets.

Change 39764 on 2002/07/11 by georgev@ma\_georgev  
Fixed registers.

Change 39759 on 2002/07/11 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated v1.2

Change 39739 on 2002/07/11 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update showing priorities for Friday's meeting...

Change 39700 on 2002/07/11 by jacarey@fl\_jcarey2  
Fix Typo in Instr\_Prefetch and Set\_State Packets

Page 225 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 39679 on 2002/07/11 by jayw@MA\_JAYW  
0.1 rev mark

Change 39678 on 2002/07/11 by jayw@MA\_JAYW  
thursday update

Change 39662 on 2002/07/11 by rbell@rbell\_crayola\_win\_cvd  
updated schedule

Change 39637 on 2002/07/11 by smoss@smoss\_crayola\_win  
account for differences in tests written and schedule

Change 39578 on 2002/07/10 by jacarey@fl\_jcarey2  
Miscellaneous

Change 39572 on 2002/07/10 by jimmylau@jimmylau\_r400\_win\_tor  
Update sections 5.6 and 5.7 after test plan review, to add more end cases and more detailed explanation to each test cases.

Change 39571 on 2002/07/10 by jacarey@fl\_jcarey2  
Clarifications for ALU and Texture write enables for LCC and Set\_Constant packets.

Change 39567 on 2002/07/10 by jacarey@fl\_jcarey2  
Miscellaneous Corrections for 2D Packets

Change 39565 on 2002/07/10 by csampayo@fl\_csampayo\_r400  
Minor textual updates

Change 39563 on 2002/07/10 by csampayo@fl\_csampayo\_r400  
Modified Provoking Vertex sub-section to include provoking vertex and edge flags

Change 39552 on 2002/07/10 by csampayo@fl\_csampayo\_r400  
Added Rectangle List Processing sub-section to the SU section

Change 39486 on 2002/07/10 by khabbari@khabbari\_r400\_win  
line buffer test plan for phase 2 released

Page 226 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 39399 on 2002/07/10 by jimmylau@jimmylau\_r400\_win\_tor  
Add section 10.4 in CRTX architecture and implementation specs, for double buffered registers  
Add sections 5.6 to 5.8 in CRTX testplan, for overscan, interfaced timing mode and double buffered registers.

Change 39359 on 2002/07/10 by rbell@rbell\_crayola\_win\_cvd  
Updated for Kscope

Change 39350 on 2002/07/10 by rbell@rbell\_crayola\_win\_cvd  
Changed name of doc

Change 39347 on 2002/07/10 by smoss@smoss\_crayola\_win  
SU tests

Change 39346 on 2002/07/10 by rbell@rbell\_crayola\_win\_cvd  
Updated file capture format, added optional macro signal capture

Change 39331 on 2002/07/10 by smoss@smoss\_crayola\_win  
SU Tests

Change 39273 on 2002/07/09 by jacarey@fl\_jcarey\_desktop  
Context is on data bits 12:10 !!!

Change 39245 on 2002/07/09 by jacarey@fl\_jcarey\_desktop  
Micro Engine Updates

Change 39237 on 2002/07/09 by jacarey@fl\_jcarey\_desktop  
1. Direct write path from micro engine behavior  
2. Adjusted address of imm\_d\_swap in local address

Change 39220 on 2002/07/09 by csampayo@fl\_csampayo\_r400  
1. Added 1 test to SU suite  
2. Updated test\_list accordingly  
3. Updated relevant status on the test tracker

Change 39124 on 2002/07/09 by ygiang@ygiang\_r400\_win\_marlboro\_p4

Page 227 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

added: shader test for debug

Change 39088 on 2002/07/09 by rbell@rbell\_crayola\_win\_cvd  
Updated status for LUT Host RW

Change 39078 on 2002/07/09 by csampayo@fl\_csampayo\_r400  
Updated status for the following tests:  
r400vgt\_edgflags\_triangle\_fan\_01  
r400vgt\_edgflags\_triangle\_wflags\_01  
r400vgt\_edgflags\_triangle\_strip\_01  
r400vgt\_edgflags\_triangle\_list\_01  
r400vgt\_edgflags\_quad\_strip\_01  
r400vgt\_edgflags\_quad\_list\_01  
r400vgt\_edgflags\_polygon\_01

Change 39062 on 2002/07/09 by mkelly@fl\_mkelly\_r400\_win\_laptop  
VFD Edge flag support for Constant to EX1 operation with example test.

Change 39045 on 2002/07/09 by jayw@MA\_JAYW  
no change

Change 39016 on 2002/07/09 by mpersaud@mpersaud\_r400\_win\_tor  
Updated revision number

Change 39015 on 2002/07/09 by mpersaud@mpersaud\_r400\_win\_tor  
Tie off ICON\_DCCARB\_rswap & CURSOR\_DCCARB\_rswap to zero in DCCARB as it is not generated by either block

Change 39004 on 2002/07/09 by bryans@bryans\_crayola\_doc  
There are 2 copies in the depot of this document: This one (version 4.2) is out of date. The most up to date one (version 4.4) resides in doc\_lib/testenv. I left that copy there since it applies to both emulation and simulation.

Change 39003 on 2002/07/09 by bryans@bryans\_crayola\_doc  
Updated as per status meeting

Change 38911 on 2002/07/08 by jacarey@fl\_jcarey\_desktop  
1. Remove Set\_Cf\_Constant Packet  
2. Added code for new Set\_Constant packet  
3. Preparations for writing constants to external memory

Page 228 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 38829 on 2002/07/08 by lseiler@lseiler\_r400\_win\_marlboro  
 RB Arch spec: modified export buffer depth storage, added explanations

Change 38815 on 2002/07/08 by tho@tho\_r400\_win  
 updated

Change 38813 on 2002/07/08 by mmantor@mmantor\_r400\_win  
 assigned quad id to the lod correct term

Change 38785 on 2002/07/08 by csampayo@fl\_csampayo\_r400  
 Added status for the following SU tests:  
 r400su\_provoking\_vtx\_point\_01  
 r400su\_provoking\_vtx\_line\_01  
 r400su\_provoking\_vtx\_triangle\_01

Change 38743 on 2002/07/08 by mzhu@mzhu\_r400\_win\_tor  
 Update for double buffer register

Change 38735 on 2002/07/08 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
 updated (1st draft) of Disput Test plan

Change 38722 on 2002/07/08 by rbell@rbell\_crayola\_win\_cvd  
 updated test list after test plan review

Change 38697 on 2002/07/08 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
 Updated

Change 38670 on 2002/07/08 by chwang@chwang\_doc\_r400\_win\_cvd  
 Update.

Change 38661 on 2002/07/08 by efong@efong\_r400\_win\_tor\_doc  
 Updated

Change 38658 on 2002/07/08 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 38654 on 2002/07/08 by nlhu@nlhu\_r400\_doclib\_cmb

- update

Change 38652 on 2002/07/08 by tho@tho\_r400\_win  
 updated

Change 38648 on 2002/07/08 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
 Update

Change 38643 on 2002/07/08 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
 Updated files for TMDS  
 Added new CMDKeys for DAC

Change 38642 on 2002/07/08 by efong@efong\_r400\_win\_tor\_doc  
 updated

Change 38618 on 2002/07/08 by rbell@rbell\_crayola\_win\_cvd  
 updated

Change 38421 on 2002/07/05 by gabarca@gabarca\_crayola\_win\_cvd  
 updated open items

Change 38412 on 2002/07/05 by nbarbier@nbarbier\_r400\_win\_tor  
 Updated TMDS test descriptions

Change 38392 on 2002/07/05 by csampayo@fl\_csampayo\_it\_r400  
 Added Edge Flag Processing and Provoking Vertex Processing sub-sections (in the SU Section). Updated format of complete SU Section.

Change 38371 on 2002/07/05 by csampayo@fl\_csampayo\_it\_r400  
 1. Added edge flag and provoking vertex sections to SU Polygon Mode 2. Moved r400su\_edge\_flag\_01 to appropriate section

Change 38348 on 2002/07/05 by gabarca@gabarca\_crayola\_win\_cvd  
 updated as pre meeting July 3

Change 38347 on 2002/07/05 by mkelly@fl\_mkelly\_r400\_win\_laptop

VFD edge flag support and example, note: waiting on bug fix in ccgen.cpp to be checked in.

Change 38344 on 2002/07/05 by gregs@gregs\_r400\_win\_marlboro  
 <added indirect access to ROM memory

Change 38339 on 2002/07/05 by subad@MA\_SUBA  
 updated area of tcd. Area increased by 2 sq.mm. bcos the correct area estimate of degamma logic was entered. Originally an estimate was entered.

Change 38338 on 2002/07/05 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 38312 on 2002/07/05 by jacarey@fl\_jcarey2  
 Clears 2D Flag when writing to the CONTEXT\_ALLOCATION\_FLAGS

Change 38294 on 2002/07/05 by jacarey@fl\_jcarey2  
 New Addresses for Setting the Context Allocation Flags and the associated 2D flag.

Change 38285 on 2002/07/05 by jacarey@fl\_jcarey2  
 Updates to ME\_INIT  
 1. Instruction Thresholds need to be programmed for Real-Time  
 2. Side affects that occur when re-programming MAX\_CONTEXT

Change 38275 on 2002/07/05 by tho@tho\_r400\_win  
 -updated test document  
 -updated model document

Change 38271 on 2002/07/05 by rbell@rbell\_crayola\_win\_cvd  
 Added auto fill tests

Change 38257 on 2002/07/05 by bryans@bryans\_crayola\_doc  
 Add legacy version of display format (this needs to be updated)

Change 38254 on 2002/07/05 by bryans@bryans\_crayola\_doc  
 Update with misc. tasks

Change 38126 on 2002/07/04 by rbell@rbell\_crayola\_win\_cvd

Added autofill test

Change 38125 on 2002/07/04 by mzhu@mzhu\_r400\_win\_tor  
 Update for double buffer register

Change 38097 on 2002/07/04 by lkang@lkang\_r400\_win\_tor  
 update

Change 38095 on 2002/07/04 by bryans@bryans\_crayola\_doc  
 Update for July 1 week

Change 38070 on 2002/07/04 by nbarbier@nbarbier\_r400\_win\_tor  
 Updated Milestone 2 Tests

Change 37973 on 2002/07/03 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 37951 on 2002/07/03 by llefebvre@llefebvre\_laptop\_r400  
 Backup

Change 37950 on 2002/07/03 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 37926 on 2002/07/03 by jacarey@fl\_jcarey2  
 Updates for Small\_Text and HostData\_Blt packets w.r.t. SRC\_X term calculation.

Change 37925 on 2002/07/03 by mmantor@mmantor\_r400\_win  
 updated the sc\_sq interface definition

Change 37905 on 2002/07/03 by rbell@rbell\_crayola\_win\_cvd  
 Updated schedule, added more alpha blending tests

Change 37852 on 2002/07/03 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Good test for basic checks of sequence/scan conversion/shader operation...

Change 37847 on 2002/07/03 by rbell@rbell\_crayola\_win\_cvd



Added zero expansion tests

Change 37832 on 2002/07/03 by mzhu@mzhu\_r400\_win\_tor

Update for MH data return

Change 37831 on 2002/07/03 by hartogs@fl\_hartogs

In description of register VGT\_HOS\_MAX\_TESS\_LEVEL, changed valid discrete levels from 1 thru 15 inclusive to 1 thru 14 inclusive.  
This change was actually checked in by Brian Buchner yesterday, but he did not update the revision number or log.

Change 37798 on 2002/07/03 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

Updated

Change 37794 on 2002/07/03 by efong@efong\_r400\_win\_tor\_doc

updated

Change 37742 on 2002/07/02 by csampayo@fl\_csampayo\_r400

Updates:  
1. Updated description/status for the following tests in the tracker:  
r400vgt\_provoking\_vtx\_all\_01 r400vgt\_hos\_cubic\_pos\_pnt\_discrete\_01  
2. Sorted test\_list

Change 37706 on 2002/07/02 by gabarca@gabarca\_crayola\_win\_cvd

Cleaned up descriptions of legacy non-standard VGA registers, added that DISP\_START, BYTE PAN and ATTR\_PPAN are loaded every line

Change 37705 on 2002/07/02 by tho@tho\_r400\_win

updated cursor test goldens  
updated milestone 2 test list

Change 37702 on 2002/07/02 by jasif@jasif\_r400\_win\_tor

Updated.

Change 37690 on 2002/07/02 by jhoule@MA\_IHOULE

Changed format to removed level skipping.

Change 37681 on 2002/07/02 by bbuchner@fl\_bbuchner\_r400\_win

tessellation engine creation

Page 233 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 37677 on 2002/07/02 by bbuchner@fl\_bbuchner\_r400\_win

updated tess level constraints

Change 37675 on 2002/07/02 by vliu@vliu\_r400\_cnviu100\_win\_cvd

Update

Change 37664 on 2002/07/02 by jacarey@fl\_jcarey2

Added Microcode for 2D Paint Packet  
Includes use of subroutines ... i.e. Call & Return Instructions.

Change 37642 on 2002/07/02 by jayw@MA\_JAYW

initial rev

Change 37613 on 2002/07/02 by frivas@FL\_FRivas

update to number of tests in "Schedule" sheet

Change 37607 on 2002/07/02 by gregs@gregs\_r400\_win\_marlboro

added hardware at the top of chip.v options (straps).

Change 37595 on 2002/07/02 by chwang@chwang\_doc\_r400\_win\_cvd

Update.

Change 37594 on 2002/07/02 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 37563 on 2002/07/02 by jacarey@fl\_jcarey2

Update for the arbitration in the RCIU

Change 37562 on 2002/07/02 by tho@tho\_r400\_win

updated

Change 37557 on 2002/07/02 by jasif@jasif\_r400\_win\_tor

Updated.

Change 37549 on 2002/07/02 by rbell@rbell\_crayola\_win\_cvd

updated for alpha blending

Page 234 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 37536 on 2002/07/02 by jacarey@fl\_jcarey2

1. Update PFP Pseudocode for the case where the INDX\_BASE/Size are not present in the draw\_indx packet.  
2. Updated algorithm for draw\_indx in the PM4 Spec.

Change 37534 on 2002/07/02 by jacarey@fl\_jcarey2

1. Update description for LCC packet.  
2. Strike through packets that were obsolete/changed as of June 15th

Change 37477 on 2002/07/01 by csampayo@fl\_csampayo\_r400

1. Updated the display size, test description and other minor test format changes for the following tests:  
r400vgt\_dma\_swap\_indx16\_01.cpp  
r400vgt\_dma\_swap\_indx32\_01.cpp  
2. Updated the tests descriptions on the test tracker for above tests  
3. Deleted the following test from the test tracker and adjusted Schedule accordingly:  
r400vgt\_hos\_PNQ\_lp\_ln\_cont\_13\_16\_texture\_lighting\_projection.cpp

Change 37456 on 2002/07/01 by gregs@gregs\_r400\_linux\_marlboro

<reset bring-up >

Change 37429 on 2002/07/01 by ashishs@fl\_ashishs\_r400\_win

update

Change 37376 on 2002/07/01 by mkelly@fl\_mkelly\_r400\_win\_laptop

More tests validating reference vertex delta pixel calcs for baryc interp.

Change 37217 on 2002/06/28 by lkang@lkang\_r400\_win\_tor

update

Change 37199 on 2002/06/28 by gabarca@gabarca\_crayola\_win\_cvd

updated VGAHDP

Change 37174 on 2002/06/28 by csampayo@fl\_csampayo\_r400

Added the following new VGT tests and updated test tracker and test\_list.

Page 235 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 37170 on 2002/06/28 by jasif@jasif\_r400\_win\_tor

Updated.

Change 37101 on 2002/06/28 by jasif@jasif\_r400\_win\_tor

Updated.

Change 36997 on 2002/06/28 by lkang@lkang\_r400\_win\_tor

clock specs for bif and dc

Change 36991 on 2002/06/28 by gregs@gregs\_r400\_linux\_marlboro

<type fix>

Change 36985 on 2002/06/28 by jacarey@fl\_jcarey2

Add Defaults to the Spreadsheet

Change 36929 on 2002/06/27 by gregs@gregs\_r400\_linux\_marlboro

< added IO\_CG\_refclk >

Change 36895 on 2002/06/27 by mzhu@mzhu\_r400\_win\_tor

Update overlay zero expansion

Change 36880 on 2002/06/27 by jasif@jasif\_r400\_win\_tor

Updated status. Reorganized features into more subsections.

Change 36872 on 2002/06/27 by gabarca@gabarca\_crayola\_win\_cvd

Completed VGAHDP spec (except performance)

Change 36862 on 2002/06/27 by frising@ma\_frising

Changes:  
-Add INDEX\_ROUND field to vfetch instruction (0=round, 1=truncate to negative infinity)  
-Make OFFSET\_X in vfetch instruction a signed 23-bit integer.

Change 36843 on 2002/06/27 by mpersaud@mpersaud\_r400\_win\_tor

Updated documents to reflect actual DCCIF implementation

Change 36842 on 2002/06/27 by mpersaud@mpersaud\_r400\_win\_tor

Page 236 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Cleared up operation of IDCT interface.  
General document clean up and maintenance.

Change 36836 on 2002/06/27 by mkelly@fl\_mkelly\_r400\_win\_laptop

Perspective-Correct barycentric coordinate interpolation simple tests verifying combos of ref v0 locations.

Change 36831 on 2002/06/27 by jayw@MA\_JAYW

pre-1st triangle render check in

Change 36824 on 2002/06/27 by jacarey@fl\_jcarey2

Document Polarity Inversion of the Deallocation FIFO Booleans used by the Micro Engine.

Change 36802 on 2002/06/27 by mzhu@mzhu\_r400\_win\_tor

Correct Y\_alpha for graphics and overlay alpha blending

Change 36792 on 2002/06/27 by tho@tho\_r400\_win

emu feature list added

Change 36785 on 2002/06/27 by frising@ma\_frising

Another 1.40 checkpoint.  
-declare noise texture and related functionality as being unsupported on r400.  
-adjust fetch opcodes for future growth. 0.15 = fetches, 16..23 = gets, 24..31 = sets  
-move height specifier in SIZE field up 3-bits to allow for future growth of max 2D texture size.  
-added DXN compressed 2 channel texture format for normals (and colors)  
-specify that number format conversion will happen for compressed texture formats (e.g. DXT/DXN)  
-make SIGNED\_RF\_MODEL\_ALL apply to unsigned biased RF numbers. Evan pointed out that this is needed to do the \*2-1 type mapping. Presumably since we have this for signed numbers this is straight forward to add.  
  
-Until we understand what MS really wants, we are keeping our getgradients as is and not adding a setgradients/txldd.

Change 36784 on 2002/06/27 by gregs@gregs\_r400\_linux\_marlboro

<remove ROM\_strap\_emu\_desktop >

Change 36778 on 2002/06/27 by csampayo@fl\_csampayo\_r400

Updated status for the following VGT tests:

Page 237 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

r400vgt\_immed\_index\_tri\_wflags\_01  
r400vgt\_immed\_index\_tri\_strip\_01  
r400vgt\_immed\_index\_tri\_list\_01  
r400vgt\_immed\_index\_tri\_fan\_01  
r400vgt\_immed\_index\_rectangle\_list\_01  
r400vgt\_immed\_index\_polygon\_01  
r400vgt\_immed\_index\_quad\_strip\_01  
r400vgt\_immed\_index\_quad\_list\_01

Change 36772 on 2002/06/27 by mzhu@mzhu\_r400\_win\_tor

Correct REDD\_LINE\_COUNT logic for color cursor

Change 36755 on 2002/06/27 by jacarey@fl\_jcarey2

Add Pixel and Vertex Shader Booleans and Status Signals.

Change 36747 on 2002/06/27 by jacarey@fl\_jcarey2

Update Pseudocode for the POLYLINE PM4 Packet.

Change 36731 on 2002/06/27 by jacarey@fl\_jcarey2

Add Vertex and Pixel Dealloc FIFO Full Signals to Boolean Register.

Change 36718 on 2002/06/27 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 36697 on 2002/06/27 by jacarey@fl\_jcarey2

Miscellaneous Typos

Change 36614 on 2002/06/26 by csampayo@fl\_csampayo\_r400

Updated status for the following tests:  
r400vgt\_dma\_index\_quad\_list\_01  
r400vgt\_dma\_index\_quad\_strip\_01  
r400vgt\_dma\_index\_polygon\_01

Change 36531 on 2002/06/26 by mzhu@mzhu\_r400\_win\_tor

Add DMIF data return order

Change 36526 on 2002/06/26 by gregs@gregs\_r400\_win\_marlboro

DRAM\_select

Change 36521 on 2002/06/26 by mzhu@mzhu\_r400\_win\_tor

Page 238 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Add more details for ICON and CURSOR implementation. Update LUT host read/write.

Change 36510 on 2002/06/26 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update SC plan test approach for baryc interpolation reference pixel delta calculation.

Change 36508 on 2002/06/26 by gregs@gregs\_r400\_linux\_marlboro

<resolving top level chip connections ... >

Change 36488 on 2002/06/26 by whui@whui\_r400\_win\_tor

Test plan for R400 DCT

Change 36480 on 2002/06/26 by chwang@chwang\_doc\_r400\_win\_cvd

Rename.

Change 36479 on 2002/06/26 by chwang@chwang\_doc\_r400\_win\_cvd

Feature list for R400 IDCT.

Change 36476 on 2002/06/26 by rramsey@RRAMSEY\_P4\_r400\_win

Clean up SC dumps  
Remove pa\_sc.dmp since it is redundant  
Add sc\_rbbm.dmp which only contains sc relevant reg writes so th\_sc runs faster  
Rearrange dump levels so only block level interfaces are dumped at level 1,  
hw accurate internals are dumped at level 2, and non-hw accurate are dumped at level 3  
Update emu\_dumps block diagram to reflect changes

Change 36473 on 2002/06/26 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

Updated

Change 36431 on 2002/06/26 by rherick@ma\_rherick\_crayola

Documentation for Multi-streamed RB Client interface...

Change 36394 on 2002/06/26 by jacarey@fl\_jcarey2

Updates for Constant Write Enables Controlled by the LCC Packet and not the Set\_Constant packet.

Change 36302 on 2002/06/25 by csampayo@fl\_csampayo\_r400

Updated status for following tests:

Page 239 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

r400vgt\_dma\_index\_tri\_list\_01  
r400vgt\_dma\_index\_tri\_fan\_01  
r400vgt\_dma\_index\_tri\_strip\_01  
r400vgt\_dma\_index\_tri\_wflags\_01

Change 36274 on 2002/06/25 by ashists@fl\_ashists\_r400\_win

update

Change 36258 on 2002/06/25 by lkang@lkang\_r400\_win\_tor

updates

Change 36191 on 2002/06/25 by gregs@gregs\_r400\_linux\_marlboro

<misc names changes >

Change 36171 on 2002/06/25 by jowang@jowang\_R400\_win

added SHIFT\_IN\_BLACK and BLACK\_COLOR\_\*

Change 36163 on 2002/06/25 by dclifton@dclifton\_r400

Identified gradients as subpixel gradients.

Change 36159 on 2002/06/25 by jacarey@fl\_jcarey2

Update draw\_indx pseudocode.

Change 36157 on 2002/06/25 by efong@efong\_r400\_win\_tor\_doc

Updated with autoreplication and autocentering for extended is done

Change 36154 on 2002/06/25 by jacarey@fl\_jcarey2

Make microh to microm and mih to mmm

Change 36145 on 2002/06/25 by csampayo@fl\_csampayo\_r400

Various updates to VGT section. Added test numbering to CL/VTE section

Change 36134 on 2002/06/25 by rfevreau@rfevreau\_r400\_win

Updated TMSD schedule

Change 36124 on 2002/06/25 by rbell@rbell\_crayola\_win\_cvd

Added alpha blending tests, update schedule for this

Page 240 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history





Change 36091 on 2002/06/25 by jacarey@fl\_jcarey2

Add note on management of the external memory surfaces for 2D.

Change 35994 on 2002/06/24 by csampayo@fl\_csampayo\_lt\_r400

Update to fix counters for some tests in the CL/VTE section

Change 35974 on 2002/06/24 by jasif@jasif\_r400\_win\_tor

Updated.

Change 35961 on 2002/06/24 by csampayo@fl\_csampayo\_lt\_r400

Updated status for the following VGT tests:  
r400vgt\_dma\_engine\_09  
r400vgt\_dma\_engine\_10

Change 35947 on 2002/06/24 by gregs@gregs\_r400\_linux\_marlboro

intel app stp/busy protocol.

Change 35890 on 2002/06/24 by gregs@gregs\_r400\_linux\_marlboro

fixing i/o

Change 35867 on 2002/06/24 by jacarey@fl\_jcarey2

Status Spreadsheet Updated

Change 35862 on 2002/06/24 by rvelez@rvelez\_r400\_win\_tor

Updated 6/24

Change 35830 on 2002/06/24 by frivas@FL\_FRivas

Update. Finished HOS PNQ test.

Change 35826 on 2002/06/24 by jacarey@fl\_jcarey2

Updates for Post-June15th Packet Changes

Change 35818 on 2002/06/24 by frivas@FL\_FRivas

update to HOS PNQ test

Change 35817 on 2002/06/24 by efong@efong\_r400\_win\_tor\_doc

Updated so that 06/22/02 done on 06/30/02

Page 241 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 35814 on 2002/06/24 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 35807 on 2002/06/24 by frivas@FL\_FRivas

update to test counts in Schedule sheet

Change 35804 on 2002/06/24 by frivas@FL\_FRivas

update to HOS PNQ test

Change 35799 on 2002/06/24 by chwang@chwang\_doc\_r400\_win\_cvd

Update.

Change 35795 on 2002/06/24 by vliu@vliu\_r400\_cnviui00\_win\_cvd

Update

Change 35787 on 2002/06/24 by frivas@FL\_FRivas

no change

Change 35784 on 2002/06/24 by tho@tho\_r400\_win

updated

Change 35773 on 2002/06/24 by rbell@rbell\_crayola\_win\_cvd

Added overlay matrix transform tests

Change 35769 on 2002/06/24 by ctaylor@fl\_ctaylor\_r400\_win\_marlboro

Added Baryc description to help define Shader Pipe usage for pixel interpolation.

Change 35765 on 2002/06/24 by jacarey@fl\_jcarey2

Updates for Microcode Width Increase to 74 bits

Change 35762 on 2002/06/24 by rbell@rbell\_crayola\_win\_cvd

updated

Change 35746 on 2002/06/24 by ashishs@fl\_ashishs\_r400\_win

update

Page 242 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 35743 on 2002/06/24 by frivas@FL\_FRivas

Update

Change 35739 on 2002/06/24 by jacarey@fl\_jcarey2

1. Microcode RAM is single-ported

Updated Sections:  
6.11  
7.28  
7.29  
7.13  
7.14

Change 35732 on 2002/06/24 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 35641 on 2002/06/21 by ashishs@fl\_ashishs\_r400\_win

update

Change 35639 on 2002/06/21 by csampayo@fl\_csampayo\_r400

Updated status for the following tests:  
r400vgt\_reuse\_index\_triangle\_list\_02  
r400vgt\_reuse\_index\_triangle\_list\_03

Change 35617 on 2002/06/21 by frivas@FL\_FRivas

update to HOS PNT tests

Change 35604 on 2002/06/21 by jasif@jasif\_r400\_win\_tor

Updated.

Change 35597 on 2002/06/21 by khabbari@khabbari\_r400\_win

auto coef cal released

Change 35571 on 2002/06/21 by jasif@jasif\_r400\_win\_tor

Updated.

Change 35548 on 2002/06/21 by jacarey@fl\_jcarey2

Add TC\_RBBM\_busy and add to RBBM\_STATUS register  
Change TP\_RBBM\_busy to TPC\_RBBM\_busy

Page 243 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 35546 on 2002/06/21 by jhoule@MA\_JHOULE

Check in for Tien to look at a bit.

Change 35545 on 2002/06/21 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 35527 on 2002/06/21 by jacarey@fl\_jcarey2

Clarify Event Initiators that generate signals from SQ and RC>

Change 35517 on 2002/06/21 by jacarey@fl\_jcarey2

Update Documents

Change 35508 on 2002/06/21 by mkelly@fl\_mkelly\_r400\_win\_laptop

Simple CL test

Change 35501 on 2002/06/21 by rbell@rbell\_crayola\_win\_cvd

Updated some graphics tests in testplan  
Added two overlay basic tests (8888 and 2101010)

Change 35494 on 2002/06/21 by jacarey@fl\_jcarey2

Fix Typo: T1 Constant should be T0 for Source informatoin.

Change 35352 on 2002/06/20 by jasif@jasif\_r400\_win\_tor

Updated.

Change 35330 on 2002/06/20 by ashishs@fl\_ashishs\_r400\_win

update

Change 35315 on 2002/06/20 by jasif@jasif\_r400\_win\_tor

Updated.

Change 35282 on 2002/06/20 by jacarey@fl\_jcarey2

1. Increased Depth of the Scratch Memory  
2. Added Incremental\_Update Boolean  
3. Added Context\_Dirty Boolean

Change 35264 on 2002/06/20 by fhshen@fhshen\_r400\_win\_marlboro

Page 244 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Update errors

Change 35218 on 2002/06/20 by georgev@ma\_georgev  
Added changes from Lauraunt.

Change 35199 on 2002/06/20 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 35176 on 2002/06/20 by jacarey@fl\_jcarey2  
Document that Type-0 packets cannot be used for instruction memory updates.

Change 35157 on 2002/06/20 by ashishs@fl\_ashishs\_r400\_win  
update

Change 35153 on 2002/06/20 by georgev@ma\_georgev  
Added new tests to list.

Change 35101 on 2002/06/20 by jacarey@fl\_jcarey2  
SRC1 into shifter is only 5 bits.

Change 35097 on 2002/06/20 by jacarey@fl\_jcarey2  
Fix Height and Width parameter sizes in packets

Change 35084 on 2002/06/19 by csampayo@fl\_csampayo\_r400  
Updated status for the following tests:  
r400vgt\_dma\_engine\_01  
r400vgt\_dma\_engine\_02  
r400vgt\_dma\_engine\_03  
r400vgt\_dma\_engine\_04  
r400vgt\_dma\_engine\_05  
r400vgt\_dma\_engine\_06  
r400vgt\_dma\_engine\_07  
r400vgt\_dma\_engine\_08

Change 35082 on 2002/06/19 by mpersaud@mpersaud\_r400\_win\_tor  
Updated spec to be inline with actual implementation

Change 35053 on 2002/06/19 by rvelez@rvelez\_r400\_win\_tor

Page 245 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated 6/19/02

Change 35048 on 2002/06/19 by lkang@lkang\_r400\_win\_tor  
updated emulation in vga, scaler, crt, fb, & dispout.

Change 35028 on 2002/06/19 by jowang@jowang\_R400\_win  
updated

Change 35008 on 2002/06/19 by jacarey@fl\_jcarey2  
Updates for IM\_Load\_Immediate Support

Change 35007 on 2002/06/19 by tho@tho\_r400\_win  
-2x magnify cursor complete  
-color cursor complete

Change 34985 on 2002/06/19 by jacarey@fl\_jcarey2  
1. Preparations for Context Management  
2. Event Timestamp Discards Data If Event ID Does Not Match  
3. Added DMA\_Data\_Source and Context\_Dirty local Addresses.

Change 34977 on 2002/06/19 by jacarey@fl\_jcarey2  
Additions to Micro Engine Address Map  
1. DMA\_Data\_Source  
2. Context\_Dirty Boolean

Change 34959 on 2002/06/19 by jacarey@fl\_jcarey2  
Update Base Addresses for Determining Incremental Updates.

Change 34953 on 2002/06/19 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update to include control of Z\_WRITE\_ENABLE and ZFUNC... awaiting support updates to RB\_emu\_lib...

Change 34936 on 2002/06/19 by inuskatb@inuskatb\_r400\_win\_cnimuskatb  
Updated

Change 34920 on 2002/06/19 by jowang@jowang\_R400\_win  
updated version

Page 246 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 34918 on 2002/06/19 by frising@ma\_frising  
Another 1.40 checkpoint.  
-go only with YUV replication (remove YUV interpolation)  
-rough in DXXN1 and DXXN2 compressed normal formats

Change 34914 on 2002/06/19 by bryans@bryans\_crayola\_doc  
Add emulate/simulate updated command line options (used for launching the emulation and simulation from the Makefiles/perl scripts)

Change 34769 on 2002/06/18 by efong@efong\_r400\_win\_tor\_doc  
Updated ... changed overscan to be done

Change 34756 on 2002/06/18 by tho@tho\_r400\_win  
-matrix transform and adjustment complete with debug test  
-ycbcr subsampling complete with debug test

Change 34750 on 2002/06/18 by inuskatb@inuskatb\_r400\_win\_cnimuskatb  
updated

Change 34747 on 2002/06/18 by inuskatb@inuskatb\_r400\_win\_cnimuskatb  
updated

Change 34731 on 2002/06/18 by bryans@bryans\_crayola\_doc  
Update to reflect the additions in TESTINFO object:  
  
getArchitecture()  
getConfiguration()  
getSimMode()  
getSimType()  
getTimingMode()  
getTestMode()  
  
- removed reference to Architecture object (this is retired for the new chip library)

Change 34730 on 2002/06/18 by inuskatb@inuskatb\_r400\_win\_cnimuskatb  
updated

Change 34722 on 2002/06/18 by rfevreau@rfevreau\_r400\_win  
TMDS schedule updated

Page 247 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 34690 on 2002/06/18 by efong@efong\_r400\_win\_tor\_doc  
Updated and put in who is responsible for M2 stuff

Change 34679 on 2002/06/18 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 34654 on 2002/06/18 by jacarey@fl\_jcarey2  
Multiplier in the Micro Engine is 14x14

Change 34629 on 2002/06/17 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 34623 on 2002/06/17 by tho@tho\_r400\_win  
update

Change 34614 on 2002/06/17 by jowang@jowang\_R400\_win  
updated horizontal filter (not complete)

Change 34608 on 2002/06/17 by snezana@snezana\_crayola\_win\_cvd  
updated

Change 34601 on 2002/06/17 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 34591 on 2002/06/17 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 34582 on 2002/06/17 by bryans@bryans\_crayola\_doc  
update...

Change 34571 on 2002/06/17 by paulv@MA\_PVELLA  
Forgot to save changes from previous submission.

Change 34567 on 2002/06/17 by paulv@MA\_PVELLA  
Updated MHS with latest specifications and hardware changes.

Change 34557 on 2002/06/17 by jasif@jasif\_r400\_win\_tor

Page 248 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Updated.

Change 34552 on 2002/06/17 by jacarey@fl\_jcarey2  
Remove Slow Client Protocol from the RBBM documentation.

Change 34550 on 2002/06/17 by gabarca@gabarca\_crayola\_win\_cvd  
updated table of vga extended registers

Change 34534 on 2002/06/17 by frivas@FL\_FRivas  
Update to PNL tests

Change 34530 on 2002/06/17 by ashishs@fl\_ashishs\_r400\_win  
update

Change 34527 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNL test.

Change 34515 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT using discrete tessellation with lighting and texturing.

Change 34508 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT with discrete tessellation and orthographic projection.

Change 34500 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT test.

Change 34498 on 2002/06/17 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Test SC rectangle list vertex order interpretation...

Change 34491 on 2002/06/17 by frivas@FL\_FRivas  
Update to PNT HOS test that uses only a single PNT in wireframe mode for continuous tessellation that varies between 1.0-14. with reuse 4-16.

Change 34485 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT texture and lighting test.

Change 34479 on 2002/06/17 by frivas@FL\_FRivas

Page 249 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update to HOS PNT texture and lighting test

Change 34475 on 2002/06/17 by rramsey@RRAMSEY\_P4\_r400\_win  
Add documentation on sc dump points

Change 34457 on 2002/06/17 by tho@tho\_r400\_win  
updated

Change 34454 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT test with changing normals.

Change 34452 on 2002/06/17 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 34443 on 2002/06/17 by chwang@chwang\_doc\_r400\_win\_cvd  
Update

Change 34439 on 2002/06/17 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 34438 on 2002/06/17 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated

Change 34437 on 2002/06/17 by jacarey@fl\_jcarey2  
Remove Constant Flag from the write requesters.

Change 34436 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT texture test

Change 34431 on 2002/06/17 by jacarey@fl\_jcarey2  
1. Set\_Constant: Qualified incrementing coherency counter with CONST\_WRITE\_ENABLE.  
2. Updated 2D-to-3D mode determination.

Change 34417 on 2002/06/17 by frivas@FL\_FRivas  
Update to HOS PNT test that adjusts normals during runtime.

Page 250 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 34415 on 2002/06/17 by rbell@rbell\_crayola\_win\_cvd  
Changed to testchip.arch and testchip.conf

Change 34414 on 2002/06/17 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 34413 on 2002/06/17 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 34412 on 2002/06/17 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Disconnect Test + golden  
updated crtc emu doc

Change 34403 on 2002/06/17 by cfong@cfong\_r400\_win\_tor\_doc  
Updated

Change 34369 on 2002/06/16 by ashishs@fl\_ashishs\_r400\_win  
update

Change 34294 on 2002/06/14 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 34290 on 2002/06/14 by csampayo@fl\_csampayo\_lt\_r400  
Various document updates

Change 34281 on 2002/06/14 by lkang@lkang\_r400\_win\_tor  
updated scaler emulation schedule

Change 34269 on 2002/06/14 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 34264 on 2002/06/14 by nbarbier@nbarbier\_r400\_win\_tor  
Updated Auto-detection section.

Change 34242 on 2002/06/14 by kcorrell@kcorrell\_r400\_docs\_marlboro  
update

Page 251 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 34221 on 2002/06/14 by efong@efong\_r400\_win\_tor\_doc  
Added in new vertical replication tests

Change 34207 on 2002/06/14 by rvelez@rvelez\_r400\_win\_tor  
Updated 6/14

Change 34205 on 2002/06/14 by snezana@snezana\_crayola\_win\_cvd  
updated for alu inside framectl

Change 34183 on 2002/06/14 by cfong@cfong\_r400\_win\_tor\_doc  
Just strikethrough on the tap configuration

Change 34146 on 2002/06/14 by mmantor@mmantor\_r400\_win  
moved spec to sc directory and added a test bench document to the directory

Change 34141 on 2002/06/14 by tien@ma\_spinach  
Updated TP and TC areas

Change 34061 on 2002/06/14 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated

Change 33916 on 2002/06/13 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 33910 on 2002/06/13 by mzhu@mzhu\_r400\_win\_tor  
add test cases for grphics/overlay blend

Change 33835 on 2002/06/13 by mzhu@mzhu\_r400\_win\_tor  
add test plan for second milestone

Change 33820 on 2002/06/13 by hartogs@fl\_hartogs  
New revision is 0.96  
Added diagram to show VGT configurations.  
Updated Tessellation Engine fixed function table.

Change 33807 on 2002/06/13 by gabarca@gabarca\_crayola\_win\_cvd

Page 252 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Added in open issues add register bit to select if line compare happens in compared line of the next

Change 33796 on 2002/06/13 by gabarca@gabarca\_crayola\_win\_cvd

updated open issue: readback of VGA DISP interface

Change 33794 on 2002/06/13 by gabarca@gabarca\_crayola\_win\_cvd

Updated open issues and legacy reg list

Change 33757 on 2002/06/13 by lkang@lkang\_r400\_win\_tor

Incorporated emulation, netlist, & chip integration schedules

Change 33619 on 2002/06/12 by imuskath@imuskath\_r400\_win\_cimuskath

wrap around test  
updated display config to support sync\_a\_start  
vga render test V1.0 - test run only

Change 33577 on 2002/06/12 by hartogs@fl\_hartogs

New revision number is 0.95  
Updated all register definitions to reflect new "driver friendly" address assignments.  
This was architecture-wide change made on 5/15/02.  
Changed GFX\_COPY\_STATE register description to reflect actual hardware implementation.

Deleted GFX\_PIPE\_CNTL register.  
Added enumerations to the VGT\_EVENT\_INITIATOR register.  
Added section about restrictions for fields in VGT\_GRP\_PRIM\_TYPE register.  
Removed TESS\_INPUT\_MODE field from VGT\_HOS\_CNTL register.  
Changed VGT\_SQ interface (in agreement with Laurent Lefebvre) so that the VGT\_SQ\_end\_of\_vtx\_vect and VGT\_SQ\_state signals are "don't care" if the VGT\_SQ\_continued signal is set.

Change 33532 on 2002/06/12 by frising@ma\_frising

Another checkpoint. Start cleaning up usage tables.

Change 33518 on 2002/06/12 by frivas@FL\_FRivas

Update - Added a test to HOS PNT section. The new test implements lighting with moving normals.

Change 33490 on 2002/06/12 by frivas@FL\_FRivas

Update to HOS PNQ test.

Page 253 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 33464 on 2002/06/12 by jasif@jasif\_r400\_win\_tor

Updated.

Change 33362 on 2002/06/11 by frising@ma\_frising

Post June 15 1.40 checkpoint.

Change 33349 on 2002/06/11 by ashishs@fl\_ashishs\_r400\_win

update

Change 33339 on 2002/06/11 by frivas@FL\_FRivas

Update to PNQ HOS test.

Change 33329 on 2002/06/11 by mkelly@fl\_mkelly\_r400\_win\_laptop

update, sc point tests...

Change 33299 on 2002/06/11 by jayw@MA\_JAYW

more FB and cache line formats

Change 33282 on 2002/06/11 by frivas@FL\_FRivas

Update to HOS test for single PNT with cubic position and quadratic normal using continuous tessellation.

Change 33275 on 2002/06/11 by tho@tho\_r400\_win

updated, matrix transform and adjustment emulation block completed

Change 33219 on 2002/06/11 by nbarbier@nbarbier\_r400\_win\_tor

Updated description of TMDS reduction block.

Change 33215 on 2002/06/11 by frivas@FL\_FRivas

Update to HOS test of a single PNT with linear interpolation and continuous tessellation.

Change 33201 on 2002/06/11 by frivas@FL\_FRivas

Update to status of HOS test of PNT's with lighting and texturing.

Change 33199 on 2002/06/11 by frivas@FL\_FRivas

Update to HOS tests for continuous tessellation of PNT's

Page 254 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 33195 on 2002/06/11 by csampayo@fl\_csampayo\_r400

Edited Windows Registry, Test Format and Test Samples sections

Change 33177 on 2002/06/11 by jowang@jowang\_R400\_win

modified spreadsheet for 10 tap H  
updated lbscfp to output fixed point coeffs to file

Change 33172 on 2002/06/11 by csampayo@fl\_csampayo\_r400

Update status for the following test:  
r400vgt\_hos\_PNT\_cp\_gn\_disc\_14\_04\_lit\_tex\_proj\_01

Change 33148 on 2002/06/11 by frivas@FL\_FRivas

Update to HOS tests of PNT and PNL

Change 33147 on 2002/06/11 by frivas@FL\_FRivas

Progress on HOS tests documented.

Change 33098 on 2002/06/10 by bryans@bryans\_crayola\_doc

Update based on today's discussion

Change 33070 on 2002/06/10 by tho@tho\_r400\_win

icon cursor testlist updated

Change 33054 on 2002/06/10 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update, sc tests...

Change 33041 on 2002/06/10 by jayw@MA\_JAYW

initial checkin

Change 33040 on 2002/06/10 by jayw@MA\_JAYW

several 'admin' type signals  
clean and busy  
resets  
clocks  
removed shadow from queue encoding.

Change 33029 on 2002/06/10 by jacarey@fl\_jcarey2

Check In All Files.

Page 255 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 33023 on 2002/06/10 by vromaker@MA\_VIC\_P4

updated sq top block diagram

Change 33021 on 2002/06/10 by ashishs@fl\_ashishs\_r400\_win

update

Change 33002 on 2002/06/10 by jacarey@fl\_jcarey2

Added RT\_GUI\_ACTIVE to rbbm\_status

Change 32990 on 2002/06/10 by nluu@nluu\_r400\_doclib\_cmb

- update

Change 32988 on 2002/06/10 by jacarey@fl\_jcarey2

Remove hirq\_pending from gui\_active determination.

Change 32987 on 2002/06/10 by vliu@vliu\_r400\_cnvtl100\_win\_cvd

Update

Change 32981 on 2002/06/10 by jacarey@fl\_jcarey2

Fix typo in sub-blk\_prefetch packet.  
DWORD count should be 7:0 because the largest size is 128 DWORDS.

Change 32973 on 2002/06/10 by jacarey@fl\_jcarey2

Add descriptions of packets for after June15th Milestone.

Change 32963 on 2002/06/10 by csampayo@fl\_csampayo\_r400

Updated status for the following tests:

r400vgt\_line\_list\_01  
r400vgt\_quad\_strip\_01  
r400vgt\_quad\_list\_01  
r400vgt\_rectangle\_list\_01  
r400vgt\_polygon\_01  
r400vgt\_line\_loop\_01  
r400vgt\_point\_list\_01  
r400vgt\_line\_strip\_01  
r400vgt\_triangle\_fan\_01  
r400vgt\_triangle\_list\_01  
r400vgt\_triangle\_strip\_01  
r400vgt\_triangle\_wflags\_01

Page 256 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 32960 on 2002/06/10 by tho@tho\_r400\_win updated

Change 32947 on 2002/06/10 by chwang@chwang\_doc\_r400\_win\_cvd Update. Added self to Icon and Cursor for test API.

Change 32939 on 2002/06/10 by jasif@jasif\_r400\_win\_tor Updated.

Change 32935 on 2002/06/10 by jasif@jasif\_r400\_win\_tor Updated.

Change 32921 on 2002/06/10 by rvelez@rvelez\_r400\_win\_tor Updated 6/10

Change 32907 on 2002/06/10 by jacarey@fl\_jcarey2 Clarification on CMDFIFO Entries in Wait\_Until

Change 32903 on 2002/06/10 by rbell@rbell\_crayola\_win\_cvd updated

Change 32899 on 2002/06/10 by rbell@rbell\_crayola\_win\_cvd updated

Change 32897 on 2002/06/10 by imuskatb@imuskatb\_r400\_win\_cnimuskatb Updated

Change 32872 on 2002/06/09 by jimmylau@jimmylau\_r400\_win\_tor Major update of DCCG specs after specs review.

Change 32809 on 2002/06/07 by efong@efong\_r400\_win\_tor\_doc updated

Change 32807 on 2002/06/07 by efong@efong\_r400\_win\_tor\_doc updated

Page 257 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 32805 on 2002/06/07 by rvelez@rvelez\_r400\_win\_tor Updated 6/7

Change 32785 on 2002/06/07 by jhoule@MA\_JHOULE Added separable variation, showing it still works. Weights stored now mean something else (a little bit).

Change 32749 on 2002/06/07 by dclifton@dclifton\_r400 Added description of VTE and VE

Change 32729 on 2002/06/07 by jasif@jasif\_r400\_win\_tor Updated.

Change 32718 on 2002/06/07 by jacarey@fl\_jcarey2 Added missing signal: CG\_CP\_pm\_enb to external interfaces.

Change 32683 on 2002/06/07 by efong@efong\_r400\_win\_tor\_doc Updated

Change 32679 on 2002/06/07 by jayw@MA\_JAYW new depth blocks

Change 32662 on 2002/06/07 by jacarey@fl\_jcarey2 Add note on 2D/3D transition detection to PFP section.

Change 32653 on 2002/06/07 by jacarey@fl\_jcarey2 Document method of determining 2D/3D transitions...

Change 32647 on 2002/06/07 by bryans@bryans\_crayola\_doc Update with new top level targets:  
gen\_block\_list  
detailed\_summary  
Add: block\_list.txt description to appendix

Change 32643 on 2002/06/07 by dclifton@dclifton\_r400 Update with increased z precision, latest I/O and register spec.

Page 258 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 32641 on 2002/06/07 by jacarey@fl\_jcarey2 Add 2D/3D Mode switch assumptions to pseudocode.

Change 32621 on 2002/06/07 by jasif@jasif\_r400\_win\_tor Updated.

Change 32619 on 2002/06/07 by jacarey@fl\_jcarey2 Update CMDFIFO\_AVAAIL for RBBM\_STATUS

Change 32609 on 2002/06/07 by jasif@jasif\_r400\_win\_tor Updated.

Change 32600 on 2002/06/07 by jacarey@fl\_jcarey2 Update Soft Reset Register Text

Change 32582 on 2002/06/07 by jhoule@MA\_JHOULE Arbitrary filter weight description.

Change 32574 on 2002/06/07 by vgoel@fl\_vgoel2 added description for test r400vgt\_hos\_PNT\_disc\_cp\_qn\_14\_4\_light\_texture\_stress.cpp and changed status of (% done) for couple of tests.

Change 32569 on 2002/06/07 by lseiler@lseiler\_r400\_win\_marlboro Changed SX\_RB\_mask\_type to SX\_RB\_quad\_type, removed RB\_SX\_index\_next, added text and SX\_RB signals for new memory export method.

Change 32562 on 2002/06/07 by gregs@gregs\_r400\_win\_marlboro removed 3 of the CG\_CP\_RT signals.

Change 32473 on 2002/06/06 by georgev@ma\_georgev First cut.

Change 32451 on 2002/06/06 by bryans@bryans\_crayola\_doc Update status - add DCCIF enhancement request

Change 32444 on 2002/06/06 by askende@andi\_r400\_docs

Page 259 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

updated the RB\_SX\_index interface to include "RB\_SX\_index\_op"

Change 32443 on 2002/06/06 by rbell@rbell\_crayola\_win\_cvd Added keyer tests

Change 32438 on 2002/06/06 by mzhu@mzhu\_r400\_win\_tor Update description for ICON and CURSOR width and height registers.

Change 32433 on 2002/06/06 by vgoel@fl\_vgoel2 removed a repeated test and changed PNL test to require linear normal instead of quadratic normal

Change 32428 on 2002/06/06 by vgoel@fl\_vgoel2 added status of HOS test ( % done)

Change 32374 on 2002/06/06 by jacarey@fl\_jcarey2 Fix Typo in Section Name

Change 32373 on 2002/06/06 by gregs@gregs\_r400\_linux\_marlboro vcs compiles.

Change 32369 on 2002/06/06 by jacarey@fl\_jcarey2  
1. Add Section for 2D Indirect Buffer Contents to 2D Appendix  
2. Updated CP Initialization Sequence.

Change 32353 on 2002/06/06 by jacarey@fl\_jcarey2 Fix Typo in the Trans\_Bitblt packet description

Change 32350 on 2002/06/06 by markf@markf\_r400\_win\_marlboro Updated Status

Change 32334 on 2002/06/06 by semara@semara\_r400\_win\_tor update for the text section

Change 32300 on 2002/06/06 by rbell@rbell\_crayola\_win\_cvd update after review

Change 32289 on 2002/06/06 by vgoel@fl\_vgoel2

Page 260 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



changed description of tests for continuous tessellation of PNT, PNQ and PNL.

Change 32283 on 2002/06/06 by lseiler@lseiler\_r400\_win\_marlboro  
Updated pdf to match current MemCtl.doc

Change 32279 on 2002/06/06 by dclifton@dclifton\_r400  
Connected up some rpeng signals

Change 32274 on 2002/06/06 by lseiler@lseiler\_r400\_win\_marlboro  
Moved and renamed to design/chip/memory/R400\_Memory\*

Change 32272 on 2002/06/06 by lseiler@lseiler\_r400\_win\_marlboro  
Moved to design/chip/memory

Change 32271 on 2002/06/06 by lseiler@lseiler\_r400\_win\_marlboro  
Moved here from design/blocks/mc

Change 32265 on 2002/06/06 by vgoel@fl\_vgoel2  
Changed discrete tessellation tests.

Change 32166 on 2002/06/05 by csampayo@fl\_csampayo\_r400  
Updated status for the following VGT tests:  
r400vgt\_index\_offset\_01  
r400vgt\_index\_offset\_02  
r400vgt\_index\_offset\_03

Change 32156 on 2002/06/05 by rvelez@rvelez\_r400\_win\_tor  
Updated 6/5

Change 32143 on 2002/06/05 by csampayo@fl\_csampayo\_r400  
Updated status for the following VGT tests:  
r400vgt\_index\_dealloc\_points\_01  
r400vgt\_index\_dealloc\_line\_list\_01  
r400vgt\_index\_dealloc\_triangle\_list\_01

Change 32140 on 2002/06/05 by gregs@regs\_r400\_linux\_marlboro  
display section updated for r400.

Page 261 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 32122 on 2002/06/05 by jacarey@fl\_jcarey2  
Add more qualifications to the generation of the destination load signals.

Change 32114 on 2002/06/05 by tho@tho\_r400\_win  
updated

Change 32097 on 2002/06/05 by jacarey@fl\_jcarey2  
Remove queued\_path\_busy from rbbm\_status register.

Change 32080 on 2002/06/05 by jacarey@fl\_jcarey2  
Removed Queued\_Path\_Busy from the RBBM\_STATUS Register

Change 32073 on 2002/06/05 by gregs@regs\_r400\_win\_marlboro  
update

Change 32061 on 2002/06/05 by nbarbier@nbarbier\_r400\_win\_tor  
Updated TMDSA section.

Change 32055 on 2002/06/05 by rbell@rbell\_crayola\_win\_cvd  
Added overlay/VP window swap tests

Change 32040 on 2002/06/05 by vgoel@fl\_vgoel2  
Created descriptions for HOS tests : PNT (discrete, continuous), PNQ (continuous), PNL (continuous)

Change 31999 on 2002/06/05 by jacarey@fl\_jcarey2  
Added CP\_NRT\_BUSY to CP\_STAT register

Change 31979 on 2002/06/05 by jacarey@fl\_jcarey2  
RBBM Spec Updates

Change 31964 on 2002/06/05 by mmantor@mmantor\_r400\_win  
added initial sc\_packer code to the sc.v and a test bench for it

Change 31919 on 2002/06/05 by jacarey@fl\_jcarey2  
Miscellaneous Updates to Diagram to Match the Design.

Page 262 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 31878 on 2002/06/04 by lseiler@lseiler\_r400\_win\_marlboro  
Rev 0.8 Memory Format document with revisions removed

Change 31877 on 2002/06/04 by lseiler@lseiler\_r400\_win\_marlboro  
Memory Format spec: extensive revision, also moved from the MC block to a chip-level location

Change 31859 on 2002/06/04 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 31858 on 2002/06/04 by gregs@regs\_r400\_linux\_marlboro  
added parallel ROM muxes ...

Change 31798 on 2002/06/04 by jimmylau@jimmylau\_r400\_win\_tor  
fix the problem that DCCG top level diagram cannot be accessed from the DCCG specs. add sections 3.1, 3.2 and 3.3.

Change 31794 on 2002/06/04 by jacarey@fl\_jcarey2  
1. Added TOC  
2. Added clarification of location for vertex and Pixel ALU constants for 2D processing.

Change 31779 on 2002/06/04 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 31748 on 2002/06/04 by frivas@FL\_FRivas  
Entered 4 tests for HOS in Sheet 1, section 1.5.1.1.9.6

Change 31740 on 2002/06/04 by bryans@bryans\_crayola\_doc  
Renamed LB\_feature\_list.doc to LB\_emu\_schedule.doc

Change 31737 on 2002/06/04 by jacarey@fl\_jcarey2  
1. Remove Unneeded Booleans  
2. Remove Clamping from ALU  
3. Temporary Depth Increase for Microcode RAM

Change 31730 on 2002/06/04 by jacarey@fl\_jcarey2  
Clarifications to which constants to write.

Page 263 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 31713 on 2002/06/04 by vgoel@fl\_vgoel2  
no change

Change 31711 on 2002/06/04 by markf@markf\_r400\_win\_marlboro  
nop

Change 31707 on 2002/06/04 by markf@markf\_r400\_win\_marlboro  
Initial rev

Change 31701 on 2002/06/04 by csampayo@fl\_csampayo\_r400  
Updated schedule

Change 31695 on 2002/06/04 by jimmylau@jimmylau\_r400\_win\_tor  
Initial Revision of DCCG specs with diagrams for R400.

Change 31680 on 2002/06/04 by smoss@smoss\_crayola\_win  
new tests

Change 31674 on 2002/06/04 by mkelly@fl\_mkelly\_r400\_win  
Update

Change 31662 on 2002/06/04 by efong@efong\_r400\_win\_tor\_doc  
added in another kludge

Change 31607 on 2002/06/03 by frivas@FL\_FRivas  
Number of tests written updated.

Change 31592 on 2002/06/03 by jacarey@fl\_jcarey2  
Checkpoint All Files

Change 31591 on 2002/06/03 by jacarey@fl\_jcarey2  
Fix Typos for Brush Decode Text

Change 31580 on 2002/06/03 by csampayo@fl\_csampayo\_r400  
Updated host test description

Page 264 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 31567 on 2002/06/03 by frising@ma\_frising  
 Added post June15 staging version of texture insts/consts.

Change 31560 on 2002/06/03 by gregs@gregs\_r400\_linux\_marlboro  
 vip + most of dvo interfaces.

Change 31543 on 2002/06/03 by onesh@ma\_omesh  
 Updated top level spreadsheet with latest information about RB Color blending test information. I was asked to defer the log related tests to later and Yung had agreed to do the "No Blend" related tests as they are related to Shader Pipe.  
 Also added blending test names and new section on stress testing to my RBC document.

Change 31529 on 2002/06/03 by bryans@bryans\_crayola\_doc  
 Initial regression distribution schedule for TO

Change 31506 on 2002/06/03 by gregs@gregs\_r400\_win\_marlboro  
 DVODATA is 24 bits wide.

Change 31476 on 2002/06/03 by dclifton@dclifton\_r400  
 Update to include changes for Z precision, major change in I, J, and W gradient calculation. Update to I/O.

Change 31475 on 2002/06/03 by jacarey@fl\_jcarey2  
 1. Removed CP\_DMA\_Busy as a boolean  
 2. Result[31:0] is write data for scratch memory.

Change 31473 on 2002/06/03 by jacarey@fl\_jcarey2  
 Update DMA Data Path

Change 31465 on 2002/06/03 by jayw@MA\_JAYW  
 added sx export buffers register  
 updated several lesser items

Change 31454 on 2002/06/03 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 31453 on 2002/06/03 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 31433 on 2002/06/03 by llefebvr@llefebvre\_laptop\_r400  
 Backup and minor updates.

Change 31432 on 2002/06/03 by tho@tho\_r400\_win  
 updated

Change 31422 on 2002/06/03 by efong@efong\_r400\_win\_tor\_doc  
 Updated

Change 31415 on 2002/06/03 by csampayo@fl\_csampayo\_r400  
 Updated status for the following test:  
 r400vgt\_hos\_cubic\_pos\_pnt\_discrete\_01

Change 31409 on 2002/06/03 by chwang@chwang\_doc\_r400\_win\_cvd  
 Update.

Change 31401 on 2002/06/03 by rbell@rbell\_crayola\_win\_cvd  
 updated

Change 31395 on 2002/06/03 by jacarey@fl\_jcarey2  
 Checkpoint Planning Spreadsheets

Change 31384 on 2002/06/03 by gregs@gregs\_r400\_win\_marlboro  
 Updated rom\_clk register

Change 31275 on 2002/05/31 by rvelez@rvelez\_r400\_win\_tor  
 Updated 5/31

Change 31273 on 2002/05/31 by mkelly@fl\_mkelly\_r400\_win\_laptop  
 Basic diamond exit tests...

Change 31262 on 2002/05/31 by gabarca@gabarca\_crayola\_win\_cvd  
 Added GENSI and GENFC\_WT to list of mono/color registers

Change 31248 on 2002/05/31 by jacarey@fl\_jcarey2  
 Misc. Updates to RBIU Diagram

Change 31228 on 2002/05/31 by tho@tho\_r400\_win  
 updated testlist

Change 31210 on 2002/05/31 by csampayo@fl\_csampayo\_r400  
 Adding Francisco (HOS)

Change 31194 on 2002/05/31 by gabarca@gabarca\_crayola\_win\_cvd  
 Write combining done by DCCIF  
 Skid buffer between BIF and VGADHP

Change 31169 on 2002/05/31 by jayw@MA\_JAYW  
 register index and some formatting

Change 31160 on 2002/05/31 by semara@semara\_r400\_win\_tor  
 re-submit

Change 31144 on 2002/05/31 by gabarca@gabarca\_crayola\_win\_cvd  
 Moved write combining to DCCIF, added skid buffer in BIF\_VGA doc

Change 31097 on 2002/05/31 by vliu@vliu\_r400\_cnvlui100\_win\_cvd  
 Update

Change 31096 on 2002/05/31 by gabarca@gabarca\_crayola\_win\_cvd  
 Updated VGADHP section

Change 31082 on 2002/05/31 by rbagley@rbagley\_ltxp  
 Adding Jocelyn's recent revision.

Change 31076 on 2002/05/31 by jacarey@fl\_jcarey2  
 Added Source Select to Read Input

Change 31044 on 2002/05/31 by efong@efong\_r400\_win\_tor\_doc  
 Updated

Change 31043 on 2002/05/31 by bryans@bryans\_crayola\_doc  
 Update...

Change 31034 on 2002/05/31 by jacarey@fl\_jcarey2  
 Make Source Select a Counter which is controlled by Micro Engine.

Change 31026 on 2002/05/31 by jasif@jasif\_r400\_win\_tor  
 Updated.

Change 31023 on 2002/05/31 by efong@efong\_r400\_win\_tor\_doc  
 put in another problem

Change 30961 on 2002/05/30 by vliu@vliu\_r400\_cnvlui100\_win\_cvd  
 Update

Change 30959 on 2002/05/30 by jacarey@fl\_jcarey2  
 Add hook to generate real-time microcode...

Change 30955 on 2002/05/30 by jacarey@fl\_jcarey2  
 Fix name of context\_done event used for state management.

Change 30934 on 2002/05/30 by jacarey@fl\_jcarey2  
 Fix typo in instr\_prefetch packet

Change 30909 on 2002/05/30 by jacarey@fl\_jcarey2  
 Update for error checking.

Change 30893 on 2002/05/30 by jacarey@fl\_jcarey2  
 Fix Typos

Change 30886 on 2002/05/30 by jacarey@fl\_jcarey2  
 Updates for Protected Mode Error Checking...

Change 30864 on 2002/05/30 by jacarey@fl\_jcarey2  
 Update for Conditional Continue Micro Instruction

Change 30854 on 2002/05/30 by rbell@rbell\_crayola\_win\_cvd  
 updated



Change 30853 on 2002/05/30 by ashishs@fl\_ashishs\_r400\_win  
update

Change 30814 on 2002/05/30 by bryans@bryans\_crayola\_doc  
Update for week of May 27

Change 30804 on 2002/05/30 by gregs@gregs\_r400\_win\_marlboro  
updated regs.

Change 30750 on 2002/05/29 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 30747 on 2002/05/29 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 30734 on 2002/05/29 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 30732 on 2002/05/29 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 30722 on 2002/05/29 by tho@tho\_r400\_win  
test list for icon and cursor

Change 30715 on 2002/05/29 by jowang@jowang\_R400\_win  
Includes Vertical Filter control

Change 30713 on 2002/05/29 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 30696 on 2002/05/29 by gabarca@gabarca\_crayola\_win\_cvd  
Put VG AHDP tests

Change 30694 on 2002/05/29 by jacarey@fl\_jcarey2  
Added GMC to opcodes for new 2D packets.

Change 30673 on 2002/05/29 by jayw@MA\_JAYW

Page 269 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

for larry's review

Change 30626 on 2002/05/29 by jhoule@MA\_JHOULE  
0.9.1.2: Update all the external interfaces.

Change 30615 on 2002/05/29 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 30609 on 2002/05/29 by rbell@rbell\_crayola\_win\_cvd  
Added Milestone 2 tests

Change 30601 on 2002/05/29 by jayw@MA\_JAYW  
ROP3 and Chroma Keying

Change 30595 on 2002/05/29 by gregs@gregs\_r400\_win\_marlboro  
pm software review.

Change 30588 on 2002/05/29 by lseiler@lseiler\_r400\_win\_marlboro  
Memory Format spec: final submission before changing file name and location.

Change 30546 on 2002/05/29 by jacarey@fl\_jcarey2  
Remove reference of "Go" signals from the RBBM Spec.  
This was a typo.

Change 30502 on 2002/05/29 by jacarey@fl\_jcarey2  
Change COND\_MEM\_WRITE TO COND\_WRITE

Change 30466 on 2002/05/28 by gabarca@gabarca\_crayola\_win\_cvd  
Updated write modes

Change 30448 on 2002/05/28 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 30415 on 2002/05/28 by jacarey@fl\_jcarey2  
Removed CP.CG.2D\_Mode signal per power management meeting...

Change 30406 on 2002/05/28 by khabbari@khabbari\_r400\_win

Page 270 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

auto coef cal added

Change 30401 on 2002/05/28 by efong@efong\_r400\_win\_tor\_doc  
Added in Kaleidoscope Kludge document

Change 30348 on 2002/05/28 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 30342 on 2002/05/28 by jacarey@fl\_jcarey2  
1. Added 8 more bios scratch registers  
2. DMA engine waits for MH to accept last write transaction before raising the interrupt.

Change 30277 on 2002/05/28 by ashishs@fl\_ashishs\_r400\_win  
update

Change 30191 on 2002/05/27 by gabarca@gabarca\_crayola\_win\_cvd  
Added more description to VG AHDP features

Change 30178 on 2002/05/27 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated

Change 30157 on 2002/05/27 by rvelez@rvelez\_r400\_win\_tor  
Updated 5/27

Change 30152 on 2002/05/27 by gabarca@gabarca\_crayola\_win\_cvd  
Updated Worksheet

Change 30151 on 2002/05/27 by gabarca@gabarca\_crayola\_win\_cvd  
Updated worsheet

Change 30148 on 2002/05/27 by gabarca@gabarca\_crayola\_win\_cvd  
Updated VGA modes spreadsheet

Change 30143 on 2002/05/27 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 30140 on 2002/05/27 by gabarca@gabarca\_crayola\_win\_cvd

Page 271 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

updated excel spreadsheet whit modes

Change 30139 on 2002/05/27 by chwang@chwang\_doc\_r400\_win\_cvd  
Update (nothing listed).

Change 30089 on 2002/05/25 by jimmylau@jimmylau\_r400\_win\_tor  
Add test cases to verify composite H sync and also feature to disable H sync cutoff in section 5.1.1.  
Add section 5.4 to test dual CRTCs in progressive scanning mode.

Change 30088 on 2002/05/25 by jimmylau@jimmylau\_r400\_win\_tor  
Explain the algorithm to generate composite H sync, under section 6.2

Change 30067 on 2002/05/24 by mmang@fl\_mmang\_r400\_win  
Updated spec for design review.

Change 30055 on 2002/05/24 by gabarca@gabarca\_crayola\_win\_cvd  
Cleaned up, added tables

Change 30020 on 2002/05/24 by jacarey@fl\_jcarey2  
Check everything in...

Change 30019 on 2002/05/24 by nbarbier@nbarbier\_r400\_win\_tor  
Updated TMDS, DVO & HPD sections.

Change 29999 on 2002/05/24 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 29936 on 2002/05/24 by rvelez@rvelez\_r400\_win\_tor  
Updated 5/24

Change 29926 on 2002/05/24 by jacarey@fl\_jcarey2  
Update packet restrictions for Real-Time Processing.

Change 29916 on 2002/05/24 by jacarey@fl\_jcarey2  
Updates to clarify what to do for real-time stream processing.

Page 272 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history





Change 29909 on 2002/05/24 by gregs@gregs\_r400\_win\_marlboro

added to PM programming guide (still under construction).

Change 29907 on 2002/05/24 by jacarey@fl\_jcarey2

Add "invert" to real-time signal conditioning selects.

Change 29884 on 2002/05/24 by rherick@ma\_rherick\_crayola

Once again, I think I submitted before WORD had actually written the changes to the disk... Hopefully this time it makes it in correctly...

Change 29876 on 2002/05/24 by rherick@ma\_rherick\_crayola

Update spec to reflect RB\_ACCESS\_TYPE modes implemented in the parser..

Change 29794 on 2002/05/23 by fhnsien@fhnsien\_r400\_win\_marlboro

UPDATE NAME

Change 29784 on 2002/05/23 by gregs@gregs\_r400\_win\_marlboro

programmer's guide - initial.

Change 29733 on 2002/05/23 by tho@tho\_r400\_win

updated

Change 29703 on 2002/05/23 by jacarey@fl\_jcarey2

Update Compare Function of CP\_RT\* Command Register

Change 29691 on 2002/05/23 by jacarey@fl\_jcarey2

Update Status and Planning Documents

Change 29643 on 2002/05/23 by jacarey@fl\_jcarey2

Document Updates

Change 29613 on 2002/05/23 by smoss@smoss\_crayola\_win

su test

Change 29593 on 2002/05/22 by jimmylau@jimmylau\_r400\_win\_tor

Fill in section for CG interface.

Page 273 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 29577 on 2002/05/22 by inuskatb@inuskatb\_r400\_win\_cnimuskatb

New Disoutp reg test  
Updated CRTC reg test  
Updated Disoutp xls doc

Change 29563 on 2002/05/22 by rvelez@rvelez\_r400\_win\_tor

Updated 5/22

Change 29558 on 2002/05/22 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 29553 on 2002/05/22 by jacarey@fl\_jcarey2

Checkpoint Validation Plan and To List

Change 29506 on 2002/05/22 by jacarey@fl\_jcarey2

Clarified that Sub-block Offset is DWORD offset for ME\_INTL.

Change 29488 on 2002/05/22 by snezana@snezana\_crayola\_win\_cvd

small update, no real change

Change 29485 on 2002/05/22 by nbarbier@nbarbier\_r400\_win\_tor

Updated Macro Interface & IO Interface.

Change 29484 on 2002/05/22 by gregs@gregs\_r400\_win\_marlboro

Core Selk clock PLL connection table + minor updates.

Change 29470 on 2002/05/22 by jacarey@fl\_jcarey2

Clarified Swap Controls

Change 29449 on 2002/05/22 by jacarey@fl\_jcarey2

Added RBBM\_STATUS2 Register  
Added CP\_RBBM\_it\_enable to RBBM\_STATUS register

Change 29438 on 2002/05/22 by jacarey@fl\_jcarey2

Clarify that DST\_TYPE=7 not used in R400...since R128

Change 29437 on 2002/05/22 by jacarey@fl\_jcarey2

Page 274 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Corrections for 2D GMC Processing.

Change 29358 on 2002/05/21 by lseiler@lseiler\_r400\_win\_marlboro

RB Spec: Updated SX section, other updates in process

Change 29343 on 2002/05/21 by jacarey@fl\_jcarey2

Update CP Specs to Reflect 4KByte Alignment for Surfaces.

Change 29335 on 2002/05/21 by inuskatb@inuskatb\_r400\_win\_cnimuskatb

updated crc test  
first crtc register test

Change 29322 on 2002/05/21 by rvelez@rvelez\_r400\_win\_tor

Added +1 to disallow multiple file checkouts

Change 29320 on 2002/05/21 by efong@efong\_r400\_win\_tor\_doc

changed it to +1 to allow for locking by just one person

Change 29310 on 2002/05/21 by askende@andi\_r400\_docs

fixed typo

Change 29305 on 2002/05/21 by jacarey@fl\_jcarey2

Clarify compare function for Cond\_Mem\_Write and Wait\_Reg\_Mem

Change 29286 on 2002/05/21 by jacarey@fl\_jcarey2

Clarification of signals used by the Wait\_Until and RTS\_WAIT\_Until registers.

Change 29275 on 2002/05/21 by rvelez@rvelez\_r400\_win\_tor

Updated 5/17

Change 29272 on 2002/05/21 by tho@tho\_r400\_win

updated

Change 29262 on 2002/05/21 by rvelez@rvelez\_r400\_win\_tor

Updated Top-level DC interface to match source code 5/21

Change 29256 on 2002/05/21 by chwang@chwang\_doc\_r400\_win\_cvd

Page 275 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Weekly update.

Change 29237 on 2002/05/21 by efong@efong\_r400\_win\_tor\_doc

Updated to be the same as the test plan

Change 29234 on 2002/05/21 by jasif@jasif\_r400\_win\_tor

Updated status.

Change 29231 on 2002/05/21 by jacarey@fl\_jcarey2

Updated compare function bit width for Cond\_Mem\_Write and Wait\_Reg\_Mem.  
Text Updates to MPEG\_Index packet

Change 29227 on 2002/05/21 by efong@efong\_r400\_win\_tor\_doc

changed from x130 to x132

Change 29223 on 2002/05/21 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 29199 on 2002/05/21 by jacarey@fl\_jcarey2

Updates to register descriptions and fix typos.

Change 29108 on 2002/05/20 by pmitchel@pmitchel\_entire\_depot\_win

add to depot

Change 29100 on 2002/05/20 by pmitchel@pmitchel\_entire\_depot\_win

adding file to depot

Change 29071 on 2002/05/20 by gregs@gregs\_r400\_win\_marlboro

added few gnd/pwr pins for TMD5 and DACs.

Change 29061 on 2002/05/20 by csampayo@fl\_csampayo\_r400

Updated status for the following test:  
r400vgt\_hos\_simple\_linear\_PNT\_discrete\_01

Change 29012 on 2002/05/20 by kcorrell@kcorrell\_r400\_docs\_marlboro

updated tc interface and display interface

Page 276 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 29003 on 2002/05/20 by gregs@gregs\_r400\_win\_marlboro  
update

Change 28998 on 2002/05/20 by jacarey@fl\_jacarey2  
Fix Typos in the MPEG\_INDEX packet.

Change 28980 on 2002/05/19 by fhsien@fhsien\_r400\_win\_marlboro  
Update

Change 28859 on 2002/05/17 by mzhu@mzhu\_r400\_win\_tor  
Add LUT bypassing registers. Update LUT register descriptions

Change 28801 on 2002/05/17 by smoss@smoss\_crayola\_win  
SU tests with golds

Change 28787 on 2002/05/17 by jacarey@fl\_jacarey2  
Updates to:  
1. Wait\_Reg\_Mem  
2. Cond\_Mem\_Write

Change 28768 on 2002/05/17 by kmahler@kmahler\_r400\_doc\_lib  
Revised Parameterized Test Case chapter to include changes for specifying the Test Case Number and other enhancements.  
Added section "Specify Input Arguments to the Test Program".

Change 28720 on 2002/05/17 by jacarey@fl\_jacarey2  
No Clamping required by the CP for UR & LL compound indices.

Change 28718 on 2002/05/17 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28711 on 2002/05/17 by jacarey@fl\_jacarey2  
Remove reference to non-queued path for BIF transaction.

Change 28679 on 2002/05/17 by fhsien@fhsien\_r400\_win\_marlboro  
Update RBD

Change 28662 on 2002/05/17 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Reformat

Change 28651 on 2002/05/17 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28572 on 2002/05/16 by csampayo@fl\_csampayo\_r400  
Updated status for the following tests:  
r400vgt\_dma\_swap\_indk16\_01  
r400vgt\_pass\_thru\_all\_prims\_01

Change 28562 on 2002/05/16 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28532 on 2002/05/16 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28526 on 2002/05/16 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28512 on 2002/05/16 by jacarey@fl\_jacarey2  
Max Context resets to 7

Change 28507 on 2002/05/16 by jacarey@fl\_jacarey2  
Misc Updates

Change 28493 on 2002/05/16 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 28483 on 2002/05/16 by jacarey@fl\_jacarey2  
Add Max Context to address

Change 28455 on 2002/05/16 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28437 on 2002/05/16 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28435 on 2002/05/16 by gregs@gregs\_r400\_win\_marlboro  
added interrupt registers.

Change 28429 on 2002/05/16 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update

Change 28423 on 2002/05/16 by jacarey@fl\_jacarey  
Update All

Change 28418 on 2002/05/16 by jacarey@fl\_jacarey  
Update source clipping equation

Change 28412 on 2002/05/16 by jimmylau@jimmylau\_r400\_win\_tor  
Fine adjust the parameter values in normal CRTX tests in section 5.1.1

Change 28404 on 2002/05/16 by ashishs@fl\_ashishs\_r400\_win  
update

Change 28392 on 2002/05/16 by omesh@ma\_omesh  
Added some more comments for the test group levels, to specify the goal of each group of tests.

Change 28385 on 2002/05/16 by rbell@rbell\_crayola\_win\_cvd  
Updated

Change 28367 on 2002/05/16 by jasif@jasif\_r400\_win\_tor  
Updated after VGA testplan review.

Change 28362 on 2002/05/16 by omesh@ma\_omesh  
Checking in top-level details of RBC related tests. Document (\*.doc) links are not yet in place, as document to be linked (RBC.doc) is not yet "section labelled".

Change 28348 on 2002/05/16 by bryans@bryans\_crayola\_doc  
Weekly DV goals for Video IP (Summary)

Change 28327 on 2002/05/16 by jacarey@fl\_jacarey

Checkpoint Everything

Change 28325 on 2002/05/16 by jacarey@fl\_jacarey  
Microcode Update  
Update 2D Appendix for source clipping  
Update PM4 spec for Reg-to-Mem Code

Change 28275 on 2002/05/15 by fhsien@fhsien\_r400\_win\_marlboro  
Update RBD part of list

Change 28261 on 2002/05/15 by bryans@bryans\_crayola\_doc  
Change emulation to M1/M2/M3 lineup

Change 28256 on 2002/05/15 by omesh@ma\_omesh  
Made some corrections to misleading wording and added some more information to document.

Change 28232 on 2002/05/15 by jacarey@fl\_jacarey  
Update Number Formats for the 2D Packets.

Change 28224 on 2002/05/15 by fhsien@fhsien\_r400\_win\_marlboro  
Update RBD testplan

Change 28223 on 2002/05/15 by jacarey@fl\_jacarey  
Fix type in Width format -- changed to 13:0

Change 28196 on 2002/05/15 by jacarey@fl\_jacarey  
Update Top-Level Diagrams

Change 28149 on 2002/05/15 by gregs@gregs\_r400\_win\_marlboro  
general update

Change 28148 on 2002/05/15 by rbell@rbell\_crayola\_win\_cvd  
Updated test plan

Change 28138 on 2002/05/15 by vliu@vliu\_r400\_cnvtiu100\_win\_cvd  
Update



Change 28130 on 2002/05/15 by gabarca@gabarca\_crayola\_win\_cvd  
Finished for Milestone 1, in bold

Change 28104 on 2002/05/15 by kmahler@kmahler\_r400\_doc\_lib  
Added more detailed explanation of using RENDER\_STATE's low-level interface per Carlos' note.

Change 28098 on 2002/05/14 by jasif@jasif\_r400\_win\_tor  
Added testlist.

Change 28095 on 2002/05/15 by georgev@ma\_georgev  
Examples added.

Change 28092 on 2002/05/15 by csampayo@fl\_csampayo\_r400  
Updated status for the following test:  
r400vgt\_dma\_swap\_idx32\_01

Change 28087 on 2002/05/15 by omesh@ma\_omesh  
Added some more stuff... Document still incomplete with lots of areas of construction. Will add test total counts today and update spreadsheet...

Change 28055 on 2002/05/15 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
add new crtc test under debug  
updated crtc doc

Change 28047 on 2002/05/15 by jacarey@fl\_jacarey  
1. CP Spec : Update Real-Time Register Names  
2. PM4 Spec : Updates to ME\_Init and Event\_Timestamp\_Write

Change 28046 on 2002/05/15 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 28011 on 2002/05/14 by kmahler@kmahler\_r400\_doc\_lib  
Added documentation for the following:  
1) Revised Parameterized Test Cases using input arguments and the "Set\_Default\_Values()" function.  
2) VFD section from Michael Kelly.

Change 28006 on 2002/05/14 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 28004 on 2002/05/14 by gabarca@gabarca\_crayola\_win\_cvd  
tried to finish

Change 28003 on 2002/05/14 by mzhu@mzhu\_r400\_win\_tor  
move dcp test plan to design/blocks directory  
add test plan for first milestone

Change 27980 on 2002/05/14 by jacarey@fl\_jacarey  
Fixed typo on data width for writing to scratch memory.

Change 27974 on 2002/05/14 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update.

Change 27956 on 2002/05/14 by jayw@MA\_JAYW  
added lower precision for majority of DeGamma table.  
New dither documentation in blend

Change 27949 on 2002/05/14 by rbell@rbell\_crayola\_win\_cvd  
small fix

Change 27946 on 2002/05/14 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 27945 on 2002/05/14 by rvelez@rvelez\_r400\_win\_tor  
Updated May 14

Change 27943 on 2002/05/14 by rbell@rbell\_crayola\_win\_cvd  
Added more tests for Milestone 1

Change 27926 on 2002/05/14 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated all crtc test to include DACA\_EN  
Updated crtc emu features doc  
updated display\_out to include crc computation  
added one debug test for dispost

Change 27914 on 2002/05/14 by jacarey@fl\_jacarey  
Update Local Address Map

Change 27876 on 2002/05/14 by lseiler@lseiler\_r400\_win\_marlboro  
RB register and architecture overview

Change 27869 on 2002/05/14 by jacarey@fl\_jacarey  
Baseline CP Validation Plans

Change 27866 on 2002/05/14 by jacarey@fl\_jacarey  
Added CGM rtr signals back to the RBBM.

Change 27861 on 2002/05/14 by jacarey@fl\_jacarey  
Updated Scratch Memory Connections  
Updated Me\_Debug\_data Connections

Change 27848 on 2002/05/14 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 27835 on 2002/05/14 by efong@efong\_r400\_win\_tor\_doc  
changed the h/v\_total for 600 and setup some more worksheets for printing

Change 27832 on 2002/05/14 by jacarey@fl\_jacarey  
ME\_Init Shader Base addresses are in Instructions, not DWORDs

Change 27824 on 2002/05/14 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 27823 on 2002/05/14 by efong@efong\_r400\_win\_tor\_doc  
line buffer test description

Change 27822 on 2002/05/14 by gregs@gregs\_r400\_win\_marlboro  
update

Change 27818 on 2002/05/14 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 27761 on 2002/05/13 by gabarca@gabarca\_crayola\_win\_cvd  
Updated features for milestone 1

Change 27752 on 2002/05/13 by rbell@rbell\_crayola\_win\_cvd  
Update

Change 27751 on 2002/05/13 by jayw@MA\_JAYW  
updated mc interface to eliminate access\_subset and not the offsetting of the access\_address by the frame buffer offset for non-external accesses.

Change 27729 on 2002/05/13 by jacarey@fl\_jacarey  
Changed Num\_Constants to Max\_Contexts in the ME\_Init Packet.

Change 27717 on 2002/05/13 by llefebvre@llefebvre\_laptop\_r400  
Changed CF opcodes, SQ->SP interface and SP->SQ constant index load interface.

Change 27714 on 2002/05/13 by jhoule@MA\_JHOULE  
TP corrections

Change 27713 on 2002/05/13 by georgev@ma\_georgev  
Some extra clarification.

Change 27707 on 2002/05/13 by georgev@ma\_georgev  
Added sections from verificatin spec.

Change 27706 on 2002/05/13 by rvelez@rvelez\_r400\_win\_tor  
Updated 5/13

Change 27695 on 2002/05/13 by jacarey@fl\_jacarey  
Update Address Map  
Top-Level Diagram Updates

Change 27679 on 2002/05/13 by jacarey@fl\_jacarey  
Update Local Addresses

Change 27673 on 2002/05/13 by jasif@jasif\_r400\_win\_tor



Updated.

Change 27670 on 2002/05/13 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated test to 4 active lines  
updated crtc test desp

Change 27669 on 2002/05/13 by chwang@chwang\_doc\_r400\_win\_cvd  
Added a few missing models.

Change 27665 on 2002/05/13 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 27664 on 2002/05/13 by rbell@rbell\_crayola\_win\_cvd  
Graphics/Overlay tests for milestone 1

Change 27658 on 2002/05/13 by mdoggett@MA\_MDOGGETT\_LT  
Added vertex fetch slide

Change 27657 on 2002/05/13 by jhoule@MA\_JHOULE  
Added EXP\_ADJUST, pseudo-assembly for border color, and fast-path mention

Change 27654 on 2002/05/13 by efong@efong\_r400\_win\_tor\_dcc  
Updated

Change 27653 on 2002/05/13 by semara@semara\_r400\_win\_tor  
update the render seaction

Change 27651 on 2002/05/13 by mdoggett@MA\_MDOGGETT\_LT  
Merged TC slides in

Change 27650 on 2002/05/13 by tho@tho\_r400\_win  
updated

Change 27648 on 2002/05/13 by mdoggett@MA\_MDOGGETT\_LT  
First version of TC SW review

Change 27645 on 2002/05/13 by jhoule@MA\_JHOULE

Page 285 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

For merging with Michael

Change 27644 on 2002/05/13 by jacarey@fl\_jacarey  
Instruction Load packets support loading of the entire instruction memory.

Change 27640 on 2002/05/13 by rbell@rbell\_crayola\_win\_cvd  
Added

Change 27634 on 2002/05/13 by jacarey@fl\_jacarey  
update cp spec.

Change 27623 on 2002/05/13 by chwang@chwang\_doc\_r400\_win\_cvd  
Small update

Change 27621 on 2002/05/13 by csampayo@fl\_csampayo\_lt\_r400  
Updated VGT tests status

Change 27596 on 2002/05/13 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 27592 on 2002/05/13 by ygiang@ygiang\_r400\_win\_mariboro\_p4  
update

Change 27591 on 2002/05/13 by gregs@gregs\_r400\_sun\_mariboro  
new model.

Change 27589 on 2002/05/13 by fhshien@fhshien\_r400\_win\_home\_mariboro  
Change little at home

Change 27588 on 2002/05/13 by smoss@smoss\_crayola\_win  
update

Change 27536 on 2002/05/10 by ashish@fl\_ashish\_r400\_win  
update

Change 27525 on 2002/05/10 by fhshien@fhshien\_r400\_win\_mariboro

Page 286 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update with new info

Change 27523 on 2002/05/10 by csampayo@fl\_csampayo\_r400  
Updated status for the following test:  
r400vgt\_dma\_index\_rectangle\_list\_01

Change 27510 on 2002/05/10 by frising@ma\_frising  
v.1.39  
-4KB aligned for all textures  
-Update data format table to be consistent with RB, add interpolate and replicate YUV formats  
-Move to Larry's convention for endian swapping  
-Remove FETCH\_VALID\_ONLY in vertex instruction and replace with MUST\_BE\_ONE  
-Start to clean up usage tables. Lots to do still.

Change 27502 on 2002/05/10 by georgev@ma\_georgev  
First revision so that everyone else can get it in Perforce.

Change 27499 on 2002/05/10 by jasif@jasif\_r400\_win\_tor  
Updated dccif model owner.

Change 27488 on 2002/05/10 by rbell@rbell\_crayola\_win\_cvd  
Updated for milestone 1 GRP/OVL features

Change 27467 on 2002/05/10 by jacarey@fl\_jacarey  
Fix Typo

Change 27463 on 2002/05/10 by jhoule@MA\_JHOULE  
For SW review (unfinished)

Change 27455 on 2002/05/10 by gregs@gregs\_r400\_win\_mariboro  
update

Change 27439 on 2002/05/10 by jacarey@fl\_jacarey  
Update

Change 27431 on 2002/05/10 by jacarey@fl\_jacarey

Page 287 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Instructions Added to Simplify Reading the Micro RAM  
Fix Typo in the Pseudocode.

Change 27421 on 2002/05/10 by jacarey@fl\_jacarey  
Updates for ME\_INIT Packet

Change 27415 on 2002/05/10 by jacarey@fl\_jacarey  
Update for Registers and Text Update to the CP Specification.

Change 27406 on 2002/05/10 by jacarey@fl\_jacarey  
Update to Internal Address Map (Comments Only)

Change 27386 on 2002/05/10 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated crtc\_controller to handle boundary conditions  
golden for the first 4 test of crtc  
disput updated?

Change 27385 on 2002/05/10 by jacarey@fl\_jacarey  
Checkpoint Updates to Specification  
Update list of things to do.

Change 27373 on 2002/05/10 by omesh@ma\_omesh  
Added test cases for Destination Color Blending as derived from Source Color Blending  
and also added notes on Source Alpha Blending test strategy.

Change 27329 on 2002/05/10 by jhoule@MA\_JHOULE  
Changed PREDICATE\_CONDITION to PRED\_CONDITION in PRED\_SELECT  
description.

Change 27325 on 2002/05/10 by llefebvre@llefebvre\_laptop\_r400  
Presentation for the 5/13.

Change 27323 on 2002/05/10 by jhoule@MA\_JHOULE  
1.38  
Instruction changes:  
Added PRED\_SELECT and PRED\_CONDITION for the sequencer to manage pixel  
masks.  
Moved FETCH\_VALID\_ONLY to bit 19 in TFetch, and added it to VFetch.

Change 27322 on 2002/05/10 by jacarey@fl\_jacarey

Page 288 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



- 1. Remove CONST\_PREFETCH Packet
- 2. Update LCC pseudocode for PFP

Change 27316 on 2002/05/10 by jacarey@fl\_jacarey

Optional processing of Type-2 and Type-3 NOPs by ME.

Change 27314 on 2002/05/10 by rherick@ma\_rherick\_crayola

Not sure what was checked in for last revision since SAMBA was acting flaky on me... Rechecking in the changes

Change 27313 on 2002/05/10 by rherick@ma\_rherick\_crayola

Fixed ADDRESS documentation to match implementation...

Change 27302 on 2002/05/10 by smorein@smorein\_r400

First rewrite of programing guide. Some parts still missing, will go in on monday.

Change 27264 on 2002/05/09 by jowang@jowang\_R400\_win

VF Control -- RGB

Change 27254 on 2002/05/09 by jacarey@fl\_jacarey

STQ is now 114 deep.

Change 27251 on 2002/05/09 by jacarey@fl\_jacarey

Update CNT register loading

Change 27241 on 2002/05/09 by jacarey@fl\_jacarey

Update PM4 spec for me\_init

Change 27237 on 2002/05/09 by jacarey@fl\_jacarey

Updated Picture

Change 27233 on 2002/05/09 by grayc@grayc\_r400\_win

describes test bench for cp/rbbm

Change 27230 on 2002/05/09 by jasif@jasif\_r400\_win\_tor

Vga emulator features and test schedule.

Page 289 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 27223 on 2002/05/09 by ashish@fl\_ashish\_r400\_win  
update

Change 27221 on 2002/05/09 by gregs@gregs\_r400\_win\_marlboro  
updated with Y25LF05 info.

Change 27214 on 2002/05/09 by omesh@ma\_omesh

Added RBC Verification Plan (new file), currently under development, as well as a link to it from the main RB Verification Plan document.

Change 27208 on 2002/05/09 by chwang@chwang\_doc\_r400\_win\_cvd  
Small update.

Change 27188 on 2002/05/09 by jacarey@fl\_jacarey  
Update

Change 27153 on 2002/05/09 by jacarey@fl\_jacarey  
Checkpoint Partial Update of CP Registers.

Change 27152 on 2002/05/09 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
update

Change 27127 on 2002/05/09 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 27064 on 2002/05/08 by nbarbier@nbarbier\_r400\_win\_tor  
Updated register test information.

Change 27053 on 2002/05/08 by gabarca@gabarca\_crayola\_win\_cvd  
submit

Change 27048 on 2002/05/08 by jacarey@fl\_jacarey  
Corrections for 8 Sub Blocks

Change 27046 on 2002/05/08 by jacarey@fl\_jacarey  
Checkpoint Specifications  
1. ME\_INIT Packet

Page 290 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

2. Updates to CP Registers

... Still Not Done Yet ...

Change 27042 on 2002/05/08 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

Updated documents  
fix latest lb, fix chunk\_size  
new crtc\_test with golden

Change 27039 on 2002/05/08 by sallen@sallen\_r400\_win\_marlboro

updates

Change 27038 on 2002/05/08 by rvelez@rvelez\_r400\_win\_tor

Updated schedule for CRTCDISPOUT

Change 27021 on 2002/05/08 by jimmylau@jimmylau\_r400\_win\_tor

H sync and V sync polarities are set to different values for normal CRTCD and VGA CRTCD test cases.  
Add a list of CRTCD registers that are not tested in normal CRTCD register test because they are either read-only or write only.

Change 27009 on 2002/05/08 by rvelez@rvelez\_r400\_win\_tor

Updated May 8

Change 26998 on 2002/05/08 by jacarey@fl\_jacarey

Add Booleans to Source Select

Change 26996 on 2002/05/08 by khabbari@khabbari\_r400\_win

lb test plan changes

Change 26991 on 2002/05/08 by tien@ma\_spinach

Updated the tp area page.

Change 26984 on 2002/05/08 by rbagley@ma\_rbagley\_ltxp

Updates include a round of revision from Andi Skende, including updates to the shader pipe related material.

Change 26978 on 2002/05/08 by ygiang@ygiang\_r400\_win\_marlboro\_p4

v1

Page 291 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 26959 on 2002/05/08 by jacarey@fl\_jacarey

Update Invalidate\_State and Subblock\_Prefetch packets to support eight sub-blocks.

Change 26949 on 2002/05/08 by jacarey@fl\_jacarey

Fix typo in rbbm\_perf\_cntl register.

Change 26934 on 2002/05/08 by tho@tho\_r400\_win

-name of document changed  
-icon/cursor status updated

Change 26928 on 2002/05/08 by khabbari@khabbari\_r400\_win

added the start of line to lb/dcp interface doc

Change 26924 on 2002/05/08 by efong@efong\_r400\_win\_tor\_doc

moved this file

Change 26923 on 2002/05/08 by efong@efong\_r400\_win\_tor\_doc

moved to be with the design block.

Change 26922 on 2002/05/08 by nbarbier@nbarbier\_r400\_win\_tor

Added register test for DCIO block.

Change 26920 on 2002/05/08 by tho@tho\_r400\_win

updated document w/ icon cursor status

Change 26919 on 2002/05/08 by efong@efong\_r400\_win\_tor\_doc

1st rev of the scaler feature list for emulator

Change 26901 on 2002/05/08 by jacarey@fl\_jacarey

- 1. Set\_State supports eight sub-blocks
- 2. Updates to Set\_CF\_Constant

Change 26886 on 2002/05/08 by jacarey@fl\_jacarey

Update name of register that CP writes for the Booleans.

Change 26885 on 2002/05/08 by jacarey@fl\_jacarey

Page 292 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



- 1. Set\_State:
  - a. Eight Sub-Blocks
  - b. Sub-Block Size Encoding = (n+1)\*8

2. New Packet : Set\_CF\_Constant

- Change 26884 on 2002/05/08 by jacarey@fl\_jacarey  
Sub-block Size Encoding Update
- Change 26854 on 2002/05/07 by csampayo@fl\_csampayo\_r400  
Updated VGT test status, as well as, limited other units test status to 99%
- Change 26843 on 2002/05/07 by jowang@jowang\_R400\_win  
Totally out of date.
- Change 26842 on 2002/05/07 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Test and Feature list. First pass
- Change 26841 on 2002/05/07 by jowang@jowang\_R400\_win  
Initial VF design.
- Change 26839 on 2002/05/07 by jowang@jowang\_R400\_win  
renamed to VF Block.vsd
- Change 26835 on 2002/05/07 by jowang@jowang\_R400\_win  
Initial VF Design
- Change 26821 on 2002/05/07 by rvelez@rvelez\_r400\_win\_tor  
Split up DCCIF and DCCARB documents
- Change 26819 on 2002/05/07 by gregs@gregs\_r400\_sun\_marlboro  
changed paths to chip directory + revision history + verified that it works.
- Change 26808 on 2002/05/07 by jacarey@fl\_jacarey  
Moving Microcode Source
- Change 26798 on 2002/05/07 by jacarey@fl\_jacarey

Page 293 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Update Revision

- Change 26795 on 2002/05/07 by jacarey@fl\_jacarey  
Added Type-0 Packet Support to Microcode.
- Change 26792 on 2002/05/07 by jayw@MA\_JAYW  
added notebook
- Change 26784 on 2002/05/07 by jayw@MA\_JAYW  
DeGamma increased precision to avoid errors when temporarily over 1.0 due to 0.055 add.
- Change 26779 on 2002/05/07 by rvelez@rvelez\_r400\_win\_tor  
Updated 5/7/02
- Change 26762 on 2002/05/07 by gregs@gregs\_r400\_sun\_marlboro  
This is unchanged R300 file.
- Change 26760 on 2002/05/07 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
updated: test list
- Change 26759 on 2002/05/07 by bryans@bryans\_crayola\_doc  
Updated as per status meeting
- Change 26727 on 2002/05/07 by smoss@smoss\_crayola\_win  
SU tests
- Change 26721 on 2002/05/07 by llefebvr@llefebvre\_laptop\_r400  
presentation for the SW meeting (draft)
- Change 26711 on 2002/05/07 by ashish@fl\_ashish\_r400\_win  
update
- Change 26701 on 2002/05/07 by rbell@rbell\_crayola\_win\_cvd  
First draft of DCP feature list
- Change 26642 on 2002/05/06 by jimmylau@jimmylau\_r400\_win\_tor

Page 294 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

- Add feature to start H and V counter at some even offset other than 0.  
Add feature to choose whether to cutoff H sync A/B at when H blank ends.
- Change 26638 on 2002/05/06 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update
- Change 26627 on 2002/05/06 by lkang@lkang\_r400\_win\_tor  
update on tristate h/vsync's in d1, D2 & D3
- Change 26614 on 2002/05/06 by jacarey@fl\_jacarey  
Checkpoint Code
- Change 26605 on 2002/05/06 by jacarey@fl\_jacarey  
Update to Micro Instructions
- Change 26598 on 2002/05/06 by jacarey@fl\_jacarey  
Update to Access Jump Table in RAM
- Change 26574 on 2002/05/06 by rvelez@rvelez\_r400\_win\_tor  
Updated May 6/02
- Change 26555 on 2002/05/06 by mdoggett@MA\_MDOGGETT\_LT  
Updates to TP, TPC, MH interfaces; L1 Tags; TCO diagram; TCD Padding; L2 cache pixel formats table; L2 cacheline format conversions table; 2d l2 one lyaer cacheline format
- Change 26554 on 2002/05/06 by jacarey@fl\_jacarey  
MicroCode for Type1 packets.
- Change 26532 on 2002/05/06 by lkang@lkang\_r400\_win\_tor  
Toronto milestone #1 schedule
- Change 26529 on 2002/05/06 by jimmylau@jimmylau\_r400\_win\_tor  
Change registers DxCRTC\_HV\_SYNC\_A\_END to 13 bits, due to added feature of testing H/V counter wrap around.  
Update VGA vertical timing parameters to 11 bits.
- Change 26525 on 2002/05/06 by jimmylau@jimmylau\_r400\_win\_tor

Page 295 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

- Change register name from DxCRTC\_HV\_COUNT\_OFFSET to DxCRTC\_HV\_SYNC\_A\_START.  
Change test cases for H/V counter wrap around so that H/V\_SYNC\_A\_START are even numbers,  
since hardware does not support odd number H/V\_SYNC\_A\_START.
- Change 26510 on 2002/05/06 by tho@tho\_r400\_win  
updated
- Change 26506 on 2002/05/06 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Rename the file
- Change 26505 on 2002/05/06 by jacarey@fl\_jacarey  
2D Indirect Buffer Invalidates Pointers instead of the hardware doing this implicitly.
- Change 26504 on 2002/05/06 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
emulation / simulation feature list
- Change 26500 on 2002/05/06 by nluu@nluu\_r400\_doclub\_cmb  
- update
- Change 26495 on 2002/05/06 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.
- Change 26491 on 2002/05/06 by efong@efong\_r400\_win\_tor\_doc  
Updated
- Change 26487 on 2002/05/06 by jasif@jasif\_r400\_win\_tor  
Updated.
- Change 26484 on 2002/05/06 by mmantor@mmantor\_r400\_win  
update per comments from Doug
- Change 26478 on 2002/05/06 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
added: more coments and tests to list
- Change 26474 on 2002/05/06 by jacarey@fl\_jacarey

Page 296 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Checkpoint Microcode Before CPP Updates

Change 26473 on 2002/05/06 by rbell@rbell\_crayola\_win\_cvd  
Added VeriBench User's Guide

Change 26470 on 2002/05/06 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 26465 on 2002/05/06 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 26395 on 2002/05/03 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 26388 on 2002/05/03 by mmantor@mmantor\_r400\_win  
added state module description

Change 26377 on 2002/05/03 by gregs@gregs\_r400\_win\_marlboro  
update.

Change 26371 on 2002/05/03 by scroce@scroce\_r400\_win\_marlboro  
update

Change 26370 on 2002/05/03 by jayw@MA\_JAYW  
friday night gamma fixed

Change 26364 on 2002/05/03 by rvelez@rvelez\_r400\_win\_tor  
Update May 3/02

Change 26354 on 2002/05/03 by hartogs@fl\_hartogs  
Fixed order of selections for VGT\_OTUPUT\_PATH\_CNTL register.

Change 26332 on 2002/05/03 by jacarey@fl\_jacarey  
Checkpoint All Documents and Microcode.

Change 26326 on 2002/05/03 by georgev@ma\_georgev  
Changes for first primlib tests, changes to tg.cpp to support

Page 297 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

ranges, SX spreadsheet and verification document, and a tg.h that is out of date, but the good one is missing.

Change 26301 on 2002/05/03 by jacarey@fl\_jacarey

1. Baseline Checklist for Post June 15th
2. Microcode Update
  - a. Main Loop

Change 26292 on 2002/05/03 by gregs@gregs\_r400\_win\_marlboro  
added to verification section.

Change 26281 on 2002/05/03 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
updated: comments

Change 26252 on 2002/05/03 by jimmylau@jimmylau\_r400\_win\_tor  
removed test features : stereosync and dual CRTCs  
add test features : H/V counter tests, CRTc register tests

Change 26250 on 2002/05/03 by gregs@gregs\_r400\_win\_marlboro  
spelling

Change 26242 on 2002/05/03 by jacarey@fl\_jacarey

1. REPL command Added to OPER field.
2. Clarification that SUB\* implies "SRC0 - SRC1"
3. MOV instruction is translated to:  
oper=shl;immed=0x00000000;

Change 26237 on 2002/05/03 by jacarey@fl\_jacarey  
Indicate input stage as a repeater.

Change 26229 on 2002/05/03 by ashishs@fl\_ashishs\_r400\_win  
update

Change 26224 on 2002/05/03 by bryans@bryans\_crayola\_doc  
Renamed: R400 VideoP DV Methodology -> VideoP DV Methodology  
Moved document to simulator/environment directory

Change 26205 on 2002/05/03 by jacarey@fl\_jacarey  
Microcode:

Page 298 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Changed jbit bool=<bit> @<address>;  
to: jbit @<address>;bool=<bit>;

Change 26166 on 2002/05/02 by rvelez@rvelez\_r400\_win\_tor  
Split up DCCIF Interface Spec to separate DCCIF and DCCARB interfaces

Change 26165 on 2002/05/02 by rvelez@rvelez\_r400\_win\_tor  
Split up DCCIF and DCCARB interfaces into two documents

Change 26154 on 2002/05/02 by fhsein@fhsein\_r400\_win\_marlboro  
Update Depth tests

Change 26152 on 2002/05/02 by viiu@vliu\_r400\_cnviu100\_win\_cvd  
Modify the structure of the test\_lib/src tree.

Change 26149 on 2002/05/02 by jayw@MA\_JAYW  
more fixes now starting monotonicity

Change 26138 on 2002/05/02 by smoss@smoss\_crayola\_win  
SU tests and golds

Change 26118 on 2002/05/02 by gregs@gregs\_r400\_win\_marlboro  
changed default value of SUBSYS\_ID ROM based strap.

Change 26111 on 2002/05/02 by efong@efong\_r400\_win\_tor\_doc  
Initial revision

Change 26110 on 2002/05/02 by scroce@scroce\_r400\_win\_marlboro  
Added examples and a lot of info.

Change 26103 on 2002/05/02 by smoss@smoss\_crayola\_win  
SU tests, golds

Change 26067 on 2002/05/02 by rvelez@rvelez\_r400\_win\_tor  
Updated 5/2

Change 26066 on 2002/05/02 by aashkar@fl\_aashkar

Page 299 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Removed unused address

Change 26065 on 2002/05/02 by aashkar@fl\_aashkar  
fixed typo

Change 26057 on 2002/05/02 by llefbvr@llefbvre\_laptop\_r400  
Modification on the Control flow instructions.

Change 26055 on 2002/05/02 by rherick@ma\_rherick\_crayola  
Parser is working... Producing same results as Hard coded version... Documentation updated to reflect new byteEnable and Tag inclusion in ADDRESS directive...

Change 26054 on 2002/05/02 by ygiang@ygiang\_r400\_win\_marlboro\_p4  
Added: Test list for SP

Change 26046 on 2002/05/02 by khabbari@khabbari\_r400\_win  
small changes

Change 26037 on 2002/05/02 by aashkar@fl\_aashkar  
Added RT\_ENABLE to address map

Change 26036 on 2002/05/02 by lseiler@lseiler\_r400\_win\_marlboro  
Replaced by the Autoreg generated register description

Change 26035 on 2002/05/02 by jacarey@fl\_jacarey  
Type 1 Packet Corrections

Change 26033 on 2002/05/02 by bryans@bryans\_crayola\_doc  
Update to include emulator diagram/flow with reify

Change 26030 on 2002/05/02 by aashkar@fl\_aashkar  
Added missing Address for Write Confirm ID FIFO

Change 26028 on 2002/05/02 by jayw@MA\_JAYW  
added example and fixed some gamma bugs

Change 26025 on 2002/05/02 by jacarey@fl\_jacarey

Page 300 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



- Microcode
- 1. Type1 Packet
- 2. NOP Packet
- 3. Reserved Bit Check Routine
- 4. Invalid Opcode Check Routine

Change 26013 on 2002/05/02 by kcorrell@kcorrell\_r400\_docs\_marlboro  
updated TC interface, DC interface and buffering, added auxiliary logic section.  
Modified address translation to include HDP\_FB\_START and ROM\_BASE.

Change 25975 on 2002/05/02 by jacarey@fl\_jacarey  
Clarified use of the texture constants.

Change 25958 on 2002/05/02 by jacarey@fl\_jacarey  
Partial Update to Top-Level Diagram

Change 25957 on 2002/05/02 by jacarey@fl\_jacarey  
Partial updates for supporting new 2D packets.

Change 25955 on 2002/05/02 by jacarey@fl\_jacarey  
Removed signals that no longer exist:  
RBBM\_CP\_3d\_idle  
CP\_RBBM\_2d\_idle

Change 25917 on 2002/05/01 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 25912 on 2002/05/01 by nbarbier@nbarbier\_r400\_win\_tor  
Made changes following test plan review for first milestone.

Change 25896 on 2002/05/01 by lkang@lkang\_r400\_win\_tor  
update on 5/1

Change 25850 on 2002/05/01 by jayw@MA\_JAYW  
Only Gamma monotonicity left.

Change 25824 on 2002/05/01 by jacarey@fl\_jacarey  
Update signal names for the memory hub power management.

Page 301 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 25816 on 2002/05/01 by jhoule@MA\_JHOULE

0.9.9-0.9.10:  
Inserted complete size restriction from .xls file.  
Wrapping/Clamping description.  
TP->TC interface suggestion.

Change 25806 on 2002/05/01 by jacarey@fl\_jacarey  
Update

Change 25805 on 2002/05/01 by gregs@gregs\_r400\_win\_marlboro  
added another open issue.

Change 25804 on 2002/05/01 by jacarey@fl\_jacarey  
Micro Engine Details

Change 25802 on 2002/05/01 by gregs@gregs\_r400\_win\_marlboro  
added another ROM: Y25LF05

Change 25778 on 2002/05/01 by jacarey@fl\_jacarey  
Renamed MH\_CP\_coherency\_busy to MH\_RBBM\_coherency\_busy

Change 25772 on 2002/05/01 by jacarey@fl\_jacarey  
Update Documents with ME details.

Change 25770 on 2002/05/01 by gregs@gregs\_r400\_win\_marlboro  
added default value of MEM\_AP\_SIZE as an open issue.

Change 25763 on 2002/05/01 by jacarey@fl\_jacarey  
Added RT Enable Flag

Change 25719 on 2002/05/01 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 25694 on 2002/05/01 by jacarey@fl\_jacarey  
Checkpoint Code

Change 25685 on 2002/05/01 by gregs@gregs\_r400\_win\_marlboro

Page 302 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

added comments on TMD5 pwr/gnd requirements.

Change 25652 on 2002/04/30 by jayw@MA\_JAYW  
minor update in progress

Change 25629 on 2002/04/30 by jacarey@fl\_jacarey  
Update Micro Engine Local Addresses

Change 25628 on 2002/04/30 by jacarey@fl\_jacarey  
Details to Micro Engine  
Local Addresses for Micro Engine

Change 25624 on 2002/04/30 by scroce@scroce\_r400\_win\_marlboro  
added PLI info

Change 25622 on 2002/04/30 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 25596 on 2002/04/30 by hartogs@fl\_hartogs  
Version 0.93

Added conversion method "VGT\_GRP\_FIX\_1\_23\_TO\_FLOAT" to the list of specifiable conversion methods in the register VGT\_GROUP\_VECT\_0\_FMT\_CNTRL. This conversion method is, at the time of this revision, used solely by the tessellation engine to convert interpolation weights from fixed point 1.23 format to 32-bit IEEE floating point.  
Added "RETAIN\_ORDER" and "RETAIN\_QUADS" fields to the register VGT\_GROUP\_PRIM\_TYPE.  
Added description of how the prim type information flows through the VGT to section 5.2.1.

Change 25586 on 2002/04/30 by cfong@cfong\_r400\_win\_tor\_doc  
updated with crtc\_en signal

Change 25581 on 2002/04/30 by ashishs@fl\_ashishs\_r400\_win  
update

Change 25570 on 2002/04/30 by ashishs@fl\_ashishs\_r400\_win  
update

Change 25561 on 2002/04/30 by ashishs@fl\_ashishs\_r400\_win

Page 303 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

update

Change 25558 on 2002/04/30 by gabarca@gabarca\_crayola\_win\_cvd  
Finished establishing features and sub-features to be tested, developed the VGA HDP section, almost finished the VGA HDP test table spreadsheet

Change 25550 on 2002/04/30 by jacarey@fl\_jacarey  
Checkpoint Micro Engine Documentation

Change 25547 on 2002/04/30 by lkang@lkang\_r400\_win\_tor  
update on 4/30

Change 25540 on 2002/04/30 by ashishs@fl\_ashishs\_r400\_win  
update

Change 25521 on 2002/04/30 by ashishs@fl\_ashishs\_r400\_win  
update

Change 25508 on 2002/04/30 by jacarey@fl\_jacarey  
Update for Local Micro Engine Addresses

Change 25458 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 25457 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 25450 on 2002/04/29 by csampayo@fl\_csampayo\_r400  
Update status for the following VGT test  
r400vgt\_index\_size\_01

Change 25418 on 2002/04/29 by sbagshaw@sbagshaw  
VIP status for chip integration as of April 23rd, 2002

Change 25415 on 2002/04/29 by jayw@MA\_JAYW  
must run

Change 25413 on 2002/04/29 by jacarey@fl\_jacarey

Page 304 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history





Checkpoint Specifications

Change 25386 on 2002/04/29 by jasif@jasif\_r400\_win\_tor  
Updated forcible signals section to use prefix "force" for all forcible signal names.

Change 25372 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
updated

Change 25354 on 2002/04/29 by lkang@lkang\_r400\_win\_tor  
update on 4/29

Change 25346 on 2002/04/29 by fhsien@fhsien\_r400\_win\_marlboro  
Only change the format of the template for RB verification

Change 25339 on 2002/04/29 by jasif@jasif\_r400\_win\_tor  
Updated

Change 25335 on 2002/04/29 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 25334 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
Put in VGA HDP

Change 25326 on 2002/04/29 by nluu@nluu\_r400\_doclib\_cmb  
- update

Change 25324 on 2002/04/29 by mmantor@mmantor\_r400\_win  
updated spec for PA\_SC su interface changes  
updated sc.v and created tb directories

Change 25305 on 2002/04/29 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 25304 on 2002/04/29 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 25303 on 2002/04/29 by askende@andi\_r400\_docs

modifications to RB-SX interfaces

Change 25296 on 2002/04/29 by omesh@ma\_omesh  
Just changed the heading/title of document. Nothing else.

Change 25295 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
Cahnged name

Change 25280 on 2002/04/29 by jacarey@fl\_jacarey  
No special logic in the RBBM for detecting IDCT register transactions. Any logic needed will be in the CP's micro engine.

Change 25278 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
Cahnged name

Change 25277 on 2002/04/29 by tho@tho\_r400\_win  
updated

Change 25275 on 2002/04/29 by gabarca@gabarca\_crayola\_win\_cvd  
Update

Change 25273 on 2002/04/29 by vliu@vliu\_r400\_cnvlui100\_win\_cvd  
Update

Change 25268 on 2002/04/29 by jacarey@fl\_jacarey  
Update Pre-Fetch Parser

Change 25197 on 2002/04/26 by csampayo@fl\_csampayo\_lt\_r400  
Added status for the following tests:  
r400vgt\_index\_offset\_01  
r400vgt\_index\_offset\_02  
r400vgt\_index\_offset\_03

Change 25193 on 2002/04/26 by csampayo@fl\_csampayo\_lt\_r400  
Resubmit previous

Change 25192 on 2002/04/26 by csampayo@fl\_csampayo\_lt\_r400

Added index offset to VGT section

Change 25187 on 2002/04/26 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 25148 on 2002/04/26 by ashishs@fl\_ashishs\_r400\_win  
just checked out.

Change 25145 on 2002/04/26 by ashishs@fl\_ashishs\_r400\_win  
update

Change 25135 on 2002/04/26 by scroce@scroce\_r400\_win\_marlboro  
Added some new features and modified some current features

Change 25134 on 2002/04/26 by jayw@MA\_JAYW  
minor tweak to the exponent table, adding one to exponent  
added +1.0 bybass in front of degamma.

Change 25105 on 2002/04/26 by jacarey@fl\_jacarey  
1. Remove GEN\_INT\_\* references  
2. No Shared Registers -- Update read return bus  
3. Added MASTER\_INT\_SIGNAL register

Change 25075 on 2002/04/26 by jacarey@fl\_jacarey  
Update Documents

Change 25056 on 2002/04/25 by gregs@gregs\_r400\_win\_marlboro  
update

Change 25055 on 2002/04/25 by gregs@gregs\_r400\_win\_marlboro  
updated number of analog siply pins + descriptions.

Change 25046 on 2002/04/25 by jayw@MA\_JAYW  
added MS gamma blech

Change 25020 on 2002/04/25 by ashishs@fl\_ashishs\_r400\_win  
update

Change 25014 on 2002/04/25 by ashishs@fl\_ashishs\_r400\_win  
update

Change 24968 on 2002/04/25 by georgev@ma\_georgev  
First Rev.

Change 24961 on 2002/04/25 by ctaylor@fl\_ctaylor\_r400\_win\_marlboro  
Spec Updates

Change 24941 on 2002/04/25 by jayw@MA\_JAYW  
fixed a missing zero in DeGamma example and improved formatting of the result.

Change 24919 on 2002/04/25 by rherick@ma\_rherick\_crayola  
Updated spec to reflect two Texture Cache interface clients

Change 24910 on 2002/04/25 by csampayo@fl\_csampayo\_r400  
Updated the schedule and the status for the following tests:  
r400vgt\_index\_min\_max\_01  
r400vgt\_index\_min\_max\_02

Change 24905 on 2002/04/25 by jacarey@fl\_jacarey  
Fixed typo of force\_mismatch

Change 24904 on 2002/04/25 by lkang@lkang\_r400\_win\_tor  
update on 4/24

Change 24902 on 2002/04/25 by lkang@lkang\_r400\_win\_tor  
update on 4/24

Change 24901 on 2002/04/25 by lkang@lkang\_r400\_win\_tor  
update after spec review

Change 24899 on 2002/04/25 by rherick@ma\_rherick\_crayola  
Improve documentation to reflect implementation (including data-spec definition)

Change 24888 on 2002/04/25 by jayw@jayw\_r400\_win\_home  
Added example of DeGamma to blend doc and



added exponent table documentation

Change 24832 on 2002/04/24 by bryans@bryans\_crayola\_doc  
Added general flow diagrams (more to come)

Change 24827 on 2002/04/24 by jayw@MA\_JAYW  
Added graph around DEBUGX

Change 24822 on 2002/04/24 by jayw@MA\_JAYW  
made debugging a particular x easier

Change 24810 on 2002/04/24 by jayw@MA\_JAYW  
added debug lines at the end

Change 24807 on 2002/04/24 by jayw@MA\_JAYW  
fixed with no implicit leading one and exponent bias of +15 as per Paul Vella's request.

Change 24796 on 2002/04/24 by gregs@gregs\_r400\_win\_marlboro  
SPLL registers update.

Change 24713 on 2002/04/24 by georgev@ma\_georgev  
Opened for edit.

Change 24712 on 2002/04/24 by smoss@smoss\_crayola\_win  
updated su tests

Change 24707 on 2002/04/24 by bryans@bryans\_crayola\_doc  
Update directory tree (parts\_lib) for virage/testchip\_vid subdirs

Change 24676 on 2002/04/24 by jacarey@fl\_jacarey  
Added Read Request Ports to the MIU

Change 24675 on 2002/04/24 by jacarey@fl\_jacarey  
Powerpoint slides from 2D PM4 Review

Change 24674 on 2002/04/24 by jacarey@fl\_jacarey

Page 309 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Checkpoint All Documents.

Change 24673 on 2002/04/24 by jayw@jayw\_r400\_win\_home  
missing files added

Change 24639 on 2002/04/23 by csampayo@fl\_csampayo\_it\_r400  
Updated status for the following tests:  
r400vgt\_reuse\_depth\_triangle\_list\_01  
r400vgt\_reuse\_depth\_line\_list\_01

Change 24615 on 2002/04/23 by jimmylau@jimmylau\_r400\_win\_tor  
move CRTc test plan documents under doc\_lib/design/blocks/dc/crtc

Change 24604 on 2002/04/23 by gregs@gregs\_r400\_win\_marlboro  
update

Change 24574 on 2002/04/23 by rbagley@ma\_rbagley\_itxp  
Some updates (far from complete) to the syntax. More important, the doc is reorganized.

Change 24542 on 2002/04/23 by lkang@lkang\_r400\_win\_tor  
update on 4/23

Change 24540 on 2002/04/23 by tien@ma\_spinach  
Updated TP area estimate

Change 24536 on 2002/04/23 by lkang@lkang\_r400\_win\_tor  
update on 4/23

Change 24519 on 2002/04/23 by jayw@MA\_JAYW  
changed tag between MC and RB to 9 bits.

Change 24516 on 2002/04/23 by jayw@MA\_JAYW  
fixed perl bug, more usefull X's found now.

Change 24489 on 2002/04/23 by jimmylau@jimmylau\_r400\_win\_tor  
Add crtc\_en signal in the SCL-CRTC interface specs.

Change 24484 on 2002/04/23 by frising@ma\_frising

Page 310 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

24 bit floating point format is E4M20 not E5M19. No version bump.

Change 24462 on 2002/04/23 by nbarbier@nbarbier\_r400\_win\_tor  
Initial Revision.

Change 24445 on 2002/04/23 by jacarey@fl\_jacarey  
Misc. Updates to 2D Appendix  
Reset "Valid" flags on 3D-to-2D Transitions in PFP.

Change 24416 on 2002/04/22 by csampayo@fl\_csampayo\_r400  
Updated status for the test  
r400vgt\_reuse\_depth\_point\_list\_01

Change 24406 on 2002/04/22 by bryans@bryans\_crayola\_doc  
Update per status meeting

Change 24387 on 2002/04/22 by mmantor@mmantor\_r400\_win  
update to sc dumps and added last tile to walker out dump in sc\_walker. Also updated the standalone exe and the scan converter spec for the new sc->sq interface

Change 24385 on 2002/04/22 by gregs@gregs\_r400\_win\_marlboro  
update

Change 24353 on 2002/04/22 by lkang@lkang\_r400\_win\_tor  
vga integration

Change 24352 on 2002/04/22 by lkang@lkang\_r400\_win\_tor  
display integration plan

Change 24266 on 2002/04/22 by chwang@chwang\_doc\_r400\_win\_cvd  
Addition of BIF Model test plan.

Change 24243 on 2002/04/22 by gabarca@gabarca\_crayola\_win\_cvd  
VGAREG\_VGA\_MEMORY\_BASE\_ADDRESS [31:25] Represents the start of the 32 Meg aligned, 32 Meg sized area of memory where the VGA HDP and rendering reads and writes.

Change 24234 on 2002/04/22 by chwang@chwang\_doc\_r400\_win\_cvd

Page 311 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated with some implementation details.

Change 24230 on 2002/04/22 by viiu@viuu\_r400\_cnviuu100\_win\_cvd  
Update

Change 24218 on 2002/04/22 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 24209 on 2002/04/22 by cfong@cfong\_r400\_win\_tor\_doc  
Updated

Change 24195 on 2002/04/22 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 24191 on 2002/04/22 by tho@tho\_r400\_win  
updated

Change 24187 on 2002/04/22 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
Updated

Change 24173 on 2002/04/22 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 24170 on 2002/04/22 by gregs@gregs\_r400\_win\_marlboro  
removed ROM sram area, as we are not going to have any memory in ROM.

Change 24082 on 2002/04/19 by csampayo@fl\_csampayo\_r400  
Updated status for following tests  
r400vgt\_reuse\_index\_triangle\_list\_01  
r400vgt\_reuse\_index\_line\_list\_01  
r400vgt\_reuse\_index\_point\_list\_01

Change 24050 on 2002/04/19 by jacarey@fl\_jacarey  
Remove constant flag from MIU logic.

Change 24049 on 2002/04/19 by pmitchel@pmitchel\_r400\_win\_marlboro  
add

Page 312 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 24024 on 2002/04/19 by jacarey@fl\_jacarey

PM4 Spec Updates for Write Confirmation  
Microcode Updates for write confirmation.

Change 24008 on 2002/04/19 by gregs@gregs\_r400\_win\_marlboro  
update.

Change 23984 on 2002/04/19 by georgev@ma\_georgev  
Master and sub documents for verification plan

Change 23961 on 2002/04/19 by smoss@smoss\_crayola\_win  
added culling

Change 23958 on 2002/04/19 by bryans@bryans\_crayola\_doc  
Add macros:

```
CHIP_EMU_ARCHS_CONFS
CHIP_SIM_ARCHS_CONFS
<test>_emu_archs_confs
<test>_sim_archs_confs
```

to support specifying pairs of arch/conf within the Makefile.

Note: CHIPARCH= and CHIPCONF= can be used on the command line to override

Change 23957 on 2002/04/19 by llefebvr@llefebvre\_laptop\_r400  
The new control flow scheme is now included in v2.0 of the sequencer spec.

Change 23946 on 2002/04/19 by llefebvr@llefebvre\_laptop\_r400  
Last version of the spec with the old control flow scheme

Change 23940 on 2002/04/19 by jacarey@fl\_jacarey  
Updated signal name to CP\_CG\_2d\_mode.

Change 23939 on 2002/04/19 by jacarey@fl\_jacarey  
Added CG\_CP\_2d\_mode to real-time stream connections document.

Change 23926 on 2002/04/19 by mkelly@fl\_mkelly\_r400\_win\_laptop

Page 313 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update

Change 23893 on 2002/04/18 by csampayo@fl\_csampayo\_r400

Updated status for following tests:  
r400vgt\_ext2int\_index\_line\_loop\_01  
r400vgt\_ext2int\_index\_triangle\_strip\_01  
r400vgt\_ext2int\_index\_quad\_strip\_01  
r400vgt\_ext2int\_index\_triangle\_fan\_01  
r400vgt\_ext2int\_index\_quad\_list\_01  
r400vgt\_ext2int\_index\_polygon\_01  
r400vgt\_ext2int\_index\_triangle\_list\_01

Change 23851 on 2002/04/18 by gabarca@gabarca\_crayola\_win\_cvd  
Added working version of VGA test plan:

Change 23836 on 2002/04/18 by jacarey@fl\_jacarey

1. Add TBD to RBBM spec for interrupts
2. Update packets for "write confirmation"

Change 23835 on 2002/04/18 by mkelly@fl\_mkelly\_r400\_win\_laptop

Update

Change 23767 on 2002/04/18 by jacarey@fl\_jacarey

Update Connections to MIU

Change 23726 on 2002/04/17 by csampayo@fl\_csampayo\_r400

Updated status for the following tests:  
r400vgt\_ext2int\_index\_points\_01  
r400vgt\_ext2int\_index\_line\_list\_01  
r400vgt\_ext2int\_index\_line\_strip\_01

Change 23722 on 2002/04/17 by askende@andi\_r400\_docs  
new rev. 03 checked in.

Change 23718 on 2002/04/17 by abcaudin@abcaudin\_r400\_win\_marlboro  
update transaction engine

Change 23714 on 2002/04/17 by vromaker@MA\_VIC\_P4  
updated SQ memory sizes

Page 314 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 23661 on 2002/04/17 by efong@efong\_r400\_win\_tor\_doc  
changed from VGA\_DISP\_d1\_rotate\_90\_deg to VGA\_DISP\_d2\_rotate\_90\_deg

Change 23635 on 2002/04/17 by efong@efong\_r400\_win\_tor\_doc  
Updated due to review as well as new pin (CRTS\_SCL\_display\_read\_request\_dis)

Change 23617 on 2002/04/17 by jacarey@fl\_jacarey  
Checkpoint Micro Engine Diagrams  
Microcode includes the main loop (Packet Dispatch)

Change 23597 on 2002/04/17 by gregs@gregs\_r400\_win\_marlboro  
updated register fields.

Change 23590 on 2002/04/17 by jayw@MA\_JAYW  
MaxErr, better error range checking with quatization effects.

Change 23573 on 2002/04/17 by efong@efong\_r400\_win\_tor\_doc  
Updated due to review as well as new spec still have to update the reify file stuff

Change 23566 on 2002/04/17 by gregs@gregs\_r400\_win\_marlboro  
updated MEM\_AP\_SIZE encodings + strap readback table.

Change 23535 on 2002/04/16 by csampayo@fl\_csampayo\_r400  
Updated r400vgt\_provoking\_vtx\_all\_01 test status

Change 23529 on 2002/04/16 by jacarey@fl\_jacarey  
Checkpoint Microcode -- A lot of Updates

Change 23525 on 2002/04/16 by smoss@smoss\_crayola\_win  
updated su stuff

Change 23395 on 2002/04/15 by whui@whui\_r400\_win\_tor  
Update open issue

Change 23370 on 2002/04/15 by jacarey@fl\_jacarey  
Baseline Micro Engine Address Map  
Check-Point Microcode

Page 315 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

ME\_INIT packet for PM4 Spec  
Register Updates for Cp Spec

Change 23345 on 2002/04/15 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update

Change 23309 on 2002/04/15 by jacarey@fl\_jacarey  
Update FIFO sizes and fix placement of the "red" signal.

Change 23307 on 2002/04/15 by jacarey@fl\_jacarey  
Document ati\_rbbm\_intf usage in cp's rbiu

Change 23302 on 2002/04/15 by efong@efong\_r400\_win\_tor\_doc  
Update the date

Change 23300 on 2002/04/15 by imuskatb@imuskatb\_r400\_win\_cnimuskatb  
updated

Change 23296 on 2002/04/15 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 23289 on 2002/04/15 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 23287 on 2002/04/15 by dwong@cndwong2  
xDCT test plan version 0.1  
Only sections 3 (3.1..3.3) and 7 (7.2) contain valid information

Change 23282 on 2002/04/15 by nhuu@nhuu\_r400\_doctlib\_cmb  
- update

Change 23262 on 2002/04/15 by vliu@vliu\_r400\_cnvlui100\_win\_cvd  
Update

Change 23259 on 2002/04/15 by tho@tho\_r400\_win  
updated

Page 316 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 23242 on 2002/04/15 by efong@efong\_r400\_win\_tor\_doc Updated

Change 23237 on 2002/04/15 by gregs@gregs\_r400\_win\_marlboro update.

Change 23234 on 2002/04/15 by gregs@gregs\_r400\_win\_marlboro added table of strap output signals

Change 23233 on 2002/04/15 by rbell@rbell\_crayola\_win\_cvd updated

Change 23227 on 2002/04/15 by jacarey@fl\_jacarey Details of Idle and Clean for wait until logic.

Change 23203 on 2002/04/14 by jiezhou@jiezhou\_r400\_win\_tor  
1)Change icon read return data format (P0 start from LSB) to keep the same format with R300.  
2)Change cursor read return data format (P0 start from LSB)

Change 23188 on 2002/04/13 by jimmylau@jimmylau\_r400\_win\_tor Initial test plan for CRTc

Change 23164 on 2002/04/12 by lkang@lkang\_r400\_win\_tor overall updating

Change 23163 on 2002/04/12 by csampayo@fl\_csampayo\_r400 Added description of r400vgt\_index\_source\_switch\_01

Change 23124 on 2002/04/12 by gregs@gregs\_r400\_win\_marlboro removed apad\_strength3\_3V straps.

Change 23112 on 2002/04/12 by khabbari@khabbari\_r400\_win frame controller changes reflecting the review

Change 23075 on 2002/04/12 by jayw@MA\_JAYW

Page 317 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Friday night check-in

Change 23074 on 2002/04/12 by jayw@MA\_JAYW Initial Gamma and DeGamma derivation code.

Change 23038 on 2002/04/12 by grayc@grayc\_r400\_win described generic fifo

Change 23036 on 2002/04/12 by mkelly@fl\_mkelly\_r400\_win\_laptop Update

Change 22989 on 2002/04/12 by gregs@gregs\_r400\_win\_marlboro  
1. added registers for fuse box for "bad pipes"  
2. added support for new devices: W45B512, W45B012

Change 22966 on 2002/04/11 by jiezhou@jiezhou\_r400\_win\_tor no changing

Change 22965 on 2002/04/11 by jiezhou@jiezhou\_r400\_win\_tor Update sub-block  
"graphic and overlay alpha blending" -> include GRPH\_EN and OVL\_EN control  
"Window Controller" -> Add more description of surface updating information  
Updated state machine for graphic and overlay request  
Remove "Y shift 1 bit" at 32 bpp digital output case and overlay half resolution case  
Section 5.1 -> Add signal description of 1/8 of H-total from CRTc as we don't have interface spec of DCP-CRTc  
"LUT" -> update register name and autofill data value for 8-bit mode.

Change 22920 on 2002/04/11 by rbell@rbell\_crayola\_win\_cvd Updates

Change 22919 on 2002/04/11 by jimmylau@jimmylau\_r400\_win\_tor Major update on CRTc specs :  
remove AUXWIN and related registers  
remove VGA timing and mode registers. Get signals from VGA block instead.  
major updates on register fields  
updates on CRTc interface signals and subblock interface signals  
major updates on section 6 : Data Processing Algorithms

Page 318 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 22903 on 2002/04/11 by gregs@gregs\_r400\_win\_marlboro typo error fixed.

Change 22894 on 2002/04/11 by mkelly@fl\_mkelly\_r400\_win\_laptop update

Change 22890 on 2002/04/11 by gregs@gregs\_r400\_win\_marlboro added ROM straps and fuse box.

Change 22886 on 2002/04/11 by nbarbier@nbarbier\_r400\_win\_tor Updated signal names.

Change 22883 on 2002/04/11 by nbarbier@nbarbier\_r400\_win\_tor Initial revision.

Change 22878 on 2002/04/11 by jacarey@fl\_jacarey Update addresses for incremental update tests for constants and instruction memory.

Change 22868 on 2002/04/11 by csampayo@fl\_csampayo\_r400 Added status of following tests:  
r400su\_parallel\_orientation\_all\_01  
r400su\_parallel\_orientation\_all\_02

Change 22867 on 2002/04/11 by jacarey@fl\_jacarey Clear the VS and PS valid flags in the PFP if the driver writes the shader instruction code directly.

Change 22866 on 2002/04/11 by semara@semara\_r400\_win\_tor adding the pixelwriter

Change 22843 on 2002/04/11 by rbell@rbell\_crayola\_win\_cvd Renamed doc file name

Change 22831 on 2002/04/11 by pmitchel@MA\_PAULM\_P4 move to proper place

Change 22818 on 2002/04/11 by georgev@MA\_YVALCOUR

Page 319 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Old version.

Change 22814 on 2002/04/11 by georgev@MA\_YVALCOUR Change property again.

Change 22805 on 2002/04/11 by georgev@MA\_YVALCOUR Changed edit protection to lock.

Change 22800 on 2002/04/11 by gregs@gregs\_r400\_win\_marlboro minor corrections

Change 22799 on 2002/04/11 by gregs@gregs\_r400\_win\_marlboro removed the BUSY signals table.

Change 22761 on 2002/04/10 by csampayo@fl\_csampayo\_r400 Added status of the following tests:  
r400vgt\_dma\_index\_points\_01  
r400vgt\_dma\_index\_line\_list\_01  
r400vgt\_dma\_index\_line\_strip\_01  
r400vgt\_dma\_index\_line\_loop\_01  
r400vgt\_immed\_index\_points\_01  
r400vgt\_immed\_index\_line\_list\_01  
r400vgt\_immed\_index\_line\_strip\_01  
r400vgt\_immed\_index\_line\_loop\_01

Change 22755 on 2002/04/10 by jiezhou@jiezhou\_r400\_win\_tor  
Change "DxOVL\_MATRIX\_TRANSFORM\_EN"  
"DxOVL\_PWL\_TRANSFORM\_EN"  
"DxCOLOR\_SUBSAMPLE\_CRCB\_MODE[1:0]"  
"DxCOLOR\_MATRIX\_TRANSFORM\_EN"  
from attribute of "double buffered" to "single buffered"  
Add "DxGRPH\_FLIP\_MODE" to Graphic group  
Move "DxGRPH\_ENABLE" to Graphic group  
"DxOVL\_ENABLE" to Overlay group  
Some change in LUT group:  
Move "DxGRPH\_LUT\_SEL" to Graphic group  
Change "DxLUT\_AUTOFILL" to "DC\_LUT\_AUTOFILL"  
Change "DC\_LUT\_MODE" to "DC\_LUT\_RW\_MODE" with single buffered attribute

Page 320 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change "DC\_LUT\_READb WRITE\_SELECT" to "DC\_LUT\_RW\_SEL"  
 Change "DC\_LUT\_INDEX[7:0]" to "DC\_LUT\_RW\_INDEX[7:0]"  
 Change "DC\_LUT\_WRITE\_EN\_MASK[5:0]" from "double buffered" to "single buffered"

Change 22709 on 2002/04/10 by lilefebvr@lilefebvre\_laptop\_r400

Control flow proposal updated

Change 22708 on 2002/04/10 by jacarey@fl\_jacarey

Removal mention of single ring mode for the instruction memory management.

Change 22700 on 2002/04/10 by jacarey@fl\_jacarey

Removal of Dual Ring Mode for Instruction Memory

Change 22683 on 2002/04/10 by gregs@gregs\_r400\_win\_marlboro

static screen update

Change 22680 on 2002/04/10 by georgev@MA\_YVALCOUR

First revision

Change 22679 on 2002/04/10 by georgev@MA\_YVALCOUR

No Change.

Change 22669 on 2002/04/10 by khabbari@khabbari\_r400\_win

frame controller for scaler released

Change 22628 on 2002/04/10 by jacarey@fl\_jacarey

Updates:  
 1. Synchronization  
 2. Performance Counters

Change 22594 on 2002/04/10 by bryans@bryans\_crayola\_doc

Update

Change 22589 on 2002/04/10 by jacarey@fl\_jacarey

Update to Specifications for Synchronization

Change 22577 on 2002/04/09 by beiwang@bei\_mcspec

Page 321 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated to reflect deletion of Address Return Bus and updates to RB bus interface

Change 22544 on 2002/04/09 by sallen@sallen\_r400\_win\_marlboro

Move ferret and rename spec

Change 22510 on 2002/04/09 by mkelly@fl\_mkelly\_r400\_win\_laptop

Scissor rect tests...

Change 22507 on 2002/04/09 by khabbari@khabbari\_r400\_win

removed DCP\_LB\_P1\_EN from lb/dcp interface

Change 22491 on 2002/04/09 by khabbari@khabbari\_r400\_win

added subsample modes signal to both lb/dcp and lb/sci interface docs

Change 22483 on 2002/04/09 by hartogs@fl\_hartogs

Updated draw initiator comments for "INDEX\_SIZE" and "SOURCE\_SELECT" fields based on behaviors learned from the emulator.

Change 22476 on 2002/04/09 by frising@ma\_frasing

v1.37  
 -make surface alignment for 2d/3d linear textures be 4KB.

Change 22473 on 2002/04/09 by abeaudin@abeaudin\_r400\_win\_marlboro

documentation for registers and the gfx transaction engine

Change 22450 on 2002/04/09 by georgev@MA\_YVALCOUR

First revision.

Change 22443 on 2002/04/09 by kcorrell@kcorrell\_r400\_docs\_marlboro

Next update

Change 22393 on 2002/04/08 by khabbari@khabbari\_r400\_win

lb/scaler and lb/dcp interface update

Change 22359 on 2002/04/08 by jasif@jasif\_r400\_win\_tor

Updated.

Change 22348 on 2002/04/08 by bryans@bryans\_crayola\_doc

Page 322 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Fix dc configuration to include VIP

Change 22319 on 2002/04/08 by bbloemer@ma-jasonh

Added DRAM bank pin names, separate from address pins.

Change 22317 on 2002/04/08 by mkelly@fl\_mkelly\_r400\_win\_laptop

Simple scissor rectangle test...

Change 22316 on 2002/04/08 by lilefebvr@lilefebvre\_laptop\_r400

The control flow proposal

Change 22313 on 2002/04/08 by jacarey@fl\_jacarey

Updates for synchronization

Change 22302 on 2002/04/08 by gregs@gregs\_r400\_win\_marlboro

clock names

Change 22293 on 2002/04/08 by mkelly@fl\_mkelly\_r400\_win\_laptop

SC scissor rectangle test

Change 22291 on 2002/04/08 by vliu@vliu\_r400\_cnviu100\_win\_cvd

Update

Change 22281 on 2002/04/08 by gregs@gregs\_r400\_win\_marlboro

clock names and spelling

Change 22277 on 2002/04/08 by jowang@jowang\_R400\_win

For first milestone

Change 22276 on 2002/04/08 by nluu@nluu\_r400\_doclib\_cnb

- update

Change 22275 on 2002/04/08 by jacarey@fl\_jacarey

Checkpoint Specifications

Change 22273 on 2002/04/08 by chwang@chwang\_doc\_r400\_win\_cvd

Page 323 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Update.

Change 22264 on 2002/04/08 by efong@efong\_r400\_win\_tor\_doc

Updated

Change 22261 on 2002/04/08 by tho@tho\_r400\_win

updated

Change 22260 on 2002/04/08 by gregs@gregs\_r400\_win\_marlboro

updated clock names

Change 22259 on 2002/04/08 by imuskatb@imuskatb\_r400\_win\_cnimuskatb

updated

Change 22253 on 2002/04/08 by abeaudin@abeaudin\_r400\_win\_marlboro

removed old schedules

Change 22243 on 2002/04/08 by jasif@jasif\_r400\_win\_tor

Updated.

Change 22241 on 2002/04/08 by jacarey@fl\_jacarey

Updates to diagram.

Change 22239 on 2002/04/08 by rbell@rbell\_crayola\_win\_cvd

Small update for config example

Change 22237 on 2002/04/08 by rbell@rbell\_crayola\_win\_cvd

updated

Change 22231 on 2002/04/08 by jacarey@fl\_jacarey

1. Update to PFF Pseudocode  
 2. Diagram for CP-to-Driver Synchronization  
 3. Checkpoint Microcode  
 4. Checkpoint RBMM Specification

Change 22162 on 2002/04/05 by jiezhou@jiezhou\_r400\_win\_tor

update some field name to be consistent with verilog register file.

Page 324 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 22152 on 2002/04/05 by mkelly@fl\_mkelly\_r400\_win\_laptop  
Update...

Change 22149 on 2002/04/05 by jacarey@fl\_jacarey  
Small clarification for event\_timestamp\_write packet.

Change 22143 on 2002/04/05 by jacarey@fl\_jacarey  
Updated EVENT\_TIMESTAMP\_WRITE PM4 packet.  
Updated count fields for PFP-to-ME intermediate packets.

Change 22135 on 2002/04/05 by chwang@chwang\_doc\_r400\_win\_cvd  
Minor update about model arguments.

Change 22130 on 2002/04/05 by chwang@chwang\_doc\_r400\_win\_cvd  
Added updated Reify spec.

Change 22120 on 2002/04/05 by nluu@nluu\_r400\_doclib\_cmb  
- add more details to the implementation section

Change 22101 on 2002/04/05 by chwang@chwang\_doc\_r400\_win\_cvd  
Update to the Coding Standard.

Change 22094 on 2002/04/05 by jacarey@fl\_jacarey  
Renamed CP\_RBBM\_rt\_idle to CP\_RBBM\_rt\_busy

Change 22079 on 2002/04/05 by lkang@lkang\_r400\_win\_tor  
display device power management update

Change 22078 on 2002/04/05 by semara@semara\_r400\_win\_tor  
adding VGA\_DISP\_d1/2\_rotate\_90\_deg signals

Change 22068 on 2002/04/05 by semara@semara\_r400\_win\_tor  
Updating the interface to use display width/height to interface to the scalar.  
adjust the vertical parameters indexes from [9:0] to [10:0].

Change 22067 on 2002/04/05 by jacarey@fl\_jacarey  
Remove Discrete signals for RT streams from CP Specification.

Page 325 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 22066 on 2002/04/05 by jacarey@fl\_jacarey  
Update to reflect "start of frame" counters for Display Engines.

Change 22065 on 2002/04/05 by jacarey@fl\_jacarey  
Document for Discrete RT stream connections instead of placing this information in the CP Specification.

Change 22056 on 2002/04/05 by llefebvre@llefebvre\_laptop\_r400  
The new control flow proposal.

Change 22037 on 2002/04/05 by bryans@bryans\_crayola\_doc  
Add dc\_disp configuration

Change 21976 on 2002/04/04 by nluu@nluu\_r400\_doclib\_cmb  
- add implementation specs to DCCIF Model.

Change 21973 on 2002/04/04 by csampayo@fl\_csampayo\_r400  
Updated VGT section with tests written

Change 21964 on 2002/04/04 by gregs@regs\_r400\_win\_marlboro  
update

Change 21919 on 2002/04/04 by nluu@nluu\_r400\_doclib\_cmb  
- add bit width to signals in diagrams

Change 21906 on 2002/04/04 by nluu@nluu\_r400\_doclib\_cmb  
- mark don't cares on all relevant signals

Change 21904 on 2002/04/04 by khabbari@khabbari\_r400\_win  
the lb test plan for phase1

Change 21894 on 2002/04/04 by jimmylau@jimmylau\_r400\_win\_tor  
Change SC-CRTC interface specs. Add signals to disable display requests for display1 and display2.

Change 21890 on 2002/04/04 by bryans@bryans\_crayola\_doc

Page 326 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Brief doc on environment variables and standard makefile defines

Change 21870 on 2002/04/04 by gregs@regs\_r400\_win\_marlboro  
added input registers for RBBM\_active and MH\_active and pm\_en.

Change 21859 on 2002/04/04 by gregs@regs\_r400\_win\_marlboro  
moved ROM based straps table

Change 21853 on 2002/04/04 by gregs@regs\_r400\_win\_marlboro  
reset -> srst

Change 21844 on 2002/04/04 by bhankins@fl\_bhankins\_r400\_win  
Initial checkin

Change 21831 on 2002/04/04 by gregs@regs\_r400\_win\_marlboro  
verilog examples of clock gating

Change 21816 on 2002/04/04 by gregs@regs\_r400\_win\_marlboro  
sclk gating example files.

Change 21798 on 2002/04/04 by jacarey@fl\_jacarey  
Miscellaneous Corrections to PM4 Specification.

Change 21771 on 2002/04/03 by jiezhou@jiezhou\_r400\_win\_tor  
small updating

Change 21770 on 2002/04/03 by csampayo@fl\_csampayo\_r400  
PA Validation Tests Tracking Document

Change 21733 on 2002/04/03 by nluu@nluu\_r400\_doclib\_cmb  
- change title in properties

Change 21719 on 2002/04/03 by nluu@nluu\_r400\_doclib\_cmb  
- add more test cases

Change 21712 on 2002/04/03 by nluu@nluu\_r400\_doclib\_cmb  
- add a no-reset test case

Page 327 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

- change to revision 1.0

Change 21710 on 2002/04/03 by nluu@nluu\_r400\_doclib\_cmb  
- Add implementation specs to rbbmif model doc

Change 21650 on 2002/04/03 by hartogs@fl\_hartogs  
changed VGT\_SQ\_end\_of\_vector to VGT\_SQ\_end\_of\_vtx\_vect.  
changed VGT\_PA\_clip\_p\_start\_vector to VGT\_PA\_clip\_p\_new\_vtx\_vect.  
fixed stride and shift entries for vector 0 in Major Mode 0 table.  
Updated the "Active Issues" list.  
Added the SWAP\_MODE field to the DMA\_SIZE register.  
Changed the implied value of bit 2 of the VGT\_MH\_ad interface from a zero to a one.  
This indicates that the VGT is always doing 256-bit requests.

Change 21638 on 2002/04/03 by jacarey@fl\_jacarey  
Updated Invalidate\_State packet to swap VS and PS bit order

Change 21634 on 2002/04/03 by abeaudin@abeaudin\_r400\_win\_marlboro  
cleaned up documentaion

Change 21620 on 2002/04/03 by jacarey@fl\_jacarey  
Clarified that the MH has a slip FIFO

Change 21619 on 2002/04/03 by gregs@regs\_r400\_win\_marlboro  
Updated MH section

Change 21589 on 2002/04/03 by jacarey@fl\_jacarey  
Added memclk active feedback to MIU.

Change 21586 on 2002/04/03 by jacarey@fl\_jacarey  
Added CP\_MH\_reqmem signal to the CP.

Change 21533 on 2002/04/03 by jacarey@fl\_jacarey  
Update to All Documents

Change 21517 on 2002/04/02 by csampayo@fl\_csampayo\_r400  
For documenting PA validation environment/processes

Change 21492 on 2002/04/02 by kcorrell@kcorrell\_r400\_docs\_marlboro

Page 328 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



updated interfaces

Change 21467 on 2002/04/02 by bryans@bryans\_crayola\_doc  
more updates (open issues)

Change 21423 on 2002/04/02 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 21396 on 2002/04/02 by bryans@bryans\_crayola\_doc  
Update status based on Lili's changes

Change 21382 on 2002/04/02 by efong@efong\_r400\_win\_tor\_doc  
prefixed all the forcible signals with force\_

Change 21381 on 2002/04/02 by efong@efong\_r400\_win\_tor\_doc  
prefixed the forcible signals with force\_.

Change 21380 on 2002/04/02 by efong@efong\_r400\_win\_tor\_doc  
changed the names of the forcible signals to be prefixed with force\_  
changed the bus\_timeout to be 100 from 50 because rbbmif will timeout after 68 cycles.  
fixed up the table with the commands and removed 0x200 from all the write cycles  
put down some extra limitations of the model  
put in a small section in the rd file section for timeout

Change 21377 on 2002/04/02 by jayw@MA\_JAYW  
added RB\_MH\_queuecount  
and removed tile\_done from RBs.

Change 21366 on 2002/04/02 by jayw@MA\_JAYW  
complement for RB\_HW\_design\_spec.doc  
area estimates, etc.

Change 21365 on 2002/04/02 by jayw@MA\_JAYW  
MH\_RB\_queuecount\_external is now MH\_RB\_queuecount

Change 21349 on 2002/04/02 by rbell@rbell\_crayola\_win\_cvd  
updated

Page 329 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 21345 on 2002/04/02 by jacarey@fl\_jacarey  
Interface Updates for CP.

Change 21314 on 2002/04/01 by jiezhou@jiezhou\_r400\_win\_tor  
Initial release for dcp test plan

Change 21308 on 2002/04/01 by bryans@bryans\_crayola\_doc  
Post status meeting update

Change 21290 on 2002/04/01 by jasif@jasif\_r400\_win\_tor  
Modified description of timing diagram.

Change 21277 on 2002/04/01 by gregs@gregs\_r400\_win\_mariboro  
added pin\_strap\_DRAM\_select

Change 21253 on 2002/04/01 by lkang@lkang\_r400\_win\_tor  
Move the file from devel/doc\_lib to doc\_lib

Change 21251 on 2002/04/01 by jasif@jasif\_r400\_win\_tor  
Updated unterface signal names to match released dccif.v top level.

Change 21222 on 2002/04/01 by bryans@bryans\_crayola\_doc  
Update status

Change 21220 on 2002/04/01 by lkang@lkang\_r400\_win\_tor  
milestones

Change 21216 on 2002/04/01 by jasif@jasif\_r400\_win\_tor  
Added assumptions section.

Change 21207 on 2002/04/01 by nluu@nluu\_r400\_doclib\_cmb  
- update status

Change 21206 on 2002/04/01 by jasif@jasif\_r400\_win\_tor  
Updated Error Section.

Change 21204 on 2002/04/01 by efong@efong\_r400\_win\_tor\_doc

Page 330 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated

Change 21201 on 2002/04/01 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 21198 on 2002/04/01 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 21195 on 2002/04/01 by dclifton@dclifton\_r400  
Moved perspective correction of I and J to VTE. Updated the RBU interface to very latest concept of state variable storage (subject to change again).

Change 21191 on 2002/04/01 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Update

Change 21189 on 2002/04/01 by jasif@jasif\_r400\_win\_tor  
Updated

Change 21182 on 2002/04/01 by jayw@MA\_JAYW  
Monday morning checkin.  
Some tile cache drawings in Visio.

Change 21177 on 2002/04/01 by tho@tho\_r400\_win  
updated

Change 21161 on 2002/04/01 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 21134 on 2002/03/31 by beiwang@bei\_mcspec  
Deleted text descriptions on Address return bus to be consistent w/ the bus interface tables

Change 21122 on 2002/03/31 by semara@semara\_r400\_win\_tor  
updating the address gen section

Change 20941 on 2002/03/28 by bbloemer@ma-jasonh  
Updated dc queue text.

Page 331 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 20934 on 2002/03/28 by hartogs@fl\_hartogs  
More clean-up. From this point on, revisions to the spec will be detailed in the revision section.

Change 20912 on 2002/03/28 by jacarey@fl\_jacarey  
Added soft reset for VGT to RBBM.  
Multiple Updates to CP specs for 2D.

Change 20890 on 2002/03/28 by rherick@ma\_rherick\_crayola  
Fixed Table Of Contents...

Change 20883 on 2002/03/28 by gregs@gregs\_r400\_win\_mariboro  
added block to block timing

Change 20880 on 2002/03/28 by rherick@ma\_rherick\_crayola  
Revamped specification to include relative transaction methods (instead of directed vs pattern methods)... Also added client synchronization...

Change 20861 on 2002/03/28 by rbell@rbell\_crayola\_win\_cvd  
updated

Change 20859 on 2002/03/28 by whui@whui\_r400\_win\_tor  
updated section 8: power management

Change 20808 on 2002/03/28 by hartogs@fl\_hartogs  
Added and deleted several state registers.  
Updated interface tables.

Change 20799 on 2002/03/28 by jacarey@fl\_jacarey  
Added clock gating information to the CP Specification.

Change 20769 on 2002/03/27 by mmantor@mmantor\_r400\_win  
updated for interface integration changes

Change 20739 on 2002/03/27 by jasif@jasif\_r400\_win\_tor  
Added force prefix for signal names forcible from tests.

Page 332 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 20721 on 2002/03/27 by jayw@MA\_JAYW  
removed bogus offset x and offset y from detail bus.  
added event bit to coarse bus.

Change 20720 on 2002/03/27 by niluu@nluu\_r400\_doelib\_cmb  
- initial revision of DCCIF Model test plan

Change 20718 on 2002/03/27 by gregs@gregs\_r400\_win\_marlboro  
Updated with the global core clock idea.

Change 20715 on 2002/03/27 by niluu@nluu\_r400\_doelib\_cmb  
- correct links - model documents were re-organized

Change 20711 on 2002/03/27 by bryans@bryans\_crayola\_doc  
Update the arch/conf spec for simulation

Change 20710 on 2002/03/27 by jacarey@fl\_jacarey  
Update RBBM Interfaces

Change 20699 on 2002/03/27 by jacarey@fl\_jacarey  
Update Spec for Interfaces

Change 20692 on 2002/03/27 by jayw@MA\_JAYW  
fixed a couple of minor signal names.

Change 20678 on 2002/03/27 by askende@andi\_r400\_docs  
a new rev of the shader export spec.

Change 20664 on 2002/03/27 by jacarey@fl\_jacarey  
Interface Updates

Change 20641 on 2002/03/27 by jacarey@fl\_jacarey  
Added "Read Combine Disable" to diagrams.

Change 20632 on 2002/03/27 by dgjen@dgjen\_r400\_dell  
Doing major update. Still not complete.

Change 20606 on 2002/03/26 by rvelez@rvelez\_r400\_win\_tor  
Latest DCCIF changes - fixed typos in docs

Change 20601 on 2002/03/26 by jacarey@fl\_jacarey  
Update CP Interfaces

Change 20589 on 2002/03/26 by khabbari@khabbari\_r400\_win  
tvout/disput interface doc released

Change 20584 on 2002/03/26 by jacarey@fl\_jacarey  
Sweeping Update to the Interface Signal List.

Change 20580 on 2002/03/26 by jayw@MA\_JAYW  
Missing file, disappeared mysteriously

Change 20578 on 2002/03/26 by jayw@MA\_JAYW  
Released to match rb.v and rc.v

Change 20574 on 2002/03/26 by jowang@jowang\_R400\_win  
Action Items 02/07

Change 20573 on 2002/03/26 by jayw@MA\_JAYW  
Several bus name changes.  
Added RB->RC system context bus.

Change 20571 on 2002/03/26 by mpersaud@mpersaud\_r400\_win\_tor  
Changes for Feb 28 Design Review

Change 20560 on 2002/03/26 by jacarey@fl\_jacarey  
Interface Update for VIP, BIF reviews

Change 20531 on 2002/03/26 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 20524 on 2002/03/26 by niluu@nluu\_r400\_doelib\_cmb  
- update

Change 20513 on 2002/03/26 by dwong@cndwong2  
R400 xDCT design review presentation material

Change 20512 on 2002/03/26 by jasif@jasif\_r400\_win\_tor  
Initial revision.

Change 20471 on 2002/03/26 by rthambim@rthambim\_r400\_win\_tor  
Added skid buffer structure diagram.

Change 20444 on 2002/03/25 by rthambim@rthambim\_r400\_win\_tor  
Updated write combining info.

Change 20442 on 2002/03/25 by rthambim@rthambim\_r400\_win\_tor  
Added skid buffer timing diagram.

Change 20426 on 2002/03/25 by askende@andi\_r400\_docs  
a new rev (0.2)

Change 20403 on 2002/03/25 by jacarey@fl\_jacarey  
Clarify the fix-to-float is not normalized.

Change 20375 on 2002/03/25 by jayw@MA\_JAYW  
Weekend updates

Change 20364 on 2002/03/25 by jiezhou@jiezhou\_r400\_win\_tor  
small updating

Change 20357 on 2002/03/25 by semara@semara\_r400\_win\_tor  
rev 0.6

Change 20347 on 2002/03/25 by vliu@vliu\_r400\_cnvlua100\_win\_cvd  
Update

Change 20339 on 2002/03/25 by jacarey@fl\_jacarey  
Checkpoint Diagram and Micro Code.

Change 20335 on 2002/03/25 by efong@efong\_r400\_win\_tor\_doc

updated

Change 20332 on 2002/03/25 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 20320 on 2002/03/25 by llefebvre@llefebvre\_laptop\_r400  
Updated the interfaces and added an exporting rule section.

Change 20316 on 2002/03/25 by niluu@nluu\_r400\_doelib\_cmb  
- update

Change 20313 on 2002/03/25 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 20309 on 2002/03/25 by tho@tho\_r400\_win  
updated

Change 20308 on 2002/03/25 by rbell@rbell\_crayola\_win\_cvd  
updates

Change 20303 on 2002/03/25 by niluu@nluu\_r400\_doelib\_cmb  
- update

Change 20302 on 2002/03/25 by imuskatb@imuskatb\_dv\_win\_cvd  
update

Change 20294 on 2002/03/25 by jiezhou@jiezhou\_r400\_win\_tor  
combine DCP\_Controller.doc into Display\_Composite\_Pipe.doc

Change 20293 on 2002/03/25 by rbell@rbell\_crayola\_win\_cvd  
changes

Change 20292 on 2002/03/25 by jiezhou@jiezhou\_r400\_win\_tor  
update

Change 20291 on 2002/03/25 by jiezhou@jiezhou\_r400\_win\_tor





major release to support architecture change:

- 1) add graphic/overlay alpha blending feature
- 2) add overlay matrix transformation block
- 3) add overlay gamma correction block
- 4) add 512 offset to icon expander
- 5) add 512 offset to cursor expander
- 6) add "pick-up" odd pixels in Sub-sampling block
- 7) some precision issues along the data path
- 8) remove supporting for lear mode
- 9) remove supporting for one pipe enabled at tiled-mode
- 10) combine DCP\_Controller.doc into Display\_Composite\_Pipe.doc
- 11) DCP\_register\_list.doc separate from Display\_Composite\_Pipe.doc

Change 20289 on 2002/03/25 by jacarey@fl\_jacarey  
clarified the brush offset value format

Change 20288 on 2002/03/25 by jacarey@fl\_jacarey  
Update cp\_interrupt packet to help the micro engine design.

Change 20287 on 2002/03/25 by jacarey@fl\_jacarey  
Fix Typos in the number formats

Change 20286 on 2002/03/25 by jacarey@fl\_jacarey  
Clarification on Packet Restrictions

Change 20269 on 2002/03/24 by rthambim@rthambim\_r400\_win\_tor  
Updated ROM cycle info.

Change 20268 on 2002/03/24 by rthambim@rthambim\_r400\_win\_tor  
Updated write combining info.

Change 20267 on 2002/03/24 by rthambim@rthambim\_r400\_win\_tor  
Fixed syntax.

Change 20237 on 2002/03/22 by jiezhou@jiezhou\_r400\_win\_tor  
Major update for DCP register list

Change 20234 on 2002/03/22 by rthambim@rthambim\_r400\_win\_tor  
Included strap table, updated review feedback.

Page 337 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 20219 on 2002/03/22 by askende@andi\_r400\_docs  
first cut of the document

Change 20215 on 2002/03/22 by jacarey@fl\_jacarey  
Update Interface list

Change 20199 on 2002/03/22 by llefebvre@llefebvre\_laptop\_r400  
Some minor changes to the SQ interfaces.

Change 20194 on 2002/03/22 by jacarey@fl\_jacarey  
Update Interfaces

Change 20192 on 2002/03/22 by mzhu@mzhu\_r400\_win\_tor  
remove support for single DCP pipeline

Change 20189 on 2002/03/22 by gregs@gregs\_r400\_win\_marlboro  
things copied from r300 and not yet modified - in red color.

Change 20187 on 2002/03/22 by gregs@gregs\_r400\_win\_marlboro  
Initial version - notes on pins, pad sizes, die and package sizes.

Change 20157 on 2002/03/22 by jacarey@fl\_jacarey  
Baseline CP Microcode  
Typos in PM4 Spec

Change 20144 on 2002/03/22 by frising@ma\_frasing  
No version change.  
-added in bit field definitions for texture width/height/depth that we keep forgetting to add :)

Change 20142 on 2002/03/22 by mmantor@mmantor\_r400\_win  
updated interface tables to represent actual planned hardware interfaces

Change 20131 on 2002/03/22 by dclifton@dclifton\_r400  
Updated drawings and interface to Scan Converter

Change 20130 on 2002/03/22 by jacarey@fl\_jacarey

Page 338 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Miscellaneous corrections to references to VGT registers

Change 20129 on 2002/03/22 by jacarey@fl\_jacarey  
Rename vgt\_index\_offset to vgt\_idx\_offset

Change 20124 on 2002/03/22 by jowang@jowang\_R400\_win  
added signals which are passed upstream from CRTG

Change 20114 on 2002/03/22 by jayw@MA\_JAYW  
Largely formatting.  
Revamped MC interface and added RBBM.

Change 20102 on 2002/03/22 by jacarey@fl\_jacarey  
Update Draw\_Idx and Viz\_Query Pseudocode.

Change 20098 on 2002/03/22 by jhoule@MA\_JHOULE  
1.36:  
Changed DST\_SEL\_\* names from XYZW to SRC\_X, SRC\_Y, SRC\_Z, and SRC\_W.  
Equivalent in SRC\_SEL\* to GRP\_X, GPR\_Y, and GPR\_W.  
Consistent capitalized first letter in fields.  
Enable/Disable FORCE\_BC\_W\_TO\_MAX now Enabled/Disabled.

Change 20097 on 2002/03/22 by gregs@gregs\_r400\_win\_marlboro  
minor mod.

Change 20094 on 2002/03/22 by jowang@jowang\_R400\_win  
reviewed and corrected description

Change 20092 on 2002/03/22 by jhoule@MA\_JHOULE  
Rev 0.9.8:  
Updated SQ and SP interface from respective specs.

Change 20086 on 2002/03/22 by gregs@gregs\_r400\_win\_marlboro  
Updated memory interface.

Change 20058 on 2002/03/21 by abeaudin@abeaudin\_r400\_win\_marlboro  
new emulator documentation for adding blocks

Page 339 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 20018 on 2002/03/21 by jacarey@fl\_jacarey  
Clarifications on Set\_state usage.  
2D Updates.

Change 20015 on 2002/03/21 by jacarey@fl\_jacarey  
Removed Erroneous Note

Change 19995 on 2002/03/21 by bryans@bryans\_crayola\_doc  
updated

Change 19979 on 2002/03/21 by bryans@bryans\_crayola\_doc  
Realign goals

Change 19960 on 2002/03/21 by jacarey@fl\_jacarey  
Clarification of C0 and C1 constant loading from CP for 2D

Change 19914 on 2002/03/21 by rherick@ma\_rherick\_crayola  
1.36:  
First Release for general consumption/review... Changes include:  
More completed requirements documentation (in the form of Configuration Spec File Documentation)  
Configuration File in a loose BNF format

Change 19865 on 2002/03/20 by nbarbier@nbarbier\_r400\_win\_tor  
Initial Release

Change 19858 on 2002/03/20 by efong@efong\_r400\_win\_tor\_doc  
Updated with new BIF-VGA requirements

Change 19843 on 2002/03/20 by abeaudin@abeaudin\_r400\_win\_marlboro  
new documentation for emulator

Change 19820 on 2002/03/20 by jacarey@fl\_jacarey  
Updated Registers Per blk file and Emulator

Change 19728 on 2002/03/20 by gregs@gregs\_r400\_win\_marlboro  
Initial version - copied (and re-arranged) from R300.

Page 340 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 19718 on 2002/03/20 by jacarey@fl\_jacarey  
Fix equation for load\_constant\_context packet.

Change 19705 on 2002/03/20 by efong@efong\_r400\_win\_tor\_doc  
Updated revision stuff

Change 19704 on 2002/03/20 by efong@efong\_r400\_win\_tor\_doc  
removed all the power stuff.

Change 19656 on 2002/03/19 by jacarey@fl\_jacarey  
Clarification for auto-generation of indices.

Change 19650 on 2002/03/19 by jacarey@fl\_jacarey  
Update to 2D Register Definitions.

Change 19631 on 2002/03/19 by jacarey@fl\_jacarey  
Update interface signals to RCIU.

Change 19629 on 2002/03/19 by jacarey@fl\_jacarey  
Fix typos on interface signals from CP and HI.

Change 19619 on 2002/03/19 by jacarey@fl\_jacarey  
Checkpoint Spec  
1. PFP Constant coherency  
2. Register Updates

Change 19595 on 2002/03/19 by jacarey@fl\_jacarey  
Update POLYLINE information.  
Update line brush processing.

Change 19590 on 2002/03/19 by scroce@scroce\_r400\_win\_marlboro  
Updated Table of Contents

Change 19568 on 2002/03/19 by jacarey@fl\_jacarey  
Updated Brush\_Offset plan for POLYLINE packet.

Change 19520 on 2002/03/18 by jiezhou@jiezhou\_r400\_win\_tor

Page 341 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

update

Change 19506 on 2002/03/18 by jiezhou@jiezhou\_r400\_win\_tor  
feature change to add alpha blending

Change 19503 on 2002/03/18 by llefebvre@llefebvre\_laptop\_r400  
Changed the interfaces to reflect the fact that the PCs are now in the SX blocks

Change 19496 on 2002/03/18 by paulv@MA\_PVELLA  
Minor update to MHS section, including the DBR block diagram.

Change 19492 on 2002/03/18 by fhsien@fhsien\_r400\_win\_marlboro  
del for yung

Change 19485 on 2002/03/18 by kcorrell@kcorrell\_r400\_docs\_marlboro  
added files describing how mh treats chips addresses, minor tweaks to text

Change 19482 on 2002/03/18 by jacarey@fl\_jacarey  
Checkpoint CP Specification  
\* Partial Register Updates  
- BIOS Scratch Registers  
- Push Register Apertures  
- Updates to Register Text

Change 19478 on 2002/03/18 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 19437 on 2002/03/18 by efong@efong\_r400\_win\_tor\_doc  
Updated to new crtc spec. Also changed the DE to read\_request

Change 19436 on 2002/03/18 by jacarey@fl\_jacarey  
Update Renderer Backend registers that are written by the CP during the GUI Master Control handler. This is based on e-mail from Larry Seiler.

Change 19424 on 2002/03/18 by vliu@vliu\_r400\_cnvtiul00\_win\_cvd  
Update

Page 342 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 19419 on 2002/03/18 by frising@ma\_frising  
Initial check-in.

Change 19417 on 2002/03/18 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 19415 on 2002/03/18 by jimmylau@jimmylau\_r400\_win\_tor  
Update interface signal list based on CRTC block specs.

Change 19413 on 2002/03/18 by nluu@nluu\_r400\_doclib\_cnb  
- update

Change 19409 on 2002/03/18 by chwang@chwang\_doc\_r400\_win\_cvd  
Update.

Change 19406 on 2002/03/18 by jacarey@fl\_jacarey  
Update to wait\_until conditions per e-mail from D. Glen on 1st and 2nd display/overlay controllers.

Change 19405 on 2002/03/18 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 19380 on 2002/03/18 by jacarey@fl\_jacarey  
Add INDEX\_OFFSET to the 3D Draw Packets.

Change 19369 on 2002/03/18 by tho@tho\_r400\_win  
update

Change 19346 on 2002/03/17 by jacarey@fl\_jacarey  
Illustration for 2D Surface Coherency

Change 19345 on 2002/03/17 by jacarey@fl\_jacarey  
Updates from Reviews

Change 19240 on 2002/03/15 by rbell@rbell\_crayola\_win\_cvd  
updates

Page 343 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 19217 on 2002/03/15 by semara@semara\_r400\_win\_tor  
update

Change 19216 on 2002/03/15 by rherick@ma\_rherick\_crayola  
More completion of first pass spec...

Change 19201 on 2002/03/15 by scroce@scroce\_r400\_win\_marlboro  
Added info about alias file creation

Change 19156 on 2002/03/15 by frising@ma\_frising  
no version change  
-fixed very minor typo on DATA\_FORMAT page pointed out by Larry.

Change 19094 on 2002/03/15 by rherick@ma\_rherick\_crayola  
More progress made... Still not complete... Redefined window setting directives...  
Worked on first pass of Pattern Reads

Change 19057 on 2002/03/14 by lkang@lkang\_r400\_win\_tor  
updated section 6 on power state management

Change 19056 on 2002/03/14 by semara@semara\_r400\_win\_tor  
update section 10

Change 19051 on 2002/03/14 by frising@ma\_frising  
v.1.35  
-moved some fields around in texture constants to facilitate 2D.  
-add per quad and per pixel register lod to texture instruction.  
-moved SIGNED\_RF\_MODE\_ALL up one bit in vertex instruction.  
-cleaned up a few comments.

Change 19034 on 2002/03/14 by nbarbier@nbarbier\_r400\_win\_tor  
Updated Interface

Change 19002 on 2002/03/14 by rherick@ma\_rherick\_crayola  
Yet another deposit along the way... Not ready for review yet...

Change 18959 on 2002/03/14 by lseiler@ma\_lseiler  
Memory Formats: minor updates

Page 344 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 18958 on 2002/03/14 by lseiler@ma\_lseiler  
Render Backend minor updates

Change 18909 on 2002/03/14 by lkang@lkang\_r400\_win\_tor  
updated power management on pclk domain.

Change 18875 on 2002/03/14 by rherick@nashua\_rherick\_crayola  
Progress on Spec.. No milestone...

Change 18834 on 2002/03/13 by nluu@nluu\_r400\_doctlib\_cmb  
- test plan for RBBMIF model

Change 18697 on 2002/03/13 by nluu@nluu\_r400\_doctlib\_cmb  
- correct comment about timeout and shared-registers

Change 18690 on 2002/03/13 by rvelez@rvelez\_r400\_win\_tor  
Top Level DC Spec

Change 18682 on 2002/03/13 by scroce@scroce\_r400\_win\_marlboro  
Quick comments

Change 18669 on 2002/03/13 by jacarey@fl\_jacarey  
Baseline Overview Presentations  
Checkpoint PM4 Specification

Change 18660 on 2002/03/13 by rherick@ma\_rherick\_crayola  
Documentation for MC/MH Test Environment

Change 18629 on 2002/03/12 by jasif@jasif\_r400\_win\_tor  
Updated arbitration between read and write requests. Added open issue of skid buffers.

Change 18616 on 2002/03/12 by nluu@nluu\_r400\_doctlib\_cmb  
- forgot to delete one doc in previous submit

Change 18607 on 2002/03/12 by khabbari@khabbari\_r400\_win  
added fields to the register section of LB arch doc

Page 345 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 18594 on 2002/03/12 by nluu@nluu\_r400\_doctlib\_cmb  
- re-org, rename files to all lowercase

Change 18582 on 2002/03/12 by efong@efong\_r400\_win\_tor\_doc  
forgot to change some of the names from HSYNC to HSYNCA/B and VSYNC to VSYNCA/B

Change 18564 on 2002/03/12 by khabbari@khabbari\_r400\_win  
EOL removed from lb\_dcp interface doc

Change 18552 on 2002/03/12 by jhoule@MA\_JHOULE  
0.9.7:  
Added mipmap packing scheme description (with images).  
Moved Addressing in a Varia section.  
Changed some sub-block names.

Change 18486 on 2002/03/11 by dglen@dglen\_r400\_dell  
Major update for first time in far too long.

Change 18483 on 2002/03/11 by semara@semara\_r400\_win\_tor  
rev 0.3

Change 18457 on 2002/03/11 by bbloemer@ma-jasonh  
Updated clock naming convention.

Change 18454 on 2002/03/11 by nluu@nluu\_r400\_doctlib\_cmb  
- Legacy => legacy

Change 18450 on 2002/03/11 by nluu@nluu\_r400\_doctlib\_cmb  
- re-organize model docs.

Change 18437 on 2002/03/11 by jacarey@fl\_jacarey  
Updated Surface Coherence Equations for Lines and Fix Problems

Change 18421 on 2002/03/11 by jacarey@fl\_jacarey  
Miscellaneous Updates and Corrections

Page 346 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 18415 on 2002/03/11 by wlawless@wlawless  
Revision 0.8 has updates to the color block cache, and its tag descriptions... Also a RB full data flow diagram and description was added.

Change 18385 on 2002/03/11 by jasif@jasif\_r400\_win\_tor  
Updated

Change 18379 on 2002/03/11 by rbell@rbell\_crayola\_win\_cvd  
update

Change 18376 on 2002/03/11 by khabbari@khabbari\_r400\_win  
added new signals to the lb\_dcp interface doc

Change 18357 on 2002/03/11 by jimmylau@jimmylau\_r400\_win\_tor  
Finalize CRTIC naming convention to CRTIC1/CRTIC2  
Remove the notation of internal/external overscan in CRTIC. Overscan width is determined by scaler only.  
Change the definition of ending timing parameters to be exclusive.  
Add power management signals to CRTIC-Scaler interface.

Change 18356 on 2002/03/11 by nluu@nluu\_r400\_doctlib\_cmb  
- update

Change 18355 on 2002/03/11 by chwang@chwang\_doc\_r400\_win\_cvd  
Update

Change 18343 on 2002/03/11 by efong@efong\_r400\_win\_tor\_doc  
Updated

Change 18342 on 2002/03/11 by tho@tho\_r400\_win  
update

Change 18341 on 2002/03/11 by rthambim@rthambim\_r400\_win\_tor  
Fixed syntax.

Change 18331 on 2002/03/11 by jacarey@fl\_jacarey  
R400 Memory Map Diagram

Page 347 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 18323 on 2002/03/11 by jacarey@fl\_jacarey  
Implicit Sync Only in CF Pipe

Change 18322 on 2002/03/11 by jacarey@fl\_jacarey  
Updates from Comments  
Update Surface Coherency Intersect Equation

Change 18320 on 2002/03/11 by jacarey@fl\_jacarey  
CP Overview  
Updates to RBBM Specification

Change 18318 on 2002/03/10 by rthambim@rthambim\_r400\_win\_tor  
Added skid buffer timing diagram.

Change 18317 on 2002/03/10 by rthambim@rthambim\_r400\_win\_tor  
Fixed naming convention in timing diagram.

Change 18308 on 2002/03/10 by rthambim@rthambim\_r400\_win\_tor  
Fixed the block diagram.

Change 18305 on 2002/03/10 by rthambim@rthambim\_r400\_win\_tor  
Added fifo info, fixed slave implementation diagram.

Change 18292 on 2002/03/09 by frising@ma\_frising  
v.1.34  
-introduced arbitrary\_filter field. A few other feilds had to be juggled in the process.

Change 18284 on 2002/03/08 by paulv@MA\_PVELLA  
Forgot to update table of contents, etc. Fixed.

Change 18283 on 2002/03/08 by paulv@MA\_PVELLA  
Updated MHS portion of spec with latest specifications/fixes, including block diagrams.

Change 18280 on 2002/03/08 by rthambim@rthambim\_r400\_win\_tor  
Initial revision.

Change 18263 on 2002/03/08 by jacarey@fl\_jacarey

Page 348 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Update RBBM Top-Level Diagram

Change 18240 on 2002/03/08 by rthambin@rthambin\_r400\_win\_tor  
Modified the RBBM-BIF timing diagram, address width, RBBMIF naming.

Change 18216 on 2002/03/08 by jacarey@fl\_jacarey  
Miscellaneous Corrections

Change 18211 on 2002/03/08 by jacarey@fl\_jacarey  
Updates for Reviews

Change 18181 on 2002/03/08 by bryans@bryans\_crayola\_doc  
Updated status with dccif change

Change 18152 on 2002/03/08 by jacarey@fl\_jacarey  
Miscellaneous Updates

Change 18140 on 2002/03/08 by scroce@scroce\_r400\_win\_marlboro  
Update for MKTREE changes

Change 18128 on 2002/03/08 by khabbari@khabbari\_r400\_win  
small fix in line buffer arch

Change 18125 on 2002/03/08 by jacarey@fl\_jacarey  
Miscellaneous Updates

Change 18109 on 2002/03/08 by jacarey@fl\_jacarey  
Updates

Change 18094 on 2002/03/08 by mdoggett@MA\_MDOGGETT\_LT  
Update TCO section, figure and subblock descriptions. Updated TC top level figure. Added L1 Tag Index to L1 Tag.

Change 18087 on 2002/03/08 by jacarey@fl\_jacarey  
Updates to Pre-Fetch Parser Diagram and Pseudocode.

Change 18082 on 2002/03/08 by jacarey@fl\_jacarey

Page 349 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Update to CP Internal Packets

Change 18077 on 2002/03/08 by jacarey@fl\_jacarey  
Add Input Register Stage

Change 18071 on 2002/03/08 by rvelez@rvelez\_r400\_win\_tor  
DCCIF Architectural Spec

Change 18055 on 2002/03/07 by khabbari@khabbari\_r400\_win  
added interface mode and supporting 2 pipe line for 20bpp

Change 18041 on 2002/03/07 by jacarey@fl\_jacarey  
Updates for Arbitration of Streams to Global register Bus.

Change 18032 on 2002/03/07 by jacarey@fl\_jacarey  
Set\_State and Load\_Palette are 2D State Packets

Change 18025 on 2002/03/07 by jacarey@fl\_jacarey  
Update to the CP\_STAT register definition.

Change 17930 on 2002/03/07 by kcorrell@kcorrell\_r400\_docs\_marlboro  
update of spec

Change 17926 on 2002/03/07 by jacarey@fl\_jacarey  
Document that the Load\_Palette packet may not be needed.

Change 17924 on 2002/03/07 by bbloemer@ma-jasonh  
Revised signal naming convention to allow for MKTREE-generated prefix. Also added clock naming convention and removed convention for instantiating flip flops.

Change 17922 on 2002/03/07 by jacarey@fl\_jacarey  
Updates to CP <-> MH Interface

Change 17859 on 2002/03/07 by jacarey@fl\_jacarey  
Update Queue Available Sizes  
Update CP\_STAT register definitions.

Change 17849 on 2002/03/07 by jacarey@fl\_jacarey

Page 350 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Clarify Usage of Busy Signals Out of MIU

Change 17845 on 2002/03/07 by jasif@jasif\_r400\_win\_tor  
Changed busy signals to go to client instead of PLL model.

Change 17836 on 2002/03/07 by jasif@jasif\_r400\_win\_tor  
Changed request address to start from bit 31 instead of 29. Added separate client id's for read and write ack requests.

Change 17834 on 2002/03/07 by jasif@jasif\_r400\_win\_tor  
Added open issues: Arbitration between reads and writes, checking whether request address falls within surface information.

Change 17824 on 2002/03/07 by jacarey@fl\_jacarey  
Update Fetchers

Change 17822 on 2002/03/07 by jacarey@fl\_jacarey  
Update Buses in MIU

Change 17820 on 2002/03/07 by jacarey@fl\_jacarey  
Separate Path Through PFP for Real-Time

Change 17773 on 2002/03/06 by jacarey@fl\_jacarey  
Checkpoint Spec

Change 17771 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- forgot to change the path

Change 17770 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- change Last Updated field to 'file save date' instead of current date

Change 17768 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- title => filename in header section

Change 17767 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- change Last Updated field to 'file save date' from 'current date'

Page 351 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 17766 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- move rom controller model test plan to test\_plan subdirectory

Change 17762 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- correct spelling and typos

Change 17760 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- very small spelling correction

Change 17753 on 2002/03/06 by efong@efong\_r400\_win\_tor  
Added in SCL\_CRTC and VGA\_DISP model specs

Change 17751 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- correct typos and stuff

Change 17736 on 2002/03/06 by jacarey@fl\_jacarey  
Memory Controller 0-3 each has their own go/active clock pair.

Change 17706 on 2002/03/06 by nluu@nluu\_r400\_doelib\_cnnb  
- move visio drawings to a separate directory

Change 17689 on 2002/03/06 by efong@efong\_r400\_win\_tor  
changed the pin names to i and o for input and output pins to models

Change 17670 on 2002/03/06 by jacarey@fl\_jacarey  
Update for Command Queue Size Update  
\* Registers Updated

Change 17658 on 2002/03/06 by semara@semara\_r400\_win\_tor  
doc update

Change 17632 on 2002/03/06 by gregs@gregs\_r400\_win\_marlboro  
update

Change 17629 on 2002/03/06 by rbell@rbell\_crayola\_win\_cvd  
Renamed doc

Page 352 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 17622 on 2002/03/06 by jacarey@fl\_jacarey  
Update RBBM FIFO depths on Top-Level Diagram

Change 17621 on 2002/03/06 by jacarey@fl\_jacarey  
Stall condition for wait\_until.

Change 17583 on 2002/03/05 by jiezhou@jiezhou\_r400\_win\_tor  
update

Change 17582 on 2002/03/05 by bbloemer@ma-jasonh  
Updated pdf file.

Change 17580 on 2002/03/05 by bbloemer@ma-jasonh  
Updated the description of the ordering engine to include A/B vs C/D fairness and the TEXTURE\_WIN\_COUNT.

Change 17578 on 2002/03/05 by jacarey@fl\_jacarey  
Checkpoint Specification

Change 17575 on 2002/03/05 by jacarey@fl\_jacarey  
Renamed RBBM\_HI\_WRTR to RBBM\_HI\_RDY  
Added Stage\_Inc For repeaters between BIF and RBBM.

Change 17556 on 2002/03/05 by rbell@rbell\_crayola\_win\_cvd  
Updates after review

Change 17549 on 2002/03/05 by jacarey@fl\_jacarey  
Split the Re-Ordering Queue from the Pre-fetch Parser

Change 17533 on 2002/03/05 by jacarey@fl\_jacarey  
Updated Streams by CP for IB2 Packet Restrictions

Change 17523 on 2002/03/05 by jacarey@fl\_jacarey  
Update to Fetcher Diagram

Change 17512 on 2002/03/05 by jacarey@fl\_jacarey  
Bitwise OR

Page 353 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 17507 on 2002/03/05 by jacarey@fl\_jacarey  
Update IB\_PREFETCH\_START packet format

Change 17504 on 2002/03/05 by scroce@scroce\_r400\_win\_marlboro  
many modifications due to changes in the next release of vcsbuild.pl

Change 17489 on 2002/03/05 by jacarey@fl\_jacarey  
Remove Ring State Queue

Change 17461 on 2002/03/05 by mdoggett@MA\_MDOGGETT\_LT  
Added L1 Tag formats. Updated TCB section, figure, subblock descriptions.

Change 17452 on 2002/03/05 by semara@semara\_r400\_win\_tor  
update

Change 17450 on 2002/03/05 by bryans@bryans\_crayola\_doc  
Update as per status meeting

Change 17449 on 2002/03/05 by semara@semara\_r400\_win\_tor  
rev 0.3

Change 17445 on 2002/03/05 by fhsien@fhsien\_r400\_win\_marlboro  
First draft of RB testbench plan

Change 17437 on 2002/03/05 by nbarbier@nbarbier\_r400\_win\_tor  
Initial Release.

Change 17436 on 2002/03/05 by jacarey@fl\_jacarey  
2D Scratch Memory Renamed to 2D Defaults Memory

Change 17431 on 2002/03/05 by lseiler@ma\_lseiler  
Version 0.7 of the Memory Format spec, with address equations, revised 2D and 3D tiling formats, and 2D mipmap packing.

Change 17427 on 2002/03/05 by rbell@rbell\_crayola\_win\_cvd  
Print warning if linear mode is used.

Page 354 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 17424 on 2002/03/05 by jacarey@fl\_jacarey  
Added ROM Go/Active Pair

Change 17422 on 2002/03/05 by rvelez@rvelez\_r400\_win\_tor  
Changed address range to start from bit 31  
Added Client ID to Write Ack Interface

Change 17405 on 2002/03/04 by whui@whui\_r400\_win\_tor  
updated section 10

Change 17404 on 2002/03/04 by nbarbier@nbarbier\_r400\_win\_tor  
Updated signal names.

Change 17395 on 2002/03/04 by jiezhou@jiezhou\_r400\_win\_tor  
update register list

Change 17387 on 2002/03/04 by jiezhou@jiezhou\_r400\_win\_tor  
update register list

Change 17386 on 2002/03/04 by jiezhou@jiezhou\_r400\_win\_tor  
update register list

Change 17380 on 2002/03/04 by lfebvre@lfebvre\_laptop\_r400  
New revision of the sequencer spec.

Change 17351 on 2002/03/04 by bryans@bryans\_crayola\_doc  
Update for 01/03/02

Change 17345 on 2002/03/04 by vliu@vliu\_r400\_cn/vliu100\_win\_cvd  
Update

Change 17337 on 2002/03/04 by nluu@nluu\_r400\_doc/lib\_cmb  
- update

Change 17321 on 2002/03/04 by tho@tho\_r400\_win  
updated

Page 355 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 17320 on 2002/03/04 by chwang@chwang\_doc\_r400\_win\_cvd  
Update

Change 17315 on 2002/03/04 by cfong@cfong\_r400\_win\_tor  
Updated

Change 17313 on 2002/03/04 by jacarey@fl\_jacarey  
Update to CP's 2D Appendix

Change 17310 on 2002/03/04 by jasif@jasif\_r400\_win\_tor  
Updated

Change 17305 on 2002/03/04 by jacarey@fl\_jacarey  
Update Opcodes for Packets

Change 17190 on 2002/03/01 by lkang@lkang\_r400\_win\_tor  
updated dynamic clocking on SCLK domain.

Change 17187 on 2002/03/01 by frising@ma\_frising  
v.1.33  
-removed support for DXV textures  
-updated texture size table for new max size restriction with 3Da 128bit textures with borders.  
-closed open issue about interaction of border color with depth and shadow textures.

Change 17184 on 2002/03/01 by jayw@MA\_JAYW  
weekend check-in

Change 17182 on 2002/03/01 by jacarey@fl\_jacarey  
Updates

Change 17169 on 2002/03/01 by mzhu@mzhu\_r400\_win\_tor  
remove support for linear surface mode

Change 17167 on 2002/03/01 by khabbari@khabbari\_r400\_win  
small corrections to line buffer arch doc

Page 356 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 17166 on 2002/03/01 by mzhu@mzhu\_r400\_win\_tor  
remove support for linear surface mode  
add more details for FIFO write control

Change 17156 on 2002/03/01 by rbell@rbell\_crayola\_win\_cvd  
Changed name of model to LB\_DCP

Change 17155 on 2002/03/01 by rbell@rbell\_crayola\_win\_cvd  
Changed name of doc file.

Change 17154 on 2002/03/01 by rbell@rbell\_crayola\_win\_cvd  
update

Change 17150 on 2002/03/01 by jacarey@fl\_jacarey  
Update SRC\_X calculation for Small\_Text PM4 packet

Change 17149 on 2002/03/01 by jacarey@fl\_jacarey  
Updated repeater flop usage text.  
STAGE\_INC used instead of N\_STRAP

Change 17122 on 2002/03/01 by jiezhou@jiezhou\_r400\_win\_tor  
change ICON1\_X\_POS to ICON1\_X\_START  
ICON2\_X\_POX to ICON2\_X\_START  
ICON1\_Y\_POS to ICON1\_Y\_START  
ICON2\_Y\_POX to ICON2\_Y\_START

Change 17119 on 2002/03/01 by jowang@jowang\_R400\_win  
added description for re-sync FIFO and some more diagrams

Change 17089 on 2002/02/28 by rbell@rbell\_crayola\_win\_cvd  
Removed sub-word write enable

Change 17084 on 2002/02/28 by jacarey@fl\_jacarey  
Fix Typo in the IM\_Load and IM\_Load\_Immediate packets

Change 17066 on 2002/02/28 by jacarey@fl\_jacarey  
1. Added IM\_LOAD\_IMMEDIATE packet.

Page 357 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

2. Update to HOSTDATA\_BLT2 and HOSTDATA\_BLT\_PNTR packets.

Change 17053 on 2002/02/28 by jiezhou@jiezhou\_r400\_win\_tor  
update

Change 17016 on 2002/02/28 by jacarey@fl\_jacarey  
Update Interrupt Signals Into RBBM

Change 17010 on 2002/02/28 by rbell@rbell\_crayola\_win\_cvd  
Initial draft (and merge from older docs).

Change 16932 on 2002/02/27 by jowang@jowang\_R400\_win  
Block Spec: read buffer, re-sync FIFO, p2s sync, and line controller diagram + description for read buffer

Change 16927 on 2002/02/27 by frising@ma\_frising  
Crap! fix cut and paste error. No version change.

Change 16925 on 2002/02/27 by frising@ma\_frising  
v1.32  
-removed TT\_CMD from texture instruction.

Change 16924 on 2002/02/27 by lkang@lkang\_r400\_win\_tor  
Added power state management. section 6.0

Change 16917 on 2002/02/27 by lkang@lkang\_r400\_win\_tor  
Added 5.2 for dynamic clocking in display clocks

Change 16914 on 2002/02/27 by jiezhou@jiezhou\_r400\_win\_tor  
update after spec review Feb. 26

Change 16906 on 2002/02/27 by jacarey@fl\_jacarey  
Version 0.02 has Pre-Fetch Parser Algorithm Updates

Change 16897 on 2002/02/27 by tho@tho\_r400\_win  
updated with section regarding the IO Model generating Perl Script

Change 16896 on 2002/02/27 by jacarey@fl\_jacarey

Page 358 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updates to Packets and Pseudocode for Pre-Fetch Parser

Change 16878 on 2002/02/27 by mpsaud@mpsaud\_r400\_win\_tor  
\* Updated link to Figure 1.2-1 VIP DMA Top Level Diagram

Change 16867 on 2002/02/27 by mpsaud@mpsaud\_r400\_win\_tor  
\* Updated Section 4.1 Pin interface, added DCIO enable signals  
\* Updated Appendix for delta between R300 and R400

Change 16859 on 2002/02/27 by lseiler@ma\_lseiler  
new 3D tile patterns and initial 3D equations

Change 16856 on 2002/02/27 by jacarey@fl\_jacarey  
Updates

Change 16850 on 2002/02/27 by jacarey@fl\_jacarey  
Pre-Fetch Parser Top-Level State Machine

Change 16849 on 2002/02/27 by khabbari@khabbari\_r400\_win  
correction to read pointer section in line buffer arch doc

Change 16843 on 2002/02/27 by rbell@rbell\_crayola\_win\_cvd  
Updates to macro name and pin out

Change 16815 on 2002/02/27 by markf@markf\_r400\_win\_marlboro  
Updated Analog section to R300 numbers. Fixed quantity of DLL's for RV400 and R400. Removed LVDS from R400.

Change 16809 on 2002/02/27 by nluu@nluu\_r400\_doclib\_cmb  
- update

Change 16799 on 2002/02/27 by nluu@nluu\_r400\_doclib\_cmb  
- update

Change 16794 on 2002/02/27 by jacarey@fl\_jacarey  
Updates to 2D Packets

Page 359 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 16793 on 2002/02/27 by mmantor@mmantor\_r400\_win  
updated memory areas based on the memory compilation of memories in the following blocks for the VGT, PA, SC blocks and updated labeling for current planned blocks

Change 16779 on 2002/02/26 by semara@semara\_r400\_win\_tor  
update doc

Change 16778 on 2002/02/26 by semara@semara\_r400\_win\_tor  
doc updates

Change 16762 on 2002/02/26 by jayw@MA\_JAYW  
typo fixes

Change 16734 on 2002/02/26 by jacarey@fl\_jacarey  
Checkpoint Specifications

Change 16731 on 2002/02/26 by lseiler@ma\_lseiler  
Spreadsheets of 2D address conversions

Change 16730 on 2002/02/26 by lseiler@ma\_lseiler  
Updated 1D and 2D formats and address equations

Change 16718 on 2002/02/26 by efong@efong\_r400\_win\_tor  
updated to spec due to change in dcio spec

Change 16710 on 2002/02/26 by jacarey@fl\_jacarey  
Updates to packets.

Change 16688 on 2002/02/26 by jacarey@fl\_jacarey  
Update Diagram

Change 16661 on 2002/02/26 by jacarey@fl\_jacarey  
Update RTEE Diagram (Gated and Permanent Clocks)

Change 16660 on 2002/02/26 by rbell@rbell\_crayola\_win\_cvd  
First draft of what env will look like.

Page 360 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 16658 on 2002/02/26 by mpersaud@mpersaud\_r400\_win\_tor

- \* added Section 4.1 Pin interface
- \* updated Appendix for delta between R300 and R400
- \* update Figure 1.2-1 VIP Top Level Diagram to move uvip\_rbbmif to DC level and rename to RBBMIF

Change 16657 on 2002/02/26 by mpersaud@mpersaud\_r400\_win\_tor

Move uvip\_rbbmif to DC level and rename to RBBMIF

Change 16653 on 2002/02/26 by jacarey@fl\_jacarey

Update Interfaces to RBBM from BIF and CP  
Fix Type on MIU Diagram

Change 16648 on 2002/02/26 by jhoule@MA\_JHOULE

v1.31:  
Brought back DIM\_3D in case we get rid of dual format 3D texture (if noise gets dropped out).  
Moved BORDER\_\* together.  
Only affects TFetch Const.

Change 16646 on 2002/02/26 by jiezhou@jiezhou\_r400\_win\_tor

update

Change 16632 on 2002/02/26 by nbarbier@nbarbier\_r400\_win\_tor

Updated document after resolving open issues.

Change 16602 on 2002/02/26 by jacarey@fl\_jacarey

Updated clock name for RBBM

Change 16565 on 2002/02/25 by jiezhou@jiezhou\_r400\_win\_tor

update

Change 16552 on 2002/02/25 by dcifton@dcifton\_r400

Updates to interface, drawings, lines, points, and polymode.

Change 16546 on 2002/02/25 by khabbari@khabbari\_r400\_win

added more details to the lb arch doc

Change 16537 on 2002/02/25 by rbell@rbell\_crayola\_win\_cvd

Page 361 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updates after review

Change 16533 on 2002/02/25 by markf@markf\_r400\_win\_mariboro

Updated SX w/ parameter caches

Change 16521 on 2002/02/25 by rbell@rbell\_crayola\_win\_cvd

update

Change 16505 on 2002/02/25 by jacarey@fl\_jacarey

Checkpoint CP Spec.

Change 16503 on 2002/02/25 by jacarey@fl\_jacarey

Update Command Stream Fetcher Diagram

Change 16499 on 2002/02/25 by jimmylau@jimmylau\_r400\_win\_tor

Add a section on stereoscopic display. Change CRTC naming convention to CRTCO / CRTCI.

Change 16495 on 2002/02/25 by jacarey@fl\_jacarey

Update Queues on Diagram for PFP

Change 16494 on 2002/02/25 by mpersaud@mpersaud\_r400\_win\_tor

added state machine appendix

Change 16493 on 2002/02/25 by mpersaud@mpersaud\_r400\_win\_tor

update to add uvip\_rbbmif

Change 16492 on 2002/02/25 by mpersaud@mpersaud\_r400\_win\_tor

general clean up

Change 16490 on 2002/02/25 by mpersaud@mpersaud\_r400\_win\_tor

- \* added Appendix - R300 vs. R400 delta
- \* updated VIP Top Level diagram
- \* updated structure section

Change 16489 on 2002/02/25 by mpersaud@mpersaud\_r400\_win\_tor

- \* moved uvipdmaregs into uvipdma

Page 362 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

\* renamed uvip\_rbbm to uvip\_rbbmif  
\* added ORing of interrupts

Change 16488 on 2002/02/25 by vliu@vliu\_r400\_cnvin100\_win\_cvd

Update

Change 16484 on 2002/02/25 by rbell@rbell\_crayola\_win\_cvd

updated

Change 16482 on 2002/02/25 by dhwang@dhwang\_r400\_win\_cvd

Update.

Change 16470 on 2002/02/25 by tho@tho\_r400\_win

update

Change 16469 on 2002/02/25 by jasif@jasif\_r400\_win\_tor

Updated

Change 16462 on 2002/02/25 by efong@efong\_r400\_win\_tor

Updated

Change 16450 on 2002/02/25 by jacarey@fl\_jacarey

Add ROM pins back to the RBBM Spec.

Change 16412 on 2002/02/22 by nluu@nluu\_r400\_doclib\_cnb

- update

Change 16411 on 2002/02/22 by jiezhou@jiezhou\_r400\_win\_tor

- 1) add Overlay Format Expansion block
- 2) remove dynamic expansion for Graphic/overlay keyer
- 3) add host read/write description for LUT palette
- 4) add ignore\_alpha for graphic/overlay keyer
- 5) update graphic/overlay Max function
- 6) add constant format for matrix conversion

Change 16407 on 2002/02/22 by lkang@lkang\_r400\_win\_tor

Added dynamic clocking on display clock domain. sec. 5.1

Change 16359 on 2002/02/22 by gregs@gregs\_r400\_win\_mariboro

Page 363 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Added interface to CG\_PM.

Change 16349 on 2002/02/22 by gregs@gregs\_r400\_win\_mariboro

daily update.

Change 16322 on 2002/02/22 by lseiler@ma\_lseiler

Updated with 1D and 2D access equations

Change 16319 on 2002/02/22 by jacarey@fl\_jacarey

Removed ROM's RTR signals from RBBM interface. BIF forwards transactions to the MH instead of through the RBBM.

Change 16309 on 2002/02/22 by jacarey@fl\_jacarey

Update RBU to show that read return data is registered on permanent clock.

Change 16304 on 2002/02/22 by jacarey@fl\_jacarey

1. Updated interrupt signals to the RBBM

\*\* Senders of interrupts need to do their own combining.

Change 16288 on 2002/02/22 by bryans@bryans\_crayola\_doc

Update VideoIP DV Methodology to include CRTC configuration

Change 16284 on 2002/02/22 by efong@efong\_r400\_win\_tor

added in sentence for MV\_DISABLE and VGA\_DISABLE to be hooked up to BIF model

Change 16283 on 2002/02/22 by efong@efong\_r400\_win\_tor

fixed up the spec due to the 0.1 version of the power management spec

Change 16217 on 2002/02/21 by fhsien@fhsien\_r400\_win\_mariboro

Added command chart  
change runtest --> runtest.pl

Change 16213 on 2002/02/21 by rbell@rbell\_crayola\_win\_cvd

First draft of this

Change 16210 on 2002/02/21 by mdoggett@MA\_MDOGGETT\_LT

Page 364 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Updated formats. Added 2d interface format and 3d four layer format. Added L2 read synchronisation description.

Change 16207 on 2002/02/21 by frising@ma\_frising

v.1.30

Change 16194 on 2002/02/21 by lkang@lkang\_r400\_win\_tor

Power management spec for DC

Change 16178 on 2002/02/21 by hartogs@fl\_hartogs

Minor Cleanup

Change 16177 on 2002/02/21 by jacarey@fl\_jacarey

No Change

Change 16175 on 2002/02/21 by rbell@rbell\_crayola\_win\_cvd

More updates since the last reviews

Change 16174 on 2002/02/21 by jacarey@fl\_jacarey

Checkpoint All Specifications

Change 16170 on 2002/02/21 by hartogs@fl\_hartogs

Fixed up some tessellation stuff.

Change 16147 on 2002/02/21 by scroce@scroce\_r400\_win\_marlboro

Some small changes to the doc

Change 16146 on 2002/02/21 by rbell@rbell\_crayola\_win\_cvd

Updates to both palette models

Change 16145 on 2002/02/21 by mpersaud@mpersaud\_r400\_win\_tor

Initial Revision

Change 16142 on 2002/02/21 by mpersaud@mpersaud\_r400\_win\_tor

Changed Text Box

Change 16138 on 2002/02/21 by jacarey@fl\_jacarey

Page 365 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Revision of RBMM and CP areas

Change 16109 on 2002/02/20 by dwong@cndwong2

version 0.4

Change 16106 on 2002/02/20 by nlau@nlau\_r400\_doelib\_cnnb

- update

Change 16100 on 2002/02/20 by nlau@nlau\_r400\_doelib\_cnnb

- update

Change 16095 on 2002/02/20 by fhshen@fhshen\_r400\_win\_marlboro

DOC for Runtest Script

Change 16083 on 2002/02/20 by jacarey@fl\_jacarey

Updated CP and RBMM Areas

Change 16079 on 2002/02/20 by gregs@gregs\_r400\_win\_marlboro

daily update.

Change 16075 on 2002/02/20 by mpersaud@mpersaud\_r400\_win\_tor

General update and/or addition to depot.

Change 16053 on 2002/02/20 by rbell@rbell\_crayola\_win\_cvd

New spec for R400

Change 16041 on 2002/02/20 by scroce@scroce\_r400\_win\_marlboro

Clearing up some things once again

Change 16033 on 2002/02/20 by csampayo@fl\_csampayo\_r400

Updated VGT and SU sections and schedule

Change 16009 on 2002/02/20 by scroce@scroce\_r400\_win\_marlboro

Trying to clarify the setup doc

Change 16007 on 2002/02/20 by rramsey@RRAMSEY\_P4\_r400\_win

Page 366 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Update rect description

Change 15992 on 2002/02/20 by efong@efong\_r400\_win\_tor

changed from dispout inject to scaler inject model

Change 15972 on 2002/02/20 by jasif@jasif\_r400\_win\_tor

Partially updated after document review.

Change 15952 on 2002/02/19 by taylor@fl\_taylor\_r400\_win\_marlboro

Most of top-level arch done.

Change 15923 on 2002/02/19 by bryans@bryans\_crayola\_win\_cvd

Add test plan templates for VID core

Change 15920 on 2002/02/19 by bryans@bryans\_crayola\_win\_cvd

Update for this week

Change 15919 on 2002/02/19 by efong@efong\_r400\_win\_tor

fixed up the spec due to the review

Change 15914 on 2002/02/19 by gregs@gregs\_r400\_win\_marlboro

Update.

Change 15878 on 2002/02/19 by bryans@bryans\_crayola\_win\_cvd

Source tree for display core

Change 15862 on 2002/02/19 by efong@efong\_r400\_win\_tor

renamed top level diagram from hdp disable to hdp\_enable  
changed the forcible signals section to be more standardized

Change 15860 on 2002/02/19 by ygiang@ygiang\_r400\_win\_marlboro

added: Ferrt Shader Docs and Test environment cook book

Change 15851 on 2002/02/19 by efong@efong\_r400\_win\_tor

updated due to review and some pad changes

Change 15837 on 2002/02/19 by tho@tho\_r400\_win

Page 367 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

updated

Change 15828 on 2002/02/19 by nbarbier@nbarbier\_r400\_win\_tor

Initial revision of DCTO Interface.

Change 15770 on 2002/02/18 by beiwang@bei\_mcspec

deleted CAM and address return queues from mcci diagram, modified the cam diagram,  
added note on bank ABCD->bank 0,1,2,3

Change 15752 on 2002/02/18 by tho@tho\_r400\_win

update cursor test plan

Change 15742 on 2002/02/18 by jasif@jasif\_r400\_win\_tor

Updated.

Change 15741 on 2002/02/18 by bryans@bryans\_crayola\_win\_cvd

Update status/dates

Change 15727 on 2002/02/18 by vliu@vliu\_r400\_cnviu100\_win\_cvd

Update the status.

Change 15723 on 2002/02/18 by efong@efong\_r400\_win\_tor

Updated dates

Change 15720 on 2002/02/18 by chwang@chwang\_r400\_win\_cvd

Update.

Change 15718 on 2002/02/18 by efong@efong\_r400\_win\_tor

after final review ...

Change 15716 on 2002/02/18 by jasif@jasif\_r400\_win\_tor

Added new forcible signals table.

Change 15713 on 2002/02/18 by jasif@jasif\_r400\_win\_tor

Updated Error section. Added open issue on dynamic clocking.

Change 15711 on 2002/02/18 by tho@tho\_r400\_win

Page 368 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history





update

Change 15709 on 2002/02/18 by rbell@rbell\_crayola\_win\_cvd

Changes

Change 15689 on 2002/02/16 by jimmylau@jimmylau\_r400\_win\_tor

Major revision of CRTC block specs after the first specs review.

Change 15679 on 2002/02/15 by jiezhou@jiezhou\_r400\_win\_tor

modified state machine

Change 15678 on 2002/02/15 by jiezhou@jiezhou\_r400\_win\_tor

add 32 bpp digital output for graphic request

Change 15676 on 2002/02/15 by jiezhou@jiezhou\_r400\_win\_tor

Initial release

Change 15671 on 2002/02/15 by jacarey@fl\_jacarey

Checkpoint Specifications

Change 15669 on 2002/02/15 by mzhu@mzhu\_r400\_win\_tor

initial version of DMIF block spec

Change 15667 on 2002/02/15 by mzhu@mzhu\_r400\_win\_tor

define pixel order for tiling mode with one DCP pipeline enabled

Change 15664 on 2002/02/15 by kcorrell@kcorrell\_r400\_docs\_marlboro

Updated GART area in MH

Change 15658 on 2002/02/15 by gregs@gregs\_r400\_win\_marlboro

Added parallel ROM support on the DVO interface.

Change 15627 on 2002/02/15 by gregs@gregs\_r400\_win\_marlboro

ROM+DEBUG blocks: increased are by 25% and added 640x8 SRAM area.

Change 15593 on 2002/02/15 by lseiler@ma\_lseiler

Restored the unrevised text that I deleted for review version 0.4, removed change bars

Page 369 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 15586 on 2002/02/15 by gregs@gregs\_r400\_win\_marlboro

increased CG area by 50% (an estimate for new power management functionality).

Change 15585 on 2002/02/15 by jacarey@fl\_jacarey

Clarify Byte Enable Support Through the RBBM.

Change 15570 on 2002/02/15 by jacarey@fl\_jacarey

1. Skew Control Update
2. Update Command FIFO Depth

Change 15564 on 2002/02/15 by kcorrell@kcorrell\_r400\_docs\_marlboro

updated MH area

Change 15563 on 2002/02/15 by efong@efong\_r400\_win\_tor

closed some open issues

Change 15562 on 2002/02/15 by efong@efong\_r400\_win\_tor

updated a ton of things

Change 15544 on 2002/02/14 by rvelez@rvelez\_r400\_win\_tor

Added more details to the spec

Change 15543 on 2002/02/14 by jasif@jasif\_r400\_win\_tor

Updated.

Change 15541 on 2002/02/14 by gregs@gregs\_r400\_win\_marlboro

daily changes

Change 15534 on 2002/02/14 by csampayo@fl\_csampayo\_r400

Updated SU section, both docs

Change 15533 on 2002/02/14 by beiwang@bei\_r400\_area

Added some MC skid buffer

Change 15529 on 2002/02/14 by beiwang@bei\_r400\_area

Added MC changes

Page 370 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 15508 on 2002/02/14 by vromaker@MA\_VIC\_P4

updated SQ macro area numbers to those obtained with .13 compiler

Change 15492 on 2002/02/14 by jasif@jasif\_r400\_win\_tor

Updated with recommendations made during the review.

Change 15455 on 2002/02/14 by rbell@rbell\_crayola\_win\_cvd

Added open issues, and changes as per Jie.

Change 15450 on 2002/02/14 by rbell@rbell\_crayola\_win\_cvd

Changes after the DMIF design review

Change 15446 on 2002/02/14 by jacarey@fl\_jacarey

Update Diagrams

Change 15418 on 2002/02/13 by csampayo@fl\_csampayo\_r400

Updated most of the SU section.

Change 15404 on 2002/02/13 by jacarey@fl\_jacarey

Checkpoint CP Specifications

Change 15392 on 2002/02/13 by jacarey@fl\_jacarey

Update Interface to Memory Hub on Diagram

Change 15390 on 2002/02/13 by gregs@gregs\_r400\_win\_marlboro

daily update

Change 15387 on 2002/02/13 by gregs@gregs\_r400\_win\_marlboro

daily update

Change 15377 on 2002/02/13 by jacarey@fl\_jacarey

Update Internal Register Bus Connections

Change 15375 on 2002/02/13 by jasif@jasif\_r400\_win\_tor

Updated.

Page 371 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 15371 on 2002/02/13 by jacarey@fl\_jacarey

Minor Updates to RBBM.

Change 15369 on 2002/02/13 by jacarey@fl\_jacarey

Update Diagrams

Change 15358 on 2002/02/13 by gregs@gregs\_r400\_win\_marlboro

daily update

Change 15333 on 2002/02/13 by jacarey@fl\_jacarey

Updates to RTEE Diagram

Change 15325 on 2002/02/13 by jacarey@fl\_jacarey

Update for Review

Change 15304 on 2002/02/12 by tho@tho\_r400\_win

removed MV\_DISABLE strap from doc.

Change 15301 on 2002/02/12 by tho@tho\_r400\_win

Changed strap value generation, updated forcible signal section

Change 15297 on 2002/02/12 by jacarey@fl\_jacarey

Incremental Update to the Spec.

Change 15296 on 2002/02/12 by jacarey@fl\_jacarey

Revision 0.06 of RBBM Spec

Change 15295 on 2002/02/12 by hartogs@fl\_hartogs

Updated the RBBM interface table.

Change 15281 on 2002/02/12 by jacarey@fl\_jacarey

Update Diagrams

Change 15279 on 2002/02/12 by jasif@jasif\_r400\_win\_tor

Updated dynamic clocking document. Changed file name from RBBM\_model.doc to RBBMIF\_model.doc.

Page 372 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 15276 on 2002/02/12 by jacarey@fl\_jacarey  
Update connections to command stream fetcher

Change 15273 on 2002/02/12 by jacarey@fl\_jacarey  
Separate RB\_RPTR write requests to MIU

Change 15271 on 2002/02/12 by jacarey@fl\_jacarey  
Updates to Diagram of RBBM Top-Level

Change 15265 on 2002/02/12 by gregs@gregs\_r400\_win\_marlboro  
new spec - initial version.

Change 15264 on 2002/02/12 by efong@efong\_r400\_win\_tor  
Fixed up IO model after new review

Change 15222 on 2002/02/12 by jhoule@MA\_JHOULE  
0.9.5:  
Added WR\_MASK\_XYZW in SQ<--TPC interface.  
Updated TOC and LOF.

Change 15216 on 2002/02/12 by efong@efong\_r400\_win\_tor  
Updated PLL model because of the review as well as added in GO and BUSY signals

Change 15215 on 2002/02/12 by efong@efong\_r400\_win\_tor  
put documentation for VIP\_DEVICE being inverted.

Change 15191 on 2002/02/11 by jasif@jasif\_r400\_win\_tor  
Changed name of document.

Change 15190 on 2002/02/11 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 15188 on 2002/02/11 by bryans@bryans\_crayola\_win\_cvd  
Update with feedback from meeting; add model code reviews, weekly issues

Change 15182 on 2002/02/11 by nluu@nluu\_r400\_cmb  
- update

Page 373 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 15167 on 2002/02/11 by jasif@jasif\_r400\_win\_tor  
Added section on avoiding race conditions and behavioural coding styles for performance.

Change 15166 on 2002/02/11 by jacarey@fl\_jacarey  
Update Waveforms for Slow Clients

Change 15165 on 2002/02/11 by gregs@gregs\_r400\_win\_marlboro  
Corrected typos.

Change 15164 on 2002/02/11 by khabbari@khabbari\_r400\_win  
the first released version of crtlv interface document.  
Also added some details to line buffer arch document.

Change 15156 on 2002/02/11 by scroce@scroce\_r400\_win\_marlboro  
Added some little things about v2html

Change 15154 on 2002/02/11 by jacarey@fl\_jacarey  
Remove Skew Control Signal Between RBBM and CP

Change 15151 on 2002/02/11 by dclifton@dclifton\_r400  
Updates to drawings

Change 15139 on 2002/02/11 by nluu@nluu\_r400\_cmb  
- update

Change 15133 on 2002/02/11 by nluu@nluu\_r400\_cmb  
- update

Change 15126 on 2002/02/11 by nluu@nluu\_r400\_cmb  
- update

Change 15121 on 2002/02/11 by csampayo@fl\_csampayo\_it\_r400  
SU updates

Change 15120 on 2002/02/11 by nluu@nluu\_r400\_cmb

Page 374 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

- update status

Change 15115 on 2002/02/11 by hartogs@fl\_hartogs  
Refreshed early diagrams and text.

Change 15108 on 2002/02/11 by bryans@bryans\_crayola\_win\_cvd  
Update milestone dates

Change 15106 on 2002/02/11 by nluu@nluu\_r400\_cmb  
- check in so I don't lose the changes

Change 15100 on 2002/02/11 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 15099 on 2002/02/11 by efong@efong\_r400\_win\_tor  
Updated DV status

Change 15096 on 2002/02/11 by dglen@dglen\_r400\_dell  
Added section on update and control of double buffered register fields.

Change 15095 on 2002/02/11 by vliu@vliu\_r400\_cnviu100\_win\_cvd  
Updating the dates.

Change 15091 on 2002/02/11 by dclifton@dclifton\_r400  
Changed a few diagrams and equations slightly

Change 15079 on 2002/02/11 by chwang@chwang\_r400\_win\_cvd  
Update

Change 15073 on 2002/02/11 by tho@tho\_r400\_win  
updated status report

Change 15068 on 2002/02/11 by dclifton@dclifton\_r400  
Updated top level block diagram

Change 15067 on 2002/02/11 by rbell@rbell\_crayola\_win\_cvd  
Updates

Page 375 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 15066 on 2002/02/11 by wlawless@wlawless  
Nothing major

Change 15018 on 2002/02/08 by jasif@jasif\_r400\_win\_tor  
Initial revision.

Change 15017 on 2002/02/08 by rvelez@rvelez\_r400\_win\_tor  
Added more description for the interface

Change 15016 on 2002/02/08 by gregs@gregs\_r400\_win\_marlboro  
Updated after David Glen and John Carey reviews.

Change 15002 on 2002/02/08 by jowang@jowang\_R400\_win  
added a column for # of horizontal filter taps

Change 15001 on 2002/02/08 by jowang@jowang\_R400\_win  
updated with overscan and interlace interface signals

Change 15000 on 2002/02/08 by jasif@jasif\_r400\_win\_tor  
Updated Joveria's status.

Change 14967 on 2002/02/08 by khabbari@khabbari\_r400\_win  
added write/read pointer des to the LB ARCH doc

Change 14962 on 2002/02/08 by gregs@gregs\_r400\_win\_marlboro  
ROM spec is ready for verilog coding phase.

Change 14961 on 2002/02/08 by efong@efong\_r400\_win\_tor  
Updated document after initial review

Change 14959 on 2002/02/08 by rbell@rbell\_crayola\_win\_cvd  
Added sample test code.

Change 14955 on 2002/02/08 by rbell@rbell\_crayola\_win\_cvd  
Initial draft

Page 376 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 14948 on 2002/02/08 by rbell@rbell\_crayola\_win\_cvd  
Updates after review

Change 14934 on 2002/02/08 by paulv@MA\_PVELLA  
Updated MHS with most recent changes and updates.

Change 14912 on 2002/02/07 by csampayo@fl\_csampayo\_r400  
Added unit/function owners and hyperlinks to the R400\_PA\_Functional\_Validation\_Approach\_Plan document

Change 14904 on 2002/02/07 by jasif@jasif\_r400\_win\_tor  
Modified dynamic clock section.

Change 14895 on 2002/02/07 by hartogs@fl\_hartogs  
Completed description of de-stripping, de-fanning, decomposition of quads and polygons into triangles, prprovoking vertex (flat shading), and line stipple wireframe fill mode issues.

Change 14883 on 2002/02/07 by jhoule@MA\_JHOULE  
Added 32-bit channels blending.  
Described math foundations.  
Updated TOC.

Change 14878 on 2002/02/07 by grayc@grayc\_r400\_win  
initial checkin

Change 14877 on 2002/02/07 by grayc@grayc\_r400\_win  
moving files

Change 14861 on 2002/02/07 by grayc@grayc\_r400\_win  
Initial checkin

Change 14855 on 2002/02/07 by mdoggett@MA\_MDOGGETT\_LT  
Updates according to TC spec review and many more discussion. Changes to TCD figure, L1 and L2 tags, L2 formats, padding and degamma.

Change 14849 on 2002/02/07 by efong@efong\_r400\_win\_tor  
Made some changes due to the review of the strap model.

Page 377 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 14842 on 2002/02/07 by rbell@rbell\_crayola\_win\_cvd  
Changed CP to DCP

Change 14824 on 2002/02/07 by jhoule@MA\_JHOULE  
Forgot the usage tables. Now updated!

Change 14823 on 2002/02/07 by jhoule@MA\_JHOULE  
Moved fields (VTX\_FORMAT, EXP\_ADJUST) from VFetch instr so that they are byte-aligned.

Change 14818 on 2002/02/07 by jhoule@MA\_JHOULE  
Aesthetic

Change 14817 on 2002/02/07 by jhoule@MA\_JHOULE  
Brought SRC\_SEL\* in same DWORD.

Change 14806 on 2002/02/06 by jiezhou@jiezhou\_r400\_win\_tor  
update window control

Change 14797 on 2002/02/06 by efong@efong\_r400\_win\_tor  
New version of the IO model with the names fixed up and some of the issues closed.

Change 14796 on 2002/02/06 by jhoule@MA\_JHOULE  
Changed instruction fields so that they match between VFetch and TFetch. This helps the SQ (fields are always at the same place). Also added cool macro for bit numbers.

Change 14785 on 2002/02/06 by bbloemer@ma-jasonh  
Removed address return bus and base and coord from RB access bus.

Change 14698 on 2002/02/05 by jacarey@fl\_jacarey  
Checkpoint the CP's PM4 Specification

Change 14697 on 2002/02/05 by jimmylau@jimmylau\_r400\_win\_tor  
Rev 0.3. Decided to keep notation of internal & external overscan.

Change 14696 on 2002/02/05 by fhsien@fhsien\_r400\_win\_marlboro

Page 378 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Add Running eum\_only. (no build is done).

Change 14694 on 2002/02/05 by jacarey@fl\_jacarey  
Checkpoint 2D Appendix

Change 14691 on 2002/02/05 by jacarey@fl\_jacarey  
Checkpoint RBBM Spec

Change 14687 on 2002/02/05 by jacarey@fl\_jacarey  
Update CP's Memory Interface Unit Diagram

Change 14685 on 2002/02/05 by jacarey@fl\_jacarey  
Update RBBM Top-Level Diagram  
1. Slip Buffer Registers  
2. Add RBBM\_CP\_DMA\_DRAW\_DEC signal  
3. Update Switch to Send Host Data through Non-Queued Path

Change 14677 on 2002/02/05 by hartogs@fl\_hartogs  
Added more information on the primitive types and provoking vertex.

Change 14674 on 2002/02/05 by rbell@rbell\_crayola\_win\_cvd  
initial draft

Change 14667 on 2002/02/05 by jacarey@fl\_jacarey  
Update

Change 14661 on 2002/02/05 by jacarey@fl\_jacarey  
Update PFP to ME Diagram  
Remove Diagram for Old Fetchers

Change 14643 on 2002/02/05 by khabbari@khabbari\_r400\_win  
added a block diagram for write data path in the line buffer doc

Change 14631 on 2002/02/05 by tho@tho\_r400\_win  
updated Data Processing Algorithms section regarding PLI/CLI usage

Change 14621 on 2002/02/05 by efong@efong\_r400\_win\_tor

Page 379 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated PLL model to support stop and go signals

Change 14587 on 2002/02/04 by khabbari@khabbari\_r400\_win  
added some description to data processing algorithm in line buffer arch document

Change 14582 on 2002/02/04 by jasif@jasif\_r400\_win\_tor  
Updated finish dates.

Change 14568 on 2002/02/04 by vromaker@MA\_VIC\_P4  
updates

Change 14551 on 2002/02/04 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 14543 on 2002/02/04 by rbell@rbell\_crayola\_win\_cvd  
Final draft

Change 14540 on 2002/02/04 by gregs@gregs\_r400\_win\_marlboro  
Added/updated after implementation analysis and adding parallel PROM support.

Change 14528 on 2002/02/04 by frising@ma\_frising  
v.1.19  
-Fixed up how certain texture formats go into the L2 cache in order to guarantee consistency within a texture family (e.g. 8\_8\_8, 8\_8\_8\_8).

Change 14527 on 2002/02/04 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 14526 on 2002/02/04 by jasif@jasif\_r400\_win\_tor  
Added section on dynamic clocking.

Change 14509 on 2002/02/04 by paulv@MA\_PVELLA  
Updated block diagram to match changes and updates to the MHS section in the spec.

Change 14500 on 2002/02/04 by nlhu@nlhu\_r400\_cmb  
- update

Page 380 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 14499 on 2002/02/04 by rbell@rbell\_crayola\_win\_cvd  
Added assumptions, stubs, model terminology, etc.

Change 14495 on 2002/02/04 by jacarey@fl\_jacarey  
Updates to RTEE Event Engine Diagram

Change 14492 on 2002/02/04 by vromaker@MA\_VIC\_P4  
updates, new figures

Change 14481 on 2002/02/04 by chwang@chwang\_r400\_win\_cvd  
Update.

Change 14476 on 2002/02/04 by rbell@rbell\_crayola\_win\_cvd  
Updates

Change 14475 on 2002/02/04 by rbell@rbell\_crayola\_win\_cvd  
Updates after reviews, added errors warnings and assumptions.

Change 14474 on 2002/02/04 by jimmylau@jimmylau\_r400\_win\_tor  
Revision 0.2 of CRTIC block specs. Remove notation of external/internal overscan. Overscan is always outside the active display area.

Change 14472 on 2002/02/04 by jasif@jasif\_r400\_win\_tor  
Updated.

Change 14470 on 2002/02/04 by tho@tho\_r400\_win  
updated status report

Change 14469 on 2002/02/04 by vromaker@MA\_VIC\_P4  
new figures

Change 14468 on 2002/02/04 by cfong@cfong\_r400\_win\_tor  
Updated

Change 14466 on 2002/02/04 by lfebev@lfebev\_laptop\_r400  
Version 1.7 of the Sequencer spec.

Change 14465 on 2002/02/03 by jiezhou@jiezhou\_r400\_win\_tor  
Add some control management

Change 14464 on 2002/02/03 by vromaker@MA\_VIC\_P4  
changes

Change 14444 on 2002/02/01 by jasif@jasif\_r400\_win\_tor  
Updated open issues.

Change 14441 on 2002/02/01 by jasif@jasif\_r400\_win\_tor  
Updated after spec review.

Change 14440 on 2002/02/01 by efong@efong\_r400\_win\_tor  
Added in IO model and strap model

Change 14439 on 2002/02/01 by jasif@jasif\_r400\_win\_tor  
Updated

Change 14436 on 2002/02/01 by mzhu@mzhu\_r400\_win\_tor  
change CP to DCP

Change 14426 on 2002/02/01 by rbagley@MA\_RBAGLEY\_LTXP  
0.1 (d) Intermediate check-in. Additional comments. The bloat of the container doc has been remedied.

Change 14424 on 2002/02/01 by jacarey@fl\_jacarey  
Checkpoint Specifications

Change 14416 on 2002/02/01 by khabbari@khabbari\_r400\_win  
small fixes

Change 14411 on 2002/02/01 by khabbari@khabbari\_r400\_win  
The first draft of line buffer doc

Change 14402 on 2002/02/01 by rbell@rbell\_crayola\_win\_cvd  
Changes some arch/conf names, added BFM's section.

Change 14400 on 2002/02/01 by jasif@jasif\_r400\_win\_tor  
Updated

Change 14399 on 2002/02/01 by semara@semara\_r400\_win\_tor  
rev 2

Change 14395 on 2002/02/01 by rbagley@MA\_RBAGLEY\_LTXP  
1.0 (c) Revisions to instructions and miscellaneous corrections.

Change 14379 on 2002/02/01 by nbarbier@nbarbier\_r400\_win\_tor  
First revision of CRTIC/DISPOUT interface

Change 14377 on 2002/02/01 by frising@ma\_frising  
-Change GetBorderColorPercentage to GetBorderColorFraction. Thanks Jocelyn.  
-no version change.

Change 14366 on 2002/01/31 by jimmylau@jimmylau\_r400\_win\_tor  
Initial revision

Change 14365 on 2002/01/31 by frising@ma\_frising  
v.1.18  
-Added 6 new multimedia texture formats  
-remove FetchWhiteTexture, replace with GetBorderColorPercentage  
-remove mask option from DST\_SEL in texture constant  
-move mask option of DST\_SEL in insts from 6 to 7  
-Add new YCbCr black border color

Change 14363 on 2002/01/31 by vromaker@MA\_VIC\_P4  
new

Change 14362 on 2002/01/31 by vromaker@MA\_VIC\_P4  
updates

Change 14356 on 2002/01/31 by hartogs@fl\_hartogs  
Still in progress.  
New block diagrams.  
Checked-in for backup.

Change 14339 on 2002/01/31 by jacarey@fl\_jacarey  
Update Busy Signals on Diagrams

Change 14333 on 2002/01/31 by chwang@chwang\_r400\_win\_cvd  
Updated Status.

Change 14313 on 2002/01/31 by efong@efong\_r400\_win\_tor  
Fixed up a ton of things from the review meeting

Change 14301 on 2002/01/31 by lkang@lkang\_r400\_win\_tor  
new directories

Change 14300 on 2002/01/31 by lkang@lkang\_r400\_win\_tor  
This directory is for DC-MH interface block architecture and implementation specs

Change 14299 on 2002/01/31 by wlawless@wlawless  
This version was updated to match the new Arch spec. The diagrams were updated. The depth logic is still old because we are working the color right now.

Change 14292 on 2002/01/30 by rbagley@MA\_RBAGLEY\_LTXP  
1.0 (b) Further revision.

Change 14287 on 2002/01/30 by dwong@cndwong2  
xDCT document, v0.2  
Adding in implementation details as well as updating open issues.

Change 14275 on 2002/01/30 by rbell@rbell\_crayola\_win\_cvd  
more changes

Change 14267 on 2002/01/30 by lseiler@ma\_lseiler  
Version 0.4: major update of sections 1-3, remaining sections temporarily removed until they can be fully updated.

Change 14265 on 2002/01/30 by jacarey@fl\_jacarey  
Streams Processed by CP Diagram

Change 14263 on 2002/01/30 by jacarey@fl\_jacarey



Baseline New Documents in Perforce

Change 14260 on 2002/01/30 by jacarey@fl\_jacarey

Checkpoint Specifications

Change 14250 on 2002/01/30 by nluu@nluu\_r400\_cmb

- fix typo

Change 14244 on 2002/01/30 by gregs@gregs\_r400\_win\_marlboro

Updated with the new CP based power management ideas. Added startup description.

Change 14239 on 2002/01/30 by khabbari@khabbari\_r400\_win

added some description in "Interface Functional Description and Purpose" section

Change 14238 on 2002/01/30 by jasif@jasif\_r400\_win\_tor

Updated.

Change 14237 on 2002/01/30 by askende@andi\_r400\_docs

new rev of the document.

Change 14236 on 2002/01/30 by tho@tho\_r400\_win

updated rom controller model test plan

Change 14212 on 2002/01/30 by nluu@nluu\_r400\_cmb

- update

Change 14202 on 2002/01/29 by dclifton@dclifton\_r400

Updated with new diagrams to match pinout, added zoffset info

Change 14198 on 2002/01/29 by jiezhou@jiezhou\_r400\_win\_tor

remove

Change 14197 on 2002/01/29 by jiezhou@jiezhou\_r400\_win\_tor

to remove CP

Change 14196 on 2002/01/29 by jiezhou@jiezhou\_r400\_win\_tor

Page 385 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change name CP to DCP

Change 14193 on 2002/01/29 by jasif@jasif\_r400\_win\_tor

Initial Revision of DCCIF Model Spec

Change 14184 on 2002/01/29 by mdoggett@MA\_MDOGGETT\_IT

Updated TCD section. New top level diagram. Algorithm for DXT added.

Change 14183 on 2002/01/29 by rthambim@rthambim\_r400\_win\_tor

Modified naming convention and removed SWAP bits.

Change 14180 on 2002/01/29 by lseiler@ma\_lseiler

Preliminary version, pdf update

Change 14179 on 2002/01/29 by lseiler@ma\_lseiler

Preliminary RB spec update

Change 14164 on 2002/01/29 by mpersaud@mpersaud\_r400\_win\_tor

Initial rev

Change 14156 on 2002/01/29 by rbell@rbell\_crayola\_win\_cvd

Added straps

Change 14155 on 2002/01/29 by rbell@rbell\_crayola\_win\_cvd

First draft.

Change 14143 on 2002/01/29 by lseiler@ma\_lseiler

Version 0.6, with depth and color compression formats

Change 14139 on 2002/01/29 by smoss@smoss\_crayola\_win

updated su\_sc interface

Change 14138 on 2002/01/29 by markf@markf\_r400\_win\_marlboro

R400 Area Estimate

Change 14136 on 2002/01/29 by kcorrell@kcorrell\_r400\_docs\_marlboro

Page 386 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

updates as a result of the design review and further discussion with designers of MH clients

Change 14135 on 2002/01/29 by jasif@jasif\_r400\_win\_tor

Added InterModel Bus Interface Spec.

Change 14124 on 2002/01/29 by scroce@scroce\_r400\_win\_marlboro

Some additional touches

Change 14115 on 2002/01/29 by bryans@bryans\_crayola\_win\_cvd

Update for week of Jan 28

Change 14113 on 2002/01/29 by hartogs@fl\_hartogs

Updated -- still in progress.

Change 14108 on 2002/01/29 by vromaker@MA\_VTC\_P4

updates, new vsds

Change 14102 on 2002/01/28 by rbagley@MA\_RBAGLEY\_L\_TXP

0.1 (a) : partial reorganization and instruction updates.

Change 14098 on 2002/01/28 by semara@semara\_r400\_win\_tor

correct the links

Change 14093 on 2002/01/28 by semara@semara\_r400\_win\_tor

remove

Change 14089 on 2002/01/28 by semara@semara\_r400\_win\_tor

initial release

Change 14071 on 2002/01/28 by semara@semara\_r400\_win\_tor

remove vcd files

Change 14068 on 2002/01/28 by semara@semara\_r400\_win\_tor

adding vga docs

Change 14057 on 2002/01/28 by smoss@smoss\_crayola\_win

Page 387 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Updated registers and functionality

Change 14055 on 2002/01/28 by rbell@rbell\_crayola\_win\_cvd

Fixed entry function names

Change 14052 on 2002/01/28 by jhoule@MA\_JHOULE

V 1.17  
Changed TX\_FMT\_\* and VTX\_FMT\_\* to plain FMT\_\*

Change 14008 on 2002/01/28 by bryans@bryans\_crayola\_win\_cvd

Initial high level description of DV environment for Video IP (DC)

Change 13999 on 2002/01/28 by gregs@gregs\_r400\_win\_marlboro

Added current serge control circuits and more info in general.

Change 13994 on 2002/01/28 by tho@tho\_r400\_win

updated dv status report

Change 13993 on 2002/01/28 by jasif@jasif\_r400\_win\_tor

Updated Joveria's status.

Change 13979 on 2002/01/28 by efong@efong\_r400\_win\_tor

Updated Status

Change 13969 on 2002/01/28 by rbell@rbell\_crayola\_win\_cvd

Changes

Change 13966 on 2002/01/28 by bryans@bryans\_crayola\_win\_cvd

Add C++ test environment documents to depot

Change 13965 on 2002/01/28 by rbell@rbell\_crayola\_win\_cvd

Added user model read/write commands

Change 13963 on 2002/01/28 by bryans@bryans\_crayola\_win\_cvd

Update ifgen in schedule

Change 13948 on 2002/01/25 by chwang@chwang\_r400\_win\_cvd

Page 388 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Added emulation coding standard and updated tutorial.

Change 13944 on 2002/01/25 by rvelez@rvelez\_r400\_win\_tor

Changes based on 1/18 Interface Spec Review

Change 13942 on 2002/01/25 by rbell@rbell\_crayola\_win\_cvd

More changes

Change 13940 on 2002/01/25 by beiwang@bei\_mcspec

Updated the spec to include issues resolved after the spec review as well as other open issues. Most of the changes are in pink. Also updated the bus interface description.  
Updated the visio drawing on address format

Change 13939 on 2002/01/25 by tho@tho\_r400\_win

updated test plan

Change 13933 on 2002/01/25 by sroce@scroce\_r400\_win\_marlboro

Added info about Module Compiler support.

Change 13929 on 2002/01/25 by tho@tho\_r400\_win

rom\_controller\_model\_test\_plan rev 0.2

Change 13890 on 2002/01/25 by jasif@jasif\_r400\_win\_tor

Updated BIF, RBBM interface to user new signal names. Added error checking section. Fixed mistakes in top-level diagram.

Change 13884 on 2002/01/25 by wlawless@wlawless

just saving

Change 13860 on 2002/01/25 by rbell@rbell\_crayola\_win\_cvd

Final version

Change 13823 on 2002/01/25 by jacarey@fl\_jacarey

Checkpoint Specification

Change 13817 on 2002/01/24 by rbagley@MA\_RBAGLEY\_LTXP

Deleting obsolete version.

Page 389 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 13816 on 2002/01/24 by rbagley@MA\_RBAGLEY\_LTXP

Intermediate checkin for version 0.1 of newly revised and reorganized shader programming model doc. The doc had been correctly renamed; the previous version is here deleted. We also delete the former assembly syntax doc from its deprecated location.

Change 13815 on 2002/01/24 by jasif@jasif\_r400\_win\_tor

Updated

Change 13814 on 2002/01/24 by semara@semara\_r400\_win\_tor

bif-vga doc

Change 13812 on 2002/01/24 by vromaker@MA\_VIC\_P4

update

Change 13809 on 2002/01/24 by jayw@MA\_JAYW

wrong filename is RB\_BlendLogic.doc

Change 13808 on 2002/01/24 by jayw@MA\_JAYW

more initial writings

Change 13787 on 2002/01/24 by wlawless@wlawless

just in case

Change 13761 on 2002/01/24 by jasif@jasif\_r400\_win\_tor

Updated

Change 13739 on 2002/01/24 by jacarey@fl\_jacarey

Note added to RBBM spec indicating that the RBBM\_CNTL and RBBM\_SOFT\_RESET registers are in the IO and MMR decode spaces.

Change 13709 on 2002/01/23 by efong@efong\_r400\_win\_tor

PLL model simulation model spec

Change 13693 on 2002/01/23 by jhoule@MA\_JHOULE

Diagrams showing multiple piecewise linear equations for the mipmap weight optimization suggested.

Page 390 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 13692 on 2002/01/23 by jhoule@MA\_JHOULE

Changed SQ to better reflect it's a separate block.

Change 13690 on 2002/01/23 by jhoule@MA\_JHOULE

Drawing representing the texels used in a filter around a sample point. Containt point.bilinear/4x4 filters.

Change 13689 on 2002/01/23 by jhoule@MA\_JHOULE

R300 figures showing the wrapping policies.

Change 13687 on 2002/01/23 by jhoule@MA\_JHOULE

0.9.3:  
Updated interfaces to match current specs.  
Added comments on various issues.  
Described LOD optimization approach.  
Added diagrams.

Change 13648 on 2002/01/23 by wlawless@wlawless

new block diagrams

Change 13646 on 2002/01/23 by rbell@rbell\_crayola\_win\_cvd

Video IP archs and confs doc

Change 13637 on 2002/01/23 by chwang@chwang\_r400\_win\_cvd

Another fix.

Change 13624 on 2002/01/23 by nluu@nluu\_r400\_cmb

- update

Change 13623 on 2002/01/23 by jacarey@fl\_jacarey

Clarification on Accessing IO and Memory-Mapped registers. These must have the same address.

Change 13617 on 2002/01/23 by nluu@nluu\_r400\_cmb

- update

Change 13603 on 2002/01/23 by chwang@chwang\_r400\_win\_cvd

Page 391 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Emulation tutorial.

Change 13570 on 2002/01/22 by tho@tho\_r400\_win

cursor & icon documents added

Change 13546 on 2002/01/22 by bryans@bryans\_crayola\_win\_cvd

Update status 01/22/02

Change 13534 on 2002/01/22 by mzhu@mzhu\_r400\_win\_tor

Remove CP\_DMIF\_read\_start signal, Add more timing diagrams.

Change 13521 on 2002/01/22 by jiezhou@jiezhou\_r400\_win\_tor

updated Jan 22

Change 13514 on 2002/01/22 by askende@andi\_r400\_docs

new rev 1.2

Change 13512 on 2002/01/22 by askende@andi\_r400\_docs

new rev.

Change 13476 on 2002/01/21 by rbeaudin@rbeaudin\_r400\_win\_marlboro

UPDATED REGRESSION INSTRUCTIONS

Change 13474 on 2002/01/21 by askende@andi\_r400\_docs

new rev. 1.1

Change 13473 on 2002/01/21 by rthambin@rthambin\_r400\_win\_tor

Initial Revision

Change 13471 on 2002/01/21 by askende@andi\_r400\_docs

new rev 1.1 of the shader pipe

Change 13465 on 2002/01/21 by askende@andi\_r400\_docs

first time check-in

Change 13449 on 2002/01/21 by vromaker@MA\_VIC\_P4

update

Page 392 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 13446 on 2002/01/21 by jacarey@fl\_jacarey  
Checkpoint Specifications

Change 13434 on 2002/01/21 by jayw@MA\_JAYW  
working documents on the alpha blend data path

Change 13427 on 2002/01/21 by frising@ma\_frising  
-Moved Usage tabs towards back. I think this makes the spec a little more manageable than the interleaved usages.  
-no version change

Change 13422 on 2002/01/21 by jiezhou@jiezhou\_r400\_win\_tor  
major updated revision

Change 13421 on 2002/01/21 by jiezhou@jiezhou\_r400\_win\_tor  
spec update

Change 13397 on 2002/01/21 by jacarey@fl\_jacarey  
Update CP\_DEBUG and CP\_STAT register fields.

Change 13391 on 2002/01/21 by efong@efong\_r400\_win\_tor  
Put in Bif model document as well as the test\_control\_server and verilog document from HW\_modelling

Change 13383 on 2002/01/21 by jacarey@fl\_jacarey  
1. Outputs to VGT for 2D  
2. Raster Order Determination for 2D Rectangles

Change 13380 on 2002/01/21 by chwang@chwang\_r400\_win\_cvd  
Updated.

Change 13372 on 2002/01/21 by tho@tho\_r400\_win  
updated status report

Change 13364 on 2002/01/21 by jasif@jasif\_r400\_win\_tor  
Updated status.

Change 13361 on 2002/01/21 by jacarey@fl\_jacarey  
Checkpoint Updates to 2D Appendix

Change 13356 on 2002/01/21 by efong@efong\_r400\_win\_tor  
Updated % done

Change 13347 on 2002/01/21 by rbell@rbell\_crayola\_win\_cvd  
update

Change 13333 on 2002/01/18 by jacarey@fl\_jacarey  
Update Open Issues List  
Update Go/Active Assertion Control Register

Change 13332 on 2002/01/18 by jacarey@fl\_jacarey  
Document Double-Registered Discrete Signals for Better Chip Timing.

Change 13331 on 2002/01/18 by jacarey@fl\_jacarey  
Checkpoint CP Spec

Change 13327 on 2002/01/18 by tho@tho\_r400\_win  
ROM controller model test plan

Change 13323 on 2002/01/18 by gregs@regs\_r400\_win\_marlboro  
initial version, based on current designs.

Change 13318 on 2002/01/18 by beiwang@bei\_mcspec  
Things noted from the spec review.  
Spec: Changes are highlighted in pink.  
MCCI drawing: reduced the number of lines going into MH read bus mux

Change 13316 on 2002/01/18 by scroce@scroce\_r400\_win\_marlboro  
Added info about v2html support and new command line switches

Change 13308 on 2002/01/18 by jasif@jasif\_r400\_win\_tor  
Updated signal interface list and top level diagram.

Change 13293 on 2002/01/18 by jowang@jowang\_R400\_win

area estimation for Lili

Change 13281 on 2002/01/18 by khabbari@khabbari\_r400\_win  
added columns to see if line buffer has enough bandwidth

Change 13272 on 2002/01/18 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
doc update

Change 13268 on 2002/01/18 by rbell@rbell\_crayola\_win\_cvd  
Added ati\_mempak doc

Change 13263 on 2002/01/18 by rvelez@rvelez\_r400\_win\_tor  
Rev 1.1

Change 13255 on 2002/01/17 by mdogett@MA\_MDOGETT\_LT  
Finished integrating and cleaning out old L1 spec details.

Change 13238 on 2002/01/17 by jacarey@fl\_jacarey  
Updated Size for Tag Memory and FIFO

Change 13235 on 2002/01/17 by askende@andi\_r400\_docs  
new rev.

Change 13231 on 2002/01/17 by askende@andi\_r400\_docs  
new shader rev of the shader spec checked in.

Change 13227 on 2002/01/17 by askende@andi\_r400\_docs  
new rev of the shader spec

Change 13226 on 2002/01/17 by askende@andi\_r400\_docs  
first time check-in

Change 13209 on 2002/01/17 by dglen@dglen\_r400\_dell  
Some updates

Change 13184 on 2002/01/17 by nlou@nlou\_r400\_cmb  
- update

Change 13179 on 2002/01/17 by nlou@nlou\_r400\_cmb  
- RBBMIF block specs, timing and block diagrams

Change 13167 on 2002/01/16 by nlou@nlou\_r400\_cmb  
- edit

Change 13160 on 2002/01/16 by rbell@rbell\_crayola\_win\_cvd  
Another draft of the spec

Change 13143 on 2002/01/16 by nlou@nlou\_r400\_cmb  
- update rbbmif - autoreg spec

Change 13137 on 2002/01/16 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
new R400 Emulator Specification

Change 13133 on 2002/01/16 by nlou@nlou\_r400\_cmb  
- update action items for RBBMIF

Change 13119 on 2002/01/16 by bryans@bryans\_crayola\_win\_cvd  
Update task list for week: 01/14/01

Change 13091 on 2002/01/15 by scroce@scroce\_r400\_win\_marlboro  
Changed some features. MKTREE is now disabled by default but can be enabled on Command line. Also, incremental compile can now be disabled

Change 13085 on 2002/01/15 by jiezhou@jiezhou\_r400\_win\_tor  
delete

Change 13075 on 2002/01/15 by nlou@nlou\_r400\_cmb  
- move interface doc to dc/Interface directory

Change 13074 on 2002/01/15 by rbell@rbell\_crayola\_win\_cvd  
Added the System Memory model

Change 13073 on 2002/01/15 by lseiler@ma\_lseiler  
revision 0.3, as checked in before Christmas



Change 13069 on 2002/01/15 by jasif@jasif\_r400\_win\_tor  
Initial revision for RBBM Model Document.

Change 13066 on 2002/01/15 by wlawless@wlawless  
ok

Change 13059 on 2002/01/15 by jacarey@fl\_jacarey  
Checkpoint Specifications

Change 13058 on 2002/01/15 by llefebvr@llefebvre\_laptop\_r400  
redundant opcodes corrected.

Change 13057 on 2002/01/15 by llefebvr@llefebvre\_laptop\_r400  
There was a small error in the control flow section. Checked in the spec so that Richard has a correct version to build the assembler on.

Change 13054 on 2002/01/14 by askende@andi\_r400\_docs  
added for the first time

Change 13015 on 2002/01/14 by jayw@MA\_JAYW  
Fixed visio drawing, try 2

Change 13013 on 2002/01/14 by lseiler@ma\_lseiler  
Version 0.7

Change 13011 on 2002/01/14 by bbloemer@ma-jasonh  
Final update for release 0.7

Change 13010 on 2002/01/14 by jayw@MA\_JAYW  
fixed typo in Figure 7: Pixel Format winin 2D Micro-Tiles  
wrong numeric bit positions

Change 13007 on 2002/01/14 by beiwang@bei\_mcspec  
Mods to MEMCtl and MCPProtocol drawings

Change 13006 on 2002/01/14 by beiwang@bei\_mcspec

Page 397 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Modifications to open issues, wordvalid field of access bus, tile+host queues depth, synchronization over valid&allocated bits of read data buffer, etc

Change 12989 on 2002/01/14 by yvalcour@yvalcour\_r400\_win\_marlboro  
fixed format and updated section 4.

Change 12984 on 2002/01/12 by beiwang@bei\_mcspec  
- Drawings: Modified MCAddressformat dawing. Slight mod to MOrdering. Added MCdrumcmd drawing.  
- Spec: Modified address format description. Modified description to MCP and added description to SW dram cmd

Change 12983 on 2002/01/11 by nluu@nluu\_r400\_win

Change 12981 on 2002/01/11 by bbloemer@ma-jasonh  
Another step closer to release 0.7

Change 12975 on 2002/01/11 by mdoggett@MA\_MDOGGETT\_LT  
More updates on TCB, TCD, TCM, TCO and Formats, including document reorganisation and out dated sections removed

Change 12973 on 2002/01/11 by rvelez@rvelez\_r400\_win\_tor  
Line Buffer-Scaler Interface Spec

Change 12966 on 2002/01/11 by scroce@scroce\_r400\_win\_marlboro  
Document about the Build script

Change 12960 on 2002/01/11 by jacarey@fl\_jacarey  
Update Tag Memory Size

Change 12949 on 2002/01/11 by jowang@jowang\_R400\_win  
delete #2

Change 12947 on 2002/01/11 by jowang@jowang\_R400\_win  
first draft after 1/10/02 review

Change 12905 on 2002/01/11 by jhoule@MA\_JHOULE  
Current document is now R400\_Texture\_Pipe.doc

Page 398 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 12890 on 2002/01/10 by rvelez@rvelez\_r400\_win\_tor  
LB - Composite Pipe Interface Spec

Change 12878 on 2002/01/10 by jiezhou@jiezhou\_r400\_win\_tor  
initial release

Change 12840 on 2002/01/10 by frising@ma\_frising  
Closed issue 1.) about mapping of signed normalized vertex data.  
No version change.

Change 12839 on 2002/01/10 by jacarey@fl\_jacarey  
Add diagram

Change 12827 on 2002/01/10 by rbell@rbell\_crayola\_win\_cvd  
Another draft.

Change 12826 on 2002/01/10 by rbell@rbell\_crayola\_win\_cvd  
Additions

Change 12824 on 2002/01/10 by jacarey@fl\_jacarey  
Fix Internal Bus Write Transaction

Change 12809 on 2002/01/10 by jacarey@fl\_jacarey  
Update RBBM Spec and Top-Level  
1. CPQ\_DATA\_SWAP  
2. NQ\_WAIT\_UNTIL

Change 12795 on 2002/01/10 by jacarey@fl\_jacarey  
Diagram Updates

Change 12786 on 2002/01/10 by jasif@jasif\_r400\_win\_tor  
Add Joveria's tasks.

Change 12774 on 2002/01/10 by jacarey@fl\_jacarey  
Update diagrams

Change 12755 on 2002/01/09 by jacarey@fl\_jacarey

Page 399 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Checkpoint Specifications

Change 12749 on 2002/01/09 by jhoule@MA\_JHOULE  
Put SQ in bold to indicate a separate block (beurk).

Change 12748 on 2002/01/09 by jhoule@MA\_JHOULE  
Updated TC interfaces.  
SP<-TC interface described.  
Pre-filter FIFO more complete.  
Minor corrections here and there.

Change 12728 on 2002/01/09 by dglen@dglen\_r400\_dell  
Updated OpenGL and started section on control of display pipe

Change 12723 on 2002/01/09 by mzhu@mzhu\_r400\_win\_tor  
DMIF-CP interface spec

Change 12708 on 2002/01/09 by llefebvr@llefebvre\_laptop\_r400  
new revision of the sequencer spec v1.6

Change 12704 on 2002/01/09 by rbell@rbell\_crayola\_win\_cvd  
First draft of the DMIF simulation model spec.

Change 12691 on 2002/01/09 by nluu@nluu\_r400\_win  
- update action items for rbbmif

Change 12690 on 2002/01/09 by yvalcour@yvalcour\_r400\_win\_marlboro  
add mc/mh test plan to correct location.

Change 12689 on 2002/01/09 by nluu@nluu\_r400\_win  
- rename doc

Change 12677 on 2002/01/09 by jacarey@fl\_jacarey  
Update CP\_RBIU Interfaces

Change 12667 on 2002/01/09 by nluu@nluu\_r400\_win  
- action items for RBBMIF

Page 400 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history





Change 12661 on 2002/01/09 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
update golden image release procedure

Change 12657 on 2002/01/09 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
added regression information

Change 12631 on 2002/01/09 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
new doc stuff

Change 12624 on 2002/01/08 by bbloemer@ma-jasonh  
Partial Update for rev 0.6

Change 12621 on 2002/01/08 by rvelez@rvelez\_r400\_win\_tor  
DCC Interface-Client Spec

Change 12618 on 2002/01/08 by nluu@nluu\_r400\_win  
- name change

Change 12612 on 2002/01/08 by frising@ma\_frising  
fixed a spelling typo

Change 12611 on 2002/01/08 by frising@ma\_frising  
v.1.16  
-remove cubemap opcode and add cubemap to DIM field.  
-added a DIM\_3D field to select between 3Da and 3Db sizes.  
-replace references to state with constant  
-rename base\_offset to base\_address  
-rename sec\_offset to mip\_address

Change 12604 on 2002/01/08 by jacarey@fl\_jacarey  
Update Strobes and Data from Internal CP Clients to RBIU

Change 12591 on 2002/01/08 by nluu@nluu\_r400\_win  
- revised docs

Change 12589 on 2002/01/08 by dglen@dglen\_r400\_dell  
Updated to current plan

Page 401 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 12586 on 2002/01/08 by jacarey@fl\_jacarey  
Checkpoint Updates for Registers

Change 12579 on 2002/01/08 by jiezhou@jiezhou\_r400\_win\_tor  
initial release

Change 12576 on 2002/01/08 by jiezhou@jiezhou\_r400\_win\_tor  
initial release

Change 12568 on 2002/01/07 by jiezhou@jiezhou\_r400\_win\_tor  
Initial release

Change 12560 on 2002/01/07 by vromaker@MA\_VIC\_P4  
added info on remapping tables

Change 12557 on 2002/01/07 by jacarey@fl\_jacarey  
Checkpoint Unit Specs

Change 12527 on 2002/01/07 by nmanator@mmanator\_r400  
added visio files for the Hardware state management document

Change 12509 on 2002/01/07 by nluu@nluu\_r400\_win  
- initial revision

Change 12488 on 2002/01/07 by jacarey@fl\_jacarey  
Clarify cp\_rbiu register read bus.

Change 12486 on 2002/01/07 by jacarey@fl\_jacarey  
Update CP and RBBM Interfaces  
RBBM can access up to 128K Bytes in the register space.

Change 12481 on 2002/01/07 by jacarey@fl\_jacarey  
Updated Register Fields in CP Spec

Change 12472 on 2002/01/07 by frising@ma\_frising  
Update with OGL feedback.

Page 402 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 12464 on 2002/01/04 by rthambim@rthambim\_r400\_win\_tor  
Fixed syntax.

Change 12462 on 2002/01/04 by rthambim@rthambim\_r400\_win\_tor  
initial release

Change 12459 on 2002/01/04 by vromaker@MA\_VIC\_P4  
added details to gpr allocation section

Change 12458 on 2002/01/04 by rbell@rbell\_crayola\_win\_cvd  
ROM Controller model spec.

Change 12444 on 2002/01/04 by kcorrell@kcorrell\_r400\_docs\_marlboro  
a few more details on some of the hardware aspects

Change 12433 on 2002/01/04 by wlawless@wlawless  
nothing

Change 12423 on 2002/01/04 by frising@ma\_frising  
Fixed a typo

Change 12421 on 2002/01/04 by jhoule@MA\_IHGOULE  
Fixed typos (didn't even change version number)

Change 12416 on 2002/01/04 by frising@ma\_frising  
Added features and caveats page. Resolved many of the open questions.

Change 12412 on 2002/01/04 by mdoggett@MA\_MDOGGETT\_LT  
Added L2 data ready signal, removed TCB to TCM signal.

Change 12406 on 2002/01/04 by mdoggett@MA\_MDOGGETT\_LT  
New version of TC spec. Updated discriptions and L1 and L2 access and decompression diagrams.

Change 12395 on 2002/01/04 by rbell@rbell\_crayola\_win\_cvd  
Added Toronto DV status

Page 403 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 12335 on 2002/01/03 by llefebvre@llefebvre\_laptop\_r400  
backup of the spec

Change 12333 on 2002/01/03 by jacarey@fl\_jacarey  
Updates: RBIU, RCIU, and RTEE Sub-units

Change 12332 on 2002/01/03 by jacarey@fl\_jacarey  
Miscellaneous Updates to RTEE Diagram

Change 12331 on 2002/01/03 by vromaker@MA\_VIC\_P4  
fixed links (hopefully)

Change 12330 on 2002/01/03 by jacarey@fl\_jacarey  
Add Internal Read Interfaces to RBIU Design

Change 12318 on 2002/01/02 by jacarey@fl\_jacarey  
Update Memory Interface Unit Diagram

Change 12317 on 2002/01/02 by jacarey@fl\_jacarey  
Update cp\_rciu Diagram

Change 12315 on 2002/01/02 by jacarey@fl\_jacarey  
Checkpoint

Change 12313 on 2002/01/02 by scroce@scroce\_r400\_win\_marlboro  
Information about dk system

Change 12310 on 2002/01/02 by vromaker@MA\_VIC\_P4  
HW Spec

Change 12302 on 2002/01/02 by wlawless@wlawless  
just didn't want to lose my edits

Change 12297 on 2002/01/02 by smorein@smorein\_r400  
adding updated docs to final resting place

Page 404 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 12292 on 2001/12/31 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
 Moved compilation of mc.cpp to top of DLL so that module can use DLL imports and exports.  
 Added definitions for exporting Ferret functions.

Change 12291 on 2001/12/31 by jiezhou@jiezhou\_r400\_win\_tor  
 updated

Change 12290 on 2001/12/31 by jiezhou@jiezhou\_r400\_win\_tor  
 updated

Change 12286 on 2001/12/31 by jiezhou@jiezhou\_r400\_win\_tor  
 Initial release

Change 12280 on 2001/12/28 by frising@ma\_frising  
 Official v. 1.14. Add tables describing L2 interactions with texture, vertex, gamma, multicycle. Lots more clean up and clarifications. Started an open questions tab.

Change 12277 on 2001/12/28 by pmitchel@pmitchel\_r400\_win\_marlboro  
 documenting partial release procedure

Change 12269 on 2001/12/28 by frising@ma\_frising  
 another checkpoint

Change 12268 on 2001/12/28 by jiezhou@jiezhou\_r400\_win\_tor  
 updated

Change 12266 on 2001/12/27 by frising@ma\_frising  
 This version of 1.14 is a checkpoint.

Change 12259 on 2001/12/27 by jowang@jowang\_R400\_win  
 test images

Change 12256 on 2001/12/27 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
 fixed error underlines

Change 12222 on 2001/12/24 by rbell@rbell\_crayola\_win\_cvd

Added Perforce and building libs

Change 12221 on 2001/12/24 by semara@semara\_r400\_win\_tor  
 adding ffirst release to the VGA display interface document  
 updating the bif interface documents

Change 12220 on 2001/12/24 by jiezhou@jiezhou\_r400\_win\_tor  
 Initial release

Change 12219 on 2001/12/24 by jiezhou@jiezhou\_r400\_win\_tor  
 Initial release

Change 12218 on 2001/12/24 by jowang@jowang\_R400\_win  
 supports YCbCr and regression testing

Change 12161 on 2001/12/21 by jacarey@fl\_jacarey  
 Check-in for the Holidays

Change 12136 on 2001/12/21 by smorein@smorein\_r400  
 added initial rom spec

Change 12121 on 2001/12/21 by jacarey@fl\_jacarey  
 Update

Change 12089 on 2001/12/20 by lseiler@ma\_travel\_micro  
 Updated micro-tiling format and updates to the depth/stencil and multi-sample color formats.

Change 12088 on 2001/12/20 by jacarey@fl\_jacarey  
 Checkpointing Specifications

Change 12085 on 2001/12/20 by jacarey@fl\_jacarey  
 Fix Signals on RBBM Top Level diagram

Change 12080 on 2001/12/20 by jhoule@MA\_JHOULE  
 3Db format: changed max value from 12 to 11 (saving 1 bit in tag helps TC logic to meet area)

Change 12073 on 2001/12/19 by frising@ma\_frising  
 remove this crusty old thing.

Change 12058 on 2001/12/19 by frising@ma\_frising  
 Added some more notes on alignment constraints + misc cleanup. Removed SAD opcodes.

Change 12053 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 update the directory content

Change 12052 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 update

Change 12047 on 2001/12/19 by jhoule@MA\_JHOULE  
 Wrong opcode order in TFetch instruction usage

Change 12044 on 2001/12/19 by jhoule@MA\_JHOULE  
 Changed opcode order.  
 Offsets are now 26 bits (64-byte aligned).  
 Comments added (LOD equation, DWORD computation)  
 Footer and common header added to keep track when printing.

Change 12026 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 first release

Change 12025 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 using # of pix to interface to the display

Change 12024 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 first release

Change 12023 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 add the files for first release

Change 12022 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 update the block diagram

Change 12016 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 update top level diagram

Change 12014 on 2001/12/19 by semara@semara\_r400\_win\_tor  
 vga top level block diagram first release

Change 12012 on 2001/12/19 by jowang@jowang\_R400\_win  
 moved into Scaler directory

Change 12010 on 2001/12/19 by jowang@jowang\_R400\_win  
 initial revision

Change 12006 on 2001/12/19 by jowang@jowang\_R400\_win  
 initial revision

Change 12004 on 2001/12/19 by jowang@jowang\_R400\_win  
 initial design: 1-D separable filters, scaling

Change 12000 on 2001/12/19 by jowang@jowang\_R400\_win  
 initial

Change 11999 on 2001/12/19 by lseiler@ma\_lseiler  
 File check-in prior to vacation

Change 11970 on 2001/12/18 by jowang@jowang\_R400\_win  
 initial design: 1-D filters for scaling

Change 11953 on 2001/12/18 by paulv@MA\_PVELLA  
 Minor fix.

Change 11952 on 2001/12/18 by paulv@MA\_PVELLA  
 Modifications to MHS to reflect new changes/fixes. Some other minor fixes throughout spec (mainly in tables).

Change 11925 on 2001/12/18 by rbell@rbell\_crayola\_win\_cvd  
 Updated doc



Change 11923 on 2001/12/18 by jacarey@fl\_jacarey  
Small Text Character Mapping Diagram

Change 11921 on 2001/12/18 by paulv@MA\_PVELLA  
Updated block diagram to reflect recent MH (and MC interface) changes.

Change 11919 on 2001/12/18 by rbell@rbell\_crayola\_win\_cvd  
Added docs for simulation

Change 11915 on 2001/12/18 by scroce@scroce\_r400\_win\_marlboro  
chmod the .cshrc

Change 11914 on 2001/12/18 by scroce@scroce\_r400\_win\_marlboro  
Remember to set P4CLIENT in UNIX setup

Change 11911 on 2001/12/18 by scroce@scroce\_r400\_win\_marlboro  
Reminded people to set \$EDITOR if they do not like vi

Change 11895 on 2001/12/17 by askende@andi\_r400\_docs  
new updates of the spec with regards to ALU instruction word definition, scalar opcode list and the hardware definition of the scalar unit.

Change 11885 on 2001/12/17 by jacarey@fl\_jacarey  
Updates to CP MIU Diagram

Change 11854 on 2001/12/17 by jacarey@fl\_jacarey  
Misc.

Change 11839 on 2001/12/17 by jacarey@fl\_jacarey  
Interface Update for RCIU

Change 11833 on 2001/12/17 by llefebvr@llefebvre\_laptop\_r400  
backup

Change 11824 on 2001/12/17 by lseiler@ma\_lseiler  
PDF file for rev 0.4a RB register spec

Page 409 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 11820 on 2001/12/17 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
fixed reference to regression test

Change 11819 on 2001/12/17 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
fixed typo

Change 11810 on 2001/12/15 by frising@ma\_frising  
v. 1.11 Lots of misc clean-up, comments, and formatting.

Change 11793 on 2001/12/14 by jhoule@MA\_JHOULE  
Changed filetype for exclusive check-out.

Change 11792 on 2001/12/14 by jhoule@MA\_JHOULE  
New diagrams used in the TP spec.

Change 11791 on 2001/12/14 by jhoule@MA\_JHOULE  
Removed duplicate of top-level diagram.  
Removed Addressing step (now part of TC).  
Changed features.  
Added SP\_TP diagram.  
Changed filetype to exclusive open.  
Rewrote Blending description (now contains Mark's LERPs with precision information).  
Added Special Operations section for weird opcodes (Noise/Shadow/SADs/...)

Change 11790 on 2001/12/14 by jhoule@MA\_JHOULE  
Changed formats cell height (printing issues).  
New SIZE (with DIM in same DWORD) ==> 3da=10:10:10, 3db=12:12:4lg  
Added FETCH\_VALID\_ONLY for calling invalid pixels fetches (important for dependent fetches).

Change 11785 on 2001/12/14 by lseiler@ma\_lseiler  
RB registers with review comments and preliminary register names

Change 11754 on 2001/12/14 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
fix doc

Change 11752 on 2001/12/14 by wlawless@wlawless  
Update Tile Logic section

Page 410 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 11747 on 2001/12/14 by mpersaud@mpersaud\_r400\_win\_tor  
Initial Revision

Change 11728 on 2001/12/13 by lseiler@ma\_lseiler  
Register update for review

Change 11686 on 2001/12/13 by kcorrell@KCORRELL  
update to version 6.3 of Memory Hub.doc

Change 11665 on 2001/12/13 by kcorrell@KCORRELL  
updated RB - MC and MH - MC interface tables

Change 11540 on 2001/12/11 by jhoule@MA\_JHOULE  
Changed filetype (no multiple opens)

Change 11535 on 2001/12/11 by jhoule@MA\_JHOULE  
Now 4 DEGAMMA values.  
Better DWORD equation (all automatic).  
Added BORDER\_SIZE for border texels.  
Moved SIGNED\_RF\_MODE before NUM\_FORMAT.

Change 11528 on 2001/12/11 by scroce@scroce\_r400\_win\_marlboro  
Trying to make Doc easier to follow.

Change 11503 on 2001/12/11 by llefebvr@llefebvre\_laptop\_r400  
Version 1.5 of the sequencer spec. See Revision changes of the document for details.

Change 11484 on 2001/12/10 by scroce@scroce\_r400\_win\_marlboro  
Clarified a few commands

Change 11479 on 2001/12/10 by askende@andi\_r400\_docs  
new revision

Change 11452 on 2001/12/10 by scroce@scroce\_r400\_win\_marlboro  
Added the actual command lines to use the client template in UNIX

Change 11443 on 2001/12/10 by llefebvr@llefebvre\_laptop\_r400

Page 411 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

backup. Updated the constant memory management section by copying stuff from the R400 state management document by Mike Mantor.

Change 11411 on 2001/12/07 by kryan@kryan\_r400\_win\_marlboro  
Updated sanity test instructions to use perf\_test.cpp.

Change 11401 on 2001/12/07 by jhoule@MA\_JHOULE  
Minor modifs.

Change 11399 on 2001/12/07 by jhoule@MA\_JHOULE  
Added usage tables.  
Minor modifications (e.g. no more WHICH\_DWORD since it uses Z instead but isn't there a problem for 3D hi-color textures?).

Change 11393 on 2001/12/07 by llefebvr@llefebvre\_laptop\_r400  
backup.

Change 11337 on 2001/12/06 by paulv@MA\_PVELLA  
Made corrections/updates to MHS. Added new subsection (L2 Cache Invalidate Arbiter).

Change 11336 on 2001/12/06 by paulv@MA\_PVELLA  
Added Tags (I/O) and Sends (output). Changed buffer sizes. GMB = GRB.

Change 11335 on 2001/12/06 by paulv@MA\_PVELLA  
Changed instances GMB to GRB.

Change 11329 on 2001/12/06 by wlawless@wlawless  
new RB to MC interface

Change 11319 on 2001/12/06 by paulv@MA\_PVELLA  
Minor modification (mostly to DISP functional block).

Change 11306 on 2001/12/06 by llefebvr@llefebvre\_laptop\_r400  
New revision of the sequencer spec.

Change 11287 on 2001/12/06 by ctaylor@fl\_ctaylor\_r400\_win\_marlboro  
Added Scan Converter Spec to P4

Page 412 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 11271 on 2001/12/06 by mpersaud@mpersaud\_r400\_win\_tor  
 Added to depot - Needs major work

Change 11264 on 2001/12/05 by kcorrell@KCCORRELL  
 updated to include top level description of GART and new MC interface.

Change 11241 on 2001/12/05 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
 fixed client spec

Change 11229 on 2001/12/05 by frising@ma\_frising  
 Move TX/VTX const+inst to tp dir.

Change 11227 on 2001/12/05 by jhoule@MA\_JHOULE  
 Renamed file for better consistency.

Change 11226 on 2001/12/05 by llefebvre@llefebvre\_laptop\_r400  
 Updated the register spec.

Change 11193 on 2001/12/05 by scroce@scroce\_r400\_win\_marlboro  
 Fixed Capitalization issues in perforce client names

Change 11191 on 2001/12/05 by jacarey@fl\_jacarey  
 Context Allocation Flags

Change 11185 on 2001/12/04 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
 added more emulator documentation

Change 11096 on 2001/12/03 by mmantor@mmantor\_r400  
 temp for backup purposes only

Change 11095 on 2001/12/03 by mmantor@mmantor\_r400  
 error in placement

Change 11093 on 2001/12/03 by mmantor@mmantor\_r400  
 Preliminary for back up only at current time

Change 11072 on 2001/12/03 by pmitchel@pmitchel\_r400\_win\_marlboro

change tx to tp for consistency

Change 11070 on 2001/12/03 by pmitchel@pmitchel\_r400\_win\_marlboro  
 adding directories to depot

Change 11063 on 2001/12/03 by pmitchel@pmitchel\_r400\_win\_marlboro  
 delete

Change 11061 on 2001/12/03 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv doc\_lib/parts to doc\_lib/design/blocks

Change 11056 on 2001/12/03 by wlawless@wlawless  
 version 0.4

Change 11055 on 2001/12/03 by jacarey@fl\_jacarey  
 Submit so directory can be moved.

Change 11052 on 2001/12/03 by hartogs@fl\_hartogs  
 Interim check-in for move.

Change 11049 on 2001/12/03 by kcorrell@KCCORRELL  
 temporary checkin to allow Paul to move things around again

Change 11048 on 2001/12/03 by llefebvre@llefebvre\_laptop\_r400  
 submitted for Paul to move stuff around again.

Change 11047 on 2001/12/03 by askende@andi\_r400\_docs  
 more updates

Change 11006 on 2001/11/30 by scroce@scroce\_r400\_win\_marlboro  
 Added some NT specific fixes

Change 11004 on 2001/11/30 by scroce@scroce\_r400\_win\_marlboro  
 Clarified some of the directions

Change 11002 on 2001/11/30 by pmitchel@pmitchel\_r400\_win\_marlboro

moving to r400/parts\_lib/  
 Change 10988 on 2001/11/30 by semara@semara\_r400\_win\_tor  
 add the vga doc to r400/doc\_lib/parts/vga

Change 10974 on 2001/11/30 by jacarey@fl\_jacarey  
 CP's General Purpose DMA Engine

Change 10956 on 2001/11/29 by dglenn@dglenn\_r400\_dell  
 Updated templates

Change 10942 on 2001/11/29 by hartogs@fl\_hartogs  
 Updated the section for the VGT to Shader interfaces.

Change 10936 on 2001/11/29 by jacarey@fl\_jacarey  
 Checkpoint CP Specifications

Change 10889 on 2001/11/29 by jacarey@fl\_jacarey  
 Updates to CP Memory Interface Unit Diagram

Change 10879 on 2001/11/29 by jacarey@fl\_jacarey  
 Baseline 2D Appendix for CP Spec (Separate Document)

Change 10852 on 2001/11/28 by scroce@scroce\_r400\_win\_marlboro  
 Added some more info on perforce setup

Change 10832 on 2001/11/28 by jacarey@fl\_jacarey  
 Diagram of 2D Surface Definitions

Change 10810 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts/sp

Change 10809 on 2001/11/27 by askende@andi\_r400\_docs  
 new rev of the spec.

Change 10807 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10806 on 2001/11/27 by hartogs@fl\_hartogs  
 Check-in for relocation.

Change 10791 on 2001/11/27 by hartogs@fl\_hartogs  
 Requested check-in. The document is in a interim state.

Change 10784 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10774 on 2001/11/27 by llefebvre@llefebvre\_laptop\_r400\_emu  
 opened the files with the wrong client

Change 10773 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 delete

Change 10772 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10771 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10770 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 change filetype to +l

Change 10769 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10767 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10766 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
 mv to doc\_lib/parts

Change 10765 on 2001/11/27 by lseiler@ma\_lseiler  
 Render Backend: temporary version, not a complete release



Change 10764 on 2001/11/27 by lseiler@ma\_lseiler  
Memory Format v0.4: intermediate form, not a complete release

Change 10763 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_marlboro  
mv to doc\_lib/parts

Change 10752 on 2001/11/27 by scroce@scroce\_r400\_win\_marlboro  
Fixed up some menu issues

Change 10745 on 2001/11/27 by taylor@fl\_taylor  
Updated SC->SU interface and a few words on performance.

Change 10738 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_home  
creation of spec areas

Change 10736 on 2001/11/27 by lseiler@ma\_lseiler  
Multisample: spec, preliminary version that needs lots of changes

Change 10732 on 2001/11/27 by pmitchel@pmitchel\_r400\_win\_home  
rename into parts/cp & parts/rbbm

Change 10717 on 2001/11/26 by jacarey@fl\_jacarey  
Check-In for Moving of Document Area

Change 10705 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
another rename to match r300

Change 10699 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
doing rename properly

Change 10698 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
fix mistake

Change 10697 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
recover

Change 10695 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro

Page 417 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

rename

Change 10693 on 2001/11/26 by llefebvre@llefebvre\_laptop\_r400  
closing for Paul to move files around

Change 10691 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
rename "blocks" to "parts\_lib"

Change 10676 on 2001/11/26 by llefebvre@llefebvre\_laptop\_r400  
changed the file type to binary and locked

Change 10675 on 2001/11/26 by llefebvre@llefebvre\_laptop\_r400  
new spin on the other documents regarding the sequencer spec

Change 10674 on 2001/11/26 by llefebvre@llefebvre\_laptop\_r400  
new spin on the sequencer spec

Change 10673 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
test

Change 10668 on 2001/11/26 by paulv@MA\_PVELLA  
Minor changes/fixes.

Change 10667 on 2001/11/26 by paulv@MA\_PVELLA  
Major revision of block diagram.

Change 10666 on 2001/11/26 by scroce@scroce\_r400\_win\_marlboro  
Added info regarding the toold menu in p4win

Change 10665 on 2001/11/26 by paulv@MA\_PVELLA  
Updated and fixed MHS section.

Change 10644 on 2001/11/26 by pmitchel@pmitchel\_r400\_win\_marlboro  
deleting

Change 10632 on 2001/11/26 by jacarey@fl\_jacarey

Page 418 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Checkpoint CP Specifications

Change 10501 on 2001/11/21 by askende@andi\_r400\_docs  
opcode update

Change 10500 on 2001/11/21 by askende@andi\_r400\_docs  
updated a couple of opcodes

Change 10489 on 2001/11/21 by kcorrell@KCORRELL  
update of architectural description

Change 10396 on 2001/11/20 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
new directions

Change 10365 on 2001/11/20 by pmitchel@pmitchel\_r400\_win\_marlboro  
adding file

Change 10333 on 2001/11/19 by pmitchel@pmitchel\_r400\_win\_marlboro  
release

Change 10318 on 2001/11/19 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
more reg release changes

Change 10294 on 2001/11/19 by pmitchel@pmitchel\_r400\_win\_marlboro  
checkpoint

Change 10281 on 2001/11/19 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
more instructions for changing block files

Change 10255 on 2001/11/19 by kcorrell@KCORRELL  
Initial revision

Change 10254 on 2001/11/19 by kcorrell@KCORRELL  
AIC block diagram initial revision

Change 10253 on 2001/11/19 by kcorrell@KCORRELL  
update

Page 419 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 10199 on 2001/11/16 by jacarey@fl\_jacarey  
Checkpoint CP Specs

Change 10197 on 2001/11/16 by mdoggett@MA\_MDOGGETT  
friday check in

Change 10157 on 2001/11/16 by jacarey@fl\_jacarey  
RBBM Version 0.04 Specification Release.

Change 10156 on 2001/11/16 by pmitchel@pmitchel\_r400\_win\_home  
change filetype

Change 10153 on 2001/11/16 by pmitchel@pmitchel\_r400\_win\_home  
initial checkin

Change 10151 on 2001/11/16 by jacarey@fl\_jacarey  
Update Multi-target Slow Client Diagram

Change 10149 on 2001/11/16 by jacarey@fl\_jacarey  
Single Slow Client Waveform

Change 10144 on 2001/11/16 by jacarey@fl\_jacarey  
Update RT stream Event Engine Diagram

Change 10114 on 2001/11/16 by pmitchel@pmitchel\_r400\_win\_marlboro  
changed file types to disallow multiple edits

Change 10112 on 2001/11/16 by pmitchel@pmitchel\_r400\_win\_marlboro  
added explicit sync to release label as part of windows setup

Change 10056 on 2001/11/15 by dglen@dglen\_r400\_dell  
Top level block diagrams

Change 10055 on 2001/11/15 by jhoule@MA\_JHOULE  
Contains instruction filed (both usage in commands, and meanings) as well as constant store fields.

Page 420 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 10053 on 2001/11/15 by jacarey@fl\_jacarey  
Add RBBM Diagrams to Perforce

Change 10042 on 2001/11/15 by jacarey@fl\_jacarey  
Checkpoint RBBM Specification

Change 10031 on 2001/11/15 by rbeaudin@rbeaudin\_r400\_win\_marlboro  
schedules

Change 9986 on 2001/11/15 by jacarey@fl\_jacarey  
Diagram for Real-Time Stream Event Engine.

Change 9981 on 2001/11/15 by mdoggett@MA\_MDOGGETT  
TC diagrams

Change 9979 on 2001/11/15 by mdoggett@MA\_MDOGGETT  
major rearrangement and integration of old texture pipe material.

Change 9967 on 2001/11/15 by mdoggett@MA\_MDOGGETT\_LT  
no changes

Change 9941 on 2001/11/14 by dglen@dglen\_r400\_dell  
First pass on list of required specs for Toronto

Change 9940 on 2001/11/14 by mdoggett@MA\_MDOGGETT  
First check-in of new TC spec. Brings together L1 access from TP spec and old TD spec, plus some additional diagrams and format information.

Change 9934 on 2001/11/14 by dglen@dglen\_r400\_dell  
Updated paths and added section on used part of shared bus

Change 9923 on 2001/11/14 by jhoule@MA\_JHOULE  
Changed Wrapping/Clamping to Clamping/Wrapping for subblock naming issues. Now at 0.8.9.

Change 9915 on 2001/11/14 by jhoule@MA\_JHOULE

Page 421 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Blending scheme diagrams.  
Modifs here and there.

Change 9910 on 2001/11/14 by dglen@dglen\_r400\_dell  
Moved from arch/doc to devel/doc\_lib/parts

Change 9903 on 2001/11/14 by jacarey@fl\_jacarey  
Update to RBBM Top-Level Diagram (Interfaces)

Change 9896 on 2001/11/14 by jacarey@fl\_jacarey  
Update RBBM Top-Level Per Interfaces

Change 9885 on 2001/11/14 by dglen@dglen\_r400\_dell  
Moving files to doc\_lib/parts from arch/doc

Change 9883 on 2001/11/14 by jacarey@fl\_jacarey  
Diagram of CP's Interface to Register Backbone.

Change 9882 on 2001/11/14 by jacarey@fl\_jacarey  
Update FIFO widths and depths for write interface.

Change 9878 on 2001/11/14 by jacarey@fl\_jacarey  
Update to CP's Memory Interface Unit (MIU) Diagram  
1. Added Write Confirm Signal  
2. Removed f's and o's from Interface Signals

Change 9872 on 2001/11/14 by jacarey@fl\_jacarey  
Update CP's View of Instruction Memory  
Checkpoint other CP Specs

Change 9826 on 2001/11/13 by jhoule@MA\_JHOULE  
Put Sampling in a separate section than Walking, because it is closer to Wrapping. Safety check-in.

Change 9739 on 2001/11/12 by paulv@MA\_PVELLA  
Initial release.

Change 9738 on 2001/11/12 by paulv@MA\_PVELLA

Page 422 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Fixed any grammatical errors found and update of Read Bus Switch, including completion (?) of Tag Sequencer subsection.

Change 9737 on 2001/11/12 by paulv@MA\_PVELLA  
Updated with latest architectural changes.

Change 9724 on 2001/11/12 by scroce@scroce\_r400\_win\_marlboro  
Clarified some instructions.

Change 9723 on 2001/11/12 by askende@andi\_r400\_docs  
new revision

Change 9720 on 2001/11/12 by scroce@scroce\_r400\_win\_marlboro  
Made setup doc instructions for perforce client more explicit

Change 9710 on 2001/11/12 by scroce@scroce\_r400\_win\_marlboro  
Fixed client spec naming from \_unix\_ to \_sun\_

Change 9653 on 2001/11/09 by jhoule@MA\_JHOULE  
Week end check-in.  
Almost finished stripping out the TC stuff.

Change 9648 on 2001/11/09 by jhoule@MA\_JHOULE  
Caching is dotted line to indicate sharing between the 4 TPs.

Change 9646 on 2001/11/09 by jacarey@fl\_jacarey  
CP's View of Instruction Memory

Change 9627 on 2001/11/09 by jhoule@MA\_JHOULE  
Isolated TC.  
Getting ready to strip it out to be plugged in TC (which Michael will check-in afterwards).

Change 9586 on 2001/11/08 by dclifton@dclifton\_r400  
new specs

Change 9561 on 2001/11/08 by scroce@scroce\_r400\_win\_marlboro  
Added some commands to build the emulator once things are set up

Page 423 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 9522 on 2001/11/08 by scroce@scroce\_r400\_win\_marlboro  
Document about the new DK\_\* Environment we will be using for R400

Change 9517 on 2001/11/08 by jacarey@fl\_jacarey  
Revision 0.03 for Preliminary Review

Change 9493 on 2001/11/08 by jacarey@fl\_jacarey  
Checkpoint Revision 0.02 of the PM4 Specification

Change 9396 on 2001/11/07 by kcorrell@KCORRELL  
continuation of major update working towards review mid Nov

Change 9393 on 2001/11/07 by kcorrell@KCORRELL  
updated diagram

Change 9278 on 2001/11/06 by jacarey@fl\_jacarey  
Update to RBBM Top-Level Diagram (Index DMA Request Path)

Change 9277 on 2001/11/06 by jacarey@fl\_jacarey  
Update CP Interface Diagrams.

Change 9214 on 2001/11/05 by jacarey@fl\_jacarey  
Checkpoint Updates to CP Spec and PM4 Spec:  
1. Viz Query  
2. Removal of Obsolete Draw Packets  
3. Add DRAW\_INDEX and VIZ\_QUERY packets  
4. Add MPEG\_INDEX packet.  
5. Some Updates for RT streams

Change 9194 on 2001/11/05 by dwong@cndwong2  
first draft of R400\_IDCT

Change 9156 on 2001/11/05 by jacarey@fl\_jacarey  
Updates to CP's Memory Interface Unit Diagram

Change 9105 on 2001/11/02 by ctaylor@fl\_ctaylor  
First Rev of PA Top Level Spec,

Page 424 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



VGT\_Spec  
CLIP/VTE Spec.

Change 9067 on 2001/11/02 by jacarey@fl\_jacarey  
Checkpoint CP Spec

Change 9045 on 2001/11/02 by jacarey@fl\_jacarey  
Diagram addition of Shader Instruction Fetch Path through RBBM.

Change 9028 on 2001/11/01 by jacarey@fl\_jacarey  
Checkpoint All RBBM and CP Documents and Diagrams.

Change 9022 on 2001/11/01 by jacarey@fl\_jacarey  
Update RCIU

Change 9014 on 2001/11/01 by jacarey@fl\_jacarey  
Update CP's MIU diagram per 32-bit interface POR.

Change 9001 on 2001/11/01 by jacarey@fl\_jacarey  
Rename CP-to-RBBM Interface

Change 8999 on 2001/11/01 by jacarey@fl\_jacarey  
Diagram of CP-to-RBBM Interface Unit

Change 8988 on 2001/11/01 by jacarey@fl\_jacarey  
Diagram of Index DMA Engine in CP for the PA.

Change 8961 on 2001/11/01 by wlawless@wlawless

Change 8932 on 2001/10/31 by kcorrell@KCORRELL  
oops this is what was supposed to be submitted the last time...

Change 8927 on 2001/10/31 by kcorrell@KCORRELL  
adding some new block diagrams and did a major reorg of the MH document

Change 8597 on 2001/10/26 by pmitchel@pmitchel\_iris

Page 425 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

fixed tabular state machine description

Change 8595 on 2001/10/26 by pmitchel@pmitchel\_iris  
added dff vs always description

Change 8571 on 2001/10/26 by pmitchel@pmitchel\_iris  
changed filetype to exclusive edit

Change 8551 on 2001/10/26 by bbloemer@ma-jasonh  
Release with updates from review meetings.

Change 8404 on 2001/10/24 by mdoggett@MA\_MDOGGETT  
Small interface corrections and additions.

Change 8386 on 2001/10/24 by kcorrell@KCORRELL  
block diagram of MHC and MHA

Change 8369 on 2001/10/24 by rbeaudin@MA\_RAYB  
moved location of autoreg doc

Change 8358 on 2001/10/24 by lseiler@ma\_lseiler  
Render Backend Registers v0.2. Various changes from one-on-one reviews

Change 8332 on 2001/10/24 by rbeaudin@MA\_RAYB  
more doc info

Change 8286 on 2001/10/23 by jacarey@fl\_jacarey  
Checkpoint CP & RBBM Requirements Matrix

Change 8283 on 2001/10/23 by jacarey@fl\_jacarey  
Checkpoint of All CP Specs (Not Complete)

Change 8282 on 2001/10/23 by jacarey@fl\_jacarey  
Checkpoint RBBM Spec:  
1. Byte-Enables are now BE  
2. Clarifications on CP "non-queued" data path.

Change 8280 on 2001/10/23 by rbeaudin@MA\_RAYB

Page 426 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

added new block interfaces

Change 8256 on 2001/10/23 by paulv@MA\_PVELLA  
Updated DBR and RRA sections, with updates to functional and architectural descriptions, along with updates to the block diagrams. Also started Tag Sequencer subsection.

Change 8200 on 2001/10/22 by bbloemer@ma-jasonh  
Some of the changes from the style guide meetings.

Change 8170 on 2001/10/22 by jacarey@fl\_jacarey  
Baseline Beginnings of Stream Fetcher Diagram

Change 8167 on 2001/10/22 by paulv@MA\_PVELLA  
Forgot to fix the DISP routing. It is done.

Change 8161 on 2001/10/22 by wlawless@wlawless  
new file

Change 8153 on 2001/10/22 by jacarey@fl\_jacarey  
Update CP Memory Interface Unit Diagram.

Change 8146 on 2001/10/22 by paulv@MA\_PVELLA  
Fixed block diagram to reflect recent functional/architectural changes.

Change 8114 on 2001/10/19 by kcorrell@KCORRELL  
Modified connections to AIC interface block (HMB)

Change 8111 on 2001/10/19 by jacarey@fl\_jacarey  
Memory Hub Interface Unit Diagram for CP.

Change 8106 on 2001/10/19 by jayw@MA\_JAYW  
Jay's exploration of recip

Change 8050 on 2001/10/18 by jacarey@fl\_jacarey  
RBBM Specification Version 0.02  
Checkpoint CP Specification and PM4 Specification

Page 427 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 8011 on 2001/10/18 by mdoggett@MA\_MDOGGETT  
a few interface changes

Change 7974 on 2001/10/17 by paulv@MA\_PVELLA  
Refixed block diagram (what I had before last revision was mostly correct).

Change 7923 on 2001/10/17 by jhoule@MA\_JHOULE  
Removed PRINT field.

Change 7884 on 2001/10/16 by jhoule@MA\_JHOULE  
Added constant store and instruction store in the interface portion.

Change 7824 on 2001/10/16 by jhoule@MA\_JHOULE  
Cleaning up of interfaces. Removed duplicates.

Change 7809 on 2001/10/15 by paulv@MA\_PVELLA  
Fixed DBR and RRA sections with new I/O and logic adjustments.

Change 7808 on 2001/10/15 by paulv@MA\_PVELLA  
Updated block diagram to fix I/O and some logic changes.

Change 7806 on 2001/10/15 by paulv@MA\_PVELLA  
Updated block diagram to include AIC address and byte swap I/O.

Change 7779 on 2001/10/15 by jhoule@MA\_JHOULE  
Minor corrections here and there.

Change 7722 on 2001/10/12 by paulv@MA\_PVELLA  
Minor fix the the RRA block diagram (changed the tag info FIFO to a tag info RAM).

Change 7703 on 2001/10/12 by jacarey@fl\_jacarey  
Update Interrupt Registers in the CP.

Change 7684 on 2001/10/12 by jhoule@MA\_JHOULE  
Major reorganization of sections.  
Not revision-savvy.

Page 428 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 7683 on 2001/10/12 by jhoule@MA\_JHOULE  
 Added Output Formatter at the end (regroups into a quad, and converts to floats).

Change 7667 on 2001/10/12 by jacarey@fl\_jacarey  
 Checkpoint write-up of interrupt generation.

Change 7645 on 2001/10/11 by paulv@MA\_PVELLA  
 Fixed Data Bus Router (HDP client needed to be added).

Change 7631 on 2001/10/11 by jhoule@MA\_JHOULE  
 New Block Description (reorganization underway).

Change 7615 on 2001/10/11 by paulv@MA\_PVELLA  
 Minor fix.

Change 7611 on 2001/10/11 by lseiler@ma\_lseiler  
 First draft of Render Backend register field list

Change 7581 on 2001/10/11 by paulv@MA\_PVELLA  
 Updated block diagram to reflect recent changes (see spec).

Change 7580 on 2001/10/11 by paulv@MA\_PVELLA  
 Updated Data Bus Router section.

Change 7554 on 2001/10/10 by jacarey@fl\_jacarey  
 Updated some state PM4 packets -- Checkpoint of document.

Change 7487 on 2001/10/09 by jhoule@MA\_JHOULE  
 Accepted all changes.  
 Various minor tweaks here and there (notably, issues aren't headings anymore).

Change 7461 on 2001/10/09 by jhoule@MA\_JHOULE  
 Better add the top-level diagram if I want people to see it...

Change 7460 on 2001/10/09 by jhoule@MA\_JHOULE  
 Added new top-level diagram.  
 Description of pipe in features to give a good idea of where we are heading.

Page 429 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 7420 on 2001/10/08 by jacarey@fl\_jacarey  
 Incremental Update

Change 7418 on 2001/10/05 by paulv@MA\_PVELLA  
 Another big update to RRA (with new understanding of subblock, functionality defined in much better detail). Also fixed DBR subblock section to reflect removal of BUFFER\_FULL flags (now done in RRA).

Change 7417 on 2001/10/05 by paulv@MA\_PVELLA  
 Updated diagram to reflect recent changes/adjustments.

Change 7411 on 2001/10/05 by jhoule@MA\_JHOULE  
 Week end check in (minor corrections, mostly formatting).

Change 7371 on 2001/10/05 by mdoggett@MA\_MDOGGETT  
 small changes to MC interfaces

Change 7370 on 2001/10/05 by mdoggett@MA\_MDOGGETT  
 0.4 revision, final check in for major changes (that's the idea at least)

Change 7361 on 2001/10/05 by jhoule@MA\_JHOULE  
 Walkers more up-to-date.  
 Described a bit the samples fetching (pt, bilin, arbi).

Change 7350 on 2001/10/04 by paulv@MA\_PVELLA  
 New block diagram for Read Return Arbitrator (RRA).

Change 7349 on 2001/10/04 by paulv@MA\_PVELLA  
 Added block diagram to RRA section along with more documentation (functional/interface).

Change 7335 on 2001/10/04 by jhoule@MA\_JHOULE  
 Updated the LOD computation pseudo-code.  
 This has to update walkers (with diagram), and the clamp logic (since it's now in float around [0,1] with clamp and mirror flags).

Change 7290 on 2001/10/04 by rbeaudin@Crayola\_NT\_Emu

Page 430 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

more doc

Change 7242 on 2001/10/03 by rbeaudin@MA\_RAYB  
 numbers library

Change 7231 on 2001/10/03 by rbeaudin@Crayola\_NT\_Emu  
 more docs

Change 7224 on 2001/10/03 by rbeaudin@MA\_RAYB  
 new doc stuff

Change 7192 on 2001/10/02 by paulv@MA\_PVELLA  
 Some minor updates.

Change 7185 on 2001/10/02 by rbeaudin@MA\_RAYB  
 corrected documentation

Change 7149 on 2001/10/01 by wlawless@wlawless  
 nothing

Change 7102 on 2001/09/28 by paulv@MA\_PVELLA  
 Fixed the data bus router's block diagram. Some minor document tweaks.

Change 7088 on 2001/09/28 by mdoggett@MA\_MDOGGETT  
 More changes.

Change 7050 on 2001/09/27 by paulv@MA\_PVELLA  
 A portion of the old Read Return Arbitrator has become what is now known as the Data Bus Router. This is the block diagram.

Change 7044 on 2001/09/27 by jhoule@MA\_JHOULE  
 Aesthetic modifications.  
 Table of contents now has correct number sizes!! (hurray!)  
 Thanks to Mike "Vege-mate" Doggett for this...

Change 6992 on 2001/09/27 by rbeaudin@MA\_RAYB  
 more doc stuff

Page 431 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 6989 on 2001/09/27 by rbeaudin@MA\_RAYB  
 more doc stuff

Change 6970 on 2001/09/26 by jacarey@fl\_jacarey  
 Lots of Update on:  
 1. Real-Time Stream Algorithm and Description  
 2. State Management Processing

Updated requirement matrix for CP.

Change 6889 on 2001/09/25 by askende@andi\_docs  
 newest version

Change 6878 on 2001/09/25 by mdoggett@MA\_MDOGGETT  
 major changes to document structure and content.  
 progress checkin before version 0.4

Change 6859 on 2001/09/24 by rbeaudin@MA\_RAYB  
 more doc stuff

Change 6840 on 2001/09/24 by jacarey@fl\_jacarey  
 Add CP/RBBM Requirements Matrix to Perforce

Change 6839 on 2001/09/24 by jacarey@fl\_jacarey  
 Checkpoint On-Going Updates to Documents.

Change 6833 on 2001/09/24 by wlawless@wlawless  
 updated revision code

Change 6832 on 2001/09/24 by rbeaudin@MA\_RAYB  
 doc update

Change 6790 on 2001/09/21 by lfebv@lfebvrv\_laptop\_r400  
 RE spec backup + HZ stats + SC spec backup

Change 6758 on 2001/09/20 by wlawless@wlawless

Page 432 of 441  
 Ex. 2050 --- R400 Document Library FH --- folder\_history





Slight update

Change 6757 on 2001/09/20 by jacarey@fl\_jacarey

CP Spec:

1. Added registers for Real-Time Event Engine Control
2. Added some registers for state management control

PM4 Spec:

1. Updated text for the state management packets.
2. Updated text for synchronization packets.

Change 6739 on 2001/09/20 by rbeaudin@MA\_RAYB

more documentation

Change 6724 on 2001/09/20 by rbeaudin@Crayola\_NT\_Emu

more documentation

Change 6529 on 2001/09/14 by ccoveney@chrisc\_r400\_docs

Finished this most of the way up.. may still need to correct some things but this is the fairly close to final version

Change 6478 on 2001/09/14 by rbeaudin@MA\_RAYB

new doc

Change 6438 on 2001/09/13 by rbeaudin@MA\_RAYB

emulator documentation

Change 6425 on 2001/09/13 by sellen@ma\_sallen

Final update. Needs cons information...

Change 6317 on 2001/09/11 by jhoule@MA\_JHOULE

Minor LODBias correction in LOD computation pseudo-code.

Change 6274 on 2001/09/10 by ccoveney@chrisc\_r400\_docs

Added description and screenshots of how to change clients in perforce

Change 6252 on 2001/09/10 by ccoveney@chrisc\_r400\_docs

This file has a short description of some specific details that help out with running perforce integrated with Developer Studio.

Page 433 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 6251 on 2001/09/10 by ccoveney@chrisc\_r400\_docs

This is the documentation file for using the new parameterized test library that's found in //depot/r400/verification/param\_test

Change 6091 on 2001/09/05 by jacarey@fl\_jacarey

General Checkpoint of Documentation

Change 5777 on 2001/08/28 by lseiler@ma\_lseiler

Version 0.5a -- fixed typos in the bus interface tables

Change 5537 on 2001/08/21 by wlawless@wlawless

RB Hardware Design Spec

Change 5466 on 2001/08/17 by askende@andi\_docs

new rev of the spec

Change 5465 on 2001/08/17 by jhoule@MA\_JHOULE

Better LOD algorithm (leaner and better... now uses log2)

Change 5384 on 2001/08/15 by jhoule@MA\_JHOULE

Initial check-in.

This file gives supplemental information on design decisions, notations, algorithms and various other underlying stuff.

It helps explain more, but reduce the already too big texture spec.

Change 5383 on 2001/08/15 by jhoule@MA\_JHOULE

File wasn't saved (sorry).

Change 5382 on 2001/08/15 by jhoule@MA\_JHOULE

Added LOD computation (with correction), samples walking (trilinear and anisotropic), and texel fetching (with wrapping policy table) in the logic description.

Change 5365 on 2001/08/15 by pmitchel@pmitchel\_iris

changed 'define section

Change 5275 on 2001/08/13 by pmitchel@pmitchel\_iris

fixed 'define section

Page 434 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 5175 on 2001/08/09 by lseiler@ma\_lseiler

Memory Controller, v0.5: removed autotag feature, changed bus/signal names and other stuff

Change 5141 on 2001/08/08 by pmitchel@pmitchel\_test\_client

add

Change 5136 on 2001/08/08 by bbloemer@ma-jasonh

More coding guidelines stuff.

Change 5129 on 2001/08/08 by pmitchel@pmitchel\_test\_client

test

Change 5090 on 2001/08/07 by pmitchel@pmitchel\_test\_client

add

Change 5049 on 2001/08/06 by pmitchel@pmitchel\_test\_client

additional comments on style guide

Change 5038 on 2001/08/03 by pmitchel@pmitchel\_r400\_docs

filled paragraphs to get rid of overly long lines

Change 5016 on 2001/08/03 by lfebevrv@lfebevrv\_laptop\_r400

setup unit revised spec

Change 4980 on 2001/08/01 by lfebevrv@lfebevrv\_laptop\_r400

new spec for SC and RE. Changed a bit the interface to encompass the fact that RE is now using the full precision normalized slopes from the SU because it takes the same number of bits than doing a per tile compression for the barycentric coordinates and it also simplifies a lot the SC.

Change 4960 on 2001/08/01 by askende@andi\_docs

new rev

Change 4929 on 2001/07/31 by askende@andi\_docs

a new rev

Page 435 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 4919 on 2001/07/31 by bbloemer@ma-jasonh

Added Verilog style guide stuff.

Change 4854 on 2001/07/30 by mdoggett@MA\_MDOGGETT

Updates to most sections.

Change 4769 on 2001/07/26 by jacarey@fl\_jacarey

Update Visio Diagrams

1. Chip Arch with RBBM
2. Read Data Path Diagram

Change 4756 on 2001/07/26 by pmitchel@pmitchel\_iris

see if John Carey gets email

Change 4736 on 2001/07/26 by jacarey@fl\_jacarey

Moved Original CP and RBBM Specs from ../arch/doc to ../doc/lib/chip/<unit> areas.

Change 4711 on 2001/07/25 by jacarey@fl\_jacarey

Visio Diagram Used in the RBBM Specification

Change 4710 on 2001/07/25 by jacarey@fl\_jacarey

Sweeping Updates to RBBM Spec:

1. Obsolete text deleted or crossed-out.
2. Questions inserted in document text.
3. Interfaces should be correct.

\*\* Have Fun ! \*\*

Change 4674 on 2001/07/24 by askende@andi\_docs

new rev

Change 4597 on 2001/07/20 by jhoule@MA\_JHOULE

Many minor corrections: some aesthetic, some (hopefully) helpful to understand more clearly, others are comments for Steve.

Change 4586 on 2001/07/20 by jhoule@MA\_JHOULE

Minor changes: changed header for cleaner ones as well as Title Field (no more Top Level Spec).

Page 436 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history



Change 4359 on 2001/07/16 by askende@andi\_docs  
new rev

Change 4207 on 2001/07/11 by askende@andi\_docs  
new rev

Change 4206 on 2001/07/11 by askende@andi\_docs  
fixed a few typos

Change 4205 on 2001/07/11 by lseiler@ma\_lseiler  
More v0.2 files

Change 4200 on 2001/07/11 by lseiler@ma\_lseiler  
Render Backend: version 0.2 with greatly revised Paramater Buffer and Tile Logic sections

Change 4162 on 2001/07/10 by askende@andi\_docs  
new rev of the hardware spec

Change 4033 on 2001/07/06 by askende@andi\_docs  
update of the specs

Change 4010 on 2001/07/06 by smorein@smorein\_r400  
major texture pipe spec update- complete except for addressing logic. Could use some more editing, and probably more block diagrams.

Change 4001 on 2001/07/05 by lfebevr@lfebevr\_laptop\_r400  
lockin is on

Change 3994 on 2001/07/05 by lfebevr@lfebevr\_laptop\_r400  
updated scan converter spec

Change 3988 on 2001/07/05 by jacarey@fl\_jacarey  
Initial Baseline from R300 plus listing of some open items.

Change 3980 on 2001/07/05 by jacarey@fl\_jacarey  
Baseline PM4 Packet Spec for CP from R300 (Khan)

Page 437 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

\*\* Note: Entire document may become obsolete or be revised depending on architecture decisions for the CP \*\*\*

Change 3979 on 2001/07/05 by jacarey@fl\_jacarey  
Baseline R300's CP Test Bus Spec for R400

Change 3975 on 2001/07/05 by jacarey@fl\_jacarey  
Baseline RBBM Unit Spec and Test Bus Document from R300. Included sections from the R400 RBBM Spec.doc in the ./arch/chip area. \*\* Document is Initial Version ONLY - Lot of work is still required \*\*

Change 3908 on 2001/07/03 by lseiler@ma\_lseiler  
FrameBuf v0.3: some extra compressed and 3d formats, minor changes

Change 3871 on 2001/07/02 by mdoggett@MA\_MDOGGETT  
Minor updates to Memory Hub spec

Change 3680 on 2001/06/25 by lseiler@ma\_lseiler  
Frame Buffer Format, v0.2: complete rewrite

Change 3588 on 2001/06/21 by smorein@smorein\_r400  
Major update. There are still a bunch of inconsistencies (and misspellings) but enough there for people closely associated with the block to need to go through it.

Change 3585 on 2001/06/20 by askende@andi\_docs  
new rev

Change 3574 on 2001/06/20 by askende@andi\_docs  
new rev

Change 3565 on 2001/06/19 by askende@andi\_docs  
new rev

Change 3560 on 2001/06/19 by askende@andi\_docs  
new rev

Change 3558 on 2001/06/19 by askende@andi\_docs  
new rev

Page 438 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

another rev

Change 3553 on 2001/06/19 by askende@andi\_docs  
another rev (rev.03) of the shader spec

Change 3476 on 2001/06/13 by smorein@smorein\_r400  
Texture pipe update

Change 3446 on 2001/06/12 by smorein@smorein\_r400  
simple update, need to do a more complete update

Change 3445 on 2001/06/12 by smorein@smorein\_r400  
added old version of chip presentation

Change 3428 on 2001/06/11 by smorein@smorein\_r400  
Adding a bunch of files

Change 3371 on 2001/06/08 by lfebevr@lfebevr\_laptop\_r400  
spec backup

Change 3330 on 2001/06/07 by lfebevr@lfebevr\_laptop\_r400  
safety backup

Change 3311 on 2001/06/06 by lseiler@ma\_lseiler  
Memory Controller: version 0.4, added internal interfaces and improved the Ordering Engine

Change 3141 on 2001/05/29 by smorein@smorein\_r400  
added memory hub spec. I am not happy with it, and this block wins the prize for most likely to be compleatly redesigned.

Change 3138 on 2001/05/29 by askende@andi\_docs  
more updates to the spec

Change 3104 on 2001/05/25 by lfebevr@lfebevr\_laptop\_r400  
new spin on RE, SC, Bary

Change 3020 on 2001/05/21 by askende@andi\_docs

Page 439 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

another revision of the shader spec

Change 3008 on 2001/05/21 by smorein@smorein\_r400  
partial update to texture spec

Change 2720 on 2001/05/10 by lseiler@ma\_lseiler  
Memory Controller rev 0.3: lots more details, including the external interface

Change 2712 on 2001/05/09 by askende@andi\_docs  
more updates

Change 2709 on 2001/05/09 by sallan@ma\_sallen  
add testenv spec

Change 2700 on 2001/05/09 by askende@andi\_docs  
Shader specifications

Change 2679 on 2001/05/09 by ccoveney@chrisc\_r400  
added some possible command descriptions and a sample header from the pp6\_blend\_all\_param.dat file

Change 2651 on 2001/05/08 by ccoveney@chrisc\_r400  
proofread and updates a few things

Change 2650 on 2001/05/08 by ccoveney@chrisc\_r400  
This file contains the proposal for the new parameterized test methodology that will be implemented for R400 verification.

Change 2649 on 2001/05/08 by lfebevr@lfebevr\_laptop\_r400  
New version of the scan converter, ready for review

Change 2570 on 2001/05/04 by lfebevr@lfebevr\_laptop\_r400  
Spin on some specs, not all complete be checked in for safety

Change 2569 on 2001/05/04 by lfebevr@lfebevr\_laptop\_r400  
new spin on setup

Page 440 of 441  
Ex. 2050 --- R400 Document Library FH --- folder\_history

Change 2508 on 2001/05/02 by llefebvr@llefebvre\_laptop\_r400  
about to change the walking algorithm and want to keep the old one...

Change 2358 on 2001/04/26 by lseiler@ma\_lseiler  
Render Backend first spec version

Change 2240 on 2001/04/17 by lseiler@ma\_lseiler  
Memory controller architectural specs and related documents

Change 2107 on 2001/04/09 by llefebvr@llefebvr\_r400  
revised specs and walker

Change 1716 on 2001/03/14 by llefebvr@llefebvr\_r400  
specs for Raster block, SC, SU, HZ + stats for HZ precision

Change 1551 on 2001/02/27 by llefebvr@llefebvr\_r400  
SC and RS specs

Change 1489 on 2001/02/23 by llefebvr@llefebvr\_r400  
specs for the raster engine and scan converter

Change 1461 on 2001/02/22 by llefebvr@llefebvr\_r400  
SC specs and stats for the raster efficiencies...

Change 871 on 2001/02/02 by smorein@smorein\_r400  
Added a bunch of new documents, also updated area

Change 400 on 2000/11/01 by pmitchel@\_pmitchel  
Initial creation of r400 area under //depot

Page 441 of 441

Ex. 2050 --- R400 Document Library FH --- folder\_history

AMD1044\_0016453