### CLASS 345 COMPUTER GRAPHICS PROCESSING AND SELECTIVE VISUAL DIS-PLAY SYSTEMS 345 - 1

|     |                                 | C11     |                                |
|-----|---------------------------------|---------|--------------------------------|
| 418 | COMPUTER GRAPHICS PROCESSING    | 611     | Anti-aliasing or image         |
| 419 | .Three-dimension                | 610     | smoothing                      |
| 420 | Solid modelling                 | 612     | Save attributes for each       |
| 421 | Hidden line/surface determining |         | object affecting a given pixel |
| 422 | Z buffer (depth buffer)         | 613     | Subpixel processing            |
| 423 | Tessellation                    | 614     | Pixel fragment                 |
| 424 | Voxel                           | 615     | Convolving technique           |
| 426 | Lighting/shading                | 616     | Error diffusion                |
| 427 | Space transformation            | 617     | Contrast                       |
| 428 | .Adjusting level of detail      | 618     | Image with abnormal condition  |
| 581 | Attributes (surface detail or   | 619     | .Graphic manipulation (object  |
| 001 | characteristic, display         |         | processing or display          |
|     | attributes)                     |         | attributes)                    |
| 582 | Texture                         | 620     | Clipping                       |
| 583 | Solid Texture                   | 621     | Based on model of objects      |
| 584 | Bump map                        | 622     | Testing or using bounding      |
| 585 | Non-planar surface              |         | shape (e.g., bounding box      |
| 586 |                                 |         | sphere)                        |
| 587 | Mathematically defined          | 623     | Object clipped to view volume  |
|     | MIP map                         | 624     | Object clipped to another      |
| 588 | Repeating pattern               |         | object                         |
| 589 | Color or intensity              | 625     | Based on image data            |
| 590 | Gamut clipping or adjustment    | 626     | Masking                        |
| 591 | Color processing in perceptual  | 627     | Non-rectangular array          |
|     | color space                     | 628     | Rectangular region             |
| 592 | Transparency (mixing color      | 629     | Merge or overlay               |
|     | values)                         | 630     | Combining model                |
| 593 | Color selection                 | 050     | representations                |
| 594 | Using GUI                       | 631     | Reducing redundancy            |
| 595 | Expert system or AI             | 632     | Placing generated data in real |
| 596 | Dither or halftone              | 052     | scene                          |
| 597 | Color                           | 633     | Augmented reality (real-time)  |
| 598 | Spatial                         | 634     |                                |
| 599 | Spatial                         | 635     | Image based                    |
| 600 | Color bit data modification or  |         | Non-overlapping                |
|     | conversion                      | 636     | Character and graphics         |
| 601 | Using look up table             | 637     | Priority based                 |
| 602 | Plural look up tables           | 638     | Insertion of bitmapped moving  |
| 603 | Format change (e.g., NTSC to    | 62.0    | picture                        |
|     | RGB, RGB to composite, XYZ to   | 639     | Weighted                       |
|     | RGB)                            | 640     | Weights vary across image      |
| 604 | Color space transformation      |         | (e.g., transition from         |
|     | (e.g., RGB to YUV)              | <i></i> | foreground to background)      |
| 605 | Change in number of bits for    | 641     | Fixed overlay pattern          |
|     | a designated color (e.g., 4     | 642     | Picking                        |
|     | bits to 8 bits, 8 bits to 4     | 643     | Arithmetic processing of image |
|     | bits)                           |         | data                           |
| 606 | Interpolation of attribute      | 644     | Matrix calculations            |
|     | values across object surface    | 645     | Hierarchy of transformations   |
| 607 | In perspective                  |         | (e.g., hierarchy of global and |
| 608 | Tri-linear                      |         | local coordinate)              |
| 609 | Bi-linear                       | 646     | Morphing                       |
| 610 | Linear                          | 647     | Distortion                     |
|     |                                 | 648     | Affine                         |
|     |                                 |         |                                |

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#### 345 - 2 CLASS 345 COMPUTER GRAPHICS PROCESSING AND SELECTIVE VISUAL DIS-PLAY SYSTEMS

| 649   | Rotation   | 689   | Textual entry or display of  |
|---|--|---|--|
| 650   | Graphical user interface tools   |   | manipulation information   |
| 651   | Alignment functions (e.g.,   |   | (e.g., enter or display degree   |
|   | snapping, gravity)   |   | of rotation)   |
| 652   | Constrained manipulations  | 440   | .Graph generating  |
|   | (e.g., movement in less than   | 440.1   | Real-time waveform display   |
|   | all dimensions)  | 440.2   | Bar graph  |
| 653   | 3D manipulations   | 441   | .Shape generating  |
| 654   | 2D manipulations   | 442   | Curve  |
| 655   | Object based   | 443   | Straight line  |
| 656   | Image based (addressing)   | 467   | .Character generating  |
| 657   | By arbitrary angle   | 468   | Character geometry processing  |
| 658   | By 90 degrees increment  | 469   | Character generation using   |
| 659   | Image rotates in response to   | 100 1   | control points or hints  |
| 660   | display device orientation   | 469.1   | Character border   |
| 660   | Scaling  | 470   | Generating character fill data   |
| 661   | Graphical user interface tools   | 171   | from outline data  |
| 662   | Alignment functions (e.g.,   | 471   | Alteration of stored font  |
| 662   | snapping, gravity)   | 472<br>472.1  | Scaling  |
| 663   | Constrained manipulations  | 472.1   | Reduction only   |
|   | (i.e., movement in less than all dimensions)   | 472.2   | Enlargement only   |
| 664   | 3D manipulations   | 472.3<br>473  | Calligraphic<br>.Animation   |
| 665   | 2D manipulations   | 473<br>474  |  |
| 666   | Object based   | 474<br>475  | Motion planning or control   |
| 667   | Image based (addressing)   | 4/5   | Temporal interpolation or  |
|   |  |   | processing   |
| 668   | By arbitrary ratio   | 156   | DIGDIAY DEDIDUEDAI INMEDEACE   |
| 668<br>669  | By arbitrary ratio   | 156   | DISPLAY PERIPHERAL INTERFACE   |
| 669   | By integer multiples   |   | INPUT DEVICE   |
| 669<br>670  | By integer multiplesReduction only   | 156<br>157  | <b>INPUT DEVICE</b><br>.Cursor mark position control   |
| 669<br>670<br>671   | By integer multiples<br>Reduction only<br>Enlargement only   | 157   | <b>INPUT DEVICE</b><br>.Cursor mark position control device  |
| 669<br>670<br>671<br>672  | By integer multiples<br>Reduction only<br>Enlargement only<br>Translation  |   | <b>INPUT DEVICE</b><br>.Cursor mark position control<br>device<br>Including orientation sensors  |
| 669<br>670<br>671<br>672<br>673   | By integer multiples<br>Reduction only<br>Enlargement only<br>Translation<br>Averaging technique   | 157   | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,</pre>   |
| 669<br>670<br>671<br>672  | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create</pre>   | 157   | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674  | <ul> <li>By integer multiples</li> <li>Reduction only</li> <li>Enlargement only</li> <li>Translation</li> <li>Averaging technique</li> <li>Copying data to create<br/>additional rows or columns</li> </ul>  | 157<br>158  | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,</pre>   |
| 669<br>670<br>671<br>672<br>673   | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools</pre>   | 157<br>158<br>159   | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speed</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676   | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,</pre>  | 157<br>158<br>159<br>160  | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor key</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676   | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)</pre>   | 157<br>158<br>159<br>160<br>161   | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystick</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677  | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,</pre>  | 157<br>158<br>159<br>160<br>161<br>162  | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystickPositional storage means</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677  | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations</pre>   | 157<br>158<br>159<br>160<br>161<br>162<br>163   | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystickPositional storage meansMouse</pre>   |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677  | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than</pre>  | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164  | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystickPositional storage meansMouseRotatable ball detector</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677  | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)</pre>  | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165   | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder</pre>   |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678   | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations</pre>   | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166                                    | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder<br/>Optical detector</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>679<br>680   | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations</pre>  | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167                             | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder<br/>Optical detector<br/>Trackball</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>679<br>680<br>681  | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations<br/>Object based</pre>   | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168                      | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystickPositional storage meansMouseRotatable ball detectorPhotosensor encoderOptical detectorTrackball .Including keyboard</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>678<br>679<br>680<br>681<br>682                                    | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations<br/>Object based<br/>Image based (addressing)</pre>  | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168                      | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystickPositional storage meansMouseRotatable ball detectorPhotosensor encoderOptical detectorTrackball .Including keyboardPortable (i.e., handheld,</pre>   |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>679<br>680<br>681<br>682<br>683<br>684<br>685                      | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>3D manipulations<br/>Object based<br/>Image based (addressing)<br/>Sprite</pre>   | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168<br>169               | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder<br/>Optical detector<br/>Trackball<br/>Including keyboard<br/>Portable (i.e., handheld,<br/>calculator, remote controller)</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>679<br>680<br>681<br>682<br>683<br>684<br>685<br>686               | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations<br/>Object based<br/>Image based (addressing)<br/>Sprite<br/>Scrolling</pre>   | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168<br>169               | <pre>INPUT DEVICE .Cursor mark position control   deviceIncluding orientation sensors   (e.g., infrared, ultrasonic,   remotely controlled)Having variable cursor speedCursor keyJoystickPositional storage meansMouseRotatable ball detectorPhotosensor encoderOptical detectorTrackball .Including keyboardPortable (i.e., handheld,   calculator, remote controller)Light source associated with</pre>  |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>678<br>679<br>680<br>681<br>682<br>683<br>684<br>685<br>686<br>687 | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations<br/>Object based<br/>Image based (addressing)<br/>Sprite<br/>Scrolling<br/>Alphanumeric</pre>  | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168<br>169<br>170        | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder<br/>Optical detector<br/>Trackball<br/>Including keyboard<br/>Portable (i.e., handheld,<br/>calculator, remote controller)<br/>Light source associated with<br/>each key<br/>Having foreign language<br/>capability (e.g., Japanese,</pre>              |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>679<br>680<br>681<br>682<br>683<br>684<br>685<br>686               | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations<br/>Object based<br/>Image based (addressing)<br/>Sprite<br/>Scrolling<br/>Alphanumeric<br/>Memory addressing</pre>                          | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168<br>169<br>170<br>171 | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder<br/>Optical detector<br/>Trackball<br/>Including keyboard<br/>Portable (i.e., handheld,<br/>calculator, remote controller)<br/>Light source associated with<br/>each key<br/>Having foreign language<br/>capability (e.g., Japanese,<br/>Chinese)</pre> |
| 669<br>670<br>671<br>672<br>673<br>674<br>676<br>677<br>678<br>678<br>679<br>680<br>681<br>682<br>683<br>684<br>685<br>686<br>687 | <pre>By integer multiples<br/>Reduction only<br/>Enlargement only<br/>Translation<br/>Averaging technique<br/>Copying data to create<br/>additional rows or columns<br/>Graphical user interface tools<br/>Alignment functions (e.g.,<br/>snapping, gravity)<br/>Constrained manipulations<br/>(i.e., movement in less than<br/>all dimensions)<br/>3D manipulations<br/>2D manipulations<br/>Object based<br/>Image based (addressing)<br/>Sprite<br/>Scrolling<br/>Alphanumeric<br/>Memory addressing<br/>Smooth or continuous</pre> | 157<br>158<br>159<br>160<br>161<br>162<br>163<br>164<br>165<br>166<br>167<br>168<br>169<br>170        | <pre>INPUT DEVICE<br/>.Cursor mark position control<br/>device<br/>Including orientation sensors<br/>(e.g., infrared, ultrasonic,<br/>remotely controlled)<br/>Having variable cursor speed<br/>Cursor key<br/>Joystick<br/>Positional storage means<br/>Mouse<br/>Rotatable ball detector<br/>Photosensor encoder<br/>Optical detector<br/>Trackball<br/>Including keyboard<br/>Portable (i.e., handheld,<br/>calculator, remote controller)<br/>Light source associated with<br/>each key<br/>Having foreign language<br/>capability (e.g., Japanese,</pre>              |

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#### CLASS 345 COMPUTER GRAPHICS PROCESSING AND SELECTIVE VISUAL DIS-345 - 3 PLAY SYSTEMS

|  |   | 540   |   |
|--|---|---|---|
| 174  | Including impedance detection   | 548   | Off-screen memory   |
| 175  | Including optical detection   | 549   | Color memory  |
| 176  | Transparent substrate having  | 550   | Multiple planes   |
|  | light entrapment capability   | 551   | Character memory  |
|  | (i.e., waveguides)  | 552   | .Texture memory   |
| 177  | Including surface acoustic  | 553   | .Display list memory  |
| ± / /  | detection   |   |   |
| 170  |   | 554   | .Multi-port memory  |
| 178  | With alignment or calibration   | 555   | .For storing compressed data  |
|  | capability (i.e., parallax<br>problem)  | 556   | .For storing condition code, flag<br>or status  |
| 179  | .Stylus   | 557   | .Cache  |
| 180  | .Light pen for CRT display  | 558   | .First in first out (i.e., FIFO)  |
| 181  | CRT having tracking capability  | 559   | .Register   |
| 182  | .Light pen for fluid matrix   |   | 5   |
| 102  | display panel   | 560   | .Row buffer (e.g., line memory)   |
| 102  |   | 561   | .Logical operations   |
| 183  | Light pen for controlling plural  | 562   | Bit block transfer  |
|  | light-emitting display  | 563   | Mask data operation   |
|  | elements (e.g., LED, lamps)   | 564   | .Addressing   |
| 184  | .Mechanical control (e.g.,  | 565   | Using memory for storing  |
|  | rotatable knob, slider)   |   | address information   |
| 501  | COMPUTER GRAPHIC PROCESSING   | 566   | Address manipulation  |
|  | SYSTEM  | 567   | Using decoding  |
| 502  | .Plural graphics processors   |   |   |
| 503  | Coprocessor (e.g., graphic  | 568   | Address translation (e.g.,  |
| 505  | accelerator)  |   | between virtual and physical addresses)   |
| 504  | Master-slave processors   | 569   | For 2D coordinate to linear   |
| 505  | Parallel processors (e.g.,  |   | address conversion  |
|  | identical processors)   | 570   | Page mode   |
| 506  | Pipeline processors   | 571   | 5   |
|  |   | J/1   | Memory addresses arranged in  |
| 519  | Integrated circuit (e.g., single  |   |   |
| 519  | .Integrated circuit (e.g., single   |   | matrix row and column   |
|  | chip semiconductor device)  |   | addresses)  |
| 520  | chip semiconductor device)<br>.Interface (e.g., controller)   | 572   | addresses)<br>Address generator   |
| 520<br>522   | chip semiconductor device)<br>.Interface (e.g., controller)<br>.Graphic command processing  | 573   | addresses)  |
| 520  | chip semiconductor device)<br>.Interface (e.g., controller)<br>.Graphic command processing<br>COMPUTER GRAPHICS DISPLAY MEMORY  | -   | addresses)<br>Address generator   |
| 520<br>522<br>530  | chip semiconductor device)<br>.Interface (e.g., controller)<br>.Graphic command processing<br>COMPUTER GRAPHICS DISPLAY MEMORY<br>SYSTEM  | 573   | addresses)<br>Address generator<br>Plural address generators  |
| 520<br>522   | chip semiconductor device)<br>.Interface (e.g., controller)<br>.Graphic command processing<br>COMPUTER GRAPHICS DISPLAY MEMORY  | 573<br>574  | addresses)<br>Address generator<br>Plural address generators<br>Read/Write address generator<br><b>DISPLAY DRIVING CONTROL CIRCUITRY</b><br>.Physically integral with display   |
| 520<br>522<br>530<br>531   | chip semiconductor device)<br>.Interface (e.g., controller)<br>.Graphic command processing<br>COMPUTER GRAPHICS DISPLAY MEMORY<br>SYSTEM<br>.Graphic display memory<br>controller   | 573<br>574<br>204<br>205  | addresses)<br>Address generator<br>Plural address generators<br>Read/Write address generator<br><b>DISPLAY DRIVING CONTROL CIRCUITRY</b><br>.Physically integral with display<br>elements   |
| 520<br>522<br>530<br>531<br>532  | chip semiconductor device)<br>.Interface (e.g., controller)<br>.Graphic command processing<br>COMPUTER GRAPHICS DISPLAY MEMORY<br>SYSTEM<br>.Graphic display memory<br>controller<br>Plural memory controllers  | 573<br>574<br>204<br>205<br>206   | addresses)<br>Address generator<br>Plural address generators<br>Read/Write address generator<br><b>DISPLAY DRIVING CONTROL CIRCUITRY</b><br>.Physically integral with display<br>elements<br>Having common base or substrate  |
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| 520<br>522<br>530<br>531<br>532<br>533<br>534<br>535<br>536  | <pre>chip semiconductor device) .Interface (e.g., controller) .Graphic command processing COMPUTER GRAPHICS DISPLAY MEMORY SYSTEM .Graphic display memory controllerPlural memory controllersUsing different access modesMemory access timing signalsMemory arbitration .Plural storage devices</pre>   | 573<br>574<br>204<br>205<br>206<br>207                                    | addresses)<br>Address generator<br>Plural address generators<br>Read/Write address generator<br><b>DISPLAY DRIVING CONTROL CIRCUITRY</b><br>.Physically integral with display<br>elements<br>Having common base or substrate<br>.Light detection means (e.g.,<br>with photodetector)  |
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| 520<br>522<br>530<br>531<br>532<br>533<br>534<br>535<br>536<br>537<br>538<br>539<br>540<br>541                             | <pre>chip semiconductor device)<br/>.Interface (e.g., controller)<br/>.Graphic command processing<br/>COMPUTER GRAPHICS DISPLAY MEMORY<br/>SYSTEM<br/>.Graphic display memory<br/>controller<br/>.Plural memory controllers<br/>.Using different access modes<br/>.Memory access timing signals<br/>.Memory arbitration<br/>.Plural storage devices<br/>.Data transfer between memories<br/>Data transfer between system<br/>memory display memory<br/>.Double buffered<br/>.Interleaved<br/>.Shared memory</pre>   | 573<br>574<br>204<br>205<br>206<br>207<br>690<br>691                      | <pre>addresses)Address generatorPlural address generatorsRead/Write address generator DISPLAY DRIVING CONTROL CIRCUITRY .Physically integral with display     elementsHaving common base or substrate .Light detection means (e.g.,     with photodetector) .Intensity or color driving     control (e.g., gray scale)Temporal processing (e.g.,     pulse width variation over     timeBinary weightedNon-binary weightedSpatial processing (e.g.,</pre>   |
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| 520<br>522<br>530<br>531<br>532<br>533<br>534<br>535<br>536<br>537<br>538<br>539<br>540<br>541<br>542<br>543<br>544<br>545 | <pre>chip semiconductor device)<br/>.Interface (e.g., controller)<br/>.Graphic command processing<br/>COMPUTER GRAPHICS DISPLAY MEMORY<br/>SYSTEM<br/>.Graphic display memory<br/>controller<br/>.Plural memory controllers<br/>.Using different access modes<br/>.Using different access modes<br/>.Memory access timing signals<br/>.Memory arbitration<br/>.Plural storage devices<br/>.Data transfer between memories<br/>.Data transfer between system<br/>memory display memory<br/>.Double buffered<br/>.Interleaved<br/>.Shared memory<br/>.Unified memory architecture<br/>(e.g., UMA)<br/>.Memory allocation<br/>.Memory partitioning<br/>.Frame buffer</pre> | 573<br>574<br>204<br>205<br>206<br>207<br>690<br>691<br>692<br>693<br>694 | <pre>addresses)Address generatorPlural address generatorsRead/Write address generator DISPLAY DRIVING CONTROL CIRCUITRY .Physically integral with display     elementsHaving common base or substrate .Light detection means (e.g.,     with photodetector) .Intensity or color driving     control (e.g., gray scale)Temporal processing (e.g.,     pulse width variation over     timeBinary weightedNon-binary weightedSpatial processing (e.g.,     patterns or subpixel     configuration)Subpixels have different     shapesChanging of subpixel location</pre> |
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#### 345 - 4 CLASS 345 COMPUTER GRAPHICS PROCESSING AND SELECTIVE VISUAL DIS-PLAY SYSTEMS

| 698 | .Adjusting display pixel size or<br>pixels per given area (i.e.,<br>resolution) | 17<br>18<br>19 | Strokes for forming characters<br>Up/down counter<br>Impedance Array |
|-----|---|----------------|--|
| 699 | Controller automatically senses<br>monitor resolution                           | 20             | Impedance Array<br>.Data responsive intensity<br>control             |
| 208 | .Waveform generator coupled to  | 21             | Magnetic element array   |
| 200 | display elements  | 22             | .Color display   |
| 209 | Field period polarity reversal  | 23             | .Graphic and alphanumeric display                                    |
| 210 | Having three or more voltage  | 24             | .Graphic display   |
| 220 | levels  | 25             | .Alphanumeric display  |
| 211 | .Display power source   | 26             | Character generator  |
| 212 | Regulating means  | 20             | .Combined with storage means   |
| 213 | Synchronizing means   | 28             | Addressing   |
| 214 | .Controlling the condition of   | 29             | .Delay line  |
|     | display elements  | 30             | PLURAL PHYSICAL DISPLAY ELEMENT                                      |
| 215 | Including priming means   | 50             | CONTROL SYSTEM (E.G., NON-CRT)                                       |
| 1.1 | PLURAL DISPLAY SYSTEMS  | 31             | .Physically movable array  |
| 1.2 | .Data transmitted or received at  | 32             |  |
| 1.3 | .Tiling or modular adjacent   | 52             | .Optical means interposed in viewing path (e.g., filters,            |
| T.J | displays  | 33             | lens, etc.)  |
| 2.1 | .Remotely located   | 33<br>34       | .Segmented display elements  |
| 2.2 | Presentation of similar images  | 35             | Seven segment display  |
| 2.2 |   | 36             | Bar graph  |
| 3.1 |   | 20             | Electroluminescent display<br>elements                               |
| J.T | LCD interface)  | 37             |  |
| 3.2 | Frame, field or scan rate   | 57             | Gas discharge display segments                                       |
| 5.2 | conversion  | 38             | (e.g., plasma)   |
| 3.3 | Number of pixels per row or   | 20             | Liquid crystal display   |
| 5.5 | column conversion (i.e.,  | 39             | segments<br>Light-emitting diode segments                            |
|     | resolution conversion)  | 29             | (LEDS)   |
| 3.4 | Controller automatically  | 40             | Plural (e.g., stacked,   |
| 011 | senses monitor resolution   | 40             | adjacent)  |
| 4   | SINGLE DISPLAY SYSTEM HAVING  | 41             | Fluid light-emitting display   |
| -   | STACKED SUPERIMPOSED DISPLAY  | 41             | elements (e.g., gas, plasma)   |
|     | DEVICES (E.G., TANDEM)  | 42             | Controlling circuitry  |
| 5   | .Diverse display devices  | 43             | Mask or electrode shape  |
| 6   | .Three-dimensional arrays   | 44             | Solid light-emitting display   |
| 7   | IMAGE SUPERPOSITION BY OPTICAL  |                | elements   |
|     | MEANS (E.G., HEADS-UP DISPLAY)  | 45             | Electroluminescent   |
| 8   | .Operator body-mounted heads-up   | 46             | Light-emitting diodes  |
|     | display (e.g., helmet mounted   | 47             | Fluorescent elements   |
|     | display)  | 48             | Light-controlling display  |
| 9   | .Plural image superposition   |                | elements   |
| 10  | DATA RESPONSIVE CRT DISPLAY   | 49             | Electrochromic elements  |
|     | CONTROL   | 50             | Liquid crystal elements  |
| 11  | .CRT provides display control   | 51             | Display element selection  |
| 12  | .Data responsive deflection and   |                | circuitry  |
|     | intensity control   | 52             | Power supply generating  |
| 13  | .Data responsive deflection   |                | circuitry  |
|     | control   | 53             | Specific waveform (e.g.,   |
| 14  | X and Y axis deflection control   |                | square waveforms, sinusoidal)  |
| 15  | Curvilinear deflection control  | 54             | Field period polarity  |
| 1.0 | (e.g., lissajous)   |                | reversal   |
| 16  | Stroke or vector  |                |  |

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### CLASS 345 COMPUTER GRAPHICS PROCESSING AND SELECTIVE VISUAL DIS-PLAY SYSTEMS 345 - 5

| 55   | .Display elements arranged in   | 89      | Gray scale capability (e.g.,     |
|------|---------------------------------|---------|----------------------------------|
|      | matrix (e.g., rows and          |         | halftone)                        |
|      | columns)                        | 90      | Control means at each display    |
| 56   | Image shifting means (i.e.,     |         | element                          |
|      | traveling message)              | 91      | Diode or varistor                |
| 57   | Having endless belt or tape     | 92      | Thin film tansistor (TFT)        |
|      | reader                          | 93      | Redundancy (e.g., plural         |
| 58   | Crosstalk elimination           | 50      | control elements or              |
| 59   | Matrix for conveying            |         | electrodes)                      |
| 39   | alphanumeric data               | 94      | Waveform generation              |
| 60   | Fluid light emitter (e.g., gas, | 95      | Three or more voltages           |
| 00   | liquid, or plasma)              | 96      | Field period polarity            |
| 61   | Shifting means                  | 90      | reversal                         |
| 62   | 5                               | 07      |                                  |
| 62   | Specified plasma coupling       | 97      | Ferroelectric liquid crystal     |
| 62   | path                            |         | elements                         |
| 63   | Intensity control               | 98      | Specific display element         |
| 64   | Liquid light emitter            |         | control means (e.g., latches,    |
| 65   | Phosphor excited by fluid       |         | memories, logic)                 |
|      | response                        | 99      | Particular timing circuit        |
| 66   | Particular discharge path       | 100     | Particular row or column         |
| 67   | More than two electrodes per    |         | control (e.g., shift register)   |
|      | element                         | 101     | Data signal compensation in      |
| 68   | Means for combining selective   |         | response to temperature          |
|      | and sustain signals             | 102     | Backlight control                |
| 69   | Resistor-diode arrangement      | 103     | Grouped electrodes (e.g.,        |
| 70   | Including transformer           |         | matrix partitioned into          |
| 71   | Electrode insulated from fluid  |         | sections)                        |
|      | medium                          | 104     | Input/output liquid crystal      |
| 72   | Color                           |         | display panel                    |
| 73   | Incandescent                    | 105     | Electrochromic elements          |
| 74.1 | Cathodolulminescent type        | 106     | Thermochromic elements           |
| 75.1 | Vacuum fluorescent              | 107     | Particle suspensions (e.g.,      |
| 75.2 | Field emissive (e.g., FED,      | 207     | electrophoretic)                 |
| 13.2 | Spindt, microtip, etc.)         | 108     | Plural mechanically movable      |
| 76   | Electroluminescent              | TOO     | display elements                 |
| -    |                                 | 109     | Having shutters                  |
| 77   | Brightness or intensity         | 110     | With motor or rotor driver       |
|      | control                         | TIO     |                                  |
| 78   | Having compensating pulse       | 111     | means                            |
| 79   | Field period polarity reversal  | 111     | With a permanent magnet placed   |
| 80   | Driving means integral to       |         | on movable display elements      |
|      | substrate                       |         |                                  |
| 81   | Optical addressing (e.g.,       |         |                                  |
|      | photodetection)                 |         |                                  |
| 82   | Solid body light emitter (e.g., | CROSS-1 | REFERENCE ART COLLECTIONS        |
|      | LED)                            |         |                                  |
| 83   | Color                           | 901     | ELECTRONIC BOOK WITH DISPLAY     |
| 84   | Light-controlling display       | 902     | MENU DISPLAY                     |
|      | elements                        | 903     | MODULAR DISPLAY                  |
| 85   | Electroscopic (e.g., movable    | 904     | DISPLAY WITH FAIL/SAFE TESTING   |
|      | electrodes or electrostatic     |         | FEATURE                          |
|      | elements)                       | 905     | DISPLAY DEVICE WITH HOUSING      |
| 86   | Magneto-optic                   | 200     | STRUCTURE                        |
| 87   | Liquid crystal display          | 947     | FONT CHARACTER EDGE PROCESSING   |
|      | elements (LCD)                  | 271     | I ON I CHARACIEN EDGE FROCEDDING |
| 88   | Color                           |         |                                  |
| 00   |                                 |         |                                  |

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Automate many repetitive legal tasks like conflict checks, document management, and marketing.

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