

レスを算出して、各メモリに転送する(10010、10020)。

【0010】各メモリに記録された画像及び音声のデジタル信号は、メモリコントローラ10000の指定したアドレスに従って再生される。出力されたデジタル画像信号7010とデジタル音声信号6010は、それぞれD/A変換器8000、9000(以下D/Aと略す)により、アナログ画像信号9010とアナログ音声信号8010に変換され、切換器14000を經由して、モニタ15000に出力される。チューナ1000から出力されたライブの信号1010、1020と、メモリ経由の信号8010、9010は、切換器14000内のスイッチ14010、14020により同時に切り換えられ、選択された画像信号14020と音声信号14030がモニタに送られ、観賞されることになる。

【0011】ここで、メモリコントローラの指示する再生アドレスを変化させることで、通常再生から特殊再生まで、色々な再生を行うことが出来る。メモリ内部の説明は図5以降で説明するが、例えば記録アドレスの進行速度と、全く同じ速度で再生アドレスが進行すると、記録アドレスと再生アドレスの差の分だけディレイをもって画像及び音声再生される。また、記録アドレスの進行速度に対して再生アドレスの進行速度が速いと、いわゆる早送り再生を行うことが出来る。さらに、記録アドレスの進行方向に対して、再生アドレスの進行方向を逆にすると、いわゆる逆回し再生を行うことが出来る。そして、再生アドレスを固定すると、静止画像を出力することが出来る。これらの動作は、CPU12000よりメモリコントローラ10000に指示される。CPU12000にはスイッチ11000が接続されており、使用者は、スイッチ11000を通して、特殊再生の方法を選択することが出来る。また、CPU12000には表示装置13000が接続されており、これは図10及び図11で説明するが、特殊再生の状態を画面もしくは専用の表示機器に表示することが出来る。

【0012】本実施例では、チューナ1000出力のライブ画像信号1020及び音声信号1010と、メモリに記録した特殊再生可能な画像信号9010及び音声信号8010を切換器14000で完全に切り換えて、1台のモニタ15000に出力する事例を示したが、これは例えば2台のモニタを用意して、同時に2種類の画像及び音声を出力させても良く、さらに、切換器14000の代わりにPinP等の、親画面の一部に縮小された小画面をインポーズして表示するような方法を用いても良い。いずれにしても使用者は、チューナで受けたライブの放送と、特殊再生が可能な状態に処理した放送のいずれかもしくは両方を同時に選択してモニタで観賞することが出来る。

【0013】図2に、PM9:00から始まってPM10:00時に終了する番組をコマーシャルカットして観

賞する時の、特殊再生装置の動作を説明する。

【0014】16000は、ライブ画像の進行状況である。最初に本番放送16010が入る。これを例えば15分間とする。次に2分間のコマーシャル(以下、CMと略す)16020が入り、次の本番放送16030が入る。そして再びCM16040が入り、次の本番放送16050が入る。そして最後のCM16060が入り、本番放送16070で、この番組は終了する。この番組をコマーシャルカットで観賞しようとする、まずビデオで全部の録画をしてから、PM10:00以降に初めてこの番組を見始めることとなる。そして再生中にコマーシャルを自動もしくは手動で検出してカット(又は早送り)して、全部の番組を観賞することになる。即ち、番組が完全に終了しないとコマーシャルカットの番組を見る事が出来ないという問題がある。これに対して、図1で示したタイムシフトシステムを使用すると、3つのCM(2分×3=6分)遅らせて、PM9:06に観賞を始めれば、コマーシャルカットで放送を観賞することが出来る。しかし、PM9:00に始まる番組は、やはりPM9:00から観賞したいというニーズがある。そこで本実施例では、最初の本番放送16010の15分の放送を、17分に引き延ばして放映する(17010)。ここで17000はタイムシフトにより処理された結果の放映内容である。この放映が終わった時刻は、CM16020が終了した時刻に相当するので、すぐ次の本番放送16030を観賞することが出来る。そしてこれも15分の本番放送16030を17分に引き延ばして放映する(17020)。これを繰り返すと、PM9:00~PM10:00の番組を、その開始時刻であるPM9:00から見始めて、コマーシャルカットを完全に行った状態で最後まで観賞することが可能になる。ここでの条件は、観賞の終了時刻は必ず放送の終了時刻PM10:00と同じかそれ以降であることである。

【0015】仮に、番組を速く見たいと思って早送り再生をしても、放送の終了時刻のPM10:00以前では、放送の終了時の番組がまだ放送されておらず、先に見ることは不可能である。従って、タイムシフトによる番組の観賞時間の終了時刻は、放送の終了時刻と同一か、それ以降となる。

【0016】図3に、図2に示した実施例で、実際に15分の放送を17分に引き延ばす方法の第1の実施例を示す。18000はライブ放送の進行状況で、18010に示す番号は例えばフレーム番号に相当する。ここでは、本番放送はフレーム1からフレーム14で、そのあと3フレーム分CMが入る形で放送されているとする。19000はタイムシフトにより処理されたフレーム番号列を示す。18000では1から14まで1つずつフレーム番号が上がっていくのに対して、19010に示すフレーム番号は、例えばフレーム1が2回連続して現

われ、またフレーム5とフレーム9も2回連続して現われる。これにより3フレーム分番組の長さを延長することが出来るので、3フレームのCMをカットすることが可能である。この実施例は、放送長さの引き延ばしをフレーム単位で行っているので、途中で静止画像を得たいと思ったときにも、常にフレーム画像を出力しているので、画質劣化はないと考えて良い。

【0017】図4に、図2に示した実施例で、実際に15分の放送を17分に引き延ばす方法の第2の実施例を示す。20000は図3と同じくライブ放送の進行状況で、20010に示す番号は、各フィールド番号に相当する。即ち1Aというフィールドと、1Bというフィールドを合わせて初めて1つのフレームとして成立する形となる。ここでNTSC方式のテレビジョンの規格では、1フレームは1/30秒となっており、従って1フィールドの時間は1/60秒ということになる。図3に示した同一フレームを連続して出力することで時間を調節するという事は、静止画像としては元画像を損なわないが、時間軸で見ると、映像の動きがそこで一瞬(1/15秒)停止するようなきくしゃくした画像となってしまふ。図4に示した実施例では、フィールド1Aを2回連続し、またフィールド4Aとフィールド7Aも同様に連続させる。即ち同一の画像が連続する時間は1/30秒となり、図3の実施例の半分で済む。これにより動画像として見たときのきくしゃくした感じは低減される。しかしその代わり、図3のメリットは失われ、例えばフィールド4Aで静止画像を得ようとしたときは、フィールド4Aの画像しか出ず、垂直解像度が半分減ってしまう。どちらが適切かは、視聴する放送の内容に係わり、絵画や自然の風景等の静止物の多い番組は図3の方法が適切であり、スポーツなど動くものが多い番組は図4の方法が適切である。これらは手で切り換えても良いし、フレームの時間軸方向の相関を検出して、自動的に切り換えても良い。

【0018】図5に、本発明によるタイムシフト機能に利用するメモリの構成を示す。メモリはエンドレスメモリのイメージ22000となっており、具体的には図示しないが図1のメモリコントローラ10000から出力されるアドレスが、最上位ビットを無視する形で接続すれば、アドレスが矢印22010の方向に進行して、0000→0001→…→FFFF→10000(=0000)というようにエンドレスメモリとして利用することが出来る。このメモリの上を録画ポインタ22030と、再生ポインタ22020が回っている。録画ポインタ22030は、現時刻における放送された番組を録画する場所であり、再生ポインタ22020は、現時刻にこのメモリに記録されている番組を再生する場所である。録画ポインタと再生ポインタは同一である必要はなく、再生ポインタ22020は、録画ポインタ22030を追い越さず、かつ遅れない範囲で使用者が自由に動

かすことが出来る。基本的な再生は、再生ポインタ22020は、録画ポインタ22030と同じ速度でメモリ22000上を進行し、早送り再生の場合は、再生ポインタ22020は録画ポインタ22030の進行速度よりも速い速度で、メモリ22000上を進行する。また、逆方向再生の場合には、再生ポインタ22020は、録画ポインタ22030の進行方向と逆の方向に進行する。

【0019】図6は、タイムシフト装置が基本的に持つ再生ポインタと録画ポインタの位置関係を示す第1の実施例である。製品の標準設定として、メモリ23000の先頭を録画ポインタ23030とすると、再生ポインタ23020は、メモリ全体のちょうど中央(23040、23050参照)であることが望ましい。こうすることで、早送り、巻き戻しともに平均的に余裕を取ることが出来るからである。具体的にはメモリ23000の容量が30分あったとしたら、早送りに要するメモリ量23050(時間t23010)と、巻き戻しに要するメモリ量23040は共に15分ずつあり、十分実用に耐える。

【0020】図7は、タイムシフト装置が基本手器に持つ再生ポインタと録画ポインタの位置関係を示す第2の実施例である。製品の標準設定として、図6では、早送りと巻き戻しの両方のメモリ量を等しく設定していたが、本実施例では、早送りに要するメモリ量24050(時間t24010)と、巻き戻しに要するメモリ量を等しく設定していた。これは、統計的に早送りと巻き戻しを同じ程度行うという前提条件の元に設定したものである。本実施例では、早送りのメモリ量24050と、巻き戻しのメモリ量24040をm:nと設定する。mとnは、例えば設計時にあらゆる人の平均的な早送りや巻き戻しの量を調査して、統計的に算出した値を用いる。また、製品として出荷したのちも、購入した使用者が、例えばVTR等で早送りや巻き戻しを行ったとき、その頻度をモニターして統計的に使用者の癖に合わせたm:nの比を設定する。

【0021】図8は、早送り再生により再生ポインタ25010がメモリ25000上の録画ポインタ25020に追いついたときの対策を示したものである。図8(a)は、再生ポインタ25010がまだメモリ25000のほぼ中間の位置にあり、早送り動作に入った状態である。そのまま早送りを続けると、矢印25030の方向に再生ポインタ25010は進行し、いずれ録画ポインタ25020に追いつく。図8(b)は、再生ポインタが録画ポインタに追いついた状態(25050)を示したものである。これ以上はまだ、放送が録画されていないので、早送りを続行することは不可能である。そこで、本実施例では、再生ポインタが録画ポインタに追いついたところで、早送りのモードを自動的に止めて(使用者の早送り命令を無視する)、通常再生に戻るよ

うに動作する。このまま通常再生を続けて、再生ポイントと録画ポイントが一致したまま進行してもよく、また図2から図4で述べたように、再生ポイントを徐々に遅らせて、再び図6もしくは図7に示した再生ポイントの標準位置に戻すようにメモリ制御を行っても良い。

【0022】図9は、図8と反対に、巻き戻し再生により、再生ポイント26010がメモリ26000の最後部(図5に示したエンドレスメモリのイメージでは、反対側の録画ポイントにぶつかる)に来たときの対策を示したものである。図9(a)は、再生ポイント26010がまだメモリ26000のほぼ中間の位置にあり、巻き戻し再生動作に入った状態である。このまま巻き戻しを続けると、矢印26030の方向に再生ポイント26010は移動し、いずれメモリの最後部に到着する。図9(b)は、再生ポイント26050がメモリの最後部に到着した状態を示す。これ以上巻き戻しを行うことは出来ないため、本実施例では、再生ポイント26050がメモリの最後部に到達した時点で、巻き戻し動作を自動的に止めて(使用者の巻き戻し命令を無視する)、通常再生に戻るよう動作する。このまま通常再生を続けて、再生ポイントがメモリ最後部に貼りついた状態のまま進行してもよく、また図2から図4で述べたのと逆に、図示しないが、再生するフレームもしくはフィールドの間引きを行い、再生ポイントを徐々に進めて、再び図6もしくは図7に示した再生ポイントの標準位置に戻すようにメモリ制御を行っても良い。

【0023】図10に、使用者に対して図8、図9に示したようなメモリ限界が発生したことを伝達する手段の第1の実施例を示す。図10(a)は、画面の中にOSD(On Screen Display)で、メモリ限界を表示する文字が発生する方法である。この場合、早送り再生または逆方向再生によりメモリ限界に来た状態(図8、図9参照)を表示するもので、それ以上の早送り再生もしくは逆方向再生が出来ないということで、「メモリ限界」のメッセージと、「ノーマル再生」の表示により、表示方式を標準速度による再生に切り換えたことを示す。図10(b)は、同じくOSDによる使用者へのメモリの使用量の伝達であるが、ここではハードウェアのメモリマップ表示27020をそのまま表示する。表示フォーマットは図6から図9までと同じで、メモリのイメージを表示し、その右端が録画ポイントであり、再生ポイントの現在位置を常に表示する。ここで早送り再生をすると、再生ポイント27030は、メモリマップ表示27020の上で右に移動し、右端まで行きつくとも早送り再生が出来なくなること示し、使用者にタイムシフトの状況を常に知らせることが出来る。

【0024】図11に、使用者に対して図8、図9に示したようなメモリ限界が発生したことを伝達手段の第2の実施例を示す。メモリマップの表示28010、29010は図10(b)と同一なので、ここでは説明は省

略する。図11(a)において、この機械はタイムシフト装置28000である。即ち図示しないチューナー付きビデオデッキからの映像及び音声信号を入力し、その信号をそのまましくはタイムシフトした映像及び音声信号を図示しないモニターに出力する装置である。タイムシフト装置28000のフロントプレートには、通常再生、ポーズ、早送り再生、巻き戻し再生等のオペレーションSW(図1参照)があり、その下に、図10

(b)で示したメモリマップ表示28010がある。オペレーションにより再生ポイント28020が、メモリマップ表示28010上を左右に移動し、メモリの使用限界を使用者が知ることが出来る。また、オペレーションSWは図示しないリモコンに設置し、赤外線等を用いたワイヤレスで操作することも可能である。図11

(b)は、タイムシフト装置自身をTV29000に内蔵した例である。使用者が操作を行うオペレーションSW(図1参照)は、例えば図示しないリモコンにより行う。TV29000の画面29030にメモリが現れないので、視聴の邪魔になることなく、メモリの使用状況を常に見ることが出来る。

【0025】

【発明の効果】以上に示した本発明により、放送局から送られてくる電波に乗った、放送局のスケジュールに沿った番組の視聴を、本タイムシフト装置の持つメモリの範囲で早送りや巻き戻し、さらに静止画像を視聴することが出来、また番組の指定した時間の間、コマーシャルをカットして視聴する事が出来る。

【図面の簡単な説明】

【図1】本発明によるタイムシフト装置の構成を示すブロック図である。

【図2】本発明により、番組の視聴開始時刻、視聴時間を変更せずにコマーシャル等のカットをおこないつつ番組を視聴するためのタイムシフト方式を示した説明図である。

【図3】放送されている番組の放映時間を少し伸ばして放映する方法を示した第1の実施例の説明図である

【図4】放送されている番組の放映時間を少し伸ばして放映する方法を示した第2の実施例の説明図である

【図5】メモリマップがエンドレスメモリのイメージとして扱われることを示した説明図である。

【図6】機器の標準設定で、メモリ上の再生ポイントの位置を、早送り方向のメモリ量と、巻き戻し方向のメモリ量の比が等しくなるように設定したメモリマップを示す説明図である。

【図7】機器の標準設定で、メモリ上の再生ポイントの位置を、使用者の使用頻度に合わせて、早送り方向のメモリ量と、巻き戻し方向のメモリ量の比が最適になるように設定したメモリマップを示す説明図である。

【図8】早送り再生に於けるメモリ限界に達したときの、本発明によるタイムシフト装置の動作を示す説明図

である。

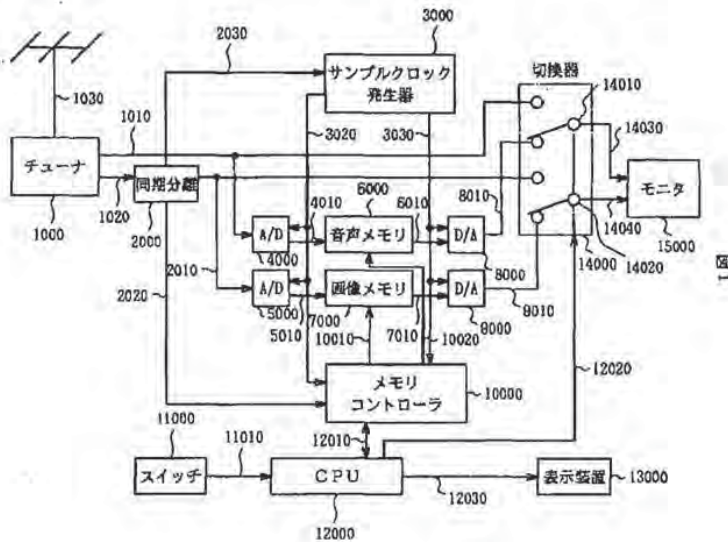
【図9】巻き戻し再生に於けるメモリ限界に達したときの、本発明によるタイムシフト装置の動作を示す説明図である。

【図10】タイムシフトの状況をモニタ画面状にメモリ*

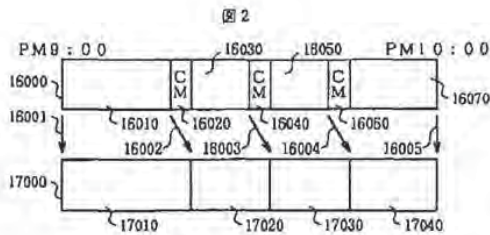
*マップ状で使用者に見せる実施例を示した説明図である。

【図11】タイムシフトの状況をモニタの画面以外の部分でメモリマップ状に使用者に見せる実施例を示した説明図である。

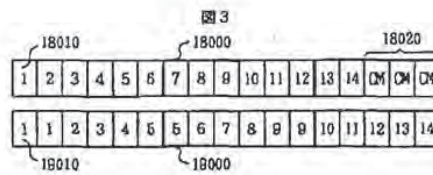
【図1】



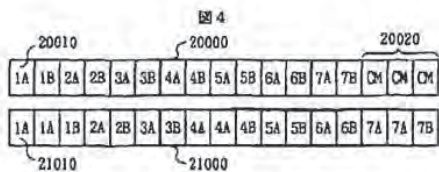
【図2】



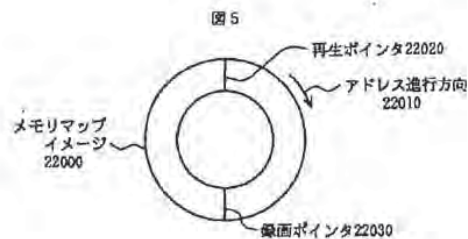
【図3】



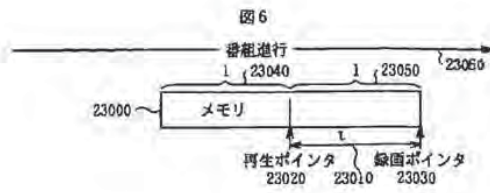
【図4】



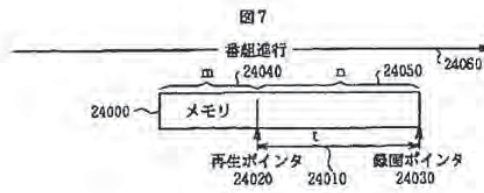
【図5】



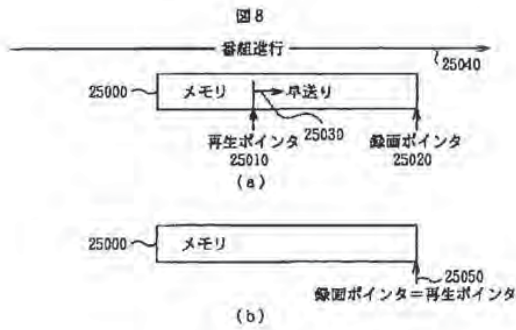
【図6】



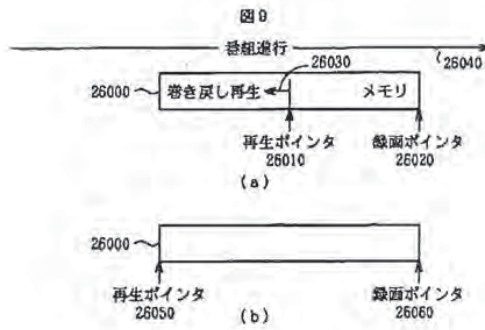
【図7】



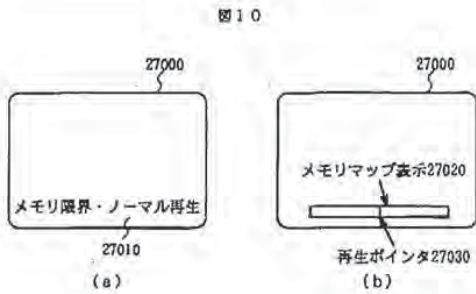
【図8】



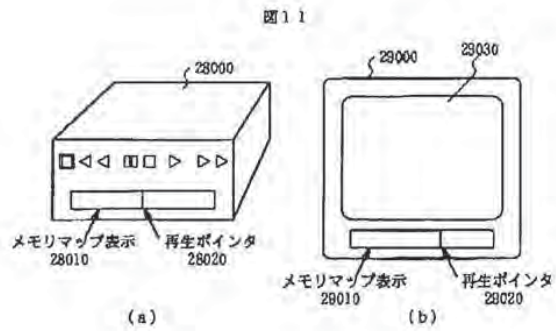
【図9】



【図10】



【図11】



【公報種別】特許法第17条の2の規定による補正の掲載
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【手続補正書】

【提出日】平成11年9月13日(1999.9.13)

【手続補正1】

【補正対象書類名】明細書

【補正対象項目名】特許請求の範囲

【補正方法】変更

【補正内容】

【特許請求の範囲】

【請求項1】所定時間分の入力映像信号が逐次書き込まれるメモリ装置を備え、該メモリ装置への前記映像信号の書込速度を所定の速度とし、前記メモリ装置からの前記映像信号の読出速度を使用者により設定可能としたことを特徴とするタイムシフト装置。

【請求項2】請求項1に記載のタイムシフト装置において、更に、前記メモリ装置に書込み及び読み出しアドレスを指示するメモリコントローラを有し、該メモリコントローラからメモリ装置へ指示するアドレスが、書込み及び読み出しに従って進行し、書込みアドレスもしくは読み出しアドレスが前記メモリ装置の特定のアドレスに達したら、再び初期アドレスから進行を開始することを特徴とするタイムシフト装置。

【請求項3】請求項2に記載のタイムシフト装置において、前記メモリ装置からの読み出しアドレスの進行速度が、書込みアドレスよりも速い速度で進行したとき、読み出しアドレスと書込みアドレスが一致した時点で、読み出しアドレスの進行速度を、書込みアドレスの進行速度と同じか、もしくは遅くするよう制御することを特徴とするタイムシフト装置。

【請求項4】請求項2に記載のタイムシフト装置において、前記メモリ装置からの読み出しアドレスの進行方向を逆にして、逆再生を行った場合、逆方向に進行する読み出しアドレスが初期アドレスに一致した場合は、読み

出しアドレスをメモリ装置の特定のアドレスに設定し直すことを特徴とするタイムシフト装置。

【請求項5】請求項4に記載のタイムシフト装置において、読み出しアドレスの進行を停止もしくは進行方向を書込みアドレスの進行方向に対して逆に逆再生を行った場合、読み出しアドレスが書込みアドレスに一致した時点で、読み出しアドレスの進行方向及び進行速度を書込みアドレスの進行方向及び進行速度と同じか、もしくは遅くするよう制御することを特徴とするタイムシフト装置。

【請求項6】請求項2に記載のタイムシフト装置において、標準的な読み出しアドレスの位置を、前記メモリ装置上に於ける書込みアドレスを先頭に、書込みアドレスから後方の、全メモリサイズを $m:n$ に分割する分割部分に設定することを特徴とするタイムシフト装置。

【請求項7】請求項6に記載のタイムシフト装置において、 $m:n$ が $1:1$ であることを特徴とするタイムシフト装置。

【請求項8】請求項6に記載のタイムシフト装置において、更に、使用者が該タイムシフト装置もしくは、既存のVTR等を操作するときの、早送り及び巻き戻しの頻度を検出する検出装置と、該検出装置により得られた頻度を統計情報として前記分割比 $m:n$ を算出する演算装置とを有することを特徴とするタイムシフト装置。

【請求項9】請求項2に記載のタイムシフト装置において、書込みアドレスの進行速度に比して、読み出しアドレスの進行速度が遅く、定期的または不定期に、該読み出しアドレスを、一定時間分書込みアドレス方向に向かって、該書込みアドレスを越えない範囲でジャンプすることを特徴とするタイムシフト装置。

【請求項10】請求項9に記載のタイムシフト装置において、前記読み出しアドレスの進行速度が、該読み出し

アドレスによって読み出された映像信号に基づく表示映像に違和感が生じない程度に、書き込みアドレスの進行速度よりも遅くしたことを特徴とするタイムシフト装置。

【請求項11】請求項9に記載のタイムシフト装置において、前記入力映像信号にテレビジョン放送番組の内容と別にコマーシャル内容が含まれており、書き込みアドレスが、番組の開始もしくは前回のコマーシャル後の番組の開始から次回のコマーシャルの終了時点までアドレスを進行させつつ記録する時間の間、読み出しアドレスは、番組の開始もしくは前回のコマーシャル後のアドレ

スから、次回のコマーシャルの開始時点までのアドレス範囲を進行することを特徴とするタイムシフト装置。

【請求項12】請求項11に記載のタイムシフト装置において、コマーシャルを含めた番組の開始時刻及び終了時刻と、読み出しアドレスの進行に伴いコマーシャルをカットして再生する番組の開始時刻及び終了時刻が一致することを特徴とするタイムシフト装置。

【請求項13】請求項1に記載のタイムシフト装置が、テレビジョン受像機に内蔵されていることを特徴とするタイムシフト装置。

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(12) 公開特許公報 (A)

(11) 特許出願公開番号

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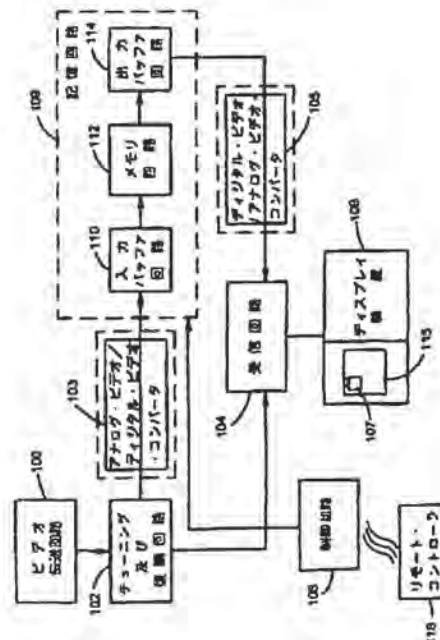
(21) 出願番号	特願平8-334291	(71) 出願人	390009531 インターナショナル・ビジネス・マシーンズ・コーポレーション INTERNATIONAL BUSINESS MACHINES CORPORATION アメリカ合衆国10504、ニューヨーク州 アーモンク (番地なし)
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(31) 優先権主張番号	60/009435	(74) 代理人	弁理士 合田 潔 (外2名) 最終頁に続く
(32) 優先日	1995年12月29日		
(33) 優先権主張国	米国 (US)		
(31) 優先権主張番号	08/659125		
(32) 優先日	1996年6月4日		
(33) 優先権主張国	米国 (US)		

(54) 【発明の名称】 割込み許容ビデオ・プログラム表示装置及び方法

(57) 【要約】 (修正有)

【課題】ビデオ放送の視聴者がプログラムの表示中の任意の時間に休止でき、また復帰時に介入セグメントを表示可能にする。

【解決手段】休止期間中に記憶媒体112は、メモリが容量いっぱいまで満たされた時、前に記憶されたデータ上に入力情報データを書き続けることができる循環式のものである。記憶回路109は、シーケンシャル・アクセス記憶装置又はダイレクト・アクセス記憶装置を使用する。記憶回路は高速度メモリ入力バッファ110及び高速度メモリ出力バッファ114を有する。休止期間の終了時に、ユーザはその記憶されたビデオを表示させることができる。ユーザは、正規の放送を捕捉すること又はデレイ・モードで残りのプログラム・ビデオを視聴することの選択を行う。記憶されたビデオは、ユーザの直接又は遠隔的なVCR型のビデオ機能制御の下に、正規の動作、低速度動作、又は高速度動作で間欠的に又は連続的に106に表示可能である。



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【あて先】 特許庁長官殿

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【出願番号】 平成 8年特許願第334291号

【請求人】

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【手数料の表示】

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番号	保存状況 書類番号 メッセージ	書類名 非電子化	受付/発送日	サイズ
0001	保存済	出願関連情報 0	0000/00/00	000012
0002	保存済	特許願 159600643645	1996/12/13	000107
0003	保存済	職権訂正データ（方式） 350000000001	1997/02/17	000002
0004	保存済	優先権証明書提出書 129624400336 有り	1996/12/17	000152
0005	保存済	優先権証明有り 職権訂正データ（方式） 350000000002	1997/02/17	000002
0006	保存済	要約不備職権訂正 330000000001	1997/06/04	000023
0007	保存済	代理人辞任届 119980201796	1999/03/29	000002
0008	保存済	代理人辞任届 159900368129	1999/04/16	000002
0009	保存済	認定・付加情報 350000000003	1999/04/22	000002
0010	保存済	通知書（再提出通知） 202199036267	1999/05/26	000003
0011	保存済	出願審査請求書 159901193624	1999/12/07	000002
0012	保存済	認定・付加情報 350000000004	1999/12/14	000003
0013	保存済	拒絶理由通知書 206103077449	2003/03/11	000005
0014	保存済	期間延長請求書 150300831915	2003/05/20	000002
0015	保存済	認定・付加情報 350000000005	2003/05/26	000003
0016	保存済	拒絶査定 206104039923	2004/02/10	000007

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種(1) コード(100091568) 市位 嘉宏
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【あて先】 特許庁長官 殿

【国際特許分類】 H04N 05/76

【発明の名称】 割込み許容ビデオ・プログラム表示装置及び方法

【請求項の数】 33

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【選任した代理人】

【識別番号】 100091568

【弁理士】

【氏名又は名称】 市位 嘉宏

【パリ条約による優先権等の主張】

【国名】 アメリカ合衆国

【出願日】 1995年12月29日

【出願番号】 60/009435

【パリ条約による優先権等の主張】

【国名】 アメリカ合衆国

【出願日】 1996年 6月 4日

【出願番号】 08/659125

【手数料の表示】

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【書類名】 明細書

【発明の名称】 割込み許容ビデオ・プログラム表示装置及び方法

【特許請求の範囲】

【請求項1】

受信回路、前記受信回路に結合されたユーザ・コマンド回路、及び前記受信回路に結合されたディスプレイ手段を有するビデオ信号表示装置にして、

前記受信回路に結合され、前記信号の部分を受信及びバッファするための入力及び入力バッファ出力を有する入力バッファ回路と、

前記入力バッファ出力に結合され及びメモリ出力を有し、前記部分を記憶するためのメモリ回路と、

前記メモリ出力に結合された出力バッファ入力及び出力バッファ出力を有し、前記メモリ出力を受信及びバッファするための出力バッファ回路と、

を含み、

前記ユーザ・コマンド回路は、前記ユーザからコマンドを受信した時、前記出力バッファ出力を前記受信回路に結合させて前記部分を搬送し、前記ディスプレイ手段上に表示させることを特徴とする装置。

【請求項2】

前記メモリ回路は、ダイレクト・アクセス記憶装置及びシーケンシャル・アクセス記憶装置の少なくとも1つから成るグループから選択された装置を含むことを特徴とする請求項1に記載の装置。

【請求項3】

前記入力バッファ回路は、

前記部分を前記入力に結合して受信するための入力結合回路と、

前記入力結合回路に結合され、前記ユーザによってコマンド指示された時、前記ユーザ・コマンド回路に応答して前記部分を前記入力へ搬送させて受信させるための制御回路と、

を含むことを特徴とする請求項1に記載の装置。

【請求項4】

前記ユーザは1つの期間を持った割込みを有すること、及び

前記信号の部分は前記期間の間に伝送されたビデオ・データの量に対応すること

と
を特徴とする請求項 1 に記載の装置。

【請求項 5】

前記メモリ回路は前記伝送されたビデオ・データの量に少なくとも等しい容量を有することを特徴とする請求項 4 に記載の装置。

【請求項 6】

前記期間は 15 分であることを特徴とする請求項 4 に記載の装置。

【請求項 7】

前記伝送されたビデオ・データの量は 170 メガバイトであることを特徴とする請求項 4 に記載の装置。

【請求項 8】

前記ビデオ信号はプログラムのビデオ信号内容全体を構成すること、及び前記信号の部分は前記プログラムのビデオ信号内容全体を含むことを特徴とする請求項 1 に記載の装置。

【請求項 9】

前記ユーザ・コマンド回路は、再生、巻戻し、停止、静止、連続、高速送り、低速送り、選択的ピクチャ、及びピクチャ内ピクチャ・フォーマットのうちの少なくとも 1 つより成るグループから選択された機能を制御するためのビデオ表示機能コントローラを含むことを特徴とする請求項 1 に記載の装置。

【請求項 10】

前記コントローラはリモート・コントローラであることを特徴とする請求項 9 に記載の装置。

【請求項 11】

ビデオ信号を受信するユーザ・コマンド制御される装置にして、
ビデオ出力を有し、前記ビデオ信号を受信するためのビデオ入力回路と、
前記ビデオ出力に結合された前記ビデオ信号を受信するための第 1 受信入力、
第 2 受信入力、及び受信出力を有する受信回路と、
前記受信出力に結合されたディスプレイ入力を有し、前記ビデオ信号を受信及

び表示するためのディスプレイ手段と、

前記ビデオ出力に結合された記憶入力及び記憶出力を有し、前記ビデオ信号の部分を受信及び記憶するための記憶回路と、

前記ユーザによってコマンド指示された時、前記記憶回路に結合された前記ユーザ・コマンドに应答して前記記憶出力を前記第2受信出力に結合させて前記部分を前記ディスプレイ手段において表示のために搬送させるための制御回路と、
を含む装置。

【請求項12】

前記記憶回路は、

前記部分をバッファして前記記憶入力を形成するための入力バッファ回路にして、入力バッファ出力を有する入力バッファ回路と、

前記入力バッファ出力に結合され、前記記憶を行うためのメモリ回路にして、メモリ出力を有するメモリ回路と、

前記メモリ出力を受信及びバッファするための出力バッファ回路にして、前記記憶出力を形成する出力バッファ回路と、

を含むことを特徴とする請求項11に記載の装置。

【請求項13】

前記記憶回路は、入力バッファ、ダイレクト・アクセス記憶装置、シーケンシャル・アクセス記憶装置、及び出力バッファのうちの少なくとも1つより成るエレメントのグループから選択されたメモリ・エレメントを含むことを特徴とする請求項11に記載の装置。

【請求項14】

前記ユーザは1つの期間を持った割込みを有すること、及び
前記信号の部分は前記期間の間に伝送されたビデオ・データの量に対応すること
と

を特徴とする請求項11に記載の装置。

【請求項15】

前記メモリ回路は前記伝送されたビデオ・データの量に少なくとも等しい容量を有することを特徴とする請求項14に記載の装置。

【請求項16】

前記期間は15分であることを特徴とする請求項14に記載の装置。

【請求項17】

前記伝送されたビデオ・データの量は170メガバイトであることを特徴とする請求項14に記載の装置。

【請求項18】

前記ビデオ信号はプログラムのビデオ信号内容全体を構成すること、及び前記信号部分は前記プログラムのビデオ信号内容全体を含むことを特徴とする請求項11に記載の装置。

【請求項19】

前記制御回路は、再生、巻戻し、停止、静止、連続、高速送り、低速送り、選択的ピクチャ、及びピクチャ内ピクチャ・フォーマットのうちの少なくとも1つより成るグループから選択された機能を制御するためのビデオ表示機能コントローラを含むことを特徴とする請求項11に記載の装置。

【請求項20】

前記コントローラはリモート・コントローラであることを特徴とする請求項19に記載の装置。

【請求項21】

ディスプレイ上にビデオ信号を表示している期間の間に割り込みされるビデオ・プログラム・ユーザをサービスするための方法にして、前記信号は前記期間中に伝送されたビデオ信号の量に対応した部分を有するものにおいて、

前記ビデオ信号を受信するステップと、

前記部分を循環式記憶回路に結合するステップと、

前記部分を前記循環式記憶回路に記憶するステップと、

前記部分を表示するようにコマンド指示するステップと、

前記コマンド指示を受けた時、前記部分を前記ディスプレイに搬送するステップと、

を含む方法。

【請求項22】

前記結合するステップは前記部分を入力バッファし、前記部分をメモリ回路に送るステップを含むこと、及び

前記搬送するステップの後に出力バッファするステップが続くことを特徴とする請求項 2 1 に記載の方法。

【請求項 2 3】

前記記憶回路は、入力バッファ、ダイレクト・アクセス記憶装置、シーケンシャル・アクセス記憶装置、及び出力バッファのうちの少なくとも 1 つより成るエレメントのグループから選択されたメモリ・エレメントを含むことを特徴とする請求項 2 1 に記載の方法。

【請求項 2 4】

前記記憶回路は前記伝送されたビデオ信号の量に少なくとも等しい容量を有することを特徴とする請求項 2 1 に記載の方法。

【請求項 2 5】

前記ビデオ信号はプログラムのビデオ信号内容全体を構成すること、及び前記信号部分は前記プログラムのビデオ信号内容全体を含むことを特徴とする請求項 2 1 に記載の方法。

【請求項 2 6】

巻戻すステップ、停止するステップ、連続するステップ、正規の送りで再生するステップ、高速送りで再生するステップ、及び低速送りで再生するステップのうちの少なくとも 1 つより成るグループから選択されたステップを含むことを特徴とする請求項 2 1 に記載の方法。

【請求項 2 7】

前記コマンド指示するステップは遠隔的に行われることを特徴とする請求項 2 6 に記載の方法。

【請求項 2 8】

ビデオ信号を受信及び表示するための回路を有する装置にして、
少なくとも 1 つの循環式記憶媒体と、
前記媒体に結合された入力バッファと、
前記媒体に結合された出力バッファと、

前記ビデオ信号の一部分を前記媒体及びバッファに記憶するための記憶階層と

、
前記記憶階層に記憶された部分をディスプレイに搬送するための回路と、

前記ディスプレイを制御するための回路と、

を含み、

前記制御するための回路は、再生、静止、停止、巻戻し、連続、低速送り、高速送り、選択的ピクチャ、及びピクチャ内ピクチャ・フォーマットのうちの少なくとも1つより成るグループから選択された機能を制御するためのビデオ表示機能コントローラを含むことを特徴とする装置。

【請求項29】

前記メモリ回路は循環式記憶装置を含むことを特徴とする請求項1に記載の装置。

【請求項30】

前記記憶回路は更に循環式記憶装置を含むことを特徴とする請求項11に記載の装置。

【請求項31】

前記ユーザが前記ビデオ信号を進行中に捕捉するための捕捉回路を含むことを特徴とする請求項1に記載の装置。

【請求項32】

前記ビデオ信号を進行中に捕捉するステップを含むことを特徴とする請求項21に記載の方法。

【請求項33】

前記捕捉回路は、ピクチャ内ピクチャ、フレーム・スキッピング、及びスプリット・スクリーンのうちの少なくとも1つより成るグループから選択された形式における捕捉を行うことを特徴とする請求項31に記載の装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】

本発明は、ビデオの監視、記憶、及び再生に関するものである。更に詳しく云

えば、本発明は、受信されるビデオ信号の記憶及び前に記憶された信号の表示を同時に行うことに関するものである。

【0002】

【従来の技術】

ユーザが、送信されたビデオ・プログラムを表示しながら、個人的な優先順位を満足させる能力を高める方法を見つけることは、絶えず努力していることである。ユーザが、所望のプログラムを表示している時に、より高い優先順位の要件を満足させるために割り込みを受けるということは、全く日常的なことである。その割り込みは、放送ビデオ・プログラムが時間的に連続して送信されている時に受ける電話呼出であることもある。このタイプの表示妨害は、比較的短い期間であっても、過去においては、その割り込みの期間中に伝送されたプログラム部分を失わせることになるであろう。これは、長いプログラム又は映画の間中に何回も起こり得ることであり、プログラムの連続性を大いに損ない、受信された情報又は娯楽を破壊するものである。

【0003】

TVシステムの送信及び受信に関する制御は、歴史的には、そのシステムの放送側によって行われていた。従って、より高い優先順位の事象（イベント）を休止すること（pausing）は、一般には、実行可能なことではなかった。ビデオ・オン・デマンド・システムでは、現在のネットワーク帯域幅ソース及び切替制限事項は、無制限の増分的インターバルに関してトータル・ビデオ・オン・デマンドを妨げている。

【0004】

【発明が解決しようとする課題】

従って、本発明の目的は、放送されたビデオ・プログラムの一部分或いは進行中の他の伝送の一部分を記憶するようにコマンド指示を行うための手段、及びその記憶された部分をユーザの都合のいい時に表示させることを想起する能力をユーザに与えるための装置を提供することにある。その記憶されたビデオは、ユーザの直接的又は遠隔的なVCR型のビデオ機能制御の下に正規の動作、低速度動作、又は高速度動作で間欠的に又は連続的に表示可能である。

【0005】

本発明のもう1つの目的は、正規の放送又はそのプログラムに関する他の伝送を捕捉するための方法及び装置をユーザに提供することにある。

【0006】

本発明の更にもう1つの目的は、記憶装置にあるプログラムのその部分に対する完全なVCR型制御をユーザに提供することにある。これらの制御は、再生、巻戻し、高速送り、低速送り、休止、連続、スクリーン・スプリット、フレーム・スキップ、及びピクチャ内ピクチャを含む。

【0007】

本発明の更にもう1つの目的は、表示されているプログラムの直前に放送された部分をレビューする能力をユーザに与えることにある。

【0008】

【課題を解決するための手段】

本発明の1つの実施例では、ビデオ信号表示装置が、ユーザ・コマンド回路、そのコマンド回路に結合された受信回路、及びその受信回路に結合されたディスプレイ手段を有する。その装置は、関連ある信号部分を受信及びバッファするための入力バッファ回路と、その入力バッファの出力に結合され、その信号部分を記憶するためのメモリ回路と、及びそのメモリ回路に結合され、そのメモリ出力を受信及びバッファするための出力バッファ回路とを含む。コマンド回路は、ユーザからコマンドを受信した時、ディスプレイ手段上に表示するために出力バッファの出力を受信回路に結合させる。その装置のメモリ回路は、少なくとも1つのダイレクト・アクセス記憶装置(DASD)、或いは少なくとも1つのシーケンシャル・アクセス記憶装置(SASD)、或いはこれらの組合せを含むことが望ましい。

【0009】

メモリ回路は、容量いっぱいまで満たされた時、前に記憶されたデータの上に入力情報データを書き込み続けるという循環型のものであることが望ましい。

【0010】

本発明の1つの実施例では、ユーザは、或量のビデオ・データが送信されてい

る期間の間、割込みを有する。メモリ回路は、その期間において送信されたビデオ・データの量に少なくとも等しい容量を有することが望ましい。

【0011】

本発明の1つの実施例では、ビデオ信号はプログラムのビデオ信号内容全体を含み、その信号部分はプログラムのビデオ信号内容全体までを及びそれを包含するものを含む。

【0012】

本発明の更に別の局面では、ビデオ信号を受信する装置であって、ユーザ・コマンド制御される装置が与えられる。その装置は、ビデオ信号を受信するためのビデオ入力回路と、そのビデオ入力回路に結合され且つそのビデオを受信するための第1レシーバ入力、第2レシーバ入力、及びレシーバ出力を有する受信回路とを含んでいる。更に、その装置は、受信回路に結合され且つその受信回路の出力を受信するための及びビデオ信号を表示するためのディスプレイ手段と、そのビデオ信号を受信するための及びそれを記憶するための記憶回路と、ユーザ・コマンドに応答して記憶出力を第2レシーバに結合させ、その信号部分をディスプレイ手段上に表示するようユーザによってコマンド指示された時にそれをディスプレイ手段上に表示するための制御回路とを有する。記憶回路は、入力バッファ回路と、その入力バッファ回路の出力に結合され、その部分を記憶するためのメモリ回路と、そのメモリの出力を受信及びバッファするための出力バッファ回路とを含むことが望ましい。更に、記憶回路は、少なくとも1つのダイレクト・アクセス記憶装置、又は少なくとも1つのシーケンシャル・アクセス記憶装置、或いはこれらの組合せを含むことが望ましい。

【0013】

本発明のもう1つの局面は、ディスプレイ上にビデオ信号を表示している時にユーザが割込みされることをサービスするための方法である。その信号は、その割込み期間中、一部分を送信される。その方法は、ビデオ信号を受信するステップと、その部分を循環式記憶回路に結合するステップと、その部分をその記憶回路に記憶するステップと、その記憶された部分を割込みの終了時に表示するようコマンド指示するステップと、そのコマンドを受信した時、その部分をディスプ

レイに搬送するステップとを含む。更に、その結合するステップは、その部分を入力バッファし及びそれをメモリ回路に搬送するステップと、出力バッファするステップに続いて搬送するステップを含むことが望ましい。

【0014】

本発明の更にもう1つの局面は、ビデオ信号を受信及び表示するための手段を有する装置である。その装置は、少なくとも1つのダイレクト・アクセス記憶媒体と、その媒体に結合された入力バッファと、その媒体に結合された出力バッファと、その媒体及びそれらのバッファにおけるビデオ信号の一部分を記憶するための記憶階層と、その記憶された部分をディスプレイに経路指定するための手段と、そのディスプレイを制御するための手段とを含む。そのディスプレイを制御するための手段は、表示休止、連続、正規再生、低速再生、高速再生、巻戻し、選択的ピクチャ、フレーム・スキップ、及びピクチャ内ピクチャ・フォーマットの各機能を含む。

【0015】

【発明の実施の形態】

本発明は、割込み許容ビデオ・プログラム表示を可能にするための方法及び装置を提供する。本発明の方法及び装置は、標準的な放送TV伝送、ケーブルTV伝送、プログラムの公的或いは私的な連続伝送を受信する場合に有利である。本発明の特徴は、データ・バッファを使用するアルゴリズムと共に少なくとも1つのダイレクト・アクセスの非シーケンシャル記憶媒体を含む記憶階層である。その技法は、アナログ・ビデオ伝送及びデジタル・ビデオ伝送の両方に対して使用可能である。

【0016】

1つの実施例では、ユーザのビデオ受信回路及びディスプレイが与えられる。それは、割込み時に、ユーザがビデオ放送表示を休止するようコマンド指示すること、及びその割込みの期間の間、進行中のビデオのその後の部分の記憶を開始させることを可能にする。復帰時に、ユーザは、その記憶された部分を表示するようにコマンド指示することができる。ディスプレイは、ユーザが正規の放送を捕捉すること、或いは遅延モードにおいてそのビデオを見続けることを可能にす

るように適応することができる。記憶されたビデオは、ユーザの直接的又は遠隔的なVCR型ビデオ機能制御の下に、正規の、低速の、又は高速の運動で間欠的に或いは連続的に表示可能である。その装置は、割込み時に受信されたビデオをバッファしてメモリ装置に適正に供給するための入力バッファ回路を含む。ユーザ・コマンド時に、その記憶されたビデオがメモリ装置からディスプレイに供給される。又、その装置は、メモリ装置の出力及びディスプレイの間のバッファとして作用するための出力バッファ回路を含む。中程度の容量の記憶装置は比較的低い速度の読取り／書込みアクセス・タイムのものであるため、高速度の読取り／書込みが可能な回路との入出力バッファリングが必要である。バッファリングは、一般に、高速度のシリコン・メモリ装置を使用して達成される。必要なバッファ・メモリの量は、当業者には知られているように、使用される読取り／書込みアルゴリズムの効率に依存する。記憶装置は、サービス可能な割込みの所定の最大期間の間に伝送されるビデオ・データの量に少なくとも等しい容量を持つことが望ましい。

【0017】

本発明の1つの実施例では、ビデオ信号はプログラムのビデオ信号内容全体を構成し、その信号部分はプログラムのビデオ信号内容全体まで、及びそれを含めて包含する。この状況に対して、装置メモリは、一般に、少なくとも1つのダイレクト・アクセス記憶装置及び少なくとも1つのシーケンシャル・アクセス記憶装置を含む。シーケンシャル・アクセス記憶装置は、非常に大きいメモリ容量を有するが、読取り／書込みに対して比較的長いアクセス・タイムを持つ。ダイレクト・アクセス記憶装置は、シーケンシャル・アクセス記憶装置に対する入力及び出力の両方のバッファリングを行うことができることが望ましい。

【0018】

本発明の1つの実施例では、その装置はビデオ表示制御機能を含んでいる。その制御される機能は、再生、巻戻し、停止、連続、正規送り、高速送り、及び低速送りを含む。その制御機能がリモート制御回路によって制御されること及びそれが捕捉機能を選択するための機能を含むことが望ましい。捕捉機能は、ピクチャ内ピクチャ、フレーム・スキップ、又はスクリーン・スプリットの選択を含む

。ピクチャ内ピクチャは、全体の表示が進行中のプログラムのピクチャを示し、その記憶されたビデオからのピクチャをそのディスプレイの一部分に示すために使用可能である。スクリーン・スプリットは、その記憶されたビデオからのピクチャを表示領域の一方の側に示すために、及び進行中のプログラムのピクチャを表示領域のもう一方の側に示すために使用可能である。選択的ピクチャは、その記憶されたビデオ或いは進行中のプログラムのピクチャのうちのどちらのピクチャを特定の瞬間に表示すべきかをユーザが選択することを可能にする。ユーザはそのユーザの希望に従って一方から他方に切り換わることが可能である。

【0019】

又、本発明は、ビデオ・プログラム・ユーザがディスプレイ上にビデオ信号を表示している時に割込みされるのをサービスするための方法を提供する。その方法は、割込み及びその後の表示期間中に伝送するビデオ信号の部分を記憶することを可能にする。その方法は、ディスプレイを休止させるステップ、その後に受信した信号を記憶媒体に結合するステップ、それをその記憶媒体に記憶するステップ、コマンドに回答してその部分を表示するステップ、及びその部分をディスプレイに搬送するステップを含む。その結合するステップは、入力をバッファするステップを含むこと、及びその搬送するステップは、出力をバッファするステップがそれに先行することが望ましい。

【0020】

本発明の実施例が図1に示される。図1は、ユーザが選択したビデオ・プログラムを伝送する外部伝送回路（ビデオ伝送回路）100を示す。正規の受信モードにおいて、チューニング及び復調回路102は、その選択され、受信され、そしてデジタル化された伝送を受信回路104に経路指定する。その回路104はそれをディスプレイ装置106に送る。簡単な形式では、これは、標準的なデジタルTV受信機に従って構成及び動作する。制御回路108は、ユーザがディスプレイを休止させること及びデジタル・ビデオを記憶回路109における入力バッファ回路110へ搬送させることを可能にする。入力バッファ回路110は、ビデオ伝送を受け付けること及びそれを記憶のためにメモリ回路112に搬送することを同時に行うデュアル・ポート・ビデオ・バッファである。記憶回

路109におけるメモリ回路112は、少なくとも1つのダイレクト・アクセス記憶装置(DASD)111(図3参照)を含む。ユーザ・コマンド時に、制御回路108は、メモリ回路112が搬送されるべきその記憶されたビデオを記憶回路109における出力バッファ回路114へ搬送するように制御する。出力バッファ回路114は、そのビデオ信号をディスプレイ装置106上に表示するために受信回路104へ送る。ユーザ・コマンドは、通常、リモート・コントローラ116を介して制御回路108へ送信される。

【0021】

送信回路100、チューニング及び復調回路102、受信回路104、リモート・コントローラ116、及びディスプレイ装置106はすべて標準的なTV受信において使用されるものと同じものでよい。実際には、入力バッファ回路110及び出力バッファ回路114は、本質的には、メモリ回路112をサポートする一時的メモリ装置である。チューニング及び復調回路102の出力がアナログ・ビデオである場合、それが入力バッファ110に搬送される前にデジタル化ビデオを形成するために、アナログ・ビデオ/デジタル・ビデオ・コンバータ103が使用される。更に、出力バッファ回路114からの出力ビデオはデジタル・ビデオ/アナログ・ビデオ・コンバータ105に送られ、それが受信回路104に送られる前にアナログ・ビデオ信号を形成させる。

【0022】

メモリ回路は、それが容量まで満たされた時、前に記憶されたデータの上に入力情報データを書き続ける循環型のものであることが望ましい。従って、メモリ容量が15分のビデオ・データ用のものである場合、16分目に受信されたデータは1分目に受信されたデータを保持しているロケーションを上書きする。この方法では、そのメモリが15分のビデオによって満たされると、新しいデータは古いビデオを上書きすることによって記憶され続ける。従って、メモリは、いつも最後の15分に対応するビデオを含んでいる。

【0023】

1つの実施例では、割込みを受信した時、ユーザは「表示休止(DISPLAY PAUSE)」コマンドを発生して休止アルゴリズムを開始させる。その休止アルゴリズ

ムは、ビデオ信号が入力バッファ回路110に送られそしてメモリ回路112、望ましくはDASD111、に記憶されることによって開始する。そのDASD111は、その後のビデオ・データによって占められることになる。それがデュアル・ポートである場合、そのバッファは、同時に、ビデオ・ソースからのその後のデジタル化ビデオ信号を受信し且つそのビデオ信号のうちの遅延した前の部分をメモリ回路112へ出力する。これは、メモリ容量が割込みの期間中の入力ビデオ・データを収容することができるようなものである限り満足に働く。現在のダイレクト・アクセス記憶装置、圧縮技法、及び入力ビデオ速度によって、数分から1時間を超える範囲の割込みに対して、この条件は容易に満足される。

【0024】

【表1】

コマンド機能 /アルゴリズム	チューニング 回路出力接続 を設定する	メモリ入力 活動を設定 する	メモリ出力 活動を設定 する	受信回路活 動を設定 する	ディスプレ イ活動を 設定する
無中断の表示	受信回路入力 に接続される	非活動	非活動	チューニン グ回路から 受信する	正規のビデ オ伝送を 表示する
表示休止	メモリ入力に 接続される	チューニン グ回路から 受信する	非活動	非活動	非活動
表示メモリ	メモリ入力に 接続される	チューニン グ回路から 受信する	記憶された ビデオを 受信回路に 出力する	メモリから 受信する	記憶された ビデオを 表示する

【0025】

ユーザは、再び視聴を再開する準備ができる時、「表示メモリ (DISPLAY MEMORY)」のコマンドを発生する。これは、表1に示されたメモリ表示のアルゴリズムを開始させる。表1に示されるように、入力バッファ回路110は、その後のビデオ・データを受信し且つ一時的に記憶し続け、その最も古い記憶されたデータをDASD111に出力する。DASD111は、その受信したビデオ・データを次の記憶ロケーションに書き込み、そして前に記憶したビデオ・データをその受信した順序で、即ち、先入れ先出しフォーマットで出力する。出力バッファ回路114はDASD111の出力を受け、その最も早く受信したビデオ・データをディスプレイ装置106において表示するために受信回路104に送る。このメモリ表示アルゴリズムは、ユーザがその記憶されたビデオ・データを表示する時、現在伝送されている新しいビデオ・データが同時に記憶

されることを保証する。

【0026】

このアルゴリズムは、各サイクル中に、その記憶装置の読取り及び書込みの両方が各ビデオ・バッファに対して生じることを必要とする。場合によっては、デュアル・ポート・バッファに対する代替えとして、2つのシングル・ポート・バッファの組合せを使用する方が有利なこともある。2つのシングル・ポート・バッファの場合、各サイクルにおいて、一方のバッファが入力信号で満たされつつある時、他方のバッファは独立して且つ同時にそのデータを記憶装置に出力する。

【0027】

各バッファは読取りオペレーション及び書込みオペレーションを交互に行う。即ち、一方が入力ビデオを読取っている間、他方がその記憶されたビデオを書込む。各ビデオ・バッファに対する記憶装置の読取り及び書込みの両方が各サイクル中に行われなければならないので、ビデオ・バッファのサイズは、上記の「休止」シーケンスに対して必要なサイズの約2倍を必要とする。記憶装置の機械的抑止、装置をアクセスするために必要な移動距離及び移動回数の機械的制約を許容するインテリジェント・ファイル・データ記憶及び検索方法が、各読取り及び書込みの期間を最適化するために使用可能である。

【0028】

長期間の割込み、従って、長い周期のビデオ記憶装置を必要とする状況に最も適応する代替えの構成が図2に示される。図2は、メモリ回路112(図1)にシーケンシャル・アクセス記憶装置(SASD)113を追加したものを示す。SASD113はDASD111よりもずっと大きい記憶容量を有する。SASD113は、磁気テープ・メモリ或いは、望ましくは、読取り及び書込み機能を持った光ディスクを使用して形成可能である。SASDは現在では比較的長いアクセス・タイムを持つけれども、DASD111は、情報の喪失を防ぐに十分な入出力バッファリングを与える。SASD113の使用は、DASD111の更なる読取り及び書込みを必要とする。先ず、DASD111上に記憶されたデータ・セクションがSASD113に保存される。しかる後、DASD111はS

ASD113上に保存されているデータ・セクションを最終的な表示のために検索する。ダイレクト・アクセス記憶装置に対して約3メガバイト/秒のデータ速度でビデオ・データ・ストリームが圧縮されなければならない。

【0029】

この実施例の修正では、入力バッファ及び出力バッファは、そのSASDのアクセス・タイムをバッファする十分な、通常は、シリコンのメモリを有する。この状況においては、SASDはDASDを置換するであろう。これは、小さいアクセス・タイムを持った光ディスクの開発及び安価で且つ大きい密度のシリコン型メモリの可用性によって益々経済的に実用可能になりつつある。シリコン装置はバッファのためには上等なメモリである。

【0030】

SASD113は、一般的には、受信装置において利用可能である場合、必要なビデオ・データ記憶装置がDASD111の容量よりも大きくなるように、割込みが長い時間を取ろうとしていることをユーザが知っている時、使用に供される。これは、ユーザが「長期休止 (LONG PAUSE)」コマンドを発生することによって表される。これは、入力バッファ回路110へのビデオ信号の搬送及びそのメモリ回路のDASD111及びSASD113の両方の部分の活動を開始する長期休止アルゴリズムを開始させる。説明の便宜上、DASD111は、第1部分及び第2部分にセグメント化されるものとするのが好都合である。それらの部分は、同じ容量のものであるがそれぞれ最小の必要容量を持つものとするのが最も一般的である。第1部分の容量は、SASDの最悪のケースの書き込みアクセス・タイムに等しい時間に受信したビデオ・データの量よりも大きくななければならない。入力バッファ回路110はその出力をDASD111の第1部分に搬送し、DASD111はその出力をSASD113に送る。どの時点でも、DASD111及びSASD113の両方ともビデオ情報を記憶している。この実施例では、記憶されたビデオの先頭及び主要部分はSASD113に存在し、DASD111の第1部分に記憶される。その第2部分は、SASD113が書き込みを開始した時に呼び出される。これは、SASDのオーバフロー時に及び「長期メモリ表示 (DISPLAY LONG MEMORY)」コマンド

に回答して生じる。

【0031】

【表2】

コマンド機能アルゴリズム	チューニング回路出力を設定する	入力バッファ活動を設定する	DASD第1部分活動を設定する	SASD活動を設定する	DASD第2部分活動を設定する	出力バッファ活動を設定する	受信回路活動を設定する	ディスプレイ活動を設定する
無中断の表示	受信回路入力に接続する	非活動	非活動	非活動	非活動	非活動	チューニング回路から受信し、ディスプレイに搬送する	正規のビデオ伝送を表示する
長期休止	入力バッファに接続する	チューニング回路から受信し、DASD第1部分に搬送する	入力バッファから受信し、DASD第1部分に搬送する	DASD第1部分から受信し、DASD第2部分に搬送する	非活動 (又は、SASDから受信する)	非活動	非活動	非活動
長期メモリ表示	入力バッファに接続する	チューニング回路から受信し、DASD第1部分に搬送する	入力バッファから受信し、SASDに搬送する	DASD第1部分から受信し、DASD第2部分に搬送する	SASDから受信し出力バッファ第2部分に搬送する	DASD第2部分から受信し、受信回路に搬送する	出力バッファから受信してディスプレイに搬送する	SASD (及びDASD) からの記憶されたビデオを表示する

【0032】

ユーザは、再び視聴を再開する時、「長期メモリ表示」コマンドを発生して、表2に示された長期メモリ表示アルゴリズムを開始させる。表2に示されるように、入力バッファ回路110は、その後のビデオ・データを受信しそして一時的に記憶し続け、その最も古い記憶されたデータをDASD111の第1部分に出力する。DASD111の第1部分は、その受信したビデオ・データをその次の記憶ロケーションに書き込み、それが前に記憶したビデオ・データをその受信したシーケンスでSASD113へ出力し続ける。SASD113は、それが受信したビデオ・データをその次の記憶ロケーションに書き込み、同時に、それが前に記憶したビデオ・データをその受信したシーケンスでDASD111の第2部分へ出力し続ける。DASD111の第2部分は、その受信したビデオ・データをその次の記憶ロケーションに書き込み、同時に、それが前に受信したビデオ・データをその受信したシーケンスで出力バッファ回路114へ出力し続ける。出力バッファ回路114はDASD111の出力を受信し、それが最も早く受信したビデオ・データをディスプレイ装置106上に表示するために受信回路104へ出力する。又、この長期メモリ表示アルゴリズムは、現在伝送されつつある新しいビデオ・データをユーザに表示しながら、そのデータが記憶されることを保証する。

【0033】

長期休止アルゴリズムの代替実施例は、DASD111がSASD113への搬送前にDASD111の第2部分を満たすものである。この場合、記憶されたビデオの先頭部分はDASD111の第2部分にあり、そしてSASD113における部分が続き、更にDASD111の第1部分における部分が後続する。これは、少なくともSASD113の読取りアクセス・タイムによって長期メモリ表示アルゴリズムをスピード・アップする。

【0034】

1つの望ましい代替実施例では、ビデオ記憶装置の量がDASDのメモリの容量に接近する時、SASDは自動的に活動化される。この機能によって、その装置は、休止アルゴリズムを操作することから長期休止アルゴリズムを操作することに変化する。これが生じる場合、ユーザが再び視聴を再開する準備ができる時

、そのシステムは、自動的に、表1に示されたメモリ表示アルゴリズムの代わりに、表2に示された長期メモリ表示アルゴリズムを使用する。

【0035】

最も簡単な形態では、DASD111の第1及び第2部分は、各部分に対して別個のDASDを使用することによって容易に実施されることは注目される。しかし、単一のDASD111は適当な入力及び出力サイズと整合して使用可能であり、その場合、各サイクルの期間、従って、各サイクルにおいて処理されるビデオ・データの量が、データ喪失又はバッファ・オーバフローなしに、ビデオ・データ転送に対して最適化されるように、各装置の読取り及び書き込みサイクルが知的に実施される。

【0036】

ビデオ・プログラムを捕捉すること或いは一定の遅延をもってそのプログラムの残り部分を表示することの選択を、割込み後に戻って、ユーザに与えることが望ましい。その一定の遅延は割込みの期間に等しくなるであろう。正規のプログラム伝送を捕捉することは、ユーザがメモリ回路112の容量全体に対してこの割込みスキームを繰り返して使用することを可能にする。

【0037】

技術的な講義又はムービ・オン・デマンドにおけるように、ユーザがリアル・タイム伝送を捕捉することを望まない場合、図2に示されたアルゴリズムだけが実行される。ユーザが通常のTV伝送のようなリアル・タイム伝送を最終的に捕捉することを選択する場合、その捕捉は幾つかの方法のうちの1つで達成可能である。1つの方法は、非常に多くのデータのフレームのうちの1つが或廃棄率と整合して廃棄されるようなフレーム・スキッピングを使用することによって幾つかのビデオ・フレームを廃棄することである。そのフレーム廃棄率はユーザ設定可能であり、或いは、別の方法として、正規のプログラミングを捕捉するために許容されたユーザ指定の時間の量から自動的に計算可能である。

【0038】

正規のビデオ伝送を捕捉するための第2の方法は、そのユーザに関係ないそのデータの特定部分を表示から切り離すか或いはその表示を大急ぎで行うことであ

る。これは、当業者には知られている方法におけるスキッピング・コマmercialを含むものでよい。第3の方法は、通常の表示速度よりも速い速度でその記憶されたビデオを再生することである。第4の方法は、連続したビデオと共にその記憶されたデータを、ユーザのディスプレイの種々のセクションにおいて同時に表示することである。これは、スクリーンをスプリットすることによって、或いはピクチャ内ピクチャ(P I P)に類似した方法で達成可能である。

【0039】

別の実施例では、ユーザ選択のプログラムのすべての受信された伝送が連続的に受信回路104及び入力バッファ回路110の両方に同時に送られる。ユーザは受信回路104を通して送られたプログラムをディスプレイ装置106上に通常の方法で表示させる。入力バッファ回路はその受信されたビデオ・データを記憶のためにメモリ回路112へ送る。この方法では、メモリ回路112はそれのCバイトの記憶容量までビデオ・プログラムでもって満たす。メモリ記憶装置は循環モードで動作し、Cバイトのビデオ上に関して循環的である。一旦それが容量まで満たされると、受信されたビデオ・データの次の各サイクルが前のサイクルのビデオ・データを上書きする。従って、ビデオ・プログラムの最初のCバイトを受信した後は何時でも、メモリはプログラム・データのうちの直前のCバイトをDASD111に記憶させる。何時でも、ユーザは、ディスプレイ装置への出力のために出力バッファ回路114を受信回路104へ送らせる「表示メモリ(D I S P L A Y M E M O R Y)」コマンドを発生することができる。

【0040】

この実施例では、ユーザは、割込み時にそのオペレーションを休止する必要がない。むしろ、ユーザは、表示されるビデオがチューニング及び復調回路102から直接に来るのではなく、記憶装置から出力バッファを通して来るべきであることをコマンド指示する必要があるだけである。ユーザは、ピクチャ内(イン)ピクチャ・モードにおいてこれを表示することができる。進行中のビデオはフル・スクリーン115上に示され、記憶されたビデオはスクリーンの一部分107上に示される。又、これは、部分107がスプリット・スクリーンを表すことによってスプリット・スクリーンで表示される。選択的スクリーンでは、ユーザの選択

に従って、進行中のビデオ或いは記憶されたビデオはフル・スクリーン115上にあるであろう。如何なる捕捉回路もこの実施例によって使用可能である。

【0041】

メモリ記憶装置の必要な量の見積りは、圧縮されていないビデオに対して毎秒2メガバイトのデジタル・データが伝送されることを考慮することによって得られる。これは120メガバイト/分に対応する。従って、15分の非圧縮ビデオは1.8ギガバイトの記憶容量を必要とする。圧縮スキームは、特定の圧縮比が必要とする記憶装置の量を減少させるであろう。例えば、圧縮されたオーディオ及びビデオMPEG-1フォーマットは、1.5メガバイト/秒又は187.5キロバイト/秒である。これは15分のビデオに対して170メガバイトより小さい記憶装置しか必要とせず、1時間のMPEG-1圧縮データに対して675メガバイトしか必要としない。更に、複数のダイレクト・アクセス記憶装置においても、或いは光ディスク又はテープ・ドライブのようなダイレクト・アクセス記憶装置及びシーケンシャル・アクセス記憶装置の両方を含む階層においても、より長いビデオが記憶可能である。今や、例えば、アクセス・タイムが秒の桁であるテープ・ドライブが利用可能である。従って、ダイレクト・アクセス記憶装置と共にシーケンシャル・アクセス記憶装置を包含する階層は非常に長いビデオを記憶することができる。

【0042】

ビデオ入力バッファ回路110の最小サイズは、そのバッファがメモリ回路112において使用される記憶装置の最大アクセス・タイム中に受信したビデオ・データを一時的に記憶するには十分大きくなければならないことに留意することによって見積り可能である。15ミリ秒のアクセス・タイムを有する記憶装置は非圧縮ビデオに対して230キロバイトのバッファを必要とする。圧縮スキームは入力バッファ回路110のサイズをかなり減少させるであろう。TV及びダイレクト・アクセス記憶装置との実用上の互換性に関しては、フレーム・フィールドの整数倍の且つ記憶装置のセクタ・サイズに近いバッファ・サイズを選択することが最善である。その必要なバッファ・サイズは、非圧縮ビデオに対してさえ、十分に現在利用可能なビデオ・バッファ内である。ビデオが圧縮フォーマット

で受信される場合、受信回路は圧縮解除のための回路を含む。

【0043】

本発明は、メモリ再生、巻戻し、停止、連続及び正規運動表示、高速運動表示、及び低速運動表示を可能にする。これらの機能は、ユーザがリモート・コントローラ 116 (図1参照) を使用することによって制御されることが望ましい。これは、ユーザが休止することを望む時にそれを前もって記憶するだけというのとは反対に、すべての伝送が記憶装置において連続的に記憶されるという実施例において最も良好に使用される。記憶アルゴリズムは、休止アルゴリズム又は長期休止アルゴリズムにおいて説明したものと同一である。前述の様式の場合のように、記憶装置のメモリがプログラム伝送全体を記憶するに十分なほど大きくない場合、そのプログラムの初期の部分は新しい伝送によって上書きされる。ユーザが巻戻すためのフレームの数又は時間単位を指定する時、ダイレクト・アクセス記憶装置におけるこのデータの位置は計算され、ディスプレイ・メモリに対するアルゴリズムは表1におけるように使用可能である。表示は、正規速度、正規速度よりも遅い速度、又は正規速度よりも速い速度で生じるようにコマンド指示可能である。

【0044】

本発明は多くの状況において利点を有する。これらは、TV信号が放送、ケーブル、衛星、又は電話によって到達するという家庭、図書館、教育、又は工業環境を含む。図3は、入力ビデオが1.544メガヘルツのアナログ帯域幅を与えるT-1電話線152から受信される場合に対して本発明を実施するシステムを示す。デジタル情報は、デジタル信号に対して使用される時、モデムを使用してT-1電話線を介して送受信される。デジタル・データ速度は、使用されるモデムのビット/ヘルツに相当する。図3におけるシステムはT-1電話線152に接続された1ビット/ヘルツのモデムを使用する。T-1電話線152の出力はT-1受信カード154へ送られる。そのカード154はその後のビデオ・データをバッファする。それは、MPEG-1の1.5メガビット/秒のフォーマットで圧縮されたビデオ・プログラムを受信することができる。システムがユーザによって休止させられるまで、その受信されたビデオはMPEG-1デコ

ンプレッサ及びデコーダ156へ直接に送られる。しかる後、そのビデオはビデオ・カード158へ送られ、ビデオ・ディスプレイ160上に表示される。ユーザが「表示休止 (DISPLAY PAUSE)」コマンドを発生する時、そのビデオは、所定量のビデオ・データがT-1受信カード154のメモリにおいて受信された後にディスク・メモリ162に転送される。

【0045】

ディスク・メモリ162は、そのメモリ容量がいっぱいになった場合、その後のビデオが受信され続けそしてそのディスク上の最も古いデータを上書きし始めるように循環モードに置かれる。これは、ユーザが「表示メモリ (DISPLAY MEMORY)」コマンドを発生するまで継続する。ユーザが「表示メモリ」コマンドを発生する時、最も新しく記憶されたディスク・データがMPEG-1デコンプレッサ及びデコーダ・カード156に送られ、そこから、それはビデオ・ディスプレイ160上に表示するためにビデオ・カード158へ送られる。ユーザが「表示メモリ」コマンドを発生する時にディスク・メモリが満たされないようにその休止の期間が短い場合、ディスクは、その記憶されたデータの表示が始まっている間満たされ続ける。その後ユーザが「表示メモリ」コマンドを発生する時にいつも、最も早く記憶されたデータが表示される。

【0046】

T-1受信カード154、MPEG-1デコンプレッサ及びデコーダ156、及びビデオ・カード158は、ディスク・メモリ162を有するパーソナル・コンピュータ (PC) 150に挿入され、デジタルTV受信機兼ディスプレイとして動作するように構成される。PCスクリーン又は外部モニタがビデオ・ディスプレイ160として使用可能である。そのパーソナル・コンピュータは操作アルゴリズムをプリロードされており、本発明を実施するための完全な媒体として働くことが可能である。標準的なVCR型機能がリモート・コントローラ164によって遠隔的にユーザ制御される。そのコントローラは、通常、赤外線テクノロジーを使用する。

【0047】

それらのアルゴリズムはソフトウェア、ハードウェア、或いはソフトウェア及

びハードウェアの組合せで実施可能である。

【0048】

まとめとして、本発明の構成に関して以下の事項を開示する。

【0049】

(1) 受信回路、前記受信回路に結合されたユーザ・コマンド回路、及び前記受信回路に結合されたディスプレイ手段を有するビデオ信号表示装置にして、

前記受信回路に結合され、前記信号の部分を受信及びバッファするための入力及び入力バッファ出力を有する入力バッファ回路と、

前記入力バッファ出力に結合され及びメモリ出力を有し、前記部分を記憶するためのメモリ回路と、

前記メモリ出力に結合された出力バッファ入力及び出力バッファ出力を有し、前記メモリ出力を受信及びバッファするための出力バッファ回路と、

を含み、

前記ユーザ・コマンド回路は、前記ユーザからコマンドを受信した時、前記出力バッファ出力を前記受信回路に結合させて前記部分を搬送し、前記ディスプレイ手段上に表示させることを特徴とする装置。

(2) 前記メモリ回路は、ダイレクト・アクセス記憶装置及びシーケンシャル・アクセス記憶装置の少なくとも1つから成るグループから選択された装置を含むことを特徴とする上記(1)に記載の装置。

(3) 前記入力バッファ回路は、

前記部分を前記入力に結合して受信するための入力結合回路と、

前記入力結合回路に結合され、前記ユーザによってコマンド指示された時、前記ユーザ・コマンド回路に应答して前記部分を前記入力へ搬送させて受信させるための制御回路と、

を含むことを特徴とする上記(1)に記載の装置。

(4) 前記ユーザは1つの期間を持った割込みを有すること、及び

前記信号の部分は前記期間の間に伝送されたビデオ・データの量に対応すること

を特徴とする上記(1)に記載の装置。

(5) 前記メモリ回路は前記伝送されたビデオ・データの量に少なくとも等しい容量を有することを特徴とする上記(4)に記載の装置。

(6) 前記期間は15分であることを特徴とする上記(4)に記載の装置。

(7) 前記伝送されたビデオ・データの量は170メガバイトであることを特徴とする上記(4)に記載の装置。

(8) 前記ビデオ信号はプログラムのビデオ信号内容全体を構成すること、及び前記信号の部分は前記プログラムのビデオ信号内容全体を含むことを特徴とする上記(1)に記載の装置。

(9) 前記ユーザ・コマンド回路は、再生、巻戻し、停止、静止、連続、高速送り、低速送り、選択的ピクチャ、及びピクチャ内ピクチャ・フォーマットのうちの少なくとも1つより成るグループから選択された機能を制御するためのビデオ表示機能コントローラを含むことを特徴とする上記(1)に記載の装置。

(10) 前記コントローラはリモート・コントローラであることを特徴とする上記(9)に記載の装置。

(11) ビデオ信号を受信するユーザ・コマンド制御される装置にして、
ビデオ出力を有し、前記ビデオ信号を受信するためのビデオ入力回路と、
前記ビデオ出力に結合された前記ビデオ信号を受信するための第1受信入力、
第2受信入力、及び受信出力を有する受信回路と、
前記受信出力に結合されたディスプレイ入力を有し、前記ビデオ信号を受信及び表示するためのディスプレイ手段と、

前記ビデオ出力に結合された記憶入力及び記憶出力を有し、前記ビデオ信号の部分を受信及び記憶するための記憶回路と、

前記ユーザによってコマンド指示された時、前記記憶回路に結合された前記ユーザ・コマンドに应答して前記記憶出力を前記第2受信出力に結合させて前記部分を前記ディスプレイ手段において表示のために搬送させるための制御回路と、
を含む装置。

(12) 前記記憶回路は、

前記部分をバッファして前記記憶入力を形成するための入力バッファ回路にして、
入力バッファ出力を有する入力バッファ回路と、

前記入力バッファ出力に結合され、前記記憶を行うためのメモリ回路にして、メモリ出力を有するメモリ回路と、

前記メモリ出力を受信及びバッファするための出力バッファ回路にして、前記記憶出力を形成する出力バッファ回路と、

を含むことを特徴とする上記(11)に記載の装置。

(13) 前記記憶回路は、入力バッファ、ダイレクト・アクセス記憶装置、シーケンシャル・アクセス記憶装置、及び出力バッファのうちの少なくとも1つより成るエレメントのグループから選択されたメモリ・エレメントを含むことを特徴とする上記(11)に記載の装置。

(14) 前記ユーザは1つの期間を持った割り込みを有すること、及び

前記信号の部分は前記期間の間に伝送されたビデオ・データの量に対応すること

を特徴とする上記(11)に記載の装置。

(15) 前記メモリ回路は前記伝送されたビデオ・データの量に少なくとも等しい容量を有することを特徴とする上記(14)に記載の装置。

(16) 前記期間は15分であることを特徴とする上記(14)に記載の装置。

(17) 前記伝送されたビデオ・データの量は170メガバイトであることを特徴とする上記(14)に記載の装置。

(18) 前記ビデオ信号はプログラムのビデオ信号内容全体を構成すること、及び

前記信号部分は前記プログラムのビデオ信号内容全体を含むこと

を特徴とする上記(11)に記載の装置。

(19) 前記制御回路は、再生、巻戻し、停止、静止、連続、高速送り、低速送り、選択的ピクチャ、及びピクチャ内ピクチャ・フォーマットのうちの少なくとも1つより成るグループから選択された機能を制御するためのビデオ表示機能コントローラを含むことを特徴とする上記(11)に記載の装置。

(20) 前記コントローラはリモート・コントローラであることを特徴とする上記(19)に記載の装置。

(21) ディスプレイ上にビデオ信号を表示している期間の間に割り込みされる

ビデオ・プログラム・ユーザをサービスするための方法にして、前記信号は前記期間中に伝送されたビデオ信号の量に対応した部分を有するものにおいて、

前記ビデオ信号を受信するステップと、

前記部分を循環式記憶回路に結合するステップと、

前記部分を前記循環式記憶回路に記憶するステップと、

前記部分を表示するようにコマンド指示するステップと、

前記コマンド指示を受けた時、前記部分を前記ディスプレイに搬送するステップと、

を含む方法。

(22) 前記結合するステップは前記部分を入力バッファし、前記部分をメモリ回路に送るステップを含むこと、及び

前記搬送するステップの後に出力バッファするステップが続くこと

を特徴とする上記(21)に記載の方法。

(23) 前記記憶回路は、入力バッファ、ダイレクト・アクセス記憶装置、シーケンシャル・アクセス記憶装置、及び出力バッファのうちの少なくとも1つより成るエレメントのグループから選択されたメモリ・エレメントを含むことを特徴とする上記(21)に記載の方法。

(24) 前記記憶回路は前記伝送されたビデオ信号の量に少なくとも等しい容量を有することを特徴とする上記(21)に記載の方法。

(25) 前記ビデオ信号はプログラムのビデオ信号内容全体を構成すること、及び

前記信号部分は前記プログラムのビデオ信号内容全体を含むこと

を特徴とする上記(21)に記載の方法。

(26) 巻戻すステップ、停止するステップ、連続するステップ、正規の送りで再生するステップ、高速送りで再生するステップ、及び低速送りで再生するステップのうちの少なくとも1つより成るグループから選択されたステップを含むことを特徴とする上記(21)に記載の方法。

(27) 前記コマンド指示するステップは遠隔的に行われることを特徴とする上記(26)に記載の方法。

(28) ビデオ信号を受信及び表示するための回路を有する装置にして、
少なくとも1つの循環式記憶媒体と、
前記媒体に結合された入力バッファと、
前記媒体に結合された出力バッファと、
前記ビデオ信号の一部分を前記媒体及びバッファに記憶するための記憶階層と

、
前記記憶階層に記憶された部分をディスプレイに搬送するための回路と、
前記ディスプレイを制御するための回路と、
を含み、

前記制御するための回路は、再生、静止、停止、巻戻し、連続、低速送り、高速送り、選択的ピクチャ、及びピクチャ内ピクチャ・フォーマットのうちの少なくとも1つより成るグループから選択された機能を制御するためのビデオ表示機能コントローラを含むことを特徴とする装置。

(29) 前記メモリ回路は循環式記憶装置を含むことを特徴とする上記(1)に記載の装置。

(30) 前記記憶回路は更に循環式記憶装置を含むことを特徴とする上記(11)に記載の装置。

(31) 前記ユーザが前記ビデオ信号を進行中に捕捉するための捕捉回路を含むことを特徴とする上記(1)に記載の装置。

(32) 前記ビデオ信号を進行中に捕捉するステップを含むことを特徴とする上記(21)に記載の方法。

(33) 前記捕捉回路は、ピクチャ内ピクチャ、フレーム・スキッピング、及びスプリット・スクリーンのうちの少なくとも1つより成るグループから選択された形式における捕捉を行うことを特徴とする上記(31)に記載の装置。

【図面の簡単な説明】

【図1】

本発明の実施例を示す図である。

【図2】

本発明のメモリ回路にシーケンシャル・アクセス記憶装置(SASD)を付加

したものを示す図である。

【図3】

ビデオ伝送がT-1電話線から受信される時の本発明の実施例を示す図である

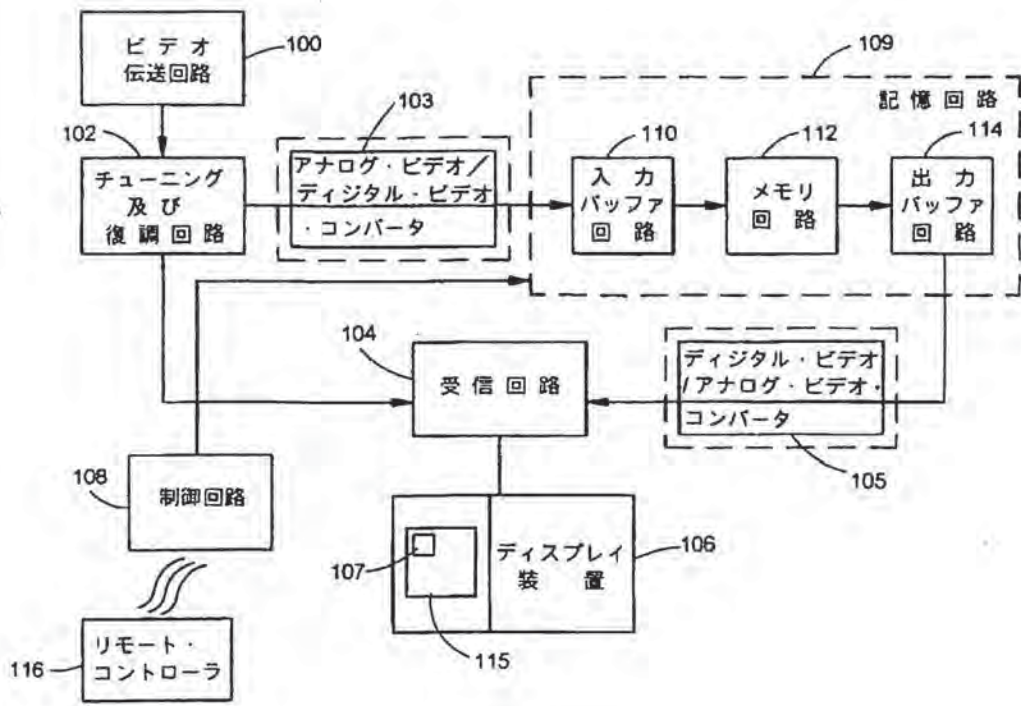
。

【書類名】 図面
【特許】 平08-334291 (08. 12. 13)

【受付日】 平08. 12. 13

頁: 1/ 4

【書類名】 図面

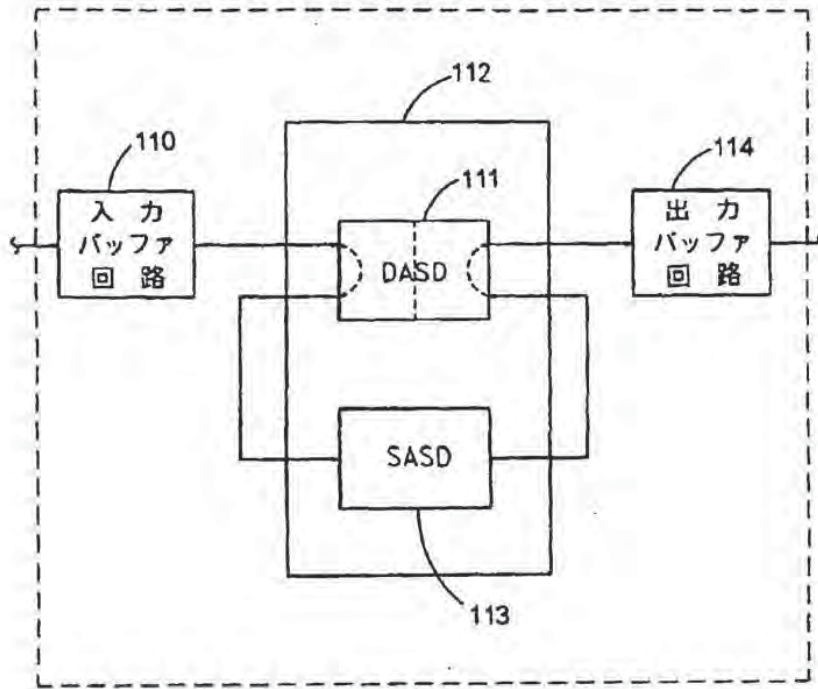


【書類名】 図面
 【特許】 平08-334291(08.12.13)

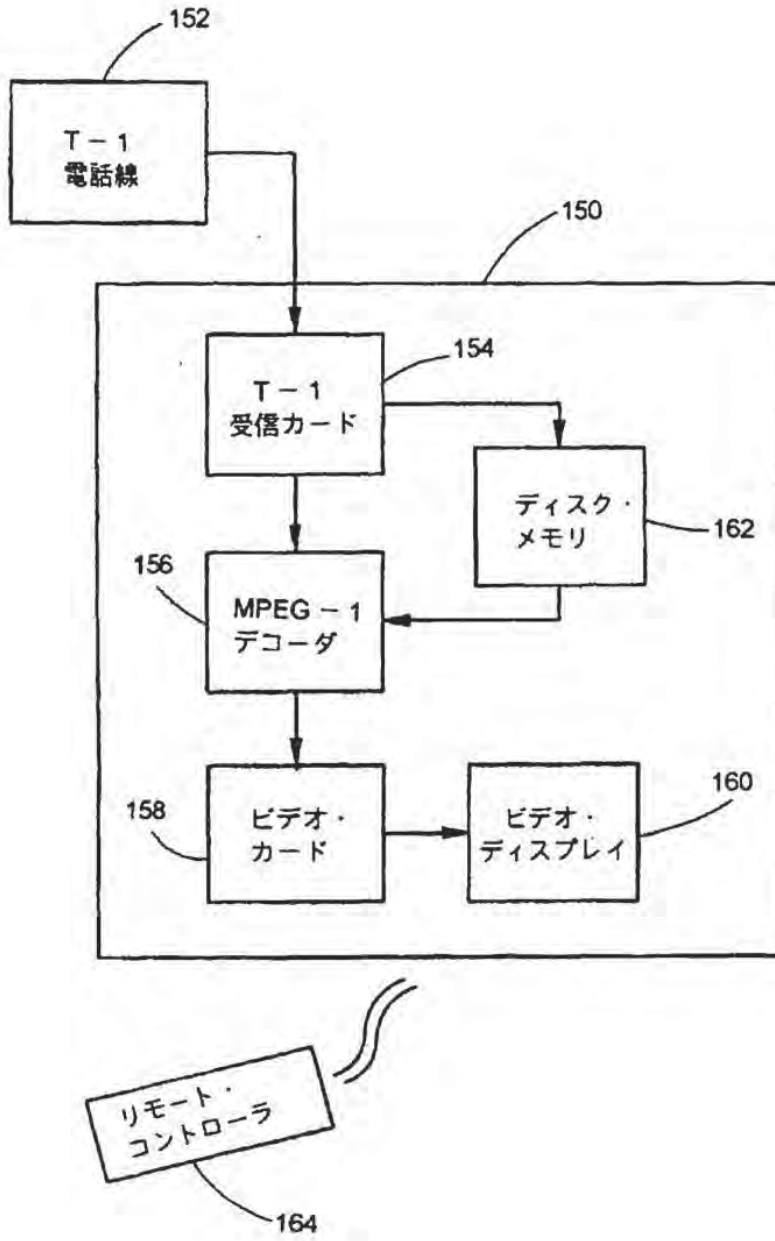
【図1】

【受付日】 平08.12.13
 頁: 2/4

【図2】



【図3】



【書類名】 要約書

【要約】

【課題】ビデオ放送の視聴者がプログラムの表示中の任意の時間に休止すること及び復帰時に介入セグメントを表示させることを可能にする。

【解決手段】

休止期間中に受信されたビデオは記憶され、ユーザ・コマンド時に取り出すことが可能である。記憶媒体は、メモリが容量いっぱいまで満たされた時、前に記憶されたデータ上に入力情報データを書き続けることができるような循環式のものである。記憶回路は、シーケンシャル・アクセス記憶装置又はダイレクト・アクセス記憶装置を使用する。記憶回路は高速度メモリ入力バッファ及び高速度メモリ出力バッファを有する。それは、その使用される記憶装置の比較的長い読取り及び書込みアクセス・タイムのためである。休止期間の終了時に、ユーザはその記憶されたビデオを表示させることができる。ユーザは、正規の放送を捕捉すること又はデイリ・モードで残りのプログラム・ビデオを視聴することの間の選択を行う。記憶されたビデオは、ユーザの直接的又は遠隔的なVCR型のビデオ機能制御の下に、正規の動作、低速度動作、又は高速度動作で間欠的に又は連続的に表示可能である。

【選択図】 図1

【書類名】 職権訂正データ
【訂正書類】 特許願

<認定情報・付加情報>

【特許出願人】

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【氏名又は名称】 市位 嘉宏

【書類名】 優先権証明書提出書
【特許】 平08-334291(08.12.13)

【受付日】 平08.12.17

頁: 1/ 1

【書類名】 優先権証明書提出書

【提出日】 平成8年12月16日

【あて先】 特許庁長官 殿

【事件の表示】

【出願番号】 平成8年特許願第334291号

【発明の名称】 割込み許容ビデオ・プログラム表示装置及び方法

【提出者】

【識別番号】 390009531

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【識別番号】 100084191

【弁理士】

【氏名又は名称】 合田 潔

【最初の出願の表示】

【国名】 アメリカ合衆国

【出願日】 1995年12月29日

【出願番号】 60/009435

【最初の出願の表示】

【国名】 アメリカ合衆国

【出願日】 1996年06月04日

【出願番号】 08/659125

【提出物件の目録】

【物件名】 優先権証明書 2

【物件名】 優先権証明書の訳文 2

Y0995-024

29624-00336
9111111111111111



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

August 27, 1996

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 60/009,435

FILING DATE: December 29, 1995

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

P. SWAIN
Certifying Officer

PATENT APPLICATION SERIAL NO. 089495

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECEIPT SHEET

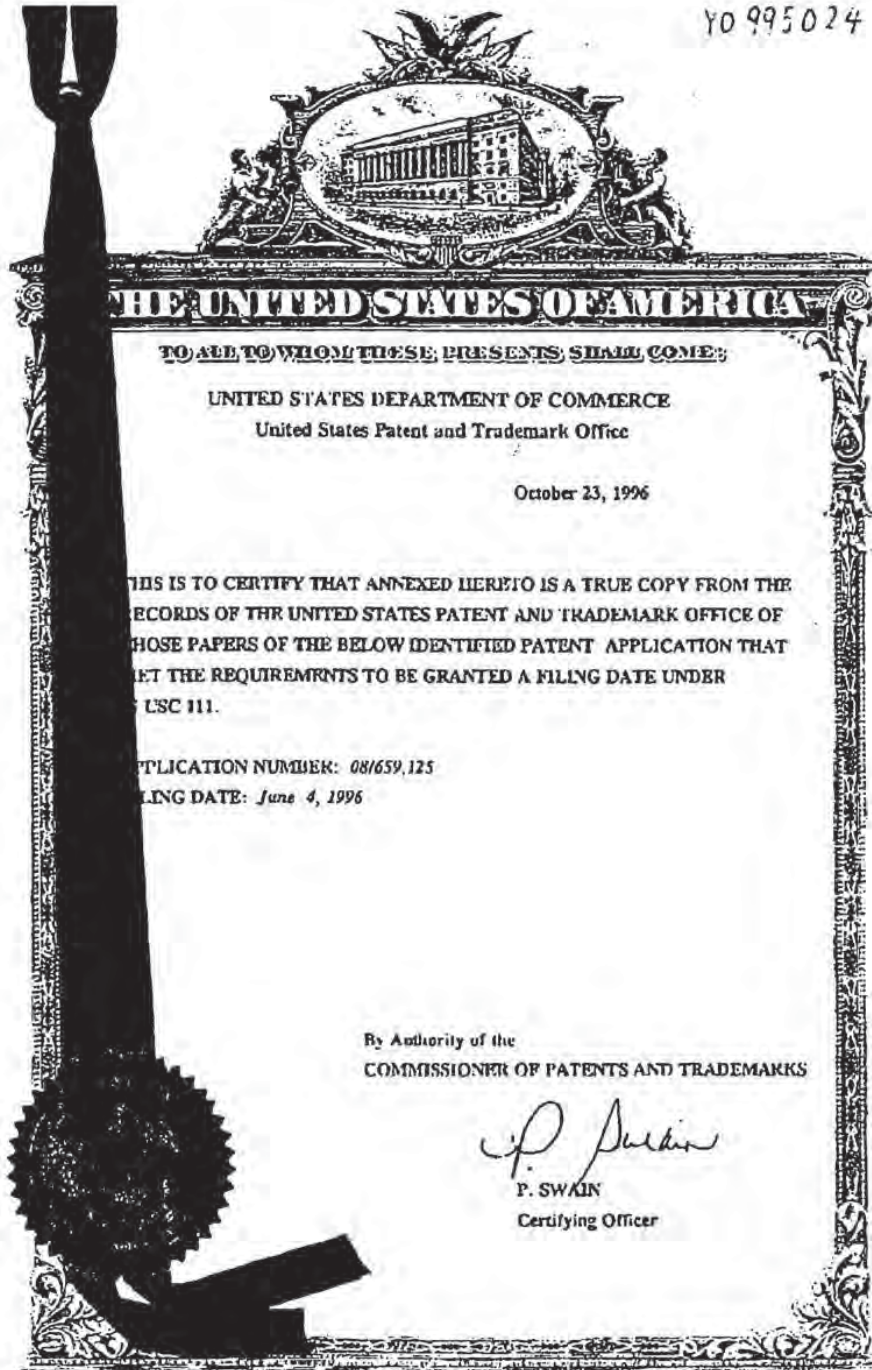
BAZ0017 02/07/96 60009435

09-0168 280 114

150.0000 10995-024

PTO-155A
(5/87)

YO 995024



PATENT APPLICATION SERIAL NO. 08/659125

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

010 01 08-0108 08/17/01 08629125
21011 121 1.111.0001 10M0024

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(5/87)

[書類名] 添付書類
[特許] 平08-334291(08.12.13)

[受付日] 平08.12.17

頁: 1/ 2

29624400336



【整理番号】 Y0995024

アメリカ合衆国優先権証明書 (訳文)

1996年 8月27日

ここに添付された書類は合衆国法典第35巻第111条の下で出願口が認められる要件を満たした下記に特定する特許出願書類のアメリカ合衆国特許局の記録からとった真正な謄本であることを証明する。

出願番号 : 第60/009435号

出願日 : 1995年12月29日

特許局長
(認証官)

(署名)

(整理番号) Y0995024

アメリカ合衆国優先権証明書 (訳文)

1996年10月23日

ここに添付された書類は合衆国法典第35巻第111条の下で出願日が認められる条件を満たした下記に特定する特許出願書類のアメリカ合衆国特許局の記録からとった真正な謄本であることを証明する。

出願番号: 第08/659125号

出願日: 1996年6月4日

特許局長
(認証官)

(署名)

【書類名】 職権訂正データ (方式)
【特許】 平08-334291 (08. 12. 13)

【作成日】
【担当者コード】 6992 頁: 1/ 1

【書類名】 職権訂正データ
【訂正書類】 優先権証明書提出書

<認定情報・付加情報>

【提出者】

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【提出された物件の記事】

【提出物件名】 優先権証明書 1
優先権証明書の訳文 1

要 約 不 備 修 正 デ ー タ

所属 特許情報管理課

【中間コード】
972-001

【出願番号】
特願平08-334291

【審査官コード】
7437

【作成日】
平成09年06月04日

【採用した要約書】 1

- 1、出願時のものを修正
- 2、新規に作成したもの
- 3、下記日付けの手續補正書に添付のもの

上記3、の場合 平成 年 月 日 の手續補正書

【要約書とともに
公開される図面】

【 】図

※選択図のみの修正はイメージ入力なし。

【特許】 平08-334291(08.12.13)

頁: 1/1

【書類名】 要約書

【要約】

【課題】 ビデオ放送の視聴者がプログラムの表示中の任意の時間に休止^{できると}する~~こと~~及び復帰時に介入セグメントを表示~~させること~~を可能にする。

【解決手段】

休止期間中に受信されたビデオは記憶され、~~ユーザがリファインド時に取り出す~~
~~ことが可能である。~~記憶媒体⁽¹²⁾は、メモリが容量いっぱいまで満たされた時、前に記憶されたデータ上に入力情報データを書き続けることができる~~ような~~循環式のものである。記憶回路⁽¹⁰⁹⁾は、シーケンシャル・アクセス記憶装置又はダイレクト・アクセス記憶装置を使用する。記憶回路は高速度メモリ入力バッファ⁽¹¹⁰⁾及び高速度メモリ出力バッファ⁽¹¹⁴⁾を有する。~~それは、その使用される記憶装置の比較的長い読取り及び書込みデータアクセスタイムのためである。~~休止期間の終了時に、ユーザはその記憶されたビデオを表示させることができる。ユーザは、正規の放送を捕捉すること又は~~リプレイ~~^{リプレイ}モードで残りのプログラム・ビデオを視聴することの~~選択~~を行う。記憶されたビデオは、ユーザの直接~~又は~~又は遠隔的なVCR型のビデオ機能制御の下に、正規の動作、低速度動作、又は高速度動作で間欠的に又は連続的に^(106に)表示可能である。

【選択図】 図1

【書類名】 代理人辞任届
【特許】 平08-334291(08.12.13)

【受付日】 平11.03.29

頁: 1/ 1

【書類名】 代理人辞任届

【提出日】 平成11年 3月29日

【あて先】 特許庁長官 殿

【事件の表示】

【出願番号】 平成 8年特許願第334291号

【手続をした者】

【事件との関係】 特許出願人

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【国籍】 アメリカ合衆国

【辞任した代理人】

【識別番号】 100084191

【弁理士】

【氏名又は名称】 合田 潔

【書類名】 代理人辞任届
【特許】 平08-334291(08.12.13)

【受付日】 平11.04.16

頁: 1/ 1

【書類名】 代理人辞任届

【あて先】 特許庁長官 殿

【事件の表示】

【出願番号】 平成 8年特許願第334291号

【手続をした者】

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【国籍】 アメリカ合衆国

【辞任した代理人】

【識別番号】 100084191

【弁理士】

【氏名又は名称】 合田 潔

認定・付加情報

特許出願の番号	平成 8年 特許願 第334291号
受付番号	59900368129
書類名	代理人辞任届
担当官	第三担当上席 0092
作成日	平成11年 4月21日

<認定情報・付加情報>

【提出日】 平成11年 4月16日

次頁無

[書類名] 通知書 (再提出通知)
[特許] 平08-334291 (08. 12. 13)

[発送日] 平11. 05. 26
[発送番号] 036267 頁: 1/ 1

通知書

平成11年 5月20日
特許庁長官

特許出願人代理人 合田 潔 様
平成 8年 特許願 第334291号 に関し

平成11年 3月29日付け提出の代理人辞任届は、下記の理由によって受理
しません。

この行政指導に不服のときは、下欄の問い合わせ先まで、その旨を申し出てく
ださい。

記

1. 手続が重複しています。

課長	上席主任方式審査専門官	主任方式審査専門官	方式審査専門官
	喜多川		小野田
	1804		7393

【書類名】 出願審査請求書
【特許】 平08-334291(08.12.13)

【受付日】 平11.12.07

頁: 1/ 1

【書類名】 出願審査請求書

【整理番号】 Y0E95024

【あて先】 特許庁長官 殿

【出願の表示】

【出願番号】 平成 8年特許願第334291号

【請求項の数】 33

【請求人】

【識別番号】 390009531

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【識別番号】 100086243

【弁理士】

【氏名又は名称】 坂口 博

【連絡先】 046-273-3318、3325、3455

【手数料の表示】

【予納台帳番号】 024154

【納付金額】 150,300円

認定・付加情報

特許出願の番号 平成 8年 特許願 第334291号
受付番号 59901193624
書類名 出願審査請求書
担当官 第三担当上席 0092
作成日 平成11年12月13日

<認定情報・付加情報>

【提出日】 平成11年12月 7日

【請求人】

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【代理人】 申請人

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次頁無

拒絶理由通知書

特許出願の番号 平成 8年 特許願 第334291号
起案日 平成15年 3月 4日
特許庁審査官 石丸 昌平 9559 5C00
特許出願人代理人 坂口 博(外 1名) 様
適用条文 第29条第2項、第36条

この出願は、次の理由によって拒絶をすべきものである。これについて意見があれば、この通知書の発送の日から3か月以内に意見書を提出して下さい。

理 由

1. この出願の下記の請求項に係る発明は、その出願前日本国内又は外国において頒布された下記の刊行物に記載された発明に基いて、その出願前にその発明の属する技術の分野における通常の知識を有する者が容易に発明をすることができたものであるから、特許法第29条第2項の規定により特許を受けることができない。
2. この出願は、明細書及び図面の記載が下記の点で、特許法第36条第6項に規定する要件を満たしていない。

記 (引用文献等については引用文献等一覧参照)

[引用文献等一覧]

1. 特開平4-88772号公報
2. 特開平6-233234号公報
3. 特開平6-245157号公報
4. 特開平7-111629号公報
5. 特開平7-131754号公報
6. 特開平7-250305号公報
7. 特開平7-264529号公報

(理由1)

[請求項1-33について] : 引例1-7

引例1-6には、「ビデオプログラムの一部分を記憶するようにコマンド指示を行う手段及びその記憶された部分をユーザの都合のいい時に表示する」等、いわゆるタイムシフト機能を実現する方法、及び、そのための手段を備えた装置が

記載されている。

したがって、引例1-7に記載される発明及び当業者間の周知技術に基づいて請求項1-33に係る発明とすることは当業者が容易になし得たものである。

(理由2)

[請求項1、15、31-33について]

少なくとも以下の記載が不明確。

- ・前記ユーザから(請求項1)
- ・前記メモリ回路は(請求項15)
- ・「捕捉」が具体的にどのような動作であるのか不明(請求項31-33)

なお、「ユーザが前記ビデオ信号を進行中に捕捉する(請求項31)」なる記載のほか、日本語として不自然な箇所が散見されるので、補正を行う場合は助詞や句読点を適切に使用して修正されたい。

なお、拒絶の理由が新たに発見された場合には拒絶の理由が通知される。また補正を行う場合は、意見書においてその根拠を明示するとともに、必要なら本願発明のポイントや各引用発明と比較した有利な効果を主張されたい。

先行技術文献調査結果の記録

- ・調査した分野 IPC第7版 I104N5/76-5/956

本通知書の内容に関する問い合わせ、本案件について面接を希望する場合は、審査第四部映像機器の石丸(電話:03-3581-1101 内線6977)までご連絡下さい。

部長/代理	審査長/代理	審査官	審査官補
	松澤 福三郎	石丸 昌平	
	7 2 5 4	9 5 5 9	

【書類名】 期間延長請求書
【特許】 平08-334291(08.12.13)

【受付日】 平15.05.20

頁: 1/ 1

【書類名】 期間延長請求書
【整理番号】 Y0995024EN
【提出日】 平成15年 5月20日
【あて先】 特許庁審査官 殿
【事件の表示】
【出願番号】 平成 8年特許願第334291号
【請求人】
【識別番号】 390009531
【氏名又は名称】 インターナショナル・ビジネス・マシーンズ・コーポレーション
【代理人】
【識別番号】 100086243
【弁理士】
【氏名又は名称】 坂口 博
【発送番号】 077449
【請求の内容】 出願人との協議中につき意見書作成に日時を要しますので3ヶ月の期間延長を請求します。
【手数料の表示】
【予納台帳番号】 024154
【納付金額】 2,100円
【ブルーフの要否】 要

認定・付加情報

特許出願の番号 平成 8年 特許願 第334291号
受付番号 50300831915
書類名 期間延長請求書
担当官 第三担当上席 0092
作成日 平成15年 5月23日

<認定情報・付加情報>

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ーポレーション

【代理人】

申請人
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【氏名又は名称】 坂口 博

拒絶査定

特許出願の番号	平成 8年 特許願 第334291号
起案日	平成16年 2月 2日
特許庁審査官	志摩 兆一郎 8733 5C00
発明の名称	割込み許容ビデオ・プログラム表示装置及び方法
特許出願人	インターナショナル・ビジネス・マシーンス・ コーポレーション
代理人	坂口 博 (外 1名)

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Doc Ref. **NPL6**
 Appl. No. 90/007,750



PATENT ABSTRACTS OF JAPAN

(11) Publication number: **04088772 A**
 (43) Date of publication of application: **23.03.1992**

(51) Int. Cl. **H04N 5/91**
G11B 20/02, H04N 5/93

(21) Application number: **02203557**
 (22) Date of filing: **31.07.1990**

(71) Applicant: **TOSHIBA CORP**
 (72) Inventor: **OHASHI HIROSHI**

(54) VIDEO RECORDING AND REPRODUCING DEVICE

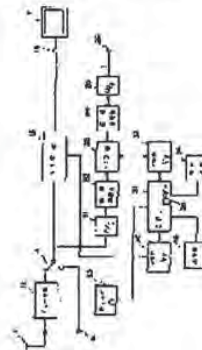
(57) Abstract:

PURPOSE: To reproduce a part already recorded from a memory section while using a VTR section so as to record a data by providing the memory section capable of random access such as an HDD in addition to a VTR.

CONSTITUTION: When the user inputs an intermittent reproduction command with an operation section 33 while a VTR section 15 and an HDD section 23 make recording, as soon as the recording of the HDD section 23 is stopped, information of a tape position at the VTR section 15 at that time is stored in a memory 32 in a CPU 31 and the HDD section 23 starts reproduction from a recording start position succeedingly. Whether or not the recording of the VTR section 15 is finished while the HDD section 23 makes reproduction, that is, whether or not the video recording end time set by timer video recording is reached is discriminated. When the recording is finished, a tape on a VTR 15 is rewound up to the recording position at a step S3.

During that time, the reproduction by the HDD section 23 is continued. When the reproduction of the HDD section 23 reaches a recording stop position, the VTR section 15 starts the reproduction from the rewound position.

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PATENT ABSTRACTS OF JAPAN

(11) Publication number: 06293234 A
(43) Date of publication of application: 19.08.1994

(51) Int. Cl. H04N 5/783
H04N 5/44, H04N 5/782

(21) Application number: 05018838
(22) Date of filing: 05.02.1993

(71) Applicant: FUJITSU GENERAL LTD
(72) Inventor: SATO SHIGERU

(54) TELEVISION RECEIVER

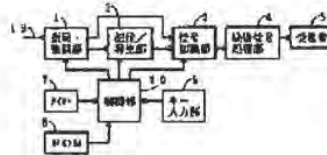
(57) Abstract:

PURPOSE: To make it possible to resume watching and listening by following up from the screen just after the screen at which a person viewed previously when viewing is resumed again after interruption.

CONSTITUTION: This receiver is composed of a selecting station/demodulating part inputting a RF signal 13 from an antenna, selecting a desired broad-casting channel, demodulating a television signal, generating a video signal, etc., and outputting it, an image recording and reproducing part 2 recording and reproducing the video signal, a signal switching part 3 selecting either one of the video signal which are outputted by the selecting/demodulating part 1, and the video signal reproduced by the image recording and reproducing part 2 and performing a circuit connection with a video sig-

nal processing part, a video signal processing part 4 inputting the video signal, performing a signal processing and outputting a primary color signal, a picture tube 5 projecting an image, a timer 7 measuring looking and listening interruption time, a ROM storing the data table of the looking and listening interruption time, the speed of a reproduction and signal switching time, a key input part 9 instructing the start and termination of the interruption of the looking and listening and a control part 10 controlling each part.

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PATENT ABSTRACTS OF JAPAN

(11) Publication number: 06245157 A
 (43) Date of publication of application: 02.09.1994

(51) Int. Cl. H04N 5/44
 H04N 5/85, H04N 5/91, H04N 7/14

(21) Application number: 05143469
 (22) Date of filing: 15.06.1993
 (30) Priority: 26.06.1992 JP 04169363
 22.12.1992 JP 04342425

(71) Applicant: MITSUBISHI ELECTRIC CORP
 (72) Inventor: KATAYAMA TAKESHI
 SHIROSHITA KENJI
 NAGASAWA MASAHITO
 YOKOYAMA EIJI

(54) TELEVISION RECEIVER AND VIDEO AUDIO SYSTEM

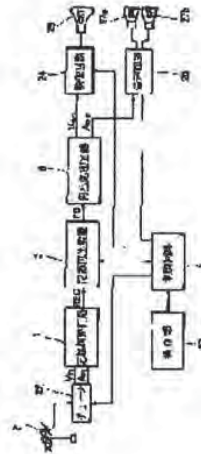
re-confirmation or the like by the reproduction of the recorded content already.

(57) Abstract:

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PURPOSE: To control the progress of a program on-air in matching with the operation of a viewer by controlling stop of reproduction or restart or the like of a recording and reproducing device independently recording and reproducing a received TV signal through an operation section.

CONSTITUTION: The system is operated usually in the followup mode, a TV signal received and demodulated by a tuner 22 is simultaneously recorded and reproduced by a recording and reproducing device 3 incorporating a disk or the like independently, a video image is displayed on a CRT 22 and a sound is outputted from speakers 22a, 27b. When the reproduction state of the device 3 is revised in response to the operation of an operation section 23 such as a remote commander, stop and restart of reproduction and the position of a reproduction head or the like are controlled, the stop, restart, forward jump and backward jump or the like of the progress of the program are executed, and the progress of a program on-air is controlled in matching with a viewer capable of reproducing a message and



Doc Ref. **NPL9**
 Appl. No. 90/007,750



PATENT ABSTRACTS OF JAPAN

(11) Publication number: 07111629 A
 (43) Date of publication of application: 25.04.1995

(51) Int. Cl. H04N 5/91
 G11B 20/02, H04N 5/7826

(21) Application number: 05255488
 (22) Date of filing: 13.10.1993

(71) Applicant: HITACHI LTD
 (72) Inventor: YAMASHITA KYO

(64) SOUND VIDEO RECORDING/REPRODUCING DEVICE

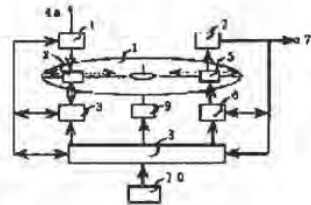
(57) Abstract:

PURPOSE: To make it possible to realize a real time shifter by enabling the independent execution of a reproducing operation and a recording operation.

CONSTITUTION: When the recording of a signal is started, a recording head 2 records a signal, successively moving from a first recording track to the final track. At this time, information on the start of a recording, a recording track number, a video frame number, a time code and the termination of the recording is recorded with a sound video signal in a disk 1. When a reproduction command signal is impressed from an instruction input device 10 during a recording operation, a recording/reproducing system controller 8 outputs a control signal starting a reproduction from the signal

recording portion designated by an input device 10 to a reproduction head 5. In accordance with this, the reproduction head 5 moves at high speed to a reproduction start designated location. During this moving, the attainment of a prescribed reproduction location is detected and the reproduction is started.

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PATENT ABSTRACTS OF JAPAN

(11) Publication number: 07131754 A
(43) Date of publication of application: 19.05.1995

(51) Int. Cl H04N 5/91
G11B 20/10, H04N 5/937

(21) Application number: 05294402
(22) Date of filing: 29.10.1993

(71) Applicant: RICOH CO LTD
(72) Inventor: ISAKA OSAMU

(54) VIDEO RECORDING AND REPRODUCING DEVICE

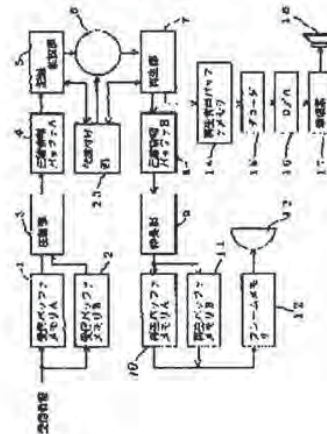
(57) Abstract:

PURPOSE: To execute video recording and reproduction in parallel by repeating the video recording and reproduction to/from a recording medium in parallel with storage to a reception buffer memory and output from a reproduction buffer memory.

CONSTITUTION: Digital reception information is stored in a buffer memory 1 in the order of reception and then stored in a buffer memory 2 when the information of a predetermined frame number is stored. Then a control means is used to read the reception information from the memory 1 in the order of reception and compressed by a compression section 3. After the compressed information is stored in the buffer 4, the information is recorded on a recording medium 6 together with audio information under the control of a recording control section 5. An output speed from the memories 1,2 is set faster than a storage speed to the memories 1,2 by a multiple of a several number and the read from the memory 1 is finished till the reception to the memory 2 is not finished and when the storage to the memory 2 reaches a predetermined frame number, the storage to the memory 1 is implemented

and consecutive recording from the memory 2 to the recording medium 6 is implemented. Succeedingly, a reproduction section T conducts reproduction and the recording and reproduction are alternately repeated.

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Doc Ref. **NPL11**
 Appl. No. 90/007,750



PATENT ABSTRACTS OF JAPAN

(11) Publication number: **07250305 A**
 (43) Date of publication of application: **26.09.1995**

(51) Int. Cl. **H04N 5/92**
H04N 5/783, H04N 5/937

(21) Application number: **D6042158**
 (22) Date of filing: **14.03.1994**

(71) Applicant: **HITACHI LTD**
 (72) Inventor: **KATSUMATA KENJI**
MURATA TOSHINORI
MIZUKAMI HIROYUKI
TAJIMA HISANOBU

(54) **TIME-SHIFT TELEVISION RECEIVER**

(57) Abstract:

PURPOSE: To allow a user to watch a broadcast program from the beginning by reading a video signal stored temporarily in a storage device from a certain time.

CONSTITUTION: A video signal received from an antenna terminal 101 is decoded into a video signal of a base band by a tuner 102 and displayed on a display device 107 via a selection circuit 106. Simultaneously the video signal from the tuner 102 is given to a compression circuit 103, in which the signal is digitized and its information quantity is compressed. The compressed video signal is given to a storage device

104, where it is stored. The video signal stored in the storage device 104 is read after a time delay according to the request by the user and restored into the video signal by an expansion circuit 5. Then the video signal is displayed on the display device 107 via the selection circuit 106. Thus, the user watches a program having been broadcast at a point of time designated by the user from a designated time and advantages not overlooking a first half or the like of the program are obtained.

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PATENT ABSTRACTS OF JAPAN

(11) Publication number: **07264529 A**
 (43) Date of publication of application: **13.10.1995**

(51) Int. Cl. **H04N 5/76**
H04N 5/783, H04N 5/91

(21) Application number: **06046715**
 (22) Date of filing: **17.03.1994**

(71) Applicant: **HITACHI LTD**
 (72) Inventor: **SHIMIZU HIROSHI**
KITAYAMA WATARU

(54) TIME SHIFTING DEVICE

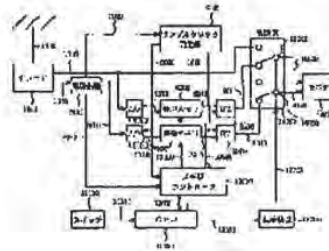
(57) Abstract:

PURPOSE: To make it possible to view a quickly traversed picture, a rewind picture and a still picture by continuously recording a program in broadcasting at present in a medium, advancing recording addresses at a fixed speed, setting up reproducing addresses independently of the recording addresses, and moving these reproducing addresses at an optional speed in an optional direction.

CONSTITUTION: Sampling clocks 3020, 3030 are simultaneously sent to a memory controller(MC) 10000, which calculates writing addresses in a picture memory 7000 and a sound memory 6000 based upon the clocks 3020, 3030 and transfers the calculated addresses to respective memories 7000, 6000. Picture and sound digital signals recorded in respective memories 7000, 6000 are reproduced in accordance with the addresses specified by the MC 10000. Outputted digital picture and sound signals 7010, 6010 are respectively converted into an analog picture signal 9010

and an analog sound signal 8010 through respective D/A converters 8000, 9000 and both the analog signals 9010, 8010 are outputted to a monitor 15000 through a switch 14000. Live signals 1010, 1020 outputted from a tuner 1000 and the signals 8010, 9010 obtained through the memories 7000, 6000 are simultaneously switched by switches 14010, 14020 in the switch 14000 and selected picture and sound signals 14020, 14030 are sent to the monitor 15000 and viewed.

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Doc Ref. NPL13
Appl. No. 90/007,750

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Title: **JP09233415A2: DEVICE AND METHOD FOR DISPLAYING INTERRUPTION PERMITTED VIDEO PROGRAM**

Derwent Title: Interruption permissible video program display device - has direct access or sequential access memory provided with input and output buffers which store video data enabling viewer to retrieve particular video broadcast that he failed to see
[\[Derwent Record\]](#)

Country: JP Japan
Kind: A

Inventor: **BRODSKY MARC H;
STEPHEN EDWARD MILLMAN;
THOMAS KIMBER WASHINGTON;**

Assignee: **INTERNATL BUSINESS MACH CORP <IBM>**
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Published / Filed: **1997-09-05 / 1996-12-13**

Application Number: **JP1996000334291**

IPC Code: Advanced: **H04N 5/44;**
Core: more...
IPC-7: **H04N 5/7826;**

Priority Number: 1996-06-04 **US1996000659125**

Abstract: **PROBLEM TO BE SOLVED:** To stop the display of a program at any arbitrary time by the viewer of video broadcasting during that display and to display an interruption segment at the time of recovery.
SOLUTION: A storage medium 112 is formed into a circulation type so as to continuously write input information data onto previously stored data during standstill time when a memory is filled with data fully for its capacity. A storage circuit 109 uses a sequential access storage device or a direct access storage device. The storage circuit 109 has a high-speed memory input buffer 110 and a high-speed memory output buffer 114. At the end of standstill time, a user can display that stored video. The user selects whether regular broadcasting is to be caught or the remaining program video is to be viewed in a delay mode. Under the direct or remote VCR type video function control of the user, the stored video can be intermittently or continuously displayed on a device 106 by regular operation, lowspeed operation or high-speed operation.
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High Resolution

INPADOC Legal Status: None Get Now: [Family Legal Status Report](#)

Family:

PDF	Publication	Pub. Date	Filed	Title
	US5774186	1998-06-30	1996-06-04	Interruption tolerant video program viewing
<input checked="" type="checkbox"/>	KR0196892B1	1999-06-15	1996-11-15	INTERRUPTION TOLERANT VIDEO PROGRAM VIEWING
<input checked="" type="checkbox"/>	JP09233415A2	1997-09-05	1996-12-13	DEVICE AND METHOD FOR DISPLAYING INTERRUPTION PERMITTED VIDEO PROGRAM
<input checked="" type="checkbox"/>	HK1001806A1	2004-01-16	1998-02-04	INTERRUPTION TOLERANT VIDEO PROGRAM VIEWING DEVICE AND THE METHOD THEREOF
<input checked="" type="checkbox"/>	CN1164162A	1997-11-05	1996-12-13	Interruption tolerant video program viewing
<input checked="" type="checkbox"/>	CN1120618C	2003-09-03	1996-12-13	Interruption tolerant video program viewing device and method

6 family members shown above

Other Abstract Info:

[DERABS G97-496709](#) [DERG97-496709](#)



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June 20, 2006

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Commissioner for Patents
 PO Box 1450
 Alexandria, VA 22313-1450

Art Unit 3992

Attn: Mail Stop Ex Parte Reexam

Re: Reexamination of U.S. Patent No. 6,233,389
 Control No. 90/007,750; Filed: October 17, 2005
 For: **Multimedia Time Warping System**
 Inventor: BARTON, et al.
 Our Ref: 454030000041

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Original executed Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address (Form PTO/SB/82);
2. Certification of Service on Third Party Requestor of Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address; and
3. One (1) Return postcard.

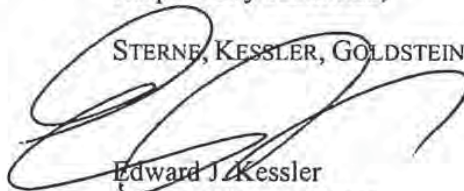
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Commissioner for Patents
June 20, 2006
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Applicant
Registration No. 25,688

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Application Number	90/007,750
Filing Date	October 17, 2005
First Named Inventor	James M. BARTON
Art Unit	3992
Examiner Name	David E. Harvey
Attorney Docket Number	454030000041

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A Power of Attorney is submitted herewith.

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Applicant/Inventor.

Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature

Name

James M. Barton, CTO and Vice President

Date

June 20, 2006

Telephone

(408) 519-9100

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

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541,537

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Reexam of Patent No.: 6,233,389
Reexam Control No.: 90/007,750

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Under Reexamination: 6,233,389
Reexamination Control No.: 90/007,750
Examiner: David E. Harvey
Art Unit: 3992

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Sir:

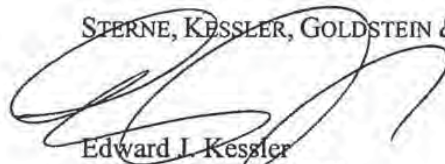
**CERTIFICATION OF SERVICE OF REVOCATION OF POWER OF ATTORNEY WITH
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In compliance with 37 C.F.R. § 1.550(f), the undersigned, on behalf of the patent owner, hereby certifies that a copy of this paper has been served on the third-party requester by first class mail on June 20, 2006. The name and address of the party served is as follows:

David L. Fehrman
Morrison & Foerster, LLP
555 W. Fifth Street, Suite 3500
Los Angeles, CA 90013

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Applicant
Registration No. 25,688

Date: June 20, 2006

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EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO 90/007750
PATENT NO. 6,233,389
ART UNI 3992

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Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the ex parte reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/007,750	10/17/2005	6233389	454030000041	4653
26111	7590	06/20/2006	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			ART UNIT	PAPER NUMBER

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Ex Parte Reexamination Interview Summary	Control No. 90/007750	Patent Under Reexamination 6,232,389	
	Examiner DAVID E. HARVEY	Art Unit 3992	

All participants (USPTO personnel, patent owner, patent owner's representative):

- (1) Mr. James M. Boston (3) Ms. Leri Gordon (6) Mr. Mark Reinhart
 (2) Mr. Edward Kessler (4) Mr. Matt Zinn (7) David Harvey
 (5) Ms. Margaret Rubin (8) _____

Date of Interview: _____

Type: a) Telephonic b) Video Conference
 c) Personal (copy given to: 1) patent owner 2) patent owner's representative)

Exhibit shown or demonstration conducted: d) Yes e) No.

If Yes, brief description: _____

Agreement with respect to the claims f) was reached. g) was not reached. h) N/A.
 Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 1

Identification of prior art discussed: Cubley et al. & Greer et al.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:

The patent owner identified structural difference between the described invention and the applied prior art (i.e. the Med. a Switch). The patent owner will submit arguments identifying how these structural differences are reflected in the claims. The examiner reserves right to further consideration.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).

cc: Requester (if third party requester)

DLH
 Examiner's signature, if required

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re reexam of: U.S. Patent 6,233,389
(Barton)

Reexam Control No.: 90/007,750

Filed: October 17, 2005

For: **Multimedia Time Warping System**

Confirmation No.: 4653

Art Unit: 3992

Examiner: David E. Harvey

Atty.Docket: 454030000041

**Reply to Office Action in *Ex Parte* Reexamination and
Statement of Substance of Interview Under 37 C.F.R. § 1.560**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Office Action in *Ex Parte* Reexamination dated May 25, 2006, the Patent Owner submits the following Listing of Claims and Remarks.

In compliance with 37 C.F.R. § 1.560, Applicants submit the following Statement of Substance of Interview conducted on June 20, 2006 between Primary Examiner Mr. David E. Harvey, Primary Examiner Ms. Margaret R. Rubin, and Special Program Examiner Mr. Mark J. Reinhart and Patent Owner's representatives, Mr. James M. Barton, Matthew Zinn, Edward J. Kessler, and Lori A. Gordon.

It is not believed that extensions of time or other fees are required. However, if any fees are necessary to prevent abandonment of this application, then such fees are hereby petitioned and hereby authorized to be charged to our Deposit Account No. 19-0036.

Listing of the Patent Claims

A listing of the status of each claim under reexamination is provided below.

1. (original patent claim) A process for the simultaneous storage and play back of multimedia data, comprising the steps of:

accepting television (TV) broadcast signals, wherein said TV signals are based on a multitude of standards, including, but not limited to, National Television Standards Committee (NTSC) broadcast, PAL broadcast, satellite transmission, DSS, DBS, or ATSC;

tuning said TV signals to a specific program;

providing at least one Input Section, wherein said Input Section converts said specific program to an Moving Pictures Experts Group (MPEG) formatted stream for internal transfer and manipulation;

providing a Media Switch, wherein said Media Switch parses said MPEG stream, said MPEG stream is separated into its video and audio components;

storing said video and audio components on a storage device;

providing at least one Output Section, wherein said Output Section extracts said video and audio components from said storage device;

wherein said Output Section assembles said video and audio components into an MPEG stream;

wherein said Output Section sends said MPEG stream to a decoder;

wherein said decoder converts said MPEG stream into TV output signals;

wherein said decoder delivers said TV output signals to a TV receiver; and

accepting control commands from a user, wherein said control commands are sent through the system and affect the flow of said MPEG stream.

2. (original patent claim) The process of claim 1, wherein said Input Section directs said MPEG stream to the destination indicated by said control commands.

3. (original patent claim) The process of claim 1, wherein said Output Section extracts said video and audio components from the storage device indicated by said control commands.

4. (original patent claim) The process of claim 1, further comprising the step of: creating custom video output sequences, wherein said sequences are specified by a user or program control.

5. (original patent claim) The process of claim 1, wherein the storing and extracting of said video and audio components from said storage device are performed simultaneously.

6. (original patent claim) The process of claim 1, wherein said Media Switch calculates and logically associates a time stamp to said video and audio components.

7. (original patent claim) The process of claim 1, wherein said Media Switch extracts time stamp values from a digital TV stream and logically associates said time stamp values to said video and audio components.

8. (original patent claim) The process of claim 1, further comprising the steps of:
placing said video component into a circular video buffer;
posting an event in a circular event buffer, wherein said event contains an indication that a video component was found and the location of said video component in said circular video buffer; and
sending notice of said event posting.

9. (original patent claim) The process of claim 1, further comprising the steps of:
placing said audio component into a circular audio buffer;
posting an event in a circular event buffer, wherein said event contains an indication that an audio component was found and the location of said audio component in said circular audio buffer; and
sending notice of said event posting.

10. (original patent claim) The process of claims 8 or 9, further comprising the steps of:
receiving said notice;
retrieving said event posting from said event buffer; and
indexing into the appropriate buffer indicated by the type and location information in said event buffer.

11. (original patent claim) The process of claim 10, further comprising the steps of:
generating a buffer containing the logical audio or video segments in order, including ancillary information, wherein each of said logical segments points to the appropriate circular buffer location where corresponding audio or video components have been placed.

12. (original patent claim) The process of claim 1, further comprising the step of:
increasing the decoder system clock rate for fast playback or fast reverse
playback.
13. (original patent claim) The process of claim 1, further comprising the step of:
decreasing the decoder system clock rate for slow playback or slow reverse
playback.
14. (original patent claim) The process of claim 1, further comprising the step of:
combining system audio cues and on-screen displays with said TV output signals.
15. (original patent claim) The process of claim 1, further comprising the steps of:
decoding the Vertical Blanking Interval (VBI) data or private data channel
information from said TV signal; and
examining said data to determine the starting or ending indicators of a specific
program.
16. (original patent claim) The process of claim 1, further comprising the step of:
scanning the words contained within the closed caption (CC) fields to determine
program starting and ending times, wherein particular words or phrases are used to
trigger the recording of a specific program and wherein the CC information is preserved
in time synchronization with the audio and video, and can be correctly presented to the
viewer when the stream is displayed.

17. (original patent claim) The process of claim 16, further comprising the step of:
performing a specific action when a specific word is found in said CC
information.
18. (original patent claim) The process of claim 1, wherein said Media Switch has a
data bus connecting it to a CPU and DRAM.
19. (original patent claim) The process of claim 1, wherein said Media Switch shares
an address bus with a CPU and DRAM.
20. (original patent claim) The process of claim 1, wherein said Media Switch
operates asynchronously and autonomously with a CPU.
21. (original patent claim) The process of claim 1, wherein said storage device is
connected to said Media Switch.
22. (original patent claim) The process of claim 1, wherein said Media Switch
allows the CPU to queue up Direct Memory Access (DMA) transfers.
23. (original patent claim) The process of claim 1, wherein said Media Switch is
implemented in hardware.
24. (original patent claim) The process of claim 1, further comprising the step of:
providing a multimedia recording device, including, but not limited to, a Video
Cassette Recorder (VCR) or a Digital Video Disk-Random Access Memory (DVD-
RAM) device, wherein said recording device is attached to the output side of said
decoder, allowing said user to record said TV output signals.

25. (original patent claim) The process of claim 24, wherein said user queues up programs from said storage device to be stored on said recording device.

26. (original patent claim) The process of claim 24, wherein said user sets time schedules for said programs to be sent to said recording device.

27. (original patent claim) The process of claim 24, wherein title pages may be sent to said recording device before sending a program to be stored on said recording device.

28. (original patent claim) The process of claim 24, wherein a program that is longer in duration than a magnetic tape in said recording device allows, is sped up to fit within the desired time limit.

29. (original patent claim) The process of claim 24, wherein a program that is longer in duration than a magnetic tape in said recording device allows, has frames dropped from it to fit within the desired time limit.

30. (original patent claim) The process of claim 24, wherein the output of said recording device is routed to said Input Section, allowing said recording device to act as a storage back up system, said recording device accepts overflow storage, TV programs, software updates, or other data that are later retrieved and sent to said Input Section.

31. (original patent claim) A process for the simultaneous storage and play back of multimedia data, comprising the steps of:

providing a physical data source, wherein said physical data source accepts

broadcast data from an input device, parses video and audio data from said broadcast data, and temporarily stores said video and audio data;

providing a source object, wherein said source object extracts video and audio data from said physical data source;

providing a transform object, wherein said transform object stores and retrieves data streams onto a storage device;

wherein said source object obtains a buffer from said transform object, said source object converts video data into data streams and fills said buffer with said streams;

wherein said source object is automatically flow controlled by said transform object;

providing a sink object, wherein said sink object obtains data stream buffers from said transform object and outputs said streams to a video and audio decoder;

wherein said decoder converts said streams into display signals and sends said signals to a display;

wherein said sink object is automatically flow controlled by said transform object;

providing a control object, wherein said control object receives commands from a user, said commands control the flow of the broadcast data through the system; and

wherein said control object sends flow command events to said source, transform, and sink objects.

32. (original patent claim) An apparatus for the simultaneous storage and play back of multimedia data, comprising:

- a module for accepting television (TV) broadcast signals, wherein said TV signals are based on a multitude of standards, including, but not limited to, National Television Standards Committee (NTSC) broadcast, PAL broadcast, satellite transmission, DSS, DBS, or ATSC;
- a module for tuning said TV signals to a specific program;
- at least one Input Section, wherein said Input Section converts said specific program to an Moving Pictures Experts Group (MPEG) formatted stream for internal transfer and manipulation;
- a Media Switch, wherein said Media Switch parses said MPEG stream, said MPEG stream is separated into its video and audio components;
- a module for storing said video and audio components on a storage device;
- at least one Output Section, wherein said Output Section extracts said video and audio components from said storage device;
- wherein said Output Section assembles said video and audio components into an MPEG stream;
- wherein said Output Section sends said MPEG stream to a decoder;
- wherein said decoder converts said MPEG stream into TV output signals;
- wherein said decoder delivers said TV output signals to a TV receiver; and
- accepting control commands from a user, wherein said control commands are sent through the system and affect the flow of said MPEG stream.

33. (original patent claim) The apparatus of claim 32, wherein said Input Section directs said MPEG stream to the destination indicated by said control commands.

34. (original patent claim) The apparatus of claim 32, wherein said Output Section extracts said video and audio components from the storage device indicated by said control commands.

35. (original patent claim) The apparatus of claim 32, further comprising:
a module for creating custom video output sequences, wherein said sequences are specified by a user or program control.

36. (original patent claim) The apparatus of claim 32, wherein the storing and extracting of said video and audio components from said storage device are performed simultaneously.

37. (original patent claim) The apparatus of claim 32, wherein said Media Switch calculates and logically associates a time stamp to said video and audio components.

38. (original patent claim) The apparatus of claim 32, wherein said Media Switch extracts time stamp values from a digital TV stream and logically associates said time stamp values to said video and audio components.

39. (original patent claim) The apparatus of claim 32, further comprising:
a module for placing said video component into a circular video buffer;
a module for posting an event in a circular event buffer, wherein said event contains an indication that a video component was found and the location of said video

component in said circular video buffer; and

a module for sending notice of said event posting.

40. (original patent claim) The apparatus of claim 32, further comprising:

a module for placing said audio component into a circular audio buffer;

a module for posting an event in a circular event buffer, wherein said event

contains an indication that an audio component was found and the location of said audio component in said circular audio buffer; and

a module for sending notice of said event posting.

41. (original patent claim) The apparatus of claims 39 or 40, further comprising:

a module for receiving said notice;

a module for retrieving said event posting from said event buffer; and

a module for indexing into the appropriate buffer indicated by the type and

location information in said event buffer.

42. (original patent claim) The apparatus of claim 41, further comprising:

a module for generating a buffer containing the logical audio or video segments in order, including ancillary information, wherein each of said logical segments points to the appropriate circular buffer location where corresponding audio or video components have been placed.

43. (original patent claim) The apparatus of claim 32, further comprising:

a module for increasing the decoder system clock rate for fast playback or fast reverse playback.

44. (original patent claim) The apparatus of claim 32, further comprising:
a module for decreasing the decoder system clock rate for slow playback or slow reverse playback.

45. (original patent claim) The apparatus of claim 32, further comprising:
a module for combining system audio cues and on-screen displays with said TV output signals.

46. (original patent claim) The apparatus of claim 32, further comprising:
a module for decoding the Vertical Blanking Interval (VBI) data or private data channel information from said TV signal; and
a module for examining said data to determine the starting or ending indicators of a specific program.

47. (original patent claim) The apparatus of claim 32, further comprising:
a module for scanning the words contained within the closed caption (CC) fields to determine program starting and ending times, wherein particular words or phrases are used to trigger the recording of a specific program and wherein the CC information is preserved in time synchronization with the audio and video, and can be correctly presented to the viewer when the stream is displayed.

48. (original patent claim) The apparatus of claim 47, further comprising:
a module for performing a specific action when a specific word is found in said CC information.

49. (original patent claim) The apparatus of claim 32, wherein said Media Switch

has a data bus connecting it to a CPU and DRAM.

50. (original patent claim) The apparatus of claim 32, wherein said Media Switch shares an address bus with a CPU and DRAM.

51. (original patent claim) The apparatus of claim 32, wherein said Media Switch operates asynchronously and autonomously with a CPU.

52. (original patent claim) The apparatus of claim 32, wherein said storage device is connected to said Media Switch.

53. (original patent claim) The apparatus of claim 32, wherein said Media Switch allows the CPU to queue up Direct Memory Access (DMA) transfers.

54. (original patent claim) The apparatus of claim 32, further comprising:
a multimedia recording device, including, but not limited to, a Video Cassette Recorder (VCR) or a Digital Video Disk-Random Access Memory (DVD-RAM) device, wherein said recording device is attached to the output side of said decoder, allowing said user to record said TV output signals.

55. (original patent claim) The apparatus of claim 54, wherein said user queues up programs from said storage device to be stored on said recording device.

56. (original patent claim) The apparatus of claim 54, wherein said user sets time schedules for said programs to be sent to said recording device.

57. (original patent claim) The apparatus of claim 54, wherein title pages may be

sent to said recording device before sending a program to be stored on said recording device.

58. (original patent claim) The apparatus of claim 54, wherein a program that is longer in duration than a magnetic tape in said recording device allows, is sped up to fit within the desired time limit.

59. (original patent claim) The apparatus of claim 54, wherein a program that is longer in duration than a magnetic tape in said recording device allows, has frames dropped from it to fit within the desired time limit.

60. (original patent claim) The apparatus of claim 54, wherein the output of said recording device is routed to said Input Section, allowing said recording device to act as a storage back up system, said recording device accepts overflow storage, TV programs, software updates, or other data that are later retrieved and sent to said Input Section.

61. (original patent claim) An apparatus for the simultaneous storage and play back of multimedia data, comprising:

a physical data source, wherein said physical data source accepts broadcast data from an input device, parses video and audio data from said broadcast data, and temporarily stores said video and audio data;

a source object, wherein said source object extracts video and audio data from said physical data source;

a transform object, wherein said transform object stores and retrieves data streams onto a storage device;

wherein said source object obtains a buffer from said transform object, said source object converts video data into data streams and fills said buffer with said streams;

wherein said source object is automatically flow controlled by said transform object;

a sink object, wherein said sink object obtains data stream buffers from said transform object and outputs said streams to a video and audio decoder;

wherein said decoder converts said streams into display signals and sends said signals to a display;

wherein said sink object is automatically flow controlled by said transform object;

a control object, wherein said control object receives commands from a user, said commands control the flow of the broadcast data through the system; and

wherein said control object sends flow command events to said source, transform, and sink objects.

Remarks

Claims 1-61 are currently pending in the reexamination proceeding of U.S. Patent No. 6,233,389 ("the '389 patent") with claims 1, 31, 32, and 61 being independent claims. Claims 2, 6-14, 19, 26-31, 33, 37-45, 50, and 56-61 have been confirmed. Based on the following remarks, the Patent Owner respectfully requests that the Examiner reconsider all outstanding rejections on the remaining claims, and that they be withdrawn.

I. Statement of Substance of Interview

The Patent Owner thanks Primary Examiner David E. Harvey, Primary Examiner Margaret R. Rubin, and Special Program Examiner Mark J. Reinhart for the courtesy extended to their representatives, James M. Barton, Matthew Zinn, Edward J. Kessler, and Lori A. Gordon, in the interview held on June 20, 2006.

During that interview, the Patent Owner's representatives explained the differences between the invention, as recited in claim 1 and 32, and the cited reference, U.S. Patent No. 6,788,882 to Geer, et al (Geer). Agreement was reached that the described differences adequately distinguish the Patent Owner's invention over Geer. The Patent Owner further agreed to identify in the Reply to the Office Action how the described differences are reflected in the claims.

II. Overview of the '389 Patent

The '389 Patent generally relates to a "low cost multimedia storage and display system that allows the user to view a television program with the option of instantly

reviewing previous scenes within the program” and of performing other manipulations of the program like rewind, fast forward, play, pause, etc. ('389 patent, col. 1, lines 65-67; col. 2, lines 34-38; col. 6, lines 40-46). As described in the '389 patent, the system in one embodiment receives television broadcast signals in any of a multitude of formats (e.g., NTSC, ATSC, DSS or DBS) and converts the received signals into an MPEG formatted stream for internal transfer and manipulation. ('389 patent, col. 3, lines 64-65).

The system has a "Media Switch" that parses the MPEG stream, and the MPEG stream is separated into its video and audio components. In one example, the system places this information in an event queue or index, which is used to manipulate the data streams on playback. ('389 patent, col. 5, lines 3-12; col. 6, lines 36-58). The Media Switch mediates between a microprocessor CPU, hard-disk or storage device, and memory, and can relieve the CPU from having to perform various operations that consume significant amounts of time and computational power. ('389 patent, col. 3, line 62 – col. 4, line 2; col. 6, lines 16-25.) The video and audio components are stored on a storage device (such as a hard disk drive). ('389 patent, col. 2, lines 26-29; col. 3, line 66 – col. 4, line 2).

On playback, the data is extracted from storage, assembled, and sent to a decoder. ('389 patent, col. 2, lines 27-30). The decoder converts the MPEG stream into TV output signals for delivery to a TV receiver. ('389 patent, col. 2, lines 30-32). Control commands (e.g., from a remote control) allow for various DVR functions (e.g., rewind, fast forward, etc.). ('389 patent, col. 2, lines 33-37; col. 6, lines 40-46).

III. Rejection Under 35 U.S.C. §103

In the Office Action, claims 1, 3-5, 15-18, 20-25, 32, 34-36, 46-49, and 51-55 were rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 6,788,882 (Geer). The Patent Owner respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, the references must teach or suggest all the claim limitations. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988); *see also In re Blamer*, 6 F.3d 788 (Fed. Cir. 1993) (unpublished).

In the Office Action, the Examiner equates the "media switch" recited in claims 1 and 32 to demultiplexing circuitry in an MPEG decoder. Office Action, p. 2 ("An MPEG data stream consists of a stream of multiplexed data packets each representing one of various types of media: namely compressed video data media, compressed audio data media, and 'other data' media. Therefor[e], MPEG decoders necessarily include demultiplexing circuitry, e.g., a 'media switch.'"). However, claims 1 and 32 recite, in an element separate from the Media Switch, the MPEG decoder referred to by the Examiner. ('389 Patent, col. 12, lines 59-60; col. 15, lines 40-41; "wherein said Output Section sends said MPEG stream to a decoder"). The MPEG decoder of Geer at best corresponds to the MPEG decoder recited in claims 1 and 32 and illustrated as element 715 in Figure 7 of the specification. ('389 Patent, FIG. 7).

In the Office Action, the Examiner indicated that "Geer describes a process by which the content of the caption and/or audio components of the received signal is automatically analyzed and indexed into a text data base." (Office Action, p. 6). However, Geer does not describe how or where in the disclosed system this content-based analysis is performed. As pointed out by the Examiner and as is well-known to

persons of skill in the art, the content-based analysis of Geer must be performed on an uncompressed signal. (Office Action, p. 4).

In Geer, there are two points in the system where a signal may be uncompressed for performing content-based analysis. First, in Geer, certain signals may be received by the system in an uncompressed format. For these uncompressed signals, a set-top box card 150 performs compression to generate a compressed signal. (Geer, col. 7, lines 13-15). As pointed out by the Examiner in the discussion of U.S. Patent No. 5,614,940 to Cobbley, et al (Cobbley), "it seems unlikely that one would receive a digital TV signal, compress the digital TV signal into an MPEG data stream, and then decompress the MPEG data stream back into its digital format for analysis." (Office Action, p. 3). Thus, for received uncompressed signals, content-based analysis in Geer would be understood to be performed prior to compression by the set-top box card.

Geer also describes the use of a "decompression device or software, e.g., the MPEG II decoder" to decompress compressed video retrieved from the recording media for output to a television for viewing. (Geer, col. 15, lines 48-52). Thus, the output of the decompression device is uncompressed video. For compressed signals, content-based analysis in Geer would be understood to be performed after the decompression process and prior to transmission to the television. Again, however, Geer does not describe where or how the content-based analysis is performed.

Claim 1 of the '389 patent recites, among other elements:

providing a Media Switch, wherein said Media Switch parses said MPEG stream, said MPEG stream is separated into its video and audio components;

storing said video and audio components on a storage device;

providing at least one Output Section, wherein said Output Section extracts said video and audio components from said storage device;

wherein said Output Section assembles said video and audio components into an MPEG stream;

wherein said Output Section sends said MPEG stream to a decoder;

wherein said decoder converts said MPEG stream into TV output signals;

Claim 32 of the '389 patent recites, among other elements:

a Media Switch, wherein said Media Switch parses said MPEG stream, said MPEG stream is separated into its video and audio components;

a module for storing said video and audio components on a storage device;

at least one Output Section, wherein said Output Section extracts said video and audio components from said storage device;

wherein said Output Section assembles said video and audio components into an MPEG stream;

wherein said Output Section sends said MPEG stream to a decoder;

wherein said decoder converts said MPEG stream into TV output signals;

Thus, as recited in claims 1 and 32, the parsing performed by the Media Switch occurs on a compressed (MPEG) signal before communication to the decoder for conversion into a TV output signal. As described above, the content-based analysis in Geer, if any, must be performed either in Geer's input - prior to compression - or in Geer's output - after decompression by the decoder for output of the decompressed signal

to the television. Either way, Geer does not teach or even suggest parsing and separating a *compressed (MPEG)* stream, as is required by the recitations of independent claims 1 and 32. Geer, therefore, does not have "a Media Switch, wherein said Media Switch parses said MPEG stream, said MPEG stream is separated into its video and audio components" or any element that is comparable or equivalent to the herein claimed Media Switch.

Furthermore, no explicit or implicit motivation exists to modify Geer to achieve the Patent Owner's invention, as recited in independent claims 1 and 32. Geer nowhere teaches or suggests parsing or analyzing the MPEG compressed signals.

For at least the foregoing reasons, independent claims 1 and 32 are patentable over Geer. Claims 3-5, 15-18, and 20-25 depend from independent claim 1, and claims 34-36, 46-49, and 51-55 depend from claim 32. For at least the foregoing reasons, and further in view of their own features, claims 3-5, 15-18, 20-25, 32, 34-36, 46-49, and 51-55 are patentable over Geer. Reconsideration and withdrawal of this rejection is therefore respectfully requested.

V. Patentable Subject Matter

The Patent Owner acknowledges with appreciation the Primary Examiner's indication that original patent claims 2, 6-14, 19, 26-31, 33, 37-45, 50, and 56-61 are patentable.

VI. Related Proceedings

Claims 1-61 of the '389 patent are the subject of pending litigation in the United States District Court for the Eastern District of Texas, Marshall Division, *TiVo Inc. v.*

Echostar Communications Corp., et al., Case No. 2-04CV-01. A jury verdict finding infringement by Echostar was filed on April 13, 2006.

The '389 patent was also previously asserted in an additional litigation in the United States District Court for the Northern California (San Francisco), *TiVo Inc. v. Sonicblue, Inc.*, Case No. 3:02cv365, filed on January 23, 2002. The parties stipulated to dismiss the case without prejudice.

VII. Other Matters

In the Office Action, the Examiner noted that the submitted copy of the "Freeman, et al" reference, cited on page 9 of 10 of the IDS filed March 10, 2006 was illegible. The Patent Owner has submitted a legible copy of this reference in an IDS filed concurrently with this reply.

VII. Conclusion

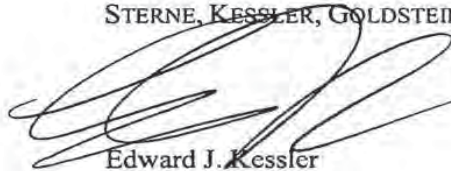
All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. The Patent Owner therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. The Patent Owner believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present reexamination proceeding is in condition for a Notice of Intent to Issue a Reexamination Certificate. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Barton
Reexam of Pat. No. 6,233,389
Reexam Control No.: 90/007,750

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



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Date: *17 July 2006*

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Reexam

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* Admitted only in Maryland
* Admitted only in Virginia
* Practice Limited to Federal Agencies

July 17, 2006

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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 3992

Attn: Mail Stop Ex Parte Reexam

Re: Reexamination of U.S. Patent No. 6,233,389
Control No. 90/007,750; Filed: October 17, 2005
For: **Multimedia Time Warping System**
Inventor: BARTON et al.
Our Ref: 454030000041

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Reply to Office Action in Ex Parte Reexamination and Statement of Substance of Interview Under 37 C.F.R. §1.560;
2. Certification of Service on Third Party Requestor of Reply to Office Action and Statement of Substance of Interview;
3. Supplemental Information Disclosure Statement;
4. Certification of Service on Third Party Requestor of Supplemental Information Disclosure Statement;
5. A listing of the Cited Document on Form PTO/SB/08B (1 page);
6. A copy of the Cited Document (NPL14); and
7. One (1) return postcard.

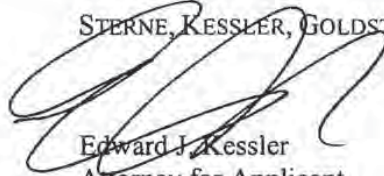
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
July 17, 2006
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Applicant
Registration No. 25,688

EJK/smn
Enclosures

558524_1.DOC

Barton
Reexam of Pat. No. 6,233,389
Reexam Control No.: 90/007,750

Patent Under Reexamination: 6,233,389
Reexamination Control No.: 90/007,750
Examiner: David E. Harvey
Art Unit: 3992

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

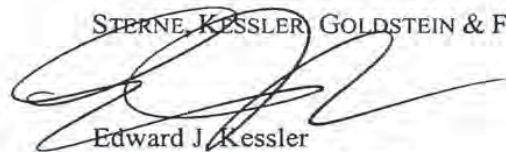
**CERTIFICATION OF SERVICE OF REPLY TO OFFICE ACTION AND
STATEMENT OF SUBSTANCE OF INTERVIEW**

In compliance with 37 C.F.R. § 1.550(f), the undersigned, on behalf of the patent owner, hereby certifies that a copy of this paper has been served on the third-party requester by first class mail on July 17, 2006. The name and address of the party served is as follows:

David L. Fehrman
Morrison & Foerster, LLP
555 W. Fifth Street, Suite 3500
Los Angeles, CA 90013

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Patent Owner
Registration No. 25,688

Date: July 17, 2006

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexam of U.S. Patent No.: 6,233,389
(Barton, et al.)
Control No.: 90/007,750
Filed: October 17, 2005
For: **Multimedia Time Warping System**

Confirmation No.: 4653
Art Unit: 3992
Examiner: David E. Harvey
Atty. Docket: 454030000041

Supplemental Information Disclosure Statement

Mail Stop Ex Parte Reexam

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying IDS Form is a document that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.555 and 1.98. The numbering on this Supplemental Information Disclosure Statement is a continuation of the numbering in Patent Owner's Supplemental Information Disclosure Statement filed on June 16, 2006 in connection with the above-captioned application.

The Patent Owner has listed a publication date on the attached IDS Form based on information presently available to the undersigned. However, the listed publication date should not be construed as an admission that the information was actually published on the date indicated.

The Patent Owner reserves the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

A copy of document NPL14 is submitted.

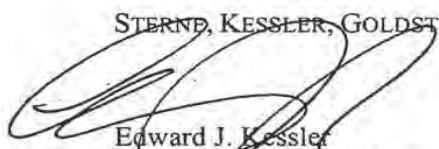
It is respectfully requested that the Examiner initial and return a copy of the enclosed IDS Form, and indicate in the official file wrapper of this reexamination proceeding that the documents have been considered.

J. BARTON
Reexam of Patent No. 6,233,389
Reexam Control No. 90/007,750

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERND, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Patent Owner
Registration No. 25,688

Date: July 17, 2006

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554125_1.DOC

Atty. Dkt. No. 454030000041

J. Barton et al.
Reexam of Patent No.: 6,233,389
Reexam Control No.: 90/007,750

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Under Reexamination: 6,233,389
Reexamination Control No.: 90/007,750
Examiner: David E. Harvey
Art Unit: 3992

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

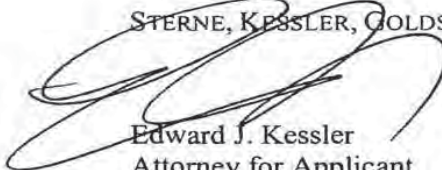
**CERTIFICATION OF SERVICE OF SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

In compliance with 37 C.F.R. § 1.550(f), the undersigned, on behalf of the patent owner, hereby certifies that a copy of this paper has been served on the third-party requester by first class mail on July 17, 2006. The name and address of the party served is as follows:

David L. Fehrman
Morrison & Foerster, LLP
555 W. Fifth Street, Suite 3500
Los Angeles, CA 90013

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Applicant
Registration No. 25,688

Date: July 17, 2006

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Substitute for form 1449/PTO				Complete if Known	
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Control Number	90/007,750
				Filing Date	October 17, 2005
				First Named Inventor	BARTON
				Art Unit	3992
				Examiner Name	David E. Harvey
Sheet	1	of	1	Attorney Docket Number	45403000041

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published	T ²
	NPL14	I. FREEDMAN, et al. "Systems Aspects of COBE Science Data Compression", pp. 85-97.	
	NPL15		
	NPL16		
	NPL17		
	NPL18		
	NPL19		
	NPL20		
	NPL21		
	NPL22		
	NPL23		

554133_1.DOC

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Re-exam

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Marvin C. Guthrie

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* Practice Limited to
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October 16, 2006

WRITER'S DIRECT NUMBER:
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Commissioner for Patents
PO Box 1450
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Art Unit 3992

Attn: Mail Stop Ex Parte Reexam

Re: Reexamination of U.S. Patent No. 6,233,389
Control No. 90/007,750; Filed: October 17, 2005
For: **Multimedia Time Warping System**
Inventor: BARTON et al.
Our Ref: 454030000041

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Supplemental Information Disclosure Statement;
2. Certification of Service on Third Party Requestor of Supplemental Information Disclosure Statement;
3. A listing of the Cited Documents on Form PTO/SB/08A (1 page); and
4. One (1) return postcard.

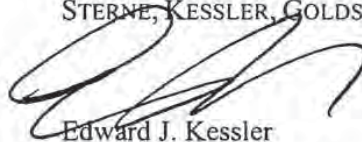
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Commissioner for Patents
October 16, 2006
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Applicant
Registration No. 25,688

EJK/smn
Enclosures

595288_1.DOC



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexam of U.S. Patent No.: 6,233,389
(Barton, et al.)
Control No.: 90/007,750
Filed: October 17, 2005
For: **Multimedia Time Warping System**

Confirmation No.: 4653
Art Unit: 3992
Examiner: David E. Harvey
Atty. Docket: 454030000041

Supplemental Information Disclosure Statement

Mail Stop Ex Parte Reexam

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

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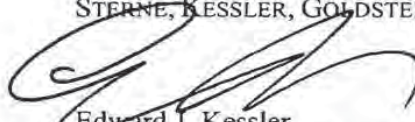
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The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Patent Owner
Registration No. 25,688

Date: October 16, 2006

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Atty. Dkt. No. 454030000041



Equivalent of Form PTO/SB/08A (07-06)
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Substitute for form 1449A/PTO		Complete if Known
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>	Control Number	90/007,750
	Filing Date	October 17, 2005
	First Named Inventor	BARTON
	Art Unit	3992
	Examiner Name	David E. Harvey
	Attorney Docket Number	454030000041
Sheet	1 of 1	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	US1	5,521,630	05/28/1996	CHEN et al.	
	US2	5,583,652	12/10/1996	WARE	
	US3	5,586,264	12/17/1996	BELKNAP et al.	
	US4	5,603,058	02/11/1997	BELKNAP et al.	
	US5	5,664,044	09/02/1997	WARE	
	US6	5,668,948	09/16/1997	BELKNAP et al.	
	US7	5,712,976	01/27/1998	FALCON, Jr. et al.	
	US8	5,761,417	06/02/1998	HENLEY et al.	
	US9	5,805,821	09/08/1998	SAXENA et al.	
	US10	5,808,607	09/15/1998	BRADY et al.	
	US11				
	US12				
	US13				
	US14				
	US15				
	US16				
	US17				
	US18				
	US19				
	US20				

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ³ Kind Code ³ (if known)				
	FP1					
	FP2					
	FP3					
	FP4					
	FP5					
	FP6					
	FP7					
	FP8					
	FP9					

595325_1.DOC

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.
 This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
 If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



J. Barton et al.
Reexam of Patent No.: 6,233,389
Reexam Control No.: 90/007,750

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Under Reexamination: 6,233,389
Reexamination Control No.: 90/007,750
Examiner: David E. Harvey
Art Unit: 3992

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

**CERTIFICATION OF SERVICE OF SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**

In compliance with 37 C.F.R. § 1.550(f), the undersigned, on behalf of the patent owner, hereby certifies that a copy of this paper has been served on the third-party requester by first class mail on October 16, 2006. The name and address of the party served is as follows:

David L. Fehrman
Morrison & Foerster, LLP
555 W. Fifth Street, Suite 3500
Los Angeles, CA 90013

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Edward J. Kessler
Attorney for Applicant
Registration No. 25,688

Date: October 16, 2006

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

595290_1.DOC

Re-exam

Attorney Docket No. 60097-0357



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Reexamination of:

James M. Barton, et al.)	Confirmation No.: 4653
)	
Application No.: 90/007,750)	Examiner: Harvey, David H.
)	
Filing Date: October 17, 2005)	Group Art Unit No.: 3992
)	
Patent No.: 6,233,389)	
)	
Issue Date: May 15, 2001)	

For: MULTIMEDIA TIME WARPING SYSTEM

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:
Enclosed is a copy of Information Disclosure Citation Form PTO/SB/08 A,B, together with copies of the documents cited on that form, if needed. Pursuant to 37 C.F.R. § 1.97, the submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made and is not to be construed as an admission that the information cited in this statement is material to patentability.

Pursuant to 37 C.F.R. § 1.97, this Information Disclosure Statement is being submitted under one of the following (as indicated by an "X" to the left of the appropriate paragraph):

37 C.F.R. §1.97(b). It is respectfully requested that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

37 C.F.R. §1.97(c). If so, then this Information Disclosure Statement includes one of the following:

A statement pursuant to 37 C.F.R. §1.97(e)

1.97(e)(1) The undersigned hereby states that each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

1.97(e)(2) The undersigned hereby states that no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in §1.56(c) more than three months prior to the filing of this information disclosure statement.

A check for \$180.00 for the fee under 37 C.F.R. § 1.17(p).

It is respectfully requested that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

37 C.F.R. §1.97(d). If so, then this Information Disclosure Statement includes the following:

A statement pursuant to 37 C.F.R. §1.97(e)

1.97(e)(1) The undersigned hereby states that each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement; OR

1.97(e)(2) The undersigned hereby states that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in §1.56(c) more than three months prior to the filing of this information disclosure statement.

AND

A check for \$180.00 for the fee under 37 C.F.R. §1.17(i) for submission of the Information Disclosure Statement.

It is respectfully requested that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

37 C.F.R. §1.97(i). Applicants are submitting references to satisfy Applicants' disclosure obligations in hopes that the references will be considered by the Examiner. Although the submission does not fully meet 37 C.F.R. §1.97, Applicant respectfully requests that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to Applicant(s). It is understood that if the Examiner does not consider the cited references, the cited documents will be placed in the file pursuant to 37 C.F.R. §1.97(i).

Accordingly, copies of the references as listed on the attached Form PTO 1449 are submitted herewith. No certification or fees are deemed necessary.

The Examiner is hereby notified that the present application is related to the following related application(s):

DISCLOSURE OF RELATED APPLICATIONS

U.S. Application/ Pat. No.	File Date	Atty. Docket. No.

The related application(s) may contain subject matter that is related to the subject matter of the present application. The related application(s) may contain one or more claims that may be substantially similar to one or more claims in the present application, and those claims may have been rejected in the related application(s). Therefore, the Examiner is encouraged to review the file history(ies) of the related application(s) as some of the information contained therein may be material to the examination of the present application.

The Examiner is hereby notified that for the following related application(s) an Office Action has been received as indicated below:

DISCLOSURE OF OFFICE ACTIONS

U.S. Application/ Pat. No.	File Date	Office Action Mailing Date	Atty. Docket. No.
10/081,776	02/20/2002	11/03/2006	60097-0029

The related application(s) may contain one or more claims that may be substantially similar to one or more claims in the present application, and those claims may have been rejected in the related application(s). Therefore, the Examiner is encouraged to review the file history(ies) of the related application(s) as some of the information contained therein may be material to the examination of the present application.

Throughout the pendency of this application, please charge any additional fees, including any required extension of time fees, and credit all overpayments to deposit account 50-1302.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP

Dated: Feb 1, 2007


Kirk D. Wong
Reg. No. 43,284

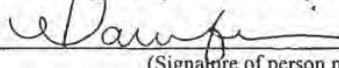
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number 90/007,750
 Filing Date October 17, 2005
 First Named Inventor James Barton et al.
 Art Unit 3992
 Examiner Name Harvey, David E
 Attorney Docket Number 60097-0357

Sheet 1

of 1

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US-6,542,695 B1	04-01-2003	Akiba et al.	
		US-			
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		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Reexam

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of:

James M. Barton, et al.

Application No.: 90/007,750

Filing Date: October 17, 2005

Patent No.: 6,233,389

Issue Date: May 15, 2001

For: MULTIMEDIA TIME WARPING SYSTEM

) Confirmation No.: 4653
)
) Examiner: Harvey, David H.
)
) Group Art Unit No.: 3992
)
)
)
)
)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a copy of Information Disclosure Citation Form PTO/SB/08 A,B, together with copies of the documents cited on that form, if needed. Pursuant to 37 C.F.R. § 1.97, the submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made and is not to be construed as an admission that the information cited in this statement is material to patentability.

Pursuant to 37 C.F.R. § 1.97, this Information Disclosure Statement is being submitted under one of the following (as indicated by an "X" to the left of the appropriate paragraph):

- 37 C.F.R. §1.97(b). It is respectfully requested that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

37 C.F.R. §1.97(c). If so, then this Information Disclosure Statement includes one of the following:

A statement pursuant to 37 C.F.R. §1.97(e)

1.97(e)(1) The undersigned hereby states that each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

1.97(e)(2) The undersigned hereby states that no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in §1.56(c) more than three months prior to the filing of this information disclosure statement.

A check for \$180.00 for the fee under 37 C.F.R. § 1.17(p).

It is respectfully requested that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

37 C.F.R. §1.97(d). If so, then this Information Disclosure Statement includes the following:

A statement pursuant to 37 C.F.R. §1.97(e)

1.97(e)(1) The undersigned hereby states that each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement; OR

1.97(e)(2) The undersigned hereby states that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in §1.56(c) more than three months prior to the filing of this information disclosure statement.

AND

A check for \$180.00 for the fee under 37 C.F.R. §1.17(i) for submission of the Information Disclosure Statement.

It is respectfully requested that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

37 C.F.R. §1.97(i). Applicants are submitting references to satisfy Applicants' disclosure obligations in hopes that the references will be considered by the Examiner. Although the submission does not fully meet 37 C.F.R. §1.97, Applicant respectfully requests that the cited documents be considered and that the enclosed Information Disclosure Citation Form PTO-1449 be initialed by the Examiner to indicate such consideration and a copy thereof returned to Applicant(s). It is understood that if the Examiner does not consider the cited references, the cited documents will be placed in the file pursuant to 37 C.F.R. §1.97(i).

Accordingly, copies of the references as listed on the attached Form PTO 1449 are submitted herewith. No certification or fees are deemed necessary.

The Examiner is hereby notified that the present application is related to the following related application(s):

DISCLOSURE OF RELATED APPLICATIONS

U.S. Application/ Pat. No.	File Date	Atty. Docket. No.

The related application(s) may contain subject matter that is related to the subject matter of the present application. The related application(s) may contain one or more claims that may be substantially similar to one or more claims in the present application, and those claims may have been rejected in the related application(s). Therefore, the Examiner is encouraged to review the file history(ies) of the related application(s) as some of the information contained therein may be material to the examination of the present application.

The Examiner is hereby notified that for the following related application(s) an Office Action has been received as indicated below:

DISCLOSURE OF OFFICE ACTIONS

U.S. Application/ Pat. No.	File Date	Office Action Mailing Date	Atty. Docket. No.
10/081,776	02/20/2002	11/03/2006	60097-0029

The related application(s) may contain one or more claims that may be substantially similar to one or more claims in the present application, and those claims may have been rejected in the related application(s). Therefore, the Examiner is encouraged to review the file history(ies) of the related application(s) as some of the information contained therein may be material to the examination of the present application.

Throughout the pendency of this application, please charge any additional fees, including any required extension of time fees, and credit all overpayments to deposit account 50-1302.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP

Dated: Feb 1, 2007



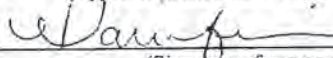
Kirk D. Wong
Reg. No. 43,284

2055 Gateway Place, Suite 550
San Jose, California 95110-1089
Telephone: (408) 414-1080
Facsimile: (408) 414-1076

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

Application Number 90/007,750
 Filing Date October 17, 2005
 First Named Inventor James Barton et al.
 Art Unit 3992
 Examiner Name Harvey, David E
 Attorney Docket Number 60097-0357

Sheet 1

of 1

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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		US-6,542,695 B1	04-01-2003	Akiba et al.	
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	† ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Attorney Docket No. 60097-0357

PROOF OF SERVICE (37 C.F.R. §1.248)

I am a resident of the aforesaid county. I am over the age of eighteen years and not a party to the within action; my business address is 2055 Gateway Place, Suite 550, San Jose, CA 95110.

On March 6, 2007, I served the within Information Disclosure Statement dated February 1, 2007 and PTO/SB/08a Form 1449 on the interested parties in this action, by placing a true copy thereof enclosed in sealed envelopes addressed as follows:

David L. Fehrman, Morrison & Foerster, LLP
555 W. Fifth Street, Suite 3500
Los Angeles, CA 90013

X (BY MAIL) The envelope was mailed with postage thereon fully prepaid. I am "readily" familiar with the firm's practice of collection and processing correspondence for mailing. It is deposited with U.S. Postal Service on that same day in the ordinary course of business. I am aware that on motion of a party served, service is presumed invalid if the postal cancellation date or postage meter date is more than one day after date of deposit for mailing an affidavit.

Executed on March 6, 2007, at San Jose, California.

X (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Annette Jacobs

[Type or print name]


[Signature]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexam of U.S. Patent No.: 6,233,389

Confirmation No.: 4653

BARTON *et al.*

Art Unit: 3992

Reexam Control No.: 90/007,750

Examiner: David E. Harvey

Filed: October 17, 2005

Atty. Docket: 2513.001REX0

For: **Multimedia Time Warping System**

66155 U.S. PTO



04/24/07

Supplemental Information Disclosure Statement

Mail Stop Ex Parte Reexam

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying IDS Form are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.555 and 1.98.

The Patent Owner has listed a publication date on the attached IDS Form based on information presently available to the undersigned. However, the listed publication date should not be construed as an admission that the information was actually published on the date indicated.

The Patent Owner reserves the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent

application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Documents US3 and US6 were cited in related U.S. Patent Application No. 09/827,029, filed April 5, 2001, which is a continuation of U.S. Patent No. 6,233,289.

Documents US3 and US6 were cited in related U.S. Patent Application No. 10/081,776, filed February 20, 2002, which is a divisional of U.S. Patent Application No. 09/827,029, filed April 5, 2001.

Documents US3 and US6 were cited in related U.S. Patent Application No. 11/051,347, filed February 4, 2005, which is a continuation of U.S. Patent Application No. 09/827,029, filed April 5, 2001, which is a continuation of U.S. Patent No. 6,233,289.

Documents US1 and US3-US8 were cited in U.S. Patent Application No. 09/665,921, filed September 20, 2000, which is a continuation-in-part of U.S. Patent No. 6,233,389.

Document FP1 was also cited in U.S. Patent Application No. 09/665,921. Document FP1 (DE 44 34 034) appears to be related to a recording tape marking and evaluating method (e.g., for TV advertisement fade-in).

Documents US1-US8 were cited in related U.S. Patent Application No. 11/182,876, filed July 14, 2005, which is a divisional of U.S. Patent Application No.

09/665,921, filed September 20, 2000, which is a continuation-in-part of U.S. Patent No. 6,233,389.

Documents US1 and US3-US8 were cited in related U.S. Patent Application No. 11/182,135, filed July 14, 2005, which is a divisional of U.S. Patent Application No. 09/665,921, filed September 20, 2000, which is a continuation-in-part of U.S. Patent No. 6,233,389.

Documents US3 and US6 were cited in related U.S. Patent Application No. 09/935,426, filed August 22, 2001, which is a continuation-in-part of U.S. Patent Application No. 09/827,029, filed April 5, 2001.

Documents US3 and US6 were cited in related U.S. Patent Application No. 10/190,256, filed July 5, 2002, which is a continuation-in-part of U.S. Patent Application No. 09/827,029, filed April 5, 2001.

Documents US3 and US6 were cited in related U.S. Patent Application No. 10/418,646, filed April 18, 2003, which is a continuation-in-part of U.S. Patent Application No. 09/827,029, filed April 5, 2001.

Documents NPL1 and NPL2 were cited in related European Patent Application No. 06019602.9.

It is respectfully requested that the Examiner initial and return a copy of the enclosed IDS Form, and indicate in the official file wrapper of this reexamination proceeding that the documents have been considered.

BARTON *et al.*
Reexam of Patent No. 6,233,389
Reexam Control No. 90/007,750
Atty. Docket: 2513.001REX0

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Edward J. Kessler
Attorney for Patent Owner
Registration No. 25,688

Date: April 24, 2007
1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

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Substitute for form 1449A/PTO				Complete if Known	
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Reexam Control Number	90/007,750
				Filing Date	October 17, 2005
				First Named Inventor	James M. BARTON
				Art Unit	3992
				Examiner Name	Harvey, David E.
Sheet	1	of	1	Attorney Docket Number	2513.001REX0

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	US1	5,121,476	06-09-1992	Yee	
	US2	5,227,876	07-13-1993	Cucchi <i>et al.</i>	
	US3	5,600,364	02-04-1997	Hendricks <i>et al.</i>	
	US4	5,648,824	07-15-1997	Dunn <i>et al.</i>	
	US5	6,229,532	05-08-2001	Fujii	
	US6	6,243,741	06-05-2001	Utsumi	
	US7	6,400,407	06-04-2002	Zigmond <i>et al.</i>	
	US8	6,698,020	02-24-2004	Zigmond <i>et al.</i>	
	US9	7,055,166	05-30-2006	Logan <i>et al.</i>	
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	US11				
	US12				
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	US18				
	US19				
	US20				

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	FP1	DE 44 34 034 A1	03-28-1996	Deutsche Thomson-Brandt GmbH		
	FP2					
	FP3					
	FP4					
	FP5					
	FP6					
	FP7					
	FP8					
	FP9					

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Examiner Signature	Date Considered
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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Reexam Control Number	90/007,750
				Filing Date	October 17, 2005
				First Named Inventor	James M. BARTON
				Art Unit	3992
				Examiner Name	Harvey, David E.
Sheet	1	of	1	Attorney Docket Number	2513.001REX0

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published	T ²
	NPL1	Office Action from European Patent Office for foreign application no. 06019602.9 dated January 10, 2007, including attachments (26 pages).	
	NPL2	European Search Report for foreign application no. 06019602.9 dated November 6, 2006 (5 pages).	
	NPL3		
	NPL4		
	NPL5		
	NPL6		
	NPL7		
	NPL8		
	NPL9		
	NPL10		

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¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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DEUTSCHES
PATENTAMT

12 **Offenlegungsschrift**
10 **DE 44 34 034 A 1**

61 Int. Cl.⁸:
G 11 B 15/087
G 11 B 27/30
G 11 B 27/32
H 04 N 5/782

21 Aktenzeichen: P 44 34 034.8
22 Anmeldetag: 23. 9. 94
43 Offenlegungstag: 28. 3. 96

DE 44 34 034 A 1

71 Anmelder:
Deutsche Thomson-Brandt GmbH, 78048
Villingen-Schwenningen, DE

72 Erfinder:
Link, Hermann, Dipl.-Ing., 78186 Donaueschingen,
DE; Philippe, B. Mace, 78078 Nidereschach, DE

66 Für die Beurteilung der Patentfähigkeit
in Betracht zu ziehende Druckschriften:

DE 38 27 970 C2
DE 38 23 108 C1
DE 38 19 359 C2
DE 41 10 153 A1
DE 35 43 888 A1
GB 21 45 555 A
US 50 18 027
EP 05 48 936 A2
WO 85 02 934

54 Verfahren zur Markierung und/oder zur Auswertung von Markierungen von auf einem Speicherträger aufgezeichneten Informationen für Steuerungszwecke

57 Es wird ein Verfahren zur Markierung und/oder zur Auswertung von Markierungen von auf einem Videoband aufgezeichneter Informationen für Steuerungszwecke eines Videorecorders und/oder weiterer mit dem Videorecorder gekoppelter Geräte beschrieben.
Zur Markierung werden ausgewählte Abschnitte aufgezeichneter Informationen oder Programmblöcke sowohl mit einer Anfangsmarke als auch mit einer Endmarke markiert. Bei einer Auswertung der Markierung erzeugt die Anfangsmarke ein erstes und die Endmarke ein zweites Steuersignal. Die Steuersignale können ausgenutzt werden, um z. B. markierte Werbeeinblendungen durch gezieltes Einschalten des schnellen Vorlaufes bei der Wiedergabe zu überspringen oder um ausgewählte Szenen lückenlos auf einen anderen Videorecorder zu überspielen.

Starting mark:

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header	ID	X	P	line	header
0111111111	1100	0	0	10	0111111111

header	ID	X	P	line	header	ID	U	E	check	frames	header
0111111111	1100	1	0	10	0111111111	1100	0	0	000	0	0111111111

header	C	S	D	line	header	ID	M	S	check	frames	header
0111111111	1100	1	0	10	0111111111	1100	0	0	000	0	0111111111

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Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

Die Erfindung betrifft ein Verfahren zur Markierung und/oder zur Auswertung von Markierungen von auf einem Speicherträger, insbesondere auf einem Videoband, aufgezeichneten Informationen für Steuerungszwecke.

Es ist bekannt, bei auf Videobändern aufgezeichneten Informationen den Anfang einer Aufzeichnung zu markieren, um diesen Anfang gezielt anfahren zu können. Der Start der Wiedergabe kann so beschleunigt werden.

Wird die Wiedergabe des Videorecorders an der Markierung gestartet, so läuft das Videoband anschließend bis zum Bandende weiter, es sei denn, die Wiedergabe wird vorher manuell beendet.

Eine selektive Wiedergabe ausgewählter Teile einer Aufzeichnung ist dadurch aber nicht möglich. Dieses Problem stellt sich, wenn bei Wiedergabe eines aufgezeichneten Fernsehprogramms Werbeeinblendungen gezielt übersprungen werden sollen oder wenn zum Zusammenschnitt einzelner selbst aufgezeichneter Szenen nur vorher ausgewählte Teile dieser Szenen automatisch auf ein anderes Gerät überspielt werden sollen.

Der Erfindung liegt daher die Aufgabe zugrunde, ein Verfahren zur Markierung und/oder zur Auswertung von Markierungen von auf einem Videoband aufgezeichneten Informationen für Steuerungszwecke dahingehend zu verbessern, daß Abschnitte der aufgezeichneten Informationen beliebig selektiert werden können.

Diese Aufgabe wird bei einem Verfahren nach dem Oberbegriff des Patentanspruchs 1 durch die im Kennzeichen angegebenen Merkmale gelöst.

Gemäß der Erfindung wird zur Markierung aufgezeichneter Informationen zusätzlich zu einer an sich bekannten Anfangsmarke eine Endmarke gesetzt. Bei der Wiedergabe werden sowohl die Anfangsmarke als auch die Endmarke ausgewertet. Die Anfangsmarke veranlaßt dann die Erzeugung eines ersten und die Endmarke die Erzeugung eines zweiten Steuersignals, mit denen zwei unterschiedliche Funktionen ausgelöst werden können.

So kann z. B. zum Zwecke des Überspringens von Werbeblöcken bei der Wiedergabe einer Aufzeichnung zunächst während der Aufnahme oder bei einer nachfolgenden Bearbeitung der Aufnahme eine Anfangsmarke am Anfang und eine Endmarke am Ende des Werbeblocks gesetzt werden. Bei der Wiedergabe löst das von der Anfangsmarke erzeugte erste Steuersignal dann eine Umschaltung des Videorecorders von Wiedergabe auf schnellen Vorlauf und zusätzliche Stummschaltung und Dunkelsteuerung des Wiedergabegerätes aus, während das zweite Steuersignal bei Erreichen der Endmarke vom schnellen Vorlauf wieder zurück in den normalen Wiedergabebetrieb schaltet. Hierbei kann das Setzen der Anfangsmarke und Endmarke entweder manuell oder auch automatisch durch eine hier jedoch nicht näher erläuterte Analyse der Programmquelle auf werbespezifische Merkmale durchgeführt werden.

Bei einem Zusammenschnitt einzelner Szenen einer Eigenaufnahme und Überspielung auf ein anderes Gerät, können auf dem Originalband die zur Überspielung vorgesehenen Szenen mit Anfangs- und Endmarken versehen werden und die durch Auswertung der Anfangs- und Endmarken erzeugten Steuersignale können dann einen angeschlossenen zweiten Videorecorder zwischen den Funktionen Aufnahme und Aufnahme-Pause umschalten, so daß die zu überspielenden Informationsabschnitte lückenlos auf dem Aufnahmegerät

aneinandergefügt werden.

In den meisten Fällen ist es zweckmäßig, einen Videorecorder so auszustatten, daß er sowohl eine Markierung des Videobandes als auch eine Auswertung der Markierungen auf einem Videoband vornehmen kann. Die Erfindung umfaßt jedoch auch Alternativen, bei denen nur eine Markierung — zur Ermöglichung einer späteren Auswertung — oder nur eine Auswertung der Marken — bei einer vorher einmal durchgeführten Markierung — vorgenommen wird.

Gemäß einer Weiterbildung können zusätzlich zu den Anfangs- und Endmarken auch Synchronmarken geschrieben und/oder zur genaueren Positionierung beim Schreiben der Anfangs- und Endmarken ausgewertet werden.

Mit dieser Maßnahme läßt sich eine verbesserte Positionierung zum Schreiben der Anfangs- und Endmarken erzielen, wenn z. B. ein Videoband durch häufige Benetzung Fehlstellen (Dropouts) hat, so daß eine genaue Positionierung durch Zählen der während der Aufnahme mitaufgezeichneten Kontrollimpulsen nicht möglich ist oder daß durch mehrfaches Aufspulen und den dadurch notwendigen Richtungswechseln ein oder mehrere Kontrollimpulse nicht oder falsch detektiert werden. Die Synchronmarke dient in diesem Fall zu einer Feinkorrektur des Kontrollimpulszählers des Videorecorders, so daß eine exakte Positionierung zum Schreiben der Anfangs- oder Endmarken als auch zum Positionieren während des Suchvorgangs gewährleistet ist. Die Synchronmarken können dabei sowohl in regelmäßiger Folge während einer Aufnahme auf dem Videoband aufgezeichnet werden, als auch jeweils vor oder hinter einer Anfangsmarke oder eine Endmarke, um im zweiten Falle auch bei Rückspulen des Bandes eine schnelle und sichere Auswertung der Anfangs- und Endmarken zu erzielen.

Vorzugsweise werden die Anfangsmarken, die Endmarken sowie die optionalen Synchronmarken auf der Kontrollspur des Videobandes aufgezeichnet und/oder ausgewertet, wobei die Kodierung und/oder Dekodierung als Pulsweitenmodulation des Kontrollsignals durchgeführt wird.

Bei Videosystemen, bei denen das Kontrollsignal zur Synchronisierung der Kopftrommel lediglich aus der Anfangs-Flanke einer Signalperiode abgeleitet wird, wie es z. B. beim VHS-System der Fall ist, gelingt es so, das Kontrollsignal zusätzlich zur Aufzeichnung der Markierungen auszunutzen, ohne daß hierdurch die ursprüngliche Kontrollfunktion beeinträchtigt wird.

Handelt es sich um einen Videorecorder nach den VHS-Spezifikationen 31, so ist allerdings die Pulsweitenmodulation des Kontrollsignals bereits für die VISS- und VASS-Kodierung (Video Index Search System) bzw. (Video Adress Search System) spezifiziert.

Gemäß einer bevorzugten Ausführung benutzt die Erfindung in diesem Fall eine mit dem VISS- und VASS-Datenformat kompatible Kodierung, die sowohl die Parameter der Pulsweitenmodulation als auch weitgehend das Format der Datenkodierung einhält.

Der Vorteil dieser Maßnahme besteht darin, daß die vorhandene Hardware und Software von Videorecordern, die nach dieser Spezifikation arbeiten, unverändert ausgenutzt werden kann. Es ist dann lediglich noch erforderlich, die das 16-Bit-Datenwort betreffenden Bit gesondert zu schreiben bzw. zu lesen, um unter Beibehaltung der bisher möglichen Funktionen zusätzlich Markierungen gemäß der Erfindung zu schreiben und auszuwerten.

Zur Identifikation der Art der Marke nach Anfangs-, End- oder Synchronmarke wird ein 4-Bit-BCD-Kode am Anfang des 16-Bit-Datenwortes gesetzt und/oder ausgewertet. Hierbei werden die hexadezimalen Zeichen oberhalb von "A" verwendet, um einen Konflikt mit der VASS-Kodierung zu vermeiden, die die hexadezimalen Zeichen "0" bis "9" verwendet.

Für die Zuordnung der restlichen 12 Bit sind drei unterschiedliche Formate des 16-Bit-Datenwortes vorgesehen. Bei einem ersten Format werden den auf die Identifikation folgenden 12 Bit eine 1-Bit-Kennung über die Anzahl der nachfolgenden Formate des Datenwortes, eine weitere 1-Bit-Kennung über die Gültigkeit einer Zeitangabe und ein 10-Bit-Bereich für die Angabe eines zeitlichen Abstandes zur anderen zugehörigen Marke zugewiesen.

Durch Variation der 1-Bit-Kennung über die Anzahl der nachfolgenden Formate des Datenwortes und der weiteren 1-Bit-Kennung über eine Gültigkeit einer Zeitangabe sowie der Zeitangabe lassen sich mehrere Datenformate für die Markierungen angeben, die sich in den Anforderungen an die gewünschte Genauigkeit auf der einen Seite und einfache Auswertbarkeit auf der anderen Seite unterscheiden. So läßt sich durch die Einbindung einer 10-Bit-Zeitangabe in das Datenwort das Auftreten der zugehörigen anderen Marke schon im voraus bestimmen, so daß das Videoband schon vor Erreichen dieser anderen Marke aus dem schnellen Vor- oder Rücklauf gebremst werden kann und das Passieren der Marke bereits mit der langsamen Wiedergabegeschwindigkeit erfolgen kann. Die Auswertung der anderen Marke dient dann nur noch zu einer eventuellen Feinkorrektur der Auslösung des Steuersignals oder zur Redundanzprüfung.

Die 10-Bit-Zeitangabe bezieht sich auf den Abstand zwischen einer Anfangsmarke und einer Endmarke, die einen bestimmten Abschnitt einer Aufzeichnung markieren sollen. Wird die Zeitangabe in einer Anfangsmarke gelesen, so ist die zugehörige Marke, auf die sich die Zeitangabe bezieht, die Endmarke und umgekehrt.

Das erste Format des 16-Bit-Datenwortes wird bei der Anfangsmarke und Endmarke stets verwendet. Ist die 1-Bit-Kennung über die Anzahl der nachfolgenden Formate des Datenwortes logisch 0 gesetzt, so bildet das 16-Bit-Datenwort das einzige Datenwort der Anfangs- oder Endmarke. Ist dagegen die 1-Bit-Kennung über die Anzahl der nachfolgenden Formate des Datenwortes auf logisch 1 gesetzt, so bildet das 16-Bit-Datenwort des ersten Formats das Hauptdatenwort, dem nach Trennung durch den Header ein weiteres 16-Bit-Datenwort eines zweiten als Formats Zusatzdatenwort folgt.

Bei dem zweiten Format des 16-Bit-Datenwortes sind den auf die Identifikation folgenden 12 Bit zwei unbenutzte Bit, eine 1-Bit-Kennung über eine Hamming-Prüfung, ein 4-Bit-Bereich für einen Hamming-Kode und eine 5-Bit-Bildrahmenangabe zur bildrahmengenauen Positionierung der anderen zugehörigen Marke zugewiesen.

Während das erste Format des 16-Bit-Datenwortes nur eine sekundengenaue Angabe des Abstandes zur nächsten zugehörigen Marke ermöglicht, bietet das zweite Format zusätzlich die Angabe des Bildrahmens, so daß durch Kombination der Zeitangabe aus dem Datenwort im ersten Format und der Bildrahmenangabe aus dem Datenwort im zweiten Format eine wesentlich genauere Positionierung möglich wird. Die Bildrahmenangabe umfaßt dabei den Beginn einer Zeitspanne für ein bestimmtes Vollbild aus der Bildsequenz.

Um die Sicherheit der Grundgenauigkeit, nämlich der Zeitangabe zu verbessern, kann noch eine zusätzliche Fehlerprüfung und Korrektur der Zeitangabe erfolgen, indem ein zusätzlich in das Datenwort des zweiten Formats geschriebener Hamming-Kode ausgewertet wird.

Schließlich sieht ein drittes Format des 16-Bit-Datenwortes vor, daß den auf die Identifikation folgenden 12 Bit eine 1-Bit-Kennung über eine Paritätsprüfung einer Zählerangabe, eine 6-Bit-Bandzählerangabe und eine 5-Bit-Bildrahmenangabe zur bildrahmengenauen Synchronisierung zugewiesen werden. Durch diese Angabe im 16-Bit-Datenwort lassen sich Zählfehler der Bandzählerangabe und der Bildrahmenangabe, wie sie nach mehrmaligem Vor- und Rückspulen eines Videobandes auftreten können, wieder korrigieren. Da aus Kompatibilitätsgründen das Datenwort nur 16 Bit aufweisen darf und die dadurch beschränkte Länge der Bandzählerangabe auf 6 Bit keine vollständige Angabe des Bandzählerstandes in Sekundenauflösung ermöglichen würde, stellen die angegebenen 6 Bit für die Bandzählerangabe nur die letzten Stellen dar. Dies reicht aber für eine Korrektur des Zählerstandes des Videorecorders aus, da sich Zählfehler beim häufigen Umspulen nur auf die letzten Stellen auswirken.

Das dritte Format des 16-Bit-Datenwortes wird nur für die Synchronmarke verwendet. Wird eine Synchronmarke unmittelbar vor einer Anfangsmarke oder unmittelbar nach einer Endmarke gesetzt, so kann der angrenzende Header entfallen, da ja bereits die Anfangsmarke und Endmarke jeweils am Anfang und am Ende einen Header aufweist.

Nachfolgend wird die Erfindung anhand der Darstellung von mehreren Formaten für Anfangsmarken, Endmarken und Synchronmarken beschrieben.

Fig. 1a—d zeigt vier unterschiedliche Datenformate a—d für eine Anfangsmarke,

Fig. 2a—d zeigt korrespondierende Datenformate a—d für eine Endmarke, und

Fig. 3 zeigt ein Datenformat für eine Synchronmarke.

Gemeinsam ist allen Formaten der Aufbau aus einem 16-Bit-Datenwort, dem ein 11-Bit-Header vor- und nachgestellt ist. Umfaßt das Datenformat im Falle von Fig. 1c und d sowie Fig. 2c und d zwei Datenworte von je 16 Bit, so werden diese durch einen gemeinsamen Header getrennt.

Der Header besteht entsprechend der VHS-Spezifikation 31 für VASS aus einem ersten Bit mit der Wertigkeit logisch Null, neun folgenden Bit mit der Wertigkeit logisch Eins und einem weiteren Bit mit der Wertigkeit logisch Null. Wenn keine Anfangs-, End- oder Synchronmarken aufgezeichnet werden, entspricht das Kontrollsignal einer Folge logischer Nullen.

Weiterhin ist den Datenformaten der Anfangsmarke und der Endmarke der Aufbau des ersten Datenwortes gemeinsam, das bei den Datenformaten gemäß Fig. 1a und b sowie Fig. 2a und b gleichzeitig das einzige Datenwort ist.

Alle 16-Bit-Datenworte, also auch die der Synchronmarke, umfassen am Anfang eine Identifikation ID als 4-Bit-BCD-Kode. Zur Vermeidung einer Kollision mit dem VASS-Kode sind nur die Hexadezimalzeichen oberhalb von "A" zulässig. Im Ausführungsbeispiel entspricht die Identifikation der Anfangsmarke dem hexadezimalen "C" und die Identifikation der Endmarke dem hexadezimalen "D". Die Identifikation der Synchronmarke ist das hexadezimale "E".

Beim ersten Format des 16-Bit-Datenwortes ist dem auf die Identifikation folgenden Bit eine 1-Bit-Kennung

zugewiesen. In Fig. 1a und b sowie Fig. 2a und b ist das Bit auf logisch Null gesetzt, was besagt, daß die Anfangs- und Endmarke nur ein 16-Bit-Datenwort umfaßt. Bei den Formaten gemäß Fig. 1c und d sowie Fig. 2c und d ist das Kennungs-Bit X auf logisch Eins gesetzt, was bedeutet, daß die Anfangsmarke und die Endmarke ein erweitertes Datenformat aus jeweils zwei 16-Bit-Datenworten zweier Formate umfaßt.

Das anschließende Bit mit der Bezeichnung P gibt an, ob eine gültige Zeitangabe vorhanden ist oder nicht. Bei den Datenformaten gemäß Fig. 1a und Fig. 2a ist das Paritätsbit auf logisch Null gesetzt sowie der Zählerstand auf Null gesetzt. Das bedeutet, daß keine gültige Zeitangabe des Abstandes zur zugehörigen Marke vorhanden ist. Bei der Auswertung der Markierung müssen daher sowohl die Anfangs- als auch die Endmarke ausgewertet werden. Bei den Formaten gemäß Fig. 1b, c und d und Fig. 2b, c und d ist dagegen eine gültige Zeitangabe des Abstandes zur zugehörigen Marke vorhanden. Die Position der zugehörigen Marke ist dann bereits bei Auswertung der ersten passierten Marke bekannt.

Im Falle einer fehlerhaften Paritätsprüfung oder eines nicht korrigierbaren Fehler der Hamming Prüfung wird mit der Positionierung gemäß des Formates Fig. 1a oder Fig. 2a verfahren.

Die Zeitangabe ist in einem auf das Paritätsbit folgenden Bereich Time von 10 Bit enthalten. Mittels der 10-Bit-Zeitangabe des zeitlichen Abstandes zur anderen zugehörigen Marke ist eine maximale Zeitangabe von bis zu 17 Minuten bei einer Auflösung von einer Sekunde möglich. Bei größeren Zeitabständen zwischen einer Anfangs- und einer Endmarke können Anfang und Ende eines markierten Abschnittes nur durch Lesen der Anfangs- und Endmarke selbst bestimmt werden. In diesem Fall kann nur das Datenformat gemäß Fig. 1a und Fig. 2a verwendet werden.

Das Format gemäß Fig. 1a und Fig. 2a stellt die einfachste Möglichkeit der Markierung dar, während das Format gemäß Fig. 1b und Fig. 2b bereits eine Angabe über den Abstand zur nächsten Marke enthalten, so daß eine vorausschauende Steuerung des Videorecorders ermöglicht wird und eine schnellere Positionierung des Bandes an der zugehörigen anderen Marke möglich ist, da wegen der bekannten Lage der zugehörigen Marke das Videoband aus einem schnellen Vor- oder Rücklauf schon vor Erreichen der Marke abgebremst werden kann und nicht erst, wenn die Marke bereits am Kontrollkopf vorbeigelaufen ist und danach die Auswertung ergeben hat, daß eine Marke passiert wurde.

Das in den Fig. 1c und d sowie Fig. 2c und d gezeigte zweite Format des 16-Bit-Datenwortes als Zusatzdatenwort ermöglicht eine noch genauere Bestimmung der Lage der anderen Marke nach Bildrahmen. Da ein Vollbild bei PAL-Aufzeichnung einen Zeitraum von 1/25 Sekunde benötigt und ein NTSC-Bild ein Vollbild von 1/30 Sekunde, gelingt es auf diese Weise, die Positioniergenauigkeit gegenüber einer Auflösung in Sekunden um den Faktor 25 bzw. 30 zu verbessern.

Das zweite Format des 16-Bit-Datenwortes umfaßt auf die Identifikation ID folgend zwei unbenutzte Bit U, eine 1-Bit-Kennung E für eine Hamming-Prüfung, einen 4-Bit-Bereich für einen Hamming-Kode Hamming und eine 5-Bit-Bildrahmenangabe Frame. Ist das Bit für die Hamming-Prüfung auf logisch Null gesetzt, findet keine Hamming-Prüfung statt. Dies ist bei dem Format gemäß Fig. 1c und Fig. 2c der Fall. Beim Format gemäß Fig. 1d und Fig. 2d ist dagegen ein 4-Bit-Hamming-Kode vor-

handen und die 1-Bit-Kennung E ist auf logisch Eins gesetzt, was bedeutet, daß eine Hamming-Prüfung und wenn nötig eine Korrektur der Zeitangabe im Hauptdatenwort durchgeführt wird. Eine Korrektur ist jedoch nur möglich wenn nicht mehr als 1 Bit der Zeitangabe oder des Hamming-Codes falsch ist.

Die in den Fig. 1a bis d und Fig. 2a bis d dargestellten Formate ermöglichen somit aufsteigend mit der Formatnummer eine zunehmende Positioniergenauigkeit und Positionierschnelligkeit, wobei jedoch der Aufwand für die Auswertung ebenfalls zunimmt. Die Formate sind jeweils abwärts kompatibel zu den in der Hierarchie darunter liegenden Formaten. Die Formate sind ebenfalls aufwärts kompatibel wenn das Format-Bit X auch von einfachen Auswertesystemen beachtet werden. Es muß dann nur der jeweils im Auswertesystem implementierte Teil ausgewertet werden, unabhängig von dem tatsächlich aufgezeichnetem Format auf dem Band. Es ist daher in jedem Fall die volle Kompatibilität gewährleistet.

Ein drittes Format benutzt ausschließlich die Synchronmarke gemäß Fig. 3. Dort folgt auf die Identifikation ID eine 1-Bit-Kennung P für eine Paritätsprüfung der Zählerangabe, eine 6-Bit-Bandzählerangabe Counter und eine 5-Bit-Bildrahmenangabe Frame. Diese Informationen des Datenwortes der Synchronmarke ermöglichen es, das Bandzählwerk und den Bildrahmenzähler eines Videorecorders bei Fehlern, wie sie nach mehrfachem Umschalten von Wiedergabe auf Rücklauf und Vorlauf auftreten können, wieder mit der aktuellen Videobandstelle exakt in Übereinstimmung zu bringen.

Im übrigen dient die Synchronmarke dazu, bei älteren oder leicht beschädigten Bändern die Auswertung des Kontrollsignals zu korrigieren, so daß bei einer nachfolgenden Anfangs- oder Endmarke diese Anpassung bereits erfolgt ist und damit die Daten der Anfangs- und Endmarken zur präzisen Positionierung verwendet werden können.

Patentansprüche

1. Verfahren zur Markierung und/oder zur Auswertung von Markierungen von auf einem Speicherträger aufgezeichneten Informationen für Steuerungszwecke eines Informations aufzeichnenden und/oder wiedergebenden Gerätes und/oder weiterer mit dem Gerät gekoppelter Geräte, wobei ein Abschnitt der aufgezeichneten Informationen mit einer Anfangsmarke markiert und/oder eine Anfangsmarke ausgewertet wird, dadurch gekennzeichnet, daß der mit einer Anfangsmarke markierte Abschnitt zusätzlich mit einer Endmarke markiert wird und/oder auch die Endmarke ausgewertet wird, und daß bei Erkennung der Anfangsmarke ein erstes und bei Erkennung der Endmarke ein zweites Steuersignal erzeugt wird.
2. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß zusätzlich mit den Anfangs- und Endmarken Synchronmarken geschrieben und/oder zur leichteren Identifizierung der Anfangs- und Endmarken ausgewertet werden.
3. Verfahren nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Anfangsmarken und die Endmarken sowie die optionalen Synchronmarken auf der Kontrollspur des Videobandes aufgezeichnet und/oder ausgewertet werden, wobei die Kodierung und/oder Dekodierung als Pulsweitenmodulation des Kontrollsignals durchgeführt wird.

4. Verfahren nach Anspruch 3, dadurch gekennzeichnet, daß bei einer Aufzeichnung und/oder Auswertung nach den VHS-Spezifikationen (31) für VISS- und VASS-Kodierung (Video Index Search System) bzw. (Video Adress Search System) eine mit dem VISS- und VASS-Datenformat kompatible Kodierung und/oder Dekodierung der Anfangs- und Endmarke sowie der optionalen Synchronmarke vorgenommen wird, indem

- a) einer ersten Pulsweite von 60% der Periodendauer eine logische Null und einer zweiten Pulsweite von 27,5% der Periodendauer eine logische Eins zugeordnet wird, wobei die Pulsweite zwischen der ansteigenden Flanke und der abfallenden Flanke des Kontrollsignals CTL betrachtet wird, und
- b) die Information der Anfangs- und Endmarke sowie der optionalen Synchronmarke in wenigstens ein 16-Bit-Datenwort geschrieben und/oder aus wenigstens einem 16-Bit-Datenwort gelesen wird, dem jeweils ein 11-Bit-VISS-/VASS-Header aus einer logischen Null, neun logischen Einsen und einer logischen Null vor- und nachgestellt wird.

5. Verfahren nach Anspruch 4, dadurch gekennzeichnet, daß eine Identifikation (ID) der Art der Marke nach Anfangs-, End- oder Synchronmarke als 4-Bit-BCD-Kode am Anfang des 16-Bit-Datenwortes gesetzt und/oder ausgewertet wird.

6. Verfahren nach Anspruch 5, dadurch gekennzeichnet, daß bei einem ersten Format des 16-Bit-Datenwortes den auf die Identifikation (ID) folgenden 12 Bit eine 1-Bit-Kennung (X) über die Anzahl der nachfolgenden Formate des Datenwortes, eine weiteren 1-Bit-Kennung (P) über eine Paritätsprüfung einer Zeitangabe und eine 10-Bit-Zeitangabe (Time) des zeitlichen Abstandes zur anderen zugehörigen Marke zugewiesen werden.

7. Verfahren nach Anspruch 4 oder 5, dadurch gekennzeichnet, daß bei einem zweiten Format des 16-Bit-Datenwortes den auf die Identifikation (ID) folgenden 12 Bit zwei unbenutzte Bit (U), eine 1-Bit-Kennung (E) über eine Hamming-Prüfung, ein 4-Bit-Bereich für einen Hamming-Kode (Hamming) und eine 5-Bit-Bildrahmenangabe (Frame) zur bildrahmengenauen Positionierung der anderen zugehörigen Marke zugewiesen werden.

8. Verfahren nach Anspruch 4 oder 5, dadurch gekennzeichnet, daß bei einem dritten Format des 16-Bit-Datenwortes den auf die Identifikation (ID) folgenden 12 Bit eine 1-Bit-Kennung (P) über eine Paritätsprüfung einer Zählerangabe, eine 6-Bit-Bandzählerangabe (Counter) und eine 5-Bit-Bildrahmenangabe (Frame) zur bildrahmengenauen Synchronisierung zugewiesen werden.

9. Verfahren nach Anspruch 6, dadurch gekennzeichnet, daß das erste Format des 16-Bit-Datenwortes als einziges oder als erstes Datenwort einer Anfangs- und Endmarke geschrieben und/oder gelesen wird.

10. Verfahren nach Anspruch 7, dadurch gekennzeichnet, daß das zweite Format des 16-Bit-Datenwortes als optionales zweites Datenwort einer Anfangs- und Endmarke geschrieben und/oder gelesen wird.

11. Verfahren nach Anspruch 7, dadurch gekennzeichnet, daß das dritte Format des 16-Bit-Datenwortes als Datenwort der optionalen Synchron-

marke geschrieben und/oder gelesen wird.

12. Verfahren nach den Ansprüchen 5 bis 7, dadurch gekennzeichnet daß das Format der Identifikation gemäß Anspruch 5 abwärts kompatibel zu den Formaten gemäß Anspruch 6 und die Formate gemäß Anspruch 6 abwärts kompatibel zu den Formaten gemäß Anspruch 7 sind.

13. Verfahren nach den Ansprüchen 5 bis 7, dadurch gekennzeichnet daß die Formate gemäß Anspruch 6 aufwärts kompatibel zum Format der Identifikation gemäß Anspruch 5 und die Formate gemäß Anspruch 7 aufwärts kompatibel zu den Formaten gemäß Anspruch 6 sind.

Hierzu 2 Seite(n) Zeichnungen

- Leerseite -

Starting mark :

Fig. 1a

header	ID	X	P	time	header
01111111110	1100	0	0	10 * 0	01111111110

Fig. 1b

header	ID	X	P	time	header
01111111110	1100	0	p	10 bit	01111111110

Fig. 1c

header	ID	X	P	time	header	ID	U	E	check	frames	header
01111111110	1100	1	p	10 bit	01111111110	1100	xx	0	xxxx	5 bit	01111111110

Fig. 1d

header	ID	X	P	time	header	ID	U	E	check	frames	header
01111111110	1100	1	p	10 bit	01111111110	1100	xx	1	4 bit	5 bit	01111111110

Ending mark :

Fig. 2a

header	ID	X	P	time	header
01111111110	1101	0	0	10 * 0	01111111110

Fig. 2b

header	ID	X	P	time	header
01111111110	1101	0	p	10 bit	01111111110

Fig. 2c

header	ID	X	P	time	header	ID	U	E	check	frames	header
01111111110	1101	1	p	10 bit	01111111110	1100	xx	0	xxx	5 bit	01111111110

Fig. 2d

header	ID	X	P	time	header	ID	U	E	check	frames	header
01111111110	1101	1	p	10 bit	01111111110	1100	xx	1	4 bit	5 bit	01111111110

Sync. mark :

Fig. 3

header	ID	P	counter	frames	header
01111111110	1110	p	6 bit	5 bit	01111111110

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Date
 10-01-2007

Reference TV990303PEP	Application No./Patent No. 06019602.9 - 2202
Applicant/Proprietor Tivo, Inc.	

Communication pursuant to Article 96(2) EPC

The examination of the above identified application revealed that it does not meet the requirements of the European Patent Convention for the reasons already stated in the European search opinion.

If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(1) EPC.

You are invited to file your observations and/or correct the deficiencies within a period of

four months

from the notification of this communication, this period being computed in accordance with Rules 78(2) and 83(2) and (4) EPC.

Amendments to the description, claims and drawings are to be filed where appropriate within the said period in one copy on separate sheets (R. 36(1) EPC).

Failure to comply with this invitation in due time will result in the application being deemed to be withdrawn (Art. 96(3) EPC).

Fragua, M.

Primary Examiner
 for the Examining Division



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divisional application to the application mentioned
under INID code 62.

(54) **Multimedia time warping system**

(57) The invention allows the user to store selected television broadcast programs while the user is simultaneously watching or reviewing another program. A preferred embodiment of the invention accepts television (TV) input streams in a multitude of analog and digital forms. The TV streams are converted to (MPEG) formatted stream for internal transfer and manipulation and are parsed and separated it into video and audio components. The components are stored in temporary buffers. Events are recorded that indicate the type of component that has been found, where it is located, and when it occurred. The program logic is notified that an event has occurred and the data is extracted from the buffers. The parser and event buffer decouple the CPU from having to parse the MPEG stream and from the real time nature

of the data streams which allows for slower CPU and bus speeds and translate to lower system costs. The video and audio components are stored on a storage device and when the program is requested for display, the video and audio components are extracted from the storage device and reassembled into an MPEG stream which is sent to a decoder. The decoder converts the MPEG stream into TV output signals and delivers the TV output signals to a TV receiver. User control commands are accepted and sent through the system. These commands affect the flow of said MPEG stream and allow the user to view stored programs with at least the following functions: reverse, fast forward, play, pause, index, fast/slow reverse play, and fast/slow play.

EP 1 729 515 A1

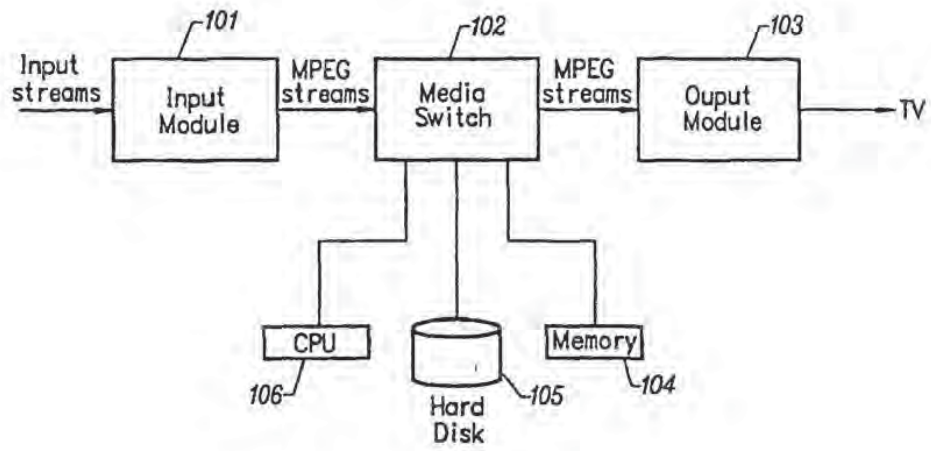


FIG. 1

Description**BACKGROUND OF THE INVENTION****TECHNICAL FIELD**

[0001] The invention relates to the time shifting of television broadcast signals. More particularly, the invention relates to the real time capture, storage, and display of television broadcast signals.

DESCRIPTION OF THE PRIOR ART

[0002] The Video Cassette Recorder (VCR) has changed the lives of television (TV) viewers throughout the world. The VCR has offered viewers the flexibility to time-shift TV programs to match their lifestyles.

[0003] The viewer stores TV programs onto magnetic tape using the VCR. The VCR gives the viewer the ability to play, rewind, fast forward and pause the stored program material. These functions enable the viewer to pause the program playback whenever he desires, fast forward through unwanted program material or commercials, and to replay favorite scenes. However, a VCR cannot both capture and play back information at the same time.

[0004] One approach to solving this problem is to use several VCRs. For example, if two video tape recorders are available, it might be possible to Ping-Pong between the two. In this case, the first recorder is started at the beginning of the program of interest. If the viewer wishes to rewind the broadcast, the second recorder begins recording, while the first recorder is halted, rewound to the appropriate place, and playback initiated. However, at least a third video tape recorder is required if the viewer wishes to fast forward to some point in time after the initial rewind was requested. In this case, the third recorder starts recording the broadcast stream while the second is halted and rewound to the appropriate position. Continuing this exercise, one can quickly see that the equipment becomes unwieldy, unreliable, expensive, and hard to operate, while never supporting all desired functions. In addition, tapes are of finite length, and may potentially end at inconvenient times, drastically lowering the value of the solution.

[0005] The use of digital computer systems to solve this problem has been suggested. U.S. Pat. No. 5,371,551 issued to Logan et al., on 6 December 1994, teaches a method for concurrent video recording and playback. It presents a microprocessor controlled broadcast and playback device. Said device compresses and stores video data onto a hard disk. However, this approach is difficult to implement because the processor requirements for keeping up with the high video rates makes the device expensive and problematic. The microprocessor must be extremely fast to keep up with the incoming and outgoing video data.

[0006] It would be advantageous to provide a multimedia

time warping system that gives the user the ability to simultaneously record and play back TV broadcast programs. It would further be advantageous to provide a multimedia time warping system that utilizes an approach that decouples the microprocessor from the high video data rates, thereby reducing the microprocessor and system requirements which are at a premium.

SUMMARY OF THE INVENTION

[0007] The invention provides a multimedia time warping system. The invention utilizes an easily manipulated, low cost multimedia storage and display system that allows the user to view a television broadcast program with the option of instantly reviewing previous scenes within the program. In addition, the invention allows the user to store selected television broadcast programs while the user is simultaneously watching or reviewing another program.

[0008] A preferred embodiment of the invention accepts television (TV) input streams in a multitude of forms, for example, analog forms such as National Television Standards Committee (NTSC) or PAL broadcast, and digital forms such as Digital Satellite System (DSS), Digital Broadcast Services (DBS), or Advanced Television Standards Committee (ATSC). Analog TV streams are converted to an Moving Pictures Experts Group (MPEG) formatted stream for internal transfer and manipulation, while pre-formatted MPEG streams are extracted from the digital TV signal and presented in a similar format to encoded analog streams.

[0009] The invention parses the resulting MPEG stream and separates it into its video and audio components. It then stores the components into temporary buffers. Events are recorded that indicate the type of component that has been found, where it is located, and when it occurred. The program logic is notified that an event has occurred and the data is extracted from the buffers.

[0010] The parser and event buffer decouple the CPU from having to parse the MPEG stream and from the real time nature of the data streams. This decoupling allows for slower CPU and bus speeds which translate to lower system costs.

[0011] The video and audio components are stored on a storage device. When the program is requested for display, the video and audio components are extracted from the storage device and reassembled into an MPEG stream. The MPEG stream is sent to a decoder. The decoder converts the MPEG stream into TV output signals and delivers the TV output signals to a TV receiver.

[0012] User control commands are accepted and sent through the system. These commands affect the flow of said MPEG stream and allow the user to view stored programs with at least the following functions: reverse, fast forward, play, pause, index, fast/slow reverse play, and fast/slow play.

[0013] Other aspects and advantages of the invention will become apparent from the following detailed descrip-

tion in combination with the accompanying drawings, illustrating, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

Fig. 1 is a block schematic diagram of a high level view of a preferred embodiment of the invention according to the invention;

Fig. 2 is a block schematic diagram of a preferred embodiment of the invention using multiple input and output modules according to the invention;

Fig. 3 is a schematic diagram of an Moving Pictures Experts Group (MPEG) data stream and its video and audio components according to the invention;

Fig. 4 is a block schematic diagram of a parser and four direct memory access (DMA) input engines contained in the Media Switch according to the invention;

Fig. 5 is a schematic diagram of the components of a packetized elementary stream (PES) buffer according to the invention;

Fig. 6 is a schematic diagram of the construction of a PES buffer from the parsed components in the Media Switch output circular buffers;

Fig. 7 is a block schematic diagram of the Media Switch and the various components that it communicates with according to the invention;

Fig. 8 is a block schematic diagram of a high level view of the program logic according to the invention;

Fig. 9 is a block schematic diagram of a class hierarchy of the program logic according to the invention;

Fig. 10 is a block schematic diagram of a preferred embodiment of the clip cache component of the invention according to the invention;

Fig. 11 is a block schematic diagram of a preferred embodiment of the invention that emulates a broadcast studio video mixer according to the invention;

Fig. 12 is a block schematic diagram of a closed caption parser according to the invention; and

Fig. 13 is a block schematic diagram of a high level view of a preferred embodiment of the invention utilizing a VCR as an integral component of the invention according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0015] The invention is embodied in a multimedia time warping system. A system according to the invention provides a multimedia storage and display system that allows the user to view a television broadcast program with the option of instantly reviewing previous scenes within the program. The invention additionally provides the user with the ability to store selected television broadcast programs while simultaneously watching or reviewing another program and to view stored programs with at least the following functions: reverse, fast forward, play, pause, index, fast/slow reverse play, and fast/slow play.

[0016] Referring to Fig. 1, a preferred embodiment of the invention has an Input Section 101, Media Switch 102, and an Output Section 103. The Input Section 101 takes television (TV) input streams in a multitude of forms, for example, National Television Standards Committee (NTSC) or PAL broadcast, and digital forms such as Digital Satellite System (DSS), Digital Broadcast Services (DBS), or Advanced Television Standards Committee (ATSC). DBS, DSS and ATSC are based on standards called Moving Pictures Experts Group 2 (MPEG2) and MPEG2 Transport. MPEG2 Transport is a standard for formatting the digital data stream from the TV source transmitter so that a TV receiver can disassemble the input stream to find programs in the multiplexed signal. The Input Section 101 produces MPEG streams. An MPEG2 transport multiplex supports multiple programs in the same broadcast channel, with multiple video and audio feeds and private data. The Input Section 101 tunes the channel to a particular program, extracts a specific MPEG program out of it, and feeds it to the rest of the system. Analog TV signals are encoded into a similar MPEG format using separate video and audio encoders, such that the remainder of the system is unaware of how the signal was obtained. Information may be modulated into the Vertical Blanking Interval (VBI) of the analog TV signal in a number of standard ways; for example, the North American Broadcast Teletext Standard (NABTS) may be used to modulate information onto lines 10 through 20 of an NTSC signal, while the FCC mandates the use of line 21 for Closed Caption (CC) and Extended Data Services (EDS). Such signals are decoded by the input section and passed to the other sections as if they were delivered via an MPEG2 private data channel.

[0017] The Media Switch 102 mediates between a microprocessor CPU 106, hard disk or storage device 105, and memory 104. Input streams are converted to an MPEG stream and sent to the Media Switch 102. The Media Switch 102 buffers the MPEG stream into memory. It then performs two operations if the user is watching real time TV: the stream is sent to the Output Section 103 and it is written simultaneously to the hard disk or storage device 105.

[0018] The Output Section 103 takes MPEG streams as input and produces an analog TV signal according to the NTSC, PAL, or other required TV standards. The Out-

put Section 103 contains an MPEG decoder, On-Screen Display (OSD) generator, analog TV encoder and audio logic. The OSD generator allows the program logic to supply images which will be overlaid on top of the resulting analog TV signal. Additionally, the Output Section can modulate information supplied by the program logic onto the VBI of the output signal in a number of standard formats, including NABTS, CC and EDS.

[0019] With respect to Fig. 2, the invention easily expands to accommodate multiple Input Sections (tuners) 201, 202, 203, 204, each can be tuned to different types of input. Multiple Output Modules (decoders) 206, 207, 208, 209 are added as well. Special effects such as picture in a picture can be implemented with multiple decoders. The Media Switch 205 records one program while the user is watching another. This means that a stream can be extracted off the disk while another stream is being stored onto the disk.

[0020] Referring to Fig. 3, the incoming MPEG stream 301 has interleaved video 302, 305, 306 and audio 303, 304, 307 segments. These elements must be separated and recombined to create separate video 308 and audio 309 streams or buffers. This is necessary because separate decoders are used to convert MPEG elements back into audio or video analog components. Such separate delivery requires that time sequence information be generated so that the decoders may be properly synchronized for accurate playback of the signal.

[0021] The Media Switch enables the program logic to associate proper time sequence information with each segment, possibly embedding it directly into the stream. The time sequence information for each segment is called a time stamp. These time stamps are monotonically increasing and start at zero each time the system boots up. This allows the invention to find any particular spot in any particular video segment. For example, if the system needs to read five seconds into an incoming contiguous video stream that is being cached, the system simply has to start reading forward into the stream and look for the appropriate time stamp.

[0022] A binary search can be performed on a stored file to index into a stream. Each stream is stored as a sequence of fixed-size segments enabling fast binary searches because of the uniform time stamping. If the user wants to start in the middle of the program, the system performs a binary search of the stored segments until it finds the appropriate spot, obtaining the desired results with a minimal amount of information. If the signal were instead stored as an MPEG stream, it would be necessary to linearly parse the stream from the beginning to find the desired location.

[0023] With respect to Fig. 4, the Media Switch contains four input Direct Memory Access (DMA) engines 402, 403, 404, 405 each DMA engine has an associated buffer 410, 411, 412, 413. Conceptually, each DMA engine has a pointer 406, a limit for that pointer 407, a next pointer 408, and a limit for the next pointer 409. Each DMA engine is dedicated to a particular type of informa-

tion, for example, video 402, audio 403, and parsed events 405. The buffers 410, 411, 412, 413 are circular and collect the specific information. The DMA engine increments the pointer 406 into the associated buffer until it reaches the limit 407 and then loads the next pointer 408 and limit 409. Setting the pointer 406 and next pointer 408 to the same value, along with the corresponding limit value creates a circular buffer. The next pointer 408 can be set to a different address to provide vector DMA.

[0024] The input stream flows through a parser 401. The parser 401 parses the stream looking for MPEG distinguished events indicating the start of video, audio or private data segments. For example, when the parser 401 finds a video event, it directs the stream to the video DMA engine 402. The parser 401 buffers up data and DMAs it into the video buffer 410 through the video DMA engine 402. At the same time, the parser 401 directs an event to the event DMA engine 405 which generates an event into the event buffer 413. When the parser 401 sees an audio event, it redirects the byte stream to the audio DMA engine 403 and generates an event into the event buffer 413. Similarly, when the parser 401 sees a private data event, it directs the byte stream to the private data DMA engine 404 and directs an event to the event buffer 413. The Media Switch notifies the program logic via an interrupt mechanism when events are placed in the event buffer.

[0025] Referring to Figs. 4 and 5, the event buffer 413 is filled by the parser 401 with events. Each event 501 in the event buffer has an offset 502, event type 503, and time stamp field 504. The parser 401 provides the type and offset of each event as it is placed into the buffer. For example, when an audio event occurs, the event type field is set to an audio event and the offset indicates the location in the audio buffer 411. The program logic knows where the audio buffer 411 starts and adds the offset to find the event in the stream. The address offset 502 tells the program logic where the next event occurred, but not where it ended. The previous event is cached so the end of the current event can be found as well as the length of the segment.

[0026] With respect to Figs. 5 and 6, the program logic reads accumulated events in the event buffer 602 when it is interrupted by the Media Switch 601. From these events the program logic generates a sequence of logical segments 603 which correspond to the parsed MPEG segments 615. The program logic converts the offset 502 into the actual address 610 of each segment, and records the event length 609 using the last cached event. If the stream was produced by encoding an analog signal, it will not contain Program Time Stamp (PTS) values, which are used by the decoders to properly present the resulting output. Thus, the program logic uses the generated time stamp 504 to calculate a simulated PTS for each segment and places that into the logical segment time stamp 607. In the case of a digital TV stream, PTS values are already encoded in the stream. The program logic extracts this information and places it in the logical segment time

stamp 607.

[0027] The program logic continues collecting logical segments 603 until it reaches the fixed buffer size. When this occurs, the program logic generates a new buffer, called a Packetized Elementary Stream (PES) 605 buffer containing these logical segments 603 in order, plus ancillary control information. Each logical segment points 604 directly to the circular buffer, e.g., the video buffer 613, filled by the Media Switch 601. This new buffer is then passed to other logic components, which may further process the stream in the buffer in some way, such as presenting it for decoding or writing it to the storage media. Thus, the MPEG data is not copied from one location in memory to another by the processor. This results in a more cost effective design since lower memory bandwidth and processor bandwidth is required.

[0028] A unique feature of the MPEG stream transformation into PES buffers is that the data associated with logical segments need not be present in the buffer itself, as presented above. When a PES buffer is written to storage, these logical segments are written to the storage medium in the logical order in which they appear. This has the effect of gathering components of the stream, whether they be in the video, audio or private data circular buffers, into a single linear buffer of stream data on the storage medium. The buffer is read back from the storage medium with a single transfer from the storage media, and the logical segment information is updated to correspond with the actual locations in the buffer 606. Higher level program logic is unaware of this transformation, since it handles only the logical segments, thus stream data is easily managed without requiring that the data ever be copied between locations in DRAM by the CPU.

[0029] A unique aspect of the Media Switch is the ability to handle high data rates effectively and inexpensively. It performs the functions of taking video and audio data in, sending video and audio data out, sending video and audio data to disk, and extracting video and audio data from the disk on a low cost platform. Generally, the Media Switch runs asynchronously and autonomously with the microprocessor CPU, using its DMA capabilities to move large quantities of information with minimal intervention by the CPU.

[0030] Referring to Fig. 7, the input side of the Media Switch 701 is connected to an MPEG encoder 703. There are also circuits specific to MPEG audio 704 and vertical blanking interval (VBI) data 702 feeding into the Media Switch 701. If a digital TV signal is being processed instead, the MPEG encoder 703 is replaced with an MPEG2 Transport Demultiplexer, and the MPEG audio encoder 704 and VBI decoder 702 are deleted. The demultiplexer multiplexes the extracted audio, video and private data channel streams through the video input Media Switch port.

[0031] The parser 705 parses the input data stream from the MPEG encoder 703, audio encoder 704 and VBI decoder 702, or from the transport demultiplexer in the case of a digital TV stream. The parser 705 detects

the beginning of all of the important events in a video or audio stream, the start of all of the frames, the start of sequence headers - all of the pieces of information that the program logic needs to know about in order to both properly play back and perform special effects on the stream, e.g. fast forward, reverse, play, pause, fast/slow play, indexing, and fast/slow reverse play.

[0032] The parser 705 places tags 707 into the FIFO 706 when it identifies video or audio segments, or is given private data. The DMA 709 controls when these tags are taken out. The tags 707 and the DMA addresses of the segments are placed into the event queue 708. The frame type information, whether it is a start of a video I-frame, video B-frame, video P-frame, video PES, audio PES, a sequence header, an audio frame, or private data packet, is placed into the event queue 708 along with the offset in the related circular buffer where the piece of information was placed. The program logic operating in the CPU 713 examines events in the circular buffer after it is transferred to the DRAM 714.

[0033] The Media Switch 701 has a data bus 711 that connects to the CPU 713 and DRAM 714. An address bus 712 is also shared between the Media Switch 701, CPU 713, and DRAM 714. A hard disk or storage device 710 is connected to one of the ports of the Media Switch 701. The Media Switch 701 outputs streams to an MPEG video decoder 715 and a separate audio decoder 717. The audio decoder 717 signals contain audio cues generated by the system in response to the user's commands on a remote control or other internal events. The decoded audio output from the MPEG decoder is digitally mixed 718 with the separate audio signal. The resulting signals contain video, audio, and on-screen displays and are sent to the TV 716.

[0034] The Media Switch 701 takes in 8-bit data and sends it to the disk, while at the same time extracts another stream of data off of the disk and sends it to the MPEG decoder 715. All of the DMA engines described above can be working at the same time. The Media Switch 701 can be implemented in hardware using a Field Programmable Gate Array (FPGA), ASIC, or discrete logic.

[0035] Rather than having to parse through an immense data stream looking for the start of where each frame would be, the program logic only has to look at the circular event buffer in DRAM 714 and it can tell where the start of each frame is and the frame type. This approach saves a large amount of CPU power, keeping the real time requirements of the CPU 713 small. The CPU 713 does not have to be very fast at any point in time. The Media Switch 701 gives the CPU 713 as much time as possible to complete tasks. The parsing mechanism 705 and event queue 708 decouple the CPU 713 from parsing the audio, video, and buffers and the real time nature of the streams, which allows for lower costs. It also allows the use of a bus structure in a CPU environment that operates at a much lower clock rate with much cheaper memory than would be required otherwise.

[0036] The CPU 713 has the ability to queue up one DMA transfer and can set up the next DMA transfer at its leisure. This gives the CPU 713 large time intervals within which it can service the DMA controller 709. The CPU 713 may respond to a DMA interrupt within a larger time window because of the large latency allowed. MPEG streams, whether extracted from an MPEG2 Transport or encoded from an analog TV signal, are typically encoded using a technique called Variable Bit Rate encoding (VBR). This technique varies the amount of data required to represent a sequence of images by the amount of movement between those images. This technique can greatly reduce the required bandwidth for a signal, however sequences with rapid movement (such as a basketball game) may be encoded with much greater bandwidth requirements. For example, the Hughes DirecTV satellite system encodes signals with anywhere from 1 to 10Mb/s of required bandwidth, varying from frame to frame. It would be difficult for any computer system to keep up with such rapidly varying data rates without this structure.

[0037] With respect to Fig. 8, the program logic within the CPU has three conceptual components: sources 801, transforms 802, and sinks 803. The sources 801 produce buffers of data. Transforms 802 process buffers of data and sinks 803 consume buffers of data. A transform is responsible for allocating and queuing the buffers of data on which it will operate. Buffers are allocated as if "empty" to sources of data, which give them back "full". The buffers are then queued and given to sinks as "full", and the sink will return the buffer "empty".

[0038] A source 801 accepts data from encoders, e.g., a digital satellite receiver. It acquires buffers for this data from the downstream transform, packages the data into a buffer, then pushes the buffer down the pipeline as described above. The source object 801 does not know anything about the rest of the system. The sink 803 consumes buffers, taking a buffer from the upstream transform, sending the data to the decoder, and then releasing the buffer for reuse.

[0039] There are two types of transforms 802 used: spatial and temporal. Spatial transforms are transforms that perform, for example, an image convolution or compression/decompression on the buffered data that is passing through. Temporal transforms are used when there is no time relation that is expressible between buffers going in and buffers coming out of a system. Such a transform writes the buffer to a file 804 on the storage medium. The buffer is pulled out at a later time, sent down the pipeline, and properly sequenced within the stream.

[0040] Referring to Fig. 9, a C++ class hierarchy derivation of the program logic is shown. The TiVo Media Kernel (Tmk) 904, 908, 913 mediates with the operating system kernel. The kernel provides operations such as: memory allocation, synchronization, and threading. The TmkCore 904, 908, 913 structures memory taken from the media kernel as an object. It provides operators, new and delete, for constructing and deconstructing the object. Each object (source 901, transform 902, and sink

903) is multi-threaded by definition and can run in parallel.

[0041] The TmkPipeline class 905, 909, 914 is responsible for flow control through the system. The pipelines point to the next pipeline in the flow from source 901 to sink 903. To pause the pipeline, for example, an event called "pause" is sent to the first object in the pipeline. The event is relayed on to the next object and so on down the pipeline. This all happens asynchronously to the data going through the pipeline. Thus, similar to applications such as telephony, control of the flow of MPEG streams is asynchronous and separate from the streams themselves. This allows for a simple logic design that is at the same time powerful enough to support the features described previously, including pause, rewind, fast forward and others. In addition, this structure allows fast and efficient switching between stream sources, since buffered data can be simply discarded and decoders reset using a single event, after which data from the new stream will pass down the pipeline. Such a capability is needed, for example, when switching the channel being captured by the input section, or when switching between a live signal from the input section and a stored stream.

[0042] The source object 901 is a TmkSource 906 and the transform object 902 is a TmkXfrm 910. These are intermediate classes that define standard behaviors for the classes in the pipeline. Conceptually, they handshake buffers down the pipeline. The source object 901 takes data out of a physical data source, such as the Media Switch, and places it into a PES buffer. To obtain the buffer, the source object 901 asks the down stream object in his pipeline for a buffer (allocEmptyBuf). The source object 901 is blocked until there is sufficient memory. This means that the pipeline is self-regulating; it has automatic flow control. When the source object 901 has filled up the buffer, it hands it back to the transform 902 through the pushFullBuf function.

[0043] The sink 903 is flow controlled as well. It calls nextFullBuf which tells the transform 902 that it is ready for the next filled buffer. This operation can block the sink 903 until a buffer is ready. When the sink 903 is finished with a buffer (i.e., it has consumed the data in the buffer) it calls releaseEmptyBuf. ReleaseEmptyBuf gives the buffer back to the transform 902. The transform 902 can then hand that buffer, for example, back to the source object 901 to fill up again. In addition to the automatic flow-control benefit of this method, it also provides for limiting the amount of memory dedicated to buffers by allowing enforcement of a fixed allocation of buffers by a transform. This is an important feature in achieving a cost-effective limited DRAM environment.

[0044] The MediaSwitch class 909 calls the allocEmptyBuf method of the TmkClipCache 912 object and receives a PES buffer from it. It then goes out to the circular buffers in the Media Switch hardware and generates PES buffers. The MediaSwitch class 909 fills the buffer up and pushes it back to the TmkClipCache 912 object.

[0045] The TmkClipCache 912 maintains a cache file 918 on a storage medium. It also maintains two pointers

into this cache: a push pointer 919 that shows where the next buffer coming from the source 901 is inserted; and a current pointer 920 which points to the current buffer used.

[0046] The buffer that is pointed to by the current pointer is handed to the Vela decoder class 916. The Vela decoder class 916 talks to the decoder 921 in the hardware. The decoder 921 produces a decoded TV signal that is subsequently encoded into an analog TV signal in NTSC, PAL or other analog format. When the Vela decoder class 916 is finished with the buffer it calls releaseEmptyBuf.

[0047] The structure of the classes makes the system easy to test and debug. Each level can be tested separately to make sure it performs in the appropriate manner, and the classes may be gradually aggregated to achieve the desired functionality while retaining the ability to effectively test each object.

[0048] The control object 917 accepts commands from the user and sends events into the pipeline to control what the pipeline is doing. For example, if the user has a remote control and is watching TV, the user presses pause and the control object 917 sends an event to the sink 903, that tells it pause. The sink 903 stops asking for new buffers. The current pointer 920 stays where it is at. The sink 903 starts taking buffers out again when it receives another event that tells it to play. The system is in perfect synchronization; it starts from the frame that it stopped at.

[0049] The remote control may also have a fast forward key. When the fast forward key is pressed, the control object 917 sends an event to the transform 902, that tells it to move forward two seconds. The transform 902 finds that the two second time span requires it to move forward three buffers. It then issues a reset event to the downstream pipeline, so that any queued data or state that may be present in the hardware decoders is flushed. This is a critical step, since the structure of MPEG streams requires maintenance of state across multiple frames of data, and that state will be rendered invalid by repositioning the pointer. It then moves the current pointer 920 forward three buffers. The next time the sink 903 calls nextFullBuf it gets the new current buffer. The same method works for fast reverse in that the transform 902 moves the current pointer 920 backwards.

[0050] A system clock reference resides in the decoder. The system clock reference is sped up for fast play or slowed down for slow play. The sink simply asks for full buffers faster or slower, depending on the clock speed.

[0051] With respect to Fig. 10, two other objects derived from the TmkXfrm class are placed in the pipeline for disk access. One is called TmkClipReader 1003 and the other is called TmkClipWriter 1001. Buffers come into the TmkClipWriter 1001 and are pushed to a file on a storage medium 1004. TmkClipReader 1003 asks for buffers which are taken off of a file on a storage medium 1005. A TmkClipReader 1003 provides only the al-

locEmptyBuf and pushFullBuf methods, while a TmkClipWriter 1001 provides only the nextFullBuf and releaseEmptyBuf methods. A TmkClipReader 1003 therefore performs the same function as the input, or "push" side of a TmkClipCache 1002, while a TmkClipWriter 1001 therefore performs the same function as the output, or "pull" side of a TmkClipCache 1002.

[0052] Referring to Fig. 11, a preferred embodiment that accomplishes multiple functions is shown. A source 1101 has a TV signal input. The source sends data to a PushSwitch 1102 which is a transform derived from TmkXfrm. The PushSwitch 1102 has multiple outputs that can be switched by the control object 1114. This means that one part of the pipeline can be stopped and another can be started at the users whim. The user can switch to different storage devices. The PushSwitch 1102 could output to a TmkClipWriter 1106, which goes onto a storage device 1107 or write to the cache transform 1103.

[0053] An important feature of this apparatus is the ease with which it can selectively capture portions of an incoming signal under the control of program logic. Based on information such as the current time, or perhaps a specific time span, or perhaps via a remote control button press by the viewer, a TmkClipWriter 1106 may be switched on to record a portion of the signal, and switched off at some later time.

[0054] This switching is typically caused by sending a "switch" event to the PushSwitch 1102 object.

[0055] An additional method for triggering selective capture is through information modulated into the VBI or placed into an MPEG private data channel. Data decoded from the VBI or private data channel is passed to the program logic. The program logic examines this data to determine if the data indicates that capture of the TV signal into which it was modulated should begin. Similarly, this information may also indicate when recording should end, or another data item may be modulated into the signal indicating when the capture should end. The starting and ending indicators may be explicitly modulated into the signal or other information that is placed into the signal in a standard fashion may be used to encode this information.

[0056] With respect to Fig. 12, an example is shown which demonstrates how the program logic scans the words contained within the closed caption (CC) fields to determine starting and ending times, using particular words or phrases to trigger the capture. A stream of NTSC or PAL fields 1201 is presented. CC bytes are extracted from each odd field 1202, and entered in a circular buffer 1203 for processing by the Word Parser 1204. The Word Parser 1204 collects characters until it encounters a word boundary, usually a space, period or other delimiting character. Recall from above, that the MPEG audio and video segments are collected into a series of fixed-size PES buffers. A special segment is added to each PES buffer to hold the words extracted from the CC field 1205. Thus, the CC information is preserved in time synchronization with the audio and video, and can be

correctly presented to the viewer when the stream is displayed. This also allows the stored stream to be processed for CC information at the leisure of the program logic, which spreads out load, reducing cost and improving efficiency. In such a case, the words stored in the special segment are simply passed to the state table logic 1206.

[0057] During stream capture, each word is looked up in a table 1206 which indicates the action to take on recognizing that word. This action may simply change the state of the recognizer state machine 1207, or may cause the state machine 1207 to issue an action request, such as "start capture", "stop capture", "phrase seen", or other similar requests. Indeed, a recognized word or phrase may cause the pipeline to be switched; for example, to overlay a different audio track if undesirable language is used in the program.

[0058] Note that the parsing state table 1206 and recognizer state machine 1207 may be modified or changed at any time. For example, a different table and state machine may be provided for each input channel. Alternatively, these elements may be switched depending on the time of day, or because of other events.

[0059] Referring to Fig. 11, a PullSwitch is added 1104 which outputs to the sink 1105. The sink 1105 calls nextFullBuf and releaseEmptyBuf to get or return buffers from the PullSwitch 1104. The PullSwitch 1104 can have any number of inputs. One input could be an ActionClip 1113. The remote control can switch between input sources. The control object 1114 sends an event to the PullSwitch 1104, telling it to switch. It will switch from the current input source to whatever input source the control object selects.

[0060] An ActionClip class provides for sequencing a number of different stored signals in a predictable and controllable manner, possibly with the added control of viewer selection via a remote control. Thus, it appears as a derivative of a TrmkXfrm object that accepts a "switch" event for switching to the next stored signal.

[0061] This allows the program logic or user to create custom sequences of video output. Any number of video segments can be lined up and combined as if the program logic or user were using a broadcast studio video mixer. TrmkClipReaders 1108, 1109, 1110 are allocated and each is hooked into the PullSwitch 1104. The PullSwitch 1104 switches between the TrmkClipReaders 1108, 1109, 1110 to combine video and audio clips. Flow control is automatic because of the way the pipeline is constructed. The Push and Pull Switches are the same as video switches in a broadcast studio.

[0062] The derived class and resulting objects described here may be combined in an arbitrary way to create a number of different useful configurations for storing, retrieving, switching and viewing of TV streams. For example, if multiple input and output sections are available, one input is viewed while another is stored, and a picture-in-picture window generated by the second output is used to preview previously stored streams. Such

configurations represent a unique and novel application of software transformations to achieve the functionality expected of expensive, sophisticated hardware solutions within a single cost-effective device.

[0063] With respect to Fig. 13, a high-level system view is shown which implements a VCR backup. The Output Module 1303 sends TV signals to the VCR 1307. This allows the user to record TV programs directly on to video tape. The invention allows the user to queue up programs from disk to be recorded on to video tape and to schedule the time that the programs are sent to the VCR 1307. Title pages (EPG data) can be sent to the VCR 1307 before a program is sent. Longer programs can be scaled to fit onto smaller video tapes by speeding up the play speed or dropping frames.

[0064] The VCR 1307 output can also be routed back into the Input Module 1301. In this configuration the VCR acts as a backup system for the Media Switch 1302. Any overflow storage or lower priority programming is sent to the VCR 1307 for later retrieval.

[0065] The Input Module 1301 can decode and pass to the remainder of the system information encoded on the Vertical Blanking Interval (VBI). The Output Module 1303 can encode into the output VBI data provided by the remainder of the system. The program logic may arrange to encode identifying information of various kinds into the output signal, which will be recorded onto tape using the VCR 1307. Playing this tape back into the input allows the program logic to read back this identifying information, such that the TV signal recorded on the tape is properly handled. For example, a particular program may be recorded to tape along with information about when it was recorded, the source network, etc. When this program is played back into the Input Module, this information can be used to control storage of the signal, presentation to the viewer, etc.

[0066] One skilled in the art will readily appreciate that such a mechanism may be used to introduce various data items to the program logic which are not properly conceived of as television signals. For instance, software updates or other data may be passed to the system. The program logic receiving this data from the television stream may impose controls on how the data is handled, such as requiring certain authentication sequences and/or decrypting the embedded information according to some previously acquired key. Such a method works for normal broadcast signals as well, leading to an efficient means of providing non-TV control information and data to the program logic. 17

[0067] Additionally, one skilled in the art will readily appreciate that although a VCR is specifically mentioned above, any multimedia recording device (e.g., a Digital Video Disk-Random Access Memory (DVD-RAM) recorder) is easily substituted in its place.

[0068] Although the invention is described herein with reference to the preferred embodiment, one skilled in the art will readily appreciate that other applications may be substituted for those set forth herein without departing

from the spirit and scope of the present invention. For example, the invention can be used in the detection of gambling casino crime. The input section of the invention is connected to the casino's video surveillance system. Recorded video is cached and simultaneously output to external VCRs. The user can switch to any video feed and examine (i.e., rewind, play, slow play, fast forward, etc.) a specific segment of the recorded video while the external VCRs are being loaded with the real-time input video. Accordingly, the invention should only be limited by the Claims included below.

Claims

1. A process for the simultaneous storage and play back of multimedia data, comprising the steps of:

providing a physical data source, wherein said physical data source accepts broadcast data from an input device, parses video and audio data from said broadcast data, and temporarily stores said video and audio data;
 providing a source, wherein said source extracts video and audio data from said physical data source;
 providing a transform, wherein said transform stores and retrieves MPEG streams onto a storage device;

wherein said source obtains a buffer from said transform, said source converts video data into MPEG streams and fills said buffer with said streams; wherein said source is automatically flow controlled by said transform;
 providing a sink, wherein said sink obtains MPEG stream buffers from said transform and outputs said streams to a video and audio decoder; wherein said decoder converts said streams into TV signals and sends said signals to a TV receiver; wherein said sink is automatically flow controlled by said transform;
 providing a control receiver, wherein said control receiver receives commands from a user, said commands control the flow of the broadcast data through the system; and
 wherein said control receiver sends flow command events to said source, transform, and sink.

2. An apparatus for the simultaneous storage and play back of multimedia data, comprising:

a physical data source, wherein said physical data source accepts broadcast data from an input device, parses video and audio data from said broadcast data, and temporarily stores said video and audio data;
 a source, wherein said source extracts video

and audio data from said physical data source;
 a transform, wherein said transform stores and retrieves MPEG streams onto a storage device;

wherein said source obtains a buffer from said transform, said source converts video data into MPEG streams and fills said buffer with said streams; wherein said source is automatically flow controlled by said transform;

a sink, wherein said sink obtains MPEG stream buffers from said transform and outputs said streams to a video and audio decoder; wherein said decoder converts said streams into TV signals and sends said signals to a TV receiver; wherein said sink is automatically flow controlled by said transform;

a control receiver, wherein said control receiver receives commands from a user, said commands control the flow of the broadcast data through the system; and

wherein said control receiver sends flow command events to said source, transform, and sink.

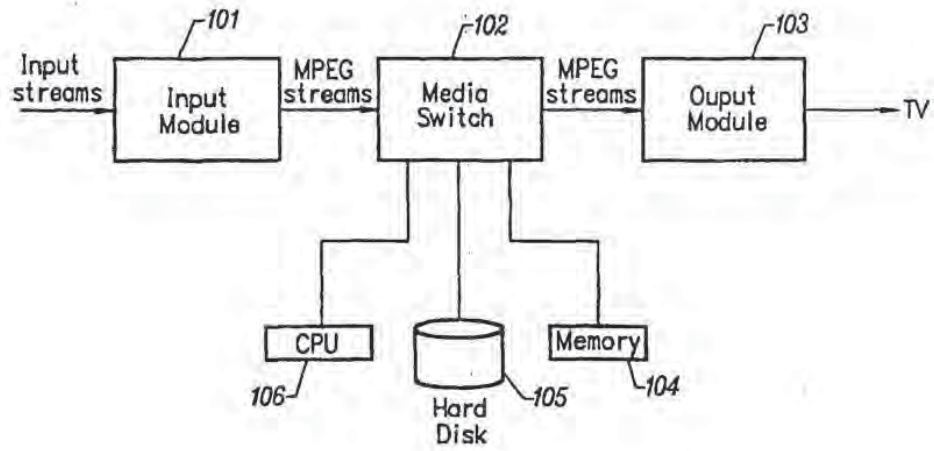


FIG. 1

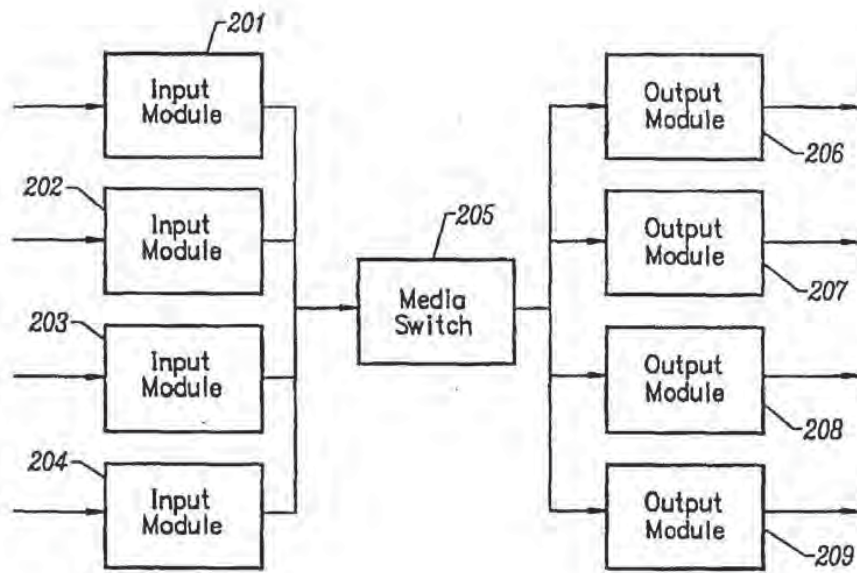


FIG. 2

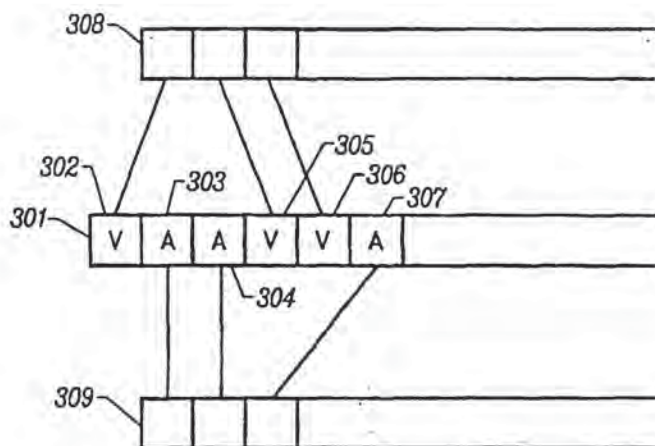


FIG. 3

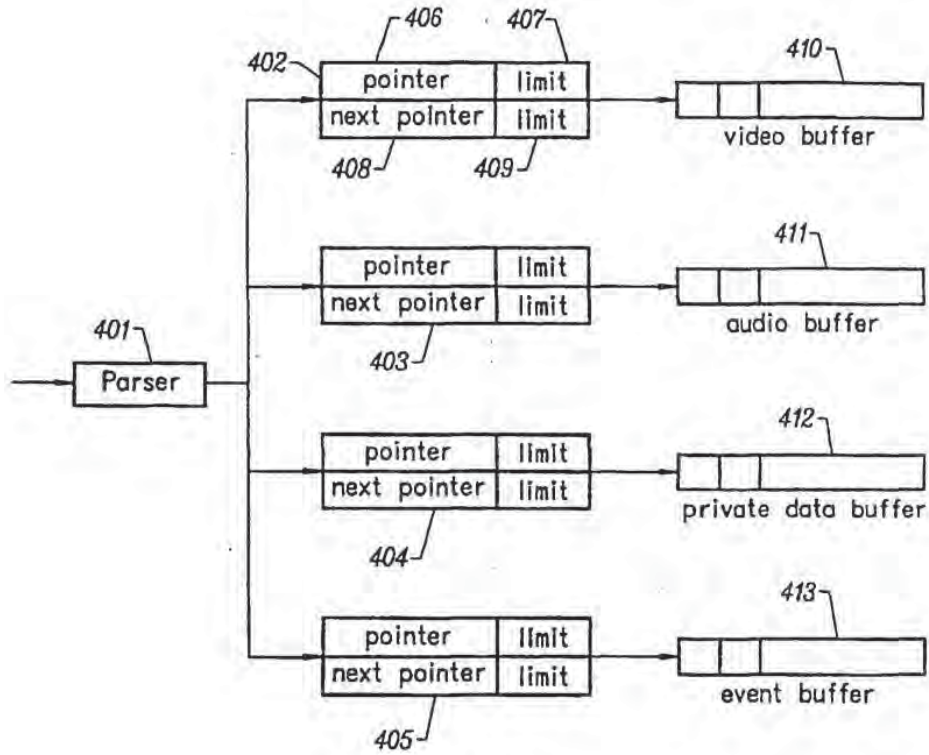


FIG. 4

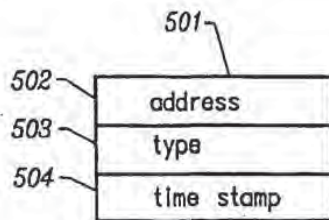


FIG. 5

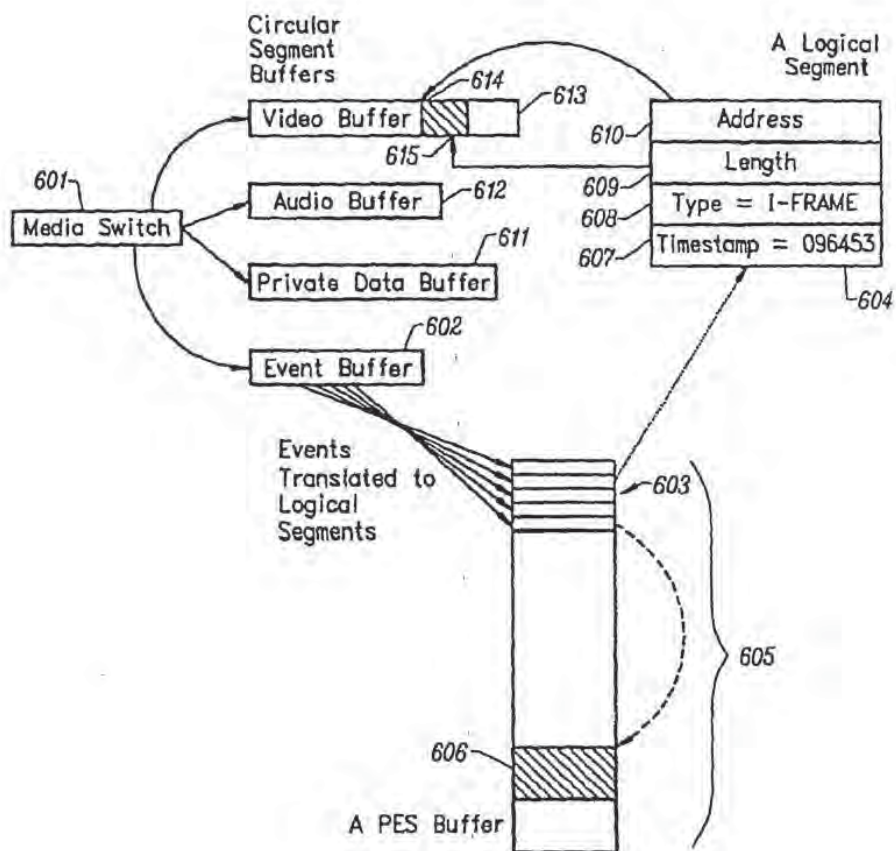


FIG. 6

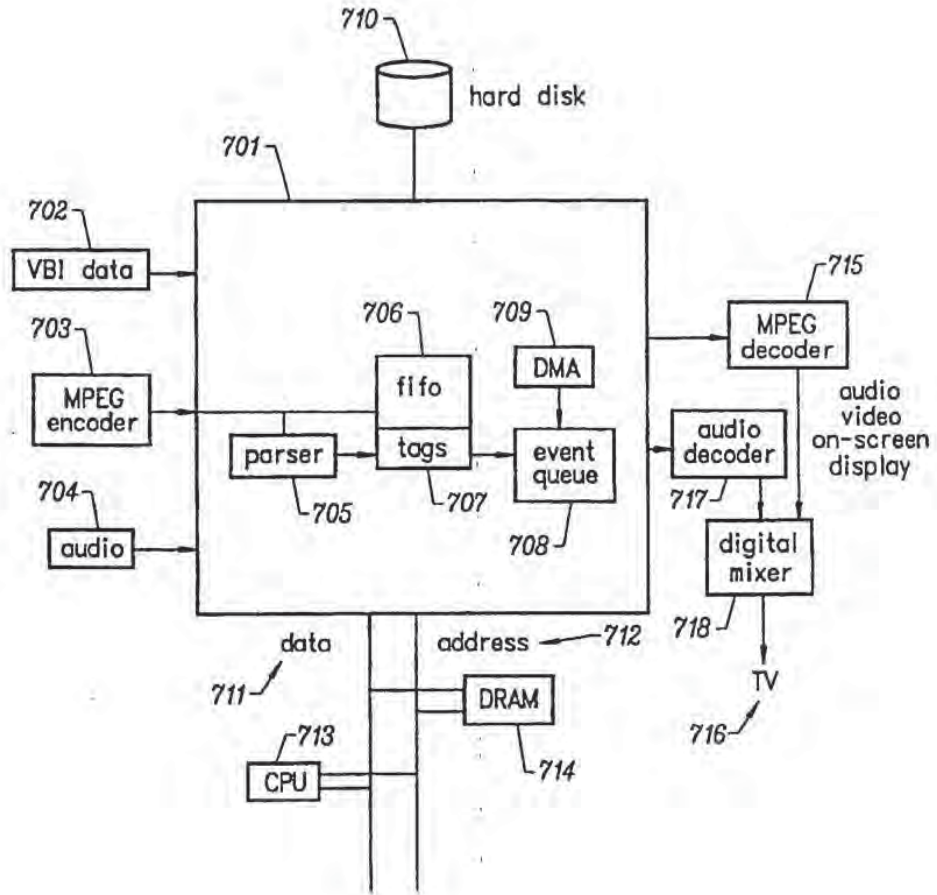


FIG. 7

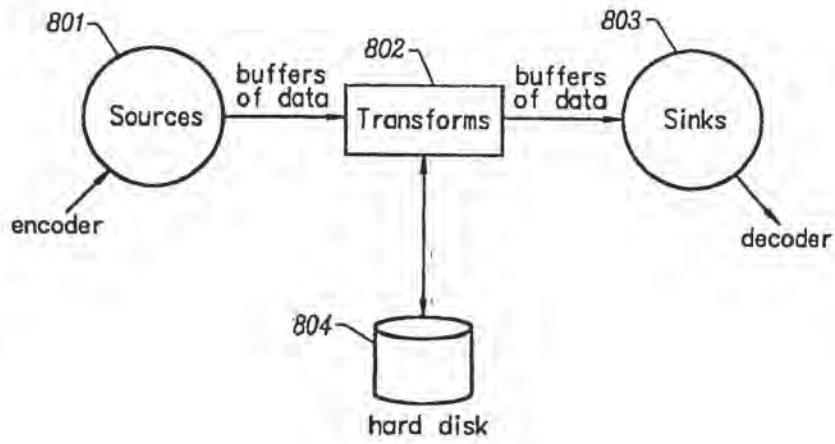


FIG. 8

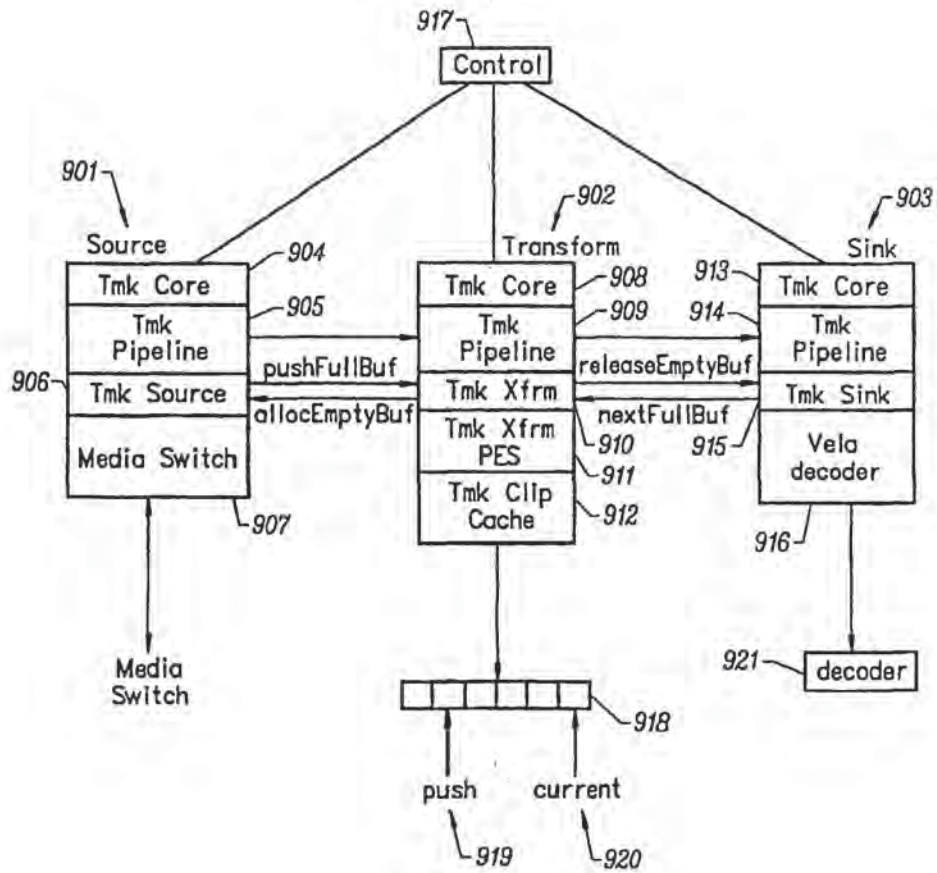


FIG. 9

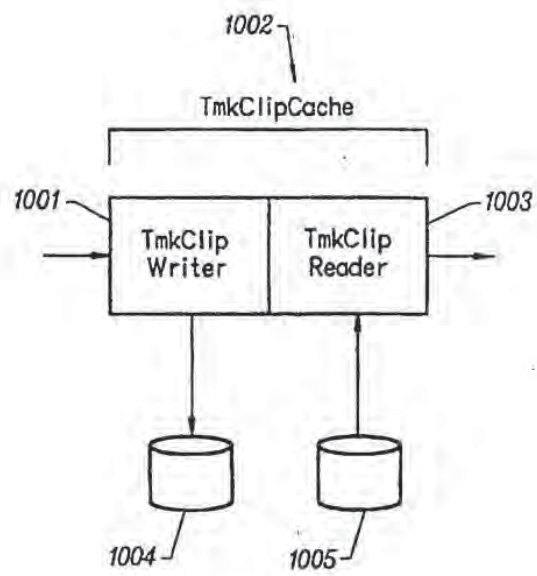


FIG. 10

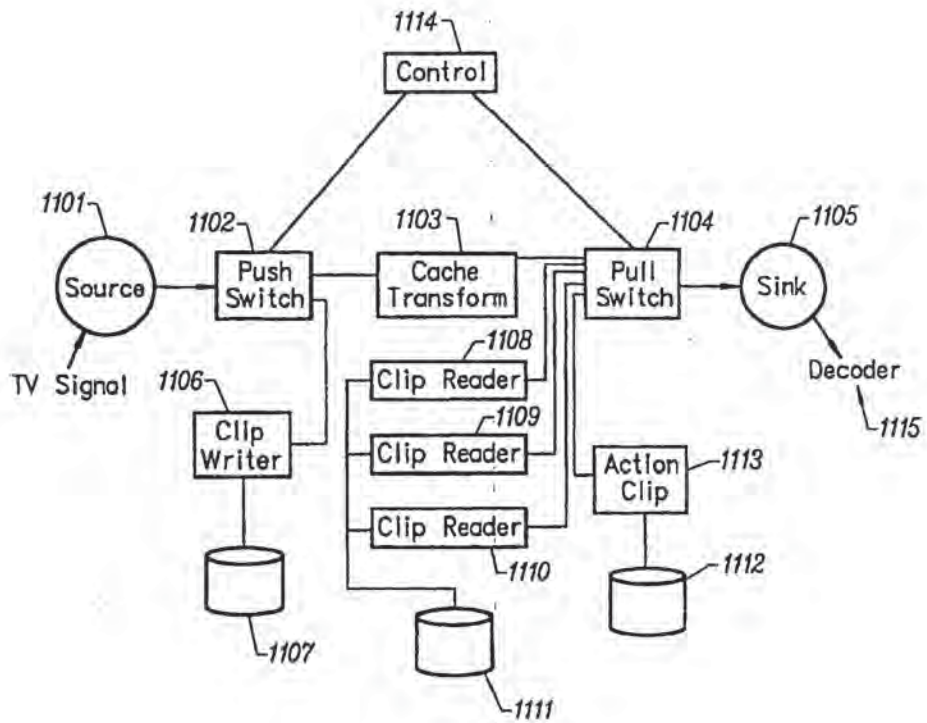


FIG. 11

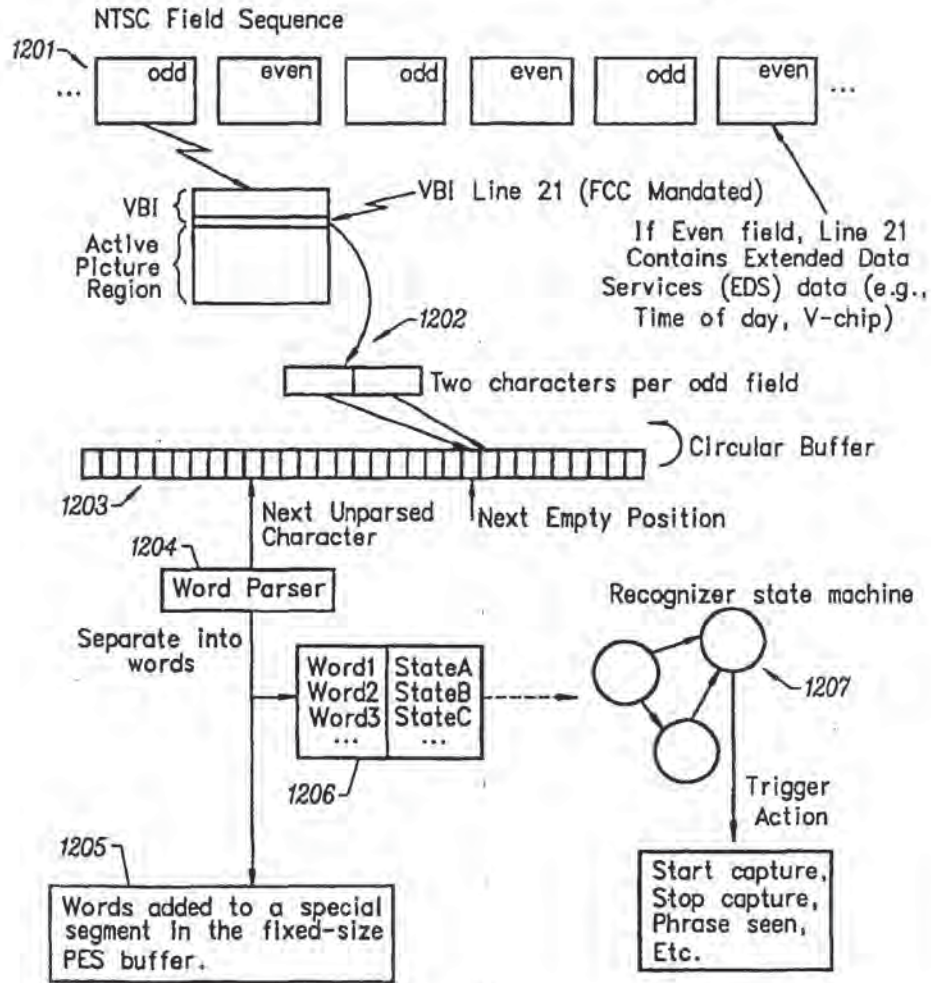


FIG. 12

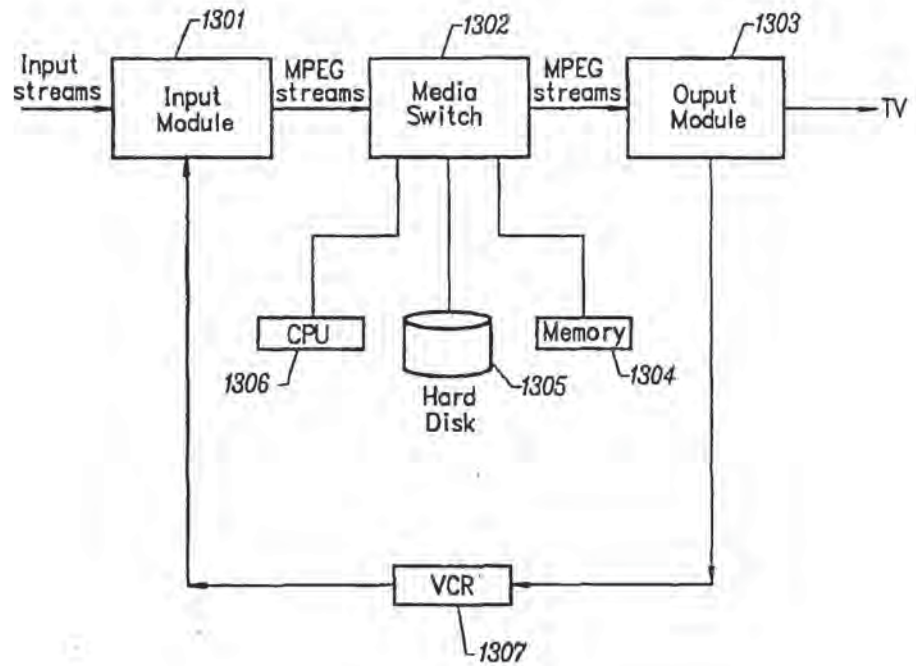


FIG. 13



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 01 9602

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 438 423 A (LYNCH ET AL.) 1 August 1995 (1995-08-01) * column 1, line 41 - line 68 * * column 2, line 9 - column 3, line 65 * * figure 1 * -----	1,2	INV. H04N5/775
A	EP 0 726 574 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 14 August 1996 (1996-08-14) * column 8, line 56 - column 16, line 17; figures 1-6 * -----	1,2	
A	US 5 706 388 A (ISAKA) 6 January 1998 (1998-01-06) * column 2, line 29 - column 6, line 23; figures 1-3 * -----	1,2	
A	US 5 696 868 A (KIM ET AL.) 9 December 1997 (1997-12-09) * column 1, line 41 - column 2, line 37 * * column 2, line 14 - column 6, line 8 * * figures 1,2 * -----	1,2	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			H04N
Place of search		Date of completion of the search	Examiner
Munich		27 October 2006	Fragua, Miguel
CATEGORY OF CITED DOCUMENTS			
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EP 1 729 515 A1

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27-10-2006

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US 5438423	A	01-08-1995	JP 3060152 B2	10-07-2000
			JP 7107439 A	21-04-1995
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			DE 69617285 D1	10-01-2002
			DE 69617285 T2	25-07-2002
			TW 453114 B	01-09-2001
			US 6002832 A	14-12-1999
US 5706388	A	06-01-1998	NONE	
US 5696868	A	09-12-1997	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 5371551 A, Logan [0005]



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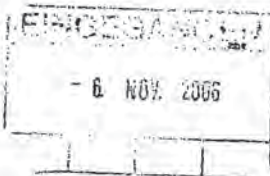
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Reference TV990303PEP	Application No./Patent No. 06019602.9 - 2202
Applicant/Proprietor Tivo, Inc.	

Communication

The extended European search report is enclosed.

The extended European search report includes, pursuant to Rule 44a EPC, the European search report (R. 44 EPC) or the partial European search report/ declaration of no search (R. 45 EPC) and the European search opinion.

Copies of documents cited in the European search report are attached.

additional set(s) of copies of such documents is (are) enclosed as well.

The following have been approved:

Abstract Title

the Abstract was modified and the definitive text is attached to this communication.

The following figure will be published together with the abstract: 1

Refund of the search fee

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 438 423 A (LYNCH ET. AL.) 1 August 1995 (1995-08-01) * column 1, line 41 - line 68 * * column 2, line 9 - column 3, line 65 * * figure 1 *	1,2	INV. H04N5/775
A	EP 0 726 574 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 14 August 1996 (1996-08-14) * column 8, line 56 - column 16, line 17; figures 1-6 *	1,2	
A	US 5 706 388 A (ISAKA) 6 January 1998 (1998-01-06) * column 2, line 29 - column 6, line 23; figures 1-3 *	1,2	
A	US 5 696 868 A (KIM ET AL.) 9 December 1997 (1997-12-09) * column 1, line 41 - column 2, line 37 * * column 2, line 14 - column 6, line 8 * * figures 1,2 *	1,2	
			TECHNICAL FIELDS SEARCHED (IPC)
			H04N
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 27 October 2006	Examiner Fragua, Miguel
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03 82 (P04C01) 3

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EP 06 01 9602

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5438423	A	01-08-1995	JP 3060152 B2	10-07-2000
			JP 7107439 A	21-04-1995
EP 0726574	A	14-08-1996	CN 1156942 A	13-08-1997
			DE 69617285 D1	10-01-2002
			DE 69617285 T2	25-07-2002
			TW 453114 B	01-09-2001
			US 6002832 A	14-12-1999
US 5706388	A	06-01-1998	NONE	
US 5696868	A	09-12-1997	NONE	

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For more details about this annex ; see Official Journal of the European Patent Office, No. 12/82



Bescheid/Protokoll (Anlage)	Communication/Minutes (Annex)	Notification/Procès-verbal (Annexe)
Datum Date Date cf Form 1507	Blatt Sheet Feuille 1	Anmelde-Nr.: Application No.: Demande n°: 06 019 602.9

The examination is being carried out on the **following application documents**:

Description, Pages

1-18 as published

Claims, Numbers

1, 2 received on 19.09.2006 with letter of 19.09:2006

Drawings, Sheets

1/12-12/12 as published

- 1 Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure:

D1: US-A-5 438 423 (LYNCH ET AL.) 1 August 1995 (1995-08-01)
D2: EP-A-0 726 574 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 14 August 1996 (1996-08-14)
- 2 The features of the claims should be provided with reference signs placed in parentheses to increase the intelligibility of the claims (Rule 29(7) EPC). This applies to both the preamble and characterising portion (see the Guidelines, C-III, 4.11).
- 3 The applicant should also indicate in the letter of reply the difference of the subject-matter of the new claims vis-à-vis the state of the art represented by documents D1, D2 (novelty, Art. 54 EPC) and the significance thereof (inventive step, Art. 56 EPC).
- 4 To meet the requirements of Rule 27(1)(b) EPC, documents D1, D2 should be identified in the description and the relevant background art disclosed therein should be briefly dis-



Bescheid/Protokoll (Anlage)

Communication/Minutes (Annex)

Notification/Procès-verbal (Annexe)

Datum
Date
Date cf Form 1507

Blatt
Sheet
Feuille 2

Anmelde-Nr.:
Application No.: 06 019 602.9
Demande n°:

cussed.

- 5 The description must be brought into conformity with the new claims to be filed (Rule 27(1)(c) EPC). Care should be taken during revision, especially of the introductory portion including any statements of problem or advantage, not to add subject-matter which extends beyond the content of the Application as originally filed, (Article 123(2) EPC).
- 6 In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123(2) EPC, the applicant is requested to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based.

If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.



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Goldstein Fox**
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Re-exam

April 24, 2007

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Alexandria, VA 22313-1450

Art Unit 3992

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Re: Reexamination of U.S. Patent No. 6,233,389
Reexam Control No. 90/007,750; Filed: October 17, 2005
For: **Multimedia Time Warping System**
Inventors: BARTON *et al.*
Our Ref: 2513.001REX0

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Transmitted herewith for appropriate action are the following documents:

1. Supplemental Information Disclosure Statement;
2. Certification of Service on Third Party Requestor of Supplemental Information Disclosure Statement;
3. One (1) sheet of Form PTO/SB/08A listing ten (10) documents;
4. One (1) sheet of Form PTO/SB/08A listing two (2) documents;
5. Copies of documents FP1 and NPL1-NPL2; and
6. One (1) return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

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Enclosures

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Litigation Search Report CRU 3999

Reexam Control No. 90/007,750

TO: David Harvey
Location: CRU
Art Unit : 3992
Date: 06/01/07

From: James R. Matthews
Location: CRU 3999
MDW 7C71
Phone: (571) 272-4233

Case Serial Number: 90/007,750

JamesR.Matthews@uspto.gov

Search Notes

U.S. Patent No- 6,233,389

- 1) I performed a KeyCite Search in Westlaw, which retrieves all history on the patent including any litigation.
- 2) I performed a search on the patent in Lexis CourtLink for any open dockets or closed cases.
- 3) I performed a search in Lexis in the Federal Courts and Administrative Materials databases for any cases found.
- 4) I performed a search in Lexis in the IP Journal and Periodicals database for any articles on the patent.
- 5) I performed a search in Lexis in the news databases for any articles about the patent or any articles about litigation on this patent.

Litigation was found.

KEYCITE

HUS PAT 6233389 MULTIMEDIA TIME WARPING SYSTEM, Assignee: TiVo, Inc. (May 15, 2001)

History
Direct History

- => 1 **MULTIMEDIA TIME WARPING SYSTEM**, US PAT 6233389, 2001 WL 510913 (U.S. PTO Utility May 15, 2001) (NO. 09/126071)
Ruled Infringed by
- H** 2 TiVo Inc. v. EchoStar Communications Corp., 446 F.Supp.2d 664 (E.D.Tex. Aug 17, 2006) (NO. 2:04 CV 1 DF)

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- H** 3 TiVo, Inc. v. EchoStar Comm. Corp., 2005 WL 4131649 (E.D.Tex. Sep 26, 2005) (NO. CIVA 2:04CV1 (DF))

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Verdict and Settlement Summaries (U.S.A.)

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- 4 EchoStar Pauses After Jury Awards TiVo \$74M for Patent Infringement, 2006 WL 1458443 (Verdict and Settlement Summary) (E.D.Tex. Apr. 13, 2006) (NO. 204CV00001)
- 5 TiVo Inc. v. EchoStar Communications Corporation, Inc., EchoStar DBS Corporation, EchoStar Technologies Corporation and Echosphere Limited Liability Company, 2006 WL 1493710 (Verdict and Settlement Summary) (E.D.Tex. Apr. 13, 2006) (NO. 2-04CV01DF)

Trial Court Documents (U.S.A.)

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- 6 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, and 2. Echostar Dbs Corporation, a Colorado corporation, Defendant., 2004 WL 3357025 (Trial Pleading) (E.D.Tex. Jan. 5, 2004) **Complaint for Patent Infringement** (NO. 2-04CV-01DF)
- 7 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. EchoStar DBS Corporation, a Colorado corporation, 3. EchoStar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2004 WL 3357040 (Trial Pleading) (E.D.Tex. Jan. 15, 2004) **Amended Complaint for Patent Infringement** (NO. 2-04CV01DF)
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- 9 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. and Related Counterclaims., 2005 WL 1365521 (Trial Pleading) (E.D.Tex. Mar. 21, 2005) **Defendants Echostar Communications Corporation and Echostar DBS Corporation's Answer to Amended Comp** (NO. 2-04CV01DF)
- 10 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966191 (Trial Pleading) (E.D.Tex. Mar. 21, 2005) **Defendants Echostar Communications Corporation and Echostar DBS Corporation's Answer to Amended Comp** (NO. 2-04CV01DF)
- 11 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966192 (Trial Pleading) (E.D.Tex. Apr. 11, 2005) **TiVo Inc.'s Opening Brief on Claim Construction** (NO. 2-04CV-01)
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- 14 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. Echostar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; 4. Echosphere Limited Liability Company, a Colorado limited liability company; and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants., 2006 WL 814195 (Trial Pleading) (E.D.Tex. Feb. 9, 2006) **Defendants Echostar Communications Corporation and Echostar DBS Corporation's Second Amended Answer** (NO. 2-04CV01DF)

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- 17 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendant., 2004 WL 3357067 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 26, 2004) **Tivo's Opposition to Motion to Transfer** (NO. 204-CV-01-DF)
- 18 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendant., 2004 WL 3357071 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 26, 2004) **Tivo's Opposition to Motion to Dismiss** (NO. 204-CV-01-DF)
- 19 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendant., 2004 WL 3768002 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 26, 2004) **TiVo's Opposition to Motion to Transfer** (NO. 204-CV-01-DF)
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- 22 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2004 WL 3357078 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 5, 2004) **Defendants' Reply Brief in Support of Motion to Dismiss** (NO. 2-04CV01DF)
- 23 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2004 WL 3768005 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 5, 2004) **Defendants' Reply Brief in Support of Motion to Transfer** (NO. 2-04CV01DF)
- 24 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2004 WL 3768006 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 5, 2004) **Defendants' Reply Brief in Support of Motion to Dismiss** (NO. 2-04CV01DF)
- 25 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendant., 2004 WL 3357080 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 12, 2004) **Tivo's Sur-Reply in Support of Opposition to Motion to Transfer** (NO. 204-CV-01-DF)

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- 27 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendant., 2004 WL 3357083 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 16, 2004) **Tivo's Sur-Reply in Support of its Opposition to Motion to Dismiss** (NO. 204-CV-01-DF)
- 28 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendant., 2004 WL 3768008 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 16, 2004) **TiVo's Sur-Reply in Support of its Opposition to Motion to Dismiss** (NO. 204-CV-01-DF)
- 29 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966209 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Feb. 7, 2005) **Stipulated Protective Order** (NO. 2-04CV-01DF)
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- 31 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966208 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 2, 2005) **Echostar Technologies Corporation and Echosphere Limited Liability Company's Motion to Compel Interr** (NO. 2-04CV01DF)
- 32 TiVo INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. EchoStar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants, And Related Counterclaims., 2005 WL 4170701 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 16, 2005) **Tivo's Opposition to EchoStar's Motion to Compel a More Detailed Interrogatory Response** (NO. 2-04CV-01)
- 33 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. and Related Counterclaims., 2005 WL 1365519 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 17, 2005) **Tivo's Motion to Compel Echostar's Production of Documents, Interrogatory Responses, and Attendance a** (NO. 2-04CV-01)

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- 35 TIVO INC., a Delaware corporation, Plaintiff, v. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; EchoStar DBS Corporation, a Colorado corporation; EchoStar Technologies Corporation, a Texas corporation; and Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966212 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 17, 2005) **Defendants' Responses and Objections to ""First Set of Requests for Production of Documents to all D** (NO. 204CV01DF)
- 36 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1365523 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 21, 2005) **Defendants' Memorandum of Points and Authorities in Opposition to Plaintiff Tivo Inc.'s Motion to Am** (NO. 2-04CV01DF)
- 37 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1365526 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 23, 2005) **Reply Memorandum of Points and Authorities in Support of Echostar Technologies Corporation's and Ech** (NO. 2-04CV01DF)
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- 44 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. and Related Counterclaims, 2005 WL 1365536 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 5, 2005) **Tivo's Reply to Defendants' Opposition to Tivo's Motion to Compel Echostar's Production of Documents** (NO. 2-04CV-01)
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- 46 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. and Related Counterclaims, 2005 WL 1365540 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 27, 2005) **Tivo's Opposition to Defendants' Second Motion to Compel** (NO. 2-04CV-01)
- 47 TIVO INC., a Delaware corporation, Plaintiff, v. 1. EHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966217 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 27, 2005) **Tivo's Opposition to Defendants' Second Motion to Compel** (NO. 2-04CV-01)
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- 52 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1365548 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 11, 2005) **Tivo's Opposition to Defendants' Third Motion to Compel** (NO. 2-04CV-01)
- 53 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1365551 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 11, 2005) **Tivo's Sur-Reply to Defendants' Second Motion to Compel** (NO. 2-04CV-01)
- 54 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966219 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 11, 2005) **Tivo's Opposition to Defendants' Third Motion to Compel** (NO. 2-04CV-01)
- 55 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966220 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 12, 2005) **Tivo Inc.'s Opposition Brief on Claim Construction** (NO. 2-04CV-01)
- 56 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1594130 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 16, 2005) **Defendants' Reply in Support of Its Third Motion to Compel** (NO. 2-04CV01DF)
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- 58 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966193 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 18, 2005) **TiVo Inc.'s Opening Brief on Claim Construction** (NO. 2-04CV-01)

- 59 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966194 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 18, 2005) **TiVo Inc.'s Opposition Brief on Claim Construction** (NO. 2-04CV-01)
- 60 TIVO INC., a Delaware corporation Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants; And Related Counterclaims., 2005 WL 1594131 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 23, 2005) **Tivo's Opposition to Defendants' Fifth Motion to Compel** (NO. 2-04CV-01)
- 61 TIVO INC., a Delaware corporation Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants; And Related Counterclaims., 2005 WL 1594132 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 23, 2005) **Tivo's Sur-Reply to Defendants' Third Motion to Compel** (NO. 2-04CV-01)
- 62 TIVO INC., a Delaware corporation Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966196 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. May 23, 2005) **TiVo's Opposition to Defendants' Fifth Motion to Compel** (NO. 2-04CV-01)
- 63 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1594133 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jun. 2, 2005) **Defendants' Sixth Motion to Compel** (NO. 2-04CV01DF)
- 64 TIVO INC., a Delaware corporation, Plaintiff, v. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, Echostar DBS Corporation, a Colorado corporation, Echostar Technologies Corporation, a Texas corporation, and Echosphere Limited Liability Company, a Colorado limited liability company, Defendants; And Related Counterclaims., 2005 WL 1924059 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jun. 16, 2005) **Tivo's Opposition to Defendants' Sixth Motion to Compel** (NO. 2-04CV-01)
- 65 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966197 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jun. 16, 2005) **TiVo's Opposition to Defendants' Sixth Motion to Compel** (NO. 2-04CV-01)
- 66 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 1924060 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jun. 23, 2005) **Defendants' Reply Brief in Support of the Sixth Motion to Compel** (NO. 2-04CV01DF)
- 67 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966198 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jun. 23, 2005) **Defendants' Reply Brief in Support of the Sixth Motion to Compel** (NO. 2-04CV01DF)

- 68 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966199 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 8, 2005) **Memorandum of Points and Authorities in Support of Echostar's Seventh Motion to Compel** (NO. 2-04CV01DF)
- 69 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966200 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 15, 2005) **Notice of Motion and Memorandum in Support of Motion for Partial Summary Judgment of Non-Infringemen** (NO. 2-04CV01DF)
- 70 TIVO INC., a Delaware Corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada Corporation, 2. Echostar DBS Corporation, a, Colorado Corporation, 3. Echostar Technologies, Corporation, a Texas Corporation, and 4. Echosphere Limited Liability, Company, a Colorado Limited Liability, Company, Defendants., 2005 WL 2299354 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 20, 2005) **Tivo's Opposition to Defendants' Motion to Enforce May 24, 2005 Resolution** (NO. 2-04CV-01)
- 71 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants; and Related counterclaims., 2005 WL 2299364 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 20, 2005) **Tivo's Opposition to Defendants' Seventh Motion to Compel** (NO. 2-04CV-01)
- 72 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966201 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 20, 2005) **TiVo's Opposition to Defendants' Seventh Motion to Compel** (NO. 2-04CV-01)
- 73 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. Echostar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2299368 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 26, 2005) **Reply in Support of Echostar's Motion to Enforce May 24, 2005 Resolution and for a Court Order Conce** (NO. 2-04CV01DF)
- 74 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2299371 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 26, 2005) **Reply Memorandum of Points and Authorities in Support of Echostar's Seventh Motion to Compel** (NO. 2-04CV01DF)
- 75 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966202 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 26, 2005) **Reply Memorandum of Points and Authorities in Support of Echostar's Seventh Motion to Compel** (NO. 2-04CV01DF)
- 76 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants; and Related Counterclaims., 2005 WL 2299373 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 27, 2005) **Tivo's Opposition to Defendants' Eighth Motion to Compel; Request for Sanctions** (NO. 2-04CV-01)

- 77 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2299377 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 27, 2005) **Tivo Inc.'s Opposition to Echostar's Motion for Partial Summary Judgment of Non-Infringement: (1) No** (NO. 2-04CV-01)
- 78 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2299376 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jul. 28, 2005) **Reply Brief in Support of Echostar'S Eighth Motion to Compel** (NO. 204-CV-00001-DF)
- 79 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2299381 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 3, 2005) **Echostar's Reply Briece in Support of Motion for Partial Summary Judgment of non-Infringement: (1) no** (NO. 2-04CV01DF)
- 80 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966203 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 3, 2005) **Echostar's Reply Brief in Support of Motion for Partial Summary Judgment of Non-Infringement: (1) No** (NO. 2-04CV01DF)
- 81 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants; and Related Counterclaims., 2005 WL 2299384 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 9, 2005) **Defendants' Opposition to Tivo's Second Motion to Compel** (NO. 2-04CV01DF)
- 82 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666748 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 9, 2005) **Echostar's Reply in Support of Its Motion in Limine No. 2 - To Exclude Reference to Or Evidence Rega** (NO. 204-CV-00001-DF)
- 83 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants, And Related Counterclaims., 2005 WL 3966204 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 9, 2005) **Defendants' Opposition to TiVo's Second Motion to Compel** (NO. 2-04CV01DF)
- 84 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2299387 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 10, 2005) **Plaintiff Tivo Inc.'s Third Motion to Compel** (NO. 2-04CV-01)
- 85 TIVO INC., a Delaware corporation Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2005 WL 3966205 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 10, 2005) **Plaintiff TiVo Inc.'s Third Motion to Compel** (NO. 2-04CV-01)

- 86 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666735 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 15, 2005) **Tivo's Reply in Support of its Second Motion to Compel** (NO. 204-CV-00001-DF)
- 87 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 3966206 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 18, 2005) **Notice of Motion, Motion and Memorandum in Support of Motion for Partial Summary Judgment of Invalid** (NO. 2-04CV01DF)
- 88 TIVO INC., a Delaware corporation, Plaintiff, v. 1. Echostar Communications Corporation, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666736 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 26, 2005) **Tivo Inc.'s Motions in Limine Nos. 3A-3C** (NO. 204-CV-00001-DF)
- 89 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2667079 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 26, 2005) **Tivo's Motion in Limine No. 2: To Preclude Evidence/Argument in Front of the Jury Regarding Echostar** (NO. 2-04CV-01)
- 90 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666700 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 30, 2005) **TiVo Inc.'s Opposition to Echostar's Motion For Partial Summary Judgment of Invalidity due to Indefi** (NO. 204-CV-00001-DF)
- 91 TIVO INC., a Delaware corporation Plaintiff, v. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, Echostar Dbs Corporation, a Colorado corporation, Echostar Technologies Corporation, a Texas corporation, and Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666701 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 31, 2005) **Tivo Inc.'s Opposition to Echostar's Motion Inlimine No. 4: to Preclude Tivo from Denying the Existe** (NO. 2-04-CV-00001-DF)
- 92 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar Dbs Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666738 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 31, 2005) **Tivo's Opposition to Echostar's Motion in Limine No. 2: Re: Written Opinion of Counsel** (NO. 204-CV-00001-DF)
- 93 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2667080 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 31, 2005) **TiVo Inc.'s Opposition to Echostar's Motion in Limine No. 6 - to Preclude Reference to, Use of, or R** (NO. 2-04CV-01)

- 94 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants, And Related Counterclaims., 2005 WL 3966207 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 31, 2005) **Defendants' Protective Motion for Reconsideration of the Court's Order of August 17, 2005** (NO. 2-04CV01DF)
- 95 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. EchoStar DBS Corporation, a Colorado corporation, 3. EchoStar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants, And Related Counterclaims., 2005 WL 4170699 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Aug. 31, 2005) **Two Inc.'s Opposition to EchoStar's Motion in Limine No. 11: to Preclude ""Late Disclosed"" Exhibits** (NO. 2-04CV-01)
- 96 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar Dbs Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666741 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 1, 2005) **Echostar's Surreply Brief in Support of its Motion for Partial Summary Judgment of Non-Infringement:** (NO. 204-CV-00001-DF)
- 97 TIVO INC., a Delaware corporation, Plaintiff, v. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, Echostar DBS Corporation, a Colorado corporation, Echostar Technologies Corporation, a Texas corporation, and Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666743 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 6, 2005) **Tivo Inc.'s Opposition to Echostar's Motion Inlimine No. 3: to Preclude any Reference To use Of, and** (NO. 204-CV-00001-DF)
- 98 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada Corporation; 2. EchoStar Dbs Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666702 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 7, 2005) **Echostar's Reply in Support of its Motion for Partial Summary Judgment of Invalidity Due to Indefini** (NO. 204-CV-00001-DF)
- 99 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar Dbs Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666745 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 7, 2005) **Echostar's Opposition to Tivo'S Motion IN Limine No. 1: to Preclude Defendants from Introducing Evid** (NO. 204-CV-00001-DF)
- 100 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar Dbs Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666746 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 7, 2005) **Echostar's Motion for a Protective Order Prohibiting Tivo from Pursuing Discovery in other Jurisdiet** (NO. 204-CV-00001-DF)
- 101 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2667082 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 7, 2005) **Echostar's Opposition to Tivo's Motion in Limine No. 2: to Preclude Evidence/Argument in Front of th** (NO. 2-04CV01DF)

- 102 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666703 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 9, 2005) **Echostar's Reply to Motion in Limine No. 1 - To Preclude Reference To, Use Of, And Reliance Upon The** (NO. 204-CV-00001-DF)
- 103 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666704 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 9, 2005) **Echostar's Reply re Motion in Limine No. 10 - to Preclude Reference to, use of and Reliance upon oth** (NO. 2-04CV01DF)
- 104 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666749 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 9, 2005) **Echostar's Reply in Support of its Motion in Limine No. 5 to Preclude Reference to, Use of, and Reli** (NO. 204-CV-00001-DF)
- 105 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2666750 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 9, 2005) **Defendants' Motion to Strike Tivo Inc.'s Cross Motion Re: Partial Summary Judgment of Infringement o** (NO. 204-CV-00001-DF)
- 106 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 2667084 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Sep. 9, 2005) **Echostar's Reply re Motion in Limine No. 9 -- to Preclude Evidence on Doctrine of Equivalents** (NO. 2-04CV01DF)
- 107 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 4170700 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Dec. 29, 2005) **Motion to Reconsider the Court's Order of December 21, 2005.** (NO. 2-04CV01DF)
- 108 TIVO INC., a Delaware corporation Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 502210 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jan. 6, 2006) **Tivo Inc.'s Sur-Reply to Echostar's Motion to Reconsider the Court's Order of December 21, 2005** (NO. 2-04CV-01)
- 109 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004918 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jan. 30, 2006) **TiVo's Brief in Support of its Objections to Defendants' Trial Exhibits** (NO. 2-04CV-01)

- 110 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004919 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Jan. 30, 2006) **TiVo's Brief in Opposition to Echostar's Objections to TiVo's Trial Exhibits** (NO. 2-04-CV-01)
- 111 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004917 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Feb. 22, 2006) **TiVo's Motion for Reconsideration of Magistrate Judge's Ruling on TiVo Trial Exhibits 1514, 1515, 16** (NO. 2-04-CV-01)
- 112 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar dbS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants, And Related Counterclaims., 2006 WL 813706 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Feb. 22, 2006) **Tivo's Motion for Reconsideration of Magistrate Judge's Ruling on Tivo Trial Exhibits 1514, 1515, 16** (NO. 2-04-CV-01)
- 113 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004920 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 3, 2006) **TiVo's Motion for Reconsideration of the Court's February 27, 2006 Order Denying Leave to Amend the** (NO. 2-04CV-01)
- 114 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Sorporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1181339 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 3, 2006) **Tivo's Motion for Reconsideration of the Court's February 27, 2006 Order Denying Leave to Amend the** (NO. 2-04CV-01)
- 115 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004921 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 20, 2006) **TiVo's Motion for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on TiVo'** (NO. 2-04-CV-01)
- 116 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1181340 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 20, 2006) **TiVo's Motion for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on Tivo'** (NO. 2-04-CV-01)

- 117 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004922 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 24, 2006) **Plaintiff TiVo Inc.'s Motion to Exclude the Testimony of Defendants' Witness Homer Knearl and all Re** (NO. 2-04CV-01)
- 118 TIVO INC., a Delaware corporation Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, A Nevada Corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, 4. Echosphere Limited Liability Company, a Colorado limited liability company, and 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1181341 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 29, 2006) **TIVO'S Motion for Reconsideration of Magistrate Judge's Rulings** (NO. 2-04-CV-01)
- 119 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada Corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; 4. Echosphere Limited Liability Company, a Colorado limited liability company; and 5. EchoStar Satellite LLC, a Colorado limited liability company, Defendants., 2006 WL 1181342 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Mar. 30, 2006) **Echostar's Opposition to Tivo's Motion for Reconsideration of Magistrate Judge's Rulings** (NO. 2-04CV01DF)
- 120 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; 4. Echosphere Limited Liability Company, a Colorado limited liability company; and 5. EchoStar Satellite LLC, a Colorado limited liability company, Defendants., 2006 WL 1004923 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 11, 2006) **Echostar's Motion for Judgment as a Matter of Law** (NO. 2-04CV01DF)
- 121 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; 4. Echosphere Limited Liability Company, a Colorado limited liability company; and 5. EchoStar Satellite LLC, a Colorado limited liability company, Defendants., 2006 WL 1503232 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 11, 2006) **Echostar's Motion for Judgment as a Matter of Law** (NO. 2-04CV01DF)
- 122 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants. And Related Counterclaims., 2006 WL 1004924 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 12, 2006) **TiVo's Opposition to Echostar's Renewed Motion for Judgment as a Matter of Law** (NO. 2-04CV-01)
- 123 TiVo INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation, 2. Echostar DBS Corporation, a Colorado corporation, 3. Echostar Technologies Corporation, a Texas corporation, and 4. Echosphere Limited Liability Company, a Colorado limited liability company, 5. Echostar Satellite LLC, a Colorado limited liability company, Defendants, And Related Counterclaims., 2006 WL 1503233 (Trial Motion, Memorandum and Affidavit) (E.D.Tex. Apr. 12, 2006) **Tivo's Opposition to Echostar's Renewed Motion for Judgment as a Matter of Law** (NO. 2-04CV-01)

E.D.Tex. Verdicts, Agreements and Settlements

- 124 TIVO INC., v. ECHO STAR COMMUNICATIONS CORPORATION et al., 2005 WL 5328264 (Verdict, Agreement and Settlement) (E.D.Tex. Sep. 7, 2005) **Local Rule 37-2 Joint Stipulation Re: Non-party Broadcom's Motion to Quash Subpoena** (NO. 204-CV-00001)

- 125 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; and 4. Echosphere Limited Liability Company, a Colorado limited liability company, Defendants., 2005 WL 4170193 (Verdict, Agreement and Settlement) (E.D.Tex. Oct. 6, 2005) **Stipulation Mooting Tivo's Motion in Limine No. 2 [Docket Number 218]** (NO. 2-04CV01DF)
- 126 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; 4. Echosphere Limited Liability Company, a Colorado limited liability company; and 5. EchoStar Satellite LLC, a Colorado limited liability company, Defendants., 2006 WL 1006117 (Verdict, Agreement and Settlement) (E.D.Tex. Mar. 27, 2006) **Echostar's First Amended Proposed Verdict Form** (NO. 2-04CV01DF)
- 127 TIVO INC., Plaintiff, v. ECHOSTAR COMMUNICATIONS CORP., et al., Defendants., 2006 WL 1006120 (Verdict, Agreement and Settlement) (E.D.Tex. Apr. 13, 2006) **Verdict Form** (NO. 204-CV-1-DF)
- 128 TIVO INC., Plaintiff, v. ECHOSTAR COMMUNICATIONS CORP., et al., Defendants., 2006 WL 1167906 (Verdict, Agreement and Settlement) (E.D.Tex. Apr. 13, 2006) **Verdict Form** (NO. 204-CV-1-DF)
- 129 TIVO INC., Plaintiff, v. ECHOSTAR COMMUNICATIONS CORP., et al., Defendants., 2006 WL 1461680 (Verdict, Agreement and Settlement) (E.D.Tex. Apr. 13, 2006) **Verdict Form** (NO. 204-CV-1-DF)
- 130 TIVO INC., Plaintiff, v. ECHOSTAR COMMUNICATIONS CORP., et al., Defendants., 2006 WL 1465509 (Verdict, Agreement and Settlement) (E.D.Tex. Apr. 13, 2006) **Verdict Form** (NO. 204-CV-1-DF)
- 131 TIVO INC., a Delaware corporation, Plaintiff, v. 1. ECHOSTAR COMMUNICATIONS CORPORATION, a Nevada corporation; 2. EchoStar DBS Corporation, a Colorado corporation; 3. EchoStar Technologies Corporation, a Texas corporation; 4. Echosphere Limited Liability Company, a Colorado limited liability company; and 5. EchoStar Satellite LLC, a Colorado limited liability company, Defendants., 2007 WL 444836 (Verdict, Agreement and Settlement) (E.D.Tex. Jan. 3, 2007) **Joint Stipulation Re Supplemental Damages and Prejudgment Interest for the Period of August 1, 2006** (NO. 2-04CV01DF)

Patent Family

- 132 SIMULTANEOUS STORAGE AND PLAYBACK OF MULTIMEDIA DATA METHOD E.G. FOR REAL TIME CAPTURE, STORAGE AND DISPLAY OF TELEVISION BROADCAST SIGNALS, DWPL 2000-205516

Assignments

- 133 Action: CORRECTIVE ASSIGNMENT TO CORRECT THE NAME OF RECEIVING PARTY PREVIOUSLY RECORDED ON REEL 018866 FRAME 0510. ASSIGNOR(S) HEREBY CONFIRMS THE SECURITY AGREEMENT., DATE RECORDED: Feb 12, 2007
- 134 Action: SECURITY AGREEMENT Number of Pages: 014, DATE RECORDED: Feb 08, 2007
- 135 ACTION: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). NUMBER OF PAGES: 002, DATE RECORDED: Jul 30, 1998

Patent Status Files

- ... Request for Re-Examination, (OG date: Jan 31, 2006)
- ...
- ... Patent Suit(See LitAlert Entries),

Litigation Alert

- 139 LitAlert P2004-08-19, (Jan 15, 2004) Action Taken: A complaint was filed.
- 140 LitAlert P2002-10-46, (Jan 23, 2002) Action Taken: A complaint was filed.

Prior Art

- C** 141 US PAT 4665431 APPARATUS AND METHOD FOR RECEIVING AUDIO SIGNALS TRANSMITTED AS PART OF A TELEVISION VIDEO SIGNAL, (U.S. PTO Utility 1987)
- C** 142 US PAT 5696868 APPARATUS AND METHOD FOR RECORDING/PLAYING BACK BROADCASTING SIGNAL, Assignee: Goldstar Co., Ltd., (U.S. PTO Utility 1997)
- C** 143 US PAT 5550594 APPARATUS AND METHOD FOR SYNCHRONIZING ASYNCHRONOUS SIGNALS, Assignee: Pixel Instruments Corp., (U.S. PTO Utility 1996)
- C** 144 US PAT 5675388 APPARATUS AND METHOD FOR TRANSMITTING AUDIO SIGNALS AS PART OF A TELEVISION VIDEO SIGNAL, (U.S. PTO Utility 1997)
- C** 145 US PAT 5202761 AUDIO SYNCHRONIZATION APPARATUS, (U.S. PTO Utility 1993)
- C** 146 US PAT RE33535 AUDIO TO VIDEO TIMING EQUALIZER METHOD AND APPARATUS, (U.S. PTO Reissue 1991)
- C** 147 US PAT 5572261 AUTOMATIC AUDIO TO VIDEO TIMING MEASUREMENT DEVICE AND METHOD, (U.S. PTO Utility 1996)
- C** 148 US PAT 4313135 METHOD AND APPARATUS FOR PRESERVING OR RESTORING AUDIO TO VIDEO SYNCHRONIZATION, (U.S. PTO Utility 1982)
- C** 149 US PAT 5937138 : METHOD AND AN APPARATUS FOR SYSTEM ENCODING BITSTREAMS FOR SEAMLESS CONNECTION, Assignee: Matsushita Electric Industrial Co., Ltd., (U.S. PTO Utility 1999)
- C** 150 US PAT 5787225 OPTICAL DISK APPARATUS FOR THE REPRODUCTION OF COMPRESSED DATA, Assignee: Matsushita Electric Industrial Co., Ltd., (U.S. PTO Utility 1998)
- C** 151 US PAT 5706388 RECORDING SYSTEM RECORDING RECEIVED INFORMATION ON A RECORDING MEDIUM WHILE REPRODUCING RECEIVED INFORMATION PREVIOUSLY RECORDED ON THE RECORDING MEDIUM, Assignee: Ricoh Company, Ltd., (U.S. PTO Utility 1998)
- C** 152 US PAT 5920842 : SIGNAL SYNCHRONIZATION, Assignee: Pixel Instruments, (U.S. PTO Utility 1999)
- C** 153 US PAT 5371551 TIME DELAYED DIGITAL VIDEO SYSTEM USING CONCURRENT RECORDING AND PLAYBACK, (U.S. PTO Utility 1994)
- C** 154 US PAT 5438423 TIME WARPING FOR VIDEO VIEWING, Assignee: Tektronix, Inc., (U.S. PTO Utility 1995)

US District Court Civil Docket

**U.S. District - Georgia Northern
(Atlanta)**

1:05cv2799

Tivo, Inc v. Echostar Communications Corporation et al

This case was retrieved from the court on Tuesday, February 13, 2007

Date Filed: 10/28/2005	Class Code: APPEAL, CLOSED, SEAL_Material
Assigned To: Judge William S Duffey, Jr	Closed: yes
Referred To:	Statute:
Nature of suit: Patent (830)	Jury Demand: None
Cause: FRCP 45(b) Motion to quash or modify subpoena	Demand Amount: \$0
Lead Docket: None	NOS
Other Docket: USDC ED TX, 2-04cv01 DF	Description: Patent
Jurisdiction: Federal Question	

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Date	#	Proceeding Text
07/07/2005	1	MOTION to Quash subpoenas with Brief In Support by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. (Attachments: # 1 Exhibit 1# 2 Exhibit 1-A# 3 Exhibit 1-B# 4 Exhibit 1-C# 5 Exhibit 1-D# 6 Exhibit 1-E# 7 Exhibit 1-F# 8 Exhibit 1-G# 9 Exhibit 1-H# 10 Exhibit 1-I# 11 Exhibit 2# 12 Exhibit 2-A# 13 Exhibit 2-B# 14 Exhibit 2-C# 15 Exhibit 2-D# 16 Exhibit 2-E# 17 Exhibit 2-F)(fmm) (Entered: 07/15/2005)
07/26/2005	2	PROPOSED CONSENT ORDER For Extension of Time re: 1 MOTION to Quash subpoenas. (Buhay, William) (Entered: 07/26/2005)
07/27/2005	6	APPLICATION for Admission of Harold J. McElhinny Pro Hac Viceby Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #539834. (fmm)

(Entered: 07/29/2005)

07/27/2005 7 APPLICATION for Admission of Peter P. Meringolo Pro Hac Viceby Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #539834. (fmm) (Entered: 07/29/2005)

07/27/2005 8 APPLICATION for Admission of Marc J. Pernick Pro Hac Viceby Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #539835. (fmm) (Entered: 07/29/2005)

07/28/2005 3 NOTICE of Appearance by William Charles Buhay on behalf of TiVo, Inc. (Buhay, William) (Entered: 07/28/2005)

07/28/2005 4 Second MOTION for Extension of Time Reply to Motion for Protective Order and to Quash re: 1 MOTION to Quash subpoenas, 2 Proposed Consent Order with Brief In Support by TiVo, Inc.. (Buhay, William) (Entered: 07/28/2005)

07/28/2005 5 PROPOSED ORDER Unopposed Motion to Extend Time to Reply to Motion for Protective Order and to Quash re: 4 Second MOTION for Extension of Time Reply to Motion for Protective Order and to Quash re: 1 MOTION to Quash subpoenas, 2 Proposed Consent Order. (Buhay, William) (Entered: 07/28/2005)

07/28/2005 9 ORDER GRANTING 4 Motion for Extension of Time. IT IS HEREBY ORDERED that Plaintiff shall have (3) three additional days in which to file its response to the Joint Motion . Signed by Judge William S. Duffey Jr. on 7/26/05. (kt) (Entered: 07/29/2005)

08/01/2005 10 ORDER GRANTING 5 Unopposed Motion to Extend time until 8/4/05 for TiVo to reply to EchoStar and Non-Party Homer Knearl's Joint Motion for a Protective Order and to Quash Rule 45 Subpoenas. Signed by Judge William S. Duffey Jr. on 8/1/05. (kt) (Entered: 08/02/2005)

08/02/2005 -- ORDER (by docket entry only) granting 6 Application for Admission Pro Hac Vice of Harold McElhinny, granting 7 Application for Admission Pro Hac Vice of Peter Meringolo, granting 8 Application for Admission Pro Hac Vice of Marc Pernick . Ordered by Judge William S. Duffey Jr. on 8/2/05. (jdb) (Entered: 08/02/2005)

08/03/2005 13 ORDER APPROVING 11 Third MOTION for Extension of Time to Reply to EchoStar and Non-Party Homer Knearl's Joint Motion for Protective Order and 1 Motion to Quash Rule 45 Subpoenas until 8/10/05. Signed by Judge William S. Duffey Jr. on 8/5/05. (kt) (Entered: 08/05/2005)

08/04/2005 11 Third MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Buhay, William) (Entered: 08/04/2005)

08/04/2005 12 PROPOSED ORDER Granting Six (6) Day Extension re: 11 Third MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas. (Buhay, William) (Entered: 08/04/2005)

08/05/2005 15 APPLICATION for Admission of Christine W.S. Byrd Pro Hac Viceby TiVo, Inc..Filing Fee received \$150.00, Receipt #540264. (fmm) (Entered: 08/11/2005)

08/05/2005 16 APPLICATION for Admission of Perry M. Goldberg Pro Hac Viceby TiVo, Inc..Filing Fee received \$150.00, Receipt #540264. (fmm) (Entered: 08/11/2005)

08/10/2005 14 Fourth MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Attachments: # 1)(Buhay, William) (Entered: 08/10/2005)

08/12/2005 -- ORDER (by docket entry only) granting 15 Application for Admission Pro Hac Vice of Christine W.S. Byrd, granting 16 Application for Admission Pro Hac Vice of Perry M. Goldberg. Ordered by Judge William S. Duffey Jr. on 8/12/05. (jdb) (Entered: 08/12/2005)

08/12/2005 17 ORDER GRANTING 14 Unopposed Motion for Extension of Time to Reply to the Joint Motion until 8/31/05. Signed by Judge William S. Duffey Jr. on 8/11/05. (kt) (Entered: 08/12/2005)

08/31/2005 18 Fifth MOTION for Extension of Time re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Attachments: # 1 Exhibit A # 2 Proposed Order)(Buhay, William) Modified on 9/1/2005 to describe attachments (fmm). (Entered: 08/31/2005)

09/01/2005 19 ORDER GRANTING 18 Motion for Extension of Time until 9/14/05 for TiVo Inc. to reply to the Joint Motion for Protective Order and to Quash Rule 45 Subpoenas. Signed by Judge William S. Duffey Jr. on 8/31/05. (kt) (Entered: 09/01/2005)

09/14/2005 20 Sixth MOTION for Extension of Time to Reply to Joint Motion for Protective Order and Quash Rule 45 Subpoenas re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Attachments: # 1 Proposed Order)(Buhay, William) Modified on 9/15/2005 to describe attachments (fmm). (Entered: 09/14/2005)

09/15/2005 21 ORDER GRANTING 20 Unopposed Motion for Extension of Time to Reply to the Joint Motion until

10/06/05. Signed by Judge William S. Duffey Jr. on 9/15/05. (kt) (Entered: 09/16/2005)

10/06/2005 22 Seventh MOTION to Continue by TiVo, Inc.. (Attachments: # 1 Exhibit Texas Court's September 26th Order# 2 Text of Proposed Order Oder Granting Continuance)(Buhay, William) (Entered: 10/06/2005)

10/07/2005 23 ORDER GRANTING 22 Seventh Unopposed Motion to Extend Time to Reply to EchoStar and Non-Party Homer Knearl's Joint Motion for a Protective Order and to Quash Rule 45 Subpoeas until 10/13/05. Signed by Judge William S. Duffey Jr. on 10/07/05. (kt) (Entered: 10/07/2005)

10/07/2005 24 RESPONSE re 22 Seventh MOTION to Continue filed by Echostar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, EchoStar DBS Corporation. (Schlossberg, Ellen) (Entered: 10/07/2005)

10/13/2005 25 DOCUMENT FILED IN ERROR Eighth MOTION for Extension of Time to Reply to Echostar and Non-Party Homer Knearl's Joint Motionf or a Protective Order and to Quash Rule 45 Subpoeas; Motion to Dismiss Joint Motion as Moot with Brief In Support by TiVo, Inc.. (Attachments: # 1 Exhibit A to 8th Motion# 2 Exhibit Exhibit B to 8th motion# 3 Text of Proposed Order)(Buhay, William) Modified on 10/14/2005 (frmm). (Entered: 10/13/2005)

10/13/2005 26 REDOCKETED #25 MOTION AS Eighth MOTION for Extension of Time by 2 weeks to file response re: 1 MOTION for protective order and to Quash subpoenas or MOTION to Dismiss without prejudice the 1 MOTION for protective order and to Quash subpoenas by TiVo, Inc. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Proposed Order)(frmm) (Entered: 10/14/2005)

10/14/2005 27 RESPONSE in Opposition re 26 MOTION to Dismiss MOTION for Extension of Time to file response to re: 1 MOTION to Quash subpoenas MOTION for Extension of Time to file response to re: 1 MOTION to Quash subpoenas filed by Homer Knearl. (Schlossberg, Ellen) (Entered: 10/14/2005)

10/28/2005 28 RESPONSE in Opposition re 1 MOTION to Quash subpoenas and Reply Brief to the 26 Motion to Dismiss filed by TiVo, Inc.. (Attachments: # 1 Text of Proposed Order Proposed Order denying Defendants' Motion for Protective Order and to Quash Subpoena and Granting Plaintiff's Motion to Dismiss Defendants' Motion as Moot)(Buhay, William) Modified on 10/31/2005 to add document link (frmm). (Entered: 10/28/2005)

10/28/2005 29 AFFIDAVIT in Opposition re 1 MOTION to Quash subpoenas and related Exhibts supporting TiVo's Response to the Motion to Quash and TiVo's Motion to Dismiss filed by TiVo, Inc.. (Attachments: # 1 Exhibit Exhibit A# 2 Exhibit Exhibit B# 3 Exhibit Exhibit C# 4 Exhibit Exhibit D# 5 Exhibit Exhibit E# 6 Exhibit Part 1 of Exhibit F# 7 Exhibit Part 2 of Exhibit F# 8 Exhibit Part 3 of Exhibit F)(Buhay, William) (Entered: 10/28/2005)

10/28/2005 30 AFFIDAVIT in Opposition re 1 MOTION to Quash subpoenas The Affidavit is actually a Declaration which attaches the Exhibits relied upon by TiVo filed by TiVo, Inc.. (Attachments: # 1 Exhibit Exhibit A - Filed Under Seal# 2 Exhibit Exhibit B# 3 Exhibit Exhibit C# 4 Exhibit Exhibit D# 5 Exhibit Exhibit E# 6 Exhibit Part 1 of Exhibit F# 7 Exhibit Part 2 of Exhibit F# 8 Exhibit Part 3 of Exhibit F)(Buhay, William) (Entered: 10/28/2005)

10/28/2005 31 MOTION to File Exhibit A to 29 Affidavit and 30 Affidavit Under Seal by TiVo, Inc. (Attachments: # 1 Proposed Order)(frmm) (Entered: 10/31/2005)

10/28/2005 32 Exhibit A to 29 Affidavit and 30 Affidavit by TiVo, Inc. (-- FILED UNDER SEAL --) (frmm) Modified on 2/13/2006 (kt). (Entered: 10/31/2005)

10/28/2005 -- Case reported statistically. Matter transferred from 1:05-mi-190. (kt) (Entered: 10/31/2005)

10/31/2005 33 MOTION to Supplement 28 Response in Opposition re 1 MOTION to Quash subpoenas and Reply Brief to the 26 Motion to Dismiss by TiVo, Inc. (Attachments: # 1 Exhibit G-1# 2 Exhibit G-2# 3 Exhibit G-3# 4 Exhibit H-1# 5 Exhibit H-2# 6 Proposed Order)(frmm) (Entered: 11/01/2005)

11/01/2005 -- Submission of 1 MOTION to Quash subpoenas, 26 MOTION to Dismiss MOTION for Extension of Time to file response to re: 1 MOTION to Quash subpoenas MOTION for Extension of Time to file response to re: 1 MOTION to Quash subpoenas, 11 Third MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas, submitted to District Judge William S. Duffey. (frmm) (Entered: 11/01/2005)

11/14/2005 34 REPLY in support of 1 MOTION to Quash subpoenas, 33 MOTION to Supplement 28 Response in Opposition to Motion, filed by Homer Knearl. (Attachments: # 1 Exhibit A # 2 Exhibit B) (Murphy, Charles) Modified on 11/16/2005 to correct docket text to reflect e-filed document. (kt). (Entered: 11/14/2005)

11/15/2005 -- Submission of 31 MOTION to Seal Document 29 Affidavit in Opposition to Motion, 30 Affidavit in Opposition to Motion, 33 MOTION to Supplement 28 Response in Opposition to Motion, to District Judge William S. Duffey. (kt) (Entered: 11/15/2005)

11/16/2005 -- Notification of Docket Correction re 34 Reply to Response to Motion. Wrong event used and

double wording in attachments. (kt) (Entered: 11/16/2005)

11/17/2005 35 RESPONSE re 31 MOTION to Seal Document 29 Affidavit in Opposition to Motion,, 30 Affidavit in Opposition to Motion, filed by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. (Murphy, Charles) (Entered: 11/17/2005)

11/17/2005 36 RESPONSE re 33 MOTION to Supplement 28 Response in Opposition to Motion, filed by Homer Knearl. (Murphy, Charles) (Entered: 11/17/2005)

02/06/2006 37 NOTICE OF Filing order in related case by TIVo, Inc. (Attachments: # 1 Order in Colorado Case) (fmm) (Entered: 02/07/2006)

02/07/2006 -- Notification of Docket Correction re 37 Notice of Filing. Pleading incorrectly e-filed in closed miscellaneous case and moved to correct pending civil action. (fmm) (Entered: 02/07/2006)

02/10/2006 38 Minute Entry for proceedings held before Judge William S. Duffey Jr.: Telephone Conference held on 2/10/2006. (Court Reporter Nick Marrone.)(jdb) (Entered: 02/13/2006)

02/13/2006 39 ORDER granting in part and denying in part 1 Motion to Quash (See order for details.) IT IS FURTHER ORDERED that the documents required by this Order to be produced in response to the subpoena which are not subject to in camera review shall be produced by Mr. Knearl on or before February 20, 2006. IT IS FURTHER ORDERED that Mr. Knearl's deposition shall be arranged to be conducted on or before February 28, 2006. IT IS FURTHER ORDERED that the motion is DENIED with respect to the grounds the Mr. Knearl was not provided with reasonable notice, with reasonable time for compliance or that the information otherwise has been requested to be produced by other lawyers at Merchant & Gould. IT IS FURTHER ORDERED that if the Court in the Eastern District of Texas determines that the Subpoena response is outside the period allowed for discovery, compliance with this order shall not be required. IT IS FURTHER ORDERED that Plaintiff's Unopposed Motion for Extension of Time to Reply to Joint Motion for a Protective Order and to Quash Subpoenas 11, Plaintiff's Motion to Extend Time to Reply 26, Plaintiff's Motion to File Documents Under Seal 31, and Plaintiff's Motion for Leave to File a Supplement to its Response in Opposition 33 are GRANTED. Signed by Judge William S. Duffey Jr. on 2/13/06. (kt) (Entered: 02/13/2006)

02/14/2006 41 TRANSCRIPT of Proceedings held on February 10, 2006 before Judge William S. Duffey. Court Reporter: Nicholas A. Marrone. (kt) (Entered: 02/15/2006)

02/15/2006 40 APPLICATION for Admission of Alison M. Tucher Pro Hac Vice by Echostar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, and EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #547386. (to WSD) (kt) (Entered: 02/15/2006)

02/17/2006 -- ORDER (by docket entry only) granting 40 Application for Admission Pro Hac Vice of Alison M. Tucher. Ordered by Judge William S. Duffey Jr. on 2/17/06. (jdb) (Entered: 02/17/2006)

02/28/2006 42 VACATED pursuant to 53 Order ORDER DIRECTING that Mr. Knearl is ORDERED to produce the documents enclosed in the packet transmitted today by Federal Express to counsel for Mr. Knearl. These documents shall be made available for inspection by Mr. Perry Goldbert, Tivo's outside counsel. The Produced Documents shall be produced for Mr. Goldberg's inspection on or before March 8, 2006. Mr. Goldberg will request Judge Folsom to determine if the Identified Documents are admissible in the litigation pending in Texas. Judge Folsome shall determine what, if any, restrictions will be placed on disclosure of any of the Identified Documents he will allow to be introduced at trial. Identified documents which are not admitted shall promptly be returned to counsel for Mr. Knearl. Signed by Judge William S. Duffey Jr. on 2/28/06. (kt) Modified on 5/15/2006 (kt). Modified on 6/8/2006 (kt). (Entered: 02/28/2006)

03/02/2006 43 Joint MOTION to Stay the Court's Order of February 28, 2006 with Brief In Support by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. (Attachments: # 1 Brief In Support of Joint Motion for a Stay of the Court's Order of February 28, 2006# 2 Text of Proposed Order) (Tucher, Alison) (Entered: 03/02/2006)

03/02/2006 44 Emergency MOTION 43 Joint MOTION to Stay the Court's Order of February 28, 2006 to Waive the Time Requirements of Rule 7.1 with Brief In Support by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. (Attachments: # 1 Text of Proposed Order)(Tucher, Alison) (Entered: 03/02/2006)

03/03/2006 45 ORDER DENYING 43 Motion to Stay the Court's Order of February 28, 2006, granting 44 Motion for Miscellaneous Relief. IT IS FURTHER ORDERED that because the Court has resolved the motion to quash at issue in this proceeding, the Clerk of Court is DIRECTED to close this case. Signed by Judge William S. Duffey Jr. on 3/3/06. (kt) (Entered: 03/03/2006)

03/03/2006 -- Civil Case Terminated. (kt) (Entered: 03/03/2006)

03/03/2006 46 NOTICE OF APPEAL as to 42 Order, by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. Filing fee \$ 255, receipt no. 548185Transcript Order Form due on 3/17/2006. (fem) (Entered: 03/06/2006)

03/06/2006 47 DOCUMENT ERROR Transmission of Certified Copy of Notice of Appeal, Judgment, Order and Docket Sheet to US Court of Appeals re 46 Notice of Appeal, (fem) Modified on 3/8/2006 (fem). (Entered: 03/06/2006)

03/08/2006 48 Transmission of Certified Copy of Notice of Appeal, Judgment, Order and Docket Sheet to US Court of Appeals, Washington, D.C re 46 Notice of Appeal, (fem) (Entered: 03/08/2006)

03/08/2006 -- Notification of Docket Correction to indicate transmission incorrectly forwarded to the Eleventh Circuit and should have been transmitted to the Federal Circuit re 47 Transmission of Notice of Appeal and Docket Sheet to USCA. (fem) (Entered: 03/08/2006)

03/09/2006 49 ORDER of USCA - Federal Circuit temporarily staying 42 district court's Order re: 46 Notice of Appeal. USCA - Federal Circuit Miscellaneous Docket Case No. 816. (kac) (Entered: 03/10/2006)

03/13/2006 50 TRANSCRIPT ORDER FORM re: 46 Notice of Appeal. USCA - Federal Circuit Miscellaneous Number 816. Certificate of Readiness due on 3/27/2006 (All necessary transcript(s) on file.) (kac) (Entered: 03/13/2006)

03/20/2006 51 USCA Acknowledgment of 46 Notice of Appeal filed by Echostar Communications Corporation, Echostar Technologies Corporation, EchoStar DBS Corporation, Echosphere Limited Liability Company and Homer Knearl. Case Appealed to USCA - Federal Circuit. Appeal Case Number 2006-1293. (kac) (Entered: 05/03/2006)

04/27/2006 -- Appeal Deadline Terminated. Appealed to the USCA for the Federal Circuit. (kac) (Entered: 04/27/2006)

05/11/2006 52 Certified copy of ORDER of USCA for the Federal Circuit GRANTING Homer Knearl and EchoStar Communication Corporation's Petition for Writ of Mandamus. The district court is directed to vacate its 42 Order requiring production of documents. The district court may conduct any additional proceedings necessary in view of this Court's EchoStar order. USCA, Federal Circuit Case Number 2006-M816. (kt) Modified on 5/23/2006 to correct docket text. (dfb) (Entered: 05/15/2006)

05/15/2006 -- Submission of 52 USCA for the Federal Circuit Order to District Judge William S. Duffey. (kt) (Entered: 05/15/2006)

06/08/2006 53 ORDER DIRECTING that Mr. Knearl produce by 6/19/06, any materials responsive to the subpoena which are required to be produced pursuant to this Order and submit to the Court, by 6/30/06, those materials for which Mr. Knearl requests the Court to conduct an in camera review. IT IS FURTHER ORDERED that Mr. Knearl provide to Plaintiff the privilege log of withheld materials contemporaneous with its 6/19/06 production of materials. IT IS FURTHER ORDERED that the Court's February 28, 2006 Order is VACATED. Signed by Judge William S. Duffey Jr. on 6/8/06. (kt) (Entered: 06/08/2006)

07/11/2006 54 DOCUMENT FILING ERROR MOTION Motion to Enforce Court's Order of June 8, 2006 by TiVo, Inc.. (Attachments: # 1 Exhibit Exhibit 1# 2 Exhibit Exhibit 2# 3 Exhibit Exhibit 3# 4 Exhibit Exhibit 4# 5 Exhibit Exhibit 5# 6 Exhibit Exhibit 6# 7 Exhibit Exhibit 7# 8 Exhibit Exhibit 8) (Buhay, William) Modified text on 7/11/2006. Attorney to refile. (mas). (Entered: 07/11/2006)

07/11/2006 -- Notification of Docket Correction re 54 MOTION Motion to Enforce Court's Order of June 8, 2006. Modified entry to indicate there was a filing error. Attorney to refile. (mas) (Entered: 07/11/2006)

07/11/2006 55 MOTION to Enforce Court's Order of June 8, 2006 by TiVo, Inc.. (Attachments: # 1 Exhibit 1# 2 Exhibit 2# 3 Exhibit 3# 4 Exhibit 4# 5 Exhibit 5# 6 Exhibit 6# 7 Exhibit 7# 8 Exhibit 8)(Buhay, William) Modified on 8/15/2006 to remove double wording. (kt). (Entered: 07/11/2006)

07/28/2006 56 RESPONSE in Opposition re 55 MOTION Motion to Enforce Court's Order of June 8, 2006 filed by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. (Attachments: # 1 Affidavit of Alison M. Tucher# 2 Exhibit A-L to Tucher Declaration# 3 Exhibit M-T to Tucher Declaration) (Tucher, Alison) (Entered: 07/28/2006)

08/11/2006 57 REPLY to Response to Motion re 55 MOTION Motion to Enforce Court's Order of June 8, 2006 filed by TiVo, Inc.. (Attachments: # 1 Exhibit #1# 2 Exhibit # 2# 3 Exhibit # 3)(Buhay, William) (Entered: 08/11/2006)

08/14/2006 58 Motion for Leave to file Surreply with Brief In Support by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation,

EchoStar DBS Corporation. (Attachments: # 1 Exhibit Surreply)(Murphy, Charles) Modified on 8/15/2006 to remove double wording in docket text. (kt). (Entered: 08/14/2006)

08/15/2006 -- Notification of Docket Correction re 58 MOTION for Leave to File Motion for Leave to file Surreply. Edited docket text to remove double wording. (kt) (Entered: 08/15/2006)

08/16/2006 -- Submission of 55 MOTION to Enforce Court's Order of June 8, 2006, to District Judge William S. Duffey. (kt) (Entered: 08/16/2006)

08/16/2006 59 RESPONSE in Opposition re 58 MOTION for Leave to File Motion for Leave to file Surreply filed by TiVo, Inc.. (Buhay, William) (Entered: 08/16/2006)

08/19/2006 60 RESPONSE re Submission to District Judge and Mr. Knearl's August 18, 2006 correspondence regarding same filed by TiVo, Inc.. (Buhay, William) (Entered: 08/19/2006)

08/21/2006 61 RESPONSE re Submission to District Judge, 60 Response (Non-Motion) and Mr. Knearl's August 18, 2006 correspondence regarding the same filed by TiVo, Inc.. (Buhay, William) (Entered: 08/21/2006)

10/03/2006 -- Submission of 58 MOTION for Leave to File Surreply, to District Judge William S. Duffey. (kt) (Entered: 10/03/2006)

01/26/2007 62 ORDER that Homer Knearl shall execute, under oath, the affidavit attached as Attachment A and Alison M. Tucher shall execute, under oath, the affidavit attached as Attachment B, and both shall return their executed affidavits to the Court on or before February 15, 2007. IT IS FURTHER ORDERED that Mr. Knearl and EchoStar shall, on or before February 15, 2007, deliver to the Court for in camera review, those documents withheld from production to TiVo on the grounds of a legal privilege. IT IS FURTHER ORDERED that Homer Knearl's and EchoStar's Motion for Leave to File Surreply in Opposition to TiVo's Motion 58 is DENIED. Signed by Judge William S. Duffey Jr. on 1/26/07. (Attachments: # 1 Attachment A# 2 Attachment B)(jdb) (Entered: 01/26/2007)

01/29/2007 -- NOTICE of Undeliverable Electronic Mail re: 62 Order. Mail returned for Peter P. Meringolo. (aar) (Entered: 01/29/2007)

02/08/2007 63 NOTICE by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation Notice of Disassociation of Counsel (Tucher, Alison) (Entered: 02/08/2007)

US District Court Civil Docket

**U.S. District - Georgia Northern
(Atlanta)**

1:05mi208

Tivo, Inc v. Echostar Communications Corporation et al

This case was retrieved from the court on Wednesday, September 14, 2005

Date Filed: 07/21/2005	Class Code: CLOSED
Assigned To: Judge William S Duffey, Jr	Closed: yes
Referred To:	Statute:
Nature of suit: Patent (830)	Jury Demand: None
Cause: FRCP 37(a) Motion to compel deposition testimony	Demand Amount: \$0
Lead Docket: None	NOS Description: Patent
Other Docket: USDC ED TX, 04cv01 DF	
Jurisdiction: Federal Question	

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Scientific Atlanta, Inc
Movant

Date	#	Proceeding Text
07/21/2005	1	MOTION to Compel production of a document from third party Scientific Atlanta with Brief In Support by Echostar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, EchoStar DBS Corporation. (Attachments: # 1 Exhibit 1# 2 Exhibit A# 3 Exhibit B# 4 Exhibit C# 5 Exhibit D# 6 Exhibit E# 7 Exhibit F# 8 Exhibit G)(fmm) (Entered: 07/22/2005)
07/28/2005	2	Withdrawal of Motion 1 MOTION to Compel production of a document from third party Scientific Atlanta filed by Echostar Communications Corporation,, Echostar Technologies Corporation,, EchoStar DBS Corporation,, Echosphere Limited Liability Company,, (Murphy, Charles) (Entered: 07/28/2005)

07/28/2005

Miscellaneous Case Terminated. (fmm) (Entered: 07/29/2005)

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US District Court Civil Docket

U.S. District - Georgia Northern
(Atlanta)

1:05mi190

Tivo, Inc v. EchoStar Communications Corporation et al

This case was retrieved from the court on Tuesday, October 10, 2006

Date Filed: 07/07/2005	Class Code: CLOSED
Assigned To: Judge William S Duffey, Jr	Closed: yes
Referred To:	Statute:
Nature of suit: Patent (830)	Jury Demand: None
Cause: FRCP 45(b) Motion to quash or modify subpoena	Demand Amount: \$0
Lead Docket: None	NOS Description: Patent
Other Docket: USDC ED TX, 2-04cv01 DF	
Jurisdiction: Federal Question	

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Plaintiff

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Defendant

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Date	#	Proceeding Text
07/07/2005	1	MOTION to Quash subpoenas with Brief In Support by Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation. (Attachments: # 1 Exhibit 1# 2 Exhibit 1-A# 3 Exhibit 1-B# 4 Exhibit 1-C# 5 Exhibit 1-D# 6 Exhibit 1-E# 7 Exhibit 1-F# 8 Exhibit 1-G# 9 Exhibit 1-H# 10 Exhibit 1-I# 11 Exhibit 2# 12 Exhibit 2-A# 13 Exhibit 2-B# 14 Exhibit 2-C# 15 Exhibit 2-D# 16 Exhibit 2-E# 17 Exhibit 2-F)(fmm) (Entered: 07/15/2005)
07/26/2005	2	PROPOSED CONSENT ORDER For Extension of Time re: 1 MOTION to Quash subpoenas. (Buhay, William) (Entered: 07/26/2005)
07/27/2005	6	APPLICATION for Admission of Harold J. McElhinny Pro Hac Viceby Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #539834. (fmm) (Entered: 07/29/2005)
07/27/2005	7	APPLICATION for Admission of Peter P. Meringolo Pro Hac Viceby Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #539834. (fmm) (Entered: 07/29/2005)
07/27/2005	8	APPLICATION for Admission of Marc J. Pernick Pro Hac Viceby Echostar Technologies Corporation, Echosphere Limited Liability Company, Homer Knearl, Echostar Communications Corporation, EchoStar DBS Corporation.Filing Fee received \$150.00, Receipt #539835. (fmm) (Entered: 07/29/2005)
07/28/2005	3	NOTICE of Appearance by William Charles Buhay on behalf of TiVo, Inc. (Buhay, William) (Entered: 07/28/2005)
07/28/2005	4	Second MOTION for Extension of Time Reply to Motion for Protective Order and to Quash re: 1 MOTION to Quash subpoenas, 2 Proposed Consent Order with Brief In Support by TiVo, Inc.. (Buhay, William) (Entered: 07/28/2005)
07/28/2005	5	PROPOSED ORDER Unopposed Motion to Extend Time to Reply to Motion for Protective Order and to Quash re: 4 Second MOTION for Extension of Time Reply to Motion for Protective Order and to Quash re: 1 MOTION to Quash subpoenas, 2 Proposed Consent Order. (Buhay, William) (Entered: 07/28/2005)
07/28/2005	9	ORDER GRANTING 4 Motion for Extension of Time. IT IS HEREBY ORDERED that Plaintiff shall have (3) three additional days in which to file its response to the Joint Motion . Signed by Judge William S. Duffey Jr. on 7/26/05. (kt) (Entered: 07/29/2005)
08/01/2005	10	ORDER GRANTING 5 Unopposed Motion to Extend time until 8/4/05 for TiVo to reply to EchoStar and Non-Party Homer Knearl's Joint Motion for a Protective Order and to Quash Rule 45 Subpoenas. Signed by Judge William S. Duffey Jr. on 8/1/05. (kt) (Entered: 08/02/2005)
08/02/2005	--	ORDER (by docket entry only) granting 6 Application for Admission Pro Hac Vice of Harold McElhinny, granting 7 Application for Admission Pro Hac Vice of Peter Meringolo, granting 8 Application for Admission Pro Hac Vice of Marc Pernick . Ordered by Judge William S. Duffey Jr. on 8/2/05. (jdb) (Entered: 08/02/2005)
08/03/2005	13	ORDER APPROVING 11 Third MOTION for Extension of Time to Reply to EchoStar and Non-Party Homer Knearl's Joint Motion for Protective Order and 1 Motion to Quash Rule 45 Subpoenas until 8/10/05. Signed by Judge William S. Duffey Jr. on 8/5/05. (kt) (Entered: 08/05/2005)
08/04/2005	11	Third MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Buhay, William) (Entered: 08/04/2005)
08/04/2005	12	PROPOSED ORDER Granting Six (6) Day Extension re: 11 Third MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas. (Buhay, William) (Entered: 08/04/2005)
08/05/2005	15	APPLICATION for Admission of Christine W.S. Byrd Pro Hac Viceby TiVo, Inc..Filing Fee received \$150.00, Receipt #540264. (fmm) (Entered: 08/11/2005)
08/05/2005	16	APPLICATION for Admission of Perry M. Goldberg Pro Hac Viceby TiVo, Inc..Filing Fee received \$150.00, Receipt #540264. (fmm) (Entered: 08/11/2005)
08/10/2005	14	Fourth MOTION for Extension of Time File Response re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Attachments: # 1)(Buhay, William) (Entered: 08/10/2005)
08/12/2005	--	ORDER (by docket entry only) granting 15 Application for Admission Pro Hac Vice of Christine W.S. Byrd, granting 16 Application for Admission Pro Hac Vice of Perry M. Goldberg. Ordered by

Judge William S. Duffey Jr. on 8/12/05. (jdb) (Entered: 08/12/2005)

08/12/2005 17 ORDER GRANTING 14 Unopposed Motion for Extension of Time to Reply to the Joint Motion until 8/31/05. Signed by Judge William S. Duffey Jr. on 8/11/05. (kt) (Entered: 08/12/2005)

08/31/2005 18 Fifth MOTION for Extension of Time re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Attachments: # 1 Exhibit A # 2 Proposed Order)(Buhay, William) Modified on 9/1/2005 to describe attachments (fmm). (Entered: 08/31/2005)

09/01/2005 19 ORDER GRANTING 18 Motion for Extension of Time until 9/14/05 for TiVo Inc. to reply to the Joint Motion for Protective Order and to Quash Rule 45 Subpoenas. Signed by Judge William S. Duffey Jr. on 8/31/05. (kt) (Entered: 09/01/2005)

09/14/2005 20 Sixth MOTION for Extension of Time to Reply to Joint Motion for Protective Order and Quash Rule 45 Subpoenas re: 1 MOTION to Quash subpoenas with Brief In Support by TiVo, Inc.. (Attachments: # 1 Proposed Order)(Buhay, William) Modified on 9/15/2005 to describe attachments (fmm). (Entered: 09/14/2005)

09/15/2005 21 ORDER GRANTING 20 Unopposed Motion for Extension of Time to Reply to the Joint Motion until 10/06/05. Signed by Judge William S. Duffey Jr. on 9/15/05. (kt) (Entered: 09/16/2005)

10/06/2005 22 Seventh MOTION to Continue by TiVo, Inc.. (Attachments: # 1 Exhibit Texas Court's September 26th Order# 2 Text of Proposed Order Oder Granting Continuance)(Buhay, William) (Entered: 10/06/2005)

10/07/2005 23 ORDER GRANTING 22 Seventh Unopposed Motion to Extend Time to Reply to EchoStar and Non-Party Homer Knearl's Joint Motion for a Protective Order and to Quash Rule 45 Subponeas until 10/13/05. Signed by Judge William S. Duffey Jr. on 10/07/05. (kt) (Entered: 10/07/2005)

10/07/2005 24 RESPONSE re 22 Seventh MOTION to Continue filed by Echostar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, EchoStar DBS Corporation. (Schlossberg, Ellen) (Entered: 10/07/2005)

10/13/2005 25 DOCUMENT FILED IN ERROR Eighth MOTION for Extension of Time to Reply to Echostar and Non-Party Homer Knearl's Joint Motionf or a Protective Order and to Quash Rule 45 Subpoenas; Motion to Dismiss Joint Motion as Moot with Brief In Support by TiVo, Inc.. (Attachments: # 1 Exhibit A to 8th Motion# 2 Exhibit Exhibit B to 8th motion# 3 Text of Proposed Order)(Buhay, William) Modified on 10/14/2005 (fmm). (Entered: 10/13/2005)

10/13/2005 26 REDOCKETED #25 MOTION AS Eighth MOTION for Extension of Time by 2 weeks to file response re: 1 MOTION for protective order and to Quash subpoenas or MOTION to Dismiss without prejudice the 1 MOTION for protective order and to Quash subpoenas by TiVo, Inc. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Proposed Order)(fmm) (Entered: 10/14/2005)

10/14/2005 27 RESPONSE in Opposition re 26 MOTION to Dismiss MOTION for Extension of Time to file response to re: 1 MOTION to Quash subpoenas MOTION for Extension of Time to file response to re: 1 MOTION to Quash subpoenas filed by Homer Knearl. (Schlossberg, Ellen) (Entered: 10/14/2005)

10/28/2005 28 RESPONSE in Opposition re 1 MOTION to Quash subpoenas and Reply Brief to the 26 Motion to Dismiss filed by TiVo, Inc.. (Attachments: # 1 Text of Proposed Order Proposed Order denying Defendants' Motion for Protective Order and to Quash Subpoena and Granting Plaintiff's Motion to Dismiss Defendants' Motion as Moot)(Buhay, William) Modified on 10/31/2005 to add document link (fmm). (Entered: 10/28/2005)

10/28/2005 29 AFFIDAVIT in Opposition re 1 MOTION to Quash subpoenas and related Exhibits supporting TiVo's Response to the Motion to Quash and TiVo's Motion to Dismiss filed by TiVo, Inc.. (Attachments: # 1 Exhibit Exhibit A# 2 Exhibit Exhibit B# 3 Exhibit Exhibit C# 4 Exhibit Exhibit D# 5 Exhibit Exhibit E# 6 Exhibit Part 1 of Exhibit F# 7 Exhibit Part 2 of Exhibit F# 8 Exhibit Part 3 of Exhibit F)(Buhay, William) (Entered: 10/28/2005)

10/28/2005 30 AFFIDAVIT in Opposition re 1 MOTION to Quash subpoenas The Affidavit is actually a Declaration which attaches the Exhibits relied upon by TiVo filed by TiVo, Inc.. (Attachments: # 1 Exhibit Exhibit A - Filed Under Seal# 2 Exhibit Exhibit B# 3 Exhibit Exhibit C# 4 Exhibit Exhibit D# 5 Exhibit Exhibit E# 6 Exhibit Part 1 of Exhibit F# 7 Exhibit Part 2 of Exhibit F# 8 Exhibit Part 3 of Exhibit F)(Buhay, William) (Entered: 10/28/2005)

10/28/2005 31 MOTION to File Exhibit A to 29 Affidavit and 30 Affidavit Under Seal by TiVo, Inc. (Attachments: # 1 Proposed Order)(fmm) (Entered: 10/31/2005)

10/28/2005 32 Exhibit A to 29 Affidavit and 30 Affidavit by TiVo, Inc. (---FILED UNDER SEAL---) (fmm) (Entered: 10/31/2005)

10/28/2005 -- Miscellaneous Case Terminated. Case converted to 1:05-cv-2799. (kt) (Entered: 10/31/2005)

10/31/2005 33 First MOTION to Supplement 28 Response in Opposition to Motion,, 29 Affidavit in Opposition to

Motion, Motion for Leave to Supplement Response with Additional Exhibits with Brief In Support by TiVo, Inc.. (Attachments: # 1 Exhibit G-1# 2 Exhibit G-2# 3 Exhibit G-3# 4 Exhibit H-1# 5 Exhibit H-2# 6 Text of Proposed Order Granting Leave)(Buhay, William) (Entered: 10/31/2005)

02/06/2006 34

NOTICE Of Filing TiVo's Response to Motion to Quash by TiVo, Inc. re 28 Response in Opposition to Motion, Notice of Filing of Colorado Order (Attachments: # 1 Exhibit Colorado Order)(Buhay, William) (Entered: 02/06/2006)

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US District Court Civil Docket

U.S. District - Texas Eastern
(Marshall)

2:04cv1

Tivo Inc v. Echostar Comm, et al

This case was retrieved from the court on Friday, June 01, 2007

Date Filed: 01/05/2004
Assigned To: Judge David Folsom
Referred To: Magistrate Judge Caroline Craven
Nature of suit: Patent (830)
Cause: Patent Infringement
Lead Docket: None
Other Docket: 5:05-cv-00081-DF
Jurisdiction: Federal Question

Class Code: CLOSED, APPEAL, FRC, JURY, MREFHM, PATENT
Closed: yes
Statute: 35:271
Jury Demand: Both
Demand Amount: \$0
NOS
Description: Patent

Litigants

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Counter Claimant

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Echostar Technologies Corporation
Counter Claimant

Echosphere Limited Liability Company
Counter Claimant

Tivo Inc A Delaware Corporation
Counter Defendant

Date	#	Proceeding Text
01/05/2004	1	Original Complaint with JURY DEMAND filed. Cause: 35:271 Patent Infringement (poa) (Entered: 01/07/2004)
01/05/2004	--	Demand for jury trial by TIVO Inc (poa) (Entered: 01/07/2004)
01/05/2004	--	Magistrate consent forms mailed to TIVO Inc (poa) (Entered: 01/07/2004)
01/05/2004	2	Form mailed to Commissioner of Patents and Trademarks. (poa) (Entered: 01/07/2004)
01/09/2004	--	Summons(es) issued for Echostar Comm, Echostar DBS Corp & given to atty's runner (ktd) (Entered: 01/09/2004)
01/15/2004	3	Amended complaint by TIVO Inc , (Answer due 1/26/04 for Echostar DBS Corp, for Echostar

Comm) amending [1-1] complaint adding dfts EchoStar Tech Corp, Echosphere Ltd Liab (ktd) (Entered: 01/15/2004)

01/15/2004 -- Summons(es) issued for EchoStar Tech Corp, Echosphere Ltd Liab & given to pla's runner (ktd) (Entered: 01/15/2004)

01/15/2004 6 Form mailed to Commissioner of Patents and Trademarks. (ktd) Additional attachment(s) added on 1/28/2005 (ehs,). (Entered: 01/22/2004)

01/20/2004 4 Return of service executed as to Echostar DBS Corp 1/12/04 Answer due on 2/2/04 for Echostar DBS Corp (ktd) Additional attachment(s) added on 1/28/2005 (ehs,). (Entered: 01/21/2004)

01/20/2004 5 Return of service executed as to Echostar Comm 1/12/04 Answer due on 2/2/04 for Echostar Comm (ktd) Additional attachment(s) added on 1/28/2005 (ehs,). (Entered: 01/21/2004)

01/26/2004 7 Return of service executed as to EchoStar Tech Corp, Echosphere Ltd Liab 1/16/04 Answer due on 2/5/04 for EchoStar Tech Corp, for Echosphere Ltd Liab (ktd) Additional attachment(s) added on 1/28/2005 (ehs,). (Entered: 01/27/2004)

01/29/2004 8 Secty's Return of service executed as to Echostar DBS Corp 1/20/04 Answer due on 2/9/04 for Echostar DBS Corp (ktd) Additional attachment(s) added on 1/28/2005 (ehs,). (Entered: 01/30/2004)

01/29/2004 9 Secty's Return of service executed as to Echostar Comm 1/20/04 Answer due on 2/9/04 for Echostar Comm (ktd) Additional attachment(s) added on 1/28/2005 (ehs,). (Entered: 01/30/2004)

02/04/2004 10 Secretary of State certificate of service served upon Echosphere Ltd Liab on 1/28/04 (poa) (Entered: 02/04/2004)

02/05/2004 11 Stipulation to extend time to close of business on 3/1/04 for dft's answer or response (ktd) (Entered: 02/05/2004)

02/09/2004 12 Secretary's Return of Service Executed as to EchoStar Technologies Corporation by c/rrr mail on 1/27/2004, answer due: 2/16/2004. (ktd,) (Entered: 02/13/2004)

02/27/2004 13 APPLICATION to Appear Pro Hac Vice by Attorney Rachel Krevans for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation and Echosphere Limited Liability Company. (ktd,) (Entered: 03/01/2004)

02/27/2004 14 APPLICATION to Appear Pro Hac Vice by Attorney Zachariah A. Higgins for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation and Echosphere Limited Liability Company. (ktd,) (Entered: 03/01/2004)

02/27/2004 15 APPLICATION to Appear Pro Hac Vice by Attorney Paul A. Friedman for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation and Echosphere Limited Liability Company. (ktd,) (Entered: 03/01/2004)

02/27/2004 16 APPLICATION to Appear Pro Hac Vice by Attorney Harold J. McElhinny for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation and Echosphere Limited Liability Company. (ktd,) (Entered: 03/01/2004)

03/01/2004 -- Pro Hac Vice Filing fee paid by McElhinny; Krevans; Higgins; Friedman; Fee: \$100., receipt number: 102101 (ktd,) (Entered: 03/01/2004)

03/01/2004 17 CORPORATE DISCLOSURE STATEMENT filed by EchoStar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, Echostar DBS Corporation (poa,) (Entered: 03/02/2004)

03/01/2004 18 Filed in Texarkana ANSWER to Amended Complaint ; COUNTERCLAIM against TIVO Inc for declaratory relief of invalidity, non-infringement and unenforceability by EchoStar Technologies Corporation, Echosphere Limited Liability Company.(ktd,) (Entered: 03/02/2004)

03/01/2004 19 MOTION to Change Venue to the Northern District Of California, MOTION to Dismiss by EchoStar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, Echostar DBS Corporation. (poa,) (Entered: 03/02/2004)

03/05/2004 20 REPLY to 18 Answer to Amended Complaint, Counterclaim by TIVO Inc. (poa,) (Entered: 03/09/2004)

03/05/2004 21 APPLICATION to Appear Pro Hac Vice by Attorney Richard E Lyon for TIVO Inc, Perry M Goldberg for TIVO Inc, Ben Yorks for TIVO Inc, Morgan Chu for TIVO Inc. (ktd,) (Entered: 03/09/2004)

03/05/2004 -- Pro Hac Vice Filing fee paid by Chu; Goldberg; Yorks; Lyon; Fee: \$100., receipt number: 102128 (ktd,) (Entered: 03/09/2004)

03/16/2004 22 APPLICATION to Appear Pro Hac Vice by Attorney Adam S. Hoffman for TIVO Inc and TIVO Inc. (mpv,) (Entered: 03/17/2004)

03/16/2004 -- Pro Hac Vice Filing fee paid by Adam S Hoffman; Fee: \$25, receipt number: 102267 (mpv,) (Entered: 03/17/2004)

03/17/2004 23 MOTION for Leave to exceed page limit for pltf to file its oppositions to defts' motion to transfer and dismiss by TIVO Inc. (mll,) (Entered: 03/22/2004)

03/26/2004 24 ORDER granting 23 Motion for Leave to File Excess Pages for its oppositions to dfts' motion to transfer or dismiss. Signed by Judge David Folsom on 3/24/04. (ktd,) (Entered: 03/26/2004)

03/26/2004 25 RESPONSE in Opposition re 19 MOTION to Change Venue filed by TIVO Inc.(exhibits not scanned) (ktd,) (Entered: 03/26/2004)

03/26/2004 26 RESPONSE in Opposition re 19 MOTION to Dismiss filed by TIVO Inc. (ktd,) (Exhibits not scanned) Modified on 3/26/2004 (ktd,). Additional attachment(s) added on 2/15/2005 (ehs,). (Entered: 03/26/2004)

04/05/2004 27 AGREED MOTION for Defendants to File Replies to Plaintiff's Oppositions to Defendant's Motion to Transfer and Dismiss, by EchoStar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, Echostar DBS Corporation. (kjr,) (Entered: 04/05/2004)

04/05/2004 28 REPLY to Response to Motion re 19 MOTION to Change Venue MOTION to Dismiss filed by EchoStar defendants. (ktd,) (Entered: 04/07/2004)

04/05/2004 29 REPLY to Response to Motion re 19 MOTION to Change Venue MOTION to Dismiss filed by "EchoStar defendants". (ktd,) (Entered: 04/07/2004)

04/12/2004 30 AGREED MOTION for Leave to File Excess Pages for TIVO's Sur-Reply in Support of its Opposition to Motion to Dismiss, by TIVO Inc. (kjr,) (Entered: 04/13/2004)

04/12/2004 32 SUR-REPLY in Support of Opposition to Motion re 19 MOTION to Change Venue, filed by TIVO Inc. (kjr,) (Entered: 04/13/2004)

04/13/2004 31 ORDER granting 27 Dfts' Motion for Leave to File Excess Pages for Replies to Plaintiff's Oppositions to Dfts' Motion to Transfer and to Dismiss. Signed by Judge David Folsom on 4/12/04. (kjr,) (Entered: 04/13/2004)

04/16/2004 33 ORDER granting 30 Motion for Leave to File Excess Pages to file Sur-Reply in support of its opposition to motion to dismiss. Signed by Judge David Folsom on 4/14/04. cc: attys (poa,) (Entered: 04/16/2004)

04/16/2004 34 SUR-REPLY to Response to Motion re 19 MOTION to Dismiss filed by TIVO Inc. (ktd,) (Entered: 04/19/2004)

07/20/2004 35 MOTION for Hearing /Scheduling Conference, or in the alternative, Request for Order Requiring Parties to Hold Rule 26(f) Conference by TIVO Inc. (Attachments: # 1 Text of Proposed Order) (Chambers, Garret) (Entered: 07/20/2004)

07/22/2004 36 RESPONSE in Opposition re 35 MOTION for Hearing /Scheduling Conference, or in the alternative, Request for Order Requiring Parties to Hold Rule 26(f) Conference filed by EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Friedman, Paul) (Entered: 07/22/2004)

08/27/2004 37 ORDER to Conduct Rule 26(f) Conference. Signed by Judge David Folsom on 8/26/04. (mrm,) (Entered: 08/27/2004)

10/15/2004 38 NOTICE of Disclosure by TIVO Inc (Baxter, Samuel) (Entered: 10/15/2004)

10/20/2004 39 NOTICE of Disclosure by EchoStar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, Echostar DBS Corporation (Young, Damon) (Entered: 10/20/2004)

10/25/2004 40 NOTICE by EchoStar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, TIVO Inc of Joint Rule 26(f) Conference Report (Attachments: # 1Proposed Scheduling Order (Submitted by Defendant)# 2Proposed Scheduling Order (Submitted by Plaintiff Tivo))(Chambers, Garret) Modified on 10/26/2004 (fal). (Entered: 10/25/2004)

10/28/2004 -- Notified Attorney, Zachariah A. Higgins, Per GO 04-12, that we received several email bounce back by leaving 2 voice mail messages on his phone and his assistant phone on 10/20/04 and 10/21/04 and have no response from either as of 10/25/04. He is no longer with Morrison & Foerster.(djh,) (Entered: 10/28/2004)

11/03/2004 41 MOTION for Zachariah A Higgins to Withdraw as Attorney by "EchoStar defendants". (ktd,) (Entered: 11/04/2004)

11/12/2004 42 ORDER Setting Hearing on Motion 19 MOTION to Change Venue MOTION to Dismiss: Motion

Hearing set for 12/8/2004 11:00 AM in Ctrm 319 (Texarkana) before Judge David Folsom.. Signed by Judge David Folsom on 11/11/04. (mrm,) (Entered: 11/12/2004)

11/12/2004 43 ORDER granting 41 Motion to Withdraw as Attorney. Attorney Zachariah A. Higgins terminated . Signed by Judge David Folsom on 11/10/04. (mrm,) (Entered: 11/12/2004)

11/15/2004 44 ORDER The Court has set a Rule 16(b) Scheduling and Planning Conference for 12/8/2004 11:00 AM, following the court's hearing on Dfts Motion to Dismiss and Transfer in Ctrm 319 (Texarkana) before Judge David Folsom.. Signed by Judge David Folsom on 11/15/04. (mrm,) Modified on 11/18/2004 (mrm,). (Entered: 11/15/2004)

12/08/2004 45 Minute Entry for proceedings held before Judge David Folsom : Motion Hearing held on 12/8/2004 re 19 MOTION to Change Venue MOTION to Dismiss filed by Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company, Scheduling Conference held on 12/8/2004. (Court Reporter Libby Crawford.) (mrm,) (Entered: 12/08/2004)

12/13/2004 46 Joint MOTION for Protective Order by "EchoStar defendants", EchoStar Technologies Corporation, Echosphere Limited Liability Company, Echostar Communications Corporation, Echostar DBS Corporation, TIVO Inc. (Attachments: # 1 Exhibit A# 2 Text of Proposed Order) (Baxter, Samuel) (Entered: 12/13/2004)

12/22/2004 47 Proposed Pretrial Order [propoeed] scheduling order by "EchoStar defendants". (Friedman, Paul) Additional attachment(s) added on 12/22/2004 (rml,). (Entered: 12/22/2004)

01/04/2005 48 TRANSCRIPT of Proceedings (on motion to dismiss) held on 12/8/2004 before Judge David Folsom. Court Reporter: Libby Crawford. (sm,) (Entered: 01/04/2005)

02/07/2005 49 STIPULATED PROTECTIVE ORDER granting 46 Motion for Protective Order . Signed by Judge David Folsom on 2/7/05. (mrm,) (Entered: 02/07/2005)

02/09/2005 50 APPLICATION to Appear Pro Hac Vice by Attorney Andrei Iancu for TIVO Inc. (rml,) (Entered: 02/10/2005)

02/09/2005 51 APPLICATION to Appear Pro Hac Vice by Attorney Alexander C D Giza for TIVO Inc. (rml,) (Entered: 02/10/2005)

02/10/2005 -- Pro Hac Vice Filing fee paid by Andrei Iancu; Fee: \$25, receipt number: 103810 (rml,) (Entered: 02/10/2005)

02/10/2005 -- Pro Hac Vice Filing fee paid by Alexander Giza; Fee: \$25, receipt number: 103811 (rml,) (Entered: 02/10/2005)

03/02/2005 52 ***FILED IN ERROR PLEASE IGNORE*** MOTION to Compel Interrogatory Response Filed by EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Friedman, Paul) Modified on 3/2/2005 (mpv,). Modified on 3/2/2005 (mpv,). (Entered: 03/02/2005)

03/02/2005 53 ***FILED IN ERROR; PLEASE IGNORE*** AFFIDAVIT in Support re 52 MOTION to Compel Interrogatory Response Filed filed by EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Exhibit C# 4 Exhibit D# 5 Exhibit E# 6 Exhibit F# 7 Exhibit G# 8 Exhibit H# 9 Exhibit I# 10 Exhibit J)(Friedman, Paul) Modified on 3/2/2005 (mpv,). (Entered: 03/02/2005)

03/02/2005 54 ***FILED IN ERROR; PLEASE IGNORE*** Additional Attachments to Main Document: 52 MOTION to Compel Interrogatory Response Filed.. (Friedman, Paul) Modified on 3/2/2005 (mpv,). (Entered: 03/02/2005)

03/02/2005 55 MOTION to Compel Interrogatory Response REPLACES DOCUMENT #'s 52, 53 & 54 by EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Affidavit of Paul A. Friedman in Support of Motion to Compel# 2 Exhibit A to the Declaration of Paul A. Friedman# 3 Exhibit B to the Declaration of Paul A. Friedman# 4 Exhibit C to the Declaration of Paul A. Friedman# 5 Exhibit D to the Declaration of Paul A. Friedman# 6 Exhibit E to the Declaration of Paul A. Friedman# 7 Exhibit F to the Declaration of Paul A. Friedman# 8 Exhibit G to the Declaration of Paul A. Friedman# 9 Exhibit H to the Declaration of Paul A. Friedman# 10 Exhibit I to the Declaration of Paul A. Friedman# 11 Exhibit J to the Declaration of Paul A. Friedman# 12 Text of Proposed Order Granting Motion to Compel)(Friedman, Paul) Modified on 3/2/2005 (mpv,). (Entered: 03/02/2005)

03/02/2005 -- ***FILED IN ERROR. Document # 52, 53, 54, Motion to Compel, Affidavit and Additional Attachments. PLEASE IGNORE. SEE #55 for correct document *** (mpv,) (Entered: 03/02/2005)

03/03/2005 56 SCHEDULING ORDER: Initial Pretrial Conference set for 9/1/2005 10:00 AM in Ctrm 319 (Texarkana) before Judge David Folsom. Amended Pleadings due by 2/1/2005. Discovery due by 6/10/2005. Joinder of Parties due by 2/1/2005. Jury instructions due by 9/20/2005 Jury Selection set for 10/4/2005 10:00 AM in Ctrm 106 (Marshall) before Judge David Folsom.

Mediation Completion due by 8/24/2005. Motions due by 6/30/2005. Proposed Pretrial Order due by 8/18/2005. Claim Construction hearing 5/6/05 at 9:00 AM. Signed by Judge David Folsom on 3/3/05. (mpv,) (Entered: 03/03/2005)

03/09/2005 57 ORDER ON DEFENDANT'S MOTION TO DISMISS AND TRANSFER; denying 19 Motion to Change Venue, denying 19 Motion to Dismiss; Therefore, the court ORDERS that Dfts Motion to Dismiss is DENIED as to ECC and DENIED WITHOUT PREJUDICE as to EDBS. The court further ORDERS that Dfts Motion to Transfer is DENIED . Signed by Judge David Folsom on 3/9/05. (mrm,) (Entered: 03/09/2005)

03/11/2005 58 MOTION for Extension of Time to File Response/Reply Unopposed Motion for Extension of Time to Respond to Echostar's Motion to Compel Interrogatory Response by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Baxter, Samuel) (Entered: 03/11/2005)

03/16/2005 59 ***FILED IN ERROR. PLEASE IGNORE. NO CERTIFICATE OF SERVICE. SEE DOC #63.*** RESPONSE in Opposition re 55 MOTION to Compel Interrogatory Response filed by TIVO Inc. (Attachments: # 1 Declaration of Richard E. Lyon in Support of Opposition# 2 Ex. 1 to Lyon Decl.# 3 Ex. 2 to Lyon Decl.# 4 Ex. 3 to Lyon Decl.# 5 Ex. 4 to Lyon Decl.# 6 Ex. 5 to Lyon Decl.# 7 Ex. 6 to Lyon Decl.# 8 Ex. 7 to Lyon Decl.# 9 Ex. 8 to Lyon Decl.# 10 Ex. 9 to Lyon Decl.# 11 Ex. 10 to Lyon Decl.# 12 Ex. 11 to Lyon Decl.# 13 Ex. 12 to Lyon Decl.# 14 Ex. 13 to Lyon Decl.# 15 Ex. 14 to Lyon Decl.# 16 Ex. 15 to Lyon Decl.# 17 Ex. 16 to Lyon Decl.# 18 Ex. 17 to Lyon Decl.# 19 Ex. 18 to Lyon Decl.# 20 Ex. 19 to Lyon Decl.# 21 Ex. 20 to Lyon Decl.# 22 Proposed Order Denying Motion to Compel)(Lyon, Richard) Modified on 3/17/2005 (fal,). (Entered: 03/16/2005)

03/16/2005 60 ORDER GRANTING TIVO'S UNOPPOSED MOTION FOR EXTENSION OF TIME; granting 58 Motion for Extension of Time to File Response/Reply re 55 MOTION to Compel Interrogatory Response Responses due by 3/16/2005. Signed by Judge David Folsom on 3/16/05. (mrm,) (Entered: 03/16/2005)

03/16/2005 61 ***FILED IN ERROR. PLEASE IGNORE. NO CERTIFICATE OF SERVICE. SEE DOC #62.*** MOTION to Amend/Correct 56 Scheduling Order,, by TIVO Inc. (Attachments: # 1 Affidavit Declaration of Richard Lyon in support of Motion to Amend# 2 Exhibit 1# 3 Exhibit 2# 4 Exhibit 3# 5 Exhibit 4# 6 Exhibit 5# 7 Exhibit 6# 8 Exhibit 7# 9 Exhibit 8# 10 Exhibit 9# 11 Exhibit 10# 12 Exhibit 11# 13 Exhibit 12# 14 Exhibit 13# 15 Exhibit 14# 16 Exhibit 15# 17 Exhibit 16# 18 Exhibit 17# 19 Text of Proposed Order)(Giza, Alexander) Modified on 3/17/2005 (fal,). (Entered: 03/16/2005)

03/17/2005 62 ***REPLACES DOC #61.*** MOTION to Amend/Correct 56 Scheduling Order,, by TIVO Inc. (Attachments: # 1 Declaration of Richard Lyon in support of Motion to Amend# 2 Exhibit 1-17 to Lyon Decl# 3 Text of Proposed Order)(Giza, Alexander) Modified on 3/17/2005 (fal,). (Entered: 03/17/2005)

03/17/2005 63 ***REPLACES DOC #59.*** RESPONSE in Opposition re 55 MOTION to Compel Interrogatory Response filed by TIVO Inc. (Attachments: # 1 Declaration of Richard E. Lyon in Support of Opposition# 2 Ex. 1 to Lyon Decl.# 3 Ex. 2 to Lyon Decl.# 4 Ex. 3 to Lyon Decl.# 5 Ex. 4 to Lyon Decl.# 6 Ex. 5 to Lyon Decl.# 7 Ex. 6 to Lyon Decl.# 8 Ex. 7 to Lyon Decl.# 9 Ex. 8 to Lyon Decl.# 10 Ex. 9 to Lyon Decl.# 11 Ex. 10 to Lyon Decl.# 12 Ex. 11 to Lyon Decl.# 13 Ex. 12 to Lyon Decl.# 14 Ex. 13 to Lyon Decl.# 15 Ex. 14 to Lyon Decl.# 16 Ex. 15 to Lyon Decl.# 17 Ex. 16 to Lyon Decl.# 18 Ex. 17 to Lyon Decl.# 19 Ex. 18 to Lyon Decl.# 20 Ex. 19 to Lyon Decl.# 21 Ex. 20 to Lyon Decl.# 22 Text of Proposed Order Denying Motion to Compel)(Lyon, Richard) Modified on 3/17/2005 (fal,). (Entered: 03/17/2005)

03/17/2005 64 MOTION to Compel EchoStar's Production of Documents, Interrogatory Responses, and Attendance at Deposition by TIVO Inc. (Attachments: # 1 Proposed Order# 2 Declaration of Richard E. Lyon# 3 Exhibit 1# 4 Exhibit 2# 5 Exhibit 3# 6 Exhibit 4# 7 Exhibit 5# 8 Exhibit 6# 9 Exhibit 7# 10 Exhibit 8# 11 Exhibit 9# 12 Exhibit 10# 13 Exhibit 11# 14 Exhibit 12# 15 Exhibit 13# 16 Exhibit 14# 17 Exhibit 15# 18 Exhibit 16# 19 Exhibit 17# 20 Exhibit 18# 21 Exhibit 19# 22 Exhibit 20# 23 Exhibit 21# 24 Exhibit 22# 25 Exhibit 23)(Lyon, Richard) (Entered: 03/17/2005)

03/21/2005 65 ANSWER to Amended Complaint for Patent Infringement, COUNTERCLAIM for Declaratory Relief of Invalidity, Non-Infringement and Unenforceability (counterclaim filed by Defendant Echostar Communications Corporation only) against TIVO Inc by Echostar Communications Corporation, Echostar DBS Corporation.(Friedman, Paul) (Entered: 03/21/2005)

03/21/2005 66 RESPONSE in Opposition re 62 MOTION to Amend/Correct 56 Scheduling Order,, filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Ann Citrin# 2 Affidavit of Paul A. Friedman# 3 Exhibit 1 to Friedman Decl.# 4 Exhibit 2 to Friedman Decl.# 5 Exhibit 3 to Friedman Decl.# 6 Exhibit 4 to Friedman Decl.# 7 Exhibit 5 to Friedman Decl.)(Friedman, Paul) (Entered: 03/21/2005)

03/23/2005 67 REPLY to Response to Motion re 55 MOTION to Compel Interrogatory Response filed by EchoStar

Technologies Corporation, Echosphere Limited Liability Company. (Friedman, Paul) (Entered: 03/23/2005)

03/24/2005 68 REPLY to Response to Motion re 62 MOTION to Amend/Correct 56 Scheduling Order,, filed by TIVO Inc. (Baxter, Samuel) (Entered: 03/24/2005)

03/28/2005 69 Joint MOTION to Amend/Correct 56 Scheduling Order,, by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Giza, Alexander) (Entered: 03/28/2005)

03/29/2005 70 RESPONSE in Opposition re 64 MOTION to Compel EchoStar's Production of Documents, Interrogatory Responses, and Attendance at Deposition filed by "EchoStar defendants". (Attachments: # 1 Affidavit Citrin Decl# 2 Affidavit Friedman Decl# 3 Exhibit A to Friedman Decl# 4 Exhibit B to Friedman Decl# 5 Exhibit C to Friedman Decl# 6 Exhibit D to Friedman Decl# 7 Exhibit E to Friedman Decl# 8 Exhibit F to Friedman Decl# 9 Exhibit G to Friedman Decl# 10 Exhibit H to Friedman Decl# 11 Exhibit I to Friedman Decl# 12 Exhibit J to Friedman Decl# 13 Exhibit K to Friedman Decl# 14 Exhibit L to Friedman Decl# 15 Exhibit M to Friedman Decl# 16 Exhibit N to Friedman Decl# 17 Exhibit O to Friedman Decl# 18 Exhibit P to Friedman Decl)(Friedman, Paul) (Entered: 03/29/2005)

03/30/2005 71 APPLICATION to Appear Pro Hac Vice by Attorney Jason A Crotty for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation; Echosphere Limited Liability Company. (rml,) (Entered: 03/30/2005)

03/30/2005 -- Pro Hac Vice Filing fee paid by Jason Crotty; Fee: \$25, receipt number: 5-1-60 (rml,) (Entered: 03/30/2005)

03/30/2005 72 APPLICATION to Appear Pro Hac Vice by Attorney Karl J Kramer for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation; Echosphere Limited Liability Company. (rml,) (Entered: 03/30/2005)

03/30/2005 -- Pro Hac Vice Filing fee paid by Karl Kramer; Fee: \$25, receipt number: 5-1-061 (rml,) (Entered: 03/30/2005)

03/30/2005 73 AMENDMENT TO SCHEDULING ORDER: Claim Construction Brief due at 4:00 pm PST on 4/11/05; Opposition Claim Construction Briefs due 5/9/05; Claim Construction hearing on 5/23/05; Discovery due by 6/24/2005.. Signed by Judge David Folsom on 3/30/05. (mrm,) (Entered: 03/30/2005)

03/30/2005 74 RESPONSE in Opposition re 55 MOTION to Compel Interrogatory Response (Sur-Reply) filed by TIVO Inc. (Attachments: # 1 Declaration of Richard E. Lyon in Support of Sur-Reply# 2 Ex. 1# 3 Ex. 2# 4 Ex. 3# 5 Ex. 4# 6 Ex. 5)(Lyon, Richard) (Entered: 03/30/2005)

04/01/2005 75 APPLICATION to Appear Pro Hac Vice by Attorney Robert M Harkins, Jr for Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation; Echosphere Limited Liability Company. (rml,) (Entered: 04/01/2005)

04/01/2005 -- Pro Hac Vice Filing fee paid by Robert Harkins Jr; Fee: \$25, receipt number: 5-1-67 (rml,) (Entered: 04/01/2005)

04/04/2005 76 APPLICATION to Appear Pro Hac Vice by Attorney Ann Critin for "EchoStar defendants"; Echostar Communications Corporation; Echostar DBS Corporation; EchoStar Technologies Corporation; Echosphere Limited Liability Company;(rml,) (Entered: 04/04/2005)

04/04/2005 -- Pro Hac Vice Filing fee paid by Ann Critin; Fee: \$25, receipt number: 5-1-071 (rml,) (Entered: 04/04/2005)

04/05/2005 77 REPLY to Response to Motion re 64 MOTION to Compel EchoStar's Production of Documents, Interrogatory Responses, and Attendance at Deposition filed by TIVO Inc. (Attachments: # 1 Declaration of Richard E. Lyon in support of Reply Brief)(Lyon, Richard) (Entered: 04/05/2005)

04/11/2005 78 REPLY to EchoStar Communication Corporation's Counterclaim ANSWER to Counterclaim by TIVO Inc.(Lyon, Richard) (Entered: 04/11/2005)

04/11/2005 79 MOTION In Support of EchoStar's Opening Claim Construction Brief by "EchoStar defendants". (Attachments: # 1 Affidavit Harkins decl# 2 Exhibit a to Harkins# 3 Exhibit B to Harkins Decl# 4 Exhibit Harkins decl exhs C to M# 5 Affidavit Reader Decl and Exhs.# 6 Affidavit Rhyne Decl# 7 Text of Proposed Order Proposed Order)(Harkins, Robert) (Entered: 04/11/2005)

04/11/2005 80 MOTION for Hearing re TiVo's Opening Claim Construction Brief by TIVO Inc. (Attachments: # 1 Affidavit Giza Declaration and Exs. 1-2# 2 Affidavit Exs. 3-9 (Giza Decl.)# 3 Text of Proposed Order)(Giza, Alexander) (Entered: 04/11/2005)

04/18/2005 81 SEALED Second MOTION to Compel by "EchoStar defendants". (mpv,) (Entered: 04/18/2005)

04/19/2005 82 ORDER REFERRING MOTION to the Honorable Harry W. McKee: [81] MOTION to Compel filed by "EchoStar defendants", . Signed by Judge David Folsom on 4/19/05. (mrm,) (Entered: 04/19/2005)

04/19/2005)

04/26/2005 83 MOTION for Leave to File First Amended Answers to First Amended Complaint and Counterclaims, Unopposed by Tivo, by Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Text of Proposed Order)(Friedman, Paul) (Entered: 04/26/2005)

04/27/2005 84 RESPONSE in Opposition re [81] MOTION to Compel filed by TIVO Inc. (Attachments: # 1 Denny Decl. in support of Opposition# 2 Lyon Decl. in support of Opposition# 3 Exhibits to Lyon Decl.# 4 Text of Proposed Order)(Lyon, Richard) (Entered: 04/27/2005)

04/29/2005 85 Third MOTION to Compel by "EchoStar defendants". (Attachments: # 1 Affidavit of Jason A. Crotty# 2 Exhibit to J. Crotty Decl.# 3 Text of Proposed Order)(Friedman, Paul) (Entered: 04/29/2005)

05/04/2005 86 REPLY to Response to Motion re [81] MOTION to Compel (Second Set) filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Paul A. Friedman# 2 Exhibit 1-3# 3 Exhibit 4# 4 Exhibit 5-6)(Friedman, Paul) (Entered: 05/04/2005)

05/06/2005 87 SEALED MOTION to Compel Deposition Testimony by Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (mpv,) (Entered: 05/09/2005)

05/06/2005 91 Minute Entry for proceedings held before Judge H. W. McKee : Telephone Conference on Motion to Compel held on 5/6/2005. (Court Reporter M. Morris.) (mjm,) (Entered: 05/10/2005)

05/09/2005 88 Fifth MOTION to Compel by "EchoStar defendants". (Attachments: # 1 Affidavit of Jason A. Crotty# 2 Exhibit A# 3 Exhibit B# 4 Exhibit C# 5 Text of Proposed Order)(Friedman, Paul) (Entered: 05/09/2005)

05/09/2005 89 Joint MOTION to Amend/Correct Scheduling Order by TIVO Inc. (Attachments: # 1 Text of Proposed Order Proposed Order Amending Scheduling Order)(Lyon, Richard) (Entered: 05/09/2005)

05/10/2005 90 NOTICE of Hearing:Motions Hearing set for 5/19/2005 02:00 PM before Magistrate Judge H. W. McKee in Tyler. (mjm,) (Entered: 05/10/2005)

05/11/2005 92 AMENDED SCHEDULING ORDER: 1. The parties will file their opposition claim construction briefs on 5/12/05. 2. Disclosure of expert testimony shall be made by the party with burden of proof on the issue by 5/16/05. Thereafter, the other party shall have until 6/6/05, to disclose rebuttal expert testimony.3. Discovery due by 6/27/2005. 4. Motions to transfer, motions to dismiss, motions for summary judgment or other dispositive motions and Daubert motions due by 7/5/2005. 5. All other dates shall remain unchanged. Signed by Judge David Folsom on 5/11/05. (mrm,) (Entered: 05/11/2005)

05/11/2005 93 RESPONSE in Opposition re 85 Third MOTION to Compel filed by TIVO Inc. (Attachments: # 1 Lyon Declaration in support of Opposition# 2 Exhibits 1-2 to Lyon Declaration# 3 Exhibits 3-8 to Lyon Declaration# 4 Denny Declaration in support of Opposition# 5 Text of Proposed Order Denying Motion to Compel)(Lyon, Richard) (Entered: 05/11/2005)

05/11/2005 94 RESPONSE in Opposition re [81] MOTION to Compel (Sur-Reply) filed by TIVO Inc. (Attachments: # 1 Lyon Declaration in support of Sur-Reply# 2 Exhibits to Lyon Declaration# 3 Denny Declaration in support of Sur-Reply)(Lyon, Richard) (Entered: 05/11/2005)

05/12/2005 95 ORDER GRANTING AGREED MOTION TO ALLOW ECHOSTAR LEAVE TO FILE FIRST AMENDED ANSWERS TO FIRST AMENDED COMPLAINT AND COUNTERCLAIMS; granting 83 Motion for Leave to File First Amended Answers to First Amended Complaint and Counterclaims. Signed by Judge David Folsom on 5/12/05. (mrm,) (Entered: 05/12/2005)

05/12/2005 96 ***FILED IN ERROR. SEE CORRECTED DOCUMENT #97*** MOTION for Hearing Opposition Claim Construction Brief by TIVO Inc. (Attachments: # 1 Affidavit Declaration of Dr. Gibson# 2 Affidavit Declaration of Giza and Ex. 1# 3 Exhibit Giza Decl. Exs. 2-4# 4 Exhibit Giza Decl. Exs. 5-6)(Giza, Alexander) Modified on 5/13/2005 (ehs,). (Entered: 05/12/2005)

05/12/2005 97 ***REPLACES DOCUMENT #96 WHICH WAS FILED IN ERROR*** RESPONSE in Opposition re 79 MOTION In Support of EchoStar's Opening Claim Construction Brief filed by TIVO Inc. (Attachments: # 1 Affidavit Declaration of Dr. Gibson# 2 Affidavit Giza Decl. and Ex. 1# 3 Exhibit Giza Decl. Exs. 2-4# 4 Exhibit Giza Decl. Exs 5-6)(Giza, Alexander) Modified on 5/13/2005 (ehs,). (Entered: 05/12/2005)

05/12/2005 98 SEALED RESPONSE to 80 TIVO's Opening Brief on Claim Construction with attached Appendices and Declaration by "EchoStar defendants". (mpv,) (Entered: 05/13/2005)

05/16/2005 99 MOTION to Continue the May 23, 2005 Claim Construction Hearing by "EchoStar defendants". (Attachments: # 1 Exhibit A# 2 Text of Proposed Order)(Friedman, Paul) (Entered: 05/16/2005)

05/16/2005)

05/16/2005 100 Joint MOTION to Amend/Correct 92 Scheduling Order,, Case Scheduling Conference; Expedited Treatment of EchoStar's Motion to Continue The Claim Construction Hearing by TIVO Inc, EchoStar Technologies Corporation, Echosphere Limited Liability Company, TIVO Inc(a Delaware corporation), Echostar Communications Corporation, Echostar DBS Corporation, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Text of Proposed Order)(Friedman, Paul) (Entered: 05/16/2005)

05/16/2005 101 REPLY to Response to Motion re 85 Third MOTION to Compel filed by "EchoStar defendants". (Friedman, Paul) (Entered: 05/16/2005)

05/17/2005 102 ORDER REFERRING MOTION to the Honorable Harry W. McKee: 85 Third MOTION to Compel filed by "EchoStar defendants",, 55 MOTION to Compel Interrogatory Response filed by EchoStar Technologies Corporation,, Echosphere Limited Liability Company,, [87] MOTION to Compel filed by Echostar Communications Corporation,, Echostar DBS Corporation,, EchoStar Technologies Corporation,, Echosphere Limited Liability Company,, 88 Fifth MOTION to Compel filed by "EchoStar defendants",, 64 MOTION to Compel EchoStar's Production of Documents, Interrogatory Responses, and Attendance at Deposition filed by TIVO Inc, . Signed by Judge David Folsom on 5/16/05. (mrm,) (Entered: 05/17/2005)

05/18/2005 103 RESPONSE in Opposition re 100 Joint MOTION to Amend/Correct 92 Scheduling Order,, Case Scheduling Conference; Expedited Treatment of EchoStar's Motion to Continue The Claim Construction Hearing filed by TIVO Inc. (Attachments: # 1 Exhibit Exhibits A, B and C)(Lyon, Richard) (Entered: 05/18/2005)

05/18/2005 104 ORDER denying 99 Motion to Continue the 5/23/05 Claim Construction Hearing. Signed by Judge David Folsom on 5/18/05. (mrm,) (Entered: 05/18/2005)

05/18/2005 105 FILED UNDER SEAL - Opposition to def't's [87] MOTION to Compel deposition testimony and Cross-Motion for Protective Order filed by TIVO Inc. (ehs) (Entered: 05/19/2005)

05/20/2005 106 SEALED REPLY to Response to Motion re [87] MOTION to Compel Deposition Testimony and Opposition to 105 Cross-Motion for Protective Order filed by "EchoStar defendants". (mpv,) (Entered: 05/20/2005)

05/23/2005 107 RESPONSE in Opposition re 88 Fifth MOTION to Compel filed by TIVO Inc. (Attachments: # 1 Declaration of Richard E. Lyon in Support of Opposition to Defendants' Fifth Motion to Compel) (Lyon, Richard) (Entered: 05/23/2005)

05/23/2005 108 RESPONSE in Opposition re 85 Third MOTION to Compel (Sur-Reply) filed by TIVO Inc(a Delaware corporation). (Attachments: # 1 Declaration of Richard E. Lyon in Support of Sur-Reply to Defendants' Third Motion to Compel# 2 Exhibits to Lyon Declaration)(Lyon, Richard) (Entered: 05/23/2005)

05/23/2005 109 NOTICE of Hearing on Motions: [87] MOTION to Compel, 88 Fifth MOTION to Compel, 64 MOTION to Compel EchoStar's Production of Documents, Interrogatory Responses, and Attendance at Deposition, 55 MOTION to Compel Interrogatory Response, [81] MOTION to Compel, 85 Third MOTION to Compel: Motion Hearing set for 5/24/2005 09:30 AM in Tyler before Magistrate Judge H. W. McKee. (mjm,) (Entered: 05/23/2005)

05/23/2005 110 FILED UNDER SEAL - Sur-Reply in Opposition to Def't's re 88 Fifth MOTION to Compel testimony and Reply in Support of Cross-Motion for protective order filed by TIVO Inc. (ehs) (Entered: 05/23/2005)

05/23/2005 111 Minute Entry for proceedings held before Judge David Folsom : Markman Hearing held on 5/23/2005. (Court Reporter Libby Crawford.) (mrm,) (Entered: 05/24/2005)

05/24/2005 112 Minute Entry for proceedings held before Judge H. W. McKee : Motions Hearing held on 5/24/2005. The parties state that they believe the motions have been resolved. The Court will make a ruling after parties send in a status update by 6/17/2005 regarding motions (#55, 64, 81, 85, 87, 88). (Court Reporter Jan Mason.) (mjm,) (Entered: 05/24/2005)

05/24/2005 113 ORDER; The court, therefore, ORDERS that dfts shall have 10 days from the date of the claim construction hrg, or until 6/2/05, to file their responsive brief. The court further ORDERS that plf shall have 5 days to respond to dfts brief or until 6/7/05. The ptys briefs shall not exceed 10 pgs. The court further ORDERS the ptys shall file a Joint Claim Construction Chart with the court by 6/7/05. Signed by Judge David Folsom on 5/24/05. (mrm,) (Entered: 05/24/2005)

06/01/2005 114 RESPONSE to 95 Order on Motion for Leave to File, REPLY to Counterclaims of EchoStar Communications Corporation by TIVO Inc. (Lyon, Richard) (Entered: 06/01/2005)

06/01/2005 115 RESPONSE to 95 Order on Motion for Leave to File, REPLY to Counterclaims of EchoStar Technologies Corp. and Ecosphere Limited Liability Company by TIVO Inc. (Lyon, Richard)

(Entered: 06/01/2005)

06/02/2005 116 TRANSCRIPT of Proceedings/Markman Hearing held on 5/23/05 before Judge David Folsom. Court Reporter: Libby Crawford. (mpv,) (Entered: 06/02/2005)

06/02/2005 117 NOTICE by "EchoStar defendants" that EchoStar Will Not File Supplemental Claim Construction Briefing In Response to the Court's Order of May 24, 2005 (Kramer, Karl) (Entered: 06/02/2005)

06/02/2005 118 Sixth MOTION to Compel by "EchoStar defendants". (Attachments: # 1 Affidavit of Ann Citrin# 2 Exhibit A-1# 3 Exhibit J# 4 Exhibit K# 5 Exhibit L# 6 Text of Proposed Order)(Friedman, Paul) (Entered: 06/02/2005)

06/03/2005 119 TRANSCRIPT of Pretrial Hearing held on May 24, 2005 at 11:30 a.m. before Judge Harry W. McKee. Court Reporter: Jan Mason. (ehs) (Entered: 06/06/2005)

06/07/2005 120 STATUS REPORT JOINT CLAIM CONSTRUCTION CHART by TIVO Inc. (Giza, Alexander) (Entered: 06/07/2005)

06/10/2005 123 APPLICATION to Appear Pro Hac Vice by Attorney Christine W S Byrd for TIVO Inc. (ch,) (Entered: 06/16/2005)

06/10/2005 -- Pro Hac Vice Filing fee paid by Christine W.S. Byrd; Fee: \$25, receipt number: 2-1-351 (ch,) (Entered: 06/16/2005)

06/13/2005 121 Proposed Pretrial Order [proposed] Amendment to Scheduling Order by TIVO Inc, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Giza, Alexander) (Entered: 06/13/2005)

06/14/2005 122 MOTION for Extension of Time to File Response/Reply to EchoStar's Sixth Motion to Compel (Unopposed) by TIVO Inc. (Lyon, Richard) (Entered: 06/14/2005)

06/16/2005 124 RESPONSE in Opposition re 118 Sixth MOTION to Compel filed by TIVO Inc. (Attachments: # 1 Affidavit Declaration by Adam Hoffman In Support of Tivo's Opposition to EchoStar's Sixth Motion to Compel)(Lyon, Richard) (Entered: 06/16/2005)

06/20/2005 125 ORDER granting 122 Motion for Extension of Time to File Response to EchoStar's Sixth Motion to Compel. Responses due by 6/16/2005. Signed by Judge David Folsom on 6/20/05. (ehs) (Entered: 06/20/2005)

06/20/2005 126 STATUS REPORT REGARDING THE PARTIES' COMPROMISES ON PENDING MOTIONS TO COMPEL (DOCKET NOS. 55, 64, 81, 85, 87, and 88) by TIVO Inc, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Lyon, Richard) (Entered: 06/20/2005)

06/23/2005 127 REPLY to Response to Motion re 118 Sixth MOTION to Compel filed by "EchoStar defendants". (Friedman, Paul) (Entered: 06/23/2005)

06/27/2005 128 RESPONSE in Opposition re 118 Sixth MOTION to Compel Sur-Reply filed by TIVO Inc. (Lyon, Richard) (Entered: 06/27/2005)

06/28/2005 129 APPLICATION to Appear Pro Hac Vice by Attorney Michelle Armond for TIVO Inc. (ch,) (Entered: 07/07/2005)

07/01/2005 -- Pro Hac Vice Filing fee paid by Armond; Fee: \$25, receipt number: 2-1-427 (ch,) (Entered: 07/07/2005)

07/08/2005 130 ***FILED IN ERROR. PLEASE IGNORE. SEE DOC #131.*** MOTION to Compel Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions To Compel by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order [Proposed] Stipulated Order Regarding the Parties' Compromises on Pending Motions to Compel)(Kramer, Karl) Modified on 7/11/2005 (fal,). (Entered: 07/08/2005)

07/08/2005 131 ***REPLACES DOC #130.*** MOTION to Compel to Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions to Compel by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order [Proposed] Stipulated Order Regarding The Parties' Compromises on Pending Motions to Compel# 2 Affidavit Declaration of Karl J. Kramer in Support of Echostar's Motion to Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions to Compel# 3 Exhibit A# 4 Exhibit B# 5 Exhibit C# 6 Exhibit D# 7 Exhibit E# 8 Exhibit F# 9 Exhibit G) (Kramer, Karl) Modified on 7/11/2005 (fal,). (Entered: 07/08/2005)

07/08/2005 132 Seventh MOTION to Compel by "EchoStar defendants". (Attachments: # 1 Affidavit of Paul A. Friedman in Support of Motion# 2 Exhibit A# 3 Exhibit B# 4 Exhibit C# 5 Exhibit D# 6 Exhibit E# 7 Exhibit F# 8 Exhibit G1# 9 Exhibit G2# 10 Exhibit H# 11 Exhibit I# 12 Exhibit J# 13 Exhibit K# 14 Exhibit L# 15 Exhibit M# 16 Exhibit N# 17 Exhibit O# 18 Text of Proposed Order) (Friedman, Paul) (Entered: 07/08/2005)

07/11/2005 — ***FILED IN ERROR. PLEASE IGNORE Doc #130, Motion to Compel. Replaced with Doc #131.*** (fal,) (Entered: 07/11/2005)

07/11/2005 134 FILED UNDER SEAL - EXHIBIT C to #132 Seventh Motion to Compel by "EchoStar defendants", Echostar Communications Corporation, Echostar DBS Corporation, Echosphere Limited Liability Company.. (ehs) (Entered: 07/14/2005)

07/13/2005 133 ORDER REFERRING MOTIONS TO THE HONORABLE HARRY W. MCKEE: 131 MOTION to Compel to Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions to Compel filed by "EchoStar defendants",, 118 Sixth MOTION to Compel filed by "EchoStar defendants",, 132 Seventh MOTION to Compel filed by "EchoStar defendants", . Signed by Judge David Folsom on 7/13/05. (mrm,) (Entered: 07/13/2005)

07/15/2005 135 Eighth MOTION to Compel by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Friedman, Paul) Additional attachment(s) added on 7/15/2005 (sm,). (Entered: 07/15/2005)

07/15/2005 136 MOTION for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order Proposed Order# 2 Exhibit Kramer Decl Cover Sheet)(Kramer, Karl) (Entered: 07/15/2005)

07/15/2005 137 FILED UNDER SEAL EXHIBIT to doc # 136. (poa,) (Entered: 07/19/2005)

07/15/2005 141 ***Document modified to attach correct document*** FILED UNDER SEAL - EXHIBIT to EchoStar's Eighth Motion to Compel #135 by EchoStar Technologies Corporation. (ehs) Modified on 7/21/2005 (ehs) (Entered: 07/21/2005)

07/20/2005 138 ORDER REFERRING MOTION to the Honorable Harry W. McKee: 135 Eighth MOTION to Compel filed by "EchoStar defendants", . Signed by Judge David Folsom on 7/20/05. (mrm,) (Entered: 07/20/2005)

07/20/2005 139 RESPONSE in Opposition re 131 MOTION to Compel to Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions to Compel filed by TIVO Inc. (Attachments: # 1 Affidavit Hoffman Declaration and Exhibits A and B# 2 Affidavit Chambers Declaration# 3 Text of Proposed Order)(Lyon, Richard) (Entered: 07/20/2005)

07/20/2005 140 RESPONSE in Opposition re 132 Seventh MOTION to Compel filed by TIVO Inc. (Attachments: # 1 Affidavit Hoffman Declaration and Exhibits A to G)(Lyon, Richard) (Entered: 07/20/2005)

07/22/2005 142 NOTICE of Hearing: Discovery Hearing set for 7/29/2005 09:30 AM in Ctrm 210 (Tyler) before Magistrate Judge Harry W. McKee. (srg,) (Entered: 07/22/2005)

07/26/2005 143 NOTICE by "EchoStar defendants" Letter Brief to Judge McKee Regarding Completion of Ramsay Deposition (Kramer, Karl) (Entered: 07/26/2005)

07/26/2005 144 RESPONSE in Support re 131 MOTION to Compel to Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions to Compel filed by "EchoStar defendants". (Kramer, Karl) (Entered: 07/26/2005)

07/26/2005 145 REPLY to Response to Motion re 132 Seventh MOTION to Compel filed by "EchoStar defendants". (Attachments: # 1 Supplemental Declaration of Paul A. Friedman In Support of EchoStar's Seventh Motion to Compel# 2 Exhibit 1, Part 1 to Friedman Decl.# 3 Exhibit 1, Part 2 to Friedman Decl.# 4 Exhibit 1, Part 3 to Friedman Decl.# 5 Exhibit 1, Part 4 to Friedman Decl.# 6 Exhibit 1, Part 5 to Friedman Decl.# 7 Exhibit 1, Part 6 to Friedman Decl.# 8 Exhibit 1, Part 7 to Friedman Decl.# 9 Exhibit 1, Part 8 to Friedman Decl.)(Friedman, Paul) (Entered: 07/26/2005)

07/27/2005 146 NOTICE by "EchoStar defendants" Notice Removing EchoStar's Eighth Motion to Compel From Calendar (Kramer, Karl) (Entered: 07/27/2005)

07/27/2005 147 ***FILED IN ERROR. SEE CORRECTED DOCUMENT #149*** RESPONSE in Opposition re 136 MOTION for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents filed by TIVO Inc. (Attachments: # 1 Affidavit Giza Decl iso Opposition w/ Exs. 1-11# 2 Text of Proposed Order)(Giza, Alexander) Modified on 8/9/2005 (ehs,). (Entered: 07/27/2005)

07/27/2005 148 RESPONSE in Opposition re 135 Eighth MOTION to Compel filed by TIVO Inc. (Lyon, Richard) (Entered: 07/27/2005)

07/27/2005 149 ***REPLACES DOCUMENT #147WHICH WAS FILED IN ERROR*** RESPONSE in Opposition re 136 MOTION for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents filed by TIVO Inc. (Attachments: # 1 Affidavit Giza Decl. iso Opposition w/ Exs. 1-11# 2 Text of Proposed Order)(Giza, Alexander) Modified on 8/9/2005 (ehs,). (Entered: 07/27/2005)

07/28/2005 150 ***SEALED PER ORDER # 176*** Second MOTION to Compel by TIVO Inc. (Attachments: # (1) Affidavit Hoffman Declaration and Exhibits# (2) Text of Proposed Order Proposed Order) (Lyon, Richard) (original sent to Marshall Ofc 9/13/05) Modified on 8/16/2005 (mrm,). Modified on 8/16/2005 (mrm,). Additional attachment(s) added on 9/13/2005 (mpv,). Modified on 9/13/2005 (mpv,). (Entered: 07/28/2005)

07/28/2005 151 REPLY to Response to Motion re 135 Eighth MOTION to Compel filed by "EchoStar defendants". (Friedman, Paul) (Entered: 07/28/2005)

07/29/2005 152 ORDER regarding motions heard before the court on 7/29/05 as set forth herein. Signed by Judge H. W. McKee on 7/20/05. (ehs) (Entered: 08/01/2005)

07/29/2005 153 Minute Entry for proceedings held before Judge H. W. McKee : Motion Hearing held on 7/29/2005 re 131 MOTION to Compel to Enforce May 24, 2005 Resolution and for a Court Order Concerning Motions to Compel filed by "EchoStar defendants",, 135 Eighth MOTION to Compel filed by "EchoStar defendants",, 118 Sixth MOTION to Compel filed by "EchoStar defendants",, 132 Seventh MOTION to Compel filed by "EchoStar defendants"; An order will be entered regarding these motions. (Court Reporter Jill McFarland.) (mjm,) (Entered: 08/01/2005)

08/01/2005 156 TRANSCRIPT of Motion hearing held on July 29, 2005 at 10:37 am before Judge Harry W McKee. Court Reporter: Jill E McFadden. (ehs) (Entered: 08/03/2005)

08/02/2005 154 NOTICE by "EchoStar defendants" and [Defendants' Proposed] Order on Motions Argued At July 29, 2005 Hearing (Attachments: # 1 Exhibit A)(Friedman, Paul) (Entered: 08/02/2005)

08/02/2005 155 NOTICE by TIVO Inc [Proposed] Order Re EchoStar's Motion to Enforce May 24, 2005 Resolution and 7th Motion to Compel (Lyon, Richard) (Entered: 08/02/2005)

08/03/2005 157 REPLY to Response to Motion re 136 MOTION for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents filed by "EchoStar defendants". (Friedman, Paul) (Entered: 08/03/2005)

08/04/2005 158 ORDER granting 131 Motion to Compel, granting in part and denying in part 132 Motion to Compel as set forth herein. Signed by Judge T. John Ward on 8/4/05. (ehs,) (Entered: 08/05/2005)

08/05/2005 159 MOTION to Continue the Deadline for Summary Judgment Motions On Issues of Infringement or Non-Infringement by "EchoStar defendants". (Friedman, Paul) Additional attachment(s) added on 8/10/2005 (fal,). (Entered: 08/05/2005)

08/08/2005 160 ORDER REFERRING MOTION to the Honorable Harry W. McKee for decision: 150 Second MOTION to Compel filed by TIVO Inc, . Signed by Judge David Folsom on 8/5/05. (mrm,) (Entered: 08/08/2005)

08/08/2005 -- Notified Attorney, Ben Yorks, Per GO 04-12, this court no longer accepts pleadings in paper form. The Clerk will no longer mail or fax notices or orders to parties. All notices and orders generated by this court shall be sent electronically. (ehs,) (Entered: 08/08/2005)

08/09/2005 161 RESPONSE in Opposition re 159 MOTION to Continue the Deadline for Summary Judgment Motions On Issues of Infringement or Non-Infringement filed by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Giza, Alexander) (Entered: 08/09/2005)

08/09/2005 162 RESPONSE in Opposition re 150 Second MOTION to Compel filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Paul A. Friedman and Exs. A-E# 2 Exhibit F-P# 3 Exhibit Q-U) (Friedman, Paul) (Entered: 08/09/2005)

08/09/2005 163 REPLY to Response to Motion re 159 MOTION to Continue the Deadline for Summary Judgment Motions On Issues of Infringement or Non-Infringement filed by "EchoStar defendants". (Friedman, Paul) (Entered: 08/09/2005)

08/09/2005 164 FILED UNDER SEAL - EXHIBIT 12 to Declaration of Alexander C.D. Giza in support of TiVo Inc's opposition to Echostar's motion for partial summary judgment of non-infringement by TIVO Inc. (ehs,) (Entered: 08/10/2005)

08/10/2005 165 Third MOTION to Compel by TIVO Inc. (Attachments: # 1 Affidavit Declaration of Michelle Armond# 2 Exhibit A-J# 3 Text of Proposed Order)(Baxter, Samuel) (Entered: 08/10/2005)

08/10/2005 166 FILED UNDER SEAL - EXHIBITS B - C to declaration of Michelle Armond in support of pltf's third motion to compel # 165 by TIVO Inc (ehs,) (Entered: 08/10/2005)

08/10/2005 167 MOTION for Leave to File Excess Pages TIVO'S MOTION FOR LEAVE TO FILE TIVO'S SURREPLY IN OPPOSITION TO ECHOSTAR'S MOTION FOR PARTIAL SUMMARY JUDGMENT OF NON-INFRINGEMENT: (1) NO INFRINGEMENT BY ECHOSTAR'S 7100/7200 DEVICES; AND (2) NO INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS IN EXCESS OF PAGE LIMIT by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Baxter, Samuel) (Entered: 08/10/2005)

08/10/2005 170 FILED UNDER SEAL - EXHIBIT A to Declaration of Paul A Friedman in Support of Deft's opposition to Tivo's second motion to compel by "EchoStar defendants". (ehs,) (Entered: 08/11/2005)

08/11/2005 168 RESPONSE in Opposition re 167 MOTION for Leave to File Excess Pages TIVO'S MOTION FOR LEAVE TO FILE TIVO'S SURREPLY IN OPPOSITION TO ECHOSTAR'S MOTION FOR PARTIAL SUMMARY JUDGMENT OF NON-INFRINGEMENT: (1) NO INFRINGEMENT BY ECHOSTAR'S 7100/7200 DEVICES; AND filed by "EchoStar defendants". (Friedman, Paul) (Entered: 08/11/2005)

08/11/2005 169 Consent MOTION to Seal TIVO'S SECOND MOTION TO COMPEL by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Baxter, Samuel) (Entered: 08/11/2005)

08/11/2005 171 FILED UNDER SEAL - EXHIBIT B to Declaration of Paul A Friedman in support of deft's opposition to Tivo's second motion to compel by "EchoStar defendants". (ehs,) (Entered: 08/11/2005)

08/11/2005 172 FILED UNDER SEAL - EXHIBIT D to Declaration of Paul A Friedman in support of deft's opposition to Tivo's second motion to compel by "EchoStar defendants".(ehs,) (Entered: 08/11/2005)

08/11/2005 173 FILED UNDER SEAL - EXHIBIT P to Declaration of Paul A Friedman in Support of Deft's opposition to Tivo's second motion to compel by "EchoStar defendants". (ehs,) (Entered: 08/11/2005)

08/12/2005 174 ORDER granting in part and denying in part 159 Motion to Continue the ddl for Summary Judgment Motions on Issues of Infringement or Non-Infringement is GRANTED-IN-PART and DENIED-IN-PART and that the ddl for summary judgment motions on issues of infringement or non-infringement is hereby CONTINUED to 8/25/05. Signed by Judge David Folsom on 8/11/05. (mrm,) (Entered: 08/12/2005)

08/15/2005 175 REPLY to Response to Motion re 150 Second MOTION to Compel filed by TIVO Inc. (Baxter, Samuel) (Entered: 08/15/2005)

08/15/2005 178 Minute Entry for proceedings held before Judge H. W. McKee : Telephone Conference held on 8/15/2005. (Court Reporter S. Guthrie.) (mjm,) (Entered: 08/17/2005)

08/16/2005 176 ORDER granting 169 Motion to Seal . Signed by Judge David Folsom on 8/15/05. (mrm,) (Entered: 08/16/2005)

08/17/2005 177 ORDER that EchoStar produce all such documents created before suit was filed, and make available any witnesses with knowledge of relevant pre-suit communications. EchoStar to make Mr. Ergen available for five hours of deposition . Signed by Judge H. W. McKee on 8/17/05. (ehs,) (Entered: 08/17/2005)

08/17/2005 179 ORDER; ORDERED that each pty shall file a motion no later than 5:00pm Friday, 8/26/05, providing an estimate of the total time that pty needs to complete the presentation of testimony, including direct examination, cross examination, re-direct, and rebuttal. . Signed by Judge David Folsom on 8/17/05. (mrm,) (Entered: 08/17/2005)

08/17/2005 180 ORDER; The Court hereby CONVERTS said initial pretrial conference to a status conference to be held at the same time and place. Status Conference set for 9/1/2005 10:00 AM in Ctrm 319 (Texarkana) before Judge David Folsom.. Signed by Judge David Folsom on 8/17/05. (mrm,) (Entered: 08/17/2005)

08/17/2005 181 FILED UNDER SEAL - MOTION for Leave to File second amended complaint to Join Echostar Satellite LLC by TIVO Inc. (ehs,) (Entered: 08/18/2005)

08/17/2005 182 FILED UNDER SEAL - NOTICE of motion for and Memorandum in support of Echostar's MOTION for Partial Summary Judgment re damages period by "EchoStar defendants". (ehs,) (Entered: 08/18/2005)

08/17/2005 --- ***FILED IN ERROR. ATTACHED WRONG DOCUMENT to Document # 181, Motion for leave. PLEASE IGNORE.*** (ehs,) (Entered: 08/18/2005)

08/17/2005 186 FILED UNDER SEAL - replaces document #181 - MOTION for Leave to File second amended complaint to join Echostar Satellite LLC by TIVO Inc. (ehs,) (Entered: 08/18/2005)

08/18/2005 183 MOTION for Extension of Time to File and for Clarification of Pre-Trial Submissions by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Armond, Michelle) (Entered: 08/18/2005)

08/18/2005 184 RESPONSE in Opposition re 183 MOTION for Extension of Time to File and for Clarification of Pre-Trial Submissions filed by "EchoStar defendants". (McElhinny, Harold) (Entered: 08/18/2005)

08/18/2005 185 CLAIM CONSTRUCTION ORDER. Signed by Judge David Folsom on 8/18/05. (mrm,) (Entered: 08/18/2005)

08/18/2005)

08/18/2005 187 NOTICE by "EchoStar defendants" of Readiness to File Joint Pre-Trial Order (McElhinny, Harold) (Entered: 08/18/2005)

08/18/2005 188 **WITHDRAWN AS PER ORDER # 333** MOTION in Limine No. 11 to Preclude Late Disclosed Exhibits by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order Proposed Order# 2 Affidavit Evans Decl. ISO w/ Exhibits A-G# 3 Affidavit Evans Decl. Ex. H# 4 Affidavit Evans Decl. Exs. H Cont. - 1)(Kramer, Karl) Modified on 9/20/2005 (mrm,). (Entered: 08/18/2005)

08/18/2005 189 MOTION for Partial Summary Judgment of Invalidity Due to Indefiniteness by "EchoStar defendants". Responses due by 8/30/2005 (Attachments: # 1 Exhibit A part 1# 2 Exhibit A part 2# 3 Exhibit B# 4 Text of Proposed Order)(Harkins, Robert) (Entered: 08/18/2005)

08/18/2005 190 FILED UNDER SEAL - NOTICE of MOTION and Memorandum in support of motion for partial Summary Judgment of no willful infringement Volume 1 by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 191 FILED UNDER SEAL - Declaration of Karl J Kramer in Support of deft's motion for partial summary judgment of non-willfulness of infringement #190 Volume 1 of Exhibits A-C, Volume #2 by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 192 FILED UNDER SEAL - Declaration of Karl J. Kramer in Support of deft's motion for partial summary judgment of non-willfulness of infringement #190 Volume II of Exhibits D-V, Volume #3 by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 193 FILED UNDER SEAL - MOTION in Limine No. 1 - to preclude reference to, use of and reliance upon the expert report and testimony of John R Hauser; Declaration of Karl J Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 194 FILED UNDER SEAL - MOTION in Limine No. 2 - to exclude reference to or evidence regarding written opinion of counsel; Declaration of Karl J Kramer in support thereof by "EchoStar defendants". (ehs,) Modified on 8/19/2005 (ehs,) ATTACHED CORRECT DOCUMENT TO ENTRY. (Entered: 08/19/2005)

08/18/2005 195 FILED UNDER SEAL - MOTION in Limine No. 3 - to preclude any reference to, use of or reliance upon PTO Museum Display, or Alternatively, to allow discovery by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 196 FILED UNDER SEAL - MOTION in Limine No. 4 - to preclude TIVO from denying the existence of non-infringing alternatives; Declaration of Karl J Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 197 FILED UNDER SEAL - MOTION in Limine No. 5 - to preclude reference to, use of, or reliance on the expert report and opinion of Alan Gordon on Willfulness; Declaration of Karl J Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 198 FILED UNDER SEAL - MOTION in Limine No. 6 - to preclude reference to, use of, and reliance upon the preamble of any asserted claim as a limitation; Declaration of Karl J Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 199 FILED UNDER SEAL - MOTION in Limine No. 7 - to preclude reference to, use of, or reliance on alleged convoyed sales of TIVO's subscription services; Declaration of Karl J. Kramer in Support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 200 FILED UNDER SEAL - MOTION in Limine No. 8 - to preclude reference to, use of, or reliance on the expert report and testimony of Keith R Ugone on damages; Declaration of Karl J. Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 201 FILED UNDER SEAL - MOTION in Limine No. 9 - to preclude evidence on doctrine or equivalents; Declaration of Karl J Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/18/2005 202 FILED UNDER SEAL - MOTION in Limine No. 10 - to preclude reference to, use of, and reliance upon other Echostar Litigation; Declaration of Karl J. Kramer in support thereof by "EchoStar defendants". (ehs,) (Entered: 08/19/2005)

08/22/2005 203 First MOTION to Amend/Correct 167 MOTION for Leave to File Excess Pages TIVO'S MOTION FOR LEAVE TO FILE TIVO'S SURREPLY IN OPPOSITION TO ECHOSTAR'S MOTION FOR PARTIAL SUMMARY JUDGMENT OF NON-INFRINGEMENT: (1) NO INFRINGEMENT BY ECHOSTAR'S 7100/7200 DEVICES; AND (Unopposed) by TIVO Inc. (Attachments: # 1)(Baxter, Samuel) (Entered: 08/22/2005)

08/22/2005 204 NOTICE by TIVO Inc re 165 Third MOTION to Compel Withdrawing Third Motion to Compel In Light of EchoStar's Agreement to Provide the Requested Discovery (Armond, Michelle) (Entered: 08/22/2005)

08/23/2005 205 ***FILED IN ERROR; PLEASE IGNORE; REPLACED BY #208 CORRECTED DOCUMENT*** Third MOTION in Limine to Preclude any reference to, use of, and reliance upon PTO museum display, or alternatively, to allow discovery by "EchoStar defendants". (Kramer, Karl) Modified on 8/24/2005 (mpv,). (Entered: 08/23/2005)

08/23/2005 206 ORDER granting 203 First MOTION to Amend/Correct 167 MOTION for Leave to File Excess Pages TIVO'S MOTION FOR LEAVE TO FILE TIVO'S SURREPLY IN OPPOSITION TO ECHOSTAR'S MOTION FOR PARTIAL SUMMARY JUDGMENT OF NON-INFRINGEMENT: (1) NO INFRINGEMENT BY ECHOSTAR'S 7100/7200 DEVICES; AND (Unopposed) by TIVO Inc.. Signed by Judge David Folsom on 8/23/05. (mrm,) (Entered: 08/23/2005)

08/23/2005 -- ***FILED IN ERROR. Document # 205, Third Motion in Limine. PLEASE IGNORE. REPLACED BY #208 CORRECTED DOCKET ENTRY*** (mpv,) (Entered: 08/24/2005)

08/24/2005 207 ORDER re 183 MOTION for Extension of Time to File and for Clarification of Pre-Trial Submissions filed by TIVO Inc, Final Pretrial Conference set for 10/11/2005 in Ctrm 106 (Marshall) before Judge David Folsom. Jury Selection set for 10/12/2005 10:00 AM in Ctrm 106 (Marshall) before Judge David Folsom. Proposed Pretrial Order due by 8/26/2005 at 5pm. Objections to exhibits shall be filed no later than 9/9/05 at 5pm. Signed by Judge David Folsom on 8/24/05. (mrm,) (Entered: 08/24/2005)

08/24/2005 208 AFFIDAVIT in Support re 195 MOTION in Limine No. 3--To Preclude Any Reference to, Use of, and Reliance Upon PTO Museum Display (by Declarant Jonathan Bockman) filed by "EchoStar defendants". (Kramer, Karl) (Entered: 08/24/2005)

08/24/2005 209 FILED UNDER SEAL - Surreply in Opposition re 136 MOTION for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents filed by TIVO Inc. (ehs,) (Entered: 08/25/2005)

08/25/2005 210 ORDER denying as moot 55 Motion to Compel, finding as moot 64 Motion to Compel . Signed by Judge H. W. McKee on 8/25/05. (ehs,) (Entered: 08/25/2005)

08/25/2005 211 NOTICE by "EchoStar defendants" Letter Brief to Judge McKee Regarding Completion of Gibson Deposition (Kramer, Karl) Modified on 8/30/2005 (fal,). Modified on 9/22/2005 (mpv,). (Entered: 08/25/2005)

08/25/2005 212 FILED UNDER SEAL - MOTION for Partial Summary Judgment of Non-Infringement (3 VOLUMES) by "EchoStar defendants". (ehs,) (Entered: 08/26/2005)

08/25/2005 213 Received Submission of Documents Pursuant to 8/5/05 order filed by BenQ defendants (ehs,) Additional attachment(s) added on 8/26/2005 (ehs,). (Entered: 08/26/2005)

08/25/2005 -- ***FILED IN ERROR. Document # 213, Submission of Documents. PLEASE IGNORE.*** (ehs,) (Entered: 08/26/2005)

08/25/2005 -- ***FILED IN ERROR. Document # 212, Motion ATTACHED WRONG DOCUMENT. PLEASE IGNORE.*** (ehs,) (Entered: 08/26/2005)

08/25/2005 214 FILED UNDER SEAL - MOTION for Partial Summary Judgment of Non-Infringement (3 VOLUMES) by "EchoStar defendants". (ehs,) (Entered: 08/26/2005)

08/25/2005 215 TRANSCRIPT of Telephonic Motion Hearing Proceedings held on 8/15/05 at 9:37 a.m. in Tyler, Tx before Honorable US Magistrate Judge Harry W. McKee. Court Reporter: Shea Sloan. (ch,) (Entered: 08/26/2005)

08/25/2005 228 FILED UNDER SEAL - MOTION for Partial Summary Judgment of Infringement of Claims 1 and 32 by TIVO Inc. (ehs,) (Entered: 08/29/2005)

08/25/2005 229 FILED UNDER SEAL - DECLARATION of Michelle Armond in Support of motion for partial summary judgment of infringement of claims 1 and 32 by TIVO Inc. (ehs,) (Entered: 08/29/2005)

08/25/2005 230 FILED UNDER SEAL - DECLARATION of Jerry Gibson, Ph.D. in Support in support of motion for partial summary judgment of infringement of claims 1 and 32 by TIVO Inc. (ehs,) (Entered: 08/29/2005)

08/26/2005 216 MOTION for More Definite Statement to Clarify Order of August 17, 2005 by "EchoStar defendants". (Attachments: # 1 Affidavit of Paul A. Friedman# 2 Text of Proposed Order) (Friedman, Paul) (Entered: 08/26/2005)

08/26/2005 217 ORDER that TIVo make Dr. Gibson available for deposition on 9/15/05. Signed by Judge H. W. McKee on 8/26/05. (ehs,) (Entered: 08/26/2005)

08/26/2005 218 Second MOTION in Limine To Preclude Evidence/Argument In Front of the Jury Regarding EchoStar's Inequitable Conduct Defense by TIVO Inc. (Attachments: # 1 Text of Proposed Order Proposed Order)(Armond, Michelle) (Entered: 08/26/2005)

08/26/2005 219 Third MOTION in Limine by TIVO Inc. (Attachments: # 1 Affidavit Declaration# 2 Text of Proposed Order)(Armond, Michelle) (Entered: 08/26/2005)

08/26/2005 220 Fifth MOTION in Limine by TIVO Inc. (Attachments: # 1 Affidavit Declaration# 2 Text of Proposed Order)(Armond, Michelle) (Entered: 08/26/2005)

08/26/2005 221 FILED UNDER SEAL - MOTION in Limine No. 4: Echostar may not offer evidence or argument or make other suggestions, inconsistent with the Court's Claim Construction rulings by TIVO Inc. (ehs,) (Entered: 08/26/2005)

08/26/2005 222 FILED UNDER SEAL - MOTION in Limine No.1: To preclude defendants from introducing into evidence or making arguments regarding agreements wholly between non-parties by TIVO Inc. (ehs,) (Entered: 08/26/2005)

08/26/2005 223 MOTION Regarding Estimated Time Required for Trial by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(McElhinny, Harold) (Entered: 08/26/2005)

08/26/2005 224 MOTION Providing Estimate of Total Trial Time by TIVO Inc. (Armond, Michelle) (Entered: 08/26/2005)

08/26/2005 225 Proposed Pretrial Order by TIVO Inc, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Exhibit Exhibit A# 2 Exhibit Exhibit B# 3 Exhibit Exhibit C# 4 Exhibit Exhibit D# 5 Exhibit Exhibit E# 6 Exhibit Exhibit F# 7 Exhibit Exhibit G# 8 Exhibit Exhibit H# 9 Exhibit Exhibit I# 10 Exhibit Exhibit J# 11 Exhibit Exhibit K# 12 Exhibit Exhibit L# 13 Exhibit Exhibit M) (Lyon, Richard) (Entered: 08/26/2005)

08/26/2005 226 MOTION for Leave to File A Surreply Brief In Support of Its Motion for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents by "EchoStar defendants". (Attachments: # 1 EchoStar's Surreply Brief# 2 Text of Proposed Order)(Friedman, Paul) (Entered: 08/26/2005)

08/26/2005 227 MOTION Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses by TIVO Inc. (Attachments: # 1 Affidavit Declaration# 2 Text of Proposed Order) (Armond, Michelle) (Entered: 08/26/2005)

08/26/2005 238 Minute Entry for proceedings held before Judge H. W. McKee : Telephone Conference held on 8/26/2005. (Court Reporter M. Morris.) (mj,) (Entered: 08/31/2005)

08/29/2005 231 RESPONSE in Opposition re 181 MOTION for Leave to File Second Amended Complaint to Join EchoStar Satellite LLC filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Paul A. Friedman# 2 Exhibit 1# 3 Exhibit 2)(Friedman, Paul) (Entered: 08/29/2005)

08/29/2005 232 FILED UNDER SEAL - RESPONSE in Opposition re Echostar's 182 MOTION for Partial Summary Judgment Re: Damages Period filed by TIVO Inc. (ehs,) Modified on 9/14/2005 (mpv,). Modified on 9/14/2005 (mpv,). (Entered: 08/30/2005)

08/29/2005 233 FILED UNDER SEAL - RESPONSE in Opposition to Defendants' re 216 MOTION to Clarify Order of August 17, 2005 filed by TIVO Inc. (ehs,) (Entered: 08/30/2005)

08/30/2005 234 REPLY to Response to Motion re 216 MOTION for More Definite Statement to Clarify Order of August 17, 2005 filed by "EchoStar defendants". (Friedman, Paul) (Entered: 08/30/2005)

08/30/2005 235 RESPONSE in Opposition re 189 MOTION for Partial Summary Judgment of Invalidity Due to Indefiniteness filed by TIVO Inc. (Attachments: # 1 Exhibit 1)(Lyon, Richard) (Entered: 08/30/2005)

08/30/2005 236 MOTION for Extension of Time to File by TIVO Inc. (Attachments: # 1 Proposed Order)(Lyon, Richard) (Entered: 08/30/2005)

08/31/2005 237 RESPONSE to Motion re 236 MOTION for Extension of Time to File filed by "EchoStar defendants". (Attachments: # 1 Exhibit 1# 2 Exhibit 2# 3 Text of Proposed Order)(Friedman, Paul) (Entered: 08/31/2005)

08/31/2005 239 FILED UNDER SEAL - RESPONSE in Opposition re Echostar's 197 MOTION in Limine No. 5: RE: reference to, use of, and reliance on the expert testimony of Alan Gordon; Declaration of Richard Lyon in support thereof filed by TIVO Inc. (ehs,) (Entered: 08/31/2005)

08/31/2005 240 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's 201 MOTION in Limine No. 9 to preclude evidence on doctrine of equivalents filed by TIVO Inc. (ehs,) (Entered: 08/31/2005)

08/31/2005 241 RESPONSE in Opposition re 188 MOTION in Limine No. 11 to Preclude Late Disclosed Exhibits filed by TIVO Inc. (Attachments: # 1 Exhibit A)(Lyon, Richard) (Entered: 08/31/2005)

08/31/2005 242 RESPONSE in Opposition re 198 MOTION in Limine No. 6 filed by TIVO Inc. (Attachments: # 1 Armond Declaration)(Lyon, Richard) (Entered: 08/31/2005)

08/31/2005 243 RESPONSE in Opposition re 196 MOTION in Limine No. 4 (and TiVo's Cross-Motion) filed by TIVO Inc. (Attachments: # 1 Lyon Declaration and Exhibits# 2 Proposed Order Granting Cross-Motion)(Lyon, Richard) (Entered: 08/31/2005)

08/31/2005 244 RESPONSE in Opposition re 194 MOTION in Limine No. 2 filed by TIVO Inc. (Attachments: # 1 Lyon Declaration and Exhibits)(Lyon, Richard) (Entered: 08/31/2005)

08/31/2005 245 MOTION for Reconsideration re 177 Order, by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Friedman, Paul) (Entered: 08/31/2005)

08/31/2005 247 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's 193 MOTION in Limine No. 1 to preclude reference to use of, and reliance upon the expert report and testimony of John R Hauser filed by TIVO Inc. (ehs,) (Entered: 09/01/2005)

08/31/2005 248 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's 199 MOTION in Limine No. 7 to preclude reference to, use of, and reliance on alleged conveyed sales of Tivo's Services filed by TIVO Inc. (ehs,) Additional attachment(s) added on 9/1/2005 (ehs,). (Entered: 09/01/2005)

08/31/2005 249 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's 200 MOTION in Limine No. 8 to preclude reference to, use of, and reliance on the expert testimony and opinion of Keith R Ugone on damages filed by TIVO Inc. (ehs,) (Entered: 09/01/2005)

08/31/2005 250 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's 202 MOTION in Limine No. 10 re: reference to, use of, and reliance on Echostar's other litigation; Declaration of Richard Lyon filed by TIVO Inc. (ehs,) (Entered: 09/01/2005)

08/31/2005 251 SEALED RESPONSE in Opposition re 190 MOTION for Partial Summary Judgment of No Willful Infringement filed by TIVO Inc. (mpv,) (Entered: 09/01/2005)

09/01/2005 246 NOTICE by TIVO Inc TiVo's Objections Regarding the Temporal Scope of the August 17, 2005 Order (Attachments: # 1 Lyon Declaration)(Lyon, Richard) (Entered: 09/01/2005)

09/01/2005 252 Minute Entry for proceedings held before Judge David Folsom : Status Conference held on 9/1/2005. (Court Reporter Libby Crawford.) (mrm,) (Entered: 09/01/2005)

09/01/2005 253 ORDER; The Court now ORDERS that each side will have 27.5 hours for case presentation, excluding time related to JS, opening, closing, and transition statements. terminating 223 Motion Regarding the Estimated Time Required for Trial . Signed by Judge David Folsom on 9/1/05. (mrm,) (Entered: 09/01/2005)

09/01/2005 254 ORDER; ORDERED that TiVo's shall have one additional day, until 9/2/05, to file its oppositions to Echostar's motions in limine. granting 236 Motion for Extension of Time to File . Signed by Judge David Folsom on 9/1/05. (mrm,) (Entered: 09/01/2005)

09/01/2005 255 ORDER; proposed jury questionnaires due 9/12/05 at 5pm. Questionnaires are limited to total of 5 pgs. ORDERS the pty's to jointly determine the size and contents of the jury notebooks. Pif and Dfts are ea allowed one jury notebook. . Signed by Judge David Folsom on 9/1/05. (mrm,) (Entered: 09/01/2005)

09/01/2005 256 ORDER GRANTING ECHOSTAR'S MOTION FOR LEAVE TO FILE A SURREPLY BRIEF IN SUPPORT OF ITS MOTION FOR PARTIAL SUMMARY JUDGMENT ON NON-INFRINGEMENT: (1) NO INFRINGEMENT BY ECHOSTAR'S 7100/7200 DEVICES; AND (2) NO INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS; granting 226 Motion for Leave to File . Signed by Judge David Folsom on 9/1/05. (mrm,) (Entered: 09/01/2005)

09/01/2005 257 ECHOSTAR'S SURREPLY OPPOSITION BRIEF IN SUPPORT OF ITS MOTION FOR PARTIAL SUMMARY JUDGMENT OF NON-INFRINGEMENT: (1) NO INFRINGEMENT BY ECHOSTAR'S 7100/7200 DEVICES; AND (2) NO INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS; re 136 MOTION for Partial Summary Judgment of non-infringement filed by "EchoStar defendants". (mrm,) Modified on 9/14/2005 (mpv,). (Entered: 09/01/2005)

09/06/2005 258 SEALED REPLY to Response to Motion re 182 MOTION for Partial Summary Judgment RE: Damages Period filed by "EchoStar defendants". (mpv,) (Entered: 09/06/2005)

09/06/2005 259 REPLY to Response to Motion re 186 MOTION for Leave to File Second Amended Complaint filed by TIVO Inc. (Lyon, Richard) (Entered: 09/06/2005)

09/06/2005 260 RESPONSE in Opposition re 195 MOTION in Limine No. 3 filed by TIVO Inc. (Attachments: # 1 Lyon Declaration# 2 Denny Declaration# 3 Singletary Declaration)(Lyon, Richard) (Entered: 09/06/2005)

09/06/2005 261 FILED UNDER SEAL - RESPONSE in Opposition re 228 MOTION for Partial Summary Judgment Of Infringement of Claims 1 and 32 filed by "EchoStar defendants". (mpv,) (Entered: 09/07/2005)

09/07/2005 262 FILED UNDER SEAL - RESPONSE in Opposition re 221 MOTION in Limine #4 Echostar may not

offer evidence or argument, or make other suggestions, inconsistent with the Court's Claim Construction Rulings; and Declaration of Karl J. Kramer filed by "EchoStar defendants". (mpv,) (Entered: 09/07/2005)

09/07/2005 263 FILED UNDER SEAL - RESPONSE in Opposition re 220 Fifth MOTION in Limine to Preclude Evidence and agrument relating to the reverse doctrine of equivalents; and Declaration of Karl J. Kramer filed by "EchoStar defendants". (mpv,) (Entered: 09/07/2005)

09/07/2005 264 FILED UNDER SEAL - RESPONSE in Opposition re 227 MOTION Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses filed by "EchoStar defendants". (mpv,) (Entered: 09/07/2005)

09/07/2005 265 RESPONSE in Opposition re 222 MOTION in Limine No. 1 filed by "EchoStar defendants". (Attachments: # 1 Affidavit Lynde Declaration In Support Of Opposition to TiVo's Motion In Limine No. 1)(Kramer, Karl) (Entered: 09/07/2005)

09/07/2005 266 RESPONSE in Opposition re 218 Second MOTION in Limine To Preclude Evidence/Argument In Front of the Jury Regarding EchoStar's Inequitable Conduct Defense filed by "EchoStar defendants". (Kramer, Karl) (Entered: 09/07/2005)

09/07/2005 267 RESPONSE in Opposition re 219 Third MOTION in Limine filed by "EchoStar defendants". (Kramer, Karl) (Entered: 09/07/2005)

09/07/2005 -- Received SEALED DECLARATION OF NANCY S. HALPIN in Support of Echostar's opposition to TiVo's Motion in Limine No. 1 #265 (mpv,) (Entered: 09/07/2005)

09/07/2005 -- Received SEALED Declaration of Karl J. Kramer In Support of Echostar's Opposition to TiVo's motion in limine No. 2. Attachment to Document #266. (mpv,) (Entered: 09/07/2005)

09/07/2005 -- Received SEALED Declaration of Karl J. KRamer in Support of Echostar's opposition to TiVo's motions in limine Nos. 3A-3C attachment to Document #267. (mpv,) (Entered: 09/07/2005)

09/07/2005 268 MOTION for Protective Order Echostar's Motion for a Protective Order Prohibiting TiVo from Pursuing Discovery in Other Jurisdictions by Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Kramer, Karl) Additional attachment(s) added on 9/13/2005 (fal,). (Entered: 09/07/2005)

09/07/2005 269 AFFIDAVIT in Support re 268 MOTION for Protective Order Echostar's Motion for a Protective Order Prohibiting TiVo from Pursuing Discovery in Other Jurisdictions Declaration of Karl J. Kramer in Support of Echostar's Motion for a Protective Order Prohibiting TiVo from Pursuing Discovery in Other Jurisdictions filed by "EchoStar defendants", Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Exhibit C# 4 Exhibit D# 5 Exhibit E# 6 Exhibit F# 7 Exhibit G# 8 Exhibit H# 9 Exhibit I)(Kramer, Karl) (Entered: 09/07/2005)

09/07/2005 270 REPLY to Response to Motion re 189 MOTION for Partial Summary Judgment of Invalidity Due to Indefiniteness filed by "EchoStar defendants". (Harkins, Robert) (Entered: 09/07/2005)

09/07/2005 271 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's MOTION and Cross Motion RE: Partial Summary Judgment of Infringement of Claims 31 and 61 filed by TiVo Inc. (ehs,) (Entered: 09/08/2005)

09/08/2005 272 TRANSCRIPT of Proceedings (JOINT Status Conference) held on 9/1/2005 before Judge David Folsom. Court Reporter: Libby Crawford. (sm,) (Entered: 09/08/2005)

09/08/2005 273 MOTION for Leave to File EchoStar's Unopposed Motion to File Declarations ISO of Replies for EchoStar's MIL Nos. 1 & 6-10 by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order Proposed Order Granting Unopposed Motion to File Declarations ISO EchoStar's MIL Nos. 1 & 6-10)(Kramer, Karl) (Entered: 09/08/2005)

09/08/2005 274 NOTICE by "EchoStar defendants" re 188 MOTION in Limine No. 11 to Preclude Late Disclosed Exhibits - Defendant's Notice of Withdrawal of Echostr's August 18, 2005 Motion in Limine No. 11 (Pickett, John) (Entered: 09/08/2005)

09/08/2005 275 Joint MOTION to Amend/Correct 207 Order,, Set Scheduling Order Deadlines,, Terminate Motions, by Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Lyon, Richard) Additional attachment(s) added on 9/13/2005 (fal,). (Entered: 09/08/2005)

09/09/2005 276 ORDER GRANTING ECHOSTAR'S UNOPPOSED MOTION TO FILE DECLARATIONS IN SUPPORT OF REPLIES FOR ECHOSTAR'S MOTIONS IN LIMINE NOS. 1 AND 6-10; granting 273 Motion for Leave to File . Signed by Judge David Folsom on 9/9/05. (mrm,) (Entered: 09/09/2005)

09/09/2005 277 ORDER PER JOINT MOTION TO MODIFY AUGUST 24, 2005 ORDER; granting 275 Motion to Amend/Correct . Signed by Judge David Folsom on 9/9/05. (mrm,) (Entered: 09/09/2005)

09/09/2005 278 REPLY to Response to Motion re 193 MOTION in Limine No. 1 filed by "EchoStar defendants", (Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 279 REPLY to Response to Motion re 194 MOTION in Limine No. 2 filed by "EchoStar defendants", (Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 280 REPLY to Response to Motion re 196 MOTION in Limine No. 4 filed by "EchoStar defendants", (Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 281 REPLY to Response to Motion re 197 MOTION in Limine No. 5 filed by "EchoStar defendants", (Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 282 REPLY to Response to Motion re 201 MOTION in Limine No. 9 filed by "EchoStar defendants", (Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 283 REPLY to Response to Motion re 202 MOTION in Limine No. 10 filed by "EchoStar defendants", (Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 284 FILED UNDER SEAL REPLY to Response to Motion re 198 MOTION in Limine No. 6 with declaration of Karl Kramer filed by "EchoStar defendants". (sm,) (Entered: 09/09/2005)

09/09/2005 285 FILED UNDER SEAL REPLY to Response to Motion re 200 MOTION in Limine No. 8 and Declaration of Karl Kramer filed by "EchoStar defendants". (sm,) (Entered: 09/09/2005)

09/09/2005 286 FILED UNDER SEAL REPLY to Response to Motion re 199 MOTION in Limine No. 7 and Declaration of Karl Kramer filed by "EchoStar defendants". (sm,) (Entered: 09/09/2005)

09/09/2005 287 FILED UNDER SEAL MOTION for Sanctions/Contempt Order with exhibits by "EchoStar defendants". (sm,) (Entered: 09/09/2005)

09/09/2005 288 ORDER Setting Hearing on Motions 188 MOTION in Limine No. 11 to Preclude Late Disclosed Exhibits, 218 Second MOTION in Limine To Preclude Evidence/Argument In Front of the Jury Regarding EchoStar's Inequitable Conduct Defense, 193 MOTION in Limine, 219 Third MOTION in Limine, 194 MOTION in Limine, 220 Fifth MOTION in Limine, 195 MOTION in Limine, 221 MOTION in Limine, 196 MOTION in Limine, 197 MOTION in Limine, 222 MOTION in Limine, 198 MOTION in Limine, 199 MOTION in Limine, 200 MOTION in Limine, 201 MOTION in Limine, 202 MOTION in Limine, 227 MOTION Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses: Motion Hearing and Initial Pretrial Conference set for 9/22/2005 10:00 AM in Ctrm 319 (Texarkana) before Judge David Folsom. Further ORDERED to attend a Final Pre-trial Conference on 10/4/05 in Texarkana at 10:00 am. Signed by Judge David Folsom on 9/9/05. (mrm,) (Entered: 09/09/2005)

09/09/2005 -- Reset Scheduling Order Deadlines: Initial Pretrial Conference 9/22/05 10:00 Am in Ctrm 319 (Texarkana) before Judge David Folsom. Final Pretrial Conference set for 10/4/2005 10:00 AM in Ctrm 319 (Texarkana) before Judge David Folsom. (mrm,) (Entered: 09/09/2005)

09/09/2005 289 MOTION to Strike TIVO Inc.'s Cross Motion Re Partial Summary Judgment of Infringement of Claims 31 and 61 by "EchoStar defendants". (Attachments: # 1 Affidavit of Karl Kramer and exhibits# 2 Text of Proposed Order)(Kramer, Karl) (Entered: 09/09/2005)

09/09/2005 290 FILED UNDER SEAL - DECLARATION of Karl J. Kramer in Support of defts 278 Reply to Motion in Limine No. 1 - to preclude reference to, use of, and reliance upon the expert report and testimony of John R Hauser by "EchoStar defendants". (ehs,) (Entered: 09/12/2005)

09/09/2005 291 FILED UNDER SEAL - Declaration of Karl J. Kramer in Support of defts 282 Reply to Motion in Limine No. 9 - to preclude evidence on doctrine of equivalents by "EchoStar defendants". (ehs,) (Entered: 09/12/2005)

09/09/2005 292 FILED UNDER SEAL - Declaration in Support of def't's 283 Reply to Motion in Limine No. 10 - to preclude reference to, use of and reliance upon other Echostar litigation by "EchoStar defendants". (ehs,) (Entered: 09/12/2005)

09/12/2005 293 ORDER that EchoStar produce the notes Bozicevic, Field & Francis, LLP created in developing its opinion concerning infringement of the '389 patent. EchoStar to produce remaining documents pertaining to advice it received from counsel before suit was filed concerning infringement of the '389 patent. Becking & Cannon each be made available for 1 hour of deposition time concerning the notes they created regarding infringement of the '389 patent. Signed by Judge H. W. McKeen on 9/12/05. (ehs,) (Entered: 09/12/2005)

09/12/2005 294 NOTICE by TIVO Inc, "EchoStar defendants" Joint Submission of Proposed Juror Questionnaires (Attachments: # 1 Exhibit A# 2.Exhibit B)(Kramer, Karl) (Entered: 09/12/2005)

09/12/2005 295 NOTICE of Disclosure by "EchoStar defendants" Pursuant to 35 U.S.C. Section 282 (Friedman, Paul) (Entered: 09/12/2005)

09/12/2005 296 STATUS REPORT Joint List of Pending Motions Other Than Motions In Limine by TIVO Inc,

Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Lyon, Richard) (Entered: 09/12/2005)

09/13/2005 297 FILED UNDER SEAL REPLY to Response to Motion re 190 MOTION for Summary Judgment of No Willful Infringement filed by "EchoStar defendants". (mpv,) (Entered: 09/13/2005)

09/13/2005 298 REPLY to Response to Motion re 195 MOTION in Limine No. 3-To Preclude Any Reference To, Use Of, and Reliance Upon PTO Museum Display, Or Alternatively, To Allow Discovery filed by "EchoStar defendants". (Friedman, Paul) (Entered: 09/13/2005)

09/13/2005 299 NOTICE by "EchoStar defendants" re 246 Notice (Other) Defendants' Opposition to Tivo's Objections Regarding the Temporal Scope of the August 17, 2005 Order (Friedman, Paul) (Entered: 09/13/2005)

09/13/2005 300 FILED UNDER SEAL - Sur-Reply in Opposition to Echostar's 182 MOTION for Partial Summary Judgment re damages period filed by TIVO Inc. (ehs,) (Entered: 09/14/2005)

09/13/2005 301 FILED UNDER SEAL - Unopposed MOTION for Leave to File Tivo's Reply regarding Tivo's motion for partial summary judgment of infringement of Claims 1 and 32 and Echostar's request for entry of partial summary judgment of non-infringement of Claims 1 and 32 in excess of page limit by TIVO Inc. (ehs,) (Entered: 09/14/2005)

09/13/2005 302 FILED UNDER SEAL - Opposition to deft's protective motion for reconsideration of the court's order of August 17, 2005 filed by TIVO Inc. (ehs,) (Entered: 09/14/2005)

09/13/2005 312 Minute Entry for proceedings held before Judge H. W. McKee : Telephone Conference held on 9/13/2005. (Court Reporter M. Morris.) (mjm,) (Entered: 09/15/2005)

09/14/2005 303 APPLICATION to Appear Pro Hac Vice by Attorney Emily A Evans for "EchoStar defendants". (rml,) (Entered: 09/14/2005)

09/14/2005 304 FILED UNDER SEAL - REPLY to Response to Motion re 214 MOTION for Partial Summary Judgment Of Non-Infringement of Claims 31 and 61 filed by "EchoStar defendants". (mpv,) (Entered: 09/14/2005)

09/14/2005 -- Pro Hac Vice Filing fee paid by Emily Evans; Fee: \$25, receipt number: 5-1-281 (rml,) (Entered: 09/14/2005)

09/14/2005 305 RESPONSE in Support re 222 MOTION in Limine TIVO'S REPLY IN FURTHER SUPPORT OF TIVO'S MOTION IN LIMINE NO. 1: TO PRECLUDE DEFENDANTS FROM INTRODUCING INTO EVIDENCE OR MAKING ARGUMENTS REGARDING AGREEMENTS WHOLLY BETWEEN NON-PARTIES filed by TIVO Inc. (Baxter, Samuel) (Entered: 09/14/2005)

09/14/2005 306 REPLY to Response to Motion re 218 Second MOTION in Limine To Preclude Evidence/Argument In Front of the Jury Regarding EchoStar's Inequitable Conduct Defense filed by TIVO Inc. (Lyon, Richard) (Entered: 09/14/2005)

09/14/2005 307 MOTION for Leave to File Tivo's Reply to Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses by TIVO Inc. (Attachments: # 1 Proposed Order) (Chambers, Garret) (Entered: 09/14/2005)

09/14/2005 308 RESPONSE in Opposition re 189 MOTION for Partial Summary Judgment of Invalidity Due to Indefiniteness filed by TIVO Inc. (Armond, Michelle) (Entered: 09/14/2005)

09/14/2005 309 RESPONSE in Support re 219 Third MOTION in Limine filed by TIVO Inc. (Armond, Michelle) (Entered: 09/14/2005)

09/14/2005 310 RESPONSE in Support re 221 MOTION in Limine filed by TIVO Inc. (Armond, Michelle) (Entered: 09/14/2005)

09/14/2005 311 RESPONSE in Support re 220 Fifth MOTION in Limine filed by TIVO Inc. (Armond, Michelle) (Entered: 09/14/2005)

09/15/2005 313 APPEAL OF MAGISTRATE JUDGE DECISION to District Court by "EchoStar defendants" re 293 Order,, (Attachments: # 1 Exhibit A)(Friedman, Paul) (Entered: 09/15/2005)

09/15/2005 314 RESPONSE in Support re 227 MOTION Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses filed by TIVO Inc. (Armond, Michelle) (Entered: 09/15/2005)

09/15/2005 315 Joint MOTION to Amend/Correct September 9, 2005 Order 277 by TIVO Inc, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Text of Proposed Order Proposed Order)(Lyon, Richard) (Entered: 09/15/2005)

09/16/2005 316 MOTION to Withdraw 188 MOTION in Limine No. 11 to Preclude Late Disclosed Exhibits by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Pickett, John) (Entered: 09/16/2005)

09/16/2005)

09/16/2005 317 RESPONSE in Opposition re 199 MOTION in Limine No. 7: TO PRECLUDE REFERENCE TO, USE OF, AND RELIANCE ON ALLEGED CONVOYED SALES OF TIVO'S SERVICES filed by TIVO Inc. (Baxter, Samuel) (Entered: 09/16/2005)

09/16/2005 318 FILED UNDER SEAL - Sur-Reply in Opposition to Echostar's 198 MOTION in Limine No. 6 to preclude reference to, use of, or reliance upon the preamble of any asserted claim as a limitation filed by TIVO Inc. (ehs,) (Entered: 09/16/2005)

09/16/2005 319 FILED UNDER SEAL - SUR-REPLY in Opposition to Echostar's 201 MOTION in Limine No. 9 - to preclude evidence on doctrine of equivalents filed by TIVO Inc. (ehs,) (Entered: 09/16/2005)

09/16/2005 320 FILED UNDER SEAL - Sur-Reply BRIEF in opposition to Echostar's motion in Limine No.1 (#193) - to preclude reference to, use of, and reliance upon the expert report and testimony of John R Hauser filed by "EchoStar defendants". (ehs,) (Entered: 09/16/2005)

09/16/2005 321 RESPONSE in Opposition re 200 MOTION in Limine TIVO'S SUR-REPLY BRIEF IN OPPOSITION TO ECHOSTAR'S MOTION IN LIMINE NO. 8 [DOC 200] - TO PRECLUDE REFERENCE TO, USE OF, AND RELIANCE UPON THE EXPERT TESTIMONY AND OPINION OF KEITH R. UGONE ON DAMAGES filed by TIVO Inc. (Baxter, Samuel) (Entered: 09/16/2005)

09/16/2005 322 RESPONSE in Opposition re 197 MOTION in Limine Sur-Reply filed by TIVO Inc. (Lyon, Richard) (Entered: 09/16/2005)

09/16/2005 323 RESPONSE in Opposition re 194 MOTION in Limine Sur-Reply filed by TIVO Inc. (Lyon, Richard) (Entered: 09/16/2005)

09/16/2005 324 RESPONSE in Opposition re 202 MOTION in Limine Sur-Reply filed by TIVO Inc. (Lyon, Richard) (Entered: 09/16/2005)

09/16/2005 325 RESPONSE in Opposition re 196 MOTION in Limine Sur-Reply filed by TIVO Inc. (Lyon, Richard) (Entered: 09/16/2005)

09/19/2005 326 RESPONSE in Opposition re 222 MOTION in Limine Surreply filed by "EchoStar defendants". (Kramer, Karl) (Entered: 09/19/2005)

09/19/2005 327 RESPONSE in Opposition re 220 Fifth MOTION in Limine Surreply filed by "EchoStar defendants". (Kramer, Karl) (Entered: 09/19/2005)

09/19/2005 328 RESPONSE in Opposition re 227 MOTION Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses Surreply filed by "EchoStar defendants". (Kramer, Karl) (Entered: 09/19/2005)

09/19/2005 329 RESPONSE in Opposition re 268 MOTION for Protective Order Echostar's Motion for a Protective Order Prohibiting TIVO from Pursuing Discovery in Other Jurisdictions filed by TIVO Inc. (Attachments: # 1 Affidavit Garret Chambers Declaration)(Chambers, Garret) (Entered: 09/19/2005)

09/19/2005 330 Joint MOTION to Amend/Correct March 3, 2005 Scheduling Order 56 by TIVO Inc, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Text of Proposed Order Proposed Order)(Lyon, Richard) (Entered: 09/19/2005)

09/19/2005 331 FILED UNDER SEAL - RENEWED MOTION to Strike 271 Tivo's late Cross-motion for partial summary judgment of Infringement of Claims 31 and 61, or, in the alternative, Echostar's opposition to Tivo's Cross-Motion for partial summary judgment of infringement of claims 31 and 61 by "EchoStar defendants". (mpv,) (Entered: 09/20/2005)

09/20/2005 332 ORDER; ORDERED to meet and confer on each of the pending motions in limine, including the motion filed as dkt no. 227, to determine whether the ptys can reach agreement on any motion or portion of a motion . Signed by Judge David Folsom on 9/20/05. (mrm,) (Entered: 09/20/2005)

09/20/2005 333 ORDER granting 316 Motion to Withdraw 188 MOTION in Limine No. 11 to Preclude Late Disclosed Exhibits . Signed by Judge David Folsom on 9/20/05. (mrm,) (Entered: 09/20/2005)

09/20/2005 334 FILED UNDER SEAL - SURREPLY to Response to Motion re 228 MOTION for Partial Summary Judgment of Infringement of Claims 1 and 32 and ECHOSTAR's Request for Entry of Partial Summary Judgment of Non-Infringement of Claims 1 and 32 filed by "EchoStar defendants". (mpv,) (Entered: 09/20/2005)

09/20/2005 335 ORDER granting 307 Motion for Leave to File Its Reply in Support of Its Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses. TIVO shall have until 9/15/05 to file said Reply. Signed by Judge David Folsom on 9/20/05. (mrm,) (Entered: 09/20/2005)

09/20/2005 336 ORDER PER JOINT MOTION TO MODIFY SEPTEMBER 9, 2005 ORDER; granting 315 Motion to Amend/Correct . Signed by Judge David Folsom on 9/20/05. (mrm,) (Entered: 09/20/2005)

09/20/2005 337 REPLY to Response to Motion re 245 MOTION for Reconsideration re 177 Order, filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Paul A. Friedman)(Friedman, Paul) (Entered: 09/20/2005)

09/20/2005 338 ***FILED IN ERROR. SEE CORRECTED DOCUMENT #344*** RESPONSE to Motion re [287] MOTION for Sanctions Sur-Reply filed by TIVO Inc. (Lyon, Richard) Modified on 9/21/2005 (ehs,). (Entered: 09/20/2005)

09/20/2005 339 Exhibit List Objections by "EchoStar defendants".. (Attachments: # 1 Exhibit A)(Friedman, Paul) (Entered: 09/20/2005)

09/20/2005 340 Exhibit List Objections by TIVO Inc.. (Attachments: # 1 Exhibit Objections to EchoStar's Preliminary Exhibit List)(Lyon, Richard) (Entered: 09/20/2005)

09/20/2005 342 FILED UNDER SEAL - Sur-Reply in Opposition to Echostar's MOTION for Partial Summary Judgment of no willful infringement filed by TIVO Inc. (ehs,) (Entered: 09/21/2005)

09/20/2005 343 FILED UNDER SEAL - TIVO'S (1) Reply in support of TIVO'S Objections re: The temporal Scope of the August 17, 2005 Ortder, and (2) Motion for (Proposed) Order Nunc Pro Tunc Extending Filing Deadline by TIVO Inc. (ehs,) (Entered: 09/21/2005)

09/21/2005 341 NOTICE of Disclosure by "EchoStar defendants" - Defendants' Pre-Trial Disclosures Under Federal Rule of Civil Procedure 26(a)(3) (Pickett, John) (Entered: 09/21/2005)

09/21/2005 344 ***REPLACES DOCUMENT #338***WHICH WAS FILED IN ERROR*** RESPONSE to Motion re 195 MOTION in Limine Sur-Reply in Further Opposition filed by TIVO Inc. (Lyon, Richard) Modified on 9/21/2005 (ehs,). (Entered: 09/21/2005)

09/21/2005 345 RESPONSE in Support re 268 MOTION for Protective Order Echostar's Motion for a Protective Order Prohibiting TiVo from Pursuing Discovery in Other Jurisdictions Reply Brief in Support of EchoStar's Motion for a Protective Order Prohibiting TiVo from Pursing Discovery in Other Jurisdictions filed by "EchoStar defendants", Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Kramer, Karl) (Entered: 09/21/2005)

09/21/2005 346 ORDER, granting 330 Joint MOTION to Amend/Correct March 3, 2005 Scheduling Order 56 filed by TIVO Inc., Echostar Communications Corporation,, Echostar-DBS Corporation,, EchoStar Technologies Corporation,, Echosphere Limited Liability Company,. Jury instructions and Verdict Form due by 9/23/2005. Signed by Judge David Folsom on 9/21/05. (mrm,) (Entered: 09/21/2005)

09/21/2005 347 RESPONSE in Opposition re 289 MOTION to Strike TiVo Inc.'s Cross Motion Re Partial Summary Judgment of Infringement of Claims 31 and 61 filed by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Giza, Alexander) (Entered: 09/21/2005)

09/21/2005 348 RESPONSE in Opposition re 214 MOTION for Partial Summary Judgment TiVo Inc.'s Surreply in Further Opposition to EchoStar's Motion for Partial Summary Judgment of Non-Infringement of Claims 31 and 61 filed by TIVO Inc. (Giza, Alexander) (Entered: 09/21/2005)

09/22/2005 349 Minute Entry for proceedings held before Judge David Folsom : Motion Hearing held on 9/22/2005 re 201 MOTION in Limine filed by "EchoStar defendants",, 227 MOTION Motion to Exclude Improperly Withheld Media4 and Burstware Documents and Witnesses filed by TIVO Inc.,, 202 MOTION in Limine filed by "EchoStar defendants",, 218 Second MOTION in Limine To Preclude Evidence/Argument In Front of the Jury Regarding EchoStar's Inequitable Conduct Defense filed by TIVO Inc.,, 193 MOTION in Limine filed by "EchoStar defendants",, 219 Third MOTION in Limine filed by TIVO Inc.,, 194 MOTION in Limine filed by "EchoStar defendants",, 220 Fifth MOTION in Limine filed by TIVO Inc.,, 195 MOTION in Limine filed by "EchoStar defendants",, 221 MOTION in Limine filed by TIVO Inc.,, 196 MOTION in Limine filed by "EchoStar defendants",, 222 MOTION in Limine filed by TIVO Inc.,, 197 MOTION in Limine filed by "EchoStar defendants",, 198 MOTION in Limine filed by "EchoStar defendants",, 199 MOTION in Limine filed by "EchoStar defendants",, 200 MOTION in Limine filed by "EchoStar defendants",,. (Court Reporter Libby Crawford.) (mrm,) (Entered: 09/22/2005)

09/22/2005 350 Joint MOTION for Extension of Time to File Response/Reply Briefs re Motion for Contempt Order [Doc 287] by TIVO Inc, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Lyon, Richard) Additional attachment(s) added on 9/23/2005 (mpv,). (Entered: 09/22/2005)

09/22/2005 351 FILED UNDER SEAL - Surreply in further in Opposition to Echostar's Motion for Partial Summary Judgment of Non-Infringement of Claims 31 and 61 (#214) filed by TIVO Inc. (ehs,) (Entered: 09/23/2005)

09/22/2005 352 FILED UNDER SEAL - RESPONSE in Opposition to Echostar's [287] MOTION for Contempt Order filed by TIVO Inc. (ehs,) (Entered: 09/23/2005)

09/23/2005 353 NOTICE by "EchoStar defendants" of Filing of Correspondence Regarding Deposition of Dan Landreth In Further Opposition to Tivo's Motion to Exclude (Attachments: # 1 Exhibit A) (Kramer, Karl) (Entered: 09/23/2005)

09/23/2005 354 ***SEE CORRECTED ORDER # 357*** ORDER; ORDERS: Echostar to produce all notes, communications, or other documentation created by or relating to the infringement analysis of the '389 patent undertaken by Bozicevic, Field & Frances, LLP, at any time; Echostar to produce the two Merchant & Gould opinions and all notes, communications, or other documentation related to any infringement analysis of the '389 patent undertaken by Merchant & Gould. Echostar is to produce these materials within 7 days of this order. The Court further ORDERS Echostar to produce Frank Becking, Alan Cannon, Kerry Miller, Homer Knearl and Timothy Scull for deposition concerning their analysis of the '389 patent and any potential infringement by Echostar. TIVO is granted an additional 5 hrs of deposition time; These witnesses are not be made available no later than 10/14/05 . Signed by Judge David Folsom on 9/23/05. (mrm,) Modified on 9/26/2005 (mrm,). (Entered: 09/23/2005)

09/23/2005 355 NOTICE by "EchoStar defendants" 35 U.S.C. Section 282 Supplemental Disclosure (Friedman, Paul) (Entered: 09/23/2005)

09/23/2005 356 Proposed Jury Instructions by TIVO Inc, "EchoStar defendants". (Attachments: # 1 Exhibit Exhibit A# 2 Exhibit Exhibit B# 3 Exhibit Exhibit C# 4 Exhibit Exhibit D# 5 Exhibit Exhibit E# 6 Exhibit Exhibit F)(Lyon, Richard) (Entered: 09/23/2005)

09/26/2005 357 *VACATED AS PER ORDER # 729* ***REPLACES ORDER # 354*** ORDER; ORDERS: Echostar to produce all notes, communications, or other documentation created by or relating to the infringement analysis of the '389 patent undertaken by Bozicevic, Field & Frances, LLP, at any time; Echostar to produce the two Merchant & Gould opinions and all notes, communications, or other documentation related to any infringement analysis of the '389 patent undertaken by Merchant & Gould. Echostar is to produce these materials within 7 days of this order. The Court further ORDERS Echostar to produce Frank Becking, Alan Cannon, Kerry Miller, Homer Knearl and Timothy Scull for deposition concerning their analysis of the '389 patent and any potential infringement by Echostar. TIVO is granted an additional 5 hrs of deposition time; These witnesses are not be made available no later than 10/14/05 . Signed by Judge David Folsom on 9/26/05. (mrm,) Modified on 5/16/2006 (mrm,). (Entered: 09/26/2005)

09/26/2005 358 ORDER PER JOINT MOTION FOR EXTENSION TO SERVE AND FILE BRIEFS RE MOTION FOR CONTEMPT ORDER; granting 350 Motion for Extension of Time to File Response/Reply re [287] MOTION for Sanctions Responses due by 9/22/2005 Replies due by 9/30/2005. Signed by Judge David Folsom on 9/26/05. (mrm,) (Entered: 09/26/2005)

09/26/2005 360 FILED UNDER SEAL - REPLY in Support of its Cross-Motion #271 for Partial Summary Judgment of Infringement of Claims 31 and 61 by TIVO Inc. (ehs,) (Entered: 09/28/2005)

09/27/2005 359 NOTICE by "EchoStar defendants" of Compliance (Evans, Emily) (Entered: 09/27/2005)

09/27/2005 361 ORDER finding as moot [81] Motion to Compel, finding as moot 85 Motion to Compel, finding as moot [87] Motion to Compel, finding as moot 88 Motion to Compel, finding as moot 118 Motion to Compel . Signed by Judge H. W. McKee on 9/27/05. (ehs,) (Entered: 09/28/2005)

09/28/2005 362 REPLY to Response to Motion re 289 MOTION to Strike Tivo Inc.'s Cross Motion Re Partial Summary Judgment of Infringement of Claims 31 and 61 filed by "EchoStar defendants". (Kramer, Karl) (Entered: 09/28/2005)

09/29/2005 363 ORDER to produce Dr. Rhyne for 2 hours of deposition time before 10/14/05. Signed by Judge H. W. McKee on 9/29/05. (ehs,) (Entered: 09/29/2005)

09/29/2005 364 FILED UNDER SEAL REPLY to Response to Motion re [287] MOTION for Sanctions/Contempt Order Based on Tivo's violation of the protective order filed by "EchoStar defendants". (mpv,) (Entered: 09/29/2005)

09/30/2005 365 Exhibit List Trial Exhibit List by TIVO Inc.. (Attachments: # 1 Supplement Part 2 of trial exhibit list# 2 Supplement Part 3 of trial exhibit list# 3 Supplement Part 4 of trial exhibit list# 4 Supplement Part 5 of trial exhibit list# 5 Supplement Part 6 of trial exhibit list# 6 Supplement Part 7 of trial exhibit list# 7 Supplement Part 8 of trial exhibit list# 8 Supplement Part 9 of trial exhibit list)(Giza, Alexander) (Entered: 09/30/2005)

09/30/2005 366 Exhibit List Objections to EchoStar's Trial Exhibit List by TIVO Inc.. (Attachments: # 1 Supplement Part 2 to Objections to EchoStar's Trial Exhibit List# 2 Supplement Part 3 to Objections to EchoStar's Trial Exhibit List# 3 Supplement Part 4 to Objections to EchoStar's Trial Exhibit List# 4 Supplement Part 5 to Objections to EchoStar's Trial Exhibit List)(Giza, Alexander) (Entered: 09/30/2005)

09/30/2005 367 Proposed Pretrial Order Amendments to Exhibits D, H, and K by "EchoStar defendants". (Attachments: # 1 Exhibit D (Revised)# 2 Exhibit H (Amended) Part 1# 3 Exhibit H (Amended) part 2# 4 Exhibit K (Addendum 1)# 5 Exhibit K (Addendum 2))(Kramer, Karl) (Entered: 09/30/2005)

09/30/2005 368 Exhibit List Objections by "EchoStar defendants".. (Attachments: # 1 Exhibit A)(Kramer, Karl) (Entered: 09/30/2005)

09/30/2005 369 NOTICE of Disclosure by "EchoStar defendants" Pursuant to Rule 26(a)(3) "Expect to Offer, May Offer" Designations (Attachments: # 1 Exhibit A)(Kramer, Karl) (Entered: 09/30/2005)

09/30/2005 371 APPLICATION to Appear Pro Hac Vice by Attorney Kristina Paszek for "EchoStar defendants". (rml,) (Entered: 10/03/2005)

09/30/2005 -- Pro Hac Vice Filing fee paid by Kristina Paszek; Fee: \$25, receipt number: 5-1-300 (rml,) (Entered: 10/03/2005)

10/03/2005 370 NOTICE of Disclosure by "EchoStar defendants" - Defendants' Supplemental Pre-Trial Disclosures Under Federal Rule of Civil Procedure 26(a)(3) (Pickett, John) (Entered: 10/03/2005)

10/03/2005 372 Proposed Pretrial Order Exhibit I - Addendum by TIVO Inc. (Lyon, Richard) (Entered: 10/03/2005)

10/03/2005 373 NOTICE by TIVO Inc of Compliance with Fed. R. Civ. Proc. 26(a)(3) (Lyon, Richard) (Entered: 10/03/2005)

10/03/2005 374 FILED UNDER SEAL - Surreply in support of deft's RESPONSE in Opposition re Tivo's 331 MOTION to Strike 271 Response in Opposition to Motion for partial summary judgment of infringement of claims 31 and 61 filed by "EchoStar defendants". (ehs,) (Entered: 10/04/2005)

10/04/2005 375 Minute Entry for proceedings held before Judge David Folsom : Initial Pretrial Conference held on 10/4/2005. (Court Reporter Libby Crawford.) (mrm,) (Entered: 10/05/2005)

10/05/2005 376 APPLICATION to Appear Pro Hac Vice by Attorney Alison M Tucher for Echostar Communications Corporation; Echostar DBS Corporation; Echostar Communications Corporation; Echosphere Limited Liability Company. (rml,) (Entered: 10/05/2005)

10/05/2005 -- Pro Hac Vice Filing fee paid by Alison Tucher; Fee: \$25, receipt number: 5-1-303 (rml,) (Entered: 10/05/2005)

10/05/2005 377 RESPONSE in Opposition re 289 MOTION to Strike TiVo Inc.'s Cross Motion Re Partial Summary Judgment of Infringement of Claims 31 and 61 (Sur-Reply) filed by TIVO Inc. (Giza, Alexander) (Entered: 10/05/2005)

10/06/2005 378 SEALED TRANSCRIPT of Proceedings (Motions in Limine, Excerpt of Proceedings regarding motion) held on 9/22/2005 before Judge David Folsom. Court Reporter: Libby Crawford. (sm,) (Entered: 10/06/2005)

10/06/2005 379 TRANSCRIPT of Proceedings (Motions in Limine except for a portion of which is excerpted and sealed under separate cover - #378) held on September 22, 2005 before Judge David Folsom. Court Reporter: Libby Crawford. (sm,) (Entered: 10/06/2005)

10/06/2005 380 *VACATED AS PER ORDER # 729* ORDER OF CLARIFICATION OF THE COURT'S SEPTEMBER 26,2005 OPINION AND ORDER re 357 Order (attachments with order are Exhibit 1 and Exhibit 2). Signed by Judge David Folsom on 10/6/05. (mrm,) Modified on 10/6/2005 (mrm,). Modified on 5/16/2006 (mrm,). (Entered: 10/06/2005)

10/06/2005 381 ORDER granting 268 Motion for Protective Order Prohibiting TiVo from Pursuing Discovery in Other Jurisdictions. Signed by Judge David Folsom on 10/6/05. (mrm,) (Entered: 10/06/2005)

10/06/2005 382 STIPULATION re 218 Second MOTION in Limine To Preclude Evidence/Argument In Front of the Jury Regarding EchoStar's Inequitable Conduct Defense As Moot by TIVO Inc, "EchoStar defendants". (Kramer, Karl) (Entered: 10/06/2005)

10/06/2005 384 FILED UNDER SEAL - Sur-Reply in Opposition to Echostar's [287] MOTION for a contempt order filed by TIVO Inc. (ehs,) (Entered: 10/07/2005)

10/07/2005 383 Emergency MOTION to Stay Court's Order of October 6, 2005 by Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Text of Proposed Order Proposed Order# 2 Text of Proposed Order Alternative Proposed Order)(McElhinny, Harold) (Entered: 10/07/2005)

10/07/2005 385 RESPONSE to Motion re 383 Emergency MOTION to Stay Court's Order of October 6, 2005 filed by TIVO Inc. (Baxter, Samuel) (Entered: 10/07/2005)

10/07/2005 386 *VACATED AS PER ORDER # 729* ORDER GRANTING DEFENDANTS' REQUEST FOR AN

EMERGENCY STAY OF THE COURT'S ORDER OF OCTOBER 6, 2005; granting 383 Emergency MOTION to Stay Court's Order of October 6, 2005 . Signed by Judge David Folsom on 10/7/06. (mrm,) Modified on 5/16/2006 (mrm,). (Entered: 10/07/2005)

10/07/2005 387 Proposed Jury Instructions by TIVO Inc, "EchoStar defendants". (Lyon, Richard) (Entered: 10/07/2005)

10/11/2005 388 STATUS REPORT TIVO'S REPORT ON ITS OBJECTIONS TO DEFENDANTS' EXHIBITS by TIVO Inc. (Baxter, Samuel) (Entered: 10/11/2005)

10/11/2005 389 NOTICE by TIVO Inc NOTICE OF LODGING OF TIVO'S DESIGNATED DEPOSITION TESTIMONY FOR FIRST WEEK OF TRIAL (Baxter, Samuel) (Entered: 10/11/2005)

10/11/2005 390 TRANSCRIPT of Pre-Trial Hearing Proceedings held on 10/4/05 at 9:55 a.m. In Texarkana, Tx Judge Honorable Judge David Folsom. Court Reporter: Libby Crawford. (ch,) (Entered: 10/11/2005)

10/11/2005 391 NOTICE by "EchoStar defendants" of Filing of Petition for Writ of Mandamus in the U.S. Court of Appeals for the Federal Circuit (Attachments: # 1 Exhibit A (Writ)# 2 Exhibit A (Addendum part 1)# 3 Exhibit A (Addendum part 2)# 4 Exhibit A (Addendum part 3))(Tucher, Alison) (Entered: 10/11/2005)

10/11/2005 392 Minute Entry for proceedings held before Judge David Folsom : Final Pretrial Conference held on 10/11/2005. (Court Reporter Libby Crawford.) (mrm,) (Entered: 10/12/2005)

10/14/2005 393 FILED UNDER SEAL NOTICE OF FILING LETTER BRIEF filed per Judge's request by "EchoStar defendants". (mpv,) (Entered: 10/14/2005)

10/14/2005 394 NOTICE by "EchoStar defendants" of Order from the Court of Appeals for the Federal Circuit Directing Briefing Concerning EchoStar's Writ of Mandamus (Kramer, Karl) (Entered: 10/14/2005)

10/14/2005 395 NOTICE by "EchoStar defendants" of Filing of Letter Brief (Kramer, Karl) (Entered: 10/14/2005)

10/14/2005 396 MOTION for Extension of Time to File UNOPPOSED MOTION BY PLAINTIFF TIVO INC. TO EXTEND DATE FOR LODGING OF DEPOSITION TESTIMONY THAT TIVO EXPECTS TO OFFER DURING THE FIRST WEEK OF TRIAL AND MATERIALS RELATED THERETO by TIVO Inc. (Attachments: # 1 Text of Proposed Order Proposed Order)(Byrd, Christine) (Entered: 10/14/2005)

10/17/2005 397 ORDER; Therefore, it is hereby ORDERED that trial in this case is CONTINUED until March 2006. It is further ORDERED that all motion practice is hereby STAYED unless leave from this Court is first obtained and all discovery is STAYED pending a status conference to be scheduled when the Court has more information concerning its November schedule . Signed by Judge David Folsom on 10/17/05. (mrm,) (Entered: 10/17/2005)

10/17/2005 399 Received NOTICE OF DOCKETING from USCA that a petition for writ of mandamus has been filed with the court. MISC NO 803 on 10/12/05 (ehs,) (Entered: 10/18/2005)

10/18/2005 398 ORDER ON UNOPPOSED MOTION BY PLAINTIFF TIVO INC. TO EXTEND DATE FOR LODGING OF DEPOSITION TESTIMONY THAT TIVO EXPECTS TO OFFER DURING THE FIRST WEEK OF TRIAL AND MATERIALS RELATED THERETO; granting 396 Motion for Extension of Time to File . Signed by Judge David Folsom on 10/17/05. (mrm,) (Entered: 10/18/2005)

10/18/2005 400 TRANSCRIPT of Proceedings/Pretrial Hearing held on 10/11/05 before Judge David Folsom. Court Reporter: Libby Crawford. (mpv,) (Entered: 10/19/2005)

10/20/2005 401 APPLICATION to Appear Pro Hac Vice by Attorney Charles Conrow Murphy, Jr for Merchant & Gould. (mpv,) (Entered: 10/20/2005)

10/20/2005 -- Pro Hac Vice Filing fee paid by Charles Conrow Murphy Jr; Fee: \$25, receipt number: 5-1-318 (mpv,) (Entered: 10/20/2005)

10/28/2005 402 NOTICE from USCA Federal Circuit showing Notice of Docketing a petition for writ of mandamus having been filed on 10/25/05 giving Misc No 805 In RE: Echostar Communications (ehs,) (Entered: 10/31/2005)

10/31/2005 403 MOTION for Extension of Time to File Unopposed Motion To Further Extend Date For Lodging Of Deposition Testimony That Tivo Expects To Offer During The First Week Of Trial And Materials Related Thereto by TIVO Inc. (Lyon, Richard) Proposed Order added on 11/1/2005 (mpv,). Modified on 11/1/2005 (mpv,). (Entered: 10/31/2005)

10/31/2005 405 NOTICE from USCA Federal Circuit that Tivo Inc is directed to respond to Merchant & Gould's petition no later than 11/3/05 (ehs,) (Entered: 11/03/2005)

11/01/2005 -- Shipped to FRC on 3/29/05, Accession Number 021-05-0102, Location E-16-047-1-6, Box 5 Vols 1-2 of 2 of 7 Boxes. [For internal information only - case is either pending and imaged or closed.] (ch,) (Entered: 11/01/2005)

11/02/2005 404 ORDER RE UNOPPOSED MOTION BY PLAINTIFF TIVO INC. TO FURTHER EXTEND DATE FOR LODGING OF DEPOSITION TESTIMONY THAT TIVO EXPECTS TO OFFER DURING THE FIRST WEEK OF TRIAL AND MATERIALS RELATED THERETO; granting 403 Motion for Extension of Time to File; Tivo shall lodge with the ct on 11/16/05, deposition transcripts w/ both Tivo's designations and dfts counter-designations highlighted, and a compilation of the objections to each other's designations . Signed by Judge David Folsom on 11/2/05. (mrm,) (Entered: 11/02/2005)

11/16/2005 406 NOTICE by TIVO Inc of Lodging of Tivo's Designated Depostion Testimony for First Week of Trial (Lyon, Richard) (Entered: 11/16/2005)

12/21/2005 407 ORDER; The Court now ORDERS that each side shall have 17.5 hours for case presentation, excluding trial related to jury selection, opening statement, closing argument, and transition statements. Signed by Judge David Folsom on 12/21/05. (mrm,) (Entered: 12/21/2005)

12/22/2005 408 ORDER The above-styled case is set for trial on this Court's in Martch 2006 docket. Status Conference set for 1/18/2006 01:30 PM in Ctrm 319 (Texarkana) before Judge David Folsom to determine a hearing date for summary judgment motions and to address any outstanding discovery issues. The Court notes that scheduled discovery is closed; should either party seek additional discovery, leave from this Court is required and will only be grqanted upon a showing of good cause. Signed by Judge David Folsom on 12/22/05. (mpv,) (Entered: 12/22/2005)

12/29/2005 409 MOTION for Reconsideration re 407 Order of December 21, 2005 by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(McElhinny, Harold) (Entered: 12/29/2005)

01/04/2006 410 RESPONSE in Opposition re 409 MOTION for Reconsideration re 407 Order of December 21, 2005 filed by TIVO Inc. (Armond, Michelle) (Entered: 01/04/2006)

01/04/2006 411 REPLY to Response to Motion re 409 MOTION for Reconsideration re 407 Order of December 21, 2005 filed by "EchoStar defendants". (McElhinny, Harold) (Entered: 01/04/2006)

01/06/2006 412 REPLY to Response to Motion re 409 MOTION for Reconsideration re 407 Order of December 21, 2005 filed by TIVO Inc. (Armond, Michelle) (Entered: 01/06/2006)

01/06/2006 413 MOTION for Paul A. Friedman to Withdraw as Attorney by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Friedman, Paul) (Entered: 01/06/2006)

01/09/2006 414 ORDER granting 413 Motion to Withdraw as Attorney for Defendants; terminated: Paul A. Friedman. Signed by Judge David Folsom on 1/9/2006. (mrm,) (Entered: 01/09/2006)

01/09/2006 -- Attorney Paul A. Friedman terminated. (as per order # 414). Signed by Judge David Folsom on 1/9/2006. (mrm,) (Entered: 01/09/2006)

01/12/2006 415 MOTION for Ann E. Citrin to Withdraw as Attorney by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Paszek, Kristina) (Entered: 01/12/2006)

01/17/2006 416 ORDER granting 415 Motion to Withdraw Ann E. Citrin as Attorney for Dfts. After considering the request, the Court finds that it has merit, GRANTS the request, and ORDERS the withdrawal of Mrs. Citrin as attorney for Dfts. The Clerk shall remove Mrs. Citrin from the Court's ECF email service list for this matter. All other Morrison & Foerster LLP attorneys remain counsel of record for Dfts . Signed by Judge David Folsom on 1/17/06. (mpv,) (Entered: 01/17/2006)

01/19/2006 417 ORDER granting 301 Motion for Leave to File. It is therefore ORDERED that Tivo's Unopposed Motion for LEave to file Tivo's Reply Regarding Tivo's Motion for Partial Summary Judgment of Infringement of Claims 1 and 32 and Echostar's Request for Entry of Partial Summary Judgment of Non-Infringement of Claims 1 and 32 In Excess of Page Limit is GRANTED. Signed by Judge David Folsom on 1/19/06. (mpv,) (Entered: 01/19/2006)

01/19/2006 418 ORDER granting 186 Motion for Leave to File Second Amended Complaint to Join Echostar Satellite LLC. Signed by Judge David Folsom on 1/19/06. (mpv,) (Entered: 01/19/2006)

01/23/2006 419 RESPONSE in Opposition re 202 MOTION in Limine No. 10 (Partial Opposition) filed by TIVO Inc. (Lyon, Richard) (Entered: 01/23/2006)

01/24/2006 420 AMENDED COMPLAINT SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT against Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company, filed by TIVO Inc. (Attachments: # 1 Exhibit A)(Baxter, Samuel) (Entered: 01/24/2006)

01/25/2006 421 ORDER; The Cour hereby ORDERS TIVO, within 5 days after the entry of this Order, to file a motion with the Court seeking to withdraw asserted claims and stating whether or not the claims are to be withdrawn with or without prejudice. No motion need be filed should Tivo choose not to withdraw any asserted claims. Signed by Judge David Folsom on 1/25/06. (mrm,) (Entered: 01/25/2006)

01/26/2006 422 ORDER denying 193 Motion in Limine, denying 194 Motion in Limine, granting 195 Motion in

Limine, denying 196 Motion in Limine, denying 197 Motion in Limine, granting 198 Motion in Limine, denying 199 Motion in Limine, denying 200 Motion in Limine, taking under advisement 201 Motion in Limine, granting as modified 202 Motion in Limine, denying 218 Motion in Limine, denying 219 Motion in Limine, denying 220 Motion in Limine, denying 221 Motion in Limine, denying 222 Motion in Limine; Accordingly the Court hereby ORDERS that the ptys motions in limine are granted, denied, or modified as set forth herein . Signed by Judge David Folsom on 1/26/06. (mrm,) (Entered: 01/26/2006)

01/27/2006 423 NOTICE by TIVO Inc of Lodging of TiVo's Shortened Designated Deposition Testimony (Lyon, Richard) (Entered: 01/27/2006)

01/30/2006 424 NOTICE by TIVO Inc TiVo's Brief In Support of Its Objections to Defendants' Trial Exhibits (Attachments: # 1 Exhibit Exhibit A through H)(Byrd, Christine) (Entered: 01/30/2006)

01/30/2006 425 NOTICE by TIVO Inc TiVo's Brief in Opposition to EchoStar's Objections to TiVo's Trial Exhibits (Attachments: # 1 Exhibit Exhibit A# 2 Exhibit Exhibit B# 3 Exhibit Exhibit D-K)(Byrd, Christine) (Entered: 01/30/2006)

01/30/2006 426 ORDER REFERRING parties' objections to deposition designations and exhibits to Magistrate Judge Caroline Craven for decision. Signed by Judge David Folsom on 1/30/06. (mrm,) (Entered: 01/30/2006)

01/30/2006 427 NOTICE by "EchoStar defendants" Defendants' Submission Regarding Evidentiary Objections To Be Heard By The Magistrate Judge (Attachments: # 1 Appendix A# 2 Appendix B# 3 Affidavit of Kristina Paszek# 4 Exhibit A-E to Paszek Decl.)(Kramer, Karl) (Entered: 01/30/2006)

01/31/2006 428 NOTICE by "EchoStar defendants" of Filing of Letter Brief (Krevans, Rachel) (Entered: 01/31/2006)

01/31/2006 429 Minute Entry for proceedings held before Judge David Folsom : Motion Hearing held on 1/31/2006 re 228 MOTION for Partial Summary Judgment filed by TIVO Inc,, 182 MOTION for Partial Summary Judgment filed by "EchoStar defendants",, 214 MOTION for Partial Summary Judgment filed by "EchoStar defendants",, 189 MOTION for Partial Summary Judgment of Invalidity Due to Indefiniteness filed by "EchoStar defendants",, 190 MOTION for Summary Judgment filed by "EchoStar defendants",, 136 MOTION for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents filed by "EchoStar defendants",. (Court Reporter Libby Crawford.) (mrm,) (Entered: 02/01/2006)

02/01/2006 430 MOTION Withdraw Asserted Claims 6, 20, 37, and 51 by TIVO Inc. (Attachments: # 1 Text of Proposed Order)(Armond, Michelle) (Entered: 02/01/2006)

02/01/2006 431 NOTICE by TIVO Inc of Submission of Previously Submitted Letters Re Jury Notebook (Hoffman, Adam) (Entered: 02/01/2006)

02/02/2006 432 ORDER granting in part and denying in part 227 Motion to Exclude Improperly Withheld Media4 and Burstware Documents & Witnesses; ORDERS that fact witnesses Dan Landreth and Fred Tuck are hereby Dan Landreth and Fred Tuck, from EchoStar's witness list and are PRECLUDED from testifying but DENIES all other requested relief . Signed by Judge David Folsom on 2/2/06. (mrm,) (Entered: 02/02/2006)

02/02/2006 433 ORDER granting in part and denying in part 201 EchoStar's ninth Motion in Limine and ORDERS that TiVo is PRECLUDED from presenting expert testimony regarding whether EchoStar's 7100 and 7200 digital video recorder products infringe the '389 patent and DENIES EchoStar's motion to preclude Dr. Gibson from testifying regarding infringement under the doctrine of equivalents . Signed by Judge David Folsom on 2/2/06. (mrm,) (Entered: 02/02/2006)

02/02/2006 434 ORDER denying 289 Motion to Strike, denying 331 Motion to Strike. The Court hereby DENIES EchoStar's motion and renewed motion to strike TiVo's Cross Motion for Partial Summary Judgment of Infringement of Claims 31 and 61. This order does not affect the Court's consideration of EchoStar's Opposition to TiVo's Cross Motion for Partial Summary Judgment of Infringement of Claims 31 and 61 Dkt. #331 . Signed by Judge David Folsom on 2/2/06. (mpv,) (Entered: 02/02/2006)

02/02/2006 435 NOTICE by TIVO Inc of Filing of Letter Brief (Armond, Michelle) (Entered: 02/02/2006)

02/03/2006 436 ***PLEASE IGNORE - MOTION MUST HAVE LEAVE TO FILE REPLACED BY #437*** MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order by "EchoStar defendants". (Attachments: # 1 Affidavit of Karl J. Kramer# 2 Text of Proposed Order)(Kramer, Karl) Modified on 2/3/2006 (rml,). Modified on 2/6/2006 (mpv,). Modified on 2/6/2006 (mpv,). (Entered: 02/03/2006)

02/03/2006 437 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order by "EchoStar defendants". (Attachments: # 1 Exhibit A-C# 2 Affidavit of Karl J. Kramer# 3 Text of Proposed Order)(Kramer, Karl) (Entered: 02/03/2006)

02/03/2006 438 NOTICE by "EchoStar defendants" of Filing of Letter Brief (Krevans, Rachel) (Entered: 02/03/2006)

02/03/2006 — ***FILED IN ERROR. Document # 436, MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order by "EchoStar defendants". PLEASE IGNORE. DOCUMENT NOW REPLACED BY #437*** (mpv,) (Entered: 02/06/2006)

02/05/2006 439 NOTICE by "EchoStar defendants" re 431 Notice (Other) of Filing of Letter Brief Regarding Proposed Jury Notebooks (Krevans, Rachel) (Entered: 02/05/2006)

02/06/2006 440 ***FILED IN ERROR; PLEASE IGNORE; DOCUMENT WILL BE REFILED UNDER SEAL*** REPLY to Response to Motion re 436 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order reply re proposed exhibit 2449 (MJ Craven) filed by TIVO Inc. (Attachments: # (1) Supplement Reply re: Exhibit 2449)(Byrd, Christine) Additional attachment (s) added on 2/6/2006 (mpv,). Modified on 2/6/2006 (mpv,). (Entered: 02/06/2006)

02/06/2006 — ***FILED IN ERROR. Document # 440, REPLY to Response to Motion re 436 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order reply re proposed exhibit 2449 (MJ Craven). PLEASE IGNORE. DOCUMENT WILL BE REFILED UNDER SEAL*** (mpv,) (Entered: 02/06/2006)

02/06/2006 442 RESPONSE in Opposition re 430 MOTION Withdraw Asserted Claims 6, 20, 37, and 51 filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Karl J. Kramer# 2 Text of Proposed Order # 3 Text of Proposed Order (Alternative))(Kramer, Karl) (Entered: 02/06/2006)

02/06/2006 443 Additional Attachments to Main Document: 442 Response in Opposition to Motion,.. (Attachments: # 1 Exhibit A)(Kramer, Karl) (Entered: 02/06/2006)

02/06/2006 444 TRANSCRIPT of Proceedings/Status Conference held on 1/18/06 before Judge David Folsom. Court Reporter: Libby Crawford. (mpv,) (Entered: 02/07/2006)

02/07/2006 446 NOTICE by TIVO Inc of Filing of Letter Brief re Jury Notebooks (Byrd, Christine) (Entered: 02/07/2006)

02/07/2006 447 NOTICE by TIVO Inc re 438 Notice (Other) of Filing of Responsive Letter Brief re EchoStar's Letter Brief on SJ Motions claims 1 & 32 (Giza, Alexander) (Entered: 02/07/2006)

02/07/2006 448 NOTICE by "EchoStar defendants" re 424 Notice (Other) Defendants' Supplemental Brief Regarding Plaintiff's Objection To Defendants' Proposed Trial Exhibit No. 2449 (Attachments: # 1 Affidavit of Karl J. Kramer)(Kramer, Karl) (Entered: 02/07/2006)

02/07/2006 449 ORDER re: 430 Motion to Withdraw Asserted Claims 6, 20, 37, and 51 with Prejudice; ORDERS: 1) Any claims by TiVo against Dfts for infringement of claims 6, 20, 37, and 51 of US Patent No 6,233,389 are hereby DISMISSED WITH PREJUDICE. 2) Any defenses or counterclaims that have been brought by Dfts against TiVo with regard to claims 6, 20, 37, and 51 of US Patent No 6,233,389 are hereby DISMISSED WITH PREJUDICE. 3) Evidence of this dismissal shall not be admissible at trial . Signed by Judge David Folsom on 2/7/06. (mrm,) (Entered: 02/07/2006)

02/07/2006 451 ORDER regarding certain disputed exhibits. EchoStar's objections to TiVo's Nos. 1514, 1515, 1645,1683, 1698, 1703, 1705 and 1709 are sustained. Signed by Judge Caroline Craven on 2/7/06. (ehs,) (Entered: 02/08/2006)

02/08/2006 450 ORDER; ORDERS that each party will have 20 hours for case presentation, excluding time related to jury selection, opening statement, closing argument, and transition statements. Motions terminated: 409 MOTION for Reconsideration re 407 Order of December 21, 2005 filed by "EchoStar defendants",... Signed by Judge David Folsom on 2/7/06. (mrm,) (Entered: 02/08/2006)

02/08/2006 453 STATUS REPORT to Mag. Judge Craven by TIVO Inc, Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Text of Proposed Order Deposition Designations# 2 Text of Proposed Order Expert Reports)(Byrd, Christine) (Entered: 02/08/2006)

02/08/2006 454 RESPONSE to Motion re 437 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order filed by TIVO Inc. (Armond, Michelle) (Entered: 02/08/2006)

02/09/2006 455 ORDER Jury Selection set for 3/6/2006 09:00 AM in Ctrm 106 (Marshall) before Judge David Folsom. Jury Trial set for 3/27/2006 9:00 AM in Ctrm 106 (Marshall) before Judge David Folsom. Signed by Judge David Folsom on 2/9/06. (mrm,) (Entered: 02/09/2006)

02/09/2006 456 ***FILED IN ERROR; DEFICIENT DOCUMENT; EXCEEDS PAGE LIMIT; ATTORNEY MUST FILE MOTION FOR LEAVE TO EXCEED PAGE LIMIT*** REPLY to Response to Motion re 437 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order filed by "EchoStar defendants". (Attachments: # 1 Affidavit of Karl J. Kramer# 2 Exhibit A to Kramer Decl.)(Kramer, Karl) Modified on 2/9/2006 (mpv,). (Entered: 02/09/2006)

02/09/2006 -- NOTICE of Deficiency regarding the REPLY to Response to Motion re 437 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order submitted by "EchoStar defendants". Exceeds Page Limit. Correction should be made by 2/9/06 (mpv,) (Entered: 02/09/2006)

02/09/2006 457 ORDER on parties' objections to trial exhibits. Ruling set forth herein. Signed by Judge Caroline Craven on 2/9/06. (ehs,) (Entered: 02/09/2006)

02/09/2006 458 ORDER on deposition designations per hearing held before Judge Craven. Deadlines set for filing of documents. Court will hear arguments on any disputes on 2/27/06 at 10:00 am . Signed by Judge Caroline Craven on 2/9/06. (ehs,) (Entered: 02/09/2006)

02/09/2006 -- Set/Reset Hearings: Hearing set for 2/27/2006 10:00 AM before Magistrate Judge Caroline Craven. (ehs,) (Entered: 02/09/2006)

02/09/2006 459 MOTION for Leave to File Excess Pages to file EchoStar's Reply in Support of its Motion for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order by "EchoStar defendants". (Attachments: # 1 Exhibit A PART 1# 2 Exhibit EXHIBIT A PART 2# 3 Exhibit A PART 3# 4 Text of Proposed Order)(Pickett, John) (Entered: 02/09/2006)

02/09/2006 460 Second Amended ANSWER to Amended Complaint Second Amended Complaint for Patent Infringement, COUNTERCLAIM for Declaratory Relief of Invalidity, Non-Infringement and Unenforceability by EchoStar Communications Corporation against TIVO Inc by Echostar Communications Corporation, Echostar DBS Corporation.(Kramer, Karl) (Entered: 02/09/2006)

02/09/2006 461 Second Amended ANSWER to Amended Complaint Second Amended Complaint for Patent Infringement, COUNTERCLAIM for Declaratory Relief of Invalidity, Non-Infringement and Unenforceability against TIVO Inc by Echostar Satellite LLC, EchoStar Technologies Corporation, Echosphere Limited Liability Company.(Kramer, Karl) (Entered: 02/09/2006)

02/10/2006 463 ORDER granting 459 Motion for Leave to Exceed Page Limit to file their Reply in Support of their Motion for Reconsideration . Signed by Judge David Folsom on 2/10/06. (mrm,) (Entered: 02/10/2006)

02/10/2006 464 REPLY in Support re 437 MOTION for Reconsideration Concerning Section II C of the Court's February 2, 2006 Order filed by "EchoStar defendants". (Attachments: # 1 Exhibit a# 2 Exhibit b)(mrm,) (Entered: 02/10/2006)

02/10/2006 465 ORDER vacating Section 2 C of 2/6/2006 Order re 437 Motion for Reconsideration and will allow the testimony of Dan Landreth at trial; MOTION for Reconsideration filed by "EchoStar defendants"; agreement that Echostar will not call Fred Tuck, . Signed by Judge David Folsom on February 10, 2006. (rml,) (Entered: 02/10/2006)

02/10/2006 466 ORDER denying [452] motion and setting briefing schedule;February 16th by 5 p.m. Deadline for TiVo to file an opening brief;the brief shall not exceed 15 pages.February 24th by 5 p.m. Deadline for EchoStar to file a response brief;the brief shall not exceed 15 pages.March 1st by 5 p.m. Deadline for TiVo to file a reply brief;the brief shall not exceed 5 pages.March 6th . Following the conclusion of jury selection, the parties will beheard on this issue; each party will have 20 minutes for argument. Signed by Judge David Folsom on February 10, 2006. (rml,) Modified on 2/10/2006 (rml,). Modified on 2/15/2006 (rml,). (Entered: 02/10/2006)

02/13/2006 467 STATUS REPORT Joint Report on Remaining Disputed Objections to TiVo Exhibits by TIVO Inc, Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Exhibit Exhibit A# 2 Exhibit Exhibit B# 3 Text of Proposed Order Proposed Order)(Byrd, Christine) (Entered: 02/13/2006)

02/13/2006 484 APPLICATION to Appear Pro Hac Vice by Attorney Randall I Erickson for TIVO Inc. APPROVED (poa,) (Entered: 02/21/2006)

02/13/2006 -- Pro Hac Vice Filing fee paid by Erickson; Fee: \$25, receipt number: 2-1-1164 (poa,) (Entered: 02/21/2006)

02/13/2006 485 APPLICATION to Appear Pro Hac Vice by Attorney Steven P Rice for TIVO Inc.APPROVED (poa,) (Entered: 02/21/2006)

02/13/2006 -- Pro Hac Vice Filing fee paid by Rice; Fee: \$25, receipt number: 2-1-1165 (poa,) (Entered: 02/21/2006)

02/13/2006 486 APPLICATION to Appear Pro Hac Vice by Attorney R Scott Feldmann for TIVO Inc. APPROVED (poa,) (Entered: 02/21/2006)

02/13/2006 493 APPLICATION to Appear Pro Hac Vice by Attorney R Scott Feldmann for TIVO Inc.APPROVED (poa,) (Entered: 02/24/2006)

02/13/2006 -- Pro Hac Vice Filing fee paid by Feldmann; Fee: \$25, receipt number: 2-1-1166 (poa,) (Entered: 02/24/2006)

02/24/2006)

02/13/2006 494 APPLICATION to Appear Pro Hac Vice by Attorney Van V Nguyen for TIVO Inc. APPROVED (poa,) (Entered: 02/24/2006)

02/13/2006 -- Pro Hac Vice Filing fee paid by Nguyen; Fee: \$25, receipt number: 2-1-1167 (poa,) (Entered: 02/24/2006)

02/14/2006 468 ORDER the courts 2/7/06 and 2/9/06 addressed two sets of objections that EchoStar raised to TiVo's Trial Exhibits. The parties having to met and conferred on the remaining EchoStar objections, and having provided the Court with a list of the objection remaining in dispute the parties shall file briefs on these objections and exhibits on the following schedule as set forth herein. Signed by Judge Caroline Craven on 2/14/06. (ch,) (Entered: 02/14/2006)

02/15/2006 473 ORDER sua sponte that the Court will hear any disputes on the depositions designations on 2/27/06 starting at 10:00 a.m. in order for the Court to prepare for the hearing, EchoStar shall provide to the Court on or before 2/24/06, in a format substantially similar to the one utilized by TiVo, copies of the deposition excerpts to be considered at the hearing. Signed by Judge Caroline Craven on 2/15/06. (poa,) (Entered: 02/16/2006)

02/16/2006 470 ***FILED IN ERROR; PLEASE IGNORE; INCORRECT DATE; WILL BE REFILED*** TRANSCRIPT of Proceedings/Hearing on Summary Judgment Motions held on 1/31/06 before Judge David Folsom. Court Reporter: Libby Crawford. (mpv,) Modified on 2/16/2006 (mpv,). (Entered: 02/16/2006)

02/16/2006 -- ***FILED IN ERROR. Document # 470, Transcript. PLEASE IGNORE. INCORRECT DATE; WILL BE REFILED*** (mpv,) (Entered: 02/16/2006)

02/16/2006 471 FILED IN ERROR; PLEASE IGNORE; INCORRECT DOCUMENT ATTACHED; SHOULD BE SEALED; ATTORNEY WILL CORRECT AND REFILE*** MOTION for Leave to File Excess Pages FOR TIVO'S REPLY IN SUPPORT OF ITS MOTION TO RECONSIDER THE COURT'S ORDER RE: ECHOSTAR'S MOTION IN LIMINE NO. 6 by TIVO Inc. (Attachments: # (1) Exhibit # (2) Text of Proposed Order)(Armond, Michelle) Additional attachment(s) added on 2/16/2006 (mpv,). Modified on 2/16/2006 (mpv,). (Entered: 02/16/2006)

02/16/2006 -- ***FILED IN ERROR. Document # 471, MOTION for Leave to File Excess Pages FOR TIVO'S REPLY IN SUPPORT OF ITS MOTION TO RECONSIDER THE COURT'S ORDER RE: ECHOSTAR'S MOTION IN LIMINE NO. 6 by TIVO Inc. PLEASE IGNORE. INCORRECT DOCUMENT; ATTORNEY WILL REFILE WITH CORRECT DOCUMENT; PREVIOUS DOCUMENT CONTAINED SEALED MATERIAL; NOW REMOVED FROM DOCKET*** (mpv,) (Entered: 02/16/2006)

02/16/2006 472 MOTION for Leave to File Excess Pages re TiVo's Reply In Support of Its Motion to Reconsider the Court's Order re EchoStar's Motion in Limine No. 6 (REPLACES #471) by TIVO Inc. (Attachments: # 1 Exhibit 1# 2 Text of Proposed Order)(Armond, Michelle) Modified on 2/16/2006 (mpv,). (Entered: 02/16/2006)

02/16/2006 474 NOTICE by TIVO Inc Brief in Opposition to Remaining Disputes Re: EchoStar Objections to TiVo's Trial Exhibits (Attachments: # 1 Exhibit Exhibits A-E)(Byrd, Christine) (Entered: 02/16/2006)

02/16/2006 475 NOTICE by TIVO Inc, Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company [Joint Proposed] Stipulation and Order on Objections to Third Party Documents As Trial Exhibits (Attachments: # 1 Exhibit Exhibit A)(Byrd, Christine) (Entered: 02/16/2006)

02/16/2006 481 TRANSCRIPT of Proceedings/Hearing on Summary Judgment Motions held on 1/31/06 before Judge David Folsom. Court Reporter: Libby Crawford. REPLACES #470 (mpv,) (Entered: 02/21/2006)

02/16/2006 482 TRANSCRIPT of Proceedings/Pretrial Hearing/Deposition Designations and Exhibit Objections held on 1/31/06 before Judge Caroline M Craven. Court Reporter: Libby Crawford. (mpv,) (Entered: 02/21/2006)

02/17/2006 476 ORDER granting 472 Motion for Leave to File Excess Pages in TIVO's reply in support of motion to reconsider court order. Signed by Judge David Folsom on February 17, 2006. (rml,) (Entered: 02/17/2006)

02/17/2006 478 NOTICE by TIVO Inc of Reply in Support of Tivo's Motion to Reconsider the Court's Order re Echostar's Motion in Limine No. 6 [Docket #422] and for a Ruling on the Merits that the Preamble is a Limitation [Docket #452] (Attachments: # 1 Declaration)(Armond, Michelle) (Entered: 02/17/2006)

02/17/2006 480 NOTICE by TIVO Inc re 474 Notice (Other) of Errata In TIVO's Brief In Opposition To Remaining Disputes Re:EchoStar Objections to TiVo Trial Exhibits (Byrd, Christine) (Entered: 02/17/2006)

02/21/2006 483 REVISED ORDER; The Court hereby RESETS the expedited briefing schedule as follows: 2/22/06

by 5pm ddl for TiVo to file opening brief; 2/27/06 by 5pm ddl for EchoStar to file response brief; 3/1/06 by 5pm ddl for TiVo to file reply brief; 3/6/06 following the conclusion of jury selection the ptys will be heard on this issue; each pty will have 20 minutes for argument. Signed by Judge David Folsom on 2/21/06. (mrm,) (Entered: 02/21/2006)

02/21/2006 -- Set/Reset Hearings: Hearing set for 3/6/2006 after jury selection in Ctrm 106 (Marshall) before Judge David Folsom. (mrm,) (Entered: 02/21/2006)

02/22/2006 488 NOTICE by TIVO Inc re 483 Order, TiVo's Brief on Claim Construction of the Preamble (Attachments: # 1 Declaration)(Armond, Michelle) (Entered: 02/22/2006)

02/22/2006 489 NOTICE by "EchoStar defendants" Brief In Support of Objections to TiVo's Trial Exhibits (Attachments: # 1 Exhibit A# 2 Exhibit B)(Kramer, Karl) (Entered: 02/22/2006)

02/22/2006 490 MOTION for Reconsideration of Magistrate Judge's Ruling on TiVo Trial Exhibits 1514, 1515, 1683, 1703, 1705, and 1709 by TIVO Inc. (Attachments: # 1 Text of Proposed Order Proposed Order# 2 Affidavit Declaration of Christine Byrd in Support of Motion to Reconsideration of Magistrate Judge's Ruling on TiVo Trial Exhibits# 3 Exhibit Exhibit A to Byrd Declaration# 4 Exhibit Exhibit B to Byrd Declaration# 5 Exhibit Exhibit C to Byrd Declaration# 6 Exhibit Exhibit D to Byrd Declaration# 7 Exhibit Exhibit E to Byrd Declaration# 8 Exhibit Exhibit F to Byrd Declaration# 9 Exhibit Exhibit G to Byrd Declaration# 10 Exhibit Exhibit H to Byrd Declaration# 11 Exhibit Exhibit I to Byrd Declaration# 12 Exhibit Exhibit J to Byrd Declaration# 13 Exhibit Exhibit K to Byrd Declaration# 14 Exhibit Exhibit L to Byrd Declaration# 15 Exhibit Exhibit M to Byrd Declaration# 16 Exhibit Exhibit N to Byrd Declaration# 17 Exhibit Exhibit O to Byrd Declaration# 18 Exhibit Exhibit P to Byrd Declaration)(Byrd, Christine) (Entered: 02/22/2006)

02/23/2006 492 ORDER re 475 Notice (Other) Joint Proposed] Stipulation and Order on Objections to Third Party Documents As Trial Exhibits . Signed by Judge Caroline Craven on 2/22/06. (mpv,) (Entered: 02/23/2006)

02/24/2006 495 NOTICE by "EchoStar defendants" of Lodging of EchoStar's Shortened Designated Deposition Testimony (Kramer, Karl) (Entered: 02/24/2006)

02/24/2006 496 Second Amended ANSWER to Counterclaim by EchoStar Communications Corp. by TIVO Inc(a Delaware corporation).(Hoffman, Adam) (Entered: 02/24/2006)

02/24/2006 497 Second Amended ANSWER to Counterclaim by EchoStar Technologies Corp., EchoSphere LLC, and EchStar Satellite LLC by TIVO Inc(a Delaware corporation).(Hoffman, Adam) (Entered: 02/24/2006)

02/27/2006 498 ***VACATED PER ORDER # 521 *** ORDER denying [469] Sealed Motion to Amend the Proposed Joint Pre-trial Order. Signed by Judge David Folsom on 2/27/06. (mrm,) Modified on 3/13/2006 (mrm,). (Entered: 02/27/2006)

02/27/2006 499 Minute Entry for proceedings held before Judge Caroline Craven : Hearing on Depo Designations and trial exhibits held on 2/27/2006. (Court Reporter Leslie Bates.) (lf,) (Entered: 02/27/2006)

02/28/2006 501 Minute Entry for proceedings held before Judge David Folsom : Telephone Conference held on 2/28/2006. (mrm,) (Entered: 03/01/2006)

03/01/2006 502 NOTICE by TIVO Inc re 483 Order, TiVo's Reply In Support of Its Brief on Claim Construction of the Preamble (Armond, Michelle) (Entered: 03/01/2006)

03/01/2006 503 ORDER regarding the parties' objections to deposition designations and exhibits, the Court issues the rulings as set forth herein. Signed by Judge Caroline Craven on 3/1/06. (ehs,) (Entered: 03/02/2006)

03/03/2006 504 MOTION for Leave to File a Surreply Brief In Support of the Court's Ruling on Motion in Limine No. 6 that the Preamble is Not a Limitation to the Claims by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Kramer, Karl) (Entered: 03/03/2006)

03/03/2006 505 MOTION for Reconsideration re 498 Order on Sealed Motion Denying Leave to Amend the Proposed Joint Pre-Trial Order by TIVO Inc. (Attachments: # 1 Declaration# 2 Exhibit A# 3 Exhibit B# 4 Exhibit C# 5 Text of Proposed Order)(Armond, Michelle) Additional attachment(s) added on 3/3/2006 (ch,). (Entered: 03/03/2006)

03/03/2006 506 NOTICE by TIVO Inc, "EchoStar defendants" of Filing of Joint Proposed Order on Deposition Designations Per Hearing Before Magistrate Judge Craven on February 27, 2006 (Attachments: # 1 Joint Proposed Order on Deposition Designations)(Kramer, Karl) (Entered: 03/03/2006)

03/06/2006 509 ORDER on Deposition Designations per Hearing before Magistrate Judge Craven on 2/27/06, ruling set forth herein . Signed by Judge Caroline Craven on 3/6/06. (ehs,) (Entered: 03/07/2006)

03/06/2006 510 Minute Entry for proceedings held before Judge David Folsom : Jury Selection and Hearing held on 3/6/2006. (mrm,) (Entered: 03/07/2006)

03/07/2006 511 ORDER; The Court hereby SETS an expedited briefing schedule as follows: 3/9th by 5pm ddl for Echostar to file a response, if any; 3/10th by 5pm ddl for TiVo to file a reply, if any. Signed by Judge David Folsom on 3/7/06. (mrm,) (Entered: 03/07/2006)

03/07/2006 512 ORDER GRANTING ECHOSTAR'S MOTION FOR LEAVE TO FILE A SURREPLY BRIEF IN SUPPORT OF THE COURT'S RULING ON MOTION IN LIMINE NO 6 THAT THE PREAMBLE IS NOT A LIMITATION TO THE CLAIMS; granting 504 Motion for Leave to File . Signed by Judge David Folsom on 3/7/06. (mrm,) (Entered: 03/07/2006)

03/07/2006 -- NOTICE TO PARTIES: The surreply referred to in ORDER # 512, was not filed because, it was not attached to the motion. It is the Ptys responsibility to file their Surreply. (mrm,) (Entered: 03/07/2006)

03/09/2006 515 TRANSCRIPT of Motion Hearing held on March 6, 2006 at 2:45 pm before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 03/09/2006)

03/09/2006 516 ORDER denying 490 Motion for Reconsideration of Magistrate Judge's Ruling on TiVo Trial Exhibits 1516, 1515, 1683, 1703, 1705, 1709 . Signed by Judge Caroline Craven on 3/9/06. (ehs,) (Entered: 03/09/2006)

03/10/2006 517 ***FILED IN ERROR; PLEASE IGNORE; COURT WILL REDOCKET SINCE OPPOSITION SHOULD HAVE BEEN FILE PRIOR TO THIS DOCUMENT*** RESPONSE in Support re 505 MOTION for Reconsideration re 498 Order on Sealed Motion Denying Leave to Amend the Proposed Joint Pre-Trial Order filed by TIVO Inc. (Armond, Michelle) Modified on 3/13/2006 (mpv,). (Entered: 03/10/2006)

03/10/2006 -- ***FILED IN ERROR. DOCKETED INCORRECTLY DUE TO CLERICAL ERROR BY COURT Document # 517, RESPONSE in Support re 505 MOTION for Reconsideration re 498 Order on Sealed Motion Denying Leave to Amend the Proposed Joint Pre-Trial Order. PLEASE IGNORE. Court will refile *** (mpv,) (Entered: 03/13/2006)

03/10/2006 519 REPLY to Response to Motion re 505 MOTION for Reconsideration re 498 Order on Sealed Motion Denying Leave to Amend the Proposed Joint Pre-Trial Order filed by TIVO Inc. (mpv,) (Entered: 03/13/2006)

03/13/2006 520 ORDER; The Court finds that the preambles to the asserted claims of the '389 patent are not limitations . Signed by Judge David Folsom on 3/13/06. (mrm,) (Entered: 03/13/2006)

03/13/2006 521 ORDER, granting 505 MOTION for Reconsideration re 498 Order on Sealed Motion Denying Leave to Amend the Proposed Joint Pre-Trial Order filed by TIVO Inc. Accordingly, it is further ORDERED that the Court's 2/27/06 Order is VACATED and TiVo's Motion for Leave to Amend the Proposed Joint Pretrial Order [469] is GRANTED. Proposed Pretrial Order due by 3/24/2006 at 5pm. Ptys shall provide supplemental expert reports directed exclusively to dependent claims 5 and 36 by 3/20/06 at 5pm. Each pty shall have 5 additional hrs of deposition to depose respective experts. Depositions shall be completed prior to trial; Ptys shall confer by 3/15/06 to discuss issues of claim construction re: claims 5 and 36. Ptys shall have until 3/20/06 by 5pm to file Markman Briefs and until 3/22/06 by 5pm to respond. Both intial and responses shall be limited to 5 pgs. Signed by Judge David Folsom on 3/13/06. (mrm,) (Entered: 03/13/2006)

03/13/2006 522 ***FILED IN ERROR; PLEASE IGNORE; DOCUMENT SHOULD HAVE BEEN FILED UNDER SEAL; DOCUMENT MOTION REFERS TO HAS NOT BEEN FILED*** MOTION to Expedite Briefing on EchoStar's Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis Disclosed for the First Time on March 10, 2006 by "EchoStar defendants". (Kramer, Karl) Modified on 3/14/2006 (mpv,). (Entered: 03/13/2006)

03/13/2006 523 ***FILED IN ERROR; DEFICIENT DOCUMENT; NO CERTIFICATE OF CONFERENCE; ATTY MUST REFILE; PLEASE IGNORE*** MOTION for Reconsideration of Magistrate Judge's Ruling on TiVo Exhibit 1656 by TIVO Inc. (Attachments: # 1 Exhibit A# 2 Text of Proposed Order Proposed Order)(Byrd, Christine) Modified on 3/14/2006 (mpv,). (Entered: 03/13/2006)

03/13/2006 -- ***FILED IN ERROR. Document # 522, MOTION to Expedite Briefing on EchoStar's Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis Disclosed for the First Time on March 10, 2006. SHOULD HAVE BEEN FILED UNDER SEAL AFTER THE MOTION TO STRIKE IS FILED: PLEASE IGNORE.*** (mpv,) (Entered: 03/14/2006)

03/13/2006 -- NOTICE of Deficiency regarding the #523 MOTION for Reconsideration of Magistrate Judge's Ruling on TiVo Exhibit 1656 submitted by TIVO Inc. No Certificate of Conference. Correction should be made by 3/15/06 (mpv,) (Entered: 03/14/2006)

03/14/2006 524 ***FILED IN ERROR; PLEASE IGNORE; DOCUMENT SHOULD HAVE BEEN FILED UNDER SEAL; WILL BE REFILED*** RESPONSE to Motion re 522 MOTION to Expedite Briefing on EchoStar's Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis Disclosed for the First Time on March 10, 2006 filed by TIVO Inc.(Byrd, Christine) Modified on 3/14/2006 (mpv,). (Entered: 03/14/2006)

03/14/2006 -- ***FILED IN ERROR. Document # 524, RESPONSE to Motion re 522 MOTION to Expedite Briefing on EchoStar's Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis Disclosed for the First Time on March 10, 2006. SHOULD BE FILED UNDER SEAL AFTER MOTION TO STRIKE AND MOTION FOR EXPEDITED BRIEFING IS FILED; PLEASE IGNORE.*** (mpv,) (Entered: 03/14/2006)

03/15/2006 528 ORDER denying 190 Motion for Partial Summary Judgment of No Willful Infringement. Signed by Judge David Folsom on 3/15/06. (mrm,) (Entered: 03/15/2006)

03/15/2006 529 ORDER denying 228 Motion for Partial Summary Judgment of Infringement of Claims 1 and 32 Signed by Judge David Folsom on 3/15/06. (mrm,) (Entered: 03/15/2006)

03/15/2006 530 ORDER denying 214 Motion for Partial Summary Judgment of Non-Infringement and denying 271 TiVo's Cross Motion for Partial Summary Judgment of Infringement . Signed by Judge David Folsom on 3/15/06. (mrm,) (Entered: 03/15/2006)

03/15/2006 532 MOTION for Reconsideration replacing document #523 by TIVO Inc. (Attachments: # 1 Exhibit Exhibit A# 2 Text of Proposed Order Proposed Order)(Byrd, Christine) (Entered: 03/15/2006)

03/15/2006 533 MOTION to Continue the Trial by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(McElhinny, Harold) (Entered: 03/15/2006)

03/15/2006 534 MOTION for Additional Time at Trial by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(McElhinny, Harold) (Entered: 03/15/2006)

03/16/2006 536 ORDER denying 136 Motion for Partial Summary Judgment of Non-Infringement: (1) No Infringement by EchoStar's 7100/7200 Devices; and (2) No Infringement Under the Doctrine of Equivalents . Signed by Judge David Folsom on 3/16/06. (mrm,) (Entered: 03/16/2006)

03/16/2006 537 ORDER re 533 MOTION to Continue the Trial filed by "EchoStar defendants", The Court hereby SETS the following expedited briefing schedule on this motion: 3/17/06 ddl for TiVo to file a response; 3/21/06 ddl for EchoStar to file a reply. Signed by Judge David Folsom on 3/16/06. (mrm,) (Entered: 03/16/2006)

03/16/2006 538 ORDER re 534 MOTION for Additional Time at Trial filed by "EchoStar defendants", The Court hereby SETS the following expedited briefing schedule on this motion: 3/17/06 ddl for TiVo to file a response; 3/21/06 ddl for EchoStar to file a reply. Signed by Judge David Folsom on 3/16/06. (mrm,) (Entered: 03/16/2006)

03/16/2006 539 ORDER re [527] SEALED MOTION filed by "EchoStar defendants", [525] SEALED MOTION filed by "EchoStar defendants", The Court hereby SETS the following expedited briefing schedule on EchoStar's Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis Disclosed for the First Time on 3/10/06: 3/17/06 ddl for TiVo to file a response; 3/21/06 ddl for EchoStar to file a reply. Signed by Judge David Folsom on 3/16/06. (mrm,) (Entered: 03/16/2006)

03/16/2006 540 NOTICE by TIVO Inc, Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company [Joint Proposed] Order on Objections to TiVo's Trial Exhibits (Attachments: # 1 Exhibit A) (Hoffman, Adam)(OK Per Judge) Modified on 3/17/2006 (mpv,). (Entered: 03/16/2006)

03/17/2006 541 ORDER re 540 Notice (Other), Notice (Other) filed by TIVO Inc,, Echostar Communications Corporation,, Echostar DBS Corporation,, EchoStar Technologies Corporation,, Echosphere Limited Liability Company,, Echostar Satellite LLC,. Based upon the Magistrate Judge's comments and rulings, and upon further meeting and conferring, the parties agree that the attached Exhibit List (Attached to #540) reflects Judge Craven's decisions on EchoStar's objections to TiVo's trial exhibits. In order to allow the parties to seek reconsideration of particular rulings pursuant to Appendix B of the Local Rules, the parties jointly request that this Order be entered without prejudice to the parties' positions on the rulings contained therein. Signed by Judge Caroline Craven on 3/17/06. (mpv,) (Entered: 03/17/2006)

03/17/2006 542 TRANSCRIPT of Jury Voir Dire Proceedings held on 3/6/06 @ 10:00 a.m. In Marshall, Tx before Honorable Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger, (150 pages) (ch,) (Entered: 03/17/2006)

03/17/2006 543 RESPONSE in Opposition re 533 MOTION to Continue the Trial filed by TIVO Inc. (Armond, Michelle) (Entered: 03/17/2006)

03/17/2006 544 RESPONSE in Opposition re 534 MOTION for Additional Time at Trial filed by TIVO Inc. (Armond, Michelle) (Entered: 03/17/2006)

03/20/2006 546 ORDER granting 534 Motion for Additional Time at Trial; The Court hereby ORDERS that ea pty will have 22 hours for case presentation, excluding time related to jury selection, opening statement, closing argument, and transition statements . Signed by Judge David Folsom on 3/20/06. (mrm,) (Entered: 03/20/2006)

03/20/2006 547 ***MISSING SIGNATURE PAGE. SEE CORRECTED ORDER # 569***

 ORDER re

533 Motion to Continue; ORDERS the trial schedule MODIFIED so that opening statements and the presentation of evidence is to commence on WEDNESDAY, 3/29/06 at 9:00 am. Signed by Judge David Folsom on 3/20/06. (mrm,) Modified on 3/23/2006 (mrm,). (Entered: 03/20/2006)

03/20/2006 548 ORDER that the Court has review the parties' positions and declines to claify 457 Order. The February 9, 2006 Order on Objections to Expert Reports as Trial Exhibits remains in effect.. Signed by Judge Caroline Craven on 3/20/06. (poa,) (Entered: 03/20/2006)

03/20/2006 549 SEALED PATENT DOCUMENT EchoStar's Opening Claim Construction Brief Regarding Claims 5 and 36. (Attachments: # (1) Affidavit of Nathaniel Polish and Exhibit 1# (2) Affidavit of Karl J. Kramer# (3) Exhibit A to Kramer Decl.# (4) Exhibit B to Kramer Decl.# (5) Exhibit C to Kramer Decl.# (6) Exhibit D to Kramer Decl.# (7) Exhibit E to Kramer Decl.# (8) Exhibit F to Kramer Decl.)(Kramer, Karl) (Entered: 03/20/2006)

03/20/2006 550 NOTICE by TIVO Inc re 521 Order,,,, Terminate Motions,,,, Set Scheduling Order Deadlines,,, Tivo's Brief on Claim Construction of Claims 5 and 36 (Attachments: # 1 Declaration# 2 Exhibit A# 3 Exhibit B# 4 Exhibit C)(Armond, Michelle) (Entered: 03/20/2006)

03/20/2006 551 SEALED PATENT DOCUMENT EchoStar's Reply In Support of Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis Disclosed for the First Time on March 10, 2006. (Kramer, Karl) (Entered: 03/20/2006)

03/20/2006 552 SEALED PATENT DOCUMENT Tivo's Opposition to EchoStar's Motion to Exclude Undisclosed Expert Testimony By Lay Witnesses and Expert Testimony Based Thereon. (Attachments: # (1) Affidavit Declaration of Christine Byrd in Support of Tivo's Opposition to EchoStar's Motion to Exclude Undisclosed Testimony By Lay Witnesses and Expert Testimony Based Thereon# (2) Exhibit A to Byrd Declaration# (3) Exhibit B to Byrd Declaration# (4) Exhibit C to Byrd Declaration# (5) Exhibit D to Byrd Declaration# (6) Exhibit E to Byrd Declaration)(Byrd, Christine) (Entered: 03/20/2006)

03/20/2006 553 MOTION for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on Tivo's Products by TIVO Inc. (Attachments: # 1 Affidavit Declaration of Christine Byrd In Support of Tivo's Motion for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on Tivo's Products# 2 Exhibit A to Byrd Declaration# 3 Exhibit B to Byrd Declaration# 4 Exhibit C to Byrd Declaration# 5 Exhibit D to Byrd Declaration# 6 Exhibit E to Byrd Declaration# 7 Exhibit F to Byrd Declaration# 8 Exhibit G to Byrd Declaration# 9 Exhibit H to Byrd Declaration# 10 Exhibit I to Byrd Declaration# 11 Exhibit J to Byrd Declaration# 12 Exhibit K to the Byrd Declaration# 13 Exhibit L to the Byrd Declaration)(Byrd, Christine) Additional attachment(s) added on 3/21/2006 (sm,). (Entered: 03/20/2006)

03/20/2006 554 FILED IN ERROR - PLEASE IGNORE - Additional Attachments to Main Document: 553 MOTION for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on Tivo's Products.. (Byrd, Christine) Modified on 3/21/2006 (sm,). (Entered: 03/20/2006)

03/20/2006 - ***FILED IN ERROR, PLEASE IGNORE, (DOCUMENT IS REALLY A PROPOSED ORDER TO #553). Document # 554, Additional Attachment. PLEASE IGNORE.*** (sm,) Modified on 3/22/2006 (mpv,). (Entered: 03/21/2006)

03/20/2006 569 ***REPLACES ORDER # 547 IT WAS MISSING THE SIGNATURE PAGE*** ORDER re 533 Motion to Continue; ORDERS the trial schedule MODIFIED so that opening statements and the presentation of evidence is to commence on WEDNESDAY, 3/29/06 at 9:00 am. . Signed by Judge David Folsom on 3/23/06. (mrm,) (Entered: 03/23/2006)

03/21/2006 555 ORDER OUTLINING COURTROOM PROCEDURES. Signed by Judge David Folsom on 3/21/06. (mrm,) (Entered: 03/21/2006)

03/21/2006 556 ORDER; The Court attaches hereto as Exhibit "A" its Proposed Preliminary Jury Instructions. Any comments on these instructions should be made by letter submitted to the Court and opposing counsel no later than Friday, 3/24/06 at 5pm . Signed by Judge David Folsom on 3/21/06. (Attachments: # 1 Exhibit A) Proposed Preliminary Jury Instructions)(mrm,) (Entered: 03/21/2006)

03/21/2006 557 NOTICE by "EchoStar defendants" of Lodging of EchoStar's Amended Proposed Jury Notebook (Attachments: # 1 Exhibit A)(Krevans, Rachel) (Entered: 03/21/2006)

03/21/2006 558 ORDER REGARDING JURY NOTEBOOKS. Signed by Judge David Folsom on 3/21/06. (mrm,) (Entered: 03/21/2006)

03/22/2006 560 ORDER granting [514] Sealed Motion for Leave to File in Excess of Page Limit Tivo's Brief in Opposition to EchoStar's Motion for Reconsideration of the Magistrate Judge's Order of 2/7/06. Signed by Judge David Folsom on 3/22/06. (mrm,) (Entered: 03/22/2006)

03/22/2006 561 SEALED PATENT DOCUMENT; TIVO'S BRIEF IN OPPOSITION TO ECHOSTAR'S MOTION FOR RECONSIDERATION OF THE MAGISTRATE JUDGE'S ORDER OF FEBRUARY 7, 2006.

(Attachments: # (1) Exhibit A# (2) Exhibit B# (3) Exhibit C# (4) Exhibit D# (5) Exhibit E# (6) Exhibit F# (7) Exhibit G# (8) Exhibit H# (9) Exhibit I# (10) Exhibit J# (11) Exhibit K# (12) Exhibit L Part 1# (13) Exhibit L Part 2# (14) Exhibit L Part 3# (15) Exhibit L Part 4# (16) Exhibit M# (17) Exhibit N# (18) Exhibit O# (19) Exhibit P)(mrm,) (Entered: 03/22/2006)

03/22/2006 562 ORDER re: courtesy copies. Signed by Judge David Folsom on 3/22/06. (mrm,) (Entered: 03/22/2006)

03/22/2006 563 ORDER granting [535] Sealed Motion to Exceed Page Limit to file their Reply Brief in Support of its Motion for Reconsideration by the District Judge of the Magistrate Judge's Order of February 7, 2006. Signed by Judge David Folsom on 3/22/06. (mrm,) (Entered: 03/22/2006)

03/22/2006 564 SEALED PATENT DOCUMENT; ECHOSTAR'S REPLY BRIEF IN SUPPORT OF ITS MOTION FOR RECONSIDERATION BY THE DISTRICT JUDGE OF THE MAGISTRATE JUDGE'S ORDER OF FEBRUARY 7,2006 (mrm,) (Entered: 03/22/2006)

03/22/2006 565 NOTICE by TIVO Inc TiVo's Sur-Reply to EchoStar's Motion to Exclude or Strike Dr. Ugone's Market Share Analysis (Armond, Michelle) (Entered: 03/22/2006)

03/22/2006 566 ***FILED IN ERROR; DEFICIENT DOCUMENT; ATTORNEY MUST REFILE; PLEASE IGNORE*** SEALED PATENT MOTION EchoStar's Motion for Leave to File a Surreply Brief in Support of Its Motion for Reconsideration by the District Judge of the Magistrate Judge's Order of February 7, 2006 by "EchoStar defendants". (Attachments: # (1) Exhibit A)(Kramer, Karl) Modified on 3/23/2006 (mpv,). (Entered: 03/22/2006)

03/22/2006 567 SEALED PATENT RESPONSE by "EchoStar defendants" to 550 Notice (Other), Notice (Other) EchoStar's Responsive Claim Construction Brief Regarding Claims 5 and 36. (Attachments: # (1) Affidavit of Karl J. Kramer and Exhibit A)(Kramer, Karl) (Entered: 03/22/2006)

03/22/2006 568 SEALED PATENT DOCUMENT TIVO'S REPLY BRIEF ON CLAIM CONSTRUCTION OF CLAIMS 5 AND 36. (Attachments: # (1) Declaration# (2) Exhibit # (3) Declaration# (4) Exhibit)(Armond, Michelle) (Entered: 03/22/2006)

03/22/2006 -- NOTICE of Deficiency regarding #566 SEALED PATENT MOTION EchoStar's Motion for Leave to File a Surreply Brief in Support of Its Motion for Reconsideration by the District Judge of the Magistrate Judge's Order of February 7, 2006 submitted Sealed document attached to motion for leave to file, under new procedures as of 3/22/06 cannot be filed. Atty must refile.. Correction should be made by one business day. (mpv,) (Entered: 03/23/2006)

03/23/2006 570 ORDER denying 182 Motion for Partial Summary Judgment re: Damages Period . Signed by Judge David Folsom on 3/23/06. (mrm,) (Entered: 03/23/2006)

03/23/2006 571 ORDER sua sponte re [508] SEALED MOTION filed by "EchoStar defendants". The deadline to file a reply on this motion is 3/27/06 at 1:00 p.m. CST . Signed by Judge David Folsom on 3/23/06. (mpv,) (Entered: 03/23/2006)

03/23/2006 572 ORDER re 532 MOTION for Reconsideration replacing document #523 filed by TIVO Inc. To protect Its Position RE: Magistrate Judge's Ruling on RiVo Exhibit 1656, Dkt # 532. It is hereby ORDERED: The RESPONSE is due on 3/27/06 at 1:00 p.m. CST. The REPLY is due on 3/28/06 at 1:00 p.m. CST. Signed by Judge David Folsom on 3/23/06. (mpv,) (Entered: 03/23/2006)

03/23/2006 573 ORDER sua sponte re 553 MOTION for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on TiVo's Products filed by TIVO Inc. It is hereby ORDERED: The RESPONSE is due on 3/27/06 at 1:00 p.m. CST. The REPLY is due on 3/28/06 at 1:00 p.m. CST. Signed by Judge David Folsom on 3/23/06. (mpv,) (Entered: 03/23/2006)

03/23/2006 574 MOTION for Leave to File a Surreply Brief In Support of Its Motion for Reconsideration by the District Judge of the Magistrate Judge's Order of February 7, 2006 by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Kramer, Karl) (Entered: 03/23/2006)

03/23/2006 576 Proposed Pretrial Order (Amended) by TIVO Inc, Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company. (Attachments: # 1 Exhibit A: TiVo's Contentions# 2 Exhibit B: EchoStar's Contentions# 3 Exhibit C: TiVo's Witness List# 4 Exhibit D: EchoStar's Witness List# 5 Exhibit Exhibit E: EchoStar's Objections to TiVo's Witness List# 6 Exhibit F: TiVo's Objections to EchoStar's Exhibit List# 7 Exhibit G: TiVo Exhibit List# 8 Exhibit H: EchoStar's Exhibit List# 9 Exhibit I: TiVo Deposition Designations# 10 Exhibit J: EchoStar's Deposition Designations)(Byrd, Christine) (Entered: 03/23/2006)

03/24/2006 577 ORDER denying 189 Motion for Partial Summary Judgment of Invalidity Due to Indefiniteness. Signed by Judge David Folsom on 3/24/06. (mrm,) (Entered: 03/24/2006)

03/24/2006 578 ORDER GRANTING ECHOSTAR'S UNOPPOSED MOTION FOR LEAVE TO FILE A SURREPLY BRIEF IN SUPPORT OF ITS MOTION FOR RECONSIDERATION BY THE DISTRICT JUDGE OF THE MAGISTRATE JUDGE'S ORDER OF FEBRUARY 7, 2006; granting 574 Motion for Leave to File .

Signed by Judge David Folsom on 3/24/06. (mrm,) (Entered: 03/24/2006)

03/24/2006 579 JOINT FINAL PRETRIAL ORDER. Signed by Judge David Folsom on 3/24/06. (Attachments: # 1 Exhibit A) TiVo's Contentions# (2) Exhibit B) (Corrected) EchoStar's Contentions# 3 Exhibit C) TiVo's Witness List# (4) Exhibit D) (Corrected)EchoStar's Witness List# 5 Exhibit E) Objections to TiVo's Witness List# 6 Exhibit F) Objections to EchoStar's Witness List# 7 Exhibit G) TiVo's Exhibit List# (8) Exhibit H) EchoStar's Exhibit List# 9 Exhibit I) TiVo's Deposition Designations# 10 Exhibit J) EchoStar's Deposition Designations)(mrm,) Additional attachment(s) added on 3/27/2006 (mrm,). Modified on 3/27/2006 (mrm,). Additional attachment(s) added on 3/28/2006 (mrm,). Additional attachment(s) added on 3/28/2006 (mrm,). (Entered: 03/24/2006)

03/24/2006 580 MOTION to Exclude The Testimony of Defendats' Witness Homer Knearl And All Reference To His Opinion Work by TIVO Inc. (Attachments: # 1 Declaration# 2 Exhibit F# 3 Exhibit B# 4 Exhibit C# 5 Exhibit D# 6 Exhibit E# 7 Exhibit F# 8 Exhibit G# 9 Text of Proposed Order)(Armond, Michelle) (Entered: 03/24/2006)

03/24/2006 581 ORDER re [575] SEALED PATENT MOTION for Reconsideration by the District Judge of the Magistrate Judge's Order of March 17, 2006 filed by "EchoStar defendants"; ORDERED: RESPONSE is due on Monday, 3/27/06 at 5pm cst; REPLY is due on Tuesday, 3/28/06 at 1pm cst. Signed by Judge David Folsom on 3/24/06. (mrm,) (Entered: 03/24/2006)

03/24/2006 582 ORDER OF CLARIFICATION; re: jury notebooks. Signed by Judge David Folsom on 3/24/06. (Attachments: # 1 Exhibit A)(mrm,) (Entered: 03/24/2006)

03/24/2006 583 SUPPLEMENTAL CLAIM CONSTRUCTION ORDER . Signed by Judge David Folsom on 3/24/06. (mrm,) (Entered: 03/24/2006)

03/24/2006 584 SEALED PATENT DOCUMENT - EchoStar's Surreply Brief in Support of its Motion for Reconsideration by the District Judge of the Magistrate Judge's Order of February 7, 2006. (Pickett, John) (Entered: 03/24/2006)

03/26/2006 585 Consent MOTION to Amend/Correct 576 Proposed Pretrial Order,, Exhibits B and D by "EchoStar defendants". (Attachments: # 1 Exhibit B# 2 Exhibit D# 3 Text of Proposed Order)(Kramer, Karl) (Entered: 03/26/2006)

03/27/2006 586 MOTION to Exclude Testimony of V. Thomas Rhyne Regarding Claims 5 and 36 by TIVO Inc. (Attachments: # 1 Declaration# 2 Exhibit A# 3 Exhibit B# 4 Text of Proposed Order)(Armond, Michelle) (Entered: 03/27/2006)

03/27/2006 587 SEALED PATENT DOCUMENT Notice of Filing of Letter Brief with Magistrate Judge Craven. (Attachments: # (1) Exhibit Letter Brief to Magistrate Re EchoStar Request for Better Copies of Documents# (2) Exhibit EchoStar Trial Exhibit 788# (3) Exhibit EchoStar Trial Exhibit 2888# (4) Exhibit EchoStar Trial Exhibit 1840# (5) Exhibit 3/23/06 E-Mail to Counsel)(Byrd, Christine) (Entered: 03/27/2006)

03/27/2006 588 Consent MOTION for Leave to File Excess Pages to EchoStar's Reply Re Motion to Exclude Undisclosed Expert Opinion Testimony By Lay Witnesses and Expert Testimony Based Thereon by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 589 RESPONSE to Motion re 532 MOTION for Reconsideration replacing document #523 filed by "EchoStar defendants". (Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 590 SEALED PATENT RESPONSE to SEALED PATENT MOTION re 553 MOTION for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on TiVo's Products filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D)(Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 591 SEALED PATENT DOCUMENT EchoStar's Reply Re Motion to Exclude Undisclosed Expert Opinion Testimony By Lay Witnesses and Expert Testimony Based Thereon. (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A)(Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 592 Proposed Jury Instructions by "EchoStar defendants". (Attachments: # 1 Exhibit D-Jury Instructions# 2 Exhibit F-Verdict Form)(Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 593 Consent MOTION to Amend/Correct 585 Consent MOTION to Amend/Correct 576 Proposed Pretrial Order,, Exhibits B and D by "EchoStar defendants". (Attachments: # 1 Exhibit D# 2 Text of Proposed Order)(Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 594 ORDER GRANTING ECHOSTAR'S UNOPPOSED MOTION TO CORRECT EXHIBITS B AND D TO THE JOINT FINAL PRE-TRIAL ORDER; granting 585 Motion to Amend/Correct . Signed by Judge David Folsom on 3/27/06. (mrm,) (Entered: 03/27/2006)

03/27/2006 -- NOTICE of docket correction; 579 Joint Final Pre-trial Order corrected as per order # 594, exhibits B and D substituted (mrm,) (Entered: 03/27/2006)

03/27/2006 595 ORDER; EchoStar is hereby ORDERED to submit to the Court a copy of Exhibit No. 3490 and of Exhibit No. 3497 no later than TUESDAY, MARCH 28th at 1pm . Signed by Judge David Folsom on 3/27/06. (mrm,) (Entered: 03/27/2006)

03/27/2006 596 ORDER re 580 MOTION to Exclude The Testimony of Defendats' Witness Homer Knearl And All Reference To His Opinion Work filed by TIVO Inc, ORDERED: RESPONSE is due on FRIDAY, 3/31/06 and the REPLY is due on MONDAY, 4/3/06 at 1pm . Signed by Judge David Folsom on 3/27/06. (mrm,) (Entered: 03/27/2006)

03/27/2006 597 ORDER re 586 MOTION to Exclude Testimony of V. Thomas Rhyne Regarding Claims 5 and 36 filed by TIVO Inc, ORDERED: RESPONSE is due on Friday, 3/31 and REPLY is due on Monday, 4/3/06 at 1pm . Signed by Judge David Folsom on 3/27/06. (mrm,) (Entered: 03/27/2006)

03/27/2006 598 ORDER granting [559] Sealed Motion for Leave to File a Surreply Brief in Opposition to EchoStar's Motion for Reconsideration of the Magistrate Judge's Order of 2/7/06. Signed by Judge David Folsom on 3/27/06. (mrm,) (Entered: 03/27/2006)

03/27/2006 599 SEALED PATENT DOCUMENT, TIVO'S SURREPLY IN OPPOSITION TO ECHOSTAR'S MOTION FOR RECONSIDERATION OF THE MAGISTRATE JUDGE'S ORDER OF 2/7/06; re [487] SEALED MOTION for Reconsideration of the Magistrate Judge's Order of 2/7/06 filed by TIVO Inc. (mrm,) Modified on 3/28/2006 (mrm,). (Entered: 03/27/2006)

03/27/2006 600 SEALED PATENT RESPONSE to SEALED PATENT MOTION re 580 MOTION to Exclude The Testimony of Defendats' Witness Homer Knearl And All Reference To His Opinion Work filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Alison M. Tucher# (2) Exhibit A-F) (Tucher, Alison) (Entered: 03/27/2006)

03/27/2006 601 NOTICE by "EchoStar defendants" Regarding EchoStar Trial Exhibit Nos. 3490 and 3497 (Attachments: # 1 Exhibit A# 2 Exhibit B)(Kramer, Karl) (Entered: 03/27/2006)

03/27/2006 602 SEALED PATENT DOCUMENT TIVo Opposition to EchoStar Motion for Reconsideration By the District Judge of the Magistrate's Order of March 17, 2006. (Attachments: # (1) Affidavit Hoffman Declaration in Support of TiVo Opposition# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D# (6) Exhibit E# (7) Exhibit F)(Byrd, Christine) Certificate of Authorization to File Sealed Document added on 3/30/2006 (mpv,). Modified on 3/30/2006 (mpv,). (Entered: 03/27/2006)

03/27/2006 603 NOTICE by "EchoStar defendants" of Filing of Letter Brief to Magistrate Judge Craven (Kramer, Karl) (Entered: 03/27/2006)

03/28/2006 604 NOTICE by "EchoStar defendants" of Filing of Letter Brief to Magistrate Judge Craven (Kramer, Karl) (Entered: 03/28/2006)

03/28/2006 605 RESPONSE in Support re 580 MOTION to Exclude The Testimony of Defendats' Witness Homer Knearl And All Reference To His Opinion Work filed by TIVO Inc. (Attachments: # 1 Declaration# 2 Exhibit H)(Armond, Michelle) (Entered: 03/28/2006)

03/28/2006 606 ORDER granting 588 Motion to Exceed Page Limit to file their Reply Re Motion to Exclude Undisclosed Expert Opinion Testimony by Lay Witnesses and Expert Testimony Based Thereon. Signed by Judge David Folsom on 3/28/06. (Reply is already on file as dkt # [591], was filed prior to order being granted) (mrm,) (Entered: 03/28/2006)

03/28/2006 607 ORDER granting 593 Motion to Correct Exhibit D to the Joint Final Pre-trial Order. Signed by Judge David Folsom on 3/28/06. (mrm,) (Entered: 03/28/2006)

03/28/2006 -- NOTICE OF DOCKET CORRECTION: Exhibit D to Document # 579, Final Pre-trial Order, substituted as per order # 607. (mrm,) (Entered: 03/28/2006)

03/28/2006 608 Proposed Jury Instructions by TIVO Inc. (Byrd, Christine) (Entered: 03/28/2006)

03/28/2006 609 SEALED PATENT DOCUMENT EchoStar's Reply Brief In Support of its Motion for Reconsideration by the District Judge of the Magistrate Judge's Order of March 17, 2006. (Kramer, Karl) Certificate of Authorization to File Sealed Document added on 3/31/2006 (mpv,). Modified on 3/31/2006 (mpv,). (Entered: 03/28/2006)

03/28/2006 610 SEALED PATENT RESPONSE to SEALED PATENT MOTION re 553 MOTION for Reconsideration of Magistrate Judge's Ruling on Admissibility of Exhibits on TiVo's Products Reply in Support of Motion filed by TIVO Inc. (Byrd, Christine) Certificate of Authorization to File Sealed Document added on 3/30/2006 (mpv,). Modified on 3/30/2006 (mpv,). (Entered: 03/28/2006)

03/28/2006 611 Consent MOTION to Amend/Correct 579 Pretrial Order,, Exhibit H by "EchoStar defendants". (Attachments: # 1 Exhibit H# 2 Text of Proposed Order)(Kramer, Karl) (Entered: 03/28/2006)

03/28/2006 612 ORDER re: Preliminary Jury Instructions. Signed by Judge David Folsom on 3/28/06. (Attachments: # 1 Exhibit A)(mrm,) (Entered: 03/28/2006)

03/28/2006 613 ORDER granting 611 Motion to Correct Exhibit H to the Joint Final Pre-trial Order. Signed by Judge David Folsom on 3/28/06. (mrm,) (Entered: 03/28/2006)

03/28/2006 -- NOTICE OF DOCKET CORRECTION: Exhibit H of Document # 579, Joint Final Pre-trial Order substituted per order # 613(mrm,) (Entered: 03/28/2006)

03/28/2006 614 SEALED PATENT DOCUMENT TiVo's Sur-Reply to EchoStar's Motion to Exclude "Undisclosed Expert Opinion Testimony by Lay Witnesses And Expert Testimony Based Thereon". (Armond, Michelle) (Entered: 03/28/2006)

03/28/2006 615 SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art by TIVO Inc. (Attachments: # (1) Declaration# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D# (6) Text of Proposed Order)(Armond, Michelle) (Entered: 03/28/2006)

03/29/2006 616 SEALED PATENT DOCUMENT TiVo's Brief in Support of Its Objections to EchoStar's New Exhibits and In Opposition to EchoStar's New Objections to TiVo's Exhibits. (Attachments: # (1) Exhibit A# (2) Exhibit B# (3) Exhibit 3564# (4) Exhibit 3567# (5) Exhibit 2110# (6) Exhibit 2111# (7) Exhibit 2112# (8) Exhibit 2113# (9) Exhibit 2114# (10) Exhibit 2115# (11) Exhibit 2116# (12) Exhibit 2117# (13) Exhibit 2118# (14) Exhibit 2120# (15) Exhibit 2121# (16) Exhibit 2122# (17) Exhibit 2123# (18) Exhibit 2124# (19) Exhibit 2125# (20) Exhibit 2125# (21) Exhibit 2127# (22) Exhibit 1899# (23) Exhibit 2105# (24) Exhibit 2106# (25) Exhibit 2107)(Hoffman, Adam) (Entered: 03/29/2006)

03/29/2006 617 MOTION for Reconsideration of Magistrate Judge's Rulings by TIVO Inc. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Exhibit C)(Byrd, Christine) Proposed Order added on 3/30/2006 (mpv,). Modified on 3/30/2006 (mpv,). (Entered: 03/29/2006)

03/29/2006 618 NOTICE by "EchoStar defendants" EchoStar's Submission of "Agreed Upon" EchoStar Trial Exhibits (Attachments: # 1 Exhibit A)(Kramer, Karl) (Entered: 03/29/2006)

03/29/2006 619 ORDER re [615] SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art filed by TIVO Inc; ORDERED: RESPONSE is due on Friday, 3/31/06 at 1pm and REPLY is due on Monday, 4/3/06 at 10:00 am . Signed by Judge David Folsom on 3/29/06. (mrm,) (Entered: 03/29/2006)

03/29/2006 620 ORDER re [616] Sealed Patent Document, TiVo's Brief in Support of its Objections to New EchoStar Exhibits and in Opposition to EchoStar's New objections to TiVo's Trial Exhibits; ORDERED: RESPONSE is due on Friday, 3/31/06 at 1pm and REPLY is due on Monday, 4/3/06 at 10:00 am . Signed by Judge David Folsom on 3/29/06. (mrm,) (Entered: 03/29/2006)

03/29/2006 621 ORDER re 617 MOTION for Reconsideration of Magistrate Judge's Rulings filed by TIVO Inc; ORDERED: RESPONSE is due on Friday, 3/31/06 at 1pm and REPLY is due on Monday, 4/3/06 at 10:00 am. Signed by Judge David Folsom on 3/29/06. (mrm,) (Entered: 03/29/2006)

03/30/2006 622 Proposed Jury Instructions by "EchoStar defendants". (Kramer, Karl) (Entered: 03/30/2006)

03/30/2006 623 NOTICE by TIVO Inc Response to EchoStar's Request for A Limiting Jury Instruction Regarding Copying (Attachments: # 1 Exhibit A# 2 Exhibit B)(Armond, Michelle) (Entered: 03/30/2006)

03/30/2006 624 MOTION for a Limiting Jury Instruction Regarding Copying by "EchoStar defendants". (Attachments: # 1 Affidavit of Karl J. Kramer# 2 Text of Proposed Order)(Kramer, Karl) (Entered: 03/30/2006)

03/30/2006 625 ***FILED IN ERROR; PLEASE IGNORE; NO SIGNATURE ON DECLARATION: REPLACED BY # [626]*** SEALED PATENT RESPONSE to SEALED PATENT MOTION re [615] SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A# (3) Exhibit B)(Kramer, Karl) Modified on 3/31/2006 (mpv,). (Entered: 03/30/2006)

03/30/2006 626 ***CORRECTS DEFICIENT DOCUMENT #625*** SEALED PATENT RESPONSE to SEALED PATENT MOTION re [615] SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A# (3) Exhibit B)(Kramer, Karl) Modified on 3/31/2006 (mpv,). (Entered: 03/30/2006)

03/30/2006 627 MOTION to Preclude Introduction of Exhibits to Dr. Gibson's Expert Report by "EchoStar defendants". (Kramer, Karl) Certificate of Conference (Inadvertently omitted per atty) added on 3/31/2006 (mpv,). Modified on 3/31/2006 (mpv,). Proposed Order added on 3/31/2006 (mpv,). Modified on 3/31/2006 (mpv,). (Entered: 03/30/2006)

03/30/2006 628 RESPONSE in Opposition re 617 MOTION for Reconsideration of Magistrate Judge's Rulings filed by "EchoStar defendants". (Kramer, Karl) (Entered: 03/30/2006)

03/30/2006 -- NOTICE of Deficiency regarding the SEALED PATENT RESPONSE to SEALED PATENT MOTION re 615 SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art #625 submitted Declaration not signed. Corrected by #626. (mpv,) (Entered: 03/31/2006)

03/31/2006 629 RESPONSE in Opposition re 627 MOTION to Preclude Introduction of Exhibits to Dr. Gibson's Expert Report Tivo's Opposition to EchoStar's Motion to Preclude Introduction of Exhibits to Dr. Gibson's Expert Report filed by TIVO Inc. (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Exhibit C# 4 Exhibit D# 5 Exhibit E# 6 Exhibit F)(Hoffman, Adam) (Entered: 03/31/2006)

03/31/2006 630 SEALED PATENT RESPONSE to SEALED PATENT MOTION re 586 MOTION to Exclude Testimony of V. Thomas Rhyne Regarding Claims 5 and 36 filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A-D)(Kramer, Karl) (Entered: 03/31/2006)

03/31/2006 631 SEALED PATENT RESPONSE by "EchoStar defendants" to [616] Sealed Patent Document,, EchoStar's Response to TiVo's Brief In Support of its Objections to New EchoStar Exhibits and In Opposition to EchoStar's New Objections to TiVo's Trial Exhibits. (Kramer, Karl) (Entered: 03/31/2006)

03/31/2006 632 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [615] SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art filed by TIVO Inc. (Armond, Michelle) (Entered: 03/31/2006)

03/31/2006 633 ORDER; Both parties are hereby ORDERED to submit to the Court their proposed final jury instructions and their proposed final jury verdict form saved as an electronic file formatted in WordPerfect. The electronic copies shall be submitted no later than MONDAY, 4/3/06 at 1pm . Signed by Judge David Folsom on 3/31/06. (mrm,) (Entered: 03/31/2006)

03/31/2006 634 NOTICE by TIVO Inc Response to EchoStar's Objections Re Demonstrative Exhibits to be Used with Dr. Ugone (Attachments: # 1)(Armond, Michelle) (Entered: 03/31/2006)

04/02/2006 635 NOTICE by "EchoStar defendants" re 634 Notice (Other) EchoStar's Reply to TiVo's Response to EchoStar's Objections Re Demonstrative Exhibits to be Used with Dr. Ugone (Kramer, Karl) (Entered: 04/02/2006)

04/02/2006 636 SEALED PATENT DOCUMENT Notice of Response to TiVo's Objection to EchoStar's Trial Exhibit Nos. 1282 and 2449 and To EchoStar's Written Opinions of Counsel. (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D# (6) Exhibit E# (7) Exhibit F# (8) Exhibit G# (9) Exhibit H)(Kramer, Karl) (Entered: 04/02/2006)

04/02/2006 637 MOTION to Seal Specified Portions of the Trial Transcripts of March 29, 2006 by TIVO Inc. (Attachments: # 1 Text of Proposed Order Proposed Order)(Byrd, Christine) (Entered: 04/02/2006)

04/03/2006 638 RESPONSE in Support re 586 MOTION to Exclude Testimony of V. Thomas Rhyne Regarding Claims 5 and 36 filed by TIVO Inc. (Armond, Michelle) (Entered: 04/03/2006)

04/03/2006 639 NOTICE by TIVO Inc re 634 Notice (Other) SURREPLY IN OPPOSITION TO ECHOSTAR'S OBJECTIONS RE DEMONSTRATIVE EXHIBITS TO BE USED WITH DR. UGONE (Byrd, Christine) (Entered: 04/03/2006)

04/03/2006 640 NOTICE by TIVO Inc Proposed Verdict Form (Byrd, Christine) (Entered: 04/03/2006)

04/03/2006 641 Proposed Jury Instructions by TIVO Inc. (Byrd, Christine) (Entered: 04/03/2006)

04/03/2006 642 SEALED PATENT DOCUMENT TiVo's Reply Brief in Further Support of Its Objections to New EchoStar Exhibits and In Further Opposition to EchoStar's New Objections to TiVo's Trial Exhibits (docket #616). (Byrd, Christine) (Entered: 04/03/2006)

04/03/2006 643 RESPONSE in Support re 617 MOTION for Reconsideration of Magistrate Judge's Rulings filed by TIVO Inc. (Byrd, Christine) (Entered: 04/03/2006)

04/03/2006 644 SEALED PATENT DOCUMENT TIVO'S REPLY IN SUPPORT OF TIVO'S OBJECTION TO ECHOSTAR'S TRIAL EXHIBIT NOS. 1282 AND 2449 AND TO ECHOSTAR'S WRITTEN OPINIONS OF COUNSEL. (Hoffman, Adam) (Entered: 04/03/2006)

04/03/2006 645 Proposed Jury Instructions by "EchoStar defendants". (Attachments: # 1 Part 2 of Jury Instruction# 2 part 3 of Jury Instruction)(Kramer, Karl) (Entered: 04/03/2006)

04/03/2006 646 NOTICE by "EchoStar defendants" EchoStar's Second Amended Proposed Verdict Form (Kramer, Karl) (Entered: 04/03/2006)

04/03/2006 647 ORDER granting 637 Motion to Seal Specified Portions of the Trial Transcripts of March 29, 2006. Signed by Judge David Folsom on 4/3/06. (mrm,) (Entered: 04/03/2006)

04/03/2006 648 ORDER; The Court hereby DENIES TiVo's motion to present a product demonstration under

Federal Rule of Evidence 403 . Signed by Judge David Folsom on 4/3/06. (mrm,) (Entered: 04/03/2006)

04/03/2006 649 ORDER; re: [525] Motion to Exclude or Strike Dr. Ugone's New Market Share Analysis; ORDERED that, pursuant to Rule 37 (c), paragraph 4.c and exhibits 35 through 38 of Dr. Ugone's March 10, 2006 expert report is hereby EXCLUDED. Signed by Judge David Folsom on 4/3/06. (mrm,) (Entered: 04/03/2006)

04/03/2006 650 NOTICE by "EchoStar defendants" of Filing of Letter Brief (McElhinny, Harold) (Entered: 04/03/2006)

04/03/2006 651 SEALED PATENT DOCUMENT EchoStar's Surreply In Opposition to TiVo's Brief Regarding New Objections [Docket No. 616]. (Kramer, Karl) (Entered: 04/03/2006)

04/03/2006 652 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [615] SEALED PATENT MOTION TiVo's Motion to Preclude any Testimony or Argument that EchoStar's 7100 and 7200 Products and EchoStar's '000 Patent are Prior Art (EchoStar's Surreply) filed by "EchoStar defendants". (Kramer, Karl) (Entered: 04/03/2006)

04/03/2006 653 NOTICE by "EchoStar defendants" Offer of Proof Related to Claim Construction Order (Krevans, Rachel) (Entered: 04/03/2006)

04/04/2006 654 SEALED PATENT MOTION TiVo's Motion to Exclude Improper Supplemental Expert Report of Nathaniel Polish Served March 17, 2006 by TIVO Inc. (Attachments: # (1) Declaration# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D# (6) Text of Proposed Order)(Armond, Michelle) (Entered: 04/04/2006)

04/05/2006 655 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [654] SEALED PATENT MOTION TiVo's Motion to Exclude Improper Supplemental Expert Report of Nathaniel Polish Served March 17, 2006 (EchoStar's Opposition) filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D)(Kramer, Karl) (Entered: 04/05/2006)

04/05/2006 656 SEALED PATENT DOCUMENT Tivo's Offer of Proof Regarding Excluded Summary Charts from Dr. Jerry Gibson. (Attachments: # (1) Declaration# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D# (6) Exhibit E# (7) Exhibit F# (8) Exhibit G# (9) Exhibit H# (10) Exhibit I# (11) Exhibit J# (12) Exhibit K# (13) Exhibit L)(Armond, Michelle) (Entered: 04/05/2006)

04/05/2006 657 NOTICE by TIVO Inc TiVo's Offer of Proof Regarding Excluded TiVo Product Demonstration (Armond, Michelle) (Entered: 04/05/2006)

04/06/2006 658 MOTION to Preclude Any Further Evidence or Argument Regarding EchoStar's Patent Applications And '000 Patent by TIVO Inc. (Attachments: # 1 Declaration# 2 Exhibit A# 3 Proposed Jury Instruction)(Armond, Michelle) Additional attachment(s) added on 4/6/2006 (ehs,). (Entered: 04/06/2006)

04/06/2006 659 NOTICE by TIVO Inc of Filing of Proposed Limiting Instruction Regarding the 7100/7200 Products and EchoStar's Patent Application (Armond, Michelle) (Entered: 04/06/2006)

04/06/2006 660 NOTICE by "EchoStar defendants" of Filing of Proposed Limiting Instruction Regarding the 7100/7200 Products and EchoStar's Patent Application (Kramer, Karl) (Entered: 04/06/2006)

04/07/2006 661 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [654] SEALED PATENT MOTION TiVo's Motion to Exclude Improper Supplemental Expert Report of Nathaniel Polish Served March 17, 2006 filed by TIVO Inc. (Attachments: # (1) Reply Declaration# (2) Exhibit E)(Armond, Michelle) (Entered: 04/07/2006)

04/07/2006 662 TRIAL BRIEF re REQUEST FOR A CURATIVE INSTRUCTION REGARDING IMPROPER CLAIM CONSTRUCTION TESTIMONY by TIVO Inc. (Byrd, Christine) (Entered: 04/07/2006)

04/07/2006 663 NOTICE by "EchoStar defendants" of Deposition Testimony Played on April 7, 2006 (Attachments: # 1 Exhibit A)(Kramer, Karl) (Entered: 04/07/2006)

04/07/2006 664 NOTICE by "EchoStar defendants" of Filing of Exhibit and Deposition Excerpts (Attachments: # 1 Exhibit A# 2 Exhibit B# 3 Exhibit C)(Kramer, Karl) (Entered: 04/07/2006)

04/08/2006 665 SEALED PATENT DOCUMENT EchoStar's Objections to Storer Testimony. (Attachments: # (1) Affidavit of Karl J. Kramer# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D)(Kramer, Karl) (Entered: 04/08/2006)

04/08/2006 666 Proposed Jury Instructions by "EchoStar defendants". (Attachments: # 1 Exhibit A)(Kramer, Karl) (Entered: 04/08/2006)

04/09/2006 667 NOTICE by TIVO Inc re 666 Proposed Jury Instructions TiVo's Brief and Objection To EchoStar's Newly-Proposed Jury Instruction on Non-Infringing Alternatives (Byrd, Christine) (Entered: 04/09/2006)

04/09/2006 668 NOTICE by TIVO Inc re 666 Proposed Jury Instructions TiVo's Brief and Objection Re EchoStar's Newly-Proposed Jury Instruction on Reasonable Royalty (Byrd, Christine) (Entered: 04/09/2006)

04/09/2006 669 TRIAL BRIEF re EchoStar's Response in Opposition to TiVo's Request for a Curative Instruction Regarding Improper Claim Construction Testimony by "EchoStar defendants". (Kramer, Karl) (Entered: 04/09/2006)

04/10/2006 670 NOTICE by "EchoStar defendants" EchoStar's Offer of Proof Regarding Testimony of Homer Knearl, Kerry Miller, and James Gambrell (Kramer, Karl) (Entered: 04/10/2006)

04/10/2006 671 SEALED PATENT DOCUMENT Notice of EchoStar's Objections to TiVo's Proposed Rebuttal Witnesses and Evidence. (Attachments: # (1) Affidavit of Alison M. Tucher# (2) Exhibit A# (3) Exhibit B)(Tucher, Alison) (Entered: 04/10/2006)

04/10/2006 672 NOTICE by "EchoStar defendants" EchoStar's Offer of Proof Regarding EchoStar Exhibit 3519 (U.S. Patent 6,490,000 Prosecution History) (Kramer, Karl) (Entered: 04/10/2006)

04/10/2006 673 NOTICE by "EchoStar defendants" re 667 Notice (Other) EchoStar's Opposition to TiVo's Brief Re: EchoStar's Newly-Proposed Jury Instruction on Non-Infringing Alternatives (Kramer, Karl) (Entered: 04/10/2006)

04/10/2006 674 NOTICE by "EchoStar defendants" EchoStar's Offer of Proof Regarding Excluded Testimony of Dr. Nathaniel Polish, Ph.D. (Kramer, Karl) (Entered: 04/10/2006)

04/10/2006 675 NOTICE by "EchoStar defendants" EchoStar's Offer of Proof Regarding EchoStar Exhibits 3554 and 3562 (Request for Reexamination and PTO Order Granting) (Kramer, Karl) (Entered: 04/10/2006)

04/10/2006 676 NOTICE by TIVO Inc TIVO'S BRIEF ON DEMONSTRATIVES RE: CLAIMS 5 AND 36 (Attachments: # 1 Exhibit)(Baxter, Samuel) (Entered: 04/10/2006)

04/11/2006 677 NOTICE by "EchoStar defendants" EchoStar's Amended Offer of Proof Regarding Excluded Testimony of Dr. Nathaniel Polish, Ph.D. (Kramer, Karl) (Entered: 04/11/2006)

04/11/2006 678 SEALED PATENT DOCUMENT Offer of Proof re: Preamble. (Attachments: # (1) Affidavit Armond Declaration ISO Offer of Proof re Preamble# (2) Exhibit A to Armond Decl)(Armond, Michelle) (Entered: 04/11/2006)

04/11/2006 679 APPLICATION to Appear Pro Hac Vice by Attorney Brian Jones for TIVO Inc. (ch,) (Entered: 04/11/2006)

04/11/2006 -- Pro Hac Vice Filing fee paid by Jones; Fee: \$25, receipt number: 2-1-1349 (ch,) (Entered: 04/11/2006)

04/11/2006 680 NOTICE by "EchoStar defendants" EchoStar's Supplemental Submission Regarding Verdict Form (Kramer, Karl) (Entered: 04/11/2006)

04/11/2006 681 MOTION for Judgment as a Matter of Law by "EchoStar defendants". (Kramer, Karl) (Entered: 04/11/2006)

04/12/2006 682 NOTICE by "EchoStar defendants" EchoStar's Proposed Modifications to Verdict Form (Attachments: # 1 Exhibit A (Redline Verdict Form))(Kramer, Karl) (Entered: 04/12/2006)

04/12/2006 683 Proposed Jury Instructions by "EchoStar defendants". (Attachments: # 1 Exhibit A (Redline Jury Instructions))(Kramer, Karl) (Entered: 04/12/2006)

04/12/2006 684 Proposed Jury Instructions by TIVO Inc. (Byrd, Christine) (Entered: 04/12/2006)

04/12/2006 685 NOTICE by TIVO Inc Proposed Modifications to Verdict Form (redline format) (Byrd, Christine) (Entered: 04/12/2006)

04/12/2006 686 RESPONSE to Motion re 681 MOTION for Judgment as a Matter of Law filed by TIVO Inc. (Byrd, Christine) (Entered: 04/12/2006)

04/12/2006 687 NOTICE by TIVO Inc, Echostar Satellite LLC, Echostar Communications Corporation, Echostar DBS Corporation, EchoStar Technologies Corporation, Echosphere Limited Liability Company Joint Report on TiVo Trial Exhibits and EchoStar Objections Thereto (Byrd, Christine) (Entered: 04/12/2006)

04/12/2006 688 MOTION to Seal Confidential Trial Exhibits by TIVO Inc. (Attachments: # 1 Exhibit Attachment A)(Hoffman, Adam) (Entered: 04/12/2006)

04/13/2006 689 ORDER; After both parties were fully heard in a trial by jury, each moved the Court for Judgment as a Matter of Law pursuant to Rule 50 of the Federal Rules of Civil Procedure. The Court, having considered these motions and the arguments from counsel, finds the parties' motions are not well taken. Accordingly, it is hereby ORDERED that the parties' respective motions are DENIED on all counts. Signed by Judge David Folsom on 4/13/06. (mrm,)

(Entered: 04/13/2006)

04/13/2006 690 JURY VERDICT. (mrm,) (Entered: 04/13/2006)

04/13/2006 691 Jury Instructions. (mrm,) (Entered: 04/13/2006)

04/13/2006 692 Minute Entry for proceedings held before Judge David Folsom : Jury Trial held on 3/29/2006 thru 4/13/2006. (Court Reporter Judy Werlinger.) (mrm,) (Entered: 04/18/2006)

04/13/2006 693 Jury Trial Witness List. (mrm,) (Entered: 04/18/2006)

04/13/2006 694 Jury Trial Exhibit List. (Attachments: # 1 TiVo's Agreed Exhibit List# 2 EchoStar's Agreed Exhibit List)(mrm,) (Entered: 04/18/2006)

04/13/2006 695 SEALED Jury Notes. (1 note, in Texarkana Vault)(mrm,) (Entered: 04/18/2006)

04/18/2006 697 TRANSCRIPT of Trial Proceedings held on March 29, 2006 at 9:00 am before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 698 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on March 29, 2006 at 9:00 am before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 699 TRANSCRIPT of Trial Proceedings held on March 29, 2006 1:30 pm before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 700 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on March 29, 2006 at 1:30 pm before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 701 TRANSCRIPT of Trial Proceedings held on March 30, 2006 at 9:15 am before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 702 TRANSCRIPT of Proceedings held on March 30, 2006 at 1:45 pm before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 703 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on March 30, 2006 at 1:45 pm before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 704 TRANSCRIPT of Trial Proceedings held on March 31, 2006 at 8:30 am before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 705 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on March 31, 2006 at 8:30 am before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/18/2006 706 TRANSCRIPT of Trial Proceedings held on March 31, 2006 at 1:30 pm before Judge David Folsom. Court Reporter: Susan Simmons. (ehs,) (Entered: 04/19/2006)

04/19/2006 696 NOTICE by TIVO Inc of Letter to the U.S. Court of Appeals for the Federal Circuit (Armond, Michelle) (Entered: 04/19/2006)

04/20/2006 707 TRANSCRIPT of Trial Proceedings held on 4/4/06 @ 10:00 a.m. in Marshall, Tx before Honorable Judge David Folsom and a Jury. Court Reporter: Susan Simmons & Judith Werlinger. (106 pages) (ch,) (Entered: 04/20/2006)

04/20/2006 708 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on 4/4/06 @ 10:00 a.m. in Marshall, Tx before Honorable Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (ch,) (Entered: 04/20/2006)

04/20/2006 709 TRANSCRIPT of Trial Proceedings held on 4/4/06 @ 1:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (152 pages) (ch,) (Entered: 04/20/2006)

04/20/2006 710 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on 4/4/06 @ 1:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (ch,) (Entered: 04/20/2006)

04/20/2006 711 TRANSCRIPT of Trial Proceedings held on 4/5/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (130 pages) (ch,) (Entered: 04/20/2006)

04/20/2006 712 TRANSCRIPT of Trial Proceedings held on 4/5/06 @ 1:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (149 pages) (ch,) (Entered: 04/20/2006)

04/20/2006 713 TRANSCRIPT of Trial Proceedings held on 4/6/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (141 pages) (ch,) (Entered: 04/20/2006)

04/20/2006 714 TRANSCRIPT of Trial Proceedings held on 4/6/06 @ 1:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (160 pages) (ch,) (Entered: 04/20/2006)

04/20/2006)

04/20/2006 715 NOTICE by "EchoStar defendants" EchoStar's Offer of Proof Regarding Cross-Examination of Dr. Storer (Kramer, Karl) (Entered: 04/20/2006)

04/21/2006 716 TRANSCRIPT of Trial Proceedings held on 4/7/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (149 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 717 TRANSCRIPT of Trial Proceedings held on 4/7/06 @ 1:45 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (84 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 718 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on 4/7/06 @ 1:45 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (ch,) (Entered: 04/21/2006)

04/21/2006 719 TRANSCRIPT of Trial Proceedings held on 4/10/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (120 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 720 TRANSCRIPT of Trial Proceedings held on 4/10/06 @ 1:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (176 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 721 SEALED TRANSCRIPT OF IN-CHAMBERS CONFERENCE Proceedings held on 4/10/06 @ 5:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (ch,) (Entered: 04/21/2006)

04/21/2006 722 TRANSCRIPT of Trial Proceedings held on 4/11/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (136 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 723 TRANSCRIPT of Trial Proceedings held on 4/11/06 @ 1:30 p.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (87 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 724 TRANSCRIPT of Trial Proceedings held on 4/13/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (191 pages) (ch,) (Entered: 04/21/2006)

04/21/2006 725 SEALED PORTION OF TRANSCRIPT of Trial Proceedings held on 4/13/06 @ 9:00 a.m. in Marshall, Tx before Judge David Folsom. Court Reporter: Susan Simmons & Judith Werlinger. (ch,) (Entered: 04/21/2006)

05/01/2006 726 APPLICATION to Appear Pro Hac Vice by Attorney Scott F Llewellyn for "EchoStar defendants". (rml,) (Entered: 05/01/2006)

05/01/2006 -- Pro Hac Vice Filing fee paid by Scott Llewellyn; Fee: \$25, receipt number: 5-1-563 (rml,) (Entered: 05/01/2006)

05/01/2006 727 TRANSCRIPT of Proceedings (Jury Charge Conference) held on April 12, 2006 before Judge David Folsom. Court Reporter: Libby Crawford. (sm,) (Entered: 05/02/2006)

05/05/2006 728 ORDER Telephonic Status Conference set for 5/16/2006 01:30 PM in Ctrm 319 (Texarkana) before Judge David Folsom, for the purposes of determining whether any post-trial briefing will be submitted and the schedule therefore. In advance of this conference, by way of letter, the parties should inform the Court of any outstanding issues which they contend need to be addressed before entry of a final judgment. The telephonic conference call shall be initiated by Plfs counsel. Signed by Judge David Folsom on 5/4/06. (mrm,) (Entered: 05/05/2006)

05/16/2006 729 ORDER; ORDERS EchoStar to produce all documents created by the Merchant & Gould law firm that relate to any infringement or validity analysis of the '389 patent where said documents (1) were communicated to EchoStar or (2) reflect a communication to EchoStar. EchoStar may redact any information that it considers unrelated to infringement or validity or that it considers primarily related to trial strategy. These documents shall be produced no later than 5/19/06; vacating 380 Order, vacating 357 Order, vacating 386 Order on Motion to Stay. Signed by Judge David Folsom on 5/16/06. (mrm,) (Entered: 05/16/2006)

05/16/2006 730 ORDER Bench Trial set for 6/26-27/2006 10:00 AM in Ctrm 319 (Texarkana) before Judge David Folsom. Motion Hearing set for 6/28/06 10:00 AM. Proposed Findings of Fact due by 7/7/2006. Pretrial briefing no later than 6/13/06. Each pty is limited to 5hrs for trial presentation. Each pty is limited to 2.5 hrs for motion argument. ORDERED that, absent advance leave of Court for good cause, the ptys are limited to 30pgs for any brief, motion, or response and are limited to 15pgs for any reply. Absent advance leave of Court for good cause, no sur-reply or supplemental briefing shall be filed. Signed by Judge David Folsom on 5/16/06. (mrm,)

(Entered: 05/16/2006)

05/16/2006 731 Minute Entry for proceedings held before Judge David Folsom : Telephone Conference held on 5/16/2006. (Court Reporter non.) (mrm,) (Entered: 05/17/2006)

05/22/2006 732 SEALED PATENT MOTION For Prejudgment Interest and Supplemental Damages by TIVO Inc. (Attachments: # (1) Exhibit Exhibit 1# (2) Exhibit Exhibit 2# (3) Exhibit Exhibit 3# (4) Affidavit Declaration of Dr. Keith R. Ugone in support of Motion for Prejudgment Interest and Supplemental Damages# (5) Exhibit Exhibit A to Ugone Declaration# (6) Exhibit Exhibit B to Ugone Declaration# (7) Exhibit Exhibit C to Ugone Declaration# (8) Exhibit Exhibit D to Ugone Declaration# (9) Exhibit Exhibit E to Ugone Declaration# (10) Exhibit Exhibit F to Ugone Declaration# (11) Exhibit Exhibit G to Ugone Declaration# (12) Exhibit Exhibit H to Ugone Declaration# (13) Text of Proposed Order Proposed Order on TiVo's Motion for Prejudgment Interest and Supplemental Damages)(Byrd, Christine) (Entered: 05/22/2006)

05/25/2006 734 NOTICE by TIVO Inc of Motion to Treble Damages and for a Determination that this Case is "Exceptional" Entitling TiVo's to Attorneys' Fees (Attachments: # 1 Affidavit Declaration of Adam Hoffman In Support of TiVo's Motion for Enhanced Damages and a Determination the this Case is Exceptional# 2 Exhibit 1# 3 Exhibit 2# 4 Exhibit 3# 5 Exhibit 4# 6 Exhibit 5# 7 Exhibit 6# 8 Exhibit 7# 9 Exhibit 8# 10 Exhibit 9# 11 Exhibit 10# 12 Exhibit 11# 13 Exhibit 12# 14 Errata 13# 15 Exhibit 14# 16 Exhibit 15# 17 Exhibit 15# 18 Exhibit 17# 19 Exhibit 18# 20 Exhibit 19# 21 Exhibit 20# 22 Exhibit 21# 23 Exhibit 22# (24) Exhibit 23# 25 Exhibit 24# 26 Exhibit 25# 27 Exhibit 26# 28 Exhibit 27# 29 Exhibit 28# 30 Exhibit 29# 31 Exhibit 30# 32 Exhibit 31# 33 Exhibit 32# 34 Exhibit 33# 35 Exhibit 34# 36 Exhibit 35# 37 Exhibit 36# 38 Exhibit 37# 39 Exhibit 38# 40 Exhibit 39# 41 Exhibit 40# 42 Exhibit 41# 43 Exhibit 42# 44 Exhibit 43# 45 Exhibit 44# 46 Exhibit 45# 47 Text of Proposed Order)(Hoffman, Adam) Additional attachment(s) added on 5/26/2006 (sm,). (Entered: 05/26/2006)

06/05/2006 735 ORDER re [733] SEALED PATENT MOTION for Injunction filed by TIVO Inc, & ORDER RE: ECHOSTAR'S MOTION FOR STAY PENDING APPEAL. Pursuant to the agreement of the parties and for good cause shown, the Court hereby ORDERS that (i) EchoStar shall combine its motion for stay pending appeal with its response to TiVo's motion for an injunction (due 6/6/06); (ii) EchoStar shall have a total of 40 pages for its combined response and motion for stay; (iii) TiVo shall combine its response to EchoStar's motion for stay with its reply in support of its motion for an injunction (due 6/13/06); and (iv) EchoStar's reply in support of its motion for stay shall be due 6/20/06. Signed by Judge David Folsom on 6/5/06. (mpv,) (Entered: 06/05/2006)

06/06/2006 736 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [732] SEALED PATENT MOTION For Prejudgment Interest and Supplemental Damages filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Matthew R. Lynde# (2) Exhibit A-K to Lynde Decl.# (3) Affidavit of Karl Kramer# (4) Exhibit A-J to Kramer Decl.)(Kramer, Karl) (Entered: 06/06/2006)

06/06/2006 737 SEALED PATENT MOTION EchoStar's (1) Opposition to TiVo's Motion for Entry of Judgment and Permanent Injunction and (2) Cross-Motion to Stay Any Injunction Pending Appeal by "EchoStar defendants". (Attachments: # (1) Affidavit of Erik Carlson# (2) Affidavit of Jody Martin# (3) Affidavit of Dan Minnick# (4) Affidavit of John J. Yodzis# (5) Affidavit of Robert Harkins# (6) Exhibit 1-17 of Harkins Decl.# (7) Exhibit 18-22 of Harkins Decl.# (8) Text of Proposed Order) (Harkins, Robert) (Entered: 06/06/2006)

06/09/2006 738 ORDER RE: TIVO'S BRIEF (i) IN FURTHER SUPPORT OF ITS MOTION FOR PERMANENT INJUNCTION AND (ii) IN RESPONSE TO ECHOSTAR'S MOTION FOR STAY PENDING APPEAL; the Court hereby ORDERS that (i) TiVo shall have a total of 25 pgs for its combined reply in support of its motion for an injunction and response in opposition to EchoStar's motion for stay pending appeal, (ii) TiVo's combined brief shall be due 6/14/06 and (iii) EchoStar's reply in support of its motion for stay shall be due 6/21/06. All other dates remain unchanged. Signed by Judge David Folsom on 6/9/06. (mrm,) (Entered: 06/09/2006)

06/09/2006 739 SEALED PATENT DOCUMENT EchoStar's Opposition to TiVo's Motion for Enhanced Damages and Attorneys' Fees. (Attachments: # (1) Affidavit of Rachel Krevans# (2) Exhibit 1-4# (3) Exhibit 5 part 1# (4) Exhibit 5 part 2# (5) Exhibit 6 part 1# (6) Exhibit 6 part 2# (7) Exhibit 7-12# (8) Exhibit 13-22# (9) Exhibit 23# (10) Exhibit 24-28)(Krevans, Rachel) (Entered: 06/09/2006)

06/09/2006 740 SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: [739] Sealed Patent Document,. (Attachments: # (1) Exhibit 29 part 2# (2) Exhibit 29 part 3# (3) Exhibit 29 part 4# (4) Exhibit 29 part 5# (5) Exhibit 29 part 6# (6) Exhibit 29 part 7# (7) Exhibit 29 part 8) (Krevans, Rachel) (Entered: 06/09/2006)

06/09/2006 741 SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: [739] Sealed Patent Document,. (Attachments: # (1) Exhibit 30 part 2# (2) Exhibit 30 part 3# (3) Exhibit 30 part 4# (4) Exhibit 30 part 5# (5) Exhibit 30 part 6# (6) Exhibit 30 part 7# (7) Exhibit 30 part 8# (8) Exhibit 31-32)(Krevans, Rachel) (Entered: 06/09/2006)

06/09/2006 742 SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: [739] Sealed Patent

Document,. (Attachments: # (1) Exhibit 33 part 2# (2) Exhibit 33 part 3# (3) Exhibit 33 part 4# (4) Exhibit 33 part 5# (5) Exhibit 33 part 6# (6) Exhibit 33 part 7# (7) Exhibit 33 part 8) (Krevans, Rachel) (Entered: 06/09/2006)

06/09/2006 743 SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: [739] Sealed Patent Document,. (Attachments: # (1) Exhibit 39 part 1# (2) Exhibit 39 part 2# (3) Exhibit 39 part 3# (4) Exhibit 39 part 4)(Krevans, Rachel) (Entered: 06/09/2006)

06/13/2006 744 SEALED PATENT REPLY to Response to PATENT Motion re [732] SEALED PATENT MOTION For Prejudgment Interest and Supplemental Damages filed by TIVO Inc. (Attachments: # (1) Affidavit Declaration of Christine Byrd# (2) Exhibit Exhibit A# (3) Exhibit Exhibit B# (4) Exhibit Exhibit C# (5) Exhibit Exhibit D)(Byrd, Christine) (Entered: 06/13/2006)

06/13/2006 745 SEALED PATENT DOCUMENT EchoStar's Pretrial Brief on Equitable Estoppel, Laches, and Inequitable Conduct. (Kramer, Karl) (Entered: 06/13/2006)

06/14/2006 746 SEALED PATENT DOCUMENT TIVO'S TRIAL BRIEF ON THIS COURT'S PERSONAL JURISDICTION OVER ECC AND EDBS. (Byrd, Christine) (Entered: 06/14/2006)

06/16/2006 749 ORDER RE: (1) TIVO'S REPLY IN SUPPORT OF ITS MOTION FOR TREBLE DAMAGES AND A DETERMINATION THAT THIS IS AN "EXCEPTIONAL CASE" (2) ECHOSTAR'S RESPONSE TO TRIAL BRIEF ON THIS COURT'S PERSONAL JURISDICTION OVER ECC AND EDBS; ORDERS that (i) TiVo's Reply Brief of its Motion for Treble Damages and a Determination that this case is an "Exceptional Case" is due 6/19/06; (ii) EchoStar's Response to TiVo's Trial Brief on this Court's Personal Jurisdiction over ECC and EDBS is due 6/22/06. Signed by Judge David Folsom on 6/16/06. (mrm,) (Entered: 06/16/2006)

06/17/2006 750 Bench Trial Witness List by TIVO Inc. (Byrd, Christine) (Entered: 06/17/2006)

06/19/2006 751 NOTICE by "EchoStar defendants" of Withdrawal of Personal Jurisdiction Affirmative Defense (Krevans, Rachel) (Entered: 06/19/2006)

06/20/2006 752 SEALED PATENT DOCUMENT TIVO'S REPLY IN SUPPORT OF ITS MOTION FOR TREBLE DAMAGES AND THE DESIGNATION OF THIS CASE AS 'EXCEPTIONAL'. (Attachments: # (1) Exhibit A# (2) Exhibit B# (3) # (4) Exhibit D# (5) Exhibit E# (6) Exhibit F# (7) Exhibit G# (8) Exhibit H# (9) Exhibit I)(Hoffman, Adam) (Entered: 06/20/2006)

06/20/2006 753 SEALED PATENT DOCUMENT TiVo's Trial Brief on Equitable Estoppel, Laches, and Inequitable Conduct. (Attachments: # (1) Jones Declaration# (2) Exhibit 1# (3) Exhibit 2# (4) Exhibit 3# (5) Exhibit 4)(Armond, Michelle) (Entered: 06/21/2006)

06/21/2006 754 SEALED PATENT REPLY to Response to PATENT Motion re [737] SEALED PATENT MOTION EchoStar's (1) Opposition to TiVo's Motion for Entry of Judgment and Permanent Injunction and (2) Cross-Motion to Stay Any Injunction Pending Appeal filed by "EchoStar defendants". (Attachments: # (1) Affidavit of Rachel Krevans# (2) Exhibit A# (3) Exhibit B# (4) Exhibit C# (5) Exhibit D)(Krevans, Rachel) Modified on 6/22/2006 (mpv,). Modified on 6/22/2006 (mpv,). (Entered: 06/21/2006)

06/26/2006 755 Minute Entry for proceedings held before Judge David Folsom : Bench Trial held on 6/26/2006 - 6/27/06. (Court Reporter Keith Johnson.) (mrm,) (Entered: 06/29/2006)

06/26/2006 757 Bench Trial Witness List. (mrm,) (Entered: 06/29/2006)

06/26/2006 758 Bench Trial Exhibit List. (Attachments: # 1 Additional Exhibit Lists)(mrm,) Modified on 6/29/2006 (mrm,). (BT exhibits in Texarkana vault some exhibits are SEALED) (Entered: 06/29/2006)

06/28/2006 756 Minute Entry for proceedings held before Judge David Folsom : Motion Hearing held on 6/28/2006 re [737] SEALED PATENT MOTION EchoStar's (1) Opposition to TiVo's Motion for Entry of Judgment and Permanent Injunction and (2) Cross-Motion to Stay Any Injunction Pending Appeal filed by "EchoStar defendants",, [732] SEALED PATENT MOTION For Prejudgment Interest and Supplemental Damages filed by TIVO Inc., [733] SEALED PATENT MOTION for Injunction filed by TIVO Inc.. (Court Reporter Keith Johnson.) (mrm,) (Entered: 06/29/2006)

07/06/2006 759 SEALED PATENT RESPONSE by "EchoStar defendants" to [753] Sealed Patent Document EchoStar's Opposition to TIVO's Arguments Regarding Timeliness and Unclean Hands. (Attachments: # (1) Affidavit of Rachel Krevans# (2) Exhibit A-G to Krevans Declaration) (Krevans, Rachel) (Entered: 07/06/2006)

07/07/2006 760 Proposed Findings of Fact by TIVO Inc. (Armond, Michelle) (Entered: 07/07/2006)

07/07/2006 761 SEALED PATENT DOCUMENT EchoStar's Proposed Findings of Fact and Conclusions of Law on Equitable Estoppel, Laches, and Inequitable Conduct. (Krevans, Rachel) (Entered: 07/07/2006)

07/07/2006 762 SEALED PATENT RESPONSE by TIVO Inc to [759] Sealed Patent Response to Non-Motion,

EchoStar's Opposition Re: Timeliness and Unclean Hands. (Jones, Brian) (Entered: 07/07/2006)

07/20/2006 763 NOTICE by TIVO Inc regarding letter brief submitted July 20, 2006 (Jones, Brian) (Entered: 07/20/2006)

07/24/2006 764 SEALED PATENT MOTION EchoStar's Rule 50(b) Renewed Motion for Judgment as a Matter of Law by "EchoStar defendants". (Attachments: # (1) Affidavit of Rachel Krevans# (2) Exhibit A-B to Krevans Decl.# (3) Text of Proposed Order)(Krevans, Rachel) (Entered: 07/24/2006)

07/24/2006 765 SEALED PATENT MOTION EchoStar's Rule 59 Motion for New Trial and/or Remittitur by "EchoStar defendants". (Attachments: # (1) Affidavit of Rachel Krevans# (2) Exhibit 1 - 9 of Krevans Decl.# (3) Affidavit of Matthew R. Lynde# (4) Exhibit 1 of Lynde Exhibit# (5) Text of Proposed Order First Alternative Proposed Order# (6) Text of Proposed Order Second Alternative Proposed Order# (7) Text of Proposed Order Third Alternative Proposed Order) (Krevans, Rachel) (Entered: 07/24/2006)

07/25/2006 766 NOTICE by "EchoStar defendants" re 763 Notice (Other) Notice of Filing of Letter Brief (McElhinny, Harold) (Entered: 07/25/2006)

08/01/2006 -- Sealed Order #767 sent via US Mail to all party attys of record 8/1/06. (mpv,) (Entered: 08/01/2006)

08/01/2006 768 Joint MOTION re: Briefing Schedule On (1) EchoStar's Rule 50(b) Renewed Motion for Judgment as a Matter of Law and (2) EchoStar's Rule 59 Motion for New Trial and/or Remittitur by TIVO Inc. (Attachments: # 1 Text of Proposed Order Joint Proposed Order Re: Briefing Schedule) (Byrd, Christine) (Entered: 08/01/2006)

08/03/2006 769 ORDER; re: 768 Joint MOTION re: Briefing Schedule On (1) EchoStar's Rule 50(b) Renewed Motion for Judgment as a Matter of Law and (2) EchoStar's Rule 59 Motion for New Trial and/or Remittitur by TIVO Inc; TiVo shall file its opposition brief on or before 8/21/06 and EchoStar shall file its reply brief on or before 8/31/06 . Signed by Judge David Folsom on 8/3/06. (mrm,) (Entered: 08/03/2006)

08/07/2006 770 NOTICE by TIVO Inc re 766 Notice (Other) Notice of Letter Brief (Byrd, Christine) (Entered: 08/07/2006)

08/11/2006 771 NOTICE by TIVO Inc of Letter to Court (Jones, Brian) (Entered: 08/11/2006)

08/17/2006 772 FINDINGS OF FACT AND CONCLUSIONS OF LAW. Signed by Judge David Folsom on 8/17/06. (mrm,) (Entered: 08/17/2006)

08/17/2006 773 ORDER granting [733] Sealed Patent Motion for Entry of Judgment and Permanent Injunction, denying [737] Sealed Patent Motion to Stay Any Injunction Pending Appeal. Signed by Judge David Folsom on 8/17/06. (mrm,) (Entered: 08/17/2006)

08/17/2006 774 ORDER granting [732] Sealed Patent Motion for Prejudgment Interest and Supplemental Damages. Signed by Judge David Folsom on 8/17/06. (mrm,) (Entered: 08/17/2006)

08/17/2006 775 ORDER denying 734 Motion for Treble Damages and for a Determination that this Case is "Exceptional" Entitling TiVo's to Attorneys' Fees filed by TIVO Inc. . Signed by Judge David Folsom on 8/17/06. (mrm,) (Entered: 08/17/2006)

08/17/2006 776 FINAL JUDGMENT AND PERMANENT INJUNCTION. Signed by Judge David Folsom on 8/17/06. (mrm,) (Entered: 08/17/2006)

08/17/2006 777 ***FILED IN ERROR; DOCKETED INCORRECTLY; PLEASE IGNORE*** NOTICE by "EchoStar defendants" Notice of Appeal (Krevans, Rachel) Modified on 8/18/2006 (mpv,). (Entered: 08/17/2006)

08/17/2006 778 ***FILED IN ERROR; DOCKETED INCORRECTLY; PLEASE IGNORE*** NOTICE by "EchoStar defendants" Corrected Notice of Appeal (Krevans, Rachel) Modified on 8/18/2006 (mpv,). (Entered: 08/17/2006)

08/17/2006 -- NOTICE of Deficiency regarding the Notice of Appeal and Corrected Notice of Appeal #777 & 778 submitted Docketed Incorrectly. Correction should be made by one business day (mpv,) (Entered: 08/18/2006)

08/17/2006 779 NOTICE OF APPEAL as to 776 Judgment, Permanent Injunction by "EchoStar defendants". Filing fee \$ 455, receipt number 5-1-671. (mpv,) (Entered: 08/18/2006)

08/18/2006 -- USCA Appeal Fees received \$ 455 receipt number 5-1-671 re 779 Notice of Appeal filed by "EchoStar defendants", (mpv,) (Entered: 08/18/2006)

08/18/2006 -- Transmission of Notice of Appeal and Docket Sheet to US Court of Appeals for the Federal Circuit Court re 779 Notice of Appeal (ehs,) (Entered: 08/18/2006)

08/18/2006 -- Appeal Remark re 779 Notice of Appeal: transcript order forms for the Federal Circuit Court of

Appeal sent to cnsl for the defendants (ehs,) (Entered: 08/18/2006)

08/21/2006 780 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [764] SEALED PATENT MOTION EchoStar's Rule 50(b) Renewed Motion for Judgment as a Matter of Law filed by TIVO Inc. (Giza, Alexander) (Entered: 08/21/2006)

08/21/2006 781 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [765] SEALED PATENT MOTION EchoStar's Rule 59 Motion for New Trial and/or Remittitur filed by TIVO Inc. (Attachments: # (1) Affidavit Hoffman Declaration In Support Of TiVo's Opposition to EchoStar's Renewed JMOL and TiVo's Opposition to EchoStar's Motion for a New Trial and/or Remittitur# (2) Exhibit A# (3) Exhibit C# (4) Exhibit D# (5) Exhibit E# (6) Exhibit F# (7) Exhibit G# (8) Exhibit H# (9) Exhibit I# (10) Exhibit J# (11) Exhibit K# (12) Exhibit L# (13) Exhibit M# (14) Exhibit N)(Hoffman, Adam) (Entered: 08/21/2006)

08/22/2006 782 SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: [781] Sealed Patent Response to Sealed Patent Motion,,,. (Attachments: # (1) Exhibit Corrected Exhibit F# (2) Exhibit Corrected Exhibit G# (3) Exhibit Corrected Exhibit H# (4) Exhibit Corrected Exhibit M# (5) Exhibit O# (6) Exhibit P# (7) Exhibit Q# (8) Exhibit R# (9) Exhibit S# (10) Exhibit T# (11) Exhibit U# (12) Exhibit V# (13) Exhibit W# (14) Exhibit X# (15) Exhibit Y# (16) Exhibit Z# (17) Exhibit AA# (18) Exhibit BB# (19) Exhibit DD# (20) Exhibit EE# (21) Exhibit FF)(Hoffman, Adam) (Entered: 08/22/2006)

08/22/2006 783 SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: [781] Sealed Patent Response to Sealed Patent Motion,,,. (Attachments: # (1) Exhibit B Part 1# (2) Exhibit B Part 2# (3) Exhibit B Part 3# (4) Exhibit B Part 4# (5) Exhibit B Part 5# (6) Exhibit B Part 6# (7) Exhibit B Part 7# (8) Exhibit CC Part 1# (9) Exhibit CC Part 2)(Hoffman, Adam) (Entered: 08/22/2006)

08/22/2006 784 SEALED PATENT RESPONSE to SEALED PATENT MOTION re [765] SEALED PATENT MOTION EchoStar's Rule 59 Motion for New Trial and/or Remittitur Amended Opposition (identical to Opposition filed under docket no. 781 except footer and table of authorities corrected; supporting Hoffman Declaration and exhibits still under docket nos. 781, 782, and 783) filed by TIVO Inc. (Hoffman, Adam) (Entered: 08/22/2006)

08/22/2006 786 USCA for the Federal Circuit Court - Case Number 2006-1574 for 779 Notice of Appeal filed by "EchoStar defendants",. (ehs,) (Entered: 08/29/2006)

08/28/2006 785 US Federal Circuit Court of Appeals Case Number 2006-1574 for 779 Notice of Appeal filed by "EchoStar defendants". (ehs,) (Entered: 08/28/2006)

08/29/2006 787 SEALED PATENT REPLY to Response to PATENT Motion re [764] SEALED PATENT MOTION EchoStar's Rule 50(b) Renewed Motion for Judgment as a Matter of Law filed by "EchoStar defendants". (Krevans, Rachel) (Entered: 08/29/2006)

08/29/2006 788 SEALED PATENT REPLY to Response to PATENT Motion re [765] SEALED PATENT MOTION EchoStar's Rule 59 Motion for New Trial and/or Remittitur filed by "EchoStar defendants". (Krevans, Rachel) (Entered: 08/29/2006)

08/29/2006 789 TRANSCRIPT of Proceedings/Hearing on Tivo's Objections to Defendants' Trial Exhibits and Defendants' Evidentiary Objections held on 2/1/06 before Judge Caroline Craven. Court Reporter: Leslie P Bates. (mpv,) (Entered: 08/29/2006)

08/29/2006 790 TRANSCRIPT of Proceedings/Hearing on Tivo's Objections to Defendants' Trial Exhibits and Defendants' Evidentiary Objections held on 2/27/06 before Judge Caroline Craven. Court Reporter: Leslie P Bates. (mpv,) (Entered: 08/29/2006)

08/29/2006 791 ***FILED IN ERROR; DEFICIENT DOCUMENT; PLEASE IGNORE*** SEALED PATENT DOCUMENT Supplemental Declaration of Dr. Keith Ugone re Prejudgment Interest and Supplemental Damages for July 31 - August 17, 2006. (Attachments: # (1) Affidavit Supplemental Declaration of Dr. Keith Ugone)(Byrd, Christine) Modified on 8/30/2006 (mpv,). (Entered: 08/29/2006)

08/29/2006 792 NOTICE of Deficiency regarding the SEALED PATENT DOCUMENT Supplemental Declaration of Dr. Keith Ugone re Prejudgment Interest and Supplemental Damages for July 31 - August 17, 2006. #791 submitted No Certificate of Authorization to file sealed document included in pleading. Correction should be made by one business day. (mpv,) (Entered: 08/30/2006)

08/30/2006 793 TRANSCRIPT of Proceedings held on 6/26/06 before Judge David Folsom. Court Reporters: Kimberly Julian and D. Keith Smith. (mpv,) (Entered: 08/30/2006)

08/30/2006 794 TRANSCRIPT of Proceedings held on 6/27/06 before Judge David Folsom. Court Reporters: Kimberly Julian and D Keith Johnson. (mpv,) (Entered: 08/30/2006)

08/30/2006 795 TRANSCRIPT of Proceedings held on 6/28/06 before Judge David Folsom. Court Reporters: Kimberly Julian and D Keith Johnson. (mpv,) (Entered: 08/30/2006)

08/30/2006 796 ***REPLACES #791*** SEALED PATENT DOCUMENT Supplemental Declaration of Dr. Keith Ugone re Prejudgment Interest and Supplemental Damages for July 31 - August 17, 2006.

(Attachments: # (1) Exhibit Ex. 1 - Declaration of Dr. Keith Ugone)(Giza, Alexander) Modified on 8/30/2006 (mpv,), (Entered: 08/30/2006)

08/30/2006 797 BILL OF COSTS by TIVO Inc. (Attachments: # 1 Affidavit Brief summarizing costs# 2 Exhibit Ex. A to Brief summarizing costs# 3 Exhibit Ex. B (part 1) to Brief summarizing costs# 4 Exhibit Ex. B (part 2) to Brief summarizing costs# 5 Exhibit Ex. B (part 3) to Brief summarizing costs# 6 Exhibit Ex. B (part 4) to Brief summarizing costs# 7 Exhibit Ex. C to Brief summarizing costs# 8 Exhibit Ex. D to Brief summarizing costs)(Giza, Alexander) (Entered: 08/30/2006)

08/31/2006 798 Joint MOTION to Amend/Correct /Extend 10-Day Period Provided For In Federal Rule of Civil Procedure 62(a) by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order) (Krevans, Rachel) (Entered: 08/31/2006)

08/31/2006 799 TRANSCRIPT REQUEST by "EchoStar defendants" for all proceedings held Transcripts already on file before Judge David Folsom.. (mpv,) (Entered: 08/31/2006)

08/31/2006 800 Joint MOTION to Amend/Correct Final Judgment and Permanent Injunction by TIVO Inc. (Attachments: # 1 Exhibit Ex. A (TiVo proposed order)# 2 Exhibit Ex. B (EchoStar proposed order))(Giza, Alexander) (Entered: 08/31/2006)

09/01/2006 801 ORDER granting 798 Motion to Amend/Correct 10-Day period provided for In FRCP 62(a). IT IS, THEREFORE, ORDERED, ADJUDGED AND DECREED that the period provided for in Rule 62(a) is hereby extended, through 9/5/06. Accordingly, no execution shall issue upon the money judgment nor shall proceedings be taken for its enforcement until after 9/5/06 . Signed by Judge David Folsom on 9/1/06. (mpv,) (Entered: 09/01/2006)

09/05/2006 802 Joint MOTION to Extend 10-Day Period Provided For In Federal Rule of Civil Procedure 62(a) by "EchoStar defendants". (Attachments: # 1 Text of Proposed Order)(Krevans, Rachel) (Entered: 09/05/2006)

09/08/2006 803 ORDER granting 802 Motion to extend 10 day period provided in federal rules of civil procedure and the period provided for in Rule 62 is hereby extended, through September 11, 2006 . Signed by Judge David Folsom on 9//8/2006. (sm,) Modified on 9/8/2006 (sm,). (Entered: 09/08/2006)

09/08/2006 804 NOTICE OF APPEAL by "EchoStar defendants". Filing fee \$ 455, receipt number 869142. (Krevans, Rachel) (Entered: 09/08/2006)

09/08/2006 805 Joint SEALED PATENT MOTION for Approval of Alternate Security Under Rule 62(d) and for Stay of Enforcement of Money Judgment by "EchoStar defendants". (Attachments: # (1) Text of Proposed Order)(Krevans, Rachel) Revised Proposed Order added on 9/11/2006 (mpv,). Modified on 9/11/2006 (mpv,). (Entered: 09/08/2006)

09/08/2006 806 AMENDED FINAL JUDGMENT AND PERMANENT INJUNCTION. Signed by Judge David Folsom on 9/8/06. (mpv,) (Entered: 09/11/2006)

09/11/2006 807 RESPONSE to 797 Bill of Costs, EchoStar's Objection to TiVo's Bill of Costs by "EchoStar defendants". (Krevans, Rachel) (Entered: 09/11/2006)

09/12/2006 808 ORDER granting [805] Sealed Patent Motion . Signed by Judge David Folsom on 9/12/06. (mpv,) (Entered: 09/12/2006)

09/21/2006 809 NOTICE OF CROSS APPEAL by TIVO Inc. Filing fee \$ 455, receipt number 881854. (Giza, Alexander) (Entered: 09/21/2006)

09/22/2006 810 Amended BILL OF COSTS by TIVO Inc. (Attachments: # 1 Affidavit Amended Bill of Costs Brief# 2 Exhibit Ex. A to Amended Bill of Costs Brief# 3 Exhibit Ex. B1 to Amended Bill of Costs Brief# 4 Exhibit Ex. B2 to Amended Bill of Costs Brief# 5 Exhibit Ex. B3 to Amended Bill of Costs Brief# 6 Exhibit Ex. B4 to Amended Bill of Costs Brief# 7 Exhibit Ex. C to Amended Bill of Costs Brief# 8 Exhibit Ex. D to Amended Bill of Costs Brief)(Giza, Alexander) (Entered: 09/22/2006)

09/27/2006 811 RESPONSE to 810 Bill of Costs, EchoStar's Objection to TiVo's Amended Bill of Costs by "EchoStar defendants". (Krevans, Rachel) (Entered: 09/27/2006)

10/04/2006 812 NOTICE by "EchoStar defendants" of Order (Attachments: # 1 Exhibit A)(McElhinny, Harold) (Entered: 10/04/2006)

10/04/2006 813 RESPONSE to 811 Response to Non-Motion EchoStar's Objection to TiVo's Amended Bill of Costs by TIVO Inc. (Giza, Alexander) (Entered: 10/04/2006)

10/09/2006 814 RESPONSE to 813 Response to Non-Motion EchoStar's Objection to TiVo's Amended Bill of Costs by "EchoStar defendants". (Krevans, Rachel) (Entered: 10/09/2006)

10/27/2006 815 USCA Federal Circuit Case Number 2007-1022 for 809 Notice of Cross Appeal filed by TIVO Inc. (ehs,) (Entered: 10/27/2006)

11/27/2006 816 ORDER denying [764] Sealed Patent Motion EchoStar's Rule 50(b) Renewed Motion for

Judgment as a Matter of Law, denying [765] Sealed Patent Motion EchoStar's Rule 59 Motion for New Trial and/or Remittitur by "EchoStar defendants". Signed by Judge David Folsom on 11/27/06. (mrm,) (Entered: 11/27/2006)

- 01/03/2007 817 Sealed Document. (Attachments: # (1) Exhibit Exhibits)(Byrd, Christine) (Entered: 01/03/2007)
- 01/03/2007 818 STIPULATION JOINT STIPULATION RE SUPPLEMENTAL DAMAGES AND PREJUDGMENT INTEREST FOR THE PERIOD OF AUGUST 1, 2006 TO SEPTEMBER 8, 2006 by TIVO Inc. (Attachments: # 1 Text of Proposed Order Proposed Order)(Byrd, Christine) (Entered: 01/03/2007)
- 01/23/2007 819 ORDER RE: SUPPLEMENTAL DAMAGES AND PREJUDGMENT INTEREST FOR THE PERIOD OF AUGUST 1, 2006 TO SEPTEMBER 8, 2006; re 818 Stipulation filed by TIVO Inc, . Signed by Judge David Folsom on 1/23/07. (mrm,) (Entered: 01/23/2007)

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US District Court Civil Docket

**U.S. District - California Northern
(San Francisco)**

3:02cv365

Tivo Inc, v. Sonicblue Incorporated et al

This case was retrieved from the court on Thursday, April 18, 2002

Date Filed: 01/23/2002	Class Code:
Assigned To: Honorable D Lowell Jensen	Closed: no
Referred To:	Statute: 35:271
Nature of suit: Patent (830)	Jury Demand: Both
Cause: Patent Infringement	Demand Amount: \$0
Lead Docket: None	NOS Description: Patent
Other Docket: None	
Jurisdiction: Federal Question	

Litigants

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Sonicblue Incorporated, A Delaware Corporation
Defendant

Replaytv, Inc, A Delaware Corporation
Defendant

Replaytv, Inc, A Delaware Corporation
Counter-Claimant

Sonicblue Incorporated, A Delaware Corporation
Counter-Claimant

Tivo Inc, , A Delaware Corporation
Counter-Defendant

Date	#	Proceeding Text
01/23/2002	1	COMPLAINT for Patent Infringement against Replaytv, Inc., Sonicblue Incorporated (Filing fee

$150 receipt number 5504550). Filed by Tivo Inc., (hdj,) (Entered: 01/30/2002)

01/23/2002 2 ADR SCHEDULING ORDER: Case Management Statement due by 5/16/2002. Case Management Conference set for 5/23/2002 at 10:00 AM. (hdj,) (Entered: 01/30/2002)

01/23/2002 -- Summons Issued as to Replaytv, Inc. ; Sonicblue Incorporated (hdj,) (Entered: 01/30/2002)

01/29/2002 3 SUMMONS Returned Executed, by Tivo Inc., Replaytv, Inc. ; Sonicblue Incorporated (hdj,) (Entered: 01/31/2002)

02/11/2002 4 NOTICE of Related Case 01-4865-RMW by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/12/2002)

02/11/2002 5 ANSWER to Complaint, COUNTERCLAIM against Tivo Inc., by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/12/2002)

02/11/2002 6 Certificate of Interested Entities by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/12/2002)

02/19/2002 7 Declination to Proceed Before a U.S. Magistrate Judge by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/20/2002)

02/26/2002 8 NOTICE re 4 Opposition to Defendants' Notice of Related Cases by Tivo Inc., (hdj,) (Entered: 02/27/2002)

03/01/2002 9 Reply ANSWER to Counterclaim by Tivo Inc., (hdj,) (Entered: 03/04/2002)

03/11/2002 10 Reply to Opposition re 8 filed by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 03/13/2002)

03/13/2002 11 ORDER Impending Reassignment to a United States District Court Judge. Signed by Judge Maria-Elena James on 3/13/02. (hdj,) (Entered: 03/14/2002)

03/13/2002 12 ORDER REASSIGNING CASE. Case reassigned to Judge D. Lowell Jensen for all further proceedings. Judge Maria-Elena James no longer assigned to case. Signed by Judge Executive Committee on 3/13/02. (hdj,) (Entered: 03/15/2002)

03/20/2002 13 CLERK'S NOTICE Case Management Conference set for 6/7/2002 at 01:30 PM. Case Management Statement due by 5/28/2002. (kc,) (Entered: 03/25/2002)

04/09/2002 14 ORDER NOT RELATING CASE to C-01-21198-RMW. Signed by Judge Ronald M. Whyte on 4/9/02. (jv,) Additional attachment(s) added on 4/17/2002 (jv,). Modified on 4/17/2002 to reflect that Judge Jensen is assigned to C-02-365 (jv,). (Entered: 04/09/2002)

US District Court Civil Docket

**U.S. District - California Northern
(Oakland)**

4:02cv365

Tivo Inc, v. Sonicblue Incorporated et al

This case was retrieved from the court on Friday, August 22, 2003

Date Filed: 01/23/2002	Class Code: ADMOP, CLOSED
Assigned To: Honorable D Lowell Jensen	Closed: yes
Referred To:	Statute: 35:271
Nature of suit: Patent (830)	Jury Demand: Both
Cause: Patent Infringement	Demand Amount: \$0
Lead Docket: None	NOS Description: Patent
Other Docket: None	
Jurisdiction: Federal Question	

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Plaintiff

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Defendant

Replaytv, Inc, A Delaware Corporation

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Date	#	Proceeding Text
01/23/2002	1	COMPLAINT for Patent Infringement against Replaytv, Inc., Sonicblue Incorporated (Filing fee \$150 receipt number 5504550). Filed by Tivo Inc., (hdj,) (Entered: 01/30/2002)
01/23/2002	2	ADR SCHEDULING ORDER: Case Management Statement due by 5/16/2002. Case Management Conference set for 5/23/2002 at 10:00 AM. (hdj,) (Entered: 01/30/2002)
01/23/2002	--	Summons Issued as to Replaytv, Inc. ; Sonicblue Incorporated (hdj,) (Entered: 01/30/2002)
01/29/2002	3	SUMMONS Returned Executed, by Tivo Inc., Replaytv, Inc. ; Sonicblue Incorporated (hdj,) (Entered: 01/31/2002)
02/11/2002	4	NOTICE of Related Case 01-4865-RMW by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/12/2002)

02/11/2002	5	ANSWER to Complaint, COUNTERCLAIM against Tivo Inc., by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/12/2002)
02/11/2002	6	Certificate of Interested Entities by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/12/2002)
02/19/2002	7	Declination to Proceed Before a U.S. Magistrate Judge by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 02/20/2002)
02/26/2002	8	NOTICE re 4 Opposition to Defendants' Notice of Related Cases by Tivo Inc.,. (hdj,) (Entered: 02/27/2002)
03/01/2002	9	Reply ANSWER to Counterclaim by Tivo Inc.,. (hdj,) (Entered: 03/04/2002)
03/11/2002	10	Reply to Opposition re 8 filed by Replaytv, Inc., Sonicblue Incorporated. (hdj,) (Entered: 03/13/2002)
03/13/2002	11	ORDER Impending Reassignment to a United States District Court Judge. Signed by Judge Maria-Elena James on 3/13/02. (hdj,) (Entered: 03/14/2002)
03/13/2002	12	ORDER REASSIGNING CASE. Case reassigned to Judge D. Lowell Jensen for all further proceedings. Judge Maria-Elena James no longer assigned to case. Signed by Judge Executive Committee on 3/13/02. (hdj,) (Entered: 03/15/2002)
03/20/2002	13	CLERK'S NOTICE Case Management Conference set for 6/7/2002 at 01:30 PM. Case Management Statement due by 5/28/2002. (kc,) (Entered: 03/25/2002)
04/09/2002	14	ORDER NOT RELATING CASE to C-01-21198-RMW. Signed by Judge Ronald M. Whyte on 4/9/02. (jv,) Additional attachment(s) added on 4/17/2002 (jv,). Modified on 4/17/2002 to reflect that Judge Jensen is assigned to C-02-365 (jv,). (Entered: 04/09/2002)
04/17/2002	15	AMENDED ORDER: deeming C01-21198RMW and C02-365DLJ NOT RELATED . Signed by Judge Ronald M. Whyte on 4/9/02. (kk,) (Entered: 05/02/2002)
05/10/2002	16	STIPULATION selecting Mediation by Replaytv, Inc., Sonicblue Incorporated, Tivo Inc., (kc,) (Entered: 05/10/2002)
06/21/2002	--	Received Document stipulation & proposed order resetting initial case management conference by Tivo Inc.,. (kk,) (Entered: 06/24/2002)
06/27/2002	17	STIPULATION AND ORDER resetting Case Management Conference for 10/18/2002 at 01:30 PM. Signed by Judge D. Lowell Jensen on 6/27/02. (kc,) (Entered: 06/28/2002)
11/12/2002	18	Stipulation and ORDER DISMISSING CASE without prejudice, each party to bear its own costs. Signed by Judge D. Lowell Jensen on 11/12/02. (kc,) (Entered: 11/14/2002)
12/13/2002	19	NOTICE re 18 by Replaytv, Inc., Sonicblue Incorporated. (kk,) (Entered: 12/16/2002)

Source: [Command Searching > Utility, Design and Plant Patents](#) [\[i\]](#)
Terms: **patno=6233389** ([Edit Search](#) | [Suggest Terms for My Search](#))

126071 (09) 6233389 May 15, 2001

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

6233389

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[Link to Claims Section](#)

May 15, 2001

Multimedia time warping system

REEXAM-LITIGATE: October 17, 2005 - Reexamination requested October 17, 2005 by Echostar Communications Corporation, Englewood, CO, (Attny. Is: David L. Fehrman, Morrison & Foerster, LLP, Los Angeles, CA), Reexamination No. 90/007,750 (O.G. January 31, 2006) Ex. Gp.: 3992

NOTICE OF LITIGATION

Tivo Inc. v. Sonicblue Incorporated, et al, Filed Jan. 23, 2002, D.C. N.D. California, Doc. No. C-02-365

NOTICE OF LITIGATION

Tivo, Inc v. Echostar Communications Corporation et al, Filed October 28, 2005, D.C. N.D. Georgia, Doc. No. 1:05cv2799

11/3/2005

NOTICE OF LITIGATION

Tivo, Inc v. Echostar Communications Corporation et al, Filed July 21, 2005, D.C. N.D. Georgia, Doc. No. 1:05mi208

7/25/2005

NOTICE OF LITIGATION

Tivo, Inc v. Echostar Communications Corporation et al, Filed July 7, 2005, D.C. N.D. Georgia, Doc. No. 1:05mi190

7/18/2005

NOTICE OF LITIGATION

Tivo Inc v. Echostar Comm, et al, Filed January 5, 2004, D.C. E.D. Texas, Doc. No. 2:04cv1

INVENTOR: Barton, James M. - Los Gatos, California, United States (US); McInnis, Roderick James - Milpitas, California, United States (US); Moskowitz, Alan S. - San Francisco, California, United States (US); Goodman, Andrew Martin - Menlo Park, California, United States (US); Chow, Ching Tong - Fremont, California, United States (US); Kao, Jean Swey - Cupertino, California, United States (US)

APPL-NO: 126071 (09)

FILED-DATE: July 30, 1998

GRANTED-DATE: May 15, 2001

ASSIGNEE-PRE-ISSUE: July 30, 1998 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., TIVO, INC. SUITE 100 894 ROSS DRIVESUNNYVALE, CALIFORNIA, 94089, Reel and Frame Number: 009377/0779

ASSIGNEE-AT-ISSUE: TiVo, Inc., Alviso, California, United States (US), United States company or corporation (02)

ASSIGNEE-AFTER-ISSUE: February 8, 2007 - SECURITY AGREEMENT, CITYGROUP GLOBAL MARKETS REALTY CORP. 390 GREENWICH STREET NEW YORK NEW YORK 10013, Reel and Frame Number: 018866/0510

February 12, 2007 - CORRECTIVE ASSIGNMENT TO CORRECT THE NAME OF RECEIVING PARTY PREVIOUSLY RECORDED ON REEL 018866 FRAME 0510. ASSIGNOR(S) HEREBY CONFIRMS THE SECURITY AGREEMENT., CITIGROUP GLOBAL MARKETS REALTY CORP. 390 GREENWICH STREET NEW YORK NEW YORK 10013, Reel and Frame Number: 018875/0933

LEGAL-REP: Glenn, Michael A.; Wong, Kirk

PUB-TYPE: May 15, 2001 - Utility Patent having no previously published pre-grant publication (B1)

PUB-COUNTRY: United States (US)

US-MAIN-CL: 386#46

US-ADDL-CL: 386#68

CL: 386

SEARCH-FLD: 348#7, 348#10, 348#571, 348#714, 348#722, 348#725, 366#7, 366#33, 369#60, 386#1, 386#33, 386#45, 386#46, 386#68, 386#111-112, 386#125-126

IPC-MAIN-CL: [7] H04N 005#92

PRIM-EXMR: Tran, Thai

REF-CITED:

RE 33535, February, 1991, Cooper, United States (US), 358#149
4313135, January, 1982, Cooper, United States (US), 358#149
4665431, May, 1987, Cooper, United States (US), 358#145
5202761, April, 1993, Cooper, United States (US), 358#149

5371551, December, 1994, Logan et al., United States (US), 348#571
5438423, August, 1995, Lynch et al., United States (US), 358#335
5550594, August, 1996, Cooper et al., United States (US), 348#513
5572261, November, 1996, Cooper, United States (US), 348#512
5675388, October, 1997, Cooper, United States (US), 348#461
5696868, December, 1997, Kim et al., United States (US), 386#46
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5787225, July, 1998, Honjo, United States (US), 386#111
5920842, July, 1999, Cooper et al., United States (US), 704#503
5937138, August, 1999, Fukuda et al., United States (US), 386#112
0726574, August, 1996, G11B 27034, European Patent Office (EP), G11#B 2.7034

NON-PATENT LITERATURE: ASTARTE DVDirector[TM] Beta Testing Program.

CORE TERMS: buffer, stream, video, audio, input, segment, decoder, user, fast, storage, transform, pipeline, stored, sink, parser, forward, analog, sequence, switch, engine, viewer, pause, broadcast, extracted, logical, capture, slow, multimedia, recorded, circular

ENGLISH-ABST:

A multimedia time warping system. The invention allows the user to store selected television broadcast programs while the user is simultaneously watching or reviewing another program. A preferred embodiment of the invention accepts television (TV) input streams in a multitude of forms, for example, National Television Standards Committee (NTSC) or PAL

broadcast, and digital forms such as Digital Satellite System (DSS), Digital Broadcast Services (DBS), or Advanced Television Standards Committee (ATSC). The TV streams are converted to an Moving Pictures Experts Group (MPEG) formatted stream for internal transfer and manipulation and are parsed and separated it into video and audio components. The components are stored in temporary buffers. Events are recorded that indicate the type of component that has been found, where it is located, and when it occurred. The program logic is notified that an event has occurred and the data is extracted from the buffers. The parser and event buffer decouple the CPU from having to parse the MPEG stream and from the real time nature of the data streams which allows for slower CPU and bus speeds and translate to lower system costs. The video and audio components are stored on a storage device and when the program is requested for display, the video and audio components are extracted from the storage device and reassembled into an MPEG stream which is sent to a decoder. The decoder converts the MPEG stream into TV output signals and delivers the TV output signals to a TV receiver. User control commands are accepted and sent through the system. These commands affect the flow of said MPEG stream and allow the user to view stored programs with at least the following functions: reverse, fast forward, play, pause, index, fast/slow reverse play, and fast/slow play.

NO-OF-CLAIMS: 61

EXMPL-CLAIM: 1

NO-OF-FIGURES: 13

NO-DRWNG-PP: 12

SUMMARY:

BACKGROUND OF THE INVENTION

1. Technical Field

The invention relates to the time shifting of television broadcast signals. More particularly, the invention relates to the real time capture, storage, and display of television broadcast signals.

2. Description of the Prior Art

The Video Cassette Recorder (VCR) has changed the lives of television (TV) viewers throughout the world. The VCR has offered viewers the flexibility to time-shift TV programs to match their lifestyles.

The viewer stores TV programs onto magnetic tape using the VCR. The VCR gives the viewer the ability to play, rewind, fast forward and pause the stored program material. These functions enable the viewer to pause the program playback whenever he desires, fast forward through unwanted program material or commercials, and to replay favorite scenes. However, a VCR cannot both capture and play back information at the same time.

One approach to solving this problem is to use several VCRs. For example, if two video tape recorders are available, it might be possible to Ping-Pong between the two. In this case, the first recorder is started at the beginning of the program of interest. If the viewer wishes to rewind the broadcast, the second recorder begins recording, while the first recorder is halted, rewound to the appropriate place, and playback initiated. However, at least a third video tape recorder is required if the viewer wishes to fast forward to some point in time after the initial rewind was requested. In this case, the third recorder starts recording the broadcast stream while the second is halted and rewound to the appropriate position. Continuing this exercise, one can quickly see that the equipment becomes unwieldy, unreliable, expensive, and hard to operate, while never supporting all desired functions. In addition, tapes are of finite length, and may potentially end at inconvenient times, drastically lowering the value of the solution.

The use of digital computer systems to solve this problem has been suggested. U.S. Pat. No. 5,371,551 issued to Logan et al., on Dec. 6, 1994, teaches a method for concurrent video recording and playback. It presents a microprocessor controlled broadcast and playback device. Said device compresses and stores video data onto a hard disk. However, this approach is difficult to implement because the processor requirements for keeping up with the high video rates makes the device expensive and problematic. The microprocessor must be extremely fast to keep up with the incoming and outgoing video data.

It would be advantageous to provide a multimedia time warping system that gives the user the ability to simultaneously record and play back TV broadcast programs. It would further be advantageous to provide a multimedia time warping system that utilizes an approach that decouples the microprocessor from the high video data rates, thereby reducing the microprocessor and system requirements which are at a premium.

SUMMARY OF THE INVENTION

The invention provides a multimedia time warping system. The invention utilizes an easily manipulated, low cost multimedia storage and display system that allows the user to view a television broadcast program with the option of instantly reviewing previous scenes within the program. In addition, the invention allows the user to store selected television broadcast programs while the user is simultaneously watching or reviewing another program.

A preferred embodiment of the invention accepts television (TV) input streams in a multitude

of forms, for example, analog forms such as National Television Standards Committee (NTSC) or PAL broadcast, and digital forms such as Digital Satellite System (DSS), Digital Broadcast Services (DBS), or Advanced Television Standards Committee (ATSC). Analog TV streams are converted to an Moving Pictures Experts Group (MPEG) formatted stream for internal transfer and manipulation, while pre-formatted MPEG streams are extracted from the digital TV signal and presented in a similar format to encoded analog streams.

The invention parses the resulting MPEG stream and separates it into its video and audio components. It then stores the components into temporary buffers. Events are recorded that indicate the type of component that has been found, where it is located, and when it occurred. The program logic is notified that an event has occurred and the data is extracted from the buffers.

The parser and event buffer decouple the CPU from having to parse the MPEG stream and from the real time nature of the data streams. This decoupling allows for slower CPU and bus speeds which translate to lower system costs. The video and audio components are stored on a storage device. When the program is requested for display, the video and audio components are extracted from the storage device and reassembled into an MPEG stream. The MPEG stream is sent to a decoder. The decoder converts the MPEG stream into TV output signals and delivers the TV output signals to a TV receiver.

User control commands are accepted and sent through the system. These commands affect the flow of said MPEG stream and allow the user to view stored programs with at least the following functions: reverse, fast forward, play, pause, index, fast/slow reverse play, and fast/slow play.

Other aspects and advantages of the invention will become apparent from the following detailed description in combination with the accompanying drawings, illustrating, by way of example, the principles of the invention.

DRWDESC:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block schematic diagram of a high level view of a preferred embodiment of the invention according to the invention;

FIG. 2 is a block schematic diagram of a preferred embodiment of the invention using multiple input and output modules according to the invention;

FIG. 3 is a schematic diagram of an Moving Pictures Experts Group (MPEG) data stream and its video and audio components according to the invention;

FIG. 4 is a block schematic diagram of a parser and four direct memory access (DMA) input engines contained in the Media Switch according to the invention;

FIG. 5 is a schematic diagram of the components of a packetized elementary stream (PES) buffer according to the invention;

FIG. 6 is a schematic diagram of the construction of a PES buffer from the parsed components in the Media Switch output circular buffers;

FIG. 7 is a block schematic diagram of the Media Switch and the various components that it communicates with according to the invention;

FIG. 8 is a block schematic diagram of a high level view of the program logic according to the invention;

FIG. 9 is a block schematic diagram of a class hierarchy of the program logic according to the invention;

FIG. 10 is a block schematic diagram of a preferred embodiment of the clip cache component of the invention according to the invention;

FIG. 11 is a block schematic diagram of a preferred embodiment of the invention that emulates a broadcast studio video mixer according to the invention;

FIG. 12 is a block schematic diagram of a closed caption parser according to the invention; and

FIG. 13 is a block schematic diagram of a high level view of a preferred embodiment of the invention utilizing a VCR as an integral component of the invention according to the invention.

DETDESC:

DETAILED DESCRIPTION OF THE INVENTION

The invention is embodied in a multimedia time warping system. A system according to the invention provides a multimedia storage and display system that allows the user to view a television broadcast program with the option of instantly reviewing previous scenes within the program. The invention additionally provides the user with the ability to store selected television broadcast programs while simultaneously watching or reviewing another program and to view stored programs with at least the following functions: reverse, fast forward, play, pause, index, fast/slow reverse play, and fast/slow play.

Referring to FIG. 1, a preferred embodiment of the invention has an Input Section 101, Media Switch 102, and an Output Section 103. The Input Section 101 takes television (TV) input streams in a multitude of forms, for example, National Television Standards Committee (NTSC) or PAL broadcast, and digital forms such as Digital Satellite System (DSS), Digital Broadcast Services (DBS), or Advanced Television Standards Committee (ATSC). DBS, DSS and ATSC are based on standards called Moving Pictures Experts Group 2 (MPEG2) and MPEG2 Transport. MPEG2 Transport is a standard for formatting the digital data stream from the TV source transmitter so that a TV receiver can disassemble the input stream to find programs in the multiplexed signal. The Input Section 101 produces MPEG streams. An MPEG2 transport multiplex supports multiple programs in the same broadcast channel, with multiple video and audio feeds and private data. The Input Section 101 tunes the channel to a particular program, extracts a specific MPEG program out of it, and feeds it to the rest of the system. Analog TV signals are encoded into a similar MPEG format using separate video and audio encoders, such that the remainder of the system is unaware of how the signal was obtained. Information may be modulated into the Vertical Blanking Interval (VBI) of the analog TV signal in a number of standard ways; for example, the North American Broadcast Teletext Standard (NABTS) may be used to modulate information onto lines 10 through 20 of an NTSC signal, while the FCC mandates the use of line 21 for Closed Caption (CC) and Extended Data Services (EDS). Such signals are decoded by the input section and passed to the other sections as if they were delivered via an MPEG2 private data channel.

The Media Switch 102 mediates between a microprocessor CPU 106, hard disk or storage