

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

IPPV ENTERPRISES, LLC, and )  
MAAST, INC., )  
 )  
Plaintiffs, )  
 )  
v. ) Civil Action No. 99-577-RRM  
 )  
ECHOSTAR COMMUNICATIONS )  
CORP.; NAGRAVISION, S.A.; )  
and NAGRASTAR, L.L.C., )  
 )  
Defendants )

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**OPINION**

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James D. Heisman, Esquire, Connolly, Bove, Lodge & Hutz LLP, Wilmington, Delaware; Frederick G. Michaud, Jr., Esquire, Samuel C. Miller, III, Esquire, David M. Schlitz, Esquire, Lloyd S. Smith, Esquire, and Mark R. Kresloff, Esquire, Burns, Doane, Swecker & Mathis, L.L.P., Alexandria, Virginia; counsel for plaintiffs.

Donald F. Parsons, Jr., Esquire and Rodger D. Smith, Esquire, Morris, Nichols, Arsht & Tunnell, Wilmington, Delaware; Philip L. Cohan, Esquire, John C. Dougherty, Esquire, Hugh J. Marbury, Esquire, James M. Heintz, Esquire, Piper Marbury Rudnick & Wolfe LLP, Washington, DC; counsel for defendants.

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Wilmington, Delaware  
March 27, 2002

McKELVIE, District Judge

This is a patent case. Plaintiff IPPV Enterprises, LLC is a Nevada limited liability corporation with its principal place of business in Reno, Nevada. IPPV is the owner of U.S. Patent Nos. 4,163,254 (the '254 patent); 4,225,884 (the '884 patent); 4,528,589 (the '589 patent); and 4,484,217 (the '217 patent), all of which relate to features for pay television service, including methods to keep track of the programs viewed by pay television subscribers, to bill and collect from subscribers for watching these programs, and to permit the subscriber to control what types of programs can be seen on their television. Plaintiff MAAST, Inc. is a Delaware corporation with its principal place of business in Sparks, Nevada. MAAST is one of the companies that owns IPPV. MAAST assigned the '254, '884, '589, and '217 patents to IPPV and itself owns U.S. Patent No. 4,600,942 (the '942 patent), which relates to the encryption and decryption of pay-per-view television broadcasts.

Defendant Echostar Communications Corp. is a Nevada corporation with its principal place of business in Littleton, Colorado. Echostar Communications operates a direct broadcast satellite subscriber television service known as the DISH Network. The DISH network transmits signals in digital format. To ensure secure transmission and delivery of signals, the broadcast signals are encrypted prior to satellite transmission and are subsequently decrypted at the subscriber location.

Defendant NagraVision, S.A. is a Swiss corporation with its principal place of business in Cheseaux, Switzerland. Defendant NagraStar L.L.C. is a Colorado limited

liability corporation with its principal place of business in Englewood, Colorado. NagraVision and NagraStar supply Echostar Communications with certain enabling technology that is used in the DISH Network satellite receivers.

On August 26, 1999, IPPV and MAAST (collectively, “IPPV”) filed a complaint in this case, alleging that Echostar Communications’ operation of the DISH Network infringes, or induces infringement of, certain claims of the ’254, ’884, ’589, ’217, and ’942 patents. IPPV subsequently abandoned its allegations with respect to the ’589 patent.

On December 28, 1999, Echostar Communications answered the complaint, denying infringement and asserting certain affirmative defenses.

On July 20, 2000, IPPV amended its complaint to add NagraVision and NagraStar as defendants, alleging that NagraVision and NagraStar contributorily infringed or induced the infringement of certain claims of the ’217 and ’942 patents. Echostar Communications, NagraVision and NagraStar (collectively, “Echostar”) answered the amended complaint and asserted certain counterclaims on August 24, 2000.

On two occasions before trial, the court conducted oral arguments and made rulings on the construction of the disputed terms and phrases of the asserted claims in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996). First, in an opinion dated July 28, 2000, the court construed the claim term “television program signal,” as used in claim 21 of the ’942 patent, in order to resolve a discovery

dispute that turned on the construction of that term. See IPPV Enters., LLC v. Echostar Communications Corp., 106 F. Supp. 2d 595 (D. Del. 2000) (“IPPV I”).

Then, on July 3, 2001, the court issued its claim construction opinion on the remaining disputed terms of the four patents at issue. See IPPV Enters., LLC v. Echostar Communications Corp., 146 F. Supp. 2d 498 (D. Del. 2001) (“IPPV II”).

On September 19, 2000, Echostar moved for summary judgment that it does not infringe the '942 patent based on the court's construction of “television program signal.” MAAST opposed Echostar's motion and sought reconsideration of the court's IPPV I claim construction opinion on October 18, 2000. On December 12, 2000, the court entered an order denying Echostar's motion for summary judgment of non-infringement, but invited the parties to file motions on potential liability for infringement under the doctrine of equivalents following the Federal Circuit's decision in Festo Corp. v. Shoketsu Kinzokukogyo Kabushiki Co., Ltd., 234 F.3d 558 (Fed. Cir. 2000) (en banc). The court also denied MAAST's motion for reconsideration of its IPPV I opinion. In a pre-trial conference on July 5, 2001, however, plaintiff MAAST conceded that, unless the court reconsidered its claim construction findings with respect to the '942 patent, the defendants were entitled to summary judgment of non-infringement of the '942 patent. Accordingly, MAAST did not participate in the trial and the infringement allegations relating to the '942 patent were not at issue in the trial.

Beginning on July 9, 2001, the court held a jury trial on IPPV's claims of infringement of the '254, '217, and '884 patents, Echostar's non-infringement defense as to the patents in suit, and Echostar's invalidity defense relating to the '217 patent. As described below, infringement of the '217 patent was established as a matter of law and was not an issue that was before the jury. On July 13, 2001, the jury rendered its verdict finding: (i) that the accused Echostar Communications products literally infringed claims 8 and 9 of the '254 patent; (ii) that the accused Echostar Communications products infringed claim 4 of the '884 patent under the doctrine of equivalents; (iii) that the '217 patent is not invalid; (iv) that each of the three defendants' infringement was willful; and (v) that the plaintiffs were entitled to "bundled" damages award of \$15 million for the infringement of the '254, '884, and '217 patents. Judgment has not yet been entered on the verdict. On a certain affirmative defenses which Echostar had asserted that it would raise prior to trial, but then failed to raise at trial, the court granted judgment for the plaintiff as a matter of law. These included: (i) that the accused Echostar Communications product literally infringed claims 1, 2, 3, 6, 7, 8, 13, 14, and 15 of the '217 patent; (ii) that NagraVision and NagraStar induced infringement of and contributorily infringed those claims; and (iii) that various invalidity positions that were no longer being pursued were out of the case.

At the close of IPPV's case, and again at the close of all of the evidence, Echostar moved for judgment as a matter of law under Rule 50(b). IPPV also moved for judgment as a matter of law. Soon after the conclusion of the jury trial, the parties filed a number

of post-trial motions. On August 27, 2001, the defendants renewed their motion for judgment as a matter of law on the '254, '884, and '217 patents under Rule 50(b), and alternatively moved for a new trial under Rule 59.

The issues raised by Echostar include (i) whether sufficient evidence supports the jury's finding that Echostar literally infringed the asserted claims of the '254 and '884 patents; (ii) whether sufficient evidence supports the jury's finding that Echostar infringed step 3 of claim 4 of the '884 patent under the doctrine of equivalence; (iii) whether the jury was unreasonable in concluding that the asserted claims of the '217 patent were not invalid in light of U.S. Patent No. 3,885,089 ("the Callais patent"), the prior art reference that the defendants assert anticipates it; (iv) whether the jury's finding of willfulness with respect to Echostar Communications, NagraVision, and NagraStar is supported by sufficient evidence; and (v) whether the defendants were unfairly prejudiced by the following, either individually or collectively: the verdict form, the bundling of damages by the jury, the admission into evidence of a settlement agreement between IPPV and Echostar's competitor, DirectTV, the plaintiff's presentation of a new damages theory at trial, or the exclusion from evidence of the defendants' expert's '217 patent invalidity chart.

This is the court's decision on Echostar's motion for judgment as a matter of law or for a new trial.

## I. PROCEDURAL AND FACTUAL BACKGROUND

The court draws the following facts from the evidence presented to the jury during the trial. The general background on the patents is drawn from the patents themselves and the court's claim construction opinions in the case.

A. The Patented Technology

The following section will briefly describe each of the patents that were at issue at the trial. For a more detailed discussion of the patented technology at issue in this case and the procedural history of the three patents at issue, see IPPV II, 146 F. Supp. 2d at 501-513.

1. The '254 patent

The '254 patent, which is entitled "Method and system for subscription television billing and access," relates to the use of program identification codes in pay television for use in customer billing. It discloses a method of placing identification codes in a television program signal and storing those codes at the subscriber's location for later retrieval and use in billing the subscriber for programs viewed.

IPPV alleged that Echostar Communications infringed method claims 8 and 9 of the '254 patent. Claim 8 recites:

A method for billing a subscriber of a pay television system for programs actually viewed by the subscriber at a subscriber station comprising the steps of:

transmitting at a predetermined carrier frequency a scrambled television program signal that includes an identification code unique to a block of program material being transmitted;

selectively receiving the transmitted program signal at the subscriber station and selectively unscrambling the

received signal in response to subscriber action indicating acceptance for viewing of the block of program material;  
detecting the identification code in the program signal received at the subscriber station and temporarily storing a program identification code for billing purposes in response to the action of the subscriber indicating acceptance for viewing of the block of program material being received;  
selectively accessing the subscriber station from a remote location to obtain access to each program identification code stored at the subscriber station; and  
billing the subscriber in accordance with the stored program identification codes accessed from the remote location.

Claim 9 recites:

A method for billing a subscriber of a pay television system for programs actually viewed by the subscriber at a subscriber station comprising the steps of:

receiving at a predetermined carrier frequency a scrambled television program signal that includes an identification code unique to a block of program material;  
selectively unscrambling the received signal in response to subscriber action indicating acceptance for viewing of the block of program material;  
detecting the identification code in the program signal received at the subscriber station and storing a program identification code in response to the action of the subscriber indicating acceptance for viewing of the block of program material being received;  
selectively connecting the subscriber station to a remote location over non-dedicated telephone lines on a periodic basis unrelated to the receiving of the scrambled program signal;  
selectively transmitting each program identification code stored at the subscriber station to the remote location in response to a command signal transmitted from the remote location over the non-dedicated telephone lines; and  
billing the subscriber in accordance with the stored program identification codes transmitted to the remote location.



## 2. The '884 patent

The '884 patent, which is also entitled "Method and system for subscription television billing and access," relates to the use of category identification codes in a pay television system. According to the methods disclosed in the '884 patent, category identification codes, which may be associated, for example, with parental control ratings such as the "G," "PG," "R," and "X" movie ratings, are inserted into a scrambled television program signal. At the subscriber's location, these codes are then detected and compared to codes that are set by the subscriber. In a system that employs the claimed method, the television signal may only be unscrambled and viewed if the control codes match the ratings level allowed in the subscriber's profile.

IPPV alleged that Echostar Communications infringed method claim 4 of the '884 patent. Claim 4 recites:

In a pay television system, a method of providing subscriber control over television programs which can be viewed at the subscriber location comprising the steps of:

- transmitting from a remote location a scrambled television program signal;
- inserting a category identification signal into the scrambled program signal at the remote location for transmission thereof with the program signal;
- receiving the scrambled program signal, including the category identification signal, at the subscriber location;
- generating a signal at the subscriber location identifying at least one category of programs which are acceptable for viewing;
- comparing the received category identification signal with the generated signal; and
- enabling the received program signal to be unscrambled if the compared signals correspond.

### 3. The '217 patent

The '217 patent, which is entitled “Method and system for remote reporting, particularly for pay television billing,” relates to the use of program cost signals in subscription television services, which capture the cost or charge associated with a program transmission. According to the claimed methods, when the program transmission is received by the subscriber, the cost signals are compared to a previously stored credit value. If the subscriber’s available credit is greater than the cost of program, the program is decoded and is made available for viewing. Otherwise, subscriber access remains blocked.

IPPV alleged that Echostar Communications infringed independent method claims 1 and 13 of the '217 patent, and various dependent claims. Claim 1 recites:

A method for providing subscription services involving transmissions from a remote location to a subscriber location and for which payment is required for access, the method comprising the steps of:

- (a) transmitting a cost signal containing a charge associated with the transmissions;
- (b) storing a credit at the subscriber location;
- (c) comparing the magnitude of the charge contained in the cost signal with the magnitude of the stored credit; and,
- (d) enabling access by the subscriber to the transmissions associated with the cost signal in response to the relative magnitudes of the charge and stored credit.

Claim 13 recites:

A method for providing impulse purchase capability in a subscription television system in which access to information transmissions from a remote location to a subscriber location

is at least limited to subscribers requesting access, comprising the steps of:

(a) transmitting within at least one allocated television channel frequency band, together with the information transmissions a cost signal indicating the magnitude of the charge for access to the information in the transmissions;

(b) storing, at the subscriber location a credit indicating an amount available for future payment of charges for access to information in the transmissions;

(c) comparing the magnitude of the charge contained in the cost signal with the magnitude of the stored credit; and,

(d) enabling access by the subscriber to the information in the transmissions associated with the cost signal in response to the relative magnitudes of the charge and the stored credit.

## B. The Accused Products

In March 1996, Echostar Communications created and launched the DISH Network, a direct broadcast satellite subscriber television service.<sup>1</sup> The DISH Network transmits signals in digital format. To ensure the secure transmission and delivery of the signals, the broadcast signals are encrypted prior to satellite transmission and are subsequently decrypted at the subscriber location.

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<sup>1</sup> For a general discussion of the technology of “direct broadcasting satellite systems,” see 5 McGraw-Hill Encyclopedia of Science & Technology 351-52 (8<sup>th</sup> ed. 1997)

IPPV's infringement allegations for the above described patent claims focus on three particular features of the DISH Network. First, the DISH Network includes an "Impulse Pay-Per-View" feature. This feature allows for the billing of DISH Network subscribers who purchase pay-per-view programming directly through the television. IPPV contends that this "store and forward" billing feature infringes claims 8 and 9 of its '254 patent. Second, the DISH Network includes a parental control feature that allows subscribers to block certain categories of programming from being viewed. IPPV contends that this feature infringes claim 4 of its '884 patent. Third, the DISH Network includes a stored credit limit feature that prevents access to a pay-per-view program if the cost of that program exceeds the subscriber's available credit. IPPV contends that this stored credit feature infringes claims 1, 2, 3, 6, 7, 8, 13, 14, and 15 of its '217 patent.

NagraVision and NagraStar help Echostar Communications to design and supply some of the equipment used in the DISH Network system. That equipment includes smart cards, cards inserted into the set-top box that implement certain access control techniques which are used in the Echostar equipment. NagraVision developed and supplies the conditional access system for the DISH Network system. NagraStar provides hardware and software services to Echostar for the conditional access system and the DISH Network system, including the above referenced smart cards that it purchased from NagraVision. IPPV contends that NagraVision and NagraStar have induced and contributed to Echostar's direct infringement of the asserted claims of the '217 patent.

### C. Claim Construction

On June 8, 2001, the parties submitted their briefs on all remaining claim construction issues that were not addressed in the court's IPPV I opinion. On June 18, 2001, the court held a hearing in accordance with Markman v. Westview Instruments, 517 U.S. 370 (1996), to construe the balance of the disputed terms and phrases of the asserted claims of the patents in suit. On July 3, 2001, the court issued its claim construction opinion, which addressed the disputed terms of the asserted claims of the '254, '884, '217, and '942 patents. See IPPV II, 146 F. Supp. 2d 498 (D. Del. 2001).

Because the infringement allegations with respect to the '942 patent were not pursued at trial after the court's IPPV II claim construction opinion, the court will not discuss its earlier claim construction findings with respect to that patent in IPPV I, 106 F. Supp. 2d 595, at 603-606 (construing the term "television program signal," as used in claim 21 of the '942 patent to mean "analog television signal"). Rather, the court will focus exclusively on IPPV II, 146 F. Supp. 2d 498 (D. Del. 2001). The court will only review the aspects of that claim construction opinion regarding the '942 patent that are relevant to the construction of the asserted claims of the '254, '884, or '217 patents, which were the set of claims at issue at trial.

In the July 3, 2001 claim construction opinion construing the disputed claims of the '254, '884, '217, and '942 patents, the court made a number of findings relevant to the consideration of defendants' instant motion.

The court first addressed the '254 patent, finding, among other things, that the term "includes" in the phrase "a scrambled television signal that includes an identification

code” contained in claim 8 requires “that the identification code be part of the transmitted program signal,” but does not “limit the location of the code within the program to the retrace interval.” Id. at 515. With regard to the ’884 patent, the court found that the words “inserting . . . into” in the phrase “inserting a category identification signal into the scrambled program signal at the remote location for transmission thereof with the program signal” of claim 4 requires “the identification signal to be placed inside of the program signal.” Id. at 521. With regard to the ’217 patent, the court construed the phrase “with the information transmissions,” and found that, because the cost signal is placed inside the program signal, which is a continuous signal by nature, “to the extent [the phrase] ‘with the information transmissions’ refers to the relationship between the cost signal and the information transmissions, the words mean closely associated in time.” Id. at 520.

With regard to the ’942 patent, the parties disputed whether the meaning of the phrase “television program signal” of claim 21 “includes video information,” which was IPPV’s position, or whether “‘television program signal’ comprises video information in combination with audio information,” which was Echostar’s position. Id. at 521. After considering the parties’ arguments, the court found no reason to limit the conventional definition of the phrase and concluded that a “television program signal” “comprises audio and video signals that are broadcast simultaneously to produce the sound and picture portions of a televised scene.” Id.

When the court construed the term “television program signal,” as used in the ’942 patent, it also intended that construction to apply to the term “television program signal,” as used in the other patents. Moreover, the parties were aware that the term “television program signal” was to be construed identically for each instance of the term in the asserted patents and did not at that time contend that a different meaning should be applied. See June 8, 2001, Claim Construction Hearing Tr. at 19-20 (plaintiffs’ counsel: “I don’t think we have any disagreement as to what makes up part of the program signal . . .”); Id. at 27 (defendants’ counsel: “I understand now that we have an agreement that television program signal consists of an audio and video signal. So we don’t have to go back there each time that term appears in these patents . . .”).

However, because the parties did not raise as disputed the term “scrambled” – found in the phrase, “scrambled television signal” – at the Markman hearing or in the claim construction briefing, the court did not issue a construction of the term “scrambled” as used in the asserted claims of the ’254 and ’884 patents. As further discussed below, the proper definition of the term “*scrambled* television program signal” was debated between the parties throughout the trial and remains a contentious subject in the parties’ post-trial briefs. See Trial Tr. at 655-65; 679-85.

#### D. The Trial

On July 9, 2001, the parties commenced a jury trial. The following sections will describe the contentions of the parties and summarize the evidence and testimony presented in support of the parties’ positions.

## 1. IPPV's contentions

IPPV contends that the defendants have infringed the patents in suit through their operation of the DISH Network digital satellite subscription television system and that it is entitled to damages as a result of the defendants' infringement. More specifically, IPPV asserts direct infringement of the '254, '884, and '217 patents, both literally and under the doctrine of equivalents, against Echostar Communications, and further contends that NagraVision and NagraStar contributorily infringe or induce the infringement of the '217 patent. While the '254 and '884 patents expired before the suit was filed, IPPV is seeking damages for Echostar's operation of its DISH Network for a period of time that runs from March 1996 until the patents' expiration in early 1997. With respect to the '217 patent, which has not yet expired, IPPV seeks damages and an injunction. IPPV also asserts that the defendants' infringement of the '217 patent was, and continues to be, willful.

## 2. Echostar's contentions

Echostar argues that the DISH Network does not infringe the '254 or '884 patents and that the '217 patent is invalid. Echostar's non-infringement position with respect to the '254 and '884 patents is that the features implemented in the DISH Network do not insert identification codes into a television program signal, as required by the asserted claims. More specifically, Echostar contends that because the DISH Network multiplexes separate digital packets of video data, audio data, and identification codes into a time division multiplexed transport stream prior to sending the signal, it does not "insert" or



“include” identification codes in a “television program signal.” Echostar’s invalidity position with respect to the asserted method claims of the ’217 patent is that they are fully disclosed in the prior art reference referred to by the parties as the Callais patent, a patent on card-operated pay TV systems, and are therefore anticipated under 35 U.S.C. § 102.

### 3. Evidence giving background information as to the patents-in-suit

IPPV called Robert S. Block to give background about IPPV and the pay television features that are embodied in IPPV’s patents-in-suit.<sup>2</sup> Block is the Manager of IPPV Enterprises, the Chairman of MAAST, and the co-inventor of the three patents at issue in this lawsuit.

Block began by discussing the ’254 patent, the “Impulse Pay-Per-View Patent.” He stated that he considered the invention of the ’254 patent to be the “idea of identifying the program, storing the program . . . – not requiring the customer to get permission, saying that he buys the program by simply pressing a button or accepting the program in some way, storing the fact that he bought the program, [and] retrieving the information that he bought that program for billing purposes at a later time.”

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<sup>2</sup> The testimony in this section is only included to give general background information as to the patents. Block also testified about IPPV’s past licensing practices with regard to the patents-in-suit. This testimony will be reviewed, *infra*, at I.D.7.a., the section relating to damages.

He next turned to the '884 patent, explaining that he wanted to create a feature that would give parents control over the content of their television, “so they could decide the level of programming that came in at any given moment.” Block explained that the '884 patent is directed at this feature, stating that the invention of the '884 patent is “the concept of rating the program, transmitting that rating to the set-top [box], allowing the subscriber or user to set their own rating control, comparing the rating control that the users set with the rating of the program, and allowing or not allowing the program to be viewed, depending on whether the program meets the test set up by the user.”

Last, Block addressed the '217 patent, describing the moment that he conceived of the idea behind that patent. Block testified that he set out to solve the problem of how to set up a pay-per-view service without requiring the customer to use a telephone line to communicate to the provider which programs he or she desires. He stated that the invention of the '217 patent was the answer – “we would take a program and give it an identification code . . . . We have the customer press a button or some other way to accept the program. And we would store the identification code in the program . . . . Then we would send along with that program a charge. . . . And we would accumulate that charge, so that at the end of the month we could tell the customer how much he owed . . . [and] how much he purchased.

4. Evidence relating to infringement of the '254 and '884 patents

a. Opinion testimony of plaintiff's expert – Roy Griffin

IPPV called Roy Griffin, who is a senior electrical design engineer and consultant with Sherwood Engineering Design Services in El Paso, Texas. Griffin has worked on cable set-top box technology for a number of companies in the cable television industry since graduating with a Bachelors of Science and Engineering in Electrical Engineering from the University of Texas at El Paso in 1981.

Griffin's substantive testimony began with an explanation of how pictures are displayed on a television set. He next referred to the analog signal in Figure 2 of the '254 patent and noted that the patent "describes one way of putting in information into the television signal" by placing scramble codes and program identification codes in the vertical retrace of the analog video signal. He confirmed that the signal described in the specification and drawings of the '884 patent was the same as the signal described in Figure 2 of the '254 patent. Griffin also explained that analog signals were present in the Echostar system prior to digitizing and again, after transmission, at the subscriber's television set.

Griffin explained that the one difference between the analog signal illustrated in the patent and the signals used in the Echostar system is the delivery mechanism. In an analog pay television broadcast system, as disclosed in the patents, an antenna connected to a user's television set picks up analog television program signals that are broadcast via a large antenna. A set-top decoder box then unscrambles the analog signals. In contrast, the Echostar system converts analog television program signals into a scrambled digital signal and directs that signal to subscriber's home via satellite where it is then decoded

back into analog form. Griffin went on to state, however, that under the claims of the '254 and '884 patents and the court's claim construction opinion, it does not matter whether the scrambled program signal is an analog or digital transmission, and further opined that the transmission of analog and digital signals are equivalent because both perform the identical function of representing information that is used in reproducing a television program by conveying the information about the intensity and color of television tube pixels as a function of time. Griffin further explained that "the DISH Network [itself] provides a lot of evidence that [the transmission of analog and digital signals are] interchangeable, because you start with analog, you transmit it. When you're back at the television set, you're analog again. So you can see the interchangeability of that."

Griffin next explained how Echostar's system transmits signals. He first noted that because of the increased bandwidth capabilities of Echostar's satellite feed and the compression techniques used by Echostar, the DISH Network is capable of transmitting a number of different television program signals at the same time. Therefore, the DISH Network's time-division multiplex transport stream contains multiple television program signals. This transport stream is comprised of separate video, audio, and data packets sent in separate "little time slices" into the transport stream, which is transmitted in "one long big continuous string." He noted that the data packets that accompany the digital and audio packets in the Echostar transport stream include codes such as scramble codes, which are used to unscramble the scrambled television signal; program identification

codes, which are used to determine whether to let a subscriber access a program; and parental control codes (called MPAA codes in the DISH Network system), which are also used to determine whether to let a user access a program. Griffin opined that while the patents' specifications describe a single analog television program signal, the claim limitations of the patents may still be met by a digital system, such as the DISH Network, that sends multiple television program signals in accordance with the claimed methods.

After acknowledging that he was aware of an issue in the case concerning what the "television program signal" is in the Echostar system and whether data is transmitted in that program signal, Griffin stated that the Echostar transport stream contains interleaved packets of scrambled video, scrambled audio, and data. In his opinion, Griffin testified, the Echostar transport stream was a "television program signal," within the meaning of the asserted patent claims. Griffin explained that in a scrambled system, like that described by the patents at issue and the accused DISH Network, keys to unscrambling the video and audio data called scramble codes must be sent with the television signals so that the scrambled television program signals can be unscrambled. He noted that the data packets, which contain program identification codes, are placed in the transport stream, and opined that in a digital system like Echostar, "you would never put [the codes] in [the actual video or audio] packets," for two reasons. First, "if you put it in [that] portion of the television signal, you could never get it out because . . . it's scrambled." Second, if you literally inserted the data packet into the video packet, "you [would] mess up the video signal."

He then described how the impulse pay-per-view, parental control, and credit limit features are implemented in the DISH Network using the program identification codes that are sent in the transport stream. Next, Griffin walked through each element of each of the asserted claims of the '254, '884, and '217 patents, and concluded that each element was present in the accused products, because the Echostar transport stream is comprised of a number of “television program signals” and the system inserted and used program codes for those program signals in accordance with the various disclosed methods of the patents at issue. In conclusion, Griffin opined that the Echostar DISH Network infringes each of the claims of the asserted patents.

On cross-examination, Griffin confirmed that Echostar’s time-division multiplex system transmitted separate audio and video packets, that each separate packet is transmitted at a slightly different time, and that the program identification and category control codes in the Echostar system are never inserted directly into the audio or video packets but are inserted into the interleaved transport stream and transmitted in separate packets as “part of the overall transport scheme.”

b. Testimony of Echostar employee, David Kummer

Defendants called David Kummer, an Echostar employee, who was hired to develop its digital system and was lead architect on set-top box development. Kummer did not submit an expert report and was not an expert witness for the defendants. Rather his testimony was limited to testifying about his knowledge and observations regarding the DISH Network.

Kummer testified that the DISH Network is a digital television system, and that the transport stream in the DISH Network is used to transport separate audio, video, and data packets from the Echostar transmitter to a subscriber's receiver, which picks out the audio and video packets that the subscriber is interested in watching, and converts those signals back to a television program signal for display on a television set.

Kummer then explained that the Echostar system uses program and category identification codes, which are separately packetized, transmitted as part of a multiplexed transport stream, and then removed by the receiver and stored in memory or tables in the receiver. He also stated that the program and category ID codes are never inserted into the audio or video packets of the DISH Network transport stream.

On cross-examination, Kummer stated that although the identification codes are not literally in the video packets, the identification codes would normally be in the horizontal or vertical blanking intervals of the video signal<sup>3</sup> in an analog signal, but in a digital signal are instead contained in data packets. He also reported that, in a pay-per-

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<sup>3</sup> In a television signal, "blanking intervals" are portions of the signal that fall in between the regions that carry the video information. They accommodate the need for retrace of the horizontal and vertical lines during the conventional scanning process. As they are invisible to the viewer, that may be used to transmit additional information along with the video signal. See 18 McGraw-Hill Encyclopedia of Science & Technology 207, 232-33 (8<sup>th</sup> ed. 1997) see also, TechEnclopedia, *at* <<http://www.techweb.com/encyclopedia/defineterm.yb?term=rasterscan>> (last visited March 24, 2002).

view system, the identification codes are necessary for the system to unscramble the signals and properly perform the impulse pay-per-view and parental control features.

c. Opinion testimony of defendants' expert - Graham Stubbs

Defendants called Graham Stubbs, who has worked in the cable television industry for roughly 25 years. Stubbs has a Bachelor of Science degree in Physics and Electronics, which he obtained in London, England, and also has a graduate degree from the Executive Program for Scientists and Engineers at University of California, San Diego.

Stubbs opined that Echostar did not infringe claims 8 and 9 of the '254 patent because the DISH Network did not "include" a program ID code in the "scrambled television program signal." Stubbs also opined that Echostar did not infringe claim 4 of the '884 patent because the DISH Network did not "insert [a category ID code] into" the "scrambled television program signal." On cross-examination, Stubbs agreed that aside from those claim elements on which he testified, he expressed no opinion "as to whether or not the other elements of those claims are in the Echostar system."

5. Evidence of invalidity of the '217 patent

Stubbs also testified that, in his opinion, the '217 patent was invalid in view of U.S. Patent No. 3,885,089, which was referred to throughout the trial as the Callais patent. He testified that he had studied the Callais patent and had found that each and every element of the asserted claims of the '217 patent was present in the Callais patent, and that, as part of his work in the case, he had prepared an invalidity claim chart in



which he had matched each element of the asserted claims with the corresponding reference in the Callais patent.

On cross-examination, counsel for IPPV brought to Stubbs' attention that language from his invalidity claim chart exactly matched language in a document prepared by defendants' counsel in September 2000, three months before Stubbs was hired. During his redirect examination, Stubbs highlighted the language in his claim chart to clarify which words were written by him, which words were written by lawyers, and which words were quoted from the Callais patent. Both the Callais patent and the claim chart were published to the jury, but only the Callais patent was admitted into evidence.

6. Evidence of willful infringement of the '217 patent

a. Testimony of Kerry Miller

IPPV called Kerry Miller, Esquire, Director of Intellectual Property for Echostar. Miller testified that his current job at Echostar involves taking care of legal issues concerning patents. He also testified that prior to holding his present position at Echostar, he was the senior patent counsel at Thomson Consumer Electronics. Miller held that position at Thomson from 1997 until he joined Echostar in June 1999, two months before this suit was filed. Miller also confirmed that, while at Thomson, he was involved in a litigation brought by IPPV against Thomson and other companies that were suppliers to DirectTV and that during the course of the litigation he learned of some of the patents involved in this litigation. However, during his cross-examination, Miller testified that he did not tell Echostar about the patents in suit when he joined Echostar because "I wasn't

thinking about these patents . . . [t]hey had a whole slate of new work for me and I got to work on that.”

During his testimony, Miller also stated that based on his search of Echostar’s files, Echostar had no record of receiving the December 30, 1998 letter purportedly sent by plaintiff’s counsel that informed Echostar of the ’217 patent and of plaintiff’s belief that Echostar was infringing that patent. The letter, which was subsequently moved into evidence, was properly addressed to Echostar’s Chairman and CEO, Mr. Charles Ergen, at Echostar Communications Corporation in Littleton, Colorado. Miller also stated that to the best of his knowledge, no one at Echostar had attempted to get an opinion of counsel with respect to the patents in this lawsuit prior to the time he joined Echostar. Miller did acknowledge that Echostar received the letter dated August 31, 1999 that advised Echostar that this suit had been filed.

Ergen did not appear to testify as to whether he received the letter. The defendants did not introduce an opinion of counsel regarding the patents in suit.

b. Testimony of Germar Schaefer and Rex Povenmire

IPPV called Dr. Germar Schaefer and Rex Povenmire to testify. Both are Echostar employees and were Echostar Rule 30(b)(6) designees in this case. Schaefer testified that Echostar had to implement the allegedly infringing credit limit feature in its DISH Network because: (i) its competitor DirectTV had it; and, (ii) there were good business reasons for managing credit limits. Povenmire explained that the credit limit function

was needed to prevent Echostar's customers from charging a lot of money that they could not pay.

## 7. Evidence of damages

### a. Testimony of Robert Block

In addition to his earlier testimony regarding his invention of the patents-in-suit, Block also testified about IPPV's past licensing practices. This testimony was offered as being relevant to damages.

Block discussed IPPV's licensing history regarding the '254, '884, and '217 patents. He reported that, as part of a joint venture, IPPV had licensed those patents to Scientific-Atlanta and to MAAST under the following royalty terms – (i) cable royalties were \$2 for the first 50,000 boxes and \$1.37 for boxes above 50,000; (ii) royalties for direct broadcast were \$3 for the first 50,000 boxes and \$2 for boxes over 50,000. He also reported that IPPV had settled a lawsuit with General Instrument for \$6.1 million in royalties plus legal fees.

Block next testified about the DirectTV settlement agreement, a copy of which was in the jury's notebooks. Without stating the dollar amount of the agreement in open court – which was approximately \$20 million – Block testified that at the time he negotiated that agreement he was “having a very tough time,” financially. As a result, he testified that terms of the DirectTV license, which ultimately included a license to the '942 patent in addition to a license to the three patents in suit, were at “a very deep discount to what we thought those patents were worth to DirectTV.” In the DirectTV

action, IPPV had sued on the '217, '254, and '884 patents. Block testified that as a condition of accepting the settlement of the case, DirectTV also wanted the settlement to include a license on the '942 patent.

On cross-examination, in response to questioning by Echostar's counsel, Block confirmed that he understood that the licensing agreements he testified about included licenses for patents that were not in this case – the '942 patent (which IPPV decided not to pursue after the court's Markman ruling) and the '589 patent (which IPPV chose to voluntarily dismiss from the case). Echostar's counsel also asked whether Block understood that “when you filed this suit, you asked for \$80 million on the '942 patent that is no longer in this case.” Block ultimately testified that he did so understand.

b. Opinion testimony of plaintiff's expert – Stuart J. Lipoff

IPPV called Stuart J. Lipoff to testify to the issue of what a reasonable royalty would be should IPPV prevail on its infringement case. Lipoff has Bachelors degrees in physics and electrical engineering, a Master's degree in Electrical Engineering, and a Master's degree in Business Administration with a concentration in Managerial Finance. For the past twenty-five years, he has been employed by Arthur D. Little. Lipoff is currently the Vice President of Communications and Information Technology and Electronics at Arthur Little and has worked with clients in the communications-related industries, with a particular focus on multi-channel programming. He has experience working on projects that involve evaluating and valuing technology.

After a reviewing his educational and professional background, Lipoff's substantive testimony began with a general description of the valuation methodology that he and his team used in reaching their conclusions as to the damages for infringement. Lipoff explained that his team used the "income method" of valuation, whose first step was to determine the total value of the patents-in-suit by comparing the actual value of Echostar's business against their team's calculation of what Echostar's business would have been worth had Echostar not used the features that allegedly infringe the asserted claims of the patents-in-suit. Lipoff stated that he and his team determined that the value of the '884 patent was \$19.78 million, the value of the '217 patent was \$1.78 million, and the value of the '254 patent was "a little bit over a million dollars." The total valuation of all three patents that Lipoff testified to was \$22.7 million, "where most of the value comes from the '884 patent."

Lipoff next explained that the second step of his analysis was to determine what a "reasonable royalty" would be for those patents had the parties negotiated a license at the time the infringement began. The total damages figure was then arrived at by multiplying the total value of the patents-in-suit by the estimated reasonable royalty rate. Lipoff stated that prior to the trial his team had arrived at a reasonable royalty rate of 35 percent, which when applied to the total value of \$22.7 million yields a total damages amount of \$7.944 million. Lipoff then testified that he and his team concluded that:

[I]t would have been reasonable for these parties at the time they were sitting down in March '96 to have agreed that \$22 million, \$22.7 million, was the full value [of the three

patents]. That given all the other things Echostar was doing, they would come down to \$8 million as agreeing to being a reasonable royalty. And they would further agree to spread that royalty out over a period of time through the life of the longest patent that was part of the package, the credit limit patent, '217, till May 2002.

Lipoff was then asked whether he “gave any consideration that the royalty could be 100 percent” instead of the 35 percent figure that he indicated was reasonable in his report. He responded that while “there certainly are instances that exist where a licensee has been willing to pay the full 100 percent . . . we started at that 100 percent level and felt that there would be a willingness to discount that, to come down from the number more in that range of 35 to 50 percent.” As Lipoff conceded on cross-examination, this statement mirrors his expert report, which states:

Based on these two factors, we would adjust the royalty percentages to 35 to 50 percent of the value of the three patents. On further consideration of the other Georgia-Pacific factors, we would set the percentage at the bottom end of this range, i.e., 35 percent.

However, in response to a question as to whether Echostar could have afforded to pay \$22.7 million if they had to, Lipoff opined that “they could afford to pay the full \$22 million and still have met all of their business plans.”

Lipoff also testified that Echostar would have paid this royalty on a “per-subscriber” basis. He reported that he and his team attempted to verify his conclusions by checking the implicit “per-subscriber” royalty rate of \$2.59 (\$8 million divided by the 3 million projected subscribers) and checking it against other licensing offers made by

IPPV. Lipoff stated that this exercise proved that the \$8 million figure in his expert report was “conservative.” Lipoff explained that the report of Echostar’s damages expert, Mr. Degen, contained “information that had not previously been made available to us about the number of boxes that each subscriber buys,” and that the projected number of boxes sold as reported in Degen’s report, which was issued after Lipoff’s expert report was finished, was actually 11 million and not the 3 million used in Lipoff’s report. He testified that other licensing offers made by IPPV in the marketplace to license these patents indicated that the patents-in-suit could be licensed at a per-box royalty rate of \$2.40. He then noted that \$2.40 “is very close to the \$2.59,” which was his per-subscriber royalty rate based on the \$8 million figure divided by 3 million subscribers. He testified that multiplying a per-box royalty of \$2.40 by the 11 million set-top boxes identified in Degen’s report yielded a total damages number in the range of \$22 million.

On cross-examination, Lipoff stated that although his report concluded that the total damages should be \$7.944 million, based on a \$22.7 total value and a 35 percent reasonable royalty rate:

the only adjustment I would make had I – were I to write the report over, using new information that was not made available to us until after we wrote the report, was perhaps a correction of about 1.6 times higher, given the fact we now know there are more boxes sold per home than was information was made available to us at the time we wrote the reports.

He also confirmed that when he was asked at his deposition whether he ought to approach his damages analysis on a per-box basis, Lipoff stated that “for the purposes of coming up

with a value of the patents, we believed using the per-box method . . . was inappropriate.”

Block did not testify about IPPV’s previous licenses involving the patents-in-suit.

#### E. The Jury’s Verdict

On July 13, the jury returned its verdict.

##### 1. Infringement

With respect to the ’254 patent, the jury found that Echostar had literally infringed claims 8 and 9.

With respect to claim 4 of the ’884 patent, the jury only needed to make two factual findings. In order to make these determinations, the jury had to resolve one disputed issue: whether the placement of an MPAA rating code into a service information (SI) packet and/or the placement of the SI packet into the transport stream with audio and video packets corresponds to the “inserting . . . into” and “including” limitations of claim 4. The jury found that Echostar had literally infringed step 4 of claim 4, which recites the following limitation: “receiving the scrambled program signal, including the category identification signal, at the subscriber location”). With respect to step 3 of claim 4, “inserting a category identification signal into the scrambled program signal . . . .,” the jury found that Echostar infringed this limitation under the doctrine of equivalents.

With respect to the ’217 patent, because Echostar failed to pursue its non-infringement contentions with respect to that patent at trial and instead relied only on its invalidity argument, the court granted judgment as a matter of law that Echostar Communications infringed the ’217 patent directly and that NagraStar and NagraVision



contributorily infringed and induced the infringement of the '217 patent. These judgments were indicated in the verdict form by marking the answers to those questions consistently with this judgment. In this way, the court communicated to the jury that they should not address these portions of the verdict form.

## 2. Invalidity – Anticipation

Although Echostar originally purported to pursue various invalidity arguments based on obviousness, anticipation, and a number of prior art references, the lone invalidity argument that the defendants pursued at trial was that the '217 patent was invalid as anticipated by the Callais patent. The jury found that Echostar did not meet its burden of proving by clear and convincing evidence that the asserted claims of the '217 patent were invalid.

Because Echostar failed to pursue its invalidity contentions with respect to the '884 patent, the court granted judgment as a matter of law that Echostar had failed to meet its burden of proving that the '884 patent was invalid. This judgment was also indicated in the verdict form by marking the answers to those questions consistently with those judgments. Additionally, for issues that defendants had abandoned at the last minute and did not raise at trial, the court blacked out the relevant areas of the verdict form in order to indicate to the jury that they no longer had to be considered.

## 3. Willfulness

The jury also found that IPPV met its burden of proving by clear and convincing evidence that Echostar Communications, NagraVision, and NagraStar willfully infringed the claims of the '217 patent.

#### 4. Damages

The jury awarded lump sum damages in the amount of \$15,000,000. They indicated this on the verdict form, by crossing out the blank lines next to the '254, '884, and '217 patents, and writing in the margin “bundle \$15 million.” During his closing statement, counsel for IPPV encouraged the jury to bundle damages in this manner.

#### F. Post-Trial Proceedings

At the close of IPPV's case, and again at the close of all of the evidence, the defendants, Echostar Communications, NagraVision, and NagraStar, moved for judgment as a matter of law under Rule 50(b). On August 27, 2001, the defendants renewed their motions for judgment as a matter of law on the '254, '884, and '217 patents under Rule 50(b), and alternatively moved for a new trial under Rule 59.

## II. DISCUSSION

### A. Echostar's Motion for Judgment as a Matter of Law

The court may grant Echostar's motion for judgment as a matter of law only if “there is no legally sufficient evidentiary basis for a reasonable jury” to have found for IPPV on an issue. See Fed. R. Civ. P. 50(a). Thus “[a] motion for judgment as a matter of law under Federal Rule 50(a) ‘should be granted only if, viewing the evidence in the

light most favorable to the nonmoving party, there is no question of material fact for the jury and any verdict other than the one directed would be erroneous under the governing law.’” Beck v. City of Pittsburgh, 89 F.3d 966, 971 (3d Cir. 1996) (quoting Macleary v. Hines, 817 F.2d 1081, 1083 (3d Cir. 1987)); see also Embrex, Inc. v. Service Eng’g Corp., 216 F.3d 1343, 1347 (Fed. Cir. 2000).

In other words, to overturn a jury verdict, the party against whom the verdict was rendered must show either that the jury’s findings are not supported by substantial evidence, or, if they were, that the legal conclusions implied from the jury’s verdict cannot be supported as a matter of law. Applied Med. Res. Corp. v. United States Surgical Corp., 147 F.3d 1374, 1376 (Fed. Cir. 1998); Read Corp. v. Portec, Inc., 970 F.2d 816, 821 (Fed. Cir. 1992). “The ‘substantial evidence’ standard for reviewing a finding of fact raises the question whether the jury’s resolution of a factual dispute was *reasonable*.” Read, 970 F.2d at 821. (emphasis in original).

### 1. Infringement Issues

At trial, defendants conceded that many of the steps and limitations of the ’254 and ’884 patents read literally on the accused processes. What was left for the jury to decide on the topic of infringement related to whether the Echostar DISH Network contained a “scrambled television program signal,” and whether the system “included” or “inserted [codes] into” such signal.

Claims 8 and 9 of the '254 patent, which the jury found to be literally infringed by the DISH Network, require transmitting and receiving (emphasis added):

at a predetermined carrier frequency a scrambled television program signal that includes an identification code unique to a block of program material.

Steps 3 and 4 of claim 4 of the '884 patent require (emphasis added):

inserting a category identification signal into the scrambled television program signal at the remote location for transmission thereof with the program signal.

receiving the scrambled [television] program signal, including the category identification signal, at the subscriber location.

As noted above, the jury found that the DISH Network literally infringed step 4 and infringed step 3 under the doctrine of equivalents.

Echostar contends that there is insufficient evidence to support the jury's verdict that it infringes the '254 and '884 patents and enumerates several supporting arguments. Some of its arguments turn on claim construction issues and relate to the jury's literal infringement findings, while the last relates to sufficiency of the record supporting the jury's finding that one of the steps in claim 4 of the '884 patent was infringed under the doctrine of equivalents.

- a. Was plaintiff's evidence sufficient to support the jury's finding infringement of claims 8 and 9 of the '254 patent and of claim 4 of the '884 patent?

Echostar first contends that no substantial evidence supported the jury's finding that the time-division multiplexed transport stream transmitted by the DISH Network is a

“television program signal,” a claim limitation found in claims 8 and 9 of the ’254 patent and claim 4 of the ’884 patent, which was defined by the court in IPPV II. Echostar also argues that there is no substantial evidence supporting the jury’s verdict that the DISH Network literally meets the “includes” limitation of the claims ’254 patent or the “inserting . . . into” limitation of the ’884 patent, as those terms had been defined by the court in IPPV II. The central issue to each of these three contentions is whether the court’s definition of “television program signal,” which requires the audio and video components to be broadcast “simultaneously,” precludes a finding that the Echostar DISH Network, which transmits a time-division multiplexed transport stream that divides audio and video signals into discrete packets and then transmits a stream of those packets along with data packets containing program identification codes, transmits a “scrambled television program signal.”

Echostar argues that in reaching its finding of literal infringement, the jury was misled by plaintiff’s counsel, asserting that during plaintiff’s closing argument to the jury, counsel ignored the court’s claim construction and instructed the jury that they could disregard the court’s definition of “television program signal,” “included,” and “inserted . . . into” when he urged them that:

scrambled television program signals . . . include not only the program signals, but the codes that you need to unscramble them, to store I.D. codes, to determine whether or not they’re acceptable for viewing. So, the definition that you should be trying to figure out as you look at these claims is what you think a scrambled television program signal is and not a television – a television program signal. Now, you have to

use the Judge's instruction as to what a television signal is.  
But that's not in this claim in that particular form.

Trial Tr. at 744-45.<sup>4</sup>

The phrase “scrambled television program signal” appears in claims 8 and 9 of the '254 patent and in claim 4 of the '884 patent. This specific term was not addressed in the claim construction briefing or in the IPPV II claim construction opinion. Plaintiff IPPV did not ask the court to construe the phrase and asserts that the reason it did not do so was because “the patents themselves clearly define scrambled television programs [sic] signal to include audio, video, and associated synchronizing signals and codes.” Defendants' claim construction brief simply asked the court to interpret the term “program signal,” to mean something other than “an entire time division multiplexed transmission.”

During the trial, just prior to closing arguments, both sides again presented arguments to the court on the proper definition of “television program signal.” The defendants asked the court to construe the phrase “television program signal,” as it appears in the claims of the '254 and '884 patents, according to the following definition taken from the Modern Dictionary of Electronics (1999):

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<sup>4</sup> Defendants also argue that certain of IPPV's demonstratives improperly and misleadingly characterize EchoStar's packetized multiplex transport stream as “EchoStar's *Program Signal*.” As the court stated when it overruled defendant's objections to their use at trial, the court finds these demonstratives to be permissible argument. Put simply, IPPV was arguing that the transport stream read onto the claimed “program signal,” while defendants were free to and did argue that it did not.

television signal: the audio signal and video signal that are broadcast simultaneously to produce the sound and picture portions of a televised scene.

This definition was originally proposed by the defendants with respect to the phrase “television program signal” as appears in claim 21 of the ’942 patent.

Plaintiff argued that this definition was, in its view, improper because it defines the phrase “television signal” and not the phrase that appears in the asserted claims of the two patents at issue: “scrambled television program signal.” Second, plaintiff argued that if any definition of this term is to be adopted, the court should adopt the definition given in the ’254 and ’884 patent specifications, which defines the term as a signal that comprises video, audio, and other signals and codes associated with the transmission. Plaintiff also proposed another definition, from the McGraw-Hill Dictionary of Scientific and Technical Terms (2<sup>nd</sup> Edition 1978), a dictionary that was published at around the same time as the filing date of the patents, which defined the phrase “television signal” to mean

a general term for the aural and visual signals that are broadcast together to provide the sound and picture portions of the television program.

When determining which definition to use in the jury instructions, based on the court’s understanding that the patent claims at issue were not necessarily to be limited to analog signals, the court asked defense counsel whether the defendants’ proposed definition of television signal included digital signals. Defendants’ counsel represented that it did, and then asserted, in response to further questioning by the court as to what EchoStar does that takes it out of the definition of television signal, that under its

definition “there is no television program signal in the [EchoStar] transport stream, because the packets of [audio] and video are fed in one after the other,” and are therefore not transmitted “simultaneously.” Plaintiff’s counsel responded that the defendant’s proposed definition of television signal as requiring “simultaneous” transmission of audio and video is not an accurate definition of a television program signal, and is particularly incorrect with respect to digital television program signals, because in a digital system the signals are broken down into data packets and not literally sent “simultaneously,” but are sent close together but spaced in time in a stream of data. IPPV’s counsel thus argued that Echostar’s definition necessarily excludes digital systems. He also noted that the notion of simultaneity does not even apply well to an analog system because analog signals use different frequencies to transmit different pieces of information, so these data elements are not really simultaneously sent in the same channel.

The court ultimately decided to instruct the jury that “television signal” means “the audio signal and video signal that are broadcast simultaneously to produce the sound and picture portions of a televised scene,” in accordance with the Modern Dictionary of Electronics (1999), as requested by the defendants. However, after listening to the parties’ statements as to how the meaning of these terms affected each side’s theory of the infringement case, the court stated in addition that by adopting the above definition of television program signal, the court “is not precluding [plaintiff’s counsel] from making the arguments he just made” and stated that if necessary,



I will just revisit the subject in post-trial briefing later. We will see whether it is correct, this definition includes digital as well as analog television broadcast. That is how I will leave it. I will leave it with that definition. And you can argue literal, you can argue doctrine of equivalents.

Plaintiff's counsel's explanation in his closing that the term "scrambled television program signal," based on the evidence, includes not only program signals (i.e. video and audio signals) but also any codes, including identification codes, needed to unscramble the television program signal, was not inconsistent with the court's instructions nor was it inconsistent with the court's claim construction opinion. The parties, thinking the claim term "scrambled television program signal" was undisputed, did not seek a construction of that term and instead relied on the court's earlier construction of "television program signal." The meaning urged by the plaintiff was consistent with the definition of "scrambled television program signal" as set forth in the '254 and '884 patents. Allowing each side to argue to the jury its theory as to whether the accused products read onto the claim term, "scrambled television program signal," was not prejudicial to the defendants.

Echostar contends that no reasonable jury applying the court's claim construction could find literal infringement of the '254 or '884 patent. Defendants' argument turns on two aspects of the claim construction. First, because a "television signal" was construed to require audio and video transmitted "simultaneously," a time-division multiplexed signal such as the EchoStar transport stream cannot literally be found to be a "television program signal." Second, because it is undisputed that the EchoStar identification codes are contained in separate packets they cannot be found to be "included" in (construed by

the court to mean, “be part of”) the television signal, which is limited to audio and video. Additionally, the defendants contend that there was no evidence presented at trial from which the jury could reasonably conclude that the multiplexing of data packets containing program codes with audio and video packets to form the DISH Network time-division multiplexed transport stream is equivalent to “inserting a category identification signal (construed by the court to mean, “be placed inside of”) into the scrambled television program signal.

As explained above, the court’s adoption of the defendant’s construction for the term “television program signal” was based on the court’s understanding, as confirmed by the defendant’s counsel, that such a construction would not exclude digital signals. As further explained below, upon further consideration of the issue and upon review of the parties’ arguments, it now appears to the court that the inclusion of the requirement “simultaneous” in the definition may improperly restrict the scope of the claim language to cover only analog signals to the exclusion of digital signals.

While analog signals are transmitted in continuous signals, digital signals, by definition, are broadcast in a discrete non-continuous series of signals. To maximize their capability to expand bandwidth and transmit more information, digital signals are generally compressed and “multiplexed.” Multiplexing is the process of mixing different signals in one transmission medium in such a way that the original signals can be reconstituted at the far end. See 11 McGraw-Hill Encyclopedia of Science & Technology 535 (8<sup>th</sup> ed. 1997) (hereinafter “Science & Technology”); see also 5 Science &

Technology 352 (describing how, in DBS systems, multiple analog signals are combined into a digital bit stream that then transmitted for relay to subscribers). One commonly used multiplexing technique is time-division multiplexing, in which the signals are chopped into time slices, and each slice (or packet) is sent streaming across the transmission medium, where they are recovered and reassembled at the destination. See 11 Science & Technology at 535. This technique is used in the accused EchoStar DISH Network.<sup>5</sup> Because the packets are not sent at the same exact time, but are sent serially in a stream of data, the audio and video are not sent simultaneously in the sense that they are transmitted at the exact same instant in time.<sup>6</sup> Id.

The first point of dispute between the parties on the infringement case at trial was whether the time-division multiplexed transport stream is a “scrambled television program signal.” Echostar essentially argued that because the signals were time-division multiplexed they were not “television program signals.” IPPV disagreed. Focusing on the claim term “scrambled television program signals,” which IPPV contended and its expert testified included not only mixed up audio and video signals, but the codes

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<sup>5</sup> Another multiplexing technique, frequency-division multiplexing, which is used by AM and FM radio, impresses the signals on different frequency carrier signals and uses frequency filters to separate the signals at the destination. See 11 Science & Technology at 535.

<sup>6</sup> It is undisputed that it is not fatal to the patent claims that the Echostar system transmits multiple program signals in its transport stream, whereas the patent describes only one program signal, because the claim language “comprising” is an inclusive term that requires only at least one program signal.

necessary to unscramble the signal, IPPV asserted that Echostar's transport stream met the claim limitation.

The issue relating to this claim term that is before the court in Echostar's motion is whether the evidence supports the findings made by the jury. In patent cases, this is inextricably linked to the issue of whether a party's theory and its evidentiary support for that theory comports with the court's claim construction. In this case, as in a multitude of patent cases that go to trial, the parties' disputes regarding the meaning of the claims do not end with the court's claim construction opinion. Rather, because claim construction is largely a semantic exercise, the parties continue to disagree as to the meaning of the words used by the court to describe the meaning of the claims and perhaps, as here, as to the meaning of claim terms that were not disputed at the time of the claim construction decision, but about which disputes have since arisen.

In this case, as recounted above, the term "television program signal" as used in the claims of the '942 patent, was defined in the court's claim construction opinion to be the simultaneous transmission of audio and video. The court expressly stated at that time and again during trial that it did not intend that definition to exclude digital broadcasting systems from infringement liability under the doctrine of equivalents.<sup>7</sup> Because the

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<sup>7</sup> Moreover, it should be noted that in the IPPV II opinion, where the court first accepted the defendant's proposed definition of the term "television signal" that included the simultaneity requirement, the focus of the court's finding was not on the simultaneous nature of the transmission, but on the fact that it contained both audio and video. See IPPV II, 146 F. Supp. 2d. at 521.

parties never disputed the term “scrambled television program signal” before trial, that term was not addressed before the outset of the trial. As the trial progressed, it became apparent that for the ’254 and ’884 patents, the key claim term at issue was not merely “television signal” or “television program signal,” but “scrambled television program signal.” Because of the timing, the court elected to treat the parties disputes regarding this term as an issue that could be decided by the jury based on examining the claims, examining the court’s definition of “television signal,” applying their own understanding of the word “scrambled” based on the evidence before them and arguments made to them by the parties.

It is clear from the verdict form that the jury weighed the evidence and determined that defendant’s transport stream was a “scrambled television program signal,” and therefore satisfied that element of the claims. Based on the jury instructions, the evidence set forth by plaintiff’s expert, and the court’s claim construction of the term “television signal,” the jury reasonably, and, in the opinion of the court, correctly determined that while a television program signal may only contain audio and video, a scrambled television program signal must contain, in addition to audio and video, codes that allow for the unscrambling of the data. The jury also determined that the serial transmission of packets in the Echostar system sufficiently met the “simultaneity” requirement of the court’s claim construction. Even though the data was multiplexed into discrete packets, those packets were sent together as a stream of associated data. The court finds that it was then reasonable, based on the uncontradicted evidence regarding the accused

EchoStar DISH Network transport stream, to determine that it meets the required claim limitation being a “scrambled television program signal.” Additionally, while the court’s determination that the jury’s literal infringement finding for this element should stand obviates the need to explore the doctrine of equivalents, the court notes here that the record also supports a finding of equivalents based on the interchangeability of analog and digital broadcasts.<sup>8</sup>

The court next turns to whether substantial evidence supports the jury’s findings that the Echostar DISH Network literally read onto the claim language from claims 8 and 9 of the ’254 patent and claim 4 of the ’884 requiring that the scrambled television signal “include” program identification and category codes. The court concludes that those findings were supported by substantial evidence.

In IPPV II, the court construed the term “includes” to require that the identification code be part of the transmitted program signal, but stated that the “court will not limit the location of the code within the program signal to the retrace interval.” The evidence showed that Echostar broadcasts a digital transport stream over a predetermined carrier frequency. That transport stream contains multiple, scrambled television program signals. Plaintiff’s expert, Roy Griffin, explained that each of the scrambled television program signals included in the transport stream is comprised of video, audio, and codes that

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<sup>8</sup> The court will address the doctrine of equivalents more substantially, *infra*, when discussing the jury’s equivalence finding for step 3 of claim 4 of the ’884 patent.

include the pay-per-view number and the MPAA rating code. He concluded that the pay-per-view number employed in the accused process to identify each program is the same as the identification code recited in claims 8 and 9 of the '254 patent, while the MPAA rating code employed in the DISH Network to convey parental control information, is the same as the category identification signal recited in claim 4 of the '884 patent.

This evidence gives the jury sufficient basis to conclude that the accused processes transmit at a predetermined carrier frequency a scrambled television program signal that includes an identification code. The fact that the program ID codes in the DISH Network are contained in separate data packets from the video and audio packets does not, as defendants argue, preclude a finding that the scrambled television signal “includes” identification codes that are unique to the block of program material. Rather, the evidence demonstrated that the transport stream contained video packets, audio packets, and associated data packets with codes. Therefore, in consideration of the court’s above finding that the jury properly considered the claim term “scrambled television program signal,” the court determines that the record contains sufficient evidence for the jury to find that the DISH Network processes literally “transmit at a predetermined carrier frequency a scrambled television program signal that includes an identification code,” in accordance with claims 8 and 9 of the '254 patent and also “receive[s] the scrambled [television] program signal, including the category identification signal, at the subscriber location,” as required step 4 of claim 4 of the '884 patent.

Last, the court must consider whether substantial evidence supports the jury's finding that, under the doctrine of equivalents, the Echostar system met the claim limitation from claim 4 of the '884 patent requiring that category codes are "insert[ed] . . . into" the scrambled TV program signal "at the remote location for transmission thereof with the program signal." The court construed the term "inserting . . . into" as requiring the identification signal "to be placed inside of the program signal." At trial, IPPV's expert, Griffin, explained that in both the '884 patent and the accused system, category identification signals are placed between the other audio and video components that make up the scrambled television program signal.

First, Defendants first argue that no reasonable jury could conclude that the DISH Network meets the "inserting . . . into" limitation of the '884 patent, because in the DISH Network the category code is not inserted directly into a video or audio packet but is rather inserted in a separate data packet that is placed between the video and audio packets in the stream. This argument, like the argument relating to the "include" limitation, is based on the court's claim construction of the term "television program signal" to mean a broadcast signal that includes only audio information and video information. Thus, according to the defendants, because the category code is not inserted directly into the audio packets or the video packets in the transport stream, they cannot be said to be "inserted . . . into" the program signal. The court disagrees.

There was sufficient evidence from which the jury could determine that, under the doctrine of equivalents, the Echostar DISH Network inserts a category identification



signal into the scrambled television signal. According to the testimony of plaintiff's expert, Griffin, the category identification signal is one of various control signals broadcast in a packet located in available temporal locations between the audio and video packets. The court's definition of "inserting . . . into" does not mandate that the codes must be inserted into a particular portion of the television signal. They do not have to be inserted directly into a video packet or directly into an audio packet; it is sufficient for the category identification code to be placed between the other components that make up the scrambled television signal. Collectively, these packets, broadcast on the same carrier, make up the audio, video, and other signals and codes associated with the program signal that enable the television programs to be viewed at the subscriber location.

The jury, however, did not find literal infringement, but instead found infringement of this "inserting . . . into" element under the doctrine of equivalents. Under this doctrine of patent law, "a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is 'equivalence' between the elements of the accused product or process and the claimed elements of the patented invention." Warner-Jenkinson Co v. Hilton Davis Chem. Co., 520 U.S. 17, 21 (1997).

In Instruction 5.3 of the Final Jury Instructions, the court specifically left open the argument that while certain elements of the claims might not be literally infringed, claim limitations might still be met under the doctrine of equivalents "if the differences between them are insubstantial" or in cases where the accused products employ "improvements

made possible by technology developed after the patent application is filed.” The court further instructed the jury that one way to assess equivalents is to “look at whether or not the accused method performs substantially the same function, in substantially the same way, to achieve substantially the same result as the claimed invention.” Another way to look at it is “to consider whether or not people of ordinary skill in the art believe that the step of the accused method and the step recited in the patent claim are interchangeable.”

That the jury resorted to the doctrine of equivalents to determine whether certain claim limitations are met is unsurprising. As alluded to above, the disclosures of the patented methods were focused on continuous analog signals and not digital broadcasts that use packets of information. According to Griffin, the only difference between the accused EchoStar DISH Network and the patent claims was that the DISH Network digitizes its programs and transmits them via satellite. He reasoned that differences as between analog broadcasts and digital broadcasts were insubstantial because analog and digital signals are “interchangeable.” Griffin testified that despite this difference, the methods used in the DISH Network are identical as those disclosed in the asserted claims. Thus, despite the fact that the DISH Network system produced a time-division multiplexed transport stream of discrete packets as opposed to the analog broadcast referred to by the patents, according to plaintiff’s expert, it nonetheless employed the claimed methods of embedding and recovering certain program signals in scrambled television program signals. In fact, in his closing, counsel for IPPV again pointed out to

the jury that “if you’re concerned about the analog versus digital nature of these signals, you can find . . . that what Echostar does is equivalent.”

Defendants challenge the jury’s finding of equivalents for this limitation contending that the proofs lacked “particularized testimony and linking arguments,” because plaintiff’s expert, Roy Griffin, testified “to facts, but not any opinions with respect to any equivalents.” Based on the record before it, however, the court finds that the jury’s equivalence verdict was supported by the evidence.

As IPPV points out, the language “particularized testimony and linking arguments” first appears in a Federal Circuit opinion in Lear Siegler, Inc. v. Sealy Mattress Co., 873 F.2d 1422, 1426 (Fed. Cir. 1989). Lear presents an equivalence based on the Graver Tank (function, way, result) test. In that case, the Federal Circuit found that the jury was “more or less put to sea without guiding charts when called to determine infringement under the doctrine [of equivalents].” The Lear case was paradigmatic of the prevalent pre-Warner-Jenkinson concern that the doctrine of equivalents had become a goal-oriented catch-all by which juries could render a verdict of infringement based not on an element by element comparison of the claims to the accused products, but on a broader determination of overall equivalence. Those concerns are not present in this case. Both the pertinent testimony and verdict form were highly focused on the determination that the jury had to make.

The failure of plaintiff’s expert Griffin to state that he is testifying or opining as to equivalents will not defeat an equivalents finding that is substantially supported by his

factual testimony. Griffin testified that a scrambled television program signal, according to the '884 patent, includes audio, video, and various data codes that are necessary to unscramble the program signal. He stated that this code is necessarily part of the television signal. He also explained that the patent illustrates placing the codes into the scrambled television program signal by locating them in the vertical blanking interval, which is convenient because in this location, the codes will not interfere with the video information. He then explained how the DISH Network transmits scrambled television program signals, which contains audio, video, and data codes that include the MPAA rating code. In the DISH Network system, the audio is inserted into audio packets, the video is inserted into video packets, and the MPAA codes are inserted into data packets. These packets are then inserted into a digital transport stream along with the audio, video, and codes associated with several television program signals. Griffin also explained that in digital packetized systems, like the DISH Network, the codes are inserted between the audio and video packets because it would make no sense to literally insert codes into the audio and video packets. Griffin's expert testimony gives the jury a sufficient basis to conclude that the "inserting . . . into" step of claim 4 is equivalently met in the DISH Network. This testimony was reviewed by counsel for IPPV at closing. See Trial Tr. at 741-44. The jury, in finding equivalents, agreed with Griffin that the differences between the DISH Network and claim 4 concerned insubstantial differences concerning the nature of analog and digital broadcasts. They therefore rejected the defendants' contention that because the DISH Network was digital, it did not infringe.

Moreover, the jury was given an adequate framework to decide the equivalence issue as it did and to find that the placement of the MPAA rating code into a packet that is placed into the transport stream with audio and video packets corresponds to the “inserting . . . into” limitation of claim 4. At trial, the jury was instructed on the proper test for equivalence, informed of the facts related to the claimed and accused elements, and provided with a verdict form that gave ample guidance by breaking up the doctrine of equivalents determinations before the jury on an element by element basis, as now required by the Supreme Court. Warner-Jenkinson, 520 U.S. at 40. Accordingly the court will not disturb the jury’s infringement findings.

## 2. Validity Issues

Echostar next contends that there was insufficient evidence to support the jury’s finding that the ’217 patent was not invalid. Because patents are statutorily presumed to be valid under the Patent Act, see 35 U.S.C. § 282 (Supp. V 1999), in order for Echostar to have successfully challenged the validity of the claims of the ’217 patent, it needed to meet the clear and convincing standard of persuasion. See Superior Fireplace v. Majestic Products, Co., 270 F.3d 1358, 1367 (Fed. Cir. 2001). The jury, in rejecting Echostar’s contention that the ’217 patent is anticipated by the Callais patent and finding the ’217 patent not to be invalid, necessarily found that Echostar did not meet this burden.

The question before the court is whether that conclusion is supported in the record by substantial evidence. In analyzing the record, the court must assess the evidence in the light most favorable to the verdict winner and determine whether the record contains the

minimum quantum of evidence upon which the jury might have reasonably based its result. See Keith v. Truck Stops Corp. of American, 909 F.2d 743, 745 (3d Cir. 1990); see also Verdegaal Bros., Inc. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987) (stating that “[w]hen considering a motion for JNOV a district court must: (1) consider all of the evidence; (2) in a light most favorable to the non-moving party; (3) drawing all reasonable inferences favorable to that party; (4) without determining credibility of the witnesses; and (5) without substituting its choice for that of the jury's in deciding between conflicting elements of the evidence”).

“Anticipation is a question of fact.” Glaverbel Societe v. Northlake Marketing & Supply Inc., 45 F.3d 1550, 1554 (Fed. Cir. 1995). The Federal Circuit has stated that, “to be anticipating, a prior art reference[,] . . . must be enabling [,] and [must] describe . . . [the] claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention.” Helifix Ltd. v. Blok-Lok, Ltd., 208 F.3d 1339, 1346 (Fed. Cir. 2000). Moreover, “the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in the prior art.” Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1473 (Fed. Cir. 1997). Thus, in order for Echostar to prove invalidity by way of anticipation, it needed to satisfy the burden of proving that every element of every asserted claim was in the earlier Callais patent.

In its briefing in support of its motion for judgment as a matter of law and for a new trial, the defendants state that the only testimonial evidence concerning the validity of the '217 patent was that of their expert, Graham Stubbs, and that he testified that “[a]ll

of the elements of the asserted claims in '217 are present in this [the Callais] patent.”

Echostar contends that because IPPV failed to offer contradictory evidence to the anticipating disclosures of the Callais patent in the form of its own expert, instead relying only on its cross-examination of Stubbs and the patents themselves, the court should enter judgment as a matter of law that the '217 patent is invalid.

At trial, instead of producing expert testimony on the topic of anticipation by, for instance, discussing why the Callais patent does not anticipate the claims of the '217 patent, IPPV relied on its cross-examination of Echostar's expert, Graham Stubbs, on his opinion that the '217 patent was invalid in light of Callais and on two pieces of documentary evidence: the '217 patent and the Callais patent. At closing, counsel for IPPV argued to the jury that the Callais patent does not anticipate the '217 patent. After explaining that neither obviousness nor inherency were in the case, counsel for IPPV stated that there are two reasons why Callais does not anticipate the '217 patent. First, the Callais patent does not teach the step disclosed in the '217 patent of “storing the credit at the subscriber location.” Instead, Callais discloses a method by which a subscriber can purchase a card containing an amount of money at a remote location and then insert that card into the box at the subscriber location for use. Counsel argued that all that is disclosed in Callais is a card reader that reads a card that had already stored information on it from another location. Second, the Callais patent doesn't teach using both a pay-per-view and flat-rate method of payment, which are disclosed together in claim 6 of the '217 patent. Based on their two arguments above, IPPV contends that the Callais patent

does not anticipate the '217 patent and notes that Stubbs' assertion that the '217 is anticipated, "cannot supplant the requirement of anticipatory disclosure in the prior art reference itself." Motorola, 121 F.3d 1473.

At trial, Echostar had to prove that each and every element of claims 1-2, 6-8, and 13-15 of the '217 patent are described in the Callais patent. Because the burden of proof to prove anticipation lies with Echostar, IPPV did not have to put on its own testimonial evidence and instead decided to rely on its cross-examination of Stubbs and on the two patents without calling its own expert to testify on the invalidity issue.

Keeping in mind that the standard to prove anticipation is clear and convincing evidence and that the burden of proving invalidity lies with Echostar, the court must determine whether reasonable evidence supports the jury's verdict that Callais does not anticipate the '217 patent. To do so, the court must examine the relevant testimonial evidence (the testimony of Stubbs) along with the documentary evidence before the jury – the '217 patent and the Callais patent. See Verdegaal Bros. Inc., 814 F.2d at 632 (irrespective of expert testimony, the disclosures of the patent reference must be considered as evidence). The court will focus its analysis on the two limitations that IPPV contends are not disclosed by Callais.

- a. Does the Callais patent disclose the step of "storing a credit at the subscriber location" ?



Claim element 1(b) of the '217 patent discloses the step of “storing a credit at the subscriber location.” Similarly, claim element 13(b) of the '217 patent discloses the step of “storing, at the subscriber location a credit indicating the amount available for future payment of charges for access to information in the transmissions.” All of the other claims at issue depend from claims 1 or 13.

The Callais patent, U.S. Patent No. 3,885,089, issued on May 20, 1975 and is entitled “Television Scrambling System.” According to the patent specification, one of the objects of the invention disclosed in the Callais patent was “to provide a scrambling system wherein any of a number of commonly used techniques such as cards, tickets, keyboards, key switches, and direct authorization by the seller over a coded channel can be used . . .” to allow the subscriber to view pay television channels. Callais, Col. 3, lines 62-67. The inventors of the Callais patent state in their summary of the invention section that their patent “provide[s] a novel system for scrambling at least two television programs at a transmitted end of a system and for allowing an authorized subscriber to unscramble a selected one of the scrambled television signals.” Callais, Col. 4, lines 8-12.

The Callais patent discloses several embodiments for such “a subscription television scrambling and unscrambling system.” In one of the embodiments, a card containing a coded indication of the amount of money available is inserted into a card reader located at the subscriber location. Based on the price of each program, the card reader then “destroy[s] a sufficient quantity of the incremental monetary units included in

the card to equal the required fee for the program.” Callais, Col. 32, lines 64-66. If enough money remains on the card, the “program authorization unit . . . allow[s] subsequent unscrambling to occur on the selected channel,” and the subscriber may view the program. Callais, Col. 31, lines 50-55.

Clearly, this embodiment differs from that of the ’217 patent in that the prepaid credit is established by inserting a card into a card reading unit. The question, however, is whether this difference is significant in light of the claim language. The court finds that because none of the claims at issue are specific as to how the prepaid credit is established, this difference is not one that distinguishes the ’217 patent from the Callais patent.

Echostar contends that the “storing credit at subscriber location” limitation of the asserted claims of the ’217 patent is fully disclosed in the Callais patent, in the following sections: (i) the disclosure that “a card or ticket will carry a coded indication of the maximum amount of money, expressed in incremental steps. For example, the card may indicate the total of \$10 recorded in twenty 50-cent increments,” see Callais, Col. 32, line 47 *et seq.*; (ii) the disclosure that “a card reader which reads a card purchased from the originator of the television program for a fee. By this means, the originator of the television program can exact a fee for the granting of unscrambled viewing and listening privileges to any given subscriber.” See Callais, Col. 9, lines 44-50.

In response, IPPV argues that no operation of “storing a credit at the subscriber location” is disclosed in Callais, because according to the disclosure of that patent a card

containing some amount of money is purchased, and therefore stored, at a remote location. In addition, while IPPV acknowledges that Callais discloses that the amount of money information on the card can then be read and decreased at the subscriber location, it contends that this does not teach an operation of “storing a credit at the subscriber location.”

The court must determine whether the act of placing a card containing an authorized amount of money (a credit) into a card reader in a subscriber’s receiver is an operation of storing credit at the subscriber’s location. From its arguments above, IPPV contends that “storing” limitation of the ’217 patent requires (i) that the storing be performed such that the credit information is capable of being modified and revised upward, and (ii) that the credit information must be sent to the subscriber’s location and then written into a storage device which is present at the subscriber’s location when the act of writing occurs.

This limiting interpretation of storing is incorrect. The dictionary definition of the term “store” or “storing” is “to reserve or put away for future use.” American Heritage Dictionary, 801 (3d. ed. 1994). Because storing only means to put away for future use, neither of the limitations that IPPV argues are inherent in the claim term “store” are part of that term’s definition. Rather, in light of the plain meaning of “storing,” when a card containing a credit amount is inserted into a card reader at the subscriber’s receiver for future use, as described in the Callais patent, the credit is “stored at the subscriber location. Aside from the plain meaning of the term “store,” this finding is also supported

by the doctrine of claim differentiation. The specific limitations to the meaning of “store” urged by IPPV are belied by claim 5 of the ’217 patent, which depends from claim 1 and adds the further step of “transmitting credit data associated with a payment made by an individual subscriber and modifying the stored credit at the location of the individual subscriber in response to the transmitted credit data.” Because this limitation is found in dependent claim 5, it should not be read onto claim 1. See Clearstream Wastewater Sys., Inc. v. Hydro-Action, Inc., 206 F3d 1440, 1446-47 (Fed. Cir. 2000) (relying on doctrine of claim differentiation). Therefore, it is clear that the Callais patent discloses the step of “storing a credit at the subscriber location.”<sup>9</sup>

b. Does the Callais patent disclose using both a pay-per-view and flat-rate method of payment in combination?

The second argument that IPPV makes in asserting that the Callais patent does not anticipate the ’217 patent is that while the ’217 patent, in claim 6, teaches the use of both a flat fee method and a pay-per-view method, the Callais patent does not teach this combination.<sup>10</sup> IPPV does not dispute that Callais teaches both a flat fee method and a

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<sup>9</sup> It should also be noted that, in order to overcome an initial rejection of the claims of the ’217 patent its prosecution, IPPV distinguished two prior art references (Mountjoy et al. and Loew et al.) that involved coin operated systems, arguing that the depositing of coins was a “real time method of payment and not a pre-paid and stored credit system as in the present invention.” April 4, 1984 Amendment for ’217 Patent. The patent was allowed, as this statement distinguished the references at issue. This statement, however, does not distinguish Callais in this regard.

<sup>10</sup> It should be noted that this argument as to whether Callais anticipates claim 6 of the ’217 patent and the claims that depend from it is limited to those claims and does not apply to claims, such as claims 1-3, that do not depend from claim 6.

pay-per-view method. It argues, however, that despite teaching the independent use of each method, Callais fails to teach the combination of the two methods in any process described within.

Claim 6 of the '217 patent claims “the method of claim 1 wherein the subscription services involve transmissions for which payment for access is pre-arranged at a fixed level and transmissions for which payment for access is not pre-arranged at a fixed level . . .” The latter of these claimed methods includes the further steps of transmitting additional identifying cost signals that are associated with particular programs.

The Callais patent describes four methods by which to authorize a subscriber to view a television program. These methods include a flat fee method and a pay-per-view method. See Callais, Col. 31, line 61 - Col. 33, line 59.

In describing the flat fee method “for implementation and actuation of a program authorization unit,” the Callais patent states that “[b]y prearrangement with the CATV operator or seller of the pay TV program or programs, the subscriber may indicate his wish to buy either a single program, more than one program, or pay for the use of one or more pay television channels” for a period of time. After such prearrangement is made, by telephone, mail, or personal visit, “a coded address would be sent . . . to all subscribers. Each subscriber would be assigned a unique coded address which would be electronically incorporated in the program authorization unit (PAU) . . . . Upon receipt of a coded channel transmission containing this coded address, a coincidence transmission is produced on the PAU” followed by a code as to whether to disable or enable viewing.

Thus, according to the Callais patent, “the subscriber can be authorized to view programs on a given channel for a period determined by the seller.” The subscriber is billed in advance of, or subsequent to, the viewing of the program. Callais also describes a pay-per-view method, discussed above in the prior section, by which a card that stores credit could be used to purchase pay-per-view programming. “The card or ticket would be encoded such that the particular channel and program number would be entered by any of various techniques . . . .” Based on output from the PAU, authorized channels would be unscrambled for viewing.

The Callais patent then goes on to adopt one of the four methods as an exemplary embodiment, but states that it “should, however, be realized that any of the other implementations described above, as well as other similar implementations, could have been used within the purview of the invention.” Callais, Col. 33, line 63-66. Relying on the term “any” as meaning “one, some, every or all without specification,” see American Heritage Dictionary, 37-38 (3d. ed. 1994), EchoStar argues that Callais anticipates a claim that incorporates a flat fee method, a claim that incorporates a pay per view method, and a claim which combines both methods. IPPV, however, argues that because the combination of the two methods is not disclosed as such by Callais, Callais cannot anticipate the ’217 patent.

Based on its review of the relevant portions of the Callais patent, it is the court’s determination that Callais’ disclosure anticipates claim 6 of the ’217 patent. Callais specifically notes that “any” of the four disclosed methods, which include both the flat fee

method and the pay-per-view method, can be used in combination with the disclosed program authorization unit in order to provide a mechanism of transmitting a scrambled television signal and billing subscribers for viewing programming. It would contradict reason to find that one skilled in the art would not recognize that the Callais system could be operated in both modes such that both subscription services and pay-per-view programming could be offered. Both methods were disclosed in Callais, and Callais taught that “any” (inclusive) of the methods disclosed could be used with the disclosed system. Accordingly, the court finds that Callais sufficiently discloses both methods in the same manner they are disclosed in claim 6 of the ’217 patent.

c. The court’s finding as to anticipation

Based on the foregoing discussion, the court finds that the undisputed evidence offered at trial by Echostar establishes that the claims of the ’217 patent that are at issue are invalid as anticipated by the Callais patent. The Callais patent, a patent that was not considered by the PTO during prosecution of the ’217 patent,<sup>11</sup> discloses each and every element of the claims of the ’217 patent at issue in this case.

As to independent claim 1,<sup>12</sup> which claims “a method for providing subscription services,” Callais discloses that its object is to “provide a novel scrambling system for a

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<sup>11</sup> Based on the court’s review of the patent and the prosecution history submitted by the parties, the Callais patent was not before the PTO during prosecution.

<sup>12</sup> The court will review only the element of claim 1 here, as a representative claim of the ’217 patent. However, the court’s conclusion that the Callais patent anticipates extends to all of the asserted claims of the ’217 patent.

subscription television system.” Callais, Col. 3, lines 16-18. It describes the step of “transmitting a cost signal” by including program bits within each television transmission that are associated with fee information. Callais, Col. 23, lines 41, et seq. It describes the “storing a credit” step, as reviewed by the court above in section II.A.2.a., by describing a card with credit units that is inserted into a card reader at the subscriber location. It then describes the step of “comparing the magnitude of the charge contained in the cost signal with the magnitude of the stored credit.” In Callais, the program authorization unit periodically receiving the amount of charge required to watch each pay television program and the card reader, in response to a signal from the program authorization unit, would destroy a quantity of credit units on the card that equals the required fee for the program. Last, the Callais system, “enabl[es] access by the subscriber to the transmissions associated with the cost signal” by comparing bits from the program input code to the card program code; if there is a correspondence in bits, the program authorization unit unscrambles the scrambled program so that the subscriber may view it.<sup>13</sup>

The Callais patent discloses each of the steps in the claimed methods of the ’217 patent. No reasonable jury viewing the documentary evidence – the Callais patent and

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<sup>13</sup> As the steps to independent claim 13 are largely the same as those of claim 1, with the one difference being that claim 13 uses the same method to provide “impulse purchase capability,” the court will not go through each element again. Callais provides an impulse purchase capability in its third embodiment, by which any program can be descrambled when a use actuates a push button, provided sufficient credit is available.



the '217 patent – could fairly conclude otherwise. Therefore, the court will grant Echostar's motion for a judgment as a matter of law that the '217 patent is invalid as anticipated by the Callais reference.

### 3. Willfulness

The jury's verdict on the issue of willful infringement is limited to a finding that the defendants willfully infringed the asserted claims of the '217 patent. The court has found that the '217 patent is invalid as anticipated under 35 U.S.C. § 102.

As a party cannot be liable for infringing – willfully or otherwise – an invalid patent, the court must – in light of its finding above that the '217 patent is invalid – vacate the portion of the damages awarded for infringement of that patent.<sup>14</sup> Additionally, the court must vacate the jury's finding that the infringement was willful.<sup>15</sup> The court will grant judgment as a matter of law to Echostar on this issue.

The court will next consider Echostar's motion for a new trial.

#### B. Echostar's Motion for a New Trial

In addition to moving for judgment as a matter of law, Echostar also moved for a new trial. Rule 59(a) states permits the court, in its discretion, to order a new trial “for

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<sup>14</sup> The court will address this issue in the section of the opinion which considers damages issues vis-a-vis Echostar's motion for a new trial.

<sup>15</sup> Even if the court did not find the '217 patent to be invalid, Echostar's strong evidence of invalidity itself casts doubt on the jury's willfulness finding. See Hall v. Acqua, 93 F.2d 1548, 1555 (Fed. Cir. 1996) (to prove willfulness, plaintiff must prove the defendants proceeded with their infringing activities without a good faith belief that the patent was either invalid, not infringed, or both.).

any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States.” Fed. R. Civ. P. 59(a). While Rule 59(a) does not expressly state the grounds on which a district court can grant a new trial, courts have found that a new trial may be appropriate in instances when a jury finding is against the weight of evidence or where an error occurs that makes the trial unfair. See Ta Instruments, Inc. v. Perkin-Elmer Corp., 250 F.3d 756 (Fed. Cir. 2000) (Table); see also, Williamson v. Consol. Rail Corp., 926 F.2d 1344, 1353 (3d Cir. 1991) (new trial should only be granted where “a miscarriage of justice would result if the verdict were to stand,” the verdict “cries out to be overturned,” or where the verdict “shocks our conscience.”). It is within the court’s discretion to decide whether to grant a motion for new trial. See Garrison v. Mollers N. Am., Inc., 820 F. Supp. 814 (D. Del. 1993).

Where the ground for a new trial is that the jury's verdict was against the great weight of the evidence, the court should proceed cautiously, because such a ruling would necessarily substitute the court's judgment for that of the jury. Klein v. Hollings, 992 F.2d 1285, 1290 (3d Cir. 1993). Accordingly, Federal Rule of Civil Procedure 61 provides that a court should not order a new trial unless “substantial justice” so requires and further states that courts should disregard any “error or defect in the proceeding which does not affect the substantial rights of the parties.” Fed. R. Civ. P. 61.

Echostar’s motion raises two reasons that it believes it should be entitled to a new trial. First, it submits that the verdict form and certain rulings by the court were unfairly prejudicial to the defendants. Second, it submits that certain rulings by the court and

actions of the plaintiffs relating to the plaintiff's damages case were unfairly prejudicial to the defendants. The court will consider these arguments in turn.

## 1. Verdict Form and Evidentiary Rulings

### a. The Verdict Form

Echostar's first argument in support of its request for a new trial is that the verdict form presented to the jury at the close of the case was prejudicial to the defendants because (i) it unfairly suggested that defendants had failed to prove certain defenses that they had voluntarily withdrawn and (ii) it unfairly validated IPPV's case. IPPV counters that the verdict form properly focused the issues for the jury and properly countered Echostar's "sandbagging tactic" by which counsel for Echostar refused to limit its disputed issues until before trial had begun and then suggested to the jury that IPPV's opening statement, which covered certain disputed issues that Echostar ultimately chose not to pursue, contained numerous irrelevancies.

As the court has described above in section I.E., after both parties rested the court marked the jury verdict form to indicate the issues that remained for the consideration of the jury. In so doing, the court filled in the answer "yes" in appropriate places and blacked out and filled in "n/a" in other places. For example, because Echostar conceded that it infringed the '217 patent and chose to pursue only invalidity and not noninfringement as a defense, the court filled in a "yes" for all the questions in the infringement section relating to whether certain elements in patent were present the accused device. An other example are the invalidity questions for the '884 patent.

Because Echostar did not pursue its defense of invalidity with respect to the '884 patent and relied only on a defense of non-infringement, the court filled in a “no” answer for questions relating to whether the claims of the '884 patent were invalid due to anticipation or obviousness. The court explained to the jury that “I have made certain decisions on issues that were identified in the initial verdict form. And so the number of questions that need to resolve has been reduced . . .” To determine whether these actions unfairly prejudiced Echostar, the court must review the reasons why the court chose to fill out certain portions of the verdict form in this manner.

At the outset of trial, defendants’ counsel submitted to the court the jointly agreed to verdict form, containing numerous “disputed” issues. The court informed the parties that this verdict form would be given to the jury at the outset of trial, to help frame the issues. The jury was then selected and given the verdict form. In the preliminary instructions, which the court read to the jury, the court indicated that over the course of the trial the preliminary form that they had been given may be changed and that they would be given a final verdict form with those changes at the end of trial.

On the basis of the pre-trial order and stipulated verdict form, plaintiffs’ opening statement discussed the evidence that would prove the defendants’ infringement of the three patents-in-suit and the reasons why defendants’ evidence regarding their multiple invalidity defenses relating to the '217 patent and the '884 patent were insufficient. At the beginning of defendants’ opening statement, counsel for Echostar responded:

The very first thing I would like to do this afternoon is to get to the issues in this case clarified for you, because I think you are going to find – because it is, in fact accurate – that much of what you heard just before I came here is not at all what this case is going to be about . . . Anything else that you might have heard from opponents is not the case. We don't challenge the validity of [the '254 and '884] patents. . . .

In this way, defense counsel sought to discredit plaintiff's counsel for raising irrelevant issues in his opening and in the jointly submitted verdict form.

In its briefs in support of a new trial, Echostar submits that “[a]s a result of the Court’s July 3, 2001 Markman Opinion, both parties made strategic decisions on the eve of trial. Plaintiffs withdrew their claim that defendants infringed the '942 patent, and defendants withdrew their defenses of non-infringement of the '217 patent and invalidity of the '884 patent, and withdrew the Bass patent as a basis for their '217 invalidity defense.” Echostar states that it simply announced these decisions in its opening statement and argues that “plaintiff was afforded full opportunity to clarify any possible confusion regarding issues that appeared on the verdict form, but defendants were no longer asserting.” But this is not the case. While IPPV announced before trial what claims it was pursuing, the defendants did not inform IPPV or the court exactly which of its defenses were withdrawn and which they were planning on pursuing. Nor did they do so on the first morning of trial when the court asked them to specify exactly what issues had been withdrawn, with the exception of their stipulation that they infringed the '217 patent, if it was found to be valid.

Based on the foregoing, the court marked the verdict form. It noted at trial that the verdict form was marked for several reasons:

One, because we told them it would be in the case. I don't want them to speculate about what happened to it.

The other is, that is typically what happens when a Court granted a directed verdict, a Court told the jury they no longer needed to deliberate on the matter. The Court directed a verdict on behalf of the plaintiff or defendant in a particular matter.

In this context, where the issue has gone to trial and a defendant had made a decision at trial not to pursue it, I think its fair to inform the jury about what is in the case and what is not in the case. Especially in the context, as [IPPV's counsel] mentioned, where he wasn't clear what was in the case until after he had completed his opening statement.

I think it is fair for the jury to get a sense of what happened.

While Echostar is correct that the verdict form was preliminary and not final when submitted to the jury on the first day of trial, the statements that its counsel chose to make during his opening statement were an improper attempt to undermine the credibility of counsel for IPPV and, if left unexplained, would have confused the jury.

Because the court continues to stand by its previously stated reasons for marking the verdict form and does not believe the verdict form was prejudicial,<sup>16</sup> the court will deny Echostar's request for a new trial on this ground.

b. Evidentiary Rulings

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<sup>16</sup> To conclude otherwise would be to ignore multiple jury findings that were supported by the weight of evidence based solely on the presumption that the jury disregarded its duty to deliberate and to consider the questions that were before it. There is no basis for the court to presume as such.

Echostar also submits that it is entitled to a new trial based on the court's exclusion of its expert's claim chart demonstrative (Def. Ex. 8) from the jury room. The court disagrees that this exclusion is a basis on which Echostar deserves a new trial.

It was agreed at the pre-trial conference that demonstrative exhibits would not be admitted into evidence. Tr. of Pre-Trial Conference, at 41-42. There was no agreement to admit expert reports, of which the subject claim chart was a part. Such charts, however, could be and in fact were published to the jury, used to aid Stubbs in illustrating his testimony, and used during both parties' closings. While a demonstrative exhibit such as a claim chart may have value in illuminating testimony, such documents are not evidence. Therefore, the court's decision to enforce the terms of the prior agreement and to exercise its discretion not to allow such demonstratives into the jury room was neither an abuse of discretion nor was it unfairly prejudicial to Echostar.

## 2. Damages Issues

Echostar's final ground on which it asserts it is entitled to a new trial is on the issue of damages. Echostar raises three arguments that relate to this issue. The court will discuss them in turn.

### a. Bundling of Damages

First, Echostar contends that the jury improperly awarded bundled damages based on the request of counsel for IPPV, instead of awarding damages for each separate patent as required by the verdict form. As a result, Echostar argues that IPPV should be precluded from seeking enhanced damages on the entire damages amount, since the jury only

considered and found willful infringement as to the '217 patent. IPPV further argues that the bundling of damages prejudices the defendants and obscures the fact that the award is not supported by IPPV's damages evidence. In its answering brief, IPPV maintains that the court should not apportion the damages award among the three patents in suit, but should instead "enhance the whole amount."

The court does not find that the jury's bundling of damages alone prejudices Echostar in such a way as to require a new trial. The decision to bundle damages simply reflects the jury's acceptance of IPPV's theory that this is the way that a reasonable royalty payment would have been structured in a hypothetical negotiation between the parties. In addition, the court's above finding that the '217 patent is invalid and that damages of any sort on the '217 patent would be inappropriate moots the parties' disagreement over whether IPPV is entitled to enhanced damages on the '217 patent. Despite these findings, the bundled damages award nonetheless presents a significant difficulty for the court to consider in light of its invalidity finding.

While the court does not believe that the bundling of damages itself is unduly prejudicial to Echostar, it does raise significant practical issues as to how this court will account for its finding that the '217 patent is invalid. The court forewarned of this potential problem when it declined to adopt IPPV's proposal to consolidate damages for all three patents into a single entry on the verdict, reasoning that so long as the form requires the jury to fill out damage awards for each patent-in-suit, "to the extent there is error with regard to any one of the patents, we will have a measure of damages for the



other two.” The court separately suggested to counsel that “on the damages issue . . . I take it you’re going to address the issue of what happens if the jury finds the patent invalid, since you don’t want a verdict coming back with one comprehensive damage figure that incorporates one invalid patent.” Thus the court discouraged, but did not prohibit, IPPV from asking the jury to bundle the damages.

Bundling damages was consistent with the opinion of IPPV’s damages expert, Dr. Lipoff. Lipoff opined that it would be reasonable to offer the three patents-in-suit as a package because that is how it had been done in offers that had been made in the past and also because the functions of the three patents were closely coupled in the marketplace. While he indicated on cross-examination that he could easily do the arithmetic to arrive at separate and independent royalties for each of the patents – in fact he calculated those amounts in his expert reports – he again pointed out that “we did not believe that was an appropriate method for licensing these patents” because in his opinion, “it was appropriate to license them as a group.” In his closing argument, counsel for IPPV urged them to accept this bundled damages theory. He stated to the jury:

The verdict form that you have been given has three lines on it: One for the ‘254 patent, one for the ‘884 patent and one for the ‘217 patent. It is necessary to break them out like that because we have asserted each, and you have to make decisions with regards to each. But at the same time, it is permissible for you to decide that since IPPV always licensed these as a group . . . it is permissible for you to also write in bundle license. We think that the royalty in this case ought to be 22 and a half million dollars for the bundle . . . The Court will allow you to do that.

The jury took his suggestion and awarded bundled damages for the three patents of \$15 million, crossing out the three lines in the verdict form that called for separate awards for each patent.

IPPV argues in its post-trial briefing that the lack of an individual measure of damages for each patent is only relevant if the Court of Appeals should determine that this court had made an error relating to one of the patents. This argument, however, neglects to address the very problem before the court – that in addressing this very post-trial motion, the lack of individual measure of damages for each patent is relevant because the court must account for the fact that one of the three patents for which the jury awarded bundled damages has been found by the court to be invalid.

While the court will not award a new trial on this basis alone, the court must determine, after reviewing Echostar's other arguments for a new trial, how to adjust the damages to account for the invalidity of the '217 patent. Before considering this problem, the court will address and consider Echostar's remaining arguments.

b. Admission of the DirectTV settlement agreement

Echostar next contends that they were prejudiced by the improper admission into evidence of the DirectTV settlement agreement (plaintiff's ex. 323) because its prejudicial effect on Echostar far outweighed its probative value. Specifically, Echostar asserts that IPPV relied on the DirectTV settlement, which was factually distinct from the issues in this case, for the prejudicial impact of its \$20 million settlement figure. IPPV

counters that the agreement was probative to issues in the case and that Echostar has not shown any undue prejudice to them by admission of the DirectTV settlement agreement.

The DirectTV settlement agreement resolved a prior patent infringement lawsuit and provided for a paid-up worldwide license for eleven defendants, including DirectTV, for 34 United States and foreign patents, including the three patents in suit and the '942 patent. After months of arguing that the DirectTV settlement was irrelevant to this case, IPPV changed course on the eve of trial and sought to include it in the plaintiff's jury notebook. At that time, Echostar argued that the agreement was inadmissible under Federal Rule of Evidence 403. Counsel for Echostar explained his objection as follows:

[IPPV] want[s] the jury to see a settlement agreement that the plaintiffs entered into with DirectTV, our competitor, which contains a settlement number that has no relevance to this case and is designed solely to prejudice the jury. We have asked the plaintiffs to identify why these materials are relevant, since we know their expert and their damages case is not relying on them. They said it is important to show the background and history of the patents.

The court then asked whether there was an objection to this document in the pre-trial order, to which counsel for Echostar responded that there was not. He noted, however, that at that point in time the '942 patent was no longer in the case. Counsel for IPPV confirmed this, but represented that the document was on both parties' exhibit list and that "the settlement agreement . . . on the face of it, the vast majority of it is for the patents in suit today. Not for the '942 patent." Echostar, in response argued that the DirectTV settlement agreement should not be in the jury notebook because the only purpose it is relevant for is to convince the jury "to award damages based on that

number.” When the court inquired of IPPV what it would tell the jury about the \$20 million settlement figure, counsel for IPPV reported that they are going to “tell them that that number was negotiated, it was a deeply discounted number, for these patents in suit.” On this basis, the court decided to allow IPPV to use to document and reserved decision on its admissibility. The court stated that “[i]f I end up concluding they are not admitted, I will tell the jury.” At the close of IPPV’s case, Echostar renewed its objection to the admissibility of the DirectTV settlement agreement.

Echostar argues that the relevance of the DirectTV agreement evaporated when the ’942 patent was removed from trial. Prior to trial, plaintiff’s damages expert had contended that the reasonable royalty for the alleged infringement was approximately \$79 million.<sup>17</sup> Echostar submits that when the ’942 patent was in the case the DirectTV license was relevant for the purpose of discrediting plaintiff’s damages theory by illustrating that the ’942 patent had previously been licensed to parties, along with other patents, for far less than the amount originally sought by IPPV as damages for that patent. Echostar contends that the admission of the DirectTV settlement agreement, after the ’942 patent was out of the case, without any accompanying expert testimony is not only irrelevant but prejudicial because it was used exclusively to place the \$20 million

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<sup>17</sup> Lipoff’s report states that the total value to Echostar of the methods described in the claims of the ’942 patent was approximately \$226 million. This value is substantially more than Lipoff’s valuations of the three patents in suit. Based on an analysis of the relevant Georgia-Pacific factors, Lipoff opined that Echostar would have agreed to a 35% royalty figure. Applying the 35% royalty to the estimated total value of the patent, Lipoff arrived at a damages figure for the ’942 patent of \$79,355,500.

settlement figure “naked before the jury, where it was never addressed or adopted by any expert witness (for either party) as a reliable indication of a reasonable royalty” for the three patents in this case.

Rather than consider this as a discrete ground for a new trial, the court will consider this argument alongside Echostar’s broader argument that IPPV prejudicially altered its damages theory at trial. The DirectTV settlement agreement is relevant to that argument, because Echostar contends that instead of seeking the \$7.944 million in damages that was disclosed to be the damages IPPV was seeking, IPPV altered course at trial, characterized the \$7.944 million damages figure as the “floor” for damages and instead used the \$20 million figure from the settlement agreement to argue that the jury should award damages in line with that amount. Echostar argues that “[a]s a result of losing the ’942 patent from the case, plaintiff chose to advance a new damages theory at trial and attempted to pump up the value of the three remaining patents from \$8 million to \$22 million by referring to the DirectTV . . . settlement.” They submit that insofar as IPPV’s use of the DirectTV agreement as probative of damages is contrary to its own damages expert’s testimony, the DirectTV agreement was used for the improper and prejudicial purpose of getting a larger – yet unsupported – figure in front of the jury. The court will consider whether plaintiff’s use of the agreement in its damages case was prejudicial to IPPV in the following section.

- c. Did IPPV unfairly introduce a new damages theory at trial? Was the jury’s damages finding supported by sufficient evidence?

Last, and most significantly, Echostar claims that a new trial should be ordered because IPPV “ambushed” Echostar by presenting an entirely new damages theory at trial that contradicted the positions taken by IPPV and its damages expert, Stuart Lipoff, prior to trial. Echostar contends that at trial IPPV sought to increase its experts’ damages projections from approximately \$8 million to \$22 million, partially by reference to the DirectTV and Scientific-Atlanta settlement agreements and partially by eliciting testimony from Lipoff based on alternate methodologies that yielded a higher damages figure. Moreover, Echostar contends that even if IPPV were correct that it did not change its damages theory at trial, the jury’s \$15,000,000 damages award is not supported by its own damages expert or by the evidence in the case. Thus, in addition to the prejudice caused to them by IPPV’s shift in damages theory, Echostar argues that this reason alone, presents an independent basis to awarded it new trial, or at a minimum, a remittitur to the damages evidence submitted by IPPV’s expert. IPPV, in response, asserts that it did not introduce a new damages theory at trial and the jury’s damages award was the result of a “rational and balanced” weighing of the evidence.

The damages statute for patent infringement, states that upon finding for the patentee, “the court shall award . . . damages adequate to compensate for infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer . . . .” 35 U.S.C. § 284. In this case, because IPPV was not alleging that it lost

profits from the infringement,<sup>18</sup> IPPV sought as damages a “reasonable royalty” and its damages case centered on proving what that reasonable royalty figure was.

IPPV’s theory of damages that it disclosed prior to the trial and elicited testimony about at trial was based on a reasonable royalty that the parties might have agreed to during a hypothetical negotiation when infringement began in March 1996. IPPV’s damages expert, Stuart Lipoff, testified that he had concluded that, based on the total value of the patents, the reasonable royalty damages sought by IPPV were \$397,950 for the ’254 patent, \$622,650 for the ’217 patent, and \$6,924,050 for the ’884 patent, for a total reasonable royalty payment for all three patents of \$7,944,650. As discussed above, Lipoff opined that the three patents would be licensed together and therefore urged that the royalties for the three patents be bundled into a single figure. Based upon this figure, under the Damages section of the Pre-Trial Order, one of the disputed issues of fact submitted by IPPV was “[w]hether Plaintiffs are entitled to a reasonable royalty of \$7,944,650 for Defendants’ infringement of the ’254, ’884, and ’217 patents.”

In his expert report and again at trial, Lipoff explained that he arrived at this figure by first calculating that the total value of the three patents-in-suit and then applying a royalty percentage to that figure to determine the reasonable royalty dollar figure. Lipoff

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<sup>18</sup> An award of lost profits requires a showing that (1) the plaintiff would have made additional sales “but for” defendant’s infringement; and (2) evidence establishing the amount of the lost profits. Kaufman Co. v. Lantech, Inc., 926 F.2d 1136, 1141 (Fed. Cir. 1991).

concluded that the total value to Echostar for the three patents was \$22,699,000.<sup>19</sup> In his report, Lipoff explained that he “started with a default assumption that the royalty should equal 100% of the patent value, and then considered the relevant Georgia-Pacific factors<sup>20</sup> to adjust this percentage downwards.” He highlighted two of the factors as most relevant. As to the factor that looks to “the extent to which the infringer has made use of the invention; and any evidence probative of the value of that use,” Lipoff concluded that this factor suggests a substantial downward adjustment of the royalty percentage” because the patents-in-suit “describe service features and capabilities, rather than the fundamental method of operation . . . .” As to the factor that looks to “the portion of the realizable profit that should be credited to the invention as distinguished from other non-patented elements,” Lipoff also concluded that a downward adjustment was warranted because “implementing the features described by asserted claims in these three patents did not require substantial financial investment, detailed review with vendors, or marketing creativity.” Lipoff thus concluded in his report, that:

Based on these two factors, we would adjust the royalty percentage to 35%-50% of the value of the three patents. On further consideration of the other

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<sup>19</sup> Table 8.1 of Lipoff’s report shows the individual amounts for each of the patents at issue: \$1,137,000 for the ’254 patent (store and forward feature), \$1,779,000 for the ’217 patent (credit limit feature), and \$19,783,000 for the ’884 patent (parental control feature).

<sup>20</sup> This refers to the seminal case, Georgia-Pacific Corp. v. U. S. Plywood Corp., 318 F. Supp. 1116 (S.D.N.Y. 1970), which sets forth the factors to be considered in determining a reasonable royalty rate in patent infringement cases. It has been cited with approval by the Federal Circuit.



Georgia Pacific factors, we would set the percentage at the bottom of this range, i.e., 35% . . . This royalty would be \$7,944,650.

Based on its review of Lipoff's testimony during trial and IPPV's closing statement to the jury, the court concludes that IPPV did shift its damages theory at trial and that the jury's damages award of \$15 million is not supported by the evidence before it. At trial, Lipoff testified that in his opinion a reasonable royalty would be \$7,944,650, explaining, through the use of demonstrative exhibit PXD 72, the steps set forth in his expert report to arrive at that number: starting with the total value of the patents of \$22.7 million and then multiplying that number by a reasonable royalty of 35%. Lipoff, however, in response to further questioning by counsel for IPPV, then stated for the first time that this royalty figure was "conservative." By performing a "cross-check" of his reasonable royalty calculation based on a per-box royalty rate using the greater number of projected boxes in Echostar's expert's later filed report, Lipoff suggested that a total damages number of \$22 million – or approximately 100% of his calculated value for the patents – would be appropriate.

Putting aside that this constituted a shift in damages theory<sup>21</sup> and a near tripling of the amount of damages sought, the court has further doubts about the mathematical accuracy and calculations that were made in reaching that conclusion. After testifying that it was his opinion that \$7.944 million was the appropriate damages amount (based on

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<sup>21</sup> Lipoff stated in his expert report and his deposition that performing a calculation of reasonable royalty based on a per-box method was not appropriate.

applying a 35% royalty rate to a \$22.7 million total value) and confirming that a 100% royalty rate would not be appropriate, counsel for IPPV asked Lipoff a number of questions about using a per-box royalty rate. He testified that he checked his calculations by determining the implicit per-box royalty rate. To do this he divided his \$7.944 million figure by about 3 million, his projected number of boxes sold. This calculation yields an approximate per-box royalty rate of \$2.59. He then noted that in the later disclosed report of Echostar's expert, Degen, the projected number of boxes sold was 11 million and not 3 million.

While Degen's projections may indicate that the initial projections of Echostar sales used by Lipoff were on the low end, Lipoff reviewed Degen's report prior to his deposition and stated at that time that "I don't believe I would make any changes in the [expert] report as a result of Mr. Degen's report." He further stated at his deposition that he did not believe it was appropriate to determine a reasonable royalty on a per-box basis. Despite these statements, at trial, Lipoff performed the following calculation. After finding that the \$2.59 implicit royalty per box figure was "close" to \$2.40 royalty rate received by IPPV in certain prior licensing agreements, he stated that multiplying the \$2.40 implicit royalty per box rate by the 11 million boxes indicated in Degen's report yielded a damages figure in the 22 million range. The mathematical flaw in this calculation is that Lipoff calculated the per box royalty rate based on 3 million boxes sold, but then multiplied the per-box figure by 11 million boxes sold. However, if 11 million boxes were the correct number of boxes, the implicit per-box royalty should have

been \$7.944 million divided by 11 million – not \$7.944 million divided by 3 million. This miscalculation had the effect of tripling his calculations of the appropriate damages, and thus served IPPV’s purpose of arguing that Lipoff’s \$7.944 damages figure was “conservative.”

More importantly, the resulting figure “in the range of 22 million” is not founded in any way on Lipoff’s methodology or IPPV’s damages theory that it disclosed pre-trial. It simply takes a per-box royalty rate that is close to a per box rate in an earlier licensing agreement and multiplies it by Echostar’s higher projected number of boxes figure. Given that Lipoff had made clear that his damages theory was based neither on other licensing rates attained by IPPV or a per-box methodology, the only virtue of this calculation, from IPPV’s perspective, is that it yields a damages figure that is close in value to Lipoff’s calculations of the total value of the patents in suit (\$22.7 million) and also close in value to the amount of the DirectTV settlement.

This allowed IPPV to argue, by analogy, that the DirectTV settlement amount was relevant to damages in this case, even though the damages in that agreement were approximately three times the damages recommended by its own expert. Lipoff had considered and rejected the idea that plaintiff’s reasonable royalty would be as much as \$22 million (the range of the DirectTV settlement) when he rejected the idea that the defendants would have paid the full value of the patents as a reasonable royalty. Furthermore, in his expert report, in reviewing the rationale for why he chose to perform his valuation based on the income method as opposed to a market method of comparing

past licensing practices of IPPV, Lipoff stated that he and his group “do not believe any of IPPV’s prior licenses or settlements [including the DirectTV agreement and Scientific-Atlanta license agreement] present a valid comparison due to their timing and circumstances.” He also maintained that a valuation based on a per-box methodology was “inappropriate.” Despite this, at closing, counsel for IPPV requested a damages award of \$22.5 million for the bundled patents-in-suit, stating that based on the testimony of Mr. Lipoff and its evidence about past licensing history: “[t]he overwhelming evidence in this case is that a reasonable royalty would be as high as 22 and a half million dollars and the absolute floor is \$8 million.” Counsel for IPPV characterized Lipoff’s calculations as “very conservative” and argued to the jury that the prior license agreements were “very good evidence of what would be a reasonable royalty in this case.”

In sum, IPPV disclosed that under the damages theory that it would present at trial, Echostar would have to pay a reasonable royalty of \$7.944 million. At trial, it shifted away from that theory, eliciting new testimony from its expert, arguing that the \$7.944 figure was merely a lower limit of the damages award, and urging the jury to award \$22.5 million based on a “licensing history” that both side’s experts agreed were not relevant to the calculation of a reasonable royalty in this case. The jury, in awarding nearly twice the amount that IPPV’s own damages expert suggested would be the proper damages award, credited IPPV’s argument that Lipoff’s figure was merely a “conservative” lower limit

and that the settlement agreements were better evidence of the appropriate damages award.

Due to the particular importance of expert testimony in complex trials, “the Civil Rules provide for extensive pretrial discovery of expert testimony.” Licciardo v. TIG Ins. Group, 140 F. 3d 357, 363 (1<sup>st</sup> Cir. 1998). Rule 26(e) of the Federal Rules of Civil Procedure also require parties to supplement answers to interrogatories if there is a “material change in or addition to information contained in an expert’s report,” in order to alleviate “the heavy burden placed on a cross-examiner confronted by an opponent’s expert whose testimony has just been revealed for the first time in open court.” Id.

IPPV’s disclosed pre-trial damages theory was embodied in Lipoff’s report. During the trial, IPPV shifted from that theory. It made the questionably relevant DirectTV settlement agreement the centerpiece of its new damages theory, despite the fact that the DirectTV agreement included a license for the ’942 patent, a patent that was (according to IPPV’s own expert) nearly ten times as valuable as the three patents in suit. Moreover, not only did IPPV fail to elicit any testimony at trial from its damages expert regarding the probative value of the DirectTV license agreement, but Lipoff and IPPV itself repeatedly discounted the DirectTV license agreement and all other license agreements for the patents in suit as unreliable indicators of a reasonable royalty for the patents. IPPV also used “creative” mathematics to create the illusion that a twenty-two million dollar award was supported by Lipoff’s methodology and report, when it is clear to the court that is not the case. For these reasons, the court finds that IPPV’s failure to

disclose their shift in damages theory, their misleading questioning of Lipoff, and the manner in which they used the DirectTV settlement agreement prejudiced Echostar. The success of IPPV's tactics can clearly be seen from the jury's damages award of \$15 million – an amount that is not supported by the trial testimony of plaintiff's own damages expert or the amount that IPPV stated that it was seeking in the pre-trial order.

d. How should the court remedy the prejudice to Echostar arising from IPPV's damages case and account for its finding that the '217 patent is invalid?

Based on the foregoing findings the court is now left with two problems relating to the damages award. First, the court must determine how to account for the prejudice to Echostar arising from IPPV's damages case. Echostar submits that it should be awarded a new trial on damages, or at a minimum, a remittitur to the damages evidence submitted by plaintiff's expert. Second, given the fact that the jury bundled the damages it awarded, the court must determine how to extract from the jury's damages award the damages relating to the since invalidated '217 patent. Because the '217 patent is invalid, Echostar cannot be liable for damages relating to its infringement of that patent. This issue too, presents the court with a choice between a new damages trial on the remaining two patents or a remittitur to the damages figure for the remaining two patents that is supported by IPPV's damages evidence. The court will explore these options below.

Once a court determines that a damages award should be overturned due to unreasonable excessiveness, a court may in its discretion grant a remittitur. See Eiland v. Westinghouse Elec. Corp., 58 F.3d 176, 182 (5th Cir. 1995); see also Evans v. Port

Authority of New York and New Jersey, 273 F.3d 346, 354 (3d Cir. 2001) (“[t]he use of remittitur clearly falls within the discretion of the trial judge”); Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1376 (Fed. Cir. 2000) (reviewing district court’s decision on motion for remittitur under abuse of discretion standard). Thus, while the court must in most cases give deference to the jury’s damages determination, the court may remit a verdict where in light of the evidence, the verdict is so unreasonably high that it would be unconscionable to permit it to stand. See 11 Charles A. Wright, Arthur R. Miller & Mary Kay Kane, Federal Practice and Procedure, § 2807, at 52 (2d. ed. 1995) (hereinafter “Wright & Miller”); Shockley v. Arcan, Inc., 248 F.3d 1349, 1362 (Fed. Cir. 2001) (quoting Virginian Ry. Co. v. Armentrout, 166 F.2d 400, 408 (4th Cir. 1948)) (“[t]he power and duty of the trial judge to set aside [an excessive] verdict ... is well-established, the exercise of the power being regarded as not in derogation of the right of trial by jury but one of the historic safeguards of that right.”).

However, because “[a] court is not at liberty to supplant its own judgment on damages for the jury’s findings,” the court must give the plaintiff the option of either accepting the remitted damages amount or granting the defendant’s motion for a new trial. Oiness v. Walgreen Co., 88 F.3d 1025, 1030 (Fed. Cir. 1996). Thus, upon finding that a damages award is unreasonably high, a court has two options. It may either reverse the jury award and order a new trial or it may allow the plaintiff the option of remitting the award to a specified amount. Unisplay, S.A. v. American Elec. Sign Co., 69 F.3d 512, 519 (Fed. Cir. 1995). To calculate the specified amount, the Federal Circuit “has

adopted the ‘maximum recovery rule’ which requires this court to remit the damage award to the highest amount the jury could ‘properly have awarded based on the relevant evidence.’” Oiness, 88 F.3d at 1030 (quoting Unisplay, 69 F.3d at 519). If the plaintiff declines to accept the remitted award, the court is left only with the option of ordering a new trial on damages alone. Unisplay, 69 F.3d at 519; see also Wilson v. Taylor, 733 F.2d 1539, 1549-50 (11th Cir. 1984) (ordering plaintiff to accept a remittitur or granting defendant a new trial on the question of damages); Modine Mfg. Co. v. Allen Group, Inc., No. C-85-6946-DLJ, 1989 WL 205782, \*16 (N.D. Cal. Nov. 30, 1989) (patent case holding the damage award excessive and ordering a new trial on damages unless plaintiff accepted a remittitur to amount calculated by court).

While the court will, if necessary, order a new trial on damages, a new trial might not be necessary if IPPV agrees to a remittitur of the excessive portion of the damages award. In the interest of avoiding the additional expense and delay associated with a new trial, the court will calculate the remitted damages in accordance with the “maximum recovery rule” and give IPPV the opportunity to avoid a new damages trial by agreeing to accept that amount as its damage award. See Wright & Miller, *supra*, § 2815.

IPPV, through its expert, Lipoff, presented evidence at trial that the reasonable royalty damages due to IPPV for Echostar’s infringement of the three patents in suit are \$397,950 for the ’254 patent, \$622,650 for the ’217 patent, and \$6,924,050 for the ’884 patent, for a total of \$7,944,650. This is the court’s starting point for determining the damages supported by the evidence. Based upon its finding that the ’217 is invalid, the



court will strike from that total figure the \$622,650 associated with the '217 patent. This yields a revised total damages award of \$7,322,000 million.

Thus, IPPV may either agree to accept \$7.322 million as its damages in this case or the court will order a new trial on damages.

### III. CONCLUSION

For the reasons discussed above, the court will deny Echostar's motion for judgment as a matter of law on infringement, but will grant Echostar's motion for judgment as a matter of law that the '217 patent is invalid. Because the liability of Nagravision and NagraStar for inducement and contributory infringement was premised on Echostar's direct liability for infringement of the '217 patent, that portion of the verdict must also be vacated. Echostar Communications alone bears the liability for its infringement of the '254 and '884 patents. For the same reasons, the court will grant Echostar's motion for judgment as a matter of law that its infringement of the '217 patent was willful.

The court will deny Echostar's motion for a new trial based on the court's evidentiary rulings and the verdict form. As to Echostar's motion of a new trial based on the damages issues identified above, the court will grant Echostar a new trial on the issue of damages alone unless, within thirty days of the filing of the order associated with this opinion, IPPV files with this court a statement accepting a remittitur of the damages to a total damages award of \$7.322 million. If IPPV agrees to accept the remittitur, the court will affirm the judgment of the jury as to that amount.

The court will issue an order consistent with this opinion.