

1 Timothy Devlin (pro hac vice to be filed)  
Devlin Law Firm LLC  
2 1306 N. Broom Street, 1<sup>st</sup> Floor  
Wilmington, DE 19806  
3 Telephone: (302) 449-9010  
Facsimile: (302) 353-4251  
4 Email: tdevlin@devlinlawfirm.com

5 Seth W. Wiener (SBN#:203747)  
Law Offices of Seth W. Wiener  
6 9107 Wilshire Blvd., Suite 450  
Beverly Hills, CA 90210  
7 Telephone: (925) 487-5607  
Email: sethwiener@yahoo.com

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9 Attorneys for Plaintiff  
HYBRID AUDIO, LLC

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11 UNITED STATES DISTRICT COURT  
12 CENTRAL DISTRICT OF CALIFORNIA  
WESTERN DIVISION

13 HYBRID AUDIO, LLC,  
14 Plaintiff,

15 vs.  
16

17 DIRECTV, LLC,  
18 Defendants.

)  
) Case No. 2:17-cv-07645-SJO-AGR  
)  
) **FIRST AMENDED COMPLAINT**  
) **FOR PATENT INFRINGEMENT**  
)  
) **DEMAND FOR JURY TRIAL**  
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1                                    **FIRST AMENDED COMPLAINT for patent infringement**

2            Plaintiff Hybrid Audio, LLC (“Hybrid Audio” or “Plaintiff”), for its First  
3 Amended Complaint against DirecTV, LLC (“DirecTV” or “Defendant”) alleges the  
4 following:

5                                    **NATURE OF THE ACTION**

6            1.        This is an action for patent infringement arising under the Patent Laws  
7 of the United States, 35 U.S.C. § 1 *et seq.*

8                                    **THE PARTIES**

9            2.        Plaintiff Hybrid Audio LLC is a limited liability corporation organized  
10 and existing under the laws of Virginia, with its principal place of business at 4041  
11 University Drive, Suite 102, Fairfax, Virginia 22030.

12            3.        Upon information and belief, DirecTV is a limited liability company  
13 organized and existing under the laws of California with its principal place of  
14 business at 2260 E. Imperial Hwy., El Segundo, CA 90245 and a registered agent for  
15 service of process The Corporation Trust Company at Corporation Trust Center 1209  
16 Orange Street, Wilmington, DE 19801.

17            4.        Upon information and belief, Defendant sells and offers to sell products  
18 and services throughout the United States, including in this judicial district, and  
19 introduces products and services into the stream of commerce and that incorporate  
20 infringing technology knowing that they would be sold in this judicial district and  
21 elsewhere in the United States.

22                                    **JURISDICTION AND VENUE**

23            5.        This is an action for patent infringement arising under the Patent Laws  
24 of the United States, Title 35 of the United States Code.

25            6.        This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and  
26 1338(a).

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1 A copy of that Certificate is attached as Exhibit 2.

2 11. By assignment dated December 22, 2010, Aware assigned all right, title  
3 and interest in the RE40,281 and ‘909 patent to Hybrid Audio LLC (“Hybrid Audio-  
4 Texas”).

5 12. On January 11, 2012 counsel for Hybrid Audio-Texas sent Defendant a  
6 letter providing notice that Hybrid Audio-Texas believed that certain of Defendant’s  
7 products infringed claims of the RE40,281 patent.

8 13. In April, 2011, Hybrid Audio-Texas filed a patent infringement lawsuit  
9 against other parties, asserting infringement of the RE40,281 patent. (*Hybrid Audio*  
10 *LLC v. High Tech Computer Corp., et. al* Case No. 6:11-cv-00195 (E.D. Tex. 2011).)  
11 In that case, Hybrid Audio-Texas alleged that certain elements of so-called “MP3”  
12 technology infringed the RE40,281 patent. That prior litigation was subsequently  
13 resolved against each of those parties.

14 14. During the pendency of that prior litigation, on June 18, 2012, a request  
15 for reexamination of the RE40,281 patent was filed in the USPTO. That request was  
16 assigned Reexamination Request No. 90/012,364. That reexamination proceeded,  
17 with the result that every reexamined claim was confirmed. On December 1, 2015,  
18 the RE40,281 patent received Reexamination Certificate No. RE40,281 C1,  
19 confirming patentability of all of the reexamined claims. A copy of that  
20 Reexamination Certificate is attached as Exhibit 3. For convenience, the reexamined  
21 C1 patent, including the original ‘909 patent document and the first RE40,281 patent,  
22 are collectively referred to in this Complaint as the “RE281C patent.”

23 15. The RE281C patent expired on September 21, 2012, twenty years after  
24 the priority filing date of the original parent application. However, Hybrid Audio-  
25 Texas was constrained from seeking royalties or filing lawsuits during the pendency  
26 of the most recent reexamination, from June, 2012 through December, 2015. At the  
27 same time, the entire period from Defendant’s notice of the RE281C patent (at that  
28 time, the RE40,218 patent) through the patent expiration is within the statutory six

1 year limitation on past damages under 35. U.S.C. § 286.

2 16. By assignment dated March 28, 2016, Hybrid Audio-Texas assigned all  
3 right, title and interest in the RE281C patent to Hybrid Audio.

4 17. Accordingly, in the present case, Hybrid Audio is seeking royalties, as  
5 set forth below, from the date on which Defendants received notice of their  
6 infringement of the RE281C patent, January 11, 2012, to the expiration of the  
7 RE281C patent, September 21, 2012.

8 18. The RE281C patent is related to certain signal processing technology. As  
9 set forth above, it was previously asserted against certain MP3 technologies.

10 19. MPEG, a working group formally named as ISO/IEC JTC1/SC29/WG11,  
11 was established by the ISO/IEC standardization body in 1988 to develop generic (i.e.  
12 useful for different applications) standards for the coded representation of moving  
13 pictures, associated audio and their combination. Since then, MPEG has undertaken  
14 the standardization of compression techniques for video and audio. Originally, its  
15 main goal was video coding together with audio coding for digital storage media. In  
16 the meantime, the MPEG audio coding standard found its way into many different  
17 applications.

18 20. On information and belief, certain technology included in what is  
19 generally known as “MP3” is set forth in technical standards designated “ISO/IEC  
20 11172-3:1993,” (“ISO/IEC 11172-3) and “HE-AACv2-ISO/IEC 14496-3:2009(E)”  
21 (“ISO/IEC 14496-3:2009(E)”) (these relevant standards are collectively referred to  
22 herein as the “MP3 Standards”). Due in large part to the popularity of delivering  
23 music through the Internet and other electronic forms of distribution, use of audio  
24 files consistent with the MP3 Standards has become widespread.

25 21. Pursuant to relevant policies governing the standards organization, Aware  
26 disclosed to the ISO/IEC working group that it might have intellectual property  
27 related to one or more of the MP3 Standards. Accordingly, for example, Aware is  
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1 identified on the “List of patent holders” set forth as Annex H to the ISO/IEC 11172-  
2 3 Standard. That Annex H is attached as Exhibit 4.

3 22. Aware agreed, and Hybrid Audio also agrees, to license users of MP3  
4 technology on reasonable, and non-discriminatory (RAND) terms. Hybrid Audio  
5 intends to abide by such terms by furnishing a courtesy copy of this Complaint upon  
6 filing, in advance of service, so that the Parties may amicably agree to such a RAND  
7 royalty. If any of the Defendants contests the obligation to abide by such terms,  
8 through action or inaction, then Plaintiff shall proceed against any such Defendant as  
9 an unwilling licensee and pursue the highest damages and/or other relief available  
10 under the law.

11 23. On information and belief, certain of Defendant’s products and services  
12 made, used, offered for sale, sold, or imported during the applicable period for which  
13 Hybrid Audio seeks royalties practice the MP3 Standards using hardware and  
14 software that is not provided by Microsoft Corporation. These products and services  
15 incorporated inventions described and claimed in the RE281C patent. These products  
16 and services include, but are not limited to, Defendant’s HD DVR Receiver products.

17 24. On information and belief, each of these products, as well as other of  
18 Defendant’s products, practice the MP3 Standards using hardware and software that  
19 is not provided by Microsoft Corporation. All such products made, used, offered for  
20 sale, sold, or imported between January 11, 2012 and September 21, 2012 are  
21 collectively referred to herein as the “Infringing Instrumentalities.”

22 **COUNT I – INFRINGEMENT OF U.S. PATENT NO. RE40,281**

23 25. The allegations set forth in the foregoing paragraphs 1 through 25 are  
24 incorporated into this First Claim for Relief.

25 26. The inventions of the RE281C patent resolve technical problems related  
26 to the use of signal processing technology. For example, the inventions allow parties  
27 to provide an improved communication system for sending a sequence of signals on a  
28 communications link. Specifically, the communication signals may be arranged to

1 approximate the bands of the human auditory system for audio signal processing  
2 applications.

3 27. The claims of the RE281C patent recite one or more inventive concepts  
4 that are rooted in signal processing technology, and overcome problems specifically  
5 arising in the realm of signal processing technology.

6 28. The claims of the RE281C patent recite an invention that is not merely  
7 the routine or conventional use of signal processing technology. Instead, to optimize  
8 transmission quality audio applications, signal processing is performed, for example,  
9 to approximate the bands of the human auditory system for audio signal processing  
10 applications. According to one aspect of the invention, this may be achieved through  
11 the utilization of specifically recited sets of filter banks, which interact in specifically  
12 recited manners.

13 29. The technology claimed in the RE281C patent does not preempt all ways  
14 of electronically transmitting information, nor preempt the use of all signal  
15 processing technology, nor preempt any other well-known or prior art technology.

16 30. Accordingly, each claim of the RE281C patent recites a combination of  
17 elements sufficient to ensure that the claim in practice amounts to significantly more  
18 than a patent on an ineligible concept.

19 31. Hybrid Audio is the assignee and owner of the right, title and interest in  
20 and to the RE281C patent, including the right to assert all causes of action arising  
21 under said patents and the right to any remedies for infringement of them, including  
22 remedies for past infringements.

23 32. Upon information and belief, Defendant has and continues to directly  
24 infringe at least claims 5-6, 9-13, 15-22, 24-30, 32-35, 38-42, 45-49, 50-51, 53, 55-  
25 61, 63, 65-121 of the RE281C patent by making, using, selling, importing and/or  
26 providing and causing to be used the Infringing Instrumentalities. Claim charts  
27 comparing the asserted claims of the RE281C patent to the MP3 Standards are  
28 attached as Exhibit 5.

1           33.     The Infringing Instrumentalities infringe claim 5 of the RE281C patent.  
2 Claim 5 generally recites a signal processing method that includes splitting a signal  
3 into subbands using multiple filter banks that form a tree-structured array having a  
4 root node and greater than two leaf nodes. Each of the nodes includes a filter bank  
5 having greater than two filters, and at least one of the leaf nodes includes a number of  
6 filters that differs from the number of filters in another leaf node.

7           34.     The Infringing Instrumentalities infringe claim 5 of the RE281C patent.  
8 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 11172-3, § 0.2 Layers,  
9 p.vi; ISO/IEC 11172-3, § 2.1 Definitions, p.5; ISO/IEC 11172-3, § C.1.1.1  
10 Introduction, p.66; ISO/IEC 11172-3, § 2.4.3.4 Layer III, p.33; ISO/IEC 11172-3, §  
11 C.1.5.3.3 Analysis part of the hybrid filterbank, p.95; ISO/IEC 11172-3, § C.1.3  
12 Analysis subband filter, p.67; ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the  
13 hybrid filterbank, p.96; ISO/IEC 11172-3, § 2.4.2.7 Audio data, Layer III, p.26;  
14 ISO/IEC 11172-3, § 2.4.2.7 Audio data, Layer III, p.27; ISO/IEC 14496-3:2009(E),  
15 Introduction; ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR filterbanks, p.238; ISO/IEC  
16 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246; ISO/IEC 14496-3:2009(E), §  
17 8.6.4 Parametric stereo, p.42.)

18           35.     The Infringing Instrumentalities infringe claim 6 of the RE281C patent.  
19 Claim 6 generally recites the method of claim 5, wherein at least one of the filter  
20 banks is designed to utilize cosine modulation.

21           36.     The Infringing Instrumentalities infringe claim 6 of the RE281C patent.  
22 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.96;  
23 ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

24           37.     The Infringing Instrumentalities infringe claim 9 of the RE281C patent.  
25 Claim 9 generally recites the method of claim 5, wherein the signal is an audio signal.

26           38.     The Infringing Instrumentalities infringe claim 9 of the RE281C. (*See,*  
27 *e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 11172-3, § C.1.1.1  
28 Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246;



1 ISO/IEC 14496-3:2009(E), § 8.1 Scope, p.2; ISO/IEC 14496-3:2009(E), § 8.A.1  
2 Overview, p.65; ISO/IEC 14496-3:2009(E), § 8.1 Scope, p.2.)

3 39. The Infringing Instrumentalities infringe claim 10 of the RE281C patent.  
4 Claim 10 generally recites the method of claim 5, wherein at least one of the filter  
5 banks is designed to utilize polyphase components.

6 40. The Infringing Instrumentalities infringe claim 10 of the RE281C patent.  
7 (*See, e.g.*, ISO/IEC 14496-3:2009(E), § 4.B.18.2 Analysis filterbank, p.106; ISO/IEC  
8 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR  
9 filterbanks, p.240.)

10 41. The Infringing Instrumentalities infringe claim 11 of the RE281C patent.  
11 Claim 11 generally recites the method of claim 10, wherein the polyphase  
12 components are generated using a window comprising 512 samples.

13 42. The Infringing Instrumentalities infringe claim 11 of the RE281C patent.  
14 (*See, e.g.*, ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67; ISO/IEC 11172-3,  
15 Table C.1, p.68-69; ISO/IEC 11172-3, Figure C.4, p.78.)

16 43. The Infringing Instrumentalities infringe claim 12 of the RE281C patent.  
17 Claim 12 generally recites a signal processing method that includes splitting a signal  
18 into subbands using multiple filter banks connected in a tree-structured array having  
19 first and second levels. The first level includes a filter bank having more than two  
20 filters. The second level includes at least two second level filter banks, each of which  
21 has as its input an output from a different filter in the first level. One of the second  
22 level filter banks has a different number of filters than another second level filter bank.

23 44. The Infringing Instrumentalities infringe claim 12 of the RE281C patent.  
24 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.5.; *see also, e.g.*, ISO/IEC 11172-3,  
25 § C.1.1.1. Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR filterbanks,  
26 p.238; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246; ISO/IEC  
27 14496-3:2009(E), § 8.A.3 Decoding process, p.65-66.)  
28

1           45.     The Infringing Instrumentalities infringe claim 13 of the RE281C patent.  
2 Claim 13 generally recites the method of claim 12, wherein at least one of the filter  
3 banks is designed to utilize cosine modulation.

4           46.     The Infringing Instrumentalities infringe claim 13 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.96;  
6 ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

7           47.     The Infringing Instrumentalities infringe claim 15 of the RE281C patent.  
8 Claim 15 generally recites the method of claim 12, wherein the signal is an audio  
9 signal.

10          48.     The Infringing Instrumentalities infringe claim 15 of the RE281C patent.  
11 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 11172-3, § C.1.1.1  
12 Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246.)

13          49.     The Infringing Instrumentalities infringe claim 16 of the RE281C patent.  
14 Claim 16 generally recites the method of claim 12, wherein at least one of the filter  
15 banks is designed to generate polyphase components.

16          50.     The Infringing Instrumentalities infringe claim 16 of the RE281C patent.  
17 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
18 4.6.18.4 SBR filterbanks, p.240.)

19          51.     The Infringing Instrumentalities infringe claim 17 of the RE281C patent.  
20 Claim 17 generally recites the method of claim 16, wherein the polyphase  
21 components are generated using a window comprising 512 samples.

22          52.     The Infringing Instrumentalities infringe claim 17 of the RE281C patent.  
23 (*See, e.g.*, ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

24          53.     The Infringing Instrumentalities infringe claim 18 of the RE281C patent.  
25 Claim 18 generally recites a signal processing method, comprising synthesizing a  
26 signal using a plurality of synthesis filter banks connected to form a tree structured  
27 array having greater than two leaf nodes and a root node, wherein each of the nodes  
28 comprises one synthesis filter bank having greater than two filters, with at least one

1 of the leaf nodes having a number of filters that differs from the number of filters in a  
2 second leaf node.

3 54. The Infringing Instrumentalities infringe claim 18 of the RE281C patent.  
4 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, § 2.1  
5 Definitions, p.9; *see also e.g.*, ISO/IEC 11172-3, § 2.4.3.4 Layer III, p.33; ISO/IEC  
6 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.95; ISO/IEC 11172-3, §  
7 2.4.3.4.10 Synthesis filterbank, p.36; *see also e.g.*, ISO/IEC 11172-3, § 2.4.3.4.10.2  
8 IMDCT, p.36; ISO/IEC 11172-3, § 2.4.3.4.10.3 Windowing, p.37.)

9 55. The Infringing Instrumentalities infringe claim 19 of the RE281C patent.  
10 Claim 19 generally recites the method of claim 18, wherein at least one of the  
11 synthesis filter banks is designed to utilize polyphase components.

12 56. The Infringing Instrumentalities infringe claim 19 of the RE281C patent.  
13 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8.)

14 57. The Infringing Instrumentalities infringe claim 20 of the RE281C patent.  
15 Claim 20 generally recites the method of claim 19, wherein the polyphase  
16 components are generated using a window length of 512 samples.

17 58. The Infringing Instrumentalities infringe claim 20 of the RE281C patent.  
18 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
19 11172-3, Table B.3, p.50-52; ISO/IEC 11172-3, Figure A.2, p.39.)

20 59. The Infringing Instrumentalities infringe claim 21 of the RE281C patent.  
21 Claim 21 generally recites the method of claim 18, wherein at least one of the  
22 synthesis filter banks is designed to transform frequency components into polyphase  
23 components by cosine modulating the frequency components.

24 60. The Infringing Instrumentalities infringe claim 21 of the RE281C patent.  
25 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
26 11172-3, Fig. A.4 Annex A, p.41.)

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1           61.     The Infringing Instrumentalities infringe claim 22 of the RE281C patent.  
2 Claim 22 generally recites the method of claim 18, wherein the signal is a regenerated  
3 time-domain audio signal.

4           62.     The Infringing Instrumentalities infringe claim 22 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
6 Annex A, p.41.)

7           63.     The Infringing Instrumentalities infringe claim 24 of the RE281C patent.  
8 Claim 24 generally recites the method of claim 18, wherein the tree-structured array  
9 is designed to synthesize a decompressed audio signal.

10          64.     The Infringing Instrumentalities infringe claim 24 of the RE281C patent.  
11 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
12 Annex A, p.41.)

13          65.     The Infringing Instrumentalities infringe claim 25 of the RE281C patent.  
14 Claim 25 generally recites the method of claim 18, wherein at least one of the  
15 synthesis filter banks is designed to transform sub-band components into polyphase  
16 components by cosine modulating the sub-band components.

17          66.     The Infringing Instrumentalities infringe claim 25 of the RE281C patent.  
18 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
19 11172-3, Fig. A.4 Annex A, p.41.)

20          67.     The Infringing Instrumentalities infringe claim 26 of the RE281C patent.  
21 Claim 26 of the RE281C patent generally recites a signal processing method  
22 comprising synthesizing a signal using a plurality of synthesis filter banks connected  
23 in a tree-structured array having a first and a second level, wherein the first level  
24 comprises more than two first level synthesis filter banks, and one first level synthesis  
25 filter bank has a different number of filters than another first level synthesis filter  
26 bank, and the second level comprises one synthesis filter bank having more than two  
27 filters, the second level having as inputs the outputs of the first level synthesis filter  
28 banks.

1           68.     The Infringing Instrumentalities infringe claim 26 of the RE281C patent.  
2     (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, § 0.2  
3     Layers, p.vi; *see also e.g.*, ISO/IEC 11172-3, Fig. A.4 Annex A, p.41; ISO/IEC  
4     11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.95; ISO/IEC 11172-3, §  
5     2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41; *see*  
6     *also e.g.*, ISO/IEC 11172-3, § 2.4.3.4.10.2 IMDCT, p.36; ISO/IEC 11172-3, § 2.4.2.7  
7     Audio data, Layer III, p.26.)

8           69.     The Infringing Instrumentalities infringe claim 27 of the RE281C patent.  
9     Claim 27 generally recites the method of claim 26, wherein at least one of the  
10    synthesis filter banks is designed to utilize polyphase components.

11  
12           70.     The Infringing Instrumentalities infringe claim 27 of the RE281C patent.  
13    (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 11172-3, § 2.1  
14    Definitions, p.9; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

15           71.     The Infringing Instrumentalities infringe claim 28 of the RE281C patent.  
16    Claim 28 generally recites the method of claim 27, wherein the polyphase  
17    components are generated using a window length of 512 samples.

18           72.     The Infringing Instrumentalities infringe claim 28 of the RE281C patent.  
19    (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; *See also*  
20    *e.g.*, ISO/IEC 11172-3, Figure A.2, p.39.)

21           73.     The Infringing Instrumentalities infringe claim 29 of the RE281C patent.  
22    Claim 29 generally recites the method of claim 26, wherein the polyphase  
23    components are generated using a window length of 512 samples.

24           74.     The Infringing Instrumentalities infringe claim 29 of the RE281C patent.  
25    (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
26    11172-3, Fig. A.4 Annex A, p.41.)

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1           75. The Infringing Instrumentalities infringe claim 30 of the RE281C patent.  
2 Claim 30 generally recites the method of claim 26, wherein the signal is a  
3 reconstructed audio signal.

4           76. The Infringing Instrumentalities infringe claim 30 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
6 Annex A, p.41.)

7           77. The Infringing Instrumentalities infringe claim 32 of the RE281C patent.  
8 Claim 32 of the RE281C patent generally recites the method of claim 26, wherein the  
9 tree-structured array is designed to synthesize a decompressed audio signal.

10           78. The Infringing Instrumentalities infringe claim 32 of the RE281C patent.  
11 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
12 Annex A, p.41.)

13           79. The Infringing Instrumentalities infringe claim 33 of the RE281C patent.  
14 Claim 33 generally recites the method of claim 26 wherein at least one of the  
15 synthesis filter banks is designed to transform sub-bandcomponents into polyphase  
16 components by cosine modulating the sub-band components.

17           80. The Infringing Instrumentalities infringe claim 33 of the RE281C patent.  
18 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
19 11172-3, Fig. A.4 Annex A, p.41.)

20           81. The Infringing Instrumentalities infringe claim 34 of the RE281C patent.  
21 Claim 34 generally recites a signal processing system that includes multiple filter  
22 banks that can connect to form a tree-structured array to split a signal into subbands,  
23 the tree-structured array having a root node and more than two leaf nodes. Each of  
24 the nodes includes one filter bank having more than two filters, and at least one of  
25 the leaf nodes has a different number of filters than another of the leaf nodes.

26           82. The Infringing Instrumentalities infringe claim 34 of the RE281C patent.  
27 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.5; ISO/IEC 11172-3, § C.1.1.1  
28 Introduction, p.66; ISO/IEC 14496-3:2009(E), Introduction.)

1           83.     The Infringing Instrumentalities infringe claim 35 of the RE281C patent.  
2 Claim 35 generally recites the system of claim 34, wherein at least one of the filter  
3 banks is designed to utilize cosine modulation.

4           84.     The Infringing Instrumentalities infringe claim 35 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.96;  
6 ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

7           85.     The Infringing Instrumentalities infringe claim 38 of the RE281C patent.  
8 Claim 38 generally recites the system of claim 34, wherein the signal is an audio  
9 signal.

10          86.     The Infringing Instrumentalities infringe claim 38 of the RE281C patent.  
11 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 11172-3, § C.1.1.1  
12 Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246.)

13          87.     The Infringing Instrumentalities infringe claim 39 of the RE281C patent.  
14 Claim 39 generally recites the system of claim 34, wherein at least one of the filter  
15 banks is designed to utilize polyphase components.

16          88.     The Infringing Instrumentalities infringe claim 39 of the RE281C patent.  
17 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
18 4.6.18.4 SBR filterbanks, p.240.)

19          89.     The Infringing Instrumentalities infringe claim 40 of the RE281C patent.  
20 Claim 40 generally recites the system of claim 39, wherein the polyphase components  
21 are generated using a window comprising 512 samples.

22          90.     The Infringing Instrumentalities infringe claim 40 of the RE281C patent.  
23 (*See, e.g.*, ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67; ISO/IEC 11172-3,  
24 Table C.1, p.68-69.)

25          91.     The Infringing Instrumentalities infringe claim 41 of the RE281C patent.  
26 Claim 41 generally recites a signal processing system that includes multiple filter  
27 banks that can connect to form a tree-structured array to split a signal into  
28 subbands, the tree-structured array having first and second levels. The first level of

1 the array includes one first level filter bank having more than two filters; and the  
2 second level of the filter bank includes at least two second level filter banks. Each  
3 second level filter bank has as its input an output from a different filter in the first  
4 level, and one second level filter bank has a different number of filters than another  
5 second level filter bank.

6 92. The Infringing Instrumentalities infringe claim 41 of the RE281C patent.  
7 (*See, e.g.*, ISO/IEC 11172-3, § C.1.1.1 Introduction, p.66; ISO/IEC 11172-3, §  
8 2.4.3.4 Layer III, p.33; ISO/IEC 14496-3:2009(E), Introduction; ISO/IEC 14496-  
9 3:2009(E), § 8.6.4 Parametric stereo, p.42; ISO/IEC 14496-3:2009(E), § 8.C.6.2  
10 Parameter Estimation, p.106; ISO/IEC 14496-3:*see also e.g.*, 2009(E), § 8.6.4.3 Low  
11 frequency filtering, p.44. )

12 93. The Infringing Instrumentalities infringe claim 42 of the RE281C patent.  
13 Claim 42 of the RE281C patent generally recites the system of claim 41, wherein at  
14 least one of the filter banks is designed to utilize cosine modulation.

15 94. The Infringing Instrumentalities infringe claim 42 of the RE281C patent.  
16 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.96;  
17 ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

18 95. The Infringing Instrumentalities infringe claim 45 of the RE281C patent.  
19 Claim 45 generally recites the system of claim 41, wherein the signal is an audio  
20 signal.

21 96. The Infringing Instrumentalities infringe claim 45 of the RE281C patent.  
22 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v.; ISO/IEC 11172-3, § C.1.1.1  
23 Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246.)

24 97. The Infringing Instrumentalities infringe claim 46 of the RE281C patent.  
25 Claim 46 generally recites the system of claim 41, wherein at least one of the filter  
26 banks is designed to generate polyphase components.

27  
28



1           98.     The Infringing Instrumentalities infringe claim 46 of the RE281C patent.  
2 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
3 4.6.18.4 SBR filterbanks, p.240.)

4           99.     The Infringing Instrumentalities infringe claim 47 of the RE281C patent.  
5 Claim 47 generally recites the system of claim 46, wherein the polyphase components  
6 are generated using a window comprising 512 samples.

7           100.    The Infringing Instrumentalities infringe claim 47 of the RE281C patent.  
8 (*See, e.g.*, ISO/IEC 11172-3, Table C.1, p.68-69.)

9           101.    The Infringing Instrumentalities infringe claim 48 of the RE281C patent.  
10 Claim 48 generally recites a signal processing system comprising a plurality of  
11 synthesis filter banks that can connect to form a tree-structured array to synthesize a  
12 signal, the tree-structured array having greater than two leaf nodes and a root node,  
13 wherein each of the nodes comprises one synthesis filter bank having greater than  
14 two filters, with at least one of the leaf nodes having a number of filters that differs  
15 from the number of filters in a second leaf node.

16           102.    The Infringing Instrumentalities infringe claim 48 of the RE281C patent.  
17 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, §  
18 2.4.3.4.10 Synthesis filterbank, p.36; *see also e.g.*, ISO/IEC 11172-3, § C.1.5.3.3  
19 Analysis part of the hybrid filterbank, p.95.)

20           103.    The Infringing Instrumentalities infringe claim 49 of the RE281C patent.  
21 Claim 49 generally recites the system of claim 48, wherein at least one of the  
22 synthesis filter banks is designed to generate polyphase components.

23           104.    The Infringing Instrumentalities infringe claim 49 of the RE281C  
24 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 11172-3, § 2.1  
25 Definitions, p.9; *See also e.g.*, ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

26           105.    The Infringing Instrumentalities infringe claim 50 of the RE281C patent.  
27 Claim 50 generally recites the system of claim 48, wherein at least one of the  
28

1 synthesis filter banks is designed to transform frequency components into polyphase  
2 components by cosine modulating the frequency components.

3  
4 106. The Infringing Instrumentalities infringe claim 50 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
6 11172-3, Fig. A.4 Annex A, p.41.)

7 107. The Infringing Instrumentalities infringe claim 51 of the RE281C patent.  
8 Claim 51 generally recites the system of claim 48, wherein the signal is a  
9 decompressed audio signal.

10 108. The Infringing Instrumentalities infringe claim 51 of the RE281C patent.  
11 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
12 Annex A, p.41.)

13 109. The Infringing Instrumentalities infringe claim 53 of the RE281C patent.  
14 Claim 53 generally recites the system of claim 48, is designed to synthesized  
15 decompressed audio signal.

16 110. The Infringing Instrumentalities infringe claim 53 of the RE281C patent.  
17 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
18 Annex A, p.41.)

19 111. The Infringing Instrumentalities infringe claim 55 of the RE281C patent.  
20 Claim 55 generally recites the system of claim 48, wherein at least one of the  
21 synthesis filter banks is designed to transform sub-band components into polyphase  
22 components by cosine modulating the sub-band components.

23 112. The Infringing Instrumentalities infringe claim 55 of the RE281C patent.  
24 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
25 11172-3, Fig. A.4 Annex A, p.41.)

26 113. The Infringing Instrumentalities infringe claim 56 of the RE281C patent.  
27 Claim 56 generally recites the system of claim 55, wherein the polyphase components  
28 are generated using a window length of 512 samples.

1 114. The Infringing Instrumentalities infringe claim 56 of the RE281C patent.  
2 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
3 11172-3, Table B.3, p.50-52.)

4 115. The Infringing Instrumentalities infringe claim 57 of the RE281C patent.  
5 Claim 57 generally recites a signal processing system comprising plurality of  
6 synthesis filter banks designed that can connect to form a tree-structured array to  
7 synthesize a signal, the tree-structured array having a first and a second level,  
8 wherein the first level comprises more than two first level synthesis filter banks, and  
9 one first level synthesis filter bank has a different number of filters than another first  
10 level synthesis filter bank, and the second level comprises one synthesis filter bank  
11 having more than two filters, the second level having as inputs the outputs of the first  
12 level synthesis filter banks.

13  
14 116. The Infringing Instrumentalities infringe claim 57 of the RE281C patent.  
15 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, § 0.2  
16 Layers, p.vi; ISO/IEC 11172-3, § 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC  
17 11172-3, Fig. A.4 Annex A, p.41.)

18 117. The Infringing Instrumentalities infringe claim 58 of the RE281C patent.  
19 Claim 58 generally recites the system of claim 57, wherein at least one of the  
20 synthesis filter banks is designed to generate polyphase components.

21 118. The Infringing Instrumentalities infringe claim 58 of the RE281C patent.  
22 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 11172-3, § 2.1  
23 Definitions, p.9.)

24 119. The Infringing Instrumentalities infringe claim 59 of the RE281C patent.  
25 Claim 59 generally recites the system of claim 58, wherein the polyphase components  
26 are generated using a window length of 512 samples.

27  
28

1           120. The Infringing Instrumentalities infringe claim 59 of the RE281C patent.  
2 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
3 11172-3, Figure A.2, p.39.)

4           121. The Infringing Instrumentalities infringe claim 60 of the RE281C patent.  
5 Claim 60 generally recites the system of claim 57, wherein at least one of the  
6 synthesis filter banks is designed to transform frequency components into polyphase  
7 components by cosine modulating the frequency components.

8           122. The Infringing Instrumentalities infringe claim 60 of the RE281C patent.  
9 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
10 11172-3, Fig. A.4 Annex A, p.41.)

11           123. The Infringing Instrumentalities infringe claim 63 of the RE281C patent.  
12 Claim 63 generally recites the system of claim 57, wherein the tree-structured array is  
13 designed to synthesize a decompressed audio signal.

14  
15           124. The Infringing Instrumentalities infringe claim 63 of the RE281C patent.  
16 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
17 Annex A, p.41.)

18           125. The Infringing Instrumentalities infringe claims 65 of the RE281C  
19 patent. Claim 65 generally recites the system of claim 57, wherein at least one of the  
20 synthesis filter banks transforms sub-band components into polyphase components by  
21 cosine modulating the sub-band components.

22           126. The Infringing Instrumentalities infringe claim 65 of the RE281C patent.  
23 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
24 11172-3, Fig. A.4 Annex A, p.41.)

25           127. The Infringing Instrumentalities infringe claim 66 of the RE281C patent.  
26 Claim 66 generally recites a signal processing system that includes means for splitting  
27 a signal into subbands using multiple filter banks that can connect to form a tree-  
28 structured array having a root node and greater than two leaf nodes. Each node

1 includes one filter bank having greater than two filters, and at least one of the leaf  
2 nodes has a different number of filters than a second of the leaf nodes.

3 128. The Infringing Instrumentalities infringe claim 66 of the RE281C patent.  
4 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v.; ISO/IEC 11172-3, § 2.1  
5 Definitions, p.5; ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR filterbanks, p.238.)

6 129. The Infringing Instrumentalities infringe claim 67 of the RE281C patent.  
7 Claim 67 generally recites the system of claim 66 wherein at least one of the filter  
8 banks is designed to utilize cosine modulation.

9 130. The Infringing Instrumentalities infringe claim 67 of the RE281C patent.  
10 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.96;  
11 ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

12 131. The Infringing Instrumentalities infringe claim 68 of the RE281C patent.  
13 Claim 68 generally recites the system of claim 66, wherein the signal is an audio  
14 signal.

15 132. The Infringing Instrumentalities infringe claim 68 of the RE281C patent.  
16 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 11172-3, § C.1.1.1  
17 Introduction, p.66.)

18 133. The Infringing Instrumentalities infringe claim 69 of the RE281C patent.  
19 Claim 69 generally recites the system of claim 66, wherein at least one of the filter  
20 banks is designed to generate polyphase components.

21 134. The Infringing Instrumentalities infringe claim 69 of the RE281C patent.  
22 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
23 4.6.18.4 SBR filterbanks, p.240.)

24 135. The Infringing Instrumentalities infringe claim 70 of the RE281C patent.  
25 Claim 70 generally recites the system of claim 69, wherein the polyphase components  
26 are generated using a window comprising 512 samples.

27 136. The Infringing Instrumentalities infringe claim 70 of the RE281C patent.  
28 (*See, e.g.*, ISO/IEC 11172-3, Table C.1, p.68-69.)

1           137. The Infringing Instrumentalities infringe claim 71 of the RE281C patent.  
2 Claim 71 generally recites a signal processing system that includes means for splitting  
3 a signal into sub-bands using multiple filter banks that can connect to form a tree-  
4 structured array having first and second levels. The first level of the array includes  
5 one filter bank having more than two filters. The second level of the array includes at  
6 least two second level filter banks. Each second level filter bank has as its input an  
7 output from a different filter in the first level, and one second level filter bank has a  
8 different number of filters than another second level filter bank.

9           138. The Infringing Instrumentalities infringe claim 71 of the RE281C patent.  
10 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v.; ISO/IEC 11172-3, § C.1.5.3.3  
11 Analysis part of the hybrid filterbank, p.96; ISO/IEC 14496-3:2009(E), Introduction;  
12 ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR filterbanks, p.238.)

13           139. The Infringing Instrumentalities infringe claim 72 of the RE281C patent.  
14 Claim 72 generally recites the system of claim 71, wherein at least one of the filter  
15 banks is designed to utilize cosine modulation.

16           140. The Infringing Instrumentalities infringe claim 72 of the RE281C patent.  
17 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank,  
18 p.96; ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67; ISO/IEC 14496-  
19 3:2009(E), § 8.A.3 Decoding process, p.65-66; ISO/IEC 14496-3:2009(E), § 8.6.4.3  
20 Low frequency filtering, p.47.)

21           141. The Infringing Instrumentalities infringe claim 73 of the RE281C patent.  
22 Claim 73 generally recites the system of claim 71, wherein the signal is an audio  
23 signal.

24           142. The Infringing Instrumentalities infringe claim 73 of the RE281C  
25 patent. (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 11172-3, §  
26 C.1.1.1 Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview,  
27 p.246; ISO/IEC 14496-3:2009(E), § 8.A.1 Overview, p.65.)  
28

1           143. The Infringing Instrumentalities infringe claim 74 of the RE281C patent.  
2 Claim 74 generally recites the system of claim 71, wherein at least one of the filter  
3 banks is designed to generate polyphase components.

4           144. The Infringing Instrumentalities infringe claim 74 of the RE281C patent.  
5 (*See e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
6 4.6.18.4 SBR filterbanks, p.240.)

7           145. The Infringing Instrumentalities infringe claim 75 of the RE281C patent.  
8 Claim 75 generally recites the system of claim 74, wherein the polyphase components  
9 are generated using a window comprising 512 samples.

10           146. The Infringing Instrumentalities infringe claim 75 of the RE281C patent.  
11 (*See, e.g.*, ISO/IEC 11172-3, Table C.1, p.68-69; ISO/IEC 11172-3, § C.1.3 Analysis  
12 subband filter, p.67. )

13           147. The Infringing Instrumentalities infringe claim 76 of the RE281C patent.  
14 Claim 76 recites a signal processing system comprising means for synthesizing a  
15 signal using a plurality of synthesis filter banks that can connect to form a tree-  
16 structured array having greater than two leaf nodes and a root node, wherein each of  
17 the nodes comprises one synthesis filter bank having greater than two filters, with at  
18 least one of the leaf nodes having a number of filters that differs from the number of  
19 filters in a second leaf node.

20           148. The Infringing Instrumentalities infringe claim 76 of the RE281C patent.  
21 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, § 0.2  
22 Layers, p.vi; ISO/IEC 11172-3, § 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC  
23 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.95; ISO/IEC 11172-3, §  
24 2.4.3.4.10.2 IMDCT, p.36.)

25           149. The Infringing Instrumentalities infringe claim 77 of the RE281C patent.  
26 Claim 77 generally recites the system of claim 76, wherein at least one of the  
27 synthesis filter banks is designed to utilize polyphase components.  
28

1           150. The Infringing Instrumentalities infringe claim 77 of the RE281C patent.  
2 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 11172-3, § 2.1  
3 Definitions, p.9.)

4           151. The Infringing Instrumentalities infringe claim 78 of the RE281C patent.  
5 Claim 78 generally recites the system of claim 77, wherein the polyphase components  
6 are generated using a window length of 512 samples.

7           152. The Infringing Instrumentalities infringe claim 78 of the RE281C patent.  
8 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
9 11172-3, Table B.3, p.50-52.)

10           153. The Infringing Instrumentalities infringe claim 79 of the RE281C patent.  
11 Claim 79 generally recites the system of claim 76, wherein at least one of the  
12 synthesis filter banks is designed to transform frequency components into polyphase  
13 components by cosine modulating the frequency components.

14           154. The Infringing Instrumentalities infringe claim 79 of the RE281C patent.  
15 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; *see also*  
16 *e.g.*, ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

17           155. The Infringing Instrumentalities infringe claim 80 of the RE281C patent.  
18 Claim 80 generally recites the system of claim 76, wherein the signal is a  
19 reconstructed audio signal.

20           156. The Infringing Instrumentalities infringe claim 80 of the RE281C patent.  
21 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
22 Annex A, p.41.)

23           157. The Infringing Instrumentalities infringe claim 81 of the RE281C patent.  
24 Claim 81 generally recites the system of claim 76, wherein the tree-structured array is  
25 designed to synthesize a decompressed audio signal.

26           158. The Infringing Instrumentalities infringe claim 81 of the RE281C patent.  
27 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
28 Annex A, p.41.)



1           159. The Infringing Instrumentalities infringe claim 82 of the RE281C patent.  
2 Claim 82 generally recites the system of claim 76, wherein at least one of the  
3 synthesis filter banks is designed to transform sub-band components into polyphase  
4 components by cosine modulating the sub-band components.

5           160. The Infringing Instrumentalities infringe claim 82 of the RE281C patent.  
6 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
7 11172-3, Fig. A.4 Annex A, p.41.)

8           161. The Infringing Instrumentalities infringe claim 83 of the RE281C patent.  
9 Claim 83 generally recites a signal processing system comprising means for  
10 synthesizing a signal using a plurality of synthesis filter banks that can connect to  
11 form a tree-structured array having a first and a second level, wherein the first level  
12 comprises more than two first level synthesis filter banks, and one first level synthesis  
13 filter bank has a different number of filters than another first level synthesis filter  
14 bank, and the second level comprises one synthesis filter bank having more than two  
15 filters, the second level having as inputs the outputs of the first level synthesis filter  
16 banks.

17           162. The Infringing Instrumentalities infringe claim 83 of the RE281C patent.  
18 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, §  
19 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41; *see*  
20 *also e.g.* ISO/IEC 11172-3, § 2.4.3.4.10.2 IMDCT, p.36; ISO/IEC 11172-3, § 2.4.2.7  
21 Audio data, Layer III, p.27.)

22           163. The Infringing Instrumentalities infringe claim 84 of the RE281C patent.  
23 Claim 84 generally recites the system of claim 83, wherein at least one of the  
24 synthesis filter banks is designed to utilize polyphase components.

25           164. The Infringing Instrumentalities infringe claim 84 of the RE281C patent.  
26 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.9; ISO/IEC 11172-3, Fig. A.4  
27 Annex A, p.41.)  
28

1           165. The Infringing Instrumentalities infringe claim 85 of the RE281C patent.  
2 Claim 85 generally recites the system of claim 84, wherein the polyphase components  
3 are generated using a window length of 512 samples.

4           166. The Infringing Instrumentalities infringe claim 85 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32; ISO/IEC  
6 11172-3, Figure A.2, p.39)

7           167. The Infringing Instrumentalities infringe claim 86 of the RE281C patent.  
8 Claim 86 of the RE281C patent generally recites the system of claim 83, wherein at  
9 least one of the synthesis filter banks is designed to transform frequency components  
10 into polyphase components by cosine modulating the frequency components.

11           168. The Infringing Instrumentalities infringe claim 86 of the RE281C  
12 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter,  
13 p.32; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41; ISO/IEC 11172-3, Fig. A.4 Annex  
14 A, p.41.)

15           169. The Infringing Instrumentalities infringe claim 87 of the RE281C patent.  
16 Claim 87 generally recites the system of claim 83 wherein the signal is a  
17 reconstructed audio signal.

18           170. The Infringing Instrumentalities infringe claim 87 of the RE281C patent.  
19 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
20 Annex A, p.41.)

21           171. The Infringing Instrumentalities infringe claim 88 of the RE281C  
22 patent. Claim 88 generally recites the system of claim 83, wherein the tree-structured  
23 array is designed to synthesize a decompressed audio signal.

24           172. The Infringing Instrumentalities infringe claim 88 of the RE281C patent.  
25 (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3, Fig. A.4  
26 Annex A, p.41.)

27           173. The Infringing Instrumentalities infringe claim 89 of the RE281C patent.  
28 Claim 89 generally recites the system of claim 83, wherein at least one of the

1 synthesis filter banks is designed to transform sub-band components into polyphase  
2 components by cosine modulating the sub-band components.

3 174. The Infringing Instrumentalities infringe claim 89 of the RE281C  
4 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter,  
5 p.32; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

6 175. The Infringing Instrumentalities infringe claim 90 of the RE281C patent.  
7 Claim 90 generally recites an information storage media storing information that  
8 when executed splits a signal into subbands using multiple filter banks connected to  
9 form a tree-structured array having a root node and greater than two leaf nodes. Each  
10 node includes one filter bank having greater than two filters, and at least one of the  
11 leaf nodes has a different number of filters than a second of the leaf nodes.

12 176. The Infringing Instrumentalities infringe claim 90 of the RE281C patent.  
13 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.5; ISO/IEC 14496-3:2009(E), §  
14 4.6.18.4 SBR filterbanks, p.238; ISO/IEC 14496-3:2009(E), § 8.A.3 Decoding  
15 process, p.65-66.)

16 177. The Infringing Instrumentalities infringe claim 91 of the RE281C patent.  
17 Claim 91 generally recites the media of claim 90, wherein at least one of the filter  
18 banks is designed to utilize cosine modulation.

19 178. The Infringing Instrumentalities infringe claim 91 of the RE281C patent.  
20 (*See, e.g.*, ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of the hybrid filterbank, p.96;  
21 ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

22 179. The Infringing Instrumentalities infringe claim 92 of the RE281C patent.  
23 Claim 92 generally recites the media of claim 90, wherein the signal is an audio  
24 signal.

25 180. The Infringing Instrumentalities infringe claim 92 of the RE281C patent.  
26 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v.; ISO/IEC 14496-3:2009(E), §  
27 4.6.18.5 SBR tool overview, p.246.)  
28

1 181. The Infringing Instrumentalities infringe claim 93 of the RE281C patent.  
2 Claim 93 generally recites the media of claim 90, wherein at least one of the filter  
3 banks is designed to utilize polyphase components.

4 182. The Infringing Instrumentalities infringe claim 93 of the RE281C patent.  
5 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
6 4.6.18.4 SBR filterbanks, p.240; ISO/IEC 14496-3:2009(E), § 4.B.18.2 Analysis  
7 filterbank, p.106.)

8 183. The Infringing Instrumentalities infringe claim 94 of the RE281C patent.  
9 Claim 94 generally recites the media of claim 93, wherein the polyphase components  
10 are generated using a window comprising 512 samples.

11 184. The Infringing Instrumentalities infringe claim 94 of the RE281C patent.  
12 (*See, e.g.*, ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67.)

13 185. The Infringing Instrumentalities infringe claim 95 of the RE281C patent.  
14 Claim 95 of the RE281C patent generally recites an information storage media storing  
15 information that when executed splits a signal into sub-bands using multiple filter  
16 banks connected in a tree-structured array having a first and a second level. The first  
17 level of the array includes one filter bank having more than two filters. The second  
18 level of the array includes at least two filter banks. Each second level filter bank has  
19 as its input an output from a different filter in the first level, and one second level  
20 filter bank has a different number of filters than another second level filter bank.

21 186. The Infringing Instrumentalities infringe claim 95 of the RE281C patent.  
22 (*See, e.g.*, ISO/IEC 11172-3, § 0.2 Layers, p.vi; ISO/IEC 11172-3, § C.1.1.2 The  
23 filterbank, p.67; ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR filterbanks, p.238;  
24 ISO/IEC 14496-3:2009(E), § 8.6.4 Parametric stereo, p.42; ISO/IEC 14496-  
25 3:2009(E), § 8.A.3 Decoding process, p.65-66.)

26 187. The Infringing Instrumentalities infringe claim 96 of the RE281C patent.  
27 Claim 96 of the RE281C patent generally recites the media of claim 95, wherein at  
28 least one of the filter banks is designed to utilize cosine modulation.

1 188. The Infringing Instrumentalities infringe claim 96 of the RE281C patent.  
2 (*See, e.g.*, ISO/IEC 11172-3, § C.1.3 Analysis subband filter, p.67; ISO/IEC 11172-3,  
3 § C.1.3 Analysis subband filter, p.67.)

4 189. The Infringing Instrumentalities infringe claim 97 of the RE281C patent.  
5 Claim 97 generally recites the media of claim 95, wherein the signal is an audio  
6 signal.

7 190. The Infringing Instrumentalities infringe claim 97 of the RE281C patent.  
8 (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v.; ISO/IEC 14496-3:2009(E), §  
9 4.6.18.5 SBR tool overview, p.246.)

10 191. The Infringing Instrumentalities infringe claim 98 of the RE281C patent.  
11 Claim 98 generally recites the media of claim 95, wherein at least one of the filter  
12 banks is designed to generate polyphase components.

13 192. The Infringing Instrumentalities infringe claim 98 of the RE281C patent.  
14 (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 14496-3:2009(E), §  
15 4.6.18.4 SBR filterbanks, p.240.)

16 193. The Infringing Instrumentalities infringe claim 99 of the RE281C patent.  
17 Claim 99 generally recites the media of claim 98, wherein the polyphase components  
18 are generated using a window comprising 512 samples.

19 194. The Infringing Instrumentalities infringe claim 99 of the RE281C patent.  
20 (*See, e.g.*, ISO/IEC 11172-3, Table C.1, p.68-69.)

21 195. The Infringing Instrumentalities infringe claim 100 of the RE281C  
22 patent. Claim 100 recites an information storage media having stored thereon  
23 information that when executed synthesizes a signal using a plurality of synthesis  
24 filter banks connected to form a tree structured array having greater than two leaf  
25 nodes and a root node, wherein each of the nodes comprises one synthesis filter bank  
26 having greater than two filters, with at least one of the leaf nodes having a number of  
27 filters that differs from the number of filters in a second leaf node.  
28

1           196. The Infringing Instrumentalities infringe claim 100 of the RE281C  
2 patent. (*See, e.g.* ISO/IEC 11172-3, § 0.2 Layers, p.vi; ISO/IEC 11172-3, §  
3 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC 11172-3, § 2.4.3.4 Layer III,  
4 p.33; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41; ISO/IEC 11172-3, § 2.4.2.7 Audio  
5 data, Layer III, p.27.)

6           197. The Infringing Instrumentalities infringe claim 101 of the RE281C  
7 patent. Claim 101 generally recites the media of claim 100, wherein at least one of  
8 the synthesis filter banks is designed to utilize polyphase components.

9           198. The Infringing Instrumentalities infringe claim 101 of the RE281C  
10 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 11172-3, Fig.  
11 A.4 Annex A, p.41.)

12           199. The Infringing Instrumentalities infringe claim 102 of the RE281C  
13 patent. Claim 102 generally recites the media of claim 101, wherein the polyphase  
14 components are generated using a window length of 512 samples.

15           200. The Infringing Instrumentalities infringe claim 102 of the RE281C  
16 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter,  
17 p.32; ISO/IEC 11172-3, Table B.3, p.50-52.)

18           201. The Infringing Instrumentalities infringe claim 103 of the RE281C  
19 patent. Claim 103 generally recites the media of claim 100, wherein at least one of  
20 the synthesis filter banks is designed to transform frequency components into  
21 polyphase components by cosine modulating the frequency components.

22           202. The Infringing Instrumentalities infringe claim 103 of the RE281C  
23 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter,  
24 p.32; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

25           203. The Infringing Instrumentalities infringe claim 104 of the RE281C  
26 patent. Claim 104 generally recites the media of claim 100, wherein wherein the  
27 signal is a reconstructed audio signal.  
28

1           204. The Infringing Instrumentalities infringe claim 104 of the RE281C  
2 patent. (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3,  
3 Fig. A.4 Annex A, p.41.)

4           205. The Infringing Instrumentalities infringe claim 105 of the RE281C  
5 patent. Claim 105 generally recites the media of claim 100, wherein the tree-  
6 structured array is designed to synthesize a decompressed audio signal.

7           206. The Infringing Instrumentalities infringe claim 105 of the RE281C  
8 patent. (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3,  
9 Fig. A.4 Annex A, p.41.)

10           207. The Infringing Instrumentalities infringe claim 106 of the RE281C  
11 patent. Claim 106 generally recites the media of claim 100, wherein at least one of the  
12 synthesis filter banks is designed to transform sub-band components into polyphase  
13 components by cosine modulating the sub-band components.

14           208. The Infringing Instrumentalities infringe claim 106 of the RE281C  
15 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter,  
16 p.32; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

17           209. The Infringing Instrumentalities infringe claim 107 of the RE281C  
18 patent. Claim 107 generally recites an information storage media having stored  
19 thereon information that when executed synthesizes a signal using a plurality of  
20 synthesis filter banks connected in a tree-structured array having a first and a second  
21 level.

22           210. The Infringing Instrumentalities infringe claim 107 of the RE281C  
23 patent. (*See, e.g.*, ISO/IEC 11172-3, § 0.2 Layers, p.vi; ISO/IEC 11172-3, §  
24 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of  
25 the hybrid filterbank, p.95.)

26           211. The Infringing Instrumentalities infringe claim 108 of the RE281C  
27 patent. Claim 108 generally recites the media of claim 107, wherein at least one of  
28 the synthesis filter banks is designed to generate polyphase components.

1           212. The Infringing Instrumentalities infringe claim 108 of the RE281C  
2 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.8; ISO/IEC 11172-3, § 2.1  
3 Definitions, p.9; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

4           213. The Infringing Instrumentalities infringe claim 109 of the RE281C  
5 patent. Claim 109 generally recites the media of claim 108, wherein the polyphase  
6 components are generated using a window comprising 512 samples.

7           214. The Infringing Instrumentalities infringe claim 109 of the RE281C  
8 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter,  
9 p.32; ISO/IEC 11172-3, Figure A.2, p.39.)

10           215. The Infringing Instrumentalities infringe claim 110 of the RE281C  
11 patent. Claim 10 recites the media of claim 107, wherein at least one of the synthesis  
12 filter banks is designed to transform frequency components into polyphase  
13 components by cosine modulating the frequency components.

14           216. The Infringing Instrumentalities infringe claim 110 of the RE281C  
15 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32;  
16 ISO/IEC 11172-3, Fig. A.4 Annex A, p.41.)

17           217. The Infringing Instrumentalities infringe claim 111 of the RE281C  
18 patent. Claim 11 generally recites the media of claim 111, wherein the signal is a  
19 decompressed audio signal.

20           218. The Infringing Instrumentalities infringe claim 111 of the RE281C  
21 patent. (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3,  
22 Fig. A.4 Annex A, p.41.)

23           219. The Infringing Instrumentalities infringe claim 112 of the RE281C  
24 patent. Claim 112 generally recites the media of claim 107, wherein the tree-  
25 structured array is designed to synthesize a decompressed audio signal.

26           220. The Infringing Instrumentalities infringe claim 112 of the RE281C  
27 patent. (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3,  
28 Fig. A.4 Annex A, p.41.)



1           221. The Infringing Instrumentalities infringe claim 113 of the RE281C  
2 patent. Claim 113 generally recites the media of claim 107, wherein at least one of  
3 the synthesis filter banks is designed to transform sub-band components into  
4 polyphase components by cosine modulating the sub-band components.

5           222. The Infringing Instrumentalities infringe claim 113 of the RE281C  
6 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.3.5 Synthesis subband filter, p.32;  
7 ISO/IEC 11172-3, Fig. A.4 Annex A, p.41; ISO/IEC 11172-3, § 2.1 Definitions, p.5;  
8 ISO/IEC 11172-3, § 2.4.3.4 Layer III, p.33; ISO/IEC 11172-3, § 2.4.2.7 Audio data,  
9 Layer III, p.26; ISO/IEC 14496-3:2009(E), § 8.C.6.2 Parameter Estimation, p.106;  
10 ISO/IEC 14496-3:2009(E), § 8.6.4.3 Low frequency filtering, p.44.)

11           223. The Infringing Instrumentalities infringe claim 114 of the RE281C  
12 patent. Claim 114 generally recites an information storage media storing audio  
13 information having been split into subbands using multiple filter banks connected to  
14 form a tree-structured array having a root node and greater than two leaf nodes. Each  
15 node includes at least one filter bank having greater than two filters, and at least one  
16 of the leaf nodes has a different number of filters than a second one of the leaf nodes.

17           224. The Infringing Instrumentalities infringe claim 114 of the RE281C  
18 patent. (*See, e.g.*, ISO/IEC 11172-3, § 0.2 Layers, p.vi.; ISO/IEC 11172-3, § 2.1  
19 Definitions, p.5; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview, p.246;  
20 ISO/IEC 14496-3:2009(E), § 8.6.4 Parametric stereo, p.42; ISO/IEC 14496-  
21 3:2009(E), § 8.6.4.3 Low frequency filtering, p.44.)

22           225. The Infringing Instrumentalities infringe claim 115 of the RE281C  
23 patent. Claim 115 generally recites the media of claim 114, wherein the information  
24 is audio information.

25           226. The Infringing Instrumentalities infringe claim 115 of the RE281C  
26 patent. (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v; ISO/IEC 14496-3:2009(E),  
27 § 4.6.18.5 SBR tool overview, p.246; ISO/IEC 14496-3:2009(E), § 8.A.1 Overview,  
28 p.65.)

1           227. The Infringing Instrumentalities infringe claim 116 of the RE281C  
2 patent. Claim 116 generally recites an information storage media storing audio  
3 information having been split into sub-bands using multiple filter bands connected in  
4 a tree-structured array having first and second levels. The first level of the array  
5 includes one filter bank having more than two filters. The second level of the array  
6 includes at least two filter banks. Each second level filter bank has as its input an  
7 output from a different filter in the first level, and one second level filter bank has a  
8 different number of filters than another second level filter bank.

9           228. The Infringing Instrumentalities infringe claim 116 of the RE281C  
10 patent. (*See, e.g.*, ISO/IEC 11172-3, § 0.2 Layers, p.vi; ISO/IEC 11172-3, § C.1.3  
11 Analysis subband filter, p.67; ISO/IEC 14496-3:2009(E), § 4.6.18.4 SBR filterbanks,  
12 p.238; ISO/IEC 14496-3:2009(E), § 8.A.3 Decoding process, p.65-66.)

13           229. The Infringing Instrumentalities infringe claim 117 of the RE281C  
14 patent. Claim 117 generally recites the media of claim 116, wherein the information  
15 is audio information.

16           230. The Infringing Instrumentalities infringe claim 117 of the RE281C  
17 patent. (*See, e.g.*, ISO/IEC 11172-3, § 0.1 Encoding, p.v.; ISO/IEC 11172-3, §  
18 C.1.1.1 Introduction, p.66; ISO/IEC 14496-3:2009(E), § 4.6.18.5 SBR tool overview,  
19 p.246; ISO/IEC 14496-3:2009(E), § 8.A.1 Overview, p.65.)

20           231. The Infringing Instrumentalities infringe claim 118 of the RE281C  
21 patent. Claim 118 generally recites a method of regenerating a signal using a plurality  
22 of synthesis filter banks connected to form a tree-structured array having greater than  
23 two leaf nodes and a root node, wherein each of the nodes comprises one synthesis  
24 filter bank having greater than two filters, with at least one of the leaf nodes having a  
25 number of filters that differs from the number of filters in a second lead node.

26           232. The Infringing Instrumentalities infringe claim 118 of the RE281C  
27 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC  
28

1 11172-3, § 2.4.3.4 Layer III, p.33; ISO/IEC 11172-3, Fig. A.4 Annex A, p.41;  
2 ISO/IEC 11172-3, § 2.4.3.4.10.3 Windowing, p.37.)

3 233. The Infringing Instrumentalities infringe claim 119 of the RE281C  
4 patent. Claim 119 generally recites the media of claim 118, wherein the regenerated  
5 signal is an audio signal.

6 234. The Infringing Instrumentalities infringe claim 119 of the RE281C  
7 patent. (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi.)

8 235. The Infringing Instrumentalities infringe claim 120 of the RE281C  
9 patent. Claim 120 generally recites a method of reconstructing a signal using a  
10 plurality of synthesis filter banks connected in a tree-structured array having a first  
11 and a second level, wherein the first level comprises more than two first level  
12 synthesis filter banks, and one first level synthesis filter bank has a different number  
13 of filters than another first level synthesis filter bank, and the second level comprises  
14 one synthesis filter bank having more than two filters, the second level having as  
15 inputs the outputs of the first level synthesis filter banks.

16 236. The Infringing Instrumentalities infringe claim 120 of the RE281C  
17 patent. (*See, e.g.*, ISO/IEC 11172-3, § 2.1 Definitions, p.9; ISO/IEC 11172-3, §  
18 2.4.3.4.10 Synthesis filterbank, p.36; ISO/IEC 11172-3, § C.1.5.3.3 Analysis part of  
19 the hybrid filterbank, p.95; ISO/IEC 11172-3, § 2.4.3.4.10.2 IMDCT, p.36.)

20 237. The Infringing Instrumentalities infringe claim 121 of the RE281C  
21 patent. Claim 121 generally recites the media of claim 120, wherein the regenerated  
22 signal is an audio signal.

23 238. The Infringing Instrumentalities infringe claim 121 of the RE281C  
24 patent. (*See, e.g.*, ISO/IEC 11172-3, Fig. 2 §0.4 Decoding, p.vi; ISO/IEC 11172-3,  
25 Fig. A.4 Annex A, p.41.)

26 239. On information and belief, the Infringing Instrumentalities are used  
27 marketed, provided to, and/or used by or for Defendant's partners, clients, customers  
28 and end users across the country and in this District.

1           240. Upon information and belief, since at least the date of Hybrid Audio-  
2 Texas' notice letter, Defendant has induced and continues to induce others to infringe  
3 at least one claim of the RE281C patent under 35 U.S.C. § 271(b) by, among other  
4 things, and with specific intent or willful blindness, actively aiding and abetting  
5 others to infringe, including but not limited to Defendant's partners, clients,  
6 customers, and end users, whose use of the Infringing Instrumentalities constitutes  
7 direct infringement of at least one claim of the RE281C patent.

8           241. In particular, Defendant's actions that aid and abet others such as its  
9 partners, customers, clients, and end users to infringe include advertising and  
10 distributing the Infringing Instrumentalities and providing instruction materials,  
11 training, and services regarding the Infringing Instrumentalities. During the relevant  
12 time period, such actions included, for example, providing and maintaining technical  
13 forums for partners, customers, clients, and end users to trouble-shoot issues with the  
14 Accused Instrumentalities. (*See, e.g.*,  
15 <http://forums.directv.com/pe/action/forums/displayrootposts?msgBoardID=10100104>  
16 ; <http://forums.directv.com:80/pe/elementDisplayRedirect.jsp?elementID=10156613>.)

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20 On information and belief, Defendant has engaged in such actions with specific intent  
21 to cause infringement or with willful blindness to the resulting infringement because  
22 Defendant has had actual knowledge of the RE281C patent and knowledge that its  
23 acts were inducing infringement of the RE281C patent since at least the date  
24 Defendant received notice that such activities infringed the RE281C patent.  
25  
26

27           242. Upon information and belief, Defendant is liable as a contributory  
28 infringer of the RE281C patent under 35 U.S.C. § 271(c) by offering to sell, selling

1 and importing into the United States wireless communications devices to be  
2 especially made or adapted for use in an infringement of the RE281C patent. The  
3 Infringing Instrumentalities are a material component for use in practicing the  
4 RE281C patent and are specifically made and are not a staple article of commerce  
5 suitable for substantial non-infringing use.

6 243. Upon information and belief, since at least the time Defendant received  
7 notice, Defendant's infringement has been willful.

8 244. Hybrid Audio has been harmed by Defendant's infringing activities.

9 **JURY DEMAND**

10 Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Hybrid Audio  
11 demands a trial by jury on all issues triable as such.

12 **PRAYER FOR RELIEF**

13 WHEREFORE, if Plaintiff Hybrid Audio is unsuccessful securing a reasonable  
14 and non-discriminatory royalty prior to service of this Complaint, Plaintiff Hybrid  
15 Audio demands judgment for itself and against Defendant as follows:

16 A. An adjudication that Defendant has infringed the RE281C patent;

17 B. An award of damages to be paid by Defendant adequate to compensate  
18 Hybrid Audio for Defendant's past infringement of said patents, and any continuing  
19 or future infringement through the date such judgment is entered, including interest,  
20 costs, expenses and an accounting of all infringing acts including, but not limited to,  
21 those acts not presented at trial;

22 C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an  
23 award of Plaintiff's reasonable attorneys' fees; and

24 D. An award to Hybrid Audio of such further relief at law or in equity as  
25 the Court deems just and proper.

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Dated: March 19, 2018

By: /s/  
Seth W. Wiener (SBN#:203747)  
sethwiener@yahoo.com  
LAW OFFICES OF SETH W. WIENER  
9107 Wilshire Blvd., Suite 450  
Beverly Hills, CA 90210  
Telephone: (925) 487-5607

Timothy Devlin (*pro hac vice* to be filed)  
Delaware Bar No. 4241  
DEVLIN LAW FIRM LLC  
1306 N. Broom Street, 1<sup>st</sup> Floor  
Wilmington, DE 19806  
Phone: (302) 449-9010  
tdevlin@devlinlawfirm.com

*Attorneys for Plaintiff Hybrid Audio, LLC*