PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of	
CERTAIN AUDIOVISUAL COMPONENTS AND PRODUCTS CONTAINING THE SAME	**Investigation No. 337-TA-837**

COMMISSION OPINION

I. INTRODUCTION

This investigation concerns U.S. Patent Nos. 5,780,087 ("the '087 patent"); 6,452,958 ("the '958 patent"); 6,707,867 ("the '867 patent"); and 6,982,663 ("the '663 patent"). The Commission determined to review the final initial determination ("ID") of the presiding administrative law judge ("ALJ") finding a violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337) with respect to the '087 patent, and no violation of section 337 with respect to the other asserted patents. For the reasons that follow, we find that there has been no violation of section 337 in this investigation.

II. BACKGROUND

The Commission instituted this investigation on April 11, 2012, based on a complaint filed by LSI Corporation of Milpitas, California, and Agere Systems Inc. of Allentown, Pennsylvania (collectively, "LSI"). 77 *Fed. Reg.* 22803 (Apr. 11, 2012). The complaint, as amended, alleged violations of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain audiovisual components and products containing the same by reason of infringement of certain claims of the '087, the '958, the '867, and the '663 patents. The Commission's notice of investigation named as respondents Realtek Semiconductor

Corporation of Hsinchu, Taiwan ("Realtek"); Funai Corporation, Inc. of Rutherford, New Jersey; Funai Electric Co., Ltd. of Osaka, Japan; P&F USA, Inc. of Alpharetta, Georgia; and Funai Service Corporation of Groveport, Ohio (collectively, "Funai"); MediaTek, Inc. of Hsinchu City, Taiwan; MediaTek USA, Inc. of San Jose, California; MediaTek Wireless, Inc. of Woburn, Massachusetts; Ralink Technology Corporation of Hsinchu County, Taiwan; and Ralink Technology Corporation (USA) of Cupertino, California (collectively, "MediaTek/Ralink"). No Commission investigative attorney participated in the investigation.

On January 24, 2013, the ALJ issued an ID (Order No. 57) granting a motion for partial termination of the investigation as to MediaTek/Ralink based on withdrawal of the complaint as to MediaTek/Ralink (not reviewed by the Commission, February 13, 2013).

On February 27, 2013, the ALJ issued an ID (Order No. 67) granting Funai's motion for summary determination that ten (10) accused Funai products for which expert testimony on infringement was not provided do not infringe the asserted patents (not reviewed by the Commission, March 27, 2013).

On March 7, 2013, the ALJ issued an ID (Order No. 72) partially terminating the investigation with respect to the following claims: (1) claims 1-7, 10-11, 30, and 36 of the '958 patent; (2) claims 1, 4-7, 9-19, 21, 36, 44-45, 57, and 62-74 of the '867 patent; and (3) claim 10 of the '663 patent (not reviewed by the Commission, March 26, 2013).

On April 2-10, 2013, the parties participated in an evidentiary hearing held before the ALJ. The ALJ issued a final ID in this investigation on July 18, 2013, finding a violation of section 337 in connection with claims 1, 5, 7-11, and 16 of the '087 patent. In particular, the ALJ found that Funai's accused products directly infringed apparatus claims 1, 5, 7-9, and 16 of the '087 patent and that Funai induced infringement of method claims 10 and 11 of the '087

patent. The ALJ found no violation of section 337 in connection with any asserted claims of the '958, the '867, and the '663 patents. Because respondent Realtek was alleged to infringe only the '958 and '867 patents, the ALJ exonerated Realtek of any violation of section 337. The ALJ also found that none of the four asserted patents were shown to be invalid. With respect to the domestic industry requirement, LSI attempted to prove that products manufactured by licensee [ ] satisfied sections 337(a)(3)(A) and (B) for the'958 and '867 patents. The ALJ found that LSI failed to prove that the [ ] products practiced those patents. The ALJ also found, however, that LSI satisfied section 337(a)(3)(C) for all four asserted patents based on licensing without requiring that LSI prove the existence of articles practicing those patents. The ALJ further determined that respondents did not prevail on any equitable or RAND defenses.

On July 31, 2013, the ALJ issued a recommended determination ("RD") on remedy and bonding in the event that the Commission finds a violation of section 337. The ALJ recommended that, if a violation of section 337 is sustained, a limited exclusion order be entered against any respondent found to infringe. The ALJ also recommended against issuing cease and desist orders against Realtek and Funai because LSI did not request one against Realtek and the evidence did not show that Funai maintained a significant domestic inventory of accused articles. The ALJ further recommended that an importation bond during the period of Presidential review be set in the amount of [ ] percent of the entered value.

On August 5, 2013, LSI, Funai, and Realtek filed their respective petitions for review challenging various findings in the final ID. The parties filed timely responses on August 13, 2013. Non-party Koninklijke Philips N.V. filed public interest comments on August 30, 2013.

On September 3, 2013, the parties filed their respective public interest comments pursuant to Commission rule 210.50(a)(4).

On October 17, 2013, the Commission determined to review the final ID in its entirety and requested additional briefing from the parties on certain issues. 78 *Fed. Reg.* 63243-45 (Oct. 23, 2013). The Commission also solicited briefing from the parties, government agencies, and the public on the issues of remedy, the public interest, and bonding. On November 1, 2013, the parties filed briefs addressing the Commission's questions and the issues of remedy, bonding, and the public interest. Also on November 1, 2013, non-parties Barnes & Noble, Inc.; InterDigital, Inc.; Intel Corporation; and Cisco Systems, Inc. filed comments on the public interest. On November 12, 2013, the parties filed reply briefs in connection with the Commission's notice.

On January 17, 2014, complainants and respondent Funai jointly filed a motion to partially terminate the investigation as to all claims of the '087 and the '663 patents based on a settlement agreement. These patents were not asserted against Realtek.

On February 6, 2014, after the Commission extended the target date for completion of this investigation to March 3, 2014, complainants filed a motion to partially terminate the investigation as to the '867 patent and to vacate all findings with respect to that patent in view of the patent's expiration date of February 23, 2014. Respondents agreed with termination, but opposed vacatur of the findings on February 12, 2014.

III. STANDARD ON REVIEW

As noted above, the Commission determined to review the final ID in this matter in its entirety. Once the Commission determines to review an initial determination, its review is conducted *de novo*. *Certain Polyethylene Terephthalate Yarn and Prods. Containing Same*, Inv.

No. 337-TA-457, Comm'n Op. at 9 (June 18, 2002). Upon review, the "Commission has 'all the powers which it would have in making the initial determination,' except where the issues are limited on notice or by rule." *Certain Flash Memory Circuits and Prods. Containing Same*, Inv. No. 337-TA-382, USITC Pub. 3046, Comm'n Op. at 9-10 (July 1997) (quoting *Certain Acid-Washed Denim Garments and Accessories*, Inv. No. 337-TA-324, Comm'n Op. at 5 (Nov. 1992)). Commission practice in this regard is consistent with the Administrative Procedure Act. *Certain EPROM, EEPROM, Flash Memory, and Flash Microcontroller Semiconductor Devices and Prods. Containing Same*, Inv. No. 337-TA-395, Comm'n Op. at 6 (Dec. 11, 2000) ("*EPROM*"); *see also* 5 U.S.C. § 557(b).

Upon review, "the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the administrative law judge. The Commission may also make any findings or conclusions that in its judgment are proper based on the record in the proceeding." 19 C.F.R. § 210.45. This rule reflects the fact that the Commission is not an appellate court, but is the body responsible for making the final agency decision. On appeal, only the Commission's final decision is at issue. *See EPROM* at 6 (citing *Fischer & Porter Co. v. U.S. Int'l Trade Comm'n*, 831 F.2d 1574, 1576-77 (Fed. Cir. 1987)).

IV. ANALYSIS

A. U.S. Patent No. 6,452,958

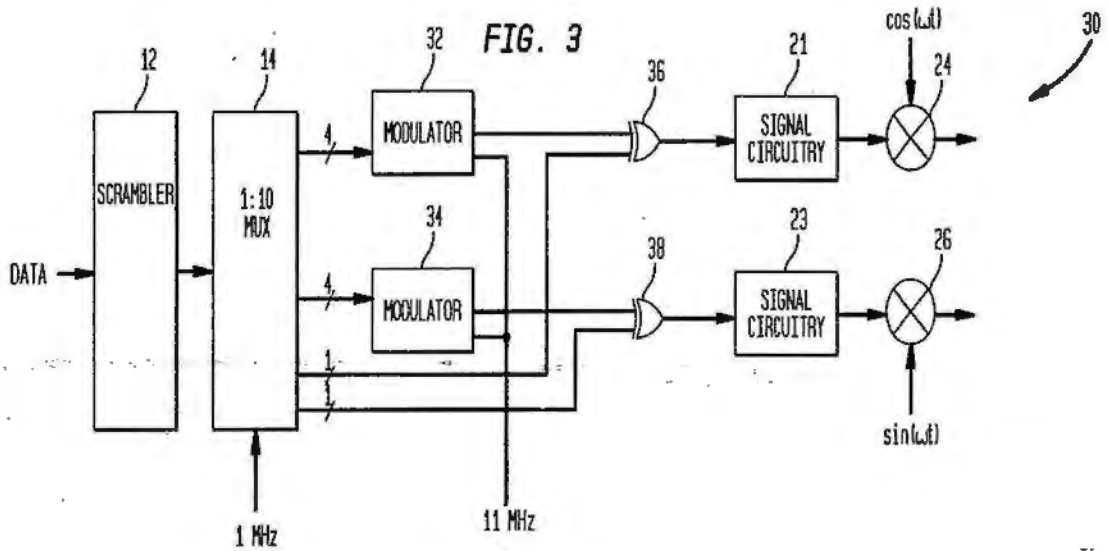
The Commission determines that no violation of section 337 has been proven with respect to the '958 patent in this investigation. We provide below an overview of the '958 patent, the'958 accused products, the alleged '958 domestic industry products, and our determination and supporting analysis with respect to the reviewed issues in this investigation.

We adopt any findings, conclusions, and supporting analysis in the final ID that are not inconsistent with our analysis and conclusions below.

1. Overview

The '958 patent is titled "Digital Modulation System Using Extended Code Set." LSI asserts that the '958 patent is essential to the Institute of Electrical and Electronic Engineers, Inc. (IEEE) 802.11 standard for CCK modulation and timing synchronization. *See* LSI Br.[1] at 68. The patent relates to digital signal modulation to encode information. The patent claims improved digital modulation systems that use a larger code set of M codes for N length codes, where M>N, to provide an increased data rate for encoding information. JX-3 at Abstract.

FIG. 3



In the above FIG. 3 embodiment, the digital modulation system **30** includes one modulator **32** that selects one of 16 codes of length 11 chips corresponding to 4 input data bits and transmits the selected code on the I channel, and another modulator **34** that selects another one of 16 codes

[1] Complainants LSI Corporation and Agere Systems LLC's Brief in Response to Notice of Commission Determination to Review Final Initial Determination Finding a Violation of Section 337 in its Entirety (Nov. 1, 2013).

of length 11 chips corresponding to another 4 input data bits and transmits that code on the Q channel. *Id.* at 7:9-33.

LSI asserts claims 22-26, 29, 32 and 35 of the '958 patent against Funai and Realtek. All of the asserted claims are apparatus claims. These claims read as follows:

> 22. A digital modulation system for modulating data bits, comprising:
>
> a serial-to-parallel converter that groups the data bits, and
>
> a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N, and wherein the code set is derived from a complementary code that provides autocorrelation sidelobes suitable for multipath environments.
>
> 23. The digital modulation system according to claim 22, further comprising a mixer that modulates a carrier signal in accordance with the chosen code.
>
> 24. The digital modulation system according to claim 23, wherein the mixer modulates the phase of at least one carrier signal in accordance with the selected code.
>
> 25. The digital modulation system according to claim 24, wherein the phase of the at least one carrier signal is QPSK modulated in accordance with the selected code.
>
> 26. The digital modulation system according to claim 22, further comprising a scrambler for scrambling the group of data bits.
>
> . . . .
>
> 29. A digital modulation system for modulating data bits, comprising:
>
> a serial-to-parallel converter that groups the data bits, and
>
> a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N, and wherein the code set is derived from a complementary code,
>
> wherein the complementary code is defined by the sequence ABAB', such that A is a sequence of elements and B is a sequence of elements and wherein B' is derived by inverting all elements in the sequence B.
>
> . . . .
>
> 32. A digital modulation system for modulating a group of data bits, comprising:

a scrambler for scrambling the group of data bits, and

a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M >N, and wherein the code set is derived from a complementary code that provides autocorrelation sidelobes suitable for multipath environments.

. . . .

35. A digital modulation system for modulating a group of data bits, comprising:

a scrambler for scrambling the group of data bits, and

a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N, and wherein the code set is derived from a complementary code,

wherein the complementary code is defined by the sequence ABAB', such that A is a sequence of elements and B is a sequence of elements and wherein B' is derived by inverting all elements in the sequence B.

2. The '958 Accused Products

LSI accused certain Funai downstream products and Realtek components of infringing one or more asserted claims of the '958 patent. ID at 172, 205, 224, 286. Funai's accused downstream products contain certain WiFi chips supplied by Realtek, Ralink, or [ ] that are compatible with the 802.11 standards described for CCK modulation and timing synchronization, respectively. *Id.* The Realtek and Ralink WiFi chips at issue in the '958 patent include at least one of two different types of modulators – a "phase modulator" and/or a "dual-IQ channel binary modulator." *Id.* at 189-90.

3. The Alleged '958 Domestic Industry Products

LSI alleged the existence of a domestic industry with respect to the '958 patent pursuant to 19 U.S.C. § 1337(a)(3)(A) and (B) through the domestic activities of its licensee, [ ], and pursuant to 19 U.S.C. § 1337(a)(3)(C) through its domestic investments in licensing. *Id.* at 319-331.

4. Claim Construction

All of the asserted claims require "a modulator that chooses a code having N chips in response to the group of data bits . . . ." LSI petitioned for review of the ALJ's construction of the term "code."

We affirm the ALJ's construction of the term "code" to mean "a sequence of chips representing a real value." *Id.* at 177. We find that the ALJ correctly recognized that LSI's proposed construction for the term "code" (*i.e.*, "a sequence of chips") contradicts the parties' agreed upon construction of the term "chip" as "a code bit." *Id.* at 179; *see* JX-3 at 2:57-58 ("Chips are actually code bits, but they are called chips to distinguish them from data bits."). A chip, or code bit, is binary, which means it can only take on one of two values (*e.g.*, "0" and "1"). For instance, FIG. 2 in the '958 patent refers to "1 x N CHIP CODE", which refers to "1" times the number of chips, N, *i.e.*, one binary bit per chip. ID at 179 (citing JX-3 at FIG. 2; RX-2813C at Q71-79). On the other hand, a complex chip is not binary and requires more than one bit because it has both real and imaginary parts. *Id.* (citing RX-2813C at Q43, 80-84, 92; RX-2811C at Q121). The ALJ correctly observed that the '958 specification discloses only real codes. *Id.* at 177-78; *see, e.g.*, JX-3 at 1:66-2:32 (example code is "1 1 1 -1"); 5:4-6:40 (showing Tables 1, 2, and 3 with sample extended code sets); 10:26-34 (describing embodiments using codes of 1's and 0's or 1's and -1's); *see also* RX-2811C at Q36, 113; RX-2813C at Q31, 86-91.

LSI contends that the claims are not precluded from covering complex codes and the ALJ's distinction between real and complex codes is meaningless. *See* LSI Pet.[2] at 43-44. On the contrary, we see nothing in the specification to suggest that the disclosed embodiments are

[2] Complainants LSI Corporation and Agere Systems LLC's Petition for Review of Initial Determination and Summary of Same (Aug. 5, 2013).

compatible with complex codes.[3] ID at 178-80; RX-2811C at Q131-33. All of the disclosed embodiments depend on the ability to transmit codes independently over a single channel, either the I channel or the Q channel. JX-3 at 7:11-34. Because real codes have no imaginary part, they can travel entirely on either the I channel or the Q channel. Complex codes, on the other hand, consist of a real part, which travels on the I channel, and an imaginary part, which travels on the Q channel. ID at 178-79; RX-2811C at Q115-19; RX-2813C at Q86-91. For example, the system in FIG. 3 of the '958 patent includes two modulators **32**, **34**, which independently transmit real codes of 11 chips. JX-3 at 7:11-34. Similarly, the "fallback mode" in FIGS. 4 and 7 of the '958 patent requires the simultaneous transmission of the same real code on the I and Q channels. Realtek Resp.[4] at 5 (citing JX-3 at 8:46-50, 9:52-64; RX-2811C at Q120-21; RX-2813C at Q86-91). In addition, the embodiment shown in FIG. 10 transmits "the same code [] on both the I and Q paths . . . ." JX-9:62-64; RX-2811C at Q119. Because all of the embodiments in the '958 patent depend on the ability to transmit codes independently over a single channel, the embodiments are incompatible with complex codes.

The extrinsic evidence is consistent with our interpretation of the intrinsic evidence. *See Gentex Corp. v. Donnelly Corp.*, 69 F.3d 527, 529-30 (Fed. Cir. 1995). The sole inventor of the '958 patent, Mr. van Nee, testified that [ ]. Realtek Resp. at 7-8 (citing RX-1787C at 94:18-95:2, 95:10-14, 96:5-22; RX-1788C at 33:20-25, 49:17-50; RX-1789C at LSIAgere837-01077136-37; RDX-2811.0043C-45C). [

[3] LSI contends that the specification of the parent '182 patent explicitly discusses codes including "complex" values. LSI Pet. at 43. Although the '958 patent incorporates by reference the parent '182 patent, the applicant did not specify what disclosure was actually incorporated from the '182 patent. JX-3 at 1:4-10. Regardless, as discussed herein, the record evidence shows that the disclosed embodiments in the '958 patent are incompatible with complex codes.

[4] Respondent Realtek Semiconductor Corporation's Response to Complainants' Petition for Review (Aug. 13, 2013).

] *Id.* (quoting RX-1789C at LSIAgere837-01077136-37, 145). Mr. Van Nee also [ ]. *Id.* (citing RX-1787C at 129:11-130:9, 150:11-151:1, 160:8-13; RX-1788C at 33:20-25, 37:18-38:13; RDX.2811.0046C). This is consistent with the fact that Lucent prepared and filed the '958 patent application when the proposals for the 802.11b standard used only real codes. *See id.* at 8.

Furthermore, both LSI's and respondents' experts testified that the stated purpose of the '958 patent, *i.e.*, to overcome the limitation of conventional M-ary keying systems where the number of possible codes M is not more than the code length N in chips (JX-3 at 4:61-64), docs not apply to complex code words. Realtek Resp. at 4 (citing Tr. (Katti) at 1795:9-97:7; RX-2813C at Q93 ("[I]f the 'code length N in chips' were construed to include 'complex chips,' a greater number than N orthogonal sequences of 'complex' length N would exist; accordingly, the patent's description of both its purported problem and its purported solution would be inaccurate."); ID at 177).

In view of the foregoing, we affirm the ALJ's construction of the term "code" to mean "a sequence of chips representing a real value."

5. Infringement

LSI accused certain Funai downstream products and Realtek components of infringing claims 22-26, 29, 32, and 35 of the '958 patent through their implementation of CCK 11 Mb/s modulation pursuant to the IEEE 802.11b standard. ID at 172-76, 181 (citing CX-1596C at Q135), 205. Funai's accused downstream products contain at least one of Realtek, Ralink, or

[ ] WiFi chips that are compatible with the 802.11 standards described for CCK modulation and timing synchronization. *Id.* The ALJ found that CCK modulation according to the IEEE 802.11b standard involves selecting complex, not real, codes. *See e.g.*, *id.* at 181-83, 87-88. In view of the record evidence, the ALJ determined that the accused products do not infringe because CCK modulation does not choose a "code" within the meaning of the '958 patent. *Id.*

The Realtek and Ralink WiFi chips accused of infringing the '958 patent include at least one of two different types of modulators – a "phase modulator" and/or a "dual-IQ channel binary modulator." *Id.* at 189. The ALJ recognized that Funai's products that include a "phase modulator" select a code from a set of sequences, where each of the sequence values is chosen from the set of {0, 1, 2, 3} and that Funai and Realtek's products that include a "dual-IQ channel binary modulator" selects a code sequence comprised of -1, 0, or 1. *Id.* at 191-92. The ALJ found that these accused CCK modulators do not use "real" codes, but rather make use of complex codes. *See, e.g., id.* at 187-88.

Despite the abundant record evidence supporting the ALJ's fact-finding, LSI argues that the "phase modulator" and the "dual-IQ channel binary modulator" select a "real" code that meets the ALJ's construction of the term "code" because the sequence values are chosen from a set of "real" numbers.

LSI's infringement argument misinterprets the ALJ's construction of the term "code." Under the ALJ's claim construction, the claims require "a sequence of chips representing a real value." Whether the physical code bits that make up a sequence are "real" is irrelevant. The ALJ determined that each 802.11b CCK codeword in the accused products is "8 complex chips" long. ID at 181-82 (quoting CX-0116C at 0723-24); *see also* RX-2811C at Q135-48; Realtek Resp. at 15 n.9. The ALJ also determined that each "complex chip" is a pair of bits, one

representing the real component of a complex value, and the other representing the imaginary component. *Id.* at 182 (citing RX-2813C at Q142-44; RX-2813C-1 at Q2). We find that the ALJ correctly concluded that each CCK codeword, thus, represents a complex value, and so the accused codewords do not meet the claimed "code." *Id.* (citing RX-2813C at Q142-44, 167, 169-74). We note that even LSI's expert, Dr. Negus, authored a paper on CCK that describes CCK modulation as "pick[ing] one of 64 complex codes." *Id.* at 183 (citing RX-2836 at 8). Dr. Negus also conceded at the hearing that the CCK waveform is a "complex" waveform. *Id.* (citing Tr. at 326-328; 333-334).

While LSI also argues that Respondents' expert, Dr. Vojcic, admitted that the "code" limitation, as construed by the ALJ, is met by the accused products, LSI Pet. at 50-51 (citing Tr. at 1226:21-27:20), we find that LSI takes this small portion of Dr. Vojcic's testimony out of context. Dr. Vojcic testified that "the so-called 'I-channel binary codes' and the 'Q-channel binary codes' are simply the complex codes generated by the formula set forth in the IEEE 802.11 standard decomposed into real and imaginary parts." RX-2811C at Q154; *see also* Tr. at 1226:1-3, 1230:13-31:3; RX-2813C at Q243. Dr. Vojcic explained that these "binary codes" are not "codes," as defined in the '958 patent, because neither the "I-channel binary codes" nor the "Q-channel binary codes" can be used in isolation to determine any of the encoded information bits. *Id.* Even LSI's expert, Dr. Negus, admitted that "the real part of the code and the imaginary part of the code, yes, together would be considered the total code." Tr. at 343:6-44:14. In light of the record evidence, we affirm the ALJ's finding that the accused products' implementation of CCK modulation does not choose a "code" representing a real value.

LSI contends that Funai downstream products that incorporate the [ ] Chips ("Funai/[ ] products") infringe claims 32 and 35 because they have an 11Mb/s CCK

transmit capability that complies with the IEEE 802.11 standard. LSI Pet. at 82-83. In support of its infringement contention, LSI proffered a datasheet for the [ ] chip, and direct and rebuttal testimony of its expert, Dr. Negus. *Id.* at 86. LSI argues that Dr. Negus' direct testimony explained, based on the [ ] datasheet, that the accused Funai/[ ] products infringe the asserted claims of the '958 patent. *Id.* at 83-86. The ALJ however struck Dr. Negus' direct testimony regarding the Funai/[ ] products because LSI waited until nine weeks after the close of fact discovery, on the same day that pre-hearing briefs were due, to supplement Dr. Negus' report with this testimony. ID at 207; Order No. 84 (Mar. 28, 2013); Order No. 85 at 4 (Mar. 29, 2013). The ALJ's ruling meant that LSI's infringement arguments were not supported by expert testimony. ID at 207. Based on the record evidence, the ALJ concluded that LSI did not prove that the Funai/[ ] products infringe the asserted '958 claims. *Id.*

LSI argues that the ALJ abused his discretion in striking Dr. Negus' direct testimony regarding the Funai/[ ] products and in refusing to extend the time for discovery from [ ]. We disagree in view of LSI's delay in taking discovery from [ ]. Despite having received information from Funai on October 5, 2012, concerning products containing [ ] chips, LSI waited until January 17, 2013, one day before the end of discovery, to move for an extension of time to take discovery from [ ]. On February 4, 2012, the ALJ granted LSI's motion to extend discovery until February 8, 2012, the date requested by LSI. Order No. 60 (Feb. 4, 2013). On February 14, LSI filed an emergency motion requesting clarification of Order No. 60 as to whether the ALJ permitted discovery of [ ] after February 8. The ALJ reiterated his ruling that the deadline for discovery from [ ] had been set on the date requested by LSI, *i.e.*, February 8, and therefore no further discovery from [ ] would be

permitted. Order No. 65 (Feb. 22, 2013). The ALJ denied LSI's subsequent motion for reconsideration, or in the alternative interlocutory review. Order No. 80 (Mar. 25, 2013). We find that the ALJ did not abuse his discretion in refusing to further extend the [ ] discovery beyond February 8, 2013, given the imminence of the evidentiary hearing which was scheduled to begin on April 2, 2013. Furthermore, we find that the ALJ did not abuse his discretion in striking Dr. Negus' testimony because LSI waited until March 22, 2013, the same day that pre-hearing briefs were due, to supplement Dr. Negus's report to accuse the Funai/[ ] products of infringing the '958 patent.

The Commission also finds no error in the ALJ's conclusion that LSI's mere allegation that the Funai/[ ] products are more likely than not to infringe the asserted claims is insufficient to prove infringement. ID at 207. The only record evidence submitted by LSI to support this allegation is the datasheet for [ ] that purportedly shows that the [ ] chips are in compliance with the IEEE 802.11 standard, and Dr. Negus' rebuttal testimony that any product that practices the 802.11 standard is more likely than not to infringe claims 32 and 35 of the '958 patent. CX-0994C at 1, 34; CX-1643C at Q11, 42. Even if the Commission were to consider the direct testimony of Dr. Negus, which was stricken by the ALJ, the Funai/[ ] products do not choose a "code" within the meaning of the '958 patent for the same reasons discussed in connection with the Realtek and Ralink chips. *See* RX-2813C at Q/A 292-97, 513-18.

Based on the foregoing, the Commission affirms the ALJ's determination that LSI has not proven infringement of the asserted '958 patent claims.

6. Validity

The '958 patent was filed on April 22, 1998. JX-3. On January 28, 2002, the applicant amended the patent application to assert priority to U.S. Application No. 08/688,574 ("the '574 application"), which issued as U.S. Patent No. 5,862,182 ("the '182 patent").[5] JX-4 at 124. LSI contends that the asserted claims of the '958 patent are entitled to the filing date of the '574 application, July 30, 1996. *See* LSI Pet. at 13; CX-878.

a) Priority Date

The ALJ found that the '958 patent is entitled to the July 30, 1996 priority date of the '182 patent. ID at 208. Respondents petitioned for review of this finding, arguing that the asserted claims of the '958 patent are entitled to a priority date no earlier than April 22, 1998, the filing date of the '958 patent. Funai Pet.[6] at 54; Realtek Pet.[7] at 17.

To prove the asserted claims of the '958 patent are entitled to the priority date of the '574 application, LSI must demonstrate that "the earlier application . . . compl[ies] with the written description requirement of 35 U.S.C. § 112, ¶ 1." *Tronzo v. Biomet*, 156 F.3d 1154, 1158 (Fed. Cir. 1998). The Federal Circuit has explained that "[a] disclosure in a parent application that merely renders the later-claimed invention obvious is not sufficient to meet the written description requirement; the disclosure must describe the claimed invention with all its limitations." *Id.*

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[5] The '958 patent issued from application No. 09/064,188 ("the '188 application"), filed on April 22, 1998, which is a continuation-in-part of application No. 09/057,310, filed on Apr. 8, 1998, which is a continuation-in-part of the '574 application, filed on July 30, 1996, now the '182 patent.

[6] Funai Respondents' Petition for Review of Initial Determination (Aug. 5, 2013).

[7] Respondent Realtek Semiconductor Corporation's Contingent Petition for Review (Aug. 5, 2013).

We find that LSI has failed to prove that the '574 application describes all of the limitations of the asserted claims. In particular, we conclude that the ALJ erred in finding that the '182 patent describes the following limitations: "a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N," "the code set is derived from a complementary code that provides autocorrelation sidelobes suitable for multipath environments," QPSK," and a "scrambler."

LSI's expert, Dr. Katti, conceded at trial that the '182 patent does not specifically disclose "QPSK" as recited in claim 25:

> Q. And one example of modulation in the '958 patent is quadrature phase shift keying, also known as QPSK?
>
> A. That's right.
>
> Q. And we see QPSK explicitly recited in claim 25, for example?
>
> A. That's right.
>
> Q. And the '182 patent does not disclose QPSK, correct?
>
> A. It describes phase shift keying, for example, BPSK or 8-phase shift keying, which is a variant of QPSK.
>
> Q. But it doesn't disclose QPSK, correct?
>
> A. It does not explicitly have the word "QPSK" in the patent itself.

Tr. at 1860:2-16. It is undisputed that the '182 patent only refers to two variants of phase shift keying, 8-PSK and BPSK. ID at 211; Realtek Br.[8] at 9 (citing, *e.g.*, CX-0878 ('182 patent) at 2:53-55, 5:61, 6:38, 7:41-43; CX-1641C at Q/A 142)). LSI presented no evidence that disclosure of 8-PSK and BPSK is representative of all phase shift keying, including QPSK. Dr. Katti's conclusory sentence that "a person of ordinary skill in the art would have understood the '182 patent to disclose phase shift keying generally" is not sufficient to meet the written description requirement. *See id.*; CX-1641C at Q/A 142.

Dr. Katti also conceded at trial that the '182 patent does not specifically disclose a "scrambler" as recited in claims 26, 32 and 35:

17 Q. Okay. Now, we also see a scrambler
18 recited in asserted claims 26, 32, and 35.
19 Yes?
20 A. Yes.
21 Q. The '182 patent does not disclose a
22 scrambler. Right?
23 A. Again, it explicitly does not spell
24 out a scrambler but a person of ordinary skill
25 in the art would have known that a scrambler
1 would be used, in an additional modulation
2 system.
3 Q. Are you saying a scrambler would have

[8] Respondent Realtek Semiconductor Corporation's Response to the Notice of Commission Determination to Review a Final Initial Determination in its Entirety (Nov. 1, 2013).

4 been obvious to a person of ordinary skill in
5 the art?
6 A. He would have known to use a scrambler
7 in designing an additional modulation system.

Id. at 1860:17-1861:7. LSI presented no evidence that a scrambler is necessarily present in the '182 patented invention. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) ("To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.'"). Respondents' expert testimony that a scrambler is "pretty much inherit [sic] in any kind of digital communication systems" is insufficient to meet the written description requirement. ID at 211; CX-1641C at Q/A 144.

Dr. Katti further conceded at trial that the '182 patent does not specifically disclose "autocorrelation sidelobes suitable for multipath environments":

2 Q. Okay. And the question was:
3 "Question: Can you point me to a
4 location in the '182 patent within the four
5 corners of the specification that mentions the
6 term multi-path environment"?
7 Do you see the question?
8 A. Yes.
9 Q. And your answer was: "No." Right?
10 A. That's right.
11 Q. Okay. You stand by that testimony,

12 sir?

13 A. Yes, I do.

. . . .

3 "Question: Can you point me to a

4 location within the four corners of the

5 specification of the '182 patent that mentions

6 the term autocorrelation sidelobes"?

7 Do you see that question?

8 A. Yes.

9 Q. And your answer was: "No." Right?

10 A. That's right.

11 Q. Do you stand by that?

12 A. Yes.

Id. at 1862:2-13, 1863:3-12. The ALJ relied on Dr. Katti's testimony that an equation in the '182 patent makes "autocorrelation sidelobes suitable for multipath environments" obvious. ID at 210; CX-1641C at Q/A 137. We find that such conclusory testimony is insufficient disclosure to meet the written description requirement. As Realtek points out, Dr. Katti did not show where the '182 patent discloses this limitation, explain how the single equation discloses the genus of code sets derived from complementary codes that provide autocorrelation sidelobes suitable for multipath environments, or present evidence showing the genus is inherent. Realtek Reply Br.[9] at 6.

[9] Respondent Realtek Semiconductor Corporation's Reply to Complainants' Brief in Response to the Notice of Commission Determination to Review a Final Initial Determination Finding a Violation of Section 337 in its Entirety (Nov. 12, 2013).

Finally, we also find that the '182 patent does not disclose "a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N." The ALJ credited the testimony of Dr. Katti in finding that Matrix A in column 4 of the '182 patent discloses a set of codes in which the number of codewords is greater than the code length. ID at 209-10 (citing CX-1641C at Q135; CX-878 at 4:49-58). According to Realtek, however, Matrix A "is an 'encoding matrix' that describes a mathematical transformation showing how to encode 'M input phases, *e.g.*, four phases . . . into N, *e.g.*, eight, output phases associated with respective carrier signals.' CX-0878 ('182 patent) at 1:34-39." Realtek Br. at 5. Realtek argues that nothing in the '182 patent suggests that input phases are codewords and the output phases are chips. *Id.* LSI however cannot meet its burden with only Dr. Katti's conclusory testimony regarding Matrix A when the '182 patent fails to explicitly describe Matrix A as being comprised of rows of codes and columns of chips.

In view of the foregoing record evidence, the Commission reverses the ALJ's determination that the '958 patent is entitled to the earlier July 30, 1996 priority date of the '574 application because the '574 application lacks written description for the asserted '958 claims. The Commission therefore determines that the correct priority date for the '958 patent claims is the filing date of the '188 application leading to the '958 patent, April 22, 1998.

b) Obviousness Based on the Harris Proposal and van Nee

The Harris Proposal (RX-1351) includes a proposal by Harris Semiconductor to the IEEE 802.11 Working Group for a high rate data modulation to include in the IEEE 802.11 standard physical layer specification.[10] Resp. Prehearing Br.[11] at 71. According to the deposition

[10] The Harris Proposal is a presentation by Carl Andren of Harris Semiconductor, entitled "Proposed 802.11 High Rate PHY Technique; Harris High Rate data modulation," IEEE P802.11-97/144 (Nov. 1997) for the IEEE 802.11 Working Group. RX-1351; *see also* RX-0529.

testimony of Mark Webster, a former employee of Harris Semiconductor, the Harris Proposal [

] *Id.* (citing *see* JX-56C at 11:18-36:5). In November 1996, Mr. van Nee published a paper, titled "OFDM Codes for Peak-to-Average Power Reduction and Error Correction," in the IEEE Globecom 1996 conference record.[12] *Id.* at 95. The van Nee article teaches a method for digital modulation suitable for radio communication in multipath environments. *See id.* at 96. Respondents argue that the Harris Proposal anticipates or, in combination with the van Nee article, renders obvious all asserted claims of the '958 patent. *See* RX-6C at Q/A 478-84, 88-91, 643-63; RX-1843C.

The ALJ found that the Harris Proposal and the van Nee article were made publicly available as early as November 10, 1997, and December 6, 1996, respectively. ID at 214-15. Because neither reference was made publicly available before July 30, 1996, which the ALJ determined was the priority date of the '958 patent, he found the combination of the Harris Proposal and the van Nee article does not render obvious the asserted '958 patent claims. *Id.* at 215. We find that the ALJ erred in finding that the Harris Proposal and the van Nee article are not prior art to the asserted claims because the correct priority date for the '958 patent claims is April 22, 1998.

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[11] Joint Prehearing Brief and Statement of Respondents Funai Electric Company, Ltd.; Funai Corporation, Inc.; P&F USA, Inc.; Funai Service Corporation; and Realtek Semiconductor Corporation (Mar. 22, 2013).

[12] Richard van Nee, "OFDM Codes for Peak-to-Average Power Reduction and Error Correction," IEEE Global Telecommunications Conference, Communications: The Key to Global Prosperity, Vol. 1, pp. 740-44 (Nov. 1996). RX-0614.

Because he found that the priority date of the '958 patent was April 22, 1998, the ALJ did not make findings regarding whether Respondents met their burden of showing that the Harris Proposal combined with the van Nee article render the asserted claims of the '958 patent obvious. The record contains Respondents' expert, Dr. Heegard's detailed explanation of how the Harris Proposal anticipates or, in combination with the van Nee article, renders obvious all asserted claims of the '958 patent. *See* RX-1843C; RX-6C at Q/A 478-84, 88-91, 643-63. In addition, LSI's expert, Dr. Katti, admitted that if the van Nee article were prior art, it would anticipate or, in combination with the Harris Proposal, render obvious every asserted claim of the '958 patent.

> Q. Okay. Now, in your opinion, then, if the van Nee 1996 paper were prior art, it would disclose or render obvious every asserted limitation of the '958 patent asserted claims, right?
>
> A. If the priority date -- if the date for the '958 patent was 1998, then this would be prior art and in that case, yes it would.

Tr. at 1877:9-16. LSI offered no rebuttal to Dr. Katti's testimony, other than contesting the priority date. Realtek Br. at 16. Moreover, as discussed below, we concur in the ALJ's assessment of the evidence concerning secondary indicia of non-obviousness. The Commission therefore determines that the asserted claims of the '958 patent are invalid for obviousness based on the Harris proposal in combination with the van Nee article.

c) Anticipation of Claims 22-24 Based on Prasad

As part of the proceedings of the Fifth International Conference on HF Radio Systems and Techniques, held in July 1991, K.V. Prasad and M. Darnell published a paper entitled "Data Transmission Using Complementary Sequence Sets."[13] RX-0590. Prasad discloses a data transmitter and data transmission system that uses complementary codes. Resp. Prehearing Br. at 65. The ALJ found that Prasad was publicly available no later than March 3, 1992. ID at 211. It is undisputed that Prasad is prior art to the asserted claims of the '958 patent pursuant to 35 U.S.C. § 102(b).

Respondents argue that the asserted claims are invalid as being anticipated or rendered obvious by Prasad. The ALJ determined that Prasad does not anticipate claims 22-24 because Prasad applies to a different type of communication system compared to that of the '958 patent and Prasad fails to disclose the claim limitation "a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N." *Id.* at 212-13. The ALJ found that, in Prasad, the code set M is less than length N chips or, at most, M equals N. *Id.* The ALJ also found that the code set in Prasad cannot be "doubled" by inverting each code to disclose the "M>N" limitation of the '958 patent because the use of such inversions was disclaimed during the prosecution of the '574 application. *Id.* at 213 (citing CX-1641C at Q/A 181; JX-4 ('958 file history) at 44, May 10, 2000 Office Action, at 4-8)).

LSI attempts to distinguish Prasad by arguing that it is a "multi-carrier system" and the '958 patent is a "single-carrier system," but the asserted claims do not recite a "single-carrier

[13] K.V. Prasad & M. Darnell, "Data Transmission Using Complementary Sequence Sets," Fifth Int'l Conf. on HF Radio Systems and Techniques, 222-26, July 22-25, 1991. RX-0590.

system." Aside from this argument, LSI concedes that Prasad discloses all of the limitations of claims 22-24 except the "M>N" limitation. LSI Resp. to Realtek[14] at 19-21. LSI argues that the ALJ properly found that the use of inversions to "double" a code set was disclaimed during prosecution of the '574 application.[15] *Id.* at 20.

Having reviewed the record evidence, the Commission finds that Prasad discloses a code set of M codes that are larger than length (N) chips when inversions of the code set in Prasad are counted in determining the number of codes in the code set. The patent specification describes inversions as one embodiment. JX-3 at 7:62-63 ("In this example, there are 16 codes, which can be inverted to get 32 codes.").

We find that LSI made no showing of clear and unmistakable disavowal of inverted codes in the prosecution history. Federal Circuit precedent requires that, in order for prosecution disclaimer to attach, the disavowal must be both "clear and unmistakable." *3M Innovative Props. v. Tredegar Corp.*, 725 F.3d 1315, 1322 (Fed. Cir. 2013); *see Biogen, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013)). Early in the prosecution, the applicant "added a limitation to each of the independent claims specifically addressing the independence of the M>N limitation of the claims from any inversions occurring in the symbols themselves." JX-4 ('958 file history) at 65 (Nov. 17, 2000 Amendment, at 7). The applicant later removed the limitation after the Examiner continued to reject the claims in view of prior art meeting the limitation "M>N," "independent of any inversions." *Id.* at 85 (Feb. 14, 2001 Office Action, at 5). Subsequently, LSI incorporated other limitations, which the Examiner cited in the

[14] Complainants LSI Corporation and Agere Systems LLC's Response to Respondent Realtek Semiconductor Corporation's Contingent Petition for Review and Summary of the Same (Aug. 13, 2013).

[15] In an eight-bit sequence, for example, the sequence "0 0 0 1 0 0 1 0" corresponding to the structure ABAB', where A = 00, B = 01, the inverse of B, B', is 10.

reasons for allowance. *Id.* at 186 (Notice of Allowability, Apr. 18, 2002, at 2). Neither LSI nor the Examiner ever stated that the asserted claims exclude inversions, nor was the exclusion of inversions an argument or basis for allowance of the asserted claims. Accordingly, we determine that the ALJ erred in finding that the applicant disclaimed inverted codes during the prosecution of the '574 application.

It is undisputed that when the code set in Prasad is doubled by inverting each code, Prasad discloses "a modulator that chooses a code having N chips in response to the group of data bits, the code being a member of a code set that includes M codes, wherein M>N." Realtek Br. at 11-12. LSI's expert, Dr. Katti, conceded that Prasad discloses "M>N" when the code set includes "inversions":

> Q. So you agree that the term M greater than N, in the claims of the '958 patent, the only limitation you claim is not satisfied by Prasad[,] would actually be satisfied by including inversions. Yes?
>
> A. If you are to include inversions, yes, Prasad would satisfy M greater than N.

Tr. at 1807:24-1808:5; *see also* CX-1641C at Q/A 174, 177.

Because Prasad discloses inverted code sets and therefore discloses the "M>N" limitation, the Commission reverses the ALJ's determination that Prasad does not anticipate claims 22-24 of the '958 patent.

d) Obviousness of Claims 25, 26, 29, 32 and 35 Based on Prasad

With respect to claims 25, 26 and 32, LSI relies solely on the argument that Prasad does not disclose M>N to dispute the Respondents' contention that Prasad renders these claims obvious. As discussed above, Prasad discloses M>N.

Moreover, as discussed below, we concur in the ALJ's assessment of the evidence concerning secondary indicia of non-obviousness. The Commission, therefore, reverses the ALJ's finding that Respondents have not adduced clear and convincing evidence that Prasad renders obvious claims 25, 26 and 32.

With respect to claims 29 and 35, we find no error in the ALJ's determination that Prasad does not render these claims obvious. Specifically, the ALJ found that Prasad does not render obvious the ABAB' limitation of claims 29 and 35. ID at 214. The ALJ noted that while the sequence ABAB' existed in the prior art, Respondents provide no convincing evidence as to the use of this sequence for digital signal modulation in the manner claimed. *See id.* In fact, Respondents' expert, Dr. Heegard, described the sequence as "silly" and "a travesty," and said there would be no reason to use this sequence. *Id.* (quoting Tr. at 1144-45). Further, as discussed below, we concur in the ALJ's assessment of the evidence concerning secondary indicia of non-obviousness. In light of the foregoing evidence, the Commission affirms the ALJ's determination that claims 29 and 35 are not obvious in view of Prasad.

e) Obviousness Based on Proakis and Weathers

The ALJ found both a digital communications textbook by John G. Proakis[16] and U.S. Patent No. 4,513,288 ("Weathers")[17] to be prior art to the asserted '958 patent claims under § 102(b). *Id.* at 215-16. However, the ALJ found that the combination does not disclose the claim limitation "autocorrelation sidelobes suitable for multipath environments" and Weathers does not disclose "M>N." *Id.*

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[16] John G. Proakis, Digital Communications (3d ed.) (1995). RX-1349.

[17] U.S. Patent No. 4,513,288 entitled "Group-Complementary Code Sets for Implementing Pulse-Compression Processing with Optimum Aperiodic Autocorrelation and Optimum Cross-Correlation Properties," issued on April 23, 1985. RX-0099.

Weathers is directed to "a pulse compression radar system for detecting a target in which a plurality of pulses are transmitted and reflection of those pulses from the target are received." RX-0099 at 10:46-48. Unlike Proakis, Weathers does not disclose a system for digital communication. We agree with the ALJ that the two references are non-analogous art and that the respondents have not shown a convincing reason why a person of ordinary skill in the art would have reason to combine them. Moreover, as discussed below, we concur in the ALJ's assessment of the evidence concerning secondary indicia of non-obviousness. Accordingly, the Commission affirms the ALJ's determination that a person of ordinary skill in the art would not find the claimed invention to be obvious based on a combination of Proakis and Weathers.

f) Secondary Considerations of Non-obviousness

The ALJ determined that LSI's evidence regarding secondary considerations, including evidence of commercial success, long felt but unmet need, failure of others, copying, and praise for the claimed invention, does not "establish the requisite nexus between the alleged secondary considerations and the '958 patent." ID at 217. LSI's response to the Commission's request for briefing on obviousness contained only the following sentence on secondary considerations: "Finally, any showing of obviousness is overcome by secondary considerations of nonobviousness as set forth in Complainants' prior submissions." LSI Br. at 54.

Given the briefing instructions in the Commission's notice, 78 *Fed. Reg.* 63244, this terse response is insufficient to support LSI's position. The Commission considers the arguments LSI made below to be unpersuasive. LSI's corporate witness on the subject, [

]. JX-043C ([ ] Depo) at 499:4-501:15.

But at trial, LSI presented expert testimony on secondary considerations. In an order disposing

of a motion to exclude that testimony, the ALJ stated, "[t]he fact that the opinions proffered by Complainants' experts regarding secondary considerations of nonobviousness may be [ ] is not a reason to strike the opinions, but is rather an indication of the persuasive value of the opinions." Order 79 at 2 (Mar. 21, 2013). Moreover, the expert testimony on secondary considerations was not substantiated by documents or data. *See* CX-1643C at Q/A 6-38. The cross-examination of LSI's expert also undercut his conclusions. *See* Tr. at 1919:19-1929:22. We see no error, therefore, in the ALJ's decision to give little weight to the testimony of LSI's expert.

g) Indefiniteness[18]

Respondents argued before the ALJ that independent claims 22, 29, 32, and 35 of the '958 patent are indefinite due to the limitation "wherein the code set is derived from a complementary code." ID at 218. Respondents also argued that claims 22 and 32 are indefinite due to the limitation of a code derived from a complementary code with "autocorrelation sidelobes suitable for multipath environments." *Id.* at 219. The ALJ found that Respondents had not shown by clear and convincing evidence that the identified claims are invalid for indefiniteness based on the record evidence. *Id.* at 218.

Respondents concede that the '958 patent provides examples of complementary codes and "describes several mathematical operations for deriving the code sets in Tables 1-3, such as shifting the codes, inverting bits in the code, extending the codes with additional bits (such as three 1's), multiplying codes, and puncturing (i.e., removing) bits from the codes." Realtek Pet.

[18] LSI contingently petitioned the Commission to review the ALJ's determination that the asserted claims would be invalid for lack of written description if the Commission were to adopt LSI's proposed construction for the term "code." LSI Pet. at 52-53. Because the Commission adopts the ALJ's claim constructions with respect to the '958 patent, we do not address this issue.

at 15 (citing JX-3 at 5:4-6:40). However, Respondents argue that it is impossible to know how a given code set was actually derived by analyzing the code set itself, thus rendering the claims indefinite. We agree with the ALJ that the claims do not require that a user knows *how* a code set was derived as long as a person of ordinary skill in the art would know whether the code set was derived from a complementary code. ID at 218. The '958 patent provides several examples of code sets derived from complementary codes including the "Barker codes," which the specification states is discussed in "Robert L. Frank, 'Polyphase Complementary Codes,' IEEE Transactions on Informatiou Theory, Vol. IT-26, No. 6, November 1980, pp. 641-647." JX-3 at 5:5-10. The "Walsh codes" described in the patent are also examples of complementary codes. *Id.* at 5:45-6:22.

Substantial evidence also supports the ALJ's determination that the limitation "autocorrelation sidelobes suitable for multipath environments" has not been proven indefinite. As the ALJ found, the specification of the '958 patent provides an example of how this limitation is met. ID at 219. Respoudents argue that the example about "half a code length" provides no information on what might be "suitable for multipath environments" and that passage refers to cross-correlation values, not autocorrelation. On the contrary, the specification provides:

> The extended code set is not orthogonal, so a non-zero cross-correlation value results between the different codes of the code set. However, the resulting noise and *multipath performance degradation* can be kept small by choosing code sets with small cross-correlation values (nearly orthogonal). The magnitudes of both cross-correlation values and *auto-correlation sidelobes* should preferably be below *half a code length.*

JX-3 at 3:66-4:6 (emphasis added). This portion of the specification describes minimizing "multipath performance degradation" and setting the magnitude of auto-correlation sidelobes to "be below half a code length."

Based on the foregoing, the Commission affirms the ALJ's determination that the respondents did not prove any claims of the '958 patent to be indefinite.

7. Domestic Industry

In order to establish a violation of section 337, a domestic industry "relating to the articles protected by the patent" must be shown to "exist[] or [be] in the process of being established" in the United States under section 337(a)(3)(A), (B), or (C).[19] 19 U.S.C. § 1337(a)(2).

LSI attempted to establish the existence of a domestic industry based upon subparagraphs (A), (B), and (C) before the ALJ. In support of its allegation that a domestic industry exists under subparagraphs (A) and (B), LSI argues that its licensee [ ] made "significant investments in plant, equipment, employment of labor, capital, engineering, and/or research and development in the United States relating to products that comply or are compatible with the IEEE 802.11b, 802.11g, and/or 802.11n standards." ID at 329. LSI contends that [ ] pays LSI [ ] in royalties to sell [ ] in the United States under a license that includes the '958 patent. LSI argues that because [ ] products comply with the IEEE 802.11 WiFi standard, they "more likely than not" practice claims 32 and 35 of the '958 patent. *See id.* at 330-31. LSI contends that [ ] investments in plant, equipment, and labor with

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[19] 19 U.S.C. § 1337(a)(3) provides, in full:

> (3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned-
>
> (A) significant investment in plant and equipment;
>
> (B) significant employment of labor or capital; or
>
> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

respect to the licensed 802.11 articles satisfy section 337(a)(3)(A) and (B) of the domestic industry requirement. LSI Pet. at 76-77.

The ALJ determined that LSI failed to show that a domestic industry under subparagraphs (A) and (B) exists with respect to the '958 patent. The ALJ found that the record evidence shows that in [ ], [ ] agreed to license [ ] patents held by LSI, including the '958 patent. ID at 329. The ALJ also found that [ ] has significant investments in the United States relating to 802.11 compliant [ ] devices. *Id.* at 330. However, the ALJ determined that merely alleging that the [ ] products practice the 802.11 standard, without any comparison of each limitation of the claims to the [ ] products or to the 802.11 standard, is insufficient to prove that [ ] products practice claims 32 and 35 of the '958 patent. *Id.* at 331. Based on the record evidence, we agree with the ALJ that LSI failed to satisfy its burden of proving the existence of a domestic industry under subparagraphs (A) and (B) with respect to the '958 patent based on [ ] products.

The ALJ found, however, that LSI proved a domestic industry under subparagraph (C) based on licensing the '958 patent, regardless of whether LSI proved the existence of articles practicing the claims of that patent. This determination conflicts with the Commission's recent decision in *Certain Computers and Computer Peripheral Devices, and Components Thereof, and Products Containing Same*, Inv. No. 337-TA-841, Comm'n Op. at 32 (Jan. 9, 2014). The Commission now "impose[s] an 'articles' requirement for subparagraph (C) domestic industries, including licensing-based domestic industries." *See id.*

LSI argues that if articles are required under subparagraph (C), "there is ample evidence of record in this investigation proving that numerous licensees practice the asserted patents through the manufacture and/or sale of products." LSI Br. at 76-77. LSI's response to the

Commission's notice of October 17, 2013 specifically identified two licensees: [ ][20] and [ ]. *Id.* at 77 (citing, *see e.g.*, CX-1617). [ ] products, however, [ ]. *Id.*; *see* ID at 326. The '867 patent, which as discussed below, is terminated from the investigation. As stated above, the Commission affirms the ALJ's determination that LSI did not prove that [ ] products practice the '958 patent.

Moreover, as we conclude above, claims 32 and 35 of the '958 patent (as well as all other asserted claims from that patent) are invalid. Section 337 requires a domestic industry in "articles *protected* by the patent." 19 U.S.C. § 1337(a)(2) (emphasis added). Because invalid patent claims cannot protect articles, LSI has not proven that a valid patent claim protects the [ ] products. *See Certain LED Photographic Lighting Devices and Components Thereof*, Inv. No. 337-TA-804, Comm'n Op. at 18 (Jan. 17, 2013); *Certain Ground Fault Circuit Interrupters and Products Containing Same*, Inv. No. 337-TA-739, Comm'n Op. at 71-74, 91 (Apr. 27, 2012). For this additional reason, LSI has not proven a violation of section 337 based on the '958 patent.

In view of the foregoing, the Commission reverses the ALJ's determination that LSI proved a domestic industry in articles protected by the '958 patent and reverses the ALJ's determination that section 337(a)(3)(C) has been satisfied for the '958 patent based on LSI's licensing activities.

8. RAND and Equitable Defenses

Because we conclude above that there are multiple grounds for determining no violation of section 337 with respect to the '958 patent, the Commission does not reach any RAND or equitable defenses associated with the '958 patent. Therefore, the Commission takes no position

[20] [ ]

on the ALJ's determinations with respect to the respondents' RAND defenses and equitable defenses. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984).

B. Joint Motion to Partially Terminate Investigation as to the '087 and the '663 Patents

Section 337(c) provides, in relevant part, that the Commission may terminate an investigation "on the basis of an agreement between the private parties to the investigation." When the investigation is before the Commission, as is the case here, the Commission acts on motions to terminate on the basis of settlement. *See e.g.*, *Certain Wireless Consumer Electronics Devices and Components Thereof,* Inv. No. 337-TA-853, Notice of Commission Determination to Grant the Consent Motion to Terminate the Investigation-in-Part as to Respondents Kyocera Corporation and Kyocera Communications, Inc. on the Basis of a Settlement Agreement (Sept. 20, 2013); *Certain Insect Traps*, Inv. No. 337-TA-498, Notice of Commission Determination to Terminate the Investigation in its Entirety on the Basis of a Settlement Agreement, 69 *Fed. Reg.* 63176 (Oct. 29, 2004).

LSI asserted claims 1, 5, 7-11, and 16 of the '087 patent and claims 1-9 and 11 of the '663 patent against only Funai. On January 17, 2014, LSI and Funai jointly filed a motion to terminate the investigation as to the '087 and the '663 patents based on a settlement agreement. Joint Motion to Partially Terminate Investigation ("the Joint Motion"), including the Memorandum and Points of Authorities in Support of Joint Motion to Partially Terminate the Investigation ("the Memo") and Settlement and Patent License Agreement ("the Agreement") (Jan. 17, 2014). As discussed below, the Commission grants the joint motion.

1. The Settlement and Patent License Agreement

Commission Rule 210.21(b), which implements Section 337(c), requires that a motion for termination based upon a settlement agreement contain a copy of that settlement agreement, as

well as a statement that there are no other agreements, written or oral, express or implied, between the parties concerning the subject matter of the investigation. We find that the parties' joint motion complies with these requirements. Joint Motion at 1; Memo at 3. The motion also includes a public version of the Agreement. Under the Agreement, LSI agrees to terminate its suit for claims relating to the '087 and the '663 patents against Funai and to license to Funai a [ ]. Agreement §§ 1.02, 3.01.

2. Public Interest

The Commission also considers the public interest when terminating an investigation based upon a settlement agreement. 19 C.F.R. § 210.50(b)(2). LSI and Funai state in the Memo that "[i]t is in the interest of the public and administrative economy to grant this motion." Memo at 2. Furthermore, LSI and Funai note that Commission policy "supports termination in order to conserve public and private resources." *Id.* at 2-3. We find there is no indication that termination of the investigation will prejudice the public interest or that settlement will adversely impact the public health and welfare, competitive conditions in the United States economy, the products of like or directly competitive articles in the United States, or United States consumers. Moreover, settlement avoids needless litigation and conserves public and private resources.

C. Motion to Partially Terminate Investigation as to the '867 Patent and to Vacate All Findings as to Same

On February 6, 2014, complainants filed a motion to partially terminate the investigation as to the '867 patent and to vacate all findings with respect to that patent. Motion to Partially Terminate Investigation as to U.S. Patent Nos. 6,707,867 and to Vacate Final Initial Determination Findings as to Same ("the '867 Motion"). Complainants note that the expiration date of the '867 patent is February 23, 2014 and that the current target date for completion of the investigation is March 3, 2014. The '867 Motion at 1. As a result, complainants contend that the

dispute over the '867 patent will become moot before the Commission is scheduled to complete the investigation.

Complainants argue that the Commission should partially terminate the investigation with respect to the '867 patent and vacate the ALJ's findings as to this patent because the Commission grants *prospective* relief only. *See Tessera, Inc. v. Int'l Trade Comm'n*, 646 F.3d 1357, 1371 (Fed. Cir. 2011) (vacating as moot Commission determinations relating to expired patents) (citing *Tex. Instruments, Inc. v. Int'l Trade Comm'n*, 851 F.2d 342, 344 (Fed. Cir. 1988) (same)).

Respondents do not oppose complainants' motion to terminate the investigation as to the '867 patent, but oppose complainants' request to vacate the ALJ's findings as to the '867 patent. Respondents' Response to Complainants' Motion to Partially Terminate Investigation as to U.S. Patent Nos. 6,707,867 and to Vacate Final Initial Determination Findings as to Same ("the '867 Response") (Feb. 12, 2014). Respondents request that the Commission "take no position" with respect to the patent because it would be inequitable to allow complainants to undo the ALJ's finding of no violation after the ALJ and the parties have expended tremendous resources litigating the dispute. The '867 Response at 1-2, 5.

Although the parties agree that termination for mootness is appropriate as to the '867 patent, they dispute whether the Commission should vacate the ALJ's findings. Vacatur is a discretionary matter. *See Tessera*, 646 F.3d at 1371. The allegations pertaining to the '867 patent became moot when the Commission extended the target date from January 29, 2014 to March 3, 2014. The Commission has determined to take no position on the final ID's findings pertaining to the '867 patent. *See Beloit Corp.*, 742 F.2d at 1423.

V. CONCLUSION

For the foregoing reasons, the Commission determines to grant the joint motion to partially terminate the investigation as to the '087 and the '663 patents based on a settlement agreement. The Commission also determines to terminate the investigation as to the '867 patent and to take no position on the ALJ's findings as to the same. Upon review, the Commission affirms the ALJ's finding of no violation of section 337 with respect to the '958 patent as modified above, and terminates the investigation.

By order of the Commission.

Lisa R. Barton
Acting Secretary to the Commission

Issued: March 26, 2014

CERTAIN AUDIOVISUAL COMPONENTS AND PRODUCTS CONTAINING SAME **Inv. No. 337-TA-837**

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION OPINION** has been served upon the following parties as indicated, on **March 26, 2014.**

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