

**PUBLIC VERSION**

**UNITED STATES INTERNATIONAL TRADE COMMISSION**

**Washington, D.C.**

**In the Matter of**

**CERTAIN TELEVISION SETS,  
TELEVISION RECEIVERS,  
TELEVISION TUNERS, AND  
COMPONENTS THEREOF**

**Inv. No. 337-TA-910**

**ORDER NO. 44: DENYING RESPONDENTS' MOTIONS FOR SUMMARY  
DETERMINATION OF NONINFRINGEMENT**

(December 1, 2014)

On October 2, 2014, Respondents MaxLinear, Inc., Sharp Corporation, Sharp Electronics Corporation, VIZIO, Inc., SIO International Inc., Hon Hai Precision Industry Co., Ltd., Top Victory Investments Ltd., TPV International (USA), Inc., Wistron Corporation, and Wistron Infocomm Technology (America) Corporation (collectively, "Respondents"), filed a motion for summary determination that the accused MxL601 and MxL661 products do not infringe U.S. Patent Nos. 7,075,585 ("the '585 Patent") and 7,265,792 ("the '792 Patent") for lack of an "intermediate signal having an intermediate frequency (IF)" as required by the patents ("IF MSD"). (Motion Docket No. 910-038.) That same day Respondents filed a motion for summary determination that the accused MxL601 and MxL661 products do not infringe the '585 Patent and the '792 Patent for lack of "digital output signals" or "plurality of modulators" as required by the '585 Patent and the '792 Patent ("Output Signal MSD"). (Motion Docket No. 910-039.)

On October 14, 2014, Complainant Cresta Technology Corporation ("CrestaTech") filed its opposition to Respondents' Output Signal MSD. On October 15, 2014, Crestatech filed its opposition to Respondents' IF MSD. No other responses were filed. Respondents aver that they

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made a reasonable, good faith effort to resolve this matter with Complainant at least two days before filing the motion.

### I. PARTIES ARGUMENTS

#### A. Respondents' Motions

Respondents argue that the term “intermediate frequency (IF)” in claims 1 and 17 of the ‘585 Patent and claim 1 of the ‘792 Patent should be construed to mean “a carrier frequency that is different from (1) the transmission frequency of the selected input RF signal band and (2) the frequencies of the baseband signals.” (IF MSD Mem. at 11.) Respondents state that the terms “IF” and “zero-IF” are terms of art that refer to distinct signal receiver architectures. (*Id.* (citing SOMF at ¶ 10).) Respondents state that the term “IF” refers to heterodyne architectures which convert input RF signals to a non-zero frequency while the term “zero-IF” refers to direct conversion architectures that convert input RF signals directly to baseband (zero frequency) instead of using an intermediate frequency during the conversion process. (*Id.* (citing (SOMF at ¶¶ 10, 25, 26).) Respondents argue, therefore, that the use of the term “IF” in the claims indicates the use of a heterodyne architecture. (*Id.* at 12.)

Respondents also state that the intrinsic evidence confirms that the term “IF” excludes baseband signal because all examples of an “IF” in the specifications are non-zero frequencies and because the disclosures in the specifications would not be operative with a “zero-IF” receiver. (*Id.* at 13-16.) Respondents also state that the extrinsic evidence limits the term “IF” to heterodyne receivers and does not include “zero-IF” direct conversion receivers. (*Id.* at 17-20 (citing SOMF at ¶ 63, 64, 66, 68-70).)

Respondents argue that it is undisputed that the accused products do not infringe the claims of the ‘585 Patent and ‘792 Patent under their construction of “intermediate frequency (IF).” Respondents state the accused products employ a “zero-IF” direct conversion architecture.

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(*Id.* at 22 (citing SOMF at ¶ 39).) Respondents state that the accused products convert an RF signal directly to baseband (zero frequency). (*Id.* at 23-24 (citing SOMF at ¶¶ 72-76, 78-80).)

Respondents argue that the construction of the terms “digital output signals” and “plurality of demodulators . . . for demodulating said digital output signals” are not in dispute and should be given their plain and ordinary meanings. (Output Signal MSD Mem. at 10-11.) Respondents further argue that under the plain and ordinary meanings of those terms, the accused products do not infringe the claims of the ‘585 Patent and the ‘792 Patent, either literally, or under the doctrine of equivalents. (*Id.* at 11, 17.)

Respondents state that the ‘585 Patent and the ‘792 Patent describe tuners that process all signals in the digital domain. (*Id.* at 11-12 (citing SOMF at ¶¶ 29-31, 33-35).) Respondents state that the accused products are tuners that use both digital and analog components to process signals and that the output of the tuners is a single analog signal as opposed to the digital signals recited in the ‘585 Patent and the ‘792 Patent. (*Id.* at 12 (citing SOMF at ¶¶ 33, 36-42).)

Respondents also state that the ‘585 Patent requires “digital output signals” to be sent to a “plurality of demodulators . . . for demodulating said digital output signals.” (*Id.* at 13-14 (citing SOMF at ¶ 43).) Respondents state that the accused products do not have any demodulators. (*Id.* at 14 (citing SOMF at ¶¶ 45, 46).) Respondents state CrestaTech’s expert, Dr. Snelgrove, admits that demodulators are not found in MaxLinear’s tuners and are only found in separate components of the televisions that incorporate MaxLinear’s tuners. (*Id.* (citing SOMF at ¶¶ 46).) Respondents argue that demodulators outside of the tuner do not literally infringe the ‘585 Patent because the ‘585 Patent expressly requires the tuners to contain a plurality of demodulators. (*Id.* (citing SOMF at ¶ 47).) Respondents also argue that because MaxLinear’s tuners only output an analog signal, the demodulators outside of the tuners cannot demodulate digital output signals.

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(*Id.* at 15 (citing SOMF at ¶¶ 48, 49, 52, 53).) Respondents also state that the evidence CrestaTech cites to support their infringement theory that the demodulators can be found in components outside of the tuners is unreliable. (*Id.* at 16 (citing SOMF at ¶ 54).) Respondents state the only documents concerning the operation of the demodulators are from television manufacturers that purchase components containing demodulators purchased from third parties rather than from the third party component manufacturers themselves. (*Id.*) Respondents argue that the television manufacturers do not design or manufacture the components containing demodulators and therefore cannot accurately describe them. (*Id.*)

Respondents also state that CrestaTech has not sufficiently identified its theory of infringement under the doctrine of equivalents or provided an expert opinions concerning infringement under the doctrine of equivalents. (*Id.* at 17-18 (citing SOMF at ¶¶ 57, 58).) Respondents state CrestaTech's failure of proof on the issue of infringement under the doctrine of equivalents entitles Respondents to summary determination. (*Id.*)

### **B. CrestaTech's Oppositions**

CrestaTech argues that summary determination of non-infringement is inappropriate where claim construction is disputed by the parties. (IF Opp. at 14; Output Signal Opp. at 9.) CrestaTech states that Dr. Hashemi admits that the accused products infringe the '585 Patent and the '792 Patent under CrestaTech's proposed constructions. (IF Opp. at 15.) Further, CrestaTech states that Dr. Hashemi's opinions concerning the construction of the term "intermediate frequency (IF)" are incorrect and rebutted by Dr. Snelgrove's expert opinions. (*Id.*)

CrestaTech states the "intermediate signal" and "intermediate frequency (IF)" should be construed as "signal that has been converted from RF but has not yet been demodulated" and "frequency of any value other than the RF signal frequency," respectively. (*Id.* at 16.)

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CrestaTech states the intrinsic evidence supports the understanding that the '585 Patent and the '792 Patent are not limited to heterodyne systems. (*Id.* at 16-17.) CrestaTech also states the intrinsic evidence discloses that an IF can have any value, including zero. (*Id.* at 17 (citing IF Opp., Ex. 1, Ex. A at ¶ 47 & Ex. B at ¶¶ 33, 34, 42).) CrestaTech also states that the intrinsic evidence does not exclude MaxLinear's direct conversion tuners. CrestaTech states that true homodyne receivers excluded from the scope of the patent do not require demodulation. (*Id.* at 19-20 (citing IF Opp., Ex. 17 at 42:13-22).) CrestaTech states that such true homodyne receivers are different from MaxLinear's accused products whose signals must be demodulated. (*Id.* at 20.) CrestaTech also states that Respondents' arguments depend on the construction of other disputed claim terms including "anti-aliasing filter" and "band-pass filter." (*Id.* at 20-22 (citing IF Opp., Ex. 1, Ex. A at ¶¶ 56-58).)

CrestaTech also argues that one of ordinary skill in the art at the time of the invention of the '585 Patent and the '792 Patent would have known how to build a "zero-IF" receiver. (*Id.* at 24 (citing IF Opp., Ex. 2 at 268:16-270:7; IF Opp., Ex. 15 at 84:13-85:11 & 97:6-17).)

CrestaTech states that this fact, coupled with the disclosure in the patent that the value of the IF is a design choice, is consistent with CrestaTech's proposed construction. (*Id.* (citing IF Opp., Ex. 1, Ex. B at ¶ 138).) CrestaTech also states the extrinsic evidence supports its proposed claim construction. CrestaTech states the IEEE technical dictionary definitions of IF do not limit an IF to non-zero frequencies. (*Id.* at 18 (citing IF Opp., Ex. 4 at 578; IF Opp., Ex. 5 at 671).)

CrestaTech further argues that even under Respondents' proposed construction, there are genuine issues of material fact that preclude summary determination of non-infringement. CrestaTech states that Respondents' proposed construction is ambiguous because the terms "carrier frequency," "transmission frequency," and "the frequencies of baseband signals" used in

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the proposed construction can indicate several different frequencies. (*Id.* at 25-28.) CrestaTech explains that there is a genuine issue of material fact as to which of several possible frequencies Respondents' proposed construction covers. (*Id.* at 30.) CrestaTech also states there is a genuine issue of material fact as to whether the accused products actually convert an input signal to a "baseband" signal. (*Id.* At 30-32 (citing IF Opp., Ex. 1 at ¶¶ 10, 11).) CrestaTech states that the accused products, rather than converting the input signal to zero or baseband, converts the input signal to a very low non-zero IF. (*Id.* at 32 (citing IF Opp., Ex. 1 at ¶ 12; IF Opp., Ex. 17 at 44:16-22).)

CrestaTech also states that there is a genuine issue of material fact as to whether the accused products have "digital output signals." (Output Signal Opp. at 9.) CrestaTech states that although the accused MaxLinear tuners output analog signals, the signal processor within the accused tuners outputs digital output signals as recited in the claims of the '585 Patent and the '792 Patent. (*Id.* at 10 (citing (Output Signal Opp., Ex. 4, Ex. A).) CrestaTech also states there is a genuine dispute as to whether "digital output signals" requires a signal processor to output multiple signals at the same time or refers to signals being processed at different points in time. (*Id.* at 11 (citing Output Signal Opp., Ex. 1 at 7:1-2; Output Signal Opp., Ex. 2 at 10:63-65; Output Signal Opp., Ex. 3 at CRESTA 585FH000130).)

CrestaTech also states there is a genuine dispute as to whether a "plurality of demodulators" must be on the same chip within the tuner or may be found in another component outside of the tuner. CrestaTech states that a preferred embodiment of the invention in the '585 Patent does not require that the demodulators be integrated on the same chip within the tuner. (*Id.* at 13-14 (citing Output Signal Opp., Ex. 1 at 6:12-16).) CrestaTech also states that the patent discloses that an analog output signal may be converted back to a digital signal using a

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digital-to-analog converter prior to being demodulated and that this is the functionality implemented in the accused tuners. (*Id.* at 14 (citing Output Signal Opp., Ex. 1 at 5:54-58, 7:13-17).)

CrestaTech finally argues that the claims do not require "a plurality of demodulators" to be found in the accused tuners. (*Id.* at 12.) CrestaTech states that demodulators elsewhere in the accused televisions are sufficient to meet this limitation. (*Id.*) CrestaTech also states there is a genuine issue of material fact as to whether the accused televisions contain a "plurality of demodulators." CrestaTech states that it has put forth sufficient evidence that the demodulators are present in the accused televisions to preclude summary determination. (*Id.* at 15 (citing Output Signal Opp., Ex. 4, Ex. A).)

## II. DICUSSION

The parties dispute the proper construction of at least the terms "intermediate frequency (IF)," "digital output signals," and "plurality of demodulators . . . for demodulating said digital output signals." (IF Opp. at 16-22; Output Signal Opp. at 9-14.) I find that it is premature to construe the disputed claim terms on an abbreviated summary determination record and that further factual development and the opportunity to evaluate witness testimony at hearing is necessary. *Certain Notebook Computer Prods. and Components Thereof*, Inv. No. 337-TA-705, Order No. 21, 2010 WL 5877089, at \*3 (Sept. 24, 2010); *see also Certain Digital Set-Top Boxes and Components Thereof*, Inv. No. 337-TA-712, Order No. 26, 2010 WL 55774328, at \*4 (Dec. 22, 2010). Accordingly, Motion Docket Nos. 910-038 and 910-039 are hereby DENIED.

Within seven (7) days of the date of this Order, each party shall submit to the Office of the Administrative Law Judges a statement as to whether or not it seeks to have any portion of this document deleted from the public version. The parties' submissions may be made by facsimile and/or hard copy by the aforementioned date.

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Any party seeking to have any portion of this document deleted from the public version thereof must submit to this office a copy of this document with red brackets indicating any portion asserted to contain confidential business information. The parties' submissions concerning the public version of this document need not be filed with the Commission Secretary.

**SO ORDERED.**

*Dee Lord*

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Dee Lord

Administrative Law Judge

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TUNERS, AND COMPONENTS THEREOF**

Inv. No. 337-910

**PUBLIC CERTIFICATE OF SERVICE**

I, Lisa R. Barton, hereby certify that the attached **ORDER** has been served by hand upon the Commission Investigative Attorney, **Peter J. Sawert, Esq.**, and the following parties as indicated, on

**DEC 01 2014**



Lisa R. Barton, Secretary  
U.S. International Trade Commission  
500 E Street SW, Room 112A  
Washington, D.C. 20436

**FOR COMPLAINANT CRESTA TECHNOLOGY CORPORATION:**

Louis S. Mastriani, Esq.  
**ADDUCI MASTRIANI & SCHAUMBERG LLP**  
1133 Connecticut Avenue NW  
Washington, DC 20036

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: \_\_\_\_\_

**FOR RESPONDENT MAXLINEAR, INC.:**

Gregory C. Schodde, Esq.  
**MCANDREWS, HELD & MALLOY, LTD.**  
500 West Madison Street, 34<sup>th</sup> Floor  
Chicago, IL 60661

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: \_\_\_\_\_

**FOR RESPONDENTS SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS  
AMERICA, INC., and SILICON LABORATORIES, INC.:**

Aaron Wainscoat, Esq.  
**DLA PIPER LLP (US)**  
2000 University Avenue  
East Palo Alto, CA 94303

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: \_\_\_\_\_

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**FOR RESPONDENTS LG ELECTRONICS INC., and LG ELECTRONICS U.S.A. (LG):**

Christian A. Chu, Esq.  
**FISH & RICHARDSON P.C.**  
1425 K Street, N.W.  
11<sup>th</sup> Floor  
Washington, DC 20005

- Via Hand Delivery  
 Via Express Delivery  
 Via First Class Mail  
 Other: \_\_\_\_\_

**FOR RESPONDENTS VIZIO, INC.; HON HAI PRECISION INDUSTRY CO., LTD; SIO  
INTERNATIONAL; TOP VICTORY INVESTMENTS LTD. and TPV INTERNATIONAL  
(USA), INC.,:**

Cono A. Carrano, Esq.  
**AKIN GUMP STRAUSS HAUER & FELD LLP**  
1333 New Hampshire Avenue NW  
Washington, DC 20036

- Via Hand Delivery  
 Via Express Delivery  
 Via First Class Mail  
 Other: \_\_\_\_\_

**FOR RESPONDENTS SHARP CORPORATION and SHARP ELECTRONICS  
CORPORATION:**

Josh Krevitt, Esq.  
**GIBSON, DUNN & CRUTCHER LLP**  
200 Park Avenue  
New York, NY 10166

- Via Hand Delivery  
 Via Express Delivery  
 Via First Class Mail  
 Other: \_\_\_\_\_

**FOR RESPONDENTS WISTRON CORPORATION and WISTRON INFOCOMM  
TECHNOLOGY (AMERICA) CORPORATION:**

Harold E. Davis, Jr. Esq.  
**K&L GATES LLP**  
Four Embarcadero Center, Suite 1200  
San Francisco, CA 94111

- Via Hand Delivery  
 Via Express Delivery  
 Via First Class Mail  
 Other: \_\_\_\_\_