



Defendant Sharp Electronics Corporation is a wholly owned subsidiary of Sharp Corporation, and is a corporation duly organized and existing under the laws of the state of New York, with its principal place of business at 1 Sharp Plaza, Mahwah, New Jersey, 07495-1163; and that Sharp Corporation and Sharp Electronics Corporation transact substantial business, either directly or through their agents, on an ongoing basis in this judicial district and elsewhere in the United States. Sharp Corporation and Sharp Electronics Corporation are referred to herein individually and collectively as “Sharp”.

5. CrestaTech is informed and believes, and on that basis alleges, that Defendant VIZIO, Inc. (“VIZIO”) is a corporation duly organized and existing under the laws of California, with its principal place of business at 39 Tesla, Irvine, California 92618. VIZIO transacts substantial business, either directly or through its agents, on an ongoing basis in this judicial district and elsewhere in the United States.

6. Unless specifically stated otherwise, the acts complained of herein were committed by, on behalf of, or for the benefit of MaxLinear, Sharp, and VIZIO.

#### **JURISDICTION AND VENUE**

7. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over Defendants because Defendants have committed acts of infringement in violation of 35 U.S.C. § 271 and have placed infringing products into the stream of commerce, through an established distribution channel, with the knowledge and/or understanding that such products are used and sold in this District. These acts cause injury to CrestaTech within the District. Defendants derive substantial revenue from the sale of infringing products distributed within the District, expect or should reasonably expect

their actions to have consequences within the District, and derive substantial revenue from interstate and international commerce.

9. Venue is proper in this Federal District pursuant to 28 U.S.C. §§ 1391(b)-(c) and 1400(b) in that the defendants reside in this district, a substantial part of the events giving rise to the claim occurred in this district, and the defendants have a regular and established place of business in this district and have committed acts of infringement in this district. Plaintiff CrestaTech and Defendant MaxLinear also are incorporated in this district.

### **FACTUAL BACKGROUND**

10. Television technology has changed dramatically in the last decade. Most notably, flat panel television sets have taken over the market and become nearly ubiquitous. As explained below, CrestaTech's patented technology is critical to this development.

11. For a television set to display a picture and play audio, a receiver or tuner in the television set must receive and process television signals. Television signals are encoded and then broadcast in accordance with one of various standards—such as NTSC, ATSC, Open Cable, PAL, SECAM, DVB-C, DVB-T, ISDB-T, or DTMB—some of which apply to analog television signals and others to digital television signals. In the United States, and elsewhere in the world, a television receiver must be able to process both analog and digital television signals that are encoded in accordance with different standards.

12. The receiver, or tuner, is a fundamental part of any television set; it allows the incoming television signal transmissions to be processed to produce video and sound. Television signals reach the tuner at the first stage in the signal path, and the tuner performs several functions. The tuner selects the wanted channel, removes unwanted signals through filtering, amplifies the wanted signal, performs a frequency translation function by shifting the wanted

signal to an intermediate frequency (“IF”) compatible with further processing, and otherwise processes the signal to produce optimal video and sound.

13. Television tuners face several technical challenges. First, the form in which television signals are broadcast varies by region. Traditional tuners were designed to handle television signals broadcast in either analog or digital form, but not both, and were not equipped to handle television signals encoded in accordance with more than one standard. Thus, a given tuner could be used only in particular geographic regions using particular standards. Second, tuners must be able to handle a broad dynamic range of signals in order to receive and tune the wanted signal, whether it is a powerful signal or a weak signal, even in the presence of powerful unwanted signals. Third, tuners must be able to tune out or exclude spurious unwanted signals or noise generated inside the television set.

14. To meet these demands, traditional television sets used “can tuners.” Traditional can tuners are electronic boxes comprising integrated circuits and a considerable number of passive discrete devices, all enclosed within a metallic enclosure. Traditional can tuners have several disadvantages or limitations. First, they are expensive and labor-intensive to manufacture; for instance, traditional can tuners include numerous individual coils that must be adjusted by hand during the manufacturing process. Second, traditional can tuners are large and bulky, which in turn requires the television set itself to be bigger. Third, traditional can tuners are designed for use only in particular geographical regions. Finally, traditional can tuners have the major drawback that they perform all signal processing in the analog domain, requiring the receiver to include duplicate components, such as multiple Surface Acoustic Wave (“SAW”) filters, in order to process both analog and digital television signals.

15. CrestaTech’s technology and its patented inventions overcome all of these obstacles. First, CrestaTech’s tuners—Smart Tuner ICs—use a single signal processing path to

process both analog and digital television signals. As a result Smart Tuner ICs eliminate the need for duplicate components and reduce the size and manufacturing cost of the television receiver. Second, CrestaTech Smart Tuner ICs perform signal processing in the digital domain, by sampling and converting analog signals into digital representations of those signals and then performing filtering and other processing on the digital representation; this eliminates the need for most external components and again reduces the size and manufacturing cost of the receiver. Finally, Smart Tuner ICs support multiple different standards and both digital and analog television signals—i.e., they provide multi-standard reception—and therefore can be used in any geographic region. Thus, CrestaTech’s Smart Tuner ICs eliminate the need for bulky traditional can tuners, reduce the cost of developing thin flat panel televisions, and make it possible to have a television that will work anywhere in the world, regardless of broadcast or transmission standard.

**COUNT 1 – INFRINGEMENT OF U.S. PATENT NO. 7,075,585**

16. On July 11, 2006, the United States Patent and Trademark Office issued United States Patent No. 7,075,585 (“the ’585 patent”) for an invention entitled “Broadband Receiver Having a Multistandard Channel Filter.” CrestaTech is the assignee and owner of the ’585 patent and holds all rights, title and interests in the ’585 patent. A true and correct copy of the ’585 patent is attached as Exhibit A.

17. MaxLinear has infringed and continues to infringe one or more claims of the ’585 patent by its making, manufacture, use, sale, importation, or offer for sale of television tuners, including but not limited to the MxL601. MaxLinear is liable for its infringement of the ’585 patent pursuant to 35 U.S.C. § 271(a), (b), and (c).

18. MaxLinear knowingly induces others to perform acts or steps that infringe method claims of the ’585 patent. MaxLinear’s inducement of infringement includes, but is not

limited to: (i) knowledge of the '585 patent; (ii) intent to induce direct infringement of the '585 patent; (iii) knowingly aiding and abetting infringement by providing instruction manuals and other directions that instruct the purchaser or user of an accused device to use that device in a manner that infringes method claims of the '585 patent; and (iv) actual or constructive knowledge that their actions induce infringement.

19. MaxLinear is also liable for contributory infringement because it offers to sell or sells within the United States or imports into the United States television tuners or receivers that constitute a component of a patented combination and a material part of the invention claimed by the '585 patent, knowing the same to be especially made or especially adapted for use in an infringement of such patent, which tuners and receivers are not a staple article or commodity of commerce suitable for substantial noninfringing use.

20. Sharp has infringed and continues to infringe one or more claims of the '585 patent by its making, manufacture, use, sale, importation, or offer for sale of televisions incorporating the infringing television tuners, including but not limited to televisions incorporating MxL601. Sharp is liable for its infringement of the '585 patent pursuant to 35 U.S.C. § 271(a) and (b).

21. Sharp knowingly induces others to perform acts or steps that infringe method claims of the '585 patent. Sharp's inducement of infringement includes, but is not limited to: (i) knowledge of the '585 patent; (ii) intent to induce direct infringement of the '585 patent; (iii) knowingly aiding and abetting infringement by providing instruction manuals and other directions that instruct the purchaser or user of an accused device to use that device in a manner that infringes certain claims of the '585 patent; and (iv) actual or constructive knowledge that their actions induce infringement.

22. VIZIO has infringed and continues to infringe one or more claims of the '585

patent by its making, manufacture, use, sale, importation, or offer for sale of televisions incorporating the infringing television tuners, including but not limited to televisions incorporating MxL601. VIZIO is liable for its infringement of the '585 patent pursuant to 35 U.S.C. § 271(a) and (b).

23. VIZIO knowingly induces others to perform acts or steps that infringe method claims of the '585 patent. VIZIO's inducement of infringement includes, but is not limited to: (i) knowledge of the '585 patent; (ii) intent to induce direct infringement of the '585 patent; (iii) knowingly aiding and abetting infringement by providing instruction manuals and other directions that instruct the purchaser or user of an accused device to use that device in a manner that infringes certain claims of the '585 patent; and (iv) actual or constructive knowledge that their actions induce infringement.

24. Defendants' acts of infringement have damaged CrestaTech, and CrestaTech is entitled to recover from Defendants the damages it has sustained as a result of Defendants' wrongful acts in an amount subject to proof at trial. Defendants' infringement of CrestaTech's rights under the '585 patent will continue to damage CrestaTech, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by this Court.

**COUNT 2 - INFRINGEMENT OF U.S. PATENT NO. 7,265,792**

25. On September 4, 2007, the United States Patent and Trademark Office issued United States Patent No. 7,265,792 ("the '792 patent") for an invention entitled "Television Receiver for Digital and Analog Television Signals." CrestaTech is the assignee and owner of the '792 patent and holds all rights, title and interests in the '792 patent. A true and correct copy of the '792 patent is attached as Exhibit B.

26. MaxLinear has infringed and continues to infringe one or more claims of the '792 patent by its making, manufacture, use, sale, importation, or offer for sale of television tuners,

including but not limited to the MxL601. MaxLinear is liable for its infringement of the '792 patent pursuant to 35 U.S.C. § 271(a) and (c).

27. MaxLinear is also liable for contributory infringement because it offers to sell or sells within the United States or imports into the United States television tuners or receivers that constitute a component of a patented combination and a material part of the invention claimed by the '792 patent, knowing the same to be especially made or especially adapted for use in an infringement of such patent, which tuners and receivers are not a staple article or commodity of commerce suitable for substantial noninfringing use.

28. Sharp has infringed and continues to infringe one or more claims of the '792 patent by its making, manufacture, use, sale, importation, or offer for sale of televisions incorporating the infringing television tuners, including but not limited to televisions incorporating MxL601. Sharp is liable for its infringement of the '792 patent pursuant to 35 U.S.C. § 271(a).

29. VIZIO has infringed and continues to infringe one or more claims of the '792 patent by its making, manufacture, use, sale, importation, or offer for sale of televisions incorporating the infringing television tuners, including but not limited to televisions incorporating MxL601. VIZIO is liable for its infringement of the '792 patent pursuant to 35 U.S.C. § 271(a).

30. Defendants' acts of infringement have damaged CrestaTech, and CrestaTech is entitled to recover from Defendants the damages it has sustained as a result of Defendants' wrongful acts in an amount subject to proof at trial. Defendants' infringement of CrestaTech's rights under the '792 patent will continue to damage CrestaTech, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by this Court.



### **WILLFUL INFRINGEMENT**

31. Upon information and belief, MaxLinear's infringement of any or all of the above-named patents is willful and deliberate, entitling CrestaTech to increased damages under 35 U.S.C. § 284 and to attorney's fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

32. MaxLinear had prior knowledge of the patented technology and notice of its infringement because CrestaTech provided notice of the patents to MaxLinear in 2013.

### **JURY DEMAND**

33. Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, CrestaTech respectfully requests a trial by jury on all issues.

### **PRAYER FOR RELIEF**

WHEREFORE, CrestaTech requests entry of judgment in its favor and against MaxLinear, Sharp, and VIZIO as follows:

- a. Declaring that Defendants have infringed the '585 and '792 patents;
- b. Awarding compensatory damages arising out of Defendants' infringement of the '585 and '792 patents to CrestaTech, including enhanced damages from MaxLinear pursuant to 35 U.S.C. § 284, together with prejudgment and post-judgment interest, in an amount according to proof;
- c. Permanently enjoining Defendants and their respective officers, agents, employees, and those acting in privity with them from further infringement, including contributory infringement or inducing infringement, of the '585 and '792 patents;
- d. Awarding attorney's fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law; and

- e. Awarding such other costs and further relief as the Court may deem just and proper.

Dated: January 21, 2014

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/s/ Brian E. Farnan

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