IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

M-RED INC.,		§	
	Plaintiff,	§	Case No.
v.		§	**JURY TRIAL DEMANDED**
ACER INC.,		§	
	Defendant.	§	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff M-Red Inc. ("M-Red" or "Plaintiff") for its Complaint against Defendant Acer Inc. ("Defendant" or "Acer") alleges as follows:

THE PARTIES

1. M-Red is a corporation organized and existing under the laws of the State of Texas, with its principal place of business located at 100 W. Houston Street, Marshall, Texas 75670.

2. Upon information and belief, Acer is a corporation organized and existing under the laws of Taiwan, with its principal place of business located at 1F, 88, Sec. 1, Xintai 5th Road, Xizhi, New Taipei City 221, Taiwan and may be served pursuant to the provisions of the Hague Convention. Acer is a leading manufacturer and seller of smartphones, laptops, desktops, servers, tablets and Internet of Things and cloud devices in the United States. Upon information and belief, Acer does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

JURISDICTION

3. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, et seq. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

4. This Court has personal jurisdiction over Defendant. Defendant regularly conducts business and has committed acts of patent infringement and/or has induced acts of patent infringement by others in this Judicial District and/or has contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States.

5. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391 because, among other things, Defendant does not reside in the United States, and thus may be sued in any Judicial District pursuant to 28 U.S.C. § 1391(c)(3).

6. Defendant is subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to its substantial business in this State and Judicial District, including (a) at least part of its past infringing activities, (b) regularly doing or soliciting business in Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas.

PATENTS-IN-SUIT

7. On February 8, 2005 the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 6,853,259 (the "'259 Patent") entitled "Ring oscillator dynamic adjustments for auto calibration." A true and correct copy of the '259 Patent is available at https://pdfpiw.uspto.gov/.piw?Docid=06853259.

8. On June 27, 2006 the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,068,557 (the "'557 Patent") entitled "Ring oscillator dynamic adjustments for auto calibration." A true and correct copy of the '557 Patent is available at https://pdfpiw.uspto.gov/.piw?Docid=07068557.

9. On April 24, 2007 the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,209,401 (the "'401 Patent") entitled "Ring oscillator dynamic adjustments for auto calibration." A true and correct copy of the '401 Patent is available at https://pdfpiw.uspto.gov/.piw?Docid=07209401.

FACTUAL ALLEGATIONS
Asserted Patents ('259, '557, '401 Patents)

10. The Asserted Patents generally cover integrated circuits comprising voltage and temperate sensors which output a voltage and temperate and store the output in memory. The technology was developed by Robert D. Norman and Dominik J. Schmidt. The Asserted Patents also cover methods for dynamically adjusting clock frequency based on voltage and temperature values. In some embodiments of the inventions, temperature sensors dynamically monitor environmental parameters and store these parameters on a memory. These temperature monitoring and power saving techniques are incorporated into chips utilized in Acer products.

11. For example, non-party MediaTek, Inc. ("MediaTek") implements techniques for dynamic frequency and voltage scaling, and for thermal management, including at least CorePilot.[1] According to MediaTek, CorePilot, "works closely with Thermal Management and User Experience (UX) Monitoring to further reduce battery power consumption . . . Based upon

[1] Improving the Mobile User Experience with CorePilot, MediaTek (retrieved April 29, 2019), https://www.mediatek.com/features/corepilot-evolution.

input from these control mechanisms, the right core(s), cluster(s) and frequencies/voltages are selected for the current application load."[2]

12. As a further example, non-party Qualcomm Inc. ("Qualcomm") sells System-on-a Chips ("SoCs"), including the Snapdragon line of SoCs, and associated software which can perform Dynamic Clock and Voltage Scaling ("DCVS").[3] According to Qualcomm, DCVS "is a technique used to adjust the frequency and voltage of the power equation to deliver the needed performance at the ideal power level." Additionally, the "CPU cores of Snapdragon processors lie on separate voltage and frequency planes. This allows each CPU core to hit independent frequencies and voltages, delivering scalable performance and power levels."[4] On information and belief, Qualcomm SoCs include a Thermal Engine that works with frequency and voltage scaling to "cap the maximum operating frequency of the CPU."[5]

13. Acer has infringed and is continuing to infringe the patents-in-suit by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell and/or importing, products that utilize SoCs and associated software that utilize on-chip temperature sensors for power management, including Qualcomm SoCs including at least the Snapdragon 808 SoC, and MediaTek SoCs including at least the MT8163. Such Acer products include at least the Liquid M220 smartphone and Iconia One 10 tablet.

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[2] *Id.*
[3] DCVS may alternately be referred to as Dynamic Frequency and Voltage Scaling ("DVFS")
[4] Power vs. Performance Management of the CPU, Qualcomm, (retrieved April 29, 2019), https://www.qualcomm.com/news/onq/2013/10/25/power-vs-performance-management-cpu.
[5] Qualcomm Snapdragon 410E Processor APQ8016E System Power Overview, Qualcomm (retrieved April 29, 2019), https://developer.qualcomm.com/qfile/35136/lm80-p0436-73_a_qualcomm_snapdragon_410e_processor_apq8016e_system_power_overview.pdf&usg=AOvVaw2fQ9dLyNcd-8h3Rd_-vbbM.

14. M-Red has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the patents-in-suit. On information and belief, prior assignees and licensees have also complied with the marking provisions of 35 U.S.C. § 287.

COUNT I
(Infringement of the '259 Patent)

15. Paragraphs 1 through 14 are incorporated by reference as if fully set forth herein.

16. M-Red has not licensed or otherwise authorized Acer to make, use, offer for sale, sell, or import any products that embody the inventions of the '259 Patent.

17. Defendant has and continues to directly infringe the '259 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '259 Patent. Upon information and belief, these products include all Acer products including any MediaTek SoCs, including at least the MT8163 SoC, and any Qualcomm SoCs, including at least the Snapdragon 808 SoC, which are sold in the United States and incorporated by others into products sold in the United States, such as the Liquid M220 smartphone and Iconia One 10 tablet.

18. For example, Defendant has and continues to directly infringe at least claim 1 of the '259 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include an apparatus to compensate for voltage and temperature variations on an integrated circuit, such as, for example, the thermal controller components and associated software utilized with MediaTek SoCs such as the MT8163, and Qualcomm SoCs such as the Snapdragon 808. The MT8163 and Snapdragon 808 include a voltage sensor. For example, MediaTek and Qualcomm SoCs operate at different voltages and frequencies and dynamically adjust these voltages and frequencies based on outputs from sensors.

19. For example, Defendant has and continues to directly infringe at least claim 1 of the ’259 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include an apparatus to compensate for voltage and temperature variations on an integrated circuit, comprising: a voltage sensor having a digital voltage output; a temperature sensor having a digital temperature output; a register coupled to the voltage sensor and the temperature sensor, the register adapted to concatenate the digital voltage output and the temperature output into an address output; and a memory device having an address input coupled to the address output of the register, the memory device being adapted to store one or more corrective vectors.

20. On information and belief, all MediaTek and Qualcomm SoCs include a voltage sensor having a voltage output, and a temperature sensor having a temperature output. For example, on information and belief, all MediaTek SoCs, including the MT8163 SoC, and all Qualcomm SoCs, including at least the Snapdragon 808 SoC, include one or more temperature and voltage sensors that provide outputs stored in one or more registers.

21. On information and belief, all MediaTek and Qualcomm SoCs include a register coupled to the voltage sensor and the temperature sensor, the register adapted to concatenate the voltage output and the temperature output into an address output. For example, on information and belief, all MediaTek SoCs, including the MT8163 SoC, and all Qualcomm SoCs, including at least the Snapdragon 808 SoC, include one or more registers including registers that store voltage and temperature information related to the performance of the temperature sensors, Thermal Controller, and the voltage states of the SoC and its cores. On information and belief, the one or more registers of MediaTek and Qualcomm SoCs are adapted to combine the voltage and temperature in order to determine whether to alter the performance of the processor.

22. On information and belief, all MediaTek and Qualcomm SoCs further include a memory device having an address input coupled to the address output of the register, the memory device being adapted to store one or more corrective vectors. For example, on information and belief, all MediaTek SoCs, including the MT8163 SoC, and all Qualcomm SoCs, including at least the Snapdragon 808 SoC, include ram, cache memory, and buffer memory to store corrective vectors, such as commands to increase or decrease the frequency and/or voltage of the SoC. As a further example, MediaTek SoCs include CorePilot functionality that works closely with Thermal Management to ensure sustainable performance.[6] As a further example, Qualcomm SoCs implement "DCVS" to "adjust the frequency and voltage of the power equation to deliver the needed performance at the ideal power level.[7]

23. Defendant has and continues to indirectly infringe one or more claims of the '259 Patent by knowingly and intentionally inducing others, including customers and end-users of Acer products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as the Liquid M220 smartphone and Iconia One 10 tablet.

24. Defendant, with knowledge that these products, or the use thereof, infringe the '259 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '259 Patent by providing these products to customers and ultimately to end users for use in an infringing manner in the United States including, but not limited to, end users of Acer products that incorporate MediaTek and/or Qualcomm SoCs, such as the Liquid M220 smartphone and Iconia One 10

[6] Improving the Mobile User Experience with CorePilot, MediaTek (retrieved April 29, 2019), https://www.mediatek.com/features/corepilot-evolution.
[7] Power vs. Performance Management of the CPU, Qualcomm, (retrieved April 29, 2019), https://www.qualcomm.com/news/onq/2013/10/25/power-vs-performance-management-cpu.

tablet.

25. Defendant induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the ’259 Patent, but while remaining willfully blind to the infringement.

26. M-Red has suffered damages as a result of Defendant’s direct and indirect infringement of the ’259 Patent in an amount to be proved at trial.

27. M-Red has suffered, and will continue to suffer, irreparable harm as a result of Defendant’s infringement of the ’259 Patent, for which there is no adequate remedy at law, unless Defendant’s infringement is enjoined by this Court.

COUNT II
(Infringement of the ’557 Patent)

28. Paragraphs 1 through 14 are incorporated by reference as if fully set forth herein.

29. M-Red has not licensed or otherwise authorized Acer to make, use, offer for sale, sell, or import any products that embody the inventions of the ’557 Patent.

30. Defendant has and continues to directly infringe the ’557 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’557 Patent. Upon information and belief, these products include all Acer products including any MediaTek SoCs, including at least the MT8163 SoC, and any Qualcomm SoCs, including at least the Snapdragon 808 SoC, which are sold in the United States and incorporated by others into products sold in the United States, such as the Liquid M220 smartphone and Iconia One 10 tablet.

31. For example, Defendant has and continues to directly infringe at least claim 1 of the ’557 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include an integrated circuit comprising a voltage sensor having a voltage input; a temperature sensor having a temperature input; and a memory capable of receiving an input address based upon the voltage output and the temperature output, the memory configured to store compensation data. On information and belief, such integrated circuits include, by way of example, any MediaTek and/or Qualcomm SoCs that include thermal controller components and associated software such as the MT8163 and Snapdragon 808. For example, MediaTek and Qualcomm SoCs operate at different voltages and frequencies and dynamically adjust these voltages and frequencies based on outputs from sensors.

32. On information and belief, all MediaTek SoCs include a voltage sensor having a voltage output, and a temperature sensor having a temperature output. For example, on information and belief, the MediaTek and Qualcomm SoCs, including the MT8163 and Snapdragon 808, include one or more temperature and voltage sensors that provide outputs.

33. On information and belief, all MediaTek and Qualcomm SoCs further include a storage capable of receiving an input address based upon the voltage output and the temperature output, the memory configured to store compensation data. For example, on information and belief, all MediaTek SoCs, including the MT8163 SoC, and all Qualcomm SoCs, including at least the Snapdragon 808 SoC, include ram, cache memory, and buffer memory capable of receiving an input address based upon the voltage output and temperature output, and are configured to store compensation data, such as commands to increase or decrease the frequency and/or voltage of the SoC. As a further example, the MediaTek SoCs include CorePilot functionality that works closely with Thermal Management to ensure sustainable performance.

As a further example, Qualcomm SoCs implement "DCVS" to "adjust the frequency and voltage of the power equation to deliver the needed performance at the ideal power level.[8]

34. Defendant has and continues to indirectly infringe one or more claims of the '557 Patent by knowingly and intentionally inducing others, including customers and end-users of Acer products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as the Liquid M220 smartphone and Iconia One 10 tablet.

35. Defendant, with knowledge that these products, or the use thereof, infringe the '557 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '557 Patent by providing these products to customers and ultimately to end users for use in an infringing manner in the United States including, but not limited to, end users of Acer products that incorporate MediaTek and/or Qualcomm SoCs, such as the Liquid M220 smartphone and Iconia One 10 tablet.

36. Defendant induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '557 Patent, but while remaining willfully blind to the infringement.

37. M-Red has suffered damages as a result of Defendant's direct and indirect infringement of the '557 Patent in an amount to be proved at trial.

[8] *Id.*

38. M-Red has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '557 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT III
(Infringement of the '401 Patent)

39. Paragraphs 1 through 14 are incorporated by reference as if fully set forth herein.

40. M-Red has not licensed or otherwise authorized Acer to make, use, offer for sale, sell, or import any products that embody the inventions of the '401 Patent.

41. Defendant has and continues to directly infringe the '401 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '401 Patent. Upon information and belief, these products include all Acer products including any MediaTek SoCs, including at least the MT8163 SoC, and any Qualcomm SoCs, including at least the Snapdragon 808 SoC, which are sold in the United States and incorporated by others into products sold in the United States, such as the Liquid M220 smartphone and Iconia One 10 tablet.

42. For example, Defendant has and continues to directly infringe at least claim 1 of the '401 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include an integrated circuit comprising: a voltage sensor having a voltage output; a temperature sensor having a temperature output; an analog-to-digital converter ("ADC") coupled to the voltage sensor and the temperature sensor, the ADC to convert the voltage output and the temperature output to digital values; and a storage coupled to receive an input address based upon at least one of the voltage output and temperature output, the storage configured to store compensation data, for example, the Thermal Controller components and associated software

utilized with MediaTek and/or Qualcomm SoCs such as the MT8163 and Snapdragon 808. On information and belief, the MT8163 and Snapdragon 808 include a voltage sensor having a voltage output. For example, MediaTek and Qualcomm SoCs operate at different voltages and frequencies and dynamically adjust these voltages and frequencies based on outputs from sensors.

43. On information and belief, all MediaTek and Qualcomm SoCs include a voltage sensor having a voltage output, and a temperature sensor having a temperature output. For example, on information and belief, MediaTek SoCs, including the MT8163 SoC, and Qualcomm SoCs, including the Snapdragon 808, include one or more temperature and voltage sensors that provide outputs.

44. On information and belief, all MediaTek and Qualcomm SoCs include an analog-to-digital converter coupled to the voltage sensor and the temperature sensor, the ADC to convert the voltage output and the temperature output to digital values. For example, MediaTek SoCs, including the MT8163 SoC, and Qualcomm SoCs, including the Snapdragon 808, include sensors which output analog signals which are converted to digital signals prior to storage.

45. On information and belief, all MediaTek and Qualcomm SoCs further include a storage capable of receiving an input address based upon the voltage output and the temperature output, the memory configured to store compensation data. For example, on information and belief, MediaTek SoCs, including the MT8163 SoC, and Qualcomm SoCs, including the Snapdragon 808, include ram, cache memory, and buffer memory capable of receiving an input address based upon the voltage output and temperature output, and are configured to store compensation data, such as commands to increase or decrease the frequency and/or voltage of the SoC. As a further example, MediaTek SoCs include CorePilot functionality that works

closely with Thermal Management to ensure sustainable performance. As a further example, Qualcomm SoCs implement "DCVS" to "adjust the frequency and voltage of the power equation to deliver the needed performance at the ideal power level.[9]

46. Defendant has and continues to indirectly infringe one or more claims of the '401 Patent by knowingly and intentionally inducing others, including customers and end-users of Acer products, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as the Liquid M220 smartphone and Iconia One 10 tablet.

47. Defendant, with knowledge that these products, or the use thereof, infringe the '401 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '401 Patent by providing these products to customers and ultimately to end users for use in an infringing manner in the United States including, but not limited to, end users of Acer products that incorporate MediaTek and/or Qualcomm SoCs, such as the Liquid M220 smartphone and Iconia One 10 tablet.

48. Defendant induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '401 Patent, but while remaining willfully blind to the infringement.

49. M-Red has suffered damages as a result of Defendant's direct and indirect infringement of the '401 Patent in an amount to be proved at trial.

[9] *Id.*

50. M-Red has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '401 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, M-Red prays for relief against Defendant as follows:

a. Entry of judgment declaring that Defendant has directly infringed one or more claims of each of the patents-in-suit;

b. An order awarding damages sufficient to compensate M-Red for Defendant's infringement of the patents-in-suit, but in no event less than a reasonable royalty, together with interest and costs;

c. Entry of judgment declaring that this case is exceptional and awarding M-Red its costs and reasonable attorney fees under 35 U.S.C. § 285; and

d. Such other and further relief as the Court deems just and proper.

Dated: April 29, 2018

Respectfully submitted,

/s/ Alfred R. Fabricant

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