IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROCHIP TECHNOLOGY INC.,
Petitioner,

v.

APTIV TECHNOLOGIES AG AND APTIV TECHNOLOGIES LIMITED,
Patent Owners.

Case No. IPR2024-00228
U.S. Patent No. 9,619,420

PETITIONER'S RESPONSE TO THE BOARD'S SHOW CAUSE ORDER

LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 9,460,037 ("'037 Patent")
1002	Patent Prosecution History for U.S. Patent No. 9,460,037
1003	U.S. Patent No. 9,619,420 ("'420 Patent")
1004	Patent Prosecution History for U.S. Patent No. 9,619,420
1005	U.S. Patent No. 9,645,962 ("'962 Patent")
1006	Patent Prosecution History for U.S. Patent No. 9,645,962
1007	U.S. Patent No. 10,545,899 ("'899 Patent")
1008	Patent Prosecution History for U.S. Patent No. 10,545,899
1009	U.S. Patent No. 11,176,072 ("'072 Patent")
1010	Patent Prosecution History for U.S. Patent No. 11,176,072
1011	U.S. Patent No. 11,681,643 ("'643 Patent")
1012	Patent Prosecution History for U.S. Patent No. 11,681,643
1013	Declaration of Eric Welch
1014	U.S. Patent Publication No. 2006/0206650 ("Chang")
1015	U.S. Patent Publication No. 2009/0268743 ("Chang II")
1016	U.S. Patent Publication No. 2004/0019732 ("Overtoom")
1017	U.S. Patent Publication No. 2006/0195625 ("Hesse")
1018	*Universal Serial Bus Specification,* Revision 2.0, April 27, 2000 ("USB 2.0 Specification")
1019	*Universal Serial Bus Type-C Cable and Connector Specification*, Revision 1.2, March 25, 2016

Exhibit	Description
1020	*Universal Serial Bus Power Delivery Specification*, Rev. 3.0, V1.0a, March 25, 2016
1021	*Universal Serial Bus Implementers Forum Full and Low Speed Electrical and Interoperability Compliance Test Procedure,* Revision 1.3, February 2004
1022	*On-The-Go and Embedded Host Supplement to the USB Revision 2.0 Specification,* Revision 2.0 version 1.1a, July 27, 2012 (the "OTG Supplement")
1023	*Universal Serial Bus 3.0 Specification*, Revision 1.0, November 12, 2008 ("USB 3.0 Specification")
1024	Declaration of Jeffrey L. Ravencraft re USB Specifications.
1025	U.S. Patent No. 8,683,085 ("Castleberry")
1026	INTENTIONALLY OMITTED
1027	INTENTIONALLY OMITTED
1028	INTENTIONALLY OMITTED
1029	U.S. Patent No. 8,447,598 ("Chutorash")
1030	U.S. Patent No. 8,694,803 ("Rafiee")
1031	GL620USB-A: GeneLink USB PC-to-PC Networking Controller, Specification 1.6, November 17, 2000
1032	U.S. Patent Publication No. 2008/0005262 ("Wurzburg")
1033	U.S. Patent Publication No. 2007/0255885 ("Bohm '885")
1034	U.S. Patent No. 7,162,566 ("Lin")
1035	*PL-2501 Product Brochure*, Prolific Technology Inc., September 11, 2002
1036	*NET1080 USB TurboCONNECT Preliminary Specification*,

Exhibit	Description
	Revision 0.6, NetChip Technology, Inc., January 31, 2000
1037	*M5632 Preliminary Product Brief*, ALi Corporation, September 15, 2002
1038	U.S. Patent No. 7,085,876 ("Lai")
1039	U.S. Patent Publication No. 2009/0185559 ("Chen")
1040	U.S. Patent No. 3,916,380 ("Fletcher")
1041	U.S. Patent No. 7,057,413 ("Young")
1042	U.S. Patent Publication No. 2006/0227759 ("Bohm '759")
1043	Oral Order, dated December 19, 2017 in *Microchip Technology Incorporated v. Delphi Automotive Systems, LLC et al.*, Case No. 1:17-cv-01194-JDW (D. Del.)
1044	INTENTIONALLY OMITTED
1045	Aptiv Technologies Limited's Responses and Objections to Microchip Technology Inc.'s First Set of Interrogatories (Nos. 1-11), dated June 12, 2023 in *Aptiv Technologies AG, v Microchip Technology Inc.*, Case No. 1:23-cv-00307-JDW (D. Del.)
1046	U.S. Patent Publication No. 2007/0156293 ("Kellzi")
1047	U.S. Patent No. 7,502,878 ("Wright")
1048	INTENTIONALLY OMITTED
1049	*USB in Automotive: Not Just for PCs Anymore,* Brian Ellis, Cypress Semiconductor Corp., Electronic Product News, September 1, 2006
1050	*The Car Entertainment System*, Niels Koch (published as Chapter 23 in Part 5 ("Infotainment and Navigation Systems" of *New Trends and Developments in Automotive System Engineering*, Marcello Chiaberge (Editor), InTech, 2011 (2014 Reprint))

Exhibit	Description
1051	*The Car Entertainment System*, Niels Koch (published as Chapter 23 in Part 5 ("Infotainment and Navigation Systems" of New Trends and Developments in Automotive System Engineering, Marcello Chiaberge (Editor), IntechOpen, 2011)
1052	U.S. Patent No. 9,864,711 ("Wang")
1053	U.S. Patent Publication No. 2004/0088449 ("Sakaki")
1054	Anchor Chips Single-Chip EZ-Link (AN2720SC), product brochure dated November 1998
1055	*CMOS Circuit Design, Layout, and Simulation*, R. Jacob Baker, IEEE Press, 1st Edition (1998) ("Baker")
1056	Library of Congress Catalog Record for *CMOS Circuit Design, Layout, and Simulation*, R. Jacob Baker, IEEE Press, 1st Edition (1998)
1057	U.S. Copyright WebVoyage Record for *CMOS Circuit Design, Layout, and Simulation*, R. Jacob Baker, IEEE Press, 1st Edition (1998)
1058	Declaration of Mariellen F. Calter re *CMOS Circuit Design, Layout, and Simulation*, R. Jacob Baker, IEEE Press, 1st Edition (1998)
1059	Fairchild Semiconductor USB Switch listing from October 16, 2011 printed from Internet Archive Wayback Machine
1060	Fairchild Semiconductor FSUSB63 3:1 High-Speed USB 2.0 Switch / Multiplexer, dated November, 2010
1061	Internet Archive Affidavit of Nathaniel E Frank-White re Exhibits 1031, 1035, 1037 and 1054
1062	Internet Archive Affidavit of Nathaniel E Frank-White re Exhibits 1036, 1049, 1050/1051, and 1058

Exhibit	Description
1063	Maxim 4989 Datasheet (USB 2.0 Hi-Speed 2-of-4 Crosspoint Switch), dated August 2008
1064	Cypress Semiconductor AN96527 - Designing USB Type-C Products Using Cypress's CCG1 Controllers, dated June 3, 2015
1065	Internet Archive Affidavit of Nathaniel E Frank-White re Exhibits 1059, 1063, 1064, 1068, and 1071
1066	U.S. Patent No. 9,104,821 ("Dunstan")
1067	U.S. Patent Publication No. 2010/0265179 ("Ram")
1068	Fairchild Semiconductor FSUSB30 Low-power, Two-Port, High-Speed USB2.0 Switch, dated January 2007
1069	*The ART of Electronics*, P Horowitz and W. Hill, Cambridge University Press, 2nd Edition (1989)
1070	*Universal Serial Bus: Micro-USB Cables and Connectors Specification*, Revision 1.01, April 4, 2007
1071	Fairchild Semiconductor FSA880 / FSA881 – USB Port 2:1 Switch with Accessory and Charger Detection, dated November 2011
1072	WITHDRAWN
1073	Microsoft Computer Dictionary, 4th ed., Microsoft Press, 1999 ("Microsoft Dictionary")
1074	STMicrosystems, RM0033 Reference Manual, STM32F205xx, STM32F207xx, STM32F215xx and STM32F217xx advanced ARM-based 32-bit MCUs, Doc ID 15403 Rev 2, December 2010
1075	Joint Claim Construction Statement (Dkt. No. 115), dated December 6, 2023 in *Aptiv Technologies AG, v Microchip Technology Inc.*, Case No. 1:23-cv-00307-JDW (D. Del.)

Petitioner Microchip Technology Inc. hereby responds to the Board's Order to Show Cause concerning whether EX1072 should be sealed or expunged from the record. *See* Paper 15. Petitioner does not object to the Board's proposal to "expunge Exhibit 1072 from the record, and deny [] as moot" Petitioner's Motion to File Confidential Document Under Seal (Paper 3) in IPR2024-00028.[1] Paper 15, 2.

Background. Petitioner filed three IPR petitions and one PGR petition on the same day (December 27, 2023) challenging four related patents from the same patent family. *See* IPR2024-00228; IPR2024-00229; IPR2024-00230; and PGR2024-00011. Exhibit 1072 is a copy of Patent Owner's infringement contentions from the related district court litigation on the same four patents. In PGR2024-00011, Petitioner raised an obviousness challenge to claim 4 of U.S. Pat. 11,681,643 which requires that the "the USB routing switch includes the signal detection circuit." EX1011, cl. 4. In support, Petitioner relied on (and quoted)

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[1] The same holds true for IPR2024-00229 and IPR2024-00230. However, Petitioner does object to expunging EX1072 in PGR2024-00011 which expressly relies on EX1072. In that proceeding, Petitioner proposes filing a replacement version of EX1072 containing just the excerpts which are cited in the petition, all of which are non-confidential.

statements made by Patent Owner in its infringement contentions (EX1072) regarding the knowledge of a POSITA:

> Aptiv admits in its infringement contentions that "[a] person of ordinary skill in the art would understand that the step of determining whether the consumer device is operating in the USB host mode or in the USB device mode is performed by the USB routing switch." ***EX1072, 597***.

PGR2024-00011, Paper 1, 74 (emphasis added).

Given similarities among the four challenged patents, the petitions relied on similar prior art and arguments, and many of the same exhibits were filed in each proceeding, including EX1072. Petitioner filed a motion to seal EX1072 because it contains highly detailed, sensitive, confidential, and non-public information concerning the design, development, functionality, and operation of various Microchip USB hub products. *See* Paper 3 (Motion to File Confidential Document Under Seal).

The Show Cause Order. On the same day the Board issued its Institution Decision, the Board issued an "Order to Show Cause" in which it stated:

> Exhibit 1072 … is not discussed, relied on, referred to, or cited in the Petition []. We also could not find any discussion, reliance on, reference to, or citation of Exhibit 1072 in any other filed paper (except, of course, the Motion). As such, the relevancy of Exhibit 1072 and the need for having this confidential document in the

> record is not apparent. It is our intention to expunge Exhibit 1072 from the record, and deny the Motion as moot, unless Petitioner can establish why Exhibit 1072 should be maintained in the record at this time.

Paper 15, 2. The Board stated that its "Order applies equally to all [four] captioned proceedings" and provided Petitioner a time frame to respond. *Id*.

Petitioner's Response. Because the claim limitation for which Petitioner cites EX1072 in PGR2024-00011 is not present in IPR2024-00228, Petitioner does not object to the Board's proposal to "expunge Exhibit 1072 from the record, and deny [] as moot" Petitioner's Motion to File Confidential Document Under Seal (Paper 3) in IPR2024-00028.[2] Paper 15, 2. Petitioner reserves the right to file EX1072 later in the proceeding should it become relevant.

Respectfully submitted,

Dated: July 18, 2024

/Travis Jensen/
Travis Jensen, Reg. No. 60,087

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[2] Petitioner maintains that EX1072 is relevant to PGR2024-00011 and proposes filing a replacement exhibit in that proceeding that contains just the cited excerpts which would moot the motion to seal in that proceeding as well.

CERTIFICATE OF SERVICE

The undersigned certifies that on July 18, 2024, a copy of the following was served in its entirety via electronic mail, upon the following attorneys of record for the Patent Owner:

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/Karen Johnson/

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