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. IPR2024-00230
U.S. Patent No. 11,176,072

NOTICE OF DISTRICT COURT *MARKMAN* 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

Exhibit	Description
1036	*NET1080 USB TurboCONNECT Preliminary Specification*, 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

Exhibit	Description
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))
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

Exhibit	Description
1062	Internet Archive Affidavit of Nathaniel E Frank-White re Exhibits 1036, 1049, 1050/1051, and 1058
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	Aptiv's Supplemental Infringement Contentions (Redline), dated November 8, 2023 in *Aptiv Technologies AG, v Microchip Technology Inc.*, Case No. 1:23-cv-00307-JDW (D. Del.) [PROTECTIVE ORDER MATERIAL - FILED UNDER SEAL]
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

Exhibit	Description
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.)
1076	INTENTIONALLY OMITTED
1077	INTENTIONALLY OMITTED
1078	INTENTIONALLY OMITTED
1079	INTENTIONALLY OMITTED
1080	Claim Construction Order (Dkt. Nos. 201-202), dated July 12, 2024 in *Aptiv Technologies AG, v Microchip Technology Inc.*, Case No. 1:23-cv-00307-JDW (D. Del.)

Petitioner Microchip Technology Inc. notifies the Board that the district court in copending litigation styled *Aptiv Technologies AG, v Microchip Technology Inc.*, Case No. 1:23-cv-00307-JDW (D. Del.) issued a *Markman* order on July 12, 2024 construing the term(s) highlighted in yellow below appearing in one or more Challenged Claims of U.S. Pat. 11,176,072 (the "'072 patent," EX1009). The *Markman* order is submitted as EX1080. *See* 37 CFR § 42.100 ("Any prior claim construction determination concerning a term of the claim in a civil action … that is timely made of record in the inter partes review proceeding will be considered."); November 2019 Consolidated Trial Practice Guide ("Guide"), 46-47.

Claim Term	**Court's Construction**
Disputed Terms	
connecting the consumer device via the second USB port to the USB hub via the first USB port through the USB routing switch and the USB bridge '420 Patent, Claim 13	**connecting the consumer device via the second USB port to the USB host via the first USB port through the USB routing switch and the USB bridge**
connecting the consumer device via the second USB port to the USB hub via the first USB port through the USB routing switch and the USB hub '420 Patent, Claim 13	**connecting the consumer device via the second USB port to the USB host via the first USB port through the USB routing switch and the USB hub**
"a USB Hub having a plurality of USB Ports and interconnected to the	Not Indefinite

embedded USB Host system . . . a USB routing switch interconnected to the USB Bridge, the USB Hub, and the plurality of USB Ports, wherein the USB routing switch is configured to connect a first USB Port of the plurality of USB Ports to the USB Hub through the USB Bridge . . . , and wherein the USB routing switch is configured to connect the first USB Port directly to the USB Hub . . .” / “providing a USB hub having a plurality of USB ports interconnected to the USB host . . . automatically configuring the USB routing switch to connect a first USB Port of the plurality of USB ports to the USB hub through the USB bridge . . . ; and automatically configuring the USB routing switch to initiate bidirectional communication with the USB host, wherein the USB routing switch is configured to connect the first USB port directly to the USB hub . . . ” ’037 patent, Claim 1 ’899 patent, Claim 1	
providing efficient communications among USB components of a data communication system ’072 Patent, Claim 1	Not indefinite
wherein the USB hub and USB bridge have different components and functionality ’643 Patent, Claims 1, 5, 10	Not indefinite

signal detection circuit ’643 Patent, Claims 1, 5	35 U.S.C. § 112(6) does not apply; not indefinite
routing logic circuit ’643 Patent, Claims 1, 5, 10	Not indefinite
some combination of embedded devices and consumer devices that are USB Devices along with at least one that is the second USB Host ’037 Patent, Claim 16	Not indefinite **some combination including both embedded devices and consumer devices that are USB Devices along with at least one that is the second USB Host**
Agreed Upon Constructions	
wherein said USB routing switch is configured to simultaneously provide the second communication path between said first USB port and said third USB port ’420 Patent, Claim 20	**wherein said USB routing switch is configured to simultaneously provide the third communication path between said first USB port and said third USB port**
“embedded Universal Serial Bus (USB) Host” / “embedded USB host” ’037 Patent, Claim 1 ’072 Patent, Claim 1	**USB host physically embedded in a vehicle**

Respectfully submitted,

Dated: July 15, 2024

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

CERTIFICATE OF SERVICE

The undersigned hereby confirms that the foregoing Petition for *Inter Partes* Review and associated exhibits were caused to be served on July 15, 2024 via overnight courier on the Patent Owner at the correspondence address of record for U.S. Pat. No. 11,176,072:

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