

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROCHIP TECHNOLOGY INC.,
Petitioner,

v.

APTIV TECHNOLOGIES AG,
Patent Owner.

Patent No. 9,619,420

Inter Partes Review No. IPR2024-00228

PATENT OWNER'S AUTHORIZED PRELIMINARY SUR-REPLY

Microchip alleges that “Aptiv’s primary nonobviousness attack centers on six internal email threads.” (Paper 11, 1.) This is false. As discussed at length in Aptiv’s POPR, Microchip fails to provide *any* evidence suggesting that a POSITA would be motivated to combine the Chang and Chang II references, a combination on which Microchip relies for every single challenged claim in the ’420 Patent. (See Paper 10, Section VII.) Instead, Microchip relies on the general existence of dual-role devices and its expert’s unsupported hindsight testimony. (*Id.*) But the evidence shows that combining the references in the proposed manner would add both complexity and cost and would frustrate the express goal of Chang. (*Id.*)

Nothing in Microchip’s Reply moves the needle regarding that fundamental deficiency in its Petition. Instead, the Reply focuses exclusively on attacking a handful of emails among Microchip employees working on its automotive USB hubs. Though these emails illuminate the challenges Microchip faced in developing its own CarPlay solution, they are not necessary for the Board to rightfully conclude that the Petition fails to articulate a cognizable motivation to combine Chang and Chang II. Aptiv provided the emails to assure the Board that Microchip’s failure to show motivation to combine was no minor pleading deficiency, but instead a reflection of the true state of the art at the priority date of the ’420 Patent. Not only would a POSITA not have been motivated to combine Chang and Chang II in the claimed manner, but they would also have been

affirmatively skeptical of trying such a combination.

Knowing this, Microchip attempts to erase the context surrounding the invention claimed in the '420 Patent. It argues that “[t]he Challenged Patent does not claim CarPlay, nor does CarPlay appear anywhere in the specification.” (Paper 11, 1.) But CarPlay was unquestionably the motivation behind Aptiv’s invention, as explained in the specification and as testified to by one of the named inventors, Robert Voto. As the specification describes:

Recently, the system level design thinking has shifted towards viewing smart phones as the USB Host, and any device connecting thereto as the USB device. . . . This presents some problems for automotive systems. A redesign of the USB architecture in the vehicle is thus necessary such that the vehicle can act either as the USB Host (when necessary to connect to USB Devices such as memory sticks, thumb drives, etc.) or USB Device (when necessary to connect to USB Hosts, such as a smart phone which demands to be USB Host rather than USB Device.

(EX-1001, 2:62-3:17.) And Mr. Voto further explained:

[T]here was one requirement that [Jaguar] asked for that absolutely made no sense. They said the downstream port of the hub module needed to support role reversing, which means that you could hook up

a USB host or a USB device to the downstream ports of the hub module [T]he reason that requirement was in there was because Jaguar was trying to work cooperatively with Apple to implement this – this new iPhone application that they would call CarPlay. . . . I wasn’t particularly excited about Option A or Option B and neither was Jaguar. . . . We worked on that and we came up with another option.

(EX-2003 at 52:1-61:13.) The problem the inventors were attempting to solve in the ’420 Patent was CarPlay’s requirement that an iPhone act as a host when plugged into a car’s head unit.

The solution Mr. Voto and his co-inventors came up with was not obvious and was in fact counter-intuitive. At the time, it was thought that, among other problems, a two-host system with downstream USB devices would result in irreconcilable conflicting commands. (EX-2001, ¶ 76.) As one of Microchip’s experienced engineers¹ put it, “no bus can serve two masters.” (EX-2005, 2.) As a result, it was believed that “you cannot do CarPlay AND own the other ports with one USB data lane” and that such a solution “may be physically outside the

¹ Mr. Steele is an electrical engineer and had over a decade of post-degree experience at the time he made these statements.

(<https://www.linkedin.com/in/brigham-steele-2244a79/>; see Paper 11, 4 n.2.)

capabilities of ANY USB system.” (*Id.*, 1-2.) Nothing in Microchip’s Petition or Reply explains why a POSITA would be motivated to make the logical leaps required to combine the Chang and Chang II references in a way that would overcome these obstacles.

Microchip’s incredible attempts to downplay its expertise in the field of USB hubs and chip design are unavailing. Microchip is one of only a handful of automotive USB hub chip manufacturers, and supplies roughly 35 million chips per year. (EX-2002 at 210:6-211:14.) Before Aptiv’s innovative CarPlay solution entered the market, Microchip had nearly 100% of the USB hub business of the “Big 3” U.S. automakers: Ford, Chrysler, and GM. (*Id.*, 211:15-212:6.) Even today, Microchip sells more than four dozen different USB products.

Microchip’s allegation that Aptiv received a head start based on early knowledge of CarPlay’s requirements is similarly a red herring. (Paper 11, 2-3.) Each of the emails in the record was authored at least six months *after* Microchip learned of CarPlay’s requirements and demonstrates that even with that knowledge, Microchip’s engineers were unable to design a viable solution despite significant motivation to do so. (Paper 10, 7-10.)

Ultimately, Microchip disputes the relevance of the cited emails, but does not dispute that its engineers were unable to successfully design a USB hub capable of supporting CarPlay with a single upstream and persistent downstream

USB for *years* after Aptiv successfully did so. Microchip also does not dispute that automakers repeatedly demanded such a solution as soon as they learned of CarPlay's requirement that an iPhone act as the USB host. These two facts demonstrate that a POSITA—and Microchip employed many²—would not have found it obvious to combine the unrelated references on which Microchip relies for its § 103 combinations.

At base, however, Microchip's Reply is of no moment. Even if the Board were to ignore entirely the evidence Microchip attacks, it should decline to institute because Microchip's Petition is devoid of any showing of motivation to combine Chang and Chang II.

² (EX-2002 at 195:17-21, 206:22-207:3 (Microchip's Senior Vice President and former head of its USB Networking Business Unit, Mitch Obolsky, oversees roughly 2,000 engineers).)

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Respectfully submitted,

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Certificate of Service (37 C.F.R. § 42.6(e)(4))

I hereby certify that the attached PATENT OWNER'S AUTHORIZED PRELIMINARY SUR-REPLY was served on the below date on the Petitioner via e-mail (by agreement) to the following counsel of record:

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