

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCT MOBILE (US), INC., TCT MOBILE (US) HOLDINGS, INC.,
HUIZHOU TCL MOBILE COMMUNICATION CO. LTD., and
TCL COMMUNICATION, INC.,
Petitioner,

v.

FUNDAMENTAL INNOVATION SYSTEMS INTERNATIONAL LLC,
Patent Owner.

IPR2021-00599
Patent 7,834,586 B2

Before BRYAN F. MOORE, JON B. TORNQUIST, and
ARTHUR M. PESLAK, *Administrative Patent Judges*.

PESLAK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

TCT Mobile (US), Inc.; TCT Mobile (US) Holdings, Inc.; Huizhou TCL Mobile Communication Co. Ltd.; and TCL Communication, Inc. (collectively “Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1, 2, 8, and 9 (the “challenged claims”) of U.S. Patent No. 7,834,586 B2 (Ex. 1001, “the ’586 patent”). Patent Owner, Fundamental Innovation Systems International LLC, timely filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314(a). *See also* 37 C.F.R § 42.4(a) (2020) (“The Board institutes the trial on behalf of the Director.”). Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Taking into account the Petition, the arguments presented in the Preliminary Response, and all supporting evidence, we conclude that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in showing that at least one claim of the ’586 patent is unpatentable. Pursuant to 35 U.S.C. § 314, and for the reasons stated below, we hereby institute an *inter partes* review of the challenged claims of the ’586 patent on the ground stated in the Petition.

Our factual findings and legal conclusions at this stage of the proceeding are based on the evidentiary record developed thus far. This decision to institute trial is not a final decision as to the unpatentability of

the claims for which *inter partes* review is instituted. Our final decision will be based on the full record developed during trial.

A. Related Matters

The parties state that the '586 patent is asserted in *Fundamental Innovation Systems International LLC v. Coolpad Group Limited, et al.*, No. 2:20-cv-00117 (E.D. Tex.); *Fundamental Innovation Systems International LLC v. Lenovo (United States) Inc., et al.*, No. 1:20-cv-00551 (D. Del.); and *Fundamental Innovation Systems International LLC v. TCT Mobile (US) Inc., et al.*, No. 1:20-cv-00552 (D. Del.). Mandatory Notices, 1¹; Paper 5, 2. In addition, the parties state that the '586 patent was the subject of IPR2018-00276, IPR2018-00495, and IPR2018-00487. Mandatory Notices 1; Paper 5, 4.

B. Real Parties-in-Interest

Petitioner identifies TCT Mobile (US), Inc., TCT Mobile (US) Holdings, Inc., Huizhou TCL Mobile Communication Co. Ltd., and TCL Communication, Inc. as real parties-in-interest. Mandatory Notices, 1. Patent Owner identifies Fundamental Innovation Systems International LLC and Fundamental Innovation Systems International Holdings LLC as real parties-in-interest. Paper 5, 1.

C. Technology Background

An overview of USB² cables and the standard USB specification is helpful in understanding the technology involved in the '586 patent, which relates to charging a mobile device through a USB connector. *See* Ex. 1001, Fig. 3. Cables compliant with the USB standard have four conductors:

¹ Petitioner appended its Mandatory Notices to the Petition. Pet., iii.

² "USB" is an acronym for "Universal Serial Bus." Ex. 1010, 1.

VBUS, D+, D-, and GND. Ex. 1008, 17–18, 86³. The VBUS and GND conductors of the USB cable are used to deliver power to devices and the D+ and D- conductors carry communication signals between a USB host and a connected device. *Id.* at 17–18; Ex. 1001, 6:63–7:3. Figure 4–2 of the USB specification, reproduced below, depicts these four conductors within a USB cable:

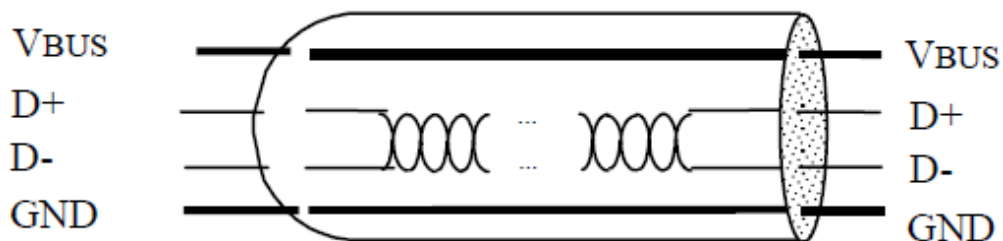


Figure 4-2. USB Cable

Ex. 1008, 17. Figure 4–2 illustrates the arrangement of conductors in a USB cable.

The USB 2.0 specification designates “SE1” as a state in which D+ and D– conductors are both high (i.e., at a voltage greater than 0.8 V). *See* Ex. 1009 at 123, 145. The USB 2.0 specification states that “[l]ow-speed and full-speed USB drivers must never ‘intentionally’ generate an SE1 on the bus.” *Id.* at 123; *see also id.* at 148 n.4 (“A high-speed driver must never ‘intentionally’ generate a signal in which both D+ and D– are driven to a level above 200 mV. The current-steering design of a high-speed driver should naturally preclude this possibility.”).

³ We refer to the original printed page numbers in this Exhibit.

D. The '586 Patent

The '586 patent is titled “Multifunctional Charger System and Method.” Ex. 1001, code (54). The '586 patent issued on November 16, 2010, from an application filed on February 26, 2010. *Id.* at codes (45), (22). The patent claims priority through a chain of related applications to Provisional Application No. 60/273,021, filed on March 1, 2001, and to Provisional Application No. 60/330,486, filed on October 23, 2001. *Id.* at codes (63), (60); *see also id.* at 1:7–30.

The '586 patent “relates generally to power adapters. More particularly, the invention relates to power adapters for use with mobile devices.” *Id.* at 1:34–36. The '586 patent explains that “[a]lthough the USB interface can be used as a power interface, the USB is typically not used for that purpose by mobile devices.” *Id.* at 1:56–58. According to the '586 patent, the USB specification requires “that a USB device participate in a host-initiated process called enumeration in order to be compliant with the current USB specification in drawing power from the USB interface.” *Id.* at 1:60–62. The '586 patent states that it would be preferable “to be able to utilize alternate power sources such as conventional AC outlets and DC car sockets that are not capable of participating in enumeration to supply power to the mobile device via a USB interface.” *Id.* at 1:65–2:3.

Figure 2, reproduced below, shows a USB adapter coupled to an exemplary mobile device.

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