

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

FUNDAMENTAL INNOVATION	§	
SYSTEMS INTERNATIONAL LLC,	§	
	§	
v.	§	CASE NO. 2:16-cv-1425-JRG-RSP
	§	
LG ELECTRONICS INC., et al.	§	
	§	

**CLAIM CONSTRUCTION**  
**MEMORANDUM OPINION AND ORDER**

On March 26, 2018, the Court held a hearing to determine the proper construction of disputed claim terms in United States Patents No. 7,239,111, 7,791,319, 7,834,586, 7,893,655, 7,999,514, 8,232,766, and 8,624,550. Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing (Dkt. Nos. 123, 127 & 130),<sup>1</sup> having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Memorandum and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005); *see also Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

<sup>1</sup> Citations to documents (such as the parties' briefs and exhibits) in this Claim Construction Memorandum and Order refer to the page numbers of the original documents rather than the page numbers assigned by the Court's electronic docket unless otherwise indicated.

**Table of Contents**

**I. BACKGROUND..... 4**

**II. LEGAL PRINCIPLES ..... 6**

**III. THE PARTIES’ STIPULATED TERMS ..... 9**

**IV. CONSTRUCTION OF DISPUTED TERMS IN THE FISCHER PATENTS ..... 10**

    A. “USB” ..... 11

    B. “USB adapter” and “Universal Serial Bus (‘USB’) adapter” ..... 12

    C. “USB controller” ..... 15

    D. “USB connector” ..... 17

    E. “USB communication path” ..... 20

    F. “abnormal USB data condition” and “abnormal USB data line condition” ..... 22

    G. “USB specification” ..... 27

    H. “without USB enumeration” ..... 29

    I. “identification signal” ..... 33

    J. “a mobile device” ..... 35

    K. “microprocessor” ..... 36

    L. “generate” and “generating” ..... 37

    M. “adapter” ..... 40

    N. “means for receiving energy from a power socket” ..... 44

    O. “means for regulating the received energy from the power socket to generate a power output” ..... 45

    P. “means for generating an identification signal that indicates to the mobile device that the power socket is not a USB hub or host” ..... 46

    Q. “means for coupling the power output and identification signal to the mobile device” ..... 48

**V. CONSTRUCTION OF DISPUTED TERMS IN THE ’319 PATENT FAMILY ..... 50**

    R. “USB” ..... 50

    S. “battery charge controller” ..... 51

    T. “voltage drop across [a/the] battery charge controller” ..... 56

    U. “power” ..... 59

    V. “such that . . . the rechargeable battery receives a remainder of [the] power available from the battery charge controller” and “such that . . . the rechargeable battery receives a remainder of the received power” ..... 61

    W. “reference voltage” and “reference voltage signal” ..... 64

    X. “a switch” and “a semiconductor switch” ..... 65

Y. “voltage sensing circuit” ..... 66

Z. “wherein the supply current passes through the external driving semiconductor rather than through the battery charge controller” and “whereby load current passes through the external driving semiconductor instead of the battery charge controller” ..... 70

AA. Preambles ..... 71

BB. “means for receiving power from the USB port” ..... 73

CC. “means for supplying the received power to the rechargeable battery and to the portable device, wherein the supplied power is limited such that the rechargeable battery and the portable device may not draw more than a pre-determined maximum amount of current available from the USB port” ..... 74

DD. “means for both isolating the rechargeable battery from the portable device and controlling an amount of current supplied to the rechargeable battery such that the portable device receives a pre-determined amount of the received power needed to operate and the rechargeable battery receives a remainder of the received power” ..... 76

EE. “means for measuring a voltage drop across a battery charge controller providing power to a portable device and an input of a switch in parallel” ..... 79

FF. “means for responding to the voltage drop across the battery charge controller by modulating the switch to control a quantity of current supplied to a rechargeable battery such that the portable device receives a predetermined amount of power to operate and the rechargeable battery receives a remainder of power available from the battery charge controller” ..... 81

**VI. CONSTRUCTION OF DISPUTED TERMS IN THE '655 PATENT ..... 83**

GG. “USB” ..... 83

HH. “USB-compliant charging and power supply circuit” ..... 84

II. “power” ..... 85

JJ. “reference voltage” ..... 87

KK. “a switch” and “a semiconductor switch” ..... 90

LL. “adjust” ..... 91

**VII. CONCLUSION ..... 93**

## I. BACKGROUND

Plaintiff Fundamental Innovation Systems International LLC (“Plaintiff” or “Fundamental” or “FISI”) has alleged infringement of United States Patents No. 7,239,111 (“the ’111 Patent”), 7,791,319 (“the ’319 Patent”), 7,834,586 (“the ’586 Patent”), 7,893,655 (“the ’655 Patent”), 7,999,514 (“the ’514 Patent”), 8,232,766 (“the ’766 Patent”), and 8,624,550 (“the ’550 Patent”) (collectively, the “patents-in-suit”) by Defendants LG Electronics, Inc., LG Electronics U.S.A., Inc., LG Electronics Mobilecomm U.S.A. Inc., LG Electronics Mobile Research U.S.A. LLC, LG Electronics Alabama, Inc., Huawei Investment & Holding Co., Ltd., Huawei Technologies Co., Ltd., Huawei Device USA, Inc., and Futurewei Technologies, Inc. (collectively, “Defendants”). Plaintiff submits that the patents-in-suit relate to “battery charging and power management.” Dkt. No. 123 at 1.

The ’111 Patent, titled “Universal Serial Bus Adapter for a Mobile Device,” issued on July 3, 2007, and bears an earliest priority date of March 1, 2001. The ’586 Patent, ’766 Patent, and ’550 Patent are continuations of the ’111 Patent, and these patents share the same specification. *See* Dkt. No. 103 at 1 n.1. The Abstract of the ’111 Patent states:

An adapter for providing a source of power to a mobile device through an industry standard port is provided. In accordance with one aspect of the invention, the adapter comprises a plug unit, a power converter, a primary connector, and an identification subsystem. The plug unit is operative to couple the adapter to a power socket and operative to receive energy from the power socket. The power converter is electrically coupled to the plug unit and is operable to regulate the received energy from the power socket and to output a power requirement to the mobile device. The primary connector is electrically coupled to the power converter and is operative to couple to the mobile device and to deliver the outputted power requirement to the mobile device. The identification subsystem is electrically coupled to the primary connector and is operative to provide an identification signal.

The ’319 Patent, titled “Circuit and Method of Operation for an Electrical Power Supply,” issued on September 7, 2010, and bears a filing date of February 21, 2003. The ’514

Patent is a continuation of the '319 Patent, and these patents share the same specification. *See* Dkt. No. 103 at 1 n.2. The Abstract of the '319 Patent states:

A battery charging circuit comprising: a semiconductor switch having an output connected to a rechargeable battery; a battery charge controller for receiving power from an external source, and supplying output power to a portable device and the input of the semiconductor switch, the current output of the battery charge controller being controllable; and a voltage sensing circuit for: measuring the voltage drop across the battery charge controller; and responding to the voltage drop across the battery charge controller by modulating the semiconductor switch to reduce the quantity of current supplied to the rechargeable battery when the voltage drop is too great; whereby the total power dissipated by the battery charge controller is controlled, the portable device receiving the power it needs to operate and the rechargeable battery receiving any additional available power.

The '655 Patent, titled "Charging and Power Supply for Mobile Devices," issued on February 22, 2011, and bears an earliest priority date of December 13, 2005. The Abstract of the '655 Patent states:

Charging and power supply for mobile devices is disclosed. A USB-compliant charging and power supply circuit includes switch-mode battery charging circuitry for receiving power from an external power source and for supplying output power through an output node to an electronic system of an electronic communication device and a battery. Battery isolation circuitry includes a semiconductor switch connecting the output node to the battery. The battery isolation circuitry senses voltage at the output node and variably restricts current to the battery when the voltage is below a minimum voltage value by operationally controlling the semiconductor switch as current passes through it. During variable current restriction the electronic system is supplied required power with said battery being supplied any additional available power.

Plaintiff has referred to these three groupings of the patents-in-suit as "the Fischer Patents," "the '319 Patent Family," and "the '655 Patent," respectively. The '319 Patent Family and the '655 Patent, together, have sometimes been referred to as "the Veselic Patents."

The Court has previously construed terms in the patents-in-suit in *Fundamental Innovation Systems International LLC v. Samsung Electronics Co., Ltd., et al.*, No. 2:17-CV-145, Dkt. No. 140 (E.D. Tex. Jan. 31, 2018) ("*Samsung*").

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.