UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC.,
LG ELECTRONICS U.S.A., INC., and
LG ELECTRONICS MOBILECOMM U.S.A., INC.,
Petitioner

v.

CYPRESS SEMICONDUCTOR CORPORATION
Patent Owner

DECLARATION OF DAVID G. WRIGHT

I, David G. Wright, hereby declare as follows:

1. I am the Vice President of Technical Staff at Cypress Semiconductor Corp. ("Cypress"). I make this declaration based on my personal knowledge and opinions following a reasonable investigation, and, if called upon to do so, could and would testify competently to the matters set forth below.

2. I received a BSc in Electronic Engineering (equivalent to BSEE) in 1988 from the University of Southampton, England. Later, I received a MSc in VLSI Design (equivalent to MSEE) in 1995 from Bournemouth University, England.

3. From 1984 to 1990, I was employed as an Electronics Engineer at Matra-Marconi Space Systems in Portsmouth, UK, where I held a variety of hardware, software, wireless, and system engineering positions. From 1990 to 1996, I was employed as a Senior Research Engineer at Raytheon Marine Europe in Portsmouth, UK, where I was responsible for hardware and firmware design of leisure marine electronics. From 1996 to 1999, I was employed as an Electronics/Firmware Lead at Saitek PLC in Bristol, UK, where I was responsible for all aspects of electronics and established and led the EE/FW function for a startup product line of an established Asian toy OEM.

4. From 1999 to present, I have been employed at Cypress in various roles. Specifically, from 1999 to 2002, I held the position of Applications Engineering Manager. In this role, I was responsible for all aspects of customer support for Cypress' market-leading LS & FS (low speed & full speed) USB products. From 2002 to 2006, I held the position of Lead Architect, Wireless &

HID (Human Interface Devices). In this role, I defined and architected Cypress'
2.4 GHz DSSS product family and Cypress' market-leading USB HID products,
and also represented Cypress on various USB and Wireless standards bodies (e.g.,
I was the co-chair of the USB OTG Working Group at the USB Implementers
Forum, USB-IF). From 2006 to 2008, I held the position of Lead Architect,
Consumer & Computation Division. In this role, I was responsible for system
engineering and architecture of Wireless, MCU, USB and HID products, and
defined and architected a major new mixed signal MCU product family. From
2008 to present, I am holding the position of Vice President of Technical Staff,
CTO (Chief Technical Officer) Office. In this role, I have acted as the platform
architect for key MCU and ASSP platforms, the domain expert for HID, USB,
Wireless, and 8-bit MCU, and the Patent Committee Chairman.

5.   I am an inventor on 119 (one hundred and nineteen) U.S. patents.

6.   Standard parameters for USB were jointly defined by computer
hardware suppliers and were released in 1996 in the USB 1.0 specification. This
initial specification defined basic performance criteria such as the data transfer
speeds.

7.   Cypress's is a world leader in USB solutions. A significant part of
this success can be attributed to the EZ-USB product line, which was incorporated
into Cypress's USB business when it acquired a company called Anchor Chips in
1999. The EZ-USB product line included a feature, not present in the USB 1.0
specification, which allowed configuring peripheral devices connected to a host

computer via USB without physically disconnecting and reconnecting the peripheral.

Anchor Chips Products, Cypress Products, and the USB Patents

8.   I understand that Anchor Chips Inc. was founded by Ron Sartore and others. It is also my understanding that Anchor Chips' founders strived to address various problems with existing high-speed USB devices. An example of such a problem was the use of non-volatile memory (e.g., Flash, EEPROMs, EPROMs, and masked ROMs), which reduced re-configuration flexibility and did not allow for quick, in-the-field changes in firmware, driver code, and working prototypes. *See* Ex. 2025, pp. 1-4; Ex. 2026, pp. 1-4; Ex. 2027, pp. 1-3. I understand that the patents involved in the IPR proceedings are based on an application that was filed by Anchor Chips.

9.   It is my understanding that Anchor Chips, and in particular, the inventors of the patents at issue in the present IPRs, devised a way to perform a "soft, downloadable configuration" to address the issue of the lack of configurability of USB peripherals. This is described in a September 1, 1998 article in EE Product News. *See* Ex. 2027 (available at

http://electronicdesign.com/microprocessors/usb-chips-are-software-configurable).

Anchor Chips' software configurable USB solution was called "EZ-USB," and provided unprecedented "soft configuration" architecture:

Soft Configuration
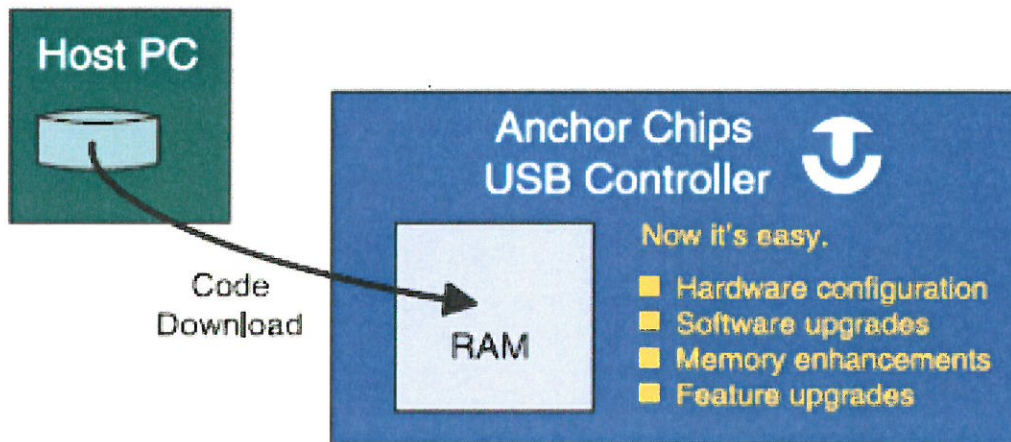
Ex. 2025, pp. 4; Ex. 2026, pp. 4. *See also* Ex. 2028, pp. 9.

10.   The EZ-USB family provided the USB product designers and peripheral manufacturers with what Anchor Chips called "ReNumeration™". Upon power-up or plug in, the EZ-USB chip automatically enumerates as a default USB device. Once enumerated, the host PC downloads configuration data that contains program, data, and enumeration tables. Once loaded, the EZ-USB core performs a ReNumeration™ cycle to simulate a USB disconnect and reconnect to come back as a completely new USB device. This entire sequence of enumeration, download, and ReNumeration™ happens quickly and is transparent to the user, as illustrated in the figure below:

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