



## Cypress USB-C with Power Delivery Making Universal Power Adapters a Reality

February 21, 2019

*Flexible Charging Solution Set to Replace Plethora of Barrel Connectors, Increasing User Convenience and Reducing e-Waste*

SAN JOSE, Calif.--(BUSINESS WIRE)--Feb. 21, 2019-- Cypress Semiconductor Corp. (NASDAQ: CY), the embedded solutions leader, today introduced a USB-C Power Delivery (PD) solution designed to reduce the e-waste resulting from the estimated one million tons of power adapters produced per year<sup>1</sup>. The Cypress EZ-PD™ Barrel Connector Replacement (BCR) solution has the potential to replace the myriad of barrel connectors used in power adapters that consumers are currently burdened by. It can also replace all legacy USB micro-B connectors that provide only 7.5 Watts, which is not nearly enough to power most consumer electronic devices or industrial applications. USB-C connectors with USB PD provide up to 100W and are widely being adopted in automobiles, smartphones, laptops and peripherals, and tablets. This combination makes USB-C connectors ideal to serve as a universal power adapter standard that eliminates the need for manufacturers to produce customized chargers—enabling the convenience of reusing chargers for electronic devices such as IoT devices, smart speakers, power tools, electric shavers, drones and other rechargeable devices.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20190221005342/en/>



Pictured is Cypress' EZ-PD BCR barrel connector replacement solution, a USB-C universal power adapter solution for fast charging of a wide range of electronics. (Graphic: Business Wire)

maximizing the re-use and sharing of a universal charger for multiple devices.”

The EZ-PD BCR Kit enables product developers to quickly prototype the conversion of their products from a conventional power adapter to USB PD in three steps:

- One, select a commercially available USB PD power adapter that supports the desired power profile;
- Two, set up the desired USB PD power profile with the EZ-PD BCR Kit and quickly prototype with no firmware development required;
- And three, embed the EZ-PD BCR controller into the product, replacing the barrel receptacle with a USB-C receptacle.

The product can then be powered by any USB-C power adapter supporting the desired USB Power Delivery profile, giving the manufacturer the option to allow consumers to use their own USB-C power adapters instead of providing one in-box.

Cypress will demonstrate the EZ-PD BCR solution at Embedded World 2019 in Nuremberg, Germany in its stand (#148 in hall 4A) of the Nuremberg Exhibition Center from February 26-28.

Cypress' EZ-PD BCR solution complies with the latest USB Type-C and USB PD 3.0 standards. The BCR controller integrates a complete Type-C USB-PD transceiver, a load switch controller with a soft start, all termination resistors required for a USB-C port and system-level ESD protection. The one-chip solution minimizes bill-of-material costs for USB-C power adapters by integrating error amplifiers for constant voltage, constant current and PPS applications, a 30 V regulator that allows direct operation from VBUS, VBUS short protection on configuration channel (CC) pins, gate drivers for

Cypress' EZ-PD BCR controller offers a high level of integration in a small footprint package that minimizes bill-of-material cost and simplifies designs, enabling developers to quickly convert their products to be powered via a USB-C connector with few external components and no firmware required. Cypress accelerates the transition to USB-C connectors with the new EZ-PD BCR Kit, which enables product developers to quickly prototype without requiring firmware development. More information on the solution is available at [www.cypress.com/bcr](http://www.cypress.com/bcr).

“Using USB-C with Power Delivery as the universal power adapter solution makes sense across the board,” said Ajay Srikrishna, Vice President of Cypress' Wired Connectivity Business Unit. “For consumers, having one charger for multiple devices is much more convenient. For manufacturers, using our Barrel Connector Replacement solution to quickly prototype USB PD charging and eliminate the need to ship a custom charger with your product provides cost savings over the long haul. And, of course, the world as a whole benefits from the reduction of e-waste by

high-voltage power FETs, a low side current sense amplifier, and dedicated hardware for legacy charger detection protocols plus system level electrostatic discharge (ESD) protection. Overvoltage and overcurrent circuitry protects systems against power overloads and other faulty operating conditions.

### **Product Availability**

The CYPD3177 EZ-PD BCR controller is now in production in a 24-pin QFN (16 mm<sup>2</sup>) package. Designers can get started with the EZ-PD BCR Kit (CY4533), which is now available for \$25. More info on Cypress' USB-C and PD solutions is available at [www.cypress.com/Type-C](http://www.cypress.com/Type-C).

### **About Cypress' EZ-PD Portfolio**

Cypress' EZ-PD portfolio of USB-C controllers also includes CCG1, the world's first programmable USB-C controller, CCG2, the market's smallest programmable USB-C solution, CCG3, the market's most integrated programmable USB-C solution, CCG4, the world's first two-port USB-C solution, and CCG5 and CCG6, the market's first two-port USB-C solutions optimized for Thunderbolt notebook and desktop PCs. The EZ-PD portfolio was the first to support the latest USB PD 3.0 specification, which enables more robust end-to-end power delivery and charging solutions for laptop and mobile devices. The portfolio also includes versions of CCG2 and CCG3PA that are AEC-Q100 certified for automotive-grade performance, enabling fast charging of portable electronics in vehicles.

The USB-C standard is gaining rapid support with top-tier electronics manufacturers by enabling slim industrial designs, easy-to-use connectors and cables, and the ability to transmit multiple protocols and deliver up to 100 Watts of power. The USB-C standard's 2.4-mm-high connector plug is significantly smaller than the current 4.5-mm USB Standard-A connector.

### **Follow Cypress Online**

Join the [Cypress Developer Community 3.0](#), read our [blog](#), follow us on [Twitter](#), [Facebook](#) and [LinkedIn](#), and watch Cypress videos on our [Video Library](#) or [YouTube](#).

### **About Cypress**

Cypress is the leader in advanced embedded solutions for the world's most innovative automotive, industrial, smart home appliances, consumer electronics and medical products. Cypress' microcontrollers, wireless and USB-based connectivity solutions, analog ICs, and reliable, high-performance memories help engineers design differentiated products and get them to market first. Cypress is committed to providing customers with the best support and development resources on the planet enabling them to disrupt markets by creating new product categories in record time. To learn more, go to [www.cypress.com](http://www.cypress.com).

Cypress and the Cypress logo are registered trademarks and EZ-PD is a trademark of Cypress Semiconductor Corp. All other trademarks are property of their owners.

1. The Global e-Waste Monitor 2017

View source version on businesswire.com: <https://www.businesswire.com/news/home/20190221005342/en/>

Source: Cypress Semiconductor Corp.

Samer Bahou  
Cypress PR  
(408) 232-4552  
[samer.bahou@cypress.com](mailto:samer.bahou@cypress.com)