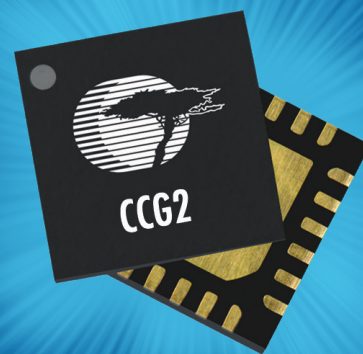


CYPRESS

# EZ-PD™ CCG2: 24W POWER ADAPTER REFERENCE DESIGN



## PRODUCT OVERVIEW

### INTRODUCTION:

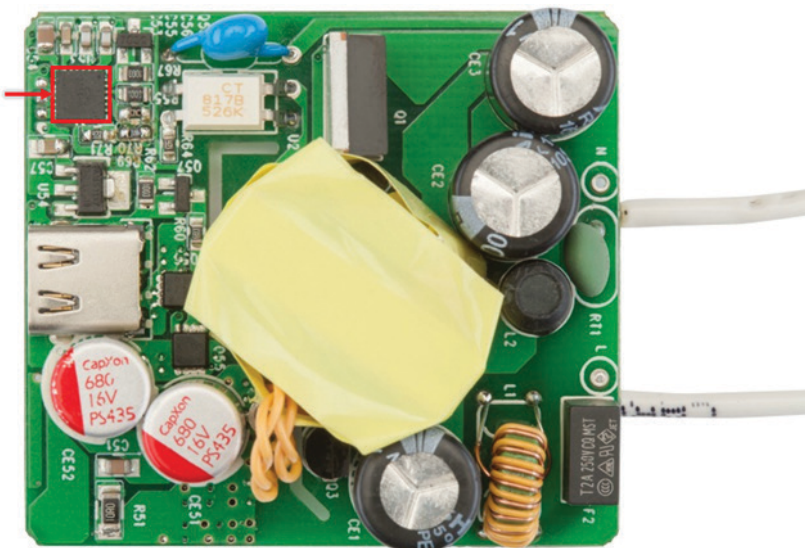
The CCG2 24W Power Adapter (PA) Board is a receptacle based Type-C power adapter which supports outputs of 5V@3A, 9V@2.7A and 12V@2A. The major components on the board are Cypress's EZ-PD CCG2 (CYPD2134-24LQXIT) controller, and Dialog Semiconductor's iW1782-00 AC-DC controller and iW671-00 Sync Rectifier.

The CCG2 controller on the board handles the USB Type-C interface and USB PD 2.0 whereas AC-DC power conversion, Over Current Protection (OCP) and Over Voltage Protection (OVP) are handled by Dialog Semiconductor's iW1782-00 AC-DC controller, which supports universal AC input supply. The board hardware design files (schematic, bill of materials and layout files) are readily available for customers to reduce the design cycle time.

### FEATURES

- USB Power Delivery support on USB Type-C Port
- Supports Downstream Facing Port on the USB Type-C Port
- Supports: 5V@3A, 9V@2.7A, 12V@2A
- Over Current and Over Voltage Protection
- Reduce design cycle time

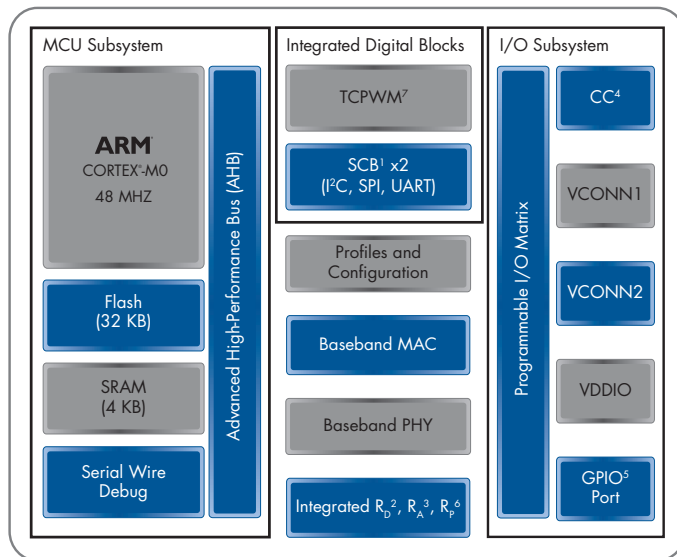
CCG2  
CYPD2134



For more information on the design, please visit reference design webpage:

[www.cypress.com/documentation/reference-designs/ccg2-24w-power-adapter-reference-design](http://www.cypress.com/documentation/reference-designs/ccg2-24w-power-adapter-reference-design)

## BLOCK DIAGRAMS



<sup>1</sup> Serial communication block configurable as UART, SPI or I<sup>2</sup>C

<sup>2</sup> Termination resistor read as a UFP

<sup>3</sup> Termination resistor read as an Electronically Marked Cable Assembly (EMCA)

<sup>4</sup> Configuration Channel

<sup>5</sup> General-purpose input/output

<sup>6</sup> Current sources to indicate a DFP

<sup>7</sup> Timer, counter, pulse-width modulation block

## CCG2: USB Type-C Port controller

## FEATURES

- 32-Bit MCU subsystem:
  - 48-MHz ARM® Cortex®-M0 MCU
  - 32 KB Flash and 4 KB SRAM
- Type-C support
  - Integrated Type-C Transceiver with termination resistors
  - Supports one USB Type-C port
  - 2x I<sup>2</sup>C/SPI/UART interface to EEPROM/device controller
- Power
  - Wide operating voltages: 2.7 V – 5.5 V
- System-Level ESD on CC and VCONN Pins
  - ± 8-kV Contact Discharge and ±15-kV Air Gap Discharge based on IEC61000-4-2 level 4C
- Packages
  - 1.63 mm × 2.03 mm, 20-ball wafer-level CSP (WLCSP) with 0.4-mm ball pitch
  - 2.5 mm × 3.5 mm × 0.6 mm 14-pin DFN
  - 4.0 mm × 4.0 mm × 0.55 mm 24-pin QFN
  - Supports industrial temperature range (-40 °C to +85 °C)
- Firmware upgradability over CC or I<sup>2</sup>C

## CCG2 PORTFOLIO

Part Number	Application	Termination Resistor	Role	Package
CYPD2103-20FNXIT	Cable	R <sub>A</sub>	EMCA	20-Ball CSP
CYPD2103-14LHXIT	Cable	R <sub>A</sub>	EMCA	14-Pin DFN
CYPD2104-20FNXIT	Accessory	R <sub>A</sub> , R <sub>D</sub>	UFP	20-Ball CSP
CYPD2105-20FNXIT	Active Cable	R <sub>A</sub>	EMCA	20-Ball CSP
CYPD2120-24LQXIT	C-DP, C-HDMI	R <sub>A</sub> , R <sub>D</sub>	UFP	24-Pin QFN
CYPD2122-24LQXIT	Note Books	R <sub>p</sub> , R <sub>D</sub>	DRP	24-Pin QFN
CYPD2134-24LQXIT	Adapters, Chargers	R <sub>p</sub>	DFP	24-Pin QFN
CYPD2122-20FNXIT	Tablets	R <sub>p</sub> , R <sub>D</sub>	DRP	24-Pin QFN

## GETTING STARTED

For more information, please contact [Online Tech Support Case System](#) or visit [www.cypress.com/ccg2](http://www.cypress.com/ccg2)

## Cypress Semiconductor Corporation

198 Champion Court, San Jose CA 95134

phone +1 408.943.2600

toll free +1 800.858.1810 (U.S. only)

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