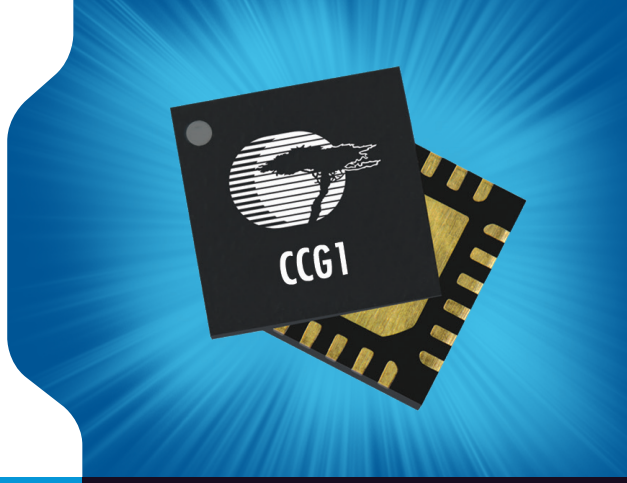
CYPRESS

EZ-PD™ CCG1: USB Type-C Port Controller with Power Delivery

Convert USB 3.1 Design to New Type-C Connector and Deliver 100 W of Power

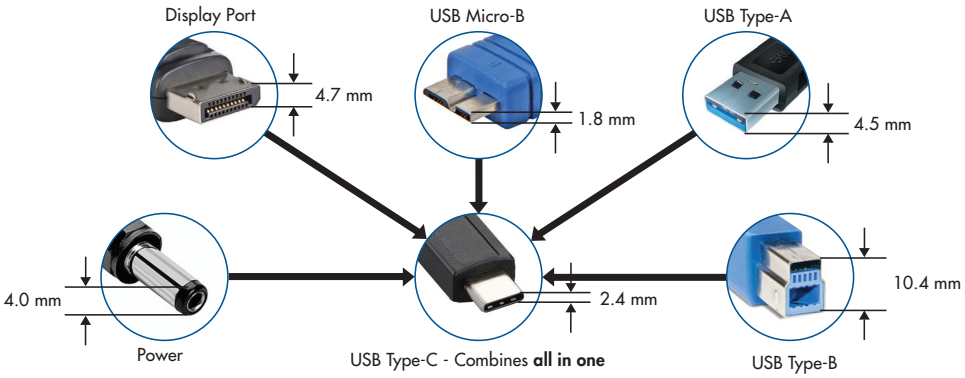


PRODUCT OVERVIEW

INTRODUCTION:

EZ-PD™ CCG1 is the industry's first Type-C port controller, with an integrated Type-C Transceiver, supporting USB Power Delivery (PD). Based on Cortex®-M0 MCU with 32 KB flash, CCG1 enables users to convert their USB designs to Type-C connectivity. CCG1 can be used to implement Type-C Cables and USB PD application for power adapters, notebooks, monitors and docking stations. CCG1 integrates digital and analog building blocks required for Type-C transceiver and monitoring circuitry for voltage and currents.

Available in 3 different packages (35-WLCSP 16-SOIC and 40-QFN) CCG1 caters to a wide range of applications.



USB Type-C is the new, slimmer, all-in-one 100-W connector

KEY APPLICATIONS

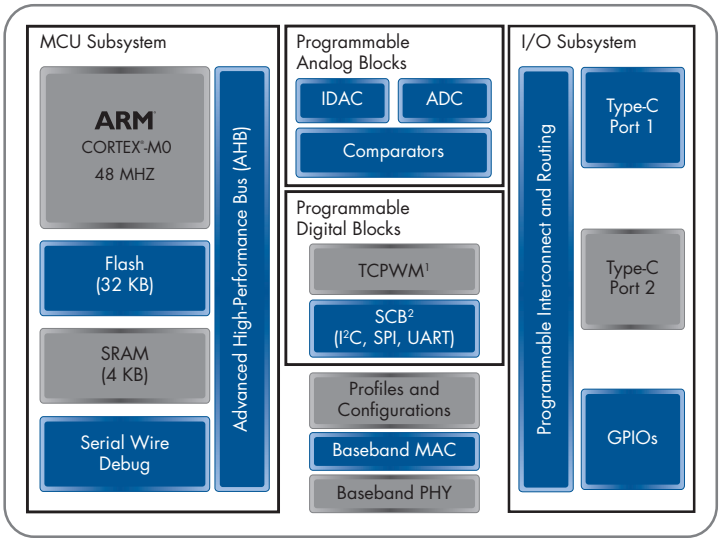
Cables, tablets, notebooks, adapters, chargers, monitors, docking stations, dongles

FEATURES

- 32-Bit MCU subsystem:
  - 48-MHz ARM® Cortex®-M0 MCU
  - 32 KB Flash and 4 KB SRAM
- Integrated analog blocks
  - 12 bit, 1-MSPS ADC to monitor V_{BUS}
  - Dynamic overcurrent and overvoltage protection
- Type-C support
  - Integrated transceiver to support two Type-C ports
  - I^2C/SPI/UART interface to system controller
- Power
  - Wide operating voltages: 1.71 V – 5.5 V
  - Low current: deep sleep – 1.3 uA, hibernate – 150 nA
- Package
  - 40-QFN, 35-WLCSP, 16-SOIC

CYPRESS PERFORM

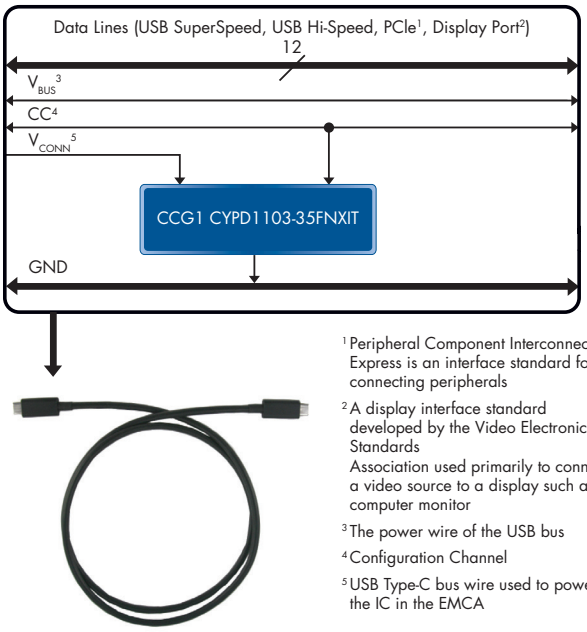
BLOCK DIAGRAMS



[1] Timer, counter, pulse-width modulation block

[2] Serial communication block configurable as UART, SPI or I²C

CCG1: USB Type-C Port Controller with PD



[1] Peripheral Component Interconnect Express is an interface standard for connecting peripherals

[2] A display interface standard developed by the Video Electronics Standards Association used primarily to connect a video source to a display such as a computer monitor

[3] The power wire of the USB bus

[4] Configuration Channel

[5] USB Type-C bus wire used to power the IC in the EMCA

Type-C cable with CCG1

CCG1 PORTFOLIO

Part Number	Application	Type-C Ports	Overcurrent Protection	Overvoltage Protection	Termination Resistor	Role	Package	Si ID
CYPD1103-35FNXIT	Cable, EMCA	1	No	No	R_a	Cable	35-WLCSP	0490
CYPD1121-40LQXI	Monitor	1	Yes	Yes	R_p, R_d	DRP	40-QFN	0489
CYPD1122-40LQXI	Notebook,	1	Yes	Yes	R_p, R_d	DRP	40-QFN	048A
CYPD1131-35FNXIT	Notebook, Tablet, Smartphone	1	Yes	Yes	R_p, R_d	DRP	35-WLCSP	0491
CYPD1132-16SXI	Power Adapter	1	Yes	Yes	R_p	DFP	16-SOIC	0498
CYPD1132-16SXQ	Power Adapter	1	Yes	Yes	R_p	DFP	16-SOIC	0498
CYPD1134-40LQXI	Notebook, Desktop	1	Yes	Yes	R_p	DFP	40-QFN	048B

GETTING STARTED

For more information on CCG1 email us at ccg1@cypress.com or visit www.cypress.com/ccg1

Cypress Semiconductor Corporation
198 Champion Court, San Jose CA 95134
phone +1 408.943.2600
toll free +1 800.858.1810 (U.S. only)

001-95699 Rev*A