

Product brief

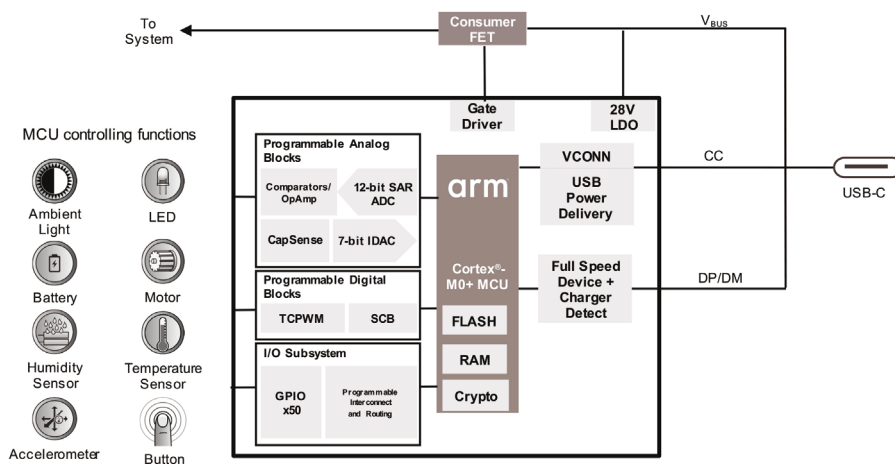
Power Delivery Microcontroller Gen 1

Industry's first high-voltage MCU with USB-C® PD

Overview

Power Delivery Microcontroller Gen 1 (PMG1) is a high-voltage USB-C Power Delivery Microcontroller (PDMCU) targeting consumer, industrial, and communication market segments that power from the USB-C connector and need an MCU to implement product features.

The PMG1 family has a market-proven USB PD stack, ensuring spec compliance and interoperability. It's the only high-voltage, programmable USB power delivery solution on the market today, complete with an integrated Arm® Cortex® M0/M0+, up to 256KB Flash and 32KB RAM, a USB full speed device, and analog and digital peripherals. The PMG1 family offers customers a unified FW view with an SDK supported in ModusToolbox®, enabling seamless migration between all PMG1 devices.



Applications

- › Power tools
- › E-Bike
- › Small home appliances
- › Wireless speaker
- › Sensor hub
- › Secure boot engine



Key features

USB power delivery 3.0

- › Supports up to 28V Extended Power Range (EPR) on V_{BUS}
- › V_{BUS} FET Gate Drivers
- › V_{BUS} fault protections: OVP, OCP

32-Bit MCU subsystem

- › 48-MHz Arm® Cortex® M0/M0+ MCU with DMA controller and RTC
- › Up to 256KB Flash and 32KB RAM

USB full speed device with BC v1.2

Analog peripherals

- › One 12-bit, 1 MS/second ADC
- › 2x low-power comparators, OpAmps
- › CapSense® with SMARTSENSE™ auto-tuning
- › 2x 7-bit current-output IDACs configurable as a single 8-bit IDAC

Digital peripherals

- › Up to 8x 16-bit TCPWM blocks
- › Up to 8x serial communication blocks (SCBs): I2C master or slave, SPI master or slave, UART

Hardware crypto block to secure firmware

- › AES¹, SHA2², CRC³, TNRG⁴, and Vector Unit

¹Advanced Encryption Standard, ²Secure Hash

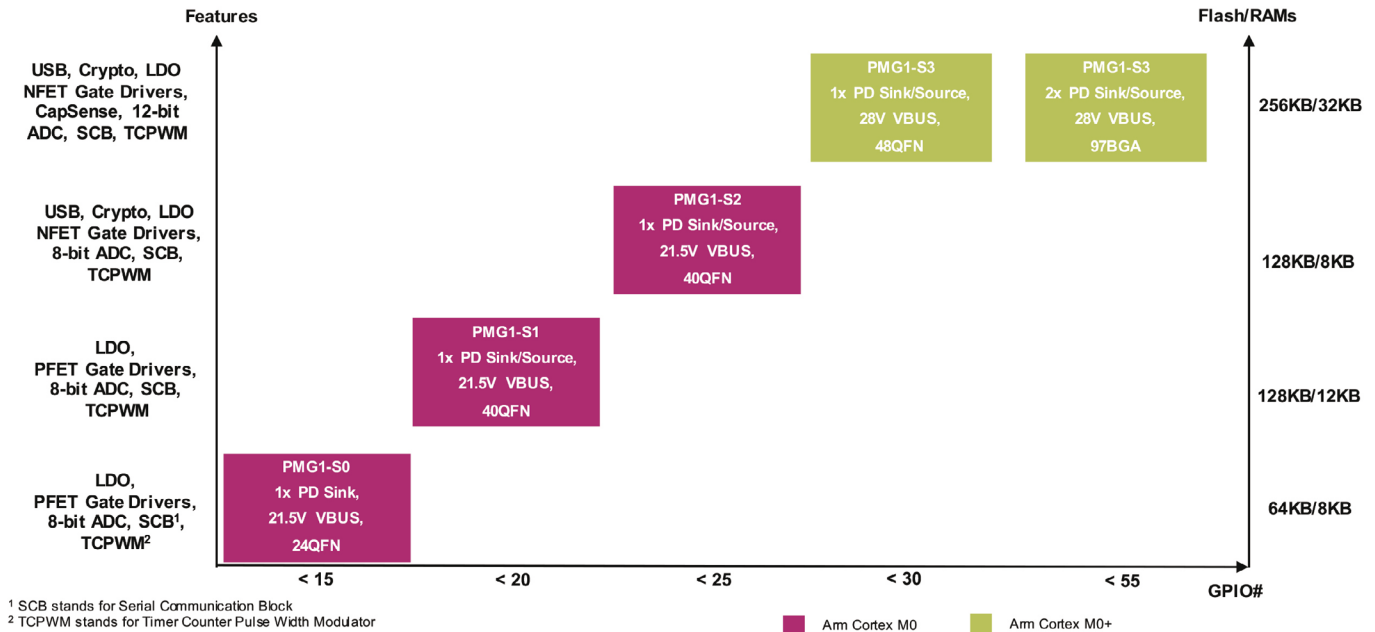
Algorithm, ³Cyclic Redundancy Check, ⁴Pseudo Random Number Generation

Packages

- › 24-, 40-, 48-QFN, 42-CSP, and 97-BGA


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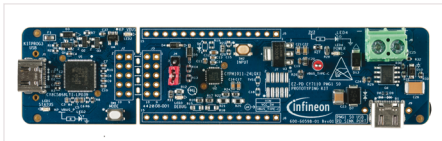


Getting started with PMG1


1 Download
ModusToolbox®



2 Purchase the
PMG1 kit



3 Download the
Getting Started PMG1 app note



Learn more at www.cypress.com/pmg1.

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