PRODUCT BRIEF

KIT_PSC3M6_CC2

PSOC™ Control C3M6 Motor Drive Control Card

The KIT_PSC3M6_CC2 Motor Drive Control Card is built to evaluate the features and capabilities of Infineon's PSOC™ Control PSC3M6 series MCU. This board enables users to connect their own power board and motor. A suitable power stage can be quickly added using MADK (M1/M3/M5) boards or the 100-pin HD connector to drive a wide range of motors. It features multiple package footprints for device evaluation flexibility, and an isolated onboard debugger. This kit is a subset of KIT_PSC3M6_MC1 kit without the power board or quad motor adapter card.

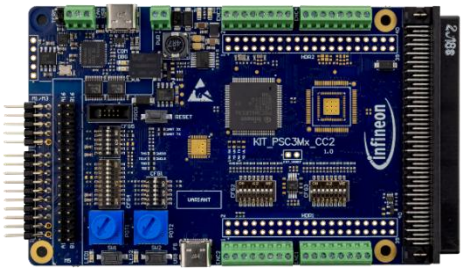
The PSOC™ Control C3M6 Main Line MCU is a high-performance, low-power, 32-bit single-core Arm® Cortex® M33-based MCU running at up to 180 MHz with state-of-the-art security. Typical applications include MHA and Aircon drives and compressors, SPMS, Solar, Robotics, Humanoids and Industrial Drives, enabling designers to innovate, solve complex design problems and speed up the design cycle, while keeping a lower BOM cost.

The PSOC™ Control C3M6 MCU includes the following features:

- Powerful core: Arm® Cortex®-M33 with DSP, FPU, and a hardware CORDIC engine
- Advanced safety and security: PSA Level 3 ready with TrustZone, PQC support, secure boot, and a hardware CRYPTO-accelerator
- Robust memory: Up to 512 KB flash and 128 KB SRAM, both featuring ECC for high reliability and a built-in bootloader for easy firmware updates
- Precision motor control: Dedicated Hall sensor and Quadrature Encoder Interfaces (QEI) with 24 TCPWM channels, featuring less than 100ps high-resolution PWM
- High-performance analog: 12-bit 9-Msps SAR ADC with 16 S/H circuits, 4x operational amplifiers (OpAmps), and 9 ultra-fast comparators for real-time hardware protection
- Ultra-low power: Flexible operation (1.71 V – 3.63 V) with six power modes
- Versatile connectivity: 6x reconfigurable SCBs (UART/I2C/SPI), CAN FD (8 Mbps), I3C, and a native USB 2.0 Full-Speed host/device PHY
- Intelligent I/O: Up to 86 functional pins, including Smart I/O with 56 LUTs to perform Boolean logic tasks without taxing the CPU

PSOC™ Control is supported by ModusToolbox™, a unified ecosystem platform with tools and software solutions. ModusToolbox™ Motor Suite, and Power Suite are available to deliver a seamless graphical user interface that streamlines evaluation and training and provides real-time parameter monitoring for valuable insights into performance, efficiency, and reliability. Specialized application environments enable engineers to quickly identify issues, optimize designs, and enhance overall functionality.

For more Information visit: www.infineon.com/KIT_PSC3M6_CC2



Kit Contents

- KIT_PSC3M6_CC2 motor control card
- USB Type-A to Type-C cable
- Quick start guide via QR code

Benefits

- HD100 MDAK connector
- M1/M3/M5 MADK connector
- Four encoder connectors
- Multi-motor sensor interface
- CAN FD and I3C Interfaces
- On-board analog input buffers
- Selectable analog input range between 3.3 V and 5 V
- Two on-board buffered DAC outputs
- External VAREF header
- USB2.0 FS device and host
- Two user and two debug LED's
- Two user switches
- Two user potentiometers
- Reset switch
- GPIO expansion headers

Featured Components

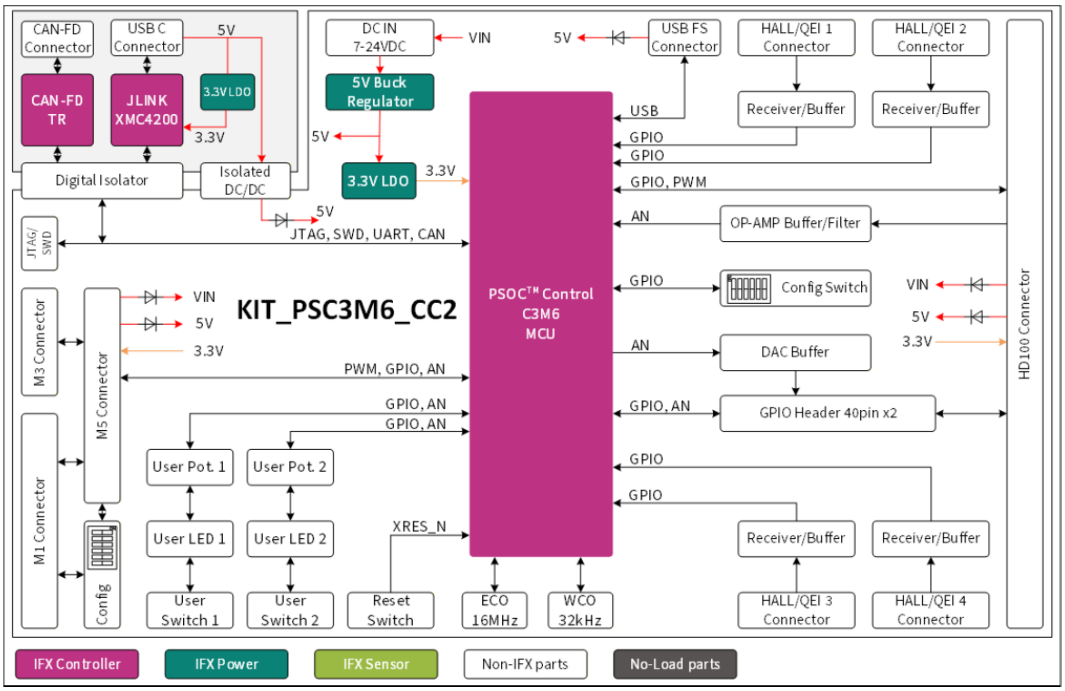
- PSC3M6GES3AHQ1 (100-pin)
- Onboard J-Link (XMC4200) programmer and debugger

Enablement

- Easy evaluation using ModusToolbox™ Motor and Power Suite libraries and code examples

PRODUCT BRIEF

Block diagram



Part Numbers

PN	Kit	Function
KIT_PSC3M6_CC2	PSOC™ Control C3M6 Motor Drive Control Card	Enables to connect an available power board and motor

Key Applications

Motor Control	HVAC and home appliances, industrial drives, robots, humanoids, drones and LEVs
Power Conversion	SMPS, EV Charging, solar
Other markets	Datacenter UBM, PCIe, e-cigarette, smart inhaler, healthcare tools, drills, etc.

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