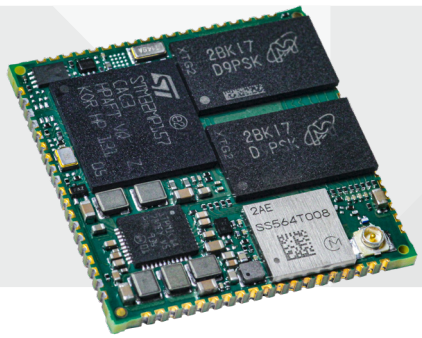




Connect this device with
Digi ConnectCore Cloud Services.
Create. Configure. Deploy. Manage.

DIGI CONNECTCORE MP1

Intelligent, wireless and secure embedded system-on-module based on the STM32MP1 MPU family, with turnkey Linux support in the robust Digi SMTplus standard form factor

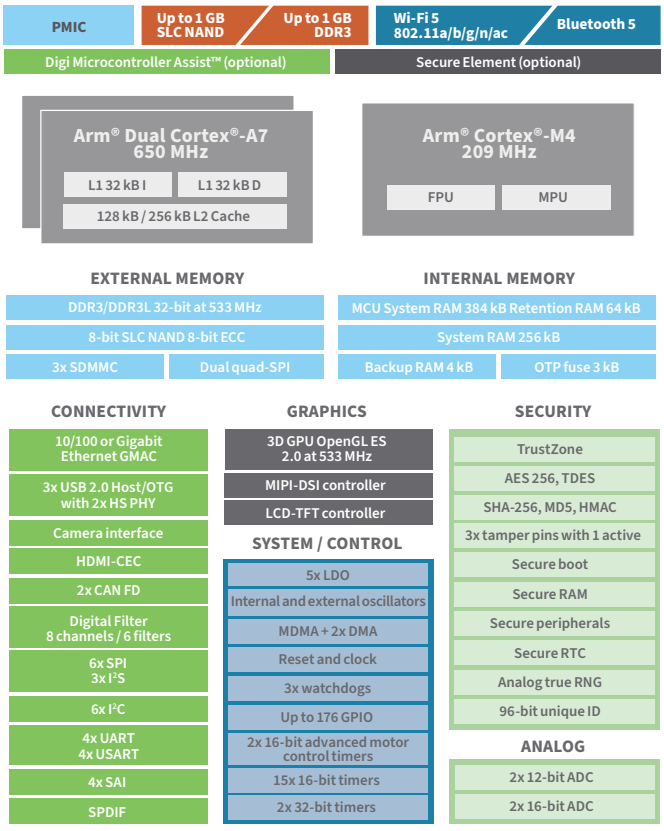
Digi ConnectCore® MP1 modules deliver a highly integrated and secure connected system-on-module solution. The Digi SMTplus® surface-mount form factor provides simplified design integration, flexibility, efficiency and reliability.

Built on the STM32MP157C microprocessor with dual Arm® Cortex®-A7 and a Cortex-M4 core, the module is the intelligent communication engine for today's secure connected devices. It seamlessly integrates pre-certified dual-band Wi-Fi 5 (802.11a/b/g/n/ac) with Bluetooth® 5 and Gigabit Ethernet connectivity.

The integrated 3D graphics processing unit (GPU) and display interface options make Digi ConnectCore MP157 the ideal platform for advanced human machine interface (HMI) development. Digi ConnectCore MP1 is designed for industrial and medical use with high levels of security, reliability, performance and 10+ year longevity.

Embedded device security is a critical design aspect for the growing number of connected IoT applications. The Digi ConnectCore SOM solutions provide built-in security with Digi TrustFence®, a fully integrated device-security framework simplifying the process of securing connected devices. Digi Embedded Yocto, Digi's feature-rich Linux distribution with many extensions for embedded product design provides a fully tested, validated and maintained turnkey Linux software platform.

DIGI CONNECTCORE® MP157 BLOCK DIAGRAM



With twenty years of embedded SOM experience enabling millions of globally connected products, Digi is a trusted embedded and IoT solutions provider, simplifying the way customers design, build and deploy connected applications. Digi also offers cellular integration support, certification assistance, and custom design and build services to get your products to market smarter and faster.

FEATURES AND BENEFITS

- Industrial-grade, scalable, STM32MP1 single/dual SOM platform
- Pre-certified dual-band Wi-Fi 5 (802.11ac) and Bluetooth 5.0
- 3D GPU, rich display and camera capabilities
- Power management with hardware and software support
- Digi SMTplus® form factor (29 x 29 mm) for ultimate reliability
- High level of pin-compatibility with Digi ConnectCore 6UL SOMs
- Built-in Digi TrustFence device security, identity and privacy
- Seamless cellular modem and Digi XBee® integration
- Digi ConnectCore Cloud Services remote monitoring, device management and IoT application enablement
- Digi Embedded Yocto Linux support
- Turnkey development services available from Digi WDS

RELATED PRODUCTS



LCD Application Kit | Digi ConnectCore Cloud Services | Digi ConnectCore 6 UL | Digi ConnectCore 8M Nano | Digi XBee Modules

SPECIFICATIONS	DIGI CONNECTCORE® MP157
FEATURES	
APPLICATION PROCESSOR	STMicroelectronics STM32MP157C, Arm® dual Cortex®-A7 at 650 MHz Cortex®-M4 at 209 MHz with FPU/MPU, 3D GPU, secure boot, crypto engine
MEMORY	Up to 1 GB SLC NAND flash, up to 1 GB DDR3L
PMIC	STMicroelectronics STPMIC1
VIDEO / GRAPHICS	3D GPU (Vivante® — OpenGL® ES 2.0) running at up to 533 MHz, with performance up to 26 Mtriangle/s, 133 Mpixel/s Parallel LCD-TFT controller, up to 24-bit digital RGB888, up to WXGA (1366 × 768) at 60 fps or up to Full HD (1920 × 1080) at 30 fps MIPI® DSI 2 data lanes up to 1 Gbps each, up to WXGA at 60 fps (63 M pixels/s) or up to Full HD (1920 × 1080) at 30 fps
CAMERA	8- to 14-bit camera
SECURITY	Secure boot, TrustZone® peripherals, 3x tamper pins including 1x active tamper, 2x TRNG (6 triple oscillators), 2x CRC calculation units 2x cryptographic processors, hardware acceleration with DMA support Encryption/decryption: DES/TDES: ECB (electronic codebook) and CBC (cipher block chaining) 64-, 128- or 192-bit key AES: ECB, CBC, GCM, CCM, and CTR (counter mode) chaining algorithms, 128-, 192- or 256-bit key Universal HASH: SHA-1, SHA-224 and SHA-256 (secure HASH algorithms), MD5, HMAC; Cortex®-M4 resources isolation Digi TrustFence® embedded security framework
PERIPHERALS / INTERFACES	6x I2C, 4x UART + 4x USART, 6x SPI (3 with full duplex I2S) 4x SAI (stereo audio: I2S, PDM, SPDIF Tx), SPDIF Rx (4 inputs) HDMI-CEC 3x SDMMC up to 8-bit (SD / eMMC™ / SDIO) 2x CAN FD (including 1 TTCAN) 2x USB 2.0 high-speed host + 1x USB 2.0 full-speed OTG Up to 176 I/O ports with interrupt capability 2x ADCs (up to 16-bit) 1x temperature sensor 2x 12-bit D/A converters (1 MHz) 1x Digital Filter for Sigma Delta Modulator (DFSDM) with 8 channels/6 filters, internal or external ADC/DAC reference VREF+ 2x 32-bit timers with up to 4 IC/OC/PWM or pulse counter and quadrature (incremental) encoder input 2x 16-bit advanced motor control timers 10x 16-bit general-purpose timers (including 2 basic timers without PWM) 5x 16-bit low-power timers Secure RTC 2x 4 Cortex®-A7 system timers (secure, nonsecure, virtual, hypervisor) 1x SysTick M4 timer 3x watchdogs (2x independent and window)
ETHERNET	10/100 M or Gigabit Ethernet GMAC IEEE 1588v2, MII/RMII/GMII/RGMII
WIRELESS	Wi-Fi 5 dual-band 802.11a/b/g/n/ac 1x1 radio (up to 433.3 Mbps) with strong WPA3-Enterprise authentication/encryption, −40 °C to 85 °C (−40 °F to 185 °F) full temperature range; Bluetooth® 5 (Basic Rate, Enhanced Data Rate and Bluetooth Low Energy)
OPERATING TEMPERATURE	Industrial: −40 °C to 85 °C (−40 °F to 185 °F); depending on use case and enclosure/system design
STORAGE TEMPERATURE	−50 °C to 125 °C (−58 °F to 257 °F)
RELATIVE HUMIDITY	5% to 90% (non-condensing)
RADIO APPROVALS	US, Canada, EU, Japan, Australia/New Zealand
EMISSIONS / IMMUNITY / SAFETY	FCC Part 15 Class B, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, ICES- 003 Class B, VCCI Class II, AS 3548 FCC Part 15 Subpart C Section 15.247, IC (Industry Canada), RSS-210 Issue 5 Section 6.2.2(o), EN 300 328, EN 301 489-17, EN 55024 EN 301 489-3, Safety (IEC 62368-1); visit www.digi.com/resources/certifications for latest updates
DESIGN VERIFICATION	Temperature: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-78; vibration/shock: IEC 60068-2-6, IEC 60068-2-64, IEC 60068-2-27, HALT
MOUNTING / PIN COUNT	Common Digi SMTplus® surface mount footprint using 76-pad edge castellated pads (1.27 mm pitch) or 245-pad LGA (1.27 mm pitch) option
MECHANICAL DIMENSIONS	29 mm x 29 mm x 3 mm (1.14 in x 1.14 in x 0.12 in)
PRODUCT WARRANTY	3-year

PART NUMBERS	DIGI CONNECTCORE® MP1
KITS	
CC-WMP157-KIT	Digi ConnectCore MP157 Development Kit with development board and Digi ConnectCore MP157 dual 512 MB/512 MB wireless SOM
DIGI CONNECTCORE MP157 — SECURE WIRELESS MODULE	
CC-WST-DW69-NM	Digi ConnectCore MP157 dual 650 MHz, M4, GPU, 512 MB DDR3L, 512 MB SLC NAND flash, secure boot, MCA, Wi-Fi 5, Bluetooth 5.0 −40 °C to 85 °C (−40 °F to 185 °F)
DIGI CONNECTCORE MP157 — SECURE ETHERNET MODULE	
CC-ST-DW69-ZM	Digi ConnectCore MP157 dual 650 MHz, M4, GPU, 512 MB DDR3L, 512 MB SLC NAND flash, secure boot, MCA −40 °C to 85 °C (−40 °F to 185 °F)
ACCESSORIES	
CC-ACC-LCDH-10	LCD application kit, including 10 in WXGA (high resolution) LCD panel

PART NUMBERS	SUPPORT SERVICES
DG-EXPE-12	Expert 12x5 support for end users
DG-EXPE-24	Expert 24x7 support for end users

PART NUMBERS	DIGI CONNECTCORE® CLOUD SERVICES
DIGI CONNECTCORE CLOUD SERVICES — ESSENTIAL	
CC-CS-ESS-1-1YR	Digi ConnectCore Cloud Services — Essential 1-year (1 device)
CC-CS-ESS-100-1YR	Digi ConnectCore Cloud Services — Essential 1-year (100 devices)
CC-CS-ESS-100-3YR	Digi ConnectCore Cloud Services — Essential 3-year (100 devices)
CC-CS-ESS-100-5YR	Digi ConnectCore Cloud Services — Essential 5-year (100 devices)
DIGI CONNECTCORE CLOUD SERVICES — PREMIUM	
CC-CS-PRM-1-1YR	Digi ConnectCore Cloud Services — Premium 1-year (1 device)
CC-CS-PRM-100-1YR	Digi ConnectCore Cloud Services — Premium 1-year (100 devices)
CC-CS-PRM-100-3YR	Digi ConnectCore Cloud Services — Premium 3-year (100 devices)
CC-CS-PRM-100-5YR	Digi ConnectCore Cloud Services — Premium 5-year (100 devices)

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