



# DIGI CONNECTCORE MP157 DEVELOPMENT KIT

Complete development platform for intelligent, connected and secure embedded industrial products with a broad suite of tools and turnkey Linux software support

The Digi ConnectCore® MP157 Development Kit features a tightly integrated, secure and industrial-specified connected system-on-module (SOM) solution in a small and reliable form factor.

The Digi ConnectCore MP157 Development Kit is the world's first connected development kit with remote capabilities. Built on the STM32MP157C with dual Arm® Cortex®-A7 and a Cortex-M4 core, the module is the intelligent communication engine for today's secure connected devices.

The integrated 3D graphics processing unit (GPU) and display interface options make it the ideal platform for advanced human machine interface (HMI) development. It also seamlessly integrates Gigabit Ethernet and pre-certified dual-band Wi-Fi 5 (802.11a/b/g/n/ac) with Bluetooth® 5 connectivity.

Digi ConnectCore MP157 is designed for industrial and medical use with high levels of security, reliability, performance and 10+ year longevity. The Digi SMTplus® surface mount form factor provides simplified design integration, flexibility and efficiency.

Embedded device security is a critical design aspect for the growing number of connected IoT applications. 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.

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.

## THE KIT INCLUDES:

- ✓ Digi ConnectCore® MP157 development board with SOM
- ✓ Console port cable
- ✓ Dual-band wireless antenna
- ✓ Power supply and accessories
- ✓ Reference designs and online documentation

| PART NUMBER   | DESCRIPTION                            |
|---------------|--|
| CC-WMP157-KIT | Digi ConnectCore MP157 Development Kit |

## FEATURES AND BENEFITS

- Industrial-grade, scalable, embedded 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 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

# SPECIFICATIONS

# DIGI CONNECTCORE® MP157

## FEATURES

|                                      |  |
|--------------------------------------|--|
| <b>APPLICATION PROCESSOR</b>         | STMicroelectronics STM32MP157C, Arm® dual Cortex®-A7 at 650 MHz<br>Cortex®-M4 at 209 MHz with FPU/MPU, 3D GPU, secure boot, crypto engine  |
| <b>MEMORY</b>                        | 512 MB SLC NAND flash, 512 MB DDR3L  |
| <b>PMIC</b>                          | STMicroelectronics Power Management IC — STPMIC1   |
| <b>VIDEO / GRAPHICS</b>              | 3D GPU (Vivante® — OpenGL® ES 2.0) running at up to 533 MHz, with performance up to 26 Mtriangle/s, 133 Mpixel/s<br>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<br>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  |
| <b>CAMERA</b>                        | 8- to 14-bit camera  |
| <b>SECURITY</b>                      | Secure boot, TrustZone® peripherals, 3x tamper pins including 1x active tamper, 2x TRNG (6 triple oscillators), 2x CRC calculation units<br>2x cryptographic processors, hardware acceleration with DMA support<br><br>Encryption/decryption: DES/TDES: ECB (electronic codebook) and CBC (cipher block chaining) 64-, 128- or 192-bit key<br>AES: ECB, CBC, GCM, CCM, and CTR (counter mode) chaining algorithms, 128-, 192- or 256-bit key<br><br>Universal HASH: SHA-1, SHA-224 and SHA-256 (secure HASH algorithms), MD5, HMAC; Cortex®-M4 resources isolation<br>Digi TrustFence® embedded security framework   |
| <b>PERIPHERALS / INTERFACES</b>      | 6x I2C, 4x UART + 4x USART, 6x SPI (3 with full duplex I2S)<br>4x SAI (stereo audio: I2S, PDM, SPDIF Tx), SPDIF Rx (4 inputs)<br>HDMI-CEC<br>3x SDMMC up to 8-bit (SD / eMMC™ / SDIO)<br>2x CAN FD (including 1 TTCAN)<br>2x USB 2.0 high-speed host + 1x USB 2.0 full-speed OTG<br>Up to 176 I/O ports with interrupt capability<br>2x ADCs (up to 16-bit)<br>1x temperature sensor<br>2x 12-bit D/A converters (1 MHz)<br>1x Digital Filter for Sigma Delta Modulator (DFSDM) with 8 channels/6 filters, internal or external ADC/DAC reference VREF+<br>2x 32-bit timers with up to 4 IC/OC/PWM or pulse counter and quadrature (incremental) encoder input<br>2x 16-bit advanced motor control timers<br>10x 16-bit general-purpose timers (including 2 basic timers without PWM)<br>5x 16-bit low-power timers<br>Secure RTC<br>2x 4 Cortex®-A7 system timers (secure, nonsecure, virtual, hypervisor)<br>1x SysTick M4 timer<br>3x watchdogs (2x independent and window) |
| <b>ETHERNET</b>                      | 10/100 M or Gigabit Ethernet<br>GMAC IEEE 1588v2, MII/RMII/GMII/RGMII  |
| <b>WIRELESS</b>                      | Wi-Fi 5 dual-band 802.11a/b/g/n/ac 1x1 radio (up to 433.3 Mbps) with strong WPA3-Enterprise authentication/encryption<br>-40 °C to 85 °C (-40 °F to 185 °F) full temperature range; Bluetooth® 5 (Basic Rate, Enhanced Data Rate and Bluetooth Low Energy)   |
| <b>OPERATING TEMPERATURE</b>         | Industrial: -40 °C to 85 °C (-40 °F to 185 °F); depending on use case and enclosure/system design  |
| <b>STORAGE TEMPERATURE</b>           | -50 °C to 125 °C (-58 °F to 257 °F)  |
| <b>RELATIVE HUMIDITY</b>             | 5% to 90% (non-condensing)   |
| <b>RADIO APPROVALS</b>               | US, Canada, EU, Japan, Australia/New Zealand   |
| <b>EMISSIONS / IMMUNITY / SAFETY</b> | 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<br>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<br>EN 301 489-3, Safety (IEC 62368-1); visit <a href="http://www.digi.com/resources/certifications">www.digi.com/resources/certifications</a> for latest updates   |
| <b>DESIGN VERIFICATION</b>           | 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  |
| <b>MOUNTING / PIN COUNT</b>          | 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  |
| <b>MECHANICAL DIMENSIONS</b>         | 29 mm x 29 mm x 3 mm (1.14 in x 1.14 in x 0.12 in)   |
| <b>PRODUCT WARRANTY</b>              | 3-year   |



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