Manage this device with
Digi Remote Manager
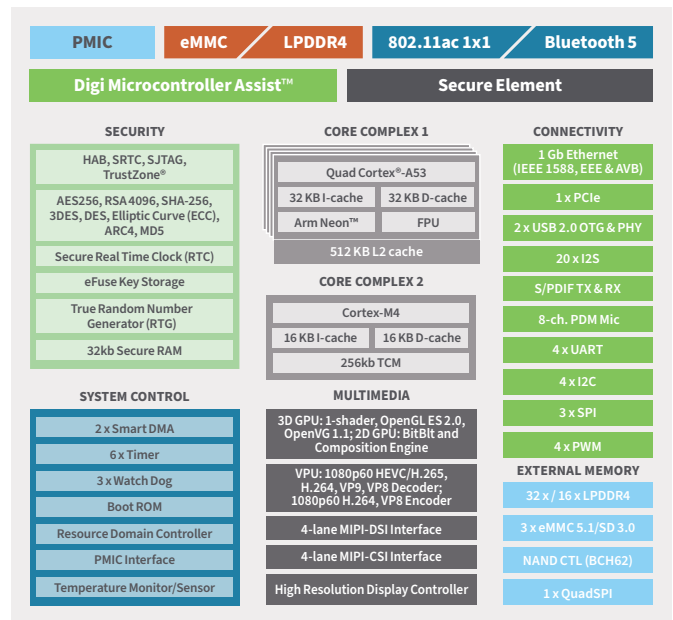
DIGI CONNECTCORE 8M MINI

Embedded system-on-module based on the NXP i.MX 8M Mini processor with built-in security; designed for longevity and scalability in industrial IoT applications

Digi ConnectCore® 8M Mini, based on the NXP® i.MX 8M Mini application processor, is a secure integrated system-on-module (SOM) platform. The Mini is designed for a wide range of industrial, medical, agricultural and transportation applications, including Internet of Things (IoT), human-machine interface (HMI), equipment monitoring, audio/voice, graphics/video, edge computing and machine learning.

Digi ConnectCore 8M Mini features four power-efficient Arm® Cortex®-A53 cores, one Cortex-M4 core, and the Digi Microcontroller Assist Cortex-M0, which allow it to minimize power consumption while maintaining a high standard of performance. With a 10+ year product lifecycle, OEMs can reduce their development costs and achieve a lower total cost of ownership by leveraging pre-certified wireless connectivity, remote management, cloud integration, and complete Linux Yocto Project and Android software platform support.

BLOCK DIAGRAM

PMIC	eMMC	LPDDR4	802.11ac 1x1	Bluetooth 5

Digi Microcontroller Assist™	Secure Element

SECURITY
- HAB, SRTC, SJTAG, TrustZone®
- AES256, RSA 4096, SHA-256, 3DES, DES, Elliptic Curve (ECC), ARC4, MD5
- Secure Real Time Clock (RTC)
- eFuse Key Storage
- True Random Number Generator (RTG)
- 32kb Secure RAM

CORE COMPLEX 1
- Quad Cortex®-A53
- 32 KB I-cache | 32 KB D-cache
- Arm Neon™ | FPU
- 512 KB L2 cache

CORE COMPLEX 2
- Cortex-M4
- 16 KB I-cache | 16 KB D-cache
- 256kb TCM

CONNECTIVITY
- 1 Gb Ethernet (IEEE 1588, EEE & AVB)
- 1 x PCIe
- 2 x USB 2.0 OTG & PHY
- 20 x I2S
- S/PDIF TX & RX
- 8-ch. PDM Mic
- 4 x UART
- 4 x I2C
- 3 x SPI
- 4 x PWM

SYSTEM CONTROL
- 2 x Smart DMA
- 6 x Timer
- 3 x Watch Dog
- Boot ROM
- Resource Domain Controller
- PMIC Interface
- Temperature Monitor/Sensor

MULTIMEDIA
- 3D GPU: 1-shader, OpenGL ES 2.0, OpenVG 1.1; 2D GPU: BitBlt and Composition Engine
- VPU: 1080p60 HEVC/H.265, H.264, VP9, VP8 Decoder; 1080p60 H.264, VP8 Encoder
- 4-lane MIPI-DSI Interface
- 4-lane MIPI-CSI Interface
- High Resolution Display Controller

EXTERNAL MEMORY
- 32 x / 16 x LPDDR4
- 3 x eMMC 5.1/SD 3.0
- NAND CTL (BCH62)
- 1 x QuadSPI

BENEFITS

- Industrial i.MX 8M Mini quad-core system-on-module
- Digi SMTplus® form factor (40 mm x 45 mm) for ultimate reliability and design freedom
- Power management with both hardware and software support for low-power designs
- Display and camera capabilities with graphics and video hardware acceleration
- Video capabilities with built-in VPU
- Pre-certified dual-band 802.11a/b/g/n/ac 1x1 and Bluetooth® 5 connectivity
- Seamless cellular modem and Digi XBee® wireless integration
- Cloud and edge-compute services integration
- Built-in device security, identity and privacy with Digi TrustFence® and a hardware Secure Element
- Remote monitoring and management with Digi Remote Manager®
- Yocto Project Linux and Android support

DIGI TRUSTFENCE   yocto PROJECT   (Android)   WiFi ALLIANCE MEMBER

Bluetooth®   GOLD PARTNER NXP   powered by aws

RELATED PRODUCTS

ConnectCore 8M Mini Dev Kit

ConnectCore 8M Nano

ConnectCore 8X

ConnectCore 6UL
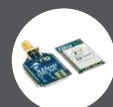
Digi XBee® Modules

SPECIFICATIONS	Digi ConnectCore® 8M Mini	
APPLICATION PROCESSOR	NXP® i.MX8 Mini • Four Cortex®-A53 cores @ 1.6 GHz • Cortex-M4 400 MHz core processor for low-power processing	
MEMORY	Up to 8 GB eMMC, up to 2 GB of LPDDR4 (32-bit)	
PMIC	NXP PCA9450	
GRAPHICS / VIDEO	Graphic Processing Unit: • GCNanoUltra for 3D acceleration • GC320 for 2D acceleration • LCDIF display controller, supporting up to 1080 p 60 fps display through MIPI DSI • MIPI DSI (4-lane) with PHY (display interface) • MIPI CSI (4-lane) with PHY (camera interface)	Video Processing Unit: • 1080 p 60 HEVC H.265 (decode) • VP9, H.264, VP8 (encode/decode)
SECURITY	Digi TrustFence®, TRNG, TrustZone, Secure RTC, Secure JTAG, Secure Element	
PERIPHERALS / INTERFACES	1x PCI Express 2.0 (PCIe) 2x USB 2.0 OTG controllers with integrated PHY interfaces 3x Ultra Secure Digital Host Controller (uSDHC) interfaces 5x Universal Asynchronous Receiver / Transmitter (UART) modules 4x I2C modules 3x SPI modules 1x Quad SPI 10x PWM channels 1x 16-bit ADC module with accurate internal voltage reference, up to 20 channels 5x Synchronous Audio Interface (SAI) modules supporting I2S, AC97, TDM, codec/DSP and DSD interfaces 1x S/PDIF input and output, including a raw capture input mode 8-channel Pulse Density Modulation (PDM) input Up to 112 GPIOs	
ETHERNET	10/100/1000M Ethernet + AVB	
WI-FI	802.11a/b/g/n/ac dual-band wireless	
BLUETOOTH	Bluetooth® 5	
ON-MODULE MICROCONTROLLER ASSIST	Digi Microcontroller Assist™ • Independent Cortex-M0+ microcontroller subsystem • Supporting ultra-low power modes @ <3µA	
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)	
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	
MECHANICAL DIMENSIONS	118 castellated vias, LGA-474, 1.27 mm pitch, 40 mm x 45 mm x 3.5 mm (1.6 in x 1.8 in x 0.1 in)	
PRODUCT WARRANTY	3-year	

PART NUMBERS	DESCRIPTION
DIGI CONNECTCORE® 8M MINI DEVELOPMENT KITS	
CC-WMX8MM-KIT	Digi ConnectCore 8M Mini development kit with development board - quad core, 8 GB eMMC, 2 GB LPDDR4 wireless
DIGI CONNECTCORE 8M MINI SOMS	
CC-WMX-ET8D-NN	Digi ConnectCore 8M Mini - quad core, 8 GB eMMC, 2 GB LPDDR4 wireless
CC-WMX-ET7D-NN	Digi ConnectCore 8M Mini - quad core, 8 GB eMMC, 1 GB LPDDR4 wireless
CC-MX-ET8D-ZN	Digi ConnectCore 8M Mini - quad core, 8 GB eMMC, 2 GB LPDDR4 Ethernet
CC-MX-ET7D-ZN	Digi ConnectCore 8M Mini - quad core, 8 GB eMMC, 1 GB LPDDR4 Ethernet

ACCESSORIES	DESCRIPTION
CC-ACC-LCDH-10	LCD application kit, including 10 in WXGA (high resolution) LCD panel

FOR MORE INFORMATION
PLEASE VISIT DIGI.COM

91004458
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