DIGI

DIGI CONNECTCORE 8X SBC PRO

Intelligent and connected single board computer based on the NXP i.MX 8X; with scalable dual/quad-core performance for industrial IoT applications

The Digi ConnectCore® 8X SBC PRO delivers a powerful, secure and cost effective off-the-shelf single board computer with complete support for Linux and Android. It includes Digi TrustFence® security framework with out-of-box features such as secure boot, encrypted filesystems, protected ports, and more.
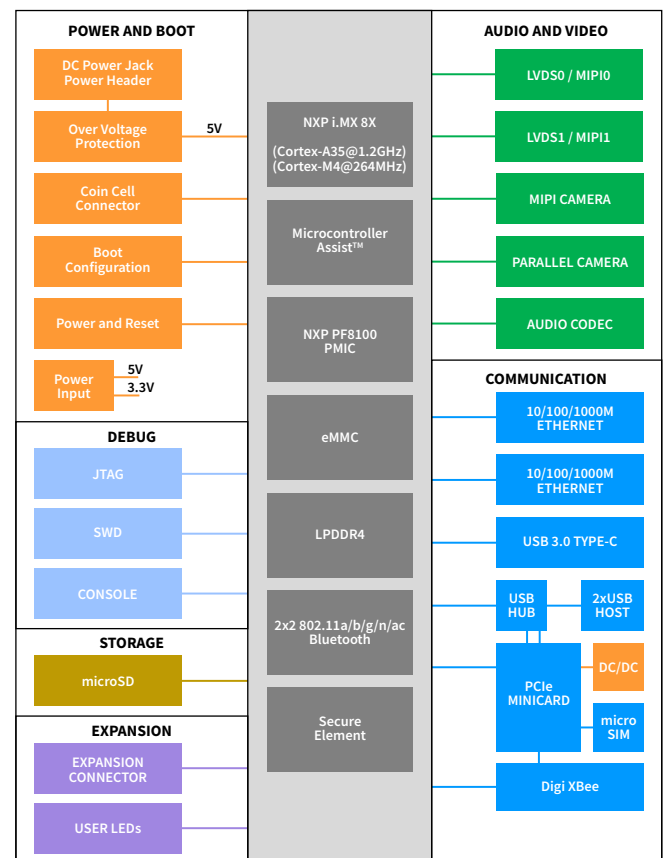
Digi ConnectCore 8X SBC Pro offers significantly reduced time-to-market by virtually eliminating the traditional risk, effort, and complexity of custom board designs without sacrificing flexibility or capabilities.

The compact form factor integrates an on-board dual-band antenna option, USB connectivity, Digi XBee® RF connector and cellular connectivity options, multi-display/camera and audio support, external storage and expansion connectors. Digi ConnectCore 8X SBC Pro is highly flexible and can be used in a wide-range of industrial applications, even those with harsh environments.
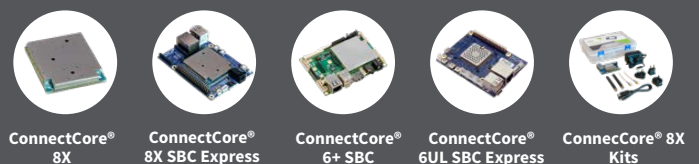
FEATURES AND BENEFITS

– Industrial i.MX 8X quad/dual-core SOM and SBC platform family
– Compact Pico-ITX form factor (100 mm x 72 mm)
– Power management – both hardware and software support for low-power designs
– Multi-display and camera capabilities with hardware acceleration
– Pre-certified dual-band 802.11a/b/g/n/ac 2x2 and Bluetooth 4.2 connectivity
– Seamless cellular modem and Digi XBee3® integration
– Cloud and edge-compute services integration
– Built-in Digi TrustFence® device security
– Yocto Project Linux and Android support

BLOCK DIAGRAM

POWER AND BOOT
- DC Power Jack Power Header
- Over Voltage Protection — 5V
- Coin Cell Connector
- Boot Configuration
- Power and Reset
- Power Input — 5V / 3.3V

DEBUG
- JTAG
- SWD
- CONSOLE

STORAGE
- microSD

EXPANSION
- EXPANSION CONNECTOR
- USER LEDs

Center:
- NXP i.MX 8X (Cortex-A35@1.2GHz) (Cortex-M4@264MHz)
- Microcontroller Assist™
- NXP PF8100 PMIC
- eMMC
- LPDDR4
- 2x2 802.11a/b/g/n/ac Bluetooth
- Secure Element

AUDIO AND VIDEO
- LVDS0 / MIPI0
- LVDS1 / MIPI1
- MIPI CAMERA
- PARALLEL CAMERA
- AUDIO CODEC

COMMUNICATION
- 10/100/1000M ETHERNET
- 10/100/1000M ETHERNET
- USB 3.0 TYPE-C
- USB HUB
- 2xUSB HOST
- PCIe MINICARD
- DC/DC
- micro SIM
- Digi XBee

RELATED PRODUCTS

ConnectCore® 8X

ConnectCore® 8X SBC Express

ConnectCore® 6+ SBC

ConnectCore® 6UL SBC Express

ConnecCore® 8X Kits

SPECIFICATIONS	Digi ConnectCore® 8X SBC PRO
APPLICATION PROCESSOR	NXP i.MX 8QuadXPlus • 4x Cortex-A35 cores @ 1.2 GHz • 1x Cortex-M4F @ 264MHz core for real-time processing • 1x Tensiilica® Hi-Fi 4 DSP
MEMORY	Up to 16 GB eMMC, up to 2GB LPDDR4 (32-bit)
GRAPHICS	Multi-stream-capable HD video engine with H.265 (4Kp30), H.264 (1080p60), VP6/VP8 (1080p60), MPEG-2 (1080p60), MPEG4 (1080p), RealVideo (1080p) decode and H.264 (1080p30) encode; 3D video playback in HD in high-performance families; Superior 3D graphics performance with up to 4 shaders
DISPLAYS	2x LVDS/MIPI with backlight control and I2C touch interface
CAMERA	1x 8-bit Parallel Camera Interface, 1x MIPI Camera 2x lanes
AUDIO	2x Line-In, 1 x Line-Out, 1x Mic-In, 1x Headset on 3.5mm audio jack
UART/CONSOLE	4-pin header (console), 2x UARTs on expansion connector
SECURITY	Digi TrustFence®, TRNG, TrustZone, Ciphers, Security Control, Secure RTC, Secure JTAG, eFuses (OTP)
ETHERNET	2x Gigabit Ethernet 10/100/1000M with AVB on RJ-45, with 2 LEDs for link/speed/activity
WI-FI	2x2 MIMO 802.11a/b/g/n/ac: 2.412 - 2.484 GHz, 4.900 - 5.850 GHz Security: WEP, WPA-PSK/WPA2-Personal, WPA/WPA2 Enterprise, 802.11i, Soft Access Point Mode (up to 10 clients)
BLUETOOTH	Bluetooth 4.2
ANTENNA CONNECTORS	2 x U.FL on module
DIGI XBEE RF	Standard Digi XBee socket
USB	2x USB 2.0 Host, 1x USB 3.0 on Type-C connector
PCI EXPRESS MINI CARD	Full-size card support, with on-board Micro SIM slot support – dedicated 3A power supply
OTHER CONNECTIVITY	2x CAN, 1x SPI, 1x I2C, 1x expansion connector
EXTERNAL STORAGE	MicroSD
BOOT CONFIGURATION	On module eMMC, on SBC microSD, serial downloader and boot from fuses
DEBUG	1x JTAG for i.MX 8X (Tag-Connect), 1x SWD for Kinetis MCA (Tag-Connect and header)
BUTTONS	1x power button (power on, power off, sleep, wake-up), 1x reset button
LEDS	2x user LEDs (1x yellow, 1x green), 1x power LED (3.3V)
POWER INPUTS	5 VDC @ 500 mA (typical, depending on use-case), 1x coin cell 2-pin header
POWER SUPPLY CONNECTOR	Main power supply via 2mm locking barrel connector, or dedicated power connector (2-pin header)
POWER OUTPUTS	3.3V Out (2-pin header), 5V Out (2-pin header)
OPERATING TEMPERATURE	-40° C to 85° C (-40° F to 186° F)
STORAGE TEMPERATURE	-50° C to 125° C (-58° F to 257° F)
RELATIVE HUMIDITY	Relative humidity 5% to 90% (non-condensing)
ALTITUDE	3,658 meters (12,000 feet)
RADIO APPROVALS (PENDING)	US, Canada, EU, Japan, Australia/New Zealand
EMISSIONS/ IMMUNITY/ SAFETY (PENDING)	FCC Part 15 Class B, EN 55024, EN 55032 Class B, ICES-003 Class B, VCCI Class II, FCC Part 15 Subpart C Section 15.247 and 15.407, IC (Industry Canada), EN 300 328, EN 301 893, EN 300 440, EN 301 489-1/-17, EN 55024, EN 301 489-3
DESIGN VERIFICATION (PENDING)	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	100 mm x 72 mm (3.9 in x 2.8 in)

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PART NUMBERS	DESCRIPTION
DIGI CONNECTCORE 8X DEVELOPMENT KITS	
CC-WMX8-EXPRESS	Digi ConnectCore 8X Express Development Kit: SBC Express baseboard with ConnectCore 8X module, UART console cable, power supply and antennas, software support for Yocto Linux and Android, Kinetis Microcontroller Assist, 802.11a/b/g/n/ac 2x2, Bluetooth 4.2
CC-WMX8-KIT	Digi ConnectCore 8X SBC PRO Development Kit: SBC PRO baseboard with ConnectCore 8X module, Pico-ITX (100 x 72 mm), Industrial Temp, 16 GB eMMC, 2GB LPDDR4, Dual 1Gbit Ethernet, 802.11a/b/g/n/ac 2x2, Bluetooth 4.2, XBee socket, cellular connectivity support via PCI Express Mini Card, SIM, microSD, USB Host, USB OTG, UART, DualCAN, SPI, I2 C, LVDS, camera, antenna connector, battery connector, UART console cable, power supply and antennas, software support for Yocto Linux and Android, Kinetis Microcontroller Assist
DIGI CONNECTCORE 8X SBC PRO	
CC-SBP-WMX-JM8E	Digi ConnectCore 8X SBC PRO: i.MX8QuadXPlus, 1.2Ghz, -40º C to 85º C (-40º F to 185º F), 16 GB flash, 2 GB LPDDR4, 802.11a/b/g/n/ac 2x2, Bluetooth 4.2, Dual Gigabit Ethernet
DIGI CONNECTCORE 8X SOMS	
CC-WMX-JM7D-NN	Digi ConnectCore 8X SOM QuadXPlus 1.2GHz, 8GB eMMC, 1GB LPDDR4, -40º C to 85º C (-40º F to 185º F), 802.11a/b/g/n/ac 2x2, Bluetooth 4.2
CC-WMX-JM8E-NN	Digi ConnectCore 8X SOM QuadXPlus 1.2GHz, 16GB eMMC, 2GB LPDDR4, -40º C to 85º C (-40º F to 185º F), 802.11a/b/g/n/ac 2x2, Bluetooth 4.2
CC-MX-JM8D-ZN	Digi ConnectCore 8X SOM QuadXPlus 1.2GHz, 8GB eMMC, 2GB LPDDR4, -40º C to 85º C (-40º F to 185º F)

ACCESSORIES	DESCRIPTION
CC-ACC-LCDW-10	LCD Application Kit, including 10" WXGA (1280x800) LCD panel with PCAP touch

FOR MORE INFORMATION
PLEASE VISIT WWW.DIGI.COM

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