Digi ConnectCore® 8X delivers a secure and cost-effective connected system-on-module platform that measures in at just 40 mm x 45 mm. The Digi SMTplus® surface mount form factor allows you to choose simplified design integration leveraging proven and easy-to-use edge-castellated SMT technology, or a versatile LGA option for ultimate design flexibility with access to virtually all interfaces.

Built on the NXP i.MX 8X application processor, the module is the intelligent communication engine for today’s secure connected devices. Digi ConnectCore 8X can help jump-start the development of streaming video/audio devices, voice control and general human-machine interface solutions. With a multitude of high performance interconnecting options, including 1x USB 3.0 port, dual Gigabit Ethernet, PCIe 3.0, and pre-certified dual-band 2x2 MU-MIMO WLAN, Digi ConnectCore 8X is ideal for developing a wide range of embedded and IoT applications.

**BENEFITS**

- Industrial i.MX 8X quad/dual-core SOM and SBC platform family
- 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
- Multi-display and camera capabilities with hardware acceleration
- Pre-certified dual-band 802.11a/b/g/n/ac 2x2 and Bluetooth® 5 connectivity
- Seamless cellular modem and Digi XBee® 3 integration
- Cloud and edge-compute services integration
- Built-in device security with Digi TrustFence®
- Yocto Project Linux and Android support
### ConnectCore® 8X

**APPLICATION PROCESSOR**

NXP i.MX8QuadXPlus
- 4x Cortex-A35 cores @ 1.0 GHz
- 1x Cortex-M4F @ 266 MHz core for real-time processing
- 1x Tensilica® Hi-Fi 4 DSP

**MEMORY**

Up to 64 GB eMMC, up to 4 GB of LPDDR4

**PMIC**

NXP PF8100

**GRAPHICS**

- Multi-stream-capable HD video engine with H.265 (4Kp30), H.264 (1080p60), VP8/VP9 (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 four shaders

**SECURITY**

- Digi TrustFence®, TRNG, TrustZone, ciphers, security control, secure RTC, secure JTAG, eFuses (OTP)

**PERIPHERALS/INTERFACES**

- 1x SD 3.0 card interface handles SD/SDIO/MMC protocols (1x additional one reserved on the SOM for supporting eMMC)
- 5x UARTs (4x UARTs from Cortex-A35 core, 1x UART from Cortex-M4), S/PDIF Tx/Rx
- 8x I2C (4x I2C high-speed DMA support 4x I2C low-speed no DMA support)
- 4x SPI, ESAT, 4x I2S/SSI, 3x FlexCAN, MLB150 + DTCP, USB 3.0 OTG with PHY, USB 2.0 OTG with PHY
- 4x PWM, GPIO, Keypad, PCIe 3.0 (x1 lane), 2x MIPI DSI/LVDS, MIPI CSI, 8/10-bit CSI
- 24-bit RGB, RTC, Watchdog, Timers, JTAG

**ETHERNET**

- 2x 10/100/1000M Ethernet + AVB

**WI-FI**

- 802.11a/b/g/n/ac: 2.412 - 2.484 GHz, 4.900 - 5.850 GHz
- 802.11b: 1, 2, 5.5, 11 Mbps (17 dBm typical ±2 dBm)
- 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps (15 dBm typical ±2 dBm)
- 802.11ac: 15, 30, 45, 60, 90, 120, 135, 150 Mbps (12 dBm typical ±2 dBm) HT40, MCS 0-7
- Note: All data rates provided above are for 1x spatial stream (double the data rate for 2x spatial streams)

**SECURITY**

- WEP, WPA-PSK/WPA2 personal, WPA/WPA2 enterprise, 802.11i, access point mode (up to 10 clients), Wi-Fi Direct

**N-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
- Commercial: 0° C to 70° C (32° F to 158° F)

**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, 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(a), EN 300 328, EN 301 489-17, EN 55024, EN 301 489-3

**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, fully shielded for radio emissions and thermal management (heat-spreading)
- 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

**DIGI CONNECTCORE® 8X DEVELOPMENT KITS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-WMX8-KIT</td>
<td>Digi ConnectCore® 8X SBC PRO development kit - SBC PRO baseboard with Digi ConnectCore 8X module, Pico-ITX (100 x 72 mm), industrial temp, 16 GB eMMC, 2 GB LPDDR4, dual 1 Gbit Ethernet, 802.11a/b/g/n/ac 2x2, Bluetooth 5, Digi 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, Digi Microcontroller Assist™</td>
</tr>
</tbody>
</table>

**DIGI CONNECTCORE 8X SBC PRO**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-SBP-WMX-JM8E</td>
<td>Digi ConnectCore 8X SBC PRO - i.MX8QuadXPlus, 1.0 Ghz, -40º C to 85º C (-40º F to 185º F), 16 GB flash, 2 GB LPDDR4, 802.11a/b/g/n/ac 2x2, Bluetooth 5, dual Gigabit Ethernet</td>
</tr>
</tbody>
</table>

**DIGI CONNECTCORE 8X SOMS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-MX-JQ6D-ZN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore 8X SOM DualXZ 1.0 GHz, 8 GB eMMC, 512 MB LPDDR4, -40º C to 85º C (-40º F to 185º F)</td>
</tr>
<tr>
<td>CC-MX-JQ7D-ZN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore 8X SOM DualXZ 1.0 GHz, 8 GB eMMC, 1 GB LPDDR4, -40º C to 85º C (-40º F to 185º F)</td>
</tr>
<tr>
<td>CC-WMX-JQ7D-ZN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore 8X SOM DualXZ 1.0 GHz, 8 GB eMMC, 1 GB LPDDR4, -40º C to 85º C (-40º F to 185º F), 802.11a/b/g/n/ac 2x2, Bluetooth 5</td>
</tr>
<tr>
<td>CC-MX-JM7D-ZN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore8X SOM QuadXPlus 1.0 GHz, 8 GB eMMC, 1 GB LPDDR4, -40º C to 85º C (-40º F to 185º F)</td>
</tr>
<tr>
<td>CC-MX-JM8D-ZN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore 8X SOM QuadXPlus 1.0 GHz, 8 GB eMMC, 2 GB LPDDR4, -40º C to 85º C (-40º F to 185º F)</td>
</tr>
<tr>
<td>CC-WMX-JM7D-NN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore 8X SOM QuadXPlus 1.0 GHz, 8 GB eMMC, 1 GB LPDDR4, -40º C to 85º C (-40º F to 185º F), 802.11a/b/g/n/ac 2x2, Bluetooth 5</td>
</tr>
<tr>
<td>CC-WMX-JM8E-NN</td>
<td>Digi ConnectCore 8X SOM - Digi ConnectCore8X SOM QuadXPlus 1.0 GHz, 16 GB eMMC, 2 GB LPDDR4, -40º C to 85º C (-40º F to 185º F), 802.11a/b/g/n/ac 2x2, Bluetooth 5</td>
</tr>
</tbody>
</table>

## ACCESSORIES

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-ACC-LCDW-10</td>
<td>LCD application kit, including 10 in WXGA (1280x800) LCD panel with PCAP touch</td>
</tr>
</tbody>
</table>

FOR MORE INFORMATION PLEASE VISIT [DIGI.COM](http://www.digi.com)