

Digi Connect EM[®] Family

Wired and Wireless Embedded Modules

The industry's first interchangeable secure device server module, delivering wired and wireless Ethernet network connectivity that is cost-effective and easy to implement.

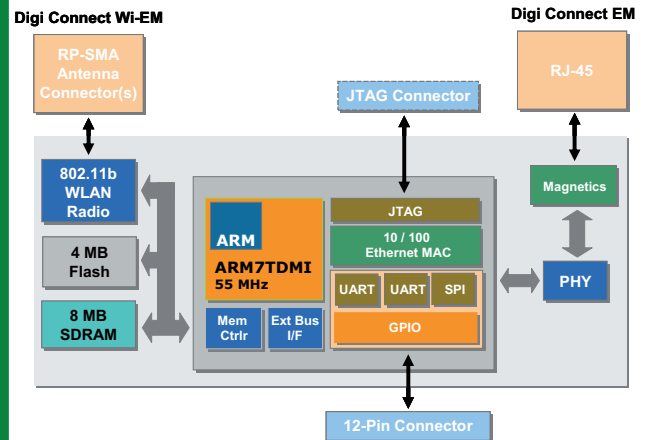


Overview

Based on a common platform design approach, the Digi Connect EM and Digi Connect[®] Wi-EM offer complete drop-in integration combined with true long-term product availability. This allows you to build future-proof products based on single design by simply selecting between the 10/100 wired and 802.11b module. The Digi Connect EM family makes this possible without the traditional complexities of hardware and software integration work, and at a fraction of the time and cost required to create custom solutions.

Built on Digi's leading 32-bit NET+ARM processor technology, the Digi Connect EM family offers two-port serial-to-Ethernet functionality through Digi's plug-and-play firmware, and the freedom and flexibility of professional embedded software development provided by the easy-to-use, cost-effective and complete Digi JumpStart Kits[®] for NET+OS[®].

Block Diagram



Features/Benefits

- Compact and secure 32-bit device server modules
- Family of low-profile and pin-compatible modules
- 10/100 Ethernet interface or 802.11b WLAN interface
- 2 UART ports and integrated SPI option
- Strong WPA2/802.11i security (PSK and Enterprise)
- Proven low-emission design (FCC Class B)
- Extended/industrial operating temperature
- Digi processor and WLAN technology for true long-term availability
- Seamless migration path to NET+ARM chip design

Platforms and Services



Design Services



Accessory Kits



Support

NET + OS



PLUG-and-PLAY
FIRMWARE

Supported Software Platforms



Integration Kits / Development Kits

Integration Kit and Digi JumpStart Kit®: Overview

| Plug-and-Play Integration Kit | Digi JumpStart Kit® for NET+OS® |
|---|--|
| <p>Digi Integration Kits provide everything needed for evaluation, rapid prototyping and integration of Digi Connect device server modules using the feature-rich Digi plug-and-play device server firmware. They deliver fully transparent wired and wireless serial-to-network functionality and allow you to quickly network-enable your existing and new product designs.</p> <p>Digi plug-and-play firmware offers industry-leading features such as a robust IPv6-ready TCP/IP stack, fully-featured serial tunneling, Modbus/TCP, web user interface with private labeling/branding options, user management, file system, SSL/TLS, SSH, Modbus/TCP, intelligent device management via SNMP, configurable e-mail alarms, and patented RealPort® COM/TTY port redirection.</p> <ul style="list-style-type: none"> • Complete kit for product evaluation, rapid prototyping, and integration • Digi plug-and-play firmware eliminates embedded software development • Transparent wired and wireless device server functionality • Full private-labeling/branding supported out-of-the-box | <p>This royalty-free turnkey solution for embedded software development is based on the ThreadX Real-Time Operating System (RTOS), one of the most reliable and field-proven RTOS solutions available. In addition to ThreadX, NET+OS provides the integrated building blocks needed to create product solutions with leading network security using Digi embedded modules and microprocessors.</p> <p>For professional NET+OS software development, the Microsoft Windows based Digi ESP™ Integrated Development Environment (IDE), with graphical user interface and a high-speed USB 2.0 hardware debugger, is provided out-of-the-box.</p> <ul style="list-style-type: none"> • Royalty-free turnkey solution for embedded software development • Built on field-proven and compact ThreadX RTOS • Fully integrated support for secure, IPv4/IPv6 networking applications • Professional software development using Windows-based Digi ESP IDE |
|  |  |

Application Kit and Digi JumpStart Kit® Contents

| Software Platform | Plug-and-Play Firmware | NET+OS® |
|--------------------------------|--|--|
| Module | Digi Connect EM or Digi Connect Wi-EM module w/ 4 MB Flash, 8 MB SDRAM, 2 dBi dipole antenna (Digi Connect Wi-EM) | |
| Development Board | 2 RS-232 serial ports, GPIO configuration/test switches (hi/lo), Screw terminal for GPIO signals, Status LEDs (serial, GPIO, power), Logic signal header, Test points, Reset button, 9-30VDC power supply w/Power-over-Ethernet support (mid-span), SPI header, JTAG header (JTAG modules) | |
| CD/DVD | Digi Connect Integration Kit CD: Device discovery tool w/source code, Device configuration wizard w/source code, RCI library, Device discovery (ADDP) library, Java applet sample source code, C/C++ sample source code (TCP, UDP, SSL) | Digi NET+OS CD: NET+OS 7, Digi ESP IDE, BSP source code, Sample code, Green Hills MULTI IDE support files, User documentation |
| Documentation | Getting started, Hardware reference manual, Development board schematics Digi Connect user's guide, Command line reference, RCI specification | Quick start guide, Getting started guide, Hardware reference manual, Development board schematics |
| Power Supply | External wall power supply (110/240VAC to 12VDC @ 850 mA) with interchangeable outlet adapters (North America, EU, UK, and Australia) | |
| Accessories | Crossover serial cable, Ethernet cable or 2 dBi dipole antenna | |
| Other | — | Digi JTAG link USB 2.0 hardware debugger |
| Kit Part Numbers | | |
| Ethernet Only | DC-EM-KT | DC-EM-NET |
| 802.11b WLAN + Ethernet | DC-WEM-KT | DC-WEM-NET |

Please refer to the feature specs on our website for detailed information about the specific software platform capabilities.

Platform

Digi Connect EM®

Digi Connect® Wi-EM

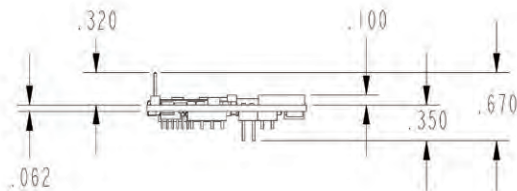
| Hardware | | |
|----------------------------------|---|--|
| Processor Type | 32-bit Digi NS7520 processor | |
| ARM Core | ARM7TDMI | |
| Processor Speed | 55 MHz | |
| Memory Base Population | 4 MB NOR flash | |
| | 8 MB SDRAM | |
| Population Options | LED array, LED pin header, Ethernet (RJ-45) connector, Ethernet pin header, Antenna connectors | |
| Pins/Form Factor | PCB-style module with 12-pin main pin header | |
| High-Speed TTL Serial Interface | 2 with up to 230 Kbps data rate | |
| | First port with full signal support for TXD, RXD, RTS, CTS, DTR, DSR and DCD, including hardware/software flow control Second port RXD/TXD only | |
| GPIO | 9 shared | |
| SPI | Master mode (Available through NET+OS development kit only) | |
| On-Board Power Supervisor | • | |
| JTAG Interface | NET+OS development modules only (P/N DC-EM-02T-JT, DC-WEM-02T-JT) | |
| Dimensions (L x W x H) | 1.935 in (49.149 mm) x 1.575 in (40.005 mm) x 0.670 in (17.018 mm) Height and width (overhang) varies depending on connector population. See hardware reference manual for additional information. | 1.935 in (49.149 mm) x 1.855" (47.117 mm) x 0.0653" (16.586 mm) Height and width (overhang) varies depending on connector population. See hardware reference manual for additional information. |
| | | |
| Network Interface - Wired | | |
| Standard | IEEE 802.3 | - |
| Physical Layer | 10/100Base-T | - |
| Data Rate | 10/100 Mbps (auto-sensing) | - |
| Mode | Full- or half-duplex (auto-sensing) | - |
| Connector | RJ-45 or Pin Header | - |
| Integrated Ethernet MAC/PHY | • | - |
| Network Interface – Wireless LAN | | |
| Standard | - | IEEE 802.11b |
| Frequency | - | 2.4 GHz |
| Data Rate | - | Up to 11 Mbps with fallback |
| Modulation | - | DBPSK (1 Mbps), DQPSK (2 Mbps), CCK (11,5.5 Mbps) |
| Typical Transmit Power | - | 16 dBm |
| Receive Sensitivity | - | -82 dBm @ 11 Mbps |
| Connector | - | 1/2 x RP-SMA |
| WLAN Security | | |
| WEP (Wired Equivalent Privacy) | - | 64/128-bit encryption (RC4) |
| WPA/WPA2/802.11i | - | 128-bit TKIP/CCMP (AES) encryption Enterprise mode (802.1X); LEAP (WEP only), PEAP, TTLS, TLS; GTC, MD5, OTP, PAP, CHAP, MSCHAP, MSCHAPv2, TTLS; MSCHAPv2 |

• Module Feature

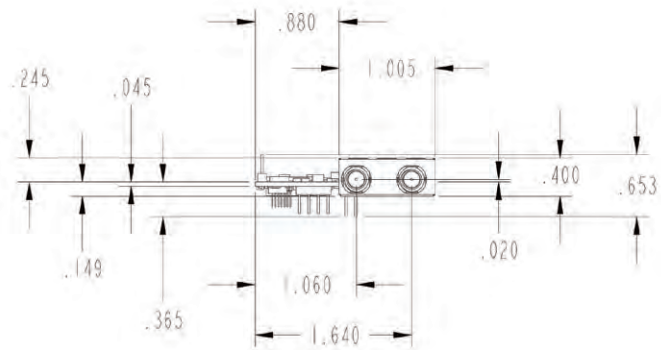
| Platform | Digi Connect EM® | Digi Connect® Wi-EM |
|--|---------------------------------------|--------------------------------------|
| Environmental | | |
| Operating Temperature | -40° C to +85° C (-40° F to +185° F) | -30° C to +85° C (-22° F to +185° F) |
| Storage Temperature | -50° C to +125° C (-58° F to +257° F) | |
| Relative Humidity | 5% to 90% (non-condensing) | |
| Altitude | 12,000 feet (3,658 meters) | |
| Power Requirements @3.3VDC | | |
| Maximum | 270 mA (891 mW) | 400 mA (1.32 W) |
| Regulatory Approvals | | |
| FCC Part 15 Class B, EN 55022 Class B | | • |
| EN 61000-3-2 and EN 61000-3-3 | | • |
| ICES-003 Class B, VCCI Class II, AS 3548 | | • |
| FCC Part 15 Sub C Section 15.247 | | • |
| IC RSS-210 Issue 5 Section 6.2.2(o) | | • |
| EN 300 328, EN 301 489-17 | | • |
| UL 60950-1, EN 60950 (EU) | | • |
| CSA C22.2, No. 60950 | | • |
| EN 55024 | | • |

• Module Feature

Digi Connect EM® - Front



Digi Connect® Wi-EM - Front



Visit www.digiembedded.com for part numbers.

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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