Digi Connect ME® Family

Wired and Wireless Embedded Modules

Digi Connect Wi-ME

- RP-SMA Antenna Connector
- 802.11b WLAN Radio
- 2 / 4 MB Flash
- 8 MB SDRAM
- JTAG Connector
- ARM — ARM7TDMI 55 MHz
- JTAG
- UART
- 10 / 100 Ethernet MAC
- Mem Ctrlr
- Ext Bus I/F
- UART
- GPIO
- 20-Pin Connector

Digi Connect ME

- RJ-45 w/integrated Magnetics
- PHY

The industry's first interchangeable secure wired and wireless embedded modules with plug-and-play functionality and comprehensive development tools for custom applications make it easy to add embedded web-enabled wired and wireless network connectivity.

Features/Benefits

- **Highly integrated 32-bit network co-processor module**
- **Family of interchangeable and pin-compatible solutions**
- **2/4 MB Flash and 8MB RAM**
- **High-speed serial interface with up to 230 kbps throughput**
- **5 shared GPIO port options**
- **10/100 Mbit Ethernet or 802.11b with WPA2/802.11i**
- **Pre-certified radio reduces cost/risk and time-to-market**
- **Industrial operating temp and FCC Class B low-emission design**
- **NIST-certified 256-bit AES encryption based on SSL/TLS**
- **ThreadX®-based NET+OS® and .NET Micro Framework software development platforms**
- **Digi plug-and-play firmware option eliminates software development effort**
- **Digi's own ARM processor and WLAN technology for true long-term product availability**

Overview

The advances of personal computers and the proliferation of the Internet have laid the groundwork for an era in which billions of networked electronic devices will work invisibly and jointly with each other and with people. The introduction of wireless technology into the rapidly emerging world of ubiquitous networking creates a new dimension of network collaboration that complements existing wired infrastructures. Making the right network technology decisions is a key factor for market success and defines the competitive edge of your products.

The Digi Connect ME family of secure embedded modules enables original equipment manufacturers to keep pace with ever-evolving networking technology by delivering complete and versatile embedded network connectivity solutions. They are cost effective and easy to implement in existing and new product designs, while powerful enough to meet future product performance needs for a wide range of applications. These include retail systems, security/access control, medical devices, building/ industrial automation, warehousing, and transportation systems.

Based on a common platform design approach, the Digi Connect ME and Digi Connect® Wi-ME embedded modules offer complete "drop-in" integration combined with true long-term product availability. This allows you to build future-proof products on a single layout design by simply selecting between 10/100 wired and secure (WPA2) wireless by a population option.

The Digi Connect ME 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 your own custom solutions.

Built on Digi's leading 32-bit NET+ARM processor technology, the Digi Connect ME family of embedded modules offer 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 and Microsoft® .NET Micro Framework.

DIGI PLUG-AND-PLAY INTEGRATION KIT: OVERVIEW

Digi Integration Kits provide everything needed for evaluation, rapid prototyping and integration of Digi Connect embedded modules using the feature-rich and field-proven Digi plug-and-play firmware.

The Digi plug-and-play firmware in combination with the design of the Digi Connect ME and Digi Connect Wi-ME modules dramatically reduces time-to-market by eliminating time-consuming embedded hardware and software development. They deliver instant and fully transparent wired and wireless device server networking functionality for all existing and new product designs, and allow you to quickly network enable your products.

Digi plug-and-play firmware offers industry-leading features such as a robust TCP/IP stack with support for IPv4 and IPv6, universal IP address assignment, integrated web server, a web user interface with private labeling/branding options, user management, custom Java applet support, user file system, NIST-certified 256-bit AES encryption, SSL/TLS, SSH, Modbus, intelligent device management via SNMP, configurable e-mail alarms, and Digi's patented RealPort® COM/TTY port redirection.

- **Complete kit for product evaluation, rapid prototyping, and integration**

- **Transparent wired and wireless device server functionality**

- **Digi plug-and-play firmware eliminates embedded software development effort**

- **Strong, standards-based wired and wireless security out-of-the-box**

- **Full private-labeling/branding supported out-of-the-box**

DIGI JUMPSTART KIT FOR NET+OS 7.X: OVERVIEW

The easy-to-use, cost-effective and complete Digi JumpStart Kits for NET+OS deliver a royalty-free turnkey solution for embedded software development based on the ThreadX Real-Time Operating System (RTOS).

With over 400 million deployments in products worldwide, ThreadX is 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 secure and fully network-enabled product solutions using Digi embedded modules and microprocessors. This includes a dual-mode IPv4/IPv6 TCP/IP stack, integrated web server, SNMPv3, POP/SMTP mail, PPP, XML, LDAP, SSL/TLS, Ekahau RTLS, and support for enterprise-grade WPA2/802.11i wireless LAN security.

Digi ESP™ for NET+OS, the Microsoft Windows-based Integrated Development Environment (included), offers an easy-to-use graphical interface with editor, single-step debugging, managed make files, build environment, online help, and innovative features.

- **Royalty-free turnkey solution for embedded software development**

- **Built on field-proven and compact ThreadX Real-Time Operating System**

- **Fully integrated, standards-based secure wired and wireless networking**

- **Professional state-of-the-art software development tools using Digi ESP or Green Hills MULTI* IDE**

- **Seamless migration to other Digi NET+ARM modules and processors**

  *Requires purchase of third party product. See website for additional information.

DIGI JUMPSTART KIT FOR .NET MICRO FRAMEWORK: OVERVIEW

The Digi JumpStart Kit for Microsoft .NET Micro Framework 2.0 provides an easy-to-use and complete off-the-shelf solution for Microsoft .NET Micro Framework embedded software development, including a fully functional 90-day trial of Microsoft Visual Studio® 2005.

Built on the .NET foundation and optimized for use in small intelligent devices, the .NET Micro Framework combines the reliability and efficiency offered by a .NET enabled managed code environment, Digi's exclusive and complete support for TCP/IP network connectivity, the strength of the C# programming language, and the professional Microsoft Visual Studio 2005 development tools. The seamless integration with Visual Studio makes rapid embedded application development instantly accessible to software designers with experience on the traditional Microsoft desktop and server operating system platforms.

- **Complete and royalty-free embedded development solution**

- **Robust managed code environment based on .NET programming model**

- **Digi-exclusive TCP/IP network stack and platform-specific extensions**

- **State-of-the art software development using Microsoft Visual Studio 2005**
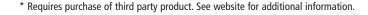
DIGI PLUG-AND-PLAY INTEGRATION KIT: CONTENTS

- Digi Connect ME or Digi Connect Wi-ME module
  - 2 MB Flash, 8 MB SDRAM
- Development board
  - 1 RS-2323 serial port, 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)
- 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)
- Documentation
  - Getting started, hardware reference manual, development board schematics Digi Connect user's guide, command line reference, RCI specification
- Power supply and accessories
  - External wall power supply (110/240VAC to 12VDC @ 850 mA) with interchangeable outlet adapters (North America, EU, UK, and Australia), crossover serial cable, Ethernet cable or 2 dBi dipole antenna

DIGI JUMPSTART KIT FOR NET+OS 7.X: CONTENTS

- Digi Connect ME or Digi Connect Wi-ME module
  - 2 MB Flash, 8 MB SDRAM, (Digi Connect Wi-ME)
- Development board
  - 1 RS-2323 serial port, 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), JTAG header and RS-232 console/debug port (JTAG modules)
- Digi JTAG link USB 2.0 hardware debugger
- Digi NET+OS CD
  - NET+OS 7.x, Digi ESP IDE, BSP source code, sample code, Green Hills MULTI* IDE support, documentation
- Documentation
  - Quick start guide, Digi ESP tutorial, NET+OS porting guide, NET+OS API documentation, Advanced Web Server, hardware reference manual, development board schematics
- Power supply and accessories
  - External wall power supply (110/240VAC to 12VDC @ 850 mA) with interchangeable outlet adapters (North America, EU, UK, and Australia), JTAG adapter, crossover serial cable, Ethernet cable or 2 dBi dipole antenna

* Requires purchase of third party product. See website for additional information.

DIGI JUMPSTART KIT FOR .NET MICRO FRAMEWORK: CONTENTS

- Digi Connect ME
  - 2 MB Flash, 8 MB SDRAM
- Development board
  - 1 RS-2323 serial port, 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)
- Digi .NET Micro Framework CD
  - Platform support, templates and samples, documentation
- Microsoft .NET Micro Framework SDK CD
- Microsoft Visual Studio 2005 CD with 90-day trial license
- Documentation
  - Quick start guide, getting started guide, hardware reference manual, development board schematics
- Power supply and accessories
  - External wall power supply (110/240VAC to 12VDC @ 850 mA) with interchangeable outlet adapters (North America, EU, UK, and Australia), crossover serial cable, Ethernet cable or 2 dBi dipole antenna

Features/Specifications

HARDWARE

- 32-bit Digi NET+ARM high-performance RISC processor
  - NS7520 @ 55 MHz
- Digi Connect ME on-board memory
  - 2/4 MB Flash and 8 MB RAM
- Digi Connect Wi-ME on-board memory
  - 4 MB Flash and 8 MB RAM
- On-board power supervisor
- High-speed TTL serial interface
  - Throughput up to 230 Kbps
  - Full signal support for TXD, RXD, RTS, CTS, DTR, DSR and DCD
  - Hardware/Software flow control
- 5 shared GPIO ports
- Wave-solderable design (no clean flux process)

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 w/magnetics
- 802.3af mid-span power pass-through

Wireless LAN
- Standard: IEEE 802.11b
- Frequency: 2.4 GHz
- Data rate: Up to 11 Mbps w/fallback
- Modulation: DBPSK (1 Mbps), DQPSK (2 Mbps), CCK (11,5.5 Mbps)
- Transmit power: 16 dBm typical
- Receive sensitivity: -82 dBm @ 11 Mbps
- Connector: 1 x RP-SMA

ENVIRONMENTAL

Digi Connect ME
- Operating temperature: -40° C to 85° C (-40° 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)

Digi Connect Wi-ME
- Operating temperature: -30° C to 75° C (-22° F to 167° 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)

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
  - Pre-shared key (PSK)

POWER REQUIREMENTS

Digi Connect ME
- 3.3VDC @ 250 mA typical (825 mW)

Digi Connect Wi-ME
- 3.3VDC @ 400 mA max (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

DIMENSIONS

Digi Connect ME
- Length: 1.445 in (36.7 mm)
- Width: 0.75 in (19.05 mm)
- Height: 0.735 in (18.67 mm)

Digi Connect Wi-ME
- Length: 1.945 in (49.4 mm)
- Width: 0.75 in (19.05 mm)
- Height: 0.735 in (18.67 mm)

MODEL.................PART NUMBERS

Model	Digi Connect ME	Digi Connect Wi-ME
Digi Connect ME Family Integration Kit	DC-ME-KT	DC-WME-KT
Digi Connect ME Family Digi JumpStart Kit for NET+OS	DC-ME-NET	DC-WME-NET
Digi Connect ME Digi JumpStart Kit for .NET Micro Framework	DC-ME-MF	N/A

See Digi website for complete list of available part numbers.

RoHS Compliant 2002/95/EC

DIGI SERVICE AND SUPPORT - You can purchase with confidence knowing that Digi is here to support you with expert technical support and a strong five-year warranty. www.digi.com/support

WHEN RELIABILITY MATTERS™

Digi International, the leader in device networking for business, develops reliable products and technologies to connect and securely manage local or remote electronic devices over the network or via the web. With over 20 million ports shipped worldwide since 1985, Digi offers the highest levels of performance, flexibility and quality.

www.digiembedded.com

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