

# Digi Connect ME<sup>®</sup> Family

Wired and Wireless Device Server Modules

The industry's first interchangeable, secure wired and wireless device server modules with plug-and-play functionality and professional development tools for custom applications.



## Overview

The Digi Connect ME family of secure device server modules delivers complete and versatile embedded IPv6-ready network connectivity. The modules are cost effective and easy to use in existing and new product designs, while powerful enough to meet future product performance needs. Target applications include retail systems, security/access control, medical devices and building/industrial automation.

Form factor compatibility allows the drop-in replacement of a wired or wireless module in your product design. The modules offer true long-term product availability and state-of-the-art wired and wireless security capabilities such as SSL/TLS and WPA2/802.11i.

Built on Digi's 32-bit NET+ARM processors, the modules deliver off-the-shelf serial-to-network functionality through Digi's plug-and-play firmware, and the freedom and flexibility of professional embedded development provided by easy-to-use and cost-effective Digi JumpStart Kits<sup>®</sup>.

### Platforms and Services



Design Services



Accessory Kits



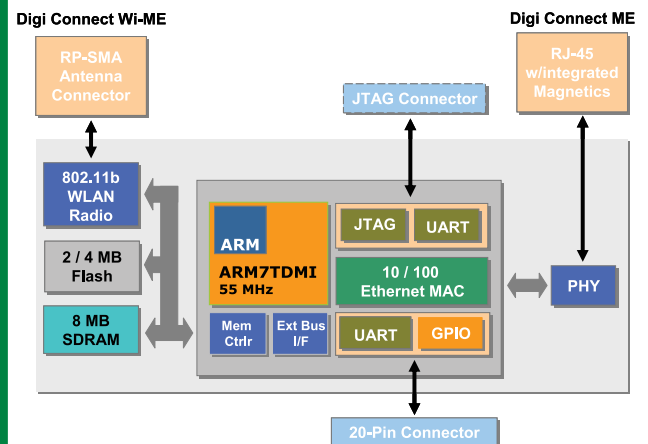
Support

NET + OS

PLUG-and-PLAY  
FIRMWARE

Supported Software Platforms

## Block Diagram



## Features/Benefits

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



## Integration Kits / Development Kits

### Integration Kits and Digi JumpStart Kits®: Overview

| Plug-and-Play Integration Kits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 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"> <li>• Complete kit for product evaluation, rapid prototyping, and integration</li> <li>• Digi plug-and-play firmware eliminates embedded software development</li> <li>• Transparent wired and wireless device server functionality</li> <li>• Full private-labeling/branding supported out-of-the-box</li> </ul>  | <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"> <li>• Royalty-free turnkey solution for embedded software development</li> <li>• Built on field-proven and compact ThreadX RTOS</li> <li>• Fully integrated support for secure, IPv4/IPv6 networking applications</li> <li>• Professional software development using Windows-based Digi ESP IDE</li> </ul>  |

### Digi JumpStart Kit® and Integration Kit Contents

| Software Platform        | Digi Plug-and-Play Device Server Firmware                                                                                                                                                                                                                                                                            | NET+OS®                                                                                                                                                            |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module</b>            | Digi Connect ME or Digi Connect Wi-ME module w/ 2 MB Flash, 8 MB SDRAM                                                                                                                                                                                                                                               |                                                                                                                                                                    |
| <b>Development Board</b> | 1 RS-2323 serial port, GPIO configuration switches, Screw terminal for GPIO signals, Prototyping area, Status LEDs (serial, GPIO, power), Logic signal header, Test points, Reset button, User buttons, PoE module header, 9-30VDC power supply, JTAG header and RS-232 console/debug port for JTAG-equipped modules |                                                                                                                                                                    |
| <b>CD/DVD</b>            | Digi Connect Integration Kit CD: Device discovery tool w/source code, Device discovery library, Java applet sample source code, C/C++ samples, (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                                      |
| <b>Documentation</b>     | Getting started, Hardware reference manual, Development board schematics Digi Connect user's guide, Command line reference, RCI specification                                                                                                                                                                        | Quick start guide, Digi ESP tutorial, NET+OS porting guide, NET+OS API documentation, Advanced Web Server, Hardware reference manual, Development board schematics |
| <b>Power Supplies</b>    | External wall power supply (110/240VAC to 12VDC @ 850 mA) with interchangeable outlet adapters (North America, EU, UK, and Australia)                                                                                                                                                                                |                                                                                                                                                                    |
| <b>Accessories</b>       | Crossover serial cable, Ethernet cable or 2 dBi dipole antenna                                                                                                                                                                                                                                                       |                                                                                                                                                                    |
| <b>Other</b>             | -                                                                                                                                                                                                                                                                                                                    | Digi JTAG link USB 2.0 hardware debugger                                                                                                                           |
| <b>Kit Part Numbers</b>  |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                    |
| <b>Ethernet Only</b>     | DC-ME-KT                                                                                                                                                                                                                                                                                                             | DC-ME-NET                                                                                                                                                          |
| <b>WLAN + Ethernet</b>   | DC-WME-KT                                                                                                                                                                                                                                                                                                            | DC-WME-NET                                                                                                                                                         |

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

| Platform                         |                                                                                                                            | Digi Connect ME®                                                                                                                                                                                                      | Digi Connect® Wi-ME |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Hardware                         |                                                                                                                            |                                                                                                                                                                                                                       |                     |
| Processor Type                   | 32-bit Digi NS7520 processor                                                                                               |                                                                                                                                                                                                                       |                     |
| ARM Core                         | ARM7TDMI                                                                                                                   |                                                                                                                                                                                                                       |                     |
| Processor Speed                  | 55 MHz                                                                                                                     |                                                                                                                                                                                                                       |                     |
| Memory Base Population           | 2/4 MB NOR flash                                                                                                           | 4 MB NOR flash                                                                                                                                                                                                        |                     |
|                                  | 8 MB SDRAM                                                                                                                 |                                                                                                                                                                                                                       |                     |
| Pins/Form Factor                 | RJ-45 connector style with 20-pin micro pin header (Samtec FTS-110-01-F-DV-TR)                                             |                                                                                                                                                                                                                       |                     |
| High-Speed TTL Serial Interface  | Up to 230 Kbps data rate<br>Full signal support for TXD, RXD, RTS, CTS, DTR, DSR and DCD<br>Hardware/Software flow control |                                                                                                                                                                                                                       |                     |
| GPIO                             | Up to 10 shared with 1 external IRQ                                                                                        |                                                                                                                                                                                                                       |                     |
| On-module Power Supervisor       | •                                                                                                                          |                                                                                                                                                                                                                       |                     |
| JTAG Interface                   | NET+OS development modules only (P/N DC-ME-01T-JT, DC-ME4-01T-JT)                                                          |                                                                                                                                                                                                                       |                     |
| Wave-Solderable Design           | No clean flux process                                                                                                      |                                                                                                                                                                                                                       |                     |
| Dimensions (L x W x H)           | 1.445 in (36.7 mm) x 0.75 in (19.05 mm) x 0.854 in (21.69 mm)                                                              | 1.845 in (46.86 mm) x 0.75 in (19.05 mm) x 0.854 in (21.69 mm)                                                                                                                                                        |                     |
| 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                                                                                                                      | —                                                                                                                                                                                                                     |                     |
| Integrated Ethernet MAC/PHY      | •                                                                                                                          | —                                                                                                                                                                                                                     |                     |
| PoE Power Pass-Through           | •<br>See website for available options                                                                                     | —                                                                                                                                                                                                                     |                     |
| Network Interface – Wireless LAN |                                                                                                                            |                                                                                                                                                                                                                       |                     |
| Standard                         | —                                                                                                                          | IEEE 802.11b                                                                                                                                                                                                          |                     |
| Frequency                        | —                                                                                                                          | 2.4 GHz                                                                                                                                                                                                               |                     |
| Data Rate                        | —                                                                                                                          | Up to 11 Mbps with automatic fallback                                                                                                                                                                                 |                     |
| Modulation                       | —                                                                                                                          | CCK (11/5.5 Mbps), DQPSK (2 Mbps), DBPSK (1 Mbps)                                                                                                                                                                     |                     |
| Typical Transmit Power           | —                                                                                                                          | 16 dBm typical                                                                                                                                                                                                        |                     |
| Receive Sensitivity              | —                                                                                                                          | -66 dBm @ 11 Mbps                                                                                                                                                                                                     |                     |
| Connector                        | —                                                                                                                          | 1 x RP-SMA                                                                                                                                                                                                            |                     |
| WLAN Security                    |                                                                                                                            |                                                                                                                                                                                                                       |                     |
| WEP (Wired Equivalent Privacy)   | —                                                                                                                          | 64/128-bit encryption (RC4)                                                                                                                                                                                           |                     |
| WPA/WPA2/802.11i                 | —                                                                                                                          | 128-bit TKIP/CCMP (AES) encryption<br>Enterprise mode (802.1X): LEAP (WEP only), PEAP, TTLS, TLS;<br>EAP-FAST, GTC, MD5, OTP, PAP, CHAP, MSCHAP, MSCHAPv2,<br>TTLS-MSCHAPv2<br><br>Pre-shared key mode (PSK/Personal) |                     |

