Digi Connect Wi-EM™

Wireless Embedded Module

The Digi Connect Wi-EM embedded module minimizes design risk and reduces time-to-market by providing secure 802.11b wireless network connectivity in a powerful and compact single-component solution.

Box   Module   Chip

Seamless migration to total integration

Future proof protection - software development migrates fully to chip solutions.

Features/Benefits

> **Powerful single-component solution based on 32-bit NET+ARM processor**

> **4MB Flash and 8MB RAM on board**

> **Two high-speed TTL serial interfaces with up to 230 Kbps throughput**

> **Serial Peripheral Interface (SPI) with throughput of up to 9 Mbps**

> **Nine shared GPIO port options for application-specific use**

> **FCC module approval eliminates design risk and improves time-to-market**

> **Integrated 802.11b wireless Ethernet interface with data rates up to 11 Mbps**

> **Full support of wireless WPA security and WEP encryption**

> **Robust design with industrial operating temperature range**

> **Low power consumption and extremely compact form factor**

> **Strong SSL/TLS encryption for security sensitive environments**

> **Plug-and-play firmware option eliminates embedded software development effort**

> **Easy-to-use and royalty-free NET+Works development platform for custom application development**

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Overview

Wireless technology creates a new dimension in a rapidly emerging world of ubiquitous networking collaboration in which billions of networked electronic devices work invisibly and jointly with each other and with people. Making the right network technology decisions is a key factor for market success and defines the competitive edge of your products.

The Digi Connect™ family of 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 your future product performance needs.

Based on a unique common platform design approach, the Digi Connect Wi-EM embedded module offers complete "drop-in" integration. This allows you to build future-proof products based on a single design supporting 802.11b wireless Ethernet connectivity. The Digi Connect Wi-EM makes all of 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.

The Digi Connect Wi-EM features a variety of connectivity options, such as two high-speed serial ports, a 9 Mbps SPI master mode interface and nine General Purpose Input/Output (GPIO) port options. For additional integration flexibility, it is available in two low-profile population options with or without onboard LED array. Customer specific population options are available on request.

Built on leading NetSilicon 32-bit NET+ARM technology, the Digi Connect Wi-EM combines true plug-and-play functionality with the freedom and flexibility of complete software customization using the proven NetSilicon NET+Works® development platform. It provides a seamless migration path to a fully integrated NetSilicon system-on-chip solution.

An integration kit and a complete development kit containing a development board, documentation, sample code, cables and accessories are available for evaluation and development use.

Please contact us at 1-877-OEM-DIGI or 952-912-3444 for additional information or to discuss your specific application requirements.

Digi®

Connectware™

Making
DEVICE NETWORKING
easy ™

Features/Specifications

HARDWARE

- 32-bit NET+ARM high-performance RISC processor (NS7520 @ 55MHz)
- On-board memory 4MB Flash and 8MB RAM
- On-board power supervisor
- Two high-speed TTL serial interfaces
  - Port 1: TXD, RXD, RTS, CTS, DTR, DSR and DCD
  - Port 2: TXD, RXD
  - Throughput up to 230 Kbps
  - Hardware and software flow control
- Nine shared GPIO ports
- Integrated 802.11b wireless Ethernet interface with support for dual diversity antenna configurations (RP-SMA)
- WPA/WEP wireless security/encryption
- FCC module approval
- Wave-solderable design (no clean flux process)
- Pin-compatible with Digi Connect™ EM

WIRELESS INTERFACE

- Standard: IEEE 802.11b
- Frequency: 2.4 GHz
- Data rate: Up to 11 Mbps with automatic fallback
- Modulation: CCK (11/5 Mbps), DQPSK (2 Mbps), DBPSK (1 Mbps)
- Transmit power: 16 dBm
- Receive sensitivity: -80 dBm
- Antenna connector: 2 x RP-SMA
- Security: WPA, WEP encryption (64-/128-bit)

PLUG-AND-PLAY FEATURES

- Robust on-board IP stack
  - TCP, UDP, DHCP, SNMP, SSL/TLS, Telnet, Rlogin, RFC 2217, LPD, HTTP/HTTPS, SMTP, ICMP, IGMP, ARP
- Secure web-based configuration (HTTP/HTTPS)
- Telnet Command Line Interface
- Low-level serial configuration interface
- User-defined network service configuration
  - HTTP/HTTPS, Telnet, Rlogin, ADDP, SNMP, RealPort, SSL/TLS, TCP/UDP
- TCP/UDP forwarding characteristics
  - Bytes, Idle Time, Data Pattern
- User-configurable TCP/UDP Socket ID string
- Fully customizable web interface with support for custom Java applets
  - Applet space: 512 kb
- Universal IP address assignment
  - Static IP, DHCP, Auto-IP
- Event notification (SMTP/SNMP Traps)
  - GPIO Status, Data Pattern
- SNMP management
  - RFC 1213/1215/1316/1317
- Strong SSL v3.0/TLS v1.0 based encryption
  - DES (56-bit)
  - 3DES (168-bit)
  - AES (128-/256-bit)
- Patented RealPort® COM/TTY port redirection for Microsoft Windows, UNIX and Linux environments

CUSTOM DEVELOPMENT

- Easy-to-use and royalty-free NET+Works development kit available for custom application development

ENVIRONMENTAL

- Ambient operating temperature: -40º C to 85º C (-40º F to 185º F)
- Relative humidity: 5% to 95% (non-condensing)
- Altitude: 12,000 ft (3685 m)

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 Subpart C Section 15.247
- IC (Industry Canada) RSS-210 Issue 5 Section 6.2.2(o)
- EN 300 328
- EN 301 489-3
- UL 60950-1
- EN 60950 (European Union)
- CSA C22.2, No. 60950
- EN 55024

DIMENSIONS

- Length: 1.445 in (36.70 mm)
- Height: 0.735 in (18.67 mm)
- Width: 1.08 in (27.51 mm)

POWER REQUIREMENTS

- 3.3Vdc @ 370mA typical (1.25W)

LEDS

- Link integrity
- Network activity
- Diagnostics

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

Model	North America	International
Custom Application		
Digi Connect Wi-EM Development Kit	DC-WEM-01T-GN	DC-WEM-01T-GN
Digi Connect Wi-EM Customizable (single-unit pack)	DC-WEM-01T-C	DC-WEM-01T-C
Plug-and-Play Firmware		
Digi Connect Wi-EM Integration Kit	DC-WEM-01T-KT	DC-WEM-01T-KT
Digi Connect Wi-EM plug-and-play (single-unit pack)	DC-WEM-01T-S	DC-WEM-01T-S

Bulk pack and customer-specific packaging configurations available.

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.   http://support.digi.com

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