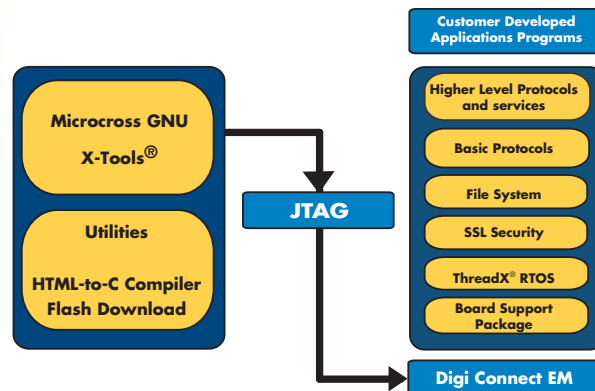# Digi Connect™ EM
Development Kit

Tools

The Digi Connect EM embedded module is a flexible, powerful and compact solution with a variety of connectivity that makes it an ideal solution for a wide variety of network- and web-enabled applications.

Customer Developed Applications Programs

Microcross GNU X-Tools®

Utilities

HTML-to-C Compiler Flash Download

JTAG

Higher Level Protocols and services

Basic Protocols

File System

SSL Security

ThreadX® RTOS

Board Support Package

Digi Connect EM

Features/Benefits

> Flexible and compact embedded module with a variety of connectivity options

> Two asynchronous high-speed serial interfaces (TTL)

> Throughput up to 230,400 bps

> Serial Peripheral Interface (SPI) in Master mode
  • Throughput up to 9 Mbps

> Integrated 10/100 Mbit Ethernet interface

> Nine GPIO port options for application-specific use

> Embedded module available in two connector population options

> Easy-to-use and royalty-free out-of-the-box development kit solution

> Quick and cost-effective embedded application software development

> Reduces design risk and accelerates hard- and software development process

> Seamless migration path to a fully integrated system-on-chip solution

www.digi.com

Overview

In the rapidly emerging world of network collaboration, making the right technology decisions is a key factor for market success and defines the competitive edge of your products. True device networking is much more than just finding a way to connect devices to an Ethernet network. The combination of Digi and NetSilicon technology delivers true device networking that is easy and cost-effective to implement, while being powerful enough to meet your future product performance needs.

Built on the leading NetSilicon 32-bit NET+ARM technology, the Digi Connect EM embedded device server module is one of the industry's most powerful and compact embedded system platforms with a seamless migration path to a fully integrated NetSilicon system-on-chip solution using the award-winning family of Ethernet-enabled NET+ARM microprocessors.

It features a wide variety of connectivity options such as two high-speed serial ports, a 9MB SPI transfer mode interface and nine GPIO port options. For additional hardware integration flexibility, the Digi Connect EM is available in two standard population options providing either an onboard RJ-45 and LED Array, or low-profile pin headers only. Customer specific population options are also available on request.

The Digi Connect EM Development Kit is an easy-to-use and royalty-free development platform that significantly reduces traditional design risk and accelerates the overall software development process. Based on the NetSilicon NET+Works® development platform, it delivers the integrated building blocks to quickly and cost effectively create flexible and secure embedded applications for integrated high-performance networking solutions based on the Digi Connect EM.

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

Digi®

Connectware™

Making
DEVICE NETWORKING
easy™

Features/Specifications

FEATURES

- 32-bit NET+ARM high-performance RISC processor (NS7520 55 MHz)
- 4MB Flash and 8MB RAM integrated
- Two asynchronous, high-speed serial interfaces (TTL)
  - Throughput up to 230,400 bps
  - Full signal support with software/ hardware flow control on port 1
  - TXD, RXD, RTS, CTS, DTR, DSR, DCD
  - Receive / transmit signals with software flow control on port 2
  - TXD, RXD
- Serial Peripheral Interface (SPI)
  - Master mode
  - Throughput up to 9 Mbps
- 9 selectable General Purpose Input / Output (GPIO) ports
- Auto-sensing 10/100 Mbit Ethernet Interface
- Available in two population options
  - RJ-45 and LED array onboard
  - Low-profile pin headers

Development Kit

- Digi Connect EM w/JTAG
- Development board
- Macgraigor Raven JTAG debugger
- NET+Works software components
  - Microcross™ GNU X-Tools with command line and visual GDB debugger
  - ThreadX Realtime Operating System with picokernel™ architecture
  - Fusion™ TCP/IP stack with full networking protocol and extended networking services support
- TCP, UDP, ICMP, IGMP, DNS, SNMPv2, LDAP, POP, SMTP, PPP, FTP, SNTP, Telnet, FastIP, Fast Sockets, Multi-Homing

- Universal IP address assignment through Address Configuration Executive (ACE)
  - Static IP, DHCP, BOOTP, Auto-IP, RARP, ARP/Ping
  - Allegro Software Embedded Web Server with HTTPS support
  - SSL 3.0/TLS 1.0 with strong encryption
  - DES (56-bit)
  - 3DES (168-bit)
  - AES (128/256-bit)
- Flexible and robust file system supporting RAM and Flash (with wear leveling)
- SMICng MIB Compiler
- Micro XML SAX Parser
- Additional utilities
  - HTML-to-C Compiler
  - Flash download
  - Sample Code
- Documentation
  - Digi Connect EM Hardware Reference
  - NET+OS® Programmer's Guide
  - NET+OS API Reference
  - NET+OS Advanced Web Server Toolkit
  - NS7520 Hardware Reference
- Cables
  - Straight-thru and crossover serial cables
  - Straight-thru and crossover network cables
- Loop-back adapter
- Power supplies

PINOUTS

Pin #	Signal Name	Description
1	+3.3 VDC	Power (Input)
2	GND	Reference Ground for power
3	RXD / GPIO-7	Port 1 RXD (Input) / GPIO-7
4	TXD / GPIO-6	Port 1 TXD (Output) / GPIO-6
5	RTS / SPI_CLK / GPIO-4	Port 1 RTS (Output) / GPIO-4 / SPI Clock
6	DTR / GPIO-5	Port 1 DTR (Output) / GPIO-5
7	CTS / GPIO-2	Port 1 CTS (Input) / GPIO-2
8	DCD / SPI_EN / GPIO-1	Port 1 DCD (Input) / GPIO-1/SPI Enable
9	DSR / GPIO-3	Port 1 DSR (Input) / GPIO-3
10	/RST	Reset (Input)
11	RXD2 / GPIO-9	Port 2 RXD (Input) / GPIO-9
12	TXD2 / GPIO-8	Port 2 TXD (Output) / GPIO-8

ENVIRONMENTAL

- Ambient temperature: -40ºC to 85ºC (-40ºF to 185ºF)
- Relative humidity: 5% to 95% (non-condensing)
- Altitude: 12,000 Feet (3658 Meters)

POWER REQUIREMENTS

- +3.3Vdc @ 270 MAX (891 mW)

REGULATORY APPROVALS

- FCC Part 15, Class B
- EN 55022, Class B
- UL 60950
- EN 60950
- CSA 22.2 No 60950

LEDS

- Network Link
- 3 custom (green, yellow, red)

DIMENSIONS

- Length: 1.93 in (4.902 cm)
- Depth: .974 in (2.473 cm)
- Height: 1.57 in (3.987 cm)

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

Model	North America	International
Digi Connect EM Development Kit (GNU)	DC-EM-02T-GN	DC-EM-02T-GN
Digi Connect EM with onboard RJ-45 and LED array (single-unit pack)	DC-EM-02T	DC-EM-02T
Digi Connect EM with onboard RJ-45 and LED array (50-unit bulk pack)	DC-EM-02T-50	DC-EM-02T-50
Digi Connect EM with pin headers (single-unit pack)	DC-EM-02T-NC	DC-EM-02T-NC
Digi Connect EM with pin headers (50-unit bulk pack)	DC-EM-02T-NC-50	DC-EM-02T-NC-50

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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