Digi Connect ME® 9210

Flexible and Secure Embedded Module

Ultra-compact high-performance embedded module combines Ethernet networking, on-chip security and interface flexibility in Digi Connect ME compatible design.

Overview

The Digi Connect ME 9210 is an ultra-compact embedded module based on Digi's powerful 75 MHz NS9210 processor. It allows customers to implement the next generation of leading network-enabled products and maintains full form factor and pin-compatibility with the existing Digi Connect ME family.

The module can provide future application-specific interface options (1-Wire, UART, USB low-speed, SD/SDIO, CAN, etc.) through its programmable Flexible Interface Module (FIM), while still keeping the main serial port or other key peripheral interfaces available. It is also well-suited for more advanced core module applications, with its support of up to ten shared GPIOs, external IRQs and an extended set of peripheral interface options such as I²C and SPI.

The Digi JumpStart Kits® for the Digi Connect ME 9210 are cost-effective and easy to use. They leverage the reliability and flexibility of the royalty-free ThreadX-based NET+OS® platform, or the readily available library of software and community support of the Linux® environment.

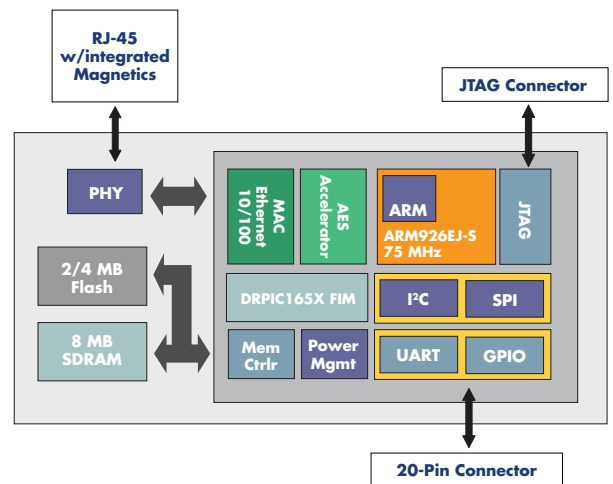## Platforms and Services

Design Services

Accessory Kits

Support

NET + OS

Supported Software Platforms

Block Diagram

RJ-45 w/integrated Magnetics

JTAG Connector

PHY

MAC Ethernet 10/100

AES Accelerator

ARM ARM926EJ-S 75 MHz

JTAG

2/4 MB Flash

DRPIC165X FIM

I²C

SPI

8 MB SDRAM

Mem Ctrlr

Power Mgmt

UART

GPIO

20-Pin Connector

Features/Benefits

- **Compact ARM9 embedded module in RJ-45 form factor**
- **Footprint-compatible with Digi Connect ME module**
- **Integrated 10/100 Mbit Ethernet interface**
- **802.3af compliant PoE pass-thru**
- **On-chip hardware encryption engine**
- **Extended set of on-chip interfaces and signals**
- **Power management modes**
- **Low-emission design (FCC Class B)**
- **Seamless migration to NET+ARM chip design**

Development Kits

Digi JumpStart Kits Overview

Digi JumpStart Kit for NET+OS	Digi JumpStart Kit for Embedded Linux

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.

For professional NET+OS software development, the Eclipse based Digi ESP™ Integrated Development Environment (IDE) with graphical user interface and high-speed USB 2.0 hardware debugger is provided out-of-the-box.

- 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

Built around a standard Linux 2.6 kernel distribution, the Digi JumpStart Kit for Embedded Linux is tailored to the specific needs of embedded Linux development and provides an easy-to-use, complete off-the-shelf embedded development platform. It includes all components that are required to build secure network-enabled products based on the Digi Connect ME 9210.

The kit includes Digi ESP™ for Embedded Linux, a powerful and fully Linux-hosted Integrated Development Environment based on the open Eclipse™ framework. Ideal for new and experienced Linux developers, Digi ESP improves software design productivity by accelerating and greatly simplifying driver and application development through a user-friendly graphical interface.

- Off-the-shelf development platform for network-enabled embedded systems
- Royalty-free and with optimized 2.6 kernel and services support
- Linux Digi ESP IDE for accelerated software development
- Full Linux and Digi BSP source code included

Digi JumpStart Kit Contents

Software Platform	NET+OS	Embedded Linux
Module	Digi Connect ME 9210 w/ 4 MB Flash, 8 MB SDRAM	
Development Board	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/wake-up buttons, PoE module header, 9-30VDC power supply, JTAG header and RS-232 console/debug port for JTAG-equipped modules	
CD/DVD	Digi NET+OS CD: NET+OS 7, Digi ESP IDE, BSP source code, sample code, Green Hills MULTI IDE support files, user documentation	Digi Embedded Linux 4 DVD: Digi Embedded Linux, Digi ESP IDE, Linux and platform specific source code, Universal boot loader source code (U-Boot), sample code, 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	Quick start guide, Digi Embedded Linux user's guide, hardware reference manual, development board schematics
Power Supplies and Accessories	External wall power supply (110/240VAC) with interchangeable outlet adapters (North America, EU, UK, and Australia), crossover serial cable, Ethernet cable	
Other	Digi JTAG Link USB 2.0 hardware debugger	—
Kit Part Numbers	DC-ME-9210-NET	DC-ME-9210-LX

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

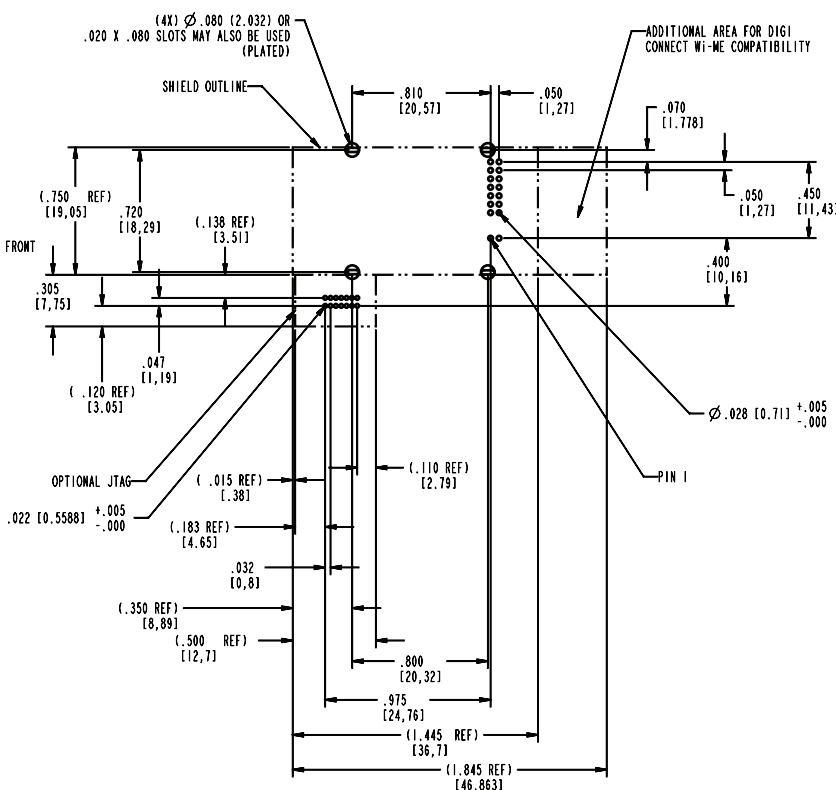| Platform	Digi Connect ME® 9210
Hardware	
Processor Type	32-bit Digi NS9210 processor
ARM Core	ARM926EJ-S
Processor Speed	75 MHz
Cache	4k I/D Cache
Memory Base Population	2/4 MB NOR flash
	8 MB SDRAM
Flexible Interface Modules (FIMs)	300 MHz DRPIC165X CPU 2k program/192 bytes data RAM
On-chip 256-bit AES Accelerator	•
Power Management Modes	On-the-fly clock scaling Low-power sleep modes Configurable scaling/wake-up events (EIRQ, UART, Ethernet, etc.)
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 1.8 Mbps data rate Full signal support (TXD, RXD, RTS, CTS, DTR, DSR and DCD) Hardware/Software flow control
GPIO	10 shared Up to 3 external IRQ options
SPI	Master data rate up to 16.7 Mbps Slave data rate up to 7.5 Mbps
I²C	v1.0 bus interface 7-bit and 10-bit address modes
Flexible Interface Support (FIM)	UART, 1-Wire, USB device low-speed, CAN
Watchdog Timer (16-bit)	•
JTAG Interface	Available on development modules only (P/N DC-ME-Y401-JT, DC-ME-Y402-[LX]-JT)
On-Board Power Supervisor	•
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 0.735 in (18.67 mm)
Network Interface - Wired	
Physical Layer	10/100Base-T
Data Rate	10/100 Mbps (auto-sensing)
Mode	Full- or half-duplex (auto-sensing)
Connector	RJ-45 w/ magnetics
PoE Power Pass-Through	802.3af compliant (Mid- and End-span)
Environmental	
Operating Temperature	-40° C to +80° C (-40° F to +176° 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	450 mA (1.485 W)
Typical	346 mA (1.14 W) UART and Ethernet activated
Idle	186 mA (613 mW) /16 clock scaling, Ethernet activated
Sleep	34 mA (113 mW) Wake-up on EIRQ, Ethernet PHY off

• Module Feature

Platform	Digi Connect ME® 9210

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

Module Pinout

Pin	UART	GPIO	Ext IRQ	I²C	SPI	FIM	Other
1							VETH+
2							VETH-
3-6	Positions removed						
7	RxD	GPIO[3]			IN	PIC[3]	
8	TxD	GPIO[7]			OUT		Timer Out 7 Timer In 8
9	RTS	GPIO[5]	3		CLK		Timer Out 6
10	DTR	GPIO[6]					Timer In 7
11	CTS	GPIO[1]	0			PIC[1]	
12	DSR	GPIO[2]	1			PIC[2]	
13	DCD	GPIO[0]			EN	PIC[0]	
14							/RST
15							3.3V
16							GND
17		GPIO[12]		SDA	CLK		RESET_DONE
18		GPIO[9]	0	SCL			
19	Reserved						
20		GPIO[13]			CLK		INIT Timer Out 9

Recommended PCB Layout

Visit www.digiembedded.com for part numbers.

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