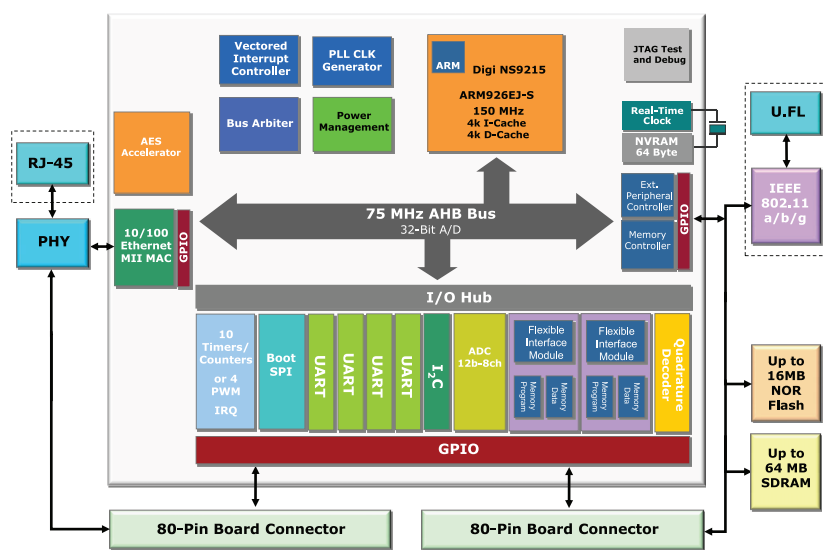# ConnectCore™ 9P 9215

Highly Integrated Core Module

Highly integrated and compact ARM® core module based on the Digi NS9215 processor. Combines main processing functionality and unique interface flexibility with secure Ethernet network connectivity.

Features/Benefits

- Compact network enabled core module

- 32-bit Digi NS9215 processor with powerful ARM926EJ-S core

- Digi's own ARM processor offers true long-term availability

- Up to 16 MB flash and RAM

- 10/100 Mbit Ethernet interface

- Rich set of on-chip interfaces and programmable FIMs

- Power management modes

- Industrial operating temperature

- FCC Class B low-emission design

- Complete embedded software platform offering - ThreadX®-based NET+OS® and Microsoft® .NET Micro Framework

- Seamless migration path to fully integrated Digi NET+ARM system-on-chip solution

Overview

The ConnectCore 9P 9215 module delivers a powerful network-enabled core processor solution with a rich set of peripherals and flexibility.

At the heart of the ConnectCore 9P 9215 module is a 32-bit ARM-based Digi NS9215 processor running at 150 MHz. Key features include a 10/100 Ethernet MAC, two on-chip Flexible Interface Modules (FIMs), 256-bit AES accelerator, power management modes with dynamic clock scaling, and a rich set of on-chip peripherals.

The unique FIMs on the NS9215 processor are two independent 300 MHz DRPIC165X processor cores that allow customers to dynamically select application-specific interfaces from within software. The growing list of supported interfaces will include UART, SD/SDIO, CAN bus, 1-Wire®, I²S, Compact Flash, Wiegand, parallel bus interface, and others.

Utilizing Digi's own ARM processor technology, the ConnectCore 9P 9215 offers the industry's only network-enabled core module with true long-term product availability to meet the extended life cycle requirements of embedded product designs. The compact module is a flexible and secure network-enabled system on a module that is suitable for a wide variety of sophisticated applications. These include medical devices, retail systems, transportation, security/access control, building and industrial automation, warehousing, networked displays, and more.

The easy-to-use and cost-effective Digi JumpStart Kit™ development solutions minimize product design risks and dramatically shorten time-to-market while allowing you to start your embedded product development right out of the box. They enable you to leverage the reliability and flexibility of the royalty-free and complete ThreadX-based NET+OS platform, or the rapid development and benefits of managed code offered by the Microsoft .NET Micro Framework software platform.

Digi also offers professional technical support as well as a wide range of hardware and software custom designs for your project-specific development needs.

DIGI JUMPSTART KIT FOR NET+OS: OVERVIEW

The Digi JumpStart Kit for NET+OS delivers 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, it is one of most reliable and field-proven RTOS solutions available on the market. In addition to ThreadX, NET+OS provides the integrated building blocks needed to create product solutions with leading support network security using Digi embedded modules and microprocessors. This includes an IPv4/IPv6 enabled TCP/IP stack, web server, SNMP device management, and full standards-based SSL/TLS support.

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

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

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

- **Fully integrated support for secure, standards-based networking applications**

- **Professional software development using Microsoft Windows-based Digi ESP or Green Hills MULTI* development tools**

DIGI JUMPSTART KIT FOR .NET MICRO FRAMEWORK: OVERVIEW

The Digi JumpStart Kit for Microsoft .NET Micro Framework provides an easy-to-use and complete off-the-shelf solution for Microsoft .NET Micro Framework embedded software development. It includes 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**

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

DIGI JUMPSTART KIT FOR NET+OS: CONTENT

- ConnectCore 9P 9215 module
  - 4 MB NOR Flash, 8 MB SDRAM
- Digi JumpStart Kit development board
  - Ethernet connector, 4 serial ports (1 x RS-232/422/485, 1 x RS-232, 2 x TTL), user/application connectors, I^{2}C/SPI headers, ADC header, screw terminal for access to 8 GPIO signals, 2 user push-buttons, 2 user LEDs, wake-up button, reset button, 802.3af PoE module connector, battery backup, 9-30VDC power supply, power switch, mounting holes
- Digi NET+OS CD
  - NET+OS 7, Digi ESP IDE, BSP source code, sample code, Green Hills MULTI* IDE, support, documentation
- Digi JTAG Link USB 2.0 hardware debugger
- Documentation
  - Quick start guide, Digi ESP tutorial, NET+OS programmer's 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, Ethernet cable, serial cable

DIGI JUMPSTART KIT
FOR .NET MICRO FRAMEWORK: CONTENT

ConnectCore 9P 9215 module
  - 4 MB NOR Flash, 8 MB SDRAM
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  - Ethernet connector, 4 serial ports (1 x RS-232/422/485, 1 x RS-232, 2 x TTL), user/application connectors, I^{2}C/SPI headers, ADC header, screw terminal for access to 8 GPIO signals, 2 user push-buttons, 2 user LEDs, wake-up button, reset button, 802.3af PoE module connector, battery backup, 9-30VDC power supply, power switch, mounting holes
- 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, online help, 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, Ethernet cable, serial cable

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

Features/Specifications

HARDWARE

- 32-bit Digi NS9215 processor @ 150 MHz (ARM926EJ-S)
- 2 Flexible Interface Modules (FIMs)
  - 300 MHz DRPIC165X CPUs
  - 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 (RTC, ADC, EIRQ, UART, etc.)
- Up to 16 MB Flash/RAM
  - Flash: 2 / 4 / 8 / 16 MB NOR
  - RAM: 8 / 16 MB SDRAM
- Up to 4 high-speed UARTs
  - Maximum data rate 1.8432 Mbps
- Serial Peripheral Interface (SPI)
  - Master data rate 33.3 Mbps
  - Slave data rate 7.5 Mbps
- I²C v1.0 bus interface
  - 7-bit and 10-bit address modes
- 17-bit address and 16-bit data bus with 2 external chip select
- 2 external IRQs
- 12-bit/8-channel ADC
  - External reference
- Software watchdog timer
- Up to ten 16-/32-bit timers/counters
  - Modes: Internal timer with external terminal count option, external gated timer, event counter
- Quadrature decoder/counter
- Up to 5 PWM functions
  - Basic and enhanced
- 2 general purpose LEDs
- POR controller
- JTAG interface
- Up to 64 shared GPIOs
- Real-time clock and 64 byte of NVRAM w/external battery backup

NETWORK INTERFACE

- Standard: IEEE 802.3
- Physical layer: 10/100Base-T
- Data rate: 10/100 Mbps (auto-sensing)
- Mode: Full or half duplex (auto-sensing)
- Optional connector: RJ-45 with integrated magnetics

ENVIRONMENTAL

- Operating temperature: -40º C to 85º C (-40º F to 185º F)
- Storage temperature: -50º C to 125º C (-58º F to 257º F)
- Relative humidity: 5% to 95% (non-condensing)
- Altitude: 12,000 feet (3,658 meters)

REGULATORY APPROVALS (IN PROGRESS)

- 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

POWER REQUIREMENTS

- ConnectCore 9P 9215: 3.3VDC @ 554 mA max.

DIMENSIONS

- Length: 1.968 in (50 mm)
- Width: 1.968 in (50 mm)

BOTTOM View
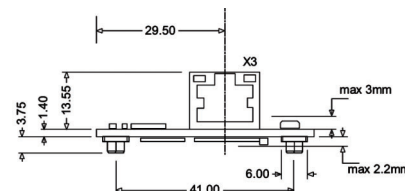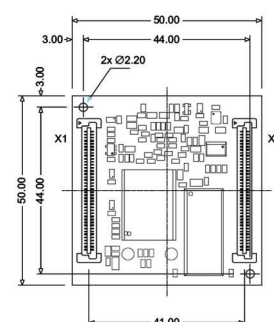
SIDE View

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

THREADX

Microsoft
.net
Micro
Framework

Development Kits	North America	International
ConnectCore 9P 9215 Digi JumpStart Kit for NET+OS	CC-9P-9215-NET	CC-9P-9215-NET
ConnectCore 9P 9215 Digi JumpStart Kit for .NET Micro Framework	CC-9P-9215-MF	CC-9P-9215-MF ➲ Coming soon

Please visit our website for a complete list of available part numbers and accessories.

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.

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