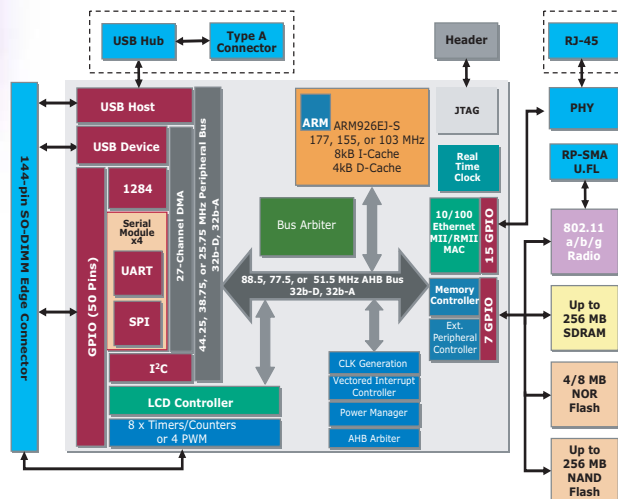# ConnectCore™ Wi-9C

Powerful ARM9 Core Module

Highly integrated, compact SO-DIMM form factor core module based on the powerful NetSilicon® NS9360 processor combines main processing functionality with on-board secure wireless and wired network connectivity.

## Features

- **Compact SO-DIMM**

- **Powerful 32-bit NS9360 w/ARM926EJ-S core**

- **Up to 256 Mbyte SDRAM/Flash**

- **802.11b/g or 802.11a/b/g with strong WPA2/802.11i security**

- **10/100 Mbit Ethernet interface**

- **I/O connectivity options: USB, UART, I²C, SPI, PWM, GPIO**

- **On-chip LCD controller**

- **Industrial operating temperature**

- **Pre-certified radio reduces cost, design risk and time to market**

- **FCC Class B compliant low emissions design**

- **Population options for unique design flexibility**

- **Complete embedded software platform offering with support and design services: ThreadX®, Microsoft® Windows® CE, Linux**

## Overview

Built on leading 32-bit NET+ARM technology, the ConnectCore Wi-9C module is a powerful network-enabled core processor solution. Its unique design combines main processor performance, secure wireless/wired network connectivity, embedded software and hardware design flexibility, and a seamless migration path to a fully integrated system-on-chip solution.

The ConnectCore Wi-9C delivers a pre-certified, flexible and secure network-enabled system on a module for a wide variety of sophisticated applications. These include medical devices, retail systems, transportation, access control, building and industrial automation, warehousing, networked displays and more.

Digi's complete embedded development solutions dramatically shorten traditional time-to-market aspects and minimize overall product designs risks, whether you want to leverage the small footprint and efficiency of the royalty-free and complete out-of-the-box ThreadX-based NET+Works® platform, the feature-complete selection of high-level software components and applications of Microsoft Windows CE, or take advantage of the open Linux environment with its community support and readily available library of software components.

Cost-effective and complete NET+Works, Linux and Microsoft Windows CE development kits with module, development board, driver source code, documentation, debugging/programming tools, cables and accessories are available for evaluation/development use.

Contact us to learn more about our professional support and design services for all of your project-specific hardware and software development needs.

**Digi®**

*Making*
**DEVICE NETWORKING**
*easy* ™

# Features/Specifications

## HARDWARE

- 32-bit NS9360 high-performance RISC processor @ 155 MHz
- Up to 256 MB Flash and 256 MB SDRAM
- Up to 4 Serial and SPI ports
- I²C v1.0 bus interface
- USB 2.0 host/device full speed interface
- On-chip LCD controller for TFT / STN LCD
- Up to 8 programmable timers/counters
- Up to 4 PWM functions
- Four programmable external interrupts
- Up to 55 shared General Purpose Input/Output (GPIO) ports
- Real-time clock

## DEVELOPMENT KITS

**NET+Works**
- NET+Works CD
    - Digi Workbench Eclipse-based IDE
    - Microcross™ GNU X-Tools
    - ThreadX Real-Time Operating System
    - Allegro Software Embedded Web Server
    - ADDP/LDAP v3 Network Services
    - SSL 3.0/TLS 1.0 w/strong encryption: DES, 3DES, AES (NIST certified)
    - Robust file system
    - SNMPv3
    - Micro XML SAX parser
    - Sample files and documentation
- ConnectCore Wi-9C module and development board
- USB 2.0 debugger/software debugger

**Linux**
- Digi Workbench Eclipse-based IDE
    - GNU toolchain (gcc/binutils/uClibc)
    - Linux kernel 2.6.x w/patches
    - Complete BSP w/source files
    - Boot loader w/source files
    - Sample files and documentation
- ConnectCore Wi-9C module and development board
- JTAG Flash programming cable

## DEVELOPMENT KITS (CONTINUED)

**Microsoft Windows CE 5.0**
- Microsoft Windows CE 5.0 BSP with source files
    - Sample files and documentation
- ConnectCore Wi-9C module
- Development board
- JTAG Flash programming cable
Integrates with Microsoft Platform Builder (not included).

## 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 w/magnetics (optional)

**Wireless**
- Standard: IEEE 802.11b/g
    - Frequency: 2.4 GHz
    - Data rate: Up to 54 Mbps w/fallback
    - Modulation: DBPSK (1 Mbps), DQPSK (2 Mbps), CCK (11,5.5 Mbps), BPSK (6,9 Mbps), QPSK (12,18 Mbps), 16-QAM (24,36 Mbps), 64-QAM (48, 54 Mbps)
    - Transmit power: 16 dBm typical
    - Receive sensitivity: -73 dBm @ 54Mbps
- Standard: IEEE 802.11a
    - Frequency: 5 GHz
    - Data rate: Up to 54 Mbps w/fallback
    - Modulation: BPSK (6,9 Mbps), QPSK (12, 18 Mbps), 16 QAM (24, 36 Mbps), 64-QAM (48, 54 Mbps)
    - Transmit power: 16 dBm typical
    - Receive sensitivity: -66 dBm @ 54 Mbps
- Connector: 1/2 x RP-SMA or 2 x U.FL

## DIMENSIONS

- Length: 3.06 in (7.76 cm)
- Width: 3.59 in (9.12 cm)
- Height: 0.80 in (2.03 cm)

## WIRELESS SECURITY

WEP (Wired Equivalent Privacy)
- 64/128-bit encryption (RC4)

WPA/WPA2/802.11i
- 128-bit TKIP/CCMP(AES) encryption
- 802.1x EAP authentication
    - LEAP (WEP only), PEAP, TTLS, TLS
    - GTC, MD5, OTP, PAP, CHAP, MSCHAP, MSCHAPv2, TTLS-MSCHAPv2
    - Pre-shared key mode (PSK)

## 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 301 489-3
- UL 60950-1
- EN 60950 (European Union)
- CSA C22.2, No. 60950
- EN 55024

## ENVIRONMENTAL AND POWER REQUIREMENTS

- Storage temperature: -50˚ C to 125˚ C (-58˚ F to 257˚ F)
- Operating temperature: -40˚ C to 85˚ C (-40˚ F to 185˚ F)
- Relative humidity: 5% to 90% (non-condensing)
- Altitude: 12,000 feet (3,658 meters)
- 3.3VDC @ 800 mA max

## LEDS

**Wired***
- Link integrity
- Network activity
*Integrated in connector

**Wireless****
- Association/Link status
- Network activity
**On-board/user-definable

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

| Model | North America | International |
|---|---|---|
| NET+Works Development Kit | CC-W9C-GN | CC-W9C-GN |
| LxNETES Linux Development Kit | CC-W9C-LX | CC-W9C-LX |
| Microsoft Windows CE 5.0 Development Kit | CC-W9C-CE | CC-W9C-CE |

Bulk packs and population options available. Please visit our website for additional information.

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## 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

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