Digi - CC-9M-NA59-Z1-B Datasheet

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Understanding Embedded - Microcontroller, Microprocessor, FPGA Modules

Embedded - Microcontroller, Microprocessor, and FPGA Modules are fundamental components in modern electronic systems, offering a wide range of functionalities and capabilities. Microcontrollers are compact integrated circuits designed to execute specific control tasks within an embedded system. They typically include a processor, memory, and input/output peripherals on a single chip. Microprocessors, on the other hand, are more powerful processing units used in complex computing tasks, often requiring external memory and peripherals. FPGAs (Field Programmable Gate Arrays) are highly flexible devices that can be configured by the user to perform specific logic functions, making them invaluable in applications requiring customization and adaptability.

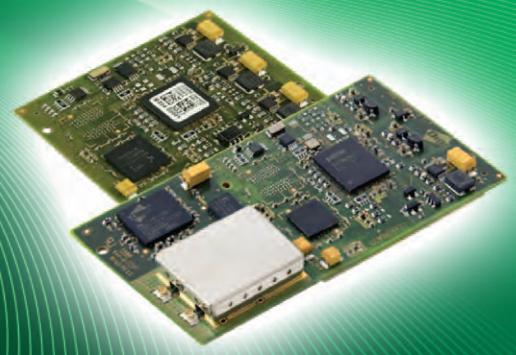
Applications of Embedded - Microcontroller,

Details	
Product Status	Obsolete
Module/Board Type	MPU Core
Core Processor	ARM920T, SC2443
Co-Processor	-
Speed	533MHz
Flash Size	512MB
RAM Size	256MB
Connector Type	Board-to-Board (BTB) Socket - 240
Size / Dimension	2.36" x 1.73" (60mm x 44mm)
Operating Temperature	-40°C ~ 85°C
Purchase URL	https://www.e-xfl.com/product-detail/digi-international/cc-9m-na59-z1-b

ConnectCore™ 9M 2443 Family

Network-Enabled High-End ARM9 Core Modules

Compact, power-efficient high-end ARM9 core module with complete software platform support, superior performance and integrated wired/wireless networking.



Overview

The ConnectCore 9M 2443 core module family delivers secure Ethernet and 802.11a/b/g connectvity, leading performance, low-power operation, and rich peripheral interface support for a wide variety of applications such as medical, transportation, security/access control, networked displays and more.

It is an ideal system platform for mobile and battery-operated product designs with full hardware and software support for power management. Based on a 400/533 MHz S3C2443 ARM9 processor, the module offers a wide variety of on-board peripherals such as a TFT/CSTN LCD controller, camera interface, audio codec interfaces, hi-speed USB device, full-speed USB host, high speed memory card support, external mass storage, and other interfaces. On-module 10/100 Mbit Ethernet and 802.11a/b/g interface options allow completely seamless integration into existing network infrastructures.

Digi JumpStart Kits® for Microsoft® Windows® Embedded CE and Digi Embedded Linux® allow immediate and professional embedded product development right out of the box.

Related Items

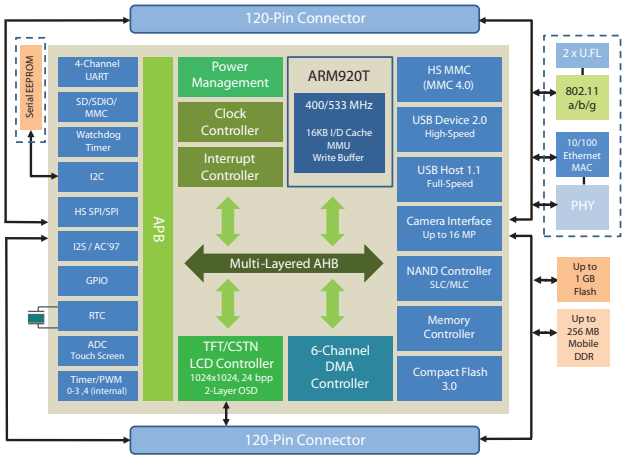
Design Services

Accessory Kits

Support

Supported Software Platforms

Block Diagram



Features/Benefits

- High-performance 32-bit core module family
- Bandwidth optimized processor architecture
- Compact and power-efficient design
- Integrated 10/100 Mbit Ethernet networking
- On-module 802.11a/b/g wireless LAN connectivity
- Complete multimedia interface options
- Power-efficient design for low power operation
- Extended/Industrial operating temperature
- FCC Class B low-emission design
- Complete Microsoft Windows Embedded CE 6.0 and Linux platform support with full BSP source code

Development Kits

Digi JumpStart Kits Overview

Digi JumpStart Kit for Embedded Linux

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 ConnectCore 9M 2443 family of wired and wireless core modules.

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.

- Complete Linux development platform for embedded systems
- Royalty-free and with optimized 2.6 kernel and services support
- Linux-based Digi ESP IDE for rapid product development
- Full Linux and Digi Board Support Package (BSP) source code

Digi JumpStart Kit for Microsoft Windows Embedded CE 6.0

Microsoft Windows Embedded CE 6.0 is a highly componentized operating system, offering pre-tested technology components designed to create sophisticated embedded applications with minimized design effort and risk. It includes a wide range of ready-to-use components such as a graphical user interface, networking, web browser and multimedia. The professional Microsoft Visual Studio 2005 development tools also support native and managed code applications using various programming languages.

The Digi JumpStart Kit for Microsoft Windows Embedded CE 6.0 provides a complete kit with all hardware and software components needed to start immediate software development on the ConnectCore 9M 2443 core module family platforms. This includes support for key processor platform features such as power management modes.

- Complete kit for immediate Windows Embedded CE 6.0 development
- Seamless integration into Microsoft Windows Embedded CE environment
- Full Digi Board Support Package (BSP) source code
- 180-day Visual Studio 2005 and Windows Embedded CE 6.0 evaluation

Digi JumpStart Kit Contents

Software Platform	Embedded Linux	Microsoft Windows Embedded CE 6.0
Module	ConnectCore 9M/Wi-9M 2443 w/128 MB NAND Flash and 64 MB mDDR	
Development Board	4 serial ports (1 x RS-232/422/485, 1 x RS-232, 2 x TTL),VGA interface, LCD/Touchscreen connector, camera connector, user/application connectors, SD/MMC socket, HS-MMC socket, USB host/device connectors, I²C/SPI headers, antenna connectors, screw terminal for access to 8 GPIO signals, 2 user push-buttons, 2 user LEDs, battery, 802.3af (PoE) module support, 9-30VDC power supply, power switch	
CD/DVD	Digi Embedded Linux with Live DVD support, Digi ESP IDE, Linux and platform specific source code, Universal boot loader source code (U-Boot), sample code, documentation	Digi Windows CE 6.0 CD: Microsoft Windows Embedded CE 6.0 BSP w/source code, Universal Boot Loader (U-Boot) source code, sample code, documentation Microsoft Embedded Windows CE 6.0 R2 evaluation DVD: 180-day trial of Microsoft Embedded Windows CE 6.0, Platform Builder, Visual Studio 2005
Documentation	Quick start guide, Digi Embedded Linux user's guide, hardware reference manual, development board schematics	Quick start guide, Digi Windows CE 6.0 BSP user's guide, hardware reference manual, development board schematics
Power Supplies and Accessories	External wall power supply (110/240VAC to 12VDC @ 1.5A) with interchangeable outlet adapters (North America, EU, UK, and Australia), Ethernet cable, serial cable, antennas	
Ethernet only	CC-9M-2443-LX	CC-9M-2443-CE6
WLAN + Ethernet	CC-W9M-2443-LX	CC-W9M-2443-CE6

Specifications	ConnectCore™ 9M 2443	ConnnectCore™ Wi-9M 2443
Hardware		
Processor Type	32-bit Samsung S3C2443	
Cache	16k I-/D-cache	
ARM Core	ARM920T	
Processor Speed	400/533 MHz	
Memory Base Population	Up to 1 GB NAND flash	
	256 MB mDDR	
Additional Population Options	Memory/processor speed grade/operating temperature	
Power Over Ethernet	Yes, on carrier board	
Pins/Form Factor	Small-footprint module with 2 x 120-pin board-to-board connectors	
UART	4-channel; Up to 921 Kbps, IrDA 1.0 SIR mode	
GPIO	24 external IRQs, 147 multiplexed IRQs	
SPI/HS-SPI	Master and slave mode	
I^2C	Standard and fast mode	
SD/SDIO/MMC	1-/4-bit and block/stream, up to 25 MHz	
High-Speed (HS) MMC	SD HC 1.0, SD MC 2.1, SDIO 1.0, MMC 4.2 1-/4-/8-bit modes, up to 50 MHz CE-ATA mode support	
CF/ATA	Compact Flash 3.0 PC card mode ATA/ATAPI-6 mode w/ PIO/UDMA	
USB Support with Integrated PHYs	USB 2.0 device, 1-port, high-/full-speed USB 1.1 host, 2-port, low-/full-speed	
LCD Controller	Up 1024x1024 pixels resolution Up to 16 grey levels/4096 colors (STN) Up to 24 bpp, 2 overlay windows (TFT)	
Camera Interface	ITU-R BT 601/656 8-bit mode support 4096x4096 pixels / 2048x2048 scaling Mirror, 180° rotation, digital zoom in RGB 16/24-bit, YCbCr 4:2:0/4:2:2 output	
I^2S and AC'97 Audio Codec Controllers	•	
10-bit ADC & Touch Screen Interface	10-channel multiplexed, 500k samples/s	
Timers/PWM	4-ch 16-bit timer/PWM, 1-ch 16-bit internal	
8-/16-bit External Memory Bus Interface	•	
Power Management Modes	Normal, idle, stop, sleep Ext IRQ, RTC alarm, tick interrupt wake-up	
Watchdog Timer (16-bit)	•	
Real-Time Clock	•	
Dimensions (L x W x H)	2.362 in (60 mm) x 1.732 in (44 mm) x 0.266 in (6.75 mm)	3.662 in (92 mm) x 1.732 in (44 mm) x 0.266 in (6.75 mm)
Network Interface - Wired		
Physical Layer	10/100Base-T	
Data Rate	10/100 Mbps (auto-sensing)	
Mode	Full or half duplex (auto-sensing)	

Specifications	ConnectCore™ 9M 2443	ConnnectCore™ Wi-9M 2443
Network Interface - Wireless LAN		
Standard	802.11a/b/g	
Security	WEP/WPA/WPA2/802.11i	
Frequency	2.4/5 GHz	
Data Rate	Up to 54 Mbps with automatic rate fallback	
Modulation	DBPSK (1 Mbps), DQPSK (2 Mbps), CCK (11, 5.5 Mbps), BPSK (6, 9 Mps), QPSK (12, 18 Mbps), 16-QAM (24, 36 Mbps), 64-QAM (48, 54 Mbps)	
Typical Transmit Power	15 dBm @ 54 Mbps (802.11b) / 13 dBm @ 54 Mbps (802.11g) / 9 dBm @ 54 Mbps (802.11a)[1]	
Typical Receive Sensitivity	-87 dBm @ 1 Mbps (802.11b) / -70 dBM @ 54 Mbps (802.11g) / -70 dBm (802.11a)	
Antenna Connectors	2 x U.FL	
Power Requirements (3.3V)		
Maximum	554 mA	1200 mA
Typical	279 mA	504 mA
Suspend	53 mA	173 mA
Environmental		
Operating Temperature[2]	-40° C to +85° C (-40° F to +185° F) -20° C to +70° C (-4° F to +158° F)	-40° C to +65° C @ 33% duty cycle (-40° F to +149° F) -20° C to +65° C @ 33% duty cycle (-4° F to +149° 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)	
Regulatory Approvals		
FCC Part 15 Class B, EN55022:2006 Class B	•	
ICES-003 Class B, VCCI Class II, AS 3548	•	
EN61000-3-3:1995 +A1:2001, A2:2005	•	
EN61000-3-2:2006	•	
EN55024:1998 +A1:2001, A2:2003	•	
FCC Part 15 Sub C Section 15.247	•	
EN 300 328, EN 301 489-17	•	
IC RSS-210 Issue 5 Section 6.2.2(o)	•	
EN60950-1:2001 (UL60950-equivalent), CSA C22.2 No. 60950	•	

[1] Depending on 5 GHz channel selected. See Hardware Reference Manual for additional information.

[2] Depending on actual Tcase. See Hardware Reference Manual for additional information.

• Module Feature

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Visit www.digiembedded.com for part numbers.

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