



Mod5270

10/100 Processor Module

Features

- Complete solution for embedded applications
- Start writing your application code immediately, instead of integrating development tools or building custom hardware.
- Use as a high-performance single board computer or as a network interface processor.
- Network development kit available with RTOS, TCP/IP, Web Server, C/C++ Compiler, IDE, Graphical Debugger, configuration and deployment tools.
- Module includes 3 UARTs, QSPI, I2C, 8 timers, Watchdog timer, Address bus, Data bus, GPIO, Interrupts and more.
- Powerful 147MHz 32-bit Freescale ColdFire 5270 processor with integrated 10/100 Ethernet MAC.
- 2MB SDRAM, 512KB Flash memory, 64k fast SRAM on processor, 8k cache.

The Mod5270 processor module is a low cost, high performance single board computer solution to network-enable both existing and new product designs with 10/100BaseT Ethernet. Based on the Freescale ColdFire 5270 32-bit processors with integrated 10/100 Ethernet MAC, it has plenty of horsepower for the most demanding applications (rated at 141 MIPS with 147MHz clock).

Network-Enable Existing Applications:

Add a module to an existing application to network enable the device through serial ports, GPIO pins, address/data bus, I2C or QSPI.

Network-Enable New Applications

Add a module to an application-specific motherboard, and you have a powerful processing platform that can function as the control processor for the product, or as a low cost network interface processor.

Customize to Suit Any Application

TheNetBurner Network Development kit enables you to quickly and easily create custom applications. NetBurner has a solid reputation for development platforms to facilitate rapid product development, and the Mod5270 kit is no exception. The kit includes the hardware platform, TCP/IP Stack, uC/OS Real-time operating system, Web Server, GNU C/C++ compiler and linker, Integrated Development Environment (IDE), GDB graphical debugger, end-user device configuration, flash update utilities, and much more.

Real 32-Bit Performance

Traditionally, companies using 8 and 16-bit platforms find it nearly impossible to run resource-intensive applications on fast Ethernet connections. The NetBurner Mod5270 features a full 32-bit architecture, at a price point less than many 8 or 16-bit devices. The Mod5270 high-performance processing platform provides the horsepower to handle both 10/100 Ethernet connections and resource-demanding applications with ease and flexibility.

Mod5270 Signal Description and Pinout

Conn J1 Pin No	Primary Function	GPIO Port	Processor Pin No	Conn J2 Pin No	Primary Function	Alternate Function	GPIO Port	Processor Pin No
1	GND			1	GND			
2	GND			2	VCC3V			
3	VCC3V			3	U0_RXD		PUARTL0	F2
4	R/*W			4	U0_TXD	U0_TXD	PUARTL1	F1
5	*CS1	PCS1	B10	5	NO CONNECT			
6	*CS2	PCS2	C9	6	D14		PDATAH6	N1
7	*CS3	PCS3	A9	7	D13		PDATAH5	M2
8	*OE			8	D15		PDATAH7	M1
9	*BS2			9	D11		PDATAH3	P2
10	*BS3			10	D12		PDATAH4	N2
11	*TIP (see note 1)			11	D10		PDATAH2	L3
12	D16			12	D9		PDATAH1	M3
13	*TA	PBUSCTL6	H11	13	D8		PDATAH0	N3
14	D18			14	GND			
15	D17			15	D0		PDATAL0	P5
16	D20			16	D1		PDATAL1	N5
17	D19			17	D4		PDATAL4	P4
18	D22			18	D2		PDATAL2	M5
19	D21			19	D5		PDATAL5	N4
20	D24			20	D6		PDATAL6	M4
21	D23			21	U1_RXD		PUARTL4	D8
22	D26			22	U1_TXD		PUARTL5	D9
23	D25			23	D3		PDATAL3	L5
24	D28			24	D7		PDATAL7	P3
25	D27			25	QSPI_CLK	I2C_SCL	PQSPI2	C5
26	D30			26	DT3_OUT	*U2_RTS/QSPI CS3	PTIMER6	G14
27	D29			27	QSPI_DIN	I2C_SDA	PQSPI1	B5
28	*RSTI			28	QSPI_DOUT		PQSPI0	A5
29	D31			29	*U0_CTS		PUARTL3	F3
30	*RSTO			30	QSPI_CS0		PQSPI3	A6
31	CLKOUT - 73.728MHz (see note 3)			31	DT0_IN	*DREQ0	PTIMER1	E4
32	A0			32	*U1_RTS	*U2_RTS	PUARTL6	C8
33	A1			33	*U1_CTS	*U2_CTS	PUARTL7	B8
34	A2			34	DT1_OUT	*DACK1	PTIMER2	M6
35	A3			35	DT2_IN	DTOUT2	PTIMER5	M9
36	A4			36	DT0_OUT	*DACK0	PTIMER0	F4
37	A5			37	DT1_IN	DT1_OUT/*DREQ1	PTIMER3	L6
38	A6			38	*U0_RTS		PUARTL2	G3
39	A7			39	I2C_SDA		PFEC12C1	J12
40	A8			40	QSPI_CS1	SD_CKE	PQSPI4	B7
41	A9			41	U2_RXD		PUARTH0	A7
42	A10			42	I2C_SCL		PFEC12C0	J11
43	A11			43	IRQ1		PIRQ1	L8
44	A12			44	U2_TXD		PUARTH1	A8
45	A13			45	IRQ3		PIRQ3	N8
46	A14			46	GND			
47	A15			47	IRQ5		PIRQ5	L7
48	VCC3V			48	IRQ7		PIRQ7	N7
49	GND			49	GND			
50	GND			50	VCC3V			

Notes:

1. The TIP signal is the logical AND of /CS1, /CS2 and /CS3. TIP can be used to control an external data bus buffer for the data bus signals. An example circuit design can be found on the Module Development Board schematic. An external data bus buffer is recommended for any designs that use data bus signals D16 - D31
2. Each UART can be clocked from an internal or external source. For external clocks, each UARTn can be clocked by the corresponding DTn_IN input pin.
3. The 5270 CLKOUT signal is 1/2 the system frequency of 147.456 MHz.
4. The Mod5270 provides QSPI chip selects QSPI_CS0, QSPI_CS1 & QSPI_CS3, but not QSPI_CS2.

Specifications

Processor

32-bit Freescale ColdFire 5270 with integrated 10/100 Ethernet MAC

Network Interface

10/100BaseT with RJ-45 connector

Network Protocols Supported

Complete protocol support included. See NNDK-MOD5270-KIT datasheet for details. Includes:

- ARP
- BOOTP
- DHCP
- FTP
- HTTP
- ICMP
- IGMP
- IP
- NTP
- SMTP
- POP3
- PPP
- TCP
- DNS
- UDP

Software Development

- NetBurner Network Development Kit includes: RTOS, TCP/IP Stack, Web Server, C/C++ Compiler, Integrated Development Environment (IDE), Graphical Debugger, configuration and deployment tools.

LEDs

- 10/100 Ethernet Speed
- Link/Activity

Physical Characteristics

Dimensions: 2.0" x 2.6"

Mounting Holes: 2 x 0.125" dia

Connectors

Two standard dual row 50-pin 0.1" headers

Power Requirements

500mA @ 3.3V

Environmental

Operating Temperature: 0 - 70°C

Ordering Information

MODULES

Freescale p/n: MOD5270 (single piece)

Freescale p/n: MOD5270BX (quantities greater than 100)

NetBurner p/n: MOD5270-100 (any quantity)

DEVELOPMENT KITS

Freescale p/n: M5270PROMO (binary release)

NetBurner p/n: NNDK-MOD5270-KIT (source code release)

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