



Features

- Companion development kit includes all of the hardware and software you will need to develop embedded applications. This includes an RTOS, TCP/IP, Web Server, C/C++ Compiler, IDE, Graphical Debugger, configuration and deployment tools.
- 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.
- Module supports 3 serial ports, 16 timers, address bus, data bus, GPIO, A/D, CAN, SPI, I2C, interrupts, PWM and more.
- Integrated 66Mhz 32-bit Coldfire 5282 processor with integrated 10/100 Ethernet and MAC.
- 8MB SDRAM, 512K of Flash Memory.
- Temperature Range: -40°C to +85° C.

MOD5282

NetBurner's High Performance Embedded Network Core Module

Overview

The MOD5282 processor modules are low cost, high performance single board computers that are excellent solutions to network-enable both existing and new product designs with 10/100BaseT Ethernet. Based on the Freescale ColdFire 5282 32-bit processors with integrated 10/100 Ethernet MAC, they have plenty of horsepower for the most demanding applications (rated at 60+MIPS with 66MHz clock).

Network-Enable New or Existing Applications

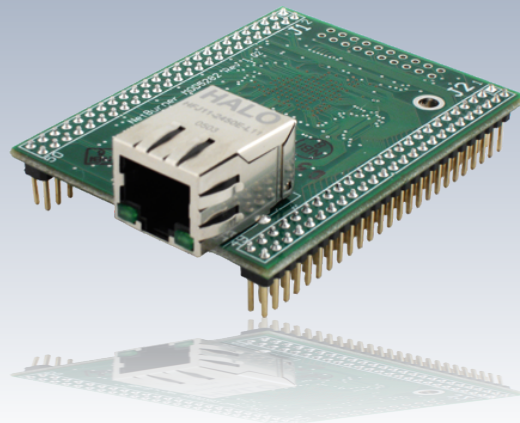
Add a module to an existing application, network enable your device though its serial ports, GPIO pins, or serial bit streams. If you have an application-specific motherboard, you can add a module and have a powerful processing platform that can function as the control processor for your product, or as a low cost network interface processor.

Customize to Suit Any Application

The NetBurner 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 module kits are no exception. The kit includes the MOD5282 module, development board, TCP/IP Stack, uC/OS Real-time operating system, Web Server, GNU C/C++ compiler and linker, 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 Embedded Network Core Module features a Web-based control interface, a full 32-bit architecture providing 60+ MIPS, and the ability to send and receive email. This processing platform provides the horsepower to handle both 10/100 Ethernet connections and resource-demanding applications with ease and flexibility.



Specifications

Processor and Memory

32-bit Freescale ColdFire 5282 running at 66MHz with 8MB SDRAM, 512KB Flash, and 64KB SRAM

Flash Card Support

SD/MMC (up to 2GB), SDHC (16GB+), Compact Flash (32GB+)

Software Development

NetBurner MOD5270 Development Kit includes

MOD5282 module, TCP/IP stack, Web Server, real-time operating system (RTOS), ANSI C/C++ compiler and linker, assembler, graphical debugger, NetBurner Eclipse integrated development environment (IDE), code update, configuration, and deployment tools.

Network Interface & Serial Interfaces

10/100 BaseT with RJ-45 connector, 3 UARTS, I²C, SPI, Up to 50 Digital I/O

Network Protocols Supported

Please reference the NetBurner Software Datasheet for a complete list of the protocols included with the development kit (www.NetBurner.com).

Connectors

Two dual row 50-pin male headers

Physical Characteristics

Dimensions: 2.0" x 2.6"
Mounting Holes: 2 x 0.125" dia

Note:

For more detailed diagrams please reference the *MOD5282 Mechanical Drawing* which can be found on the NetBurner MOD5282 Ethernet Core Module web page.

Power

DC Input Voltage: 3.3V @500mA

Environmental Operating Temperature

-40°C to 85°C

Part Numbers

NetBurner MOD5282 Development Kit

P/N: *NNDK-MOD5282-KIT*

Includes all the hardware and software you need to customize the included NetBurner MOD5282 module. This kit includes the NetBurner MOD-DEV-100 Carrier Board.

NetBurner MOD5282 Ethernet Core Module

P/N: *MOD5282-100IR*

The MOD5282-100IR Module is a industrial temperature, RoHS compliant part.

NetBurner MOD5282-200IR Ethernet Core Module with 10-pin Ethernet Jack Header

P/N: *MOD5282-200IR*

The MOD5270 Board is a industrial temperature, RoHS compliant part.

NetBurner Development Kit Support & Maintenance Agreement Renewal

P/N: *NBMAINT-100*

Extends software updates, tools updates and email support for a period of 1 year.

Note:

1. All NetBurner hardware produced after July of 2006 is RoHS compliant.

Ordering Information

E-mail: sales@netburner.com

Online Store: www.NetburnerStore.com

Telephone: 1-800-695-6828

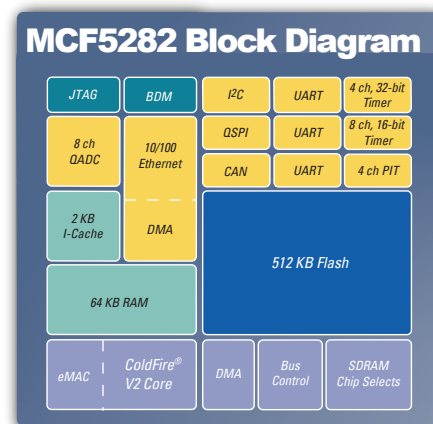


Figure 2: Freescale ColdFire Block Diagram

Note:

The MOD5282 is based on the Freescale ColdFire 5282 processor. For additional processor specific information please reference the *Freescale Coldfire 5282 Manual*.

Ethernet Jack Pinout and Signal Description (200 version module)

The MOD5282-**200**IR version NetBurner Ethernet Core Module has a 10-pin header which enables you to connect to your own Ethernet jack.

Table 2: Module Ethernet 10- Pin Dual Row Header Pinout and Signal Descriptions

Pin	Signal	Description
1	TX-	Transmit -
2	TX+	Transmit +
3	VCC ¹	2.5V
4	RX+	Recieve +
5	RX-	Recieve -
6	VCC ¹	2.5V
7	GND	Ground
8	N/C	Not Connected
9	LED	Link LED
10	LED	Speed LED

Note:

1. The 2.5V pins are used for the magnetics taps and LED power.

MOD5282 Pinout and Signal Description

The MOD5282 module has two dual in-line 50 pin headers which enable you to quickly and easily connect to one of our standard NetBurner Carrier Boards, or a board you create on your own. Table 1 and 2 provide descriptions of pin function of the MOD5282 header.

Table 1: NetBurner MOD5282 Pinout and Signal Connector ⁽¹⁾ for J1 Connector

J1 Connector				
Pin	CPU Pin	Function	GPIO	Description
1		GND		Ground
2		GND		Ground
3		VCC3V		Input Power 3.3V
4	N15	R/*W	●	Read / NOT Write
5	L14	*CS1	●	Chip Select 1
6	L15	*CS2	●	Chip Select 2
7	L16	*CS3	●	Chip Select 3
8	N16	*OE	●	Output Enable
9		*BS2		Byte Strobe for D16 to D23 (8 bits)
10		*BS3		Byte Strobe for D24 to D31 (8 bits)
11	M14	*TIP	●	Transfer in Progress
+ ²		SYNCB		GP Timer B Synchronization Input
12		D16		Data Bus - Data 16
13	P16	*TA	●	Transfer Acknowledge
14		D18		Data Bus - Data 18
15		D17		Data Bus - Data 17
16		D20		Data Bus - Data 20
17		D19		Data Bus - Data 19
18		D22		Data Bus - Data 22
19		D21		Data Bus - Data 21
20		D24		Data Bus - Data 24
21		D23		Data Bus - Data 23
22		D26		Data Bus - Data 26
23		D25		Data Bus - Data 25
24		D28		Data Bus - Data 28
25		D27		Data Bus - Data 27
26		D30		Data Bus - Data 30
27		D29		Data Bus - Data 29
28		*RSTI		Processor Reset Input
29		D31		Data Bus - Data 31
30		*RSTO		Processor Reset Output
31		CLKOUT		Clock Out (CLKOUT-66.355 Mhz)
32		A0		Data Bus - Address 0
33		A1		Data Bus - Address 1
34		A2		Data Bus - Address 2
35		A3		Data Bus - Address 3
36		A4		Data Bus - Address 4
37		A5		Data Bus - Address 5
38		A6		Data Bus - Address 6
39		A7		Data Bus - Address 7
40		A8		Data Bus - Address 8
41		A9		Data Bus - Address 9
42		A10		Data Bus - Address 10
43		A11		Data Bus - Address 11
44		A12		Data Bus - Address 12
45		A13		Data Bus - Address 13
46		A14		Data Bus - Address 14
47		A15		Data Bus - Address 15
48		VCC3V		Input power 3.3V
49		GND		Ground
50		GND		Ground

Note:

1. Asterisk (*) denotes active low. All input/output lines are 3.3V only.
2. Plus sign (+) denotes additional alternate pin function

Table 2: NetBurner MOD5282 Pinout and Signal Descriptions ⁽¹⁾ for J2 Connector

J2 Connector					
Pin	CPU Pin	Function	Alt. Func.	GPIO	Description
1		GND			Ground
2		VCC3V			Input power 3.3V
3	N6	URXD0		•	UART 0 Receive ⁴
4	T7	UTXD0		•	UART 0 Transmit ⁴
5		ADVCC			ADVCC
6	R1	AN3		•	Analog I/O CH3
7	R2	AN1		•	Analog I/O CH1
8	T2	AN2		•	Analog I/O CH2
9	R3	AN56		•	Analog I/O CH56
10	T3	AN0		•	Analog I/O CH0
11	T4	AN53		•	Analog I/O CH53
12	R4	AN52		•	Analog I/O CH52
13	P3	AN55		•	Analog I/O CH55
14		GND			Ground
15	T13	GPTA3		•	General Purpose Timer A3
16	T12	GPTB3		•	General Purpose Timer B3
17	R13	GPTA2		•	General Purpose Timer A2
18	R12	GPTB2		•	General Purpose Timer B2
19	P13	GPTA1		•	General Purpose Timer A1
20	P12	GPTB1		•	General Purpose Timer B1
21	R7	URXD1		•	UART 1 Receive ⁴
22	P7	UTXD1		•	UART 1 Transmit ⁴
23	N13	GPTA0		•	General Purpose Timer A0
24	N12	GPTB0		•	General Purpose Timer B0
25	F14	SPI_CLK		•	QSPI Clock
26	G14	SPI_CS3		•	QSPI Chip Select 3
27	F16	SPI_DIN		•	QSPI Input
28	F13	SPI_DOUT		•	QSPI Data Out
29	K14	TIN2	UCTS0	•	DMA Timer 2 ⁴ In or UART 0 Clear to Send ⁴ or + ¹ UCTS1 UART 1 Clear to Send ⁴
30	F15	SPI_CS0		•	QSPI Chip Select 0
31	J14	TIN0	UCTS0	•	DMA Timer 0 ⁴ In or UART 0 Clear to Send ⁴ or + ¹ UCTS1 UART 1 Clear to Send ⁴
32	K15	DTOUT3	URTS0	•	DMA Timer 3 Out or UART 0 Request to Send ⁴ or + ¹ UCTS1 UART 1 Request to Send ⁴
33	K13	DTOUT2	UCTS0	•	DMA Timer 2 Out or UART 0 Clear to Send ⁴ or + ¹ UCTS1 UART 1 Clear to Send ⁴
34	J15	DTOUT1	URTS0	•	DMA Timer 1 Out or or UART 0 Request to Send ⁴ or + ¹ UCTS1 UART 1 Request to Send ⁴
35	G13	SPI_CS2		•	QSPI Chip Select 2
36	J13	DTOUT0	UCTS0	•	DMA Timer 0 Out or UART 0 Clear to Send ⁴ or + ¹ UCTS1 UART 1 Clear to Send ⁴
37	J13	TIN1	URTS0	•	DMA Timer 1 ⁴ In or UART 0 Request to Send ⁴ or + ¹ UCTS1 UART 1 Request to Send ⁴
38	K16	TIN3	URTS0	•	DMA Timer 3 ⁴ In or UART 0 Request to Send ⁴ or + ¹ UCTS1 UART 1 Request to Send ⁴
39	E14	SDA	URXD2	•	I ² C Data Line ² or UART 2 Receive ^{3,4}
40	F16	SPI_CS1		•	QSPI Chip Select 1
41	D16	CANRX	URXD2	•	CAN Receive or UART 2 Receive ^{3,4}
42	E15	SCL	UTXD2	•	I ² C Clock Line ² or UART 2 Transmit ^{3,4}
43	D15	IRQ1_LVS	IRQ1_RET	•	IRQ1 Level-Sensitive, Rising Edge Triggered, + ¹ IRQ1_FET IRQ1_FRT Falling Edge Triggered, Falling and Rising Edge Triggered
44	E13	CANTX		•	CAN Transmit
45	C16	IRQ3_LVS	IRQ1_RET	•	IRQ3 Level-Sensitive, Rising Edge Triggered, + ¹ IRQ3_FET IRQ1_FRT Falling Edge Triggered, Falling and Rising Edge Triggered
46		GND			Ground
47	C14	IRQ5_LVS	IRQ5_RET	•	IRQ5 Level-Sensitive, Rising Edge Triggered, + ¹ IRQ5_FET IRQ5_FRT Falling Edge Triggered, Falling and Rising Edge Triggered
48	B15	IRQ7_LVS	IRQ7_LVS	•	IRQ5 Level-Sensitive, Rising Edge Triggered, + ¹ IRQ7_FET IRQ7_FET Falling Edge Triggered, Falling and Rising Edge Triggered
49		GND			Ground
50		VCC3V			Input power 3.3V

Note:

1. Plus sign (+) denotes additional alternate pin function
2. If using I²C, the module must add pull-up resistors to SDA/SCL.
3. The third UART (UART2) can be routed to either of the two pin configurations: replacing CAN RX and TX, or I2C SDA and SDL.
4. TIN0, TIN1 and TIN2 can be used as external baud rate clocks for UART0, UART1 and UART2