



NetBurner's Network Development Kit

CFV2-66 Hardware Manual

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1. Introduction

NetBurner is your single source for hardware, software, development kits, tools, technical support, and custom design services. These elements are combined in a unique package that lets you concentrate on developing your product instead of reinventing network protocols and designing hardware.

NetBurner solutions also allow you to reduce risk and improve functionality with a complete proven design, including hardware, TCP/IP Stack, RTOS, and all necessary tools. NetBurner is indeed the fastest way to network enable your product.

Whether you want to design your own hardware, or are looking for a standard off-the-shelf network solution - NetBurner provides the software, hardware, and tools to get your product to market in the shortest possible time. NetBurner offers a full line of services from board level designs and hourly consulting to complete turnkey systems. NetBurner also offers a Royalty-Free License option. Please contact our [Sales](#) Department for more information on any of these options.

Please ensure that your NetBurner Network Development Kit is registered by going to our [Support](#) site now to set up your account. Registration is quick and easy. The registration data stored on NetBurner's server will not be sold, exchanged, or knowingly released to third parties without prior written permission from the individuals affected.

2. Additional Documentation

- CFV2-66 (Hard Copy) Quick Start Guide
- NNDK User's Manuals are located (by default) in C:\Nburn\docs
- An NNDK Programmer's Guide is located (by default) in C:\Nburn\docs
- An NBEclipse Getting Started Guide is located (by default) in C:\Nburn\docs
- All License Information is located (by default) in C:\Nburn\docs
- All [Freescale](#) Manuals are located (by default) in C:\Nburn\docs
- ALL GNU Information is located (by default) in C:\Nburn\docs

3. Overview

The NetBurner CFV2-66 provides high performance (60 MIPS) low cost 10/100 BaseT Ethernet using the new Motorola ColdFire 5272 processor. The 5272 combines the processor and Ethernet MAC in a single low cost BGA package.

3.1. Hardware Features

- MCF 5272 Processor at 62.5 MHz
- 1 MB FLASH providing 2 MBytes of compressed space (80k used by system)
- 8 K Non-volatile user parameter storage (expandable)
- 16 MB of SDRAM
- Integrated 10/100 BaseT Ethernet connectivity
- 1 channel DMA
- USB device mode hardware support
- Dual programmable UARTs
- BDM debug module interface connector
- Switching Power Supply accepts 7-24 VDC
- 60-pin interface connector for custom hardware

3.2. Software Features

- Configuration through web browser, telnet, NetBurner's IPSetup utility, or SNMP (supports MIB-II).
- Password protection
- Firmware updates through network or serial connections
- Network Protocols Supported: ARP, DHCP, BOOTP, TCP, UDP, ICMP, Telnet, HTTP, and SNMP (**optional**)
- SSL Support (**optional**)

Please contact our [Sales](#) Department for more information.

4. Life Support Disclaimer

NetBurner's CFV2-66 Processor Board is not authorized for use as a critical component in life support devices or systems, without the express written approval of NetBurner, Inc. prior to use. As used herein:

1. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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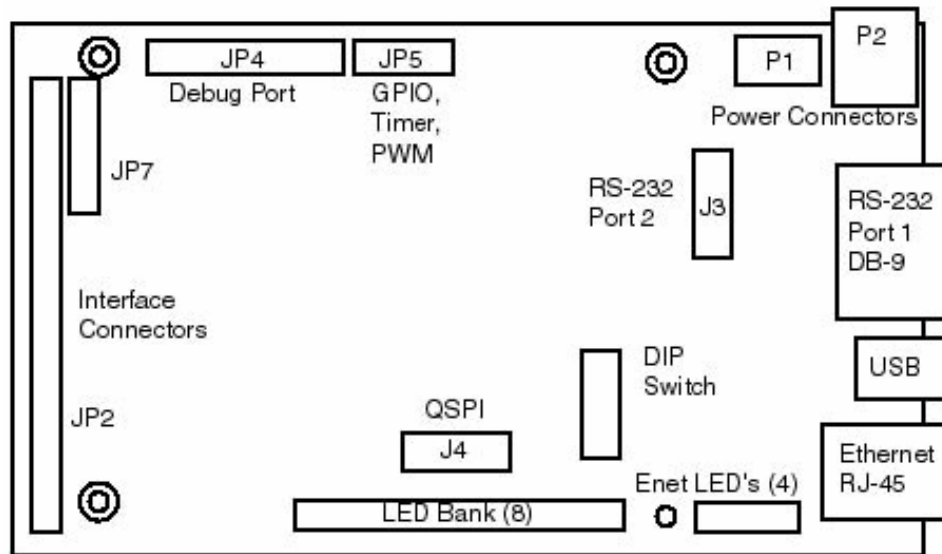
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5. Hardware Specifications

5.1. Diagram



5.2. Memory Map

Memory Region	Address Range	Region Description
Undefined	0x00000000 to 0x01FFFFFF	Undefined Area to Catch NULL pointers
SDRAM	0x02000000 to 0x02FFFFFF	The SDRAM
Undefined	0x03000000 to 0x0FFFFFFF	
MBAR	0x10000000 to 0x1000FFFF	The 5272 internal register mapping.
Undefined	0x10010000 to 0x1FFFFFFF	
RAMBAR	0x20000000 to 0x20000FFF	The 5272 Internal Static RAM
VBR	0x20000000 to 0x200003FF	The 5272 Vector Base Register
Undefined	0x20002000 to 0x40000000	
LED's and Switches	0x40000000 to 0x4000FFFF	
Undefined	0x40010000 to 0xFFBFFFFF	
Flash Memory	0xFFC00000 to 0xFFFFFFFF	The Whole Flash chip
Flash Monitor	0xFFC00000 to 0xFFC03FFF	The Boot Monitor
Monitor Params	0xFFC04000 to 0xFFC05FFF	Monitor Parameter Storage
User Params	0xFFC06000 to 0xFFC07FFF	User Parameter Storage
Application Code	0xFFC08000 to	Compressed Application Code

5.3. Chip Selects

Resource	Usage
*CS0	Used for the Flash
*CS1	Used for LED's and Switches.
*CS2	Unused
*CS3	Unused
*CS4	Unused
*CS5	Unused
*CS6	Unused
*CS7	Used for SDRAM.
IRQ1	Used internally for Ethernet
IRQ2	Unused
IRQ3	Used by Serial and PPP drivers. Can be shared, but it is not exposed externally.
IRQ4	Unused
IRQ5	Used for system timer tick..
IRQ6	Unused, but not exposed externally.
IRQ7	Unused, but not exposed externally.

5.4. Mechanical

- PCB Dimensions: 6.0" x 3.5"
- RS-232 Port1: DB9
- RS-232 Port2: 10 pin dual row header
- Ethernet: Four wire RJ-45
- QSPI: 10 pin dual row header
- GPIO, TIMER, and PWM: 16 pin dual row header
- Interface Connector: 60 pin dual row header (JP2)
- Interface Connector: 20 pin dual row header (JP7)
- ColdFire BDM (debug port): 26 pin dual row header
- Dip Switch: 4 on/off switches
- Reset switch: Single push button switch
- Power, 2.0mm jack (P2): Plug in type
- Power, terminal block (P1): 2 screw terminals

5.4.1. Electrical Power Requirements

7 to 22V DC at less than 500mA. The user may draw additional power, up to 100ma @ 5V, from the 60-pin interface connector. The maximum voltage rating of the switching power supply is 24.0 VDC. There are two power connectors, either of which can be used to provide power to the board. P1 is a 2 input screw terminal and P2 is a 2.0mm female jack input.

5.4.2. User LED Display

There are 8 LEDs available for custom application use. They are visible from the top and side of the board assembly. They are also useful in debugging when the OS Show Tasks option is used to indicate the active task.

5.4.3. Ethernet Status LED Display

This bank of 4 LEDs indicate the status and activity of the 10/100 Ethernet connection.

5.4.4. Dip Switches

The 4 dip switches are not used by the system, and are available for user functions like setting options/modes for the application.

5.5. Connectors

5.5.1. JP2

This connector is used for connecting the NetBurner CFV2-66 board to application-specific hardware.

1	Vcc	11	A8	21	A14	31	D16	41	D24	51	A5
2	Vcc	12	IRQ1	22	A15	32	D17	42	D25	52	A4
3	CLK	13	IRQ3	23	CS3	33	D18	43	D26	53	A3
4	/RST	14	A9	24	CS4	34	D19	44	D27	54	A2
5	IRQ4	15	A10	25	AS6	35	D20	45	D28	55	A1
6	TA	16	A11	26	CS1	36	D21	46	D29	56	A0
7	-	17	A12	27	CS5	37	D22	47	D30	57	GND
8	-	18	A13	28	R/W	38	D23	48	D31	58	GND
9	GND	19	Vcc	29	-	39	-	49	A7	59	GND
10	GND	20	Vcc	30	GND	40	Vcc	50	A6	60	GND

5.5.2. JP7

Buffered data bus signals 0 – 15

1	GND	11	DB4
2	GND	12	DB12
3	DB0	13	DB5
4	DB8	14	DB13
5	DB1	15	DB6
6	DB9	16	DB14
7	DB2	17	DB7
8	DB10	18	DB15
9	DB3	19	GND
10	DB11	20	GND

5.5.3. JP4 (Debug Port)

The Freescale standard BDM interface supports the following three functions:

1. Real-Time Trace Support
2. Background Debug Mode (BDM)
3. Real-Time Debug Support

1	-	11	GND	21	-
2	/BKPT	12	PST3	22	-
3	GND	13	PST2	23	GND
4	DSCLK	14	PST1	24	CLK
5	GND	15	PST0	25	Vcc
6	-	16	DDATA3	26	TEA
7	/RST	17	DDATA2		
8	DSI	18	DDATA1		
9	-	19	DDATA0		
10	DSO	20	GND		

5.5.4. RS-232 (Port 1)

This is a DB9 connector

1	-
2	TX
3	RX
4	-
5	GND
6	-
7	-
8	-
9	-

5.5.5. J3 (RS-232 Port 2)

This is a dual row 10-pin header

1	-
2	RX
3	TX
4	-
5	GND
6	-
7	-
8	-
9	-
10	-

5.5.6. RJ-45

1	TX+
2	TX-
3	RX_
4	-
5	-
6	RX-
7	-
8	-
9	GND
10	-

5.5.7. JP5

This connector is used for GPIO, TIMER, PWM, and other functions

1	PA15/IRQ6
2	VCC
3	PA14
4	VCC3V
5	PA13
6	TIN0
7	PA12
8	TOUT0W
9	PA11
10	PWM1
11	PA10
12	PWM2/TOUT2
13	PA9
14	PWM3/TIN2
15	PA8
16	GND

5.5.8. J4

This connector is used for QSPI

1	GND
2	PA11
3	GND
4	QSPI_CS0
5	GND
6	QSPI_CLK
7	VCC3
8	QSPI_DIN
9	VCC3
10	QSPI_DOUT