

# SB72

## 2-Port Serial to Ethernet Server

301 Version



# DATASHEET

### Key Points

- Serial to Ethernet server
- RS-232 and RS-422/485 serial device support
- 5V tolerant input and TTL serial device support
- Works out of the box - no programming is required
- Board level product
- Customize with development kit

### Features

- 10/100Mbps Ethernet
- TCP/UDP/Telnet modes
- DHCP/Static IP modes
- Web based configuration
- 32-bit performance

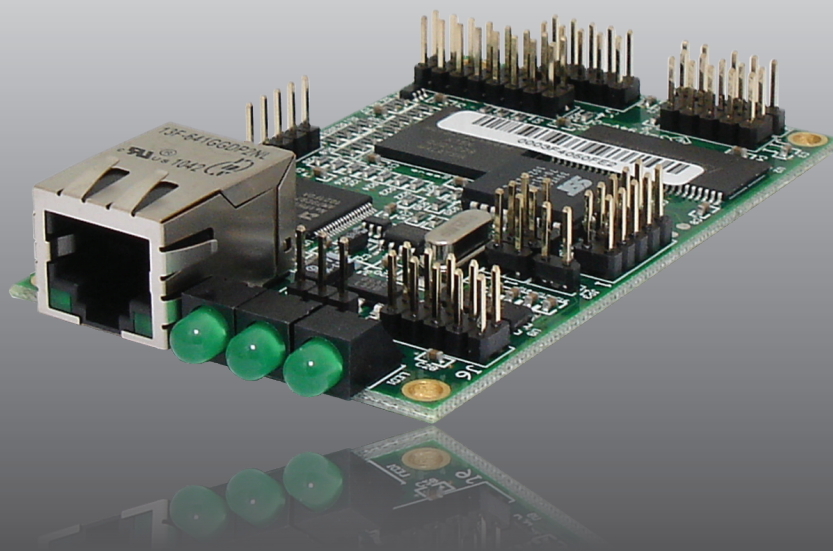
### Optional

*The following options are available with the optional development kit:*

- Customize any aspect of operation including web pages, data filtering, or custom network applications
- Additional baud rates available
- SPI peripheral interface

*The following optional software modules not included with kit and are sold separately:*

- SNMP



## Factory Application Specifications

### Serial Port Baud Rate

Factory application supports up to 115,200 baud. Custom rates available with development kit.

### Serial Protocols Supported

RS-232, RS-422, RS-485 and TTL

### Serial Configurations

The two UARTs can be configured in the following ways:

- Two RS-232 ports, without hardware handshaking
- One RS-232 port with hardware handshaking and one RS-485/422 port
- Two TTL ports
- One TTL port and one RS-232 port
- One TTL port and one RS-485/422 port

## Hardware Specifications

### Processor and Memory

32-bit Freescale ColdFire 5272 running at 62.5MHz with 512KB of flash and 8MB of SDRAM.

### Network Interface

10/100 BaseT with RJ-45 connector

### Data I/O Interface

- Two UARTs
- SPI peripheral interface

### LEDs

Auto-negotiation (off/on), speed (10/100), power (off/on)

### Physical Characteristics

Dimensions (inches): 3.25" x 2.00"

Weight: 1.1 oz.

Mounting Holes: 4

### Power

DC Input Voltage: 5V @480mA

### Environmental Operating Temperature

0° to 70° C (SB72-301CR)

-40° to 85° C (SB72-301IR)

### RoHS Compliance

The Restriction of Hazardous Substances guidelines ensure that electronics are manufactured with fewer environment harming materials.

## Connector Interface Description and Pinouts

Table 1: Connector Description

Connector	Description
J1	Factory test connector
J2	RS-485, 10-pin dual row header
J3	Factory test connector
J4	SPI Interface, single row 5 pin header (SPI requires development kit)
J5	TTL, 10-pin dual row header
J6	RS-232, 10-pin dual row header
J7	Ethernet, RJ-45 connector
J8	5V Power, 3-pin single row header
JP1-JP5	Configuration jumpers

Note:

1. Please see Users Manual for jumper configuration instructions.

Table 2: Serial Port Connector (J2 for RS-485) Pinout and Signal Description<sup>1</sup>

Pin	Function	Description	Max Voltage
1	FD RX-	Full Duplex Recieve -	RS-422/485
2	GND	Ground	
3	FD RX+	Full Duplex Recieve +	RS-422/485
4	GND	Ground	
5	VCC 5V	Input Voltage 5VDC <sup>1</sup>	RS-422/485
6	GND	Ground	
7	FD TX+ / HD+	Full Duplex Transmit+ / Half Duplex +	RS-422/485
8	GND	Ground	
9	FD TX- / HD-	Full Duplex Transmit - / Half Duplex -	RS-422/485
10	GND	Ground	

Note:

1. The RS-485 interface supports 4-wire full duplex (FD), and 2-wire half duplex (HD). Note that jumpers JP1 – JP5 must be configured correctly to FD or HD mode.

Table 3: SPI Connector (J4) Pinout and Signal Description

Pin	Function	Description	Max Voltage
1	GND	Ground	
2	DOUT	Data Out	5VDC
3	CLK	Clock	5VDC
4	DIN	Data In	5VDC
5	/SPI_CS3	SPI Chip Select 3 (Active low)	5VDC

Table 4: Serial Port Connector (J5 for TTL) Pinout and Signal Description

Pin	CPU Pin	Function 1	Function 2	Description	Max Voltage
1		GND		Ground	
2	K2	UART1_CTS	SPI_CS2	UART 1 Clear to Send or SPI Chip Select 2	5VDC
3	K4	UART1_TX	T0OUT	UART 1 Transmit or Timer Output 0	5VDC
4	K1	UART1_RX	T0IN	UART 1 Recieve or Timer Input 0	5VDC
5	K3	UART1_RTS	INT5	UART 1 Request to Send or External Interrupt 5	5VDC
6	H3	UART0_RTS	PB3	UART 0 Request to Send	5VDC
7	H2	UART0_CTS	PB2	UART 0 Clear to Send	5VDC
8	H4	UART0_TX	PB0	UART 0 Transmit	5VDC
9		VCC5V		Input voltage 5VDC <sup>1</sup>	5VDC
10	H1	UART0_RX	PB1	UART 0 Receive	5VDC

Note:

Pin 9 is a 5V DC input, which allows for a single connector interface with TTL serial and power to the board.

Table 5: Serial Port Connector (J6 for RS-232) Pinout and Signal Description

Pin	CPU Pin	Function 1	Function 2	Description	Max Voltage
1		NC		No Connect	
2		Short to 7			
3	K1	UART1_RX	T0IN	UART 1 Recieve or Timer Input 0	RS-232
4	K3	UART1_RTS	UART0_TX	UART 1 Request to Send or UART 0 Transmit	RS-232
5	K4	UART1_TX	T0OUT	UART 1 Transmit or Timer Output 0	RS-232
6	K2	UART1_CTS	UART0_RX	UART 1 Clear to Send or UART 0 Recieve	RS-232
7		Short to 2			
8		NC		No Connect	
9		GND		Ground	
10		NC		No Connect	

Note:

1. This connector provides RS-232 level signals for Channel 0 and Channel 1, or RS-232 levels with hardware handshaking for Channel 2.
2. If your application requires a null modem adapter, wiring information is provided in the “RS-232 NULL Modem Wiring” section of the Users Manual.

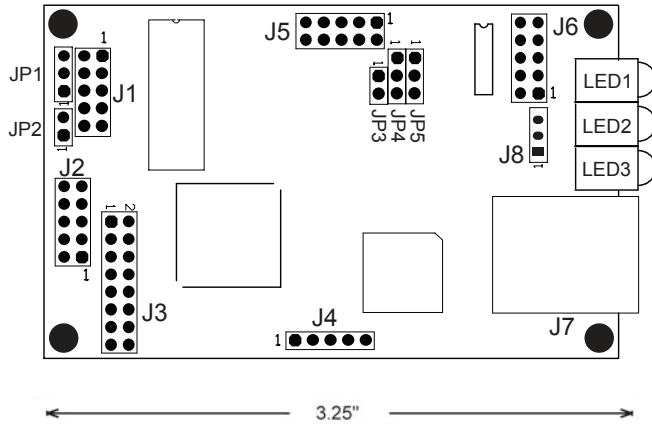
Table 6: Power Connector (J8) Pinout and Signal Description

Pin	Function	Description
1	VCC5V	Input voltage 5VDC
2	GND	Ground
3	VCC5V	Input voltage 5VDC

Note:

1. PCB Revision 1.3 and Higher

## SB72 Connector Diagram



## Part Numbers

### **SB72 Development Kit**

Part Number: NNDK-SB72-KIT

Kit includes all the hardware and software you need to customize the included platform hardware. See NetBurner Store product page for package contents.

### **SB72 2-Port Serial to Ethernet Server (Commercial Temperature Version)**

Part Number: SB72-301CR

### **SB72 2-Port Serial to Ethernet Server (Industrial Temperature Version)**

Part Number: SB72-301IR

### **SNMP V1 (Module License Version)**

Part Number: NBLIC-SNMP

Available as an option if you are using a development kit.

## Ordering Information

E-mail: [sales@netburner.com](mailto:sales@netburner.com)

Online Store: [www.NetBurner.com](http://www.NetBurner.com)

Telephone: 1-800-695-6828

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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9