

# 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

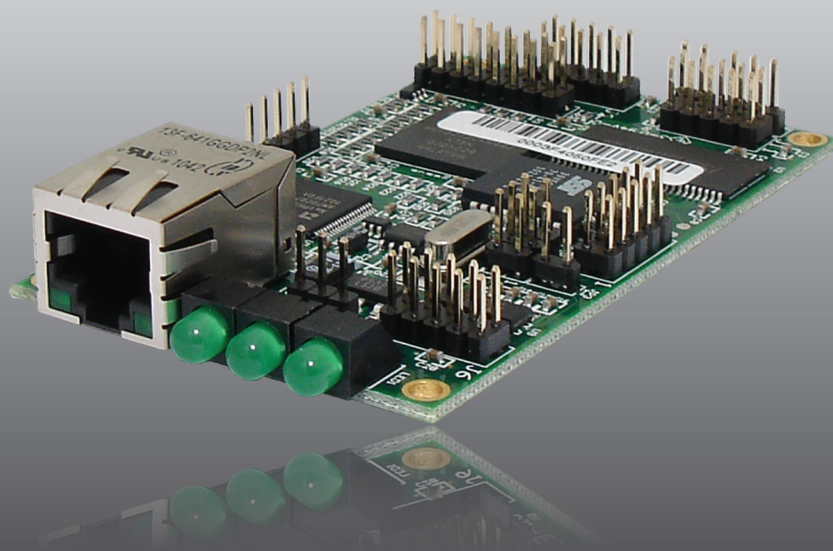
### Optional

*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. If your application requires a null modem adapter, wiring information is provided in the “RS-232 NULL Modem Wiring” section of the Users Manual.

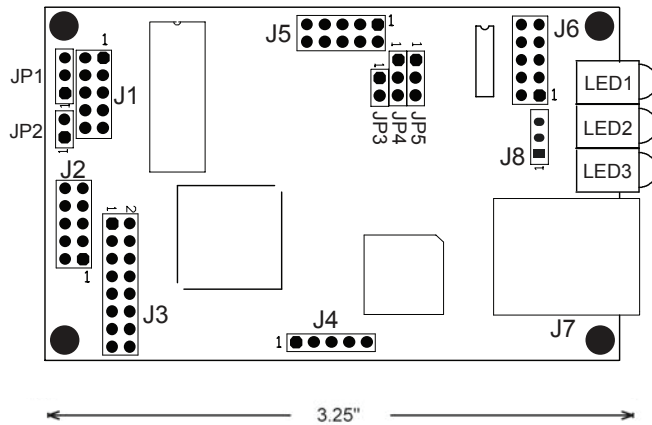
Table 6: Power Connector (J8) Pinout and Signal Description

| 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