# SB72

## 2-Port Serial to Ethernet Server

301 Version

NetBurner

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

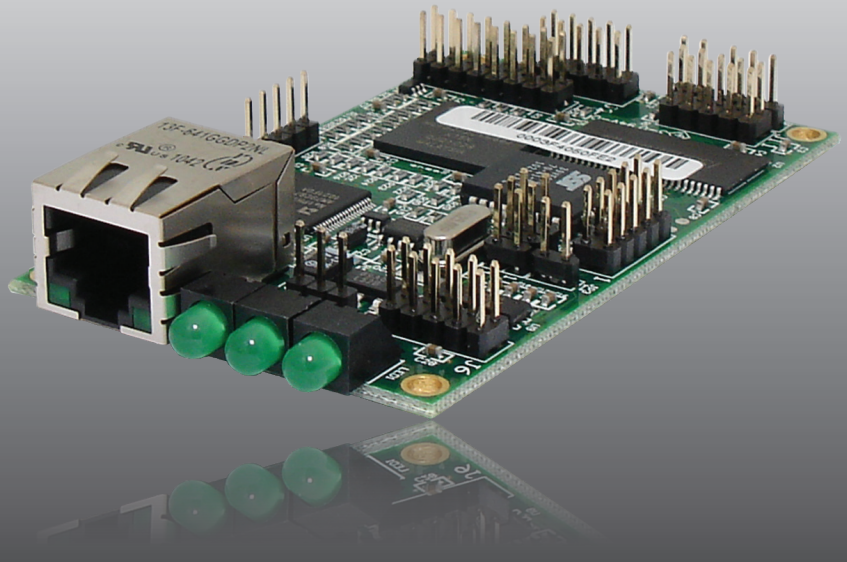
### Optional

*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[1]**

| 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[1] | 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 | $\overline{\text{UART1\_CTS}}$ | 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 | $\overline{\text{UART1\_RTS}}$ | $\overline{\text{INT5}}$ | 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[1] | 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 | $\overline{\text{UART1\_CTS}}$ | 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.

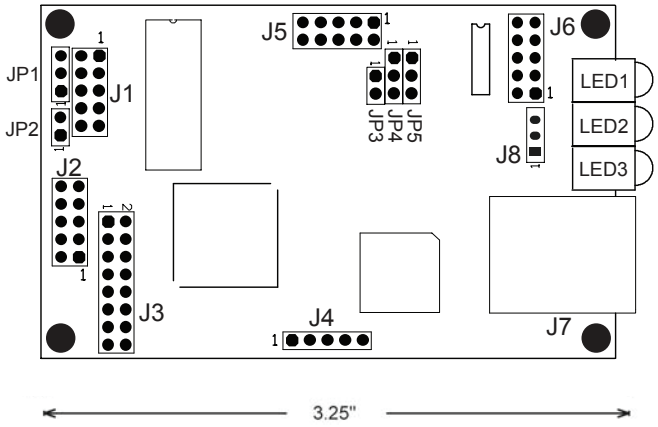
*Table 6:* **Power Connector (J8) Pinout and Signal Description**

| 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
Online Store: www.NetBurner.com
Telephone: 1-800-695-6828

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