

# SB70 LC

## 2-Port Serial to Ethernet Server

100 Version with RJ-45 | 200 Version with 10-pin header



# DATASHEET

### Key Points

- Serial to Ethernet server
- SSL and SSH data encryption to protect from unauthorized monitoring
- 3.3V tolerant input and TTL serial device support
- Works out of the box - no programming is required
- Board level product
- Customize with development kit

### Features

- SSH, SSL, HTTPS, certificate support
- 10/100Mbps Ethernet
- TCP/UDP/Telnet modes
- DHCP/Static IP modes
- Web based configuration
- 32-bit performance
- RS-232 and RS-422/485 ready (require external level shifter)

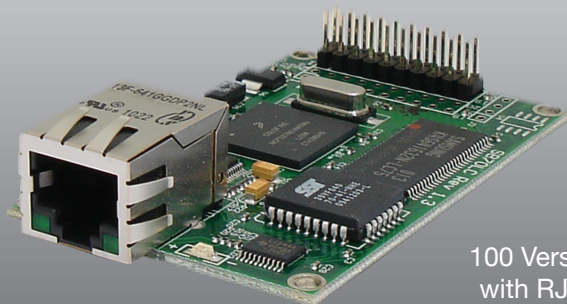
### Optional

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

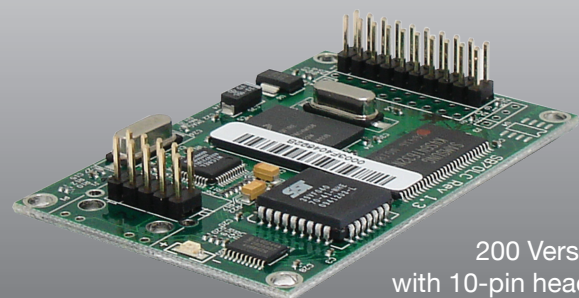
- Customize any aspect of operation including web pages, data filtering, or custom network applications
- Additional baud rates
- SD/MMC Card interface with included flash file system
- Up to 15 Digital I/O
- I<sup>2</sup>C and SPI peripheral interface
- External timer input

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

- Embedded SSL & SSH Security Suite (Module License Version)
- SNMP



100 Version  
with RJ-45



200 Version  
with 10-pin header

## Factory Application Specifications

### Serial Port Baud Rate

Factory application supports up to 230kbps. Custom rates available with development kit

### Serial Protocols Supported

2 TTL

### Serial Configurations

The UARTs can be configured in the following way:

- Two TTL ports
- Add external level shifter for RS-232
- Add external level shifter for RS-422/485 (up to two ports)

Note: UART 0/1 also provide RTS/CTS hardware handshaking signals.

## Hardware Specifications

### Processor & Memory

32-bit Freescale ColdFire 5270 running at 147.5MHz with 512Kbytes of flash and 8Mbytes SDRAM.

### Network Interface

10/100 BaseT with RJ-45 connector (100 Version)

10-pin header (200 Version)

### Data I/O Interface

- Up to two TTL ports
- Up to 15 digital I/O
- Up to one timer input
- Up to one I<sup>2</sup>C and SPI peripheral interface

### LEDs

Link, Speed/Data, Power

### Physical Characteristics

Dimensions (inches): 2.75" x 1.76"

Weight: 1 oz.

Mounting Holes: 4 x 0.125" dia.

### Power

DC Input Voltage: 3.3V @ 250mA typical

### Environmental Operating Temperature

-40° to 85° C

### RoHS Compliance

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

## Connector Interface Pinout and Signal Description

The SB70 LC (100 and 200 version) board has one dual in-line 20 pin header (JP1) which enables you to quickly and easily connect to a NetBurner SB70 LC Adapter Board, or a board that you create on your own. The SB70 LC 200 version board has a 10-pin header (JP2) instead of the RJ-45 jack. Tables 1 and 2 provide descriptions of pin function for the JP1 header and JP2, respectively.

Table 1: Multi-function I/O Connector (JP1) Pinout and Signal Descriptions <sup>(1, 2)</sup>

| Pin | CPU Pin | Function 1 | Function 2 | General Purpose I/O | Description  | Max Voltage |
|-----|---------|------------|------------|---------------------|--|-------------|
| 1   |         | VCC3V      | -          | -                   | Input Voltage 3.3VDC                               | 3.3VDC      |
| 2   |         | VCC3V      | -          | -                   | Input Voltage 3.3VDC                               | 3.3VDC      |
| 3   | A6      | SPI_CS0    | -          | PQSPI3              | SPI Chip Select 0                                  | 3.3VDC      |
| 4   | A5      | SPI_DOUT   | -          | PQSPI0              | SPI Data Out                                       | 3.3VDC      |
| 5   | G3      | UART0_RTS  | -          | PUARTL2             | UART 0 Request To Send <sup>1</sup>                | 3.3VDC      |
| 6   | B5      | SPI_DIN    | I2C_SDA    | PQSPI1              | SPI Data Input or I <sup>2</sup> C Serial Data     | 3.3VDC      |
| 7   | C5      | SPI_CLK    | I2C_SCL    | PQSPI2              | SPI Clock or I <sup>2</sup> C Clock                | 3.3VDC      |
| 8   | B8      | UART1_CTS  | -          | PUARTL7             | UART 1 or UART 2 Clear To Send <sup>1</sup>        | 3.3VDC      |
| 9   | C8      | UART1_RTS  | -          | PUARTL6             | UART 1 or UART 2 Request To Send <sup>1</sup>      | 3.3VDC      |
| 10  | F1      | UART0_TX   | -          | PUARTL1             | UART 0 Transmit                                    | 3.3VDC      |
| 11  | F2      | UART0_RX   | -          | PUARTL0             | UART 0 Receive                                     | 3.3VDC      |
| 12  | D9      | UART1_TX   | -          | PUARTL5             | UART 1 Transmit                                    | 3.3VDC      |
| 13  | D8      | UART1_RX   | -          | PUARTL4             | UART 1 Receive                                     | 3.3VDC      |
| 14  | F3      | UART0_CTS  | -          | PUARTL3             | UART 0 Clear To Send <sup>1</sup>                  | 3.3VDC      |
| 15  | H14     | T3IN       | -          | PTIMER7             | Timer Input 3 or UART 2 Clear To Send <sup>1</sup> | 3.3VDC      |
| 16  | J12     | I2C_SDA    | -          | PFECI2C0            | I <sup>2</sup> C Serial Data <sup>3</sup>          | 3.3VDC      |
| 17  | J11     | I2C_SCL    | -          | PFECI2C1            | I <sup>2</sup> C Serial Clock <sup>3</sup>         | 3.3VDC      |
| 18  | N13     | RESET      | -          | -                   | Processor Reset Input <sup>1</sup>                 | 3.3VDC      |
| 19  |         | GND        | -          | -                   | Ground   | -           |
| 20  |         | GND        | -          | -                   | Ground   | -           |

### Note:

- Active low signals, such as  $\overline{\text{RESET}}$ , are indicated with an overbar.
- All UART signals are TTL Level, external level shifters may be added for RS-232 or RS-422/485 operation.
- If using I<sup>2</sup>C, pull-up resistors must be added to open drain SDA/SCL signals.

Table 2: Ethernet Jack Header (JP2) Pinout and Signal Descriptions <sup>(1)</sup>

| Pin | Signal           | Description   |
|-----|------------------|---------------|
| 1   | TX-              | Transmit -    |
| 2   | TX+              | Transmit +    |
| 3   | LDLED            | Link/Data LED |
| 4   | RX+              | Receive +     |
| 5   | RX-              | Receive -     |
| 6   | VCC <sup>2</sup> | 2.5V          |
| 7   | SLED             | Speed LED     |
| 8   | NC               | No Connect    |
| 9   | NC               | No Connect    |
| 10  | GND              | Ground        |

### Note:

- Optional 0.1" dual row 10-pin header
- The 2.5V pins are used for the magnetics taps and LED power.

## Connector Diagram

Figure 1: Connector Diagram for JP1 (100 version)

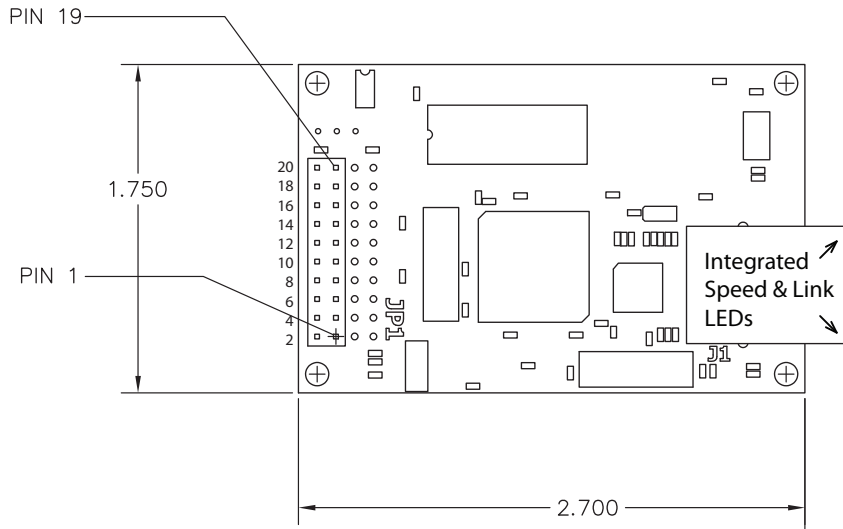
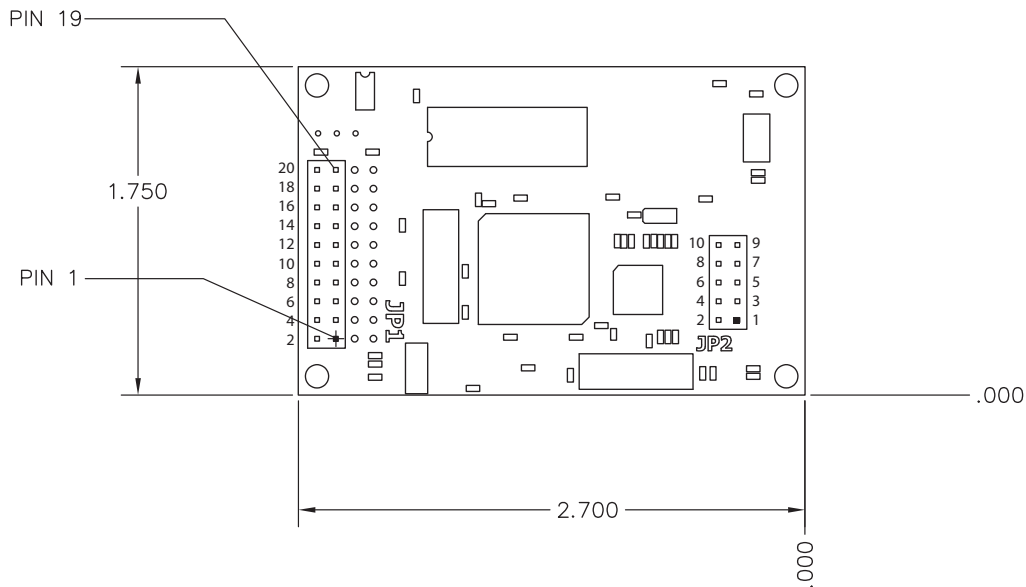


Figure 2: Connector Diagram for JP1 and JP2 (200 version)



## Part Numbers

### **SB70 LC 2-Port Serial to Ethernet Server (100 Version, with RJ-45)**

Part Number: SB70LC-100IR

### **SB70 LC 2-Port Serial to Ethernet Server (200 Version, with 10-pin header)**

Part Number: SB70LC-200IR

### **SB70 LC Development Kit**

Part Number: NNDK-SB70LC-KIT

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

### **Embedded SSL & SSH Security Suite (Module License Version)**

Part Number: NBLIC-SSL-MODULE

Only required if you are using a development kit (SSH/SSL functionality is included in the pre-programmed application).

### **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