

# 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
- I<sup>2</sup>C peripheral interface
- Web based configuration
- 32-bit performance
- RS-232 and RS-422/485 ready (require external level shifter)

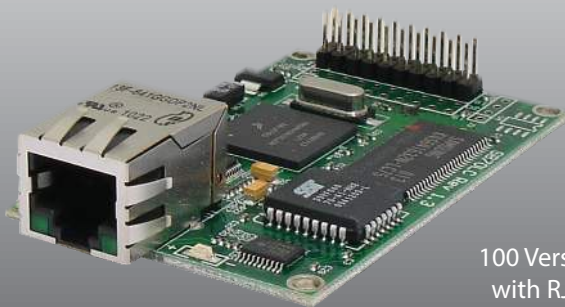
### Optional

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
- 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 230,000 baud. 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 provides RTS/CTS hardware handshaking signals.

## Hardware Specifications

### Processor & Memory

32-bit Freescale ColdFire 5270 running at 147.5MHz with 512KB of flash and 8MB 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): 2.70" x 1.75"

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	<u>UART0_RTS</u>	-	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	<u>UART1_CTS</u>	-	PUARTL7	UART 1 or UART 2 Clear To Send <sup>1</sup>	3.3VDC
9	C8	<u>UART1_RTS</u>	-	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	<u>UART0_CTS</u>	-	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	<u>RESET</u>	-	-	Processor Reset Input <sup>1</sup>	3.3VDC
19		GND	-	-	Ground	-
20		GND	-	-	Ground	-

Note:

1. Active low signals, such as RESET, are indicated with an overbar.
2. All UART signals are TTL Level, external level shifters may be added for RS-232 or RS-422/485 operation.
3. 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	LED control sink, link/activity
4	RX+	Receive +
5	RX-	Receive -
6	TXCT/RXCT <sup>2</sup>	Transmit Data Center Tap, Receive Data Center tap
7	SLED	LED control sink, speed
8	NC	No Connect
9	NC	No Connect
10	GND	Ground

Refer to the application note, "Adding an External Ethernet RJ-45 Connector and PCB Layout Guidelines for NetBurner -200 Version Modules", for details and examples.

Note:

1. Optional 0.1" dual row 10-pin header
2. Ethernet magnetics center tap voltage provided by NetBurner device

## Connector Diagram

Figure 1: Connector Diagram for JP1 (100 version)

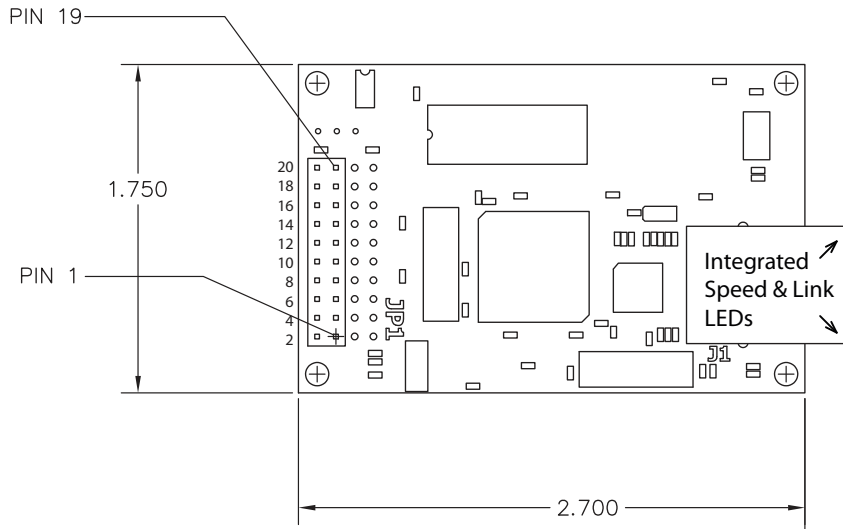
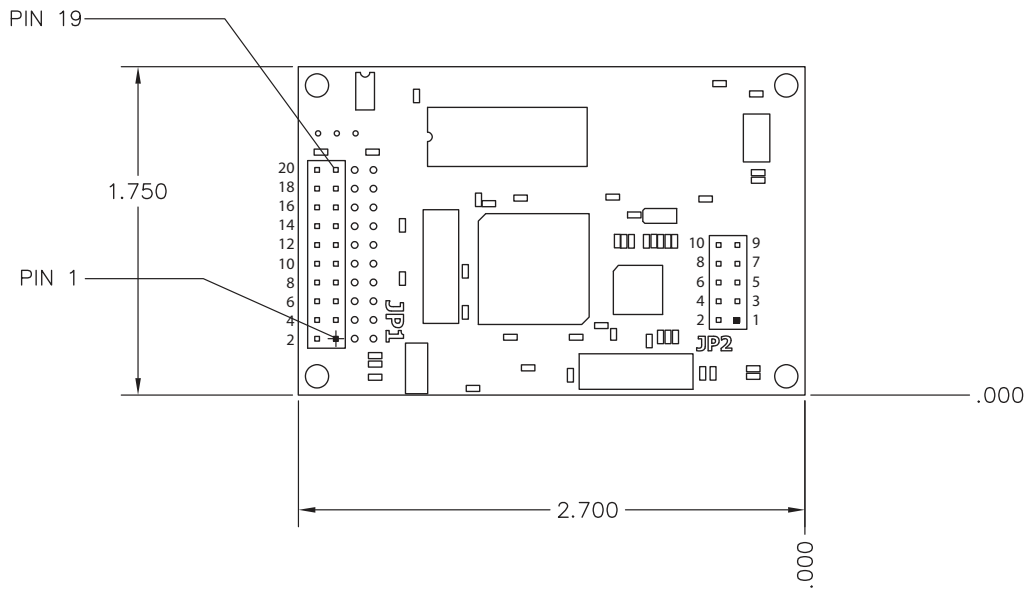


Figure 2: Connector Diagram for JP1 and JP2 (200 version)



## 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