SB70 LC

2-Port Serial to Ethernet Server
100 Version with RJ-45 | 200 Version with 10-pin header

NetBurner

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
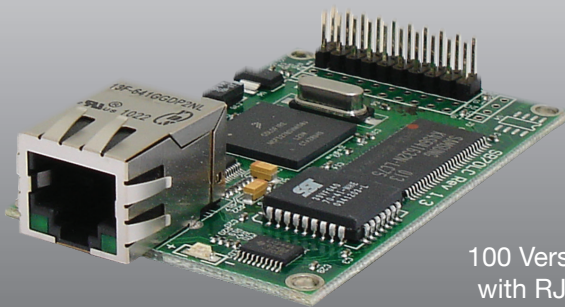- Customize with development kit

Features

- SSH, SSL/TLS 1.3, HTTPS, certificate support
- 10/100Mbps Ethernet
- TCP/UDP/Telnet modes
- DHCP/Static IP modes
- I²C 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

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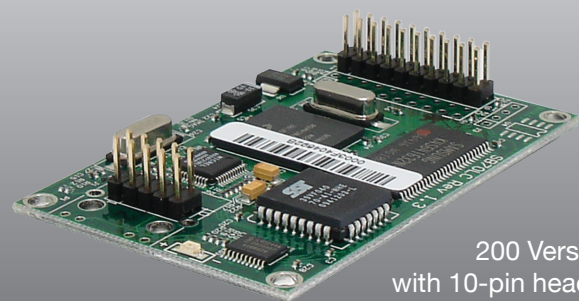
200 Version
with 10-pin header

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^2C 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** [1, 2]

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	$\overline{UART0\_RTS}$	-	PUARTL2	UART 0 Request To Send[1]	3.3VDC
6	B5	SPI_DIN	I2C_SDA	PQSPI1	SPI Data Input or I²C Serial Data	3.3VDC
7	C5	SPI_CLK	I2C_SCL	PQSPI2	SPI Clock or I²C Clock	3.3VDC
8	B8	$\overline{UART1\_CTS}$	-	PUARTL7	UART 1 or UART 2 Clear To Send[1]	3.3VDC
9	C8	$\overline{UART1\_RTS}$	-	PUARTL6	UART 1 or UART 2 Request To Send[1]	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	$\overline{UART0\_CTS}$	-	PUARTL3	UART 0 Clear To Send[1]	3.3VDC
15	H14	T3IN	-	PTIMER7	Timer Input 3 or UART 2 Clear To Send[1]	3.3VDC
16	J12	I2C_SDA	-	PFECI2C0	I²C Serial Data[3]	3.3VDC
17	J11	I2C_SCL	-	PFECI2C1	I²C Serial Clock[3]	3.3VDC
18	N13	$\overline{RESET}$	-	-	Processor Reset Input[1]	3.3VDC
19		GND	-	-	Ground	-
20		GND	-	-	Ground	-

Note:

1. Active low signals, such as $\overline{RESET}$, 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 I²C, pull-up resistors must be added to open drain SDA/SCL signals.

Table 2: **Ethernet Jack Header (JP2) Pinout and Signal Descriptions** [1]

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[2]	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

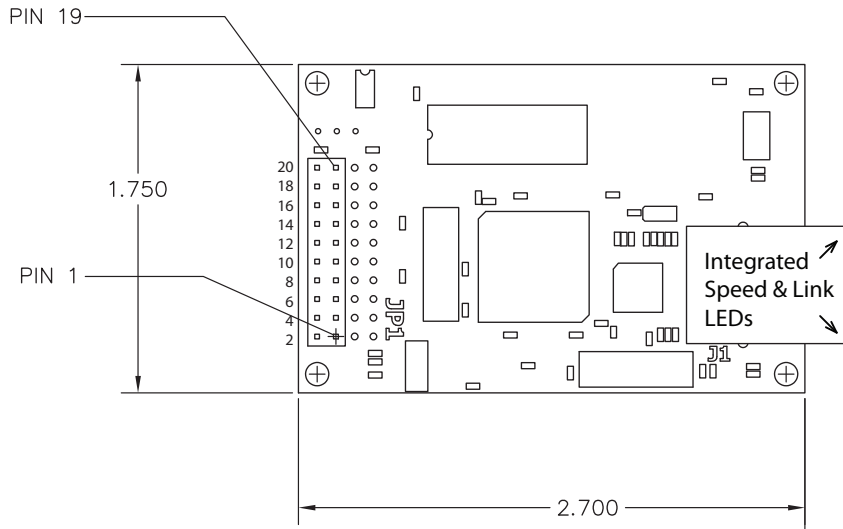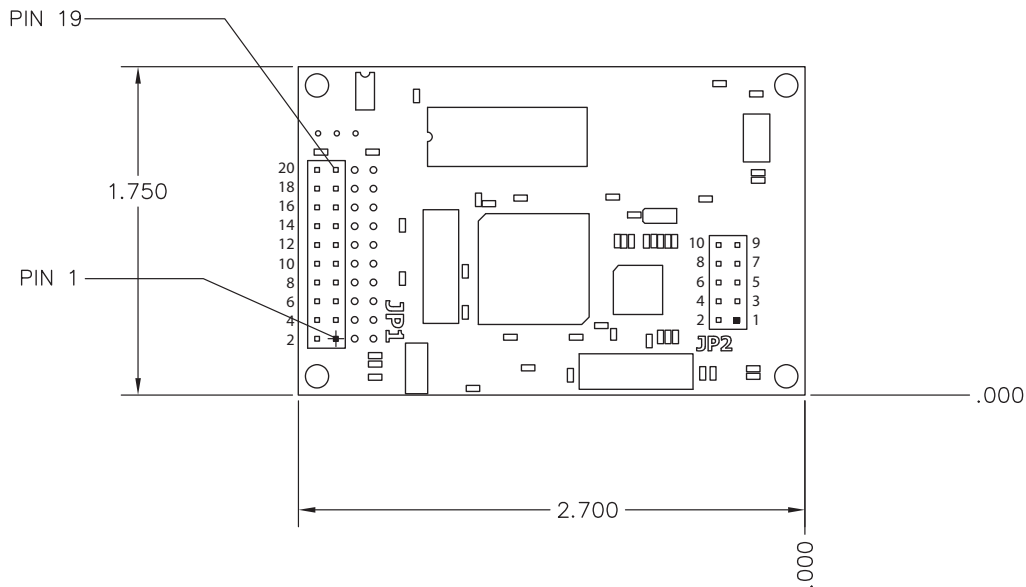*Figure 1:* **Connector Diagram for JP1 (100 version)**

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.

Ordering Information

E-mail: sales@netburner.com
Online Store: www.NetBurner.com
Telephone: 1-800-695-6828