SBE70 LC

2-Port Serial to Ethernet Server

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

NetBurner

DATASHEET

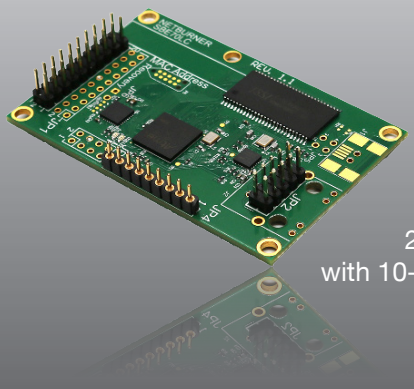
A versatile module that can be used off the shelf, customized to suite any application:

- Preprogrammed with Serial to Ethernet client/server with no programming required.
- Can be used as a high-performance network-enabled System on Module (SOM) customized to suit any network or serial application with the NetBurner Network Development Kit (NNDK).
- A replacement/upgrade for the NetBurner SB70LC.
- Applications that benefit from a lower pin count than the MODM7AE70 (20 vs 100).
- Easily branded to your company.

Hardware Features

- 300MHz ARM M7 processor, 2MB Flash, 8MB SDRAM
- Two 3.3V TTL serial interfaces with RX, TX, RTS and CTS
- Supports RS-232, RS-422 and RS-485 with the addition of external tranceivers
- Baud rates up to 921,600 bps
- I2C interface
- SPI interface
- 10/100 Ethernet interface available as a RJ-45 or 10-pin header
- Wifi option
- Operating range: -40C to +85C

100 Version
with RJ-45



200 Version
with 10-pin header

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Secure Serial to Ethernet Factory Application Features

- Application is pre-programmed into every SBE70LC
- Supports TTL, RS-232, RS-422, RS-485, and I2C to Serial*
- Configuration methods include: device web server, serial, AT commands, JSON posts
- Security includes: SSL/TLS 1.3, HTTPS, SSH and Certificate management
- Virtual comm port driver
- Serial tunneling
- Custom packetization of serial data

*RS-232, RS-422 and RS-485 require the addition of external tranceivers. I2C requires pull-up resistors.

Customization with the NetBurner Network Development Kit

- The Secure Serial to Ethernet Factory Application can be easily modified, rebranded, or completely replaced with any application you wish to create to suit your product requirements.
- The NNDK includes everything you need to create custom applications.
- Can implement additional hardware capabilities including: GPIO, A/D, SPI, PWM, Programmable clock outputs, Timer inputs, CAN

Physical Characteristics

Dimensions: 2.70” x 1.75”
Weight: 1 oz.
Mounting Holes: 4 x 0.125” diameter

Compliance

RoHS

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

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Pinout and Signal Description

Table 1: **Multi-function I/O Header, JP1**
The maximum voltage on any SBE70LC connector pin is 3.3VDC.

Pin	Processor Port	Description	Alternate Functions
1	VCC 3.3V	Input Power	
2	VCC 3.3V	Input Power	
3	PD12	SPI 0 Chip Select 2	GPIO
4	PD21	SPI 0 Data Out (MOSI)	GPIO, Timer 11 Line A (TIOA11), PWM 0 Channel 1 Output High
5	PB3	Serial Port 0 RTS	GPIO, CAN 0 Receive (CAN0RX), Programmable Clock Output 2 (PCK2)
6	PD20	SPI 0 Data In (MISO)	GPIO, PWM 0 Channel 0 Output High
7	PD22	SPI 0 Clock	GPIO, PWM 0 Channel 2 Output High, Timer 11 Line B
8	PA25	Serial Port 1 CTS	GPIO, PWM 0 Channel 2 Output High
9	PA24	Serial Port 1 RTS	GPIO, PWM 0 Channel 1 Output High
10	PB1	Serial Port 0 TX	GPIO, PWM 0 Channel 1 Output High, AFE 1 ADC Input 0
11	PB0	Serial Port 0 RX	GPIO, PWM 0 Channel 0 Output High, AFE 0 ADC Input 10
12	PB4	Serial Port 1 TX	GPIO, PWM 0 Channel 2 Output High
13	PA21	Serial Port 1 RX	GPIO, Programmable Clock Output 1 (PCXK1)
14	PB2	Serial Port 0 CTS	GPIO, SPI 0 Chip Select 0, CAN 0 Transmit (CANTX0)
15	PD24	Timer 11 Clock Input (TCLK11)	GPIO, PWM 0 Channel 0 Output Low
16	PA3	I2C Data (TWD0)	GPIO, Programmable Clock Output 2 (PCK2)
17	PA4	I2C Clock (TWCK0)	GPIO, Serial Port 3 TX, Timer 0 Clock
18	$\overline{\text{RESET}}$	Active Low Reset Input	
19	GND	Ground	
20	GND	Ground	

Note:
1. Active low signals, such as $\overline{\text{RESET}}$, 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^2C, pull-up resistors must be added to open drain SDA/SCL signals.

Table 2: **Ethernet 10-pin Header, JP2 (SBE70LC-200IR Only)**

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

Pin	Description
1	Transmit -
2	Transmit +
3	Transmit Data Center Tap
4	Receive +
5	Receive -
6	Receive Data Center Tap
7	Ground
8	Not Connected
9	LED control sink, speed
10	LED control sink, link/activity

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Part Numbers

SBE70 LC (100 Version, SOM with RJ-45 Ethernet connector)
Part Number: SBE70LC-100IR

SBE70 LC (200 Version, SOM with male 10-pin header for Ethernet signals)
Part Number: SBE70LC-200IR

SBE70 LC Development Kit
Part Number: NNDK-SBE70LC-KIT
For evaluation of the SBE70LC hardware SOM and Secure Serial to Ethernet Factory Application. Also includes custom development tools.

Ordering Information

email: sales@netburner.com
Online Store: www.netburner.com
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