

# SB800 EX

2-Port Serial to Ethernet Server with Optional Wifi/CAN



## DATASHEET

### Key Points

- Complete serial to Ethernet solution right out of the box
- Optional development kit to create custom applications
- Pre-programmed factory application supports RS-232, RS-422, RS-485 with jumperless configuration
- Optional 802.11 b/g/n Wifi
- Optional CAN bus configuration
- Rebrand with custom product label
- Data encryption to protect from unauthorized monitoring

### Features

- TCP, UDP, and Telnet with SSL/TLS, HTTPS, and SSH
- Certificate support
- 10/100Mbps Ethernet
- DHCP/Static IP modes
- RS-232, RS-422, and RS-485 with support for standard and custom baud rates up to 921,600 bps
- CAN baud rates up to 1Mbps (requires dev kit)
- Web server and serial AT Command configuration
- Create a serial tunnel with two devices
- Custom packetization of serial data

### Customizations

Use the optional development kit to:

- Customize any aspect of operation including web pages, data filtering, or custom network applications
- MicroSD Card interface with included flash file system



## Hardware Specifications

### RS-232, RS-422, and RS-485 Specifications

- Factory application supports up to 921,600 bps
- Jumperless software configuration

### CAN Specifications

- Replaces either of the RS-232, RS-422, RS-485 serial ports
- Supports up to 1Mbps
- Requires the development kit, secure serial factory application does not support CAN

### Processor & Memory

32-bit Freescale ColdFire 54415 running at 250MHz with 8MB of on-chip flash, 64MB DDR2 RAM.

### Storage

MicroSD/MMC Flash Card Interface

### Ethernet Interface

10/100 BaseT with RJ-45 connector

### Wifi Interface (optional)

IEEE 802.11 b/g/n

Security: WPA, WPA2

Modes: Infrastructure, Access Point with DHCP Server

### Miscellaneous

Real-time clock

LEDs for Ethernet link, speed/activity, and power

LEDs for status of each serial ports

### Physical Characteristics

Dimensions (inches): 4.20" x 3.25" x 1.00"

### Power

DC Input Voltage: 7V-24V DC; 12V @ 120mA

### 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.

### Agency Approvals

UL, C/UL, CE, FCC



## Front and Back Panel



Front Panel  
(Shown with optional WIFI)



Back Panel

## Connector Interface Description and Pinouts

Table 1: DB9 Serial Port Connector Pinout and Signal Description<sup>1</sup>

Pin	RS-232 Function	RS-485 Function	CAN Function <sup>2</sup>	Description
1	CD	FD TX- / HD-	-	Carrier Detect or Full Duplex Transmit- / Half Duplex-
2	RX	FD TX+ / HD+	CANL	Receive or Full Duplex Transmit+ / Half Duplex+ or CAN Low
3	TX	RX+	GND	Transmit or Full Duplex Receive+ or Ground
4	DTR	RX-	-	Data Terminal Ready or Full Duplex Receive-
5	GND	GND	GND	Ground
6	DSR	-	GND	Data Set Ready or Ground
7	RTS	-	CANH	Ready to Send or CAN High
8	CTS	-	-	Clear to Send
9	RI	-	PWR_V+ <sup>3</sup>	Ring Indicator or Optional CAN Input Power (7-24V DC)

Table 2: Terminal Block Serial Port Pinout and Signal Description<sup>1</sup>

Pin	RS-232 Function	RS-485 Function	CAN Function <sup>2</sup>	Description
1	GND	GND	GND	Ground
2	CD	FD TX- / HD-	CANL	Carrier Detect or Full Duplex Transmit- / Half Duplex- or CAN Low
3	RX	FD TX+ / HD+	GND	Receive or Full Duplex Transmit+ / Half Duplex+ or Ground
4	DTR	RX-	CANH	Data Terminal Ready or Full Duplex Receive- or CAN High
5	TX	RX+	PWR_V+ <sup>3</sup>	Transmit or Full Duplex Receive+ or Optional CAN Input Power (7-24V DC)

### Notes:

1. For developers: Port 0 is connected to processor UART1. Port 1 is connected to processor UART2.
2. For CAN devices only.
3. Replaces power from input barrel jack or two-pin terminal strip.

## SB800EX Build Options

### Serial Ports:

- Connectors can be DB-9 or a 5-pin terminal strip
- All ports support RS-232, RS-485 and RS-422, jumperless configuration through software
- CAN bus can be supported as an option in place of RS-232, RS-485 and RS-422

### Input Power Connector:

- Can be a 2.1mm barrel jack or a 2-pin terminal strip

### Options:

- Wifi b/g/n with external antenna
- CAN Bus
- GPS option for Network Time Server (NTP) operation

## Part Numbers

The part number will specify the options in the format: **SB800EX-(P, S2, S1, W)-IR**, where:

Connector Type	Values
P = Power Connector	J = Barrel Jack T = 2 Pin Terminal Plug
S1, S2 = Serial Connectors	D = DB-9 T = 5 Pin terminal strip N = No Connector
W = Wifi	W = Wifi Installed
CD, CT = CAN	CAN bus transceiver installed. Replaces RS-232/422/485 transceiver. CT = CAN on terminal strip, serial connector S1 (port 0) CD = CAN on DB9, serial connector S2 (port 1)

**Example:** SB800EX-JDDW-IR = Barrel jack, both serial ports are DB9, Wifi installed.

## Stock Configurations

Custom configurations available upon request.

Part Number	Description	Upgrade From
<b>Power = Jack</b>		
SB800EX-JDD-IR	Power Jack DB9 supports RS-232/422/485 DB9 supports RS-232/422/485	SB72EX, SB700EX
SB800EX-JDT-IR	Power Jack DB9 supports RS-232/422/485 5-Pin terminal supports RS-232/422/485	CB34EX without CAN bus
<b>Power = Terminal Strip</b>		
SB800EX-TDD-IR	Power 2-pin terminal plug DB9 supports RS-232/422/485 DB9 supports RS-232/422/485	SB72EX, SB700EX with 2 pin terminal input power instead of jack.
SB800EX-TDT-IR	Power 2-pin terminal plug DB9 supports RS-232/422/485 5-Pin terminal supports RS-232/422/485	CB34EX with 2 pin terminal power input instead of jack.
<b>WIFI</b>		
SB800EX-JDDW-IR	Power Jack DB9 supports RS-232/422/485 DB9 supports RS-232/422/485 Wifi and Ethernet port	SB72EX, SB700EX plus Wifi
SB800EX-JDTW-IR	Power Jack DB9 supports RS-232/422/485 5-Pin terminal supports RS-232/422/485 Wifi and Ethernet port	CB34EX plus Wifi without CAN bus
<b>CAN Bus</b>		
SB800EX-TDTCT-IR	Power 2-pin terminal plug DB9 supports RS-232/422/485 5-Pin terminal supports CAN bus	CB34EX
SB800EX-TDTCD-IR	Power 2-pin terminal plug DB9 supports CAN 5-Pin terminal supports RS-232/422/485	CB34EX