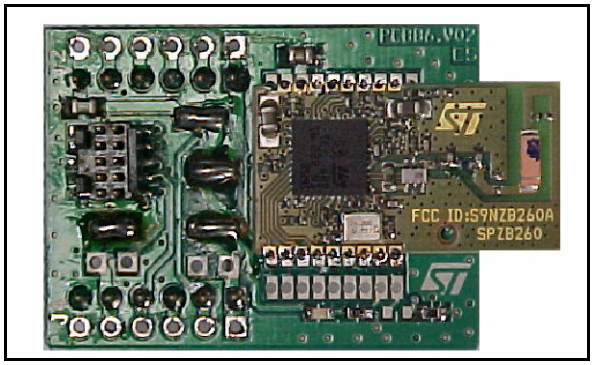
SPZB260ADP

Adapter board

Features

- Easy interface for SPZB260 module
- Single supply from 2.1 to 3.6 V
- Two 6-pin connectors to access EZSP
- 10 pin InSight™ port connector for debug
- Access to SIF signals
- Access to the InSight™ Desktop packet trace interface
- LEDs for link activity indication



Description

SPZB260ADP is the adapter board for the ZigBee® module SPZB260.

It provides an easy way to interface the SPZB260 module with the development kit during the development and deployment phase of a ZigBee® application.

It contains two 6 pins connectors to access the EmberZNet™ serial protocol (EZSP) and the SPZB260 module SPI, SIF signals and voltage supply; in addition a keyed 10 pin connector allow the connectivity of the SIF and PTI signals with the InSight™ Desktop for debug.

A LED indicator is driven by a Link Activity signal to provide a visual indication of the module behavior.

As SPZB260ADP is a passive interface of the SPZB260 module, for the electrical characteristics, please refer to the SPZB260 module datasheet.

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1 Recommended operating conditions

Table 1. Recommended operating conditions

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VDD	Board supply voltage	- 40 °C < T < +85 °C	2.1	3	3.6	V
T_{STG}	Operating ambient temperature		- 40		+ 85	°C

2 Connections

2.1 J1 connector

J1 is the 10-pin, dual-row, 0.05-inch pitch InSight™ connector provided for programming and debug interface of the SPZB260 module. It contains the four SIF signals (SIF_MOSI, SIF_MISO, SIF_LOADB, SIF_CLK), two packet trace signals (PTI_EN and PTI_DATA), voltage and ground connections.

Through the InSight™ port cable, it connects directly to the InSight™ Adapter, which allows programming and debug access within InSight™ Desktop.

The part used on the adapter is from Samtec (MFG P/N: FTSH-105-01-F-DV-K); it is keyed to guarantee the right connection with the InSight™ port cable.

Figure 1. InSight™ port pin out (J1)

V_{DD}	1	2	SIF_MISO
GND	3	4	SIF_MOSI
GND	5	6	SIF_CLK
SIF_LOADB	7	8	RSTB
PTI_EN	9	10	PTI_DATA

Figure 2. J1 connector

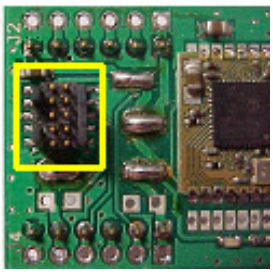


Table 2. InSight™ port pins (J1)

Pin number	Signal name	Direction	Description
1	Vdd	Power	2.1 to 3.6 V supply voltage
2	SIF_MISO	Output	Serial interface, master in / slave out
3	GND	Power	Ground connection
4	SIF_MOSI	Input	Serial interface, master out/ slave in
5	GND	Power	Ground connection
6	SIF_CLK	Input	Serial interface, clock signal
7	SIF_LOADB	I/O	Serial interface, load strobe
8	RSTB	Input	Active low reset
9	PTI_EN	Output	Packet trace frame signal
10	PTI_DATA	Output	Packet trace data signal

2.2 J2 and J4 connectors

Two 6 pin, single -row, 0.1-inch (2.54 mm) pitch connector on the bottom side of the adapter allows access to the SPZB260US module by means a synchronous (SPI) or asynchronous (UART) serial line.

This connector attaches directly to the Breakout Board and provides a robust and stable interface to the host microcontroller.

J2 and J4 are 2.54 mm pitch header (i.e Molex: 22-28-4063).

Figure 3. Pin out (J2 and J4)

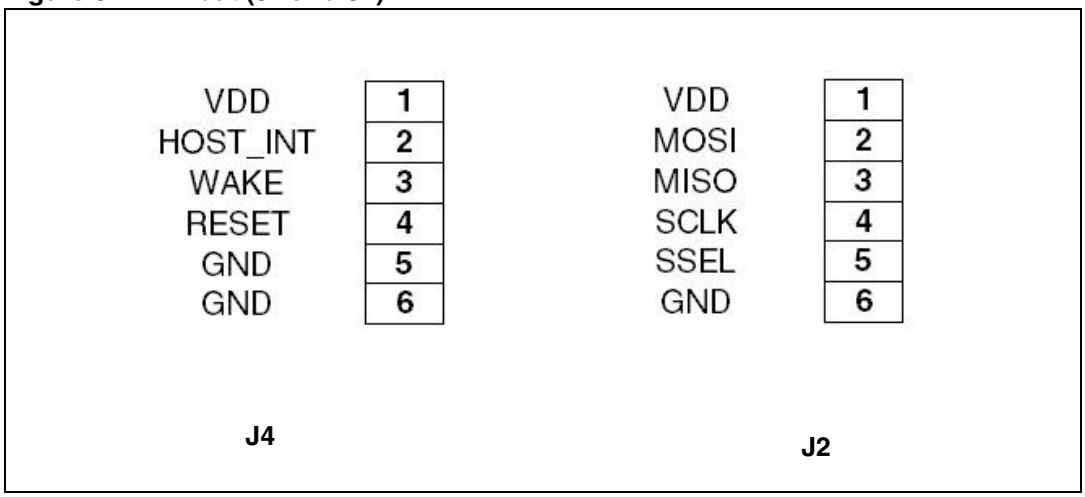


Figure 4. J2 and J4 connector

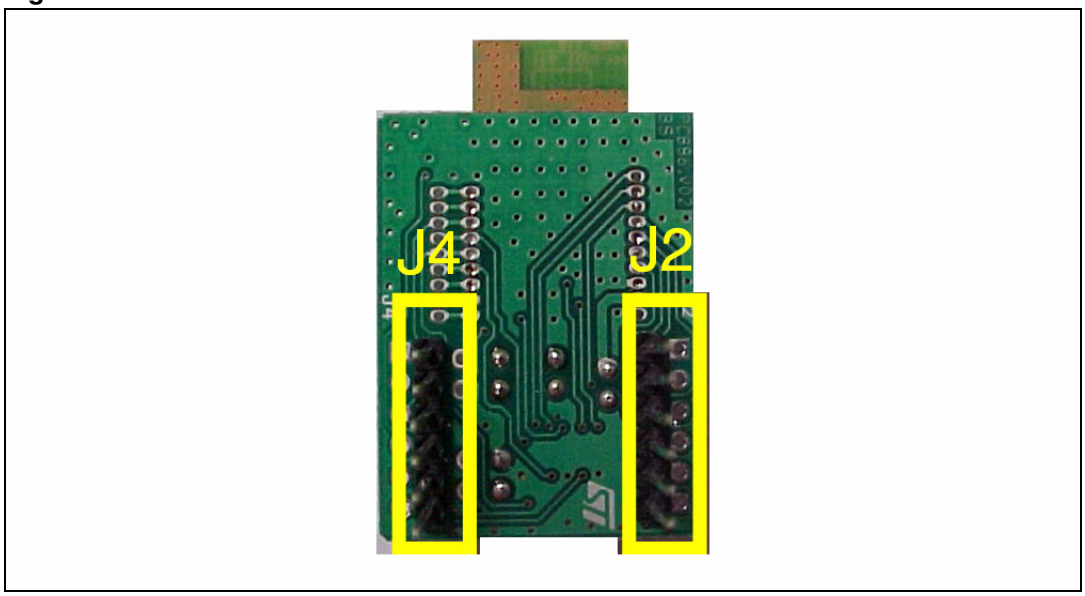


Table 3. J2 pins

Pin number	Signal name	Direction	Description
1	VDD	Power	2.1 to 3.6 V supply voltage
2	MOSI	Input	SPI data, master out/ slave in (from Host to SPZB260)
3	MISO	Output	SPI data, master in / slave out (from SPZB260 to Host)
4	SLCK	Input	SPI clock (Host to SPZB260)
5	SSEL	Input	Active low SPI slave select (Host to SPZB260)
6	GND	Power	Ground connection

Table 4. J4 pins

Pin number	Signal name	Direction	Description
1	VDD	Power	2.1 to 3.6 V supply voltage
2	HOST_INT	Output	Host interrupt (from SPZB260 to Host)
3	WAKE	Input	Wake interrupt (from Host to SPZB260)
4	RSTB	I/O	Active low chip reset
5	GND	Power	Ground connection
6	GND	Power	Ground connection

3 Device description

3.1 LED indicator

A LED indicator, L1, is provided on the adapter; this LED is connected to the SPZB260 module (pin 16) which make available the Activity signal giving a visual indication of the behavior of the module.

3.2 Jumpers

Six jumpers are provided on the adapter:

- JP1 - between pin 1 of J2 connector and SPZB260 power supply pin
- JP2 - between pin 1 of J4 connector and SPZB260 power supply pin
- JP3 - between pin 1 of J1 connector (“10 pin InSight™ connector”) and SPZB260 power supply pin

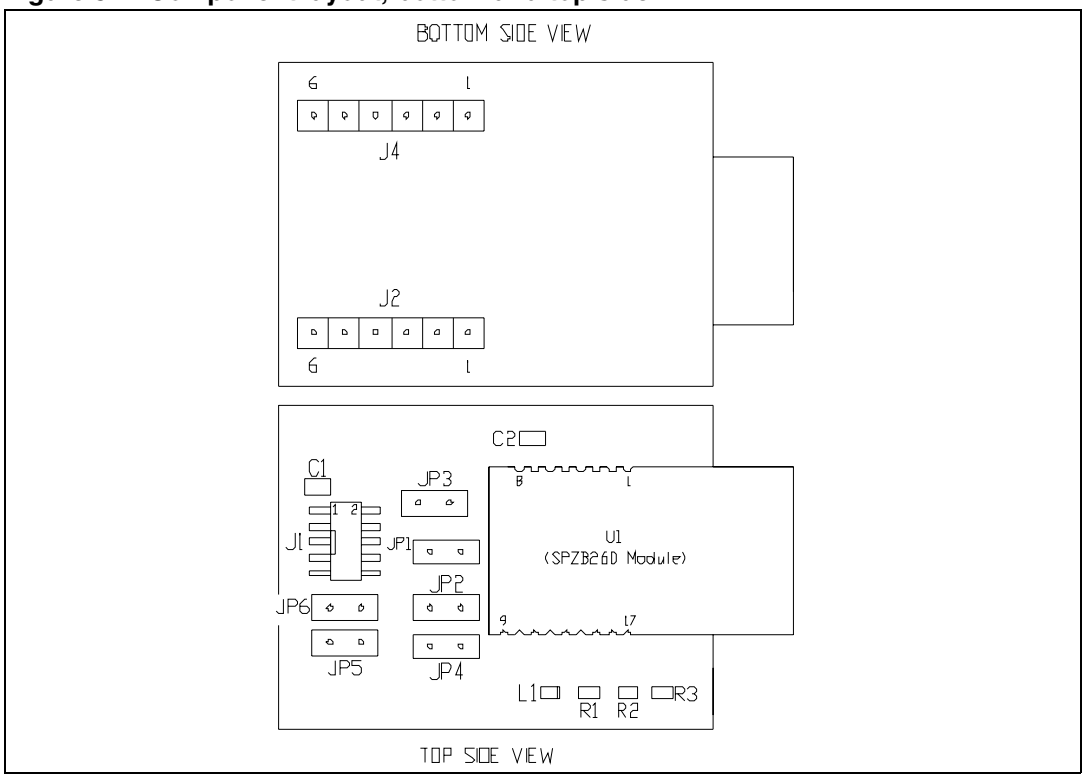
These jumpers can be used to separate the voltage supply source and to measure the current consumption; in normal operation they should be closed.

3.3 Configuration jumpers

- Module SPZB260
  - JP4 JP5: open
  - JP6: closed

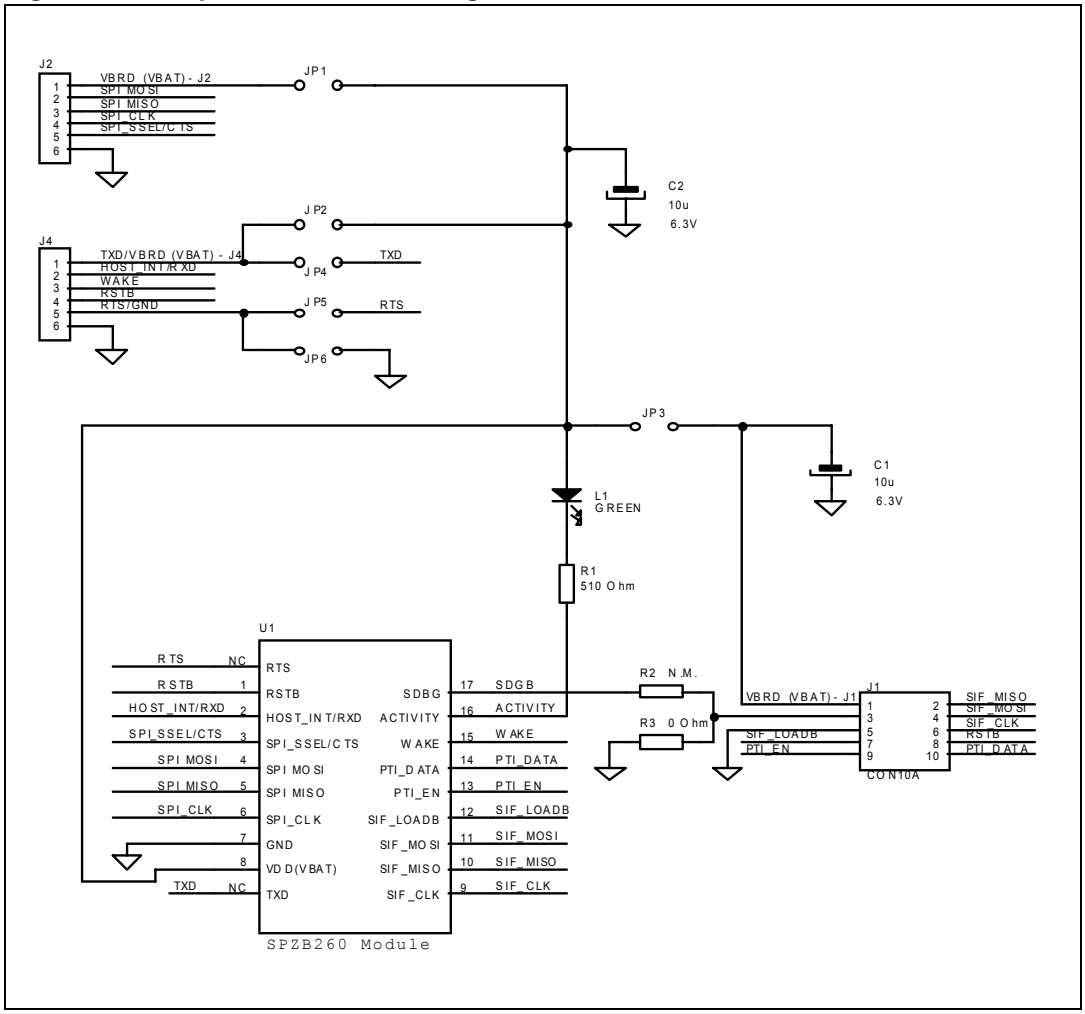
3.4 Adapter layout

Figure 5. Component layout, bottom and top side



4 Electrical drawing

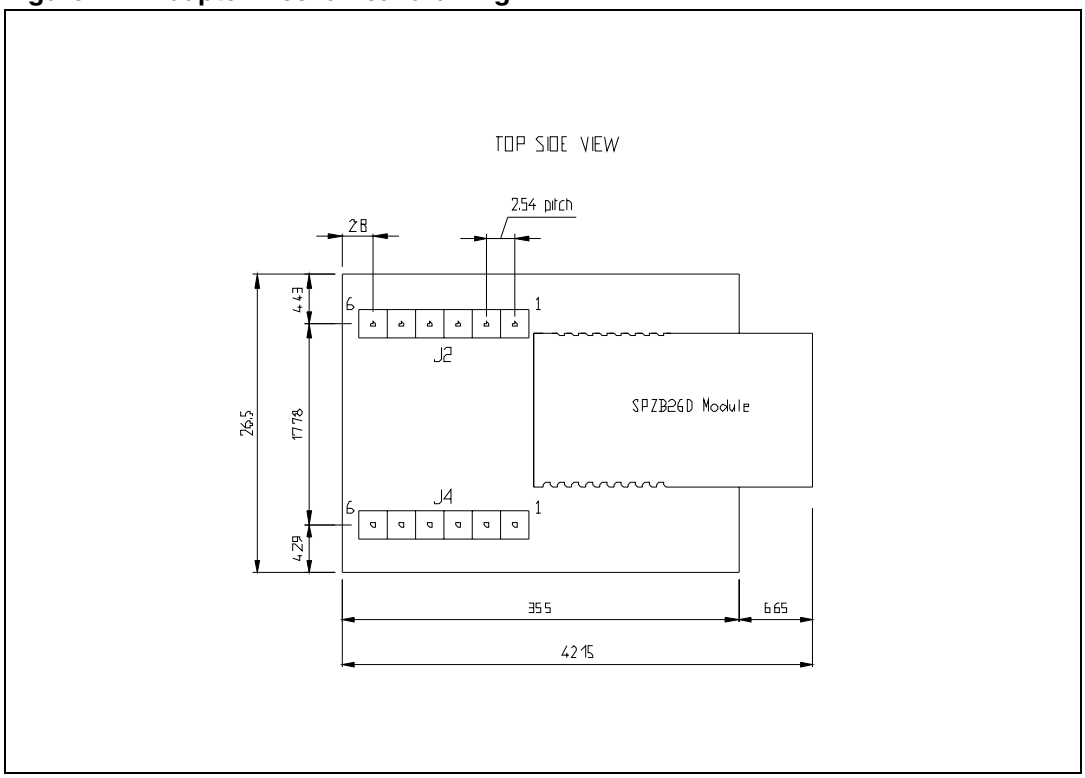
Figure 6. Adapter electrical drawing



5 Mechanical drawing

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a lead-free second level interconnect. The category of second Level Interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

Figure 7. Adapter mechanical drawing



6 Revision history

Table 5. Document revision history

Date	Revision	Changes
18-Apr-2008	1	First release

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