

Digi XBee Application Note

Migration from XBee-PRO XSC (S3) to XBee-PRO XSC (S3B)

This guide will assist you with migrating from the XBee-PRO XSC (S3) to the XBee-PRO XSC (S3B). Even though the function of these radios is basically the same; the following sections list some of the basic hardware and software differences between the radios. In addition, the guide lists what you need to consider when migrating from the XBee-PRO XSC (S3) to the XBee-PRO XSC (S3B).

Hardware Considerations

The following chart lists the major hardware differences between the XBee-PRO XSC (S3) and the XBee-PRO XSC (S3B).

Considerations	XBee-PRO XSC (S3)	XBee-PRO XSC (S3B)	Comments
Nominal Voltage	3.0 - 3.6VDC	2.4 - 3.6VDC	Supply voltages of less than 3.0V may result in reduced performance. Output power and receiver sensitivity may be degraded.
UART	3.3V (5V-tolerant)	3.3V	XSC (S3) was 5V tolerant; XSC (S3B) is NOT 5V tolerant.
TX Current Draw	265mA	215mA	Power output can be reduced in S3B software for lower current draw.
RX Current Draw	65mA	26mA	Improved
Power Output	20dBm (100mW)	24dBm (250mW)	Power output has increased, but is also software adjustable with the PL parameter.
Receiver Sensitivity	-106dBm (9.2kbps)	-109dBm (9.2kbps) -107dBm (19.2kbps)	Improved
Sleep Current	50uA	2.5uA	Improved
FCC ID	MCQ-XBEE XSC	MCQ-XBPS3B *MCQ-XB900HP	Customer will need to change the label on the outside of their end product to show the appropriate FCC ID for the S3B. *Revision H and newer needs to use MCQ-XB900HP as the FCC ID.
IC ID	1846A-XBEE XSC	1846A-XBPS3B *1846A-XB900HP	Customer will need to change the label on the outside of their end product to show the appropriate IC ID for the S3B. *Revision H and newer needs to use 1846A-XB900HP as the IC ID.

Software Considerations

The following chart lists the major software differences between the XBee-PRO XSC (S3) and the XBee-PRO XSC (S3B).

Considerations	XBee-PRO XSC (S3)	XBee-PRO XSC (S3B)	Comments
Wake Time	40ms	40ms	Time from pin sleep to when CTS asserts and is ready to transmit data.
Software/AT Commands	Same	Some Added	Added commands like power level should be considered. New commands are not required to be used for the interoperability of the radio.
RS-485 Modes	Supported	Supported	The XBee does support RS-485 mode, however, the development board does NOT.
Throughput Data Rates	9.6kbps	9.6kbps and 19.2kbps	RF data rates other than 9600 and 19200 are not currently supported.
RF Data Rates	10kbps	10kbps or 20kbps	19.2kbps allows for faster RF Data Rates.
Australian	Not-Supported	Supported	920MHz version is supported on S3B.

Configuration

The XBee-PRO XSC (S3B) has all of the same features as the XBee-PRO XSC (S3) plus some new features such as:

- MY (Source Address)
- MD (RF Mode)
- PK (RF Packet Size)
- PL (RF Power Level)
- RB (Packetization Threshold)
- RZ (DI Buffer Size)

Use of the new features may cause incompatibility between S3 and S3B modules in a network. If full backward compatibility is required with your S3 network, keep these new features at default. All of these new features are described in more detail in the XBee-PRO XSC product manual.