



# XBEE PCB design guide

UCD FSAE 2015  
Electrical group design document

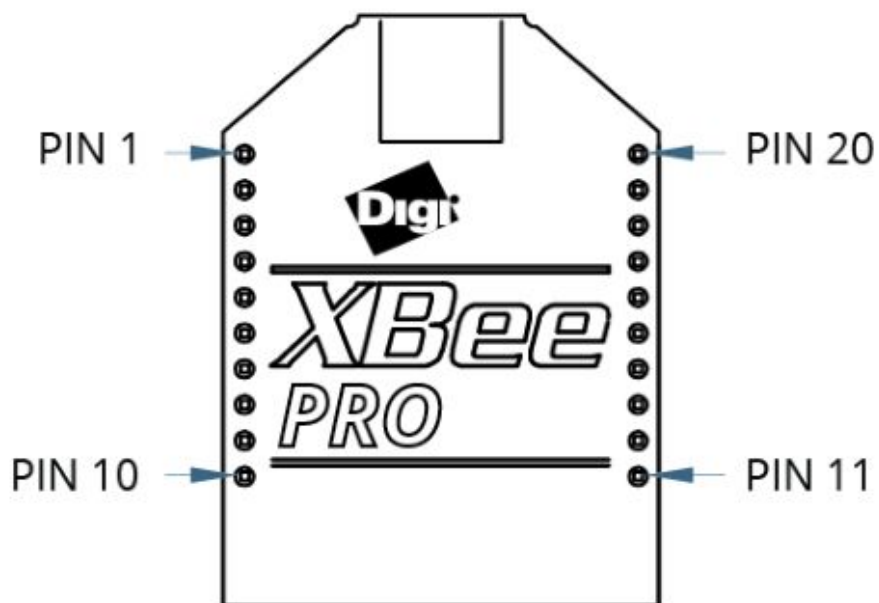
Hengjiu Kang

Author: Hengjiu Kang  
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<i>XBEE Pinouts:</i> .....	3
<i>XBEE pin connection chart:</i> .....	4
POWER:.....	5
UART/SPI pins.....	6
LED indicator:.....	7

## XBEE Pinouts:

# XBee-PRO (top view)



## XBEE pin connection chart:

Pin on Cypress		Pin on XBEE	Pin on XBEE	Pin on Cypress	
VCC(3.3)		1 VCC(3.3)	20		
P4[2] (80)	UART_rx	2 DOUT	19 SPI_nATTN	NC	NC
P4[0] (69)	UART_tx	3 DIN	18 SPI_SCLK	XBEE_CLK	P4[5] (83)
P4[4] (82)	SPI_MISO	4 SPI_MISO	17 SPI_nSSEL	XBEE_SS	P4[6] (84)
P4[7] (85)	XBEE_RST	5 nRESET	16		
		6	15 Associate		External LED
		7	14 VRef		GND
		8	13 On_nSLEEP	NC	NC
		9	12		
GND		10	11 SPI_MOSI	SPI_MOSI	P4[3] (81)

### Mark:

1. Leave all unused pins disconnected.
2. NC means “no connect”
3. Add a jumper between Xbee pin15(associate) to LED. For compatibility.
4. Because we will not use secondary programmable chip, so just connect Xbee pin 14 to GND.
5. XBEE pin 19 will not be used, because in our design, Xbee on logger only send out data.
6. More notices are on following chapters.

## POWER:

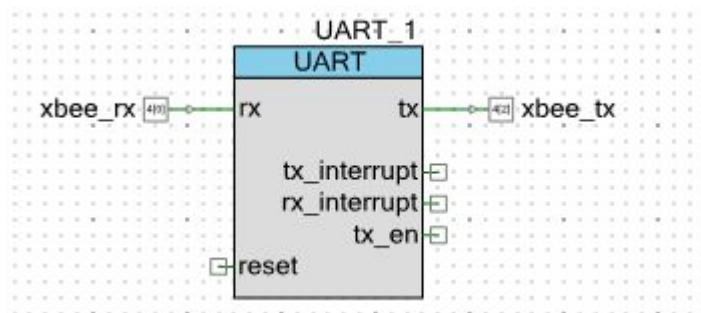
XBEE dose not have special requirements for powering expect for some basic suggestions:

- 1.“To help reduce noise, we recommend placing both a 1uF and 47 pF capacitor as near to pin 1 on the printed circuit board (PCB) as possible. ”
- 2.“If you use a switching regulator for your power supply, switching frequencies above 500 kHz are preferred. Limit the power supply ripple to a maximum 50mV peak to peak.”

## UART/SPI pins

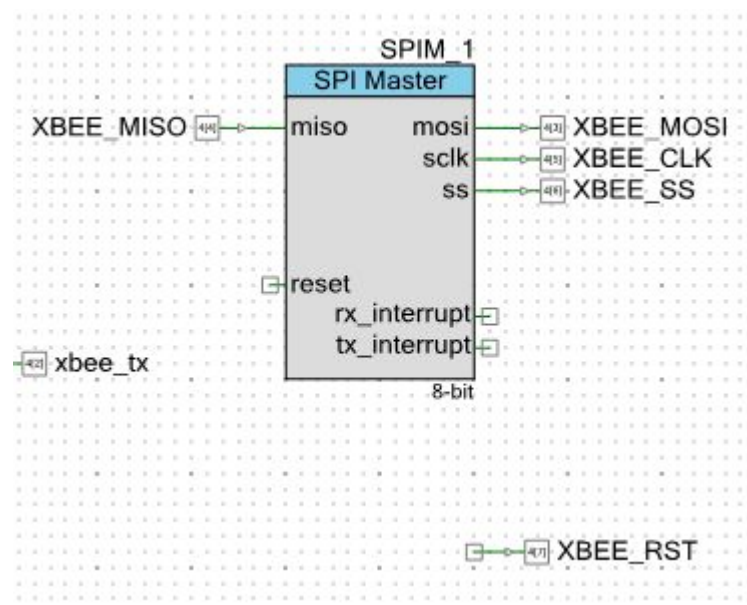
UART:

UART only requires two wires: Tx and Rx



xbee_rx	P4[0]	▼	69	▼	✓
xbee_tx	P4[2]	▼	80	▼	✓

SPI:



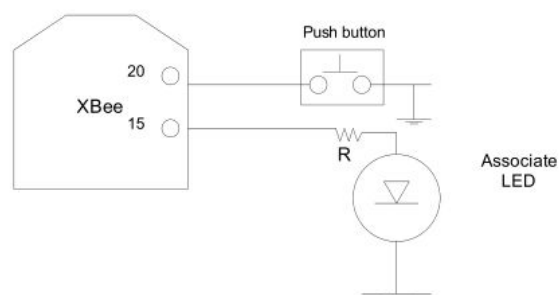
XBEE_CLK	P4 [ 5 ]	▼	83	▼	✓
XBEE_MISO	P4 [ 4 ]	▼	82	▼	✓
XBEE_MOSI	P4 [ 3 ]	▼	81	▼	✓
XBEE_RST	P4 [ 7 ]	▼	85	▼	✓
XBEE_SS	P4 [ 6 ]	▼	84	▼	✓

## LED indicator:

### Commissioning pushbutton and associate LED

The XBee modules support a set of commissioning and LED behaviors to aid in device deployment and commissioning. These include the commissioning push button definitions and associate LED behaviors. These features can be supported in hardware as shown below.

Commissioning Pushbutton and Associate LED Functionalities



**A pushbutton and an LED can be connected to module pins 20 and 15 respectively to support the commissioning pushbutton and associated LED functionalities.**