



Power

JP1 is used to select between USB or user-provided DC power sources. To use the USB connection as a power source, the shorting jumper on JP1 should be on pins 1-2 (this is the default position). To use an external DC power source, the shorting jumper must be moved to pins 2-3. The on-board LDO will convert either USB-provided 5V or user-provided external power to 3.3V.

USB Connection

5V up to 325mA

Alternate Power Connector (J6 - See I/O section)

Recommended DC Power Source
4-5VDC 62mA

Absolute Max Input Voltage

6.5VDC (Note: Higher voltage levels will result in damage to the unit).

LEDs

Three LED indicators are provided:

- TX – Flashes when the module transmits serial data
- RX – Flashes when the module receives serial data
- PWR – Lights when there is 3V power present on the board

Connectivity

JP2 & JP3 jumper installed on pins 1-2 (the default positions for those jumpers)

Normal USB operation

JP2 & JP3 jumper installed on pins 2-3

External TTL UART enabled on connector J4, USB disabled (Note: the device can still be powered via USB while in TTL mode)

The RapidConnect Development Board provides developers with a selection of convenient interfaces to a RapidConnect ZigBee module.

When connected via USB to a PC running RapidSE Desktop or RapidHA Desktop, the Development Board offers the same functionality as the RapidConnect USB stick. Additionally, the Development Board offers UART and SPI connectivity for integration directly with third-party hardware.

I/O

Refer to the Ember EM357 data sheet for complete GPIO usage details and specs.

J1 – Ember Debug and Programming InSight Port

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|------------------|--------------------|
| Pin 1 = +3.3v | Pin 6 = JCLK/SWCLK |
| Pin 2 = JTDO/SWO | Pin 7 = JTMS/SWDIO |
| Pin 3 = nJRST | Pin 8 = nReset |
| Pin 4 = JTDI | Pin 9 = PTE |
| Pin 5 = GND | Pin 10 = PTD |

J2 – mini-B USB Connector

J3 – Bootloader Mode

Installed = Bootloader mode enabled

J4 – EM357 UART (3V) Connection

- Pin 1 = PB1 (module TX)
- Pin 2 = PB2 (module RX)
- Pin 3 = GND

EM357 SPI Port (slave mode)

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|------------------------|-------------------------|
| J7 Pin 10 = PB1 (MISO) | J7 Pin 7 = PB4 (SELECT) |
| J7 Pin 11 = PB2 (MOSI) | J7 Pin 1 = GND |
| J7 Pin 8 = PB3 (CLK) | |

(Note: USB mode must be disabled before SPI can be used)

J5 – EM357 Spare GPIO

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|-------------|-------------|
| Pin 1 = PB1 | Pin 4 = PB4 |
| Pin 2 = PB2 | Pin 5 = GND |
| Pin 3 = PB0 | |

J6 – Alternate Power Connection

- Pin 1 = Vin
 - Pin 2 = GND
- See Power Section

J9 – CTS/RTS connector

- Pin 1 = CTS (USB transceiver TTL input)
- Pin 2 = RTS (USB transceiver TTL output)

J7 & J10 – EM357 GPIO

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|----------------------|----------------------|--------------------|
| J10 Pin 1 = Reserved | J7 pin 8 = PB3 | J7 pin 17 = JRST |
| J10 Pin 2 = Reserved | J7 pin 9 = PA6 | J7 pin 18 = NRESET |
| J7 Pin 1 = GND | J7 pin 10 = PB1 | J7 pin 19 = JTDI |
| J7 Pin 2 = Reserved | J7 pin 11 = PB2 | J7 pin 20 = JTMS |
| J7 pin 3 = GND | J7 pin 12 = Reserved | J7 pin 21 = JTDO |
| J7 pin 4 = Reserved | J7 pin 13 = Reserved | J7 pin 22 = JTCK |
| J7 pin 5 = PA4 | J7 pin 14 = Reserved | J7 pin 23 = GND |
| J7 pin 6 = PA5 | J7 pin 15 = Reserved | J7 pin 24 = +3.3v |
| J7 pin 7 = PB4 | J7 pin 16 = Reserved | |

Ordering Information

RapidConnect Development Boards are included in RapidSE or RapidHA Development Kits, but can also be purchased separately from MMB Networks or its distributors, using the SKU Z357PA31-DEV