

ZBR-100

LED/Button description

History:

DVers.:	Date	Author	Change	State
1.00	28.12.2015	PI-MH	Born	

The ZBR-100 units have 2 buttons (SW1/Reset and SW2/Reboot) and 2 LEDs (D1/Amber and D2/Blue).

If you press the button SW2/Reboot, you will direct reset the included XBee radio. SW1/Reset is connected to the Commissioning input of the XBee and short button presses will perform the following actions (it is necessary that D0 of the XBee is set to 1).

Button Presses	If module is joined to a network	If module is not joined to a network
1	<ul style="list-style-type: none"> Wakes an end device for 30 seconds Sends a node identification broadcast transmission 	<ul style="list-style-type: none"> Wakes an end device for 30 seconds Blinks a numeric error code on the Associate pin indicating the cause of join failure
2	<ul style="list-style-type: none"> Sends a broadcast transmission to enable joining on the coordinator and all devices in the network for 1 minute. (If joining is permanently enabled on a device (NJ = 0xFF), this action has no effect on that device.) 	<ul style="list-style-type: none"> N/A
4	<ul style="list-style-type: none"> Causes the device to leave the PAN. <ul style="list-style-type: none"> Issues ATRE to restore module parameters to default values, including ID and SC. The device attempts to join a network based on its ID and SC settings. 	<ul style="list-style-type: none"> Issues ATRE to restore module parameters to default values, including ID and SC. The device attempts to join a network based on its ID and SC settings

The blue LED D1 is connected to the RSSI output of the XBee. This output is activated when P0 is set to 1 (enabled by default). The RSSI output is a PWM output which shows the signal strength of the last received radio message. Because it is connected to one single LED you can only see that a radio message was received.

The amber LED D2 is connected to the Associate pin of the XBee. The Associate Indicator functionality is enabled by setting the D5 command to 1 (enabled by default). If enabled, the Associate pin is configured as an output and will behave as described in the following sections.

Joined Indication:

The Associate pin indicates the network status of a XBee. If the module is not joined to a network, the Associate pin is set high and the LED is on. Once the module successfully joins a network, the Associate pin blinks at a regular time interval.

The LT command defines the blink time of the Associate pin. If set to 0, the device uses the default blink time (500ms for coordinator, 250ms for routers and end devices).

Diagnostics Support:

The Associate pin works with the commissioning pushbutton to provide additional diagnostics behaviors to aid in deploying and testing a network. If the commissioning push button is pressed once, and the XBee has not joined a network, the Associate pin blinks a numeric error code to indicate the cause of join failure. The number of blinks is equal to (AI value – 0x20). For example, if AI=0x22, 2 blinks occur. If the commissioning push button is pressed once, and the device has joined a network, the device transmits a broadcast node identification packet. If the XBee receive a broadcast node identification packet of another device the Associate pin will blink rapidly for 1 second.