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10054 Pasadena Ave. Y Cupertino, CA 95014

Phone: (650) 489-4111 Y stacklighting.com

Stack Enabled ZigBee Module User Manual

Model: STACK002

FCC ID: 2AGFX-STACK002

IC ID: 20845-STACK002

1. General Description

The STACK002 is a self-contained and shielded IEEE 802.15.4 ZigBee low power module. It has been optimized for use in connected lighting and other intelligent building technologies. It has a built in antenna and a small footprint to allow for easy mounting on main host PCBs.

2. Device Features

- Frequency: 2.4835 GHz
- Typical installed indoor range: 5-7 m
- Full ZigBee ZHA/ZLL profile supported
- Size: 15.6 mm x 12.2 mm
- Operating temperature: -40 °C to 110 °C
- Supply voltage: 2.0V to 3.6 V
- Current: < 80 mA
- Interfaces
 - GPIO x 15
 - 16 bit ADC input x 3
 - UART x 2
 - SPI x 1
 - I2C x 1
 - SWD debug
- Antenna options
 - 1/4 I J-bend wire antenna
 - 1/4 I coax wire antenna

3. Pin Locations – Table 1

Pin # (see figure 1)	Net name	Description
1	GND	Ground
2	GND	Ground
3	GPIO12	PWM Output-1
4	GPIO13	PWM Output-2
5	GPIO14	SWD Clock
6	GPIO15	SWD Data



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7	GPIO16	IIC SDA
8	VIO	IO Power
9	GPIO17	IIC CLK
10	GPIO18	PWM Output-3
11	GND	Ground
12	GND	Ground
13	GND	Ground
14	GPIO21	UART2_TXD
15	GPIO22	UART2_RXD
16	GPIO23	PWM Output-4
17	GND	Ground
18	VBAT	Main Power
19	GND	Ground
20	GPIO29	Reserve
21	GPIO28	Enable
22	GND	Ground
23	RESET_N	The Reset Signal
24	GPIO4	ADCx3 or ADCx1 And Wakeup INTx2
25	GPIO5	
26	GPIO6	
27	GND	Ground

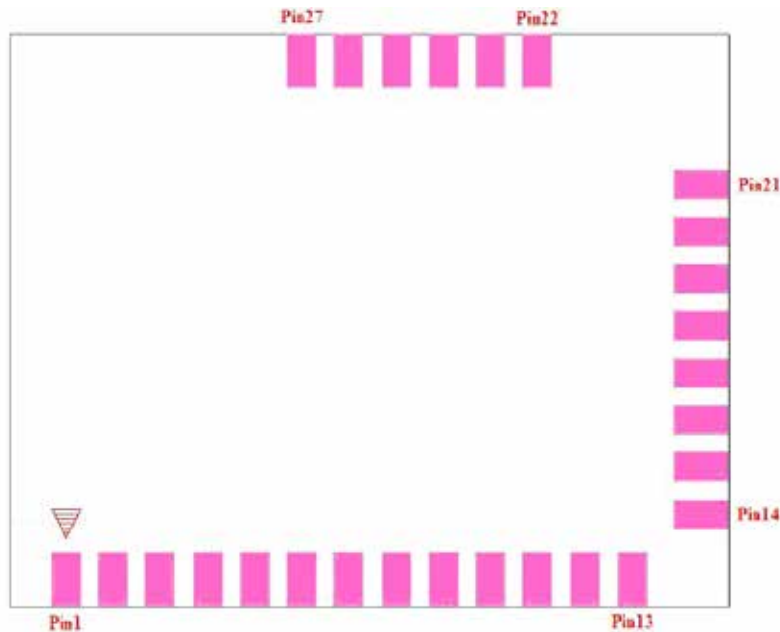


Figure 1 Pin Map



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4. OEM Integration Instructions:

This device is intended only for OEM integrators under the following conditions:

- The module must be installed in the host equipment such that 20 cm is maintained between the antenna and users
- The transmitter module may not be co-located with any other transmitter or antenna unless tested and approved by Stack Labs.
- The module shall be only used with the antenna that has been originally tested and certified with this module. Other external antennas are not supported.

As long as these 3 conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). The end-product may need Verification testing, Declaration of Conformity testing, a Permissive Class II Change or new Certification. Please involve a FCC certification specialist in order to determine what will be exactly applicable for the end-product.

5. End Product User Manual

The OEM integrator must not provide information to the end user regarding how to install or remove the Stack module. The end user manual shall include all required regulatory information/warning as shown in this manual.

5.1. FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or



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television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- § Reorient or relocate the receiving antenna.
- § Increase the separation between the equipment and receiver.
- § Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- § Consult the dealer or an experienced radio/TV technician for help.

5.2. FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

5.3. ISED Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

6. End Product Labeling

The final end product must be labeled in a visible area with the following:

- "Contains FCC ID: 2AGFX-STACK002"
- "Contains IC: 20845-STACK002"

7. Contact Information

Stack Labs, Inc.
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