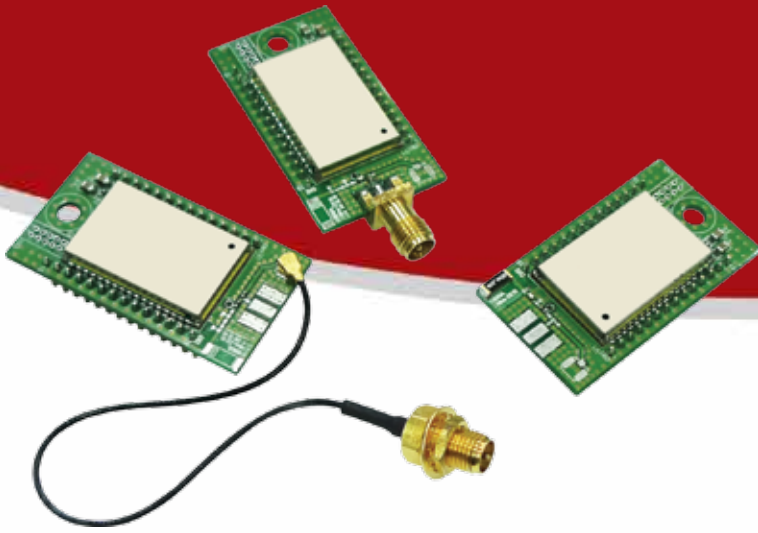# ProBee-ZE10

Features

· Fully supports ZigBee 2007 / ZigBee Pro stack
· Integrated 2.4GHz, IEEE 802.15.4-compliant coprocessor
· Various antenna options according to users' requirement, up to 1.6km (1 mile) with optional 5 dBi dipole antenna
· UART Signals Support
· 4 Analog Inputs, 13 Digital Inputs/Outputs
· Supports remote management features wirelessly such as firmware upgrade and system configuration by using modem AT command set
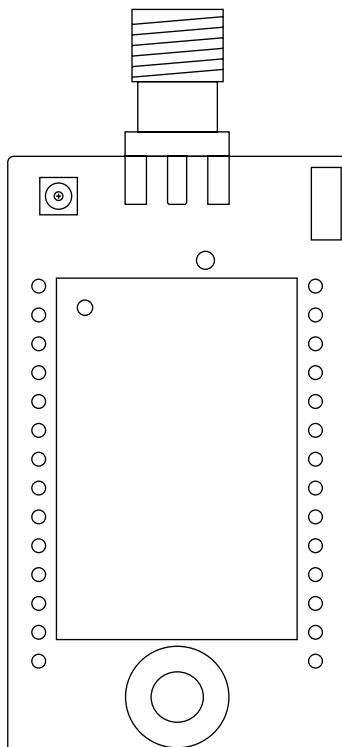· Easy to use Windows configuration tool available

The ProBee-ZE10 is an all-in-one ZigBee OEM module with integrated ZigBee core and radio/antenna circuits together with high level software library so OEM manufacturers can easily and cost effectively integrate ZigBee functionality into target products in timely manner.

The ZE10 OEM module is designed to meet specific requirements to low cost and low power wireless applications such as Home Automation, Smart Energy, Health care, Building Automation and Telecom Services by adopting the ZigBee technology. The ZE10 is based on the Ember EM250 ZigBee core and certified by ZigBee alliance based on ZigBee 2007 and ZigBee Pro stack.

Despite of its low cost and low power consumptions, the ZE10 provides high performance and robust data transfer capability for wide range of applications. The ZE10 can transfer data at up to 250 kbps and reach up to 1.6 km (1 mile) outdoor line-of-sight.

Pin Assignment

NO	Pin Assignment
1	GND
2	NC
3	GPIO_1
4	GPIO_2
5	GPIO_0
6	Factory Reset
7	GPIO_3 / ADC_0
8	GPIO_4 / ADC_1
9	H/W RESET
10	GPIO_5 / ADC_2
11	GPIO_6 / ADC_3
12	+3V3
13	NC
14	GND

Pin Assignment	NO
GND	28
NC	27
NC	26
NC	25
GPIO_7	24
GPIO_9 / RTS	23
GPIO_8 / CTS	22
UART_TXD	21
UART_RXD	20
GPIO_10 / DTR	19
GPIO_11 / DSR	18
GPIO_12	17
GND	16
GND	15

SENA

Specifications

RF Characteristics
- Based on Ember EM250
- Interface Immunity: DSSS
- Transmit Power: +20dBm E.I.R.P (max.)
- Receiver Sensitivity: -102dBm @1% BER
- RF Data Rate: 250 kbps
- Working Distance: Up to 1.6km using 5 dBi dipole antenna
- Various Antenna/Connector Options: Dipole 1/3/5dBi, U.FL, Chip
- Channels: 14
- Channel Spacing: 5 MHz

ZigBee Network
- Network topology: Mesh
- Stack profile: ZigBee 2007 / ZigBee Pro
- Network addressing: Channel, PAN ID, EPID

ZigBee Data Transmission
- Unicasting
- Multicasting
- Broadcasting
- Many-to-One Communication
- Enhanced Reliability based on data retransmission

ZigBee Security
- Network Layer security with one Trust Center for efficient operation
- 128 bit AES encryption algorithms
- Strong, NIST-approved security

Interfaces
- Serial Data Interface: 1 UART
- Serial Data Rate: 1 Mbps
- ADC: 4 Inputs
- 13 Digital Inputs/Outputs

Device Management and Configuration
- Configuration Method: AT Commands, ProBee Manager
- Remote Configuration
- Remote Firmware Upgrade using both Cloning and Pass-thru methods
- Supports rich neighborhood device scanning and monitoring using AT commands

Power Requirements
- Supply Voltage: 5V ~ 12V DC
- TX Current: 190mA @3.3V (max.)
- RX Current: 45mA @3.3V (max.)
- Sleep Current: ≤ 2uA

Physical Properties and Others
- Pin: 2.0mm Pin Header 14 x 2
- Size: 51.7 mm x 23.0 mm x 11.15 mm (2.03 in x 0.90 in x 0.43 in)
- Operating Temperature: -40˚C to 85˚C

Certification: FCC, CE, TELEC, KCC

Warranty: 3-year limited warranty

Ordering Information

Part number	Description
ZE10C-00	ProBee ZE10 ZigBee OEM Module w/ Chip Antenna
ZE10U-00	ProBee ZE10 ZigBee OEM Module w/ U.FL Connector
ZE10S-00	ProBee ZE10 ZigBee OEM Module w/ RPSMA Connector
ZE10-SK01	ProBee ZE10 Starter Kit

Optional Accessories

Part number	Description
SAT-G01R	1 dBi Stub Antenna, RP-SMA Plug, Right-hand Thread
DAT-G01R	3 dBi Dipole Antenna, RP-SMA Plug, Right-hand Thread
DAT5-G01R	5 dBi Dipole Antenna, RP-SMA Plug, Right-hand Thread
SEC-G01R	15cm RPSMA Antenna Extension Cable, Right-Hand Thread
UEC-G01R	12cm U.FL to RPSMA Cable, Right-Hand Thread

Applications

· Advanced Metering Infrastructure
· Home Area Networks (HAN)
· Neighborhood Area Networks (NAN)
· Home Automation
· Advanced Lighting, Entertainment, and Climate Control Systems
· Service-based Monitoring, Security, and Awareness Systems
· Commercial Building Automation
· Climate & Lighting Control Systems
· Industrial and Domestic Applications

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