ProBee-ZE20S

Features

- Supports ZigBee 2007/ ZigBee Pro Stack
- Integrated 2.4GHz, IEEE 802.15.4-2003 compliant coprocessor
- Short range ZigBee OEM SMD/DIP module
- Various antenna options according to users Requirement upto 300m (0.19 miles) with optional 5dBi dipole antenna
- UART Signals Support
- 6 Analog Inputs, 17 Digital Inputs/Outputs
- Supports remote management features wirelessly such as firmware upgrade and system configuration by using modem AT command set
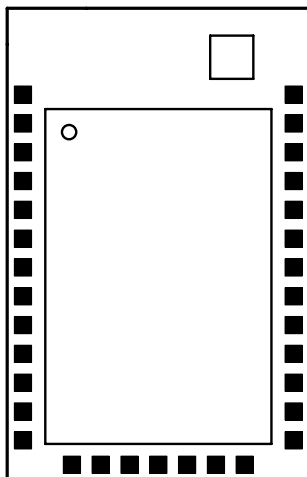- Easy to use Windows configuration tool available

The ProBee-ZE20S is short range ZigBee OEM SMD/ DIP module with integrated ZigBee core and radio/antenna circuits together with high level software interface so that OEM manufacturers can easily and cost effectively integrate ZigBee functionality into their target products in timely manner.

The ZE20S OEM module is designed to meet specific requirements of 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 ZE20S is based on the Ember EM357 ZigBee core certified by the ZigBee alliance based on ZigBee 2007 and ZigBee Pro stack.

Despite of its cost effective and low power consumptions, the ZE20S provides high performance and robust data transfer capability for wide range of applications. The ZE20S can transfer data at up to 250 kbps and reach up to 300m (0.19 miles) outdoor line-ofsight

Pin Assignment

NO	Pin Assignment
1	GND
2	PC_5/FACTORY_RST
3	PC_6/GPIO0
4	PC_7/DTR/GPIO1
5	PA_7/DSR/GPIO2
6	PB_3/CTS/GPIO3
7	PB_4/RTS/GPIO4
8	PA_0/MOSI/GPIO5
9	PA_1/MISO/GPIO6
10	PA_2/SCLK/GPIO7
11	PA_3/nSSEL/GPIO8
12	VCC
13	GND

Pin Assignment	NO
GND	33
PB_5/ADC0/GPIO9	32
PB_6/ADC1/GPIO10	31
PB_7/ADC2/GPIO11	30
PC_1/ADC3/GPIO12	29
PA_4/ADC4/GPIO13	28
PA_5/ADC5/GPIO14	27
PB_1/TXD	26
PB_2/RXD	25
PB_0/GPIO15	24
PA_6/GPIO16	23
/RESET	22
GND	21

NO	Pin Assignment
14	VCC
15	JTCK
16	PC_2/JTDO
17	PC_3/JTDI
18	PC_4/JTMS
19	PC_0/JRST
20	GND

ProBee-ZE20S

Specifications

RF Characteristics
- Based on Ember EM357
- Interface Immunity: DSSS
- Transmit Power: +8dBm (Max.)
- Receiver Sensitivity: Typ. -100dBm/ Max. -102dBm
- RF Data Rate: 250 kbps
- Working Distance: Up to 150m with default antenna
- Various Antenna/Connector Options: Dipole 1/3/5dBi, U.FL, RPSMA, Chip
- Channels: 16
- Channel Spacing: 5 MHz

ZigBee Network
- Network topology: Mesh, Star and Tree
- 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: 6 Inputs
- 17 Digital Inputs/Outputs

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

Power Requirements
- Supply Voltage: 2.1~3.6 VDC
- TX Current: 33mA/Max.45mA (Boost)
- RX Current: 28mA/ Max.31mA (Boost)
- Sleep Current: <1uA@25˚C

Physical Properties and Others
- SMD type: 33 pin, half-thought hole, 2mn pitch
- DIP type: 26 pin, 2 mm pitch-pin Header, 13x2
- SMD type Size: 31.6x18.6
- DIP type Size: 32.8x21.0
- Operating Temperature: -40˚C to 85˚C

Certification: FCC, CE, TELEC, KCC

Warranty: 3-year limited warranty

Ordering Information

Part number	Description
ZE20SSC-00	ProBee ZE20S ZigBee SMD type w/ chip antenna
ZE20SSU-00	ProBee ZE20S ZigBee SMD type w/ U.FL connector
ZE20SDC-00	ProBee ZE20S ZigBee DIP type w/ Chip antenna
ZE20SDU-00	ProBee ZE20S ZigBee DIP type w/ U.FL connector
ZE20SDS-00	ProBee ZE20S ZigBee DIP type w/ RPSMA connector
ZE20-SK01	ProBee ZE20S Starter Kit

Optional Accessories

Part number	Description
SAT-G01R	1dBi Stub Antenna, RPSMA Plug, Right-hand thread
DAT-G01R	3dBi Dipole Antenna, RPSMA Plug, Right-hand Thread
DAT5-G01R	5dBi Dipole Antenna, RPSMA 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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