

## U-Force Antenna Module 2.4GHz Transceiver



### General Description

The U-Force module is an IEEE 802.15.4 ZigBee™ compliant solution that satisfies the requirements of low-cost, low-power wireless sensor networks. Its small form factor saves RF tuning work and valuable board space. The modules are easy-to-use, require minimal power and provide reliable delivery of critical data between devices.

The U-Force module operates within the ISM 2.4 to 2.5 GHz frequency band. The system integrates UBEC's UZ2400 and necessary components such as crystal, inductors and capacitors.

The purpose of the U-Force module is to provide our customers a flexible and reliable module for their application.

UZ2400, 802.15.4 compliant transceiver, features a maximum 5 MHz serial interface SPI bus for control and data transfer. It is a SPI interface slave device. SPI interface consists of 4-wired bus: SCLK, SI, SO, and SEN.

Specifically, it provides access to various storage units: MAC/BB/RF control/status registers, TXFIFOs, RXFIFOs and security key table.

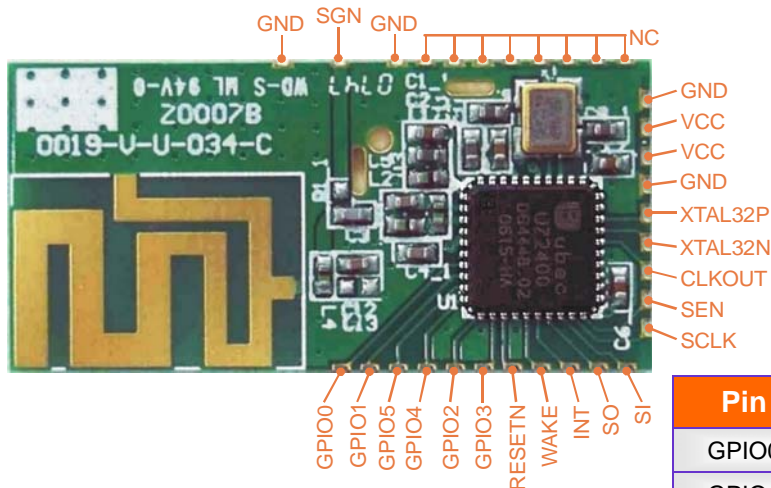
### Features

- ◆ 2.4GHz IEEE 802.15.4 and ZigBee™ Compliant
- ◆ 2.4 to 3.6V Operation
- ◆ Sleep Current: 2uA
- ◆ > 100m Range (Environment dependent)
- ◆ PCB Antenna
- ◆ Receiver Sensitivity: -95dBm
- ◆ TX Power: 0dBm
- ◆ TX Current: 25mA
- ◆ RX Current: 20mA
- ◆ Data rate: 250kbps/625kbps
- ◆ SPI interface
- ◆ Additional GSG (ground-signal-ground) interfaces provided
- ◆ Size: 28.5mmx14mm



**PCB of U-Force Module**

# U-Force Module Pin Names and Location Map



Pin	Type	Description
GPIO0	DIO	General purpose digital I/O
GPIO1	DIO	General purpose digital I/O
GPIO5	DIO	General purpose digital I/O
GPIO4	DIO	General purpose digital I/O
GPIO2	DIO	General purpose digital I/O
GPIO3	DIO	General purpose digital I/O
RESETN	DI	Global hardware reset pin, active low
WAKE	DI	External wake up trigger, active high / low can be programmable
INT	DO	Interrupt pin to micro-processor : Level trigger, Hi/low programmable
SO	DIO	Serial interface data output from UZ2400
SI	DIO	Serial interface data input to UZ2400
SCLK	DI	Serial interface clock
SEN	DI	Serial interface enable
CLKOUT	DIO	20/10/5/2.5 MHz Clock output
XTAL32N	AI	32 kHz Crystal input (-) for internal RTC
XTAL32P	AI	32 kHz Crystal input (+) for internal RTC
GND	Ground	Ground
VCC	Power	2.4V to 3.6V
GND	Ground	Optional SMA Connector for Antenna Signal
SGN	AIO	
GND	Ground	

**Certified according to EN 300 328 V1.7.1**

