

# 2.4GHz ZigBee® wireless transceiver module

## 「ZB24TM-Z2750」

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The ZB24TM-Z2750 embedded RF modules provide wireless connectivity using the ZigBee PRO Feature Set.



### Product Photo

#### < Features >

- Integrated by MCU, RF circuits, antenna
- Communicated by the functions of device detect and data transmission
- ZigBee mesh networking protocol
- Controlled by UART I/F
- Low power sleep mode only End Device
- DC2.0-3.6V supply voltage
- FCC certification, Japan Radio Law

## <Specifications>

Product name	ZB24TM-Z2750
Carrier frequency	2400MHz~2483.5MHz (16 channel)
Communication protocol	ZigBee2007® protocol using the ZigBee PRO Feature Set
Modulation	DS-SS (Direct Sequence Spectrum Spread)
Wireless bit rate	Maximum 250Kbps (Subject to the communication environment)
Transmit Power	Maximum 3mW (At the feeding point of the antenna)
Effective range	About 200m (Reference value)
Interface	•UART serial communication Data length: 8bit Baud rate : 115.2kbps Parity: no parity Stop: 1stop bit Flow control: hardware (RTS/CTS)
Supply Voltage	•2.0 - 3.6VDC
Current Consumption	•TX: Typ. 34mA (2.5dBm), Typ. 29mA (1dBm) •RX: Typ. 24mA •Sleep Mode : Typ. 1uA (End Device only) (power-supply voltage 3.0VDC)
Operating conditions	•Operating temperature range:-10°C~+75°C •Operating humidity range:85%RH or less (No do be dewy)
Weight	Aprox. 2g
Dimensions	24mm×16.5mm×3.9mm (D×W×H)
Restrictions	RoHS-Compliant (Pb free)
Reguration	FCC certification, Japan Radio Law

## <FCC 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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modifications not expressly approved by NEC Engineering, Ltd. could void the user's authority to operate the equipment.

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 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.

### Radiofrequency radiation exposure Information:

The radiated output power of the device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

## <output I/F connector>

### Module

connector type : Stacking connector 20pin 0.5mm pitch  
product name : JST 20R-JMCS-G-TF(NSA) Receptacle  
Signal level : CMOS

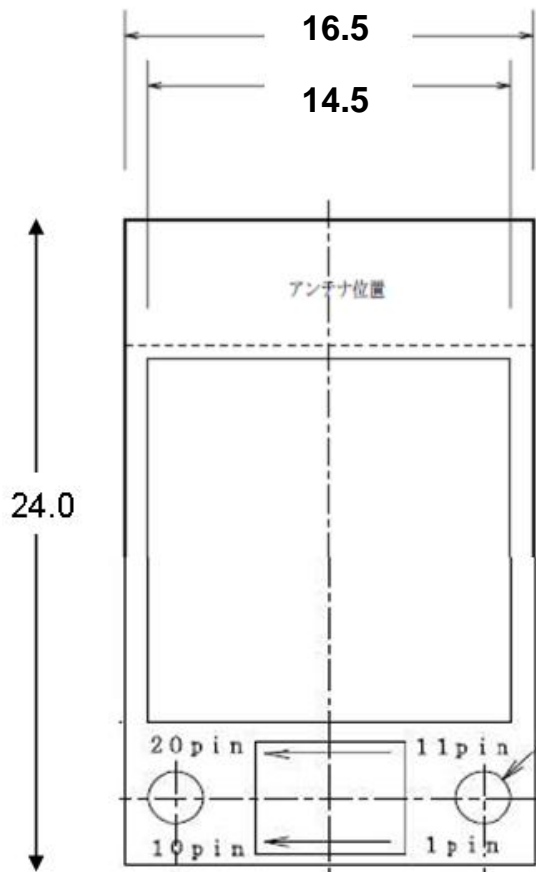
### Connecting Device

Product name : JST 20P3.0-JMCS-G-TF(N) Plug(Recommended)  
Connector type : Stacking connector 20pin 0.5mm pitch  
Stacking height : Stacking height 3mm

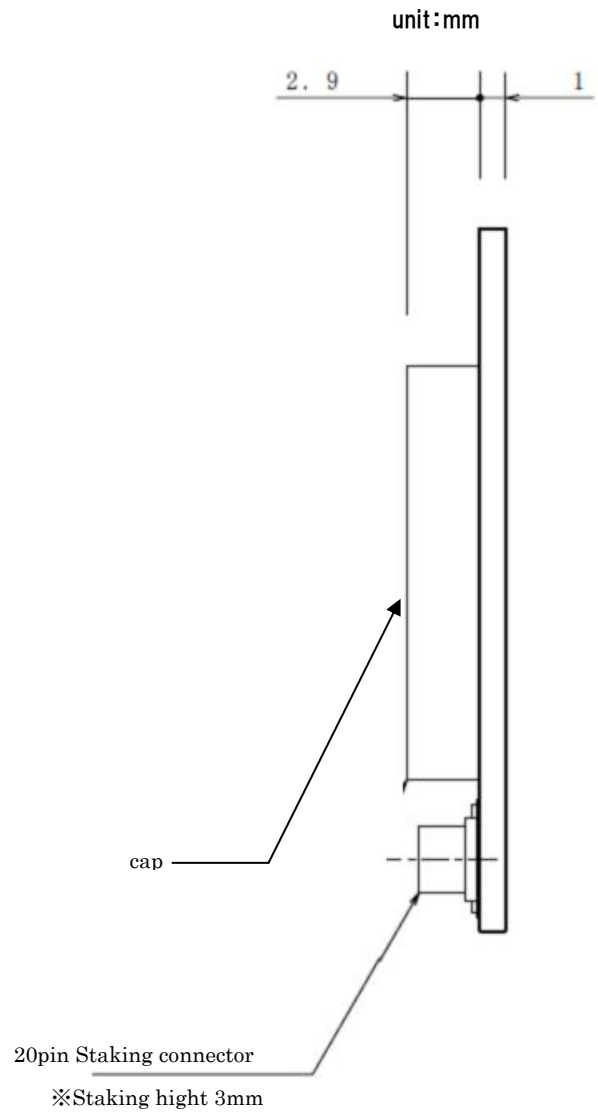
### -Module pin definitions

Pin No.	Pin name	Type	Definition	State of reset	Detail
1	VDD	power	Power	—	3.0VDC(Recommended power supply voltage)
2	GND	GND	GND	—	
3	TxD	OUT	UART transmitted data	HiZ	
4	RxD	IN	UART received data	HiZ	
5	WAKEUP	IN	Reserved	Hi	Pull-up
6	RESET	IN	Reserved	Hi	Pull-up
7	SSN	IN	Reserved	—	
8	SCK	IN/OUT	Reserved	—	
9	MOSI	IN/OUT	LED4	—	Internal pull-up
10	MISO	IN/OUT	LED3	—	Internal pull-up
11	VDD	power	Power	—	3.0VDC(Recommend power supply voltage)
12	GND	GND	GND	—	
13	GND	GND	GND	—	
14	CTS	IN	Clear to send	—	
15	RTS	OUT	Ready to send/LED1	—	Internal pull-up
16	DBG_DC	IN/OUT	Reserved	—	
17	DBG_DD	IN/OUT	Reserved	—	
18	FCS	IN/OUT	Reserved	—	
19	MODE	OUT	LED2	Hi	Pull-up
20	GND	GND	GND	—	

## <Dimensions>



Top view



Side view

## Contact

### NEC Engineering, Ltd.

#### General inquiries

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