

# **ZigBee Module**

## **Preliminary Product Specification**

**GFZM-T532x**

**Zigbee/RF4CE Wireless Module for 2.4 GHz IEEE 802.15.4 / ZigBee Pro Stack**



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**GFZM-T532x**

## **Revision History :**

<b>Date</b>	<b>Reason of Change</b>	<b>Prepare by</b>	<b>Approve by</b>
Aug. 05, 2009	Initial Release	Owen Tang	Sam Jen
Dec. 29, 2009	Layout Guide Revised	Owen Tang	Sam Jen



**GFZM-T532x**

## **Features :**

- Suitable for home/building automation, industrial control and monitoring, low power wireless sensor networks, PC peripherals, set-top boxes and remote controls, consumer Electronic.
- High performance and low power consumption.
- Wide supply voltage range (2.0V – 3.6V).
- Excellent receiver sensitivity and robustness to interferers.
- RoHS compliant.

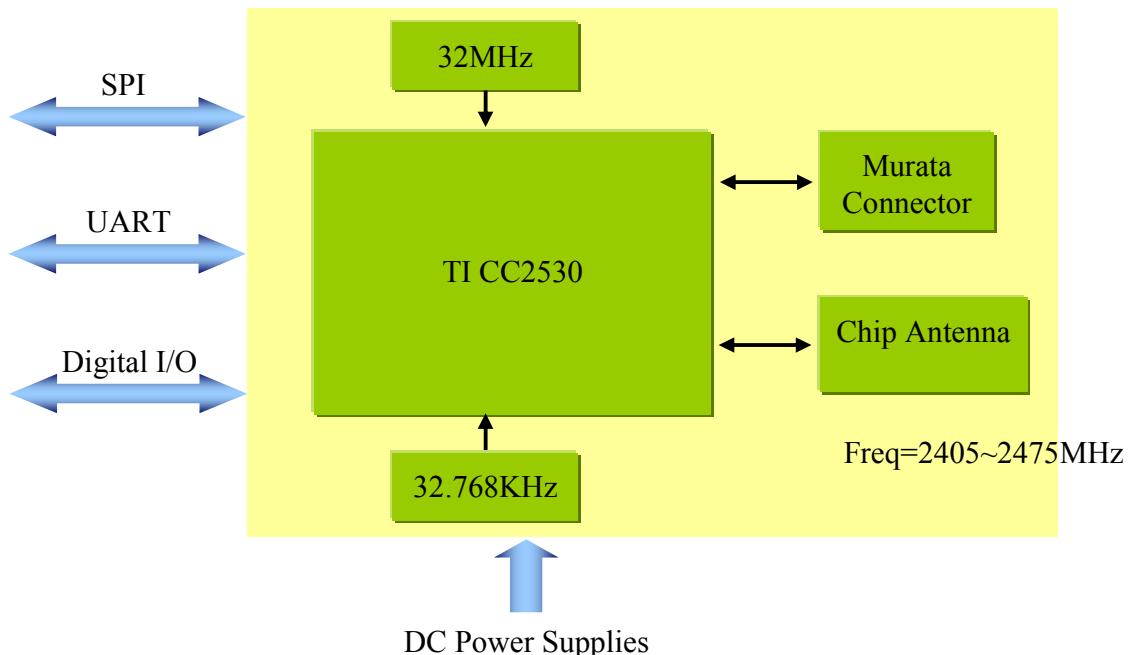


**GFZM-T532x**

## **Applications :**

- Low Power Wireless Sensor Networks.
- 2.4GHz IEEE802.15.4 systems.
- Home and commercial building automation.
- RF4CE Remote Control Systems.
- ZigBee system (256KB Flash).
- Lighting Systems.
- Industrial control and monitoring system.
- Consumer Electronics.
- Health Care.

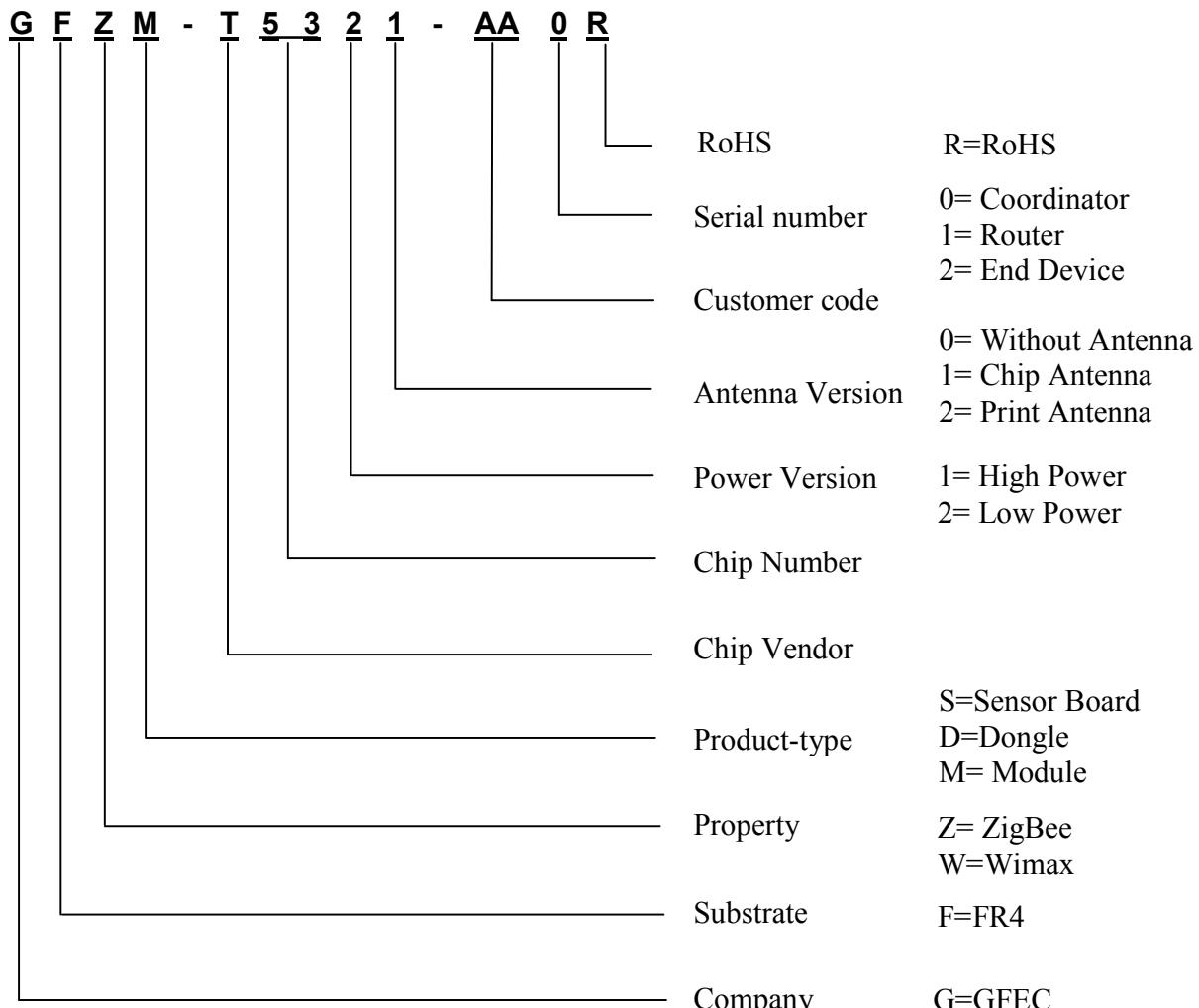
## Block Diagram :





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## ZigBee Module P/N Definition :





**GFZM-T532x**

## **General Specification :**

<b>Interface</b>	<b>Description</b>
Frequency	2.405GHz~2.475GHz
Modulation Type	O-QPSK
Transmit power (Low Power)	2.0dBm
Receiver sensitivity	-95dBm (Nominal)
Data Rate	250Kbps
Antenna Impedance	50 ohm
Package Size (Low Power)	22*16*3.3 (mm)



**GFZM-T532x**

## Interface :

Interface	Description
Antenna	External Antenna 50Ω
UART Interface	TX, RX, RTS, CTS
SPI Interface	Synchronous Serial Interface
PIO Interface	19 terminals



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## **Rating :**

Parameter	Min	Max	Unit
Operate Ambient Temperature Range	-40	+125	°C
Supply Voltage	+2.0	+3.6	V
Storage Temperature Range	-40	+125	°C

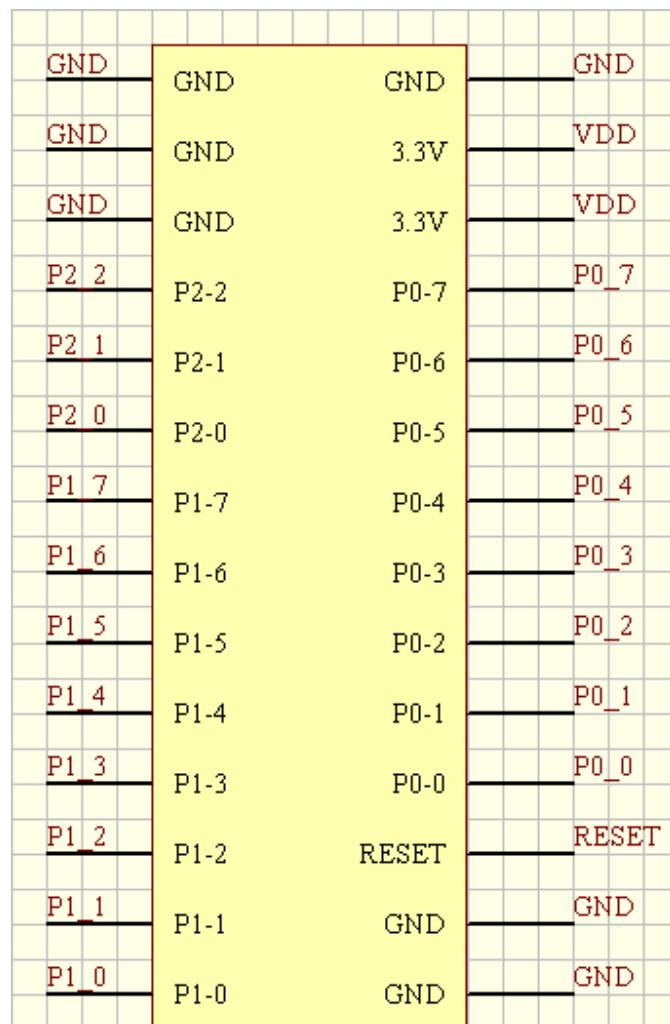


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## RF Characteristics :

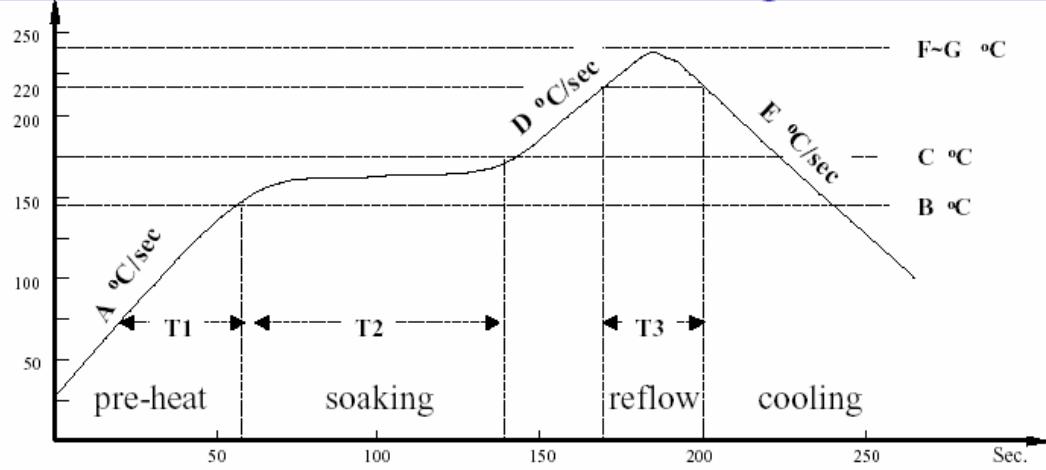
Parameter	Min.	Typ.	Max.	Unit
Receiver Sensitivity		-97		dBm
Frequency Error Tolerance	-50		+50	KHz
Output Power (Low Power)		2.0		dBm
EVM		30		%

## Application Circuit :



## Recommended Reflow Profile :

### Reflow Profile Used at The Evaluation (Sn-3.0Ag-0.5Cu) -PF606-P



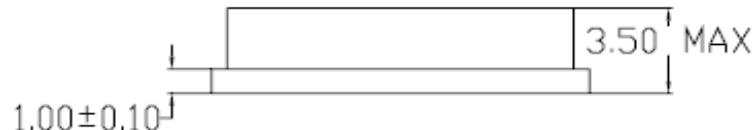
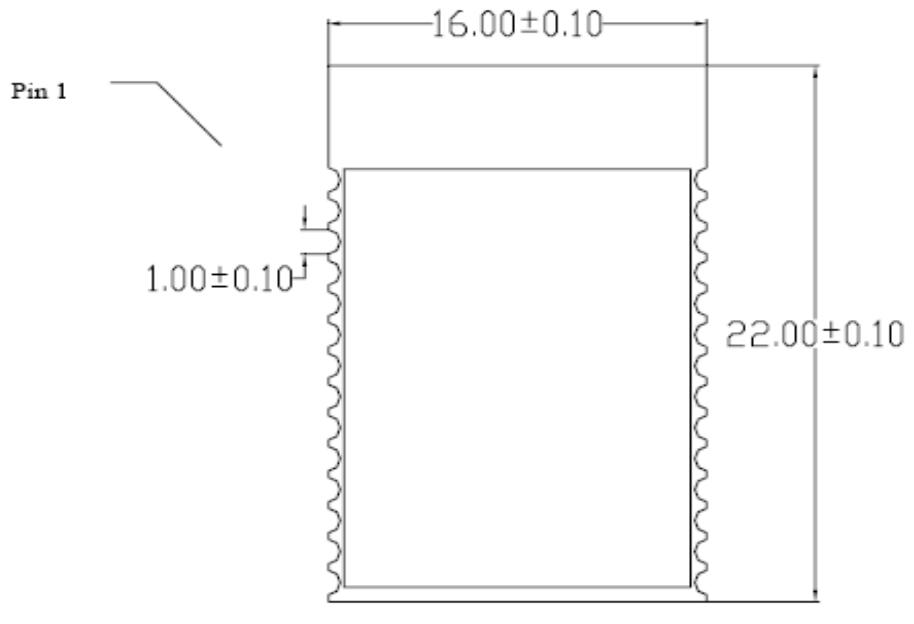
A: ramp up rate during preheat:	1.5~3.0 °C/sec
B-C: soaking temperature:	170± 15 °C
D: ramp up rate during reflow:	1.2~2.3 °C/sec
E: ramp down rate during cooling:	1.7~2.2 °C/sec
F-G: peak temperature:	240± 10 °C
T1: preheat time:	65± 15 sec
T2: dwell time during soaking:	75± 15 sec
T3: time above 220 °C :	30± 10 sec



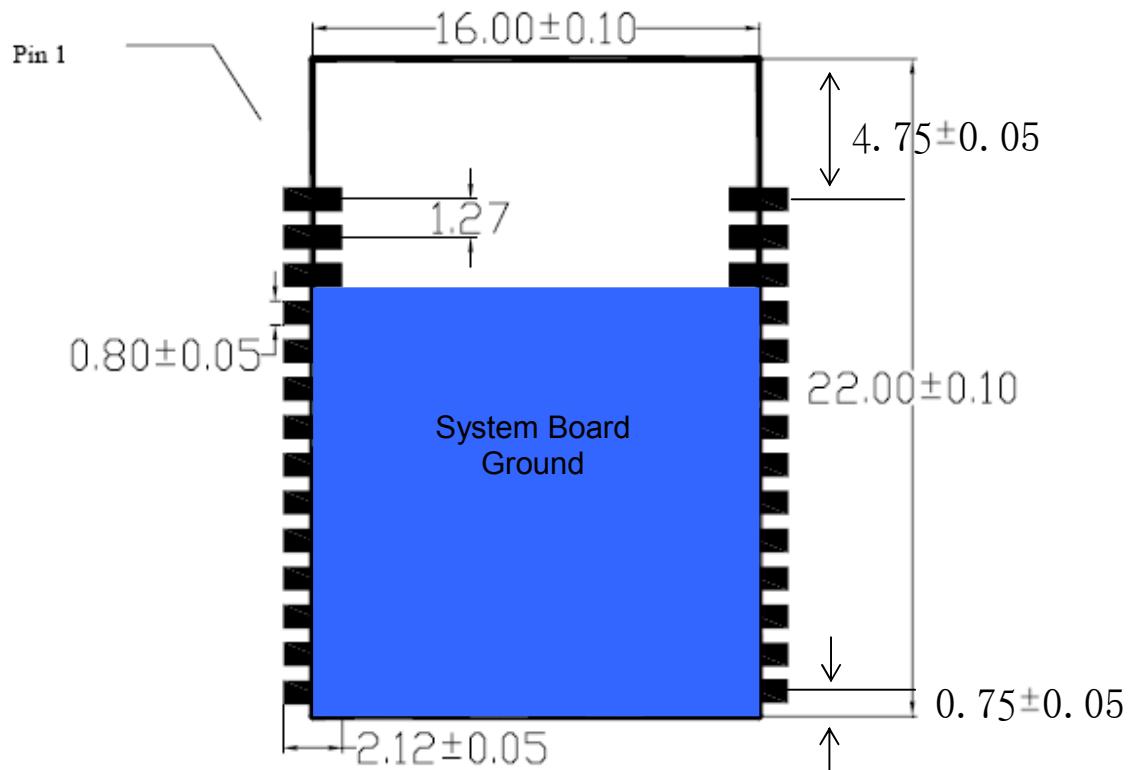
**GFZM-T532x**

## Pin Assignment :

Pin No.	Name	Pin Type	Description
1	GND	GND	Ground
2	GND	GND	Ground
3	GND	GND	Ground
4	P2_2	Digital I/O	Port 2.2
5	P2_1	Digital I/O	Port 2.1
6	P2_0	Digital I/O	Port 2.0
7	P1_7	Digital I/O	Port 1.7
8	P1_6	Digital I/O	Port 1.6
9	P1_5	Digital I/O	Port 1.5
10	P1_4	Digital I/O	Port 1.4
11	P1_3	Digital I/O	Port 1.3
12	P1_2	Digital I/O	Port 1.2
13	P1_1	Digital I/O	Port 1.1
14	P1_0	Digital I/O	Port 1.0
15	GND	GND	Ground
16	GND	GND	Ground
17	RESET	Digital Input	Reset, Active Low
18	P0_0	Analog / Digital I/O	Port 0.0
19	P0_1	Analog / Digital I/O	Port 0.1
20	P0_2	Analog / Digital I/O	Port 0.2
21	P0_3	Analog / Digital I/O	Port 0.3
22	P0_4	Analog / Digital I/O	Port 0.4
23	P0_5	Analog / Digital I/O	Port 0.5
24	P0_6	Analog / Digital I/O	Port 0.6
25	P0_7	Analog / Digital I/O	Port 0.7
26	3.3V	POWER	2.0V~3.6V Power Supply
27	3.3V	POWER	2.0V~3.6V Power Supply
28	GND	GND	Ground

**Dimensions (mm) :**

## Layout guide (mm) :





**GFZM-T532x**

## **Contact information :**

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## **Federal Communication Commission Interference Statement**

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 of the following measures:

- 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.