

ZigBee Module

Preliminary Product Specification

GFZM-T532x

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



GFZM-T532x

Table of Contents

Revision History.....	3
Features.....	4
Applications.....	5
Block Diagram.....	6
ZigBee Module P/N Definition	7
General Specification.....	8
Interface	9
Rating.....	10
RF Characteristics	11
Application Circuit.....	12
Recommended Reflow Profile.....	13
Pin Assignment.....	14
Dimensions.....	15
Layout guide.....	16
Contact Window.....	17



GFZM-T532x

Revision History :

Date	Reason of Change	Prepare by	Approve by
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

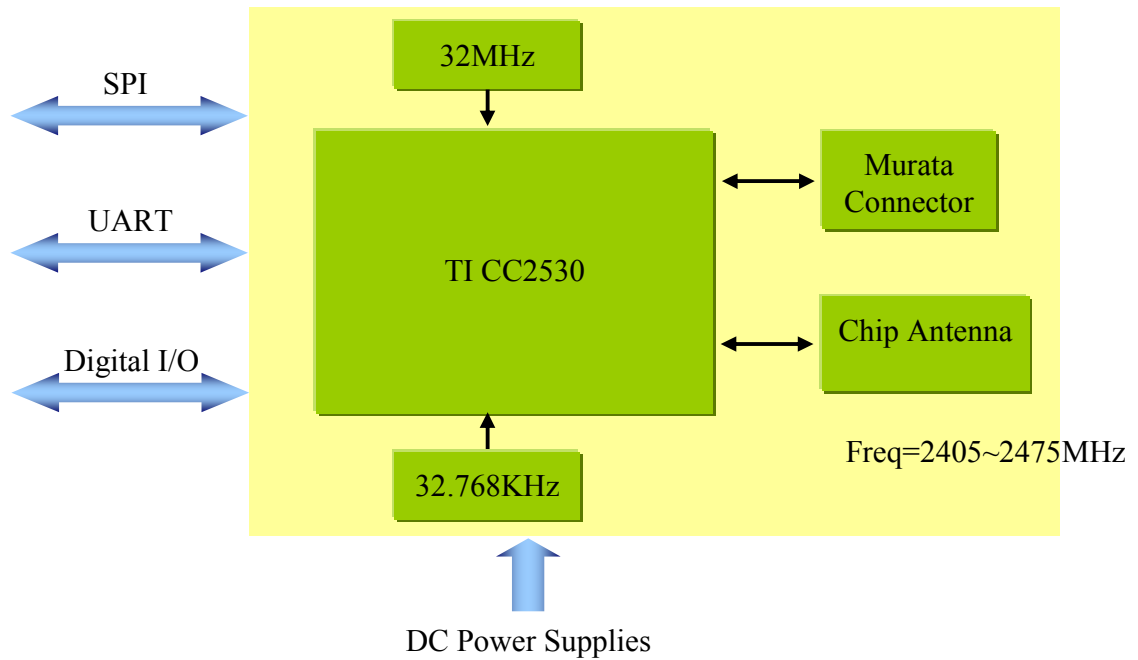
Applications :

- + 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.



GFZM-T532x

Block Diagram :





The diagram illustrates the hierarchical structure of a product code. The code is broken down into segments, each representing a specific component or specification:

- G**: Company (G=GFEC)
- F**: Substrate (F=FR4)
- Z**: Property (Z= ZigBee, W=Wimax)
- M**: Product-type (M= Module, D=Dongle, S=Sensor Board)
- : Separator
- T**: Chip Vendor
- 5**: Chip Number
- 3**: Power Version (2= Low Power, 1= High Power)
- 2**: Antenna Version (2= Print Antenna, 1= Chip Antenna, 0= Without Antenna)
- 1**: Customer code
- : Separator
- AA**: Serial number
- 0**: RoHS (R=RoHS)
- R**: End Device (2= End Device, 1= Router, 0= Coordinator)



GFZM-T532x

General Specification :

Interface	Description
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



GFZM-T532x

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



GFZM-T532x

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		%



GFZM-T532x

Application Circuit :

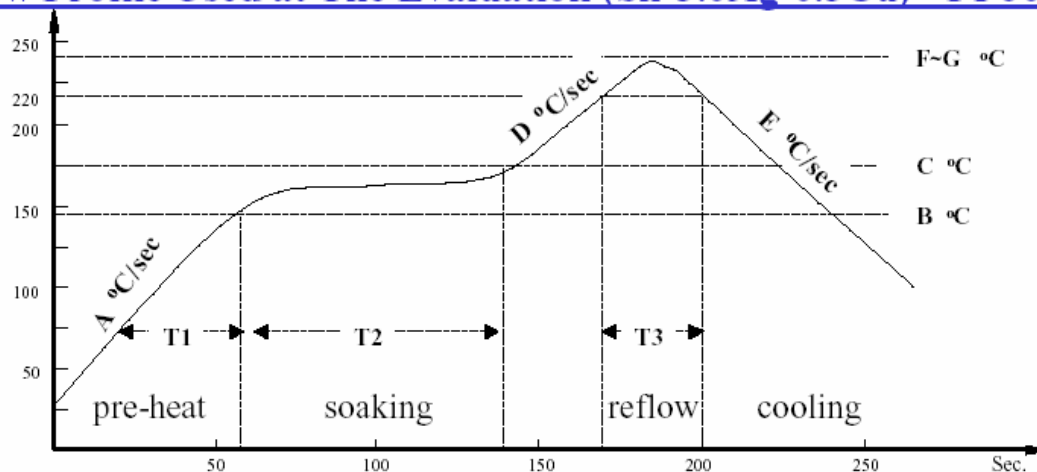
GND	GND	GND	GND
GND	GND	3.3V	VDD
GND	GND	3.3V	VDD
P2_2	P2-2	P0-7	P0_7
P2_1	P2-1	P0-6	P0_6
P2_0	P2-0	P0-5	P0_5
P1_7	P1-7	P0-4	P0_4
P1_6	P1-6	P0-3	P0_3
P1_5	P1-5	P0-2	P0_2
P1_4	P1-4	P0-1	P0_1
P1_3	P1-3	P0-0	P0_0
P1_2	P1-2	RESET	RESET
P1_1	P1-1	GND	GND
P1_0	P1-0	GND	GND



GFZM-T532x

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

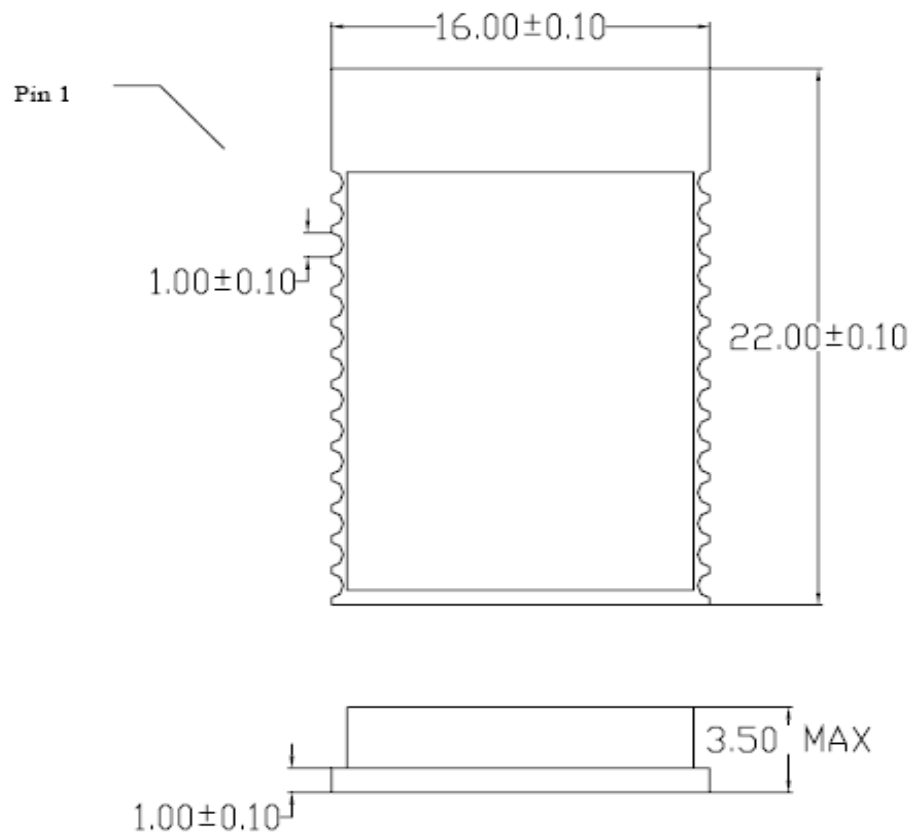
Pin Assignment :

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



GFZM-T532x

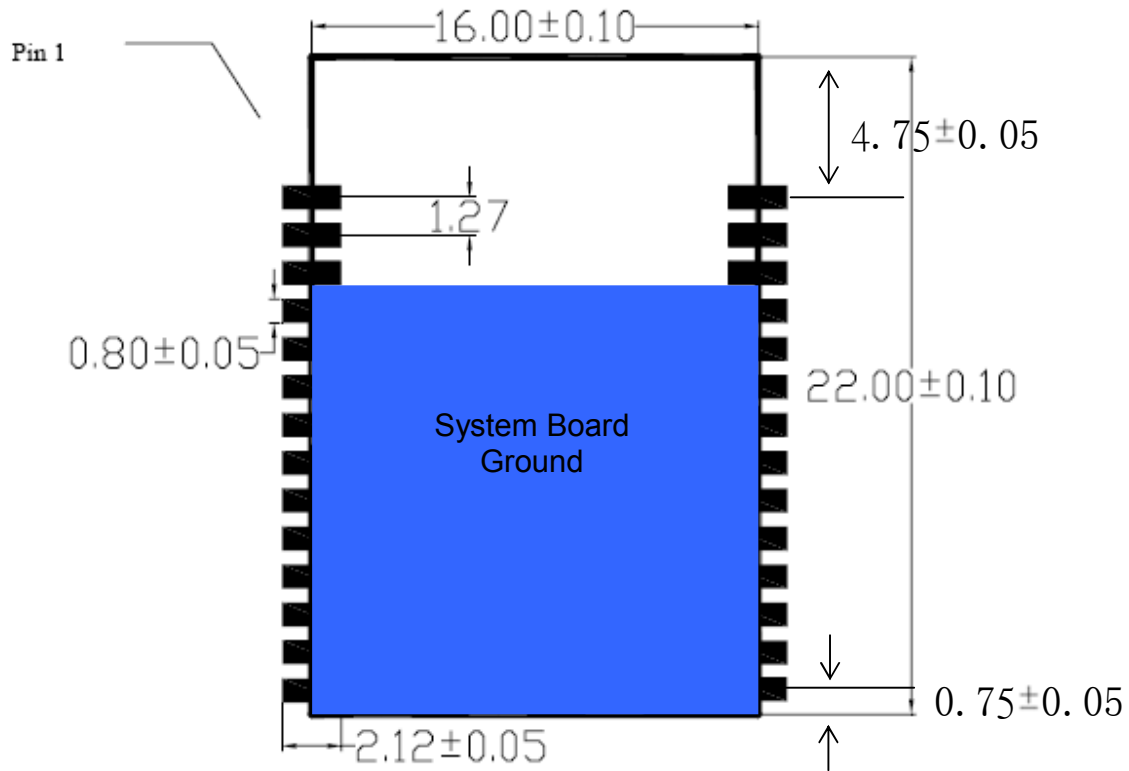
Dimensions (mm) :





GFZM-T532x

Layout guide (mm) :





GFZM-T532x

Contact information :

Website : <http://www.gfec.com.tw>

Email : owen.tang@gfec.com.tw

TEL : [+886-3-578-6766](tel:+886-3-578-6766) ext.230

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.