

ZigBee Module

Product Specification

GFZM-T5310 (CC2530, CC2591)

Zigbee Wireless Module for 2.4 GHz IEEE 802.15.4 / ZigBee Stack

High power version

GFZM-T5310

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Revision History :

Date	Reason of Change	Prepare by	Approve by
Jun. 19, 2009	Initial Release	Owen Tang	Sam Jen
Mar. 13, 2009	Specification Revised	Owen Tang	Sam Jen
Apr. 08, 2009	Added High Power Module P/N	Owen Tang	Sam Jen
May. 12, 2009	Revised the Pin Assignment	Owen Tang	Sam Jen
July 03, 2009	Revised the Layout Guide	Owen Tang	Sam Jen
Feb. 14, 2010	Revised the Pin Assignment	Owen Tang	Sam Jen
23, Aug,2011	IO voltage level, Tx,Rx, Reset	Henry Hung	Bob Hsia

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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.
- ✚ CC2530 based 256KB flash.

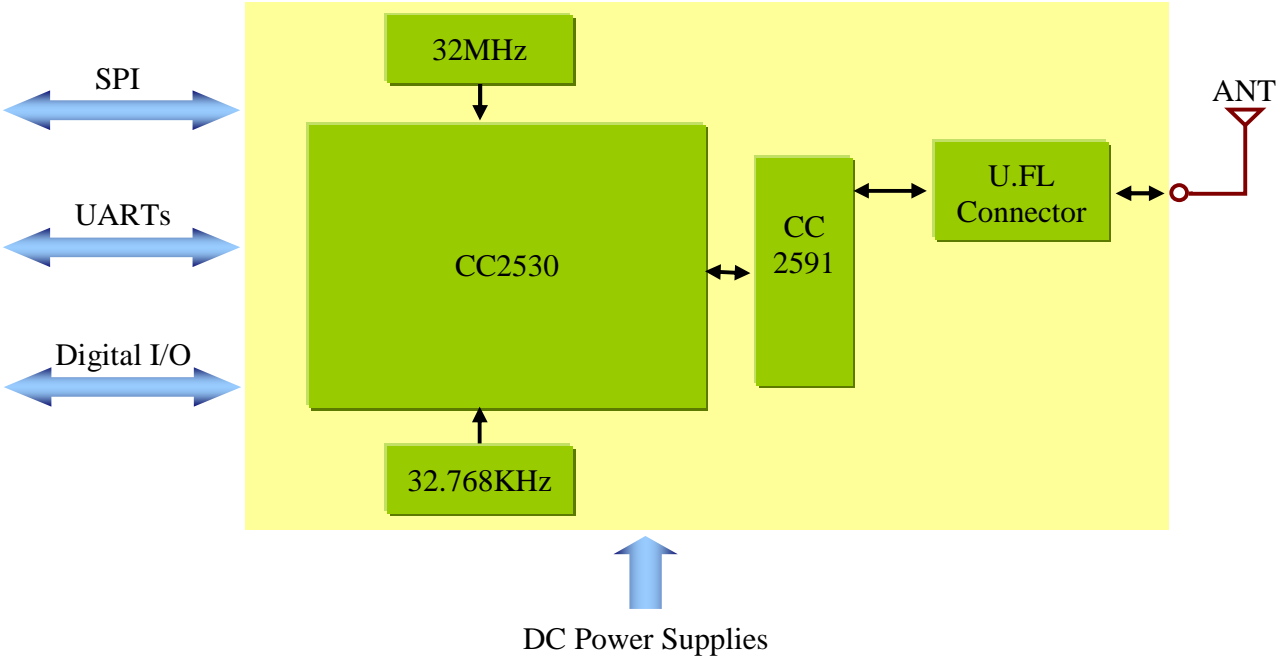
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Applications :

- + Wireless sensor networks, particularly IEEE802.15.4/ ZigBee systems.
- + Home and commercial building automation.
- + ZigBee system.
- + PC peripherals.
- + Industrial control and monitoring system.
- + Set-top boxes and remote controls.
- + Consumer Electronics

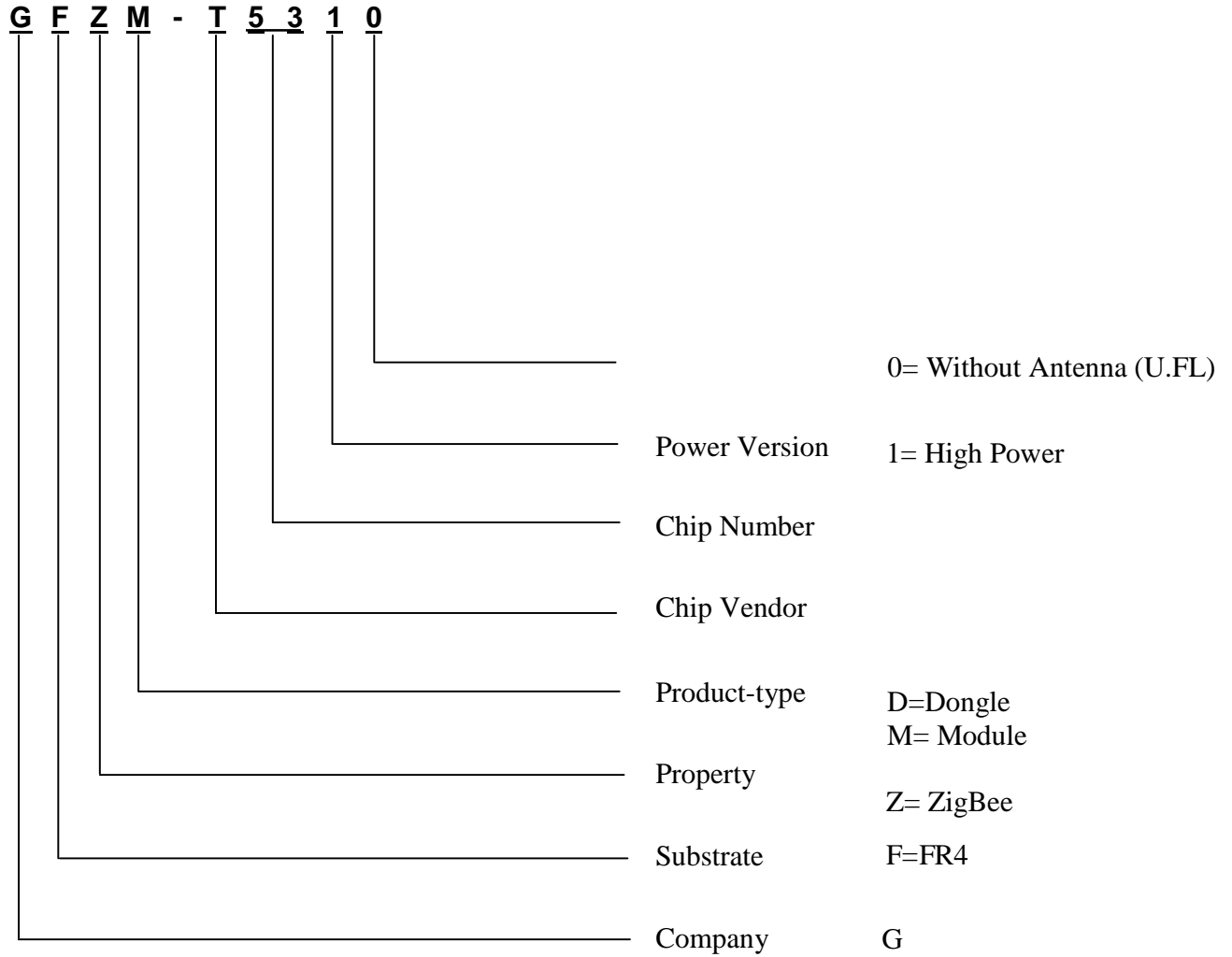
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Block Diagram :



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ZigBee Module P/N Definition :



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General Specification :

Interface	Description
Frequency	2.4GHz~2.5GHz
Modulation Type	O-QPSK
Transmit power (High Power)	18dBm
Receiver sensitivity	-95dBm (Nominal)
Data Rate	250Kbps
Antenna Impedance	50 ohm
Package Size (High Power)	30.3*16.2*4 (mm)

Interface :

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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	-20	+85	°C
Supply Voltage	+2.0	+3.6	V
Storage Temperature Range	-40	+125	°C
GPIO voltage		V _{cc} +0.3	V

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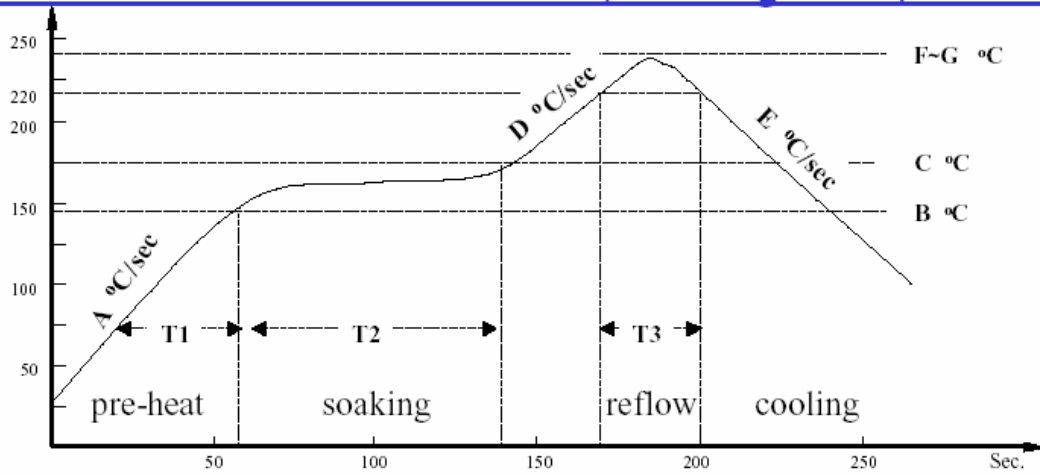
RF Characteristics :

Parameter	Min.	Typ.	Max.	Unit
Receiver Sensitivity		-95		dBm
Frequency Error Tolerance	-50		+50	KHz
Output Power		+18		dBm
EVM		30		%

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Recommended Reflow Profile :

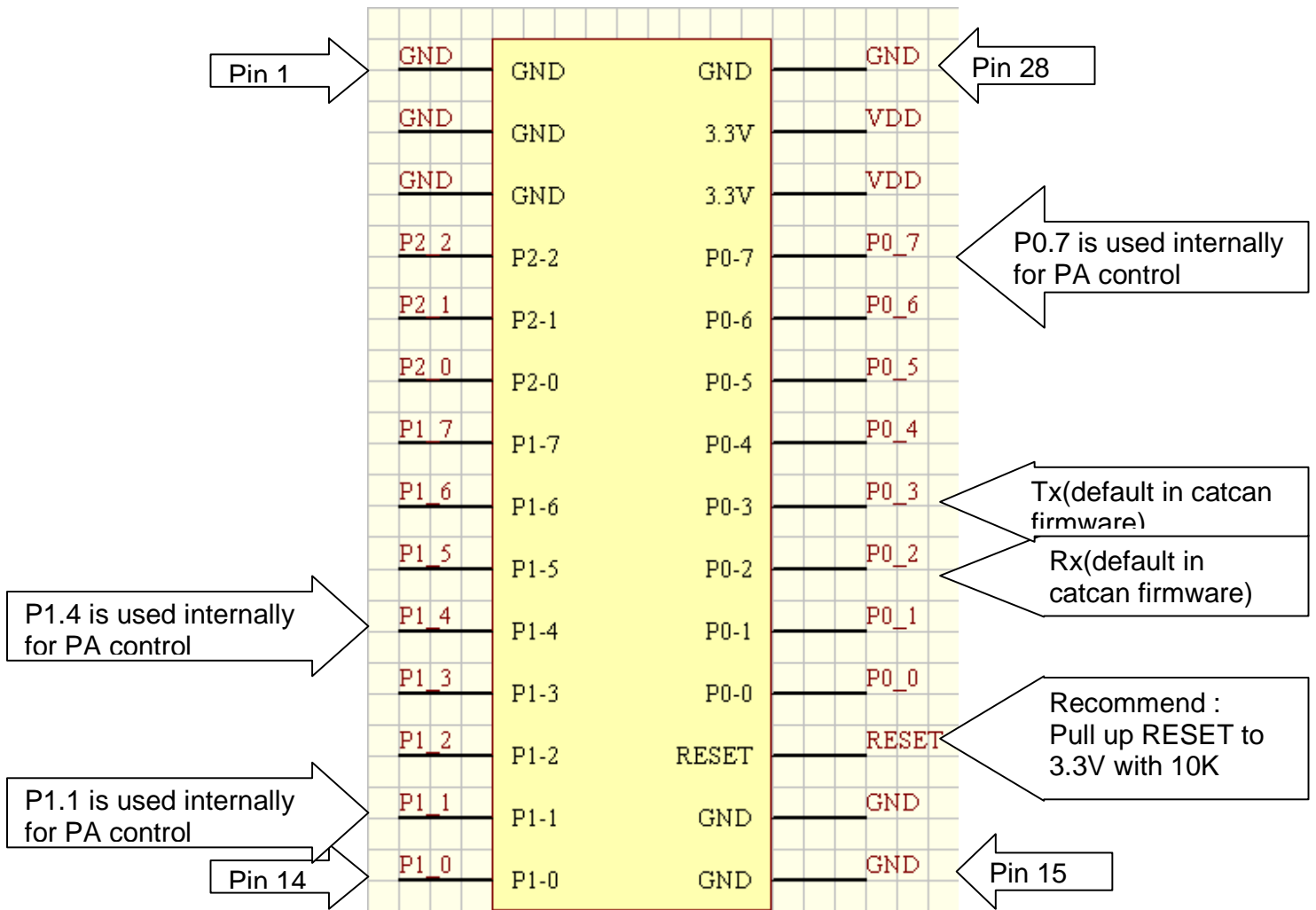
Reflow Profile Used at The Evaluation (Sn-3.0Ag-0.5Cu) –PF606-P



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

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Pin Assignment :



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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	NC	NC	NC
11	P1_3	Digital I/O	Port 1.3
12	P1_2	Digital I/O	Port 1.2
13	NC	NC	NC
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	Analogy / Digital I/O	Port 0.0
19	P0_1	Analogy / Digital I/O	Port 0.1
20	P0_2	Analogy / Digital I/O	Port 0.2
21	P0_3	Analogy / Digital I/O	Port 0.3
22	P0_4	Analogy / Digital I/O	Port 0.4
23	P0_5	Analogy / Digital I/O	Port 0.5
24	P0_6	Analogy / Digital I/O	Port 0.6
25	NC	NC	NC
26	3.3V	POWER	2.0V~3.6V Power Supply
27	3.3V	POWER	2.0V~3.6V Power Supply
28	GND	GND	Ground

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Pin Mapping :

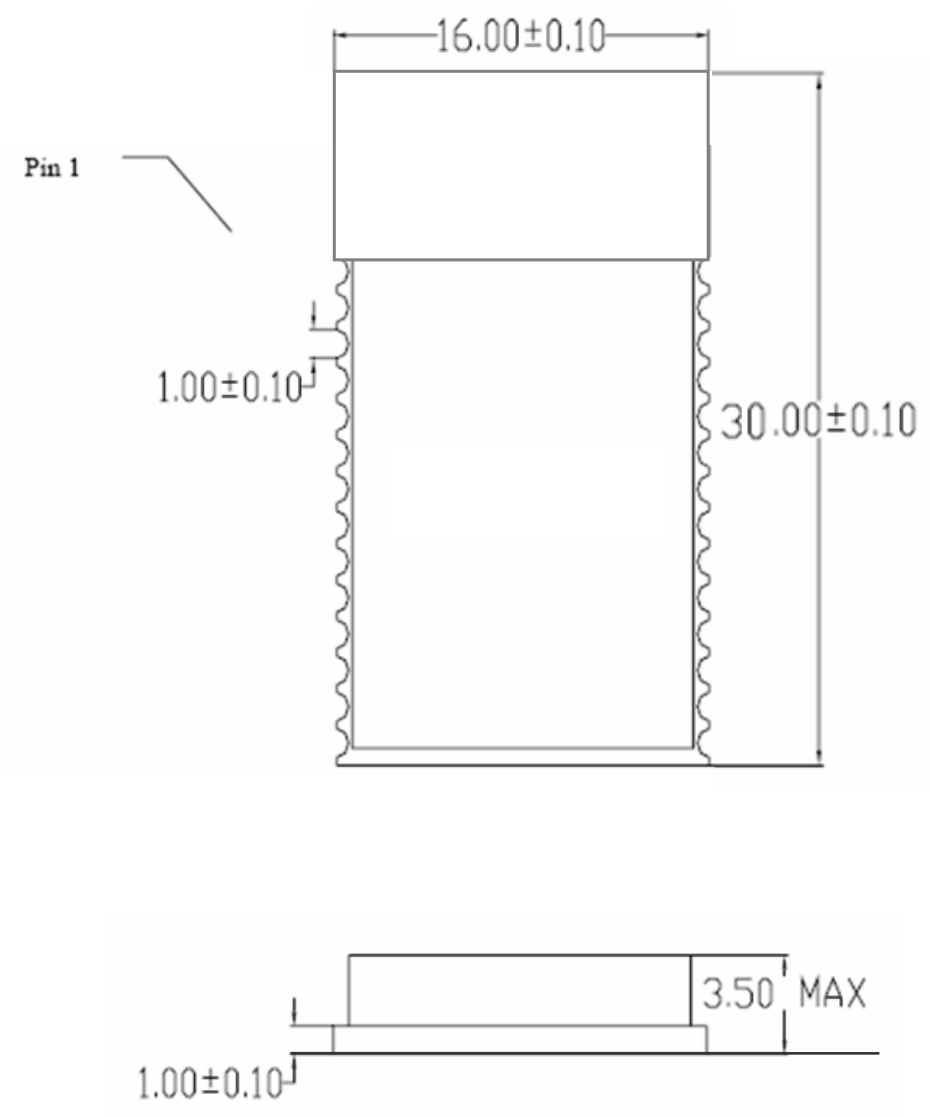
Table 7-1. Peripheral I/O Pin Mapping

Periphery/ Function	P0								P1								P2				
	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	4	3	2	1	0
ADC	A7	A6	A5	A4	A3	A2	A1	A0													T
Operational Amplifier						O	-	+													
Analog Comparator			+	-																	
USART 0 SPI			C	SS	MO	MI															
Alt. 2											MO	MI	C	SS							
USART 0 UART			RT	CT	TX	RX															
Periphery/ Function	P0								P1								P2				
	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	4	3	2	1	0
Alt. 2											TX	RX	RT	CT							
USART 1 SPI			MI	MO	C	SS															
Alt. 2									MI	MO	C	SS									
USART 1 UART			RX	TX	RT	CT															
Alt. 2									RX	TX	RT	CT									
TIMER 1		4	3	2	1	0															
Alt. 2	3	4												0	1	2					
TIMER 3												1	0								
Alt. 2									1	0											
TIMER 4															1	0					
Alt. 2																		1			0
32-kHz XOSC																	Q1	Q2			
DEBUG																			DC	DD	
OBSSEL											5	4	3	2	1	0					

Details can be referred from TI document: CC2530 application note: SWRU191b.pdf

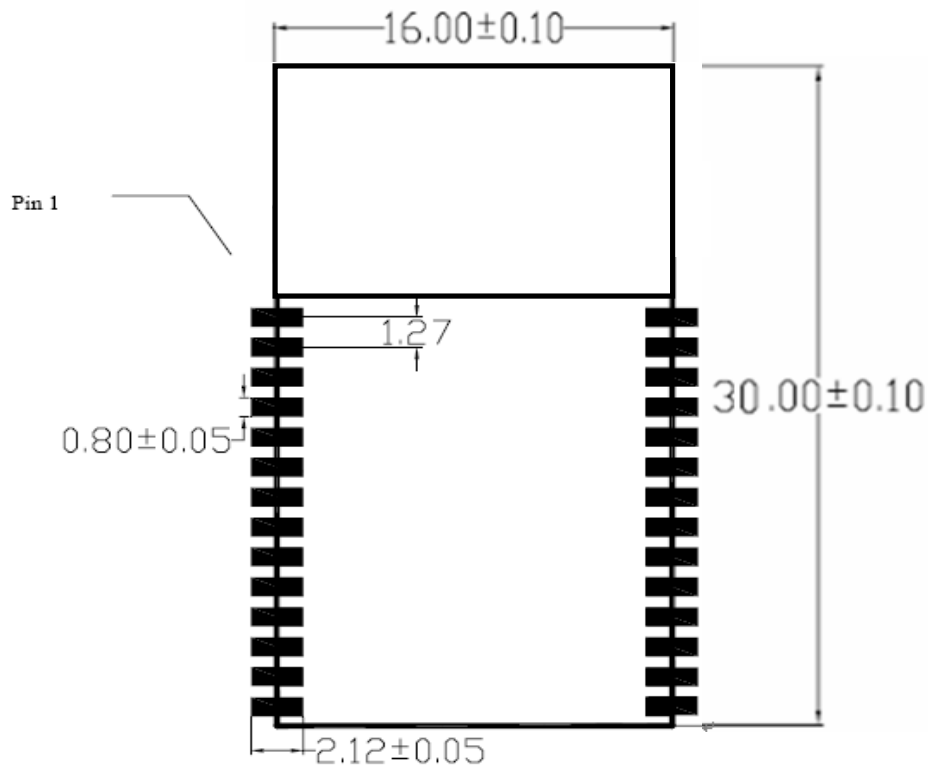
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Dimensions (mm) :

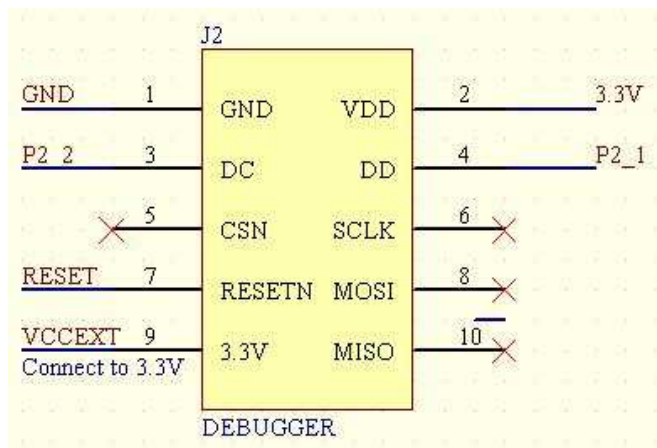


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Layout guide (mm) :



Additional debugger header is advised to keep on carrier board for further firmware programming.



Pin 9 is used to power up module from CC debugger's 3.3V

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Contact information :

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