TONLY

Wireless Module Datasheet

Model No.:TWM-CC8520

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版本变更说明 Document Revision History

Revision 版本	Date 日期	Author 作者	Description 描述
V1.0	2017-04-25	zzhjiang	First release.

目录 Table of Contents

1. 系统概览 System overview

1.1 通用说明 General Descriptions

TWM-CC8520 is a 2.4GHz ISM band wireless module.

This document is to specify the specification for TWM-CC8520 wireless Module. It is based on CC8520 chipset incorporate TI proprietary wireless protocol. It can be integrated into your family Mono/Stereo wireless audio system, which enables the seamless and bi-directional transmission of high quality digital audio.
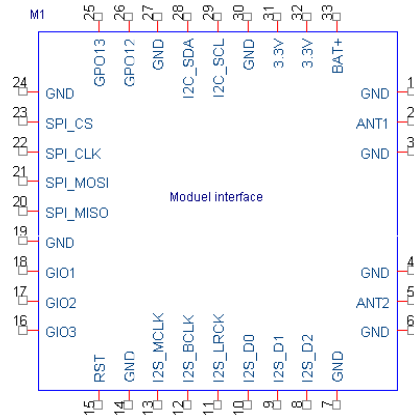
1.2 性能特点 Features

- Built-in audio protocol

- Worldwide 2.4G ISM band

- CD-quality uncompressed audio

- 5 or 2 Mbps over-the-air data rate

- Support I2S/I2C/SPI protocol

- Compact 18mm*12mm SMT package

- Compliance with worldwide radio frequency regulations
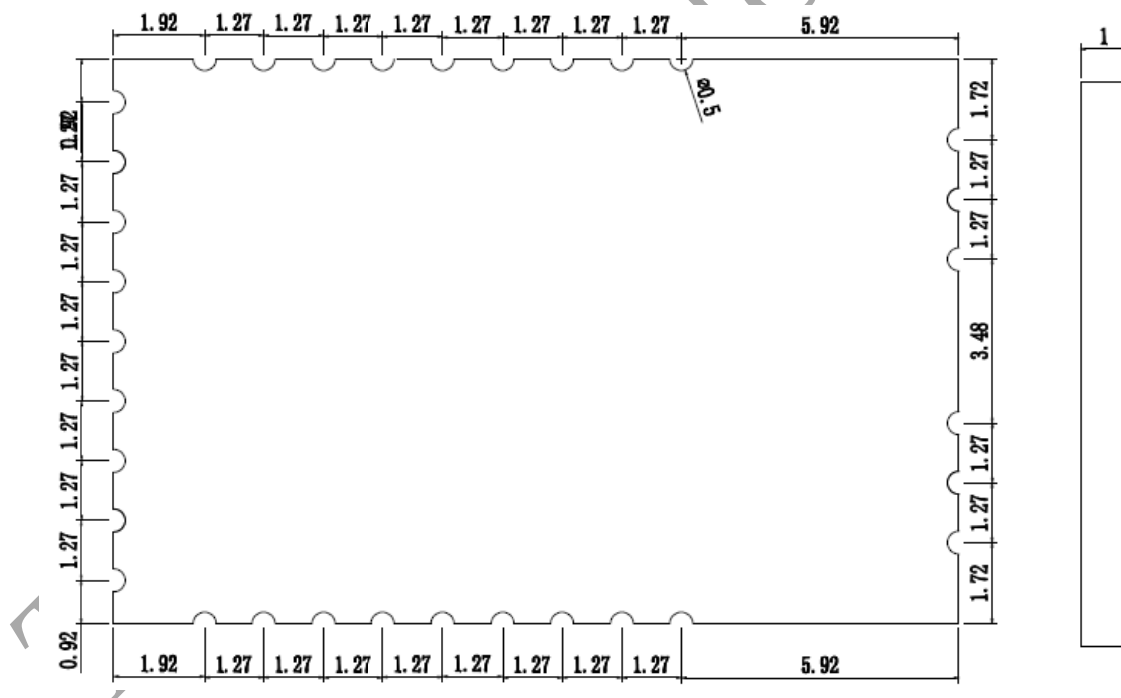
1.3 系统方框图 Block Diagram
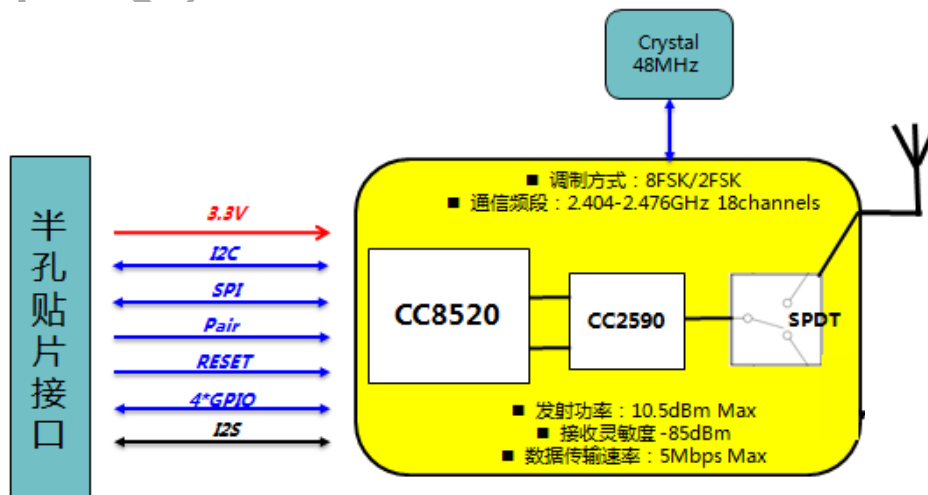
2.产品描述 Production Description

2.1 引脚与功能说明 Pin Description & Appearance

2.2 外形尺寸 Physical Dimensions

Tolerances are ±0.5 mm Unless otherwise specified (Unit : mm) .

2.3 引脚定义Pin descriptions

Pin.	Symbol	Description	Remark
1	GND	Ground	GND
2	ANT1	RF port1	RF
3	GND	Ground	GND
4	GND	Ground	GND
5	NC	NC	NC
6	GND	Ground	GND
7	GND	Ground	GND
8	I2S_D2	I2S data line 2	I2S
9	I2S_D1	I2S data line 1	I2S
10	I2S_D0	I2S data line 0	I2S
11	I2S_LRCK	I2S LRCK	I2S
12	I2S_BCLK	I2S BCLK	I2S
13	I2S_MCLK	I2S MCLK	I2S
14	GND	Ground	GND
15	RST	Device reset	Active low
16	GIO3	GPIO3	IO
17	GIO2	GPIO2	IO
18	GIO1	GPIO1	IO
19	GND	Ground	GND
20	SPI_MISO	Master input , slave output	SPI
21	SPI_MOSI	Master output , slave input	SPI
22	SPI_CLK	SPI clock	SPI
23	SPI_CS	SPI enable	SPI , Active low
24	GND	Ground	GND
25	GPO13	GPIO13	IO
26	GPO12	GPIO12	IO
27	GND	Ground	GND
28	I2C_SDA	I2C SDA	I2C
29	I2C_SCL	I2C SCL	I2C
30	GND	Ground	GND
31	3.3V	Power supply	POWER
32	3.3V	Power supply	POWER
33	BAT+	Voltage supervisor ,4.5V max	Analog input

3.应用说明 Application Explanations

- Soundbar

- Wireless Headphone

- Wireless HTiB

4.电气特性 Electrical Characteristics

4.1 DC Electrical Characteristics

Supply Voltage	DC 3.0~3.6V
Current consumption	Max : 60mA@RX Max:100mA@TX
Size (L x W x H)	18mm * 12mm *2mm
Weight	0.8g

4.2Thermal characteristic

- Storage Temperature -40 +80 ℃

- Ambient Operating Temperature   0~60 ℃

- Junction Temperature   0 ~125 ℃

5.射频性能 RF Characteristics(to be update)

Specification	Description
Frequency Band	2400~2483.5MHz
Channel number	18chan nels
Modulation Method	Shaped 2FSK / Shaped 8FSK
Data Rate	2 Mbps / 5Mbps
TX Power	Max35.727mW
RX Sensitivity	-85dBm

6.包装与订货说明 Package& Ordering information

- **60 pcs per every Blister tray**

- **480 pcs per every Vacuum packing**

7.环保声明 Green Policy

This module can meet ROHS & REACH compliance.

8.推荐过炉温度 Recommended Temperature Reflow Profile
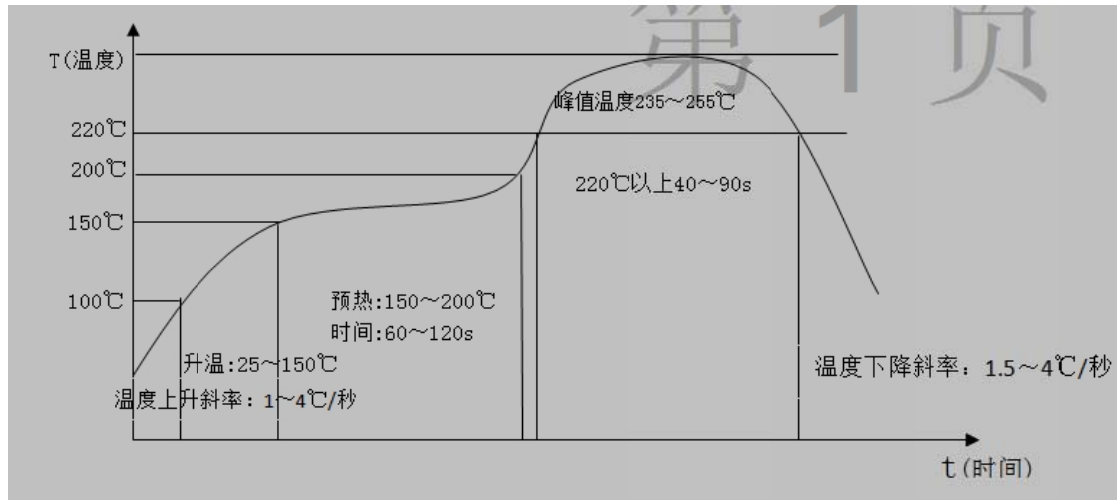
9.抗静电保护 ESD Protection

ESD CAUTION

TWM-CC8520 is ESD(electrostatic discharge) sensitive device and may be damaged with ESD or spike voltage. Although TWM-CC8520 is with built-in ESD protection circuits, please handle with care to avoid the permanent malfunction or the performance degradation.

------------------------END--------------------------

For FCC:

FCC RF Radiation Exposure Statement Caution: To maintain compliance with the FCC's RF exposure guidelines, place the product at least 20cm from nearby persons. The Module can be installed in Mobile device only, and it can not be installed in any portable Device.

FCC Conditions

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.

2.This device must accept any interference received, including interference that may cause undesired operation.

This device complies with Part 15, Part 15.247 of the FCC Rules. The FCC ID for this device is ZVA15.

If the FCC ID is not visible with the module is installed inside another device, then it must be still responsible for the FCC compliance requirement of the end product which referring to the enclosed module and it also must display a label, such as the following:

Contains Transmitter module FCC ID: ZVA15 or contains FCC ID: ZVA15

The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

The end user manual shall include all required regulatory information / warning as shown in this manual, include: This product must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

IC Statement

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
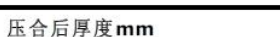
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

The device should be installed and operated with a minimum distance of 20cm between the radiator and your body.
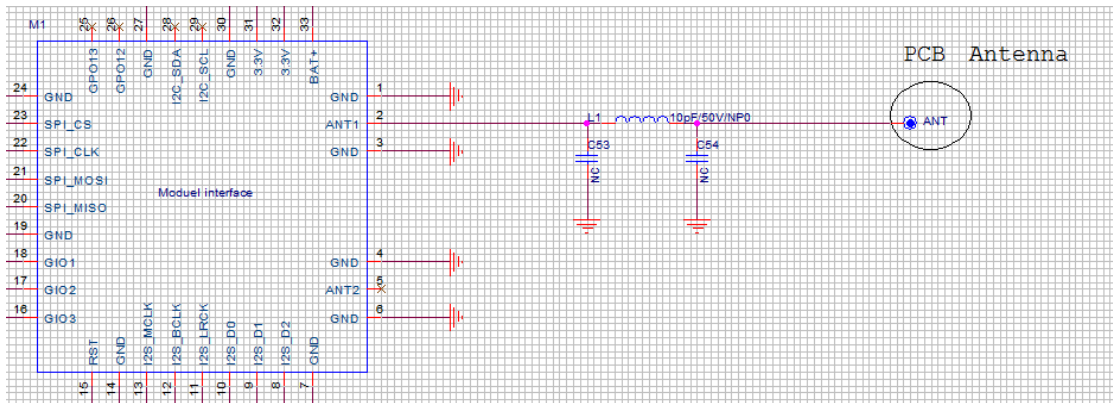
L'appareil doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateu et votre corps.
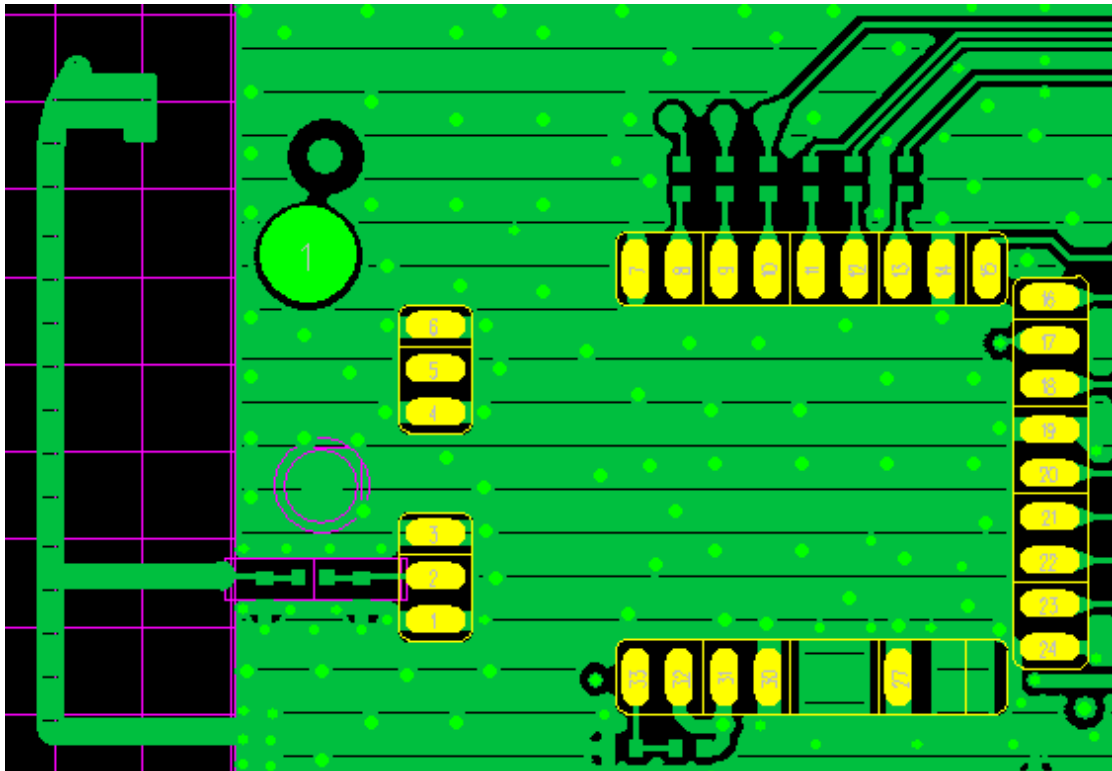
1. Stack

MN10001G040498A-1/4 :
　　靶距(mm)　　　X: 212.4　　　Y: 606
　　测试靶距(mm) X: 500.2　　　Y: 602

Layer	Thickness (Millimeter)	Stackup Picture	Family	Description	Type
S1X			SolderMask	防焊油墨	
L1X	0.0150		CU	Joz ;残铜率:56.79%	SIGNAL
	0.1104		S0401	2116RC53%	
L2X	0.0350		CU	1oz ;残铜率:67.07%	SIGNAL
	0.6000		S1141	060------core---TG130	
L3X	0.0350		CU	1oz ;残铜率:65.15%	SIGNAL
	0.1097		S0401	2116RC53%	
L4X	0.0150		CU	Joz ;残铜率:61.28%	SIGNAL
S2X			SolderMask	防焊油墨	

0.9201	压合后厚度mm			
0.9000	After Lamination	+0.0750	-0.0750	
0.1143	L1X - L2X	+0.0114	-0.0114	
0.1143	L3X - L4X	+0.0114	-0.0114	

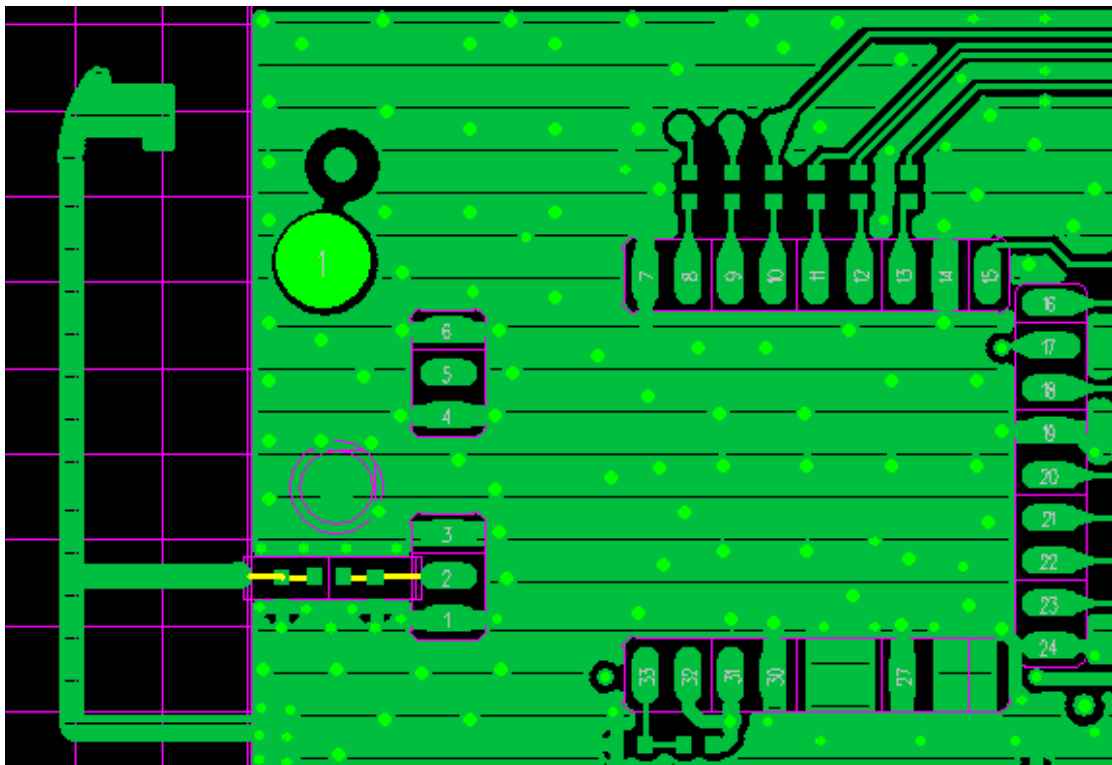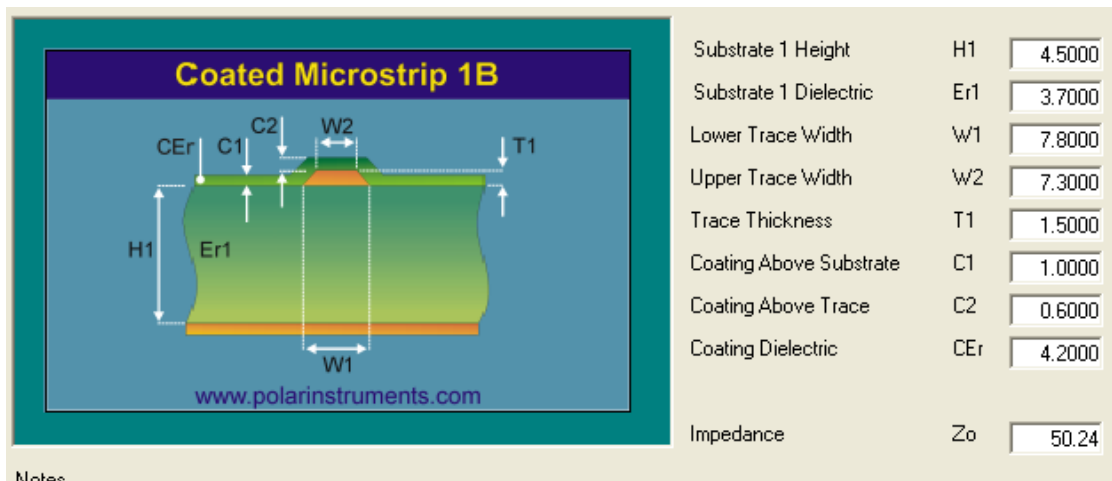Engenix? by Cimnet Systems, A Consona ERP Solution. Copyright ? 2002-2012
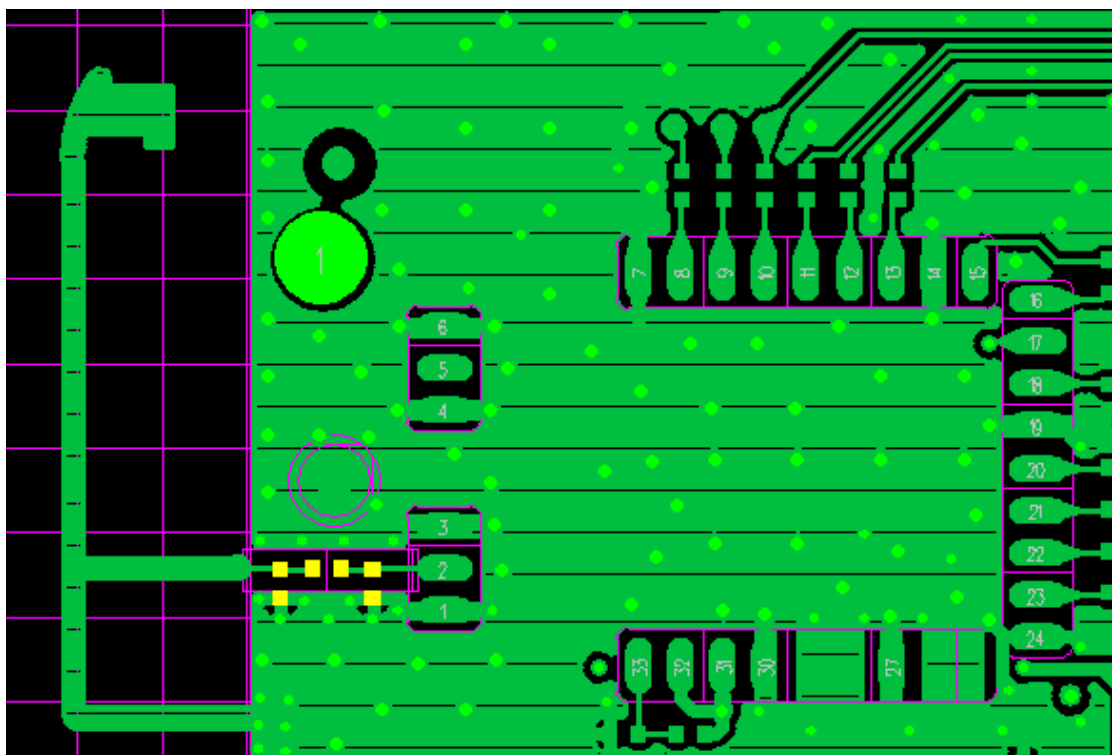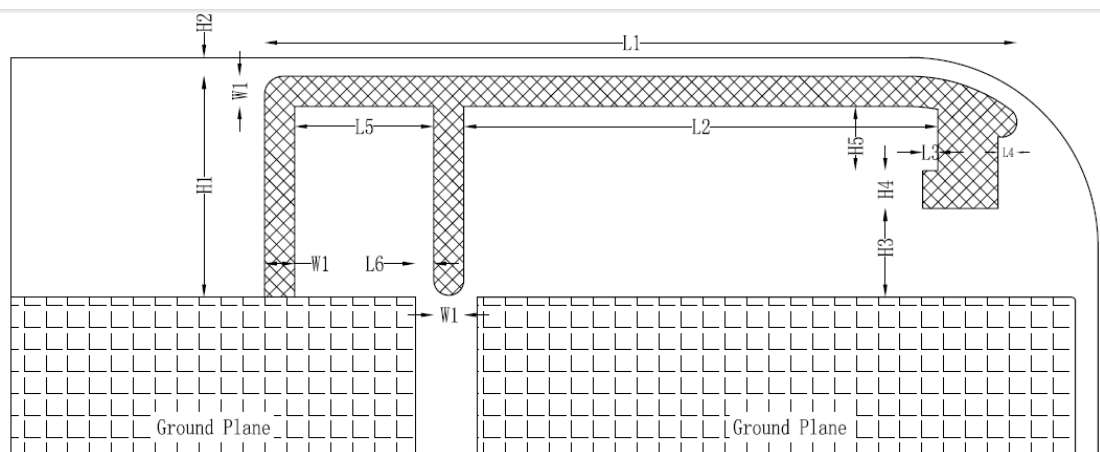
2. Schematic

3. Module

4. 50Ohm Trace

Substrate 1 Height	H1	4.5000
Substrate 1 Dielectric	Er1	3.7000
Lower Trace Width	W1	7.8000
Upper Trace Width	W2	7.3000
Trace Thickness	T1	1.5000
Coating Above Substrate	C1	1.0000
Coating Above Trace	C2	0.6000
Coating Dielectric	CEr	4.2000
Impedance	Zo	50.24

5. Match component

6. PCB Antenna
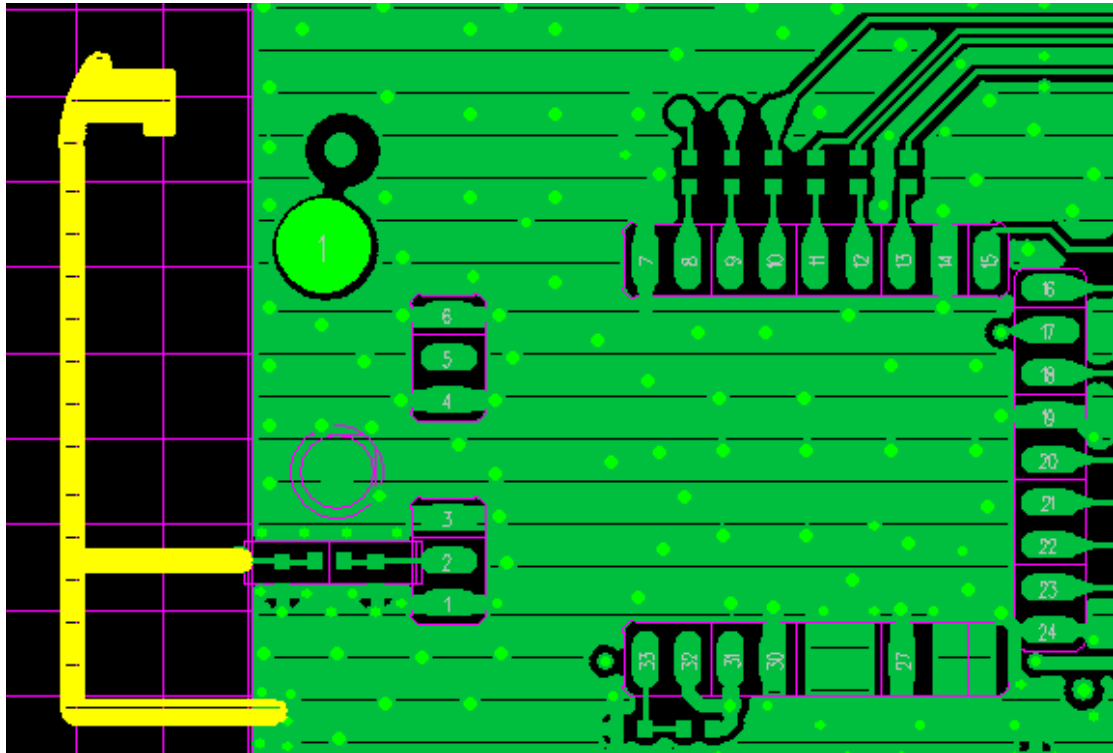
L1	20.0mm	H1	5.85mm
L2	12.6mm	H2	0.5mm
L3	0.4mm	H3	2.35mm
L4	0.5mm	H4	1.0mm
L5	3.7mm	H5	1.7mm
L6	0.5mm	W1	0.8mm

The Thick is 0.015mm

7. Characteristics
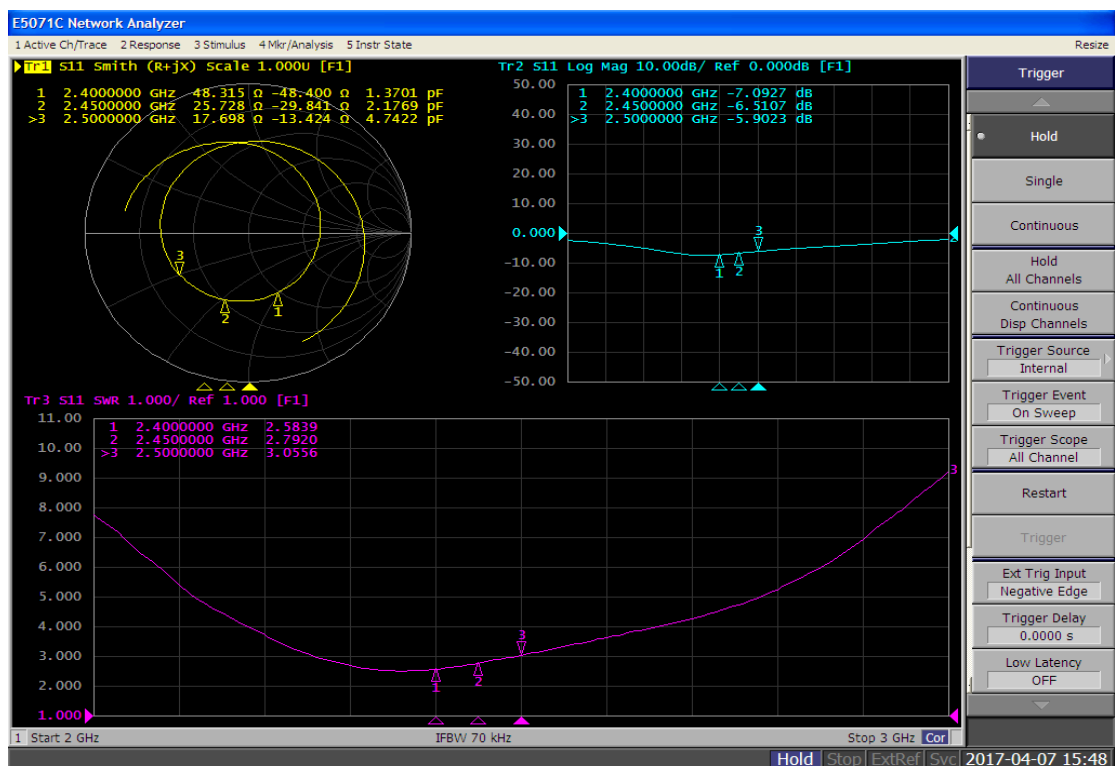
频段(Freq.)（Hz）	增益(Gain)（dBi）	效率(Efficiency)
2400000000	3.0	53%
2410000000	3.0	52%
2420000000	3.2	53%
2430000000	3.3	53%
2440000000	3.3	53%
2450000000	3.5	53%
2460000000	3.6	54%
2470000000	3.5	53%
2480000000	3.5	52%
2490000000	3.5	53%

| 2500000000 | 3.3 | 52% |

8.