TEST REPORT

Applicant	:	SHANGHAI MOUNTAIN VIEW SILICON CO,. LTD
PRODUCT NAME	:	MV_BP10xx PCB Antenna
MODEL NAME	:	MV_BP10
TRADE NAME	:	MVSILICON
BRAND NAME	:	MVSILICON
STANDARD(S)	:	ANSI/IEEE Std 149-2008
RECEIPT DATE	:	2019-08-30
TEST DATE	:	2019-09-02
ISSUE DATE	:	2019-10-15

Edited by: Chi Shide(Rapporteur)

Approved by: Andy Yeh(Technical Director)

MORLAB
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DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2019-10-15	First edition

1. Technical Information

Note: Provide by manufacturer.

1.1. Manufacturer and Factory Information

Applicant:	SHANGHAI MOUNTAIN VIEW SILICON CO,. LTD
Applicant Address:	Suite 4C, Building 3, 1238 Zhangjiang Road, Pudong New District, Shanghai, China
Manufacturer:	SHANGHAI MOUNTAIN VIEW SILICON CO,. LTD
Manufacturer Address:	Suite 4C, Building 3, 1238 Zhangjiang Road, Pudong New District, Shanghai, China

1.2. Equipment Under Test (EUT) Description

Wireless Type	N/A
Frequency	N/A

2. Test Results

2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	ANSI/IEEE Std 149-2008	IEEE Standard Test Procedures for Antennas

2.2. Test Conditions

Test Environment Conditions：

Relative Humidity:	25 ... 75 %
Temperature:	+10 °C to +30 °C

2.3. Test Results lists

2.3.1. Gain

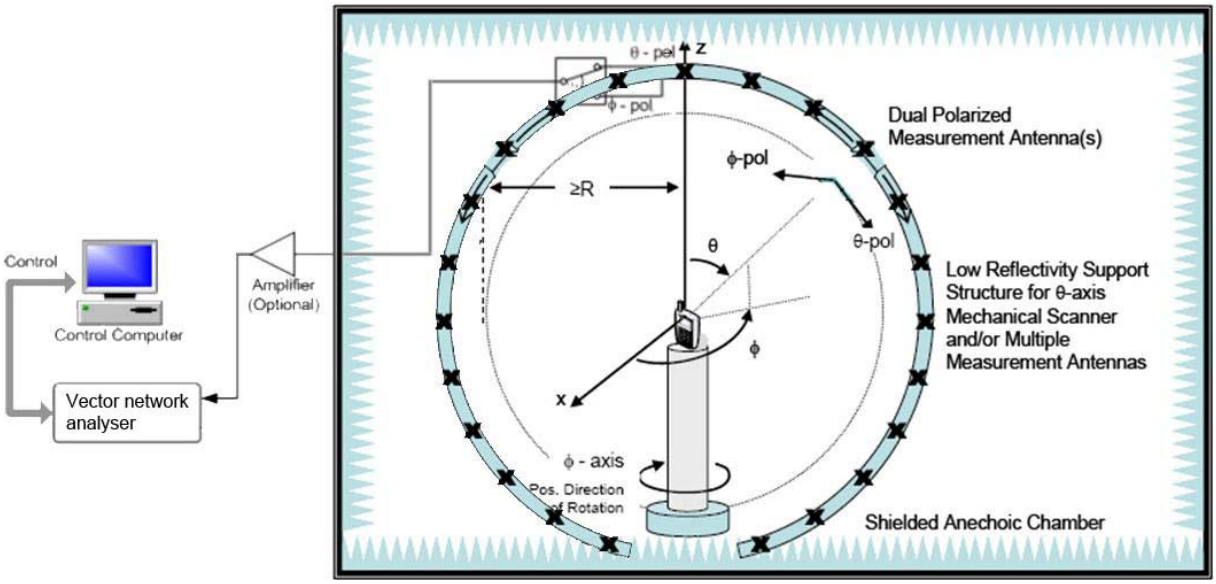
Frequency	Gain(dBi)
2400MHz	2.81
2410MHz	2.74
2420MHz	3.38
2430MHz	2.73
2440MHz	1.01
2450MHz	1.26
2460MHz	1.50
2470MHz	1.49
2480MHz	1.42
2490MHz	0.36
2500MHz	0.33

2.3.2. Return Loss/VSWR/Input Impedance

Frequency	Return Loss (dB)	VSWR	Input Impedance(Ω)
2400MHz	-7.23	2.53	25.37
2440MHz	-6.47	2.80	17.99
2450MHz	-6.22	2.90	17.18
2480MHz	-5.18	3.44	15.55
2500MHz	-4.56	3.89	15.48

Annex A Photographs

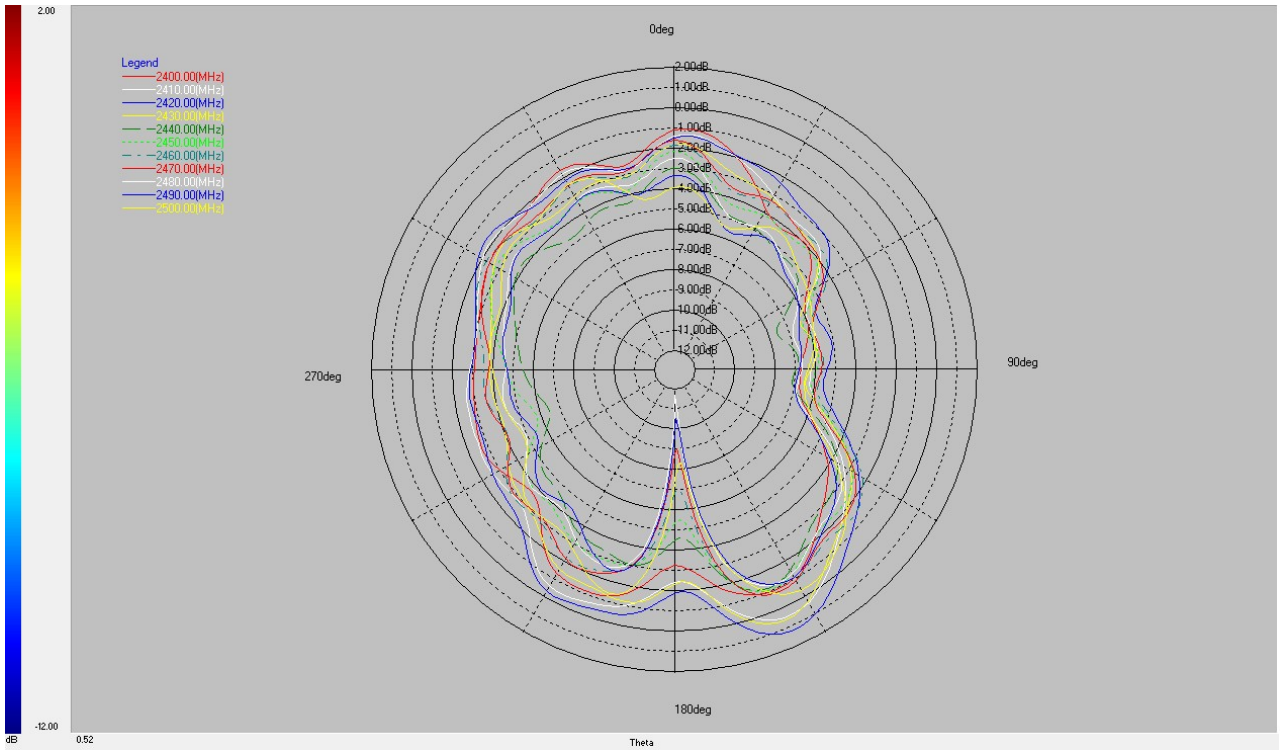
1. Test Setup



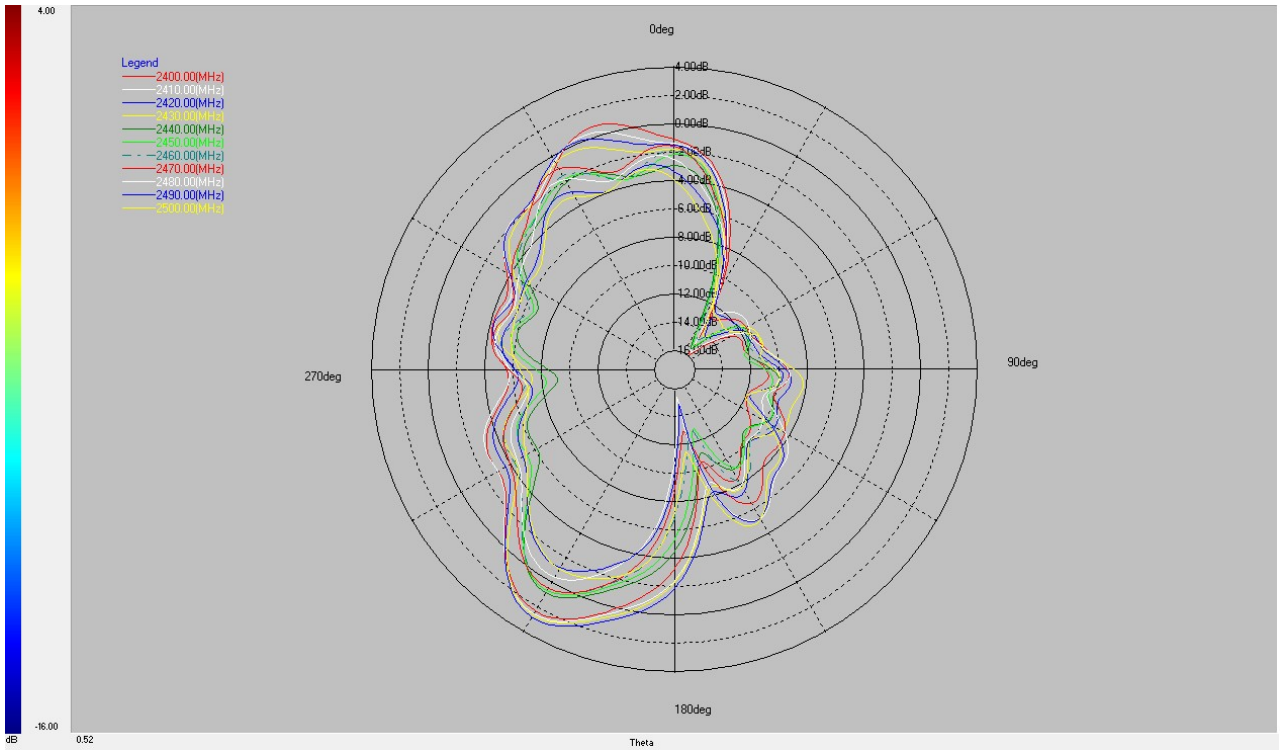
Annex B Figures

1. 2D Radiation Pattern

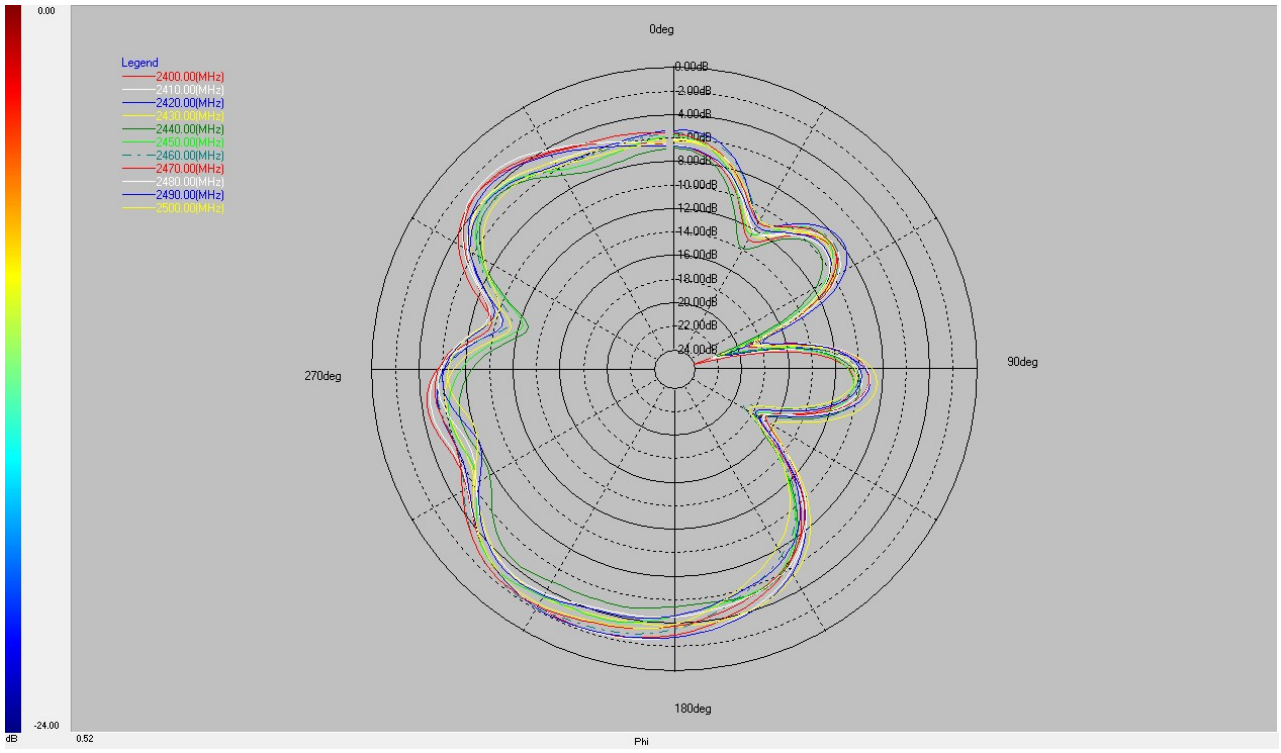
Phi=0°



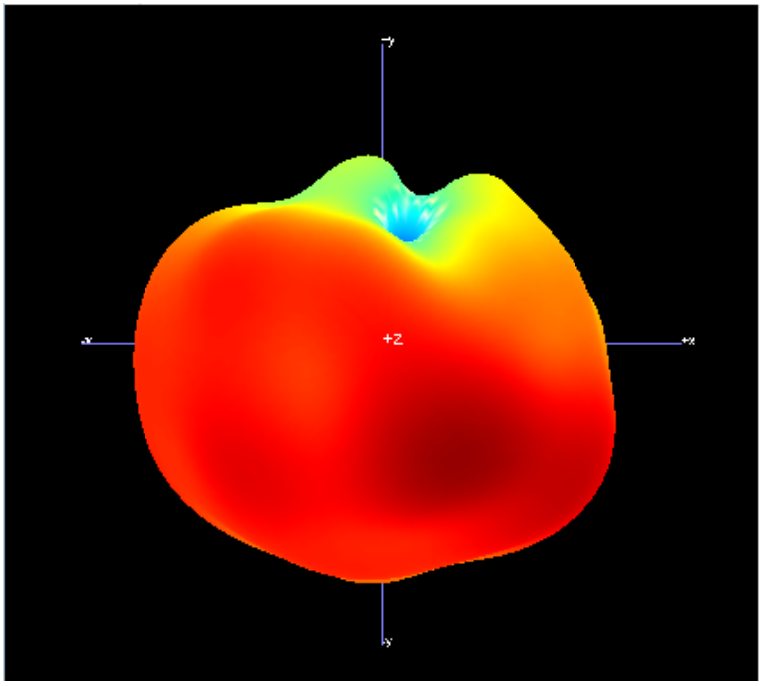
Phi=90°



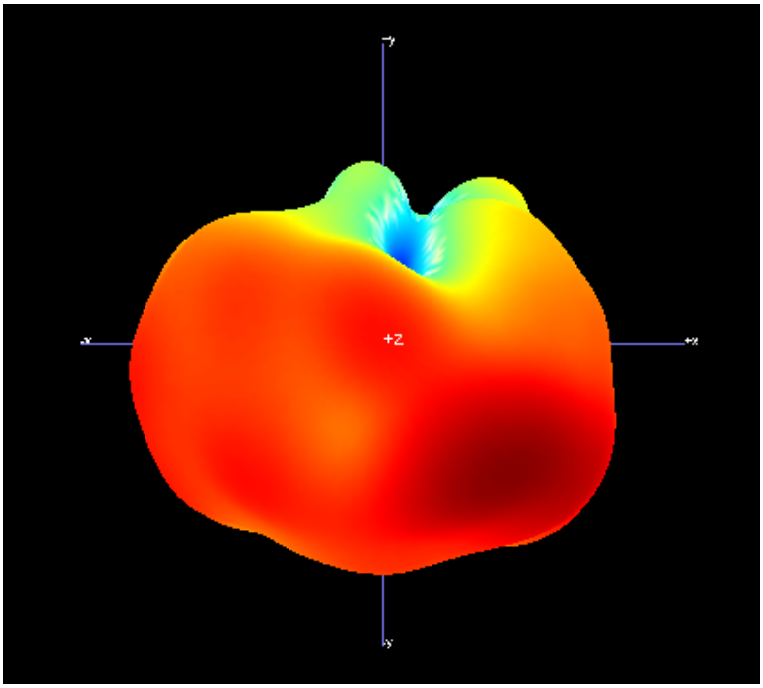
Theta=90°



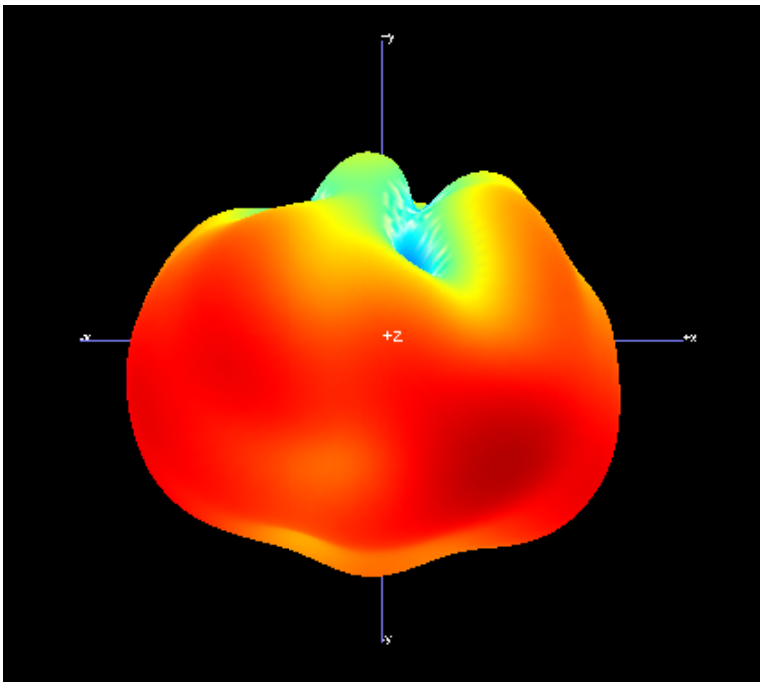
2. 3D Radiation Pattern



2400MHz

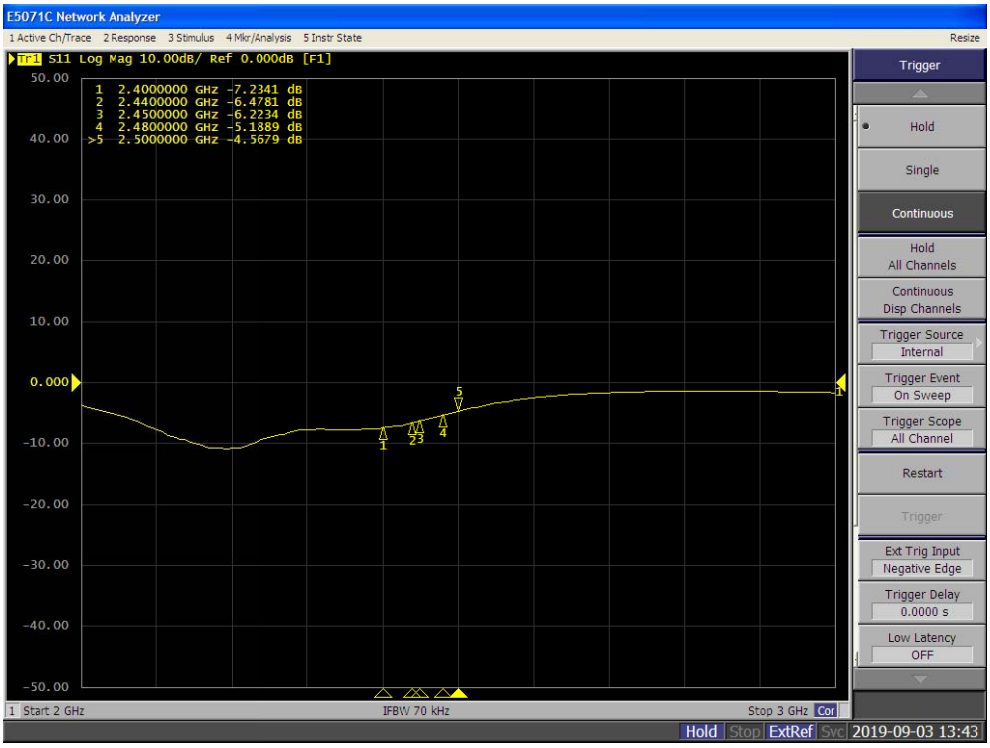


2450MHz

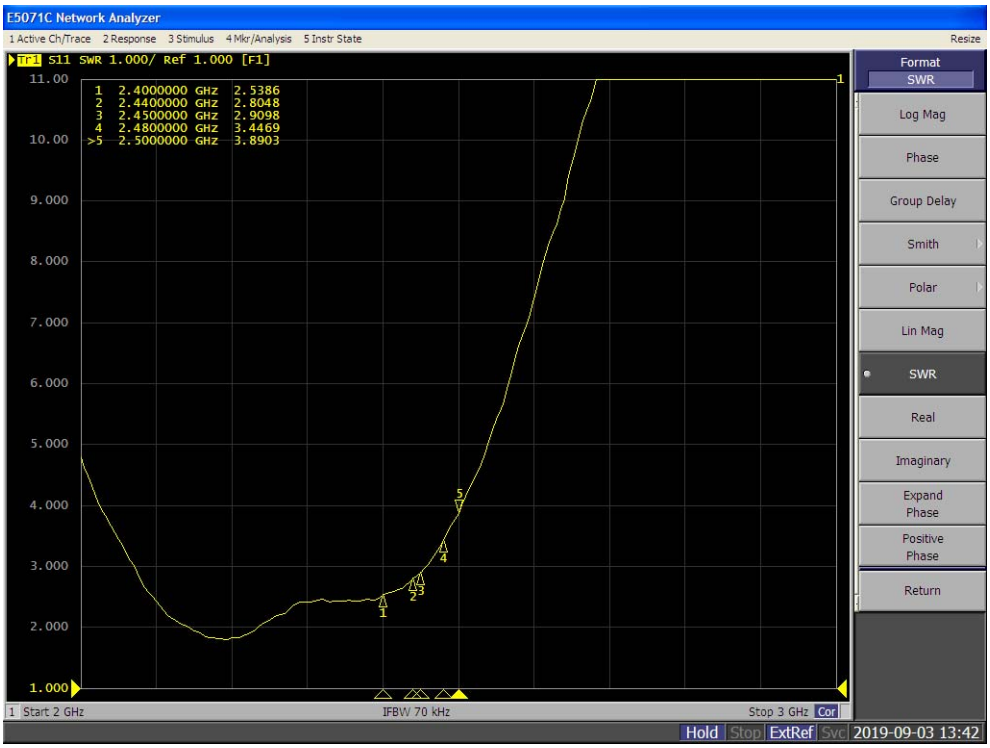


2500MHz

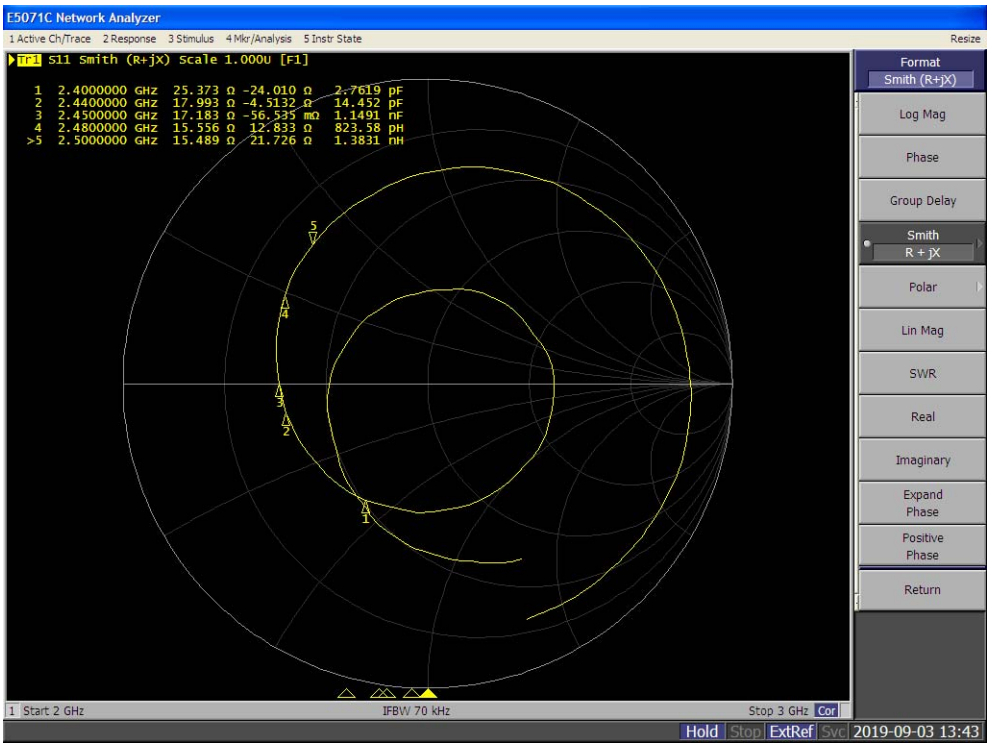
3. Return Loss



4. VSWR

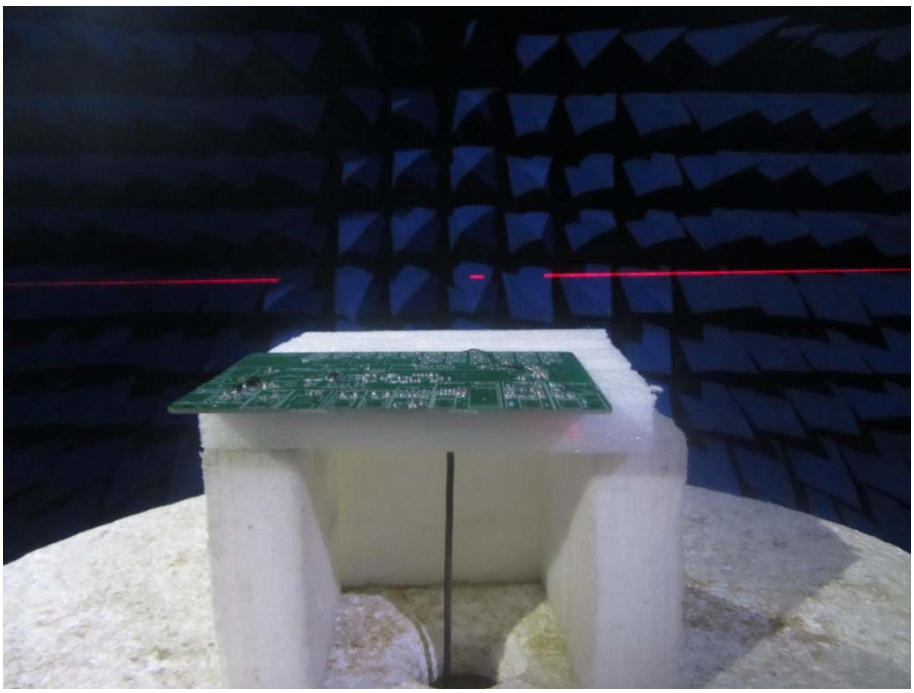


5. Input Impedance

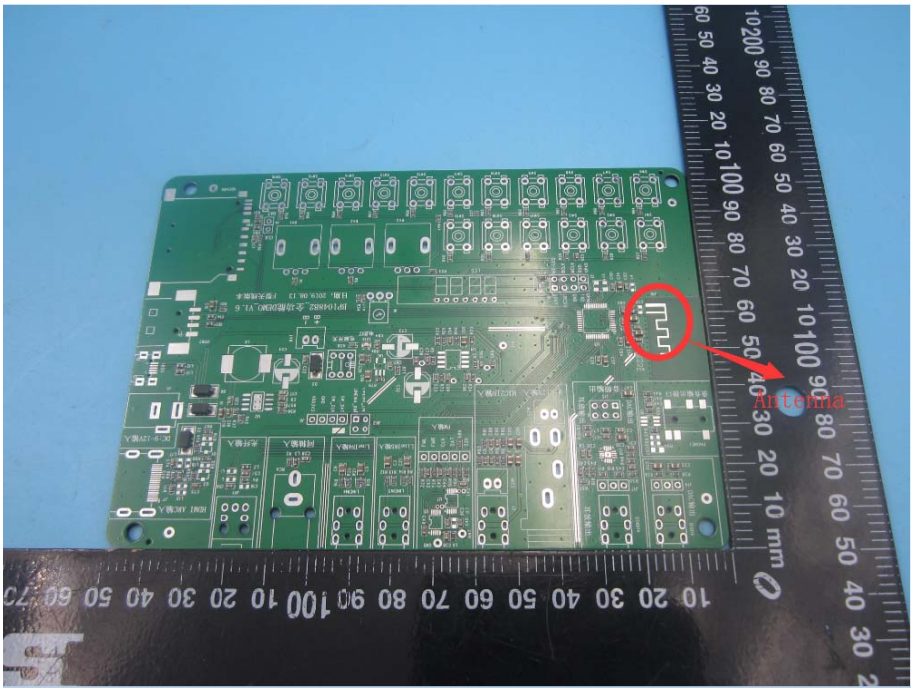


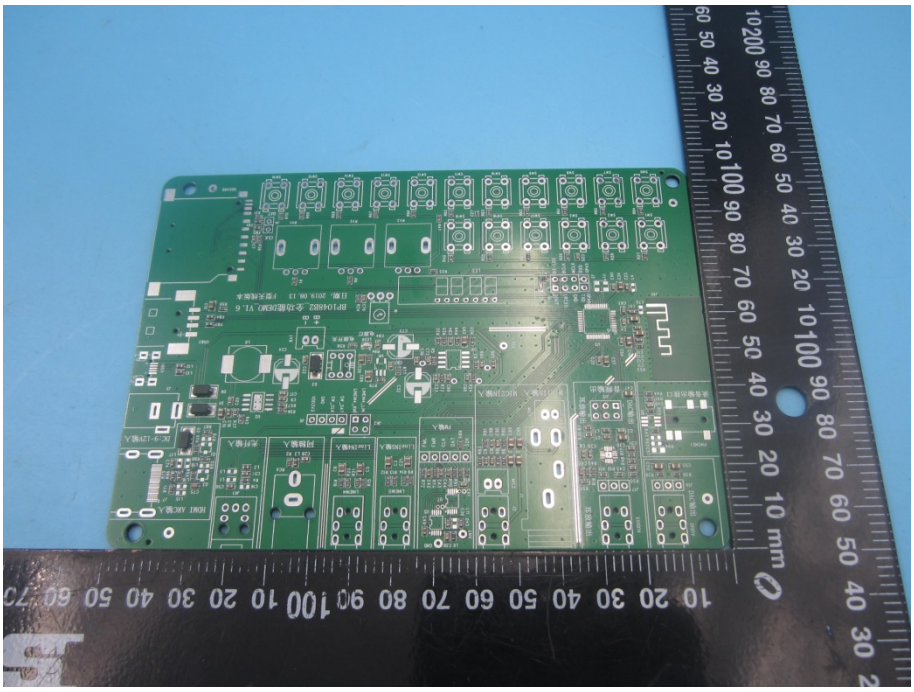
Annex C Photographs

1. Test environment



2. EUT





Annex D General Information

1.1 Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

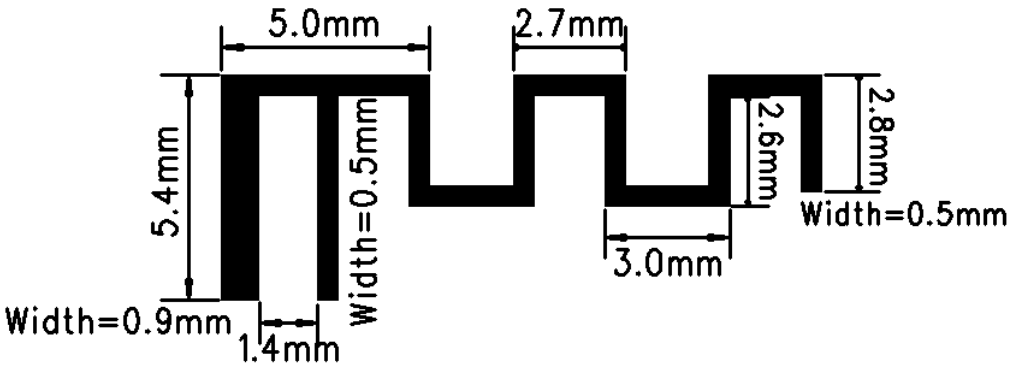
Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

1.3 Test Equipments Utilized

1.3.1 List of Test Equipment

No.	Type	Specification
1	E5071C Vector Network Analyzer	Manufacturer: Agilent
2	4*4*4 Full Anechoic Chamber	Manufacturer: Satimo
3	SG24 Multi-probe Antenna Measurement System	Manufacturer: Satimo

END OF REPORT



Actual Size

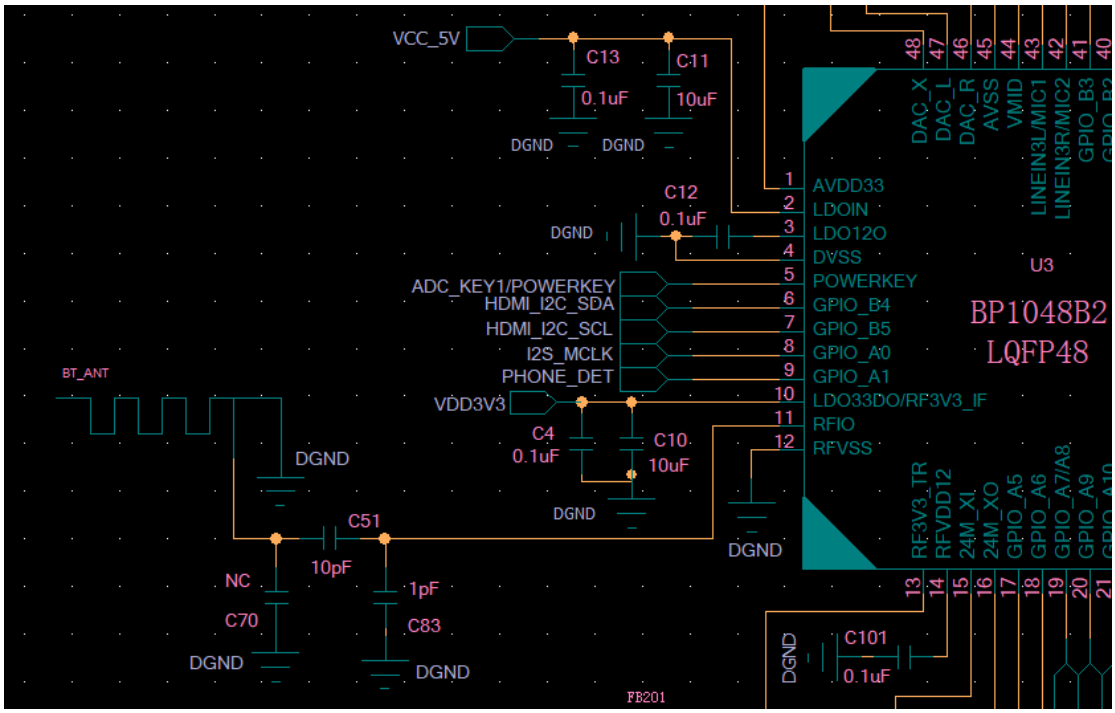
注意事项：

1、蓝牙天线线径宽为 0.9mm 的引脚接 GND；

2、蓝牙天线的线径宽是 0.5mm 如下图示：

3、蓝牙天线天线铺铜间隙 2.3mm 如图示：

4、附件为天线匹配参考电路网络，要求匹配器件距离芯片管脚位置越近越好.


VCC_5V
C13
0.1uF
C11
10uF
DGND
DGND
C12
0.1uF
DGND
ADC_KEY1/POWERKEY
HDMI_I2C_SDA
HDMI_I2C_SCL
I2S_MCLK
PHONE_DET
VDD3V3
C4
0.1uF
C10
10uF
DGND
BT_ANT
DGND
C51
10pF
NC
C70
DGND
1pF
C83
DGND
DGND
FB201
AVDD33
LDOIN
LDO12O
DVSS
POWERKEY
GPIO_B4
GPIO_B5
GPIO_A0
GPIO_A1
LDO33DO/RF3V3_IF
RFIO
RFVSS
U3
BP1048B2
LQFP48
DAC_X
DAC_L
DAC_R
AVSS
VMID
LINEIN3L/MIC1
LINEIN3R/MIC2
GPIO_B3
RF3V3_TR
RFVDD12
24M_XI
24M_XO
GPIO_A5
GPIO_A6
GPIO_A7/A8
GPIO_A9
DGND
C101
0.1uF