- **Manufacturer:** **Shenzhen Xinbinuo Communication Technology Co., Ltd.**
- **Customer:** Duoke
- **Project:** ROCK 2 Pro
- **ME:** Xiao Xiang

  TEL-13316888409
- **RF: Chen** Kai

  TEL- 13145925658
- **Date: 11**.28.2025
- Add.:Building 25, Feipeng Industrial Park, Ping'an Avenue, Pinghu Sub-district, Longgang District, Shenzhen, Area A, Third Floor

# Catalogue

## 1.Basic information

Frequency band:

GSM:850/900/1800/1900.

WCDMA:B1/B2/B5/B8.

FDD LTE:

B1/B2/B3/B4/B5/B7/B8/B12/B17/B19/B20/B26/B28B/B28A/B66

TDD LTE:B38/ B40/B41.

5GNR:N1/N2/N3/N5/N7/N8/N20/N26/N28/N38/N40/N41/N66/N77/N78.

Others:

GPS/Beidou/GLONASS/Galileo,80211.a/b/g/n/ac 2.4G/5G,Bluetooth.

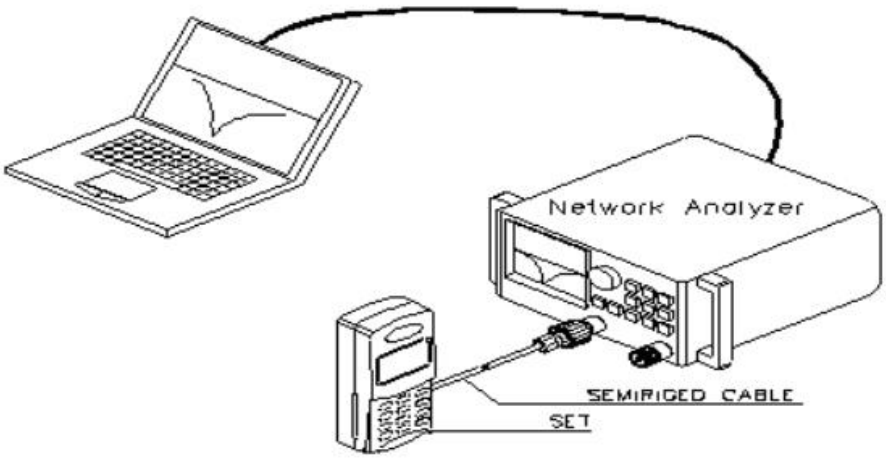
2.1 Test Method Description and Data

| Device Name | Purpose |
|---|---|
| Vector Network Analyzer | S11/Impedance/ Passive Test |
| Agilent 8960<br>SP6010<br>R&S CMU200 | Testing of mobile communication devices including GSM, GPRS, EDGE, CDMA2000, 1xEV-DO, TD-SCDMA, WCDMA, and HSDPA |
| R&S CMW500<br>MT8820C | Testing of mobile communication devices including TD-SCDMA, WCDMA, HSDPA, LTE, WIFI, and GPS |
| Agilent E4438C | Test GPS |
| MVG Chamber | Passive Test / OTA active Test / Efficiency/Gain |
| MT8000A | Testing of 5G NR mobile communication devices |

## 2 Passive Test Report

Test equipment: Network analyzer

Test method: Use a 50 ohm cable to lead out from the instrument test port, calibrate it with a calibration piece, then connect it to the SMA connector of the mobile phone device. Record the echo loss or standing wave ratio corresponding to relevant frequency points.




测试示意图

3 Active Test Report

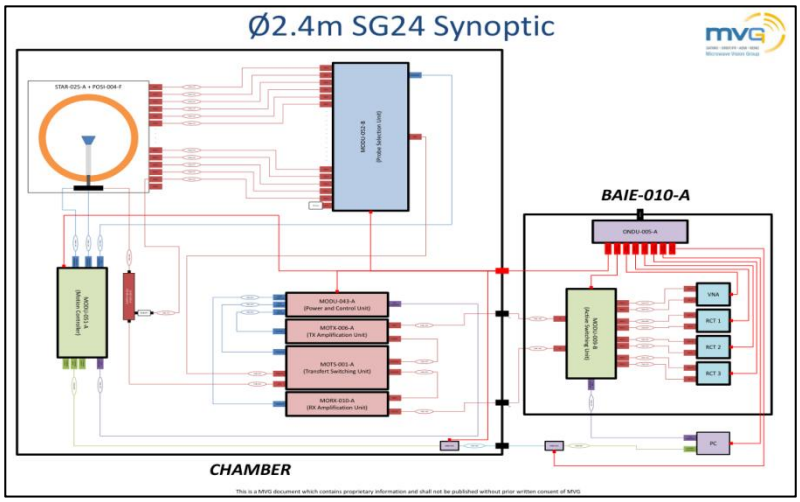
TRP/TIS

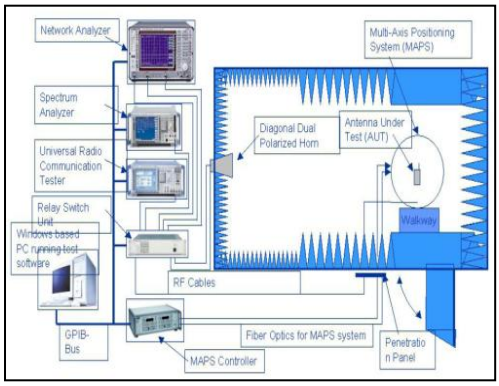
Testing Tools: Comprehensive Tester, Network Analyzer, Full-wave Far-field ETS, French MVG SG24LT (Satmio) near-field 3D microwave anechoic chamber, high-precision positioning system and its controller, and a computer test environment with automatic testing procedures: Temperature 22° C±3° C, humidity 60%±15%. Testing Method: The testing method and calculations using the EST or Satimo 24LT system software TRP are carried out. During TRP testing, the DUT (Device Under Test) is in its maximum transmission power state. Three channels, high, medium, and low, are selected for testing. The position of the DUT is controlled by the positioning system, with a step size of 15 degrees, to measure the effective radiated power (EIRP) at each point in three-dimensional space. The average value on the spherical surface is calculated by integration, and the formula is as follows:

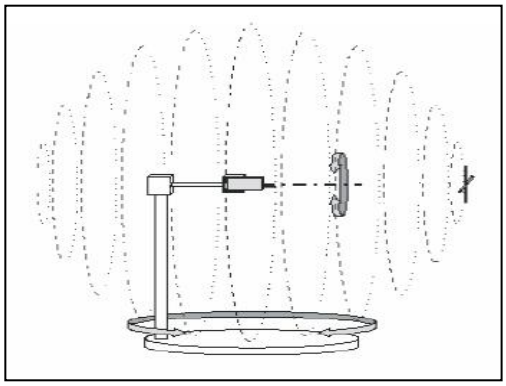
$$TRP \cong \frac{\pi}{2NM}\sum_{i=1}^{N-1}\sum_{j=0}^{M-1}\left[EiRP_{\theta}(\theta_i,\phi_j)+EiRP(\theta_i,\phi_j)\right]\sin(\theta_i)$$

During the TIS test, the DUT is in its maximum transmission power state. Three channels, high, medium, and low, are selected for testing. By controlling the position of the DUT and measuring the received sensitivity at each point in three-dimensional space with a step size of 30 degrees, the average value on the spherical surface is calculated through integration. The calculation formula is as follows:

$$TIS \cong \frac{2NM}{\pi\sum_{i=1}^{N-1}\sum_{j=0}^{M-1}\left[\frac{1}{EIS_{\theta}(\theta_i,\phi_j)}+\frac{1}{EIS_{\phi}(\theta_i,\phi_j)}\right]\sin(\theta_i)}$$


Ø2.4m SG24 Synoptic
BAIE-010-A
CHAMBER

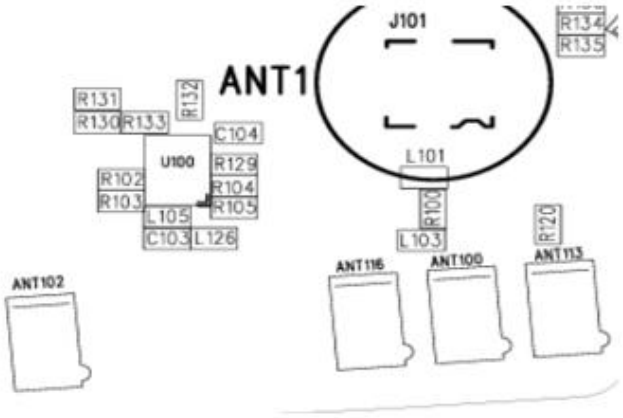

Network Analyzer
Spectrum Analyzer
Universal Radio Communication Tester
Relay Switch Unit
Windows based PC running test software
GPIB-Bus
Multi-Axis Positioning System (MAPS)
Diagonal Dual Polarized Horn
Antenna Under Test (AUT)
Walkway
RF Cables
Fiber Optics for MAPS system
MAPS Controller
Penetration Panel



# 2.Matching circuit

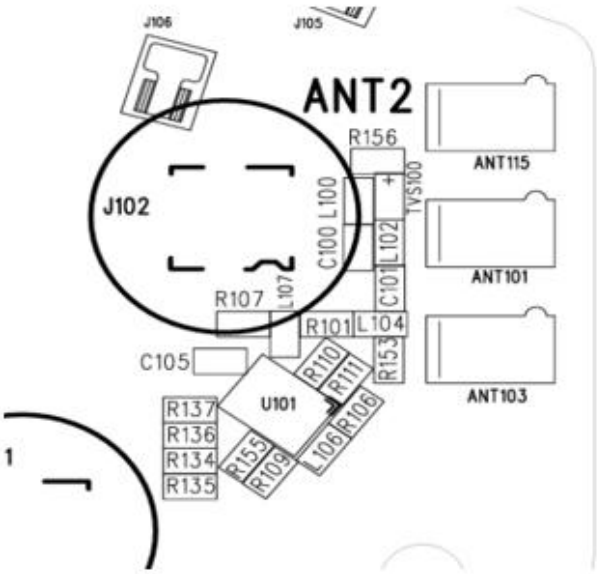
Ant1

| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 9.1nH | L103 |
| E2(0201) | 5.6pf | R100 |
| E3(0201) | 2.7pf | L101 |
| Antenna switch | | |
| Element | Value | PCB |
| RF2(0201) | 15NH | R102 |
| RF3(0201) | 3.9NH | R103 |
| RF1(0201) | 0R | R104 |
| RF4(0201) | NC | R105 |
| (0201) | 0R | C103 |
| 常驻(0201) | NC | L105 |
| (0201) | NC | L126 |
| (0201) | NC | R120 |




ANT2

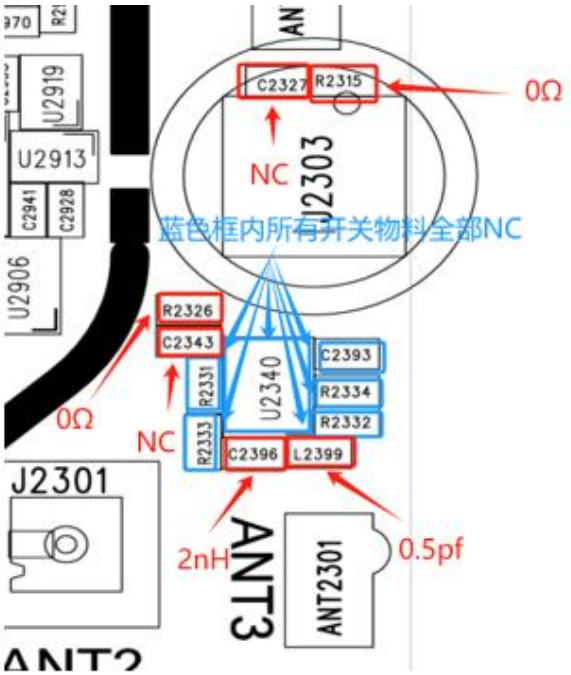
| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 47pf | C101 |
| E2(0201) | 68nH | L104 |
| E3(0201) | 3.9nH | R101 |
| E4(0201) | NC | L107 |
| E5(0201) | 0Ω | R107 |
| E6(0201) | 0Ω | R156 |
| E7(0201) | 47PF | R153 |
| E8(0201) | NC | R106 |
| E9(0201) | 100NH | L100 |
| E10(0201) | 47PF | C100 |
| E11(0201) | 100NH | L102 |



ANT3

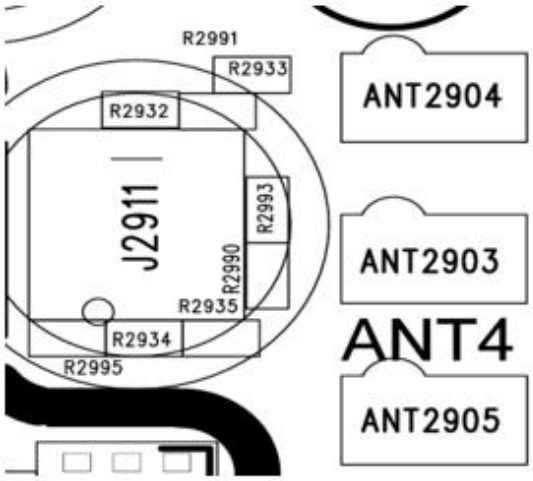
| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 0.5pf | L2399 |
| E2(0201) | 2nH | C2396 |
| E3(0201) | NC | C2343 |
| E4(0201) | 0Ω | R2326 |
| E5(0201) | 0Ω | R2315 |
| E6(0201) | NC | C2327 |

Antenna switch off



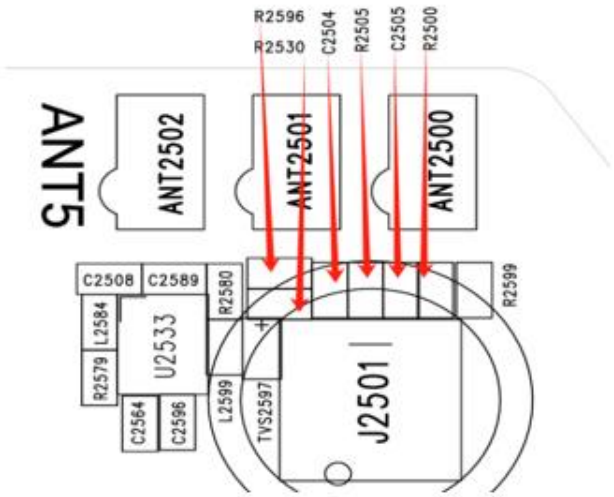

ANT4

| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 5.1NH | R2990 |
| E2(0201) | 3.3PF | R2993 |
| E3(0201) | NC | R2991 |
| E4(0201) | 0Ω | R2932 |
| E5(0201) | 0Ω | R2935 |
| E6(0201) | 0Ω | R2933 |



ANT5

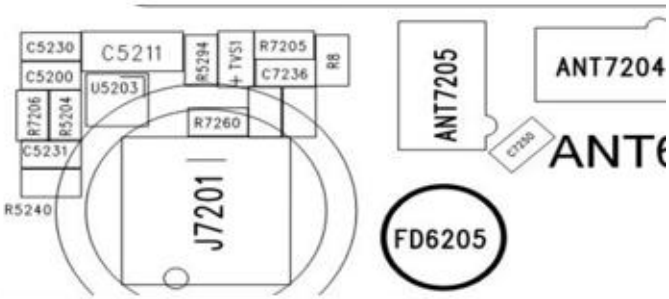
| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 100nH | R2596 |
| E2(0201) | 47PF | R2530 |
| E3(0201) | 68NH | C2504 |
| E4(0201) | 5.6NH | R2505 |
| E5(0201) | 33NH | C2505 |
| E6(0201) | 3.3PF | R2500 |
| E7(0201) | 47PF | R2599 |




Antenna switch off

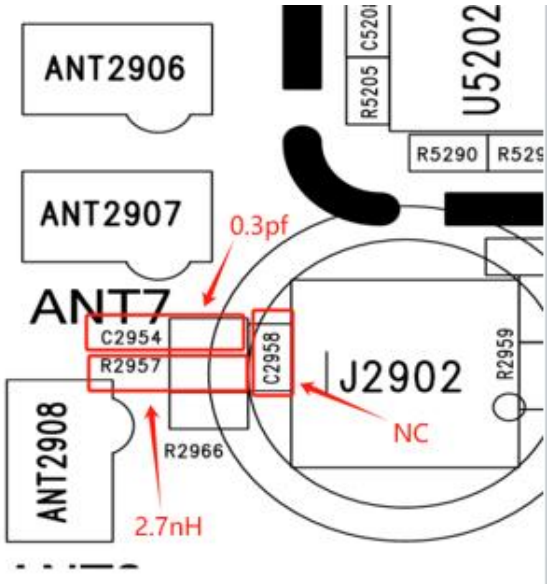
ANTT6

| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 100nH | R7205 |
| E2(0201) | 47PF | R8 |
| E3(0201) | 68nH | C7236 |
| E4(0201) | 47PF | R7254 |
| E5(0201) | NC | C7234 |
| E6(0201) | 1.5NH | R7260 |
| E7(0201) | 47pF | C7250 |
| E8(0201) | 47PF | R7206 |



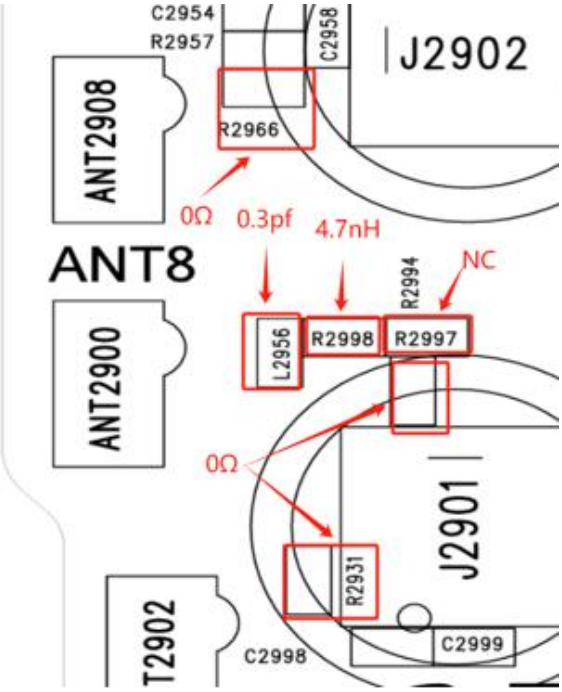
ANT7

| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 0.3pf | C2954 |
| E2(0201) | 2.7nH | R2957 |
| E3(0201) | NC | C2958 |



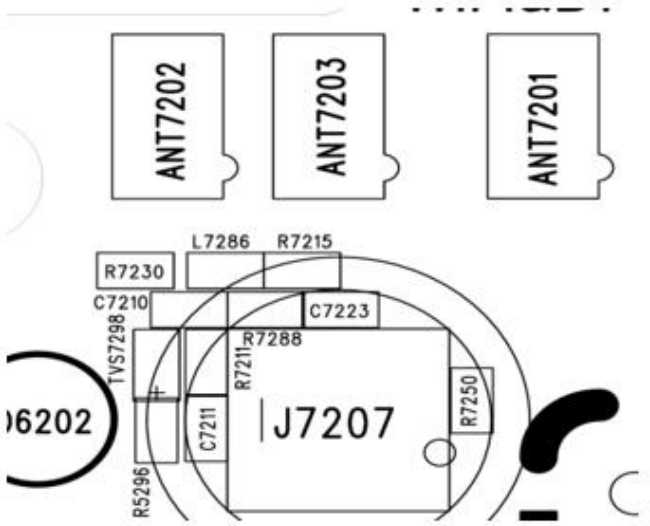

ANT8

| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 0.3pf | L2956 |
| E2(0201) | 4.7nH | R2998 |
| E3(0201) | NC | R2997 |
| E4(0201) | 0Ω | R2994 |
| E5(0201) | 0Ω | R2966 |
| E6(0201) | 0Ω | R2931 |

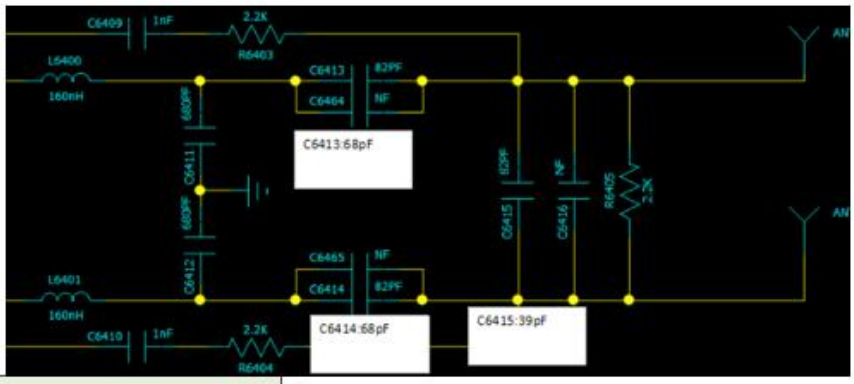


ANT9

| 0201specifications | | |
|---|---|---|
| Element | Value | PCB |
| E1(0201) | 100nH | L7286 |
| E2(0201) | 47PF | R7215 |
| E3(0201) | 68NH | C7223 |
| E4(0201) | 4.7NH | R7288 |
| E5(0201) | NC | C7210 |
| E6(0201) | 0Ω | R7211 |
| E7(0201) | NC | C7211 |
| E8(0201) | 0Ω | R7206 |
| E9(0201) | 0Ω | R7230 |




NFC




| | | |
|---|---|---|
| Element | Value | PCB |
| E1(0402) | 68PF | C6413 |
| E2(0402) | 68PF | C6414 |
| E3(0201) | 100PF | C6415 |
| E4(0402) | 820PF | C6412 |
| E5(0402) | 820PF | C6411 |

The NFC match has changed the values of five matching bits on the left, while the remaining bits remain unchanged.

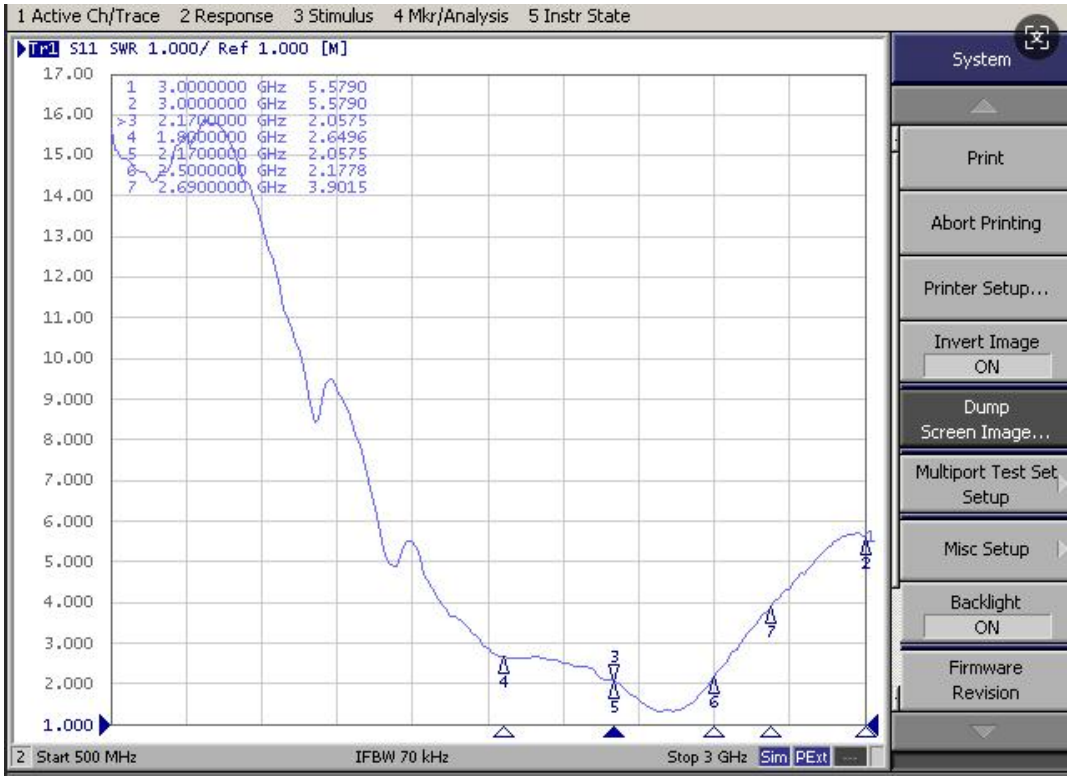
**ANT1 Antenna switch logic**

| | | |
|---|---|---|
| RF1(R104) | 0Ω | GSM:900<br>LTE-FDD:B8<br>WCDMA:B8<br>NR:N8 |
| RF2(R102) | 15nH | LTE-FDD:B12/B17/B28A/B28B<br>NR: N28 |
| RF3(R103) | 3.9nH | GSM:850<br>LTE-FDD:B5/B19/B20/B26<br>WCDMA:B5<br>NR:N5/N20/N26 |
| RF4(R105) | NC | / |

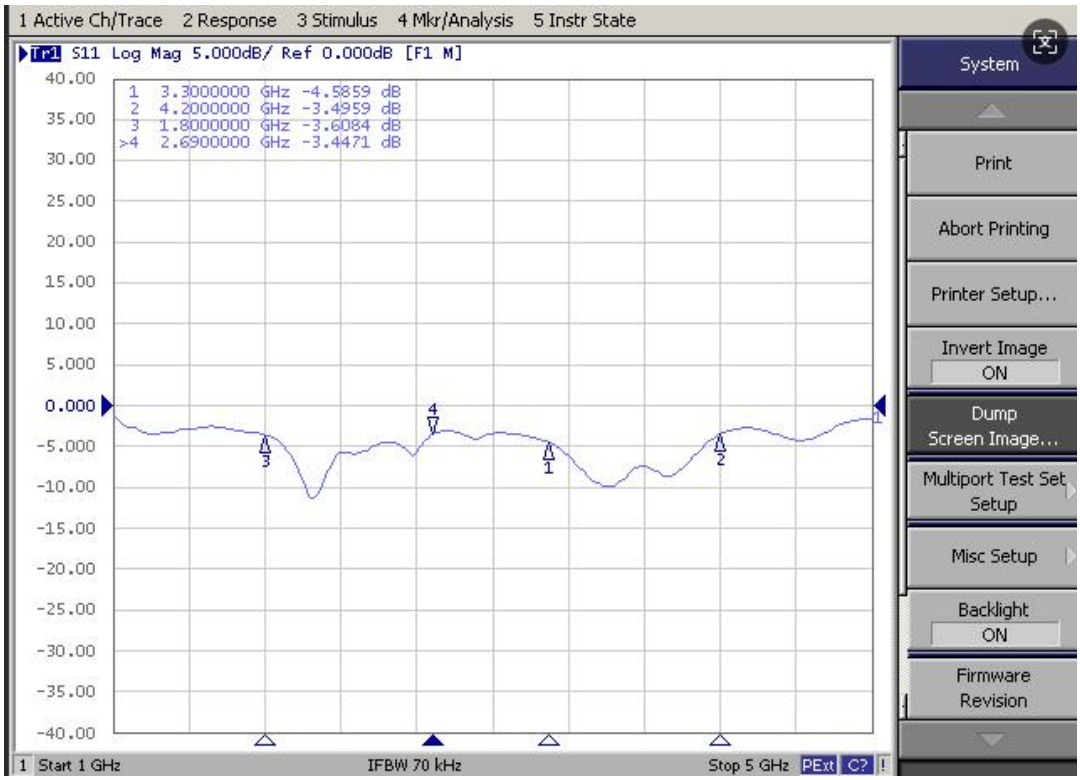
# 4.Antenna return loss

ANT1 LOSS

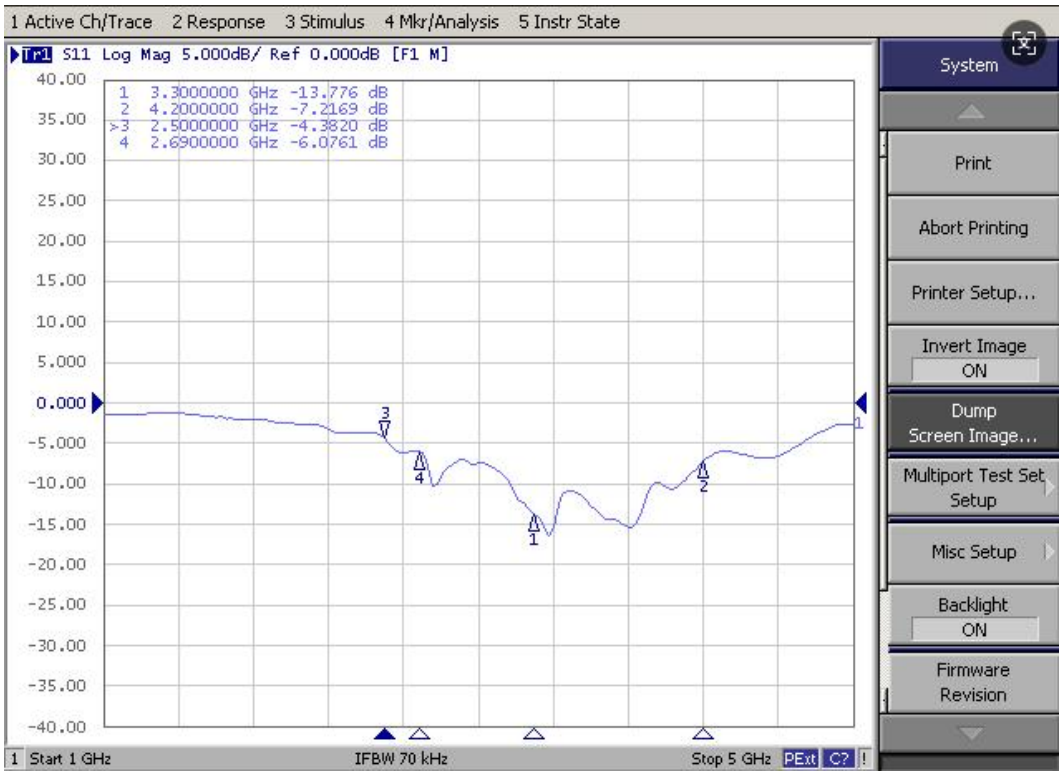
ANT2 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 3.0000000 GHz 5.5790
2 3.0000000 GHz 5.5790
>3 2.1700000 GHz 2.0575
4 1.8000000 GHz 2.6496
5 2.1700000 GHz 2.0575
6 2.5000000 GHz 2.1778
7 2.6900000 GHz 3.9015
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 500 MHz
IFBW 70 kHz
Stop 3 GHz
Sim
PExt
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

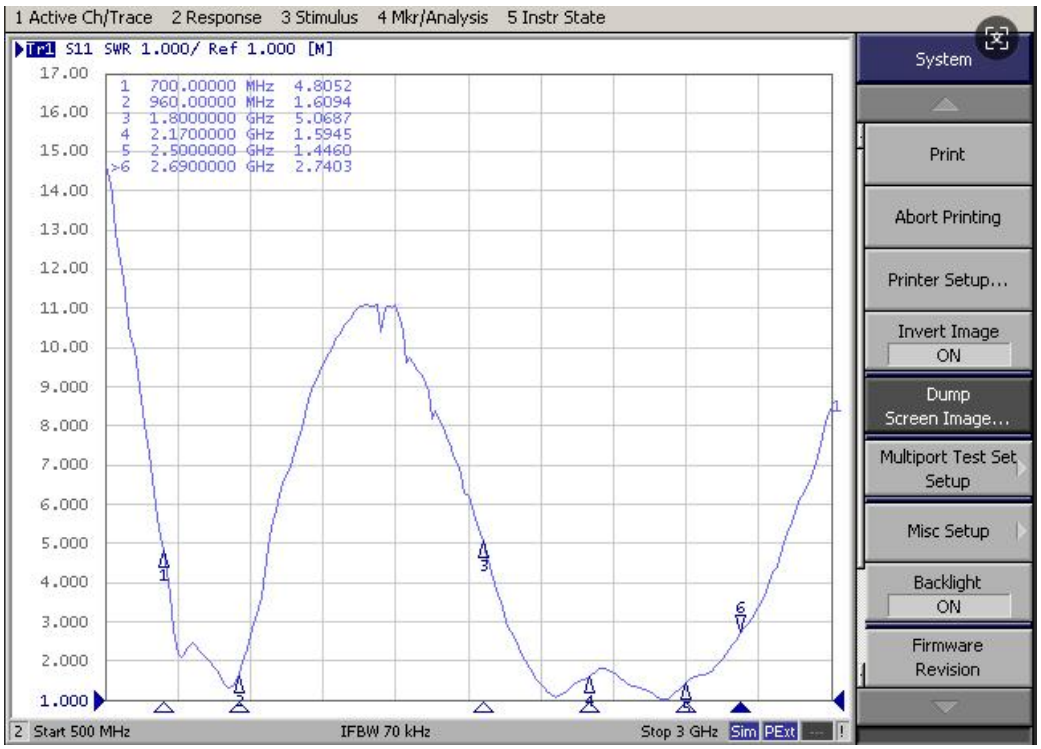
ANT3 LOSS


1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 M]
1 3.3000000 GHz -4.5859 dB
2 4.2000000 GHz -3.4959 dB
3 1.8000000 GHz -3.6084 dB
>4 2.6900000 GHz -3.4471 dB
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.000
0.000
-5.000
-10.00
-15.00
-20.00
-25.00
-30.00
-35.00
-40.00
1 Start 1 GHz
IFBW 70 kHz
Stop 5 GHz
PExt
C?
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

ANT4 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 M]
1 3.3000000 GHz -13.776 dB
2 4.2000000 GHz -7.2169 dB
>3 2.5000000 GHz -4.3820 dB
4 2.6900000 GHz -6.0761 dB
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.000
0.000
-5.000
-10.00
-15.00
-20.00
-25.00
-30.00
-35.00
-40.00
1 Start 1 GHz
IFBW 70 kHz
Stop 5 GHz
PExt
C?
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

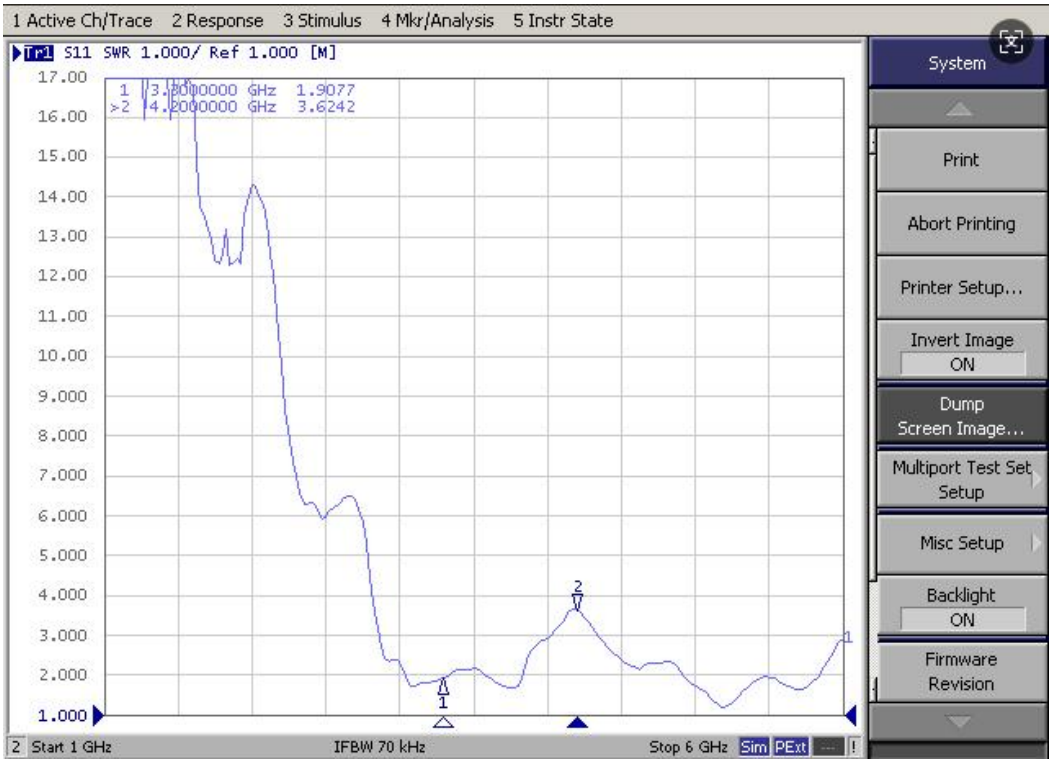
ANT5 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 700.00000 MHz 4.8052
2 960.00000 MHz 1.6094
3 1.8000000 GHz 5.0687
4 2.1700000 GHz 1.5945
5 2.5000000 GHz 1.4460
>6 2.6900000 GHz 2.7403
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 500 MHz
IFBW 70 kHz
Stop 3 GHz
Sim
PExt
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

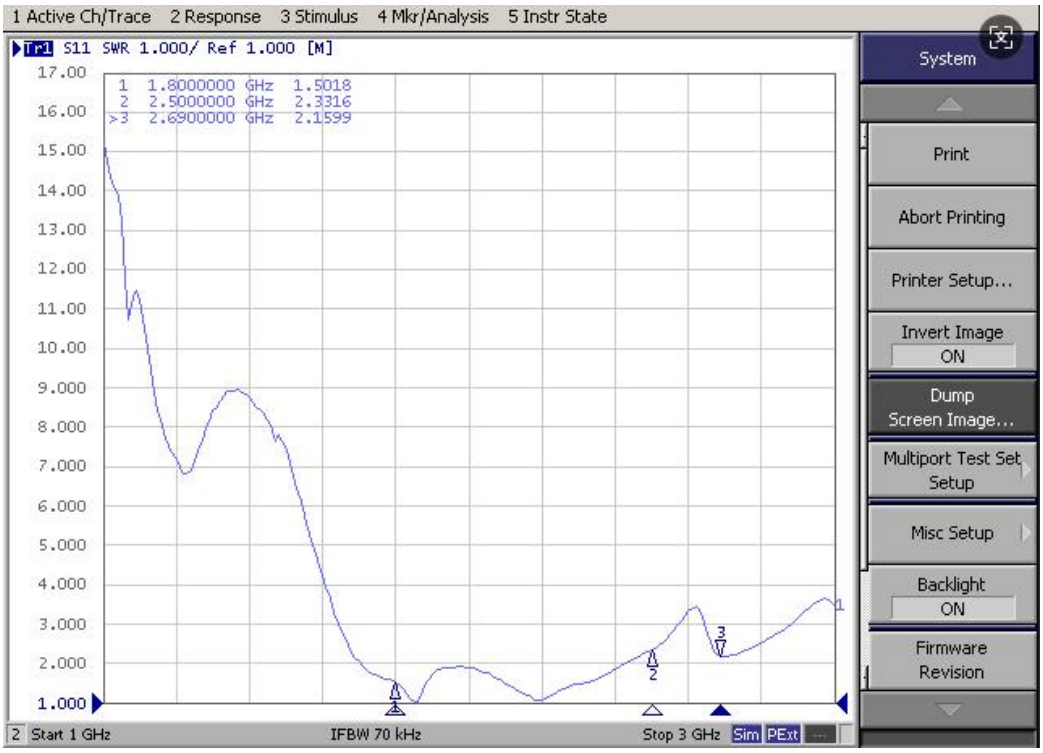
ANT6 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 3.3000000 GHz 2.1800
2 4.2000000 GHz 1.9987
3 5.1500000 GHz 2.0310
>4 5.8500000 GHz 1.7835
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
Start 1 GHz
IFBW 70 kHz
Stop 6 GHz
Sim
PExt
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

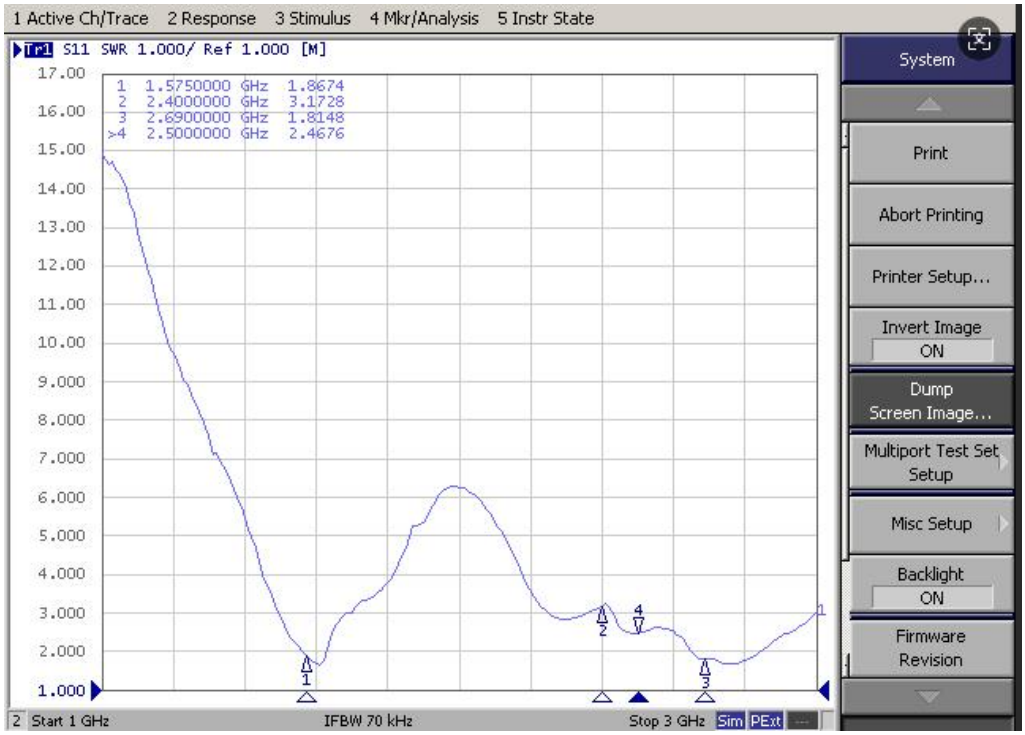
ANT7 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 3.2000000 GHz 1.9077
>2 4.2000000 GHz 3.6242
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 1 GHz
IFBW 70 kHz
Stop 6 GHz
Sim
PExt
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

ANT8 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 1.8000000 GHz 1.5018
2 2.5000000 GHz 2.3316
>3 2.6900000 GHz 2.1599
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 1 GHz
IFBW 70 kHz
Stop 3 GHz
Sim
PExt
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

ANT9 LOSS


1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S11 SWR 1.000/ Ref 1.000 [M]
1 1.5750000 GHz 1.8674
2 2.4000000 GHz 3.1728
3 2.6900000 GHz 1.8148
>4 2.5000000 GHz 2.4676
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 1 GHz
IFBW 70 kHz
Stop 3 GHz
Sim
PExt
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision

# 5.Gain

| Band | Peak Gain/dBi | Band | Peak Gain/dBi |
|---|---|---|---|
| GSM850 | -1.6 | FDD-B28A | -1.9 |
| GSM900 | -1.7 | FDD-B28B | -1.8 |
| DCS1800 | 1.4 | FDD-B66 | 1.4 |
| PCS1900 | 1.2 | TDD-B38 | 1.3 |
| WCDMA B1 | 1.5 | TDD-B40 | 1.4 |
| WCDMA B2 | 1.4 | TDD-B41 | 1.43 |
| WCDMA B5 | -1.6 | NR- N1 | 1.5 |
| WCDMA B8 | -1.7 | NR-N2 | 1.2 |
| FDD-B1 | 1.5 | NR- N3 | 1.4 |
| FDD-B2 | 1.2 | NR -N5 | -1.6 |
| FDD-B3 | 1.4 | NR -N7 | 1.3 |
| FDD-B4 | 1.4 | NR -N8 | -1.7 |
| FDD-B5 | -1.6 | NR- N20 | -1.3 |
| FDD-B7 | 1.3 | NR -N26 | -1.4 |
| FDD-B8 | -1.7 | NR- N28 | -1.8 |
| FDD-B12 | -1.9 | NR -N38 | 1.3 |
| FDD-B17 | -1.9 | NR -N40 | 1.4 |
| FDD-B19 | -1.2 | NR -N41 | 1.3 |
| FDD-B20 | -1.3 | NR -N66 | 1.4 |
| FDD-B26 | -1.4 | NR -N77 | 2.1 |
| GPS | 1.4 | NR-N78 | 2.0 |
| WIFI-2.4 | 1.5 | | |
| WIFI-5G | 1.9 | | |
| BT | 1.5 | | |
| | | | |
| | | | |

# 6.OTA

## 6.1 Antenna OTA

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| GSM850 | 128 | 25.6 | |
| | 190 | 25.9 | |
| | 251 | 26.3 | -102.0 |
| EGSM | 1 | 26.8 | |
| | 62 | 26.9 | |
| | 124 | 27.2 | -102.5 |
| DCS | 512 | 26.5 | |
| | 698 | 26.5 | |
| | 885 | 26.8 | -105.5 |
| PCS | 512 | 26.3 | |
| | 661 | 26.5 | |
| | 810 | 26.7 | -105.3 |

| POTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| WCDMA Band 1 | 10562 | 19.1 | |
| | 10700 | 19.2 | |
| | 10838 | 19.2 | -108.6 |
| WCDMA Band 2 | 9662 | 19.5 | |
| | 9800 | 19.5 | |
| | 9938 | 19.6 | -108.4 |
| WCDMA Band 5 | 4357 | 17.6 | |
| | 4410 | 17.8 | |
| | 4458 | 17.6 | -104.5 |
| WCDMA Band 8 | 5900 | 17.4 | |
| | 5900 | 17.7 | |
| | 5900 | 17.6 | -105.2 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| B1(10M) | 50 | 19.4 | |
| | 300 | 19.5 | |
| | 550 | 19.6 | -98.2 |
| B2(10M) | 650 | 19.3 | |
| | 900 | 19.4 | |
| | 1150 | 19.6 | -96.3 |
| B3(10M) | 1250 | 19.1 | |
| | 1575 | 19.3 | |
| | 1900 | 19.4 | -95.5 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| B4(10M) | 2000 | 19.1 | |
| | 2175 | 19.2 | |
| | 2350 | 19.3 | -98.3 |
| B5(10M) | 2450 | 17.3 | |
| | 2525 | 17.5 | |
| | 2600 | 18.2 | -93.1 |
| B7(10M) | 2800 | 17.8 | |
| | 3100 | 18.0 | |
| | 3400 | 17.6 | -96.0 |
| B8(10M) | 3500 | 17.9 | |
| | 3625 | 18.3 | |
| | 3750 | 18.6 | -92.8 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| B12(10M) | 5060 | 15.6 | |
| | 5095 | 15.9 | |
| | 5130 | 16.3 | -92.1 |
| B17(10M) | 5780 | 15.8 | |
| | 5790 | 16.3 | |
| | 5800 | 16.6 | -91.8 |
| B19(10M) | 6050 | 17.6 | |
| | 6075 | 17.7 | |
| | 6100 | 17.9 | -93.3 |
| B20(10M) | 6200 | 17.7 | |
| | 6300 | 17.9 | |
| | 6400 | 18.2 | -92.7 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| B26 (10M) | 8740 | 17.5 | |
| | 8865 | 17.9 | |
| | 8990 | 18.3 | -92.8 |
| B28A (10M) | 9310 | 15.8 | |
| | 9360 | 15.9 | |
| | 9410 | 16.1 | -92.3 |
| B28B (10M) | 9460 | 15.7 | |
| | 9510 | 15.5 | |
| | 9560 | 16.1 | -92.2 |
| B66 (10M) | 66536 | 19.0 | |
| | 66786 | 19.2 | |
| | 67036 | 19.3 | -97.1 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| B38 (20M) | 37850 | 18.3 | |
| | 38000 | 18.6 | |
| | 38150 | 18.7 | -92.4 |
| B40 (20M) | 38750 | 18.3 | |
| | 39150 | 18.3 | |
| | 39550 | 18.5 | -92.8 |
| B41 (20M) | 40620 | | |
| | 40140 | 18.6 | -91.9 |
| | 41240 | | |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| N1 (20M) | 386000 | 19.4 | |
| | 390000 | 19.6 | |
| | 394000 | 19.5 | -94.7 |
| N2 (20M) | 388000 | 19.4 | |
| | 392000 | 19.5 | |
| | 396000 | 19.6 | -94.3 |
| N2 (20M) | 344000 | 19.5 | |
| | 349500 | 19.3 | |
| | 355000 | 19.5 | -93.5 |
| N5 (20M) | 166800 | 17.3 | |
| | 167300 | 17.6 | |
| | 167800 | 17.8 | -89.4 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| N7 (20M) | 502000 | 17.7 | |
| | 507000 | 18.1 | |
| | 512000 | 18.2 | -92.1 |
| N8 (20M) | 178000 | 17.6 | |
| | 179500 | 17.8 | |
| | 181000 | 17.9 | -89.1 |
| N20 (20M) | 168400 | 18.1 | |
| | 169400 | 17.9 | |
| | 170400 | 18.5 | -88.3 |
| N26 (20M) | 173800 | 17.7 | |
| | 175300 | 18.0 | |
| | 176800 | 18.3 | -89.3 |

| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| N28 (20M) | 142600 | 16.9 | |
| | 145100 | 16.7 | |
| | 147600 | 16.6 | -89.5 |
| N38 (20M) | 516000 | 18.5 | |
| | 519000 | 18.4 | |
| | 522000 | 18.6 | -92.6 |
| N40 (20M) | 462000 | 18.6 | |
| | 470000 | 18.7 | |
| | 478000 | 18.8 | -92.5 |
| N41 (100M) | 509202 | 19.2 | |
| | 518598 | 19.3 | |
| | 528000 | 19.6 | -87.2 |

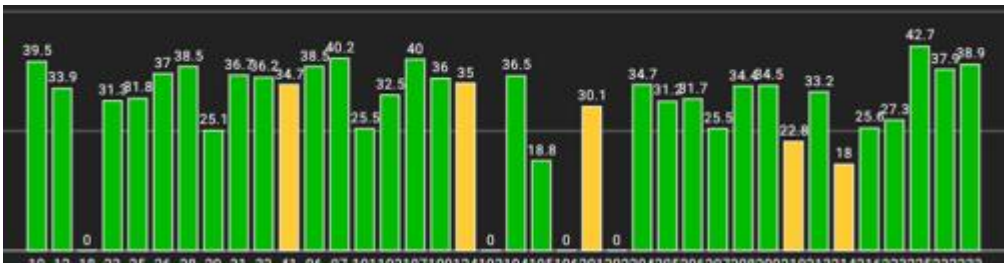
| OTA | | | |
|---|---|---|---|
| Band | Channal | TRP | TIS |
| N77 (100M) | 623334 | 18.6 | |
| | 650000 | 18.7 | |
| | 676666 | 18.8 | -87.1 |
| N78 (100M) | 623334 | 18.4 | |
| | 636666 | 18.6 | |
| | 650000 | 18.9 | -88.2 |
| N66 (20M) | 424000 | 19.5 | |
| | 429000 | 19.5 | |
| | 434000 | 19.6 | -93.7 |

| OTA | | | | |
|---|---|---|---|---|
| | | | | |
| | Band | Channel | TRP/dBm | TIS/dBm |
| 2.4G | b(11M) | 1 | 12.5 | |
| | | 6 | 11.4 | |
| | | 13 | 12.7 | -81.3 |
| | g(54M) | 1 | 11.0 | |
| | | 6 | 10.3 | |
| | | 13 | 11.8 | -70.2 |
| | n(MCS7) | 1 | 11.5 | |
| | | 6 | 10.6 | |
| | | 13 | 11.8 | -65.0 |
| 5.8G | a(54M) | 36 | 10.9 | |
| | | 149 | 11.5 | |
| | | 165 | 11.9 | -71.0 |
| | n(MCS7) | 36 | 10.1 | |
| | | 149 | 11.5 | |
| | | 165 | 11.7 | -66.0 |
| | ac(MCS8) | 36 | 10.0 | |
| | | 149 | 11.6 | |
| | | 165 | 11.7 | -65.3 |

## 2 NFC testing

| NFC | |
|---|---|
| tag | Reading distance (mm) |
| card 1 | 38 |
| card 2 | 40 |
| card 3 | 30 |
| card 4 | 20 |

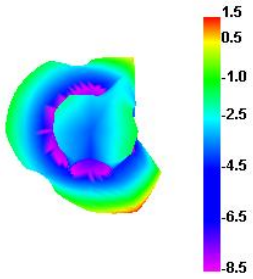
## 6.2 GPS testing



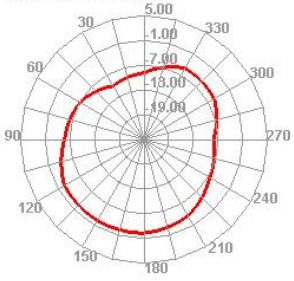

## 7.1Antenna radiation pattern

## 7.2 GPS/WIFI/BT

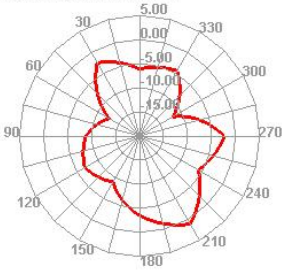
1568.888MHz



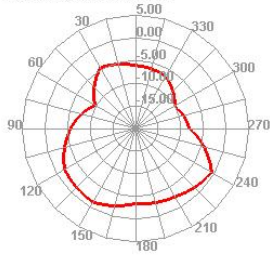

1568.888MHz H



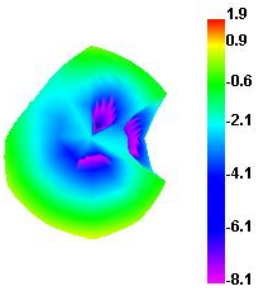

1568.888MHz E1



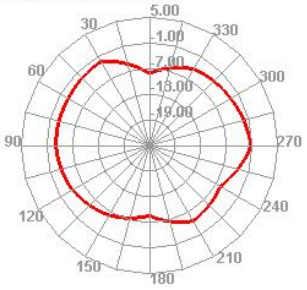

1568.888MHz E2



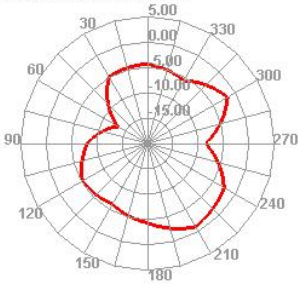
2422.222MHz



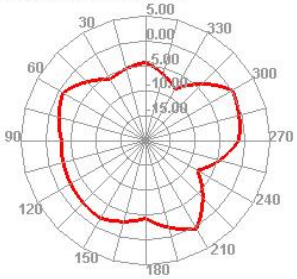

2422.222MHz H



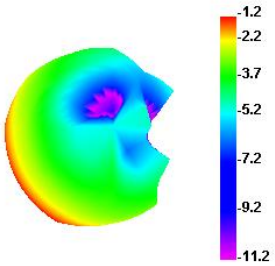

2422.222MHz E1



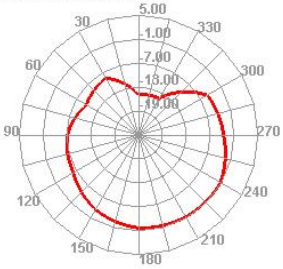

2422.222MHz E2



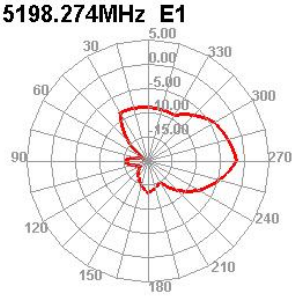

5198.274MHz



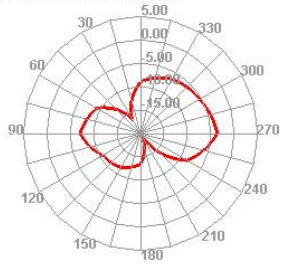

5198.274MHz H




5198.274MHz E1

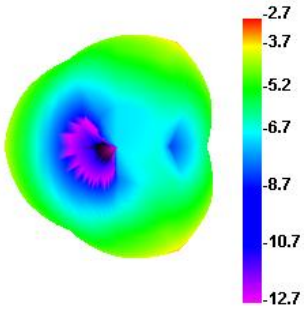



5198.274MHz E2

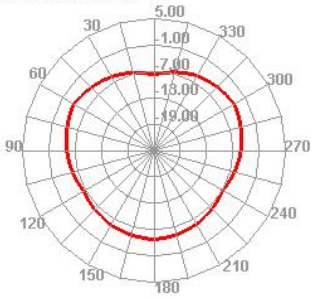


## 7.3.2 GSM/WCDMA/LTE/NR

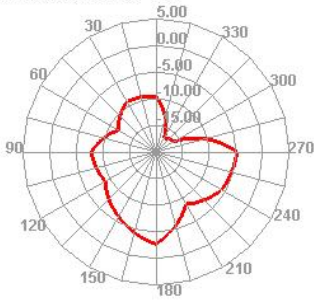
843.662MHz



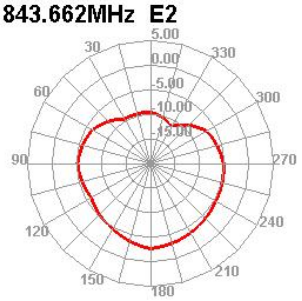

843.662MHz H



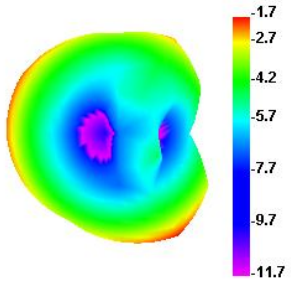

843.662MHz E1



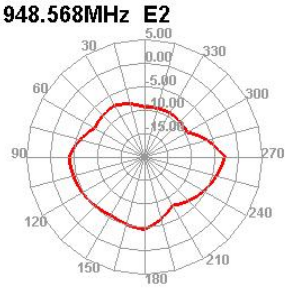

843.662MHz E2



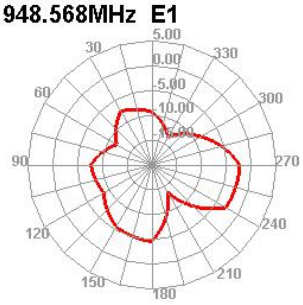

948.568MHz



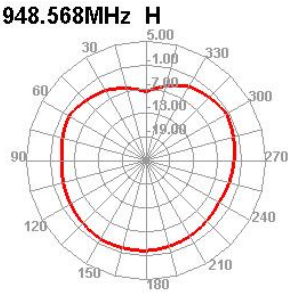

948.568MHz E2



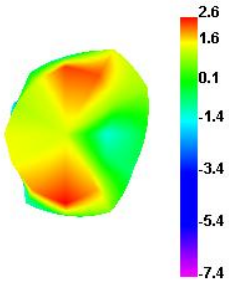

948.568MHz E1



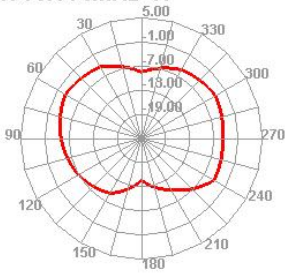

948.568MHz H



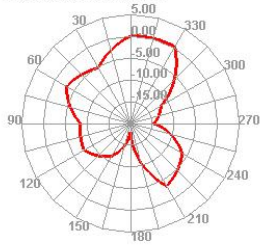
1766.664MHz



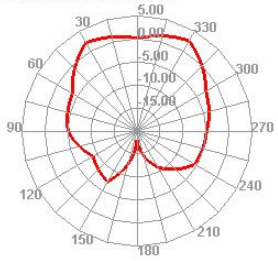

1766.664MHz H



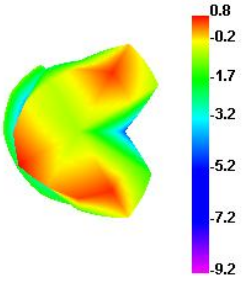

1766.664MHz E1



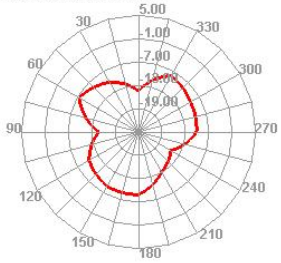

1766.664MHz E2



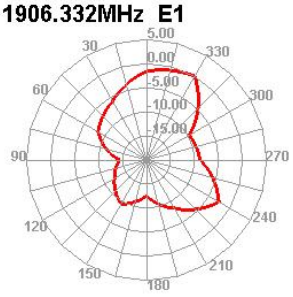

1906.332MHz



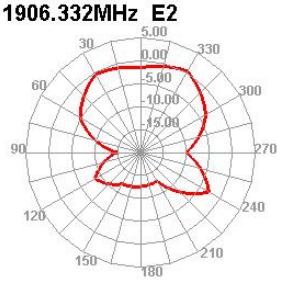

1906.332MHz H



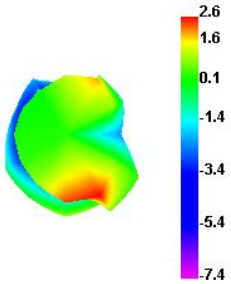

1906.332MHz E1



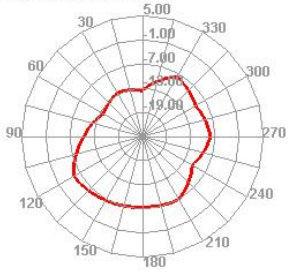

1906.332MHz E2



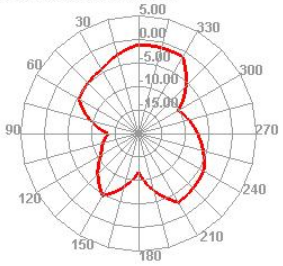
2086.662MHz



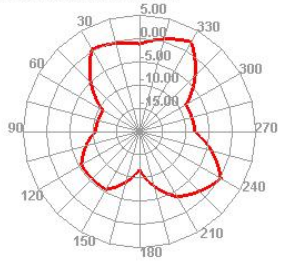

2086.662MHz H



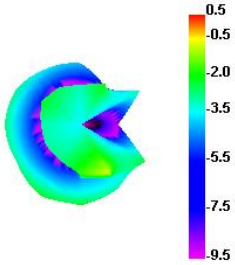

2086.662MHz E1



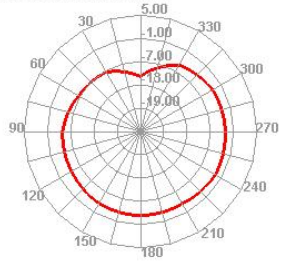

2086.662MHz E2



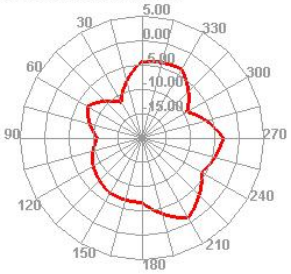

2333.333MHz



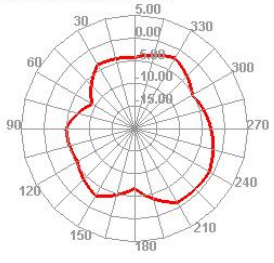

2333.333MHz H



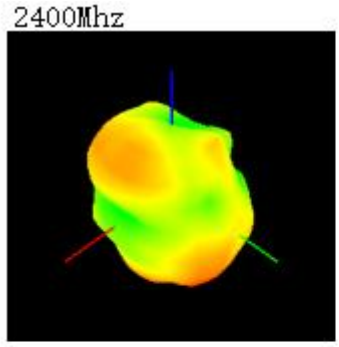

2333.333MHz E1

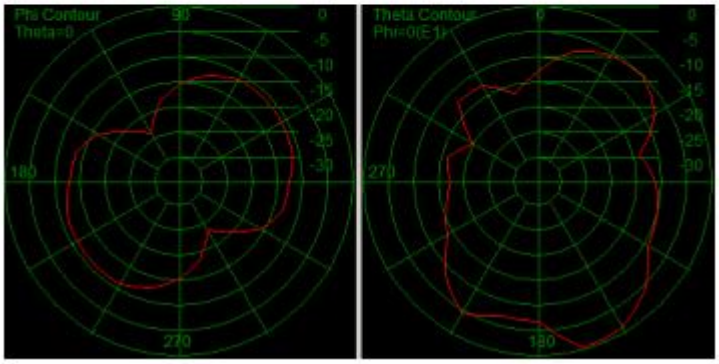



2333.333MHz E2

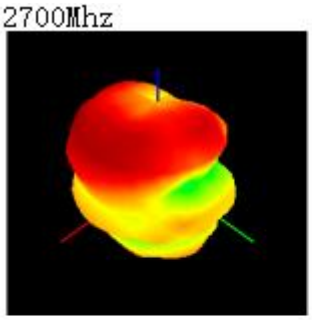


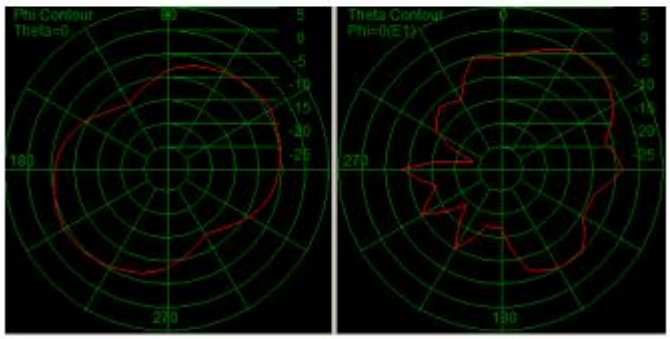
2400Mhz



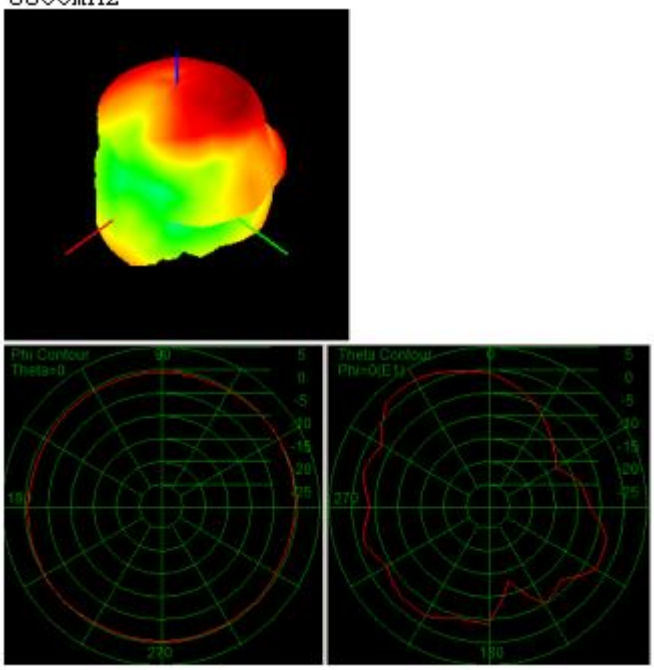



2700Mhz

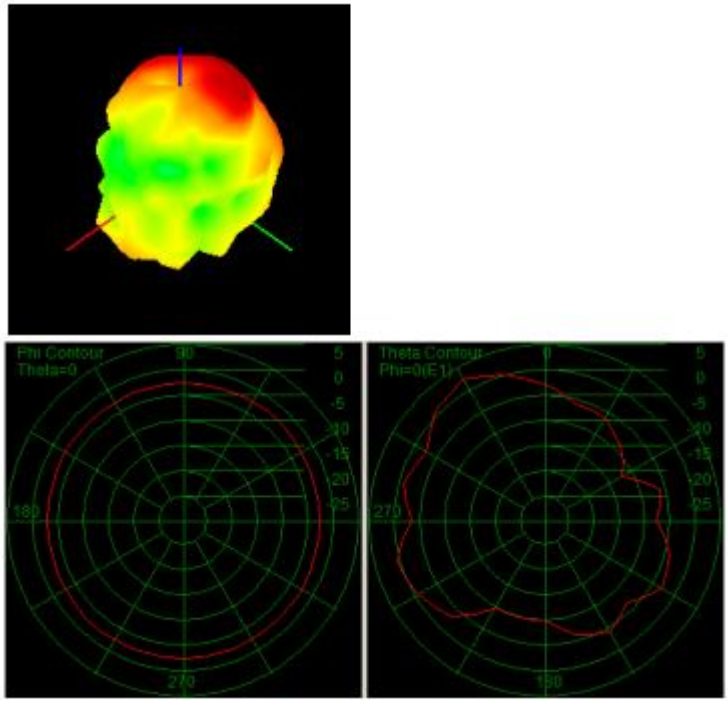




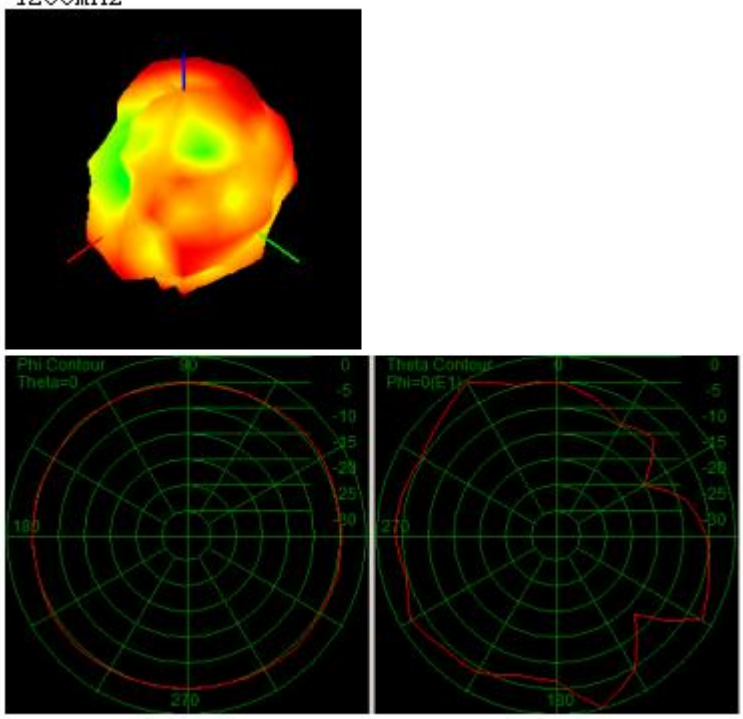
3300Mhz




3800MHZ

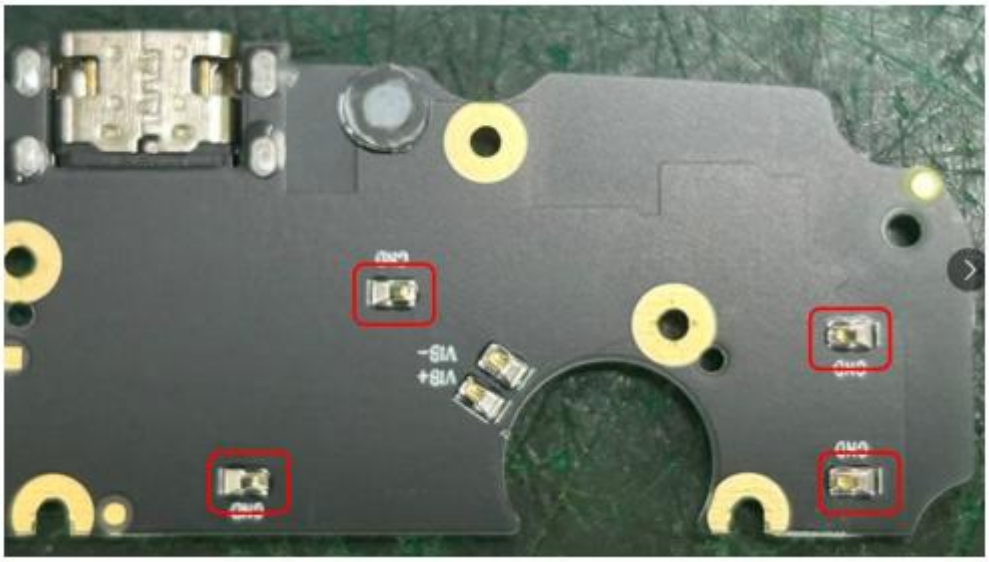


4200Mhz

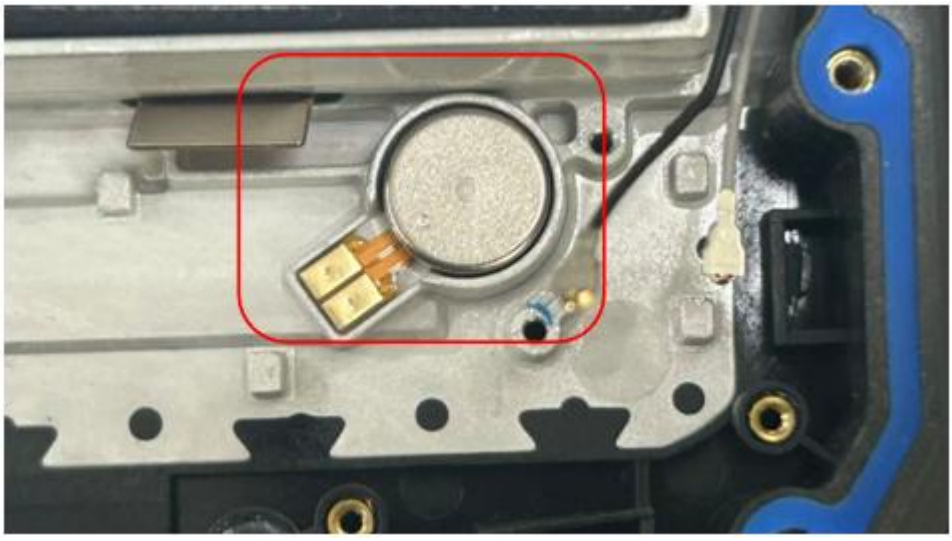

Phi Contour
Theta=0
90
0
-5
-10
-15
-20
-25
-30
180
270
Theta Contour
Phi=0(E1)
0
0
-5
-10
-15
-20
-25
-30
270
180

# 8.EMC optimization

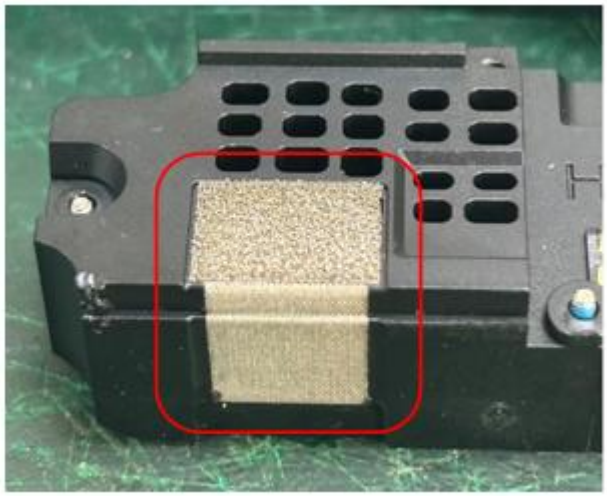
1.As shown in the figure: The small board ANT1 has a red square box with a spring-loaded contact for grounding.




2.As shown in the diagram: The motor inside the red box of the small panel ANT1 is grounded.

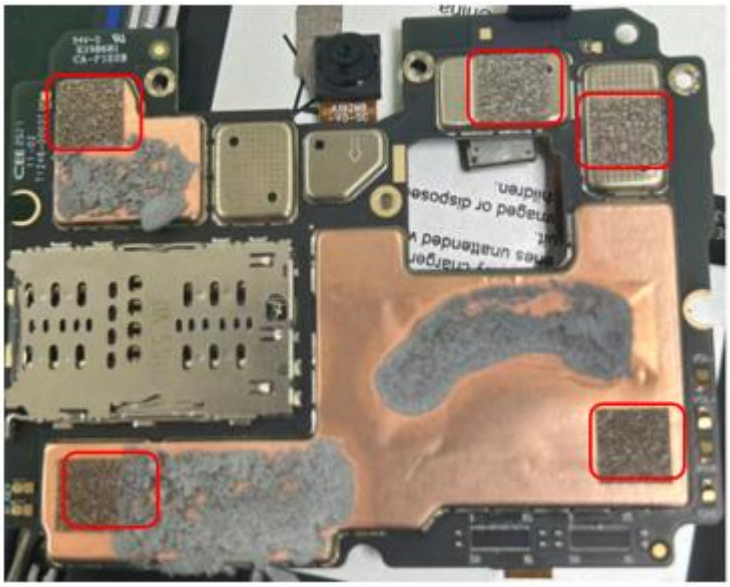


3.As shown in the figure: The BOX monomer within the red box of the small panel ANT1 is grounded.

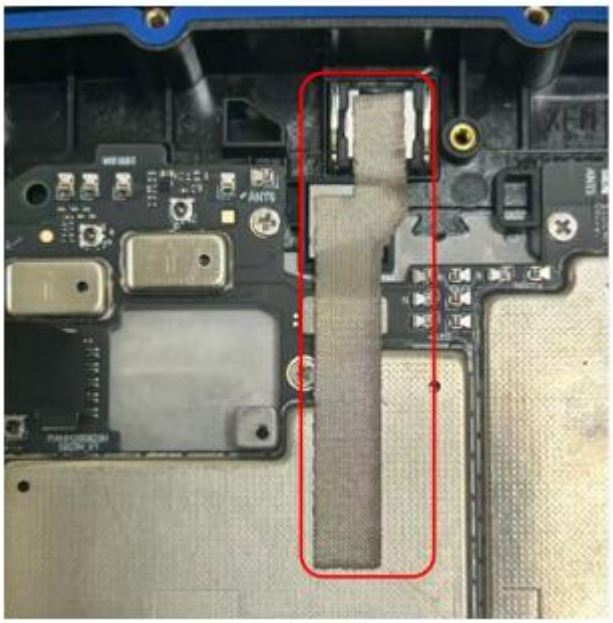


4.As shown in the figure: Remove the two spring feet inside the red box of the small board ANT1.

5.As shown in the figure: Add conductive sponge grounding inside the red box below.



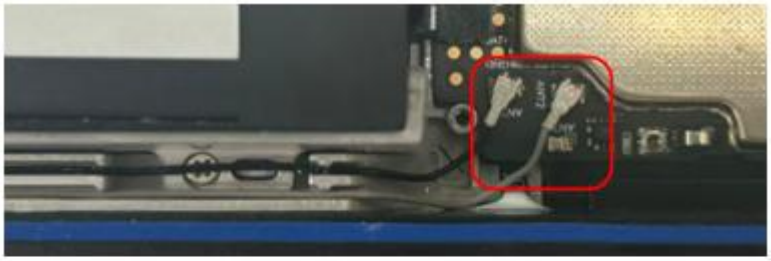
6.As shown in the diagram: Add a conductive fabric camera inside the red box below, and ground the microphone.

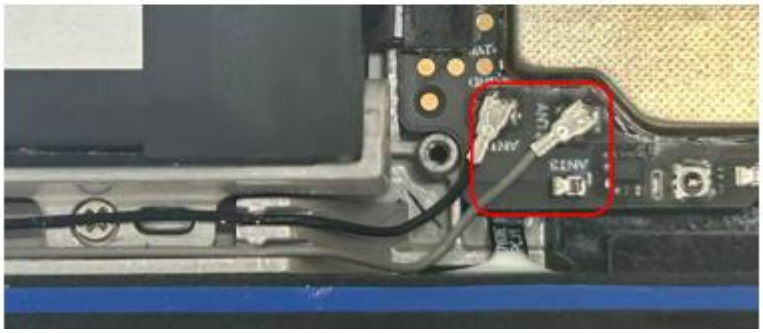


7.As shown in the diagram: Copper foil is added for heat dissipation at the camera location, and double-sided tape is used to secure the wiring at the red box area to ensure consistency.

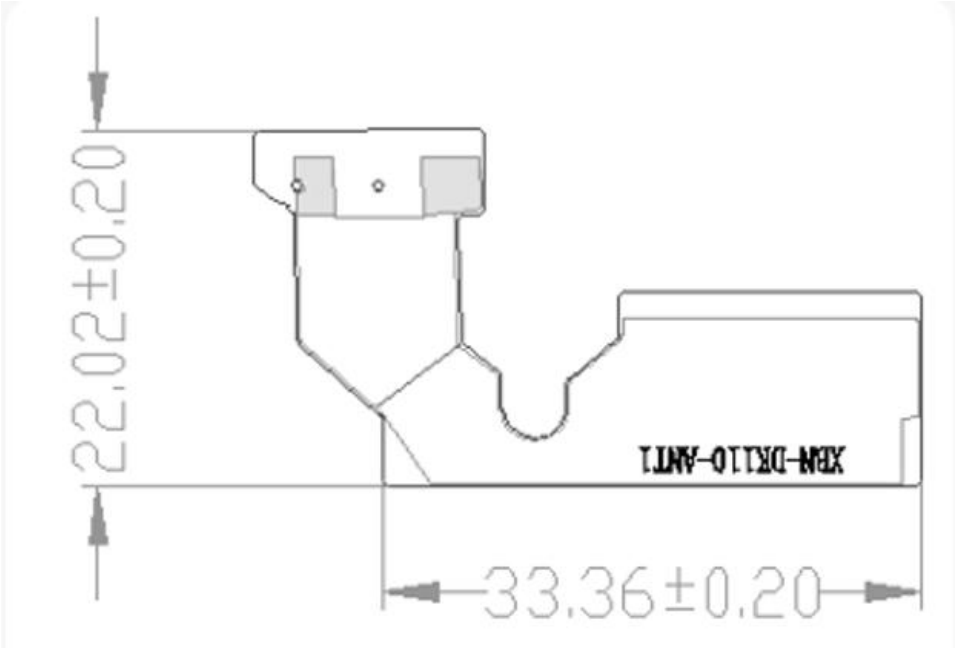

8.1. Add double-sided tape at the lined area of the red box in the diagram above to secure the wiring and ensure consistency.
8.2. The blue box in the diagram above has a conductive sponge for grounding the microphone wiring.

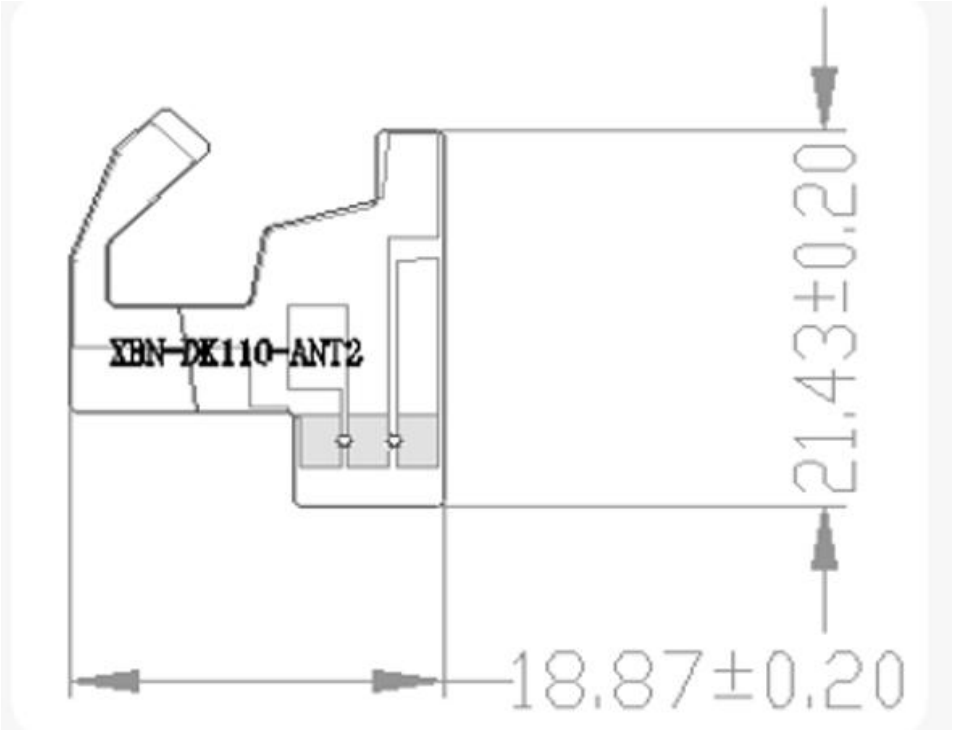
9.Keep the gray Cable away from the ANT3 feed point.

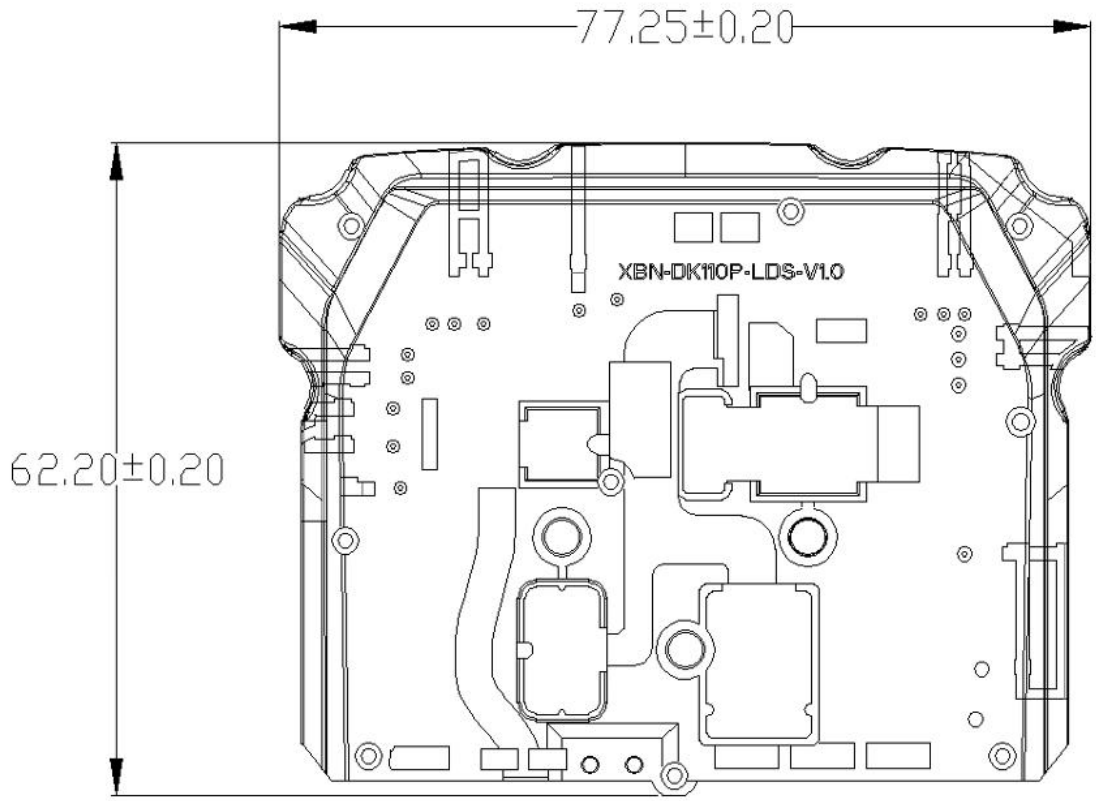


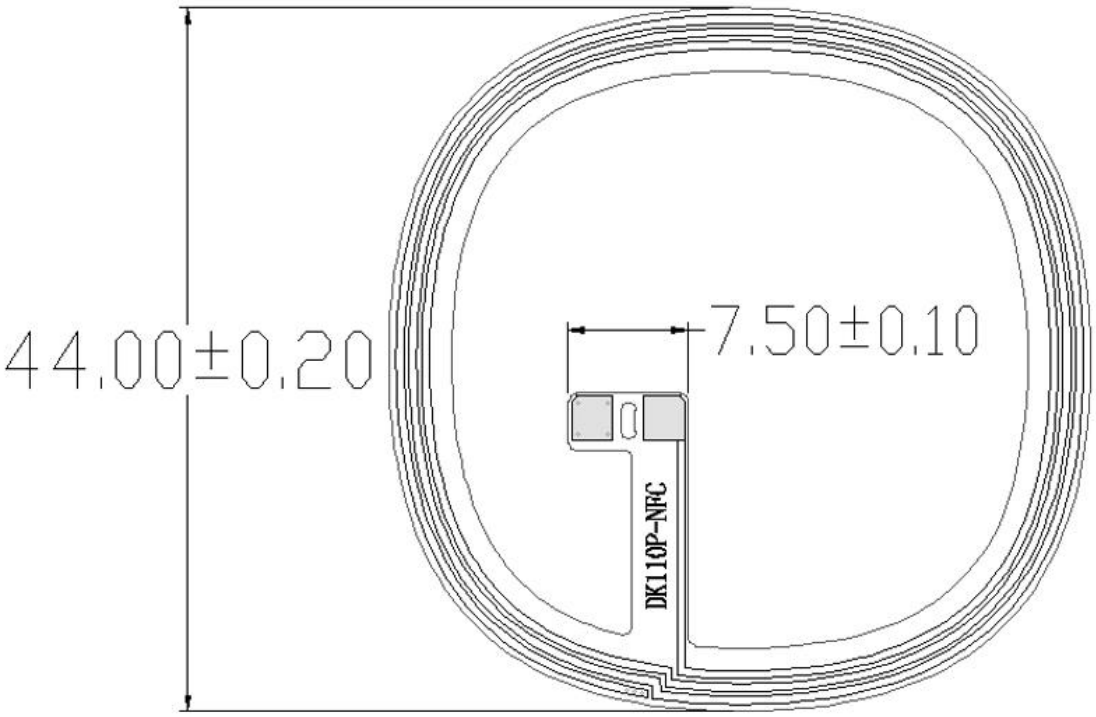


9.Dimension Inspection Report




77.25±0.20
62.20±0.20
XBN-DK110P-LDS-V1.0


44.00±0.20
7.50±0.10
DK110P-NFC