



上海增信电子有限公司
Signal Plus Technology Co., Ltd.

规格承认书
SPECIFICATION FOR APPROVAL

日期
DATE: 2022.10.12

版本
REV.: B

客 户
CUSTOMER: 德明通讯(上海)有限公司

客 户 料 号
CUSTOMER P/N: TX0555T003

品 名
PART NAME: 内置wifi天线 支架+钢片 for NG21

供 方 料 号
SUPPLIER P/N: 6001F00291

送样日期Date: 送样数量Q'TY: Pcs

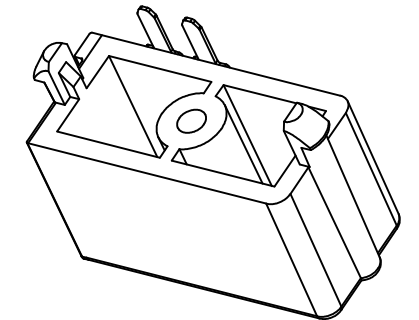
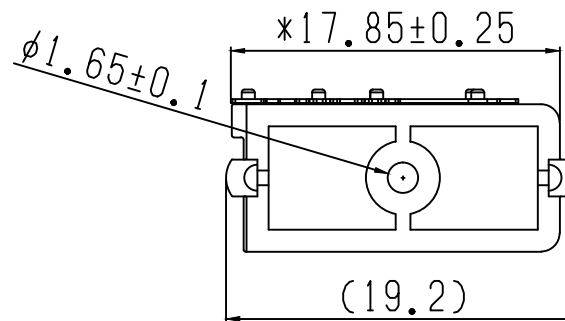
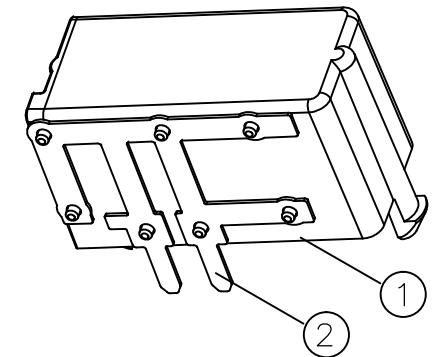
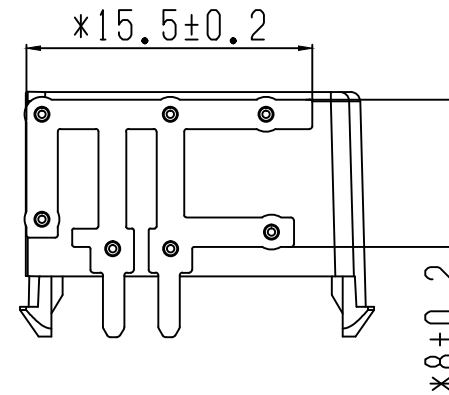
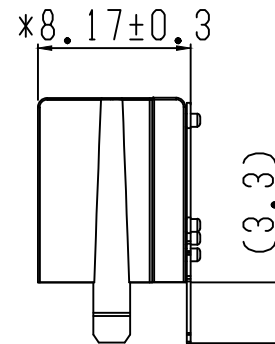
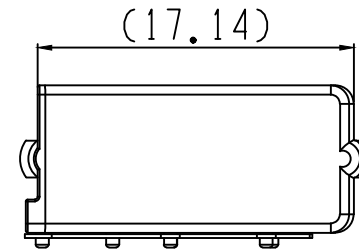
客户确认CUSTOMER APPROVED BY		
核准 Approved by	审核 Checked by	拟制 Prepared by

供方确认SUPPLIER SIGNATURE		
核准 Approved by	审核 Checked by	拟制 Prepared by
Jack		andy

ZX-QT-RD-0011-A1

Add:上海市徐汇区桂箐路69号30栋603室 Tel:021-54266190 Fax:021-54266191

REV	DATE	DESCRIPTION
X1	08/20-2020	New Issue
X2	09/23-2020	Update support dimensions
A	10/27-2020	X2-A
X3	09/30-2022	Change the support material
X4	10/12-2022	Change the project name



Description:

- 1, The parts are well assembled;
- 2, The height of columns should be $\leq 0.30\text{mm}$, after hot-melted;
- 3, there is no warping, deformation and other defects on the antenna;
- 4, For antenna support's requirement:
Material: Sabic PC 940
Recycling material shall be not used.
- 5, The parts compliance with RoHS2.0 requirements;
- 6, Strict size is marked with "*", and () size is for reference.



2	WIFI-ANT	SUS304, Pre-nickel plated, T=0.2mm	1	404-1-0110-X2
1	WIFI Support	Sabic PC 940, UL94 V-0, Color: Black	1	302-1-0061-X3
NO	DESCRIPTION	Q'TY	REMARK	

CUSTOMER'S SINGATURE	XXX.	±2.0	APPROVED	CUSTOMER:		
	XX.	±1.0	CHECKED	PART NO: TX0555T003		
	X.	±0.5		PART NAME: WIFI ANTENNA FOR NG21		
	.X	±0.3		Z&X P/NO: 6001F00291		
	.XX	±0.2	DRAWING	REV	UNIT	FILE:
	⊙	≡		X4	mm	SHEET: 1/1



Antenna Test Report

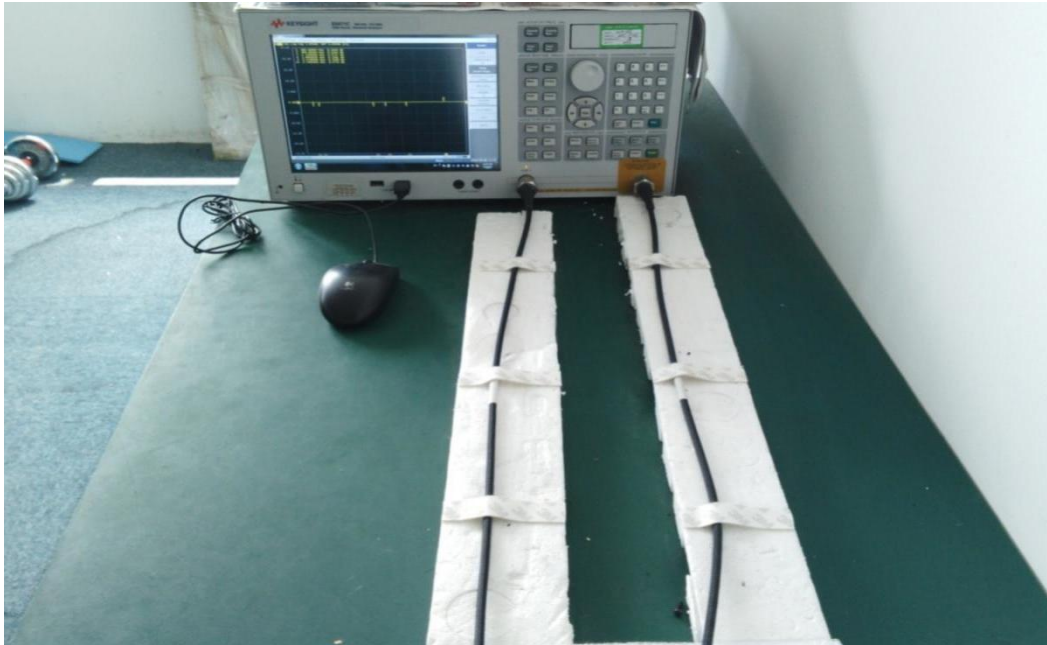
(NG21-WIFI)

1. RF Fixture Experiment

1.1 Test Setup

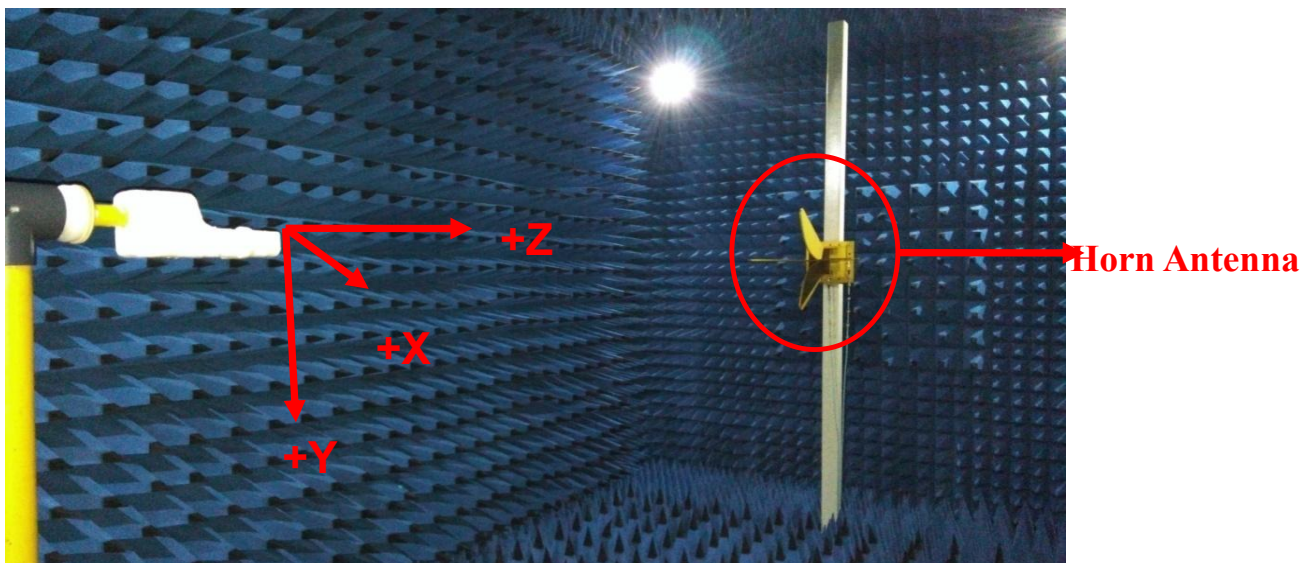
1.1.1 VNA Test Setup

VSWR and Return Loss measurements (S_{11}) were performed using an Keysight E5071C Network Analyzer. The isolation between antennas is also tested. The testing was performed with apparatus in free space.

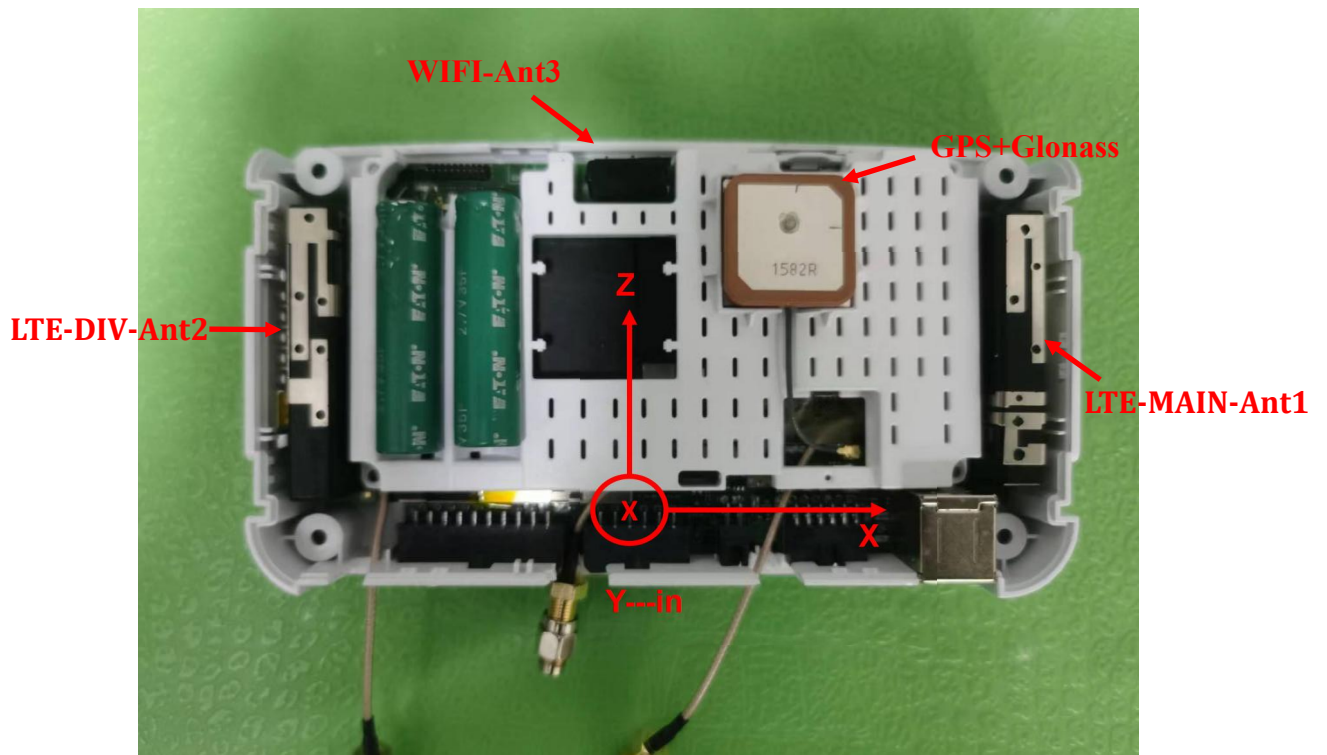


1.1.2 Anechoic Chamber Test Setup

The gain of the antenna was measured in the anechoic chamber. The chamber provides less than -30 dB reflectivity from 400 MHz through 6 GHz. The chamber size is: 7m*4m*3m. The measurement results are calibrated using a leaky wave horn standard. We can measure the antenna gain and efficiency accurately.



2. Antenna Solution



Data Preview

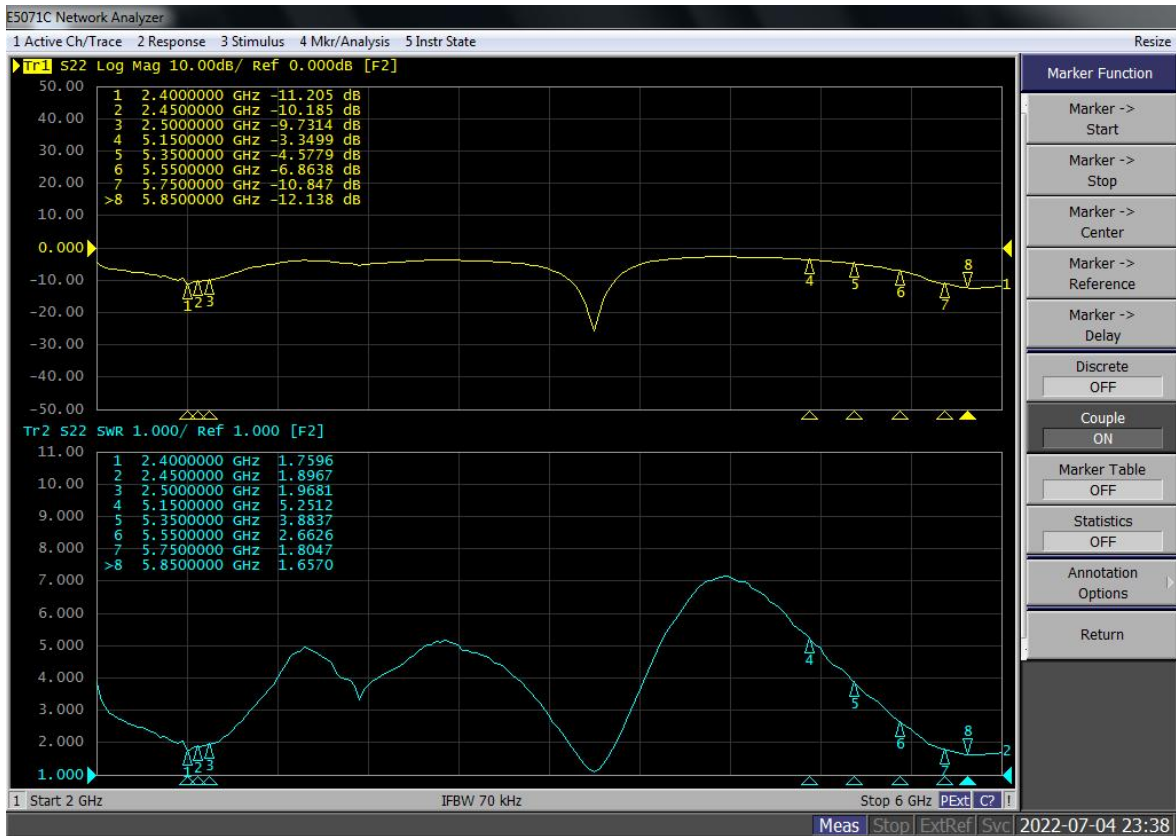
WIFI-Ant3:

Freq.(MHz)	2400	2450	2500	5150	5350	5550	5750	5850
VSWR	1.75	1.89	1.96	5.25	3.88	2.66	1.80	1.65
Gain(dBi)	3	3	3	4	4	4	4	4
Eff.	63.4%	65.5%	61.2%	28.3%	33.0%	52.8%	54.7%	60.1%

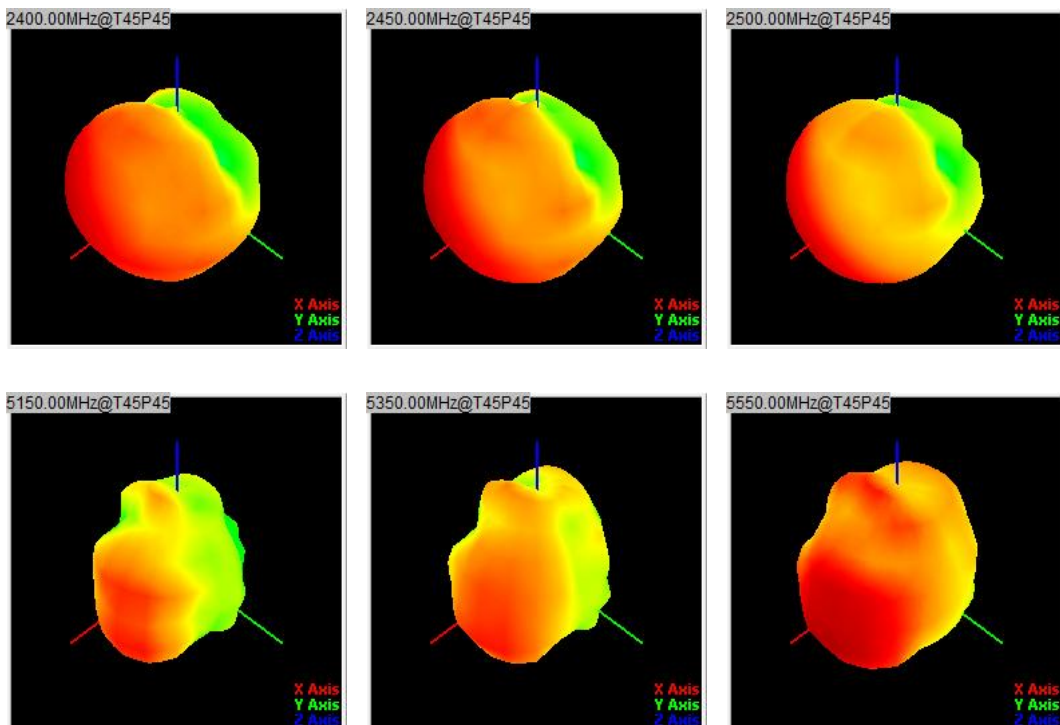
Active test data:

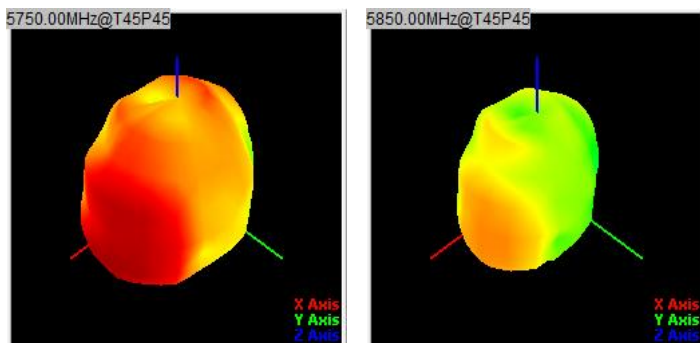
802.11b (11M)	Freq (MHz)	TRP	TIS
1	2412	13.36	-83.52
6	2437	13.12	-83.49
11	2462	12.89	-82.83
802.11a (54M)	Freq (MHz)	TRP	TIS
40	5200	11.05	-67.21
161	5805	11.77	-67.62

S11(WIFI-Ant3):



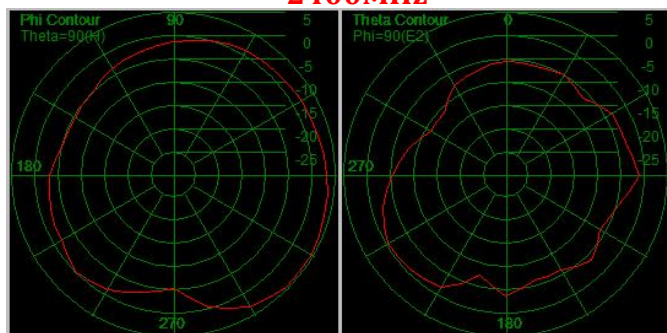
Radiation patterns:3D





Radiation patterns:2D

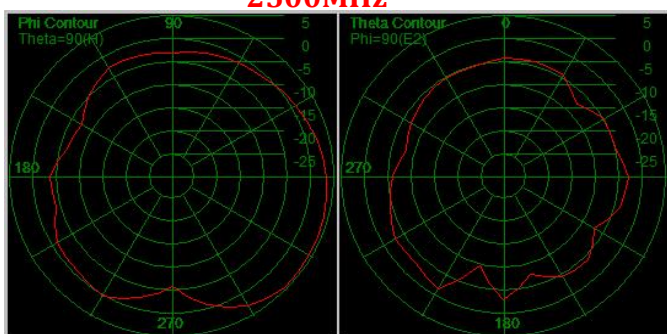
2400MHz



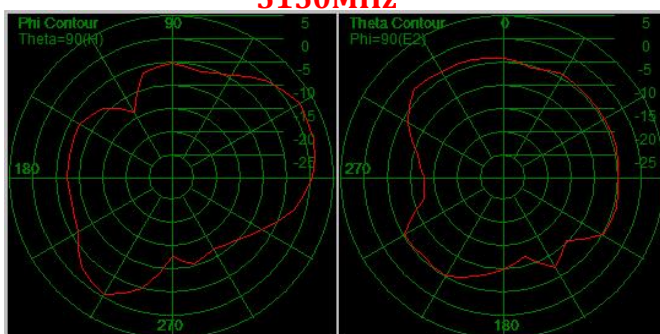
2450MHz



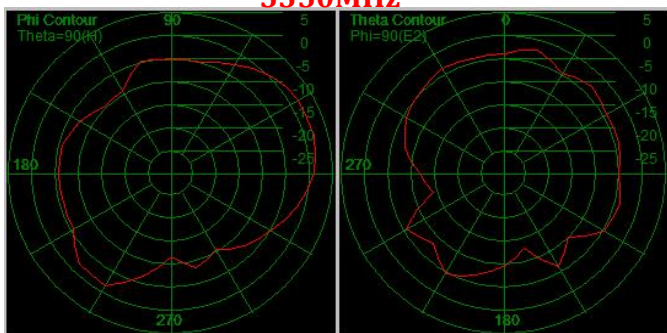
2500MHz



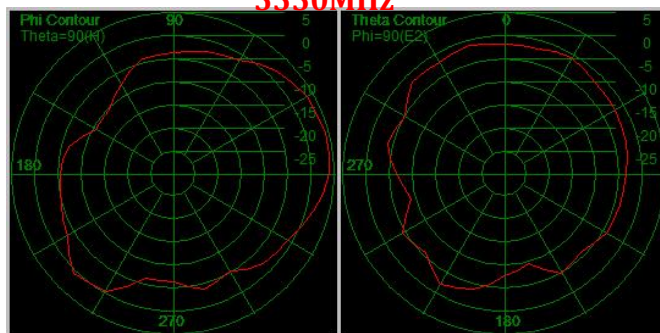
5150MHz



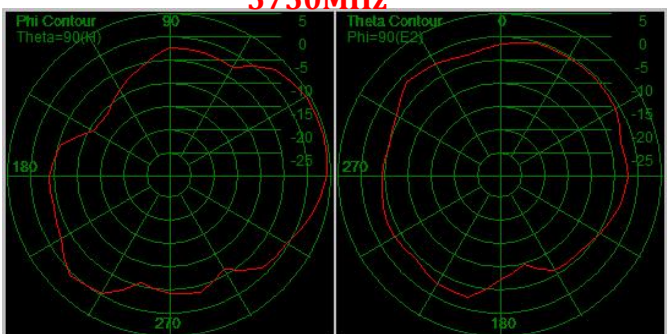
5350MHz



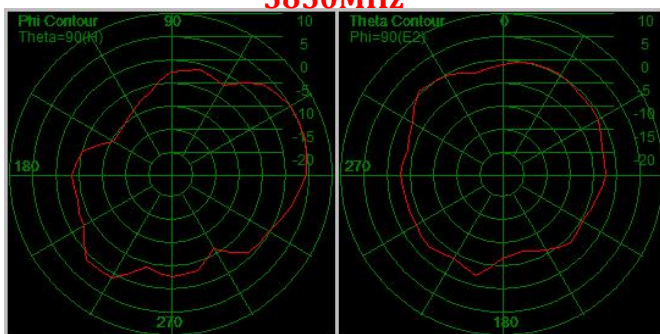
5550MHz



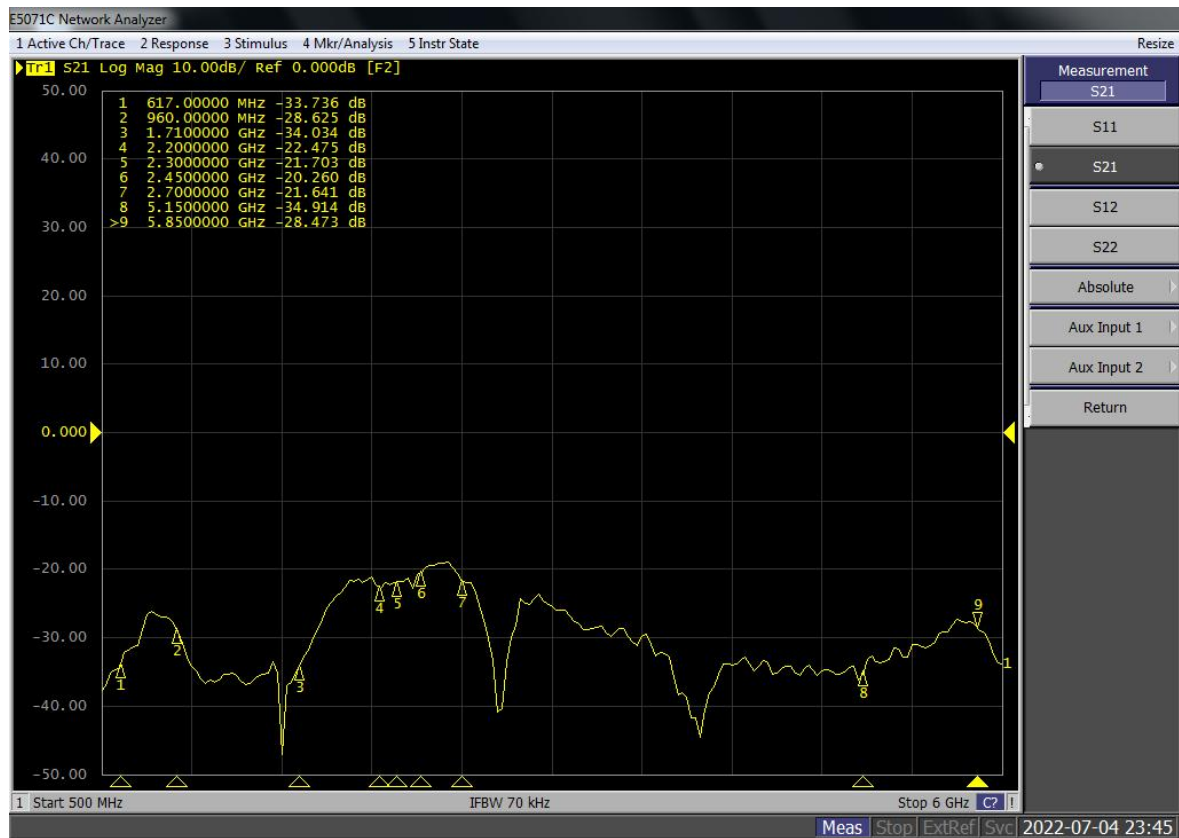
5750MHz



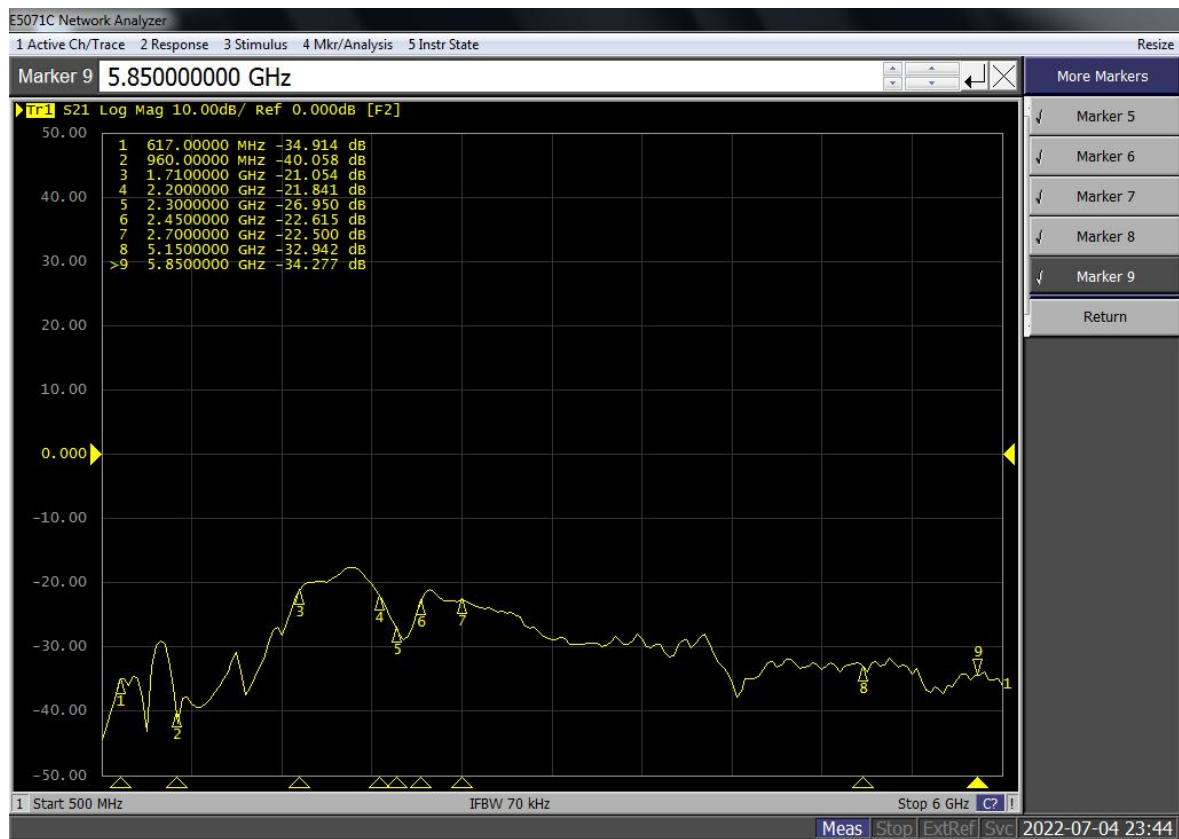
5850MHz



S21(Ant1&Ant3)



S21(Ant2&Ant3)



S21(Ant3&GPS+Glonass)

