



Specification

# SPECIFICATION

- Model No. : MA.206
- Part No. : **MA.206.A.A301111.C301151**
- Product Name : Stingray Adhesive Mount Combination Antenna  
GPS/2.4~2.5GHz
- Feature : GPS 1575MHz – 2.4~2.5GHz  
Custom cables and connectors available  
RoHS ✓



Version	Date	Page	Revision Description	Prepared	Approved
A	Jan 9 <sup>th</sup> 2009	All	New product	TW Product Centre	Zita Lin
B	Feb 25 <sup>th</sup> 2009	12	Technical Drawing	TW Product Centre	Zita Lin



## I Specification

### I.1 GPS Ceramic Patch Antenna 25\*25\*4mm

Ground Size (25\*25\*4mm<sup>2</sup>)

Parameter	Specification
Frequency	1575.42MHz ± 2MHz
Bandwidth	10MHz
VSWR	1.92 Max
Axial Ratio @Zenith	3dB Typical
Gain @Zenith	-1 dbi Typical
Impedance	50 Ω
Polarization	RHCP

### I.2 Low Noise Amplifier

Parameter	Specification
Frequency	1575.42MHz
Noise Figure	2dB Typical
VSWR	1.92 Max
Gain	28dB Typical
DC Power Input	2.7~3.3V
Impedance	50 Ω
Power Consumption	6 mA @3.3V
Operating Temperature	-30°~+80°C
Storage Temperature	-40°~+90°C

### I.3 Wi-Fi Antenna

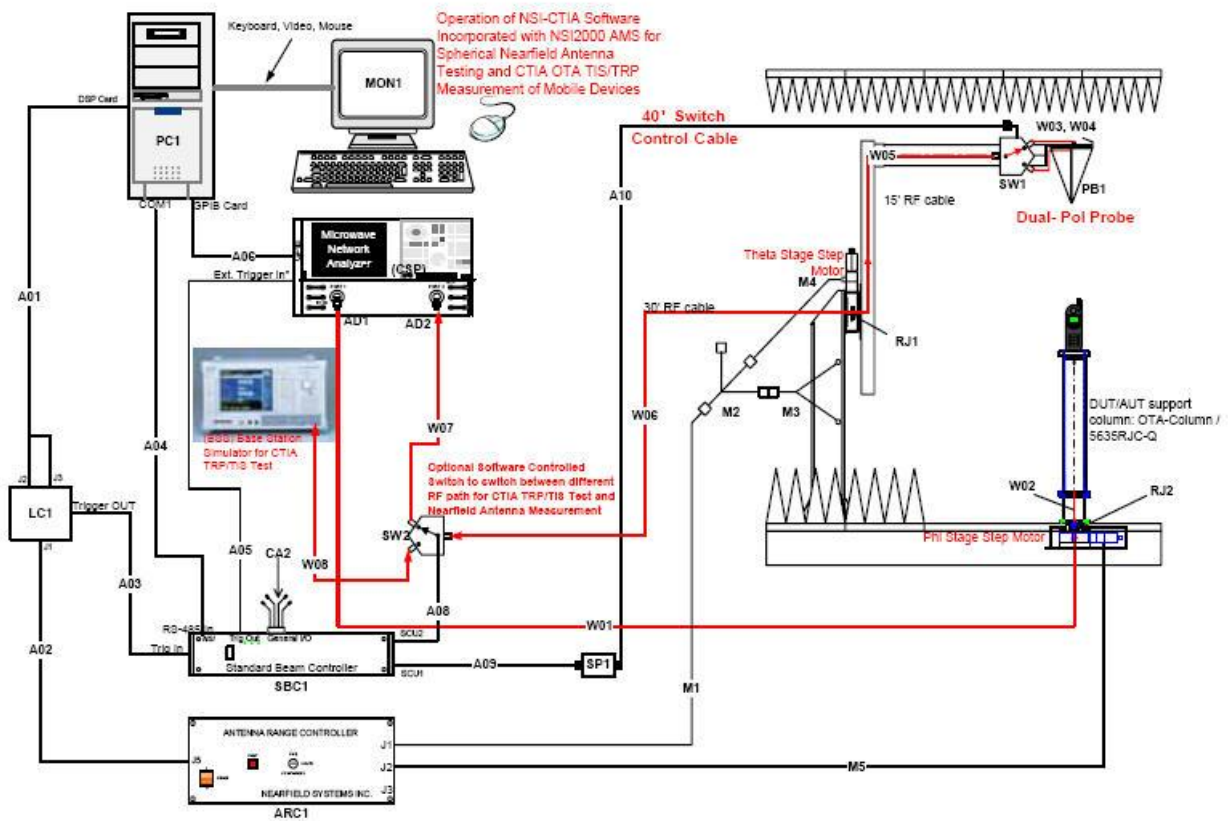
Parameter	Specification
Frequency	2.4~2.5GHz
Impedance	50 Ω
VSWR	1.92 Max





Specification

NFT-500S 3D Chamber Coordinate System Definition



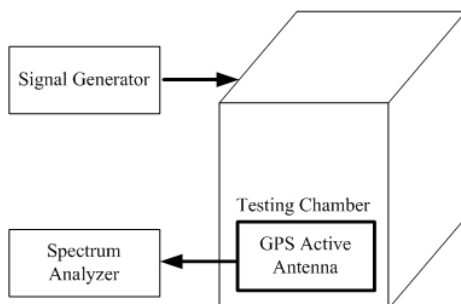
Configuration of NFT-500S 3D Chamber



Agilent E5071B Network Analyzer



Anritsu 68147C Signal Generator



Testing Chamber



Anritsu MS2721A Spectrum



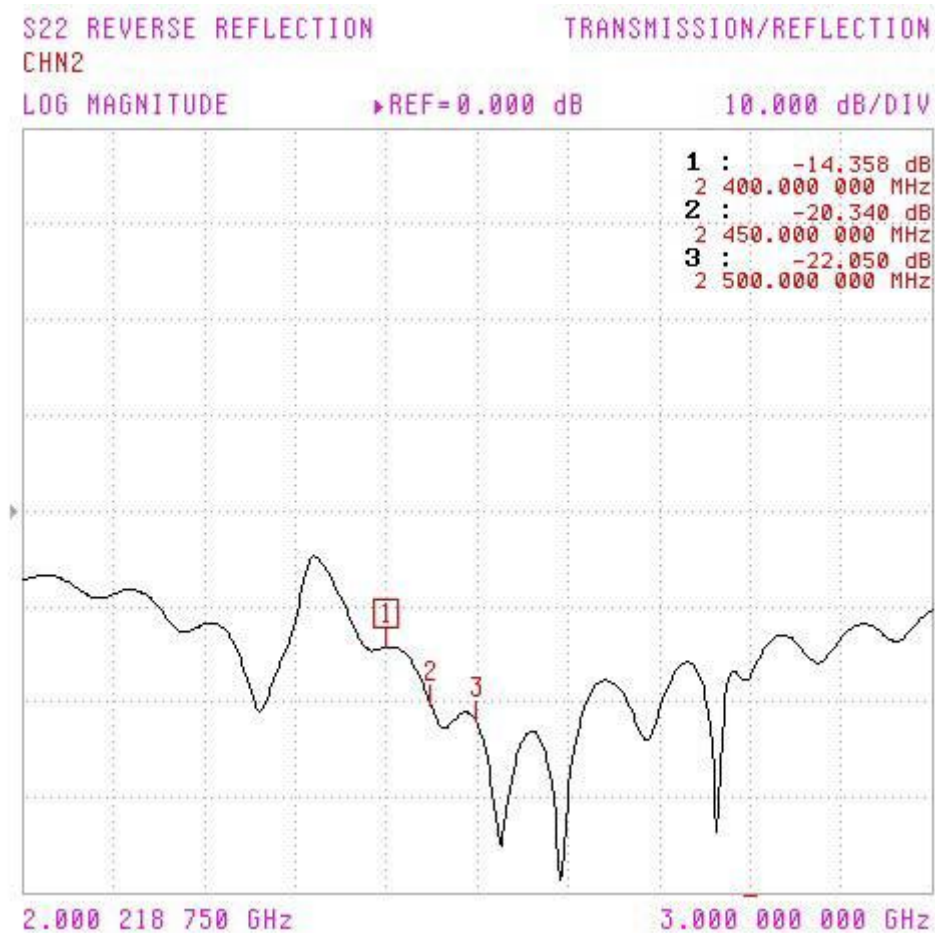
### III Electrical Characteristic

Note:

1. Return Loss, radiation patterns are measured in free space condition
2. The LNA data is measured without cable loss
3. RG-174 cable attenuation (dB/100m)

GHz	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
RG-174	47	110	127	153	168	183	207	229	252	272	291	311

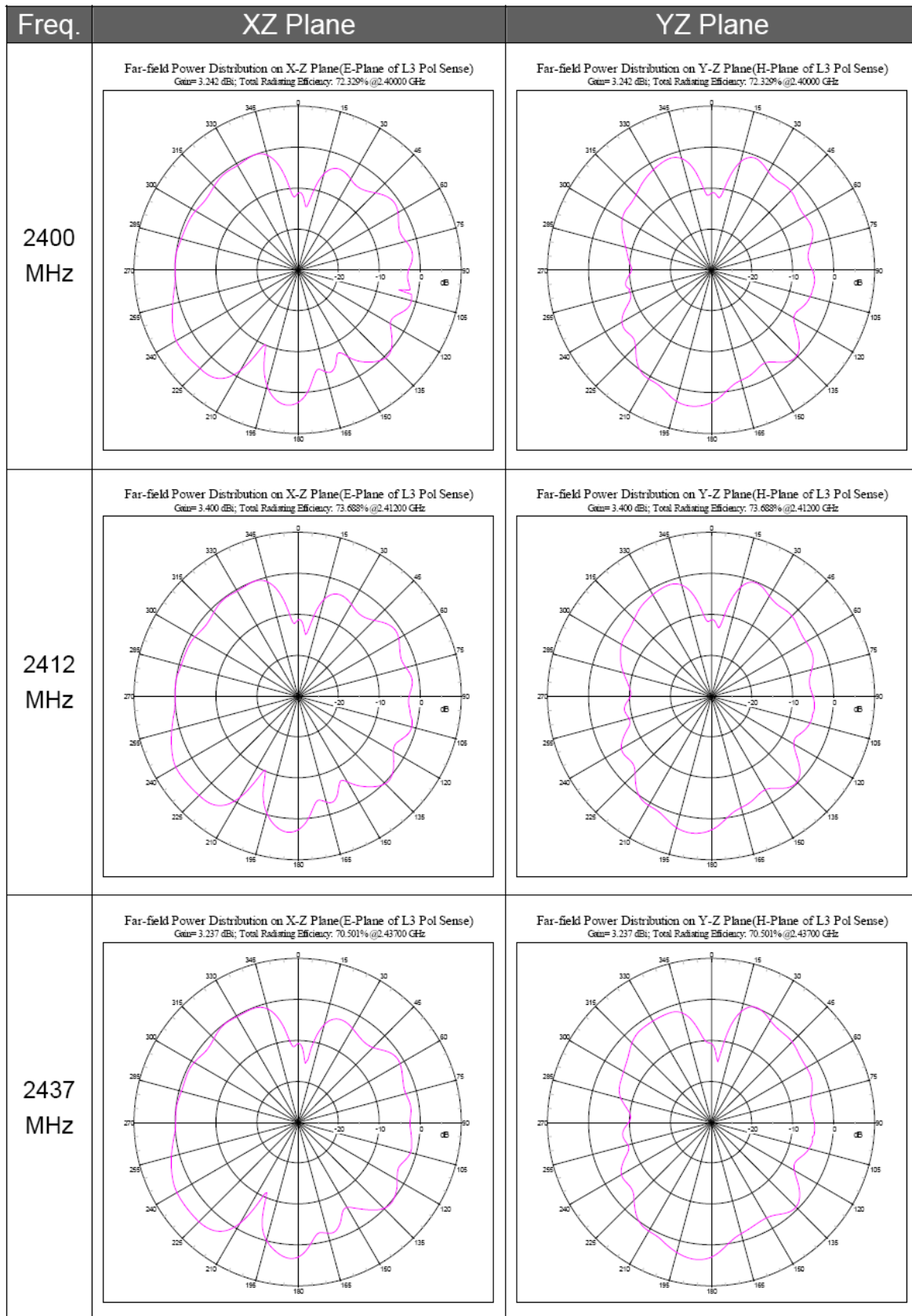
#### III.1 Return Loss Wi-Fi Antenna





Specification

### III.2 Radiation Patterns Wi-Fi Antenna





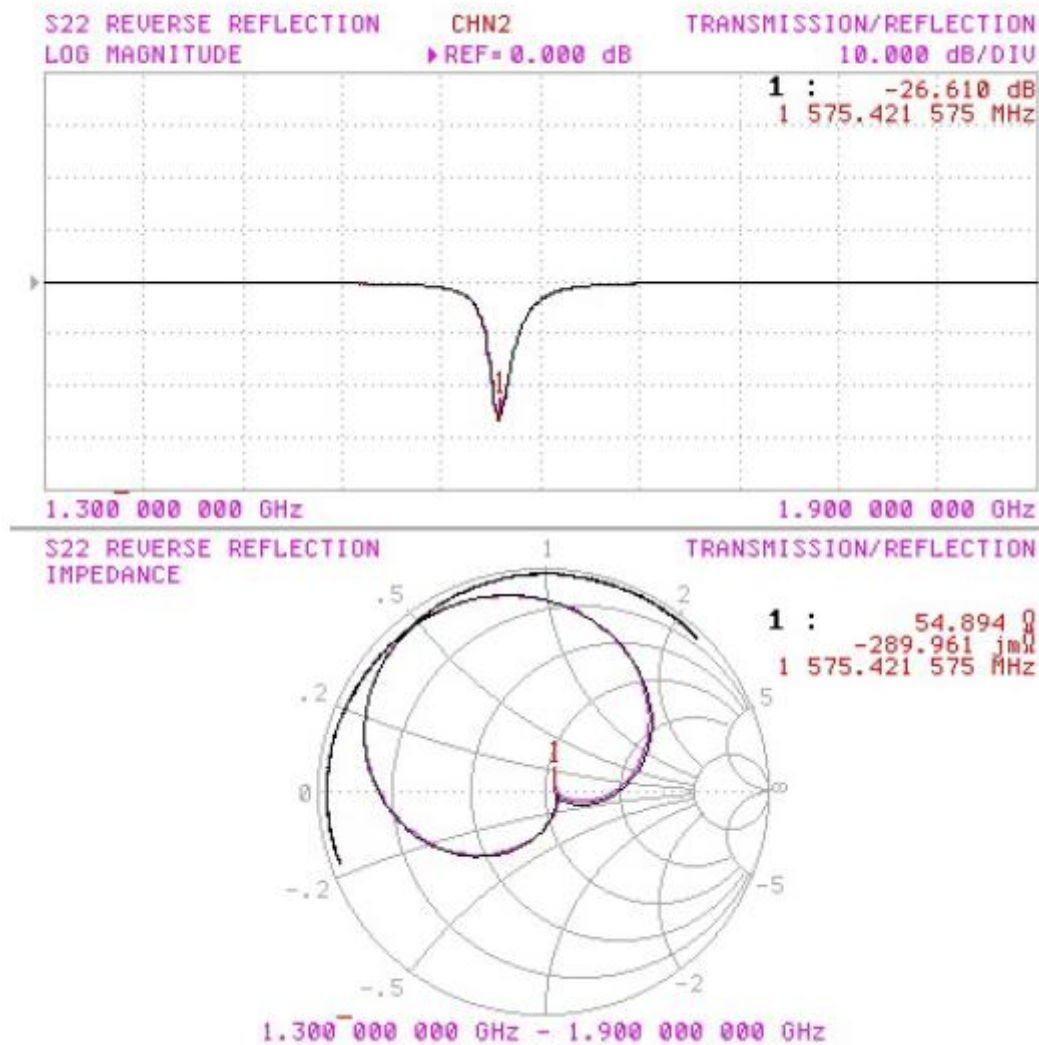


Specification

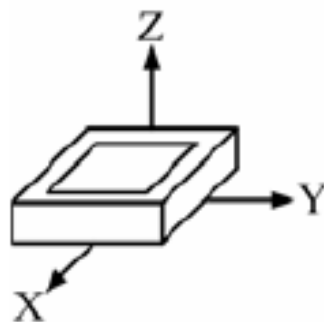
Freq.	XZ Plane	YZ Plane
2450 MHz	<p>Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense) Gain= 3.171 dBi; Total Radiating Efficiency: 72.553% @2.45000 GHz</p>	<p>Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense) Gain= 3.171 dBi; Total Radiating Efficiency: 72.553% @2.45000 GHz</p>
2472 MHz	<p>Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense) Gain= 3.176 dBi; Total Radiating Efficiency: 63.163% @2.47200 GHz</p>	<p>Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense) Gain= 3.176 dBi; Total Radiating Efficiency: 63.163% @2.47200 GHz</p>
2500 MHz	<p>Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense) Gain= 3.328 dBi; Total Radiating Efficiency: 66.901% @2.50000 GHz</p>	<p>Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense) Gain= 3.328 dBi; Total Radiating Efficiency: 66.901% @2.50000 GHz</p>



### III.3 GPS Ceramic Patch Antenna



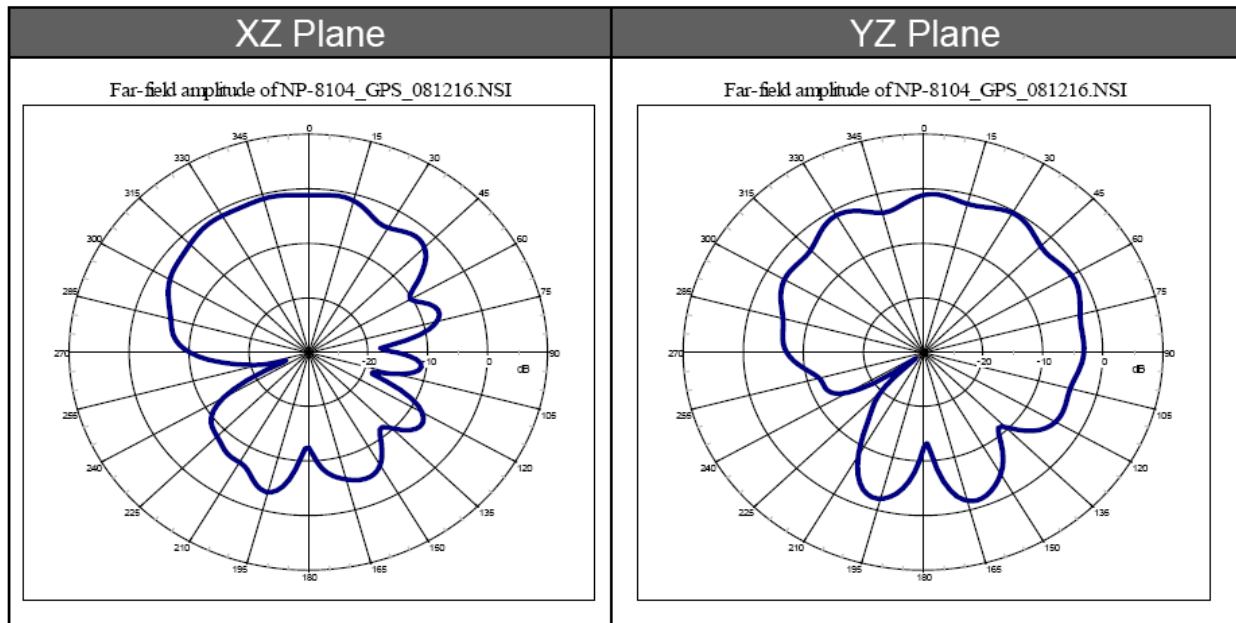
### III.4 Radiation Pattern of GPS Ceramic Patch







Specification



### III.5 LNA – S22

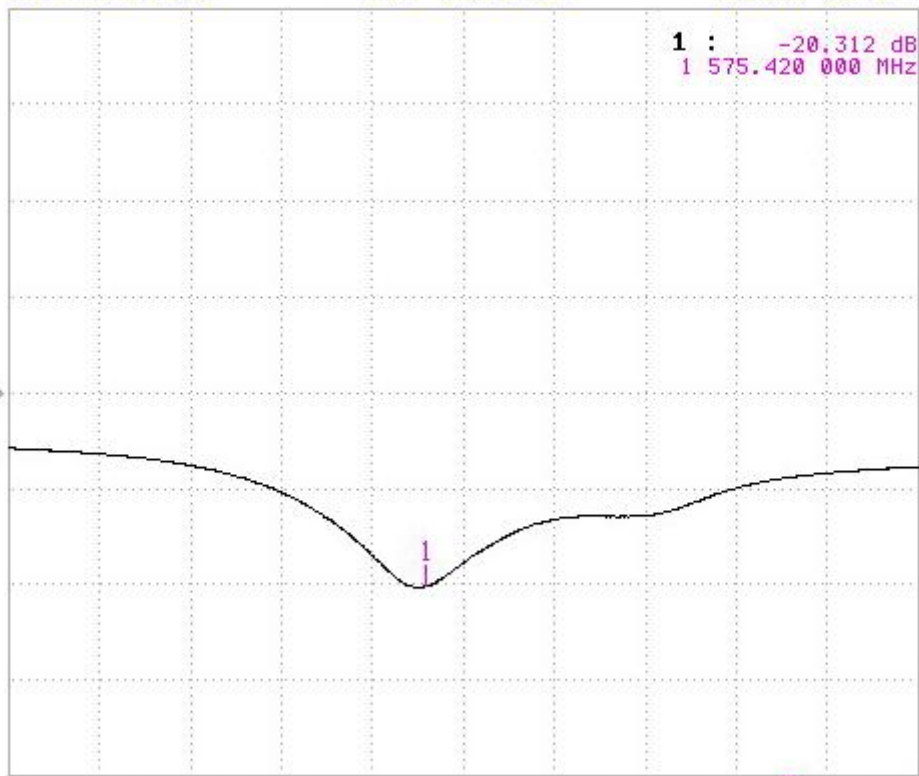
S22 REVERSE REFLECTION  
CHN2

TRANSMISSION/REFLECTION

LOG MAGNITUDE

REF=0.000 dB

10.000 dB/DIV



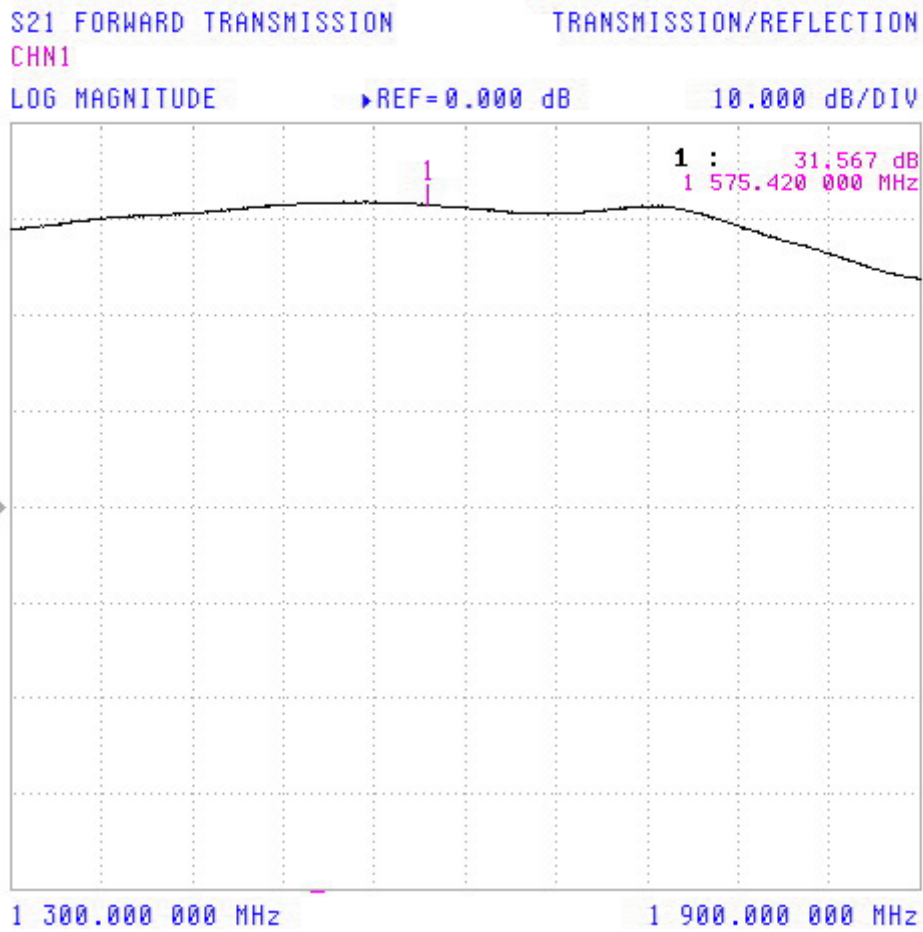
1 300.000 000 MHz

1 900.000 000 MHz



Specification

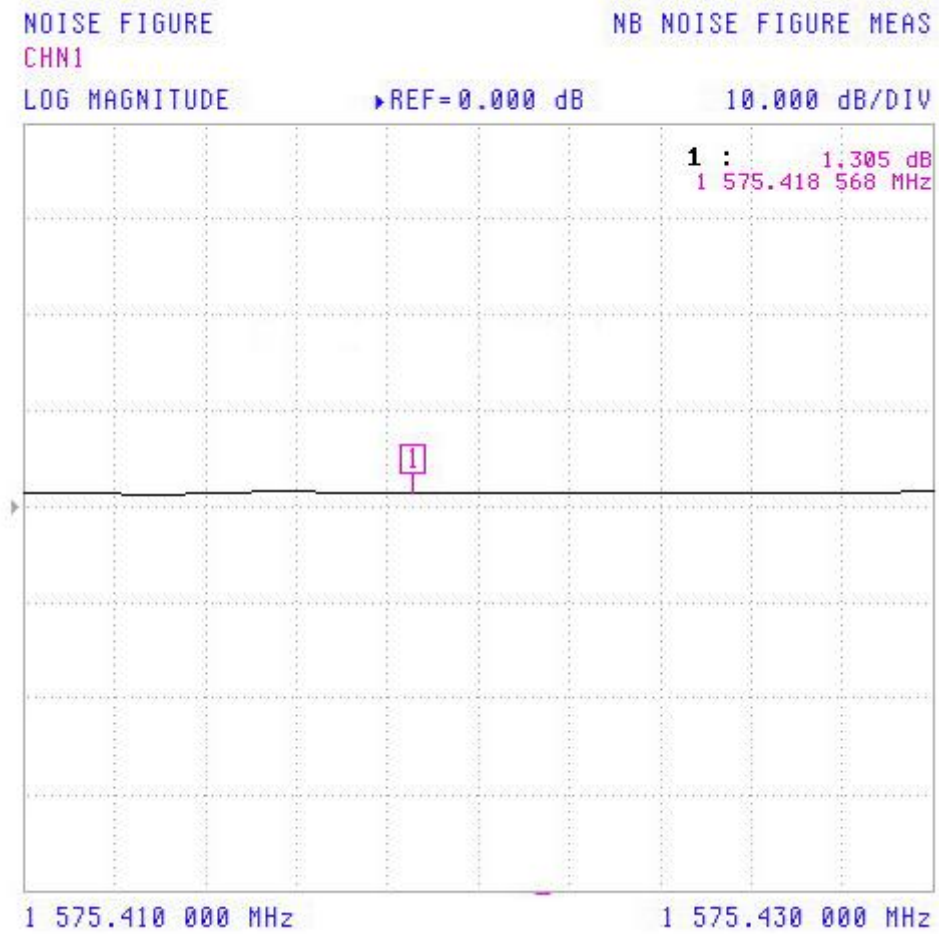
### III.6 LNA-S21





Specification

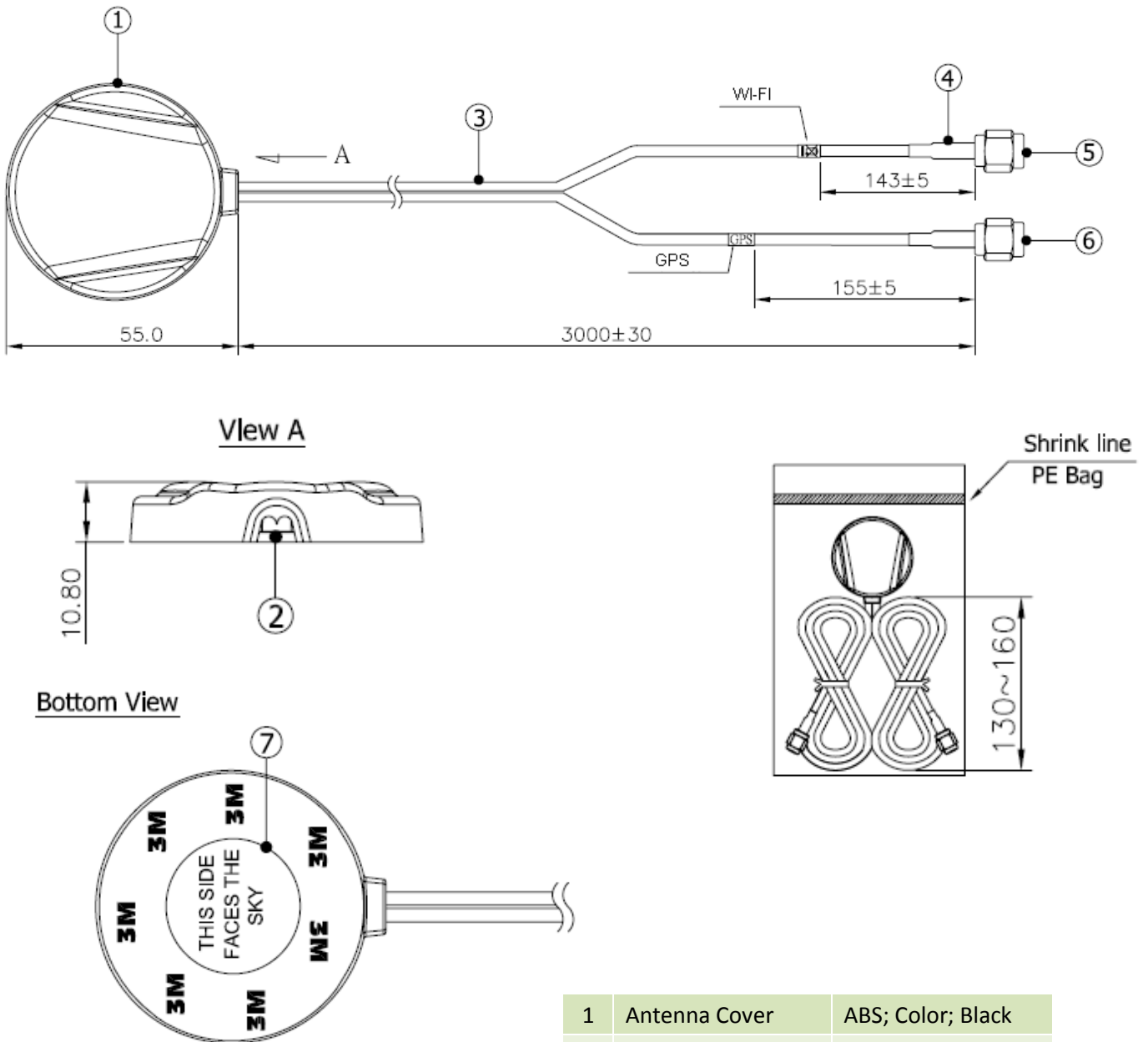
### III.7 Noise Figure





Specification

III.8 Technical Drawing



1	Antenna Cover	ABS; Color; Black
2	Cable Holder	ABS; Color; Black
3	Cable	RG-174 Black
4	Heat Shrink	Heat Shrink Tube
5	Connector: Wi-Fi	RP-SMA(M)
6	Connector: GPS	SMA(M)
7	Label	Ø25mm