SUNNYWAY



SWB010

PN: SW20280EB56

Features

- Antenna for 1176 MHz、1575.42MHz、1602MHz
- High gain
- Impedance 50 Ohm.

Applications:

- Antenna for IRNSS/GPS/GLONASS/GALILEO

Sunnyway Technology

Add: 1F, Building 4, No.215-99, GaoGuang Road, QingPu District, Shanghai, China
Tel: +86-021-6083 5368 Fax: +86-021-6484 2328
Email: info@sunny-way.com Web: www.sunny-way.com

1. Electrical Specifications

Standards	IRNSS/GPS/GLONASS/GALILEO		
Frequency range (MHz)	1176	1575.42	1602
Peak Gain (dBi)	2.7	4.4	5.8
Average Gain (dB)	-1.4	-1.8	-1.5
VSWR	1.2	1.1	1.1
Return Loss	-20.1	-24.1	-25.3
Efficiency (%)	72.8	65.8	71.6
Polarization mode	Circular polarization	Circular polarization	Circular polarization
Radiation pattern	Hemispherical	Hemispherical	Hemispherical
Voltage Range (V)	3.0-4.2		
Active Gain (dB)	30±1dB		
Noise Figure (dB)	2.5	2.2	
Current Consumption (mA)	55mA@3.3V		
Power Consumption (mW)	181.5mW@3.3V		

Note:

Test based on 200 mm wire length

2. Mechanical and Environmental Specification

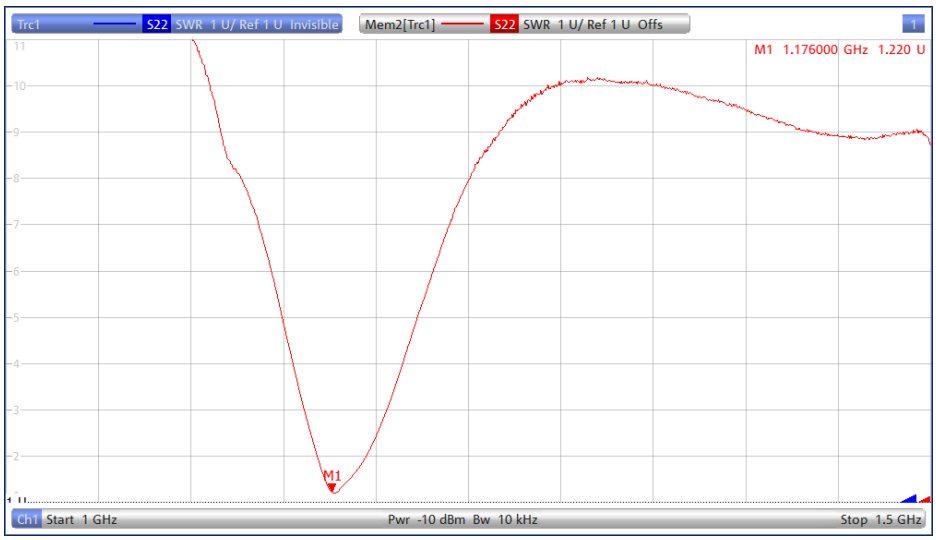
Mounting Type	Screw lock
Cable &Connector Type	SYWV-50-2+SMA (M)
Antenna size(mm)	99.96 (φ) x 105.8 (H) x 50000 (Line length)
Material	SABIC PC 1414
Cable length(mm)	50000mm (can be customized)
Operating Temperature (˚C)	- 40 ˚C ~ + 85 ˚C
Storage Temperature(˚C)	- 40 ˚C ~ + 85 ˚C

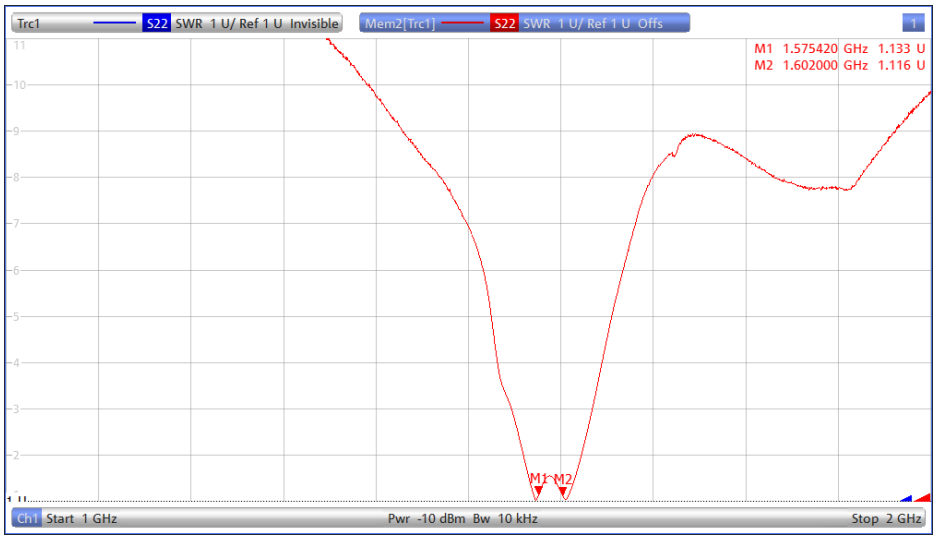
3. Antenna parameters

3.1 General Data

FRE (MHz)	**1176**	**1575.42**	**1602**
VSWR	1.2	1.1	1.1
Return Loss	-20.1	-24.1	-25.3
Eff (%)	72.8	65.8	71.6
Average Gain(dB)	-1.4	-1.8	-1.5

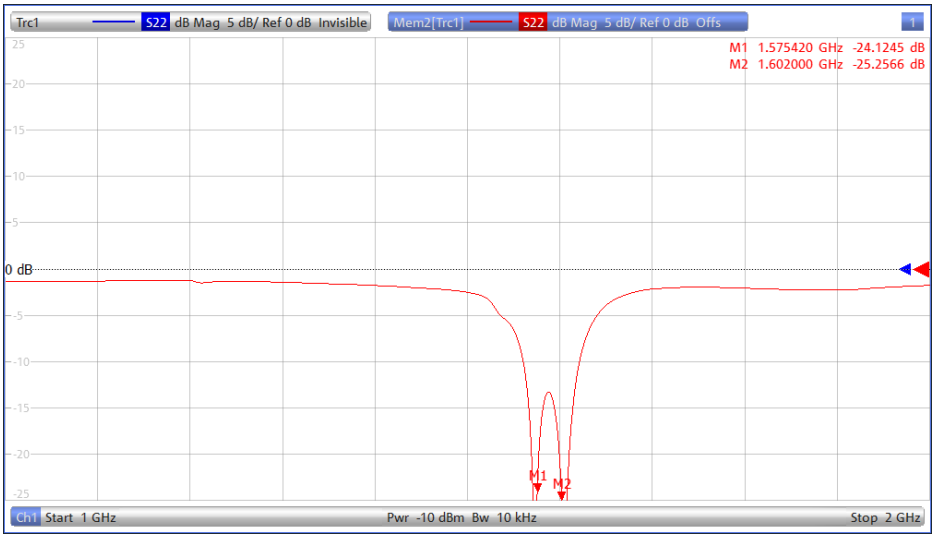
3.2 VSWR



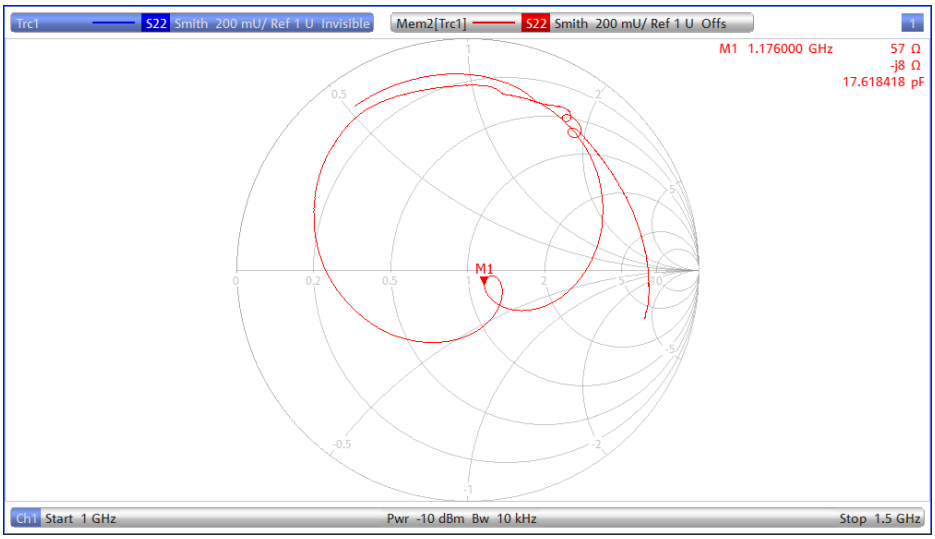


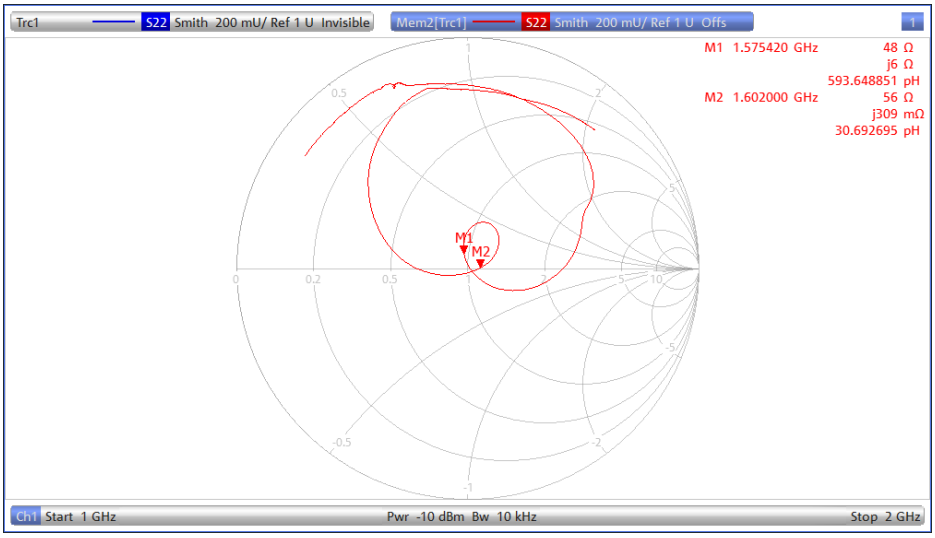
3.3 Return Loss



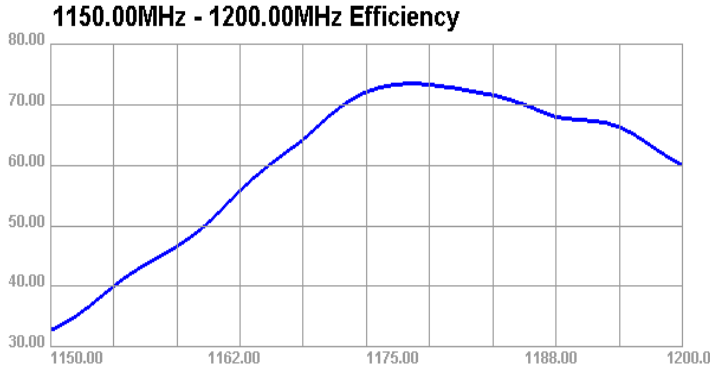


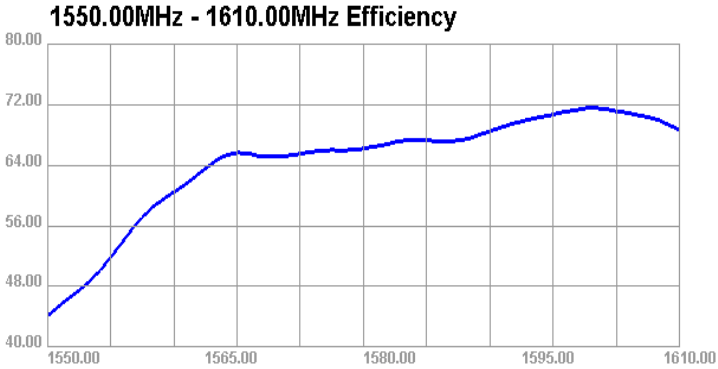
3.4 Smith


Trc1 S22 Smith 200 mU/ Ref 1 U Invisible
Mem2[Trc1] S22 Smith 200 mU/ Ref 1 U Offs
M1 1.176000 GHz
57 Ω
-j8 Ω
17.618418 pF
M1
Ch1 Start 1 GHz
Pwr -10 dBm Bw 10 kHz
Stop 1.5 GHz

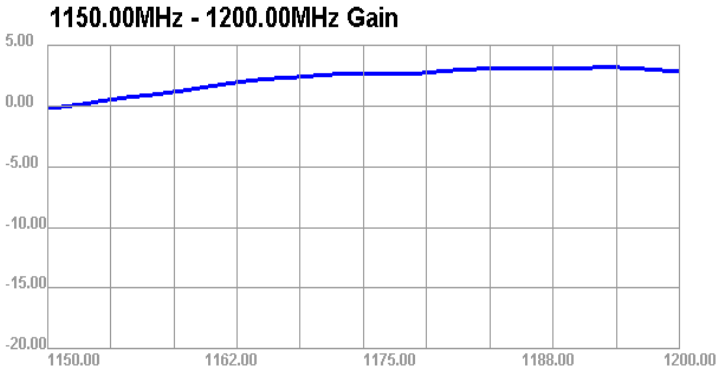

Trc1 S22 Smith 200 mU/ Ref 1 U Invisible
Mem2[Trc1] S22 Smith 200 mU/ Ref 1 U Offs
M1 1.575420 GHz
48 Ω
j6 Ω
593.648851 pH
M2 1.602000 GHz
56 Ω
j309 mΩ
30.692695 pH
M1
M2
Ch1 Start 1 GHz
Pwr -10 dBm Bw 10 kHz
Stop 2 GHz

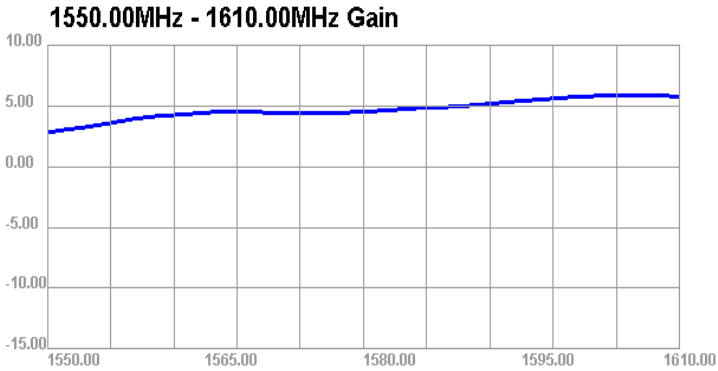
3.5 Efficiency



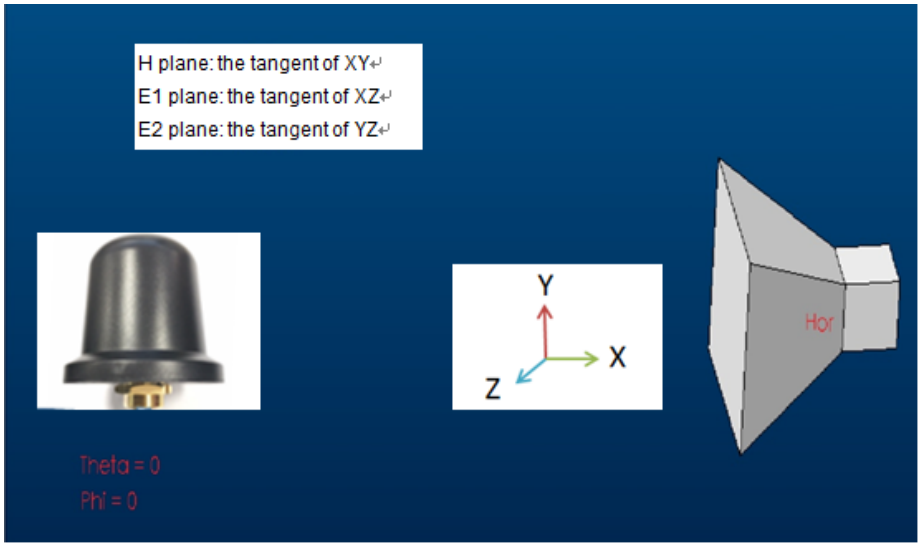


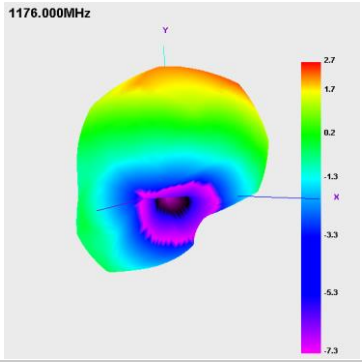
3.6 Gain

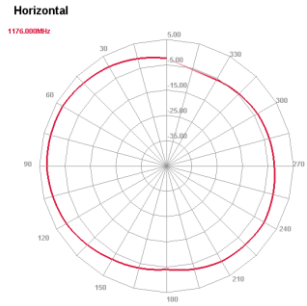


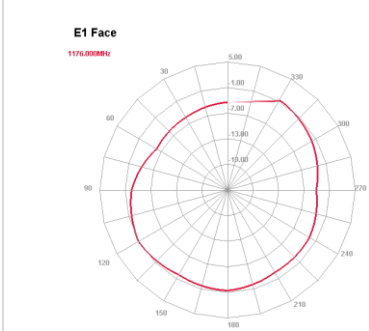


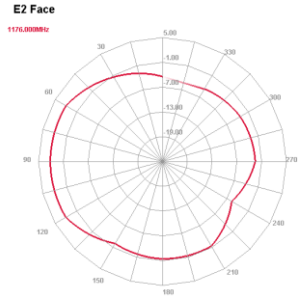
3.7 Directional Pattern

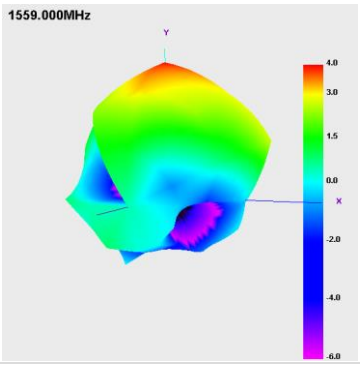


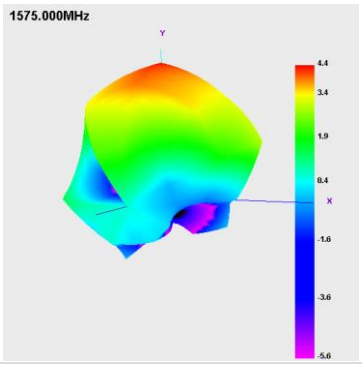

1176.000MHz
Y
2.7
1.7
0.2
-1.3
X
-3.3
-5.3
-7.3

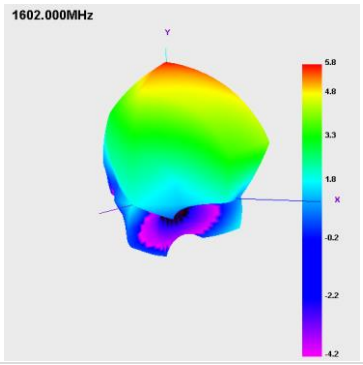

Horizontal
1176.000MHz

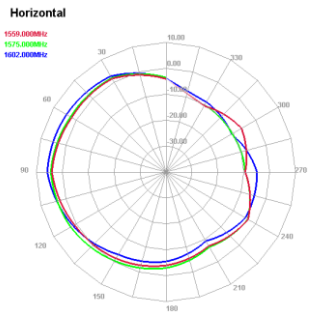

E1 Face
1176.000MHz

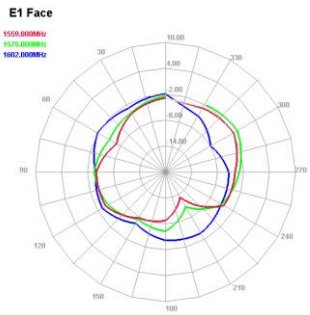

E2 Face
1176.000MHz

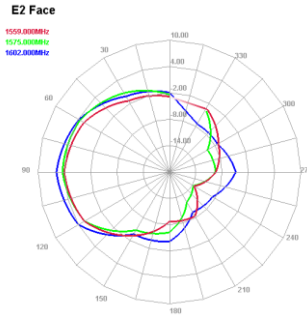

1559.000MHz
Y
4.0
3.0
1.5
0.0
X
-2.0
-4.0
-6.0


1575.000MHz
Y
4.4
3.4
1.9
0.4
X
-1.6
-3.6
-5.6

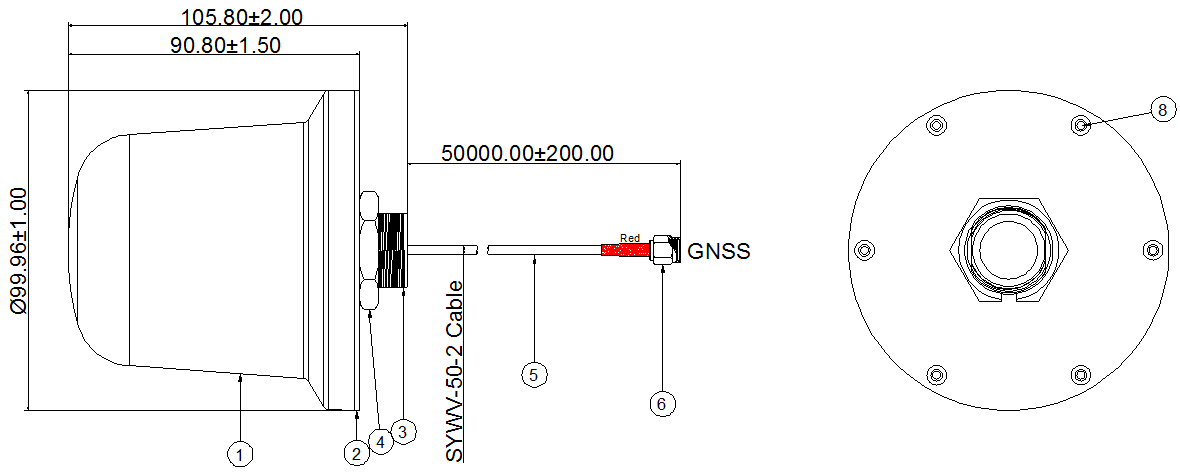

1602.000MHz
Y
5.8
4.8
3.3
1.8
X
-0.2
-2.2
-4.2


Horizontal
1559.000MHz
1575.000MHz
1602.000MHz


E1 Face
1559.000MHz
1575.000MHz
1602.000MHz


E2 Face
1559.000MHz
1575.000MHz
1602.000MHz

4. Antenna Drawing



Series	Component name	Material	Color	Quantity
1	Upper Shell	SABIC PC 1414	black	1
2	Lower Shell	SABIC PC 1414	black	1
3	Screw	brass	Gold	1
4	Nuts	brass	Gold	1
5	Cable	SYWV-50-2	black	1
6	SMA Male	brass	Gold	1
7	Screw	M3x5	black	6

Note: Cable Loss

Attenuation, Typical value (20℃) (Permissible error±10%)

Frequency MHZ	dB/100m
100	19
200	22
400	32
500	37
800	44
1000	49
1200	54
1500	65
1800	67
2000	71
2500	81
3000	88
4000	105
5000	121
5800	132
6000	135