SWB007

PN: SW20267EB56



Features:

- Antenna for 5G&4G&3G&2G, 2.4G&5G WIFI, BT, GPS&GLONASS&GALILEO&BEIDOU.
- Maintains high performance on device.
- 4 connecting wires.
- High gain.
- Impedance 50 Ohm.

Applications:

- Access Points
- Game Consoles
- Set-Top-Box
- Network Devices
- MIMO Systems

Sunnyway Technology

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1. Electrical Specifications

Cable 1 Parameters Tested with 250mm cable length - RG174

Standards	5G&4G&3G&2G	
Frequency range(MHz)	600~960	1710~6000
Peak Gain (dBi)	-4.3~3.7	0.5~7.0
Average Gain (dB)	-7.0~-1.6	-4.0~-1.2
VSWR	<5.0	<4.5
Return Loss	<-3.5	<-4.0
Efficiency (%)	20~70	40~75
Polarization mode	Linear	Linear
Radiation pattern	Omni-Directional	Omni-Directional
Output impedance (Ω)	50	50
Max. Input Power(W)	25	25

Cable 2 Parameters Tested with 250mm cable length - RG174

Standards	2.4G&5G WIFI	
Frequency range(MHz)	2400~2500	4900~5900
Peak Gain (dBi)	2.5~4.2	2.5~5.0
Average Gain (dB)	-2.4~-2.1	-3.4~-1.5
VSWR	<2.0	<2.0
Return Loss	<-10.0	<-10.0
Efficiency (%)	57~62	45~70
Polarization mode	Linear	Linear
Radiation pattern	Omni-Directional	Omni-Directional

Output impedance (Ω)	50	50
Max. Input Power(W)	25	25

Cable 3 Parameters Tested with 250mm cable length - RG174

Standards	**BT**
Frequency range(MHz)	2400~2480
Peak Gain (dBi)	2.5~3.0
Average Gain (dB)	-2.9~-2.6
VSWR	<3.0
Return Loss	<-6.5
Efficiency (%)	51~55
Polarization mode	Linear
Radiation pattern	Omni-Directional
Output impedance (Ω)	50
Max. Input Power(W)	25

Cable 4 Parameters Tested with 250mm cable length - RG174

Standards	**GPS&GLONASS&GALILEO&BEIDOU**		
Band (MHz)	1559	1575.42	1602
Peak Gain (dBi)	3.24	1.92	2.65
Average Gain (dB)	-1.88	-2.71	-2.36
VSWR	2.40	1.77	1.34
Return Loss	-7.69	-11.08	-16.61

Efficiency (%)	64.8	53.6	58.1
Impedance(Ω)	50	50	50
Polarization	RHCP	RHCP	RHCP
Radiation Pattern	Hemispherical	Hemispherical	Hemispherical
Saw Filter	Pre-Filter	Pre-Filter	Pre-Filter
Active Gain (dB)	28dB	28dB	28dB
Noise-Figure(dB)	1dB(+25°C±10°C)	1dB(+25°C±10°C)	1dB(+25°C±10°C)
Supply Current(mA)	15mA	15mA	15mA
Supply Voltage(V)	1.5v~3.6v	1.5v~3.6v	1.5v~3.6v

2. Mechanical and Environmental Specification

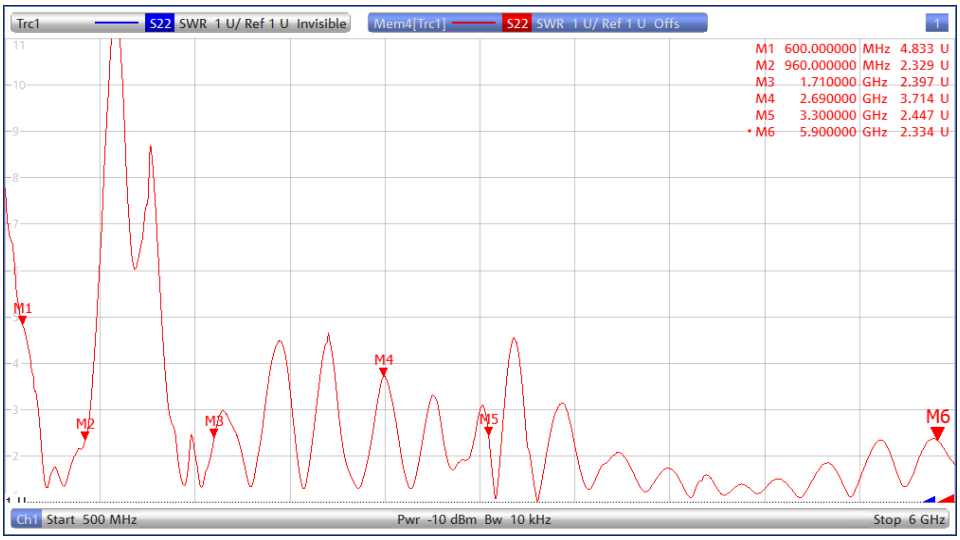
Mounting Type	Screw lock
Connector Type	RG174+SMA (M)
Antenna size(mm)	99.96 (φ) x 105.8 (H) x 3000 (Line length)
Material	SABIC PC 1414
Cable length(mm)	3000mm (can be customized)
Operating Temperature (˚C)	- 40 ˚C ~ + 85 ˚C
Storage Temperature(˚C)	- 40 ˚C ~ + 85 ˚C

3. Antenna parameters

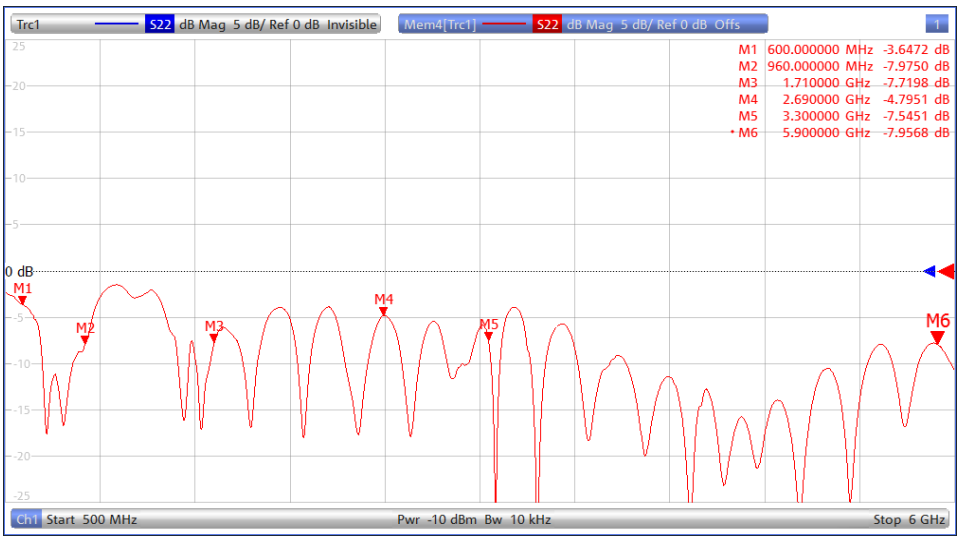
3.1 Cable 1: 5G&4G&3G&2G

FRE (MHz)	600	960	1710	2690	3300	5900
VSWR	4.8	2.3	2.3	3.7	2.4	2.3
Return Loss	-3.6	-7.9	-7.7	-4.7	-7.5	-7.9
Eff (%)	20.1	44.5	72.9	65.1	49.8	48.1
Average Gain(dB)	-7.0	-3.5	-1.4	-1.9	-3.0	-3.2

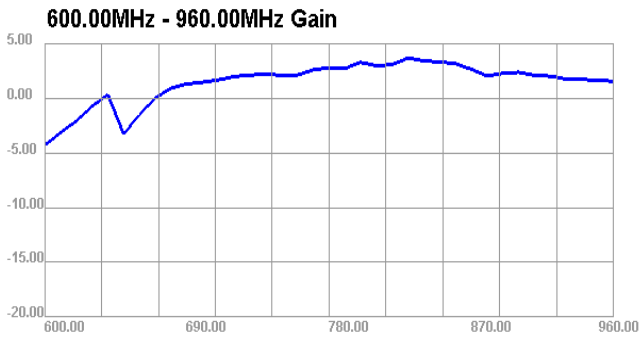
3.1.1 VSWR

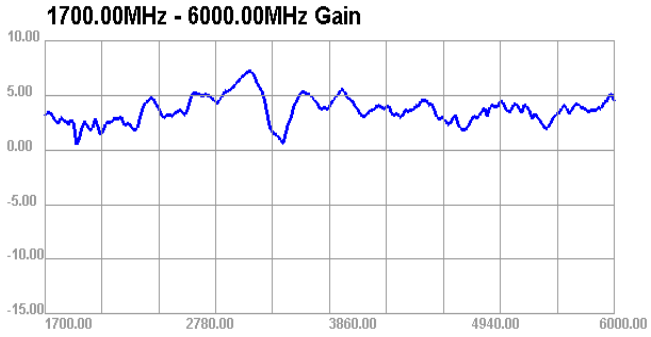


3.1.2 Return Loss

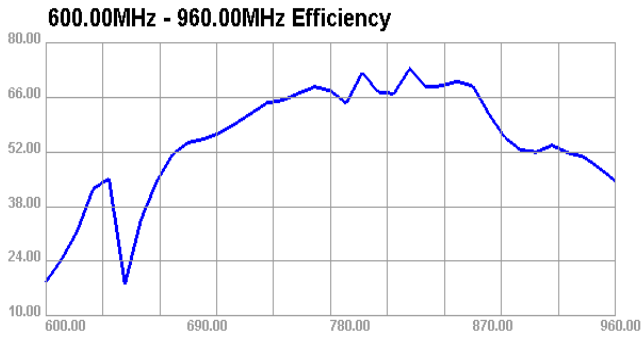


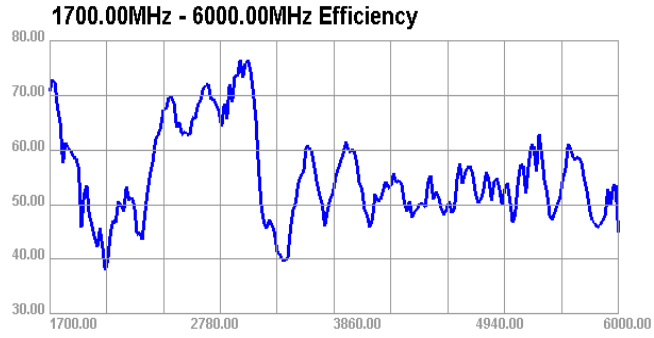
3.1.3 Gain



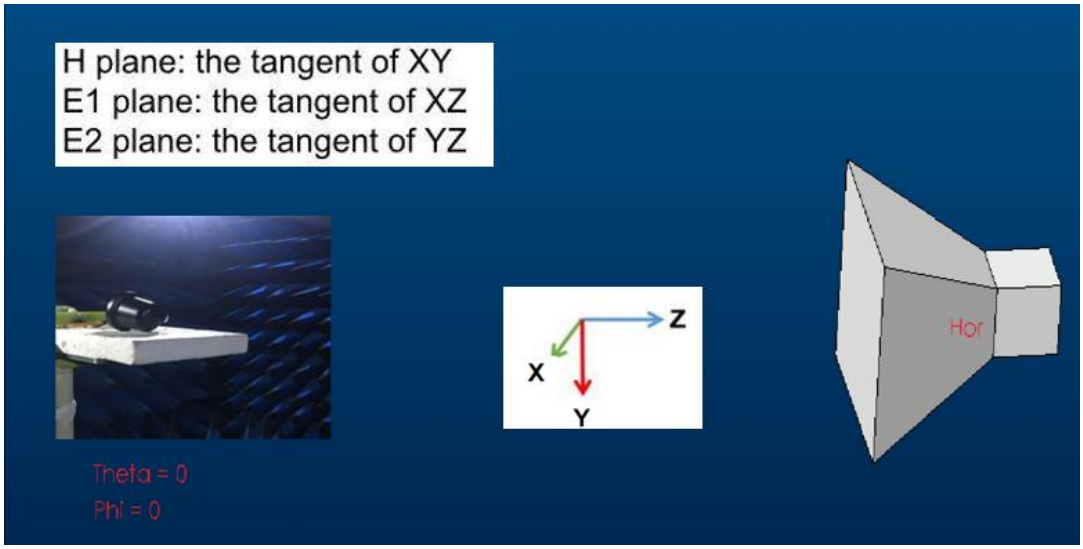


3.1.4 Efficiency

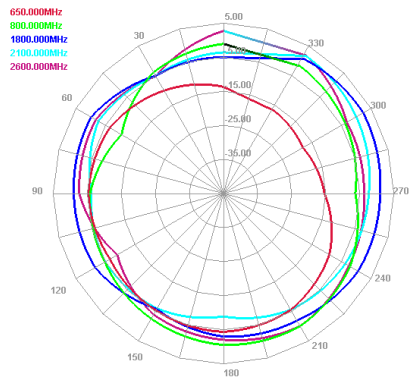




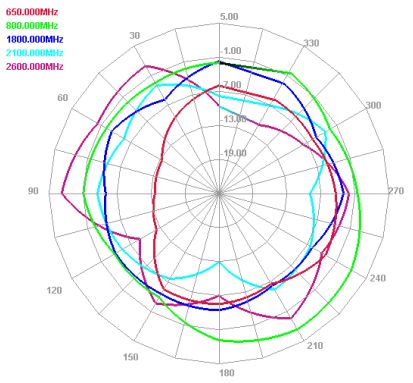
3.1.5 Directional Pattern



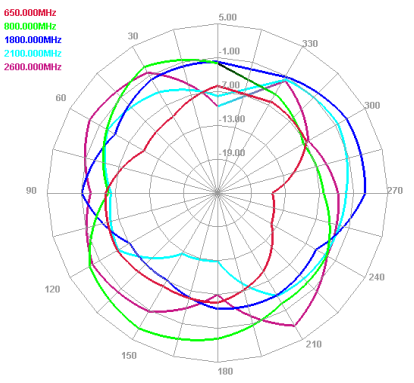
Horizontal



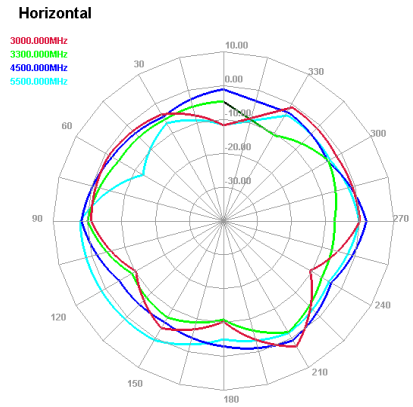
E1 Face



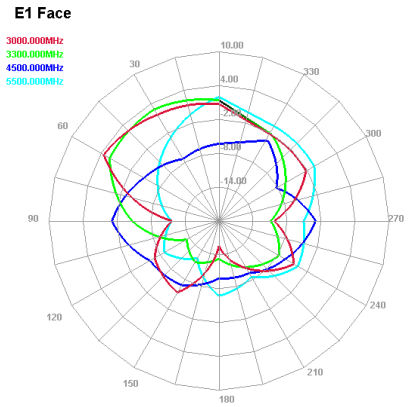
E2 Face



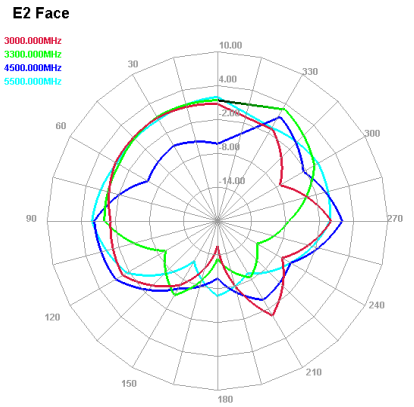
Horizontal



E1 Face



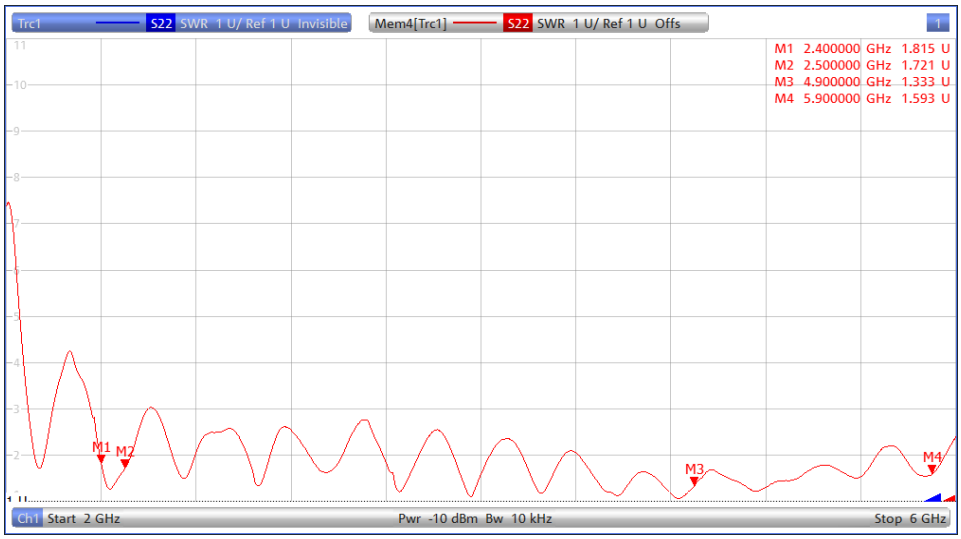
E2 Face



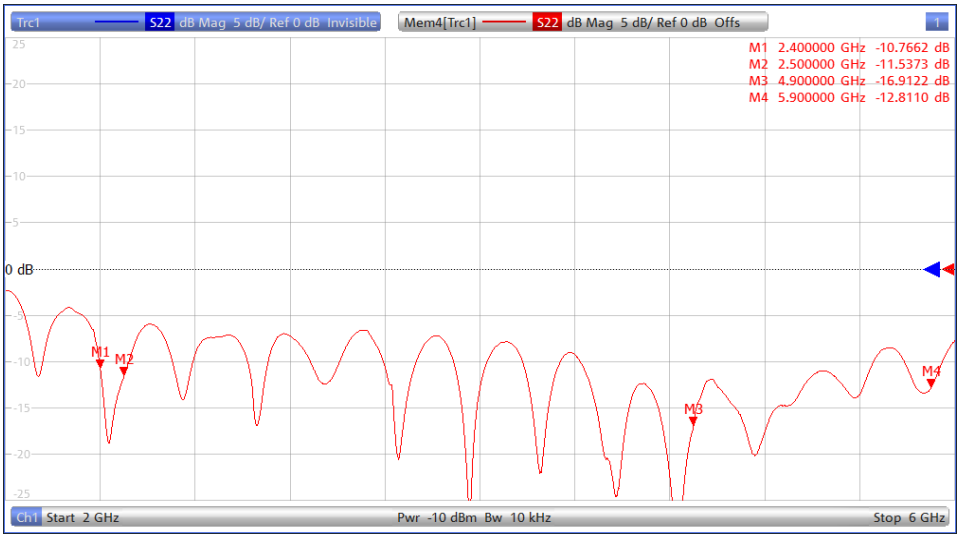
3.2 Cable 2: 2.4G&5G WIFI

FRE (MHz)	2400	2500	4900	5900
VSWR	1.8	1.7	1.3	1.5
Return Loss	-10.7	-11.5	-16.9	-12.8
Eff (%)	60.0	61.0	56.9	54.7
Average Gain(dB)	-2.2	-2.1	-2.5	-2.6

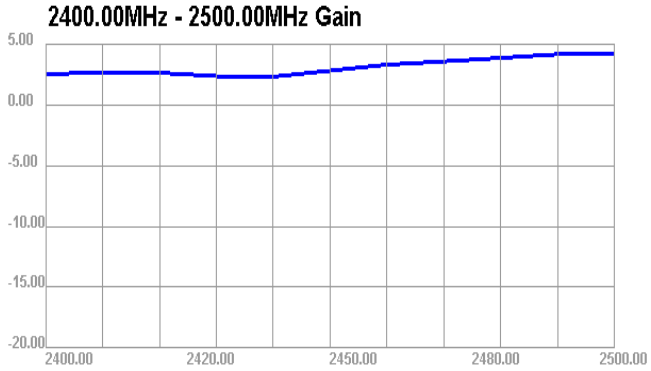
3.2.1 VSWR

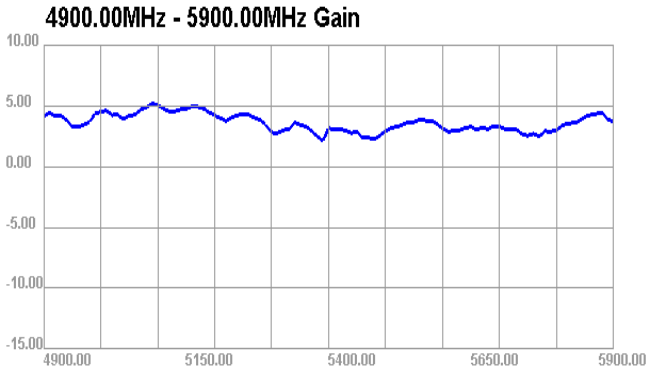


3.2.2 Return Loss

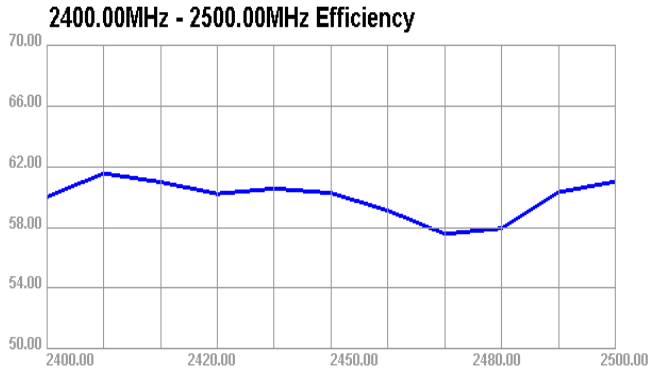


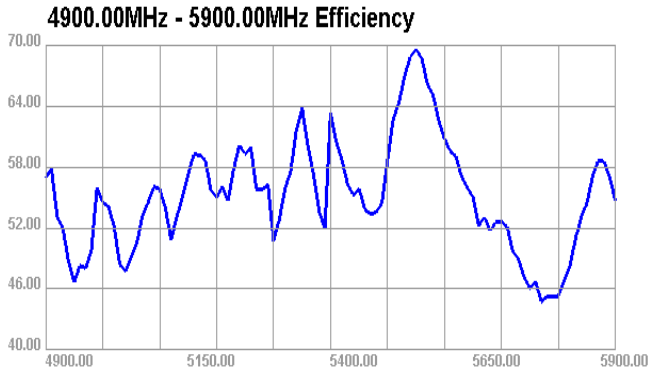
3.2.3 Gain



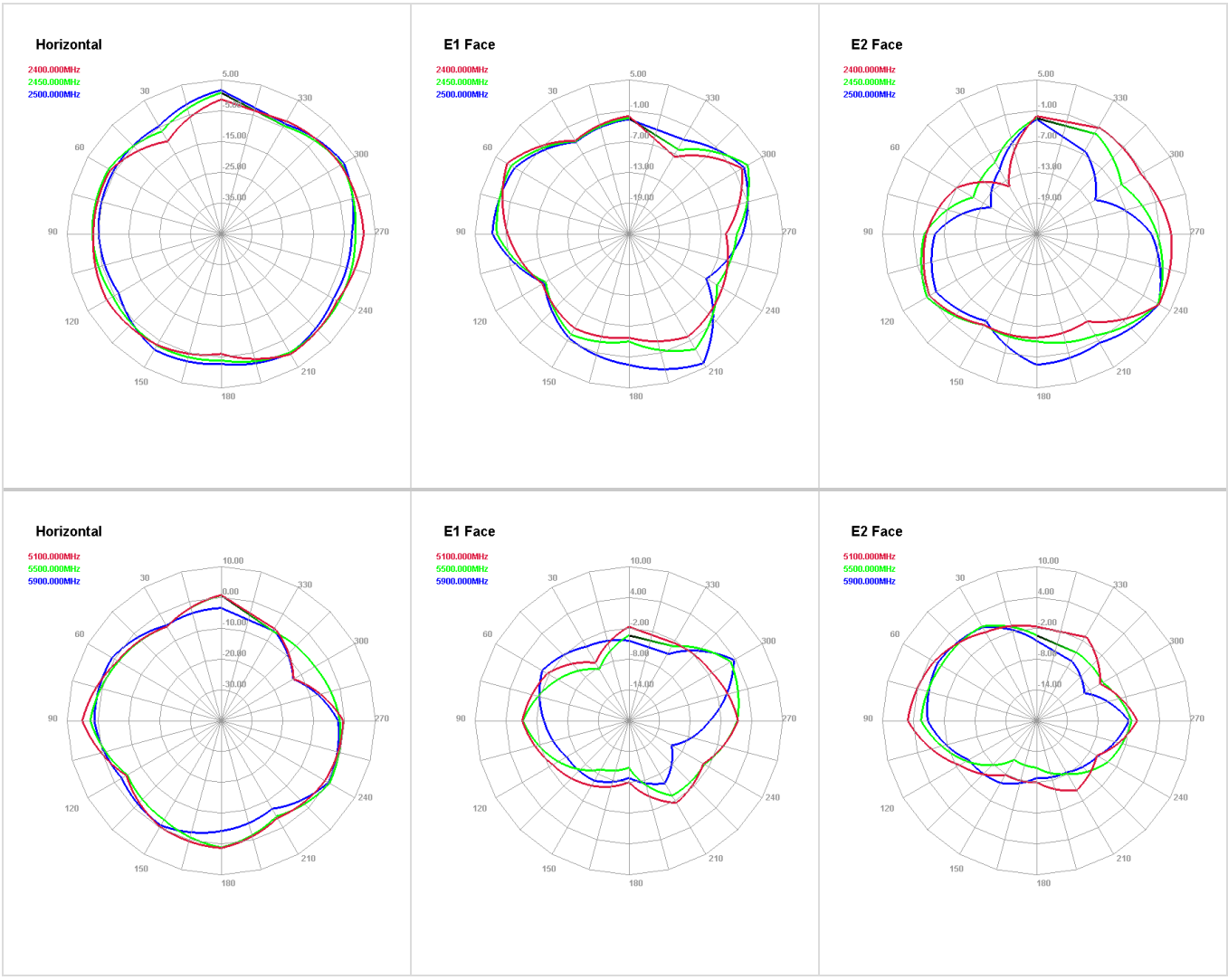


3.2.4 Efficiency





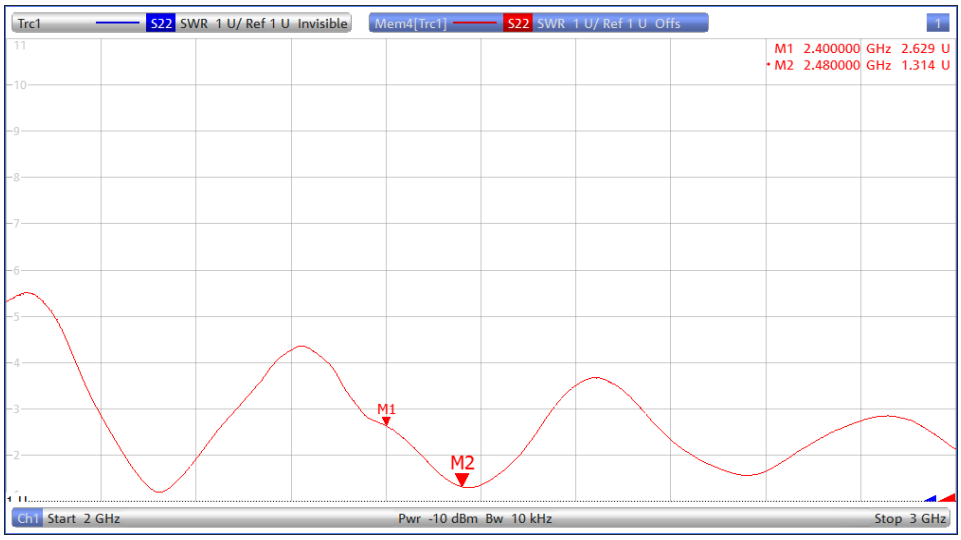
3.2.5 Directional Pattern



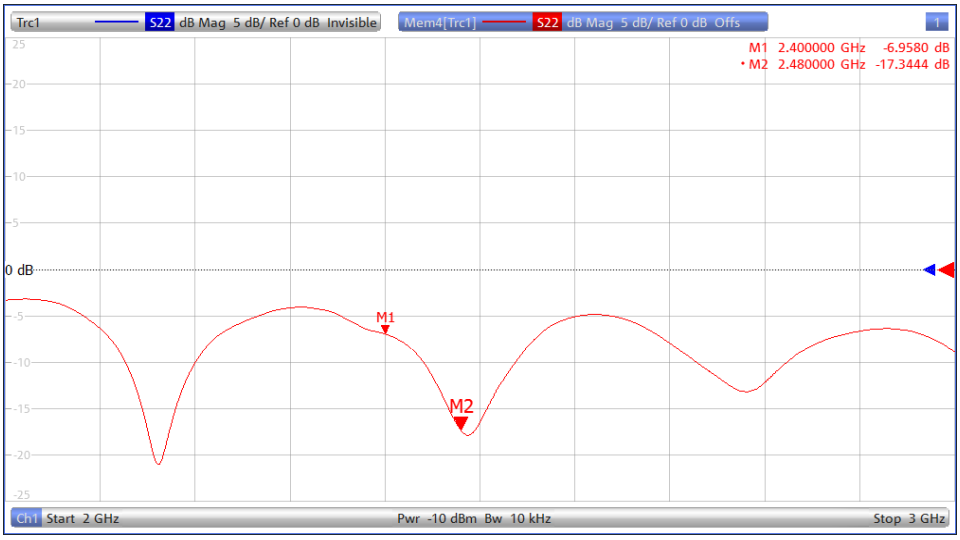
3.3 Cable 3: BT

FRE (MHz)	2400	2480
VSWR	2.6	1.3
Return Loss	-6.9	-17.3
Eff (%)	51.0	54.5
Average Gain(dB)	-2.9	-2.6

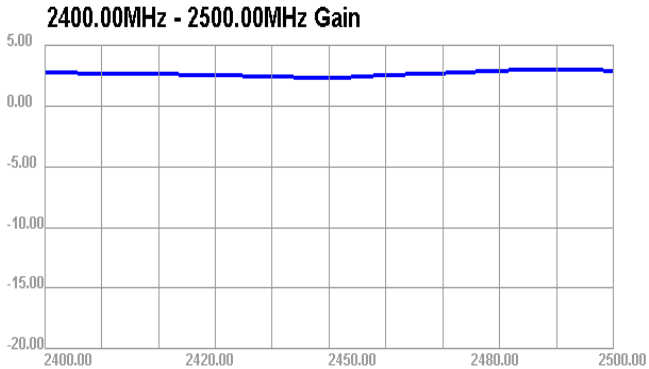
3.3.1 VSWR



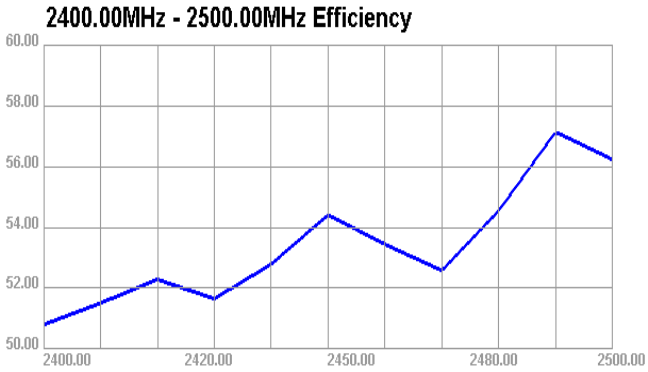
3.3.2 Return Loss



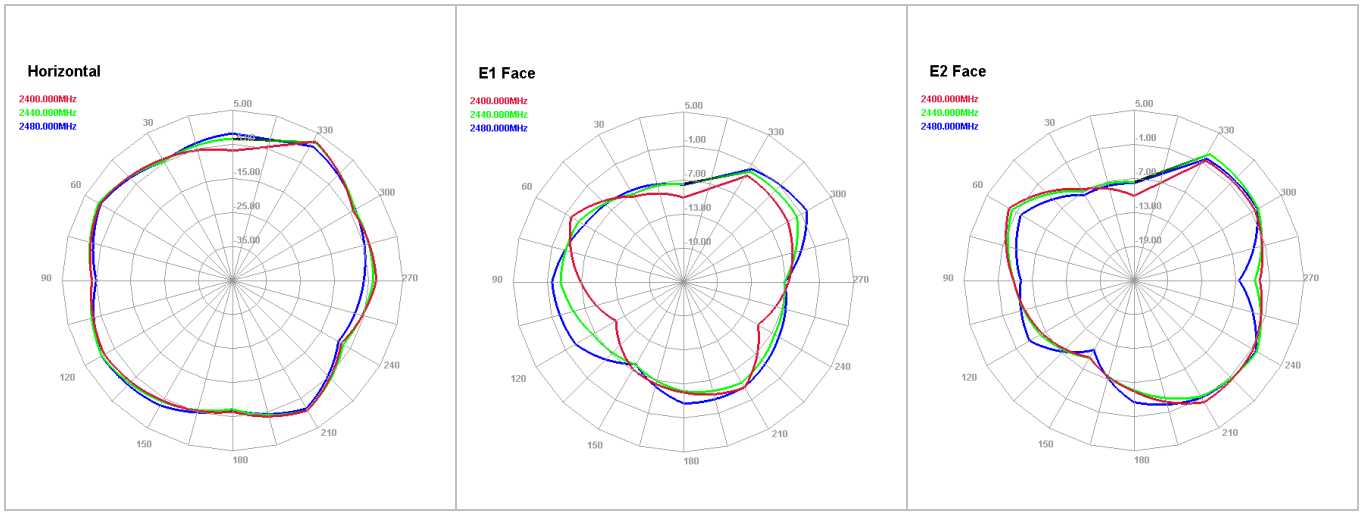
3.3.3 Gain



3.3.4 Efficiency



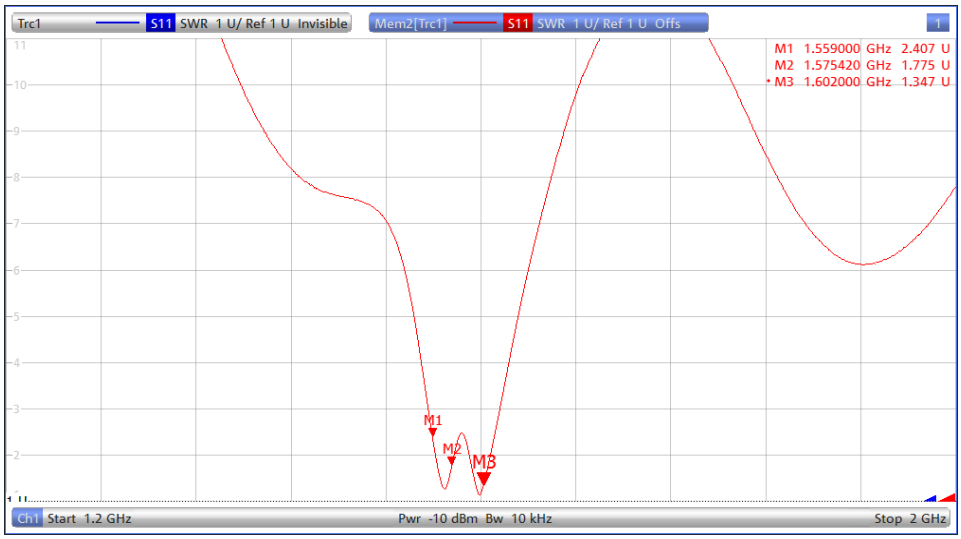
3.3.5 Directional pattern



3.4 Cable 4: GNSS

FRE (MHz)	1559	1575.42	1602
VSWR	2.40	1.77	1.34
Return Loss	-7.69	-11.08	-16.61
Eff (%)	`64.8	53.6	58.1
Average Gain(dB)	-1.88	-2.71	-2.36

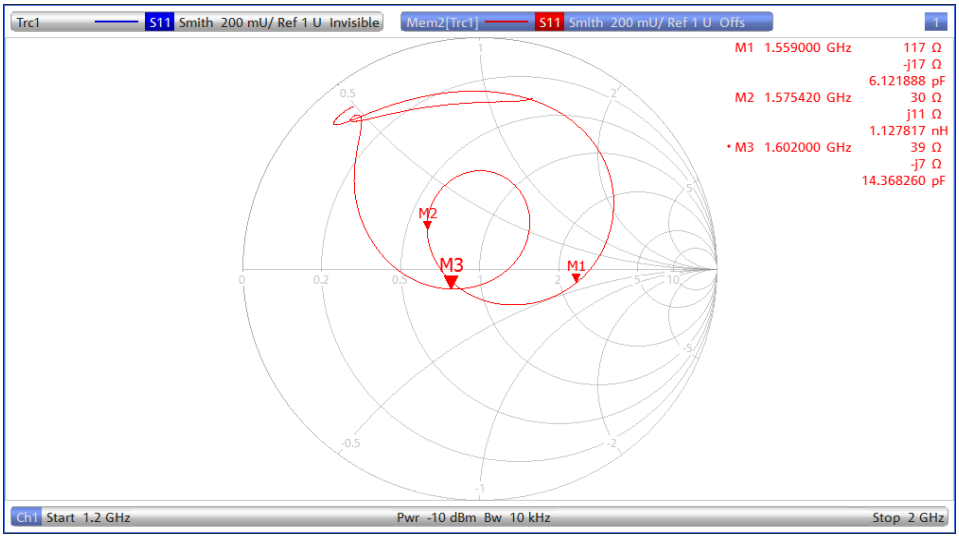
3.4.1 VSWR



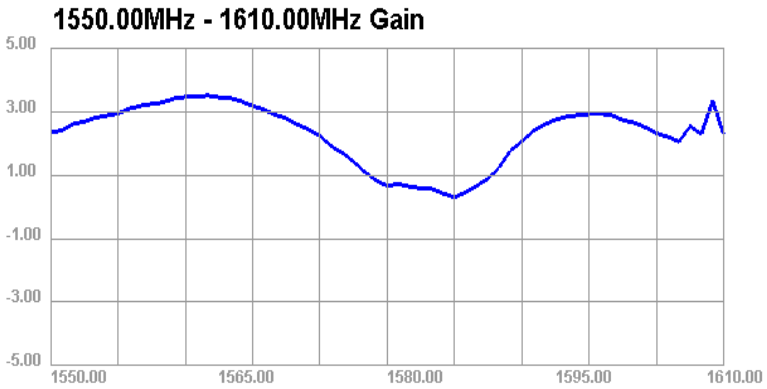
3.4.2 Return loss



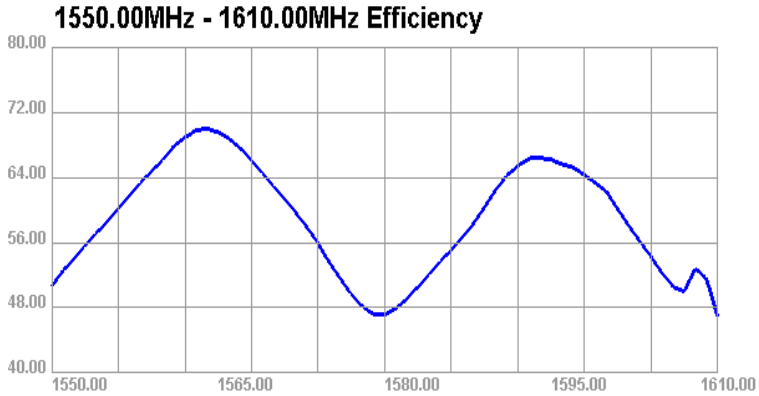
3.4.3 Smith



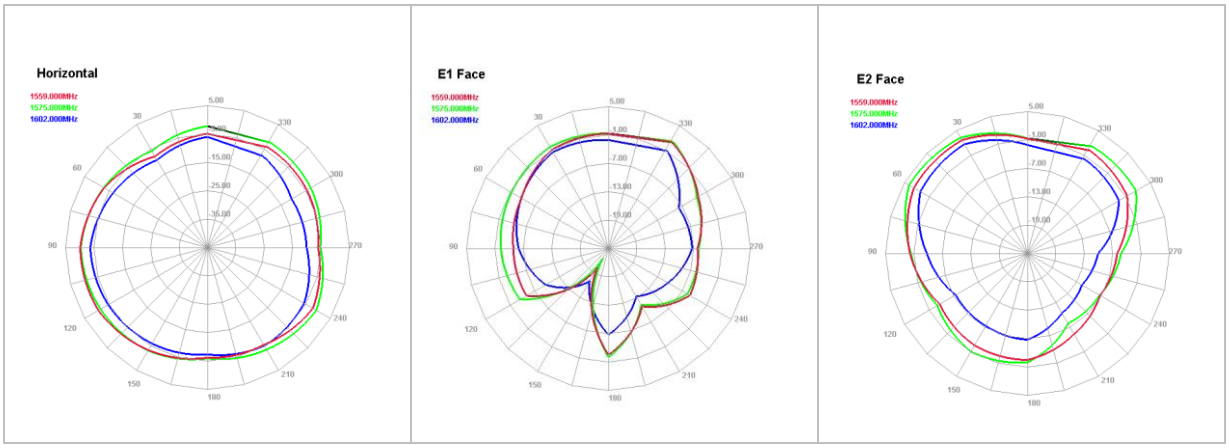
3.4.4 Gain



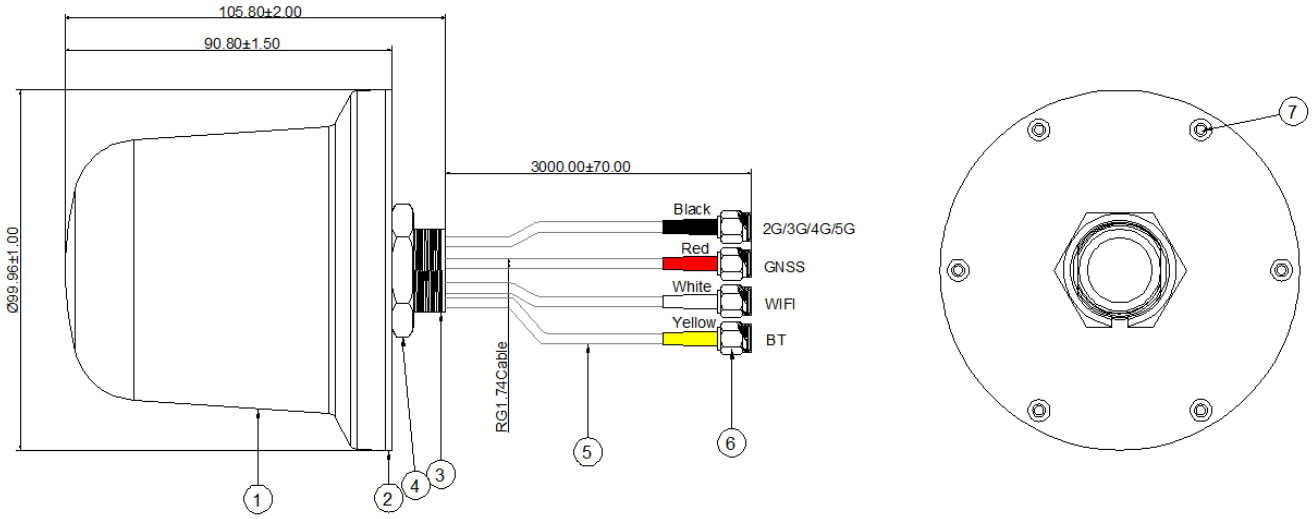
3.4.5 Efficiency



3.4.6 Directional pattern



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	RG174	black	4
6	SMA	brass	gold	4
7	Screw	M3x5	black	6

Note: Cable Loss

20℃时衰减（允许误差15%） Attenuation constant at 20℃ （Permissible error 15%）	200MHz	dB/100m	39
	400MHz	dB/100m	58
	900MHz	dB/100m	90
	1500MHz	dB/100m	117
	1800MHz	dB/100m	128
	2000MHz	dB/100m	139
	2500MHz	dB/100m	156