



SWB001

PN: SW19012EB56

Features:

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

Applications:

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

1. Electrical Specifications

Cable 1 Parameters CELLULAR / LTE Antenna

Standards	4G/3G/2G/NB-IoT/CAT M1		
Frequency range (MHz)	699~960	1710~2170	2300~2690
Peak Gain (dBi)	0~3.5	0.5~3.5	0.5~3.5
Average Gain (dB)	-4~-2.4	-3.5~-1.8	-3.5~-1.6
VSWR	<3.0	<2.0	<2.0
Return Loss	<-6.0	<-10.0	<-10.0
Efficiency (%)	40~60%	44~66%	45~68%
Polarization mode	Linear		
Radiation pattern	Omni-Directional		
Output impedance (Ω)	50		
Max. Input Power(W)	5		

Cable 2 Parameters CELLULAR / LTE Antenna

Standards	4G/3G/2G/NB-IoT/CAT M1		
Frequency range (MHz)	699~960	1710~2170	2300~2690
Peak Gain (dBi)	0.8~3.8	2.0~5.0	1.5~3.0
Average Gain (dB)	-4.3~-1.8	-3.5~-1.4	-2.5~-1.5
VSWR	<3.0	<2.0	<2.0
Return Loss	<-6.0	<-9.0	<-10.0
Efficiency (%)	37~66%	45~73%	55~68%
Polarization mode	Linear		
Radiation pattern	Omni-Directional		
Output impedance (Ω)	50		
Max. Input Power(W)	5		

Cable 3 Parameters GNSS Antenna

Standards	GPS&GLONASS&GALILEO	
Frequency range (MHz)	1575.42	1602
VSWR	1.2	1.6
Return Loss	-19.6	-15.9
Average Gain (dB)	-3.1	-2.7
Efficiency (%)	48.5%	53.7%
Impedance(Ω)	50	
Polarization	RHCP	
Radiation Pattern	Hemispherical	

Saw Filter	Pre-Filter
Active Gain (dB)	18
Noise-Figure(dB)	1dB(+25°C±10°C)
Supply Current(mA)	15mA
Supply Voltage(V)	1.8~3.6

2. Mechanical and Environmental Specification

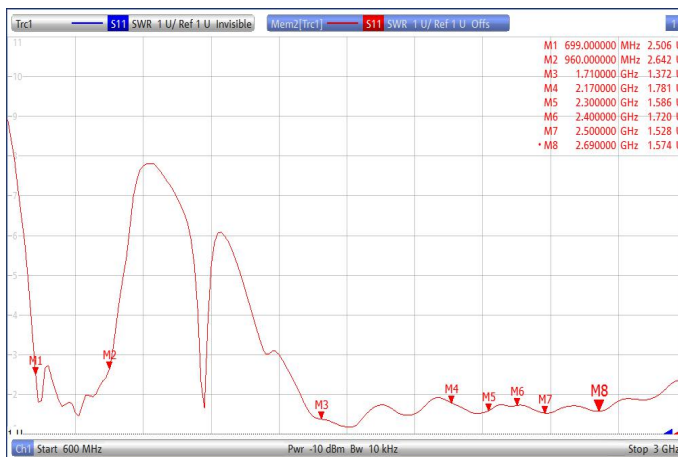
Mounting Type	Adhesive & Screw
Adhesive Type	3M &Screw
Connector Type	RG174
Antenna size(mm)	81.0 (φ) x 24.9 (H) x 3000 (Line length)
Material	External
Cable length(mm)	3000(can be customized)
Operating Temperature (°C)	- 40 °C ~ + 80 °C
Storage Temperature(°C)	- 40 °C ~ + 80 °C

3. Antenna parameters

3.1 Cable 1: CELLULAR/LTE Tested with 50cm cable length - RG174 with C20N

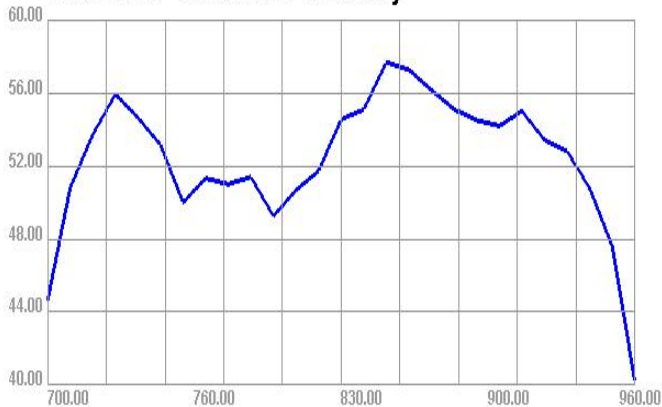
FRE (MHz)	700	960	1710	2170	2300	2400	2500	2690
VSWR	2.5	2.6	1.3	1.7	1.5	1.7	1.5	1.5
Return Loss	-7.6	-6.9	-16.0	-11.0	-12.8	-11.5	-13.6	-13.0
Eff (%)	44.6	40.2	51.0	45.6	49.3	53.6	68.4	56.3
Average Gain(dB)	-3.5	-3.9	-2.9	-3.4	-3.0	-2.7	-1.6	-2.4

3.1.1 VSWR and Return Loss



3.1.2 Efficiency

700.00MHz - 960.00MHz Efficiency



1710.00MHz - 2690.00MHz Efficiency



3.1.3 Gain

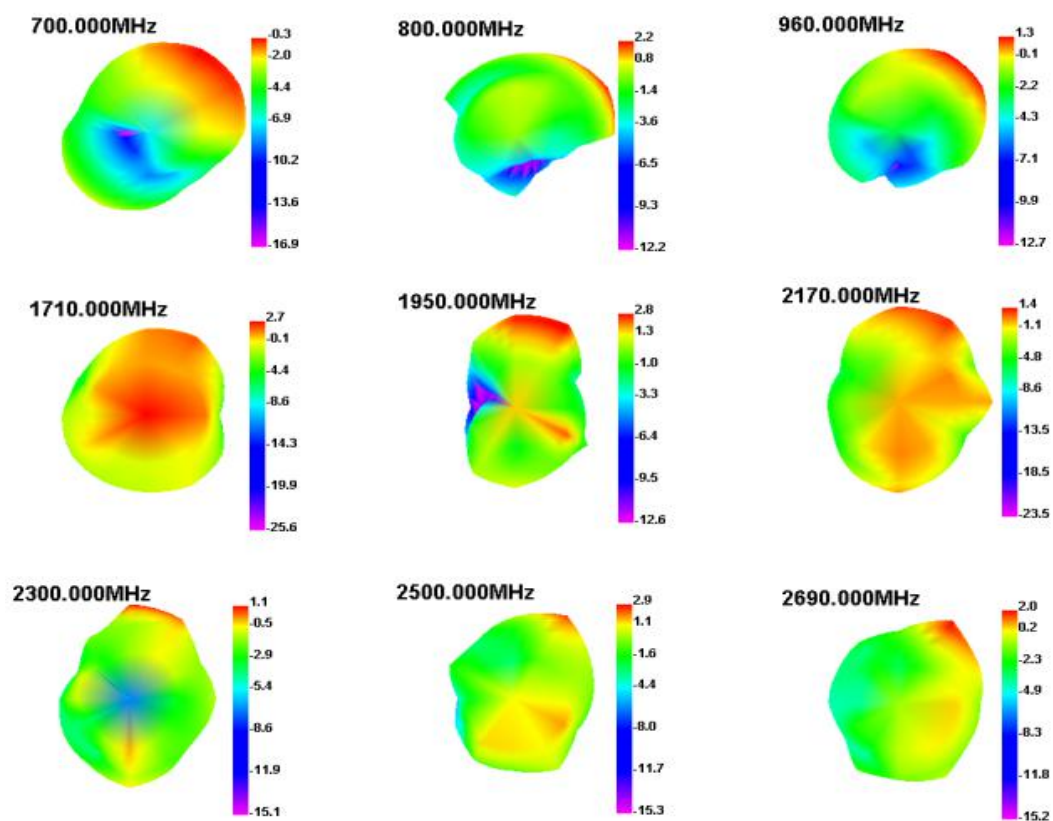
700.00MHz - 960.00MHz Gain



1710.00MHz - 2690.00MHz Gain



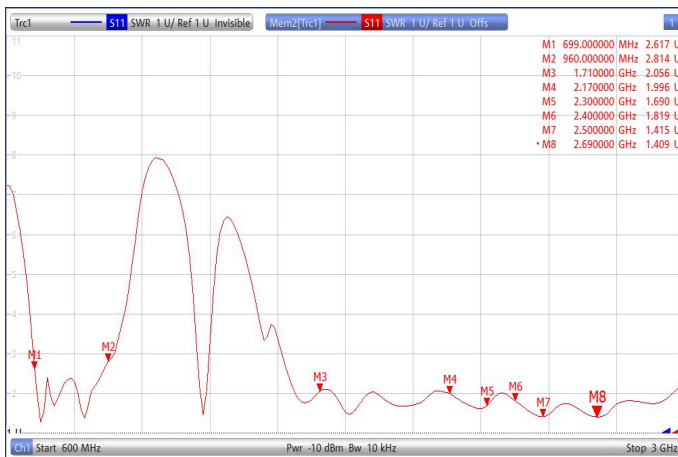
3.1.4 Directional pattern



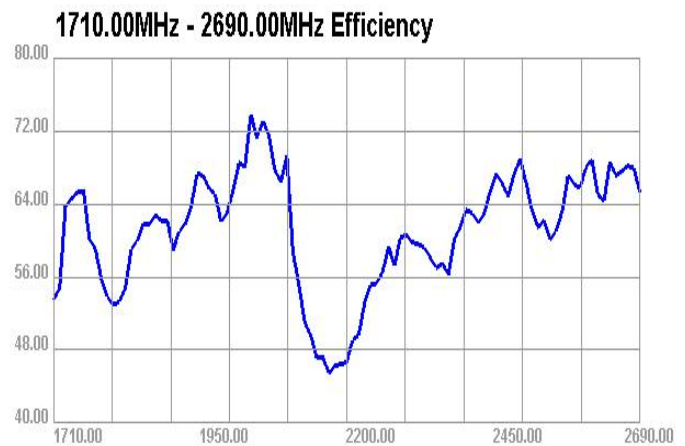
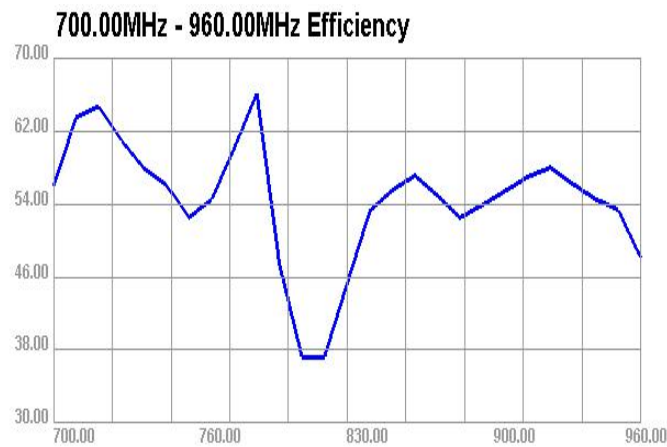
3.2 Cable 2: CELLULAR/LTE Tested with 50cm cable length - RG174 with C20N

FRE (MHz)	700	960	1710	2170	2300	2400	2500	2690
VSWR	2.6	2.8	2.0	1.9	1.6	1.8	1.4	1.4
Return Loss	-7.2	-6.4	-9.2	-9.5	-11.8	-10.7	-15.3	-15.4
Eff (%)	55.9	48.1	53.6	45.4	60.5	63.3	66.2	65.2
Average Gain(dB)	-2.5	-3.1	-2.7	-3.4	-2.1	-1.9	-1.7	-1.8

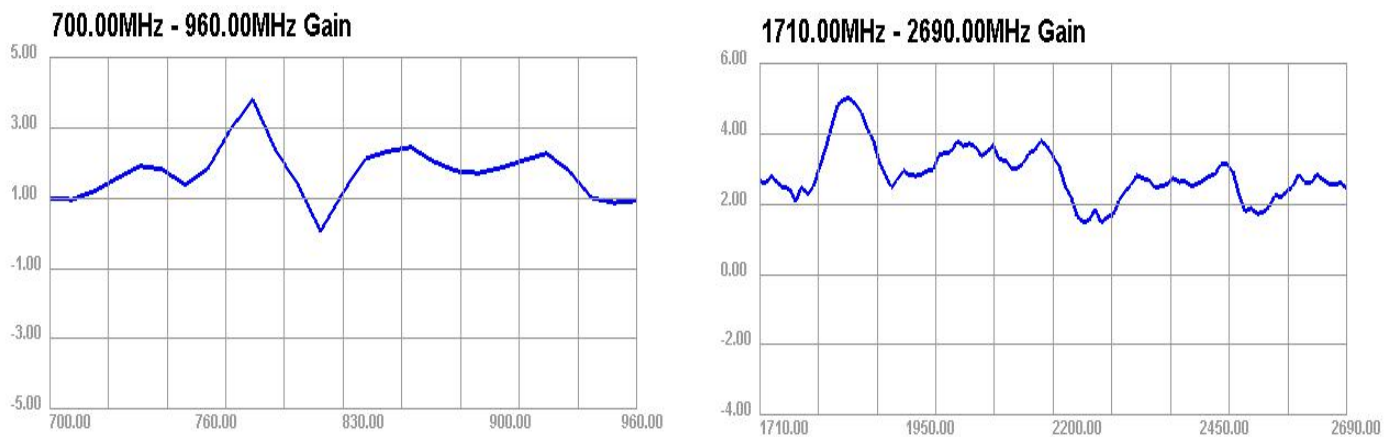
3.2.1 VSWR and Return loss



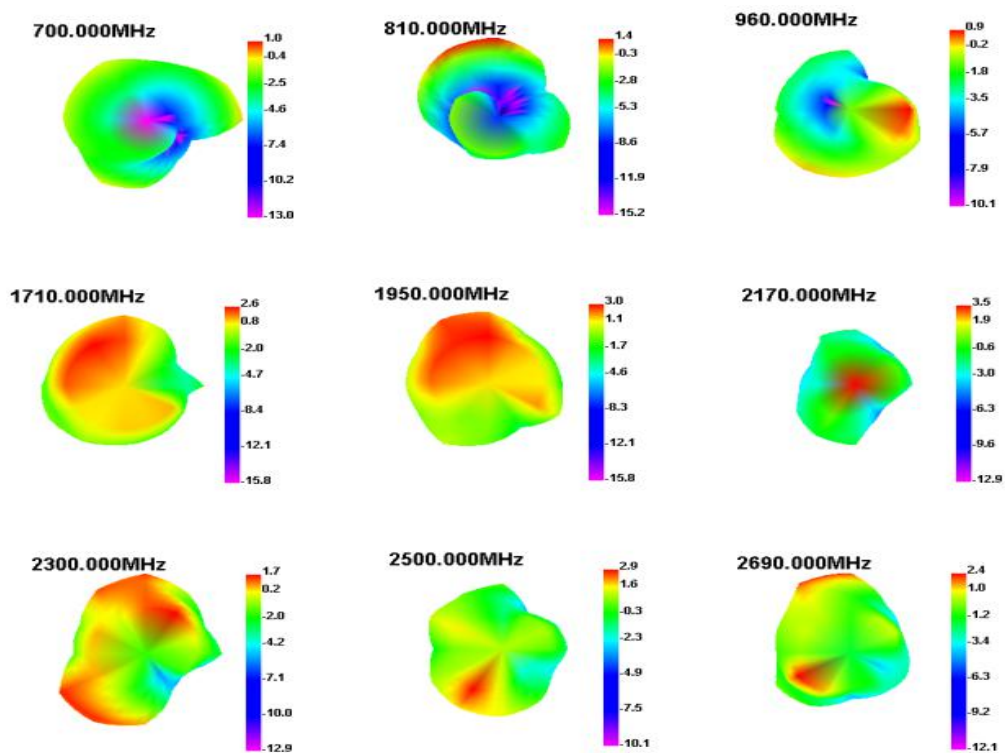
3.2.2 Efficiency



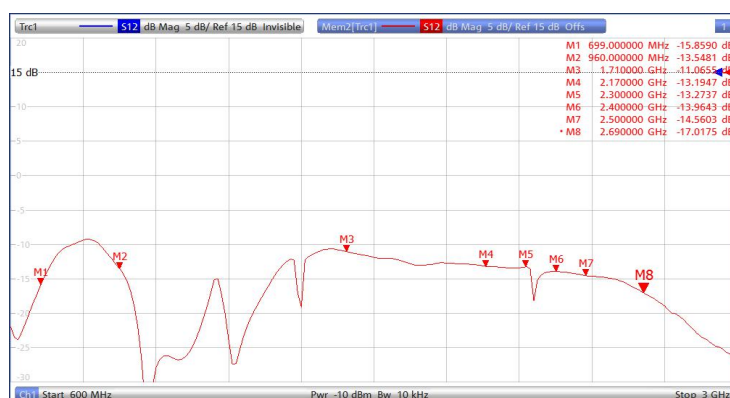
3.2.3 Gain



3.2.4 Directional pattern



3.2.5 ISOLATION FOR CABLE 1 AND 2



3.3 Cable 3: GNSS Tested with 50cm cable length - RG174 with C20N

FRE (MHz)	1575.42	1602
VSWR	1.2	1.6
Return Loss	-19.6	-15.9
Eff (%)	48.5	53.7
Average Gain(dB)	-3.1	-2.7

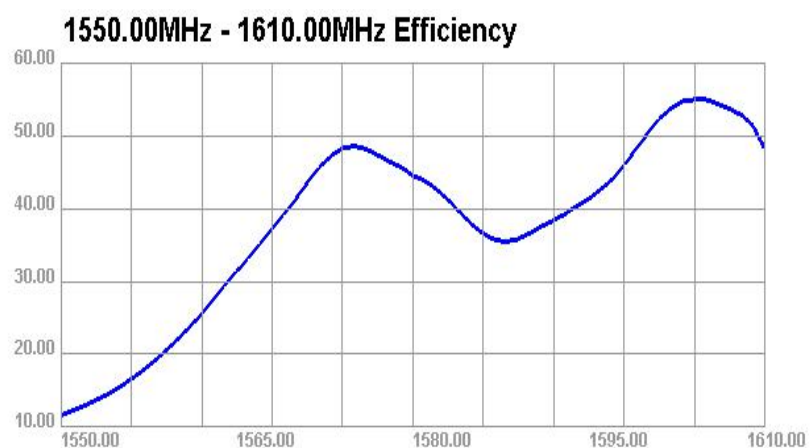
3.3.1 VSWR



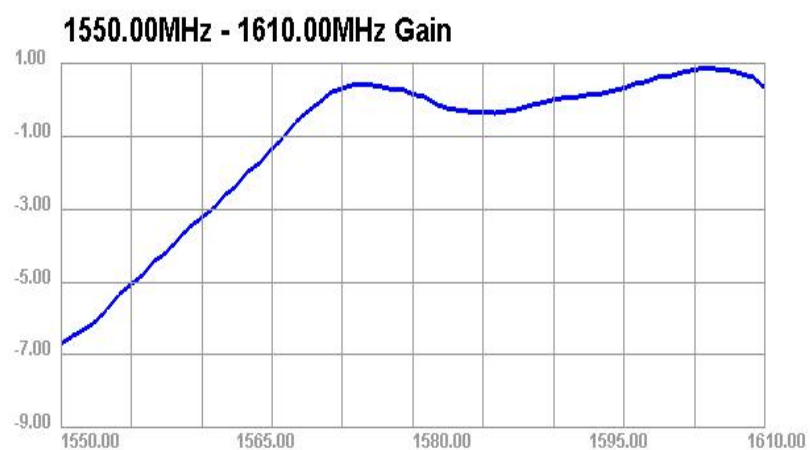
3.3.2 Return Loss



3.3.3 Efficiency

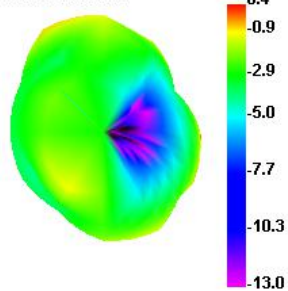


3.3.4 Gain

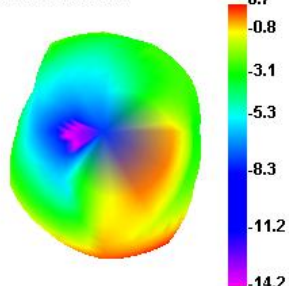


3.3.5 Directional pattern

1575.000MHz



1602.000MHz



4. Antenna Drawing

