Vehicle Locating & Marine GPS & 3G,LTE MIMO Antenna

MODEL: GAF-68

Small size and ruggedness, demand of vehicle locating and Marine navigation GPS/3G/LTE antenna that will sustain harsh environment.

The antenna system **GAF-68** is the integration of the high performance GPS patch antenna and a low noise amplifier into state-of-the-art low a very low profile/extremely compact/fully waterproof antenna signal enclosure. When connected to a GPS receiver with +2.5~ 5.5V DC antenna powers it provides excellent signal amplification and out-band-rejection for that receiver.

Features:

GPS antenna with double threaded bolts and through holes for cable routing with course & fine treaded pitch locking for wing-nut fastener and lock-nut to prevent vibrations and un-authorize removal.

Specifications:

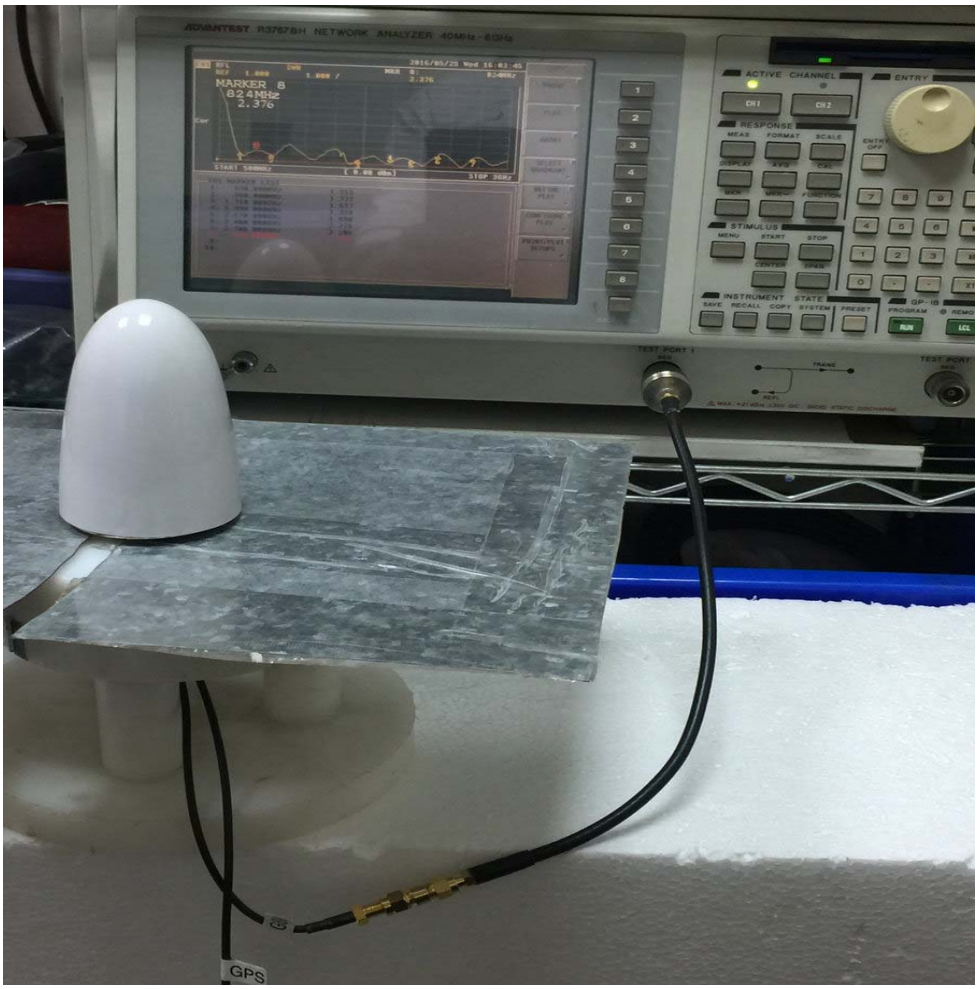
PHYSICAL CONDITION	
Constructions:	Polycarbonate radome,detachable cable/connector for easy mount, rubber-O-ring between top radome and screw base for waterproof
Dimensions:	60mm(Dia.) x 90mm(H)
Weight:	65grams (w/o cable & connector).
Color:	White or Black (Optional)
Mounting:	Bulkhead mount with 0.8 inch threaded wing nut (standard accessory). FB6 2.5mm SUS L-Mounting
Cable & Connector	
RF cable:	RG174-20CM-SMA(F) or ----
Pulling strength:	6 Kg @ 5sec. molded plastic on connector end for strain relief.
Connector available:	SMA ,SMB, Fakra , BNC,TNC,MMCX,MCX----
Antenna Element	
Center Frequency:	1575.42 MHz +/-1.023 MHz

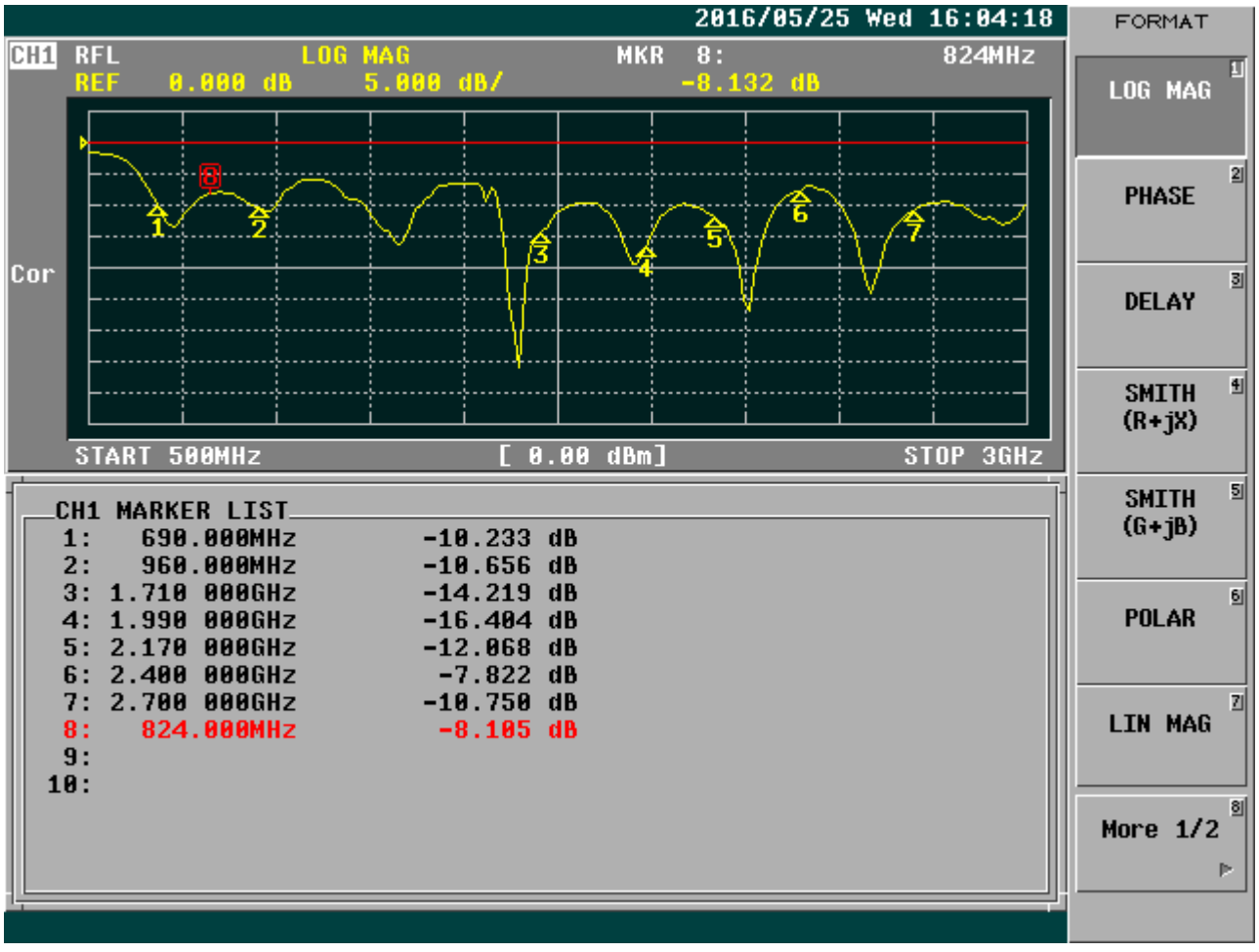
Polarization:	R.H.C.P. (Right Handed Circular Polarization).
Absolute Gain @ Zenith:	+5 dBi typical.
Gain @ 10° Elevation:	-1 dBi typical.
Axial Ratio:	3 dB max.
Output VSWR:	2.0
Output Impedance:	50 ohm
Low Noise Amplifier	
Center Frequency:	1575.42 +/- 1.023 MHz
Power Gain:	28 db +/-3db
Bandwidth:	10 MHz min. @S11≤-10 dB
Noise Figure:	1.5
Outer Band Attenuation:	3 dB max.
Supply Voltages:	2.5~5.5V DC.
Current Consumption:	at 2.5V 6.6mA Typ. at 3.0V 8.6mA Typ. at 4.0V 12.6mA Typ. at 5.0V 16.6mA Typ.
Filter	20dB 25dB @ fo+/- 50MHz 30dB 35dB @ fo+/- 100MHz * fo=1575.42MHz
Overall Performance: (antenna element, LNA & coax cable)	
Center Frequency:	1575.42 +/- 1.023 MHz
Gain:	At 90° vertical to sky 30 ± 4.5dBi (cable loss) Note:1 Mounted on the 60mm x 60mm square ground plane
Noise Figure:	1.5 typ.
Axial Ratio:	3 dB max.
Bandwidth:	10 MHz min. @S11≤-10 dB
VSWR:	2.0 max.
Output Impedance:	50 ohm
Environmental	
Operating Temperature:	-40°C~ +80°C.
Storage Temperature:	-40°C~ +80°C.
Relative Humidity:	95% non-condensing.
Water Resistance:	100% waterproof.

GSM / ADS-B/ 3G / LTE / WIFI	
Frequency	690~960/1090/1616~1636/1710~2170/2400~2700Mhz
VSWR	3.5
Impedence	50Ω
Cable type	RG174
Cable length	20CM-SMA(F) or
Connector	SMA Coding or Others

＊This specification is subject to change without prior notice **Data Updated:** May.25, 2016

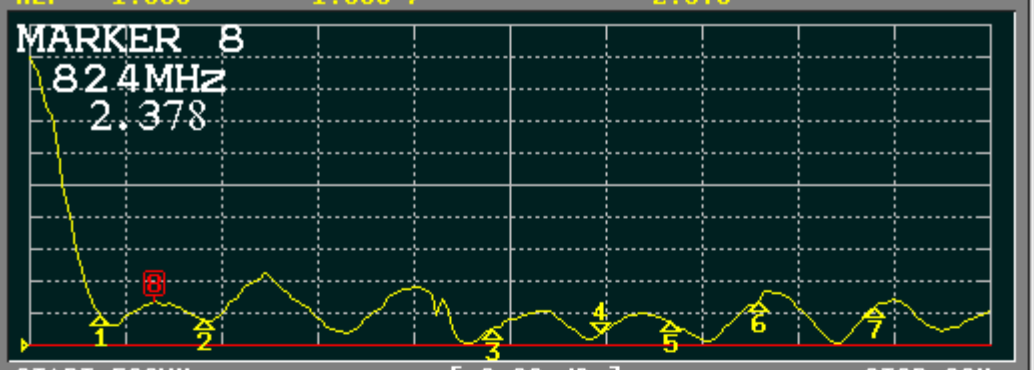
ON 320x220mm GND Test





2016/05/25 Wed 16:03:33

CH1 RFL SWR MKR 8: 824MHz
REF 1.000 1.000 / 2.378



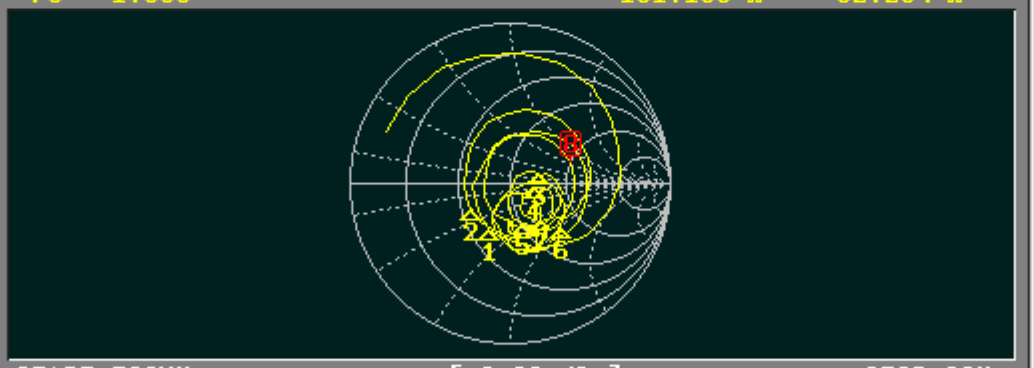
CH1 MARKER LIST

1:	690.000MHz	1.920
2:	960.000MHz	1.782
3:	1.710 000GHz	1.530
4:	1.990 000GHz	1.364
5:	2.170 000GHz	1.705
6:	2.400 000GHz	2.395
7:	2.700 000GHz	2.179
8:	824.000MHz	2.378
9:		
10:		

COPY
PRINT
PLOT
ABORT
SELECT QUADRANT
DEFINE PLOT
CONFIGURE PLOT
PRINT/PLOT SETUPS

2016/05/25 Wed 16:04:47

CH1 RFL SMITH(R+jX) MKR 8: 824MHz
FS 1.000 101.196 Ω 32.234 Ω



CH1 MARKER LIST

1:	690.000MHz	33.094 Ω	-19.640 Ω	11.743pF
2:	960.000MHz	28.958 Ω	-9.981 Ω	16.609pF
3:	1.710 000GHz	72.063 Ω	8.527 Ω	793.715pH
4:	1.990 000GHz	67.829 Ω	-3.408 Ω	23.466pF
5:	2.170 000GHz	50.474 Ω	-25.671 Ω	2.857pF
6:	2.400 000GHz	75.052 Ω	-48.877 Ω	1.356pF
7:	2.700 000GHz	64.139 Ω	-31.926 Ω	1.846pF
8:	824.000MHz	101.196 Ω	32.234 Ω	6.226nH
9:				
10:				

RECALL
RECALL REG_1
RECALL REG_2
RECALL REG_3
RECALL REG_4
RECALL REG_5
RECALL POWER OFF
LOAD FILE
More 1/4

Test result:

Frequency (MHz)	690	698	704	710	716	734	740	746	751	756	777	782	787	791
Efficiency (%)	94.14	96.65	96.97	96.25	92.84	82.29	80.30	78.95	78.85	78.86	76.41	74.70	72.98	72.27
Peak Gain (dBi)	3.07	3.21	3.28	3.28	3.13	2.80	2.81	2.86	2.95	3.04	3.23	3.18	3.10	3.1

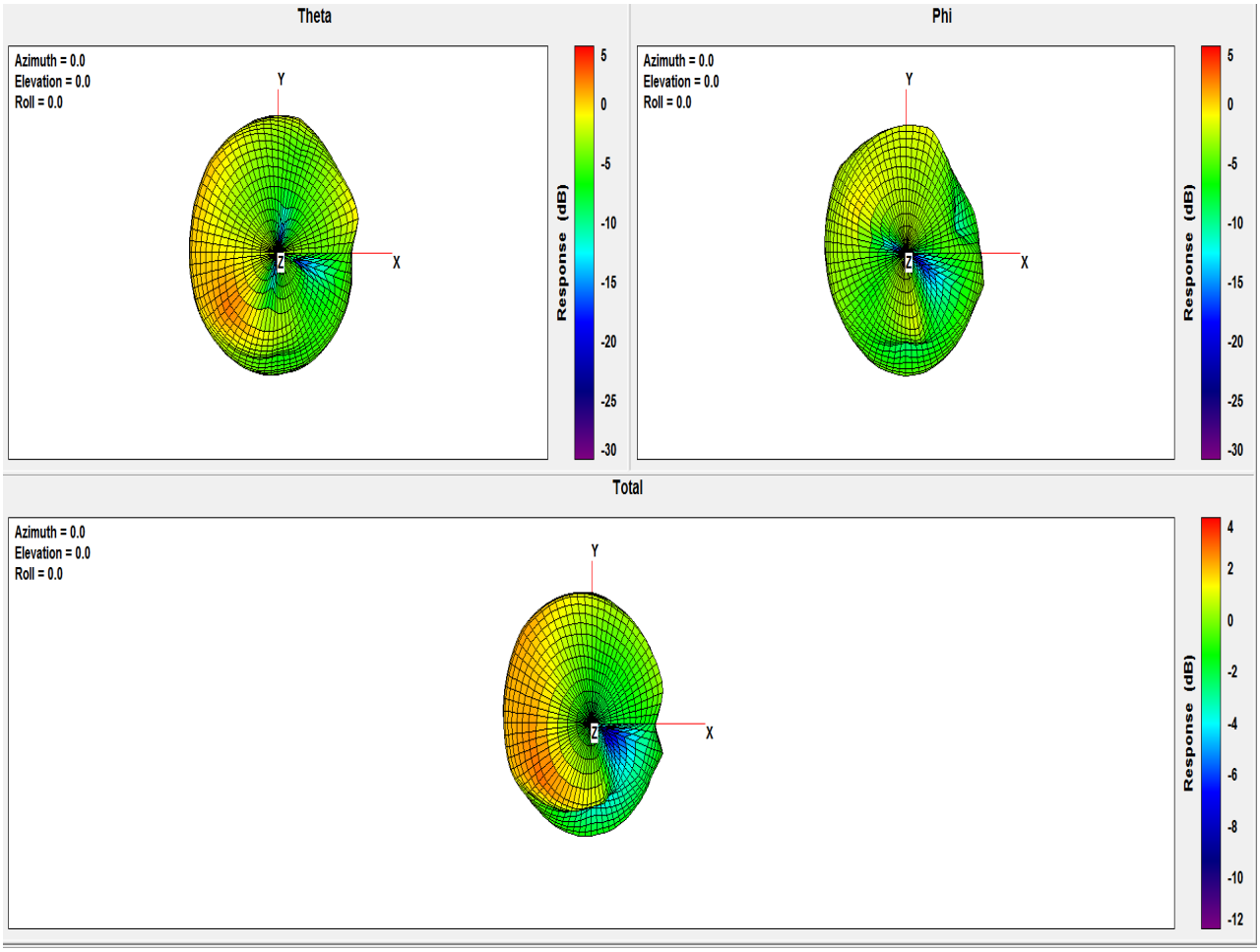
Frequency (MHz)	806	815	821	824	830	832	836	845	847	849	860	862	869	875
Efficiency (%)	78.29	76.81	76.34	76.62	77.15	77.74	77.80	77.48	77.01	76.56	73.46	73.12	70.95	69.82
Peak Gain (dBi)	3.36	3.22	3.13	3.17	3.15	3.15	3.08	2.99	2.94	2.90	2.64	2.58	2.39	2.23

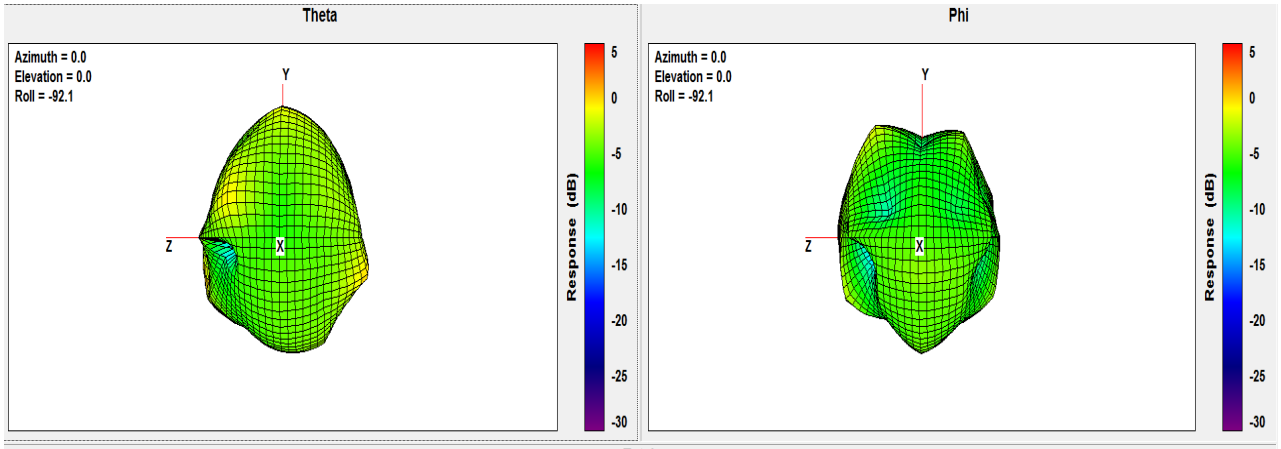
Frequency (MHz)	880	881	890	894	900	915	925	940	960	1427.9	1447.9	1462.9	1475.9	1495.9
Efficiency (%)	68.89	68.78	68.30	68.88	69.31	71.30	72.56	73.74	74.35	72.22	71.95	71.71	70.98	68.98
Peak Gain (dBi)	2.09	2.06	1.83	1.76	1.64	1.51	1.75	2.16	2.71	2.68	2.59	2.56	2.48	2.29

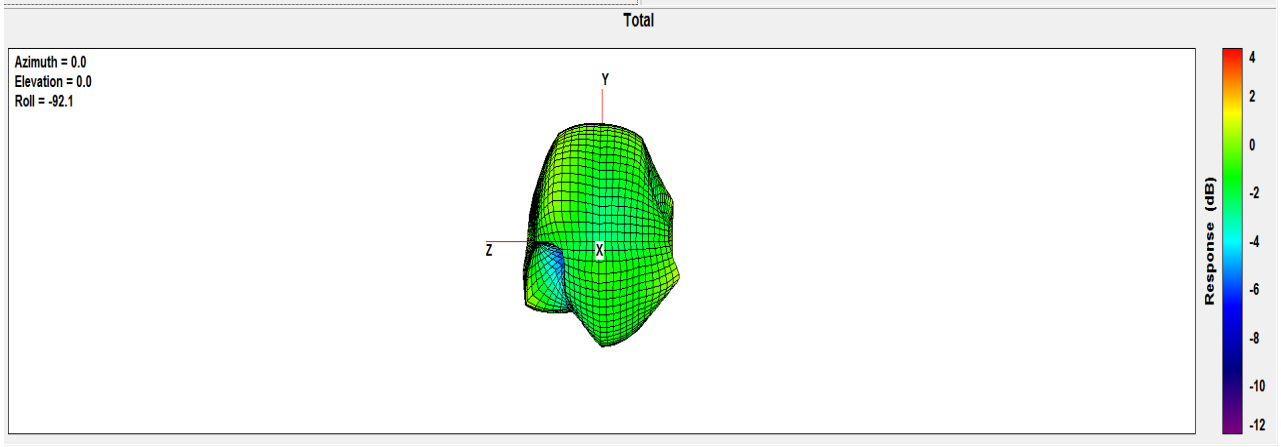
Frequency (MHz)	1510.9	1574.7	1575.4	1576.4	1602	1710	1750	1755	1785	1805	1840	1850	1880	1882
Efficiency (%)	68.17	74.85	74.81	74.97	78.06	98.03	93.06	91.75	85.41	84.88	82.58	81.53	81.45	81.62
Peak Gain (dBi)	2.26	3.93	3.95	3.97	5.30	4.15	3.83	3.78	3.61	3.88	3.97	3.89	3.69	3.71

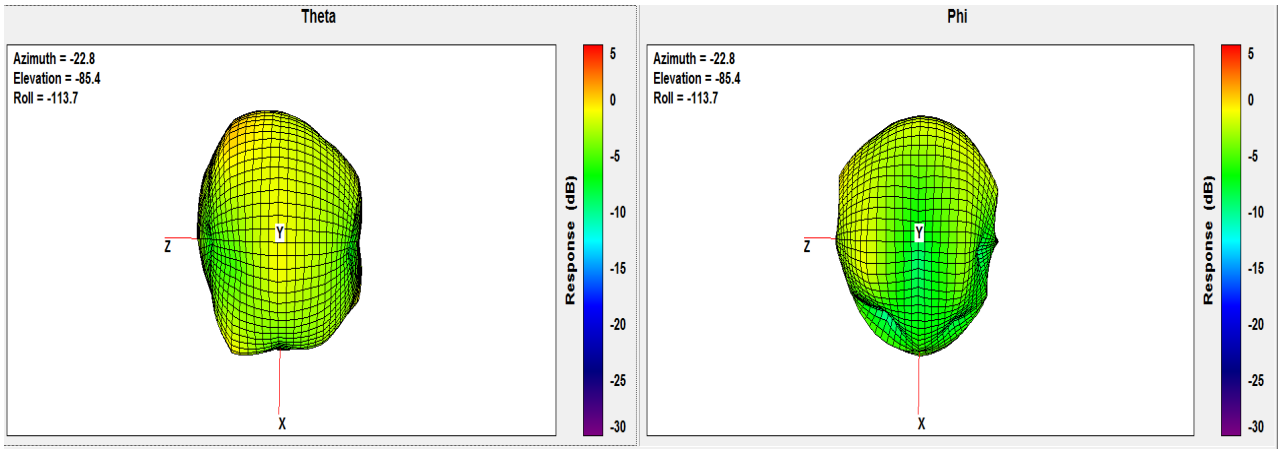
Frequency (MHz)	1910	1920	1930	1950	1962	1980	1990	2110	2132	2140	2155	2170	2400	2450
Efficiency (%)	86.45	88.31	90.60	93.93	97.53	98.16	98.01	75.28	76.28	76.20	77.90	79.80	75.11	75.13
Peak Gain (dBi)	4.25	4.44	4.68	4.96	5.17	5.39	5.43	3.72	4.05	4.07	4.16	4.23	4.48	3.15

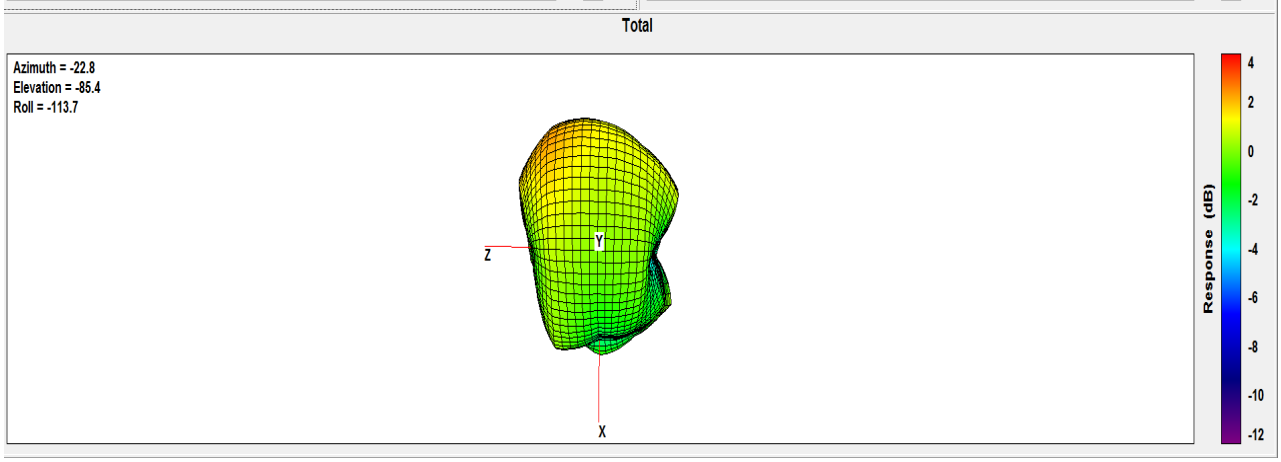
Frequency (MHz)	2500	2535	2570	2620	2655	2690	2700							
Efficiency (%)	81.65	88.12	89.31	84.28	80.03	74.18	72.51							
Peak Gain (dBi)	3.56	4.06	4.17	3.92	3.84	3.68	3.57							

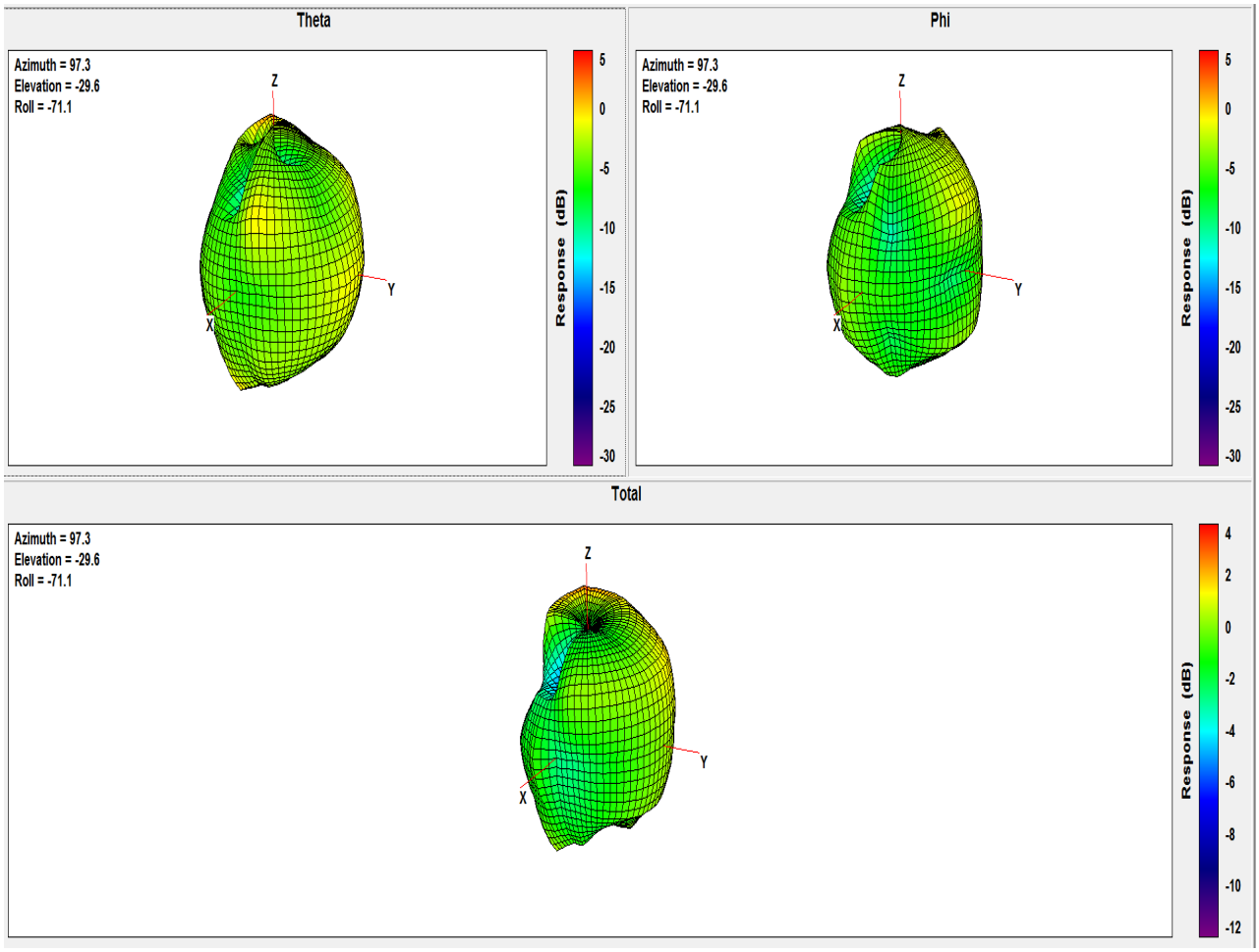



Theta
Azimuth = 0.0
Elevation = 0.0
Roll = -92.1
Y
Z
X
Response (dB)
5
0
-5
-10
-15
-20
-25
-30
Phi
Azimuth = 0.0
Elevation = 0.0
Roll = -92.1
Y
Z
X
Response (dB)
5
0
-5
-10
-15
-20
-25
-30


Total
Azimuth = 0.0
Elevation = 0.0
Roll = -92.1
Y
Z
X
Response (dB)
4
2
0
-2
-4
-6
-8
-10
-12


Theta
Azimuth = -22.8
Elevation = -85.4
Roll = -113.7
Y
Z
X
Response (dB)
5
0
-5
-10
-15
-20
-25
-30
Phi
Azimuth = -22.8
Elevation = -85.4
Roll = -113.7
Y
Z
X
Response (dB)
5
0
-5
-10
-15
-20
-25
-30


Total
Azimuth = -22.8
Elevation = -85.4
Roll = -113.7
Y
Z
X
Response (dB)
4
2
0
-2
-4
-6
-8
-10
-12


Theta
Azimuth = 97.3
Elevation = -29.6
Roll = -71.1
Z
Y
X
Response (dB)
5
0
-5
-10
-15
-20
-25
-30
Phi
Azimuth = 97.3
Elevation = -29.6
Roll = -71.1
Z
Y
X
Response (dB)
5
0
-5
-10
-15
-20
-25
-30
Total
Azimuth = 97.3
Elevation = -29.6
Roll = -71.1
Z
Y
X
Response (dB)
4
2
0
-2
-4
-6
-8
-10
-12