

4G/LTE Antenna

Model : TH-89B



1. GENERAL DESCRIPTION

P/N
TH-89B-SMA(M)

1.1 Electrical Properties

Parameter	Description
Frequency Band	690~960/1710~2170/2400~2700MHz
Nominal Impedance	50 ohm
Polarization	Vertical
V.S.W.R	3.5 : 1

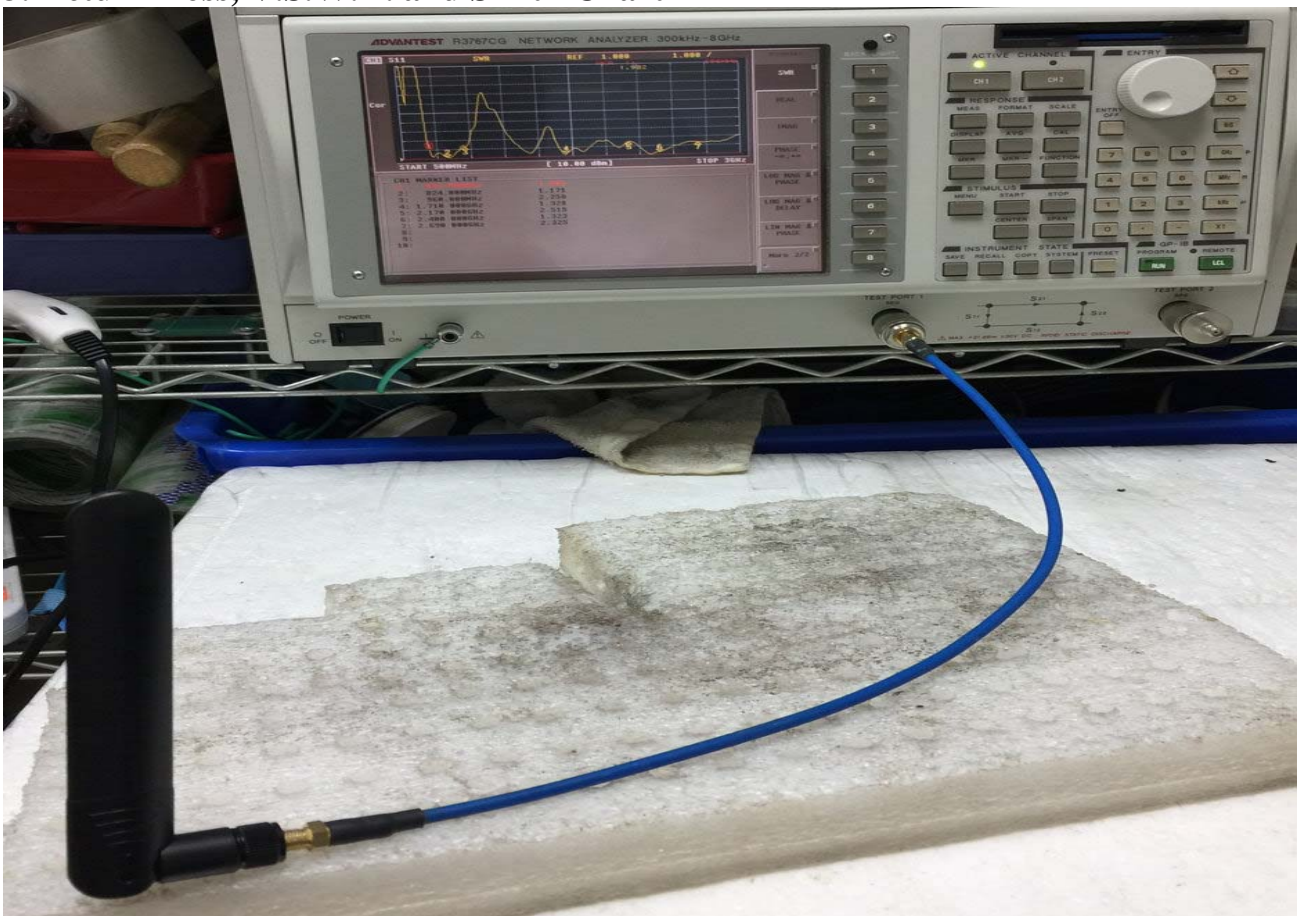
1.2 Mechanical Properties

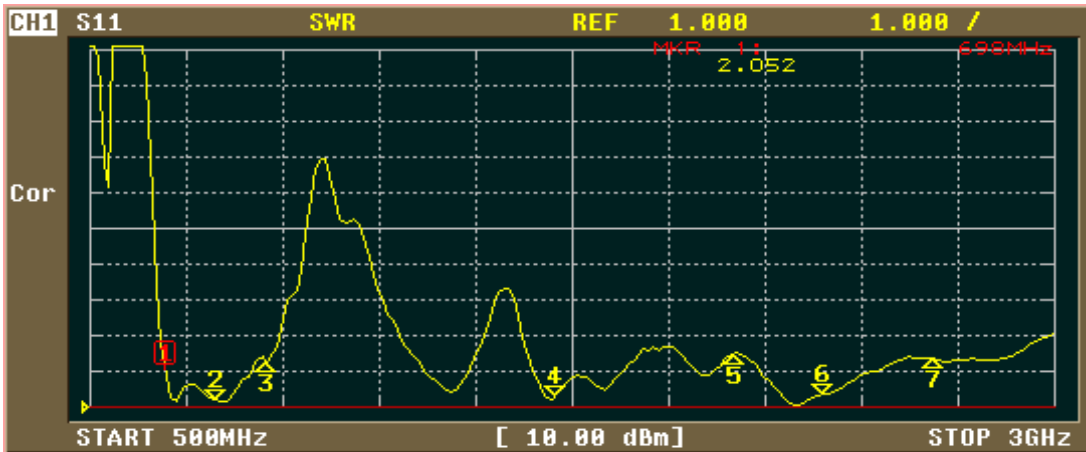
Parameter	Description
Antenna Type	External Antenna
Touch Type	Screw Type
Connector Type	SMA 180°(Male)
Antenna Dimensions	144mm±3
Antenna Color	Black
Operating Temperature Range	-30°C~+70°C
Storage Temperature Range	-30°C~+70°C

2. APPEARANCE:

<div style="border: 2px solid black; padding: 5px; display: inline-block;"> RoHS Compatible </div>					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SIGN</th> <th>DATE</th> <th>DESCRIPTION</th> <th>APPROVER</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>			SIGN	DATE	DESCRIPTION	APPROVER																																																		
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<p>★★★★☆</p>					<p>Note: 1.Take * "is the important dimension. 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.</p>																																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>5</td> <td>R-RG-78U-03</td> <td>Coaxial Cable</td> <td>RG178U</td> <td></td> <td>1</td> </tr> <tr> <td>4</td> <td>PB-AN67-08FB</td> <td>PCB</td> <td>FR4</td> <td>Black</td> <td>1</td> </tr> <tr> <td>3</td> <td>AN67-01B</td> <td>Body</td> <td>ABS</td> <td>Black</td> <td>1</td> </tr> <tr> <td>2</td> <td>Hinge-AN67-01B</td> <td>Hinge</td> <td>ABS</td> <td>Black</td> <td>1</td> </tr> <tr> <td>1</td> <td>SMA194-CCT5AN19-D</td> <td>SMA公頭公針</td> <td>Cu</td> <td>Black</td> <td>1</td> </tr> <tr> <th>No.</th> <th>Part Number</th> <th>Name</th> <th>Material</th> <th>Finish</th> <th>Q'ty</th> </tr> </table>								5	R-RG-78U-03	Coaxial Cable	RG178U		1	4	PB-AN67-08FB	PCB	FR4	Black	1	3	AN67-01B	Body	ABS	Black	1	2	Hinge-AN67-01B	Hinge	ABS	Black	1	1	SMA194-CCT5AN19-D	SMA公頭公針	Cu	Black	1	No.	Part Number	Name	Material	Finish	Q'ty	百展科技有限公司 TITLE: TH89B-SMA(M) 3G/LTE Antenna PART NO.: CUSTOMER P/N: / <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>APP BY</th> <th>CHK BY</th> <th>RF BY</th> <th>DES BY</th> <th>UNITS: mm</th> <th>Tolerance</th> </tr> <tr> <td>Grant</td> <td>Kenny</td> <td>Sifei</td> <td>ZGR</td> <td>SCALE: /</td> <td>X.X =0.5 X.XX =0.2 X" =1</td> </tr> <tr> <td>2017/07/05</td> <td>2017/07/05</td> <td>2017/07/05</td> <td>2017/07/05</td> <td>REVISION: A</td> <td></td> </tr> </table>			APP BY	CHK BY	RF BY	DES BY	UNITS: mm	Tolerance	Grant	Kenny	Sifei	ZGR	SCALE: /	X.X =0.5 X.XX =0.2 X" =1	2017/07/05	2017/07/05	2017/07/05
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3. Return Loss, V.S.W.R. and Smith Chart





CH1 MARKER LIST

1:	698.000MHz	2.852
2:	824.000MHz	1.225
3:	960.000MHz	2.258
4:	1.710 000GHz	1.336
5:	2.170 000GHz	2.504
6:	2.400 000GHz	1.340
7:	2.690 000GHz	2.339
8:		
9:		
10:		

FORMAT

SWR

REAL

IMAG

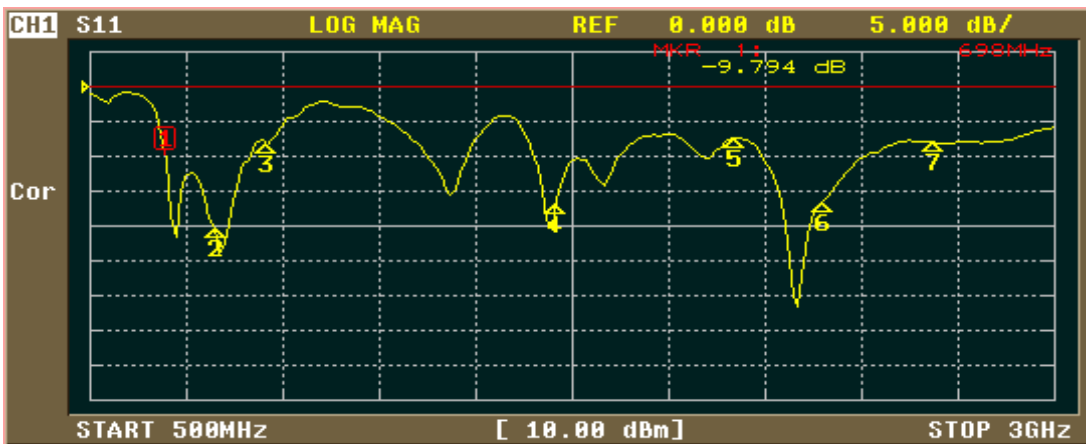
PHASE
-∞, +∞

LOG MAG &
PHASE

LOG MAG &
DELAY

LIN MAG &
PHASE

More 2/2



CH1 MARKER LIST

1:	698.000MHz	-9.794 dB
2:	824.000MHz	-20.207 dB
3:	960.000MHz	-8.247 dB
4:	1.710 000GHz	-17.012 dB
5:	2.170 000GHz	-7.306 dB
6:	2.400 000GHz	-16.705 dB
7:	2.690 000GHz	-7.986 dB
8:		
9:		
10:		

FORMAT

LOG MAG

PHASE

DELAY

SMITH
(R+jX)

SMITH
(G+jB)

POLAR

LIN MAG

More 1/2



CH1 MARKER LIST

1:	698.000MHz	50.580 Ω	-33.407 Ω	6.825pF
2:	824.000MHz	41.388 Ω	1.052 Ω	203.316pH
3:	960.000MHz	23.559 Ω	-10.940 Ω	15.153pF
4:	1.710 000GHz	37.934 Ω	4.071 Ω	378.948pH
5:	2.170 000GHz	30.599 Ω	-31.605 Ω	2.320pF
6:	2.400 000GHz	37.226 Ω	-833.953mΩ	79.518pF
7:	2.690 000GHz	61.401 Ω	-46.824 Ω	1.263pF
8:				
9:				
10:				

FORMAT

LOG MAG

PHASE

DELAY

SMITH
(R+jX)

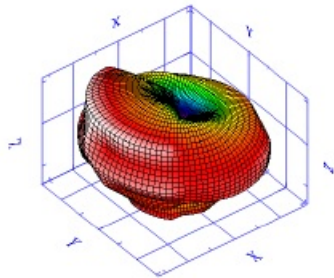
SMITH
(G+jB)

POLAR

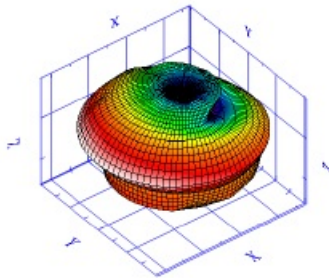
LIN MAG

More 1/2

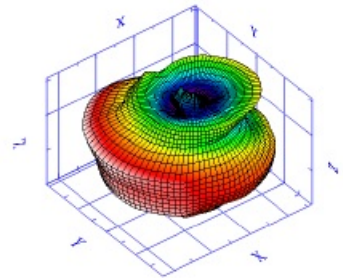
699 MHZ



869 MHZ

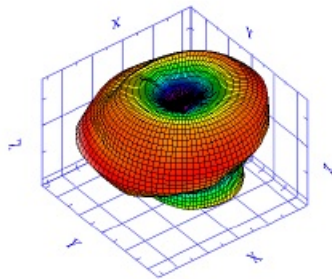


960 MHZ

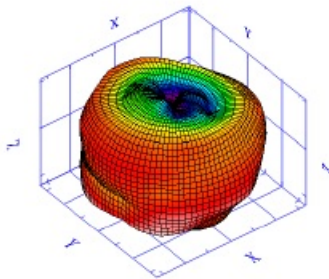


Frequency	699	824	839	854	869	884	899	914	929	944	960
E-Total Peak Gain (dBi)	-2.91	0.94	1.19	1.4	0.67	0.23	-0.17	-0.85	-1.74	-2.86	-3.8
Efficiency (%)	22.49	44.41	44.36	44.04	32.12	25.4	21.96	18.66	15.66	13.17	11.91
Average Gain (dB)	-6.48	-3.53	-3.53	-3.56	-4.93	-5.95	-6.58	-7.29	-8.05	-8.8	-9.24

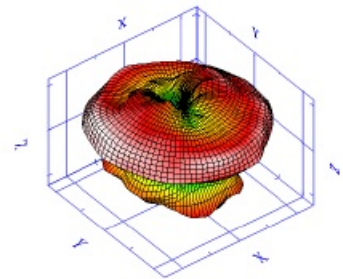
1710 MHZ



2200 MHZ



2700 MHZ



Frequency	1710	1880	1920	1990	2000	2100	2200	2300	2400	2500	2600	2700
E-Total Peak Gain (dBi)	-0.03	-1.57	-0.93	-0.28	-0.29	-0.17	0.54	1.69	1.14	0.96	-0.85	-3.54
Efficiency (%)	27.32	24.39	27.73	32.01	32.04	34.71	49.11	60.22	52.67	49.06	34.33	20.39
Average Gain (dB)	-5.63	-6.13	-5.57	-4.95	-4.94	-4.6	-3.09	-2.2	-2.78	-3.09	-4.64	-6.91