

2011.11.17	
MB-RD-E11117-08	

SPECIFICATIONS SHEET

<p>GPS ANTENNA (SG51x)</p>

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1. General Application

This document specifies the chip antenna for the mobile communication terminal.

Model Number	SG51x
Application	GPS

2. Technical Specification

2.1 Electrical Specification

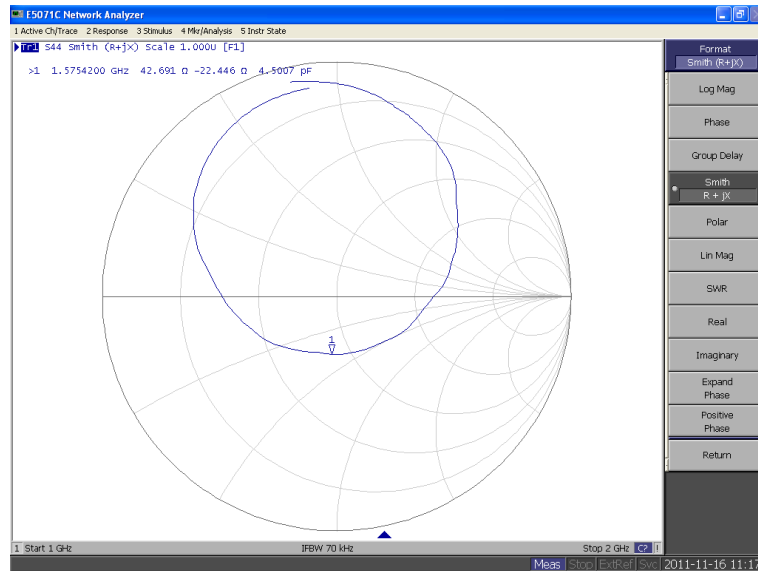
No	Item	Specification	Remarks
1	Frequency Range	1575.42MHz	
2	VSWR	2.0: 1	
3	Impedance	50 Ω	
4	3D Efficiency	64%	Test Jig
5	Polarization	Linear	
6	Radiation Pattern	Omni directional	

2.2 Mechanical Specification

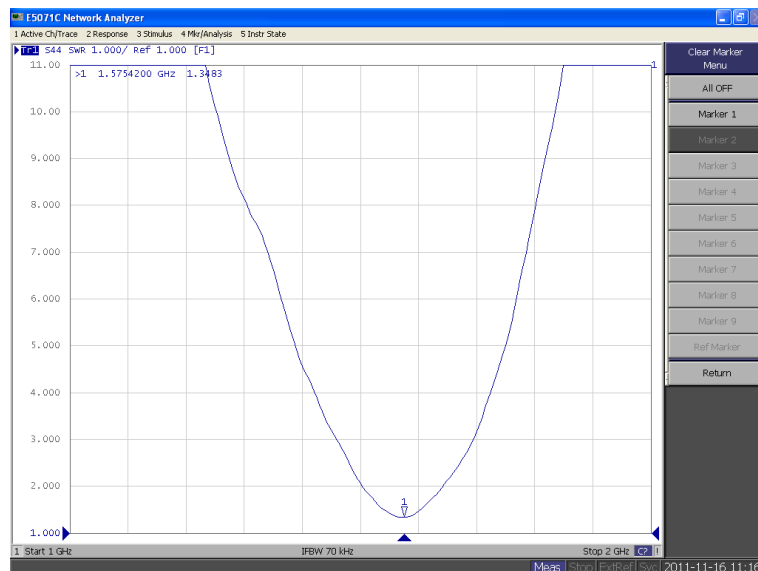
No	Item	Specification	Remarks
1	Dimension	3 * 11 * 2.0(H)mm	
2	Radiator Material	Copper	
3	Operating Temperature	-30℃ ~ +80℃	
4	Operating Humidity	10% ~ 90%	
5	Weight	N/A	
6	Connector Type	Solder(SMT)	

3. Measurement Data

3.1 VSWR & Smith Chart



< Smith Chart >



< VSWR >

Fig 2. VSWR & Smith Chart

3.2 Test Result (3D Efficiency)

	1	2	3	4	5	6	7	8
Frequency(MHz)	1550	1560	1565	1570	1575	1580	1585	1590
Efficiency(dB)	-1.69	-1.77	-1.72	-1.80	-1.89	-1.92	-1.86	-1.92
Efficiency(%)	67.81	66.56	67.33	66.11	64.78	64.24	65.23	64.28
TRG(dB)	-1.69	-1.77	-1.72	-1.80	-1.89	-1.92	-1.86	-1.92
TRG _{total} (dB)	-2.27	-2.37	-2.32	-2.41	-2.51	-2.55	-2.49	-2.56
TRG _{phi} (dB)	-10.73	-10.67	-10.57	-10.60	-10.64	-10.63	-10.52	-10.54
UHRG(dB)	-6.21	-6.32	-6.28	-6.36	-6.45	-6.48	-6.40	-6.46
UHRG/TRG(%)	35.27	35.06	35.00	34.95	34.97	35.04	35.16	35.14
H-Plane	-0.61	-0.68	-0.62	-0.69	-0.76	-0.77	-0.67	-0.71
E1-Plane, AVG(dB)	-3.68	-3.79	-3.75	-3.85	-3.96	-4.00	-3.94	-4.01
E2-Plane, AVG(dB)	-3.01	-3.10	-3.07	-3.16	-3.27	-3.31	-3.24	-3.30
Peak Gain(dB)	1.42	1.44	1.63	1.81	1.89	1.79	1.61	1.43
Directivity(dB)	3.11	3.20	3.35	3.61	3.78	3.71	3.47	3.35
Minimum Gain(dB)	-11.74	-11.01	-10.61	-10.33	-10.11	-9.83	-9.48	-9.32
Test Condition	FS							
Antenna Type								
Average Efficiency	-1.82 dB, 65.79 %							

3.3 Radiation Pattern

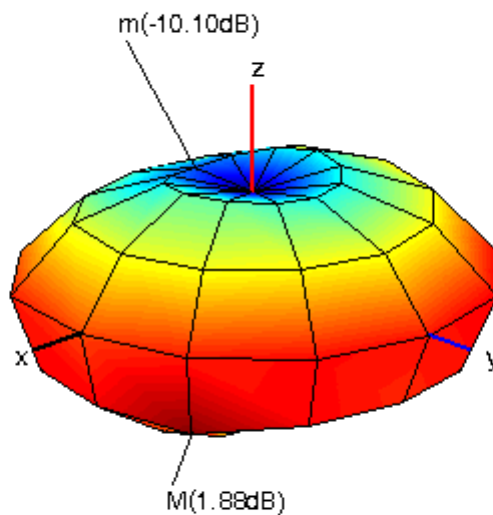
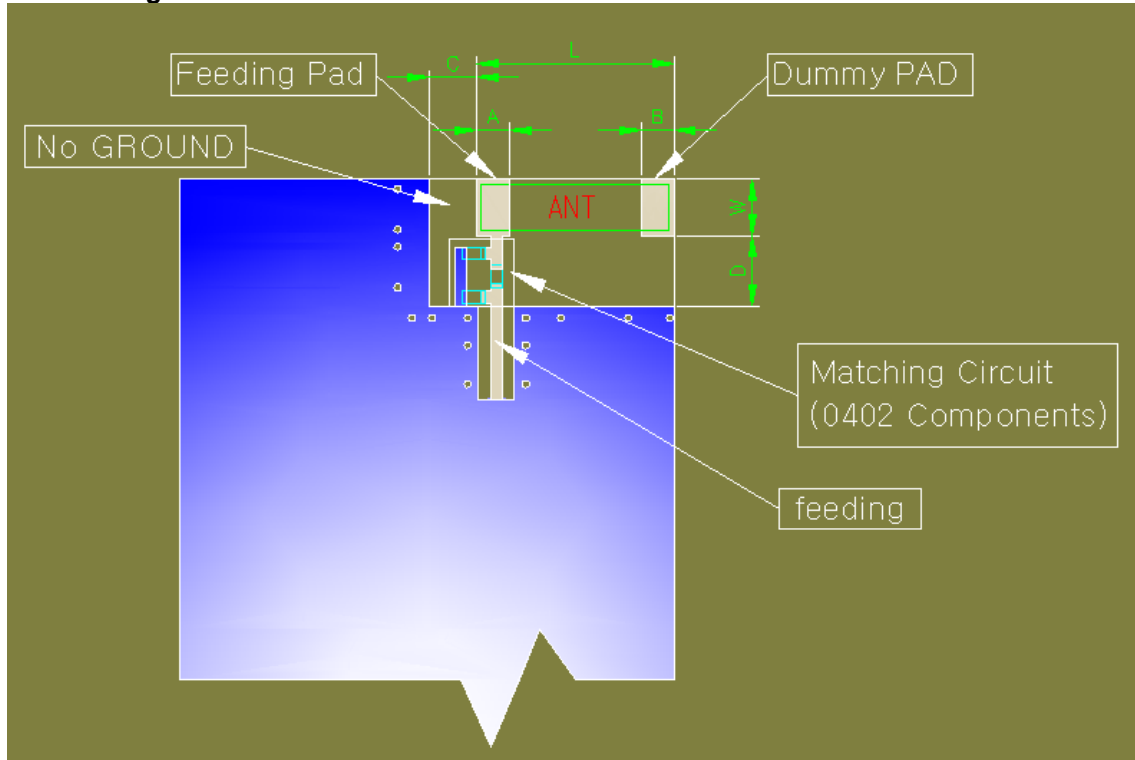


Fig 3. Radiation Pattern

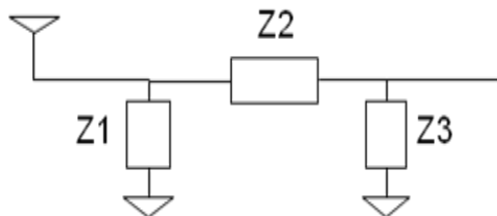
4. Application Guide

4.1 PCB Design Guide



	A	B	C	D	L	W
길이(mm)	1.7	1.7	2.0	3.0	11.4	3.4

4.2 Default Condition Matching Circuit



Z1	DNI
Z2	6.8nH
Z3	5.6nH

< Default Matching Value >