

2011.11.17

MB-RD-E11117-06


# SPECIFICATIONS SHEET

**GPS ANTENNA  
( XGA8x B )**

**CONFIDENTIAL**

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## 1. General Application

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

Model Number	<b>XGA8x B</b>
Application	GPS

## 2. Technical Specification

### 2.1 Electrical Specification

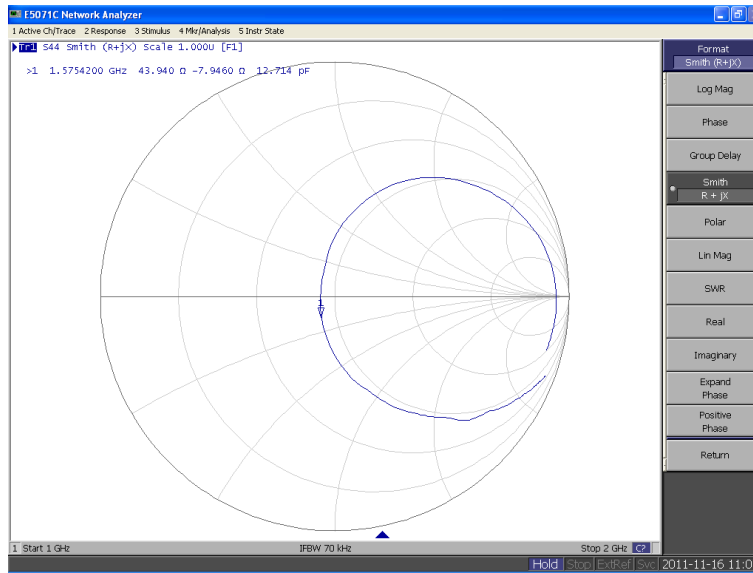
No	Item	Specification	Remarks
1	Frequency Range	1575.42MHz	
2	VSWR	2.0: 1	
3	Impedance	50 Ω	
4	3D Efficiency	72%	Test Jig
5	Polarization	Linear	
6	Radiation Pattern	Omni directional	

### 2.2 Mechanical Specification

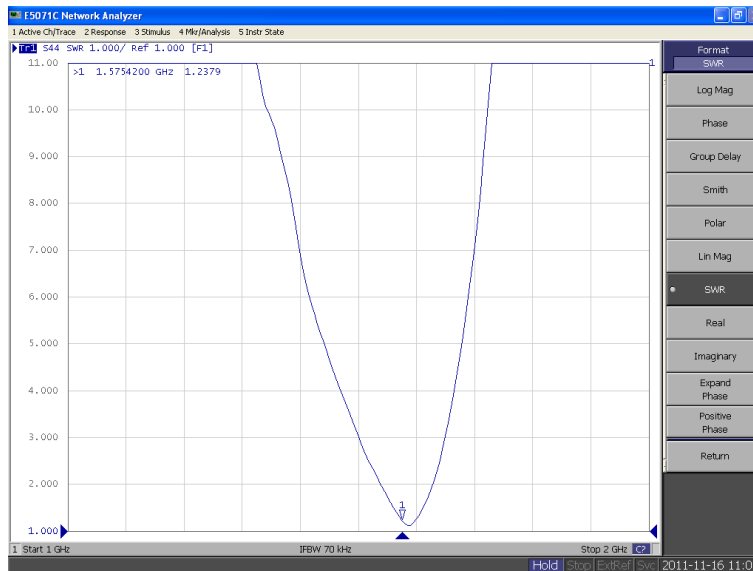
No	Item	Specification	Remarks
1	Dimension	3 * 12.5 * 2.0(H)mm	
2	Radiator Material	Copper	
3	Operating Temperature	-30℃ ~ +80℃	
4	Operating Humidity	10% ~ 90%	
5	Weight	N/A	
6	Connector Type	Solder(SMT)	

## 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)	-1.95	-1.84	-1.68	-1.50	-1.38	-1.39	-1.62	-1.75
Efficiency(%)	63.81	65.48	67.90	70.87	72.82	72.61	68.89	66.91
TRG(dB)	-1.95	-1.84	-1.68	-1.50	-1.38	-1.39	-1.62	-1.75
TRG <sub>Theta</sub> (dB)	-2.50	-2.41	-2.26	-2.08	-1.97	-1.99	-2.23	-2.36
TRG <sub>Phi</sub> (dB)	-11.19	-10.93	-10.71	-10.47	-10.30	-10.27	-10.46	-10.53
UHRG(dB)	-6.71	-6.61	-6.45	-6.27	-6.15	-6.15	-6.38	-6.50
UHRG/TRG(%)	33.45	33.34	33.32	33.33	33.35	33.42	33.41	33.44
H-Plane	-0.91	-0.78	-0.61	-0.40	-0.27	-0.26	-0.47	-0.57
E1-Plane, AVG(dB)	-3.90	-3.81	-3.66	-3.50	-3.40	-3.42	-3.66	-3.79
E2-Plane, AVG(dB)	-3.23	-3.12	-2.98	-2.80	-2.70	-2.71	-2.94	-3.05
Peak Gain(dB)	1.36	1.39	1.60	1.90	2.18	2.09	1.89	1.43
Directivity(dB)	3.31	3.23	3.28	3.39	3.56	3.48	3.50	3.17
Minimum Gain(dB)	-10.21	-9.36	-8.85	-8.31	-8.02	-8.20	-8.60	-8.90
Test Condition	FS							
Antenna Type								
Average Efficiency	-1.63 dB,		68.66 %					

### 3.3 Radiation Pattern

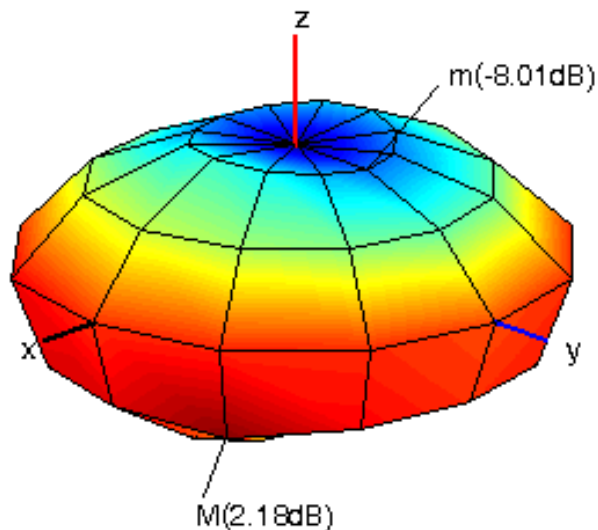
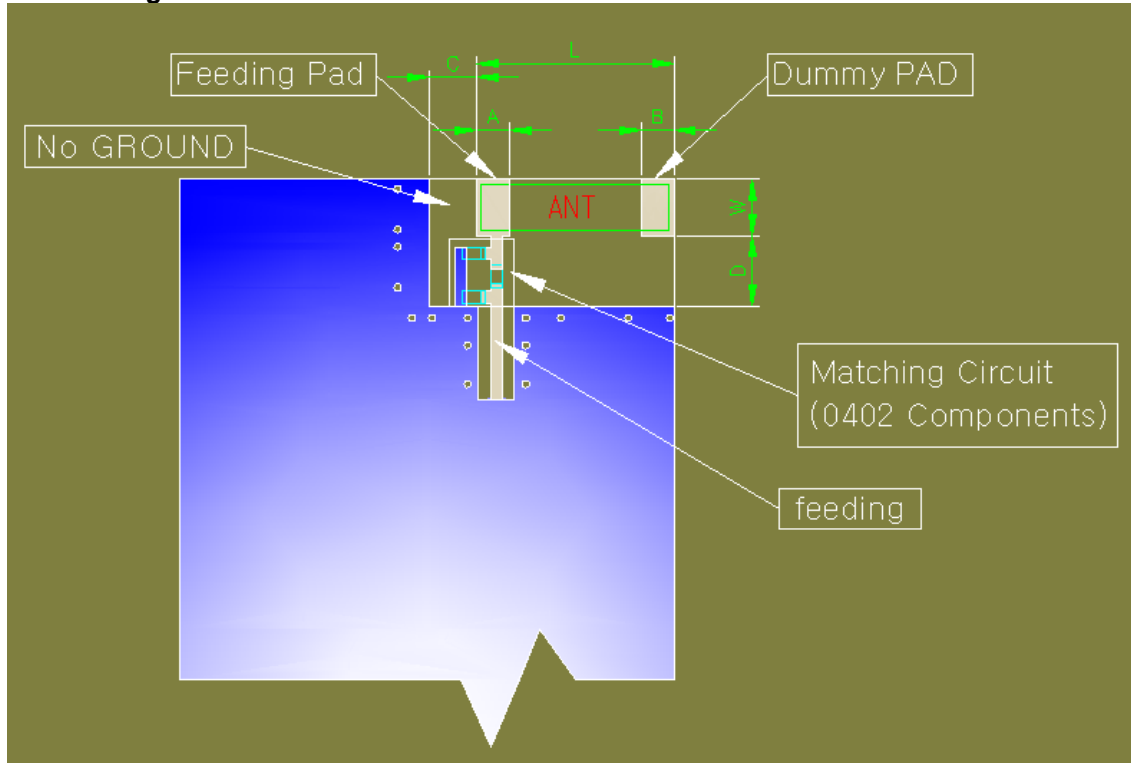


Fig 3. Radiation Pattern

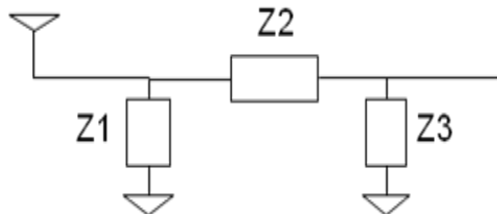
## 4. Application Guide

### 4.1 PCB Design Guide



	A	B	C	D	L	W
DIM(mm)	1.7	1.7	2.0	3.0	12.9	3.4

### 4.2 Default Condition Matching Circuit



Z1	DNI
Z2	1.0nH
Z3	DNI

< Default Matching Value >

\* The component values for the matching circuit will vary depending on the size of the PCB and surrounding components.