GPS Active Antenna

- Mini GPS Antenna with High Gain
- 1575.42MHz +/- 1MHz
- Active gain: +5dB
- VSWR <1.5:1
- 5metres RG174 Cable
- SMA or MMCX Male Connector
- Dimensions 38 x 34 x 12 ($_{Approx.}$)
- Mag Mount and Screw Fix

Applications

- Car GPS Systems
- Hand held GPS Systems

Description

A compact Antenna for GPS applications where high performance is required from a small size. The antenna includes a Low Noise Amplifier and incorporates both magnetic mount and screw fixings.

Part Numbers

	Description	Cable Length	Connector
ANT-GPSMG	Active GPS with cable and connector	5metres	SMA (M)
ANT-GPSMG-MMCX	Active GPS with cable and connector	5metres	MMCX (straight)

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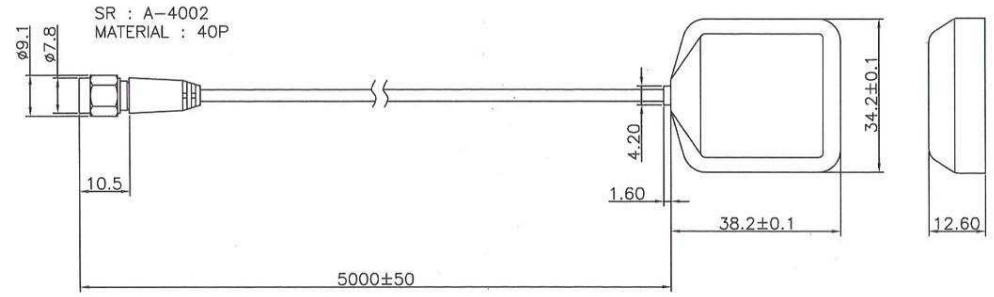
Mechanical Detail

ANT-GPSMG

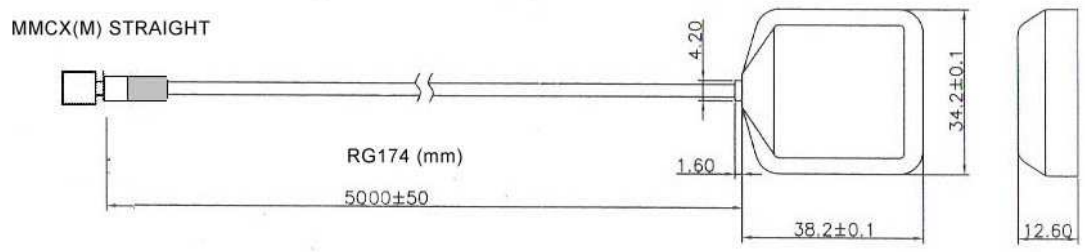
Cable	RG174/U
OD	ø2.6±0.1mm
Cover	Black
SMA M	Gold(鍍金)



Material:			Treatment:				
Drawer	Design	Aprov	Tolerance	Unit: mm		TITLE	SMA M+174U+10D
			X=±0.5 .X=±0.2 .XX=±0.1 .XXX=±0.05	Ver: B	Scale 1:1	Model NO	
				File NO: QR0402		Drawing NO	

NO	DESCRIPTION	MATERIAL	FINISH	Q"TY
Part NO				

ANT-GPSMG-MMCX



FM76316

Test Data

GENERAL

3.1 ENVIRONMENTAL CONDITIONS

3.1.1 OPERATING TEMPERATURE	-40°C TO +85°C
3.1.2 STORAGE TEMPERATURE	-40°C TO +90°C (110°C MAX 1HR.)
3.1.3 RELATIVE HUMIDITY	20% TO 95%, rain

3.2 ELECTRICAL SPECIFICATIONS

3.2.1 INPUT VOLTAGE Require:	2.5 to 5.5 VDC
3.2.2 POWER CONSUMPTION	10~25 mA
3.2.3 OUTPUT CONNECTOR	SMA male
3.2.4 CABLE Shikoku Cable	RG174U
	Loss at 1575 MHz < 1.32 dB per meter

3.3 MECHANICAL SPECIFICATIONS

3.3.1 MOUNTING	Magnetic Mount
3.3.2 PULLING FORCE OF MAGNET	29.4N Min.
3.3.3 WATER PROOF	Waterproof (JISD0203 S2)
3.3.4 SHOCK	50G : Vertical Axis
	30G : All Axis
3.3.5 VIBRATION	10 through 200Hz. Log sweep 3.0G
	(Sweep Time : 15 MIN.) 3 AXIS
3.3.6 MAGNET MOUNT	Withstand speed of upto 180Km/h.
3.3.7 CABLE PULLING FORCE	49N MIN.
	Before Visible or electrical damage appears applying up to 49N pulling force between cable and antenna as well as between cable and connector.
3.3.8 BENDING TEST 1" radius	After bending test 90 degree right and left
	1,000 cycles, no permenant damage found.
3.3.9 ANTI-COROSION	Based on JIS Z 2371, spray 5% saltwater at 35°C should not rust after 96Hrs,
3.3.10 Dimensions	see mechanical drg

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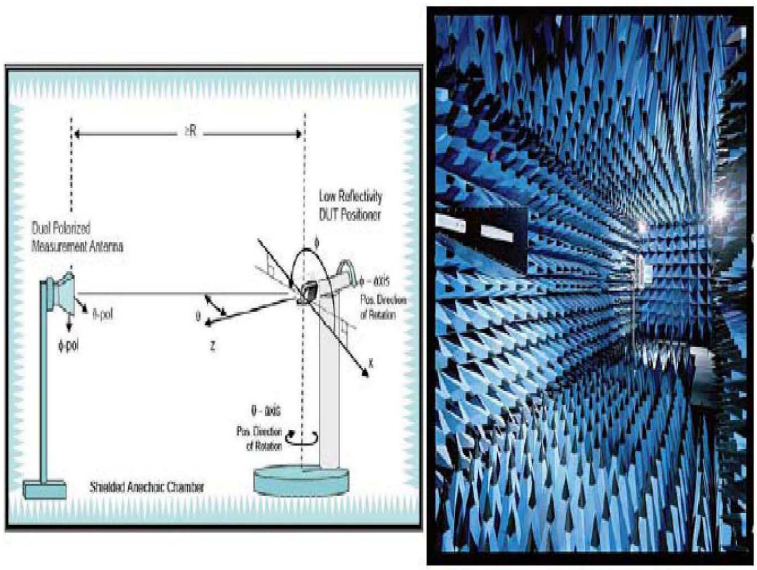
4.0 ANTENNA	
4.1 Outline Dimension	25x25x4 mm
4.2 FREQUENCY RANGE (minimum)	1,575.42 + 1.1 MHz
4.3 Frequency rejection (low side)	-10 dB or more rejection below 1500 MHz
4.4 Frequency rejection (high side)	-10 dB or more rejection above 1650 MHz
4.5 GAIN	1.0dBi minimum When MOUNTED ON A 25x25mm diameter metal GROUND PLANE
4.6 POLARIZATION	RHCP
4.7 AXIAL RATIO	3 dB MAX.
4.8 Bandwidth	10MHz
5.0 LNA	
5.1 FREQUENCY RANGE (minimum)	1,575.42 + 1.1 MHz
5.2 GAIN	32dB +3 dB (+30°C)
	32dB +4 dB (-40°C to +85°C)
5.3 NOISE FIGURE	1.8 dB MAX. (+30°C)
5.4 OUT OF BAND REJECTION	fo =1,575.42 MHz
	fo + 20MHz 7dB MIN.
	fo + 30MHz 12dB MIN.
	fo + 50MHz 20dB MIN.
	fo + 100MHz 30dB MIN.
5.5 OUTPUT IMPEDANCE	50ohm
5.6 OUTPUT VSWR	2.0:1 MAX.
6.0 Other Specifications	
6.1 ESD	ANTENNA SURFACE 15KV
	CONNECTOR PIN 8KV
	(TEST CONDITION JASOD001-94 C-3)
6.2 WEEE & Rohs compliant	Yes
7.0 MTBF	2,000 Hours
8.0 RECOMMENDED STORAGE CONDITION	-20°C~+45°C, HUMIDITY 80%MAX.
9.0 EXTERNAL APPEARANCE	NO VISIBLE STAIN OR FLAW.
10 Supplied DATA	GAIN and Current CONSUMPTION
	5.0V +0.2VDC At 1575 MHz

●Experimental Results：

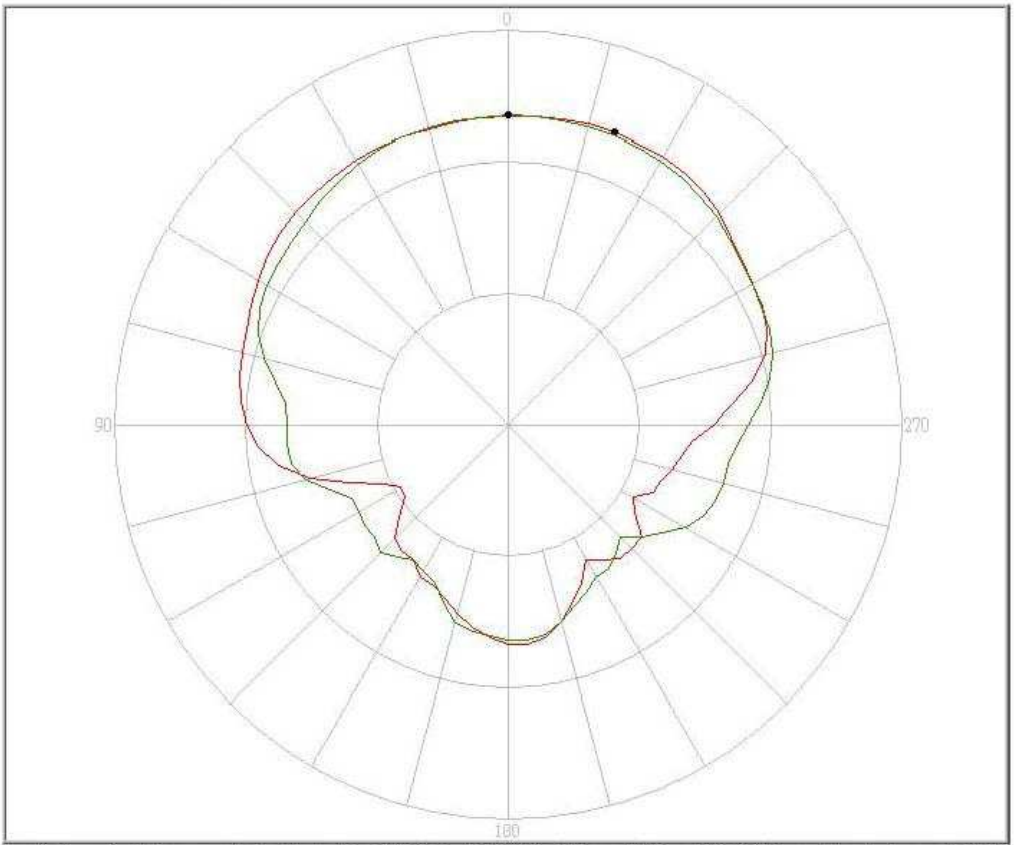
▲ VSWR

▲ Return Loss

▲TEST GAIN PATTERN SETUP(ANTENNA WITH 70MM*70MM GROUND)



Antenna Pattern Measurement



Pattern		Model Name	Test Mode	Freq(MHz)	Peak Gain(dBi)	Peak angle	Avg. Gain(dBi)	Source Polar.	Date	PAG
1		E	P90	1575.42	27.66	340.00	20.04	V+H	2009/3/12	12.90
2		H	P0	1575.42	27.51	0.00	19.86	V+H	2009/3/12	13.76

7M CABLE GPS ANTENNA 3D PATTERN(at 3.0V)

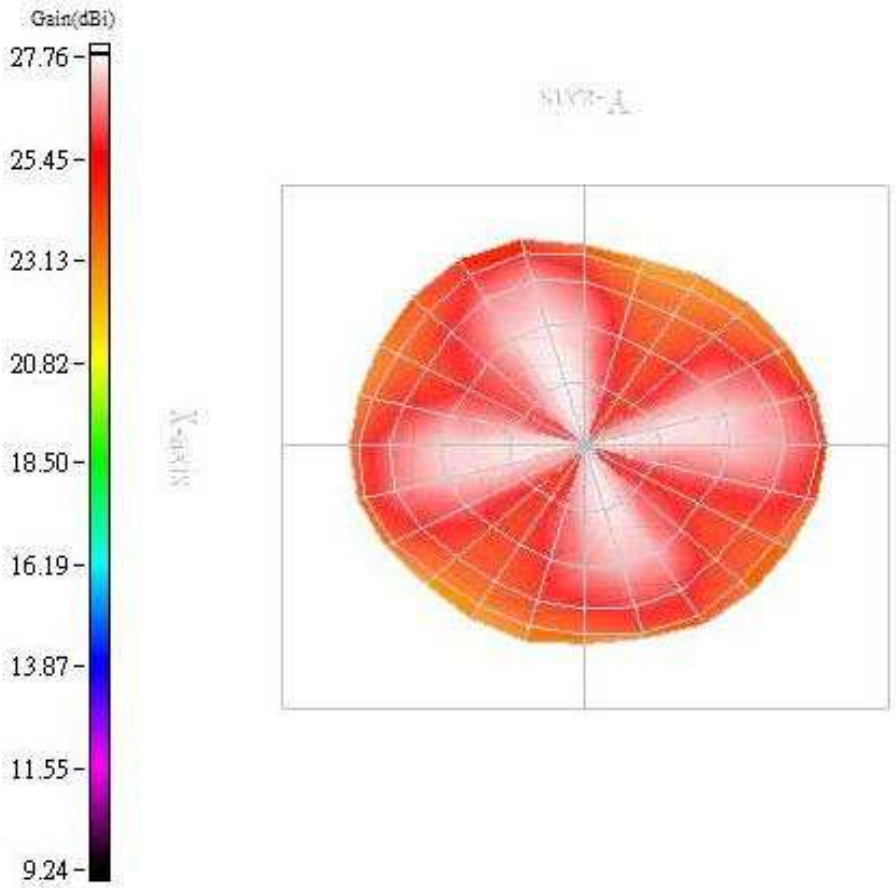
XY

Model name

GPS ANTENNA

Test frequency / Polarization

1575.42 MHz / Vector XY



Max gain= 27.76dBi, at (0, 195)
Average Power= 19.78dBm
Directivity(dB)= 4.48
Efficiency= 19.28dB, 8462.62%

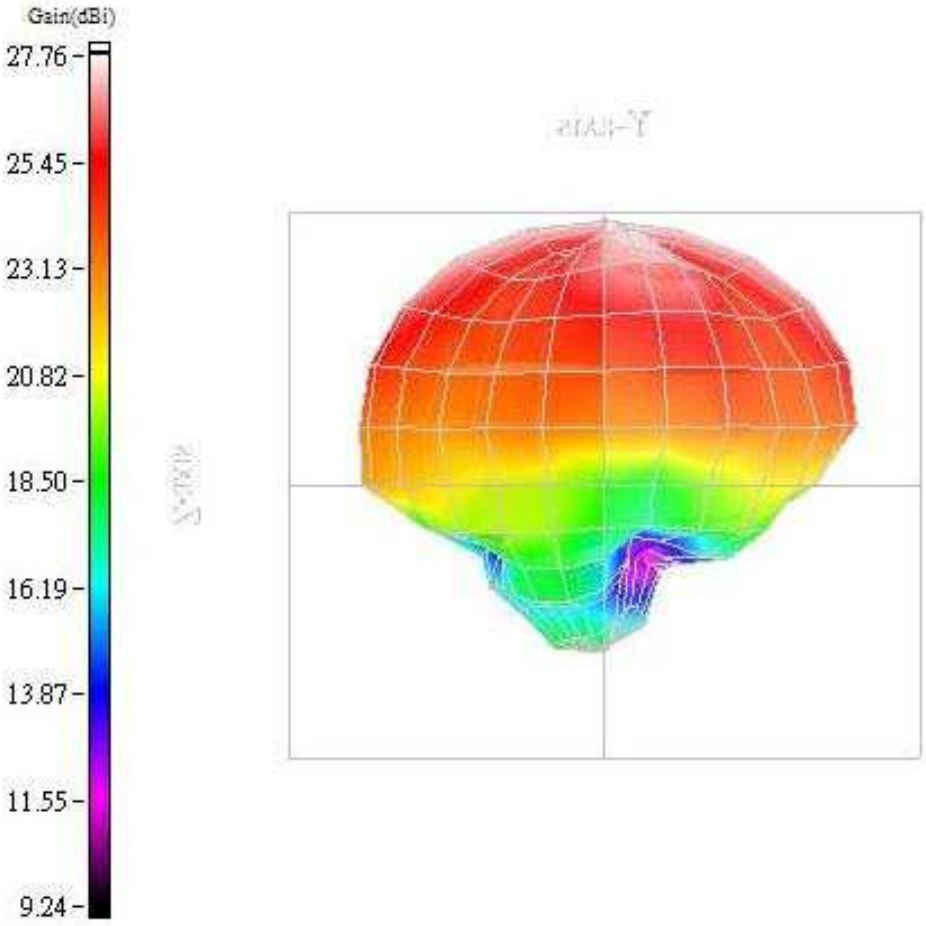
YZ

Model name

GPS ANTENNA

Test frequency / Polarization

1575.42 MHz / Vector YZ



Max gain= 27.76dBi, at (0, 195)
Average Power= 19.78dBm
Directivity(dB)= 4.48
Efficiency= 19.28dB, 8462.62%

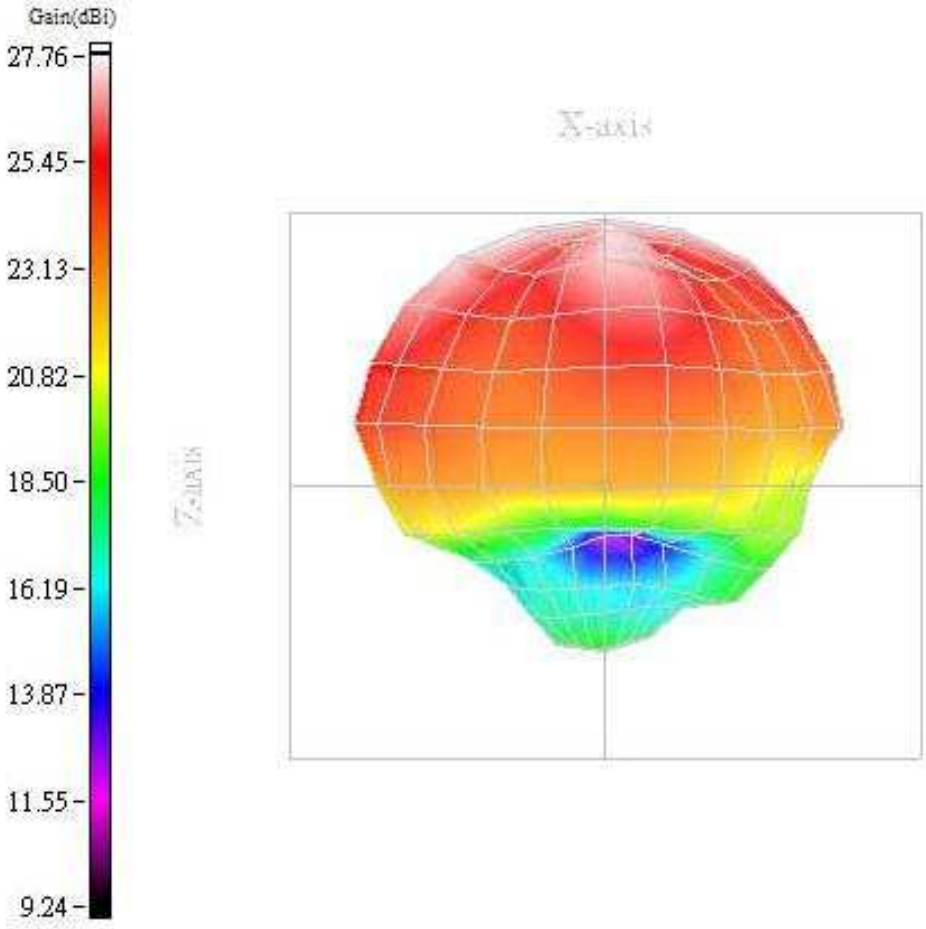
XZ

Model name

GPS ANTENNA

Test frequency / Polarization

1575.42 MHz / Vector XZ



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