AMOTECH Co., Ltd.

Document	Datasheet
Type	Ceramic Patch Antenna
Application	GPS L1
Part No.	YDRA-A18-1575
Revision	0

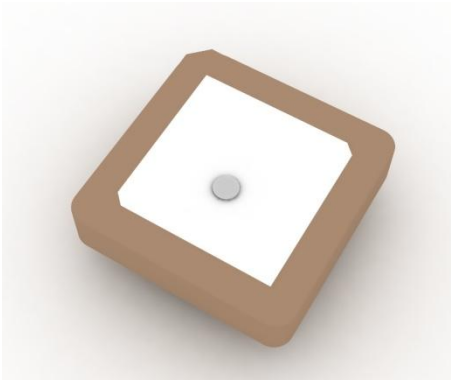
DATASHEET

Application

Navigation
DSC

Features

High efficiency, High directivity
Pin type
Pb-free Condition
RoHS Compliant



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Notes

The contents of this datasheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Revision History

Rev. No	Date	Title	Contents	Page
0	2009.06.16		First, documented	-

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1. Specifications

1.1 Electrical Specifications

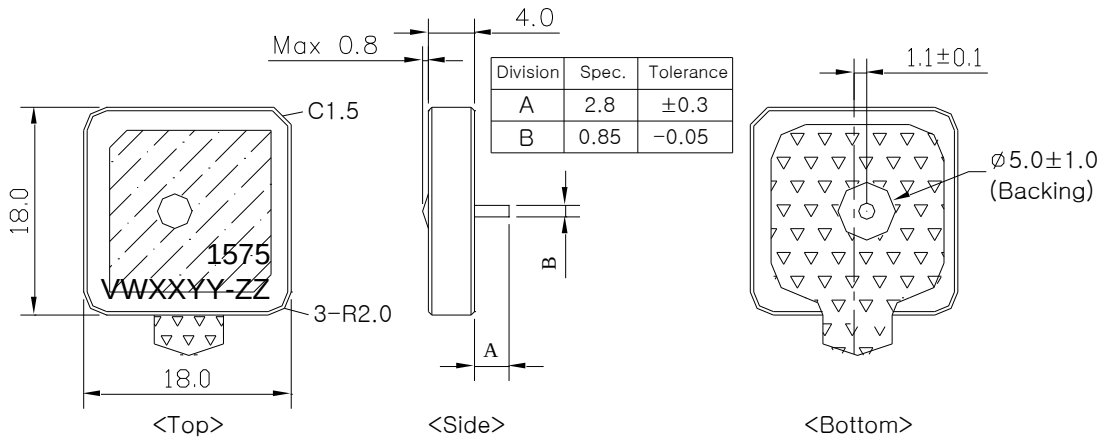
No	Item	Spec.	Remark
1	Center Frequency(fc) [MHz]	1575.0 ± 3	
2	Return Loss [dB]	Min .15	
3	Axial Ratio @ fc	Typ. 3.0	
4	Zenith Gain@fc [dBic]	Typ. 3.0	
5	Polarization	RHCP	
6	Impedance [Ω]	Nominal 50	

✓ fc is mid point of loop/cusp in smith chart
✓ Measured on50x50mm FR4 ground plane

1.2 Mechanical Specifications

No	Item	Spec.	Remark
1	Dimensions (L x W x H)	18x18x4 mm³	
2	Unit Weight	Typ. 6.1 g	
3	Operating Temperature	-40 ~ +90 ℃	

1.3 Drawing and Marking

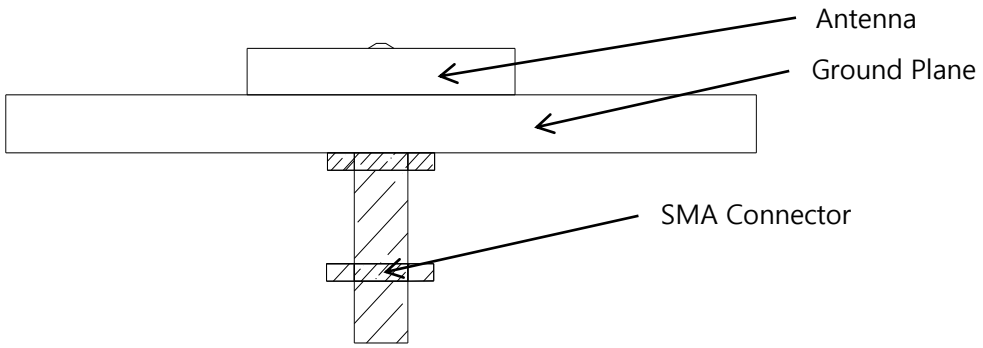


* Note
1. Unit : mm
2. X.X : ±0.2
3. All Round Both Sides Max. 0.3 Chamfer

- V : Line section
- W : Year
- XX : Month
- YY : Day
- ZZ : Serial number of daily

2. PCB Design for Test

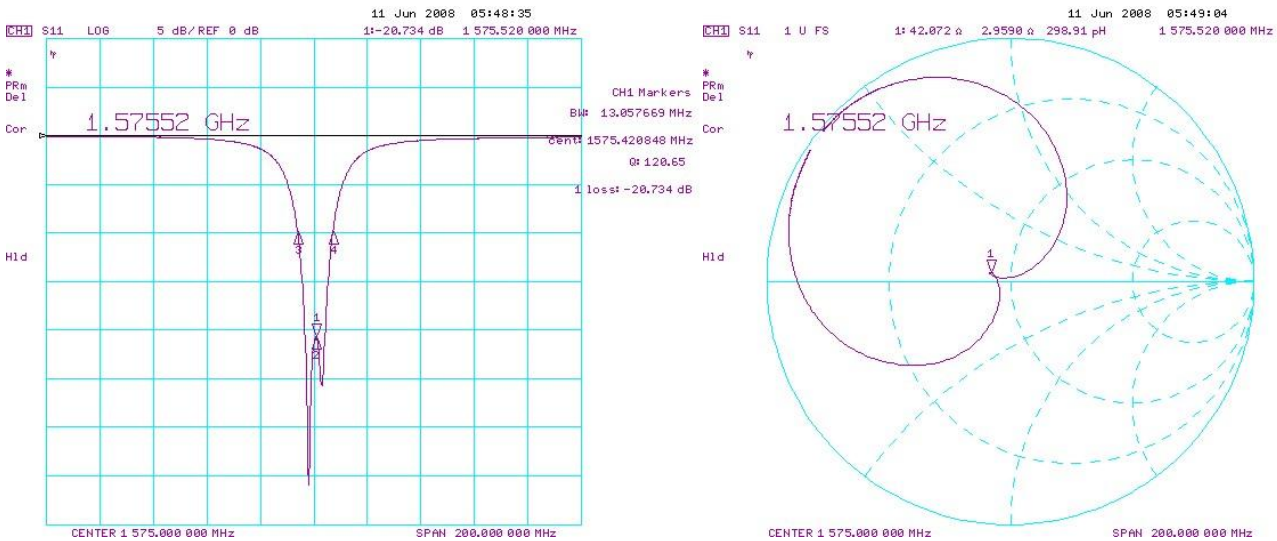
2.1 Evaluation Board Dimension



✓ Evaluation board size ~ 50x50mm^2

3. Measurement Result

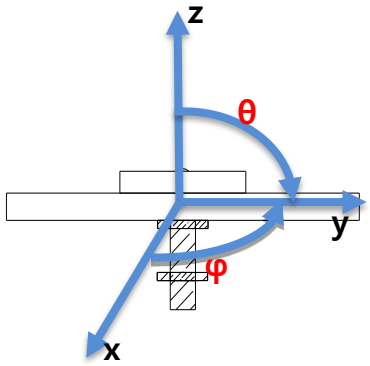
3.1 Typical Measurement Result (RL, Smith chart)

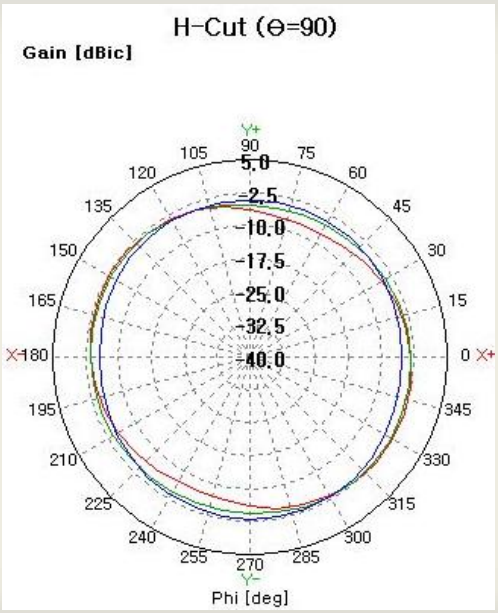


✓ The results are measured on the 50x50mm^2 ground plane.

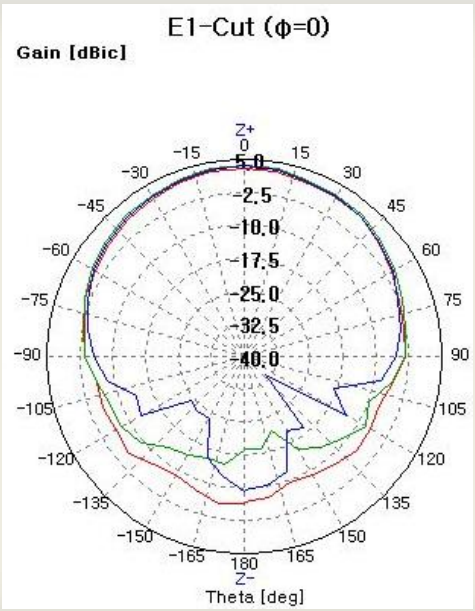
3.2 Typical Measurement Result (Gain, Radiation Pattern)

Frequency (MHz)	Peak Gain (dBic)	AR (dB)
1572.0	3.28	7.7
1575.0	3.95	1.9
1578.0	3.76	4.7

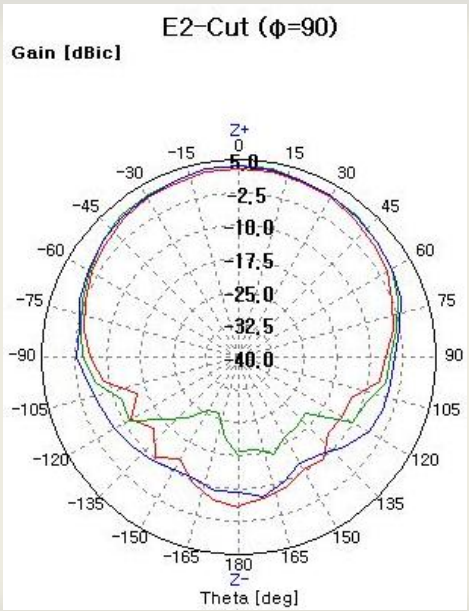




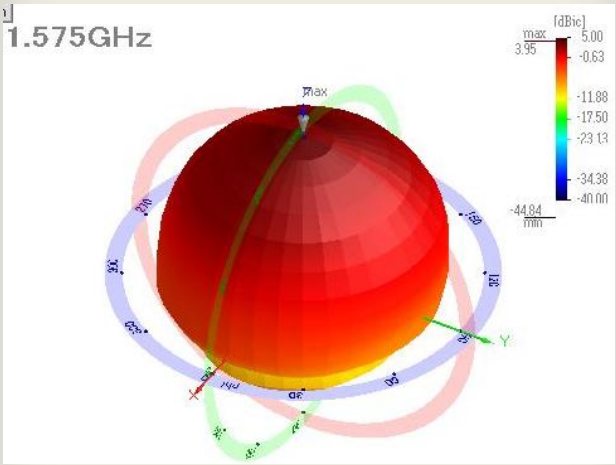
[Theta 90°]



[Phi 0°]



[Phi 90°]



[3D Radiation Pattern]

4. Reliability

No	Item	Test condition	Requirement
1	Drop Test	1. Place antenna on set 2. 1.5m height 3. Drop 5 times	1. No Visible defect 2. S11 satisfy
2	Vibration Test	1. 5-55-5Hz, 1 Octave/min, Amp.=1.5mm, acceleration=2g, Crossover Freq.=18Hz, Hold time = 2H.R	1. No Visible defect 2. S11 satisfy
3	Humidity	1. 60℃, 95%RH, 96Hr	1. No Visible defect 2. S11 satisfy
4	Thermal Shock	1. +80℃(30min)→5mim →-40℃ (30min) 2. 10 cycle	1. No Visible defect 2. S11 satisfy
5	High Temperature Resistance	1. +90℃, 96Hr	1. No Visible defect 2. S11 satisfy
6	Low Temperature Resistance	1. -40℃, 96Hr	1. No Visible defect 2. S11 satisfy
7	Adhesion Strength of Soldering	1. Used of pull push gauge.	1. Spec(min. 5kgf)

※ The sample must satisfy Requirement after 24 hours of test

※ Be base on IEC Climatic category (IEC68-1) -40℃ / +90℃ / 56h

5. Soldering

- Wettability to IEC 68-2-58 :≥75%(After Aging)
- Manual Soldering(By Iron) – Pb free
- Soldering Temperature : 300℃ ± 5℃, 5sec max. (Solder : Sn/Ag/Cu:96.5/3.0/0.5)
- Must comply with above soldering condition to prevent from degradation of antenna performance.

6. Packaging

6.1 Packaging Quantity

Item	Quantity	Dimension
Tray	70 ea	334 * 174 (mm^3)
Inner Box	700 ea (10 Tray)	370 * 195 * 130 (mm^3)
Outer Box	2100 ea (3 Inner Box)	390 * 620 * 150 (mm^3)