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| Document | Datasheet |
| Type | Ceramic Patch Antenna |
| Application | GPS & GLONASS |
| Part No. | A18-4135920-AMT04 |
| Revision | 0 |

DATASHEET

Application
Navigation

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



AMOTECH

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 | 2011.04.04 | | First, documented | - |
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1. Specifications

1.1 Electrical Specifications

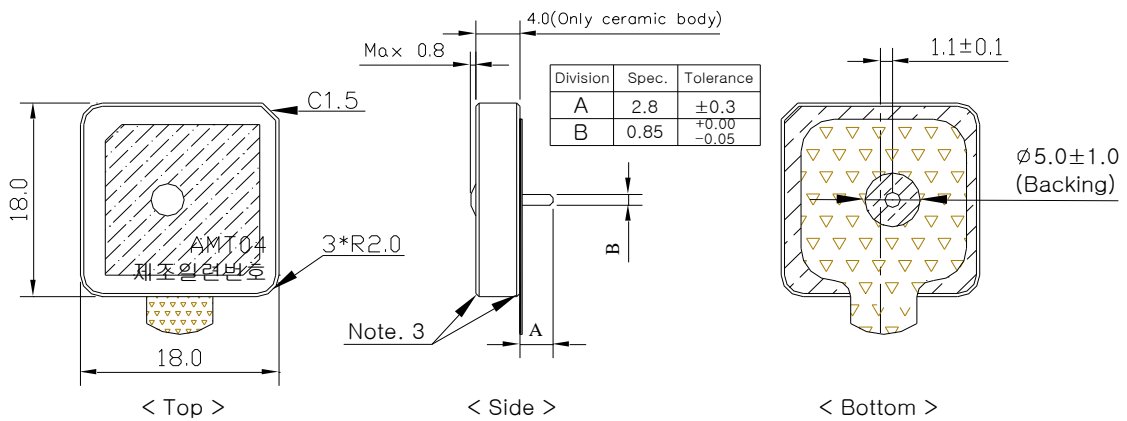
| No | Item | Spec. | Remark |
|----|------------------|--|----------|
| 1 | frequency(fc) | 1575~1608 (GPS : 1575, GLONASS : 1592~1608) | MHz |
| 2 | Return Loss @ fc | Min. 5 | dB |
| 3 | Axial Ratio | Typ. 10 | dB |
| 4 | Gain @ fc | Typ.3.0 @ Zenith | dBic |
| 5 | Polarization | RHCP | - |
| 6 | Impedance | 50 | Ω |

- ✓ fc is mid point of loop/cusp in smith chart
- ✓ Measured on70x70mm FR4 ground plane

1.2 Mechanical Specifications

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

1.3 Drawing and Marking

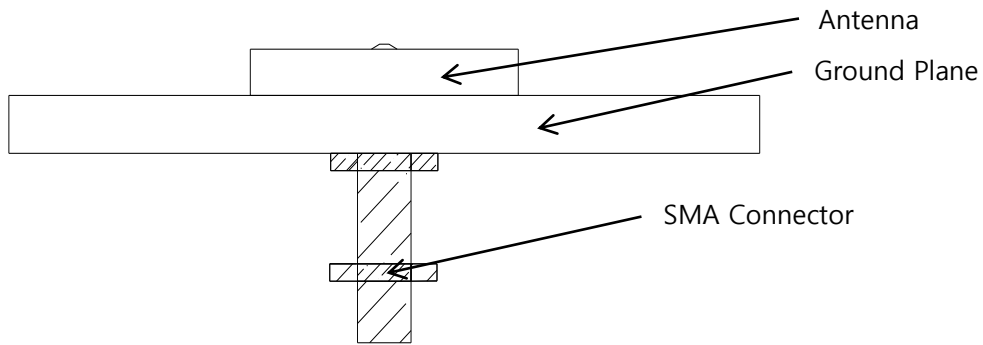


- * Note
1. Unit : mm
 2. X.X : ±0.2
 3. All Round Both Sides Max. 0.3 Chamfer

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

2. PCB Design for Test

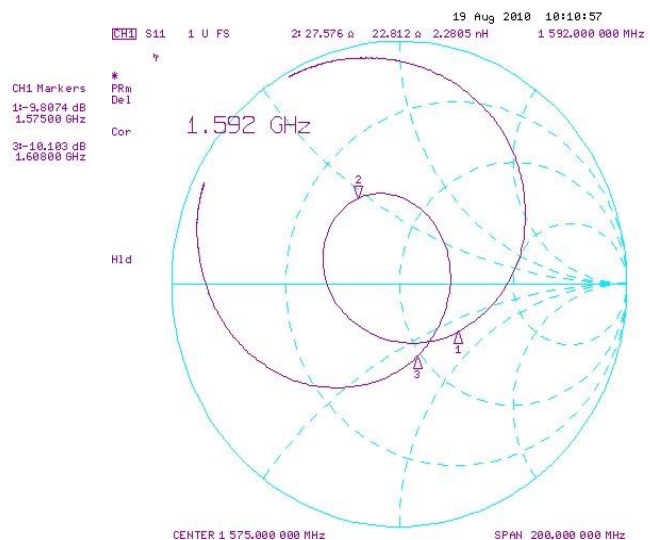
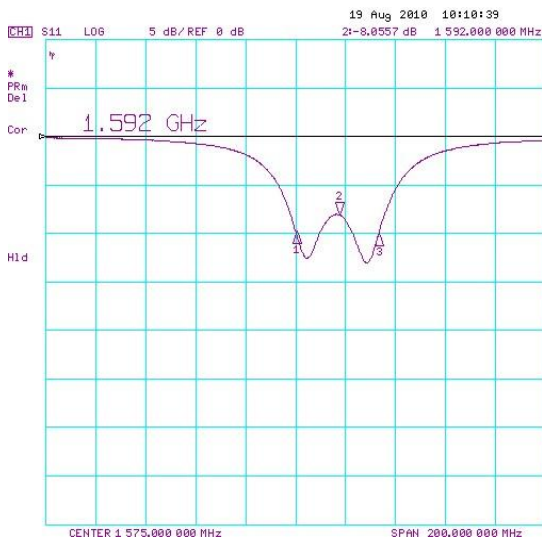
2.1 Evaluation Board Dimension



✓ Evaluation board size ~ 70x70mm²

3. Measurement Result

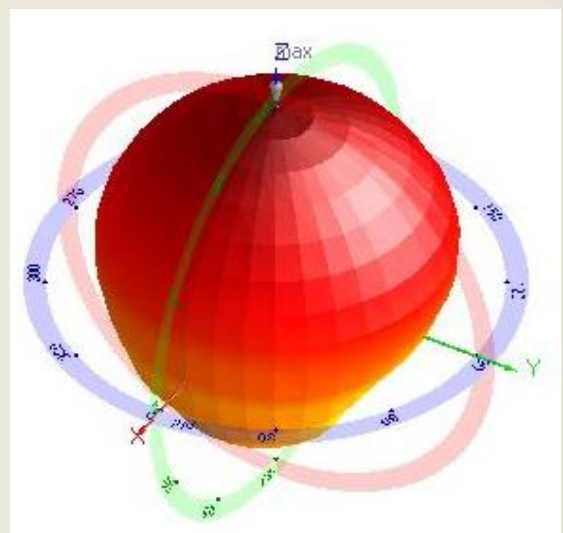
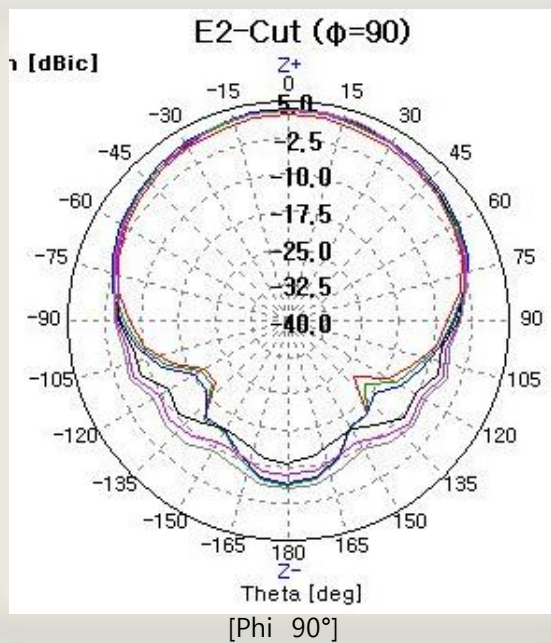
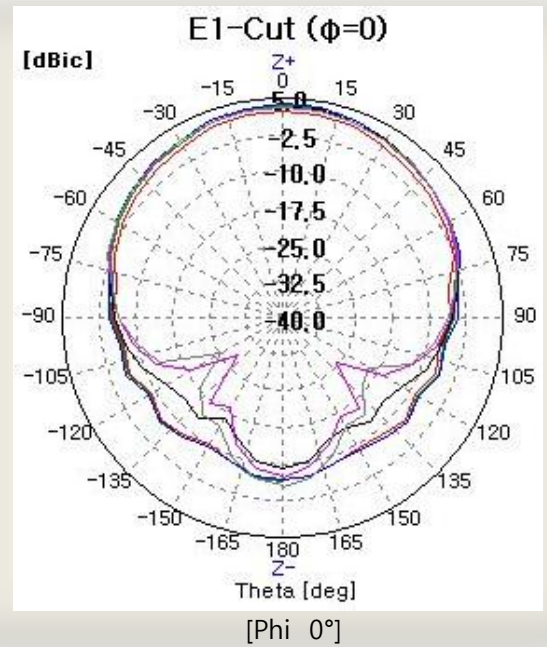
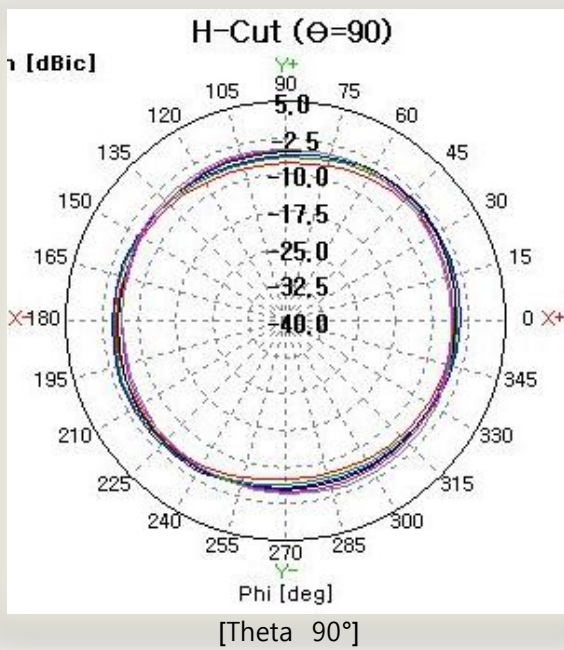
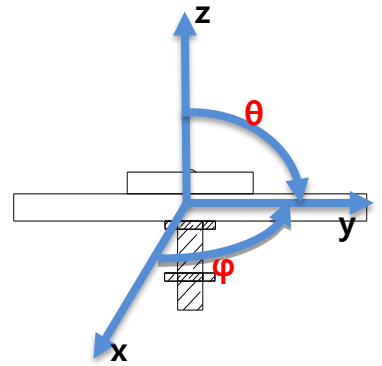
3.1 Typical Measurement Result (RL, Smith chart)



✓ The results are measured on the 70x70mm² ground plane.

3.2 Typical Measurement Result (Gain, Radiation Pattern)

| Frequency (MHz) | Avg. [dBic] | Peak [dBic] |
|-----------------|-------------|-------------|
| 1575.0 | -2.83 | 3.37 |
| 1592.0 | -2.82 | 3.45 |
| 1608.0 | -2.66 | 3.42 |



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°C, 95%RH, 96Hr | 1. No Visible defect 2. S11 satisfy |
| 4 | Thermal Shock | 1. +80°C(30min)→5mim →-40°C (30min) 2. 10 cycle | 1. No Visible defect 2. S11 satisfy |
| 5 | High Temperature Resistance | 1. +90°C, 96Hr | 1. No Visible defect 2. S11 satisfy |
| 6 | Low Temperature Resistance | 1. -40°C, 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°C / +90°C / 56h

5. Soldering

- Wettability to IEC 68-2-58 :≥75%(After Aging)
- Manual Soldering(By Iron) – Pb free
- Soldering Temperature : 300°C ± 5°C, 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) |