

# Approval Sheet

Type : Ceramic Patch Antenna  
 Amotech Part No : A20-4565753-STD60  
 Customer Part No :

-	Drawing	Checked		Approved
Date	/	/	/	/

Revision no	Content	Page	Date	Name
0	First, documented	-	2009.02.13	S.O Kim

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		/	/	/	/

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## 1. Specification

### 1.1 Electrical characteristic

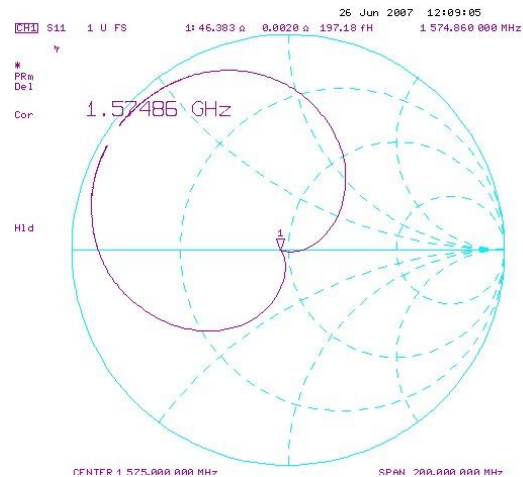
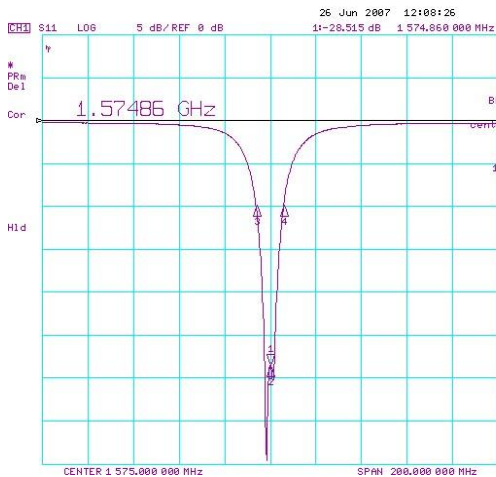
No	Item	Specification	Unit	Remarks
1	Center frequency(fc)	1575.0 ±3	MHz	Notes : 1)
2	Return-Loss @ fc	Min. 15	dB	Notes : 1)
3	Axial Ratio	Typ.3.0	dB	Notes : 1)
4	Gain @ fc	Typ. 4.0 @ Zenith	dBic	Notes : 1)
5	Polarization	RHCP	-	-
6	Impedance	50	Ω	-

- fc is mid point of loop/cusp in smith chart.

※ Notes: 1) Measured on 60x60mm FR4 ground plane and with adhesive tape.

### 1.2 Typical S11 (Log mag & Smith chart)

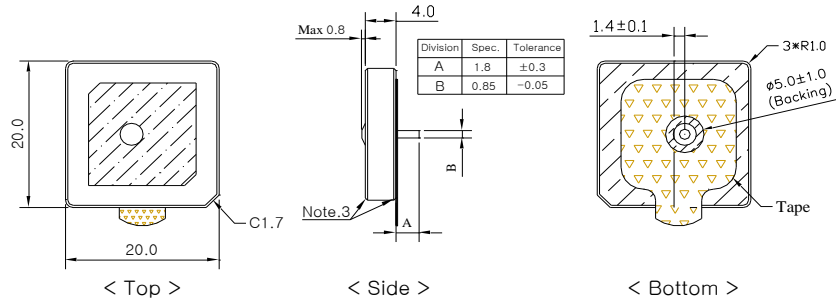
※ Measured on 60x60mm FR4 ground plane and adhesive tape.



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## 2. Mechanical Outline

### 2.1 Dimension



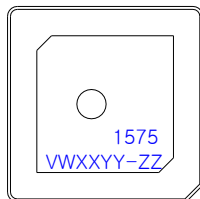
- Note
1. Unit : mm
  2. X.X : ±0.2
  3. All Around Both Sides Max. 0.3 Chamfer

### 2.2 Tuning: Top& Bottom (According to Procedure of Amotech document )

### 2.3 Mechanical characteristic

No	Item	Specification	Unit	Remarks
1	Dielectric constant	38.0 ± 1.5	-	-
2	Electrode (Top and Bottom)	Silver	-	-
3	Probe	brass	-	-
4	Probe pin solder material	Stannum	-	-
5	Adhesive tape thickness	Typ. 0.125	mm	3M 468MP

### 2.4 Marking



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

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### 3. Reliability Test

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. 5-55-5 Hz, 1 Octave/min, Amp.=1.5mm, acceleration=2g, Crossover Freq.=18 Hz, 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

### 4. Soldering Condition

Wettability to IEC 68-2-58 : ≥75%(After Aging)

1. 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.

### 5. Caution and Warranty

1. Electrode metallizations are unprotected silver and will tarnish during storage due to sulphuric compounds (namely H<sub>2</sub>S) in the atmosphere. Elevated temperature and humidity will accelerate this process. Human skin contact, wool etc. also cause tarnishing. This has no effect whatsoever on the electrical performance of the patches. Tarnishing of the silver plated feed pins may affect solderability. Because of this normal and to be expected process, AMOTECH accepts no warranty claims for tarnished products.

AMOTECH uses vacuum packaging to reduce atmospheric influence and to extend shelf life.

2. Ceramic Patch Antennas must avoid shock and drop, to prevent cracking of the antenna.

3. Ceramic Patch Antennas should be used within 6 months after delivery, antennas older than 6 months should be checked for solderability before using