

Approval Sheet

Type : Ceramic Patch Antenna
 Amotech Part No : A13-4579753-STD1420
 Customer Part No :

Customer	Drawing	Checked		Approved
Date	/	/	/	/

Revision no	Content	Page	Date	Name
0	First, documented	-	2008.01.24	J.S. Yoo

	AMOTECH CO., LTD 5B-1L, 617, NAMCHON-DONG, NAMDONG-GU, INCHOEN-CITY, KOREA TEL : 82-32-821-0363 FAX : 82-32-811-0283	Designed	Checked		Approved
		/	/	/	/

1. Specification

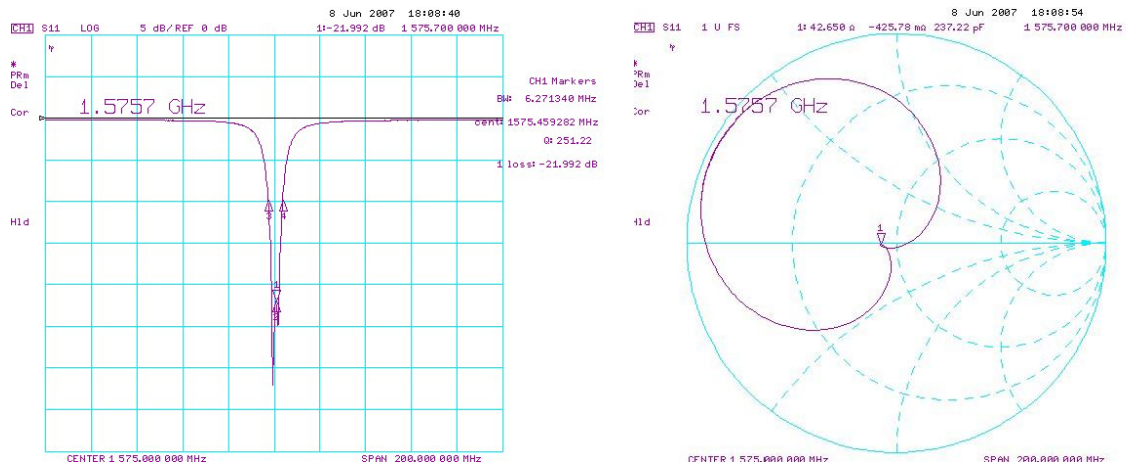
1.1 Electrical characteristic

No	Item	Specification	Unit	Remarks
1	Center frequency(fc)	1575.42 ± 3	MHz	Notes : 1)
2	Return-Loss @ fc	Min. 15	dB	Notes : 1)
3	Axial Ratio	Typ. 4.0	dB	Notes : 1)
4	Gain @ fc	Typ. 0.0 @ 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 14x20mm FR4 ground plane (AMOTECH STD jig) with SMA connector.

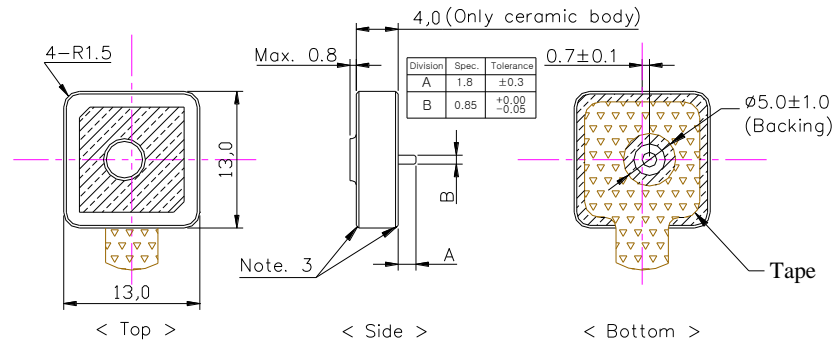
1.2 Typical S11 (Log mag and Smith chart)



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2. Mechanical Outline

2.1 Dimension



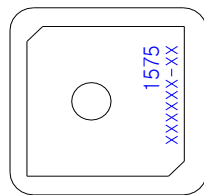
Note
 1. Unit : mm
 2. X.X : ±0.2
 3. All Round Both Side
 Max. 0.25 Chamfer

2.2 Tuning : Top and Bottom(According to Procedure of Amotech document : 06 유전-한도-XXX)

2.3 Mechanical characteristic


No	Item	Specification	Unit	Remarks
1	Dielectric constant	90.0 ± 0.5	-	-
2	Electrode (Top and Bottom)	Min. 0.06	mm	Silver
3	Probe	Silver plated brass	-	-
4	Probe pin solder material	Stannum	-	-
5	Adhesive tape thickness	Typ. 0.125	mm	3M 468MP

2.4 Marking



X	X	XX	XX	-	XX
(1)	(2)	(3)	(4)	-	(5)

- (1) Line section
- (2) Year
- (3) Month
- (4) Day
- (5) Serial number of daily

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3. Reliability Guarantee Condition

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($\Delta f_c < 0.2 \%$)
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($\Delta f_c < 0.2 \%$)
3	Humidity	1. 60°C, 95%RH, 96Hr	1. No Visible defect 2. S11 satisfy($\Delta f_c < 0.2 \%$)
4	Thermal Shock	1. +80°C (30min)→5min →-40°C (30min) 2. 10 cycle	1. No Visible defect 2. S11 satisfy($\Delta f_c < 0.2 \%$)
5	High Temperature Resistance	1. +90°C, 96Hr	1. No Visible defect 2. S11 satisfy($\Delta f_c < 0.2 \%$)
6	Low Temperature Resistance	1. -40°C, 96Hr	1. No Visible defect 2. S11 satisfy($\Delta f_c < 0.2 \%$)
7	Adhesion Strength of Soldering	1. Used of pull push gauge.	1. Spec(min. 5kgf)
8	IEC Climatic Category(IEC68-1)	-40°C / +90°C / 56h	-
9	Operating Temperature	-40°C / +90°C	-

※ The sample must satisfy Requirement after 24 hours of test

4. Soldering Condition

- Wettability to IEC 68-2-58 : $\geq 75\%$ (After Aging)

4.1 Manual Soldering(By Iron) – Pb free

- Soldering Temperature : 300°C \pm 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

5.1 Electrode metallizations are unprotected silver and will tarnish during storage due to sulphuric compounds (namely H₂S) 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.

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

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