

# APPROVAL SHEET

MESSRS. (주)네스랩

ITEM : Ceramic Patch Antenna

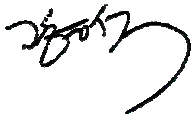

PART NAME : MPAC72SE925S-TA

APPLICATION : UHF RFID READER (AT-570)

REVISION : 0

ISSUE DATE : December 21, 2007

LAST SAVED : December 21, 2007

BUYER : (주)네스랩	SUPPLIER : MAC technologies		
ACKNOWLEDGED BY	DRAWN	CHECKED	APPROVED
			



MAC technologies

# 103, Business Incubating Center, Cheongju Polytechnic College,  
47, Songjeong-Dong, Heungdeok-Gu, Cheongju-Si, Chungbuk, KOREA, 361-290

Tel : 043 275 2485 Fax : 043 275 2487



Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

---

# Table of Contents

1. Scope	4
2. Part Name Information	4
3. Composition and Materials	4
4. Mechanical Dimensions	5
5. Electrical Specifications	6
6. Test Fixture	6
7. Typical Characteristic Curve	7
8. Environmental Specifications	8
9. Radiation Pattern	9
10. Remark	10

Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

---

## 1. Scope.

This specification covers the characteristics of the ceramic patch antenna element for the ISM band

## 2. Part Name Information.

Part Name : M P A C 72S E 925 S - T A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① : MAC technologies
- ② : Patch Antenna
- ③ : Hole Location - Center type ( D : Diagonal type)
- ④ : 71.5 mm Square ( Size )
- ⑤ : 6.4 mm Thickness ( A : 2 mm, B : 3 mm, C : 4 mm, D : 5 mm ...)
- ⑥ : Center Frequency : 925 MHz ( ± 3 Mhz )
- ⑦ : Ground Plane -S : 80 \* 80 mm Special Ground Plane Size
- ⑧ : Include Double Sides Tape
- ⑨ : Assembly - PCB & Cable

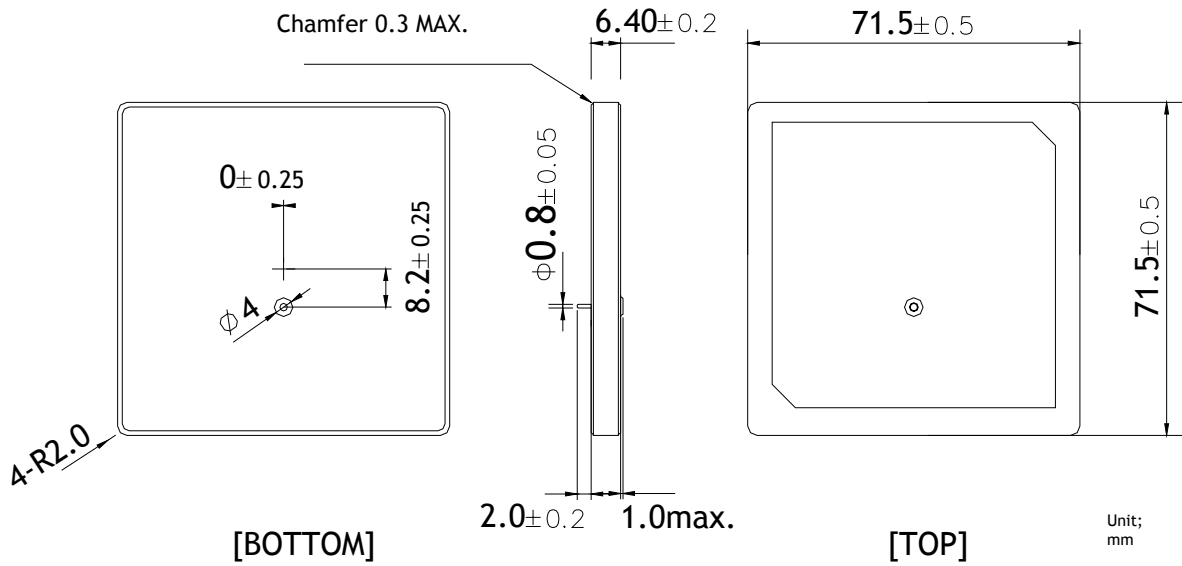
## 3. Composition and Materials.

- 3-1. Ceramic Substrate :  $\epsilon_r$  = **keeping a secret from outsiders**
- 3-2. Electrode Plating : Silver
- 3-3. Terminal pin : Brass with Silver coating

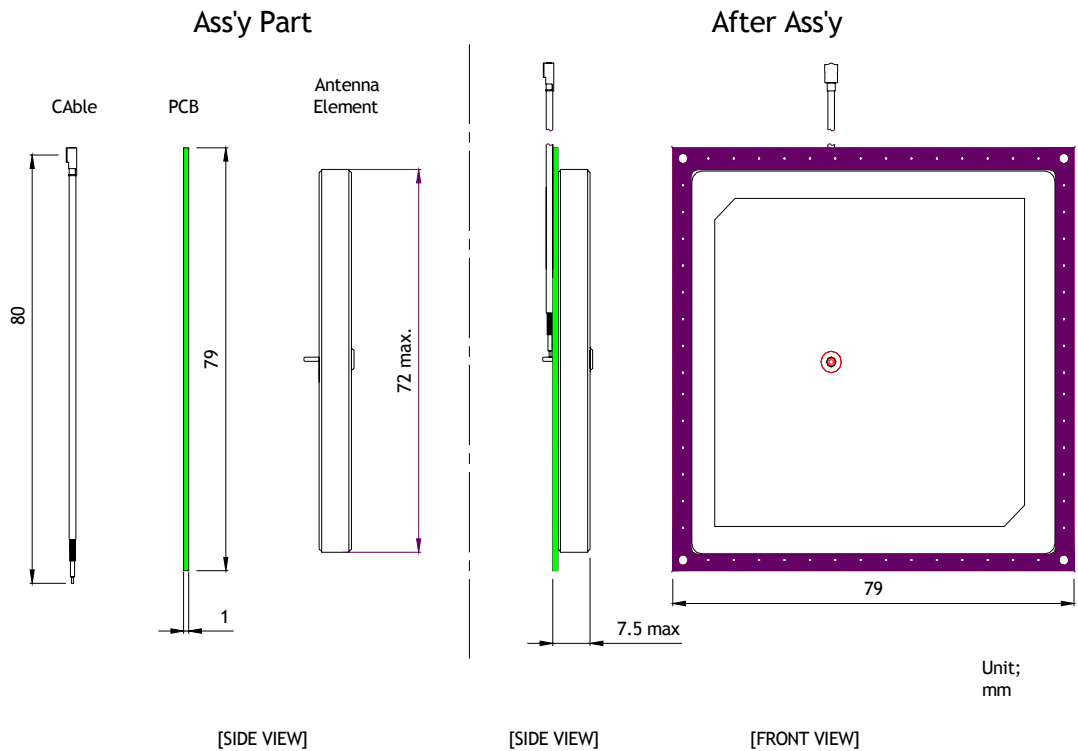
Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

## 4. Mechanical Dimensions. (unit: mm)

### 4-1. Antenna Element



### 4-2. PCB & Cable Ass'y

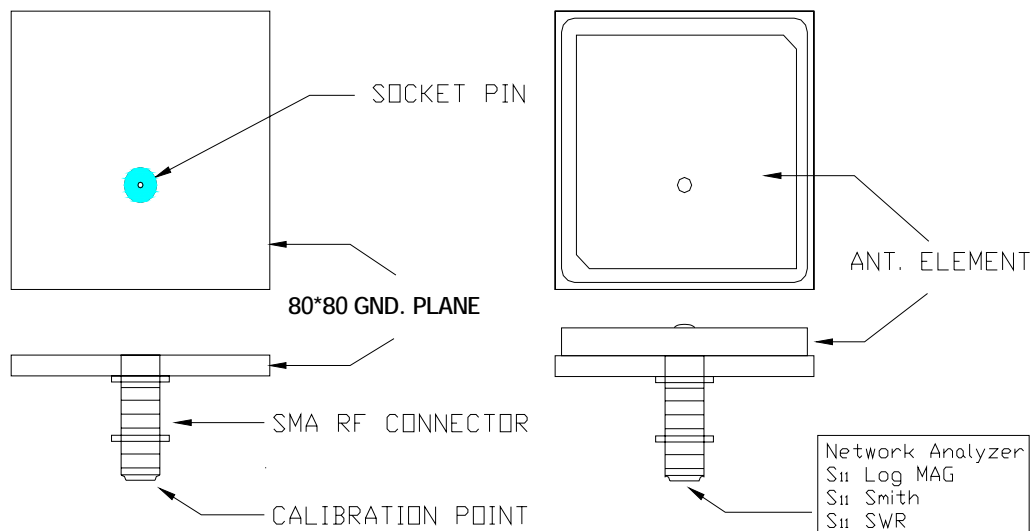


Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

## 5. Electrical specifications.

NO.	Parameters	Spec.	Spec. @ Set Assembly	Unit	Remark
1	Center Frequency	925 ± 3	915 ± 3	MHz	Ant. Element Freq. @80GND.& Without Tape
2	Band Width @ - 10 dB R.L.	16 min.	16 min.	MHz	
3	VSWR	2 : 1 max.	2 : 1 max.	Ratio	
4	Gain @ Zenith	-2.0 min.		dBil	
5	Impedance	50		Ohms	
6	Temp. Coefficient	20 max.		ppm/°C	-30 to 85 °C
7	Polarization	RHCP			

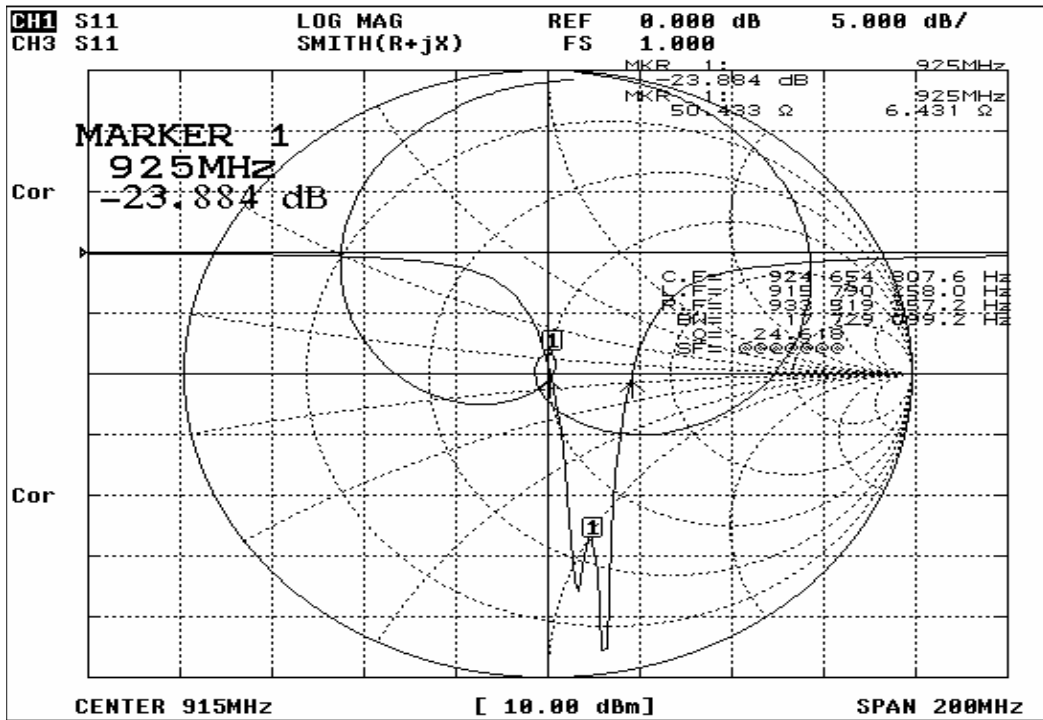
## 6. Test Fixture.



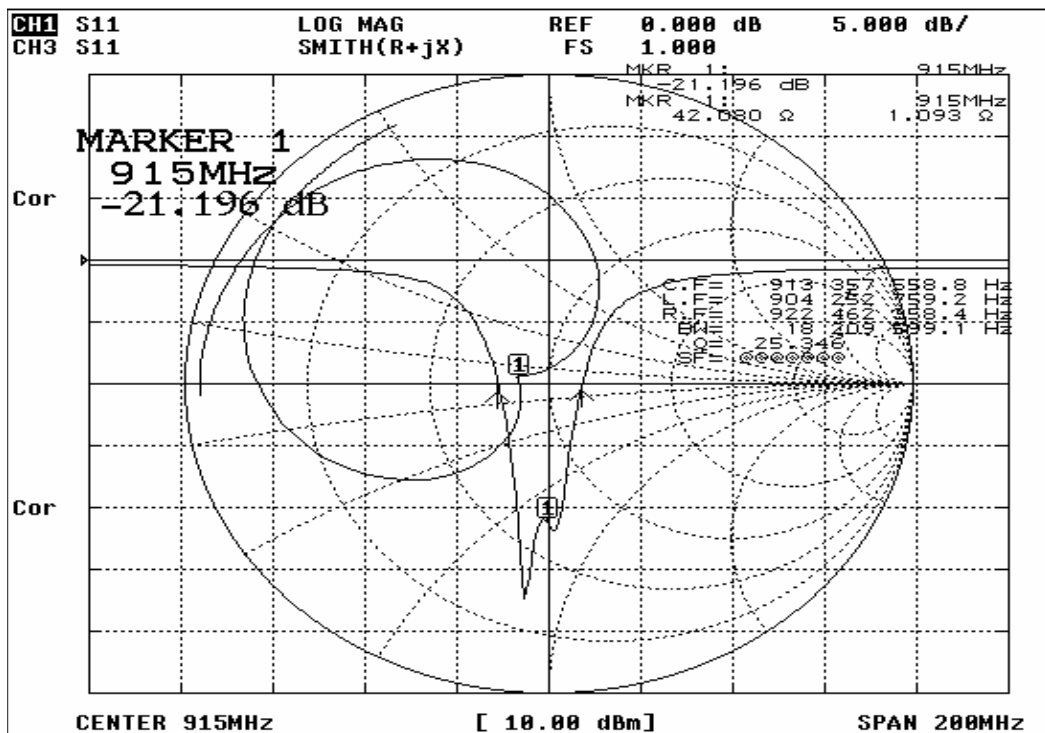
Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

## 7. Typical Characteristic Curve.(단품측정 및 Set Ass'y)

### 7-1. 80x80 Ground plane



### 7-2. SET Ass'y



Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

---

## 8. Environmental specifications.

\*\* Operation conditions : Temperature range : -30 °C ~ +85 °C

Humidity range : 45 ~ 85 % RH

The device should satisfy the electrical characteristics specified in paragraph 4 after the following tests.

Measurements should be done after putting in the typical condition (20-30 °C / 55-75 % RH) for 2 hours minimum.

### 8-1. Temperature Characteristics

The device should satisfy the electrical characteristics specified in paragraph 4 at the temperature range of -30 °C ~ +85 °C.

### 8-2. Heat Proof

The device should satisfy the electrical characteristics specified in paragraph 4 after exposed to the temperature  $85 \pm 2$  °C for 72 hours.

### 8-3. Cold Proof

The device should satisfy the electrical characteristics specified in paragraph 4 after exposed to the temperature  $-30 \pm 2$  °C for 72 hours.

### 8-4. Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 4 after exposed to the temperature  $40 \pm 2$  °C and the humidity 95 % RH for 72 hours.

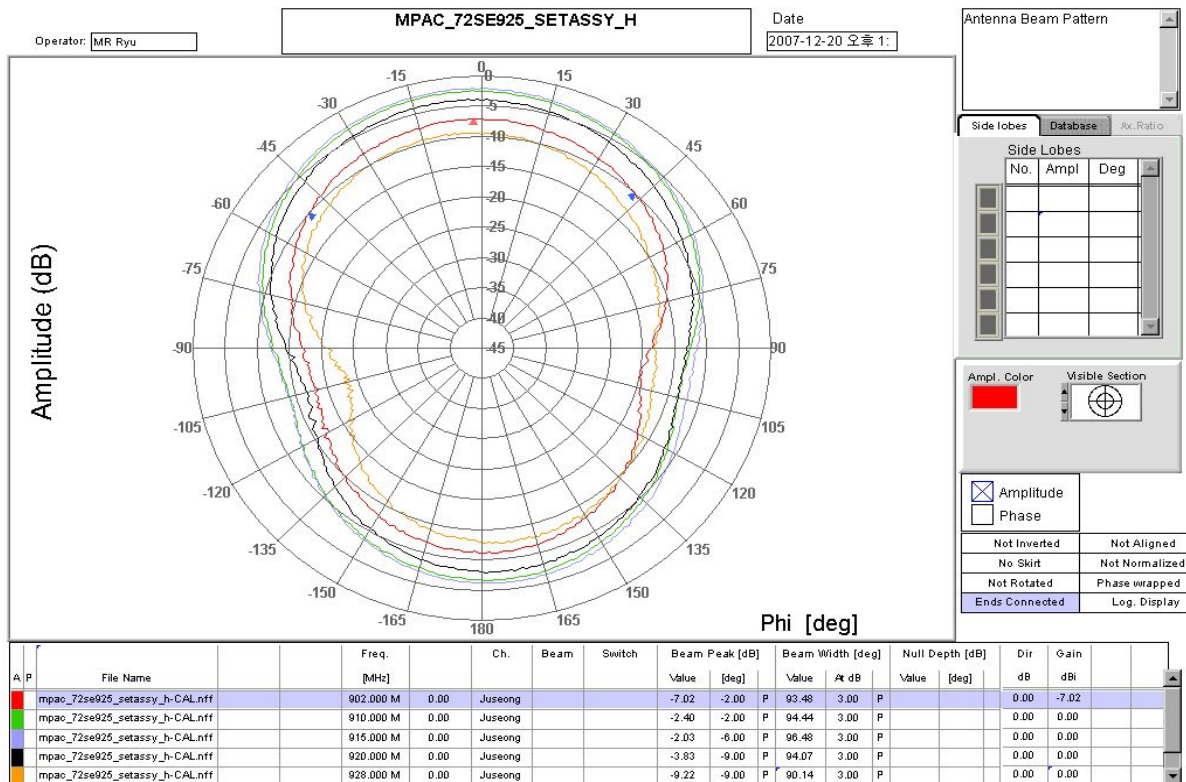
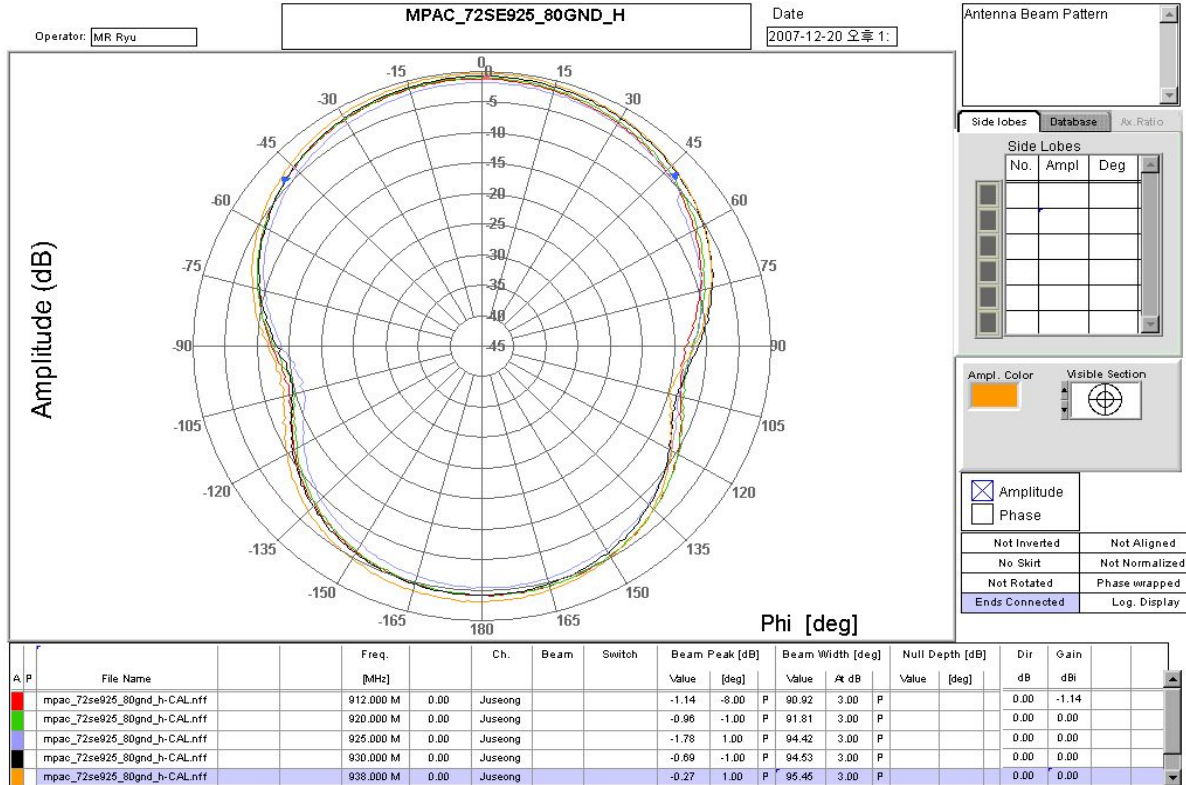
### 8-5. Vibration

The device should satisfy the electrical characteristics specified in paragraph 4 after applied to the vibration of 10 to 50 Hz with amplitude of 1.5 mm & sw of 1min for 2 hours each of x, y and z directions.



Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

## 9. Radiation Pattern.(주성대학교 무선정보통신기술센터)



Title	RFID Ceramic Patch Ant. Specification
Document Number	MACQM730-06-07013
Revision & Date	0
Issue Date	December 21, 2007

---

## 10. Remark.

- If there is any doubt in this specification and product, it should be resolved between made and manufacture.
- Don't handling by unarmed.
- No responsibility is assumed by us for any consequence resulting from any wrong or improper use or operation, etc. of the product.
- No part of the contents contained herein may be reprinted or re-produced without our prior permission.