

# PA1590MI4G-101-17

## Engineering Specification

### 1. Typical Electrical Properties

Characteristics	Specification	Unit	Conditions
Patch Center Frequency	1593 ± 3	MHz	On 70x70 mm Ground Plane
Bandwidth	40.6 min.	MHz	S11 ≤ -10dB
Gain at Zenith	4.5 typ.	dBic	Center Frequency
S11	< -10	dB	By Test Ground Plane
Polarization	RHCP		
Frequency Temperature Coefficient	0±20	ppm/°C	-40°C to +85°C

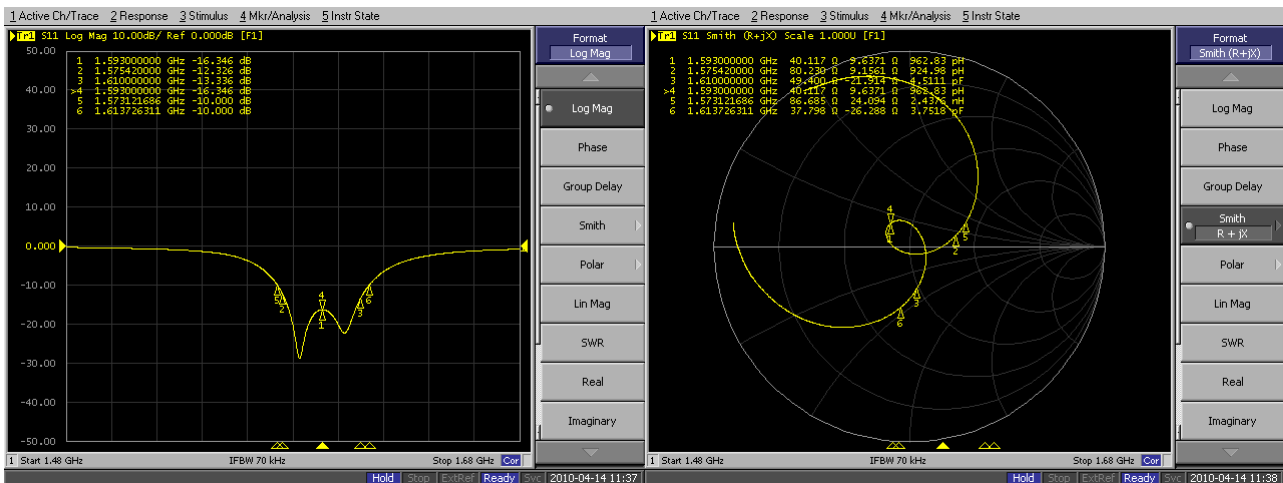
Frequency (MHz)	S <sub>11</sub> (dB)	Gain 0°XZ-plane (dBic)	RH Upper Hemi. efficiency (%)
1575.42	-12.32	2.64	43.88
1593	-16.34	4.87	59.74
1610	-13.33	3.17	42.2

PA1590MI4G-101-17 , G : Green parts (RoHS compliance)

-101 are the code of project number, -17 show of appendix

### 2. Patch Antenna Performance and Characteristic Data on 70x70 mm Ground

#### 2.1 Smith Chart/Return Loss



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±                      X.X=±                      X.XX=±

ANGLES=±                      HOLEDIA=±

SCALE :                      UNIT : mm

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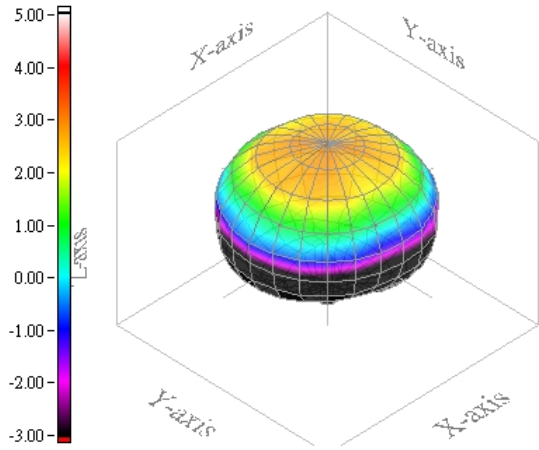


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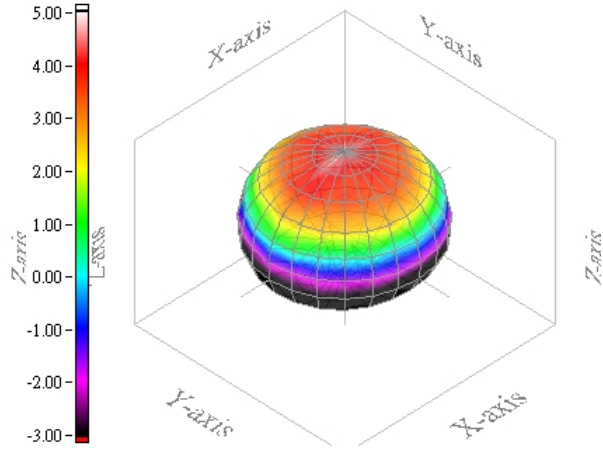
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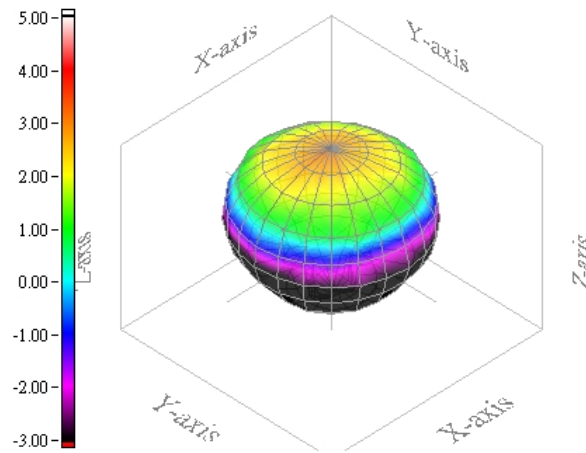
**2.2 Gain Pattern (Unit : dBic)**



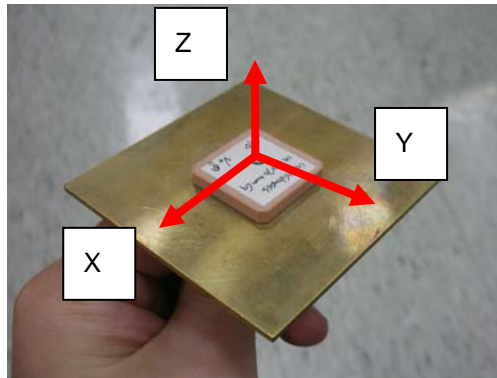
**1575.42 MHz**



**1593 MHz**



**1610 MHz**



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±



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SCALE :

UNIT : mm

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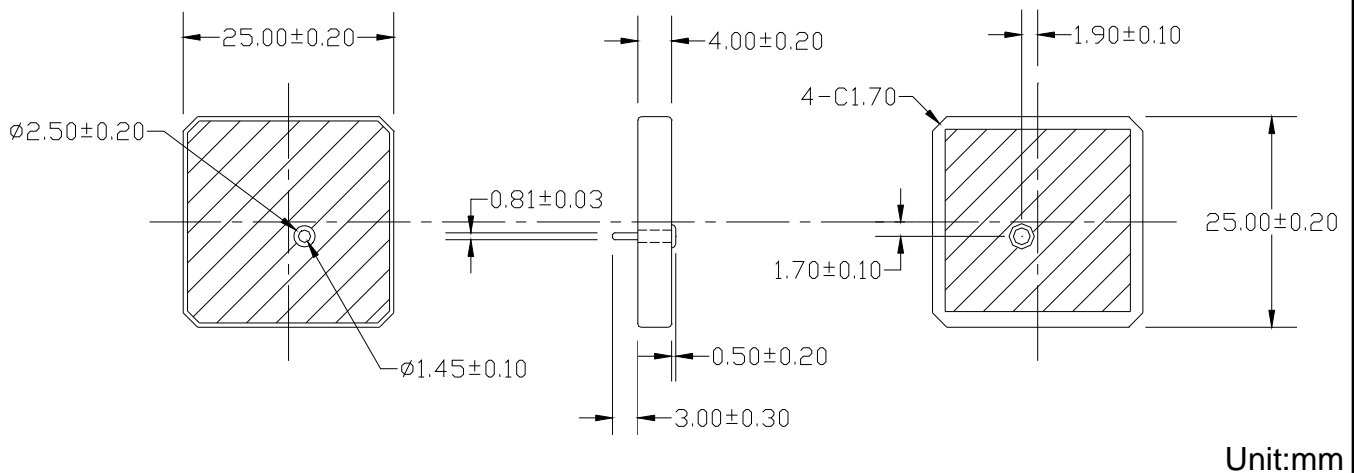
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## 2.3 Antenna Direction



## 3. Dimension



## 4. Typical Electrical Properties on INPAQ Test Ground

Characteristics	Specification	Unit	Conditions
Patch Center Frequency	1597.2 ± 3	MHz	By Test on INPAQ Ground Plane
S11	< -20	dB	By Test on INPAQ Ground Plane
Polarization	RHCP		
Frequency Temperature Coefficient	0±20	ppm/°C	-40°C to +85°C

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±



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SCALE :

UNIT : mm

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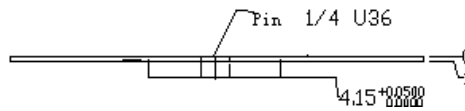
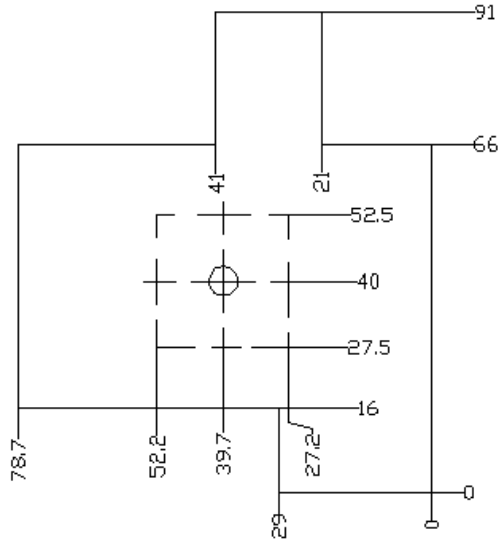
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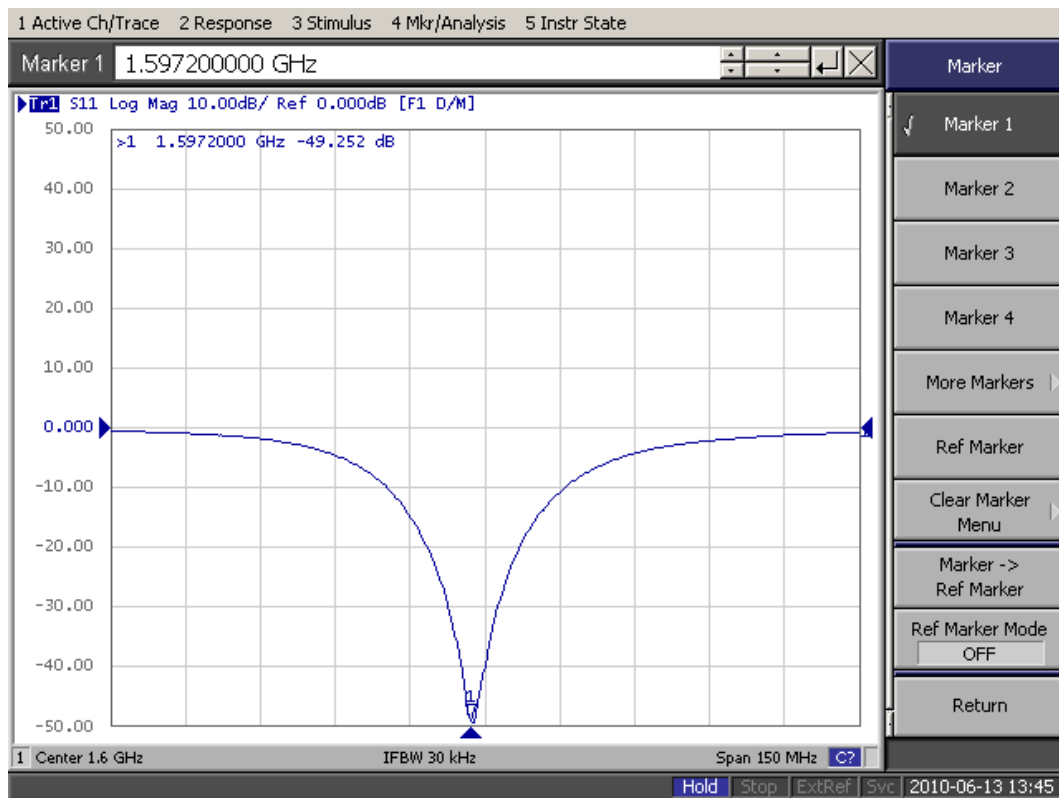
## 5. Test Condition Ground Plane

正面俯視圖，  
虛線部份在下方



Unit: mm

## 6. Return Loss Characteristics



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±

SCALE :      UNIT : mm

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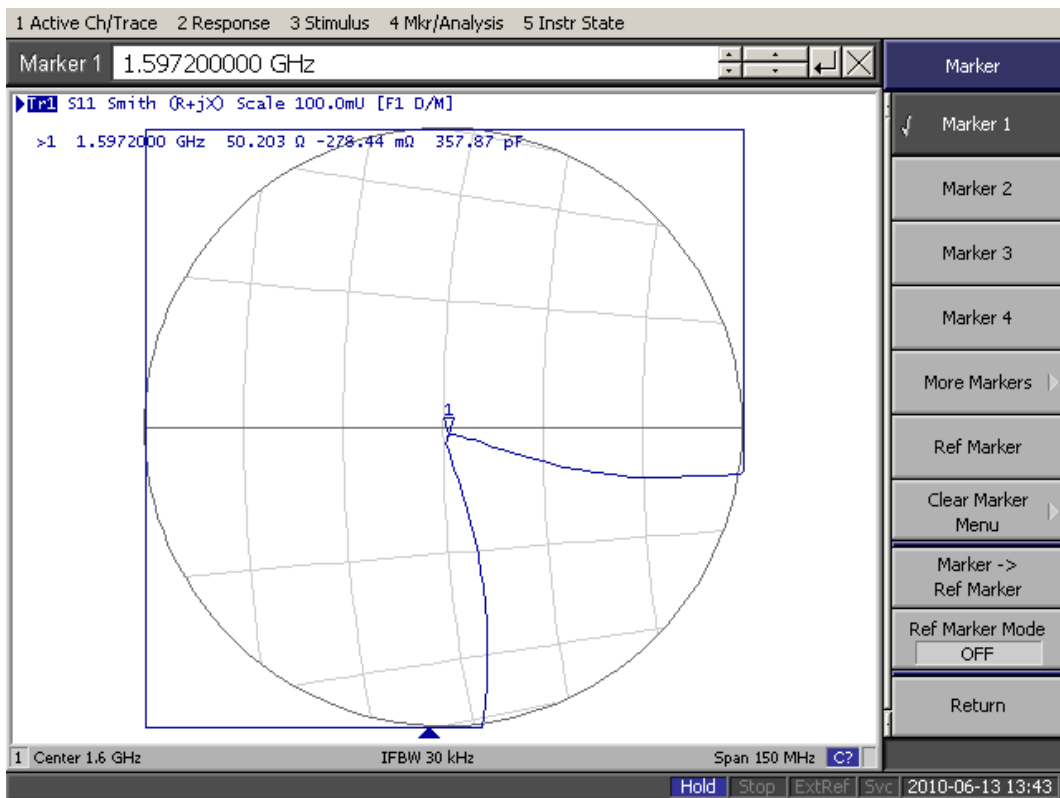
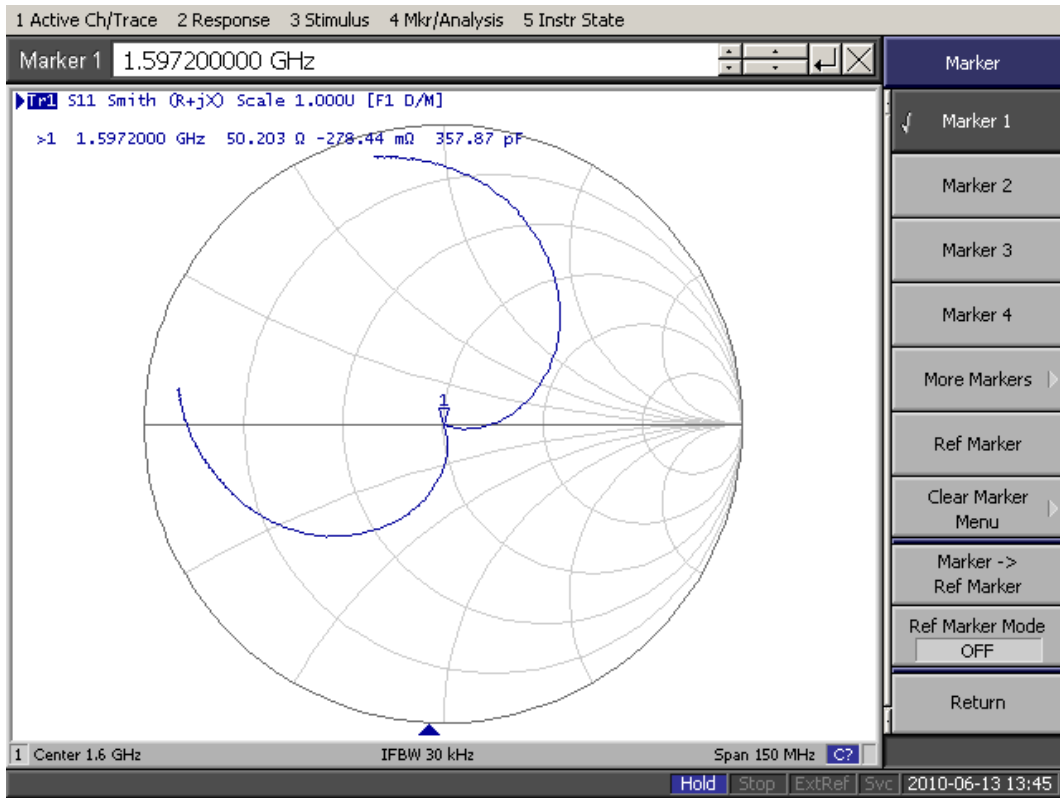
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# 7. Measured Input Impedance on a Smith Chart



UNLESS OTHER SPECIFIED TOLERANCES ON :

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ANGLES=±      HOLEDIA=±

SCALE :      UNIT : mm

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## 8. Explanation of Appendix

P A 1 5 9 0 M I 4 G - 1 0 1 -  $\frac{1}{(1)}$   $\frac{7}{(2)}$

(1) The Pin length is 3 mm

(2) Adhesive Tape 7 22x22mm

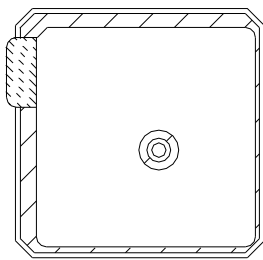
Adhesive Transfer Tape Specification

2.1 TAPE : Nitto 5000NS 22x22x0.16mm

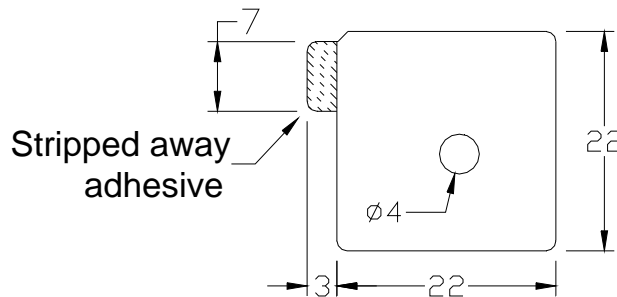
2.2 Thickness : 0.16 mm

2.3 Release Liner : 0.1mm (typ.) printed paper or paper

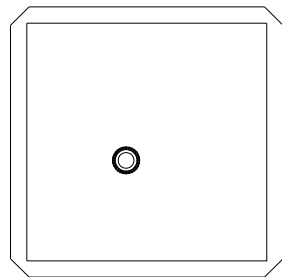
2.4 Dimension : mm



Patch bottom



Tolerance :  $\pm 0.5\text{mm}$



Patch top electrode

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ANGLES=±      HOLEDIA=±



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SCALE :

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