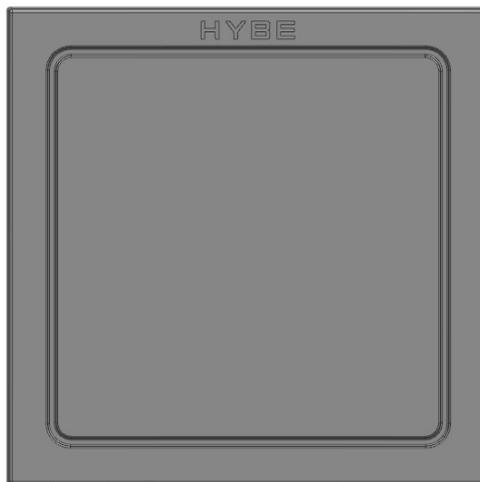


Datasheet

2.4GHz Band Circular-Polarization Patch Antenna

P/N : APTBTTH1CPOP



1. Application

- This product is a patch antenna that satisfies the 2.4GHz Band (Bluetooth, WiFi, Zigbee).

2. Part Number

| | | | | |
|---|----|----|------|----|
| A | PT | BT | H1CP | OP |
| ① | ② | ③ | ④ | ⑤ |

- ① A : Partron Antenna
- ② PT : Patch Antenna
- ③ BT : 2.4GHz Band
- ④ H1CP : HYBE 1st Circular-Polarization Repeater Antenna
- ⑤ OP : Open

3. Temperature Condition

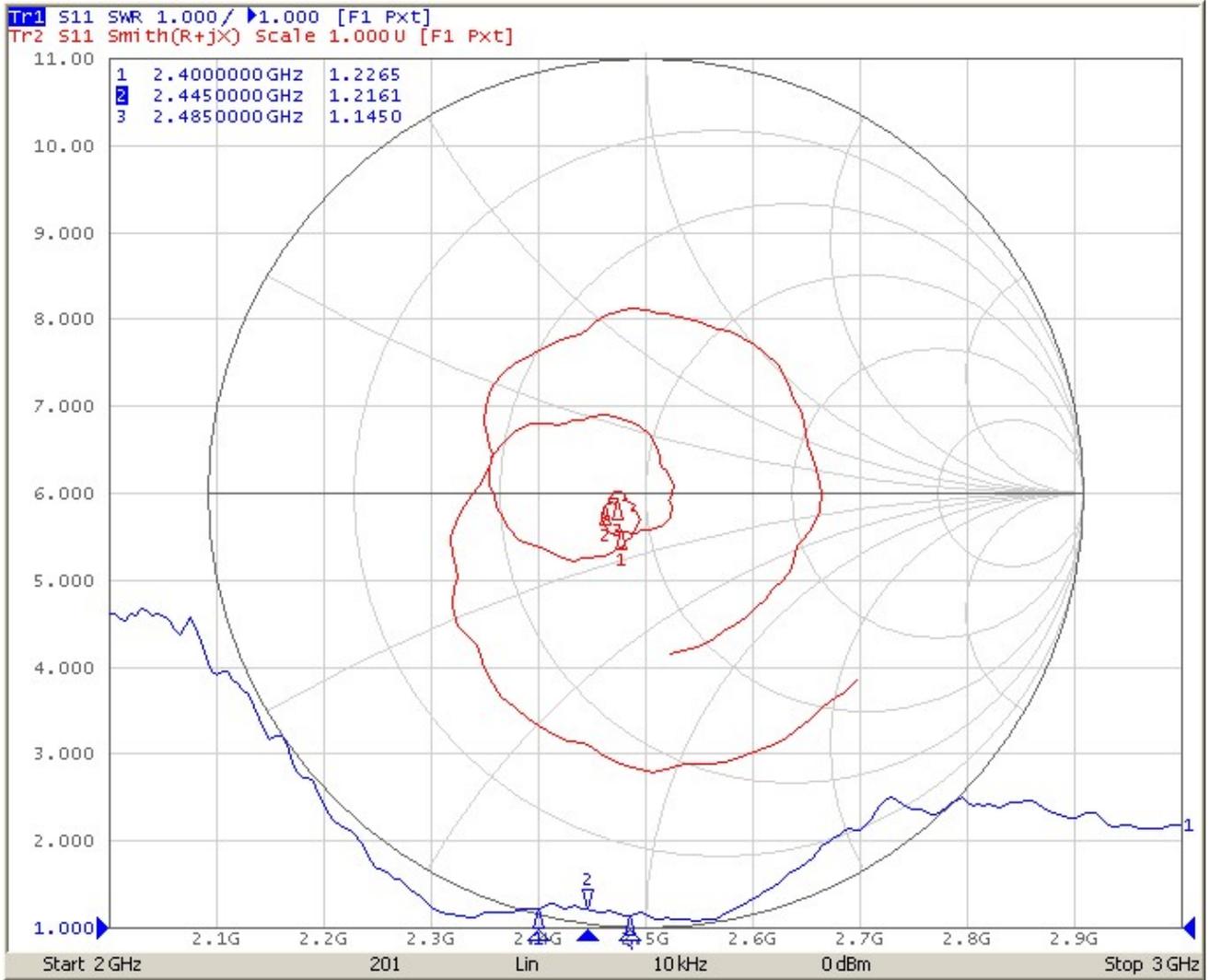
| No | Item | Specification | Unit |
|----|-----------------------|---------------|------|
| 1 | Operating Temperature | -40 ~ +85 | °C |
| 2 | Storage Temperature | -40 ~ +85 | °C |

4. Electrical Characteristics

4-1. Antenna Element

| No | Item | Specification | Unit | |
|----|---------------------|---------------|--------|--------------------|
| 1 | Operating Frequency | 2400 ~ 2485 | MHz | |
| 2 | Polarization | LHCP | - | |
| 3 | Antenna Gain | Typ. 8.8 | dBi | @ 2480MHz & Zenith |
| 4 | Axial Ratio | Typ. 2.0 | dB | @ 2480MHz & Zenith |
| 5 | Bandwidth | min 100 | MHz | @ VSWR 2:1 |
| 6 | Output Impedance | 50 | ohm | |
| 7 | HPBW @ E1-Plane | < 65 | degree | |
| 8 | HPBW @ E2-Plane | < 63 | degree | |
| 9 | Connector Type | SMA | | |

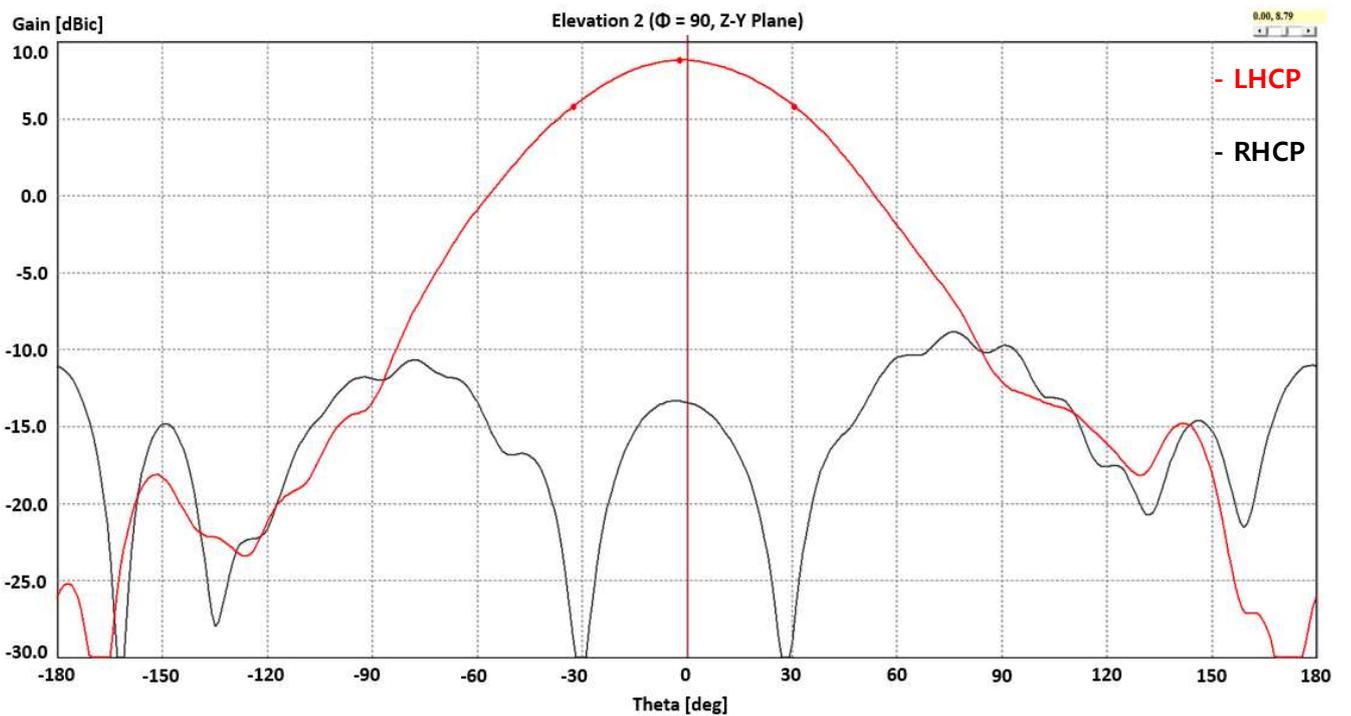
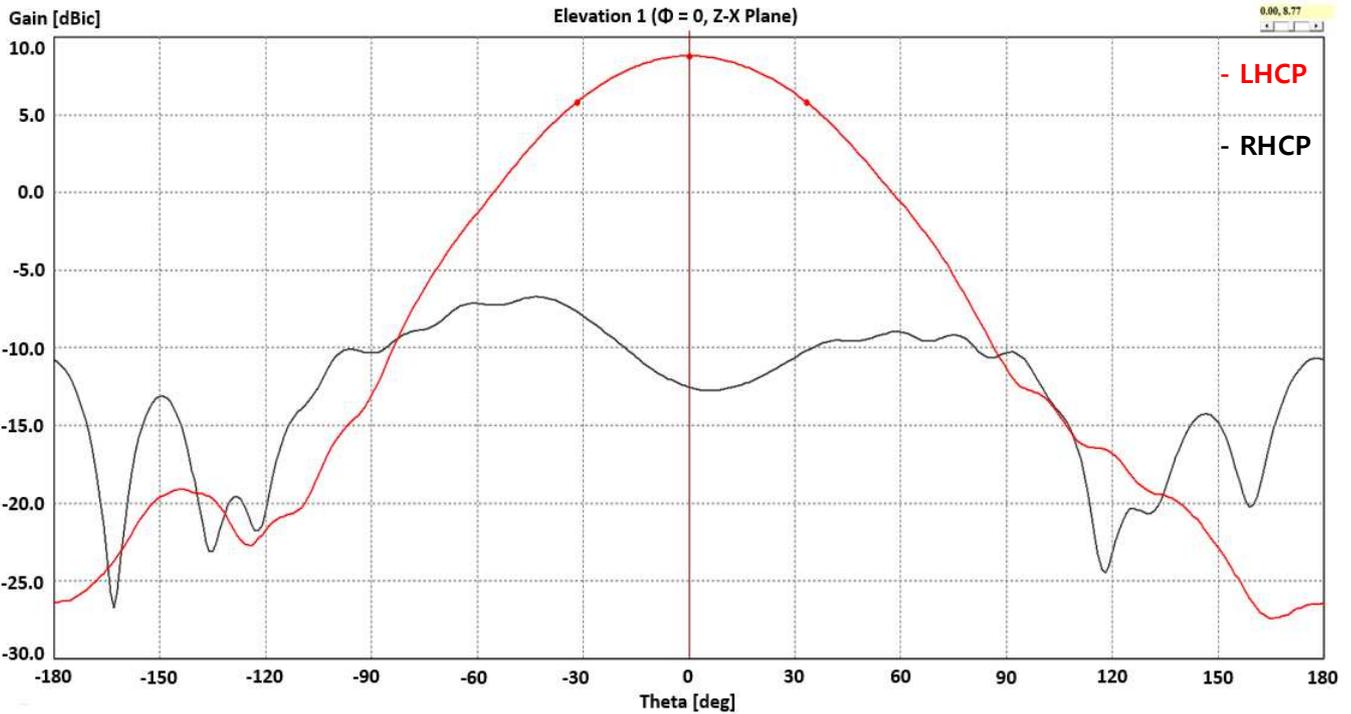
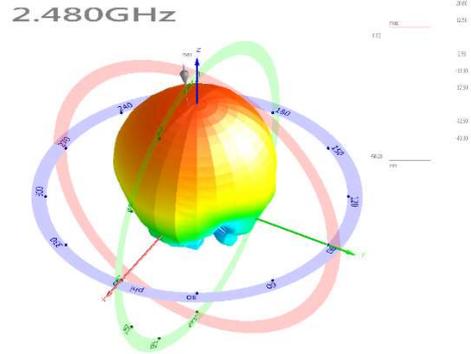
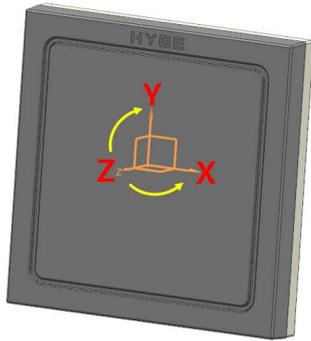
4-2. VSWR of Antenna Element



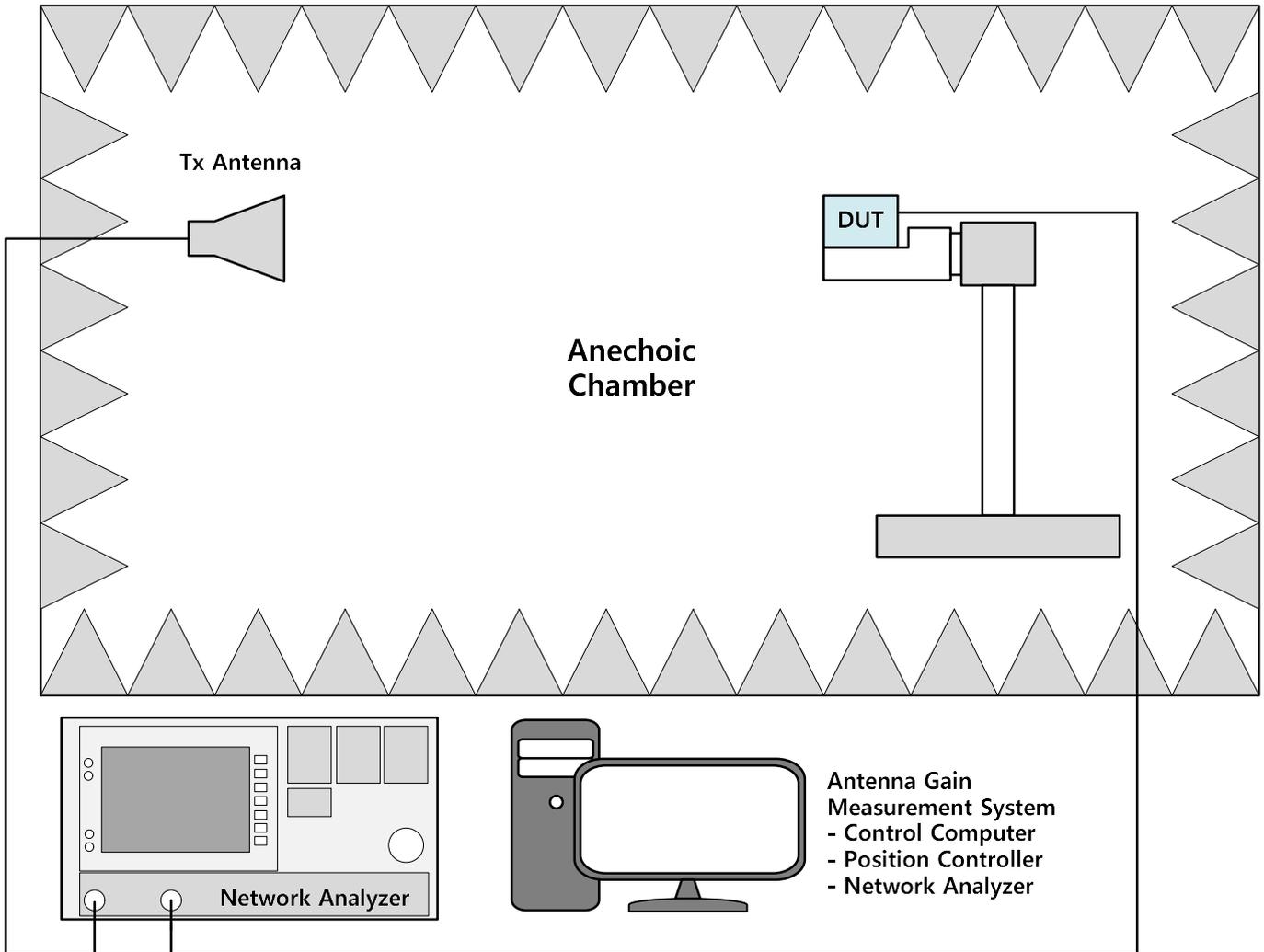
4-3. Gain Table

| Freq. | LHCP | | | | | H($\theta=90$) | | | | E1($\varphi=0$) | | | | E2($\varphi=90$) | | | |
|-------|---------|-----------|-----------|----------------|-----------------|------------------|-----------|----------------|---------|-------------------|-----------|----------------|---------|--------------------|-----------|----------------|---------|
| | Eff.[%] | Avg.[dBi] | Peak[dBi] | θ [deg] | φ [deg] | Avg.[dBi] | Peak[dBi] | θ [deg] | BW[deg] | Avg.[dBi] | Peak[dBi] | θ [deg] | BW[deg] | Avg.[dBi] | Peak[dBi] | θ [deg] | BW[deg] |
| 2.400 | 72.92 | -1.37 | 8.17 | -5.00 | 165.00 | -11.86 | -7.69 | 360.00 | 999.00 | 1.29 | 8.17 | 5.00 | 67.54 | 1.04 | 8.14 | 0.00 | 65.76 |
| 2.410 | 72.35 | -1.41 | 8.21 | -5.00 | 165.00 | -12.29 | -8.39 | 360.00 | 999.00 | 1.29 | 8.20 | 5.00 | 67.15 | 1.05 | 8.17 | 0.00 | 65.27 |
| 2.420 | 71.62 | -1.45 | 8.22 | -5.00 | 165.00 | -12.67 | -8.82 | 360.00 | 999.00 | 1.27 | 8.18 | 0.00 | 67.25 | 1.03 | 8.16 | 0.00 | 65.01 |
| 2.430 | 72.26 | -1.41 | 8.29 | -5.00 | 165.00 | -12.60 | -9.13 | 360.00 | 999.00 | 1.31 | 8.26 | 0.00 | 66.94 | 1.09 | 8.25 | 0.00 | 64.57 |
| 2.440 | 74.56 | -1.28 | 8.45 | -5.00 | 165.00 | -12.80 | -9.66 | 360.00 | 999.00 | 1.46 | 8.41 | 0.00 | 66.98 | 1.26 | 8.41 | 0.00 | 64.40 |
| 2.445 | 75.68 | -1.21 | 8.55 | -5.00 | 165.00 | -13.05 | -10.04 | 360.00 | 999.00 | 1.53 | 8.51 | 0.00 | 66.78 | 1.34 | 8.51 | 0.00 | 64.18 |
| 2.450 | 76.44 | -1.17 | 8.64 | -5.00 | 165.00 | -13.25 | -10.35 | 345.00 | 999.00 | 1.59 | 8.60 | 0.00 | 66.32 | 1.41 | 8.60 | 0.00 | 63.86 |
| 2.460 | 76.35 | -1.17 | 8.69 | -5.00 | 150.00 | -13.62 | -10.95 | 345.00 | 999.00 | 1.60 | 8.64 | 0.00 | 65.77 | 1.46 | 8.66 | 0.00 | 63.49 |
| 2.470 | 77.88 | -1.09 | 8.79 | -5.00 | 165.00 | -13.66 | -10.90 | 15.00 | 999.00 | 1.68 | 8.74 | 0.00 | 65.61 | 1.57 | 8.75 | 0.00 | 63.50 |
| 2.480 | 77.67 | -1.10 | 8.82 | -5.00 | 150.00 | -13.97 | -11.28 | 15.00 | 999.00 | 1.68 | 8.77 | 0.00 | 65.27 | 1.58 | 8.78 | -5.00 | 63.36 |
| 2.485 | 76.70 | -1.15 | 8.78 | -5.00 | 150.00 | -14.27 | -11.62 | 15.00 | 999.00 | 1.64 | 8.73 | 0.00 | 65.09 | 1.55 | 8.74 | -5.00 | 63.36 |

4-4 Radiation Pattern



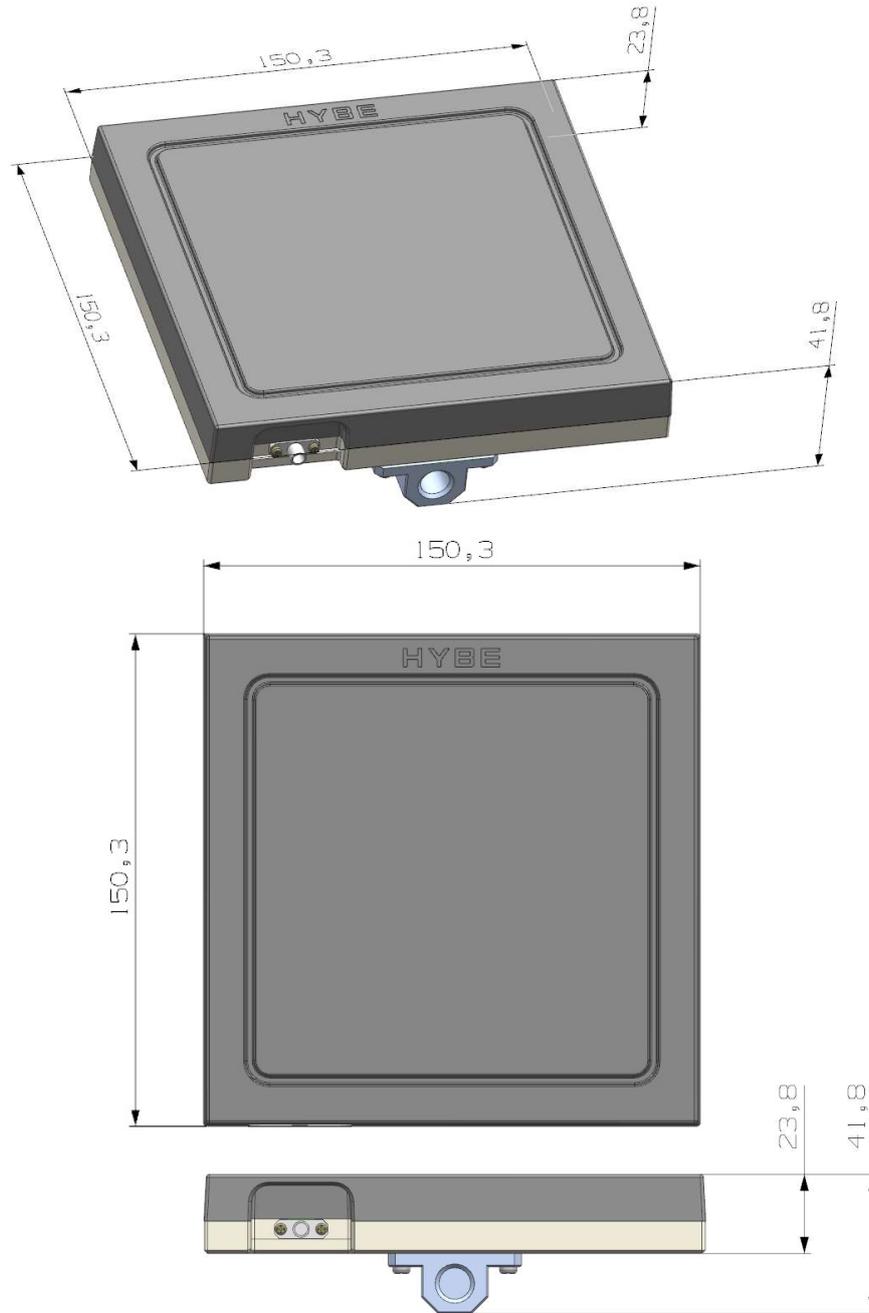
4-5 Test Method



| No | Device Name | Manufacturer | Model Name | Serial Number |
|----|----------------------------|-----------------|------------|---------------|
| 1 | ZNA Network Analyzer | Rodhe & Schwarz | ZNA26 | 101268 |
| 2 | Microwave System Amplifier | Keysight | 83017A | MY53270141 |
| 3 | Quad-Ridged Horn | MTG | QRH004060 | - |
| 4 | Waveguide Horn | Schwarzbeck | BBHA9120 | 253 |

| No | Division | Contents |
|----|---------------|---|
| 1 | Test Place | NIPA (National IT Industry Promotion Agency) |
| 2 | Test Standard | ANSI/IEEE Std 149-1979 IEEE Standard Test Procedures for Antennas |

5. Product Drawing



| No | Item | Specification | Unit |
|----|----------------------------------|-----------------------|------|
| 1 | Size | 150.3 x 150.3 x 41.8T | mm |
| 2 | Weight | 830 | g |
| 3 | Housing Upper - Color / Material | Black / PC+GF20% | |
| 4 | Housing Lower - Color / Material | Black / Aluminum | |
| 5 | Rigging Pin Hole Size | 3/8 | inch |
| 6 | RF Connector | SMA Female | |

Revision History

| No | Description of Change | Date | Revision |
|----|------------------------------------|----------|----------|
| 1 | Ver. 1.0 First release of document | 22.06.03 | 1.0 |
| 2 | Test Method Update | 22.12.07 | 2.0 |
| | | | |
| | | | |
| | | | |
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