


AIW-512 Specification

| | |
|----------------------|--|
| Product name | AIW-512 |
| Advantech P/N | 1751000651-01 |
| Description | External Dipole antenna Wi-Fi 5/6/6E/7 Straight & 90° bent IP54 level Tri-band 2.4&5&6 GHz |
| Version | 1.1 |
| Date | 2024/05/22 |

| Index | | |
|-------|--|------|
| No. | Item | Page |
| 1 | Revision History | 3 |
| 2 | Specification | 4 |
| 3 | Antenna - S Parameter Test Data | 6 |
| 4 | Antenna – Gain & Radiation Pattern Test Data | 7 |
| 5 | Mechanical Drawing | 10 |
| 6 | Packing Drawing | 11 |
| | | |



<https://advavee.com>

1. Revision History

| Version | Date | Change Notification | Description |
|---------|------------|---------------------|--|
| 1.0 | 2024/03/07 | Initial version | |
| 1.1 | 2024/05/22 | P/N, Temperature | 1. Change P/N 2. Modify temperature to -40 ~ 85°C |
| | | | |



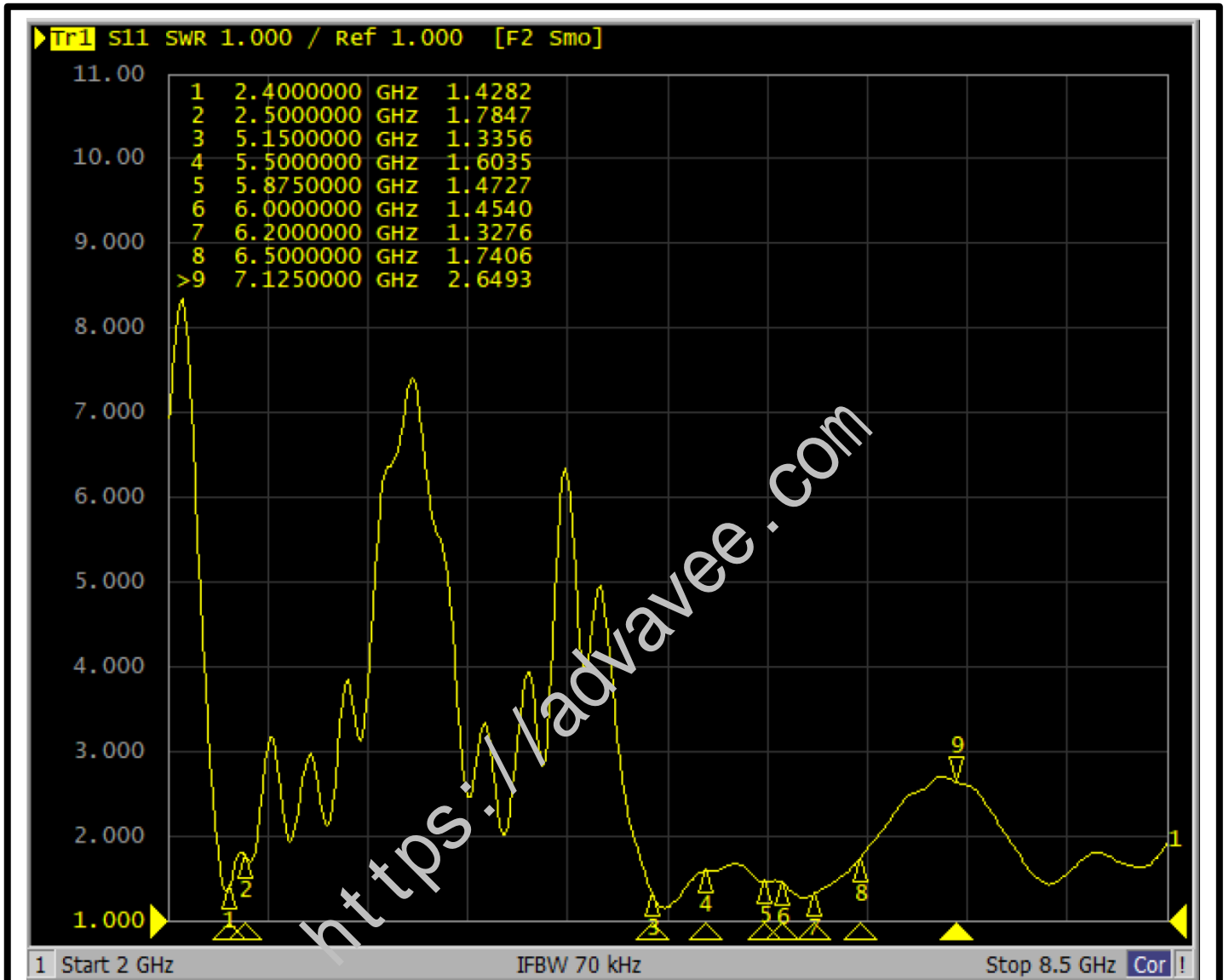
2. Specification

| Sample Photo | |
|---|--|
|  | |
| Antenna Length- 111.7 mm Antenna Diameter- 10 mm | |
| Electrical Characteristics | |
| Frequency | 2400 – 2500 MHz, 5150 – 5850 MHz, 5925 – 7125 MHz |
| V.S.W. R | ≤ 2.0 @ 2400 – 2500 MHz ≤ 2.0 @ 5150 – 5850 MHz ≤ 3.0 @ 5925 – 7125 MHz |
| Peak Gain | 2.87 dBi @ 2400 – 2500 MHz 3.11 dBi @ 5150 – 5850 MHz 3.22 dBi @ 5925 – 7125 MHz |
| Efficiency | 74~78 % @ 2400 – 2500 MHz 71~77 % @ 5150 – 5850 MHz 67~70 % @ 5925 – 7125 MHz |
| Polarization | Linear |
| Radiation Pattern | Omni-direction |
| Impedance | 50 ohm |
| Application | Wi-Fi 6 & 6E & 7, BT, Zigbee |
| Antenna Type | Dipole |
| Material & Mechanical Characteristics | |
| Antenna Length | 111.7 mm |
| Antenna Diameter | 10 mm |
| Material of Radiator | NA |
| Material of Plastic | ABS |
| Antenna housing color | Black |
| Cable Type | RG-178 B/U |
| Connector Type | SMA- Male reverse |

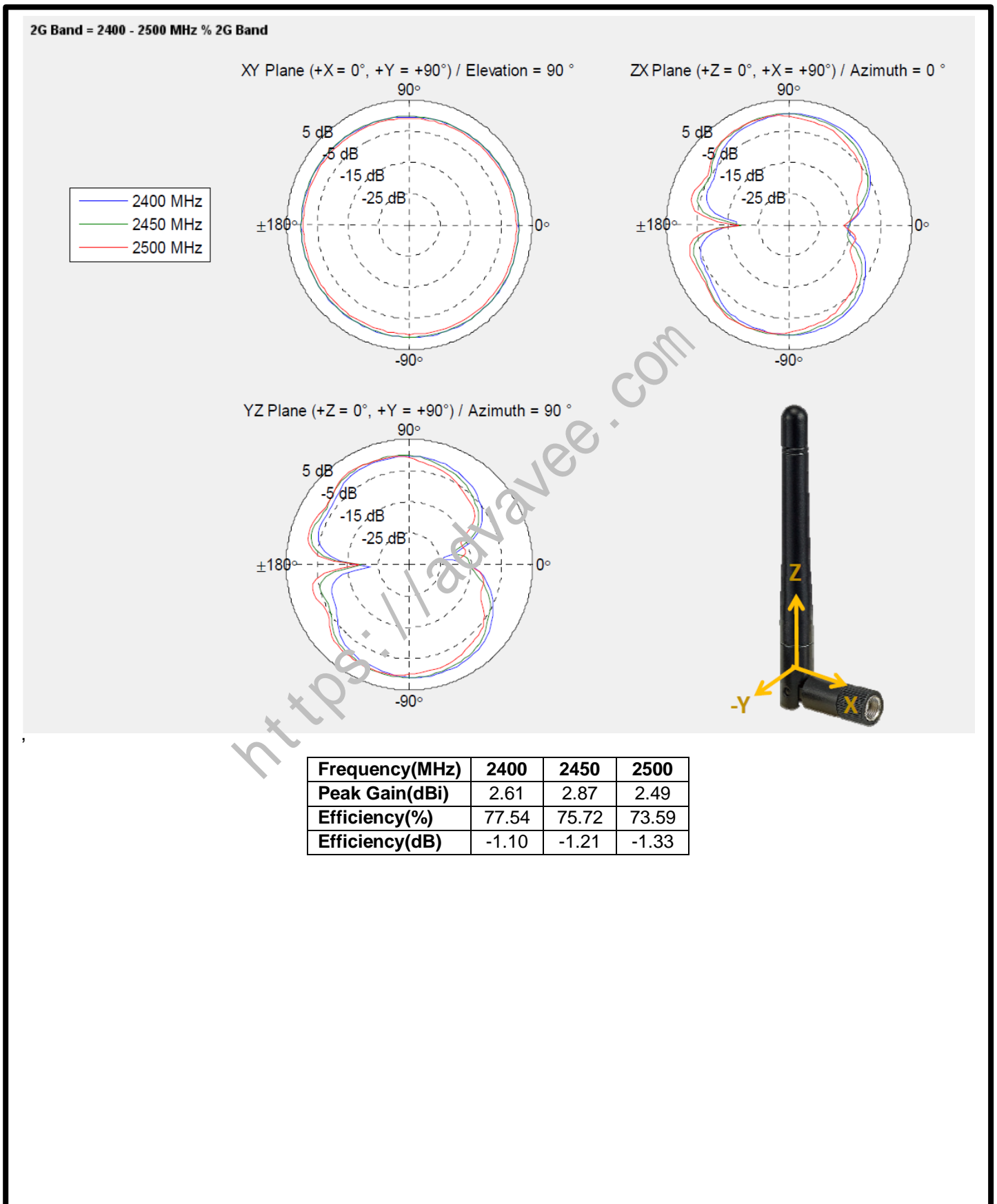
| Environmental | |
|-------------------------|-------------|
| Operation Temperature | -40 ~ 85 °C |
| Storage Temperature(°C) | -40 ~ 85 °C |
| Ingress Protection | IP54 |
| Power Handling | 2 W |



3. Antenna - S Parameter Test Data



4. Antenna – Gain & Radiation Pattern Test Data

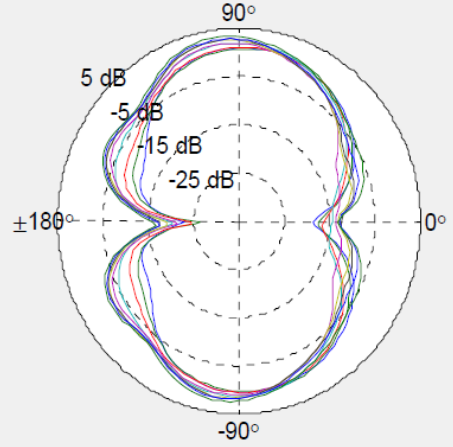
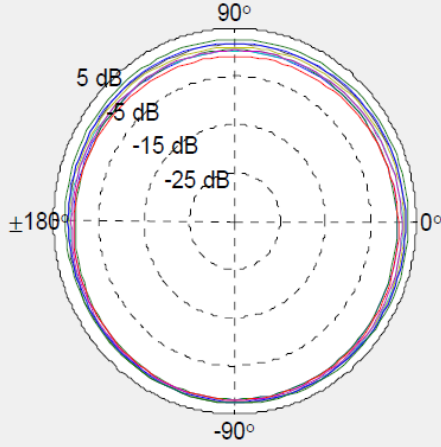


5G Band = 4900 - 5975 MHz

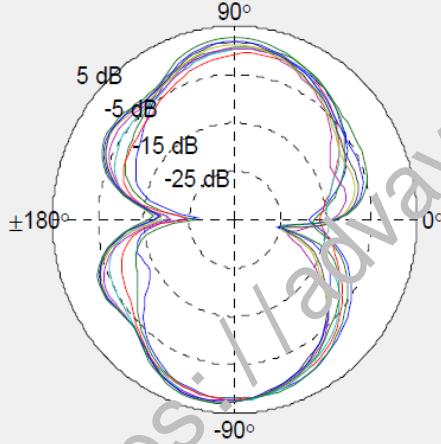
XY Plane (+X = 0°ϕX, +Y = +90°ϕX) / Elevation = 90°ϕX

ZX Plane (+Z = 0°ϕX, +X = +90°ϕX) / Azimuth = 0°ϕX

- 5150 MHz
- 5250 MHz
- 5350 MHz
- 5470 MHz
- 5600 MHz
- 5725 MHz
- 5785 MHz
- 5850 MHz
- 5925 MHz

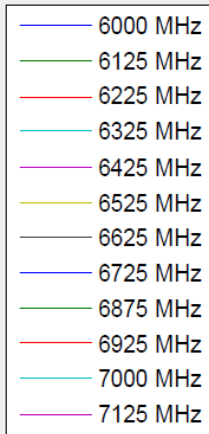


YZ Plane (+Z = 0°ϕX, +Y = +90°ϕX) / Azimuth = 90°ϕX

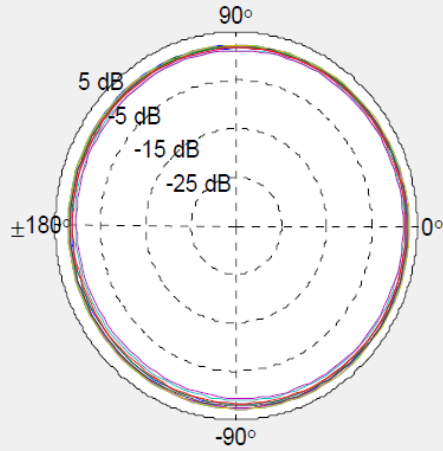


| Frequency(MHz) | 5150 | 5250 | 5350 | 5470 | 5600 | 5725 | 5785 | 5850 | 5925 |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak Gain(dBi) | 2.82 | 2.82 | 2.92 | 3.11 | 2.99 | 3.04 | 3.06 | 2.98 | 3.15 |
| Efficiency(%) | 73.92 | 75.31 | 71.01 | 77.30 | 74.57 | 75.44 | 76.28 | 77.29 | 77.45 |
| Efficiency(dB) | -1.31 | -1.23 | -1.49 | -1.12 | -1.27 | -1.22 | -1.18 | -1.12 | -1.11 |

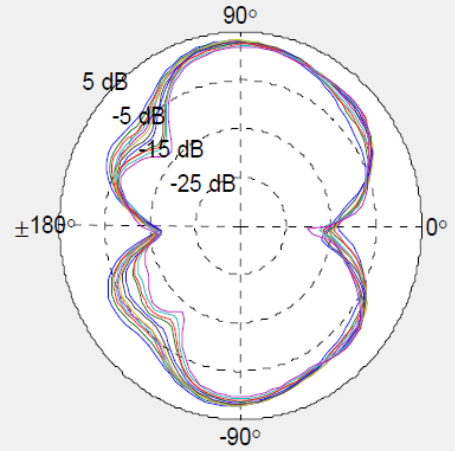
6G Band = 6000 - 8500 MHz



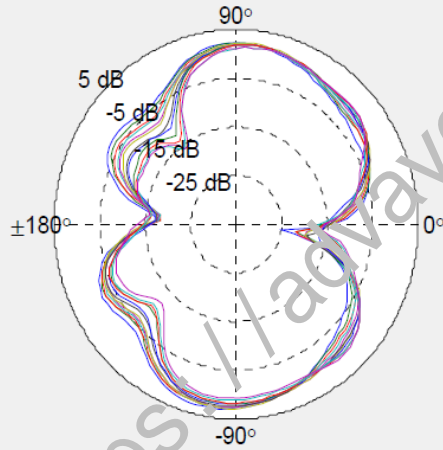
XY Plane (+X = 0°X, +Y = +90°X) / Elevation = 90°



ZX Plane (+Z = 0°X, +X = +90°X) / Azimuth = 0°

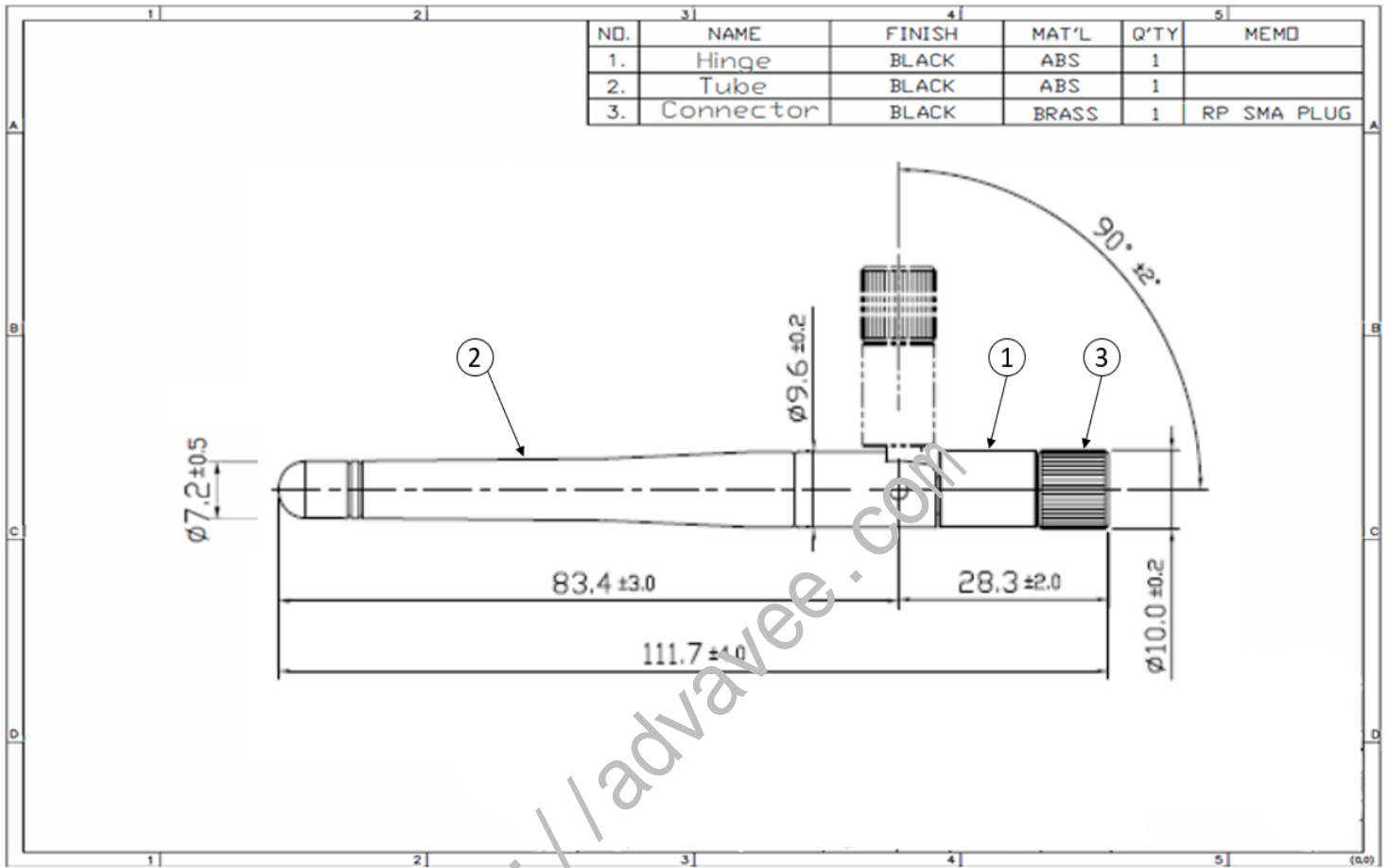


YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°



| Frequency(MHz) | 6000 | 6125 | 6225 | 6325 | 6425 | 6525 | 6625 | 6725 | 6875 | 6925 | 7000 | 7125 |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak Gain(dBi) | 3.22 | 2.97 | 2.79 | 2.89 | 2.78 | 3.08 | 2.72 | 2.65 | 2.61 | 2.47 | 2.04 | 1.94 |
| Efficiency(%) | 78.45 | 76.42 | 74.59 | 74.65 | 75.03 | 76.18 | 74.17 | 72.63 | 70.68 | 70.77 | 69.84 | 67.23 |
| Efficiency(dB) | -1.05 | -1.17 | -1.27 | -1.27 | -1.25 | -1.18 | -1.30 | -1.39 | -1.51 | -1.50 | -1.56 | -1.72 |

5. Mechanical Drawing

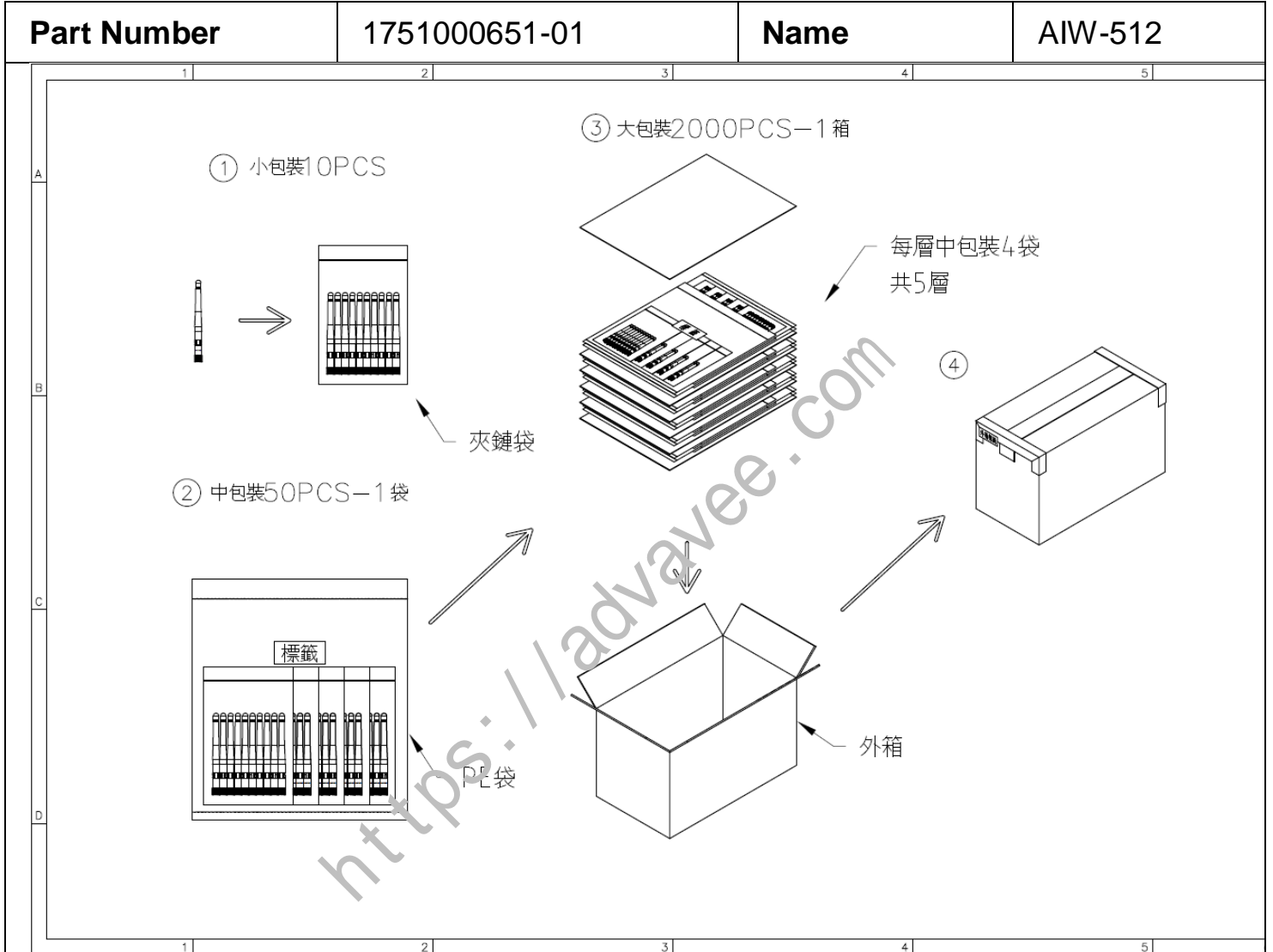


Advantech Industrial Wireless

<https://advavee.com>

6. Packing Drawing

產品包裝規範 PACKING CRITERION



<https://www.advantech.com>

ADVANTECH



AIWireless

Advantech Industrial Wireless