



### Features & Applications:

-  5-in-1 combo antenna
-  2xMiMo 5G-FR1 (4G compatible)
-  2xMiMo WiFi 6E/7
-  Active GNSS L1 RHCP Patch antenna
-  LNA Gain 30dB
-  High out of band rejection filters
-  ESD protected
-  Adhesive mount, ideal for plastic and glass surface installation
-  Optional plastic bracket included

### ELECTRICAL SPECIFICATIONS

#### General Specifications – 5G FR1 / WiFi 6E/7

| Antenna type          | Nominal Impedance | Polarization      | Radiation pattern | Power withstanding | DC Ground |
|-----------------------|-------------------|-------------------|-------------------|--------------------|-----------|
| Monopole <sup>1</sup> | 50Ω               | Vertical / Linear | Omni              | 2W                 | No        |

#### 5G FR1 Antennas: 617 – 7125MHz

| Port                   | Frequency (MHz)      | 617-960 | 1710-2700 | 3300-7125 |
|------------------------|----------------------|---------|-----------|-----------|
| Port 1, 2              | VSWR                 | 2.5:1   | 2:1       | 2:1       |
|                        | Avg. Peak Gain (dBi) | 2.5     | 5.5       | 5.1       |
|                        | Avg. Efficiency (%)  | 48      | 62        | 60        |
| Isolation <sup>2</sup> | Port 1-2 (dB)        | 10      | 20        | 30        |

#### WiFi 6E/7 Antennas: 2400-2500 / 5150-7125MHz

| Port                   | Frequency (MHz)      | 2400-2500 | 5150-7125 |
|------------------------|----------------------|-----------|-----------|
| Port 3, 4              | VSWR                 | 2:1       | 2:1       |
|                        | Avg. Peak Gain (dBi) | 4.5       | 3.3       |
|                        | Avg. Efficiency (%)  | 60        | 58        |
| Isolation <sup>2</sup> | Port 3-4 (dB)        | 13        | 25        |

#### GNSS Antenna: 1560-1610MHz

| Antenna type  | Nominal Impedance | Polarization |
|---------------|-------------------|--------------|
| Patch antenna | 50 Ω              | RHCP         |

|                                 |                                                        |
|---------------------------------|--------------------------------------------------------|
| Frequency (MHz)                 | 1561.098 ± 2.046/<br>1575.42 ± 1.023/<br>1602.5625 ± 4 |
| Return Loss (dB)                | <-7 dB                                                 |
| LNA Gain                        | 30dB ± 2 dB                                            |
| Current consumption             | <10 mA                                                 |
| DC voltage in via GNSS RF cable | 3.3-5 Vdc ± 0.5V                                       |

#### Notes:

1. 5G-FR1 and WiFi 6E/7: Multi-Band Monopoles with built in ground plane, Independent from external ground plane
2. Minimum Isolation (dB)

## MECHANICAL SPECIFICATIONS

## CDB52211AM

| Dimension<br>(Length x Width x Height)  | Weight      | Color         | Fixing System                                | Housing Material      |
|-----------------------------------------|-------------|---------------|----------------------------------------------|-----------------------|
| 178 x 60x19 mm<br>(7.01" x2.36"x 0.75") | 575 g       | Black         | Adhesive Mount /<br>Bracket<br>(3M VHB 4959) | PC<br>(UV-stabilized) |
| Wireless Technology                     | No. of Port | Cable Length  | Cable Type                                   | Connector Type        |
| 5G FR1/LTE                              | 2           | 10FT (3.048M) | LMR195                                       | SMA Male              |
| GNSS                                    | 1           | 10FT (3.048M) | LMR100                                       | SMA Male              |
| WiFi 6E/7                               | 2           | 10FT (3.048M) | LMR195                                       | RP SMA Male           |

## ENVIRONMENTAL SPECIFICATIONS

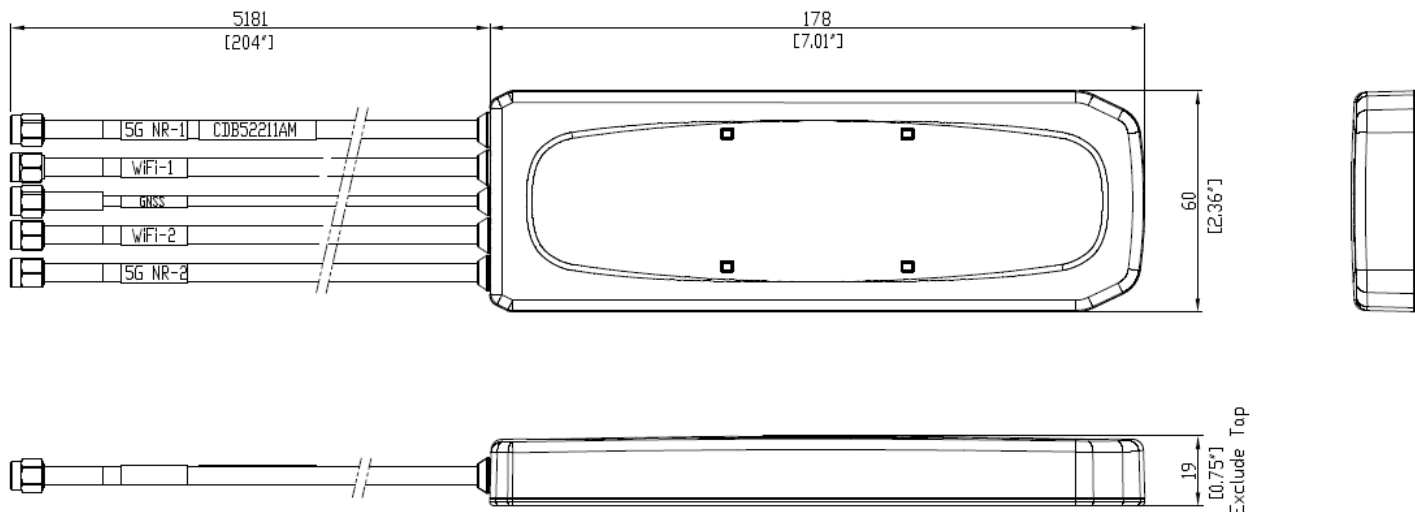
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| Storage Temperature | Operating Temperature | Ingress Protection | RoHS Compliant |
|---------------------|-----------------------|--------------------|----------------|
| -40 / +85° C        | -40 / +85° C          | IP67               | Yes            |

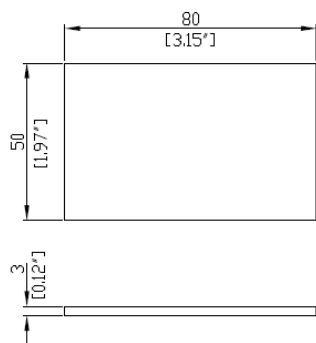
## Mechanical Drawing

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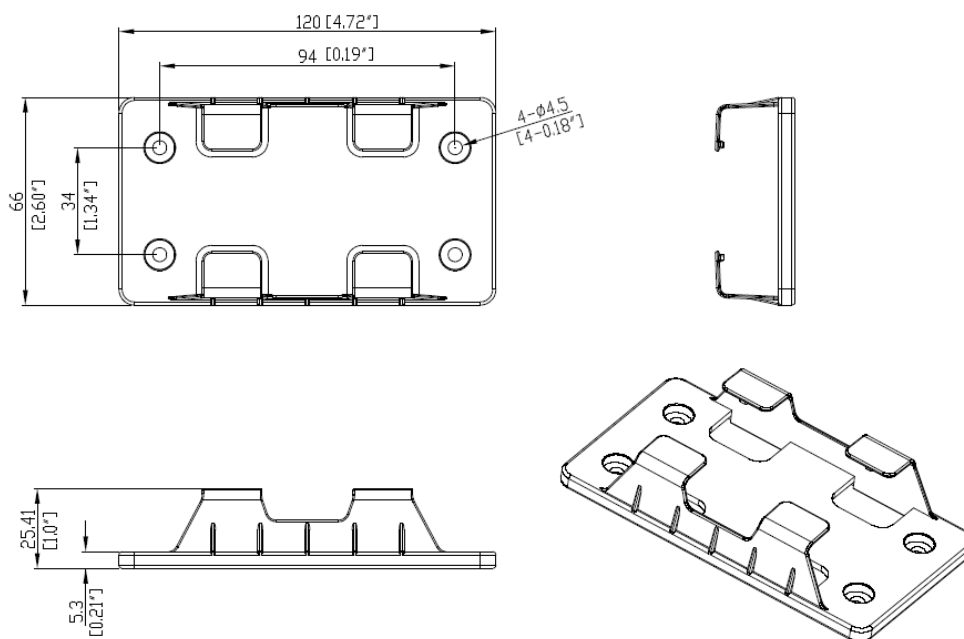
## Antenna



## 3M VHB Tape



## Plastic Bracket



\*Tape and bracket package separately

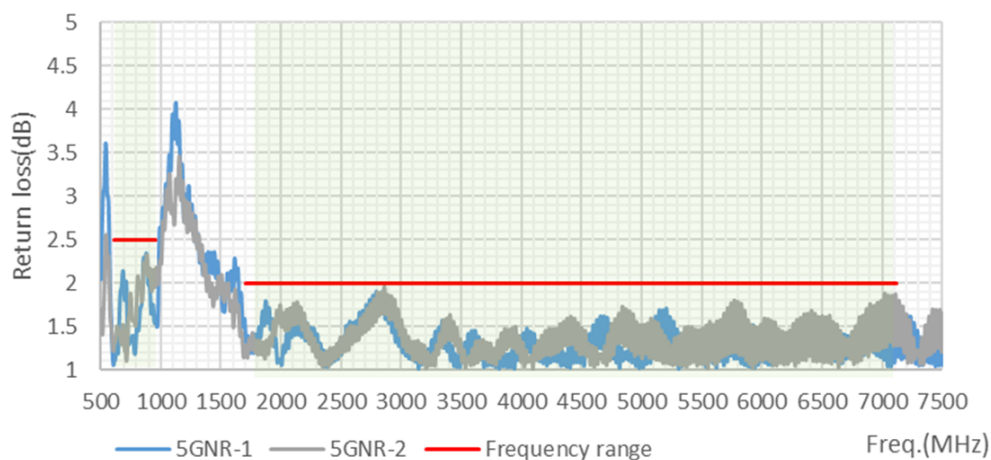
Unit: mm/ inches

## Charts

Test data  
5G NR Antennas

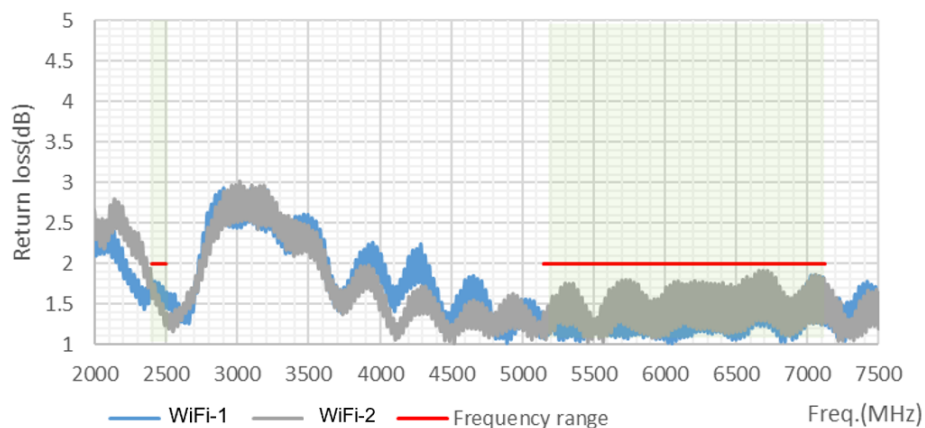
VSWR vs Frequency

Measured in PSU 20230510



VSWR vs Frequency

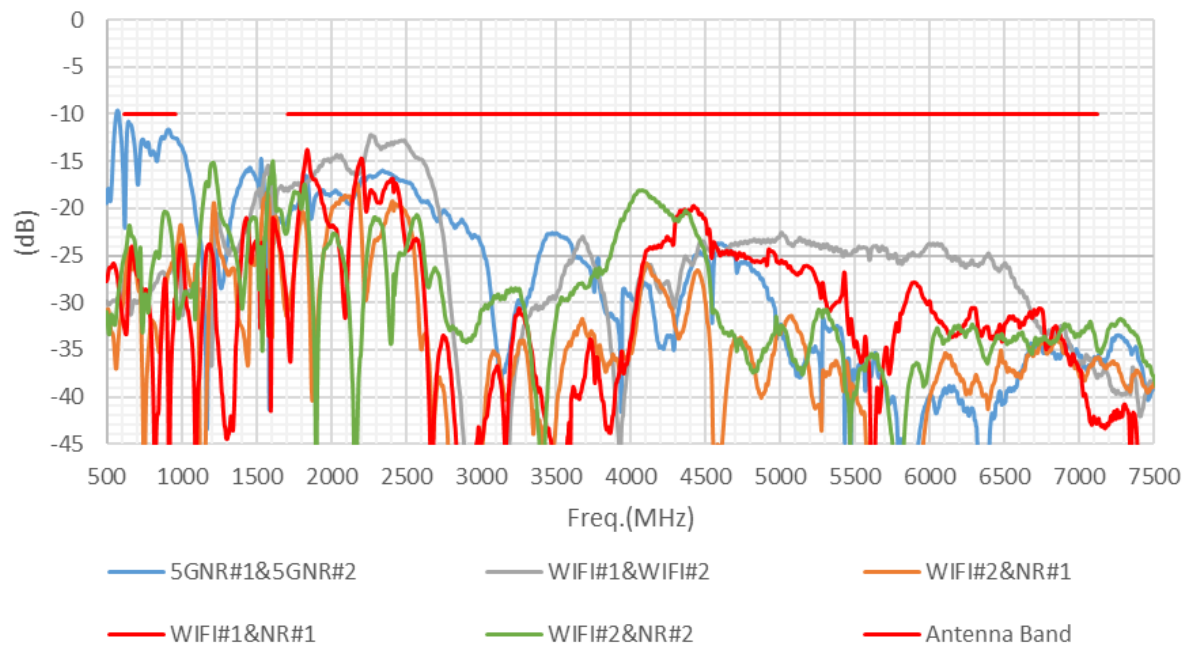
Measured in PSU 20230510



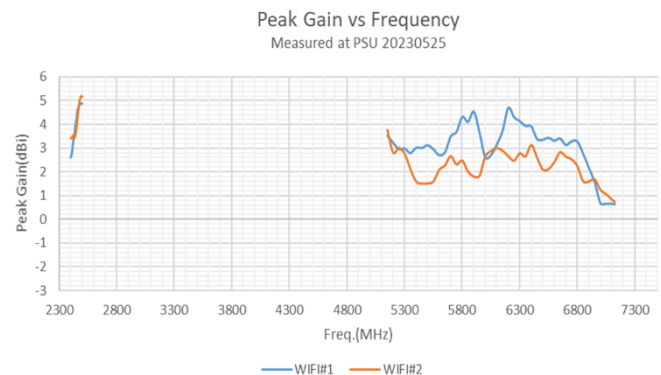
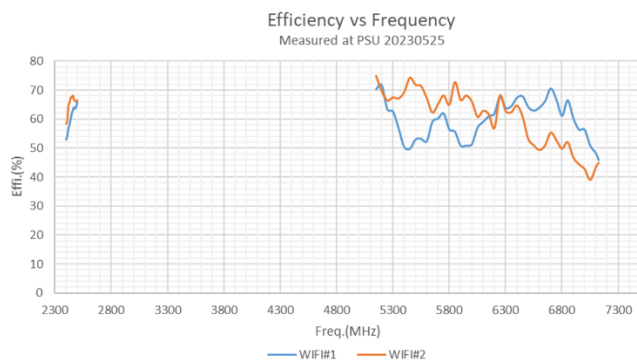
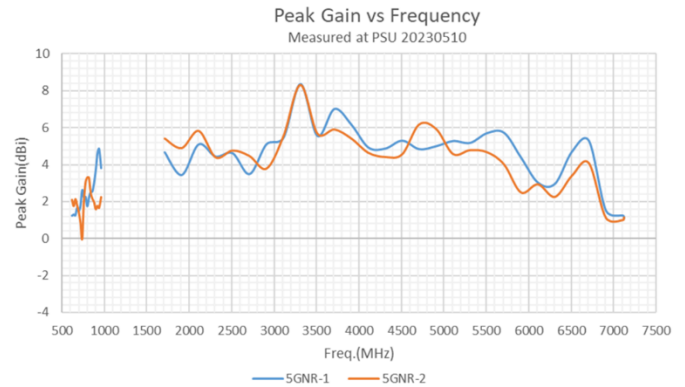
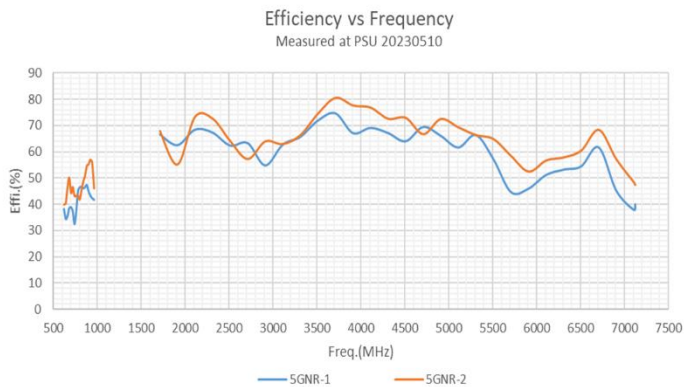
\*antenna VSWR test in free space and 10-ft cables

### Isolation vs Frequency

Measured at PSU 20230510

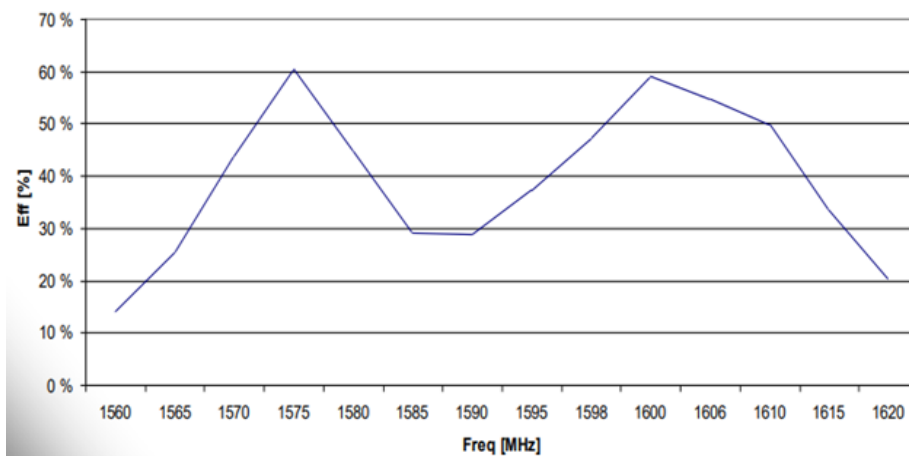


## Charts

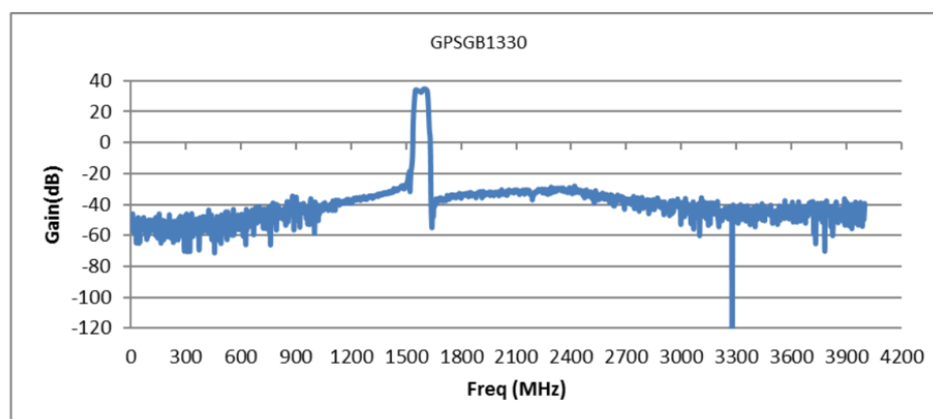
Test data  
5G NR Antennas

\* antenna test in free space and 1-ft cables

## Charts

Test data  
GNSS Antenna

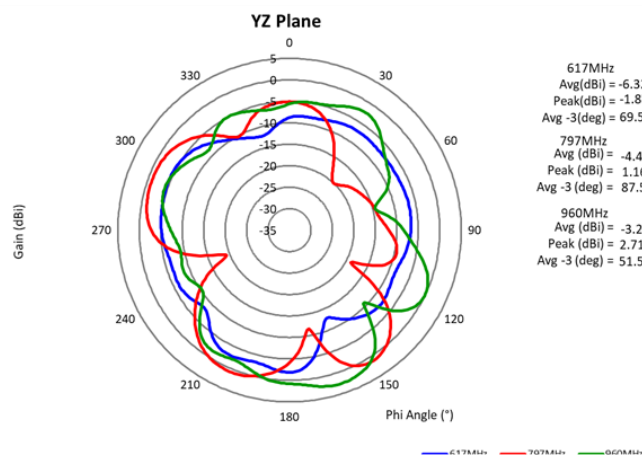
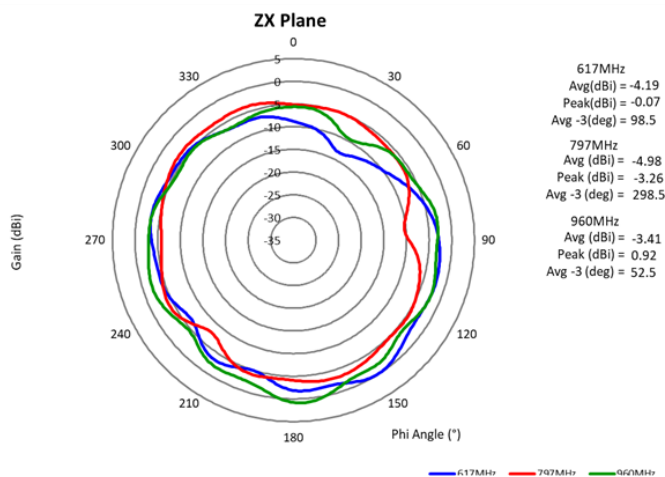
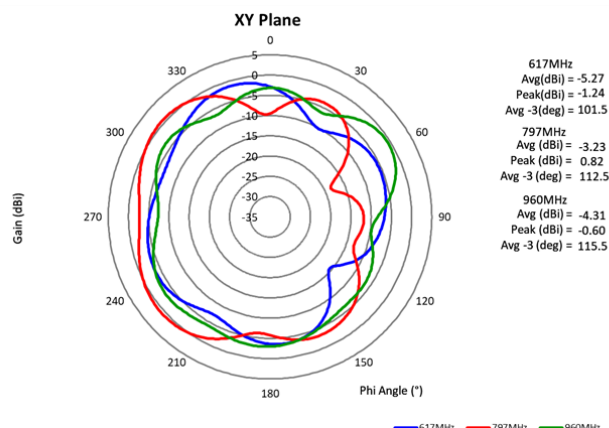
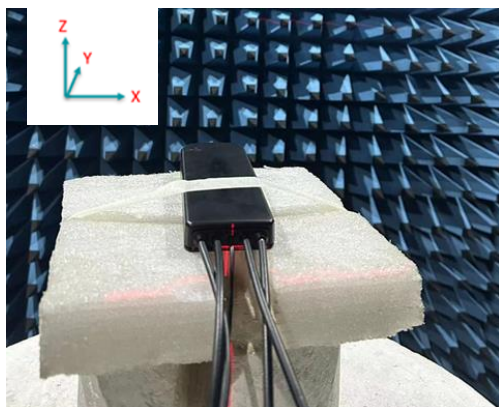
## LNA Gain and out-of-band rejection



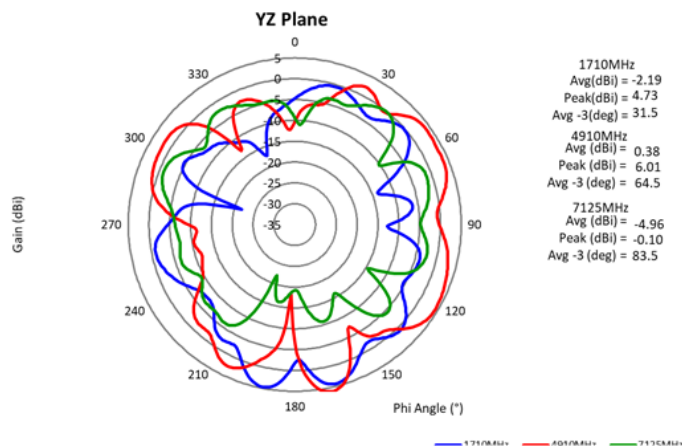
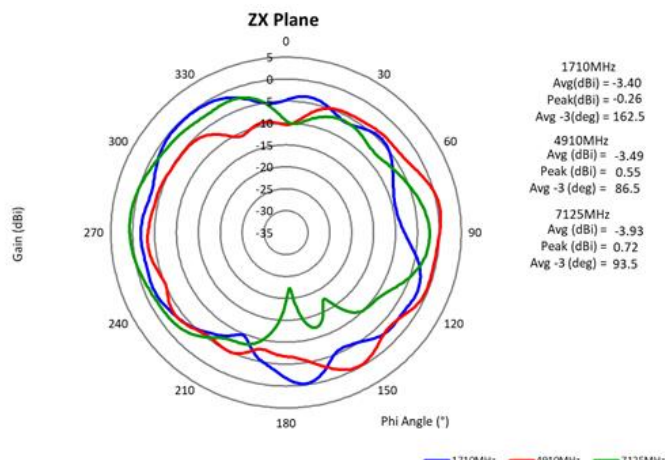
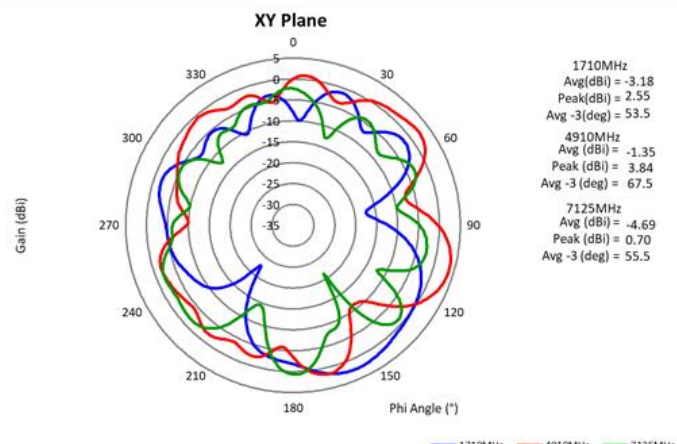
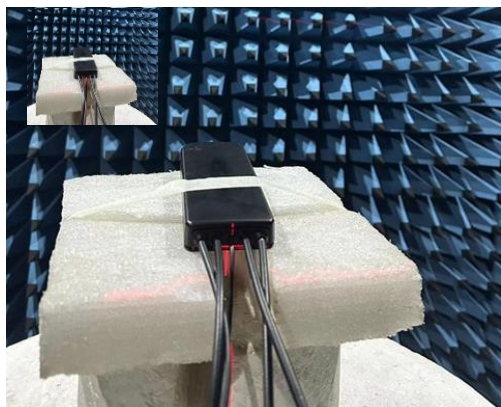
## Charts

Test data  
5G NR-1 Antennas

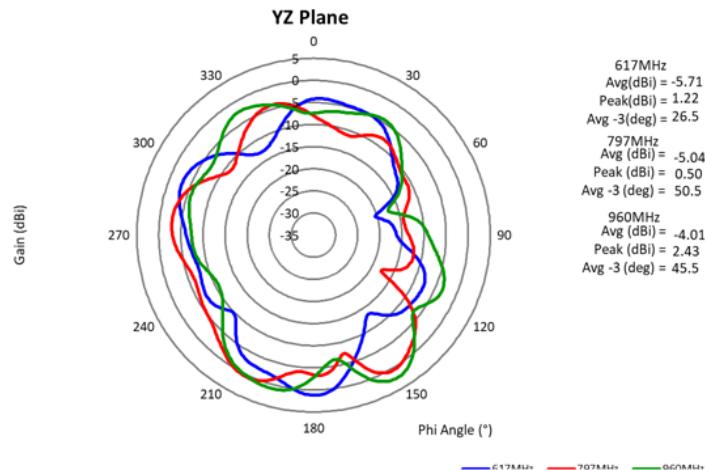
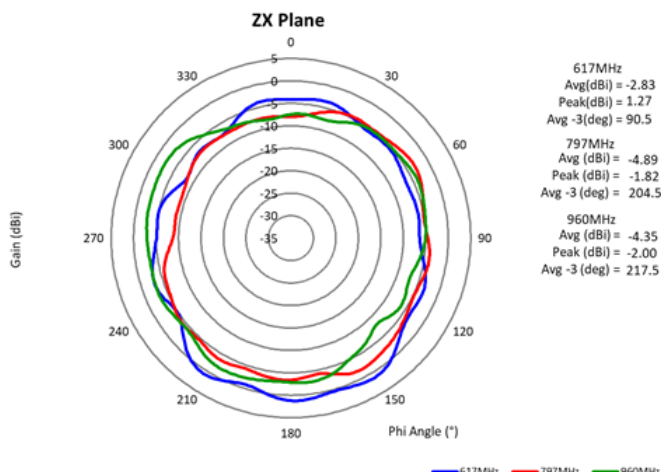
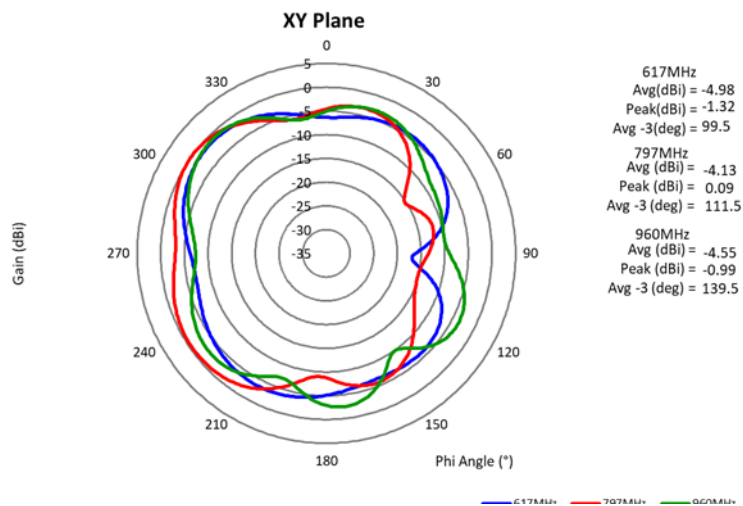
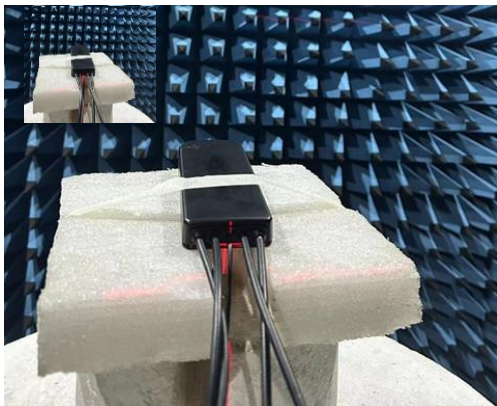
## Radiation Pattern



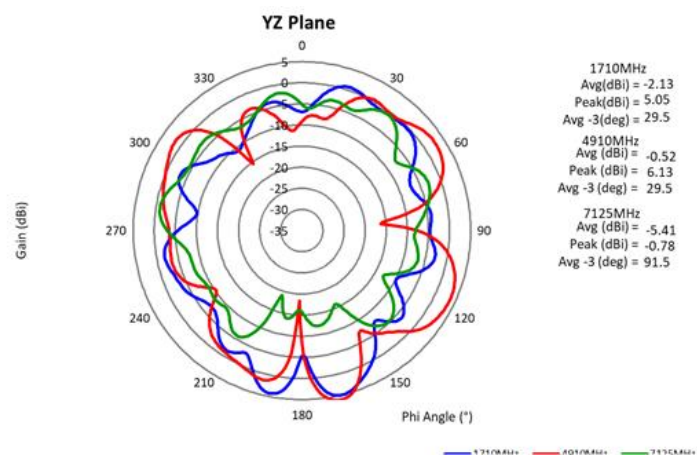
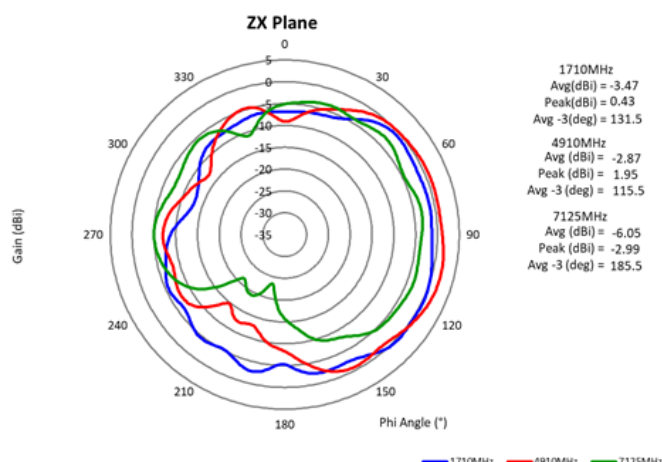
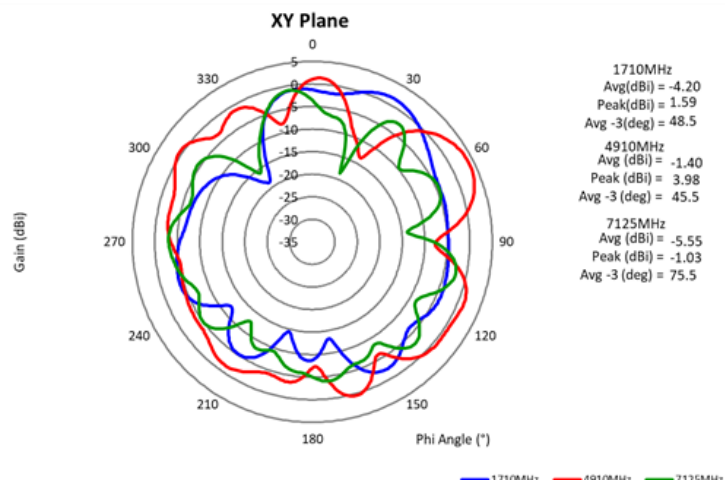
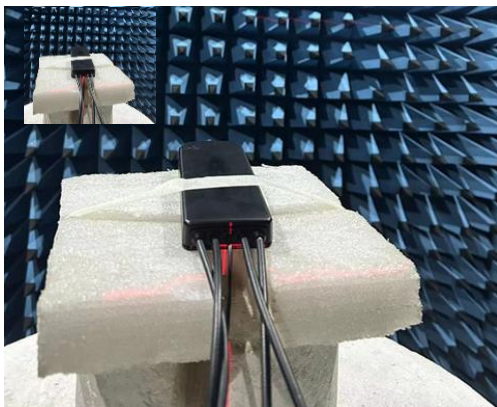
## Charts

Test data  
5G NR-1 Antennas

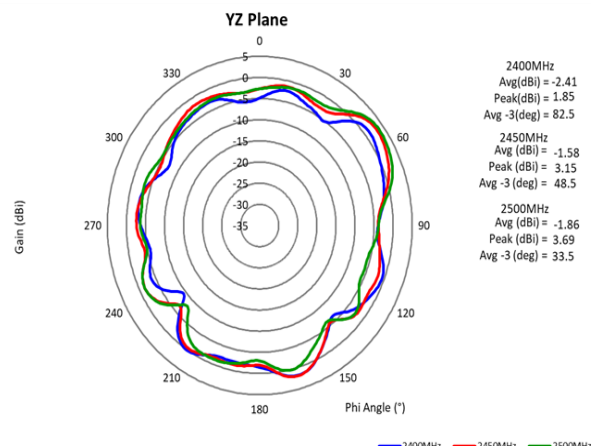
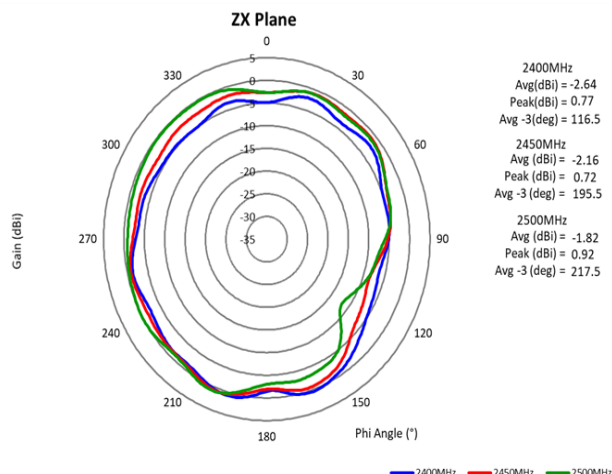
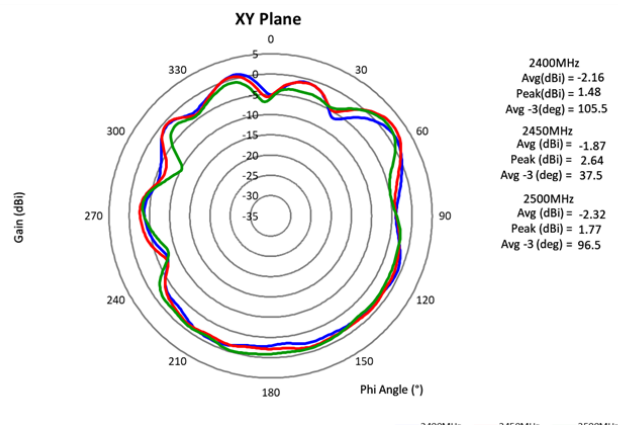
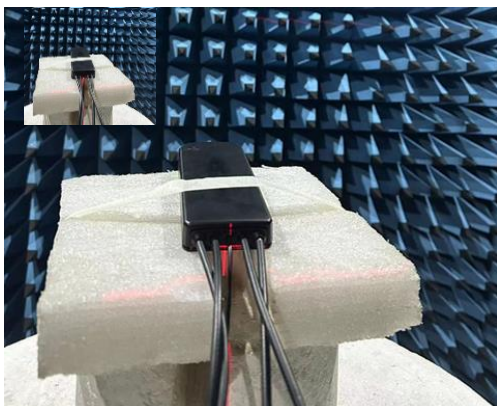
## Charts

Test data  
5G NR-2 Antennas

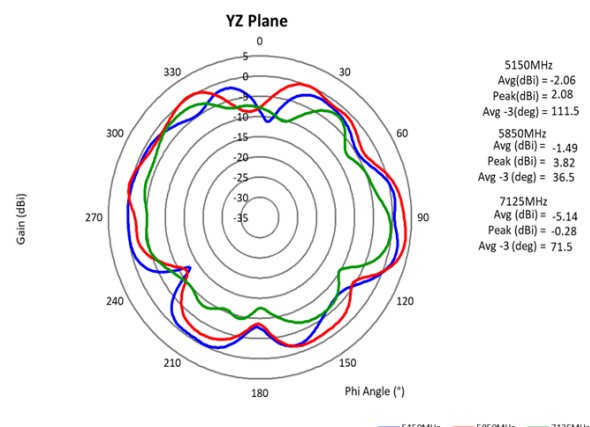
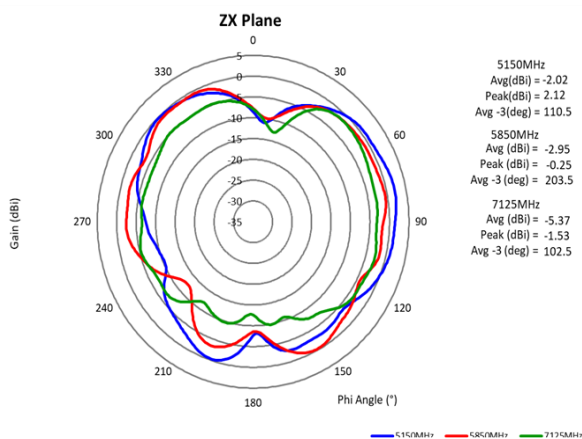
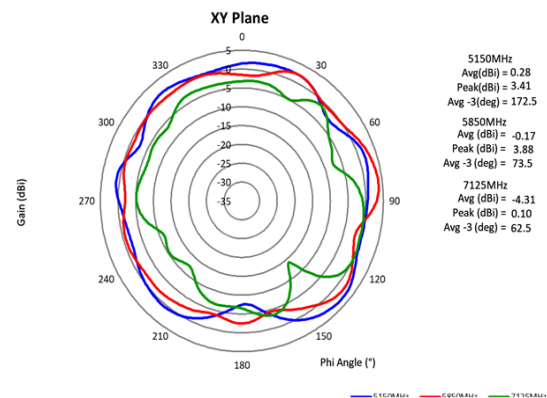
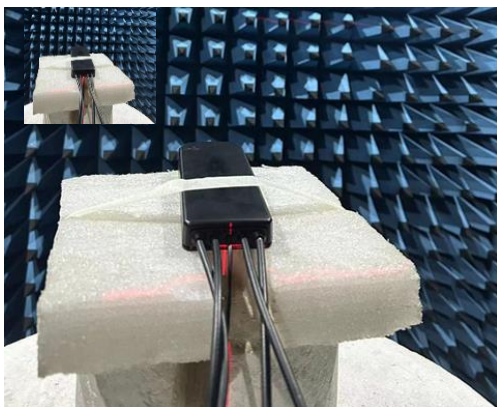
## Charts

Test data  
5G NR-2 Antennas

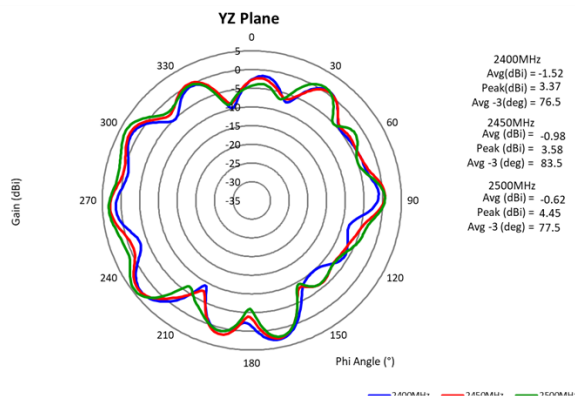
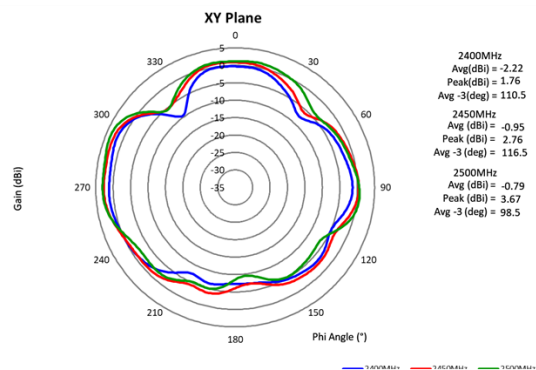
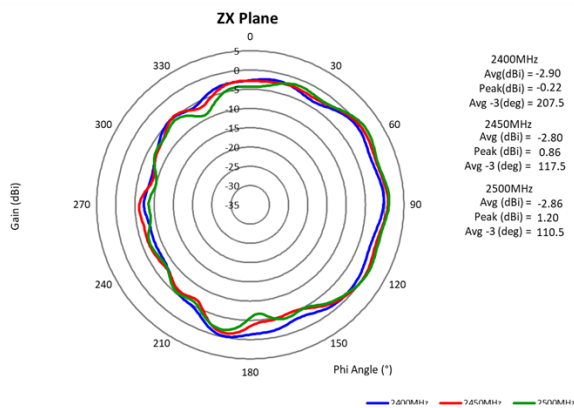
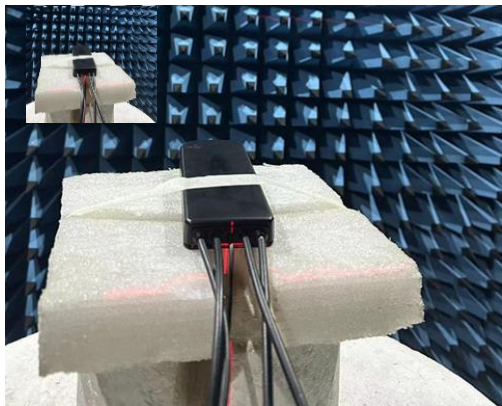
## Charts

Test data  
WIFI-1 Antennas

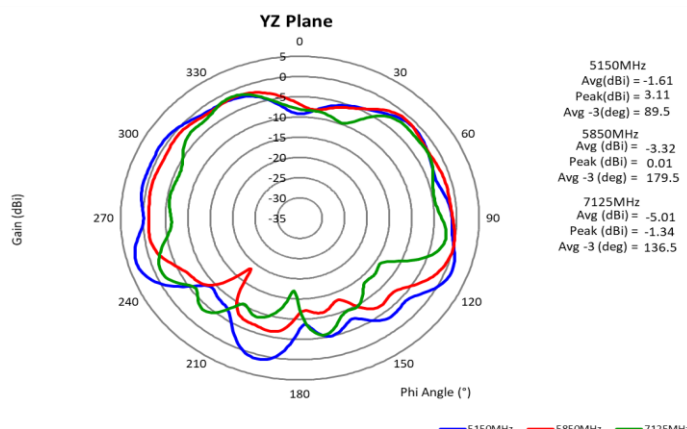
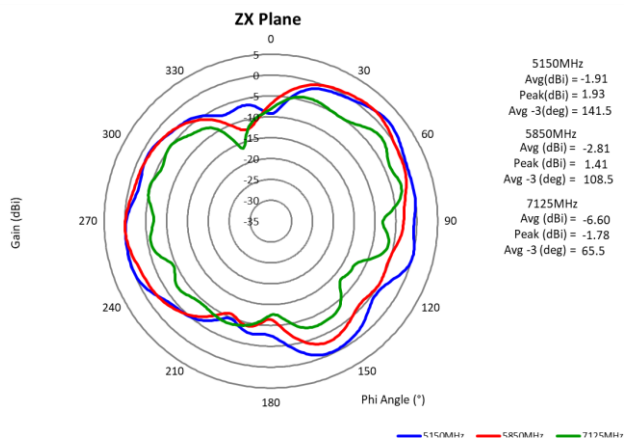
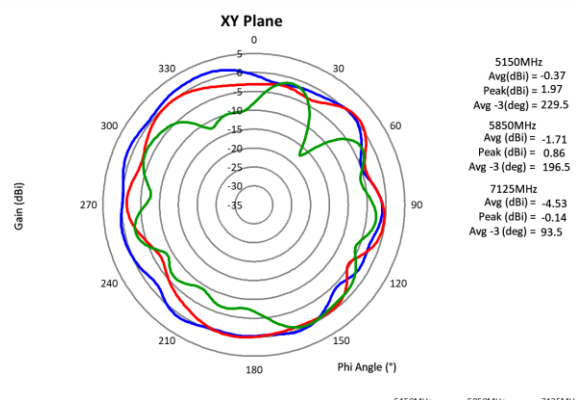
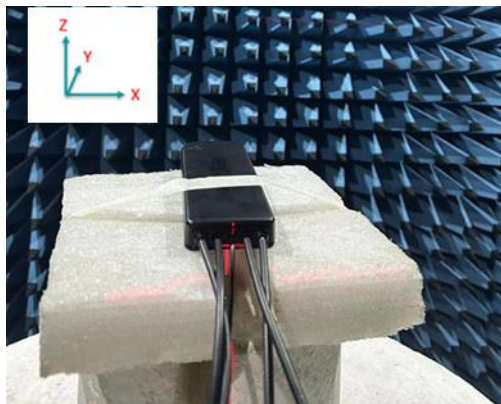
## Charts

Test data  
WIFI-1 Antennas

## Charts

 Test data  
 WIFI-2 Antennas


## Charts

Test data  
WIFI-2 Antennas

## Packing

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TBD

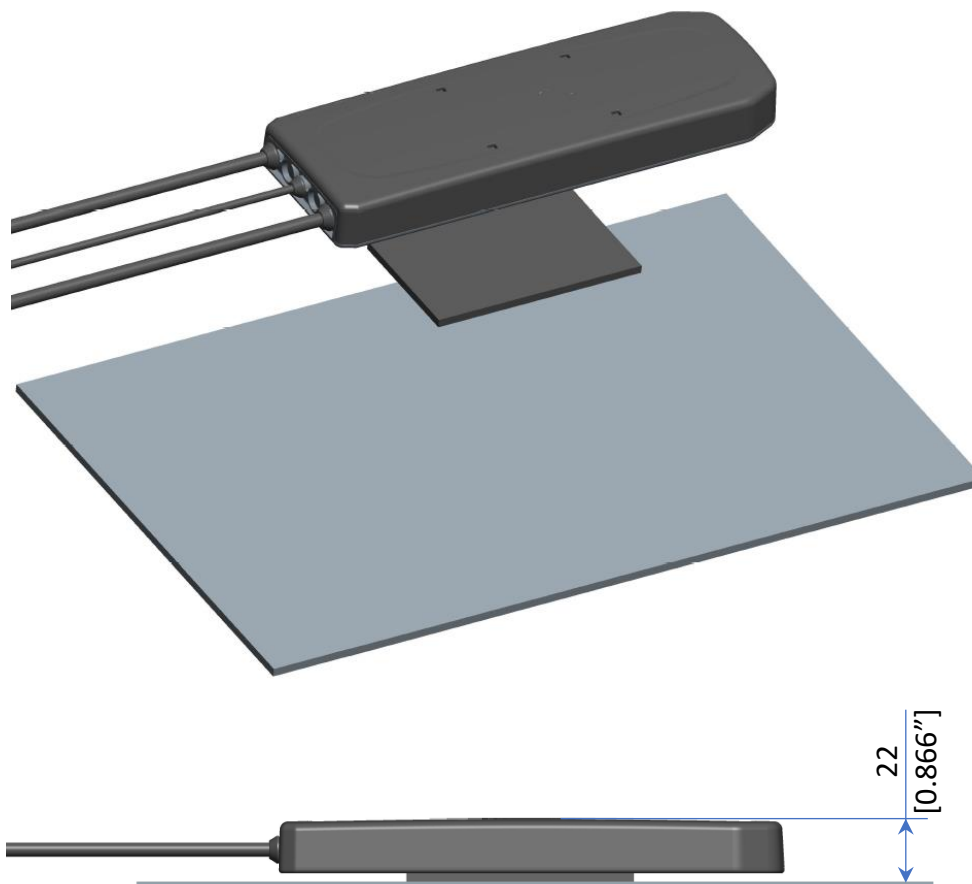
## Assembly

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Option 1

Tap Mount

Apply to the surface of the glass fiber or plastic material, the antenna could be adhered on the surface by the 3MVHB adhesive tape (3M VHB4959 80X50mm).



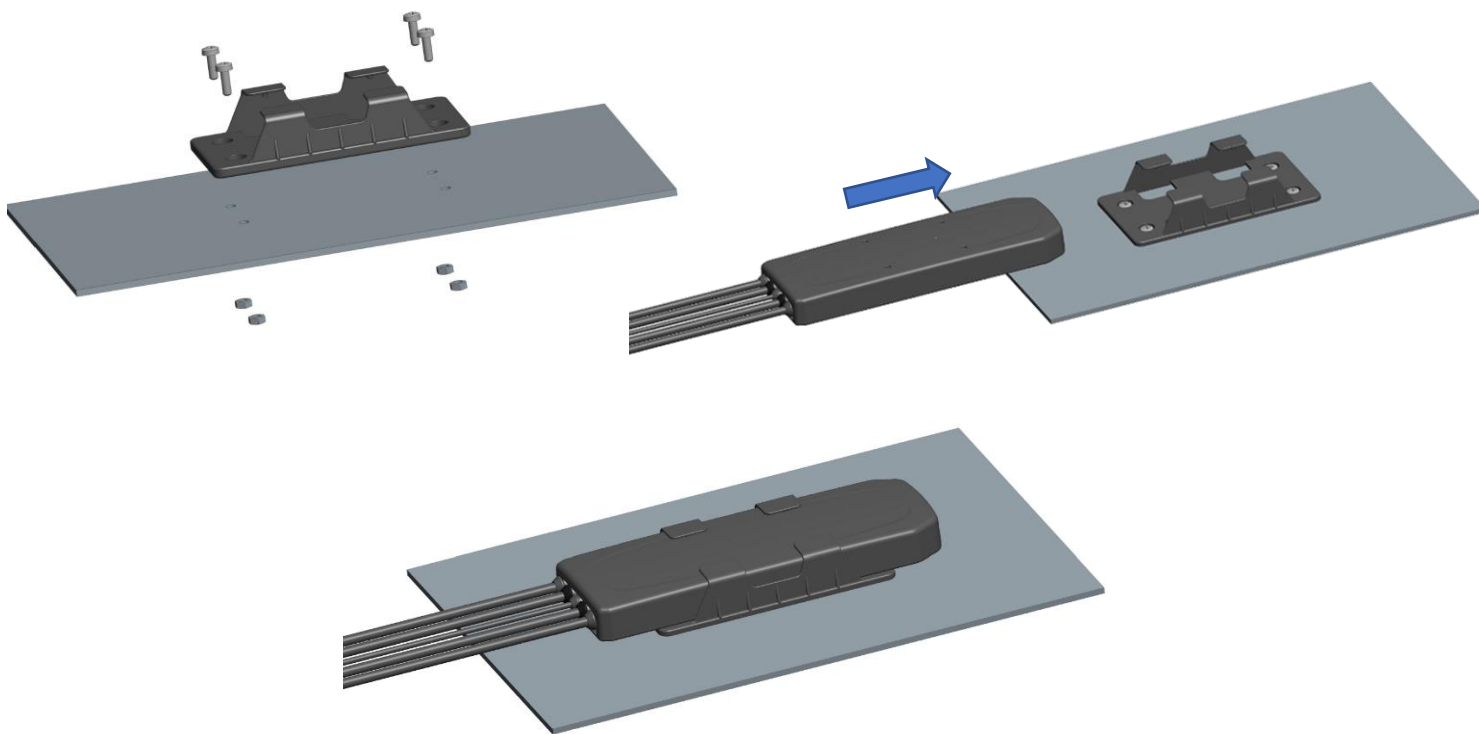
## Assembly

## CDB52211AM

## Option 2

## Plastic Bracket Mount

Firstly, fix the bracket on the customer side with 4pcs M4 screws and 4pcs M4 nuts;  
Then push the antenna into the plastic bracket.



## For More Information:

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