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# Candy Bar
# 5G-NR / GNSS / WiFi 6E/7

*CDB94411AM, 617-7125MHz*



## Features & Applications:

- *9-in-1 combo antenna*
- *4xMiMo 5G-FR1 (4G compatible)*
- *4xMiMo WiFi 6E/7*
- *Active GNSS L1/L2+L5 RHCP Patch antenna*
- *High out of band rejection GNSS filters*
- *Adhesive mount, ideal for plastic and glass surface installation*

| ELECTRICAL SPECIFICATIONS | | | | | | |
|---|---|---|---|---|---|---|
| **General Specifications – 5G FR1 / WiFi 6E/7** | | | | | | |
| **Antenna type** | **Impedance** | **Polarization** | **Rad. Pattern** | **Power withstanding** | | **DC Ground** |
| Dipole/Monopole[1] | 50Ω | Vertical / Linear | Omni | 2W | | No |
| **5G FR1 Antennas: 617 – 7125MHz** | | | | | | |
| **Port** | **Frequency (MHz)** | **617-960** | | **1710-2700** | | **3300-6000** |
| **Port 5G#1, 2,3,4** | **VSWR** | 2:1 | | 2:1 | | 2:1 |
| | **Return Loss (dB)** | <-10 | | <-10 | | <-10 |
| | **Avg. Peak Gain (dBi)** | 3.6 | | 3.9 | | 4.7 |
| | **Avg. Efficiency (%)** | 49 | | 56 | | 52 |
| **Isolation[2]** | **5G Port 1-2-3-4 (dB)** | 8 | | 15 | | 15 |
| **WiFi 6E/7 Antennas: 2400-2500 /5150-7125MHz** | | | | | | |
| **Port** | **Frequency (MHz)** | **2400-2500** | | | **5150-7125** | |
| **Port WIFI#1,2,3, 4** | **VSWR** | 2:1 | | | 2:1 | |
| | **Return Loss (dB)** | <-10 | | | <-10 | |
| | **Avg. Peak Gain (dBi)** | 3.4 | | | 3.1 | |
| | **Avg. Efficiency (%)** | 51 | | | 56 | |
| **Isolation[2]** | **WIFI Port1-2-3-4 (dB)** | 13 | | | 25 | |
| **GNSS Antenna:1164-1602MHz** | | | | | | |
| **Antenna type** | **Nominal Impedance** | | | **Polarization** | | |
| Stacked active patch antenna | 50 Ω | | | RHCP | | |
| **Frequency (MHz)** | L1: 1561-1602MHz | | L2: 1215-1237MHz | | L5: 1164-1189MHz | |
| **Return Loss (dB)** | < -10 @L1 | | < -13@L2 | | < -15@L5 | |
| **LNA Gain Typical (dB)** | 28dB ± 2 dB | | | | | |
| **Noise Figure (dB)** | 1.7 @1575MHz, 2.2@1227MHz, 2.2 @1164MHz | | | | | |
| **Current consumption** | <16 mA | | | | | |
| **DC voltage in via GNSS RF cable[3]** | 2.5-18 Vdc | | | | | |
| **ESD protected** | Yes | | | | | |

Notes:
1. 5G-FR1: Multiband Dipoles, WiFi 6E/7: Multi-Band Monopoles with built in ground plane
2. Minimum Isolation (dB)
3. LNA internal voltage stabilized by LDO (Low dropout regulator)

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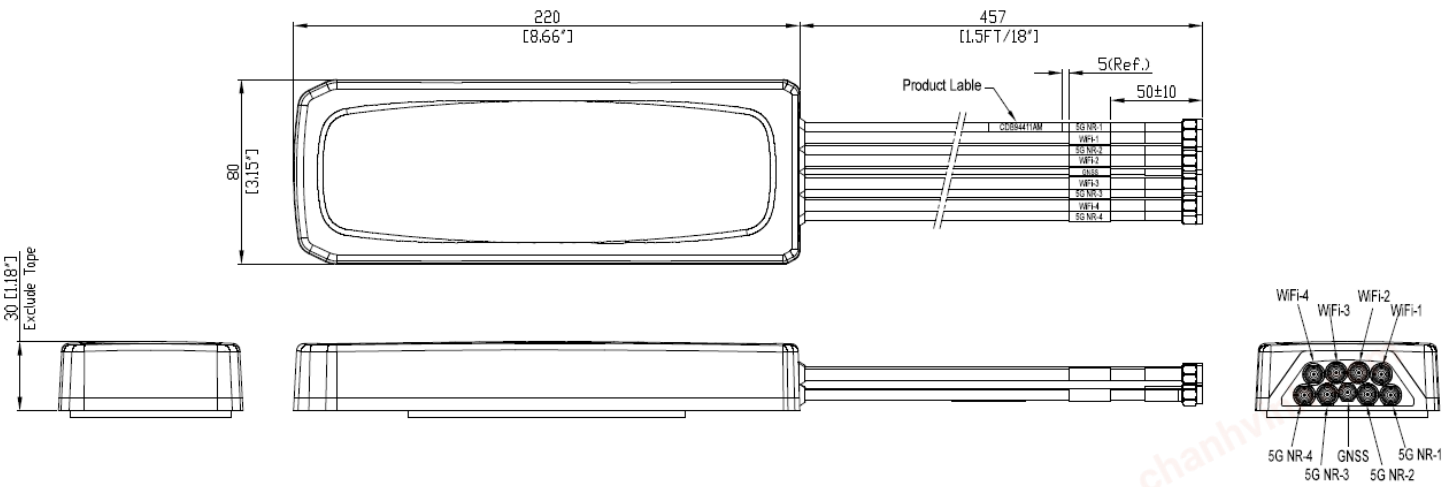
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| MECHANICAL SPECIFICATIONS | | | | |
|---|---|---|---|---|
| **CDB94411AM** | | | | |
| **Dimension (L x W x H)** | **Weight** | **Color** | **Fixing System** | **Housing Material** |
| 220 x 80 x 30 mm (8.66” x 3.15”x 1.18”) | 380 g | Black | Adhesive Mount (3M VHB 4991(Gray)) | PC (UV-stabilized) |
| **Wireless Technology** | **No. of Port** | **Cable Length** | **Cable Type** | **Connector Type** |
| 5G FR1/LTE | 4 | 1.5FT (457mm) | LMR195 | SMA Male |
| GNSS | 1 | 1.5FT (457mm) | RG174 | SMA Male |
| WiFi 6E/7 | 4 | 1.5FT (457mm) | LMR195 | SMA Male |

| ENVIRONMENTAL SPECIFICATIONS | | | |
|---|---|---|---|
| **CDB94411AM** | | | |
| **Storage Temperature** | **Operating Temperature** | **Ingress Protection** | **RoHS Compliant** |
| -40 / +85° C | -40 / +85° C | IP65 | Yes |

## Mechanical Drawing

**CDB94411AM**




Unit: mm/ inches

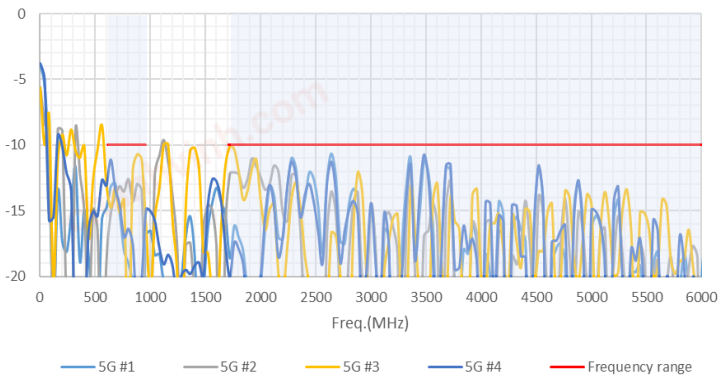
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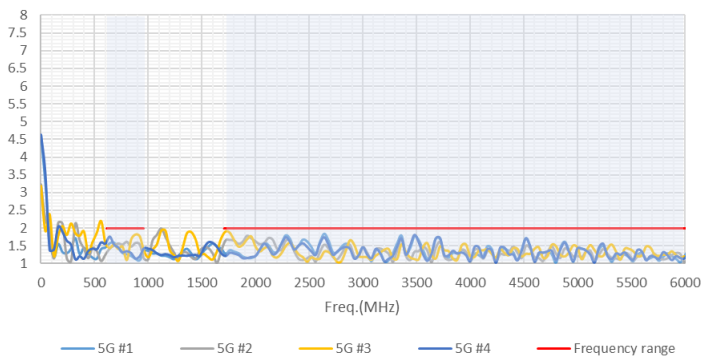
## Charts

### Test data

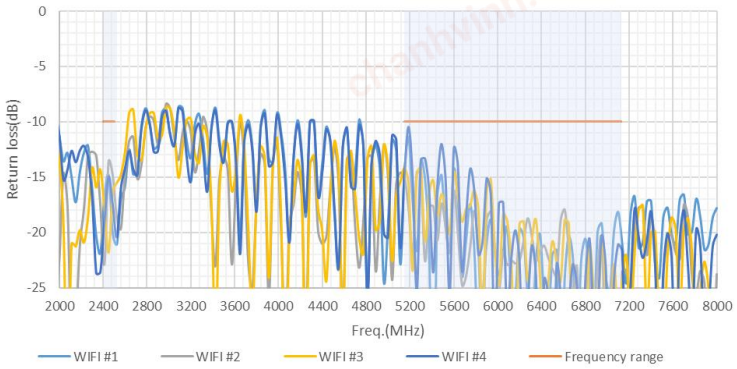
Return Loss vs Frequency
Measured at PSU 20240725



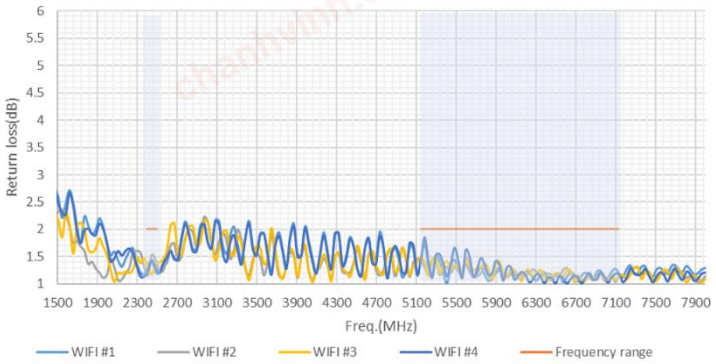

VSWR vs Frequency
Measured at PSU 20240725



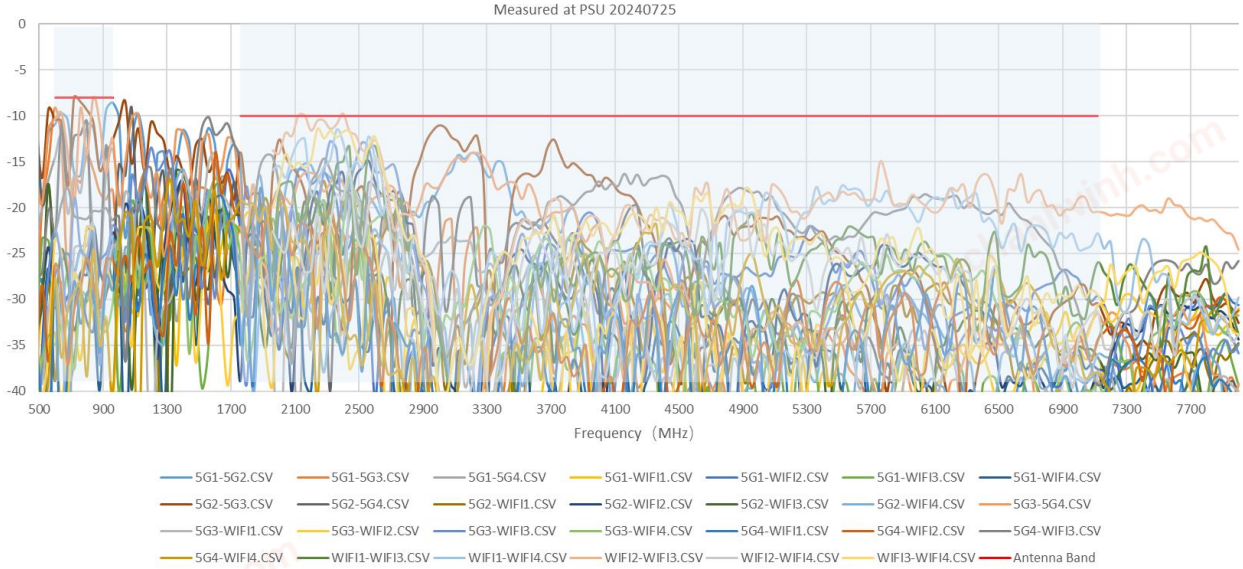

Return Loss vs Frequency
Measured at PSU 20240730




VSWR vs Frequency
Measured at PSU 20240730




Isolation Vs Frequency
***CDB94411AM* Measured with 17ft LMR-195 in free space**
Measured at PSU 20240725



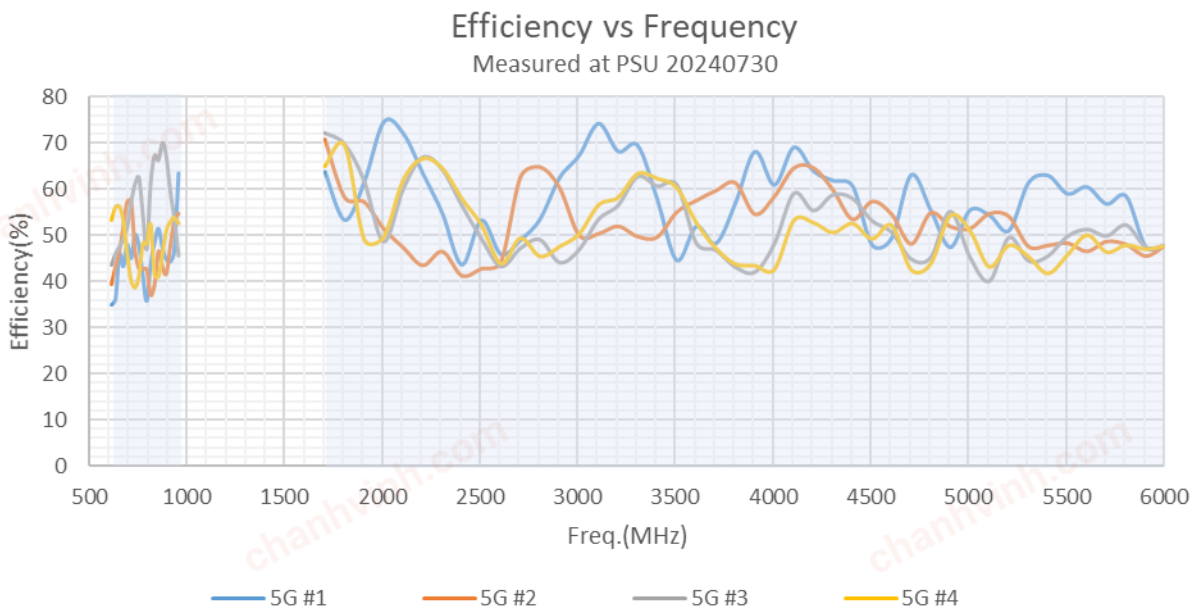

* Antenna test in free space and 17-ft LMR195 cables

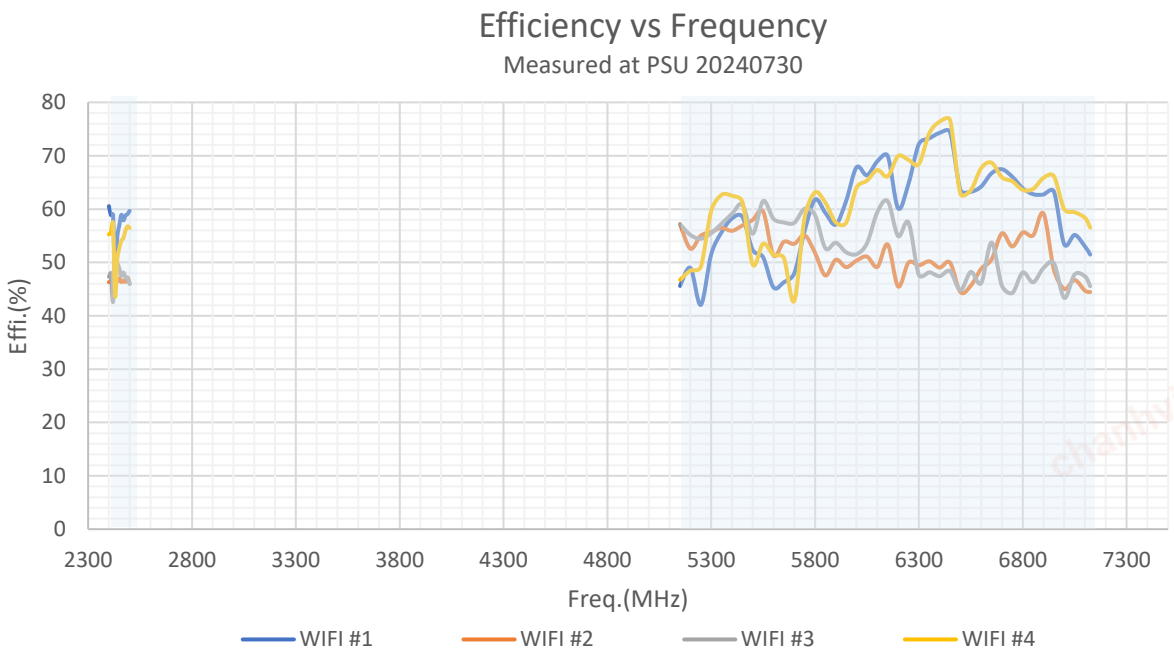
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## Charts

Test data



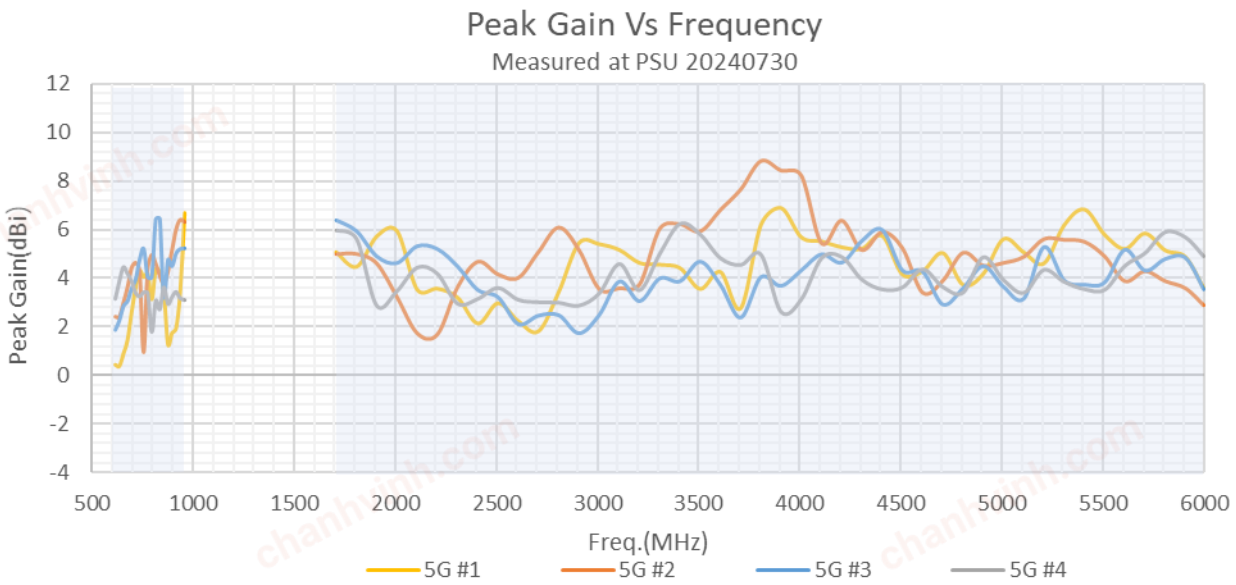

* Antenna test in free space and 1-ft LMR195 cables

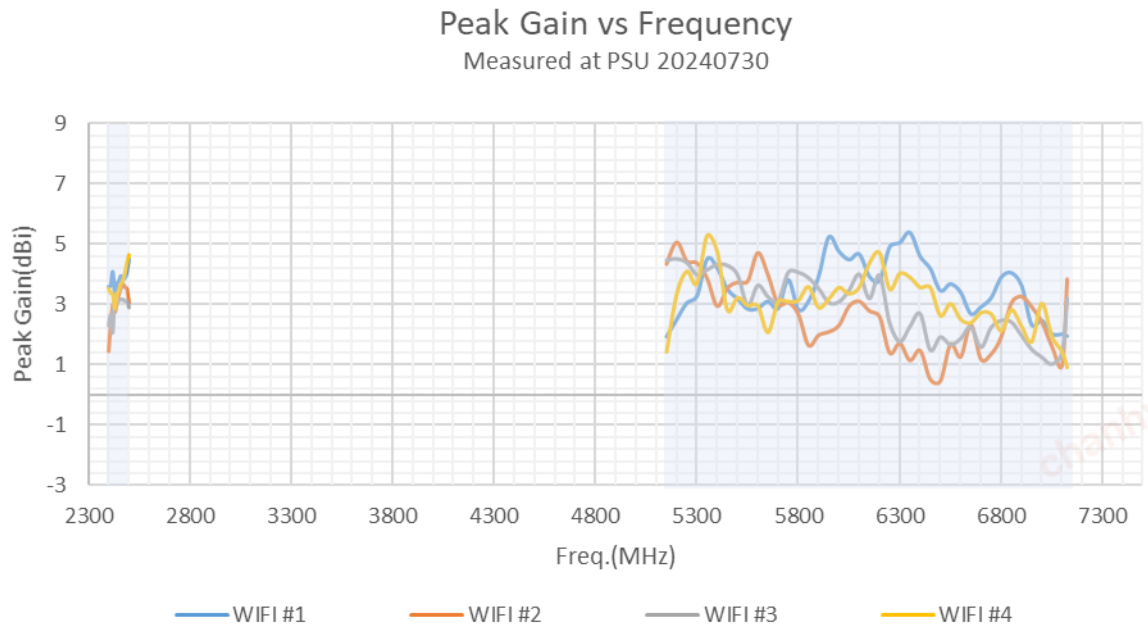
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Test data




* Antenna test in free space and 1-ft LMR195 cables

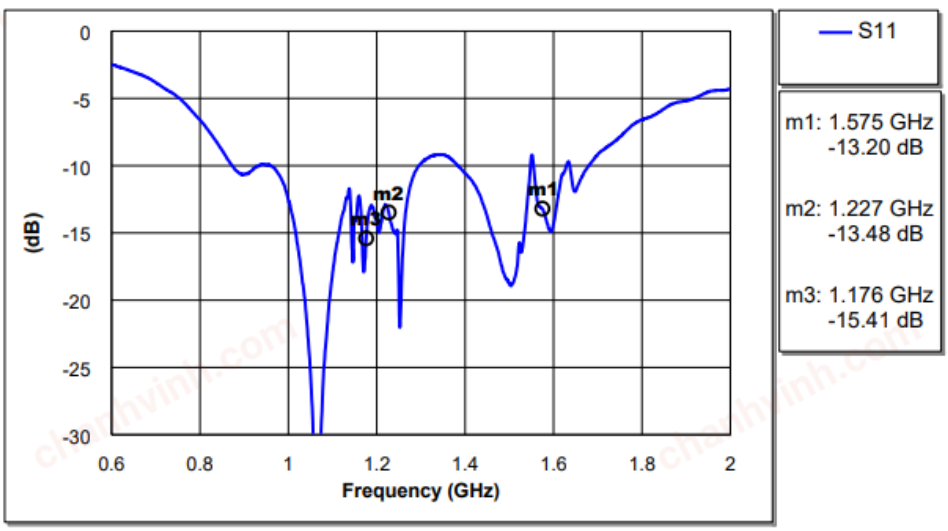
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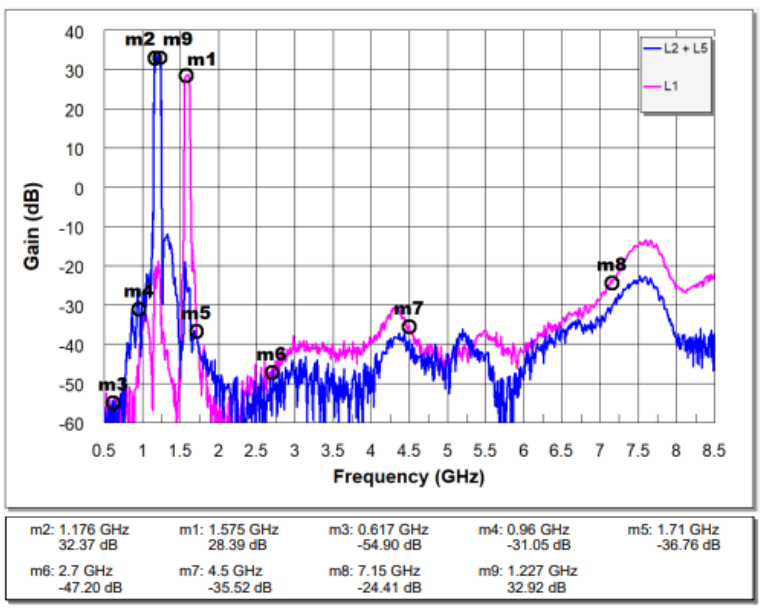
## Charts

Test data
GNSS Antenna

### Return Loss




### LNA Out of band rejection



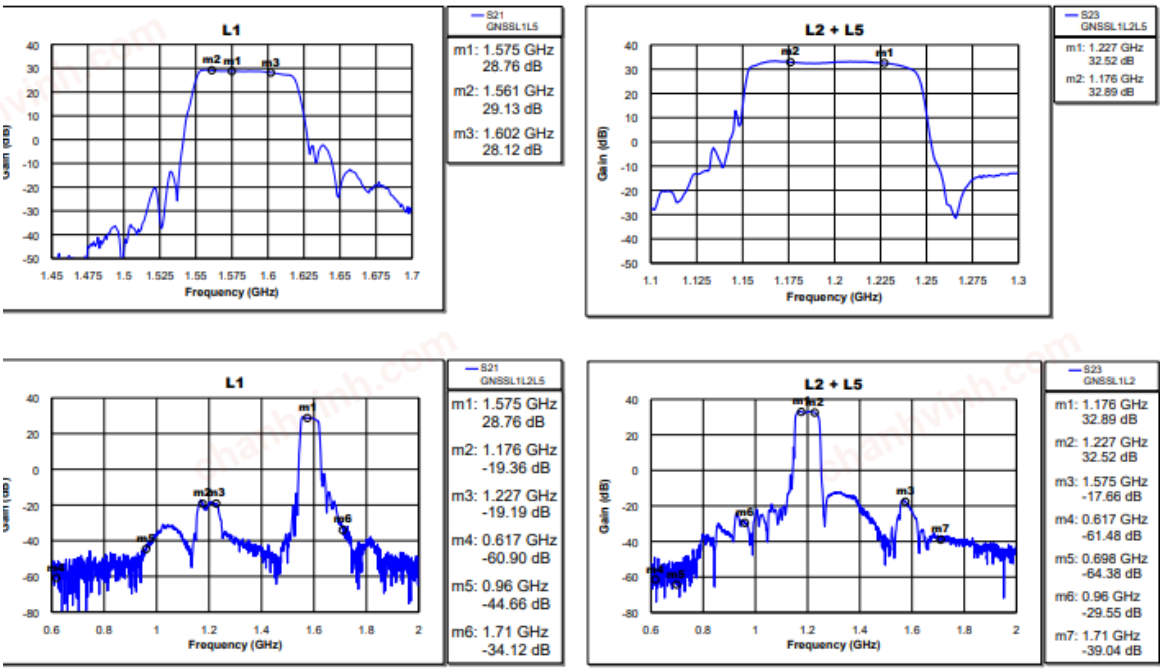
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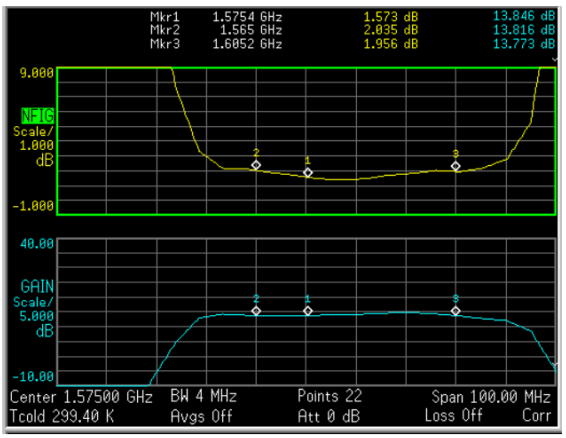
## Charts

Test data
GNSS Antenna

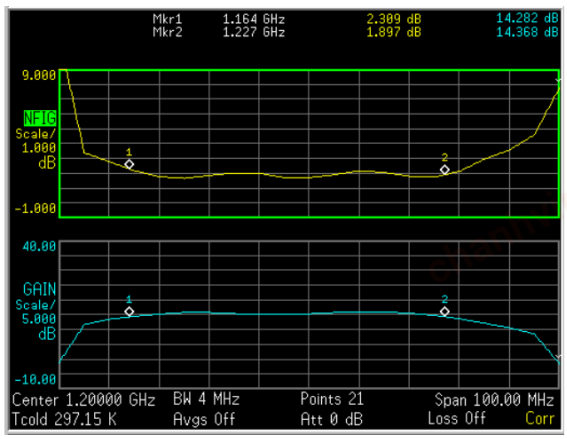
### LNA Gain




### LNA Noise Figure




L1 Noise Figure




L2 + L5 Noise Figure

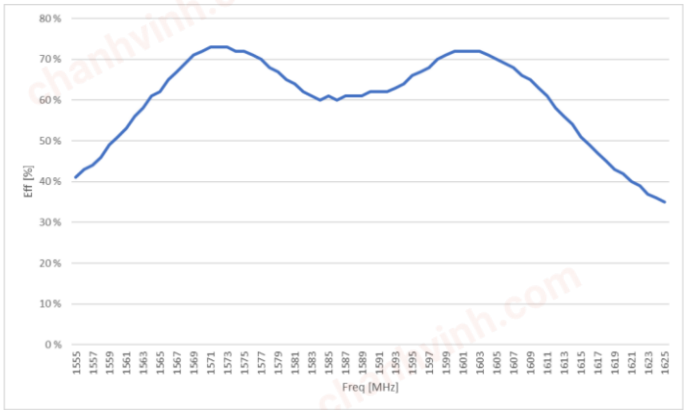
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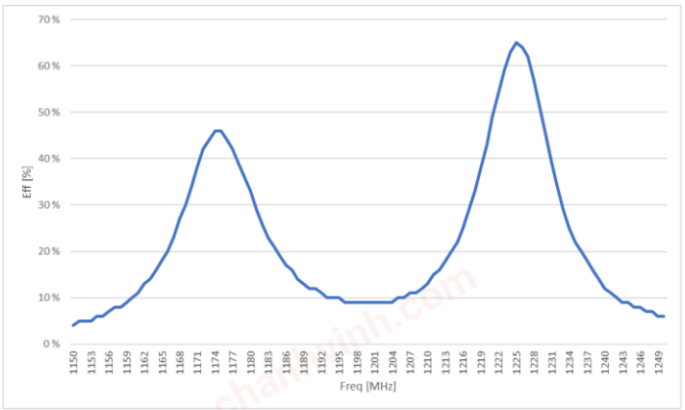
## Charts

Test data
GNSS Antenna

### Radiating Element Efficiency

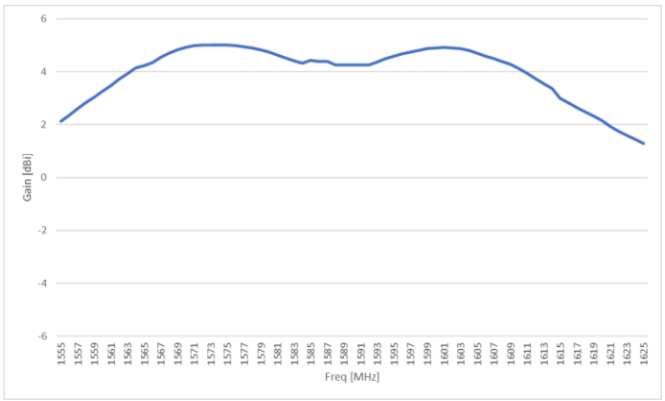



L1 Band

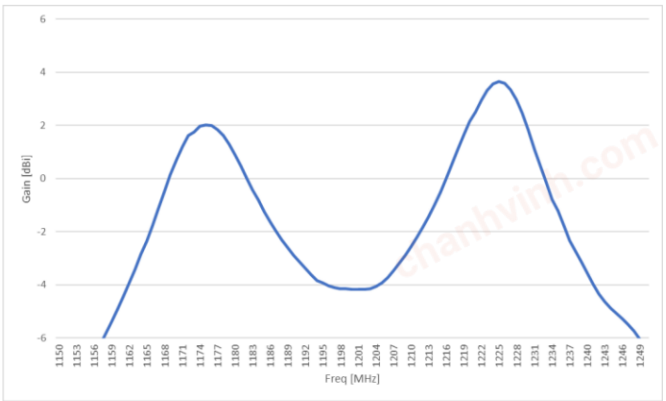



L2 + L5 Band

### Radiating Element Peak Gain (Linear)




L1 Band




L2 + L5 Band

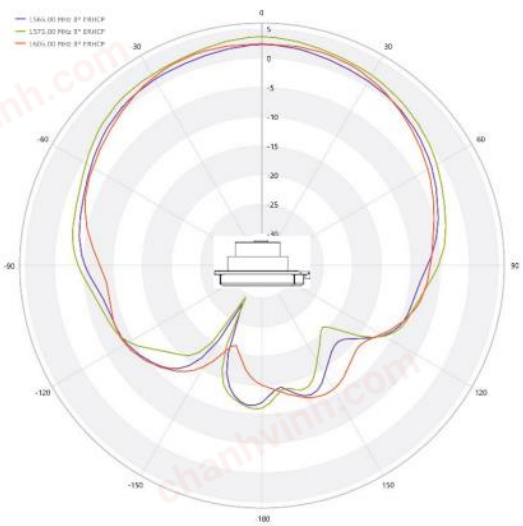
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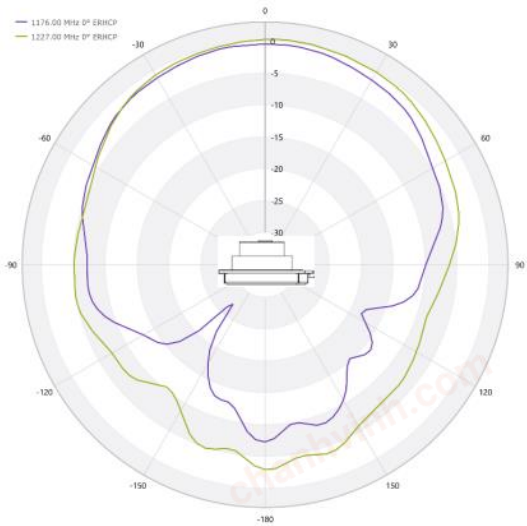
## Charts

Test data
GNSS Antenna

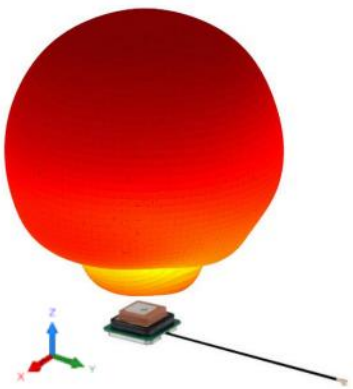
Radiation Patterns RHCP (dBic)



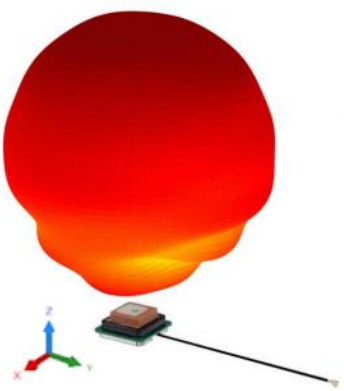
L1 RHCP Pattern



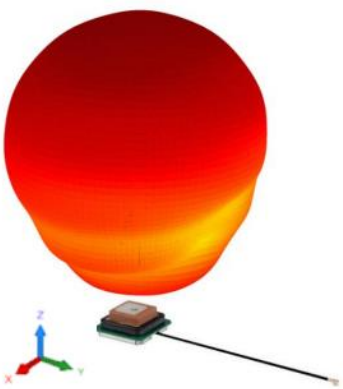
L2 + L5 RHCP Pattern



L1 3D RHCP Pattern
@1575 MHz



L2 3D RHCP Pattern
@1227 MHz



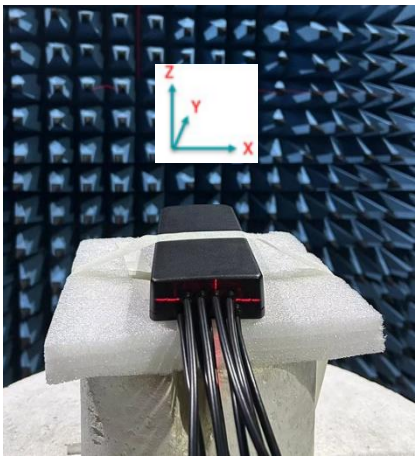
L5 3D RHCP Pattern
@1176 MHz

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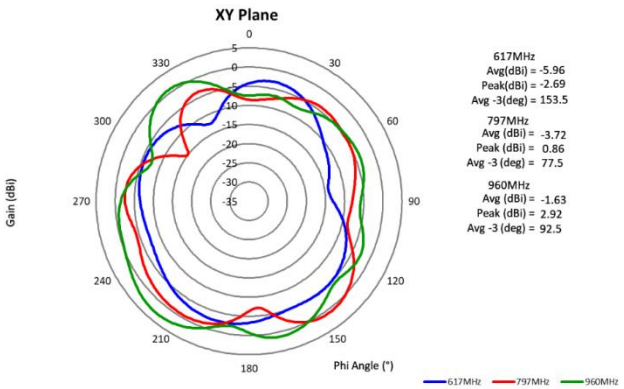
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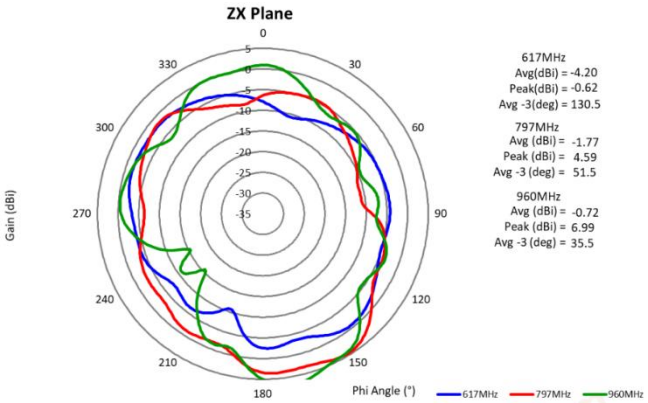
CDB94411AM

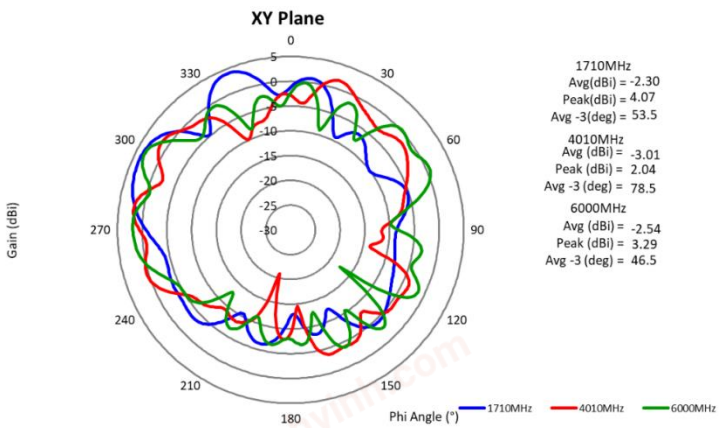


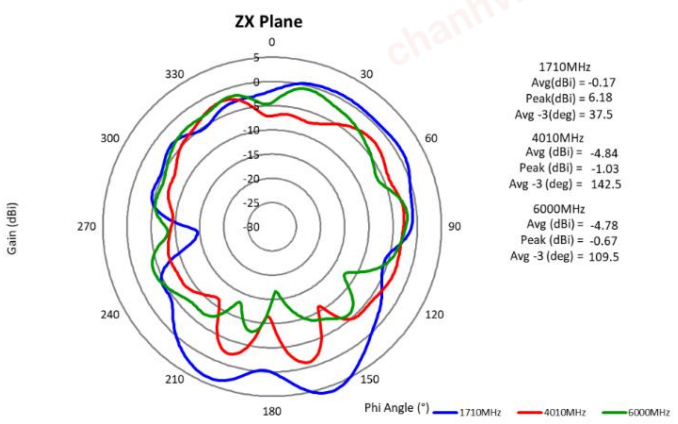

## Radiation Pattern

Test data
5G NR-Antenna 1



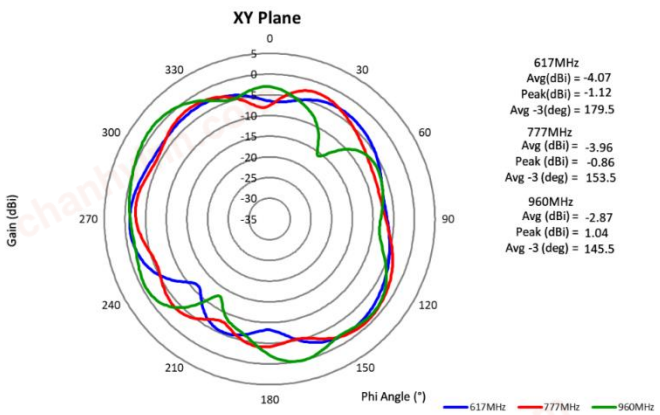



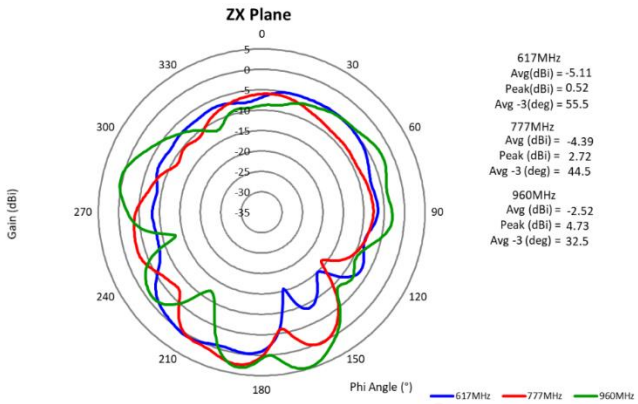
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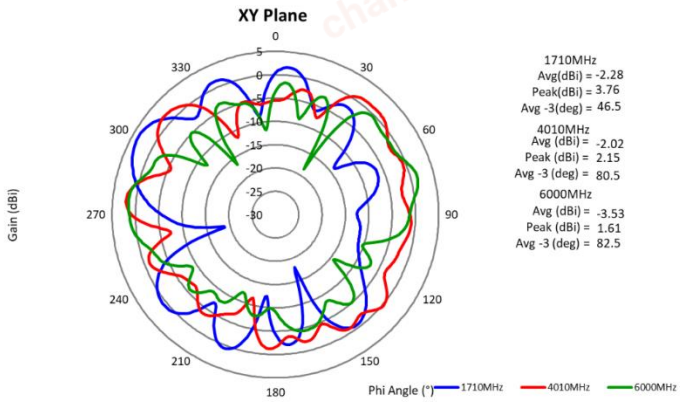
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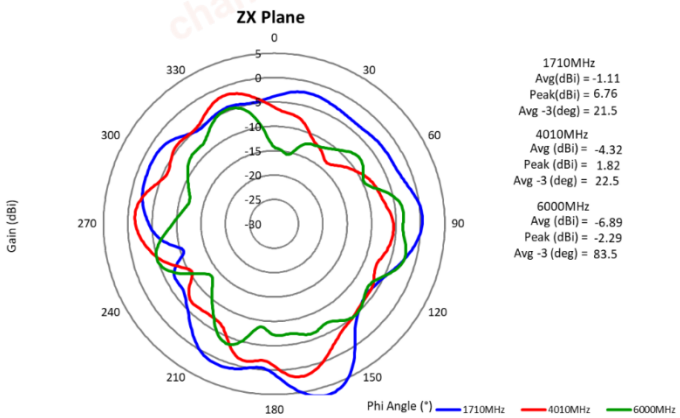
## Radiation Pattern

Test data
5G NR-Antenna 2



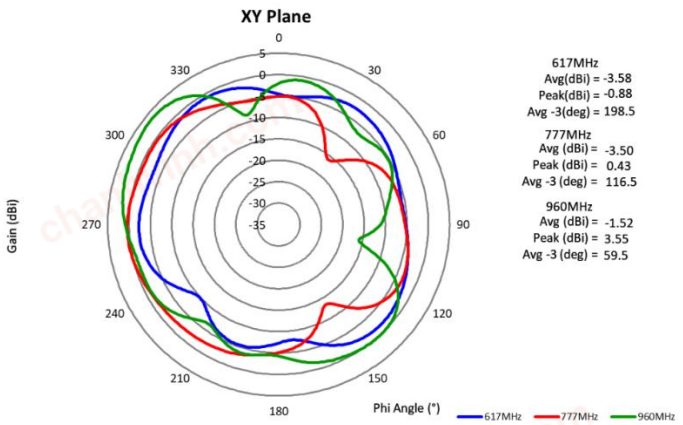



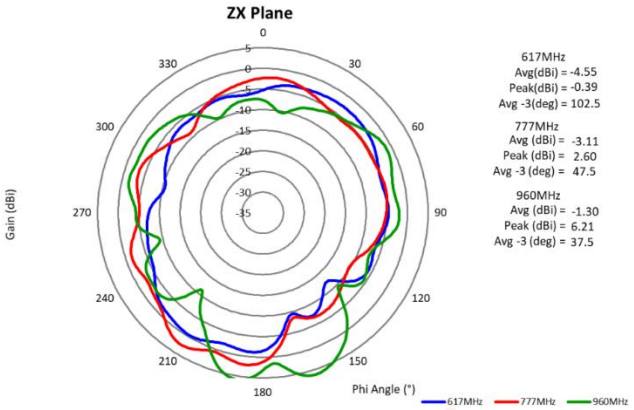
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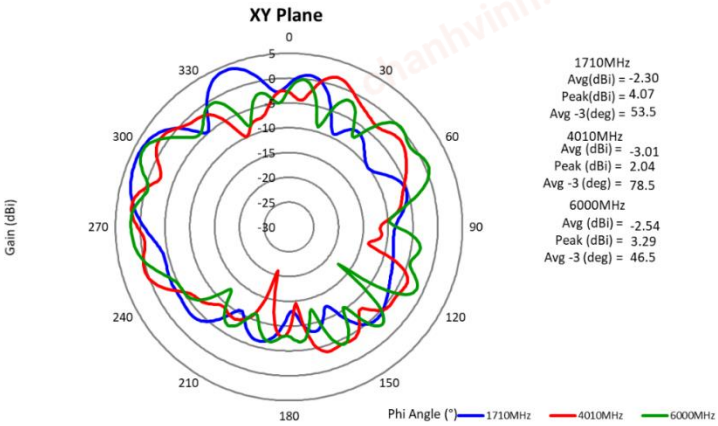
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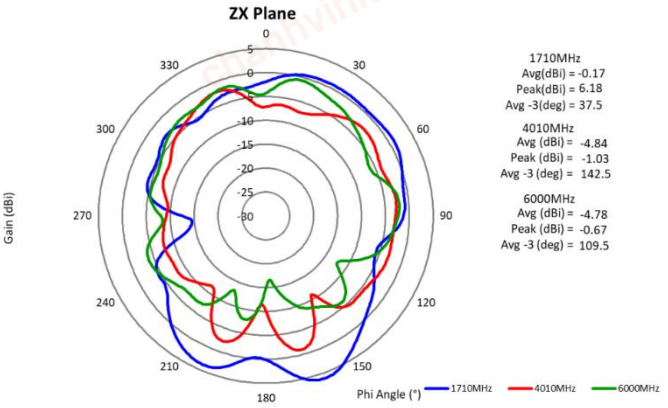
## Radiation Pattern

Test data
5G NR-Antenna 3



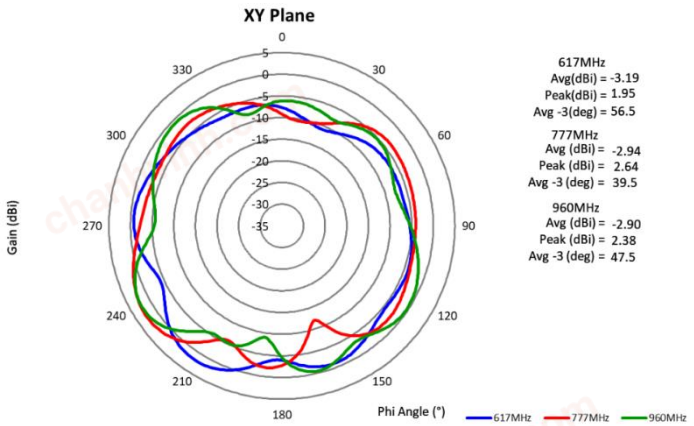



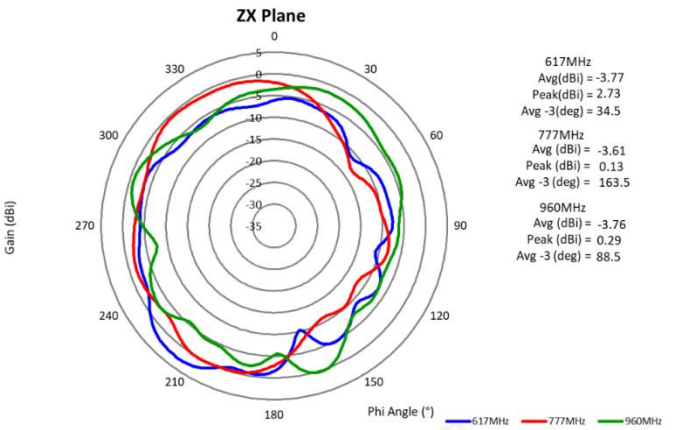



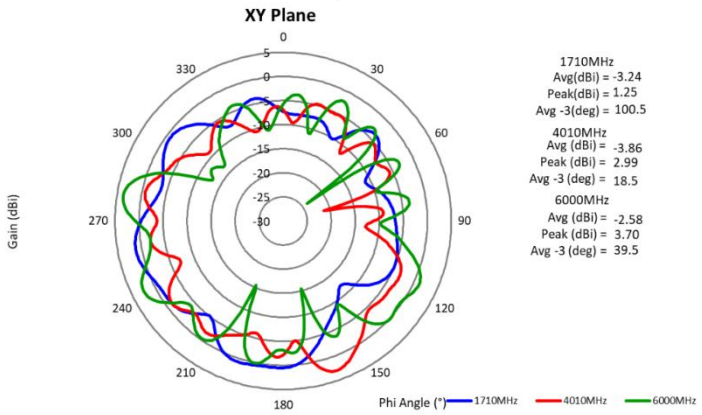
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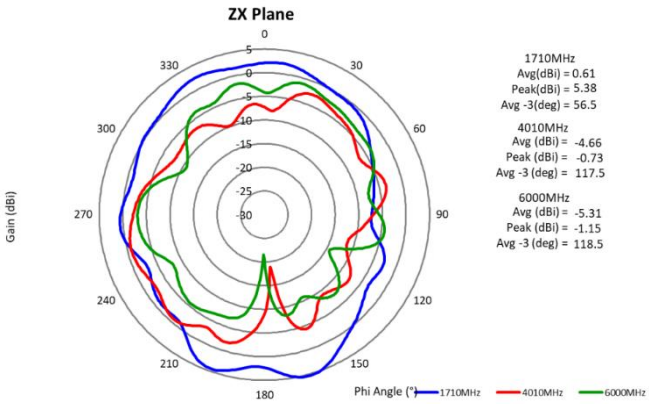
## Radiation Pattern

Test data
5G NR-Antenna 4



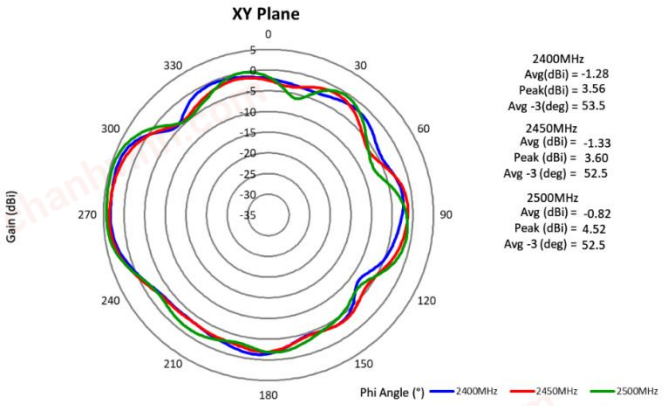



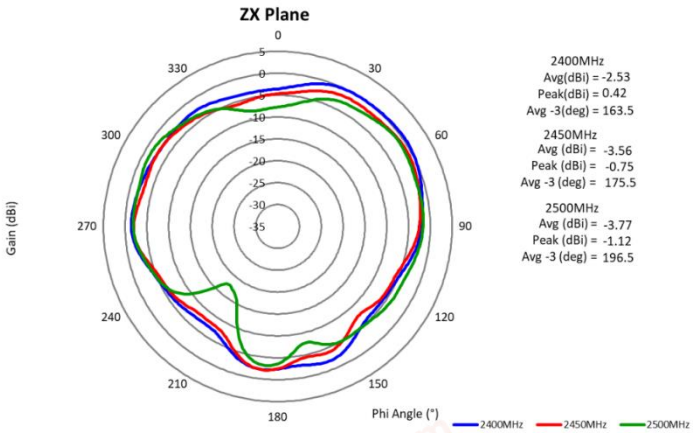
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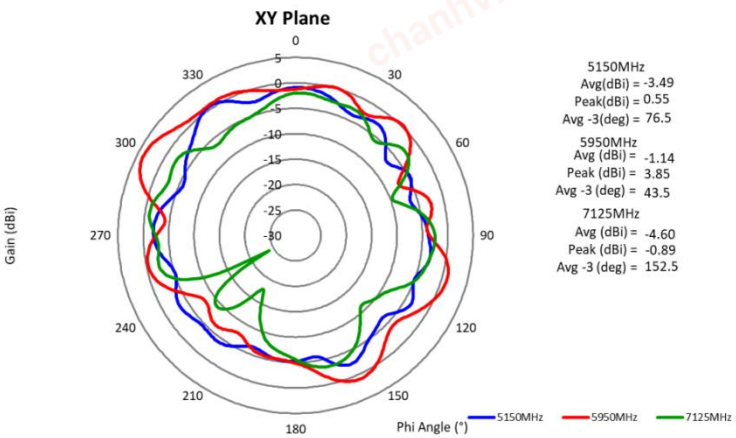
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## 5G-NR / GNSS / WiFi 6E/7
*CDB94411AM, 617-7125MHz*

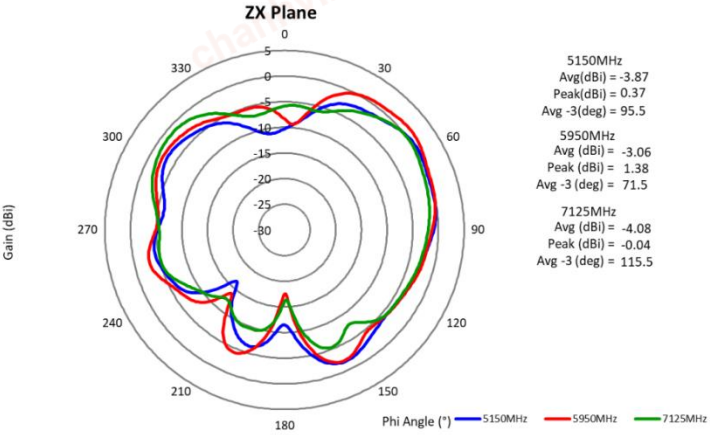
## Radiation Pattern

Test data
WiFi-Antenna 1



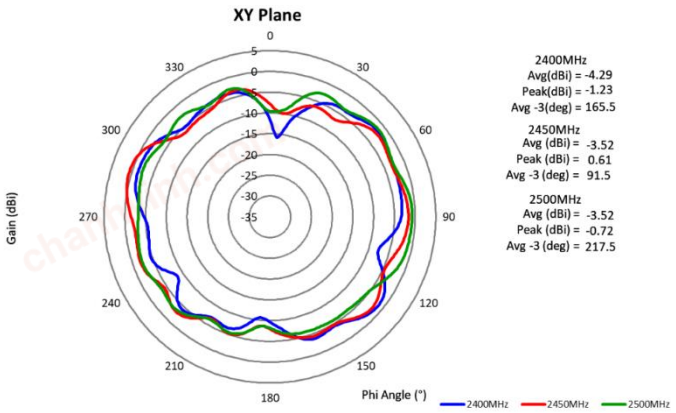



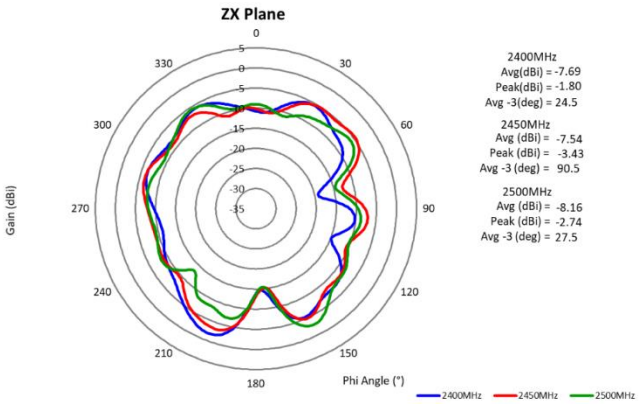
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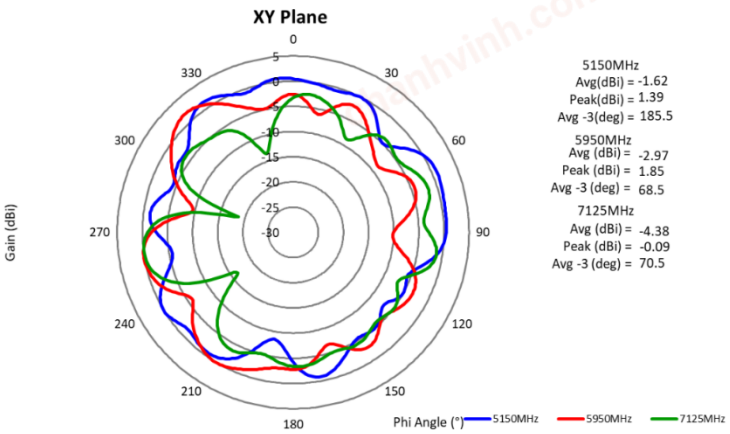
# Candy Bar
## 5G-NR / GNSS / WiFi 6E/7
*CDB94411AM, 617-7125MHz*

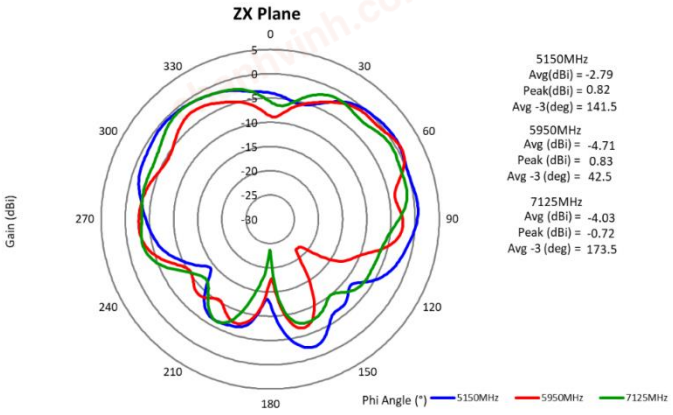
## Radiation Pattern

Test data
WiFi-Antenna 2



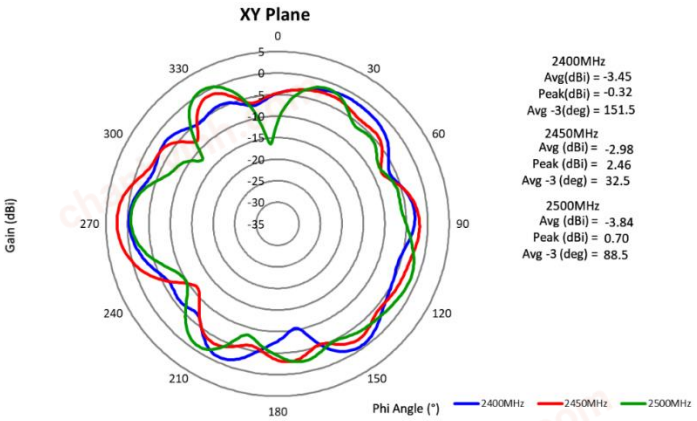



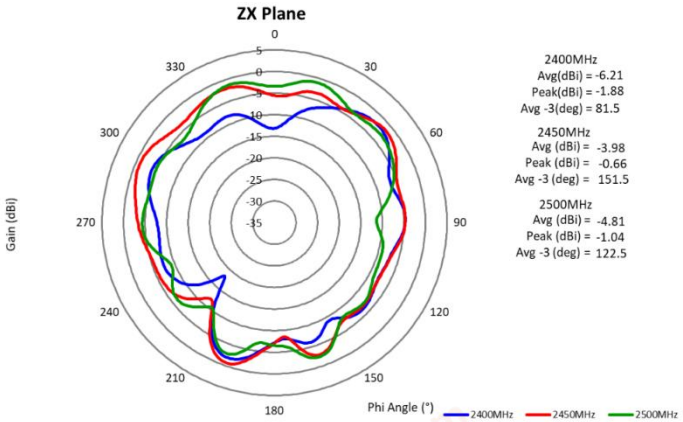
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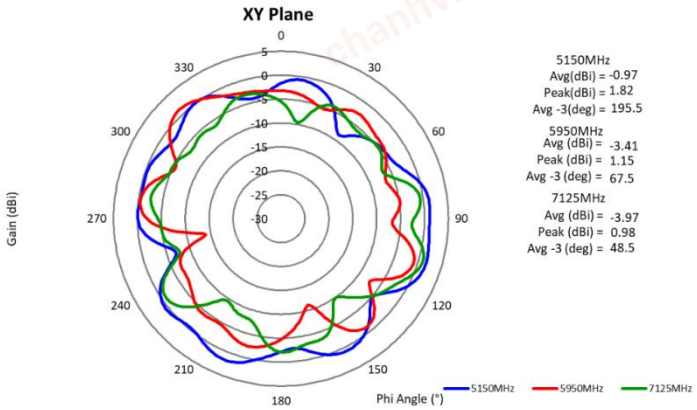
# Candy Bar
## 5G-NR / GNSS / WiFi 6E/7
*CDB94411AM, 617-7125MHz*

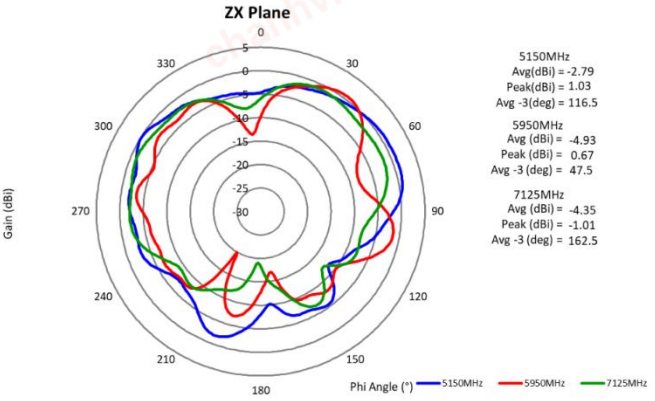
## Radiation Pattern

Test data
WiFi-Antenna 3



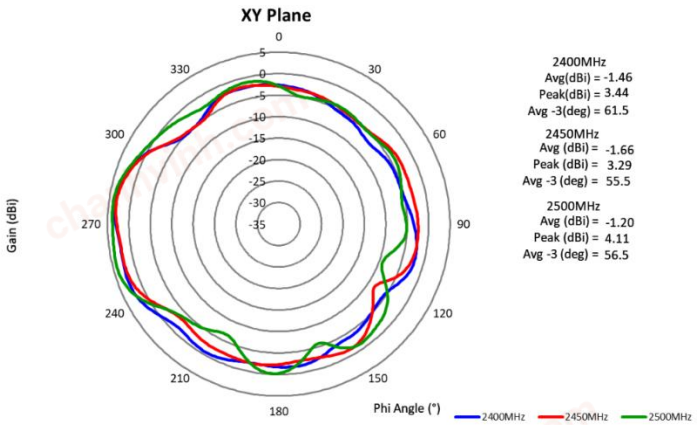



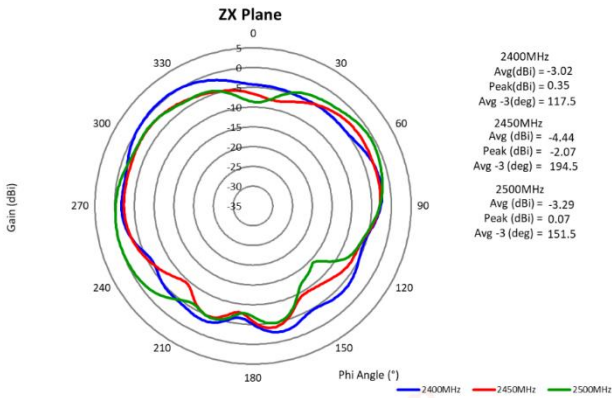
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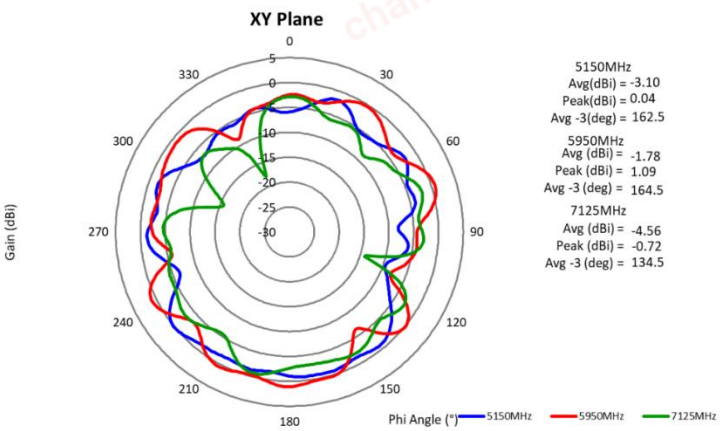
# Candy Bar
## 5G-NR / GNSS / WiFi 6E/7
*CDB94411AM, 617-7125MHz*

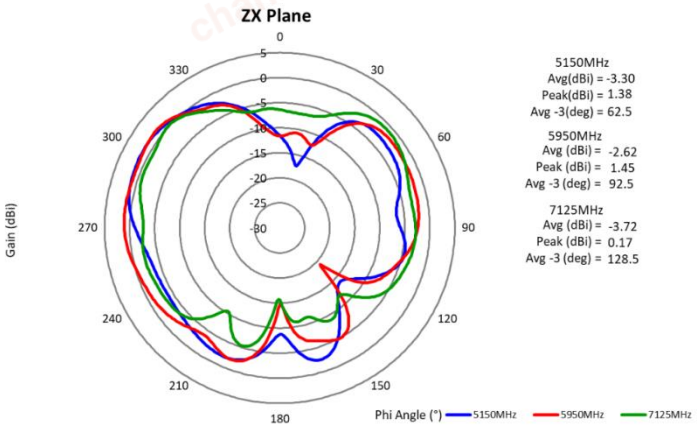
## Radiation Pattern

Test data
WiFi-Antenna 4



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## Packing

**CDB94411AM**

| | |
|---|---|
| 1.Put one antenna and one bag accessories into a big packing bag. |  |
| 2. Put the partition board into the outer box, and put 2 products in every grid,<br>12 sets products per outer box. |   |

For More Information:
Americas - antennas.us@pulseelectronics.com | Europe – antennas.eu@pulseelectronics.com | Asia – antennas.as@pulseelectronics.com | Questions? +1-800-ANTENNA
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