



## **AP-3025 Antenna Check Sheet**



**Revision History:**

| Version | Date       | Change Description                     |
|---------|------------|----------------------------------------|
| 1.0     | 2022/12/28 | New Release                            |
| 2.0     | 2023/01/09 | Add pattern and gain table description |
|         |            |                                        |
|         |            |                                        |
|         |            |                                        |
|         |            |                                        |



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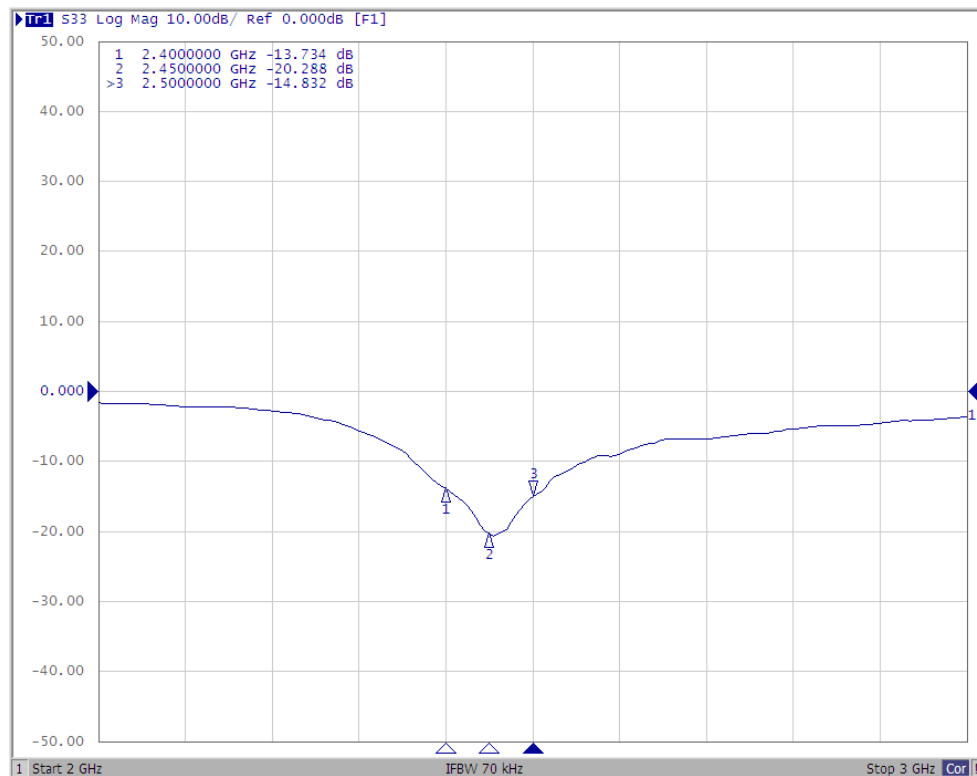
**Antenna Specification**

| Ant. | Antenna.<br>model | Antenna<br>type | Antenna<br>Gain<br>(dBi) | Frequency<br>Range<br>from GHz<br>to GHz | Connector<br>type | Cable<br>length (cm) | Remark      |
|------|-------------------|-----------------|--------------------------|------------------------------------------|-------------------|----------------------|-------------|
| #1   | NYS5390           | Dipole          | 6.5                      | 2.4~2.5                                  | IPEX              | 3                    | 2.4G-1Black |
| #2   | NYS5390           | Dipole          | 6.5                      | 2.4~2.5                                  | IPEX              | 3                    | 2.4G-2 Gray |
| #3   | NYS5390           | Dipole          | 5                        | 5.15~5.85                                | IPEX              | 3                    | 5G-1 Black  |
| #4   | NYS5390           | Dipole          | 5                        | 5.15~5.85                                | IPEX              | 3                    | 5G-2 Gray   |

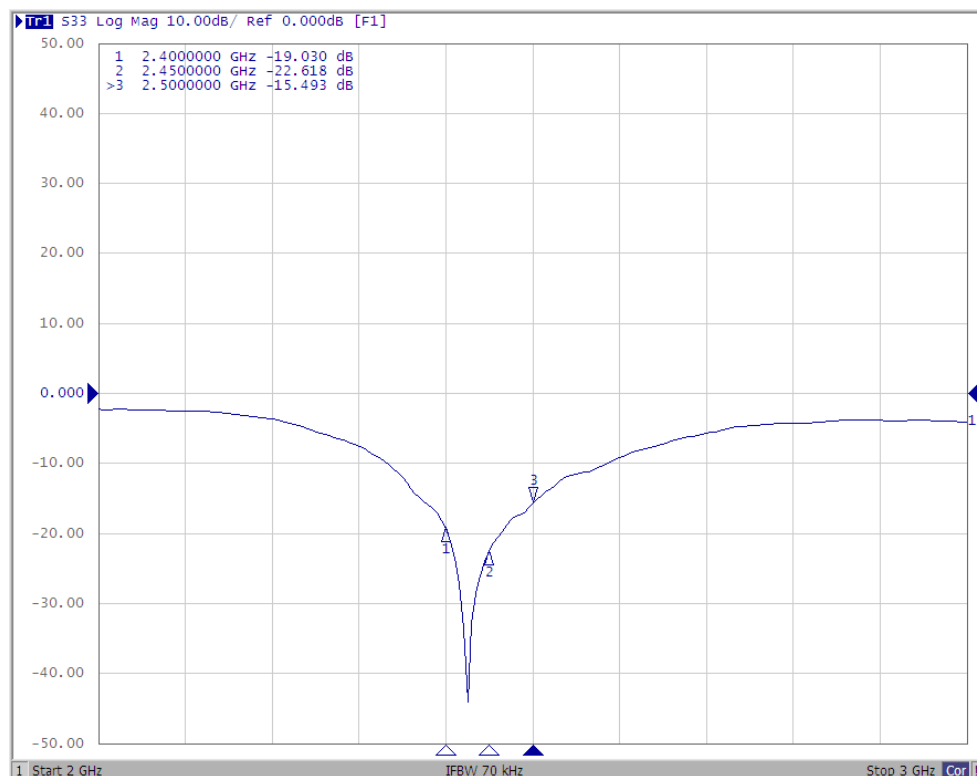
### Test Result:

Return Loss

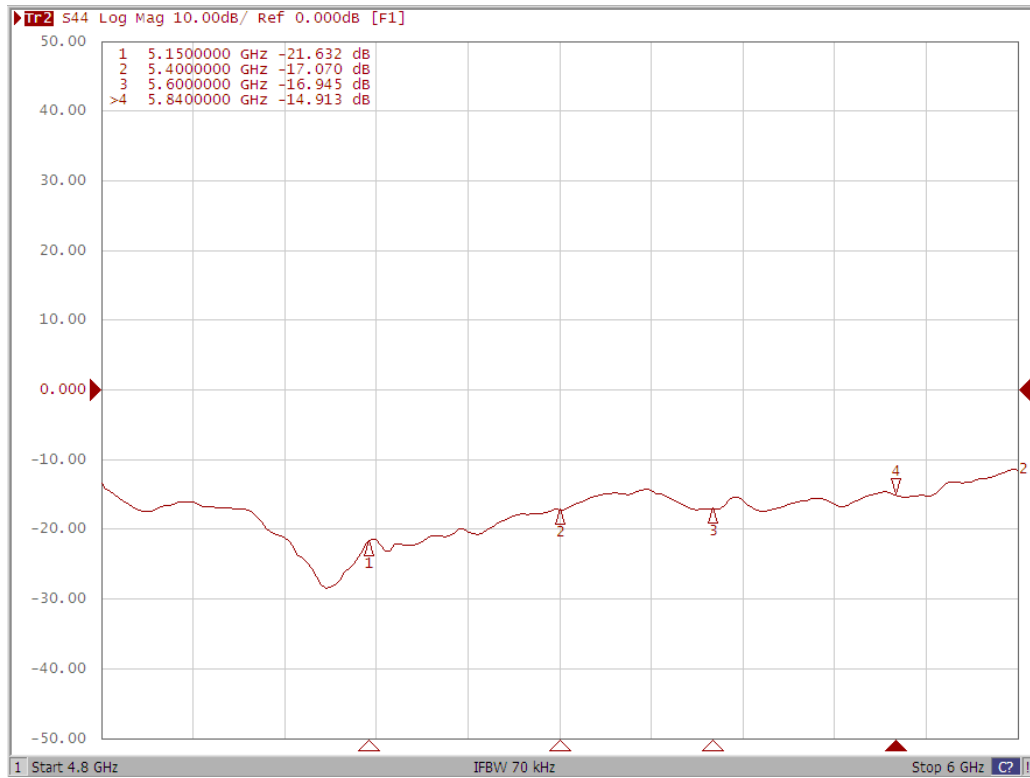
2.4G-1



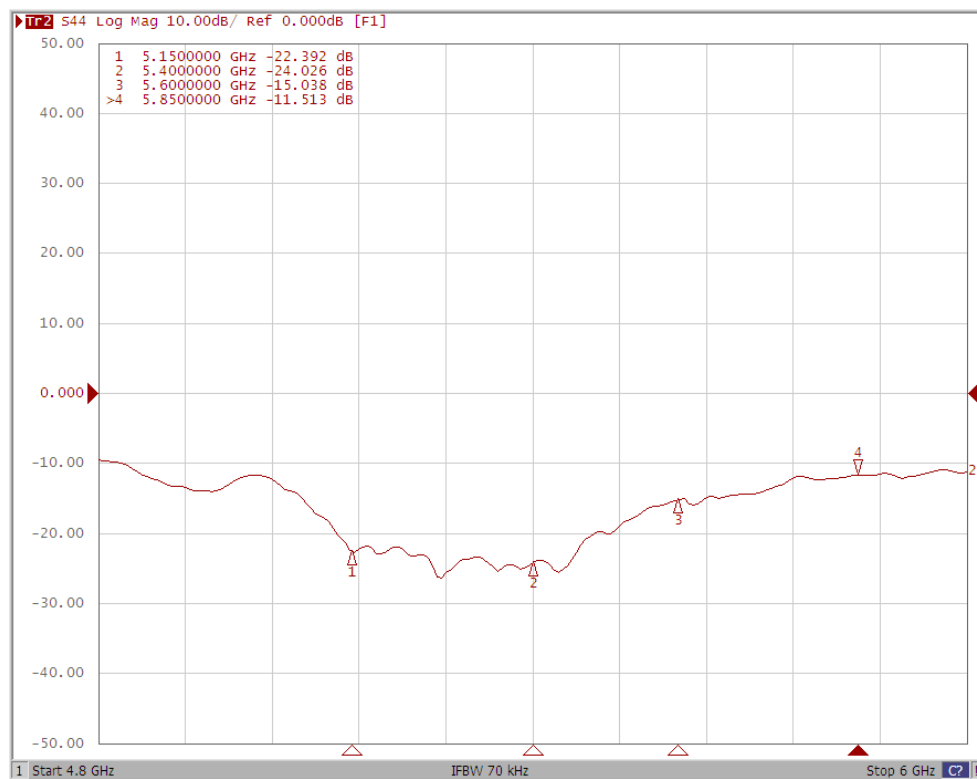
2.4G-2



### 5G-1

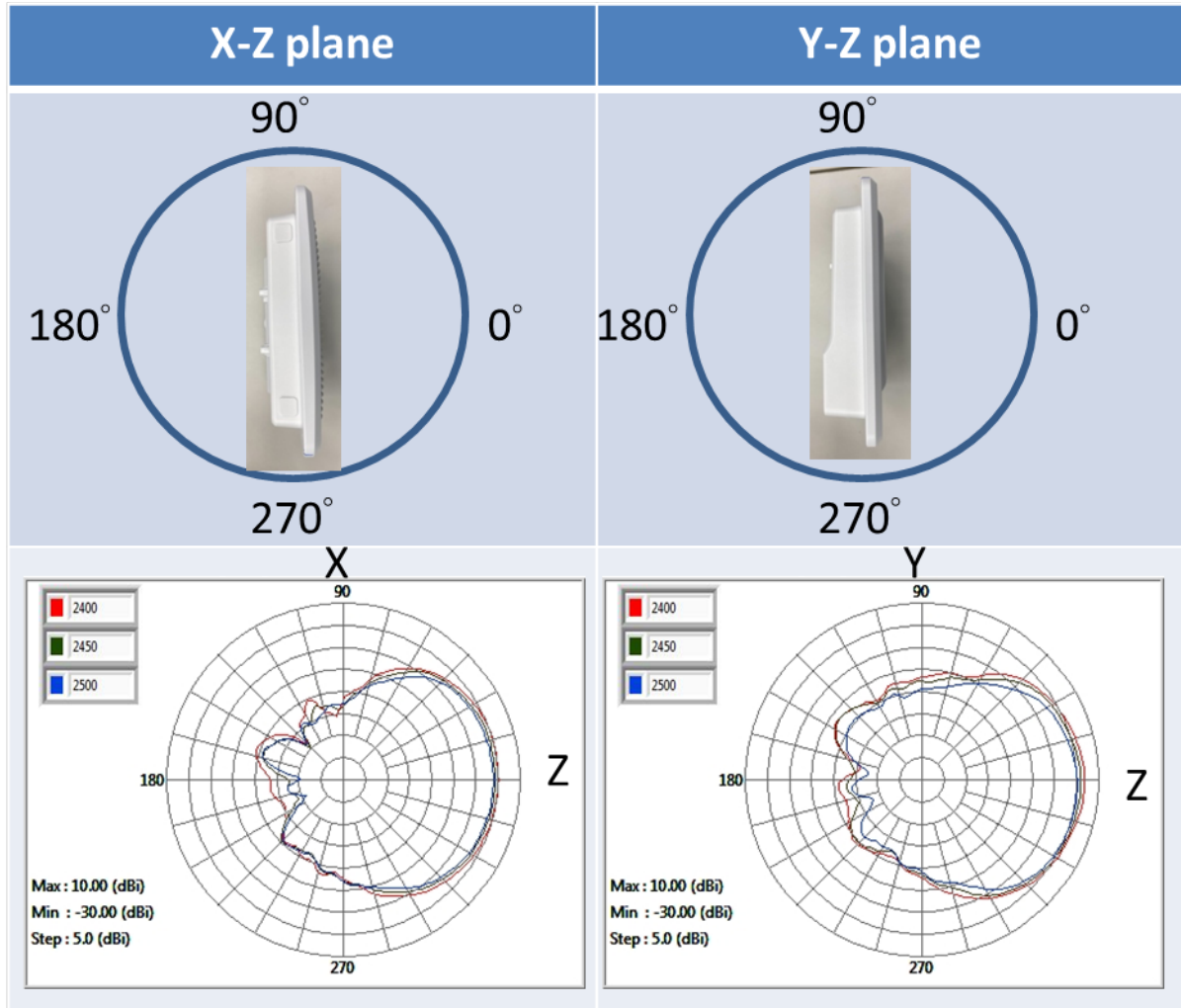


### 5G-2

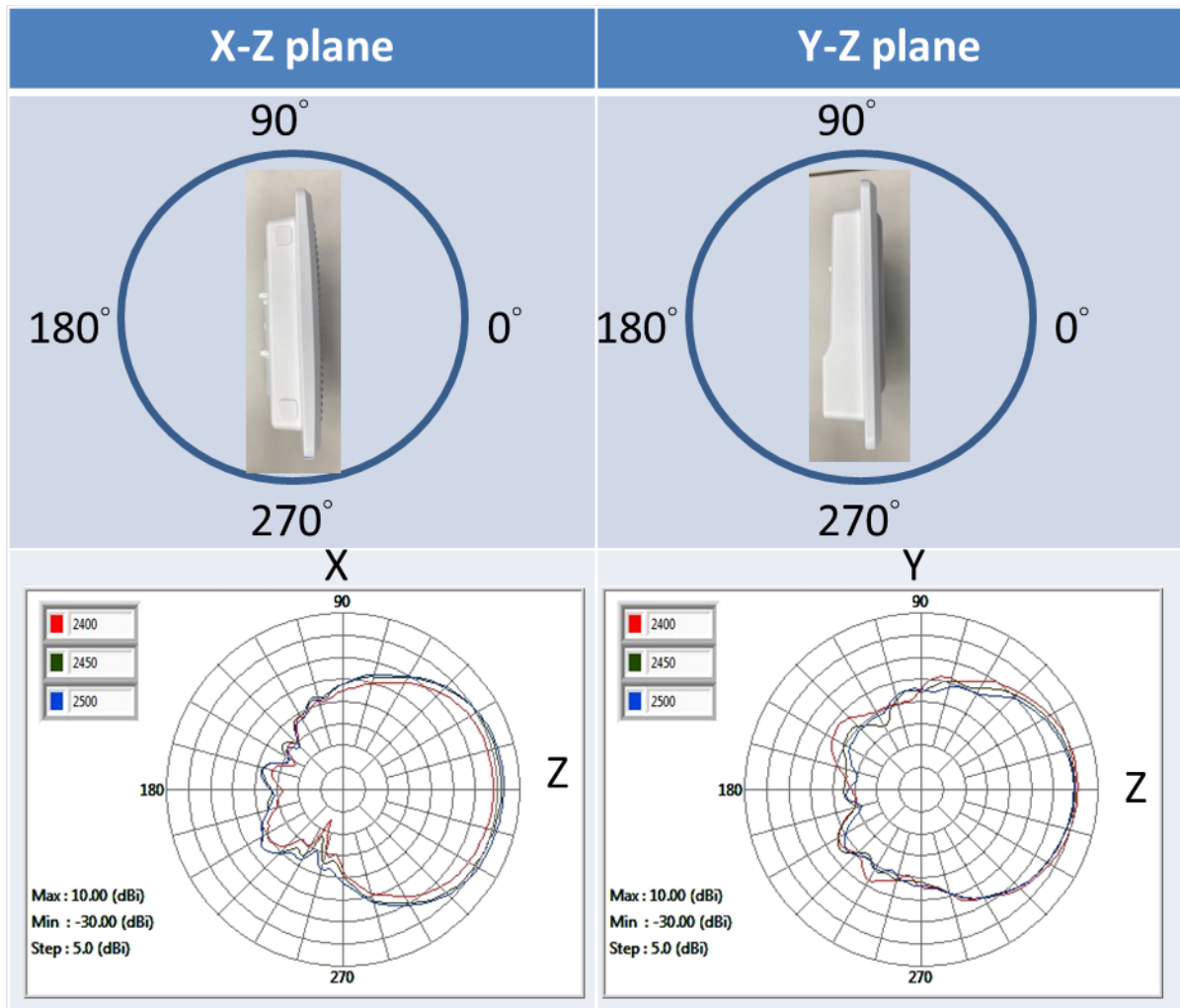


### 2D Radiation Patterns:

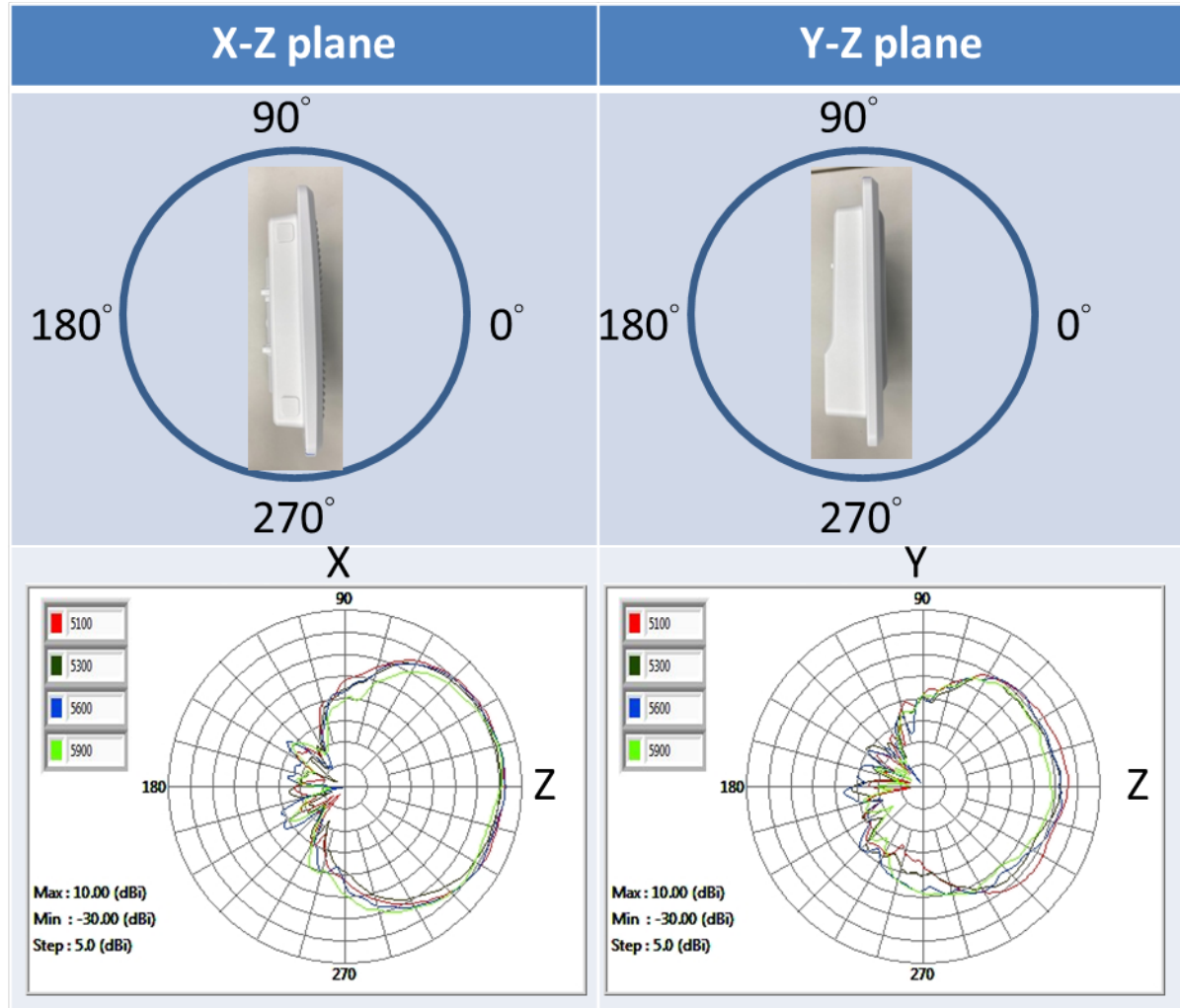
2.4G-1



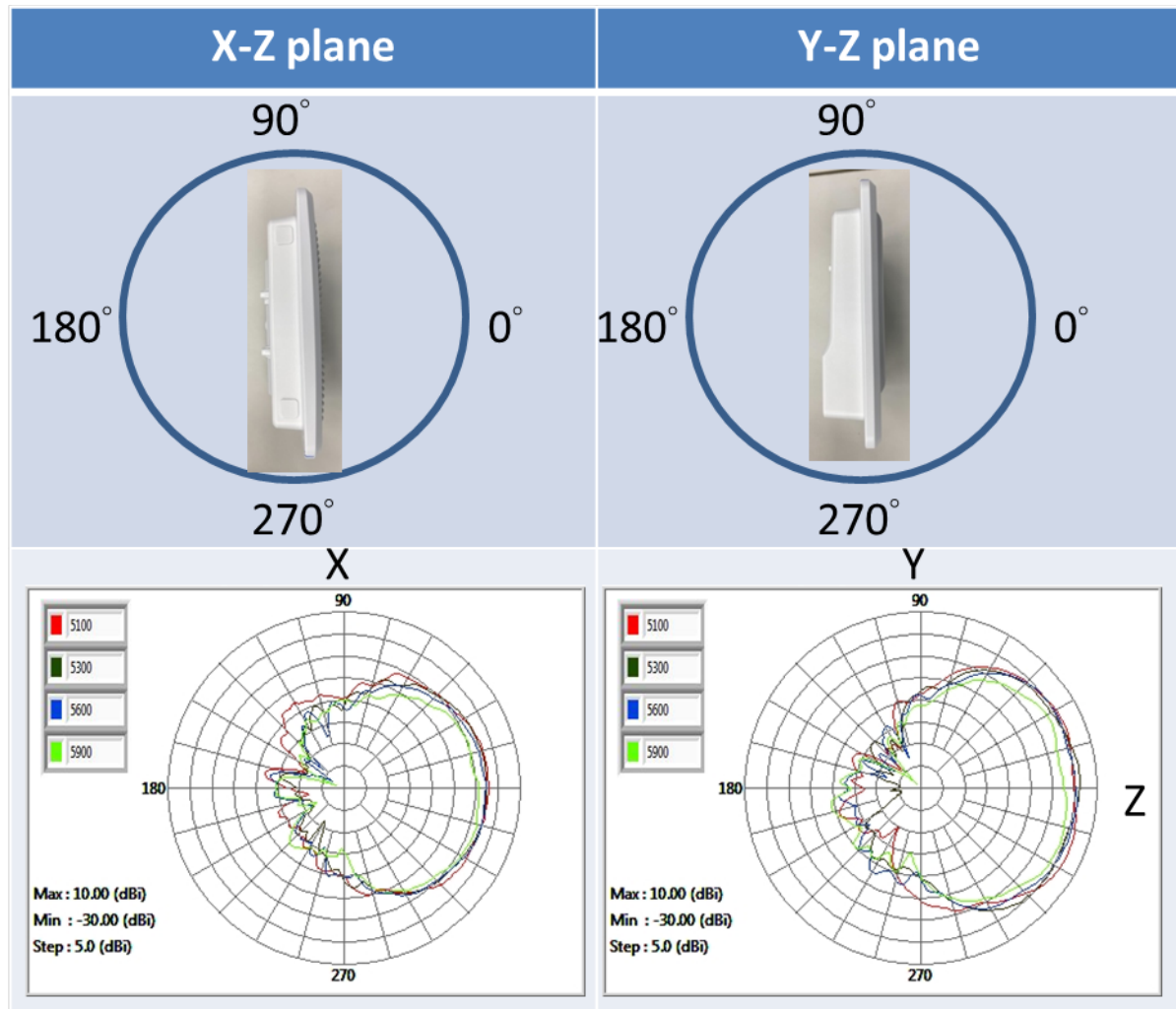
2.4G-2



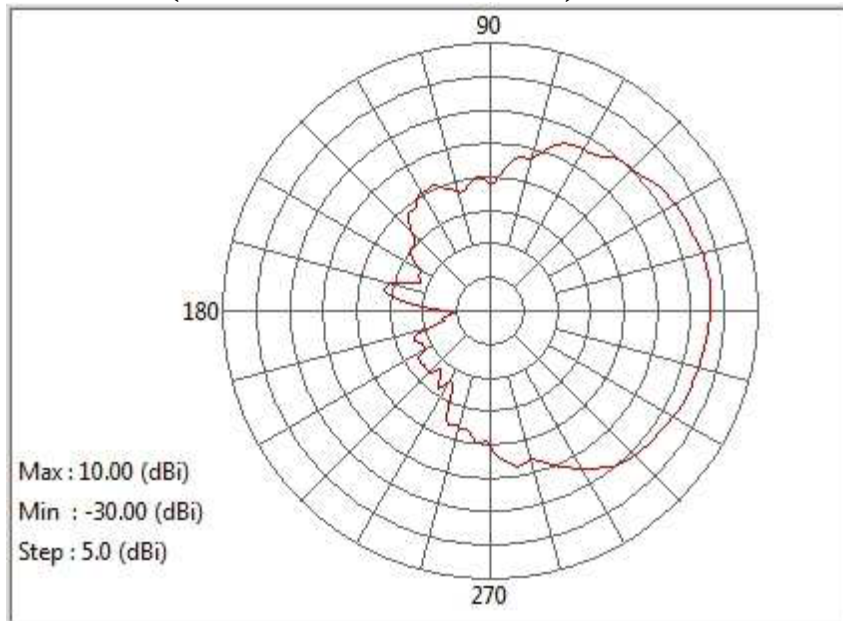
5G-1



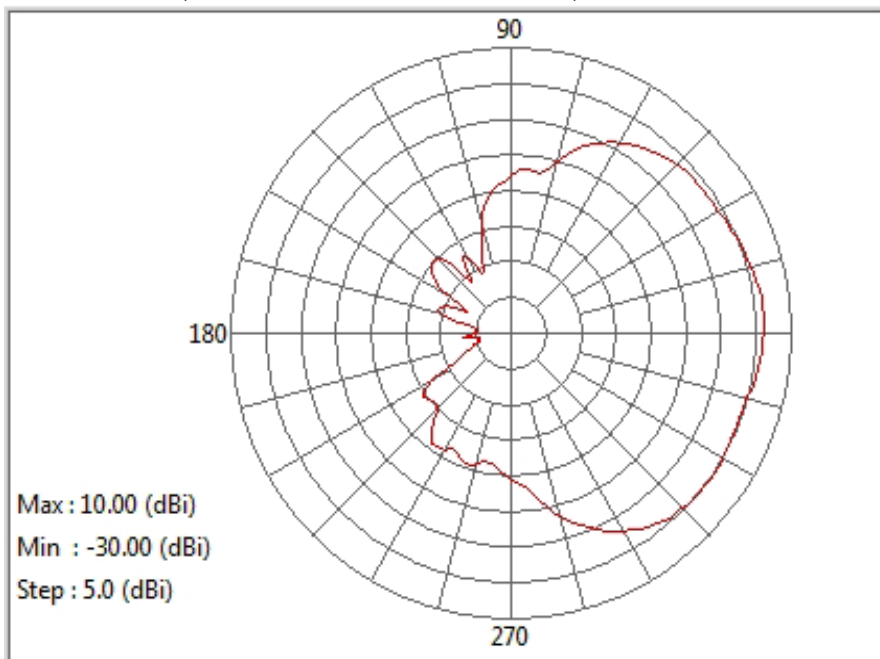
5G-2



5150 MHz(Antenna 5G-2, Plane X-Z)



5150 MHz(Antenna 5G-2, Plane Y-Z)





## Antenna Gain Table:

| Frequency(MHz) | 2.4G-1(dBi) | 2.4G-2(dBi) |
|----------------|-------------|-------------|
| 2400           | 5.88        | 5.98        |
| 2450           | 6.50        | 6.50        |
| 2500           | 5.53        | 5.61        |

| Frequency(MHz) | 5G-1(dBi) | 5G-2(dBi) |
|----------------|-----------|-----------|
| 5150           | 3.97      | 4.93      |
| 5600           | 4.51      | 4.6       |
| 5850           | 5.00      | 5.00      |



## AP-3025 Antenna Check Sheet

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Antenna Gain Table(5150 MHz-Antenna 5G-2, Plane X-Z):

| angle | (dBi) | angle | (dBi)  |
|-------|-------|-------|--------|
| 0     | 2.83  | 182   | -24.5  |
| 2     | 2.91  | 184   | -23.87 |
| 4     | 2.95  | 186   | -23.9  |
| 6     | 2.99  | 188   | -23.45 |
| 8     | 3.03  | 190   | -22.86 |
| 10    | 3.06  | 192   | -22.87 |
| 12    | 3.02  | 194   | -21.27 |
| 14    | 2.94  | 196   | -19.6  |
| 16    | 2.82  | 198   | -18.47 |
| 18    | 2.66  | 200   | -17.94 |
| 20    | 2.5   | 202   | -17.83 |
| 22    | 2.32  | 204   | -18.19 |
| 24    | 2.19  | 206   | -18.81 |
| 26    | 2.09  | 208   | -18.86 |
| 28    | 1.96  | 210   | -18.83 |
| 30    | 1.93  | 212   | -17.55 |
| 32    | 1.8   | 214   | -17.01 |
| 34    | 1.57  | 216   | -17.07 |
| 36    | 1.29  | 218   | -17.11 |
| 38    | 0.9   | 220   | -17.31 |
| 40    | 0.51  | 222   | -17.09 |
| 42    | 0.18  | 224   | -17.04 |
| 44    | -0.06 | 226   | -17.02 |
| 46    | -0.13 | 228   | -18.01 |
| 48    | -0.15 | 230   | -18.53 |
| 50    | -0.32 | 232   | -17.65 |
| 52    | -0.79 | 234   | -16.57 |
| 54    | -1.42 | 236   | -15.91 |
| 56    | -1.94 | 238   | -16.67 |
| 58    | -2.16 | 240   | -17.9  |
| 60    | -2.24 | 242   | -17.94 |
| 62    | -2.25 | 244   | -16.73 |
| 64    | -2.44 | 246   | -14.54 |



## AP-3025 Antenna Check Sheet

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|     |        |     |        |
|-----|--------|-----|--------|
| 66  | -2.67  | 248 | -12.76 |
| 68  | -3.25  | 250 | -11.94 |
| 70  | -4.1   | 252 | -12.06 |
| 72  | -5.23  | 254 | -12.27 |
| 74  | -6.09  | 256 | -11.97 |
| 76  | -6.48  | 258 | -11.87 |
| 78  | -6.53  | 260 | -11.81 |
| 80  | -6.79  | 262 | -10.96 |
| 82  | -7.56  | 264 | -10.16 |
| 84  | -8.42  | 266 | -10.26 |
| 86  | -9.53  | 268 | -10.62 |
| 88  | -10.84 | 270 | -9.9   |
| 90  | -11.32 | 272 | -8.75  |
| 92  | -10.53 | 274 | -7.84  |
| 94  | -9.81  | 276 | -7.38  |
| 96  | -9.84  | 278 | -6.79  |
| 98  | -10.32 | 280 | -6.33  |
| 100 | -10.99 | 282 | -6.52  |
| 102 | -11.83 | 284 | -6.98  |
| 104 | -11.87 | 286 | -6.94  |
| 106 | -11.27 | 288 | -6.45  |
| 108 | -10.9  | 290 | -5.78  |
| 110 | -10.61 | 292 | -5.2   |
| 112 | -9.91  | 294 | -4.51  |
| 114 | -9.35  | 296 | -3.93  |
| 116 | -9.34  | 298 | -3.33  |
| 118 | -9.56  | 300 | -2.81  |
| 120 | -9.58  | 302 | -2.22  |
| 122 | -9.53  | 304 | -1.73  |
| 124 | -10.24 | 306 | -1.05  |
| 126 | -11    | 308 | -0.58  |
| 128 | -11.1  | 310 | -0.1   |
| 130 | -11.02 | 312 | 0.19   |
| 132 | -11.56 | 314 | 0.38   |
| 134 | -12.98 | 316 | 0.56   |
| 136 | -14.19 | 318 | 0.72   |



## AP-3025 Antenna Check Sheet

Date: 2023/01/09

|     |        |     |      |
|-----|--------|-----|------|
| 138 | -14.9  | 320 | 0.9  |
| 140 | -15.23 | 322 | 1.03 |
| 142 | -14.95 | 324 | 1.13 |
| 144 | -15.29 | 326 | 1.19 |
| 146 | -15.85 | 328 | 1.32 |
| 148 | -17.04 | 330 | 1.52 |
| 150 | -18.17 | 332 | 1.74 |
| 152 | -18.08 | 334 | 1.93 |
| 154 | -17.97 | 336 | 2.07 |
| 156 | -18.43 | 338 | 2.1  |
| 158 | -18.67 | 340 | 2.15 |
| 160 | -17.62 | 342 | 2.17 |
| 162 | -16.37 | 344 | 2.19 |
| 164 | -14.81 | 346 | 2.19 |
| 166 | -14.3  | 348 | 2.24 |
| 168 | -13.86 | 350 | 2.4  |
| 170 | -14.26 | 352 | 2.54 |
| 172 | -15.24 | 354 | 2.64 |
| 174 | -16.7  | 356 | 2.72 |
| 176 | -18.74 | 358 | 2.73 |
| 178 | -21.23 | 360 | 2.83 |
| 180 | -23.26 |     |      |

Antenna Gain Table(5150 MHz-Antenna 5G-2, Plane Y-Z):

| angle | (dBi) | angle | (dBi)  |
|-------|-------|-------|--------|
| 0     | 4.56  | 182   | -26.09 |
| 2     | 4.78  | 184   | -25.15 |
| 4     | 4.93  | 186   | -26.12 |
| 6     | 4.67  | 188   | -27.44 |
| 8     | 4.39  | 190   | -27.4  |
| 10    | 4.12  | 192   | -27.02 |
| 12    | 3.83  | 194   | -27.31 |
| 14    | 3.67  | 196   | -26.37 |
| 16    | 3.51  | 198   | -26.28 |
| 18    | 3.29  | 200   | -25.96 |
| 20    | 3.12  | 202   | -25.08 |
| 22    | 2.95  | 204   | -24.61 |
| 24    | 2.77  | 206   | -23.26 |
| 26    | 2.59  | 208   | -21.44 |
| 28    | 2.41  | 210   | -19.3  |
| 30    | 1.91  | 212   | -17.48 |
| 32    | 1.9   | 214   | -16.74 |
| 34    | 1.88  | 216   | -16.64 |
| 36    | 1.84  | 218   | -16.95 |
| 38    | 1.78  | 220   | -17.15 |
| 40    | 1.75  | 222   | -17.45 |
| 42    | 1.69  | 224   | -17.53 |
| 44    | 1.56  | 226   | -16.92 |
| 46    | 1.37  | 228   | -15.67 |
| 48    | 1.06  | 230   | -14.14 |
| 50    | 0.75  | 232   | -13.39 |
| 52    | 0.38  | 234   | -12.8  |
| 54    | -0.02 | 236   | -12.86 |
| 56    | -0.36 | 238   | -13.05 |
| 58    | -0.75 | 240   | -13.17 |
| 60    | -1.19 | 242   | -13.62 |
| 62    | -1.69 | 244   | -13.67 |
| 64    | -2.28 | 246   | -13.51 |



## AP-3025 Antenna Check Sheet

Date: 2023/01/09

|     |        |     |        |
|-----|--------|-----|--------|
| 66  | -2.87  | 248 | -12.95 |
| 68  | -3.63  | 250 | -12.66 |
| 70  | -4.5   | 252 | -12.54 |
| 72  | -5.6   | 254 | -12.61 |
| 74  | -6.78  | 256 | -13.12 |
| 76  | -8.06  | 258 | -13.72 |
| 78  | -8.87  | 260 | -13.58 |
| 80  | -9.21  | 262 | -13.61 |
| 82  | -8.99  | 264 | -13.16 |
| 84  | -8.81  | 266 | -12.48 |
| 86  | -8.95  | 268 | -12.01 |
| 88  | -9.38  | 270 | -11.55 |
| 90  | -9.97  | 272 | -11.21 |
| 92  | -10.64 | 274 | -10.82 |
| 94  | -11.11 | 276 | -10.12 |
| 96  | -11.34 | 278 | -9.13  |
| 98  | -11.86 | 280 | -7.93  |
| 100 | -12.83 | 282 | -6.85  |
| 102 | -13.9  | 284 | -5.81  |
| 104 | -15.1  | 286 | -4.92  |
| 106 | -16.82 | 288 | -4.13  |
| 108 | -18.41 | 290 | -3.46  |
| 110 | -19.39 | 292 | -2.7   |
| 112 | -20.56 | 294 | -1.85  |
| 114 | -22.39 | 296 | -1.15  |
| 116 | -22.59 | 298 | -0.51  |
| 118 | -21.28 | 300 | 0.01   |
| 120 | -19.81 | 302 | 0.5    |
| 122 | -19.27 | 304 | 1.04   |
| 124 | -20.42 | 306 | 1.32   |
| 126 | -22.23 | 308 | 1.42   |
| 128 | -22.76 | 310 | 1.49   |
| 130 | -20.96 | 312 | 1.52   |
| 132 | -18.94 | 314 | 1.56   |
| 134 | -17.5  | 316 | 1.69   |
| 136 | -16.96 | 318 | 1.72   |



## AP-3025 Antenna Check Sheet

Date: 2023/01/09

|     |        |     |      |
|-----|--------|-----|------|
| 138 | -16.96 | 320 | 1.74 |
| 140 | -17.13 | 322 | 1.77 |
| 142 | -17.77 | 324 | 1.82 |
| 144 | -18.35 | 326 | 1.85 |
| 146 | -19.08 | 328 | 1.88 |
| 148 | -19.98 | 330 | 1.92 |
| 150 | -22.05 | 332 | 2.94 |
| 152 | -24.09 | 334 | 2.84 |
| 154 | -24.91 | 336 | 2.78 |
| 156 | -23.25 | 338 | 2.77 |
| 158 | -21.84 | 340 | 2.78 |
| 160 | -21.46 | 342 | 2.84 |
| 162 | -21.1  | 344 | 2.91 |
| 164 | -21.43 | 346 | 3.08 |
| 166 | -22.25 | 348 | 3.31 |
| 168 | -23.54 | 350 | 3.49 |
| 170 | -25.64 | 352 | 3.65 |
| 172 | -26.74 | 354 | 3.8  |
| 174 | -27.24 | 356 | 4.18 |
| 176 | -27.23 | 358 | 4.31 |
| 178 | -26.86 | 360 | 4.56 |
| 180 | -26.8  |     |      |

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Antenna Vendor information:

Nienyi Industrial Corp.

Address: 4F, 15, Lane 360, Sec.1 Neihu Rd., Taipei 11445 , Taiwan



年益實業股份有限公司

Nienyi Industrial Corp.



Antenna Vendor:Nienyi

Test date:2022/03/02

Test Engineer:JJ Wang

Address of test site: 4F, 15, Lane 360, Sec.1 Neihu Rd., Taipei 11445 , Taiwan

Measurement Setup:

Reflection Coefficient Measurement:

-Instrument:Keysight VNA E5071C

-Setup:

VNA RF port connect to DUT

Pattern Measurement:

-Chamber: Atenlab OTA800

-TestProgram: CTIA\_OTA\_Test\_Plan\_Rev\_3.8.2

-Setup Photo: See Appendix.

Test instrument calibration information:

| Vendor   | Model      | Calibrated Date | Calibrated Until |
|----------|------------|-----------------|------------------|
| Keysight | VNA E5071C | 2021/07/01      | 2022/06/31       |

### Appendix

Antenna Vendor: Nienyi

Test date: 2022/03/02

Test Engineer: JJ Wang

Measurement Setup:

Reflection Coefficient Measurement:

-Instrument: Keysight VNA E5071C

-Setup:

VNA RF port connect to DUT

Pattern Measurement:

-Chamber: Atenlab OTA800

-Test Program: CTIA\_OTA\_Test\_Plan\_Rev\_3.8.2

-Setup Photo:

