

## 【TN0047B】 Wi-Fi/Bluetooth Antenna

### 1.Specification

Antenna Type : Inverted F Antenna

Part No. Bluetooth : ANT2660-16A/U-BT

Wi-Fi : ANT2644-A3.0-W/U-267-W

Antenna Gain(Peak) : Bluetooth 0.25dBi

: Wi-Fi 2.4GHz -0.19dBi

: Wi-Fi 5GHz 1.65dBi

Frequency Band : Bluetooth 2400 - 2483.5 MHz

: Wi-Fi 2.4GHz 2401 - 2495 MHz

: Wi-Fi 5GHz 5735 - 5835 MHz

### 2.Appearance / Dimension

See fig.1 on another Document.( 【TN0047B】 \_Antenna Spec\_Photo)

### Measurement content

#### 1.Measurement condition

- Measurement ANT : ETS-LINDGREN 3115 (1-18GHz) ※Calibration '22/6
- Reference ANT : ETS-LINDGREN 3160-03 (1.7-2.6GHz) / 3160-05 (3.95-5.85GHz) ※Calibration '22/6
- Measuring instrument : P9372A (Keysight network analyzer) ※Calibration '22/6
- Measured distance : 3m (1.5m high)
- Range of measurement : 360 degree/5 degree step
- Measurement layout : The measurement environment is measured with the following layout.

See fig2 on another Document.( 【TN0047B】 \_Antenna Spec\_Photo)

#### 2.Measurement direction

See fig3 on another Document.( 【TN0047B】 \_Antenna Spec\_Photo)

- Test dates : 2025/9/23
- Names of test personnel : Shingo Kato(NISSEI ELECTRIC CO.,LTD.)
- Names of commercial test software being used : Antenna gain measurement system(NISSEI ELECTRONICS CO.,LTD.)

## 3. Antenna gain

## 3-1. Antenna-Left (2.4GHz-Band) ANT2660-16A/U-BT

| frequency<br>[MHz] | Plane | plane of<br>polarization | Peak<br>[dBi] | Average<br>[dBi] | Average<br>linear value | Composite<br>linear value | Composite<br>[dBi] | DIP<br>[dBi] | DIP-AVE<br>[dBi] |
|--------------------|-------|--------------------------|---------------|------------------|-------------------------|---------------------------|--------------------|--------------|------------------|
| 2402               | XY    | HOR.                     | -4.42         | -9.72            | 0.11                    | 0.37                      | -4.37              | -14.37       | 10.13            |
|                    |       | VER.                     | -1.49         | -5.87            | 0.26                    |                           |                    |              |                  |
|                    | XZ    | HOR.                     | 0.25          | -5.22            | 0.30                    | 0.56                      | -2.54              | -10.73       | 6.50             |
|                    |       | VER.                     | -1.52         | -5.90            | 0.26                    |                           |                    |              |                  |
| 2441               | XY    | HOR.                     | -5.21         | -11.04           | 0.08                    | 0.30                      | -5.18              | -17.49       | 13.26            |
|                    |       | VER.                     | -1.62         | -6.49            | 0.22                    |                           |                    |              |                  |
|                    | XZ    | HOR.                     | -0.30         | -6.14            | 0.24                    | 0.44                      | -3.53              | -9.17        | 4.94             |
|                    |       | VER.                     | -2.74         | -6.97            | 0.20                    |                           |                    |              |                  |
| 2480               | XY    | HOR.                     | -8.01         | -12.48           | 0.06                    | 0.24                      | -6.13              | -11.40       | 7.17             |
|                    |       | VER.                     | -2.52         | -7.27            | 0.19                    |                           |                    |              |                  |
|                    | XZ    | HOR.                     | -1.03         | -6.74            | 0.21                    | 0.35                      | -4.55              | -10.25       | 6.02             |
|                    |       | VER.                     | -4.38         | -8.58            | 0.14                    |                           |                    |              |                  |

**0.25 dBi    Max Peak**

## 3-2. Antenna-Right (2.4GHz-Band) ANT2644-A3.0-W/U-267-W

| frequency [MHz] | Plane | plane of polarization | Peak [dBi] | Average [dBi] | Average linear value | Composite linear value | Composite [dBi] | DIP [dBi] | DIP-AVE [dBi] |
|-----------------|-------|-----------------------|------------|---------------|----------------------|------------------------|-----------------|-----------|---------------|
| 2402            | XY    | HOR.                  | -5.78      | -9.41         | 0.11                 | 0.19                   | -7.14           | -19.08    | 14.25         |
|                 |       | VER.                  | -4.56      | -11.04        | 0.08                 |                        |                 |           |               |
|                 | XZ    | HOR.                  | -1.75      | -8.16         | 0.15                 | 0.33                   | -4.87           | -9.46     | 4.64          |
|                 |       | VER.                  | -5.48      | -7.62         | 0.17                 |                        |                 |           |               |
| 2441            | XY    | HOR.                  | -3.79      | -8.06         | 0.16                 | 0.28                   | -5.53           | -13.60    | 8.78          |
|                 |       | VER.                  | -3.27      | -9.10         | 0.12                 |                        |                 |           |               |
|                 | XZ    | HOR.                  | -0.19      | -6.30         | 0.23                 | 0.44                   | -3.60           | -8.69     | 3.86          |
|                 |       | VER.                  | -3.90      | -6.94         | 0.20                 |                        |                 |           |               |
| 2480            | XY    | HOR.                  | -3.97      | -8.49         | 0.14                 | 0.30                   | -5.24           | -15.35    | 10.53         |
|                 |       | VER.                  | -2.80      | -8.03         | 0.16                 |                        |                 |           |               |
|                 | XZ    | HOR.                  | -0.75      | -5.98         | 0.25                 | 0.44                   | -3.55           | -7.37     | 2.55          |
|                 |       | VER.                  | -4.44      | -7.24         | 0.19                 |                        |                 |           |               |

**-0.19 dBi Max Peak**

## 3-3. Antenna-Right (5GHz-Band) ANT2644-A3.0-W/U-267-W

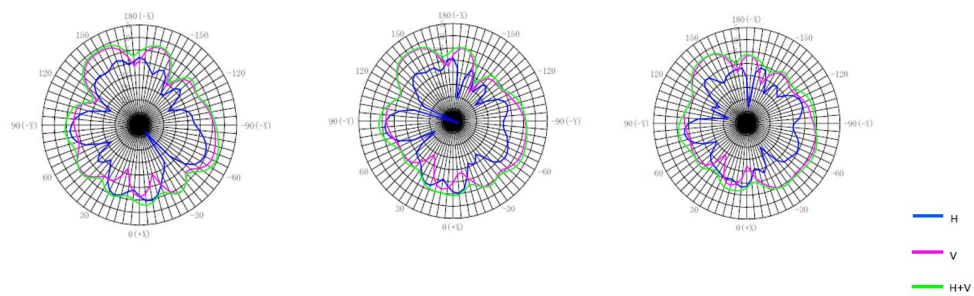
| frequency [MHz] | Plane | plane of polarization | Peak [dBi] | Average [dBi] | Average linear value | Composite linear value | Composite [dBi] | DIP [dBi] | DIP-AVE [dBi] |
|-----------------|-------|-----------------------|------------|---------------|----------------------|------------------------|-----------------|-----------|---------------|
| 5735            | XY    | HOR.                  | -4.16      | -8.82         | 0.13                 | 0.56                   | -2.51           | -20.65    | 16.28         |
|                 |       | VER.                  | 1.65       | -3.67         | 0.43                 |                        |                 |           |               |
|                 | XZ    | HOR.                  | -0.75      | -7.84         | 0.16                 | 0.26                   | -5.90           | -15.38    | 11.01         |
|                 |       | VER.                  | -4.85      | -10.35        | 0.09                 |                        |                 |           |               |
| 5785            | XY    | HOR.                  | -4.24      | -9.00         | 0.13                 | 0.53                   | -2.74           | -19.02    | 14.65         |
|                 |       | VER.                  | 0.99       | -3.92         | 0.41                 |                        |                 |           |               |
|                 | XZ    | HOR.                  | -1.81      | -8.29         | 0.15                 | 0.23                   | -6.36           | -14.63    | 10.26         |
|                 |       | VER.                  | -5.05      | -10.82        | 0.08                 |                        |                 |           |               |
| 5835            | XY    | HOR.                  | -5.63      | -9.67         | 0.11                 | 0.42                   | -3.72           | -17.14    | 12.77         |
|                 |       | VER.                  | -0.25      | -4.99         | 0.32                 |                        |                 |           |               |
|                 | XZ    | HOR.                  | -2.47      | -9.18         | 0.12                 | 0.19                   | -7.26           | -16.20    | 11.83         |
|                 |       | VER.                  | -6.36      | -11.73        | 0.07                 |                        |                 |           |               |

**1.65 dBi Max Peak**

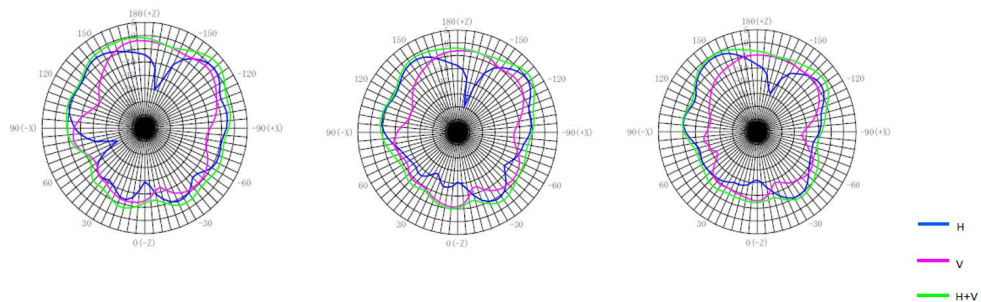
#### 4. Radio wave radiation pattern (directivity graph)

##### 4-1. Antenna-Left (2.4GHzBand) ANT2660-16A/U-BT

XY-plane @2402/2441/2480 MHz

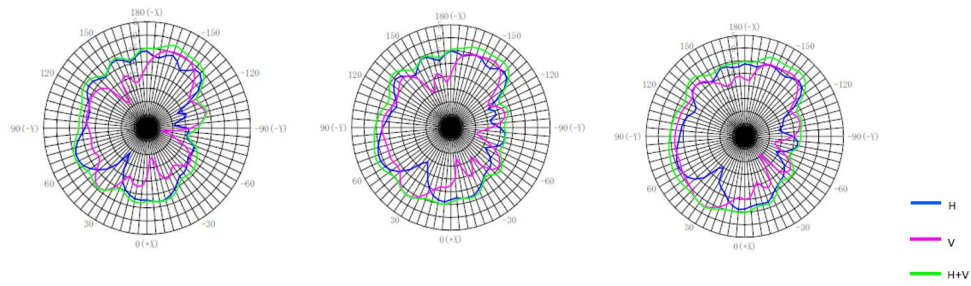


XZ-plane @2402/2441/2480 MHz

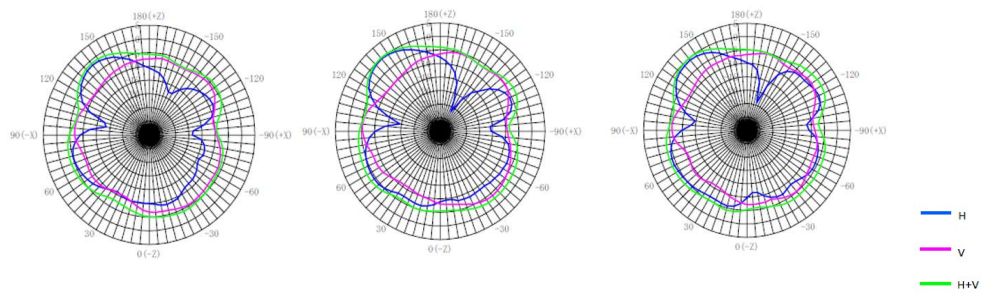


## 4-2. Antenna-Right (2.4GHzBand) ANT2644-A3.0-W/U-267-W

XY-plane @2402/2441/2480 MHz

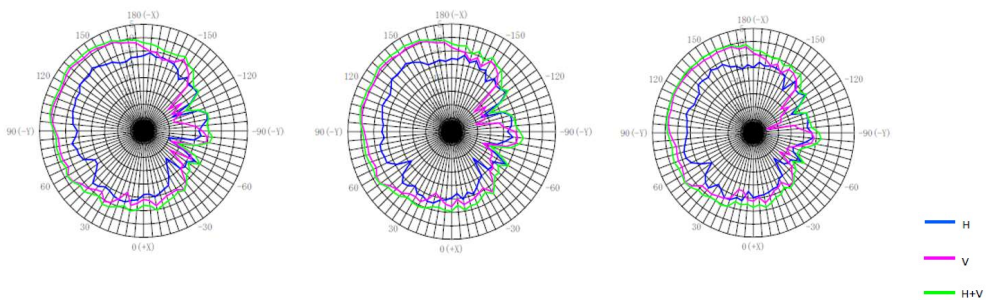


XZ-plane @2402/2441/2480 MHz



## 4-3. Antenna-Right (5GHz-Band) ANT2644-A3.0-W/U-267-W

XY-plane @5735/5785/5835 MHz



XZ-plane @5735/5785/5835 MHz

