

# Bluetooth Antenna

## 1. Specification

|                          |                         |
|--------------------------|-------------------------|
| Antenna Type             | Inverted-F PCB Antenna  |
| Nominal Center Frequency | 2440MHz                 |
| Impeadance               | 50Ω (nominal)           |
| Antenna Gain             | -2.4 dBi Peak           |
| Alloable Input Power     | 500mW or less (Average) |

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## 測定内容/Measurement content

### 1.測定条件/Measurement condition

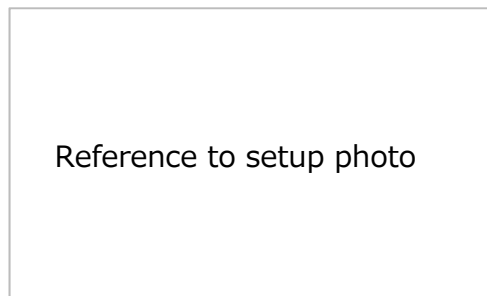
- ・測定ANT/Measurement ANT： BBHA9120 (0.5～6GHz)
- ・基準ANT/Reference ANT： MA5612B4 (2.25～2.6GHz)
- ・測定器/measuring instrument： E8357A (Agilent network analyzer)
  
- ・測定距離/Measured distance： 3m (高さ1m/1m high)
- ・測定範囲/range of measurement： 360度/1度ステップ/360 degree/1 degree step
- ・測定レイアウト/Measurement layout： 測定環境は以下のレイアウトで測定  
The measurement environment is measured with the following layout.

See separate setup photo for layout of measurement environment

2.測定方向/measurement direction

XY平面

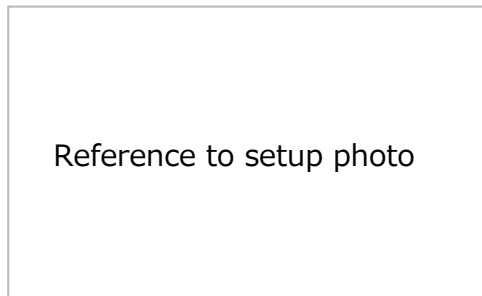
XY plane



( RX-ANT\_View )

ZX平面

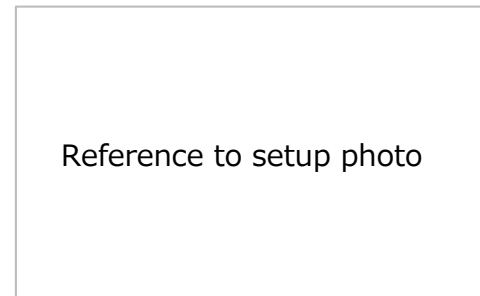
ZY plane



( RX-ANT\_View )

YZ平面

YZ plane



( RX-ANT\_View )

- ・測定日時/test dates : 20. May. 2022
- ・測定者/names of test personnel : Ohtsuka, Yasue @DENSO TEN Limited
- ・ソフトウェア/names of commercial test software being used : TN0041A Version:1.0

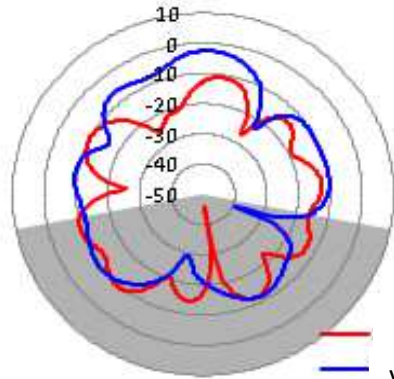
### 3. アンテナゲイン/antenna gain

| frequency<br>[MHz] | Plane | plane of<br>polarizatio | $\pm 100^\circ$<br>Average | $\pm 100^\circ$<br>true mean | Composite<br>true value | Composite<br>[dBi] | DIP[dBi] | DIP-AVE<br>[dB] |
|--------------------|-------|-------------------------|----------------------------|------------------------------|-------------------------|--------------------|----------|-----------------|
| 2402               | XY    | HOR.                    | -14.38                     | 0.04                         | 0.20                    | -7.01              | -45.93   | 38.92           |
|                    |       | VER.                    | -7.89                      | 0.16                         |                         |                    |          |                 |
|                    | XZ    | HOR.                    | -7.04                      | 0.20                         | 0.23                    | -6.34              |          |                 |
|                    |       | VER.                    | -14.61                     | 0.03                         |                         |                    |          |                 |
| 2441               | XY    | HOR.                    | -15.13                     | 0.03                         | 0.18                    | -7.35              | -38.57   | 31.22           |
|                    |       | VER.                    | -8.14                      | 0.15                         |                         |                    |          |                 |
|                    | XZ    | HOR.                    | -7.96                      | 0.16                         | 0.19                    | -7.15              |          |                 |
|                    |       | VER.                    | -14.87                     | 0.03                         |                         |                    |          |                 |
| 2480               | XY    | HOR.                    | -16.79                     | 0.02                         | 0.13                    | -8.71              | -43.22   | 34.51           |
|                    |       | VER.                    | -9.45                      | 0.11                         |                         |                    |          |                 |
|                    | XZ    | HOR.                    | -8.44                      | 0.14                         | 0.16                    | -7.98              |          |                 |
|                    |       | VER.                    | -17.93                     | 0.02                         |                         |                    |          |                 |
|                    |       |                         |                            |                              |                         |                    |          |                 |

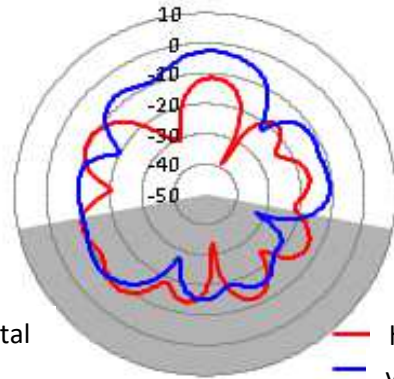
\*Correction during measurement: cable loss = 0.35 dB After correction **-7.01 dBi Ave**  
**-2.4 dBi Max Peak**

Radio wave radiation pattern (directivity graph)

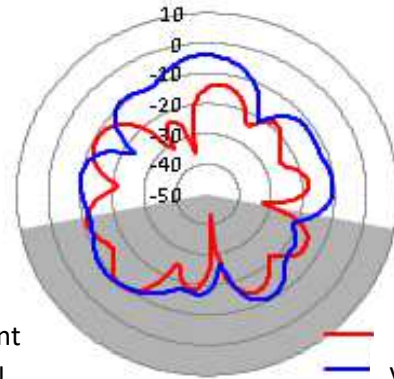
XY-plane @2402/2441/2480 MHz



— horizontal  
— vertical

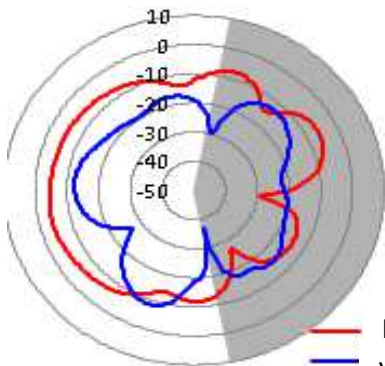


— horizont  
— vertical

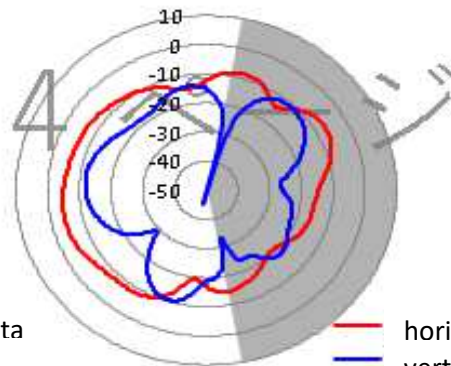


— horizontal  
— vertical

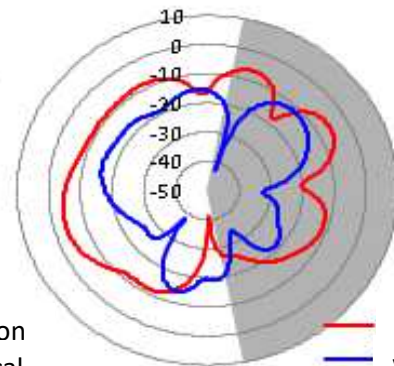
ZX-plane @2402/2441/2480 MHz



— horizonta  
— vertical

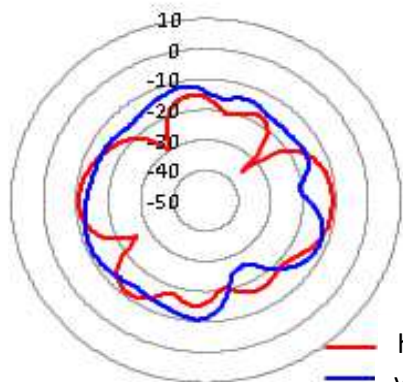


— horizon  
— vertical

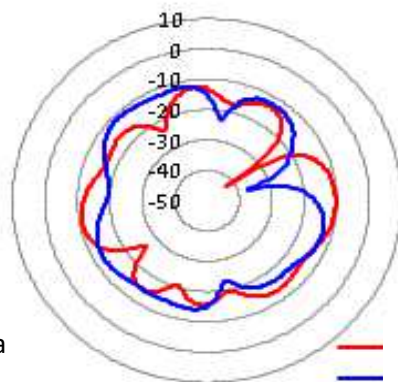


— horizonta  
— vertical

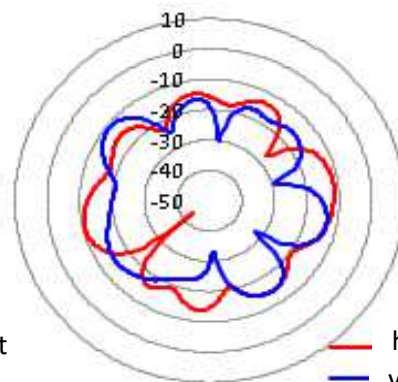
YZ-plane @2402/2441/2480 MHz



— horizontal  
— vertical



— horizont  
— vertical



— horizont  
— vertical