

## **Antenna Specification**

- Peak Antenna Gain

Peak Antenna gain: 2.4GHz: 0.4 dBi (max), 5GHz: 1.9 dBi (max)

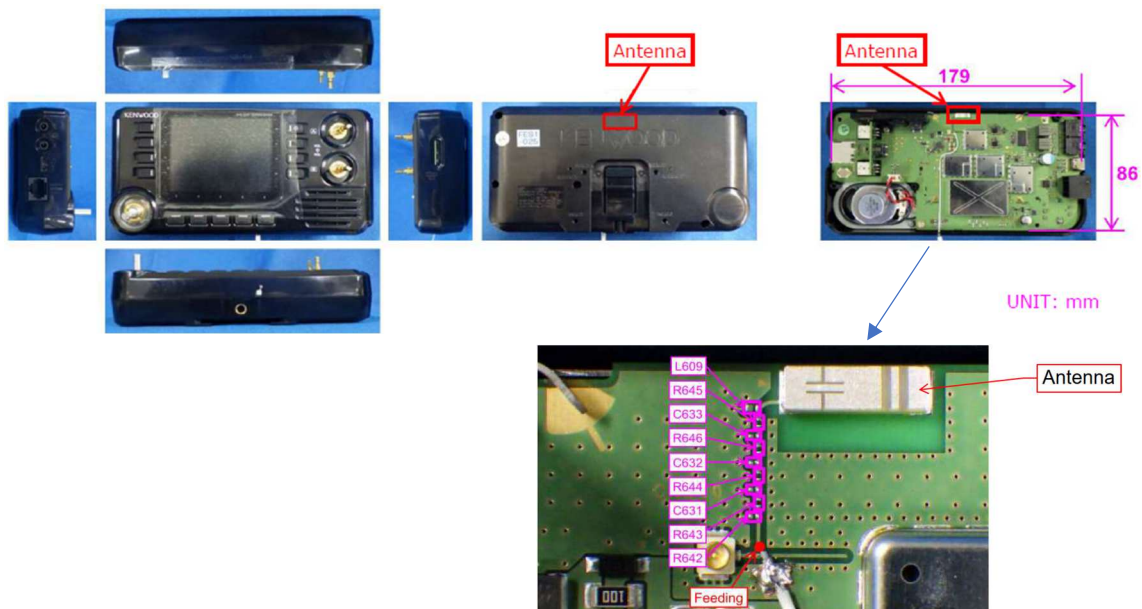
- Antenna Information

Manufacturer: Pulse Electronics, Inc.

Model: W3006

Type: Chip Antenna

- Photos of the Antenna



- Antenna Gain Test Equipment

-Measurement system

Microwave Vision Group SG32 18GHz

Calibration date: December 16, 2024

-Network Analyzer

P9374A (MY57213280)

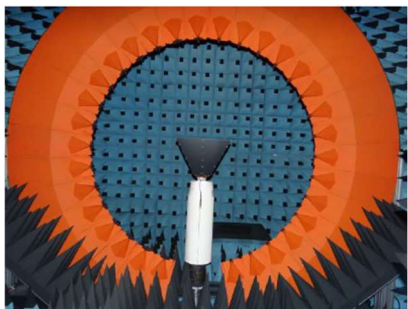
Calibration date: June 8, 2023

- Test Location

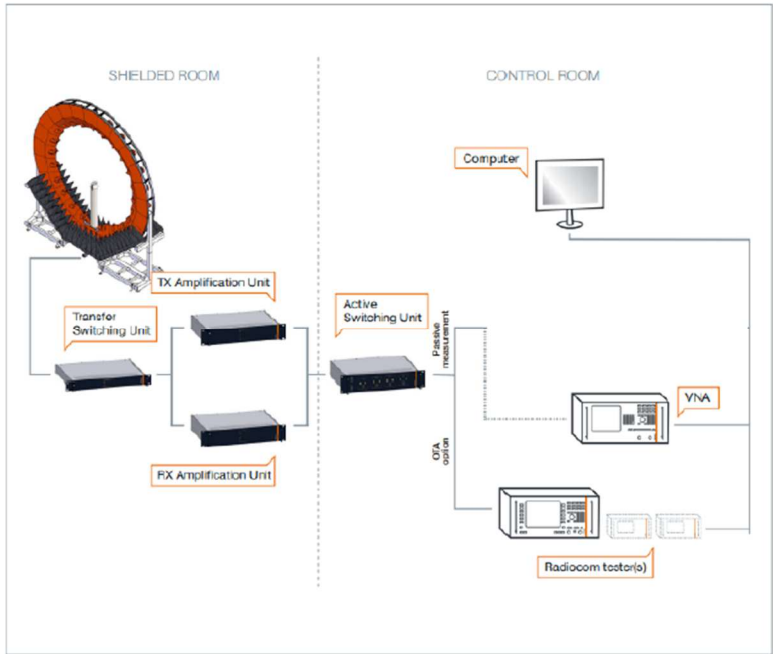
Chi-18 Sodanimachi, Hakusan-shi, Ishikawa, Japan, 9202101

Kanazawa Murata Manufacturing.Co.,Ltd

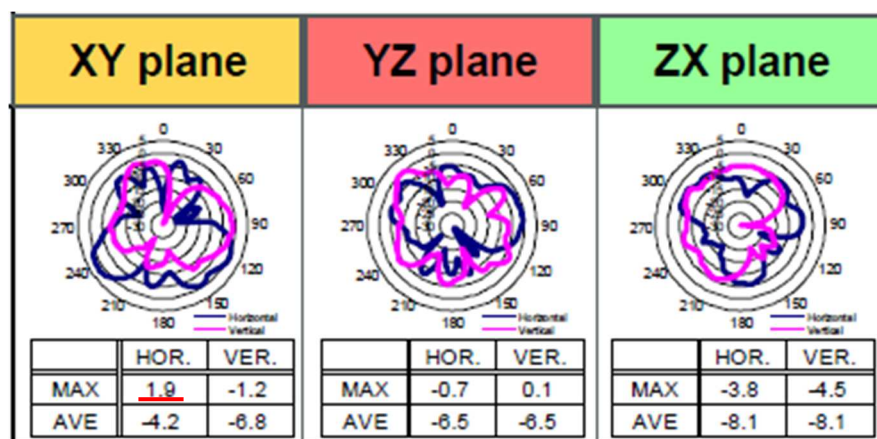
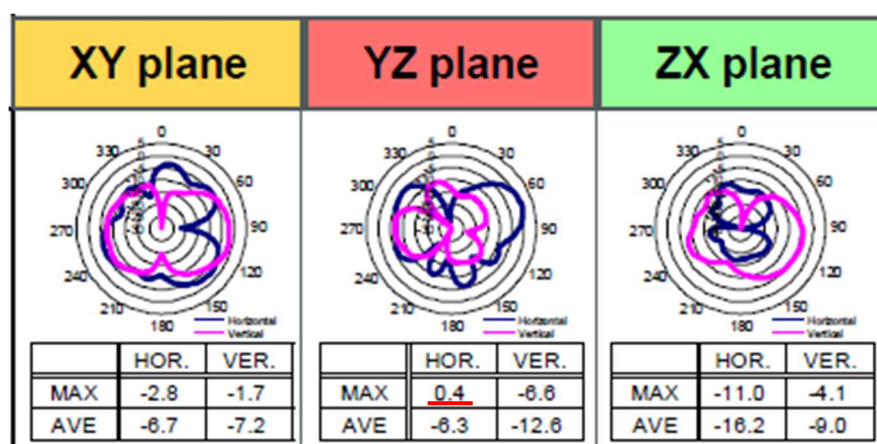
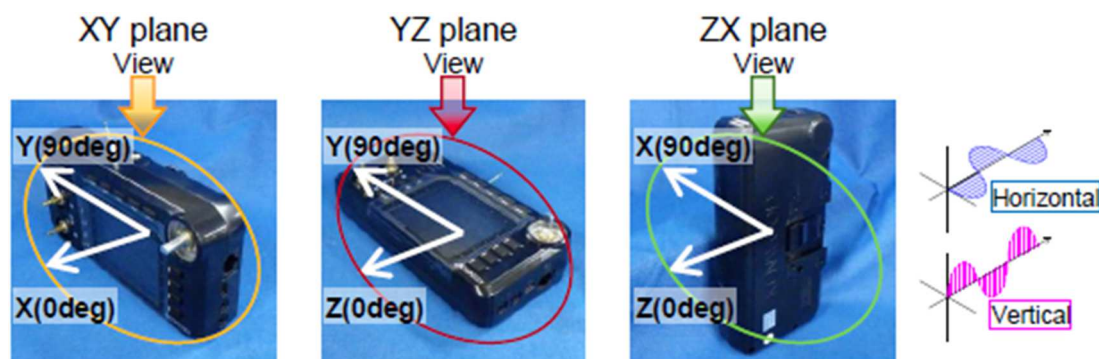
●Test Set up Photos and details SG32



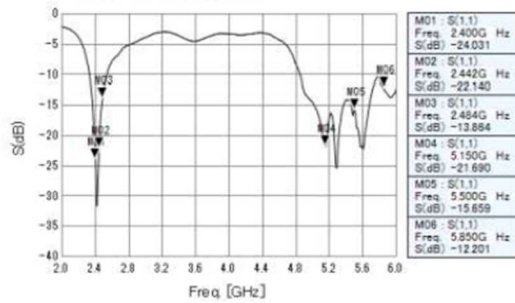
|                         |                            |                                             |
|-------------------------|----------------------------|---------------------------------------------|
| Anechoic chamber size   |                            | Approximately 3.5m x 3.5m x 3m (H)          |
| Frequency band          |                            | 0.8~18GHz                                   |
| Measurement time        | Global surface measurement | < 2 minutes (when measuring 11 frequencies) |
| Measurement uncertainty | Peak gain                  | < +/-0.9dB (0.8~1.0GHz)                     |
|                         | Low gain                   | < +/-0.8dB (1.0~18.0GHz)                    |
| Typical dynamic range   |                            | < +/-3.0dB (@-20dB from peak)               |
|                         |                            | 70dB                                        |



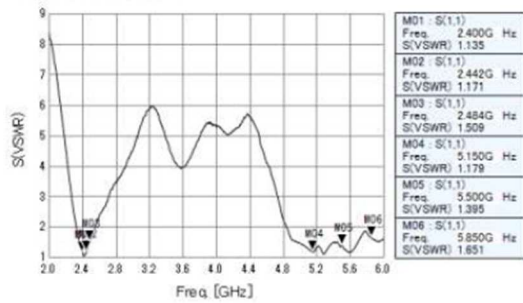
●Polar Plot



&lt;Return Loss&gt;



&lt;V.S.W.R.&gt;



&lt;Efficiency&gt;

[dBi]

[dB]

| LINEAR POLAMIZATION |      | XY-plane |       | YZ-plane |       | ZX-plane |      | Total Efficiency |
|---------------------|------|----------|-------|----------|-------|----------|------|------------------|
|                     |      | hor.     | ver.  | hor.     | ver.  | hor.     | ver. |                  |
| 2400.0 MHz          | MAX. | -2.8     | -1.7  | 0.4      | -6.6  | -11.0    | -4.1 | -5.4             |
|                     | AVE. | -6.7     | -7.2  | -6.3     | -12.6 | -16.2    | -9.0 |                  |
| 2442.0 MHz          | MAX. | -2.1     | -1.8  | -0.1     | -6.9  | -9.2     | -4.2 | -5.4             |
|                     | AVE. | -6.4     | -7.0  | -6.7     | -12.6 | -14.8    | -9.2 |                  |
| 2484.0 MHz          | MAX. | -1.8     | -2.9  | -1.2     | -7.9  | -9.3     | -4.0 | -5.9             |
|                     | AVE. | -6.6     | -7.7  | -7.5     | -13.1 | -14.4    | -9.4 |                  |
| 5150.0 MHz          | MAX. | 1.9      | -1.2  | -0.7     | 0.1   | -3.8     | -4.5 | -3.5             |
|                     | AVE. | -4.2     | -6.8  | -6.5     | -6.5  | -8.1     | -8.1 |                  |
| 5500.0 MHz          | MAX. | 1.0      | -1.6  | -1.4     | -2.9  | -2.8     | -3.4 | -4.1             |
|                     | AVE. | -4.5     | -8.0  | -6.5     | -7.5  | -7.9     | -7.9 |                  |
| 5850.0 MHz          | MAX. | 0.1      | -4.9  | -1.3     | -4.4  | -2.2     | -1.4 | -4.9             |
|                     | AVE. | -6.6     | -10.8 | -7.3     | -10.0 | -9.3     | -6.3 |                  |

Total efficiency [dB] [%]

| Condition   | Frequency [MHz] |      |      |           |      |      | Average   | Average   | Average   | Average   |
|-------------|-----------------|------|------|-----------|------|------|-----------|-----------|-----------|-----------|
|             | 2GHz band       |      |      | 5GHz band |      |      | 2GHz band | 5GHz band | 2GHz band | 5GHz band |
|             | 2400            | 2442 | 2484 | 5150      | 5500 | 5850 | [dB]      | [dB]      | [%]       | [%]       |
| Condition 1 | -5.4            | -5.4 | -5.9 | -3.5      | -4.1 | -4.9 | -5.6      | -4.1      | 27.8      | 38.7      |

Peak gain

| Condition   | Frequency [MHz] |      |      |           |      |      | Average<br>2GHz band<br>[dB] | Average<br>5GHz band<br>[dB] |
|-------------|-----------------|------|------|-----------|------|------|------------------------------|------------------------------|
|             | 2GHz band       |      |      | 5GHz band |      |      |                              |                              |
|             | 2400            | 2442 | 2484 | 5150      | 5500 | 5850 |                              |                              |
| Condition 1 | 0.4             | -0.1 | -1.2 | 1.9       | 1.0  | 0.1  | 0.4                          | 1.9                          |