

【TN0047A】 Wi-Fi/Bluetooth Antenna

1.Specification

Antenna Type : Inverted F Antenna

Part No. Bluetooth : ANT2312-A3.0-W/U-215-A

Wi-Fi : ANT2312-A3.0-W/U-267-W

Antenna Gain(Peak) : Bluetooth -0.49dBi

: Wi-Fi 2.4GHz -0.57dBi

: Wi-Fi 5GHz 0.31dBi

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.(【TN0047A】 _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.(【TN0047A】 _Antenna Spec_Photo)

2.Measurement direction

See fig3 on another Document.(【TN0047A】 _Antenna Spec_Photo)

- Test dates : 2024/1/22~2024/1/23
- Names of test personnel : Toshiaki Hirose(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) ANT2312-A3.0-W/U-215-A

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.	-4.49	-9.92	0.10	0.26	-5.83	-19.04	15.38
		VER.	-3.45	-7.97	0.16				
	XZ	HOR.	-2.45	-7.55	0.18	0.40	-3.99	-8.96	5.30
		VER.	-4.24	-6.51	0.22				
2441	XY	HOR.	-2.96	-8.82	0.13	0.39	-4.05	-17.51	13.84
		VER.	-1.03	-5.81	0.26				
	XZ	HOR.	-1.79	-5.76	0.27	0.48	-3.15	-9.87	6.21
		VER.	-3.50	-6.60	0.22				
2480	XY	HOR.	-2.60	-8.11	0.15	0.46	-3.35	-15.41	11.74
		VER.	-0.49	-5.11	0.31				
	XZ	HOR.	-1.25	-4.98	0.32	0.58	-2.38	-9.46	5.79
		VER.	-3.11	-5.84	0.26				

*Correction during measurement: cable loss = 0.00 dB After correction **-3.67 dBi Ave**
-0.49 dBi Max Peak

3-2. Antenna-Right (2.4GHz-Band) ANT2312-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.	-6.85	-10.80	0.08	0.20	-7.00	-22.77	18.15
		VER.	-2.86	-9.34	0.12				
	XZ	HOR.	-3.44	-8.68	0.14	0.32	-4.91	-11.44	6.82
		VER.	-4.71	-7.27	0.19				
2441	XY	HOR.	-5.59	-9.61	0.11	0.31	-5.03	-23.80	19.18
		VER.	-1.10	-6.89	0.20				
	XZ	HOR.	-1.83	-6.55	0.22	0.43	-3.70	-9.55	4.93
		VER.	-4.34	-6.87	0.21				
2480	XY	HOR.	-4.56	-9.17	0.12	0.35	-4.54	-17.22	12.60
		VER.	-0.57	-6.37	0.23				
	XZ	HOR.	-2.10	-6.09	0.25	0.45	-3.42	-7.17	2.55
		VER.	-4.60	-6.80	0.21				

*Correction during measurement: cable loss = 0.00 dB After correction **-4.62 dBi Ave**
-0.57 dBi Max Peak

3-3. Antenna-Right (5GHz-Band) ANT2312-A3.0-W/U-267-W

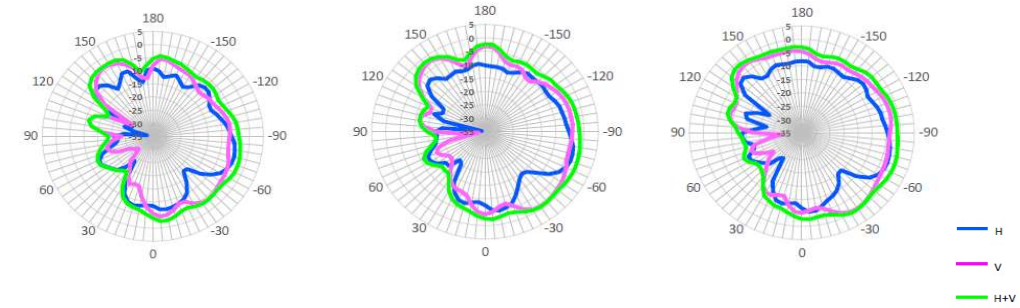
frequency [MHz]	Plane	plane of polarization	Peak [dBi]	Average [dBi]	Average linear value	Composite linear value	Composite [dBi]	DIP [dBi]	DIP-AVE [dBi]
5735	XY	HOR.	-3.96	-9.72	0.11	0.47	-3.29	-14.35	9.36
		VER.	0.31	-4.41	0.36				
	XZ	HOR.	-1.58	-7.77	0.17	0.26	-5.82	-18.87	13.88
		VER.	-4.60	-10.23	0.09				
5785	XY	HOR.	-4.60	-9.65	0.11	0.41	-3.82	-16.73	11.73
		VER.	-0.45	-5.14	0.31				
	XZ	HOR.	-1.80	-8.70	0.13	0.22	-6.48	-15.74	10.74
		VER.	-4.65	-10.46	0.09				
5835	XY	HOR.	-4.63	-9.85	0.10	0.35	-4.54	-15.68	10.68
		VER.	-1.44	-6.06	0.25				
	XZ	HOR.	-2.57	-9.93	0.10	0.18	-7.50	-17.72	12.72
		VER.	-6.94	-11.18	0.08				

*Correction during measurement: cable loss = 0.00 dB After correction **-5.00 dBi Ave**
0.31 dBi Max Peak

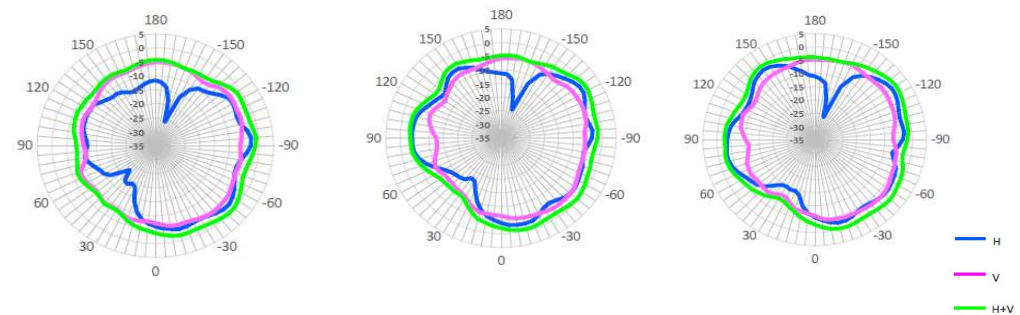
4. Radio wave radiation pattern (directivity graph)

4-1. Antenna-Left (2.4GHzBand) ANT2312-A3.0-W/U-215-A

XY-plane @2402/2441/2480 MHz

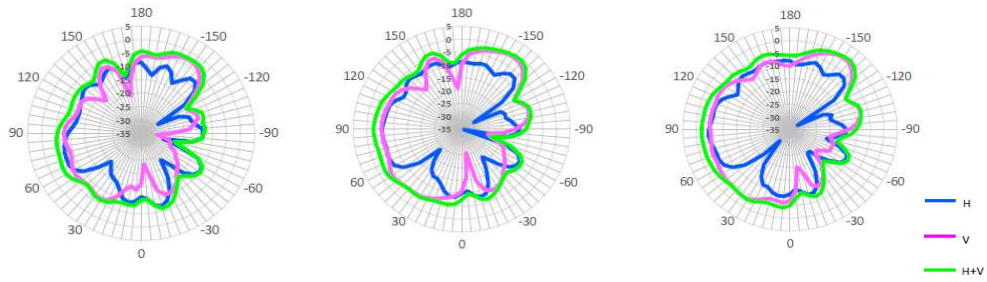


XZ-plane @2402/2441/2480 MHz

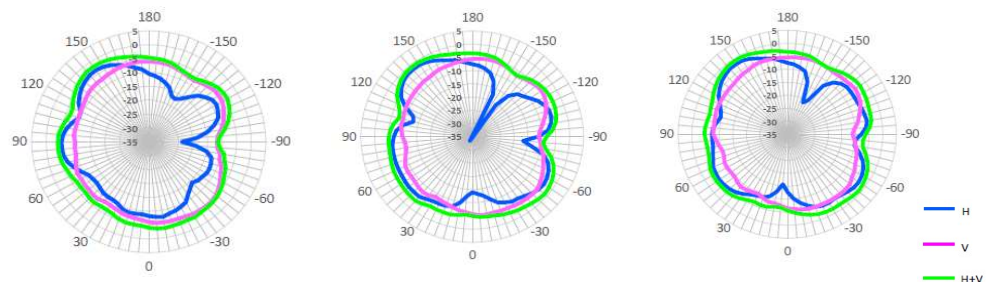


4-2. Antenna-Right (2.4GHzBand) ANT2312-A3.0-W/U-267-W

XY-plane @2402/2441/2480 MHz

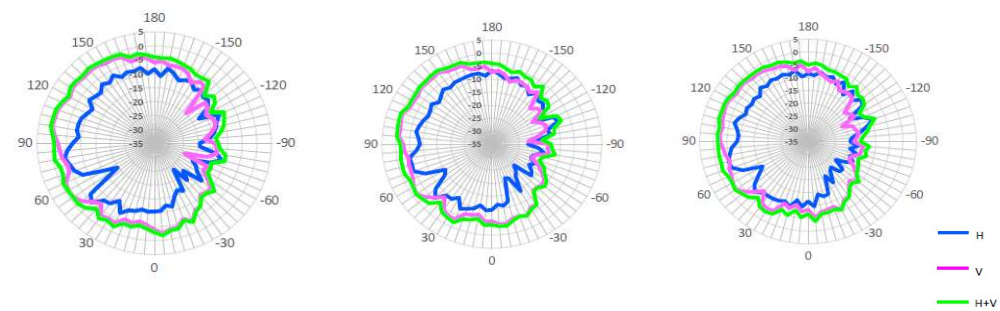


XZ-plane @2402/2441/2480 MHz



4-3. Antenna-Right (5GHz-Band) ANT2312-A3.0-W/U-267-W

XY-plane @5735/5785/5835 MHz



XZ-plane @5735/5785/5835 MHz

