

【TN0036A】 Wi-Fi/Bluetooth Antenna

1.Specification

Antenna Type : Inverted F Antenna
Part No. Wi-Fi : ANT2312-A3.0-W/U-201-W
Bluetooth : ANT2312-A3.0-W/U-108-A
Antenna Gain(Peak) : Wi-Fi 5GHz 2.90dBi
Bluetooth -0.84dBi

Frequency Band : Wi-Fi 5GHz 5735 - 5835 MHz
Bluetooth 2400 - 2483.5 MHz

2.Appearance / Dimension

See fig.1 on another Document.(TN0036A_Antenna Photo)

Measurement content

1.Measurement condition

- Measurement ANT : ETS-LINDGREN 3115 (1-18GHz)
- Reference ANT : ETS-LINDGREN 3160-03 (1.7-2.6GHz) / 3160-05 (3.95-5.85GHz)
- Measuring instrument : P9372A (Keysight network analyzer)

- 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.(TN0036A_Antenna Photo)

2.Measurement direction

See fig3 on another Document.(TN0036A_Antenna Photo)

- Test dates : 2021/12/17
- 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)

frequency [MHz]	Plane	plane of polarization	± 100° Average [dBi]	± 100° true mean	Composite true value	Composite [dBi]	DIP[dBi]	DIP-AVE [dB]
2402	XY	HOR.	-11.03	0.08	0.33	-4.86	-9.81	5.96
		VER.	-6.06	0.25				
	XZ	HOR.	-5.66	0.27	0.51	-2.92	-9.73	5.88
		VER.	-6.22	0.24				
2441	XY	HOR.	-10.53	0.09	0.35	-4.57	-10.51	6.66
		VER.	-5.84	0.26				
	XZ	HOR.	-5.71	0.27	0.55	-2.61	-8.12	4.27
		VER.	-5.54	0.28				
2480	XY	HOR.	-11.79	0.07	0.28	-5.46	-10.75	6.90
		VER.	-6.61	0.22				
	XZ	HOR.	-6.36	0.23	0.45	-3.43	-10.64	6.79
		VER.	-6.52	0.22				

*Correction during measurement: cable loss = 0.00 dB After correction **-3.85 dBi Ave**
-0.84 dBi Max Peak

3-2. Antenna-Right (5GHz-Band1)

frequency [MHz]	Plane	plane of polarization	± 100° Average [dBi]	± 100° true mean	Composite true value	Composite [dBi]	DIP[dBi]	DIP-AVE [dB]
5170	XY	HOR.	-1.15	0.77	0.87	-0.61	-17.44	16.76
		VER.	-9.87	0.10				
	XZ	HOR.	-10.69	0.09	0.79	-1.03	-10.79	10.11
		VER.	-1.53	0.70				
5210	XY	HOR.	-1.34	0.74	0.85	-0.69	-23.13	22.44
		VER.	-9.28	0.12				
	XZ	HOR.	-9.73	0.11	0.84	-0.75	-12.68	11.99
		VER.	-1.34	0.73				
5250	XY	HOR.	-1.25	0.75	0.89	-0.53	-19.13	18.45
		VER.	-8.68	0.14				
	XZ	HOR.	-8.67	0.14	0.88	-0.53	-13.44	12.75
		VER.	-1.26	0.75				

*Correction during measurement: cable loss = 0.00 dB After correction **-0.69 dBi Ave**
3.99 dBi Max Peak

3-3. Antenna-Right (5GHz-Band2)

frequency [MHz]	Plane	plane of polarization	±100° Average [dBi]	±100° true mean	Composite true value	Composite [dBi]	DIP[dBi]	DIP-AVE [dB]
5250	XY	HOR.	-1.25	0.75	0.89	-0.53	-19.13	18.95
		VER.	-8.68	0.14				
	XZ	HOR.	-8.67	0.14	0.88	-0.53	-13.44	13.25
		VER.	-1.26	0.75				
5290	XY	HOR.	-1.18	0.76	0.93	-0.33	-16.27	16.09
		VER.	-7.82	0.17				
	XZ	HOR.	-7.56	0.18	0.98	-0.08	-13.38	13.19
		VER.	-0.93	0.81				
5330	XY	HOR.	-1.03	0.79	0.97	-0.14	-13.54	13.35
		VER.	-7.48	0.18				
	XZ	HOR.	-6.81	0.21	1.10	0.42	-17.10	16.91
		VER.	-0.48	0.89				

*Correction during measurement: cable loss = 0.00 dB After correction **-0.19 dBi Ave**
3.99 dBi Max Peak

3-4. Antenna-Right (5GHz-Band3)

frequency [MHz]	Plane	plane of polarization	±100° Average [dBi]	±100° true mean	Composite true value	Composite [dBi]	DIP[dBi]	DIP-AVE [dB]
5490	XY	HOR.	-1.19	0.76	0.95	-0.21	-14.48	14.36
		VER.	-7.11	0.19				
	XZ	HOR.	-4.99	0.32	1.30	1.15	-8.51	8.38
		VER.	-0.06	0.99				
5600	XY	HOR.	-1.45	0.72	0.84	-0.78	-16.33	16.20
		VER.	-9.23	0.12				
	XZ	HOR.	-6.13	0.24	1.13	0.52	-10.15	10.03
		VER.	-0.54	0.88				
5710	XY	HOR.	-2.43	0.57	0.65	-1.85	-14.50	14.38
		VER.	-10.92	0.08				
	XZ	HOR.	-8.25	0.15	0.96	-0.17	-10.97	10.85
		VER.	-0.91	0.81				

*Correction during measurement: cable loss = 0.00 dB After correction **-0.12 dBi Ave**
3.92 dBi Max Peak

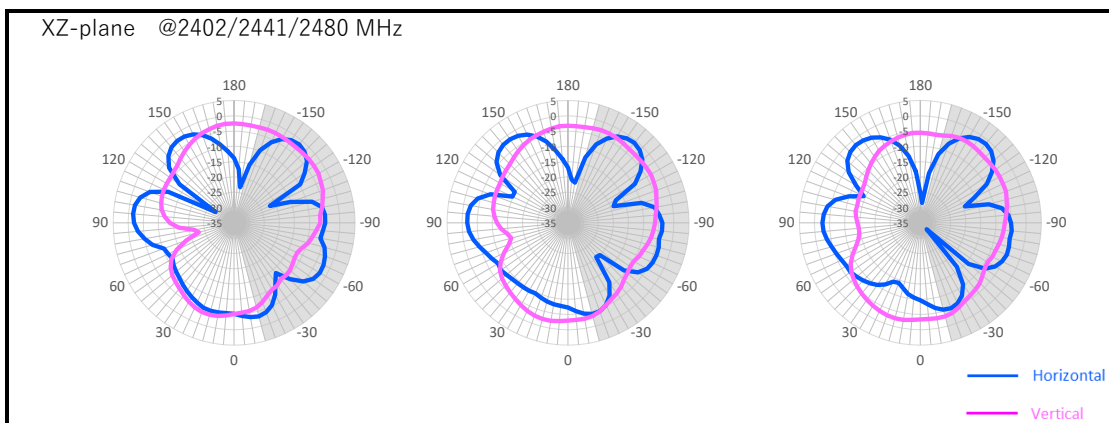
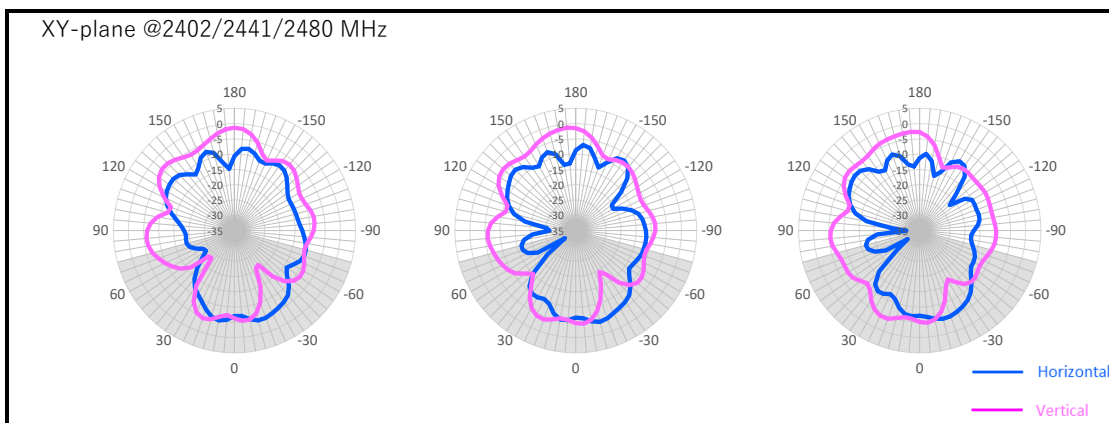
3-5. Antenna-Right (5GHz-Band4) ※Bandwidth used by TN0036A

frequency [MHz]	Plane	plane of polarization	±100° Average [dBi]	±100° true mean	Composite true value	Composite [dBi]	DIP[dBi]	DIP-AVE [dB]
5735	XY	HOR.	-2.63	0.55	0.63	-2.03	-13.50	12.00
		VER.	-10.93	0.08				
	XZ	HOR.	-8.71	0.13	0.93	-0.32		
		VER.	-1.00	0.79				
5785	XY	HOR.	-2.92	0.51	0.58	-2.38		
		VER.	-11.70	0.07				
	XZ	HOR.	-8.35	0.15	0.84	-0.75		
		VER.	-1.58	0.69				
5835	XY	HOR.	-3.14	0.49	0.57	-2.44		
		VER.	-10.73	0.08				
	XZ	HOR.	-7.97	0.16	0.71	-1.50		
		VER.	-2.62	0.55				

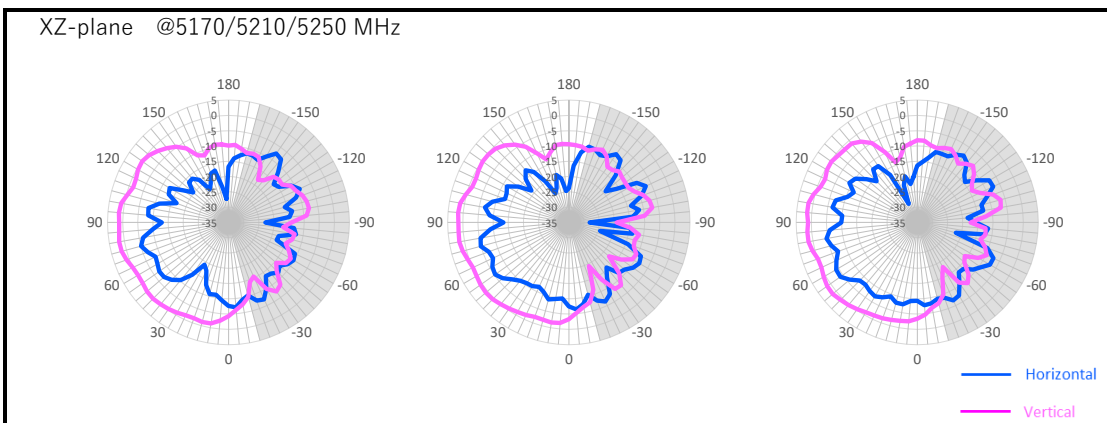
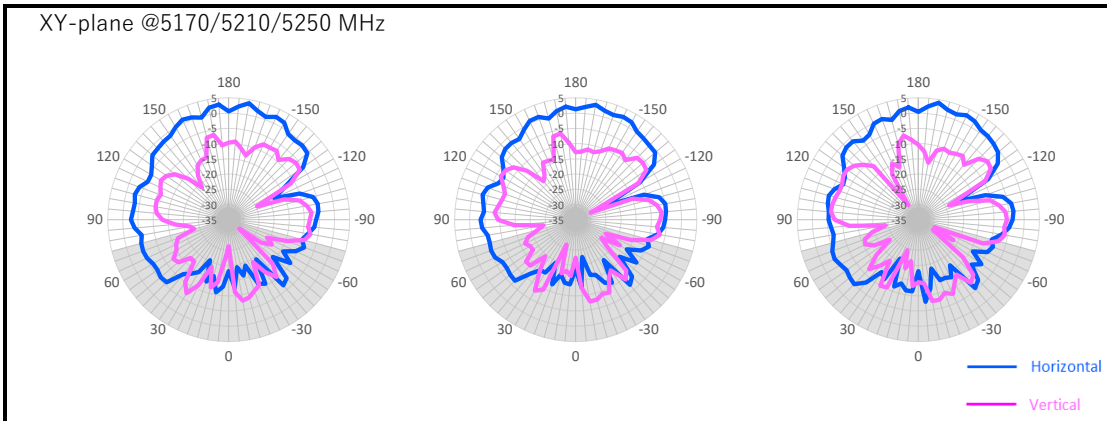
*Correction during measurement: cable loss = 0.00 dB After correction **-1.50 dBi Ave**
2.90 dBi Max Peak

4. Radio wave radiation pattern (directivity graph)

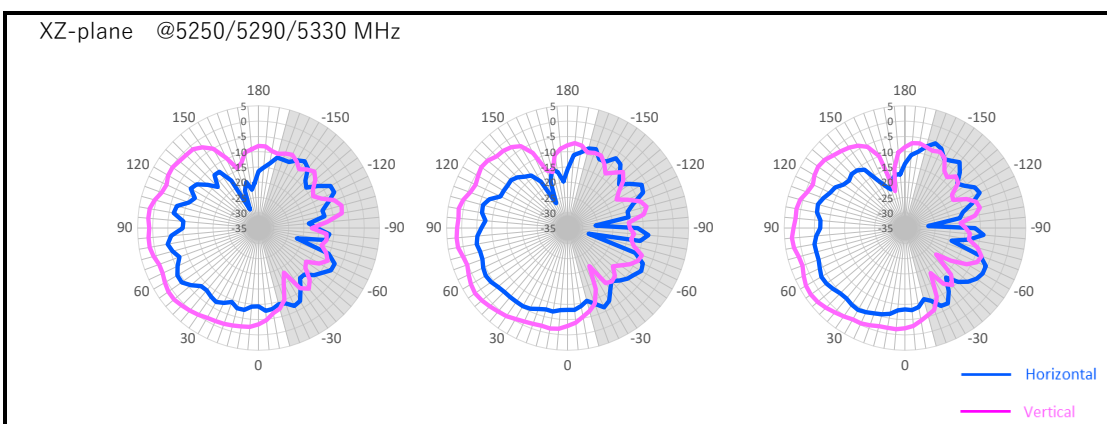
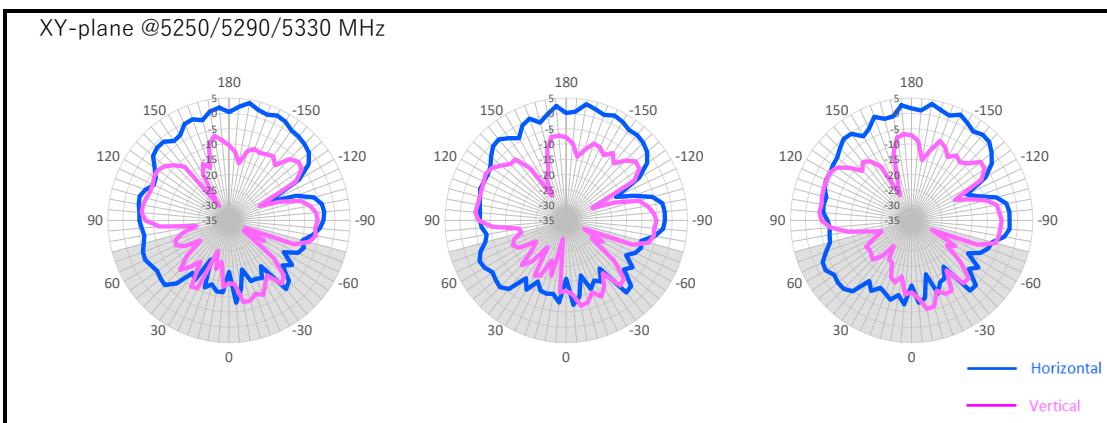
4-1. Antenna-Left (2.4GHzBand)



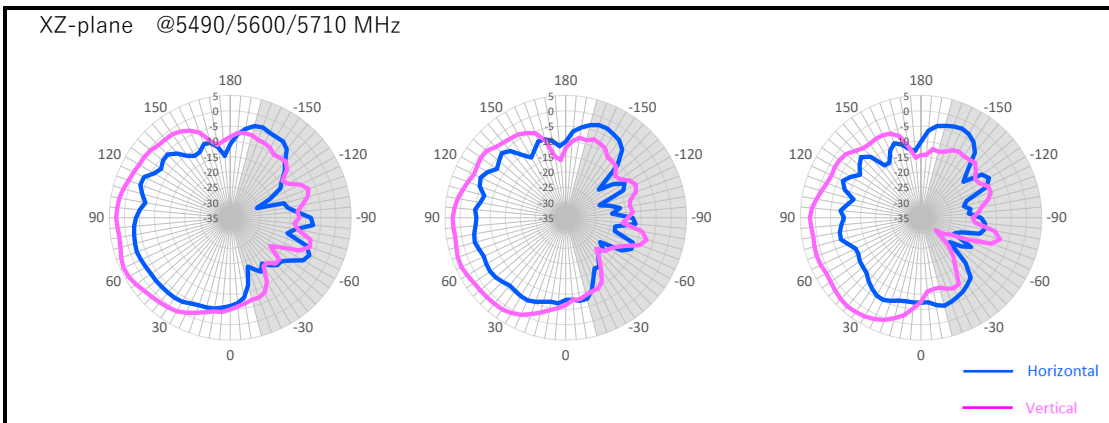
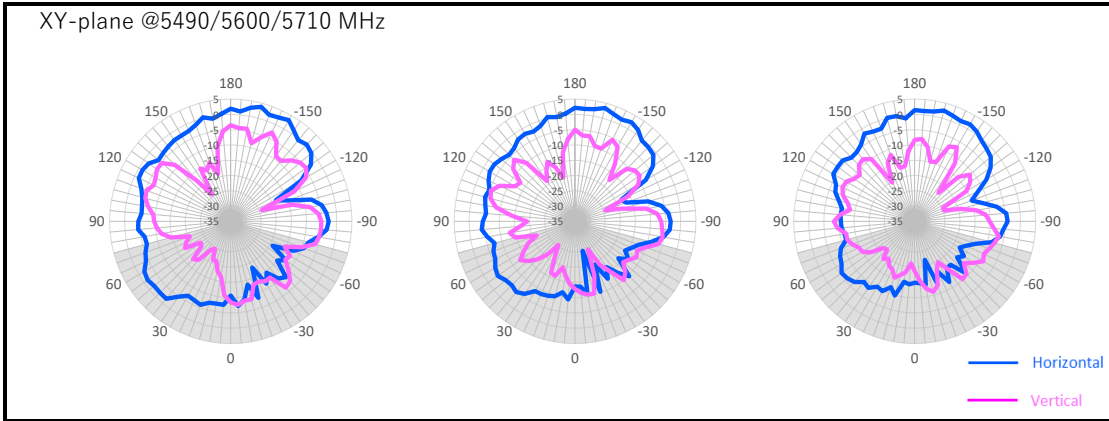
4-2. Antenna-Right (5GHz-Band1)



4-3. Antenna-Right (5GHz-Band2)



4-4. Antenna-Right (5GHz-Band3)



4-5. Antenna-Right (5GHz-Band4)

