

【TN0036B】 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 0.72dBi
Bluetooth 0.14dBi

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

2.Appearance / Dimension

See fig.1 on another Document.(TN0036B_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.(TN0036B_Antenna Photo)

2.Measurement direction

See fig3 on another Document.(TN0036B_Antenna Photo)

- Test dates : 2022/12/06
- 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.	-11.65	0.07	0.30	-5.24	-12.53	8.46
		VER.	-6.37	0.23				
	XZ	HOR.	-7.41	0.18	0.34	-4.66	-8.41	4.34
		VER.	-7.94	0.16				
2441	XY	HOR.	-10.69	0.09	0.38	-4.16	-10.67	6.60
		VER.	-5.25	0.30				
	XZ	HOR.	-5.65	0.27	0.49	-3.06	-6.26	2.19
		VER.	-6.54	0.22				
2480	XY	HOR.	-12.03	0.06	0.33	-4.82	-10.12	6.05
		VER.	-5.73	0.27				
	XZ	HOR.	-5.60	0.28	0.50	-3.00	-5.99	1.92
		VER.	-6.47	0.23				

*Correction during measurement: cable loss = 0.00 dB After correction **-4.07 dBi Ave**
0.14 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.	-0.69	0.85	0.96	-0.20	-12.15	12.37
		VER.	-9.88	0.10				
	XZ	HOR.	-8.44	0.14	1.08	0.35	-7.66	7.88
		VER.	-0.27	0.94				
5210	XY	HOR.	-0.59	0.87	0.98	-0.07	-11.79	12.00
		VER.	-9.54	0.11				
	XZ	HOR.	-7.57	0.18	1.15	0.59	-5.89	6.10
		VER.	-0.13	0.97				
5250	XY	HOR.	-0.73	0.84	0.97	-0.15	-10.83	11.05
		VER.	-9.17	0.12				
	XZ	HOR.	-6.93	0.20	1.17	0.69	-6.26	6.47
		VER.	-0.13	0.97				

*Correction during measurement: cable loss = 0.00 dB After correction **0.22 dBi Ave**
3.85 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.	-0.73	0.84	0.97	-0.15	-10.83	11.21
		VER.	-9.17	0.12				
	XZ	HOR.	-6.93	0.20	1.17	0.69	-6.26	6.64
		VER.	-0.13	0.97				
5290	XY	HOR.	-1.04	0.79	0.93	-0.29	-10.63	11.01
		VER.	-8.33	0.15				
	XZ	HOR.	-6.26	0.24	1.21	0.83	-8.00	8.37
		VER.	-0.11	0.97				
5330	XY	HOR.	-0.94	0.80	0.97	-0.13	-11.97	12.35
		VER.	-7.83	0.16				
	XZ	HOR.	-5.49	0.28	1.29	1.12	-8.52	8.90
		VER.	0.05	1.01				

*Correction during measurement: cable loss = 0.00 dB After correction **0.38 dBi Ave**
3.75 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.	-1.35	0.73	0.86	-0.66	-13.68	12.43
		VER.	-8.96	0.13				
	XZ	HOR.	-6.06	0.25	0.96	-0.16	-9.06	7.81
		VER.	-1.45	0.72				
5600	XY	HOR.	-1.76	0.67	0.78	-1.09	-13.54	12.29
		VER.	-9.53	0.11				
	XZ	HOR.	-7.55	0.18	0.71	-1.47	-9.10	7.85
		VER.	-2.70	0.54				
5710	XY	HOR.	-2.99	0.50	0.60	-2.21	-14.26	13.01
		VER.	-10.03	0.10				
	XZ	HOR.	-8.05	0.16	0.58	-2.34	-9.06	7.81
		VER.	-3.70	0.43				

*Correction during measurement: cable loss = 0.00 dB After correction **-1.25 dBi Ave**
3.25 dBi Max Peak

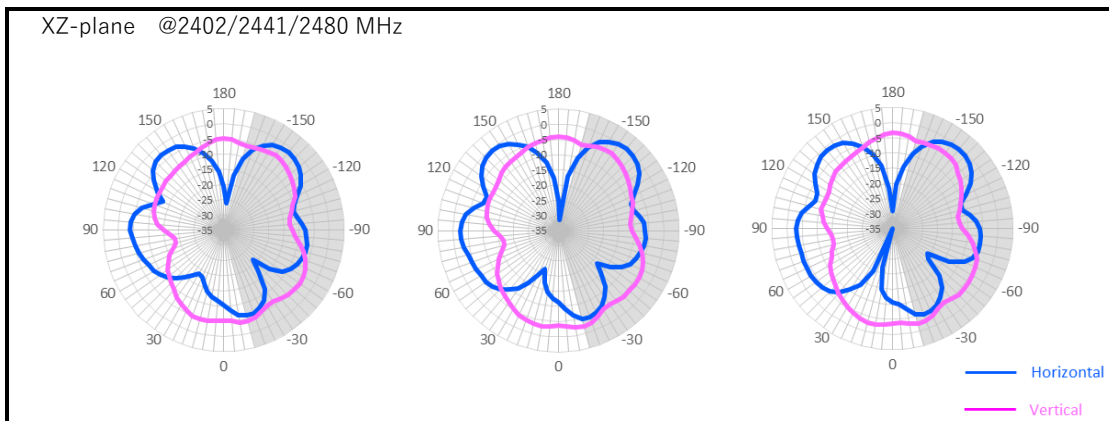
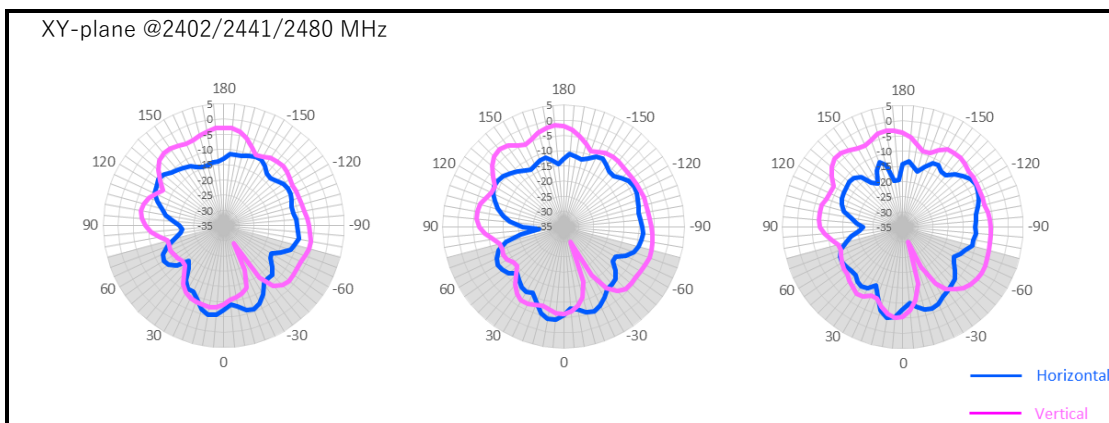
3-5. Antenna-Right (5GHz-Band4) ※Bandwidth used by TN0036B

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.	-3.26	0.47	0.57	-2.41	-15.35	12.58
		VER.	-9.92	0.10				
	XZ	HOR.	-8.26	0.15	0.54	-2.64		
		VER.	-4.02	0.40				
5785	XY	HOR.	-3.34	0.46	0.57	-2.47		
		VER.	-9.91	0.10				
	XZ	HOR.	-7.92	0.16	0.52	-2.81		
		VER.	-4.41	0.36				
5835	XY	HOR.	-3.82	0.41	0.51	-2.92		
		VER.	-10.19	0.10				
	XZ	HOR.	-8.42	0.14	0.45	-3.46		
		VER.	-5.13	0.31				

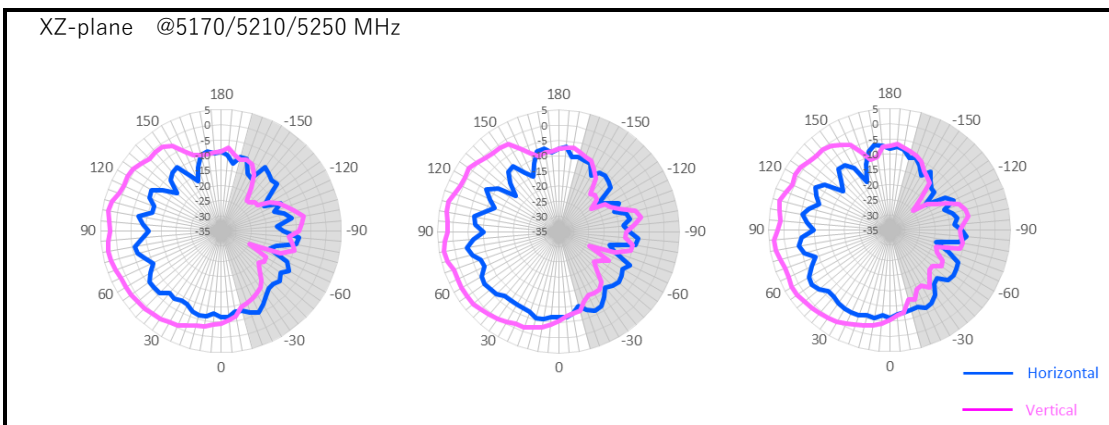
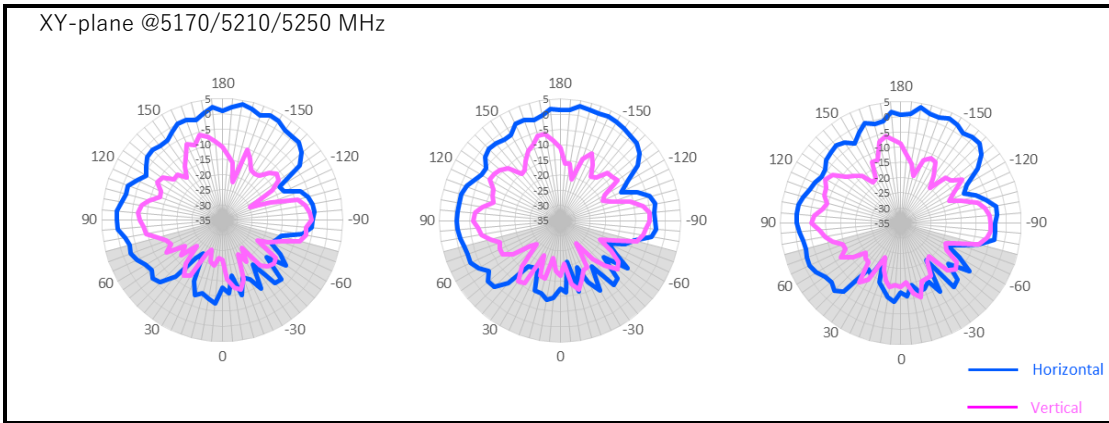
*Correction during measurement: cable loss = 0.00 dB After correction **-2.77 dBi Ave**
0.72dBi Max Peak

4. Radio wave radiation pattern (directivity graph)

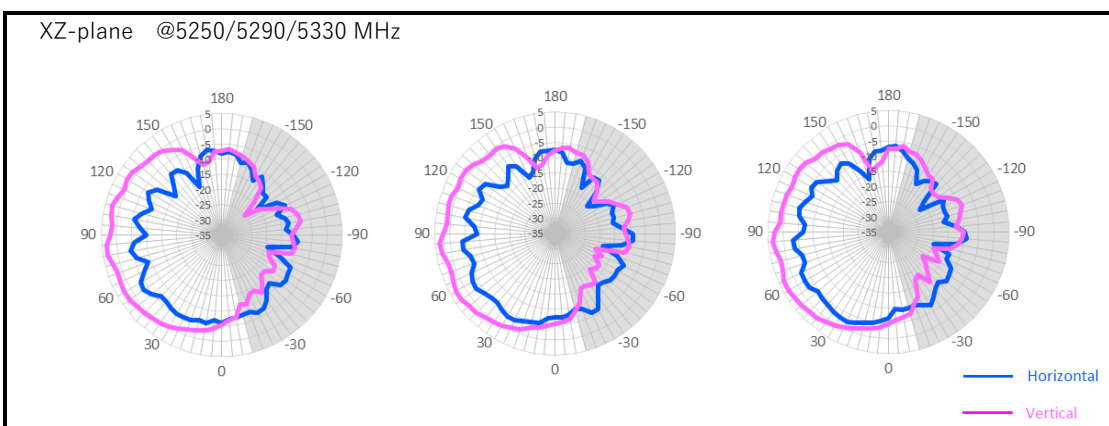
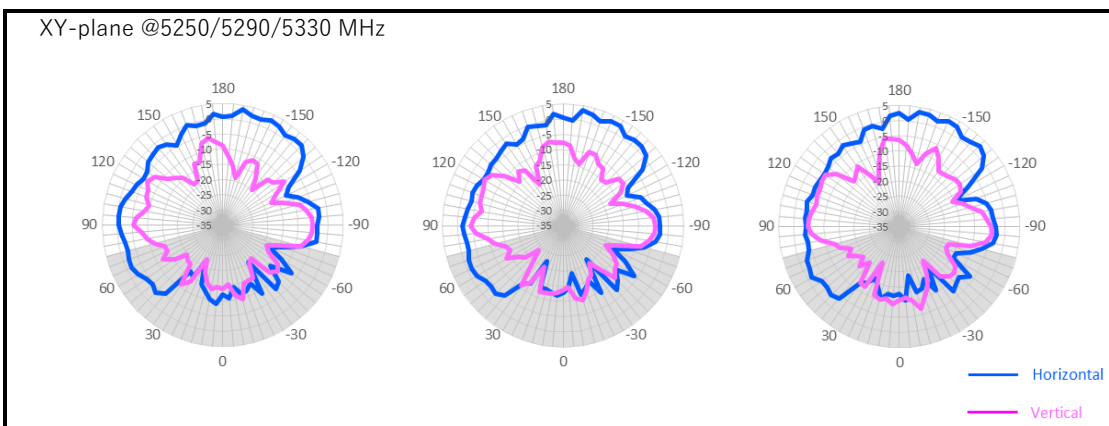
4-1. Antenna-Left (2.4GHzBand)



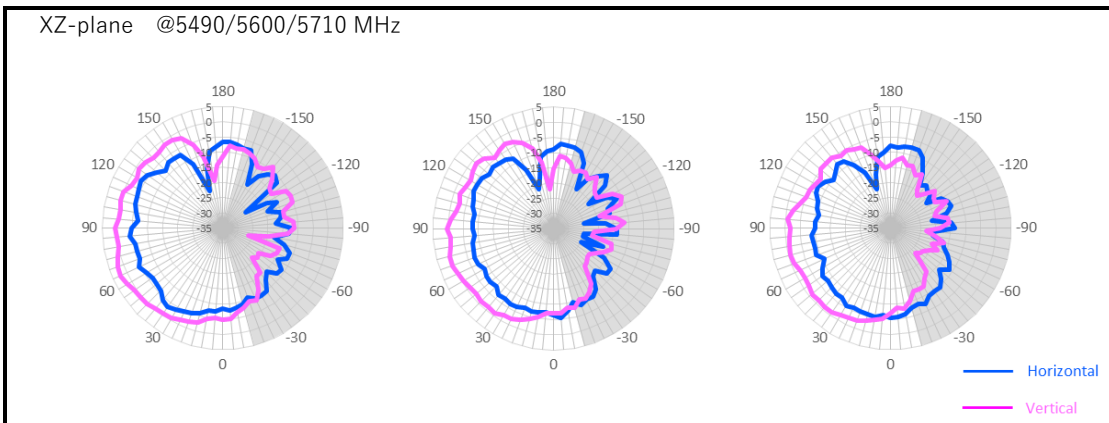
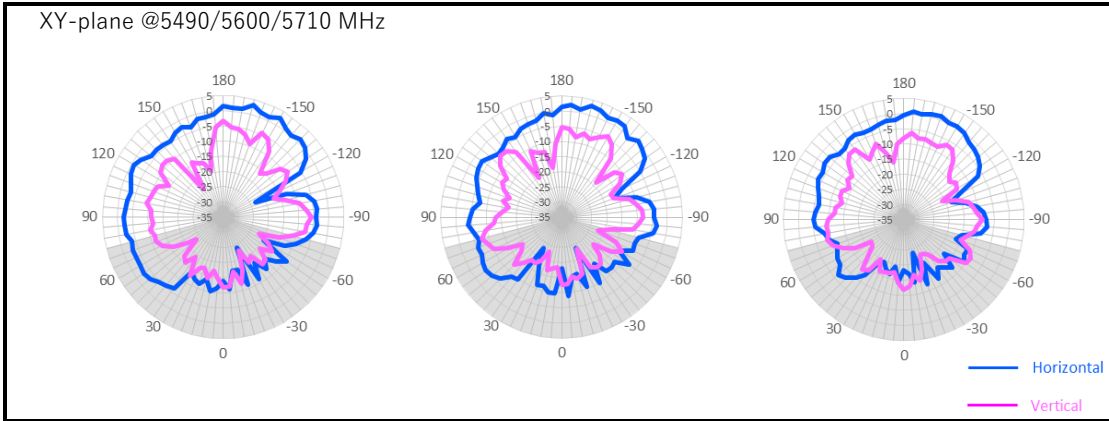
4-2. Antenna-Right (5GHz-Band1)



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



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



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

