

【TN0051A】 Wi-Fi/Bluetooth Antenna

1.Specification

Antenna Type : Inverted F Antenna

Part No. ANT1 : 2406952-1

ANT2 : 2406951-1

Antenna Gain(Peak) : ANT1 Bluetooth 1.63dBi

ANT1 Wi-Fi 5GHz 1.22dBi

ANT2 Wi-Fi 2.4GHz 0.78dBi

ANT2 Wi-Fi 5GHz 0.20dBi

Frequency Band : Wi-Fi 2.4GHz 2402 - 2480 MHz

Wi-Fi 5GHz(W52) 5170 - 5250 MHz

Wi-Fi 5GHz(W58) 5735 - 5835 MHz

Bluetooth 2402 - 2480 MHz

2.Appearance / Dimension

See fig.1 on another Document.(TN0051A_Antenna Photo)

Measurement content

1.Measurement condition

- Reference ANT : Dual-Ridge horn antenna, SH600-154, MVG
- Measuring instrument : ENA Network Analyzer, E5071C, Keysight
- Range of measurement : 360 degree/5 degree step
- Measurement layout : The measurement environment is measured with the following layout.
- The measurement instrument was calibrated from December 19 to 22, 2025.

See fig2 on another Document.(TN0051A_Antenna Photo)

2.Measurement direction

See fig3 on another Document.(TN0051A_Antenna Photo)

- Test dates : 2025/12/19 to 2025/12/22
- Names of test personnel : Daisuke Nozue(Hirschmann Car Communication,inc)
- Names of commercial test software being used : Automated Antenna and OTA Measurement Software Suite, Wave Studio, MVG
Near-Field to Far-Field Transformation Software, MV-Sphere, MVG

3. Antenna gain

3-1. Average Gain Left ANT1 +/-100deg(200deg), XY/ZX

frequency [MHz]	±100°Average Gain[dBi]			
	XY	ZX	XY/ZX	In Band
2402	-3.81	-2.19	-2.92	-4.07
2441	-6.06	-3.55	-4.63	
2480	-5.71	-4.32	-4.96	
5170	-5.06	-2.50	-3.59	-3.55
5210	-4.63	-3.00	-3.74	
5250	-3.68	-3.02	-3.34	
5250	-3.68	-3.02	-3.34	-2.53
5290	-2.68	-2.02	-2.34	
5330	-1.89	-2.16	-2.02	
5490	-1.27	-2.77	-1.96	-2.43
5600	-1.47	-3.10	-2.21	
5710	-3.46	-3.00	-3.22	
5735	-3.56	-3.46	-3.51	-3.78
5785	-3.41	-4.20	-3.79	
5835	-3.47	-4.72	-4.05	

3-2. Average Gain Left ANT1 +/-180deg(360deg), XY/ZX

frequency [MHz]	360°Average Gain[dBi]				
	XY	YZ	ZX	XY/YZ/ZX	In Band
2402	-3.87	-3.28	-2.00	-2.98	-3.65
2441	-5.19	-3.43	-3.05	-3.79	
2480	-5.54	-4.01	-3.56	-4.29	
5170	-6.40	-3.80	-3.69	-4.46	-4.57
5210	-6.07	-4.18	-4.14	-4.71	
5250	-5.24	-4.16	-4.25	-4.52	
5250	-5.24	-4.16	-4.25	-4.52	-3.39
5290	-4.24	-3.16	-3.25	-3.52	
5330	-3.47	-2.96	-3.32	-3.24	
5490	-2.75	-3.68	-3.15	-3.18	-3.64
5600	-3.21	-3.76	-4.03	-3.65	
5710	-4.47	-3.75	-4.26	-4.15	
5735	-4.56	-4.25	-4.76	-4.52	-4.96
5785	-4.48	-5.11	-5.57	-5.03	
5835	-4.52	-5.76	-5.95	-5.37	

3-3. Average Gain Right ANT2 +/-100deg(200deg), XY/ZX

frequency [MHz]	±100°Average Gain[dBi]			
	XY	ZX	XY/ZX	In Band
2402	-2.33	-3.21	-2.75	-3.68
2441	-3.60	-4.33	-3.95	
2480	-4.77	-4.33	-4.55	
5170	-4.87	-2.58	-3.58	-4.04
5210	-5.96	-3.04	-4.26	
5250	-5.86	-3.21	-4.34	
5250	-5.86	-3.21	-4.34	-3.79
5290	-4.97	-3.25	-4.03	
5330	-3.30	-2.90	-3.10	
5490	-1.49	-3.10	-2.22	-2.31
5600	-1.27	-3.15	-2.11	
5710	-2.23	-3.01	-2.60	
5735	-3.01	-3.25	-3.13	-3.61
5785	-3.93	-3.62	-3.77	
5835	-3.94	-4.00	-3.97	

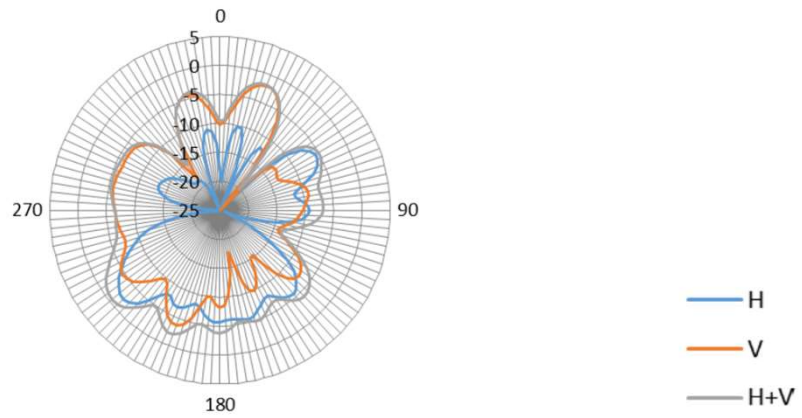
3-4. Average Gain Right ANT2 +/-180deg(360deg), XY/ZX

frequency [MHz]	360°Average Gain[dBi]				
	XY	YZ	ZX	XY/YZ/ZX	In Band
2402	-2.78	-2.53	-2.33	-2.54	-3.31
2441	-3.68	-3.34	-3.41	-3.47	
2480	-4.43	-3.85	-3.89	-4.05	
5170	-6.03	-2.90	-3.31	-3.87	-4.35
5210	-7.49	-3.20	-3.86	-4.49	
5250	-7.69	-3.46	-4.13	-4.74	
5250	-7.69	-3.46	-4.13	-4.74	-4.59
5290	-6.91	-3.72	-4.26	-4.76	
5330	-5.27	-3.73	-4.02	-4.29	
5490	-3.35	-4.38	-4.36	-4.00	-3.82
5600	-2.80	-3.81	-4.39	-3.62	
5710	-3.36	-3.94	-4.26	-3.84	
5735	-3.97	-4.39	-4.55	-4.30	-4.73
5785	-4.68	-4.89	-4.90	-4.82	
5835	-4.84	-5.28	-5.23	-5.11	

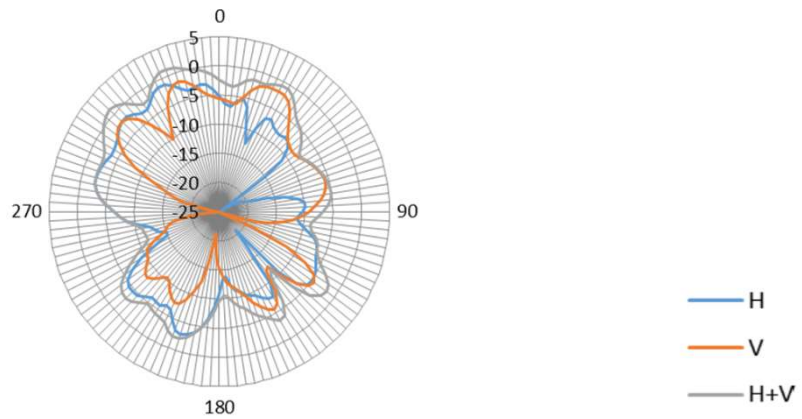
4. Radio wave radiation pattern (directivity graph)

4-1. Antenna1-Left (2.4GHzBand)

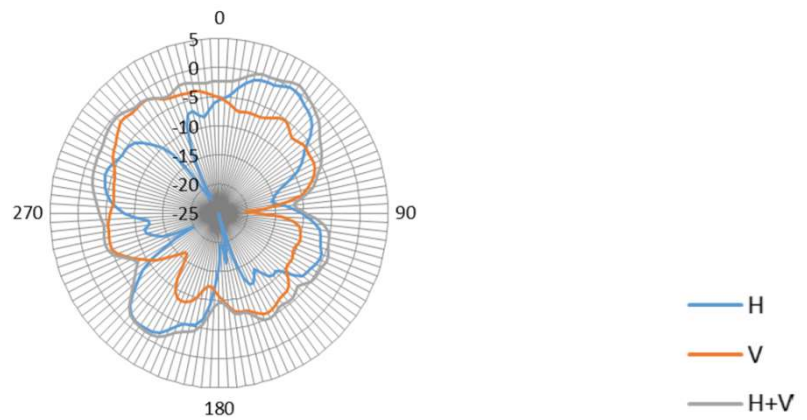
XY-plane @2441 MHz



YZ-plane @2441 MHz

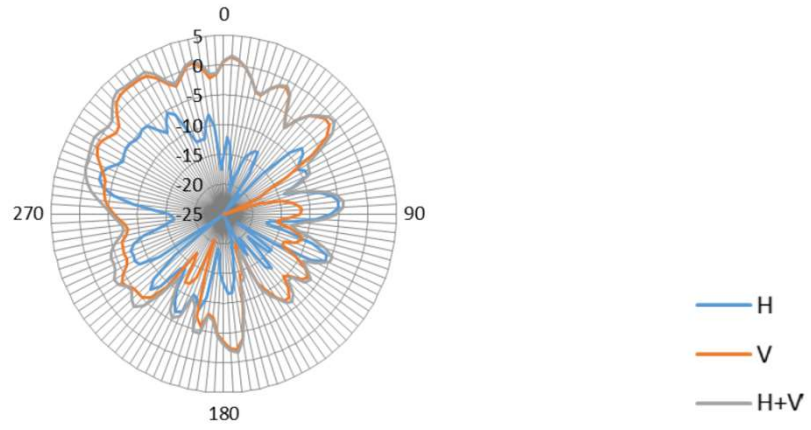


XZ-plane @2441 MHz

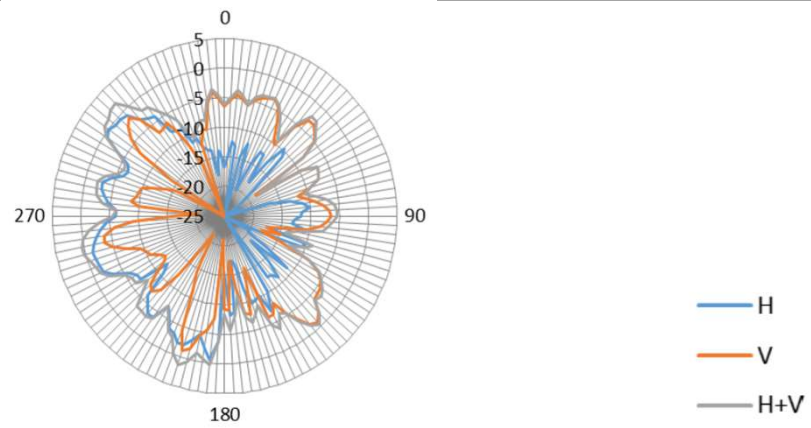


4-2. Antenna1-Left (5GHzBand)

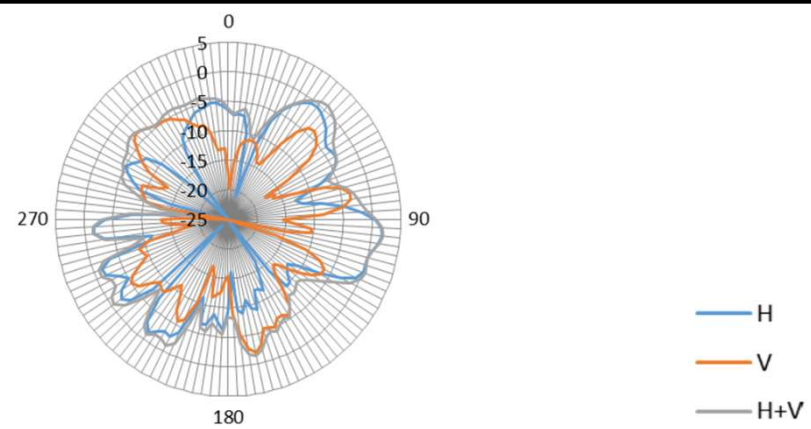
XY-plane @5490 MHz



YZ-plane @5490 MHz

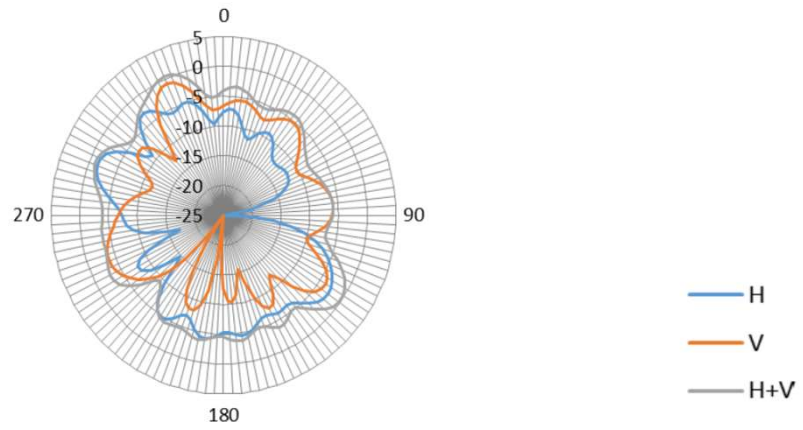


XZ-plane @5490 MHz

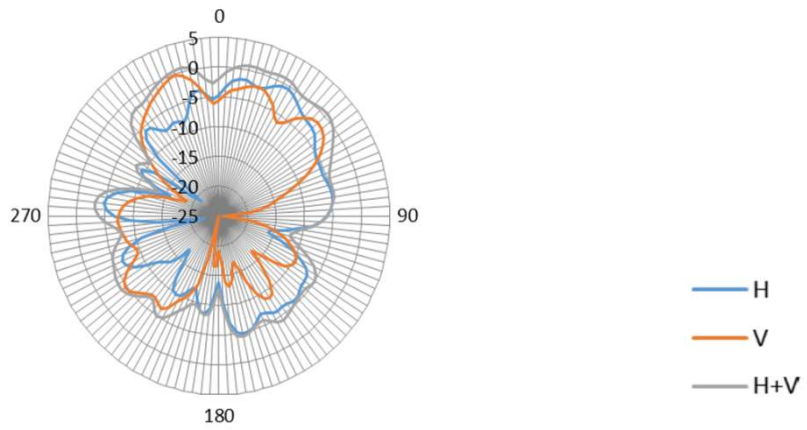


4-3. Antenna2-Right (2.4GHzBand)

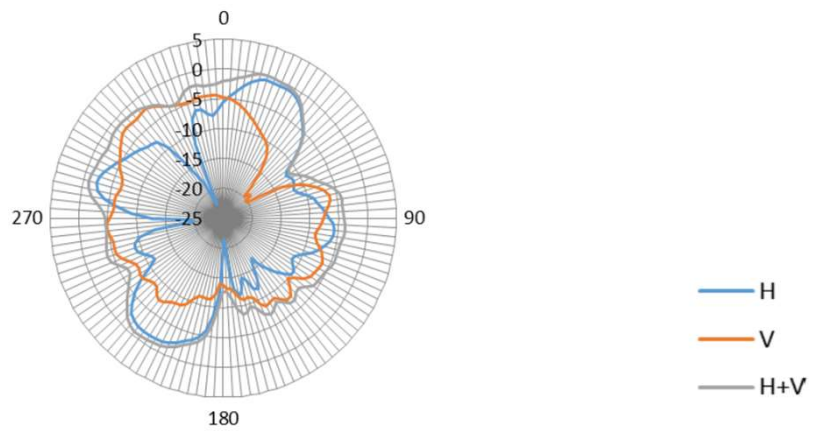
XY-plane @2441 MHz



YZ-plane @2441 MHz

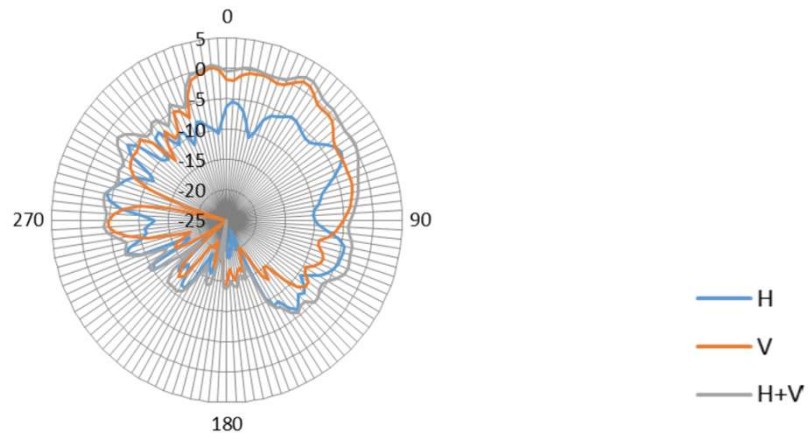


XZ-plane @2441 MHz

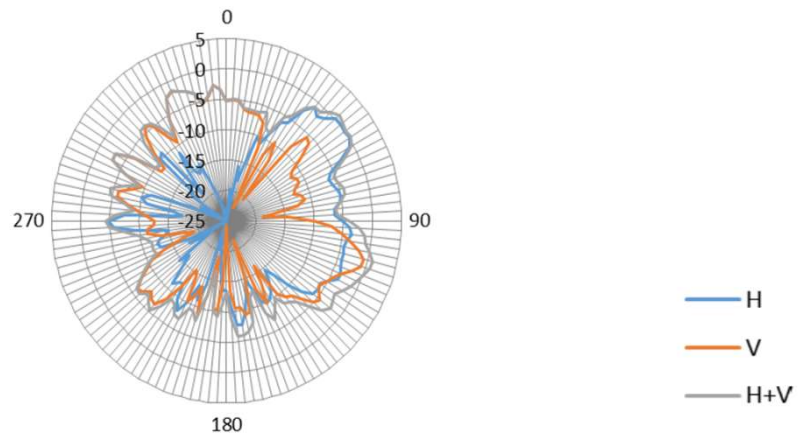


4-4. Antenna2-Right (5GHzBand)

XY-plane @5490 MHz



YZ-plane @5490 MHz



XZ-plane @5490 MHz

