

【TN0051A】 Wi-Fi/Bluetooth Antenna**1.Specification**

Antenna Type : Inverted F Antenna

Part No. ANT1 : 2406952-8

ANT2 : 2406952-7

Antenna Gain(Peak) : ANT1 Bluetooth 0.18dBi

ANT1 Wi-Fi 5GHz 1.75dBi

ANT2 Wi-Fi 2.4GH 0.15dBi

ANT2 Wi-Fi 5GHz 3.70dBi

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 October 28 to 29, 2025.

See fig2 on another Document.(TN0051A_Antenna Photo)

2.Measurement direction

See fig3 on another Document.(TN0051A_Antenna Photo)

•Test dates : 2025/10/28 to 2025/10/29

•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]	$\pm 100^\circ$ Average Gain[dBi]			
	XY	ZX	XY/ZX	In Band
2402	-2.55	-2.07	-2.30	-3.09
2441	-4.64	-2.71	-3.57	
2480	-5.62	-2.12	-3.53	
5170	-3.62	-5.44	-4.44	-4.01
5210	-3.17	-4.91	-3.95	
5250	-3.27	-4.10	-3.66	
5250	-3.27	-4.10	-3.66	-3.71
5290	-3.57	-4.22	-3.88	
5330	-3.14	-4.11	-3.60	
5490	-2.51	-4.93	-3.55	-3.45
5600	-2.73	-5.48	-3.89	
5710	-2.10	-4.05	-2.96	
5735	-1.89	-3.72	-2.71	-2.50
5785	-1.74	-3.31	-2.46	
5835	-1.87	-2.86	-2.34	

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	-3.23	-3.71	-2.44	-3.09	-3.54
2441	-4.80	-4.12	-2.94	-3.88	
2480	-5.10	-4.14	-2.29	-3.68	
5170	-4.95	-5.30	-6.29	-5.48	-5.11
5210	-4.48	-4.78	-5.75	-4.97	
5250	-4.59	-5.00	-5.19	-4.92	
5250	-4.59	-5.00	-5.19	-4.92	-5.08
5290	-4.91	-5.56	-5.41	-5.28	
5330	-4.51	-5.42	-5.28	-5.05	
5490	-4.13	-5.65	-5.91	-5.16	-4.97
5600	-4.45	-5.01	-6.34	-5.20	
5710	-3.94	-4.58	-5.34	-4.58	
5735	-3.75	-4.48	-5.06	-4.39	-4.22
5785	-3.60	-4.41	-4.64	-4.19	
5835	-3.67	-4.31	-4.30	-4.08	

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

frequency	± 100° Average Gain[dBi]			
[MHz]	XY	ZX	XY/ZX	In Band
2402	-2.72	-4.35	-3.46	-2.95
2441	-2.08	-3.72	-2.83	
2480	-1.82	-3.56	-2.61	
5170	-4.59	-1.00	-2.43	-2.60
5210	-4.38	-1.46	-2.68	
5250	-4.07	-1.63	-2.68	
5250	-4.07	-1.63	-2.68	-2.65
5290	-4.00	-1.54	-2.60	
5330	-4.09	-1.62	-2.68	
5490	-4.19	-2.97	-3.53	-3.36
5600	-4.23	-2.72	-3.41	
5710	-3.79	-2.60	-3.16	
5735	-3.81	-2.28	-2.98	-2.38
5785	-3.08	-1.42	-2.18	
5835	-2.66	-1.50	-2.04	

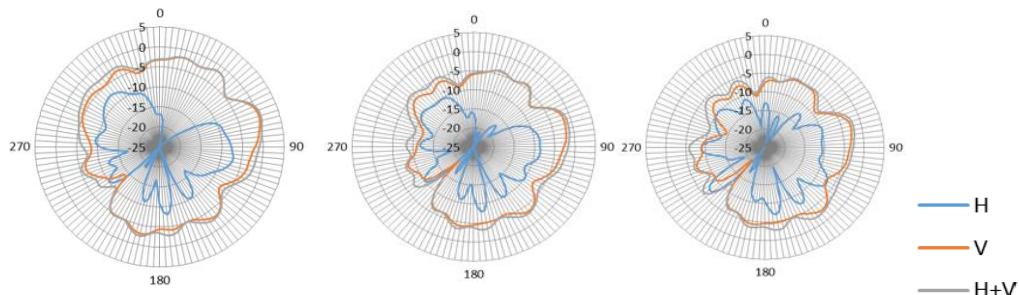
3-4. Average Gain Right ANT2 +/-180deg(360deg), XY/ZX

frequency	360° Average Gain[dBi]				
[MHz]	XY	YZ	ZX	XY/YZ/ZX	In Band
2402	-4.24	-4.21	-5.33	-4.56	-4.05
2441	-3.74	-4.02	-4.19	-3.98	
2480	-3.52	-3.74	-3.75	-3.67	
5170	-6.66	-5.98	-1.85	-4.27	-4.22
5210	-6.43	-5.73	-2.16	-4.35	
5250	-6.10	-5.01	-2.06	-4.04	
5250	-6.10	-5.01	-2.06	-4.04	-3.87
5290	-5.97	-4.51	-1.82	-3.75	
5330	-5.97	-4.47	-1.99	-3.83	
5490	-5.94	-4.89	-3.47	-4.65	-4.63
5600	-6.27	-5.52	-3.60	-4.98	
5710	-5.72	-4.61	-2.97	-4.28	
5735	-5.79	-4.83	-2.75	-4.27	-3.69
5785	-5.06	-4.19	-1.90	-3.50	
5835	-4.65	-3.75	-2.06	-3.35	

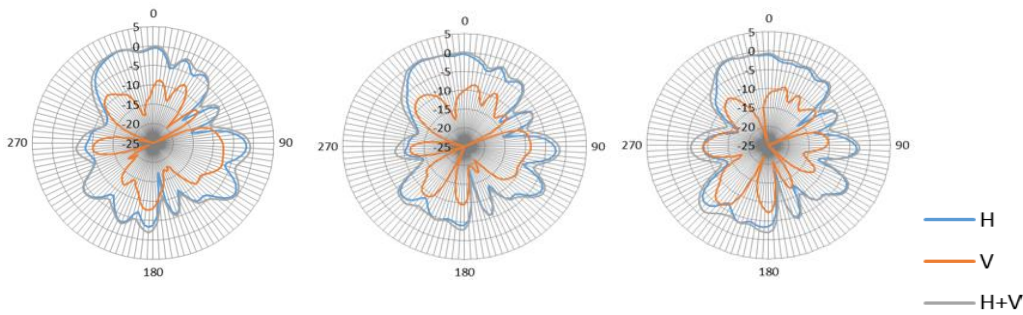
4. Radio wave radiation pattern (directivity graph)

4-1. Antenna1-Left (2.4GHzBand)

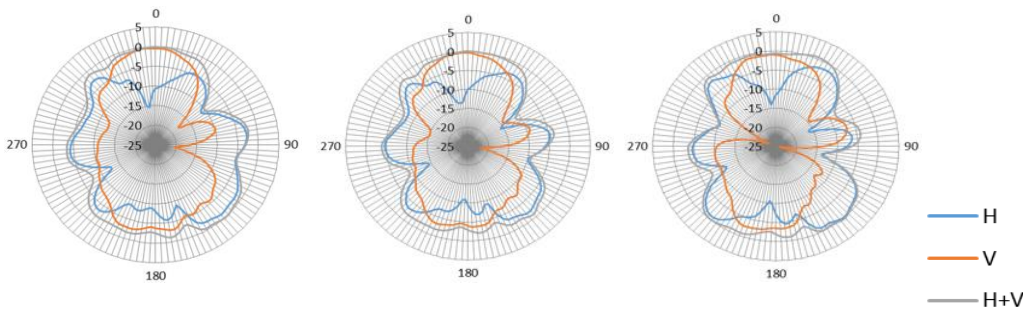
XY-plane @2402/2441/2480 MHz



YZ-plane @2402/2441/2480 MHz

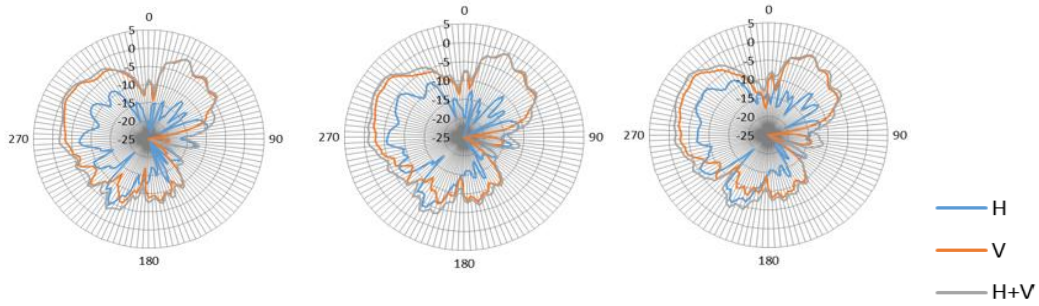


XZ-plane @2402/2441/2480 MHz

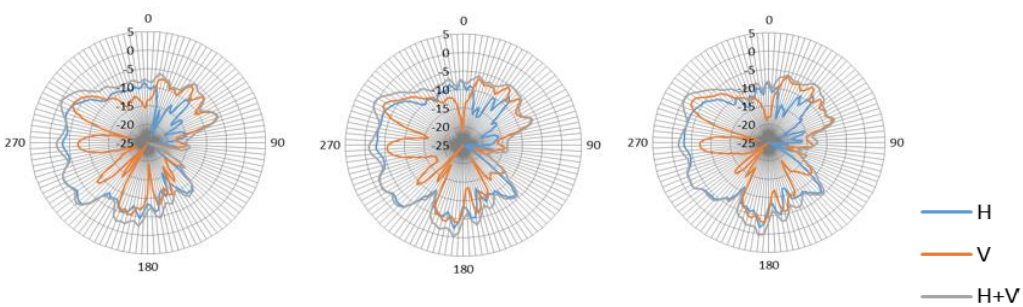


4-2. Antenna1-Left (5GHz W52 Band)

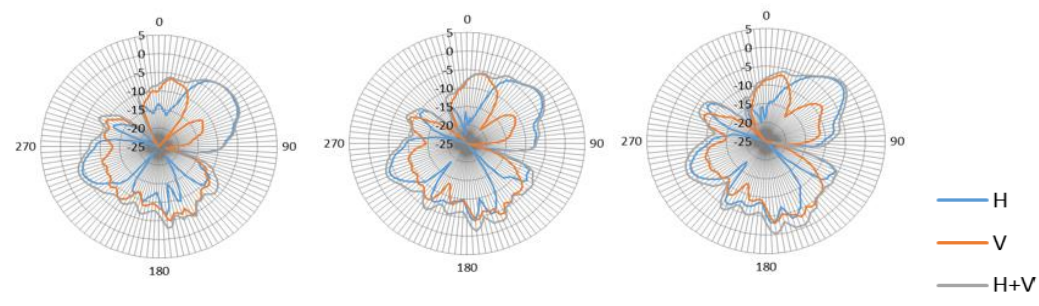
XY-plane @5170/5210/5250 MHz



YZ-plane @5170/5210/5250 MHz

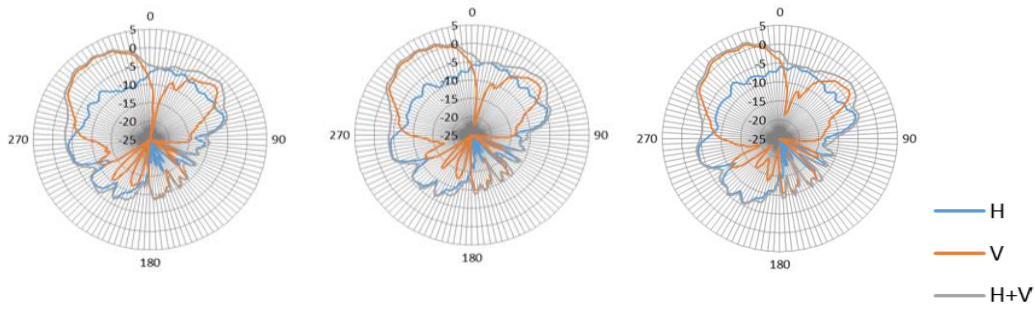


XZ-plane @5170/5210/5250 MHz

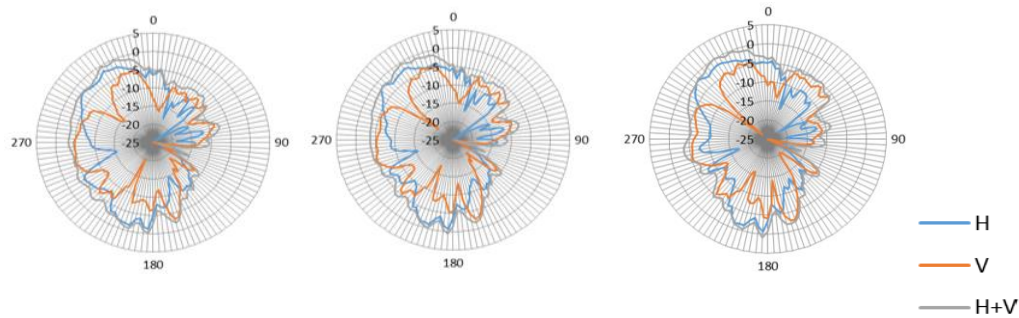


4-3. Antenna1-Left (5GHz W58 Band)

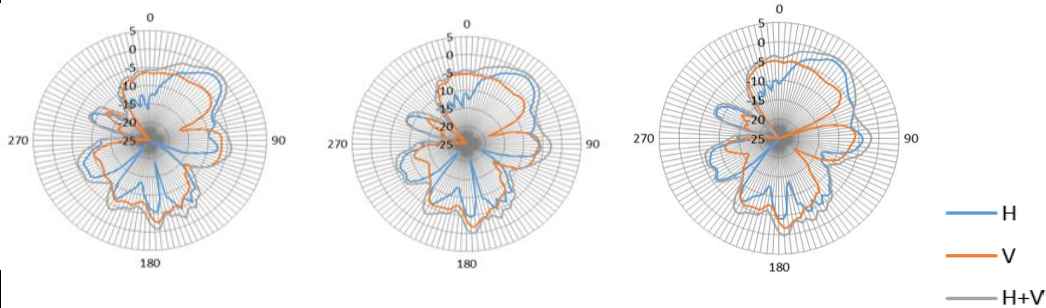
XY-plane @5735/5785/5835 MHz



YZ-plane @5735/5785/5835 MHz

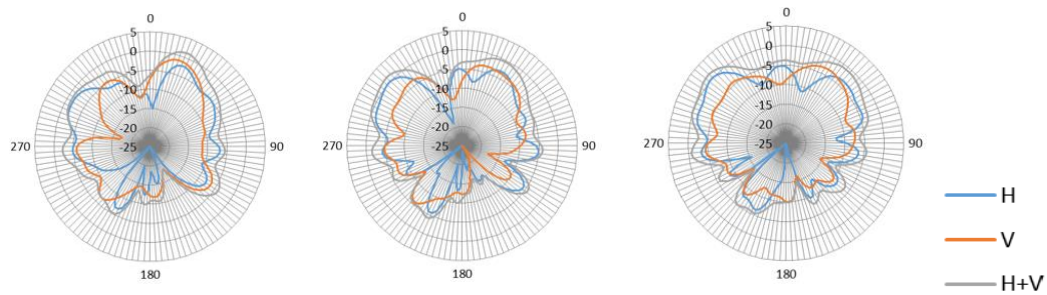


XZ-plane @5735/5785/5835 MHz

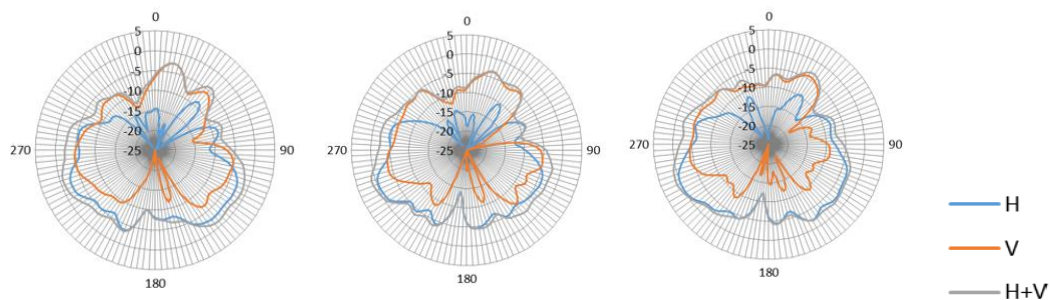


4-4. Antenna2-Right (2.4GHzBand)

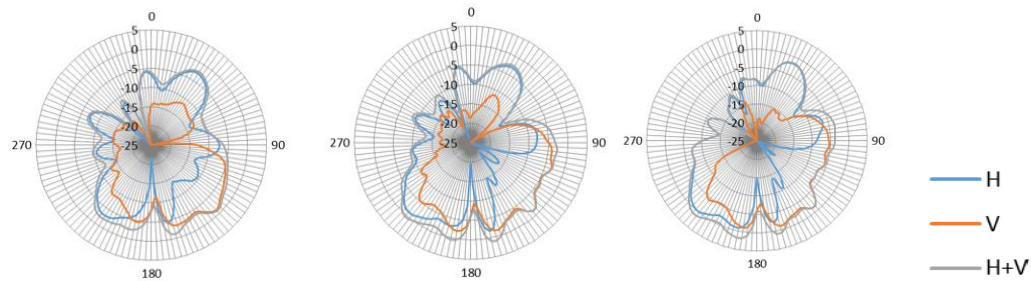
XY-plane @2402/2441/2480 MHz



YZ-plane @2402/2441/2480 MHz

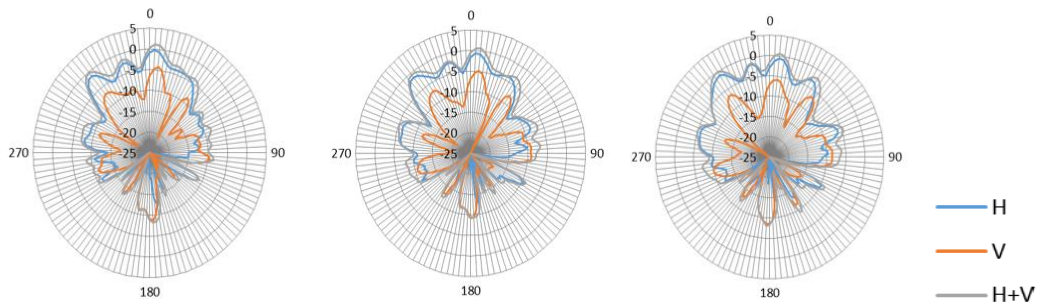


XZ-plane @2402/2441/2480 MHz

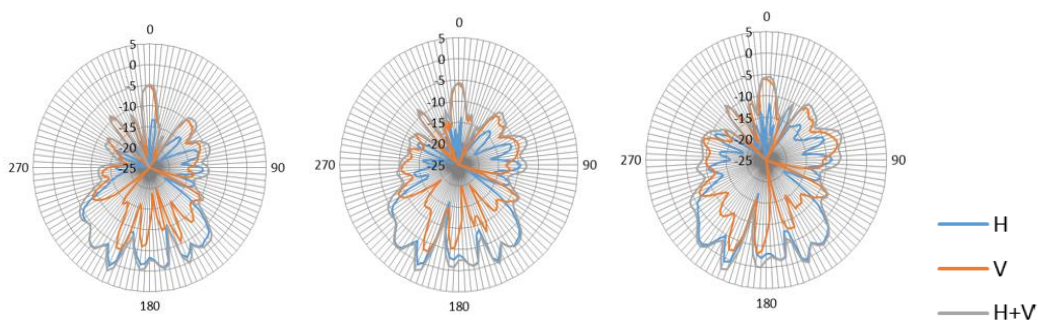


4-5. Antenna2-Right (5GHz W52 Band)

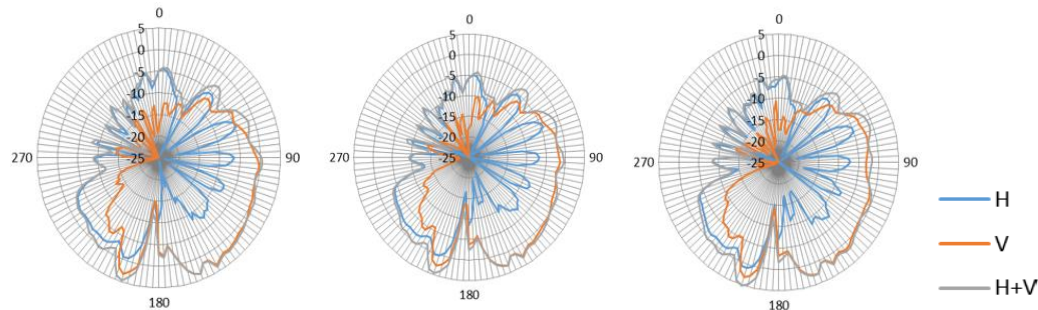
XY-plane @5170/5210/5250 MHz



YZ-plane @5170/5210/5250 MHz

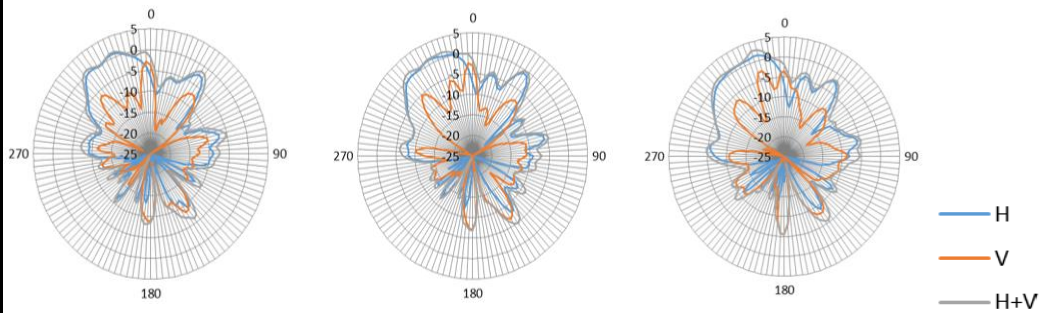


XZ-plane @5170/5210/5250 MHz

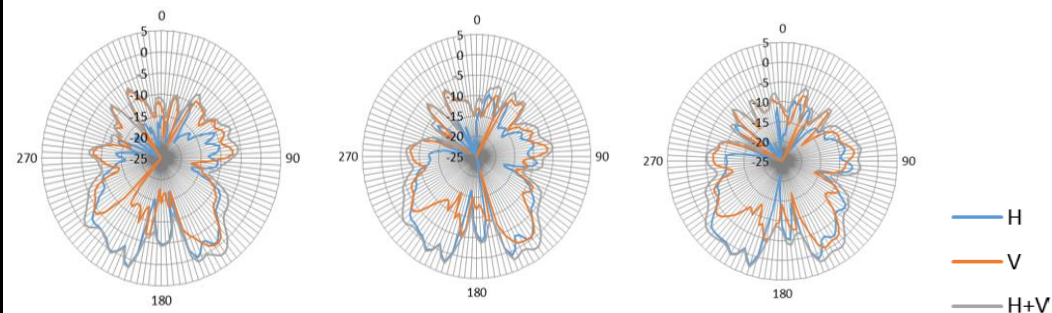


4-6. Antenna2-Right (5GHz W58 Band)

XY-plane @5735/5785/5835 MHz



YZ-plane @5735/5785/5835 MHz



XZ-plane @5735/5785/5835 MHz

