



BEE-056 AUT Report

note

- Since the radio specifications of BEE-001 and BEE-056 are equivalent including the antenna, the antenna performance measurement was performed on BEE-001 as a representative.

Antenna specification (Antenna0)

- Frequency Range
 - WLAN: 2412-2472, 5180-5320, 5500-5700, 5745-5825 MHz
 - Bluetooth: 2402-2480 MHz
- Antenna Type
 - LDS antenna
- Connector Type
 - MHF I / II
- Antenna Gain (Peak)
 - 2.4 GHz Band: -2.51 dBi
 - 5 GHz Band: +0.70 dBi

Antenna specification (Antenna1)

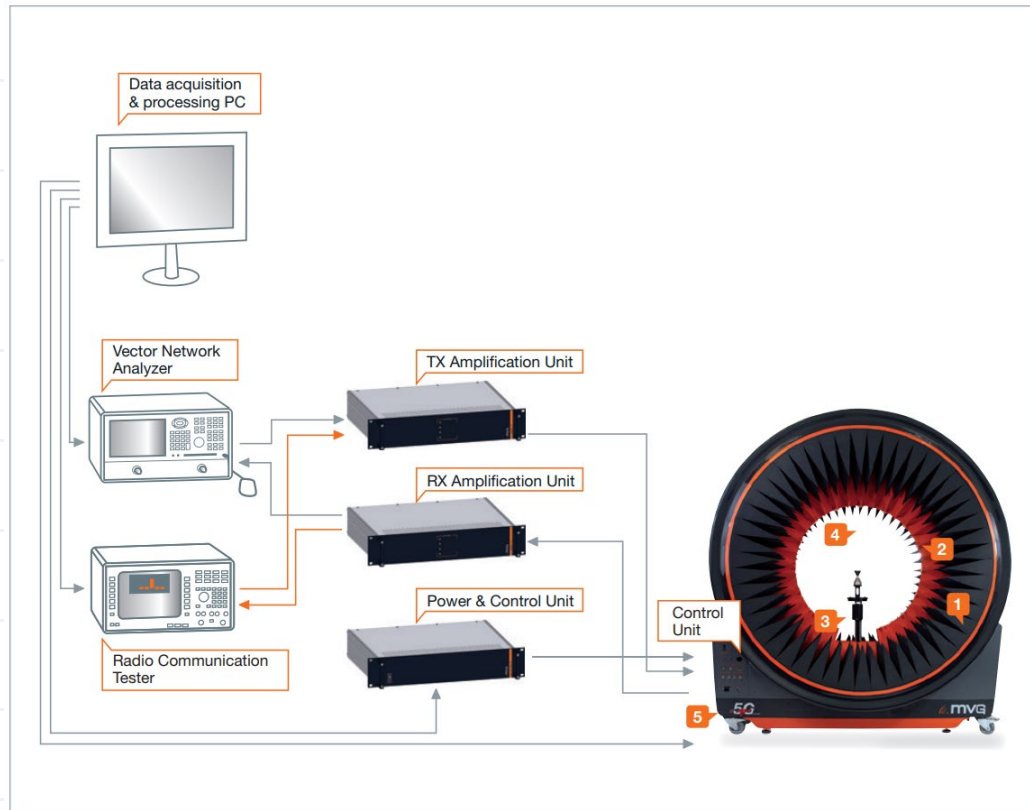
- Frequency Range
 - Bluetooth: 2402-2480 MHz
- Antenna Type
 - LDS antenna
- Connector Type
 - MHF I / II
- Antenna Gain (Peak)
 - 2.4 GHz Band: -1.74 dBi

Antenna specification (Antenna2)

- Frequency Range
 - WLAN: 2412-2472, 5180-5320, 5500-5700, 5745-5825 MHz
- Antenna Type
 - LDS antenna
- Connector Type
 - MHF I / II
- Antenna Gain (Peak)
 - 2.4 GHz Band: +0.21 dBi
 - 5 GHz Band: +4.07 dBi

Antenna measurement procedure

- The antenna gain is measured with StarLab system.

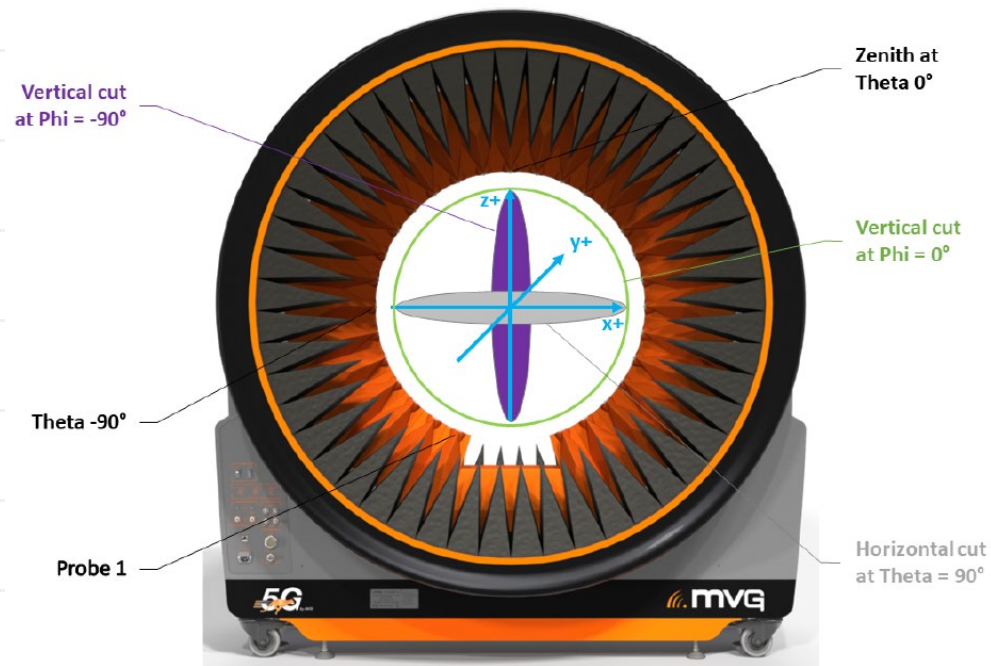


1. Wedge Absorber
2. Probe
3. Positioner
4. Oversampling
5. Accurate Stabilizer

(Reference: MVG, Datasheet of StarLab 50 GHz)

Antenna measurement procedure

- Measurement axis



(Reference: MVG, User Manual of StarLab 50 GHz)

Measurement information

- Test Facility
 - Nintendo Co., Ltd. Development Center
 - 2-1 Minamimatsuda-cho, Higashikujo, Minami-ku, Kyoto 601-8502, Japan
- Test Date
 - 2023/07/21
- Test Engineer
 - Mitsuru Katayama
- Measurement Software
 - Wave Studio ver.22.4.2

Measurement information

- Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Last Calibration Date
StarLab 50GHz system	MVG	StarLab 50GHz	1103673-0003	2023/01/12
Vector Network Analyzer	Keysight	P5008A	MY58100292	2023/01/12

Antenna Gain (Antenna0)

Frequency [MHz]	E _φ [dBi]			E _θ [dBi]		
	XY plane	YZ plane	XZ plane	XY plane	YZ plane	XZ plane
2400	-8.69	-5.77	-2.51	-7.80	-4.18	-8.42
2440	-9.94	-6.35	-3.77	-9.36	-5.12	-7.29
2480	-10.36	-8.89	-4.97	-8.40	-7.83	-6.75
5150	-6.52	-3.25	-1.62	-2.80	-1.01	-0.47
5550	-3.50	-4.45	-2.13	-3.90	-0.95	-1.80
5850	-2.83	-3.57	0.70	-0.81	-1.11	-0.65

Antenna Gain Chart (Antenna0)

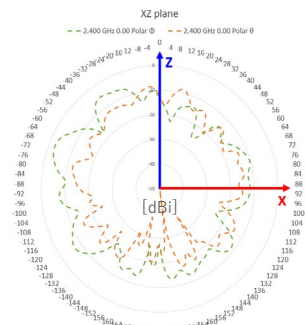
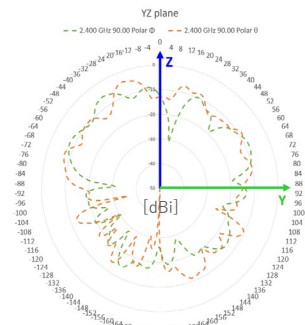
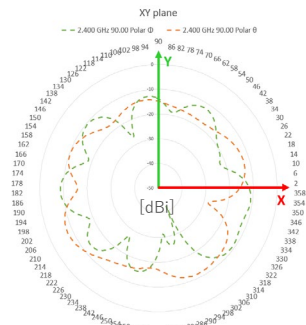
Frequency [MHz]

XY plane

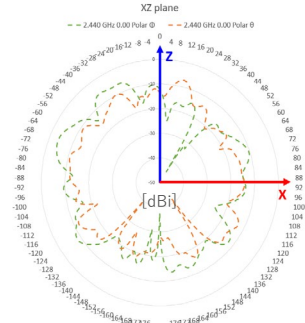
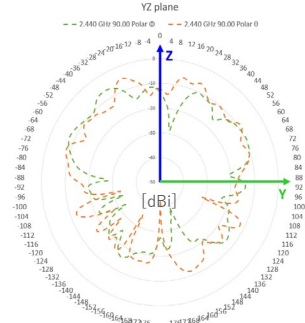
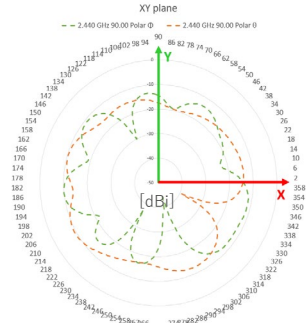
YZ plane

XZ plane

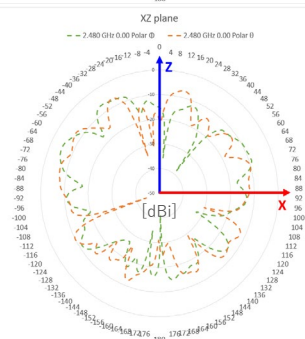
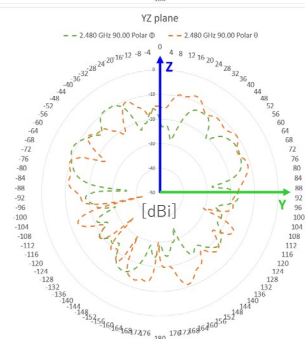
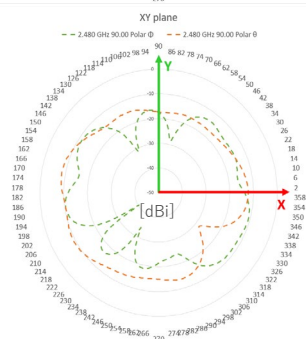
2400



2440



2480



Antenna Gain Chart (Antenna0)

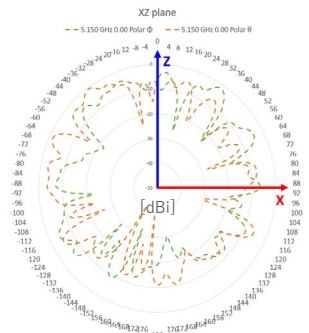
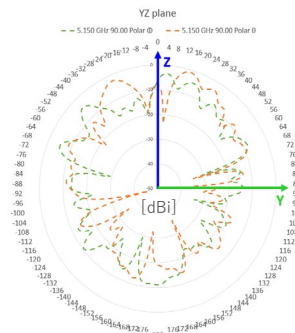
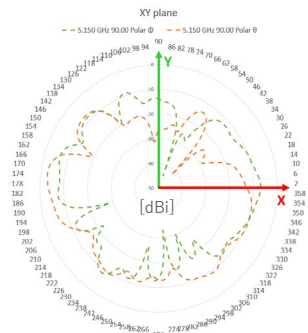
Frequency [MHz]

XY plane

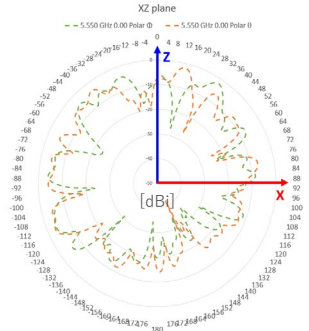
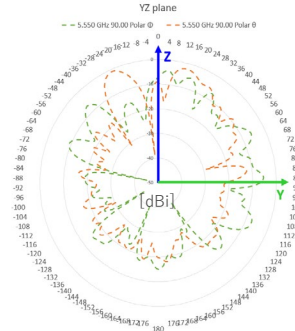
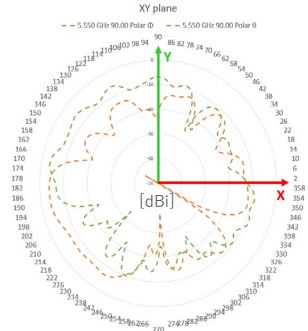
YZ plane

XZ plane

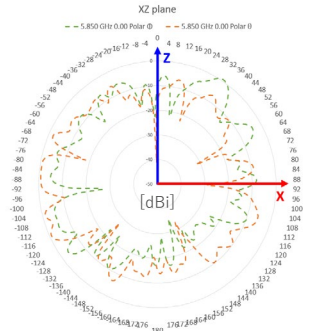
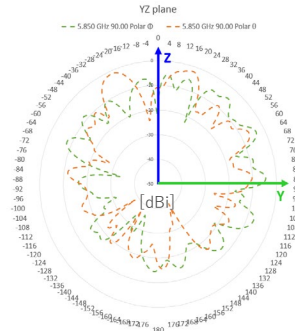
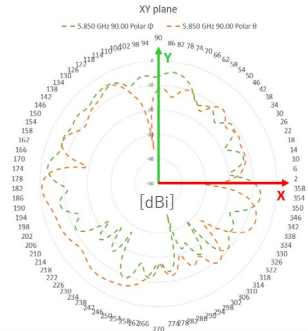
5150



5550



5850



Antenna Gain (Antenna1)

Frequency [MHz]	E_{ϕ} [dBi]			E_{θ} [dBi]		
	XY plane	YZ plane	XZ plane	XY plane	YZ plane	XZ plane
2400	-8.17	-6.53	-6.61	-8.59	-9.88	-2.82
2440	-6.56	-5.37	-5.19	-7.77	-8.29	-1.74
2480	-5.91	-6.26	-4.88	-7.39	-8.48	-1.88

Antenna Gain Chart (Antenna1)

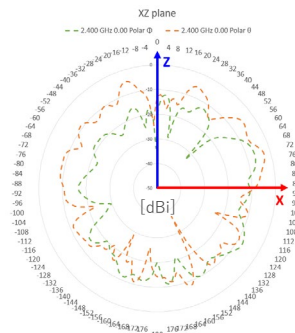
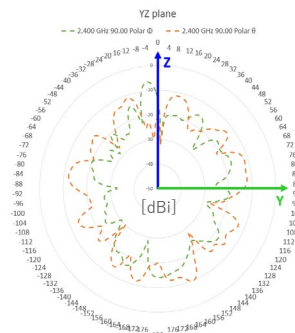
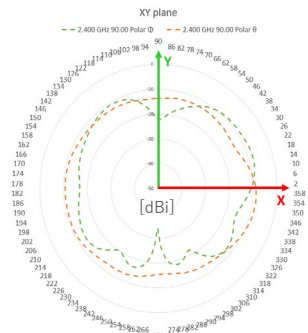
Frequency [MHz]

XY plane

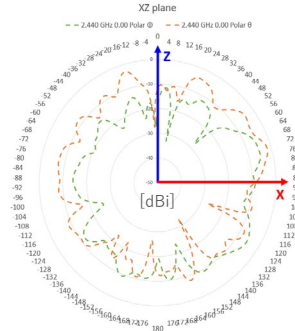
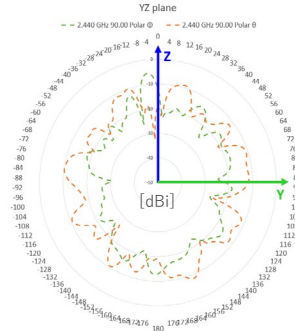
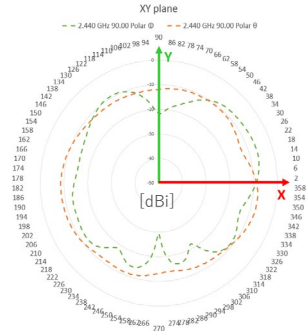
YZ plane

XZ plane

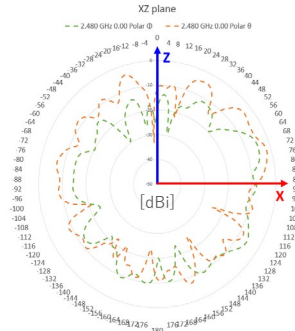
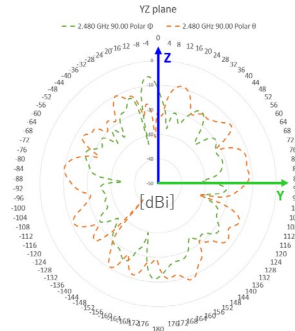
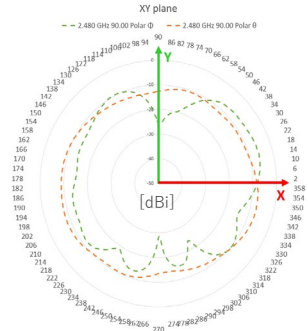
2400



2440



2480



Antenna Gain (Antenna2)

Frequency [MHz]	E _φ [dBi]			E _θ [dBi]		
	XY plane	YZ plane	XZ plane	XY plane	YZ plane	XZ plane
2400	-11.16	-8.38	-1.76	-6.50	-3.79	-3.16
2440	-10.63	-6.53	0.11	-5.16	-2.11	-2.11
2480	-9.39	-6.41	0.21	-5.05	-2.49	-1.90
5150	-4.51	4.07	-1.77	-3.62	1.48	1.52
5550	-6.82	1.16	-3.02	-5.49	-1.63	0.20
5850	-8.44	4.00	-3.60	-3.73	-4.33	3.02

Antenna Gain Chart (Antenna2)

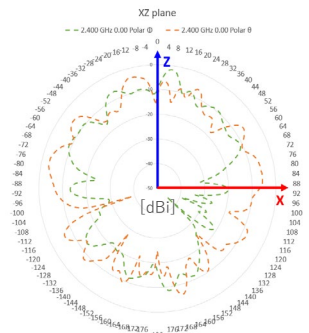
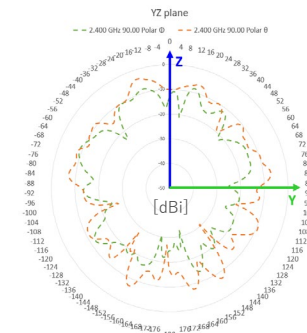
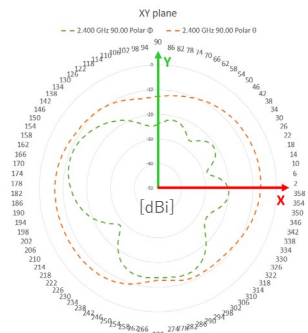
Frequency [MHz]

XY plane

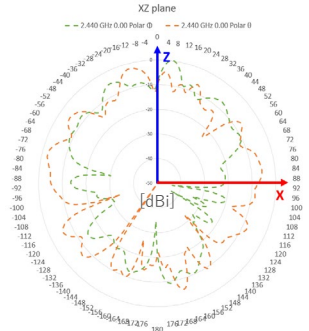
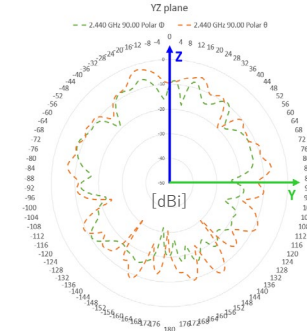
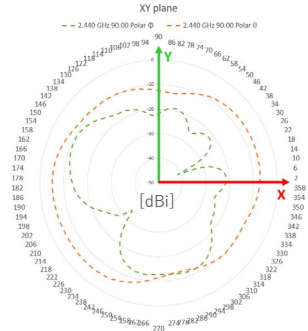
YZ plane

XZ plane

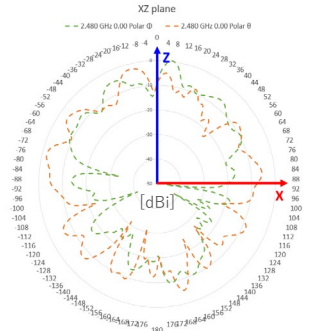
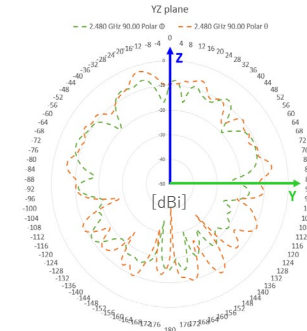
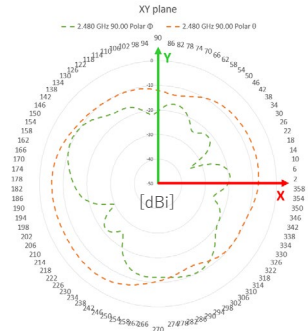
2400



2440



2480



Antenna Gain Chart (Antenna2)

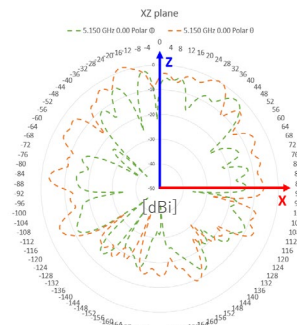
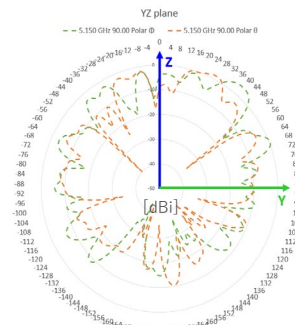
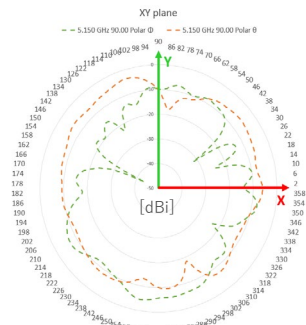
Frequency [MHz]

XY plane

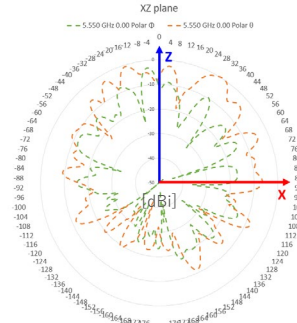
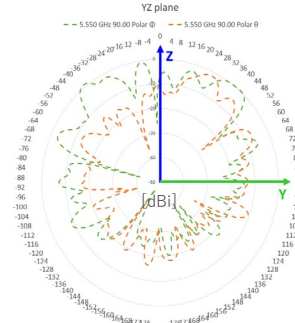
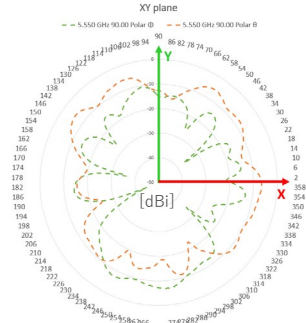
YZ plane

XZ plane

5150



5550



5850

