LBEE5XV1YM-Antenna

Antenna information

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Content

1. Test method for antenna gain measurement

- Test method for antenna gain measurement:
  Standard antenna method (comparative method)
  * Comparing a measured antenna to a standard antenna with a known gain factor

- Equipment used for antenna gain measurement (model name, serial number, calibration date, etc.);
  - Measurement system
    Microwave Vision Group (former SATIMO) SG32 (details next page)
  - Equipment
    PAC (MW 000021H-0068)
    E4428C (MY45280451, MY45280466)
  - Calibration date
    September 12, 2018
  - Antenna gain measurement date / Measurement person July 31, 2020 / Rie Ichimura

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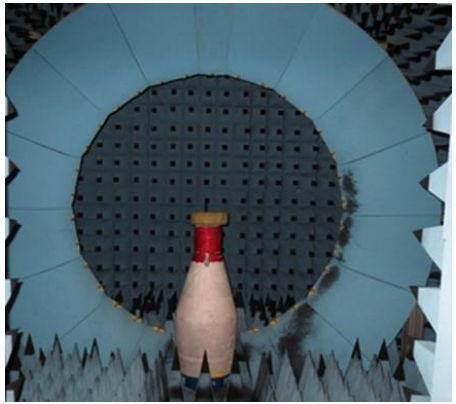
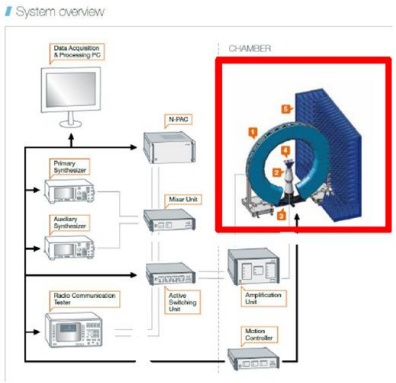
2. Test Equipment (Details of SG32)





Anechoic chamber size		Approximately 3.5m x 3.5m x 3m (H)		
Frequency band		800~6000MHz (18~40GHz compatible with Option)		
Measurement time	Elevation 1 cut	Real time		
	Global surface measurement	< Approx. 20 seconds (when measuring 10 frequencies)		
Measurement uncertainty	Peak gain	< +/-0.75dB (1.0~6.0GHz)		
		< +/-1.0dB (0.8~1.0GHz)		
	Low gain	< +/-2dB (@-20dB from peak)		
Dynamic range		70dB		
Cross Polar Isolation		> 45dB		
DUT size	0.8 GHz	1.8 GHz	2.5 GHz	6 GHz
	75 cm	75 cm	65 cm	30 cm

Peak gain variation is secured within ±0.75 dB by system calibration.

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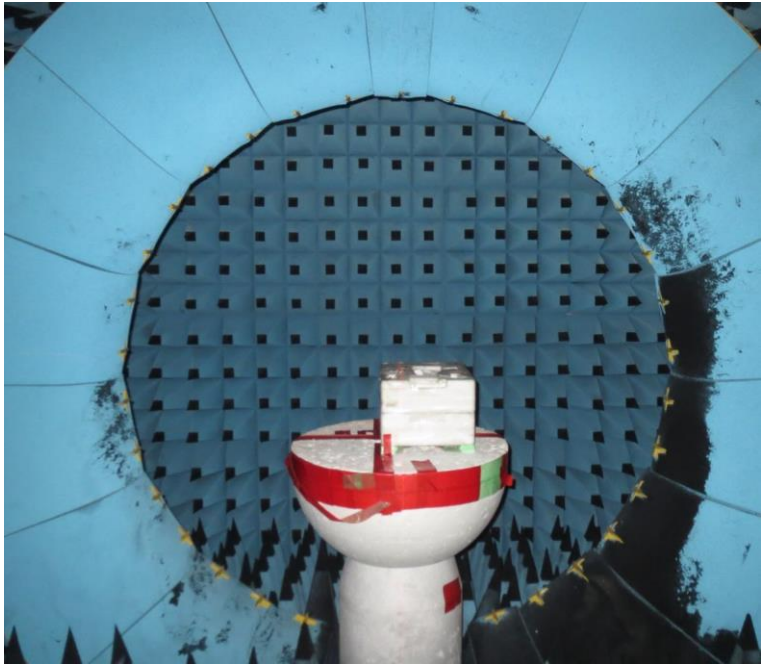
3. DUT placement status



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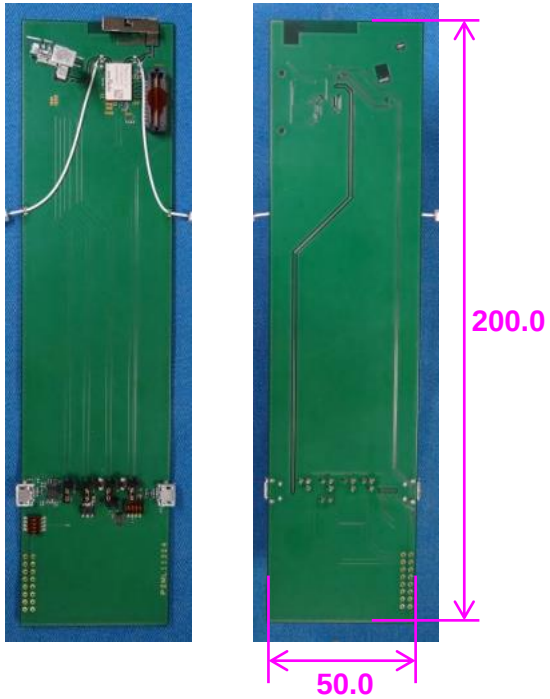
4. Appearance

<DUT>



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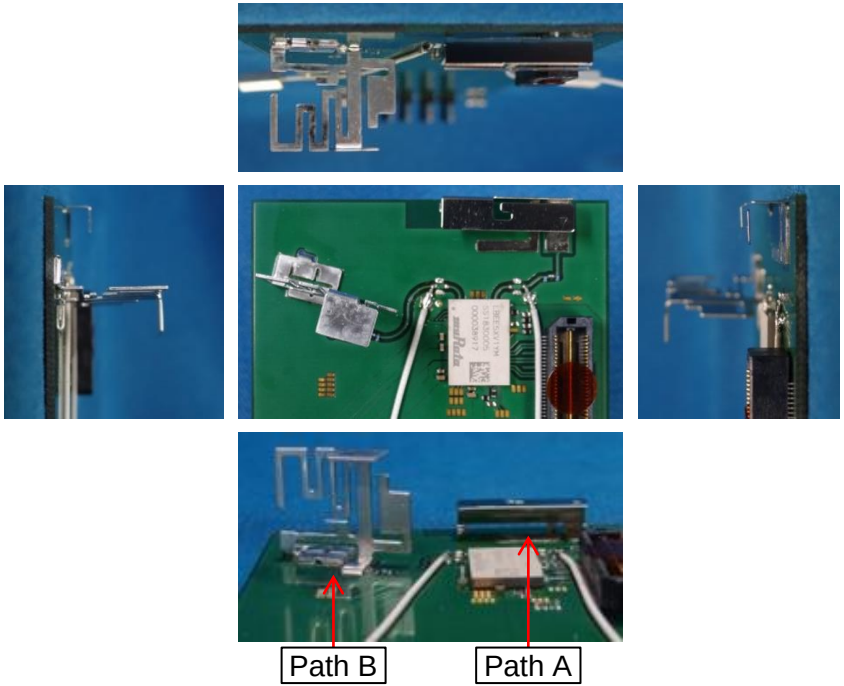

UNIT : mm

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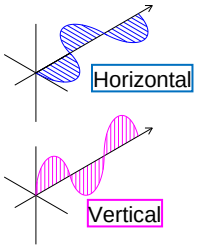
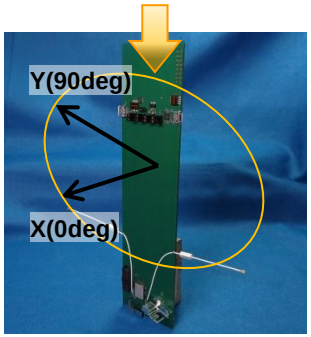
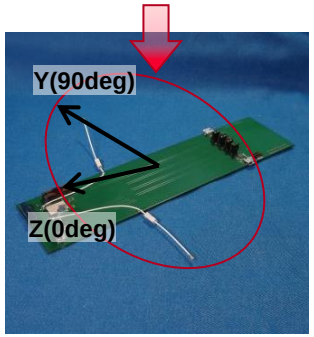
5. Measurement direction



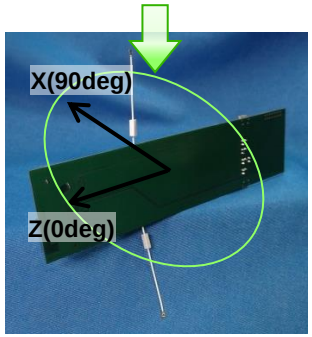
XY plane View



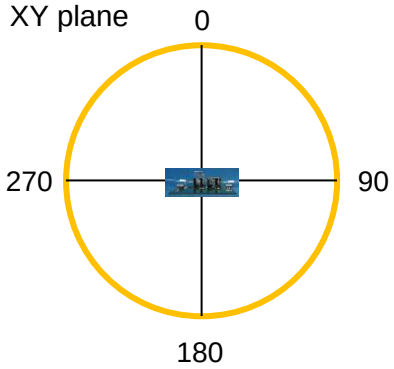
YZ plane View

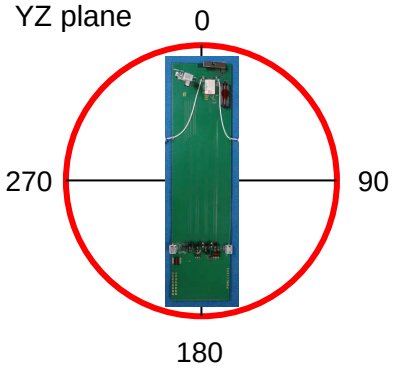


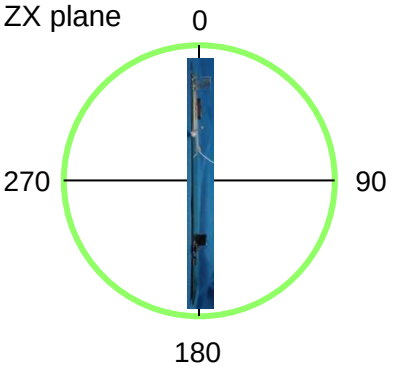
ZX plane View



2D Directional indication







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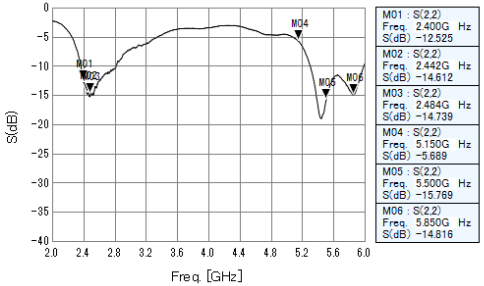
6. Measurement result

Path A

<Return Loss>



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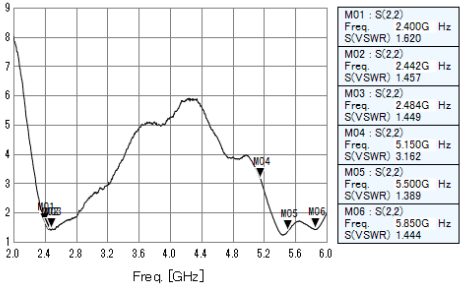

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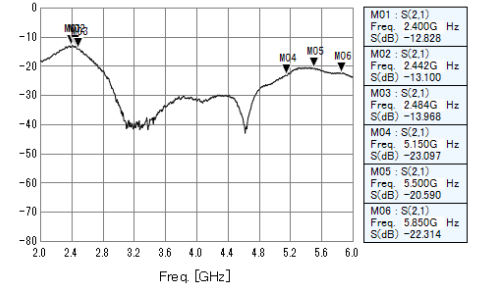
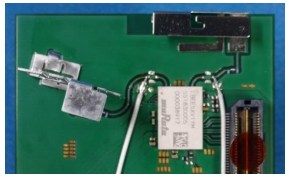
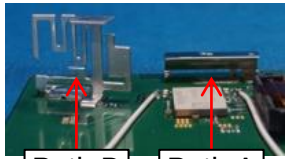






<Efficiency>

[dBi] [dB]

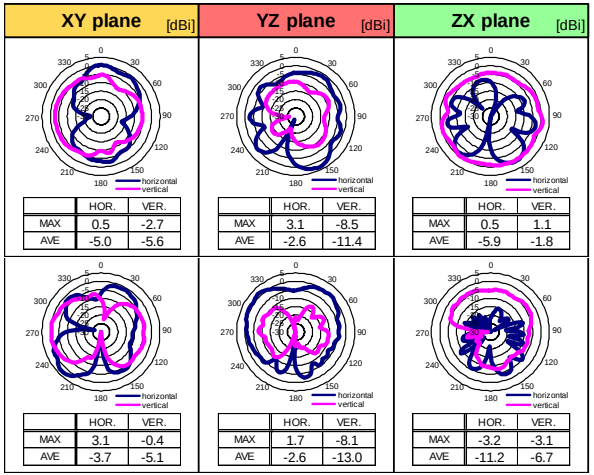
LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-0.6	-3.0	3.1	-8.7	0.5	-0.6	-1.5
	AVE.	-5.1	-5.7	-2.8	-11.6	-5.8	-2.3	
2442 MHz	**MAX.**	**0.5**	**-2.7**	**3.1**	**-8.5**	**0.5**	**1.1**	**-1.3**
	AVE.	**-5.0**	**-5.6**	**-2.6**	**-11.4**	**-5.9**	**-1.8**	
2484 MHz	MAX.	-0.4	-2.7	2.8	-8.4	0.2	0.1	-1.4
	AVE.	-5.5	-5.8	-2.8	-11.1	-6.3	-1.8	

[dBi] [dB]

LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
5150 MHz	MAX.	1.9	-1.9	-0.1	-10.6	-5.4	-3.5	-2.3
	AVE.	-4.8	-5.5	-3.1	-16.3	-13.2	-7.4	
5500 MHz	**MAX.**	**4.3**	**0.8**	**2.9**	**-6.9**	**-2.0**	**-1.9**	**-0.2**
	AVE.	**-2.5**	**-3.9**	**-1.4**	**-11.8**	**-10.0**	**-5.5**	
5850 MHz	MAX.	4.5	1.2	3.2	-7.0	-1.7	-1.6	-0.3
	AVE.	-1.6	-4.3	-1.7	-12.1	-9.3	-5.0	

*Red color shows peak gain

<Directivity>



	XY plane HOR.	XY plane VER.	YZ plane HOR.	YZ plane VER.	ZX plane HOR.	ZX plane VER.
MAX	0.5	-2.7	3.1	-8.5	0.5	1.1
AVE	-5.0	-5.6	-2.6	-11.4	-5.9	-1.8

@2442MHz

	XY plane HOR.	XY plane VER.	YZ plane HOR.	YZ plane VER.	ZX plane HOR.	ZX plane VER.
MAX	3.1	-0.4	1.7	-8.1	-3.2	-3.1
AVE	-3.7	-5.1	-2.6	-13.0	-11.2	-6.7

@5500MHz

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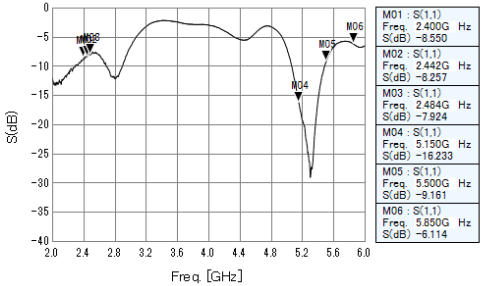
6. Measurement result

Path B

<Return Loss>



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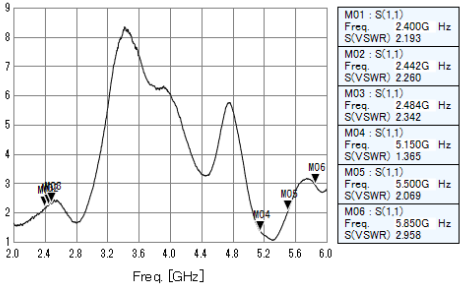

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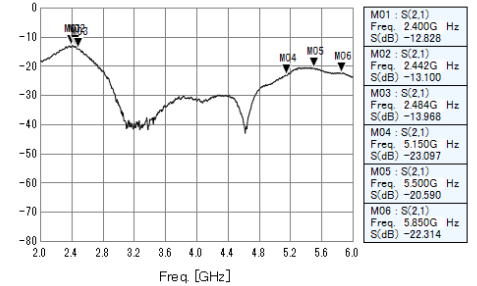
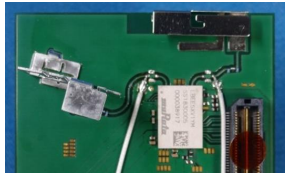
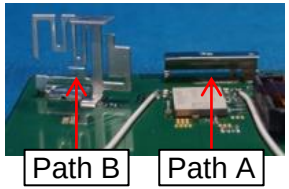






<Efficiency>

[dBi] [dB]

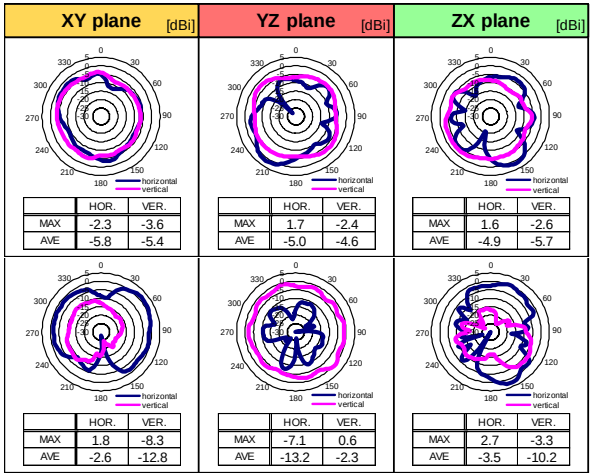
LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-1.8	-3.6	2.1	-2.5	1.8	-1.9	-1.7
	AVE.	-5.2	-5.4	-4.3	-4.7	-4.9	-4.9	
2442 MHz	**MAX.**	**-2.3**	**-3.6**	**1.7**	**-2.4**	**1.6**	**-2.6**	**-2.0**
	AVE.	**-5.8**	**-5.4**	**-5.0**	**-4.6**	**-4.9**	**-5.7**	
2484 MHz	MAX.	-2.8	-3.4	1.3	-2.6	1.5	-3.1	-2.3
	AVE.	-6.3	-5.5	-5.5	-4.8	-5.0	-6.6	

[dBi] [dB]

LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
5150 MHz	MAX.	1.1	-5.3	-5.9	1.2	4.2	-1.9	-0.9
	AVE.	-2.3	-10.8	-11.0	-1.6	-2.2	-9.1	
5500 MHz	**MAX.**	**2.1**	**-8.0**	**-6.8**	**0.9**	**3.0**	**-3.0**	**-1.6**
	AVE.	**-2.3**	**-12.5**	**-12.9**	**-2.0**	**-3.2**	**-9.9**	
5850 MHz	MAX.	1.8	-9.3	-9.6	-1.1	0.1	-5.5	-3.5
	AVE.	-3.7	-13.1	-14.7	-3.8	-6.0	-11.5	

*Red color shows peak gain

<Directivity>



XY plane	HOR.	VER.
MAX	-2.3	-3.6
AVE	-5.8	-5.4

YZ plane	HOR.	VER.
MAX	1.7	-2.4
AVE	-5.0	-4.6

ZX plane	HOR.	VER.
MAX	1.6	-2.6
AVE	-4.9	-5.7

@2442MHz

XY plane	HOR.	VER.
MAX	1.8	-8.3
AVE	-2.6	-12.8

YZ plane	HOR.	VER.
MAX	-7.1	0.6
AVE	-13.2	-2.3

ZX plane	HOR.	VER.
MAX	2.7	-3.3
AVE	-3.5	-10.2

@5500MHz

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