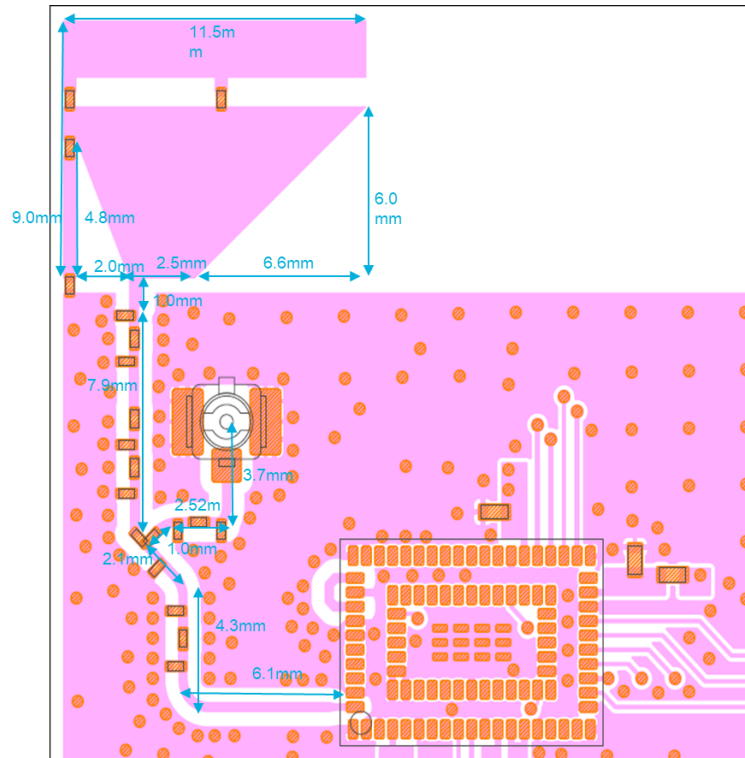


Type2GF_Antenna Antenna Specification

Antenna Model Name		Type2GF_Antenna
Antenna type		Monopole
Antenna Manufacturer		Murata
Manufacturer Address		Chi-18, Sodanimachi, Hakusan-shi, Ishikawa 920-2101 Japan
Antenna Gain	2.4GHz band	0.8dBi@2400-2483.5MHz
	5GHz band	1.2dBi@5150-5850MHz

1. Appearance

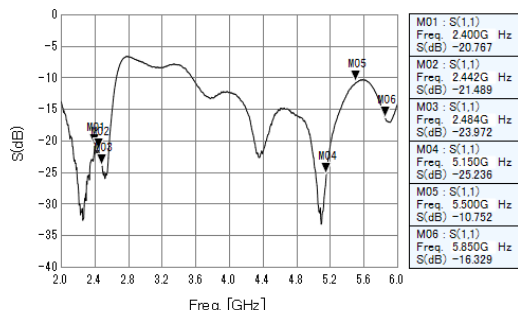
Enlarged view of the antenna



3. Measurement Result

2GHz / 5GHz

<Return Loss>

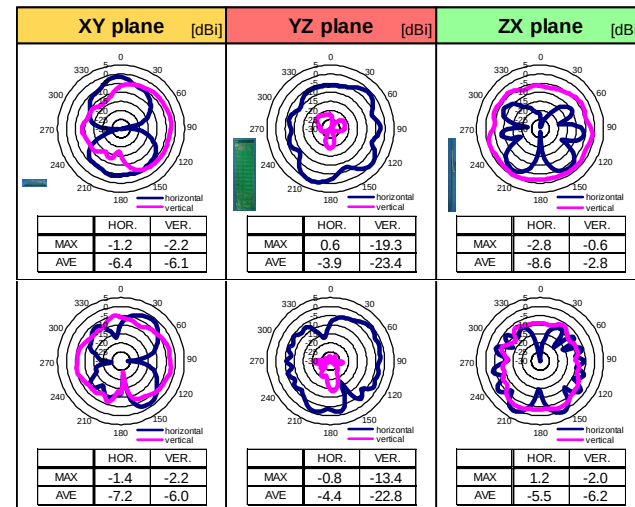


<Efficiency>

LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	[dB]
2400 MHz	MAX.	-2.3	-1.6	0.8	-19.7	-2.6	-0.2	-2.7
	AVE.	-6.1	-5.6	-3.6	-23.5	-8.2	-2.9	
2442 MHz	MAX.	-1.2	-2.2	0.6	-19.3	-2.8	-0.6	-2.9
	AVE.	-6.4	-6.1	-3.9	-23.4	-8.6	-2.8	
2484 MHz	MAX.	-3.4	-2.7	0.4	-17.3	-2.9	-0.9	-3.2
	AVE.	-7.0	-6.4	-4.2	-22.4	-9.2	-3.1	

LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	[dB]
5150 MHz	MAX.	-0.2	-1.9	0.5	-13.1	0.8	0.3	-2.7
	AVE.	-6.1	-6.3	-3.4	-22.1	-5.9	-3.9	
5500 MHz	MAX.	-1.4	-2.2	-0.8	-13.4	1.2	-2.0	-3.4
	AVE.	-7.2	-6.0	-4.4	-22.8	-5.5	-6.2	
5850 MHz	MAX.	-1.7	-2.3	-0.7	-13.9	1.2	-2.5	-3.2
	AVE.	-7.3	-6.1	-4.0	-23.6	-6.0	-6.4	

<Directivity>

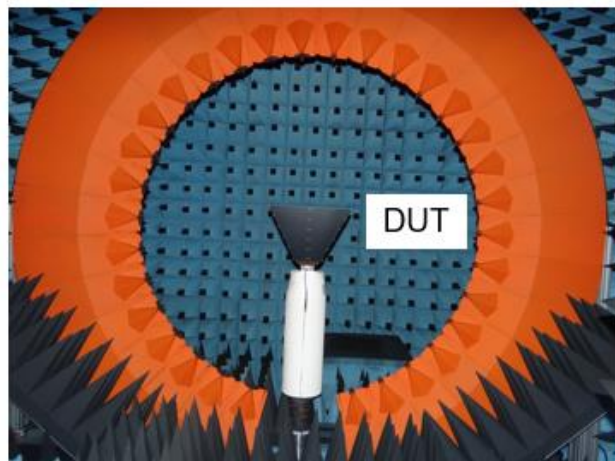


4. Measurement Method



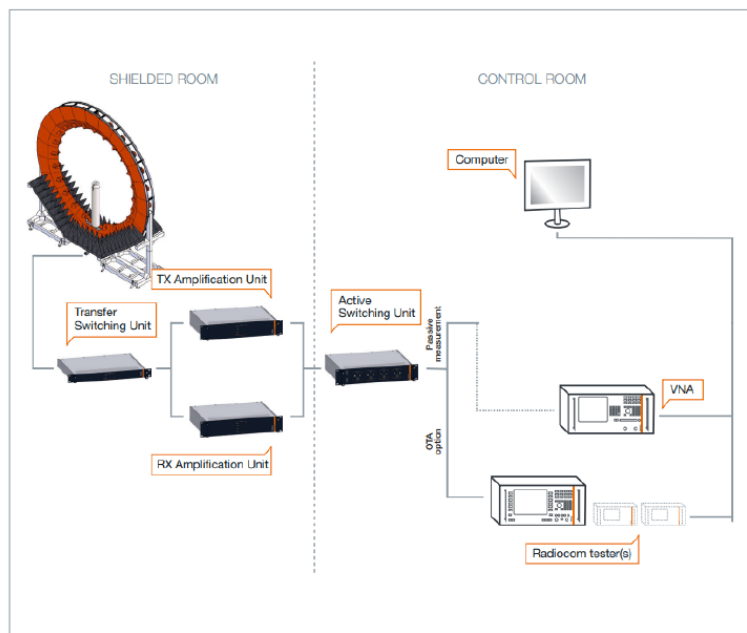
- Test method for antenna gain measurement:
Standard antenna method (comparative method)
 - * Comparing a measured antenna to a standard antenna with a known gain factor
- Equipment used for antenna gain measurement (model name, serial number, calibration date, etc.);
 - Measurement system
Microwave Vision Group (former SATIMO)
SG32 (details next page)
 - Equipment
P9374A (MY57213280)
 - Calibration date
November, 2023
 - Antenna gain measurement date / Measurement person
Mar. 12, 2024 / Rie Ichimura

Details of SG32



Anechoic chamber size		Approximately 3.5m x 3.5m x 3m (H)
Frequency band		650~18000MHz
Measurement time	Elevation 1 cut	Real time
	Global surface measurement	< Approx. 120 seconds (when measuring 40 frequencies)
Measurement uncertainty	Peak gain	< +/-0.9dB (0.65~1.0GHz)
		< +/-0.8dB (1.0~18.0GHz)
	Low gain	< +/-3.0dB (0.65~1.0GHz)
		< +/-2.4dB (1.0~6.0GHz)
		< +/-2.2dB (6.0~18.0GHz)
Dynamic range		>70dB(0.65~6.0GHz)
		>68-42dB(6.0~18.0GHz)
Cross Polar Isolation		> 45dB

DUT size	Sampling cycle	0.65 GHz	1.0 GHz	2.5 GHz	6 GHz	10 GHz	18 GHz
	x1	75 cm	84 cm	65 cm	27 cm	18 cm	10 cm
	X3	75 cm	84 cm	84 cm	82 cm	50 cm	28 cm
	X5	75 cm	84 cm	84 cm	84 cm	82 cm	45 cm
	x10	75 cm	84 cm	84 cm	84 cm	84 cm	84 cm



Peak gain variation is secured within ± 0.90 dB by system calibration.