


Technical Data Sheet for 2FJ_Antenna Measurement result(3D)

Kanazawa Murata Mfg. Co., Ltd
Antenna Technical Support Section

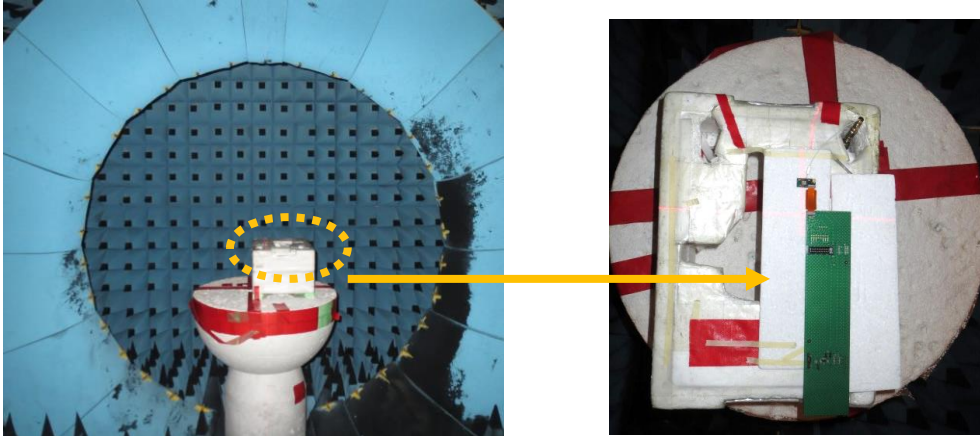


Test method for antenna gain measurement

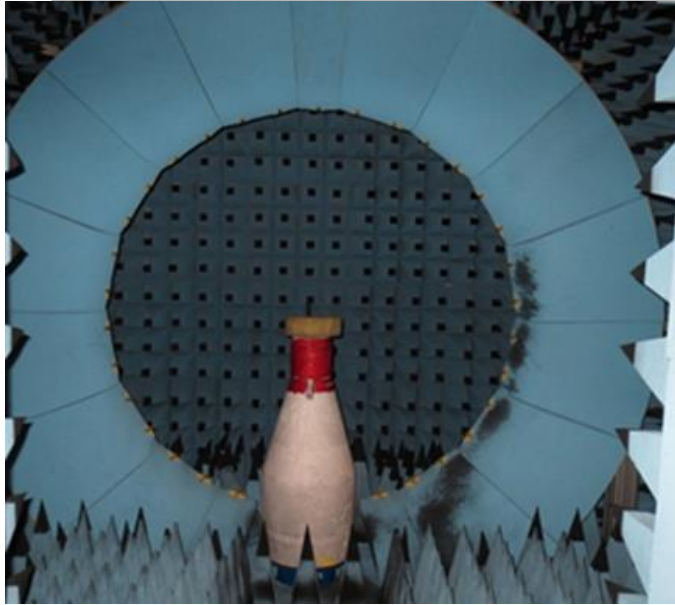


Model Name	2FJ_Antenna
Frequency Range	2400~2484MHz
Antenna type	$\lambda/4$ Monopole Antenna
Antenna gain(dBi)	+1.33
Exterior photo	

Test method for antenna gain measurement

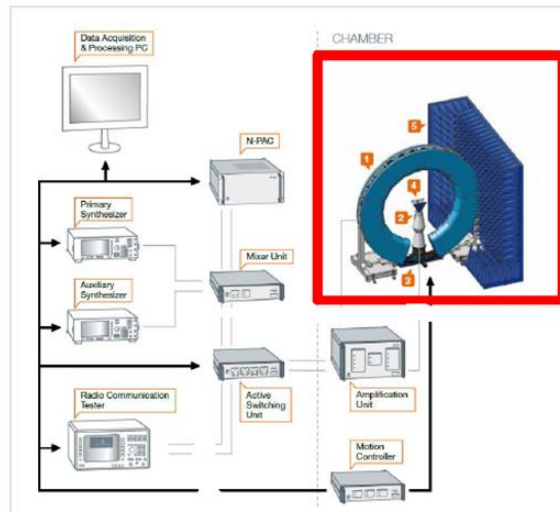
Test method	Standard antenna method (comparative method) * Comparing a measured antenna to a standard antenna with a known gain factor	
Equipment used for antenna gain measurement	Model name	Measurement system : Microwave Vision Group (former SATIMO) SG32 (details next page) Equipment PAC E4438C E4428C
	Serial number	PAC : MW 00021H-0068 E4438C : MY45090139 E4428C : MY45280466
	Calibration date	September 6, 2018
Antenna gain measurement date	February 28, 2022	
Measurement person	Harumi Matsuoka	
Setup photo		

Details of SG32



Anechoic chamber size		Approximately 3.5m x 3.5m x 3m (H)			
Frequency band		800~6000MHz			
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)			
	Low gain	< +/-1.0dB (0.8~1.0GHz)			
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	

System overview



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

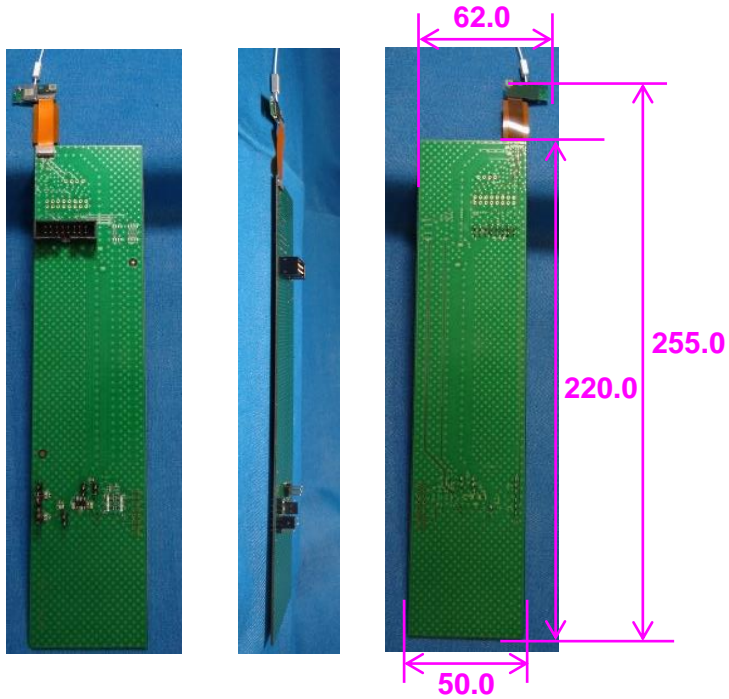
Content



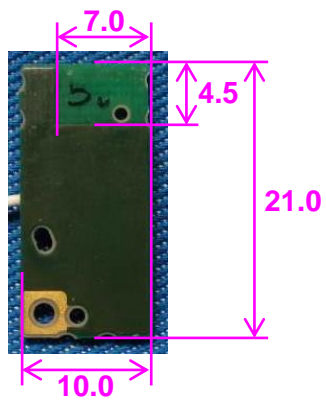
1. Appearance
2. Measurement condition
3. Measurement result

1. Appearance

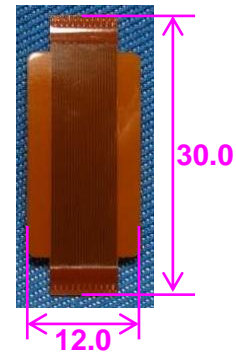
<DUT>



<2FJ>



<FPC>



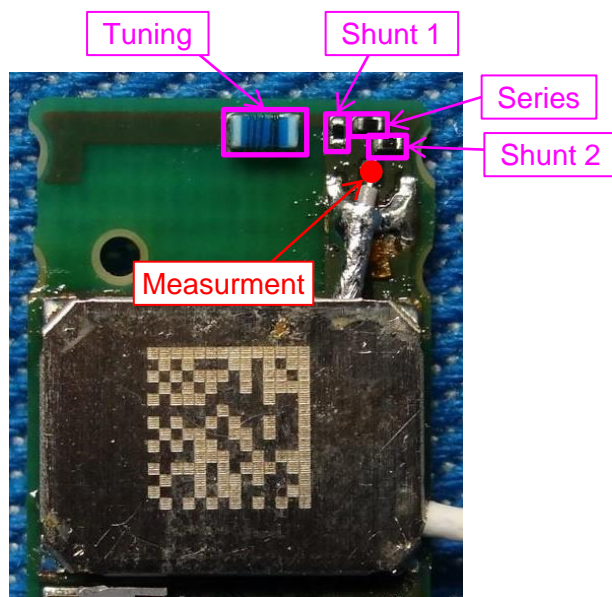
UNIT : mm

2. Measurement condition

Condition	Memo	Matching circuit			
		Tuning	Shunt 1	Series	Shunt 2
Condition 1	2FJ with EVB	16.0nH	560ohm	8.2ohm	560ohm

Size:1608 LQW18AN

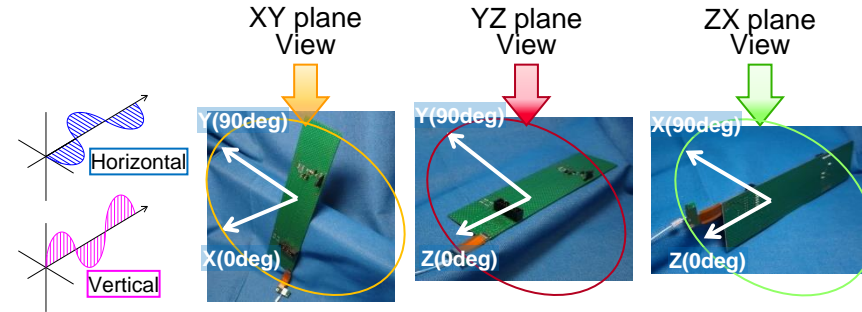
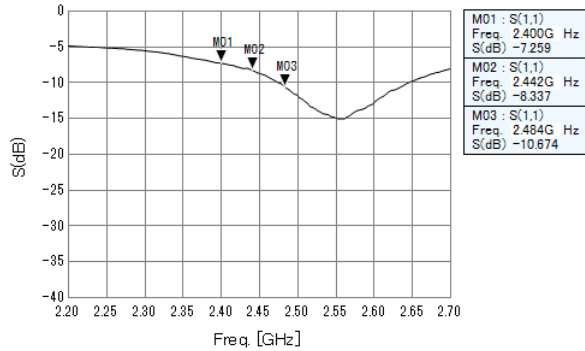
Size:0603 LQP03 / GRM03 / Resistor



3. Measurement result

Condition 1: 2FJ with EVB

<Return Loss>

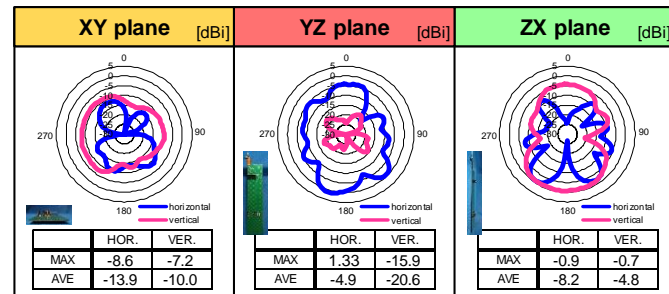


<Efficiency>

*Red color shows peak gain

LINEAR POLARIZATION		XY-plane [dBi]		YZ-plane [dBi]		ZX-plane [dBi]		Total Efficiency [dB]
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-9.8	-9.6	-0.8	-16.3	-2.1	-3.2	-6.6
	AVE.	-15.2	-12.8	-7.3	-19.7	-9.6	-7.3	
2442 MHz	MAX.	-9.9	-8.5	0.3	-18.3	-1.8	-1.9	-5.7
	AVE.	-14.9	-10.9	-6.0	-22.0	-9.0	-6.0	
2484 MHz	MAX.	-8.6	-7.2	1.33	-15.9	-0.9	-0.7	-4.6
	AVE.	-13.9	-10.0	-4.9	-20.6	-8.2	-4.8	

<Directivity>



@2484MHz

3. Measurement result (Comparison)

<Measurement condition>

Condition	Memo
Condition 1	2FJ with EVB

<Measurement result>

Total efficiency [dB] [%]

Condition	Frequency [MHz]			Average	Average
	2400	2442	2484		
Condition 1	-6.6	-5.7	-4.6	-5.5	27.9

Peak gain [dBi]

Condition	Frequency [MHz]			Max.
	2400	2442	2484	
Condition 1	-0.8	0.3	1.33	1.33