

Type1UR Antenna Under Test Report

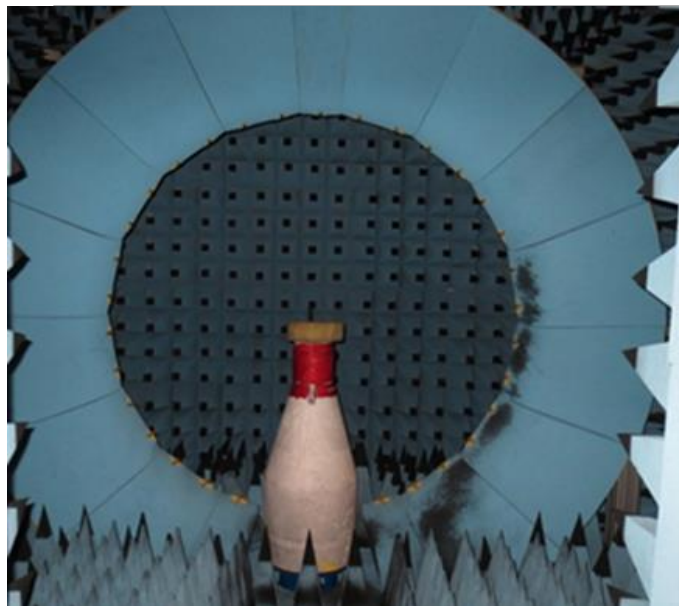


1. Test method for antenna gain measurement



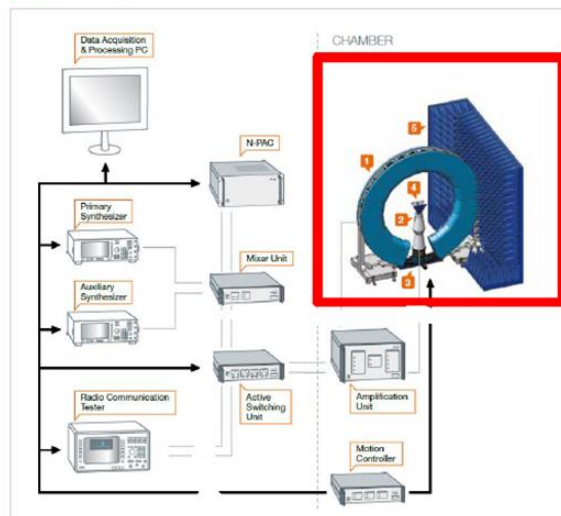
- Test method for antenna gain measurement:
Standard antenna method (comparative method)
 - * Comparing a measured antenna to a standard antenna with a known gain factor
- Equipment used for antenna gain measurement (model name, serial number, calibration date, etc.);
 - Measurement system
Microwave Vision Group (former SATIMO) SG32 (details next page)
 - Equipment
PAC (MW 000021H-0068)
E4428C (MY45280451, MY45280466)
 - Calibration date
November 11, 2022
 - Antenna gain measurement date / Measurement person
April 26, 2023 / Harumi matsuoka

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)			
	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.

4. Measurement result

Antenna 1 : Chip Antenna(WLAN)

Part number: VGAP-CLB-AS-A1

Supplier: INPAQ TECHNOLOGY

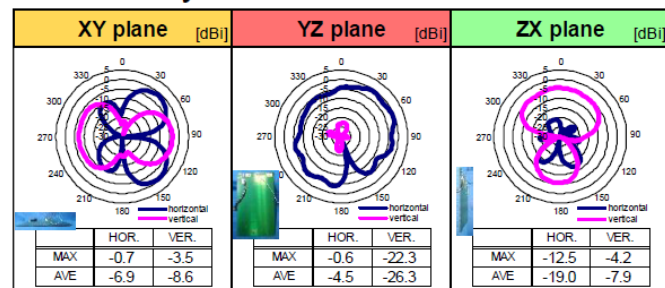
<Efficiency>

*Red color shows peak gain
[dBi] [dB]

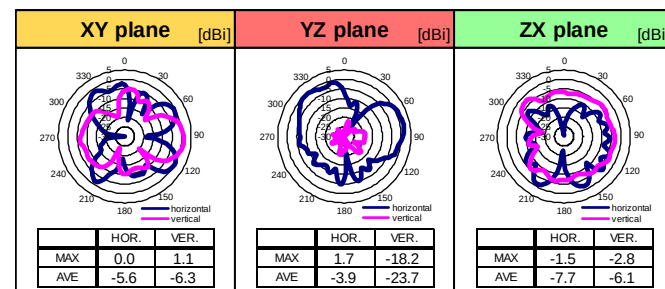
LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-1.5	-4.1	-1.2	-23.6	-12.2	-5.0	-5.5
	AVE.	-7.7	-9.1	-5.3	-27.7	-18.7	-8.5	
2442 MHz	MAX.	-0.7	-3.5	-0.6	-22.3	-12.5	-4.2	-4.7
	AVE.	-6.9	-8.6	-4.5	-26.3	-19.0	-7.9	
2484 MHz	MAX.	-1.4	-4.4	-1.6	-22.9	-14.6	-5.1	-5.6
	AVE.	-7.6	-9.5	-5.4	-27.1	-21.1	-8.9	

LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
5150 MHz	MAX.	-0.6	0.3	1.4	-21.4	-2.1	-9.1	-5.4
	AVE.	-6.6	-7.0	-4.9	-26.5	-9.2	-13.1	
5500 MHz	MAX.	0.0	1.1	1.7	-18.2	-1.5	-2.8	-3.8
	AVE.	-5.6	-6.3	-3.9	-23.7	-7.7	-6.1	
5850 MHz	MAX.	-1.7	-1.8	-1.4	-16.0	-3.9	-2.3	-5.2
	AVE.	-6.9	-8.3	-6.1	-22.3	-10.2	-5.7	

<Directivity>



@2442MHz



@5500MHz

4. Measurement result

Antenna 2 : Pattern Antenna(BT)

Part number: BT_IFA

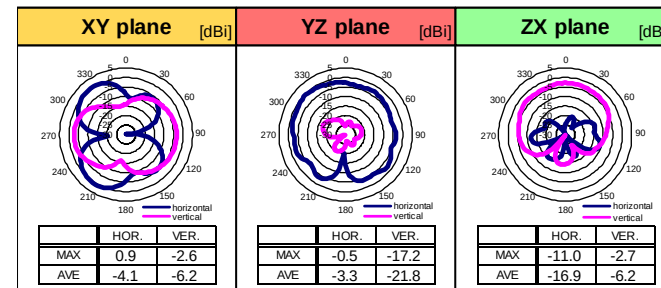
Designer: Forvia

<Efficiency>

*Red color shows peak gain

<Directivity>

LINEAR POLAMIZATION		XY-plane		YZ-plane		ZX-plane		[dBi]	[dB]
		hor.	ver.	hor.	ver.	hor.	ver.	Total	Efficiency
2400 MHz	MAX.	0.9	-2.0	-1.1	-16.8	-11.4	-3.0		
	AVE.	-4.1	-6.0	-3.1	-21.0	-16.8	-6.1		
2442 MHz	MAX.	0.9	-2.6	-0.5	-17.2	-11.0	-2.7		
	AVE.	-4.1	-6.2	-3.3	-21.8	-16.9	-6.2		
2484 MHz	MAX.	1.0	-2.5	0.3	-17.9	-10.7	-3.5		
	AVE.	-3.7	-5.6	-3.0	-21.6	-17.1	-6.9		



@2442MHz



end