Customer : P/N : ( )

SPECIFICATION

RoHS

Product : FPCB Antenna

Customer Model Name : Flex 800

Remarks :

Revision: 1.0 (2023-09-04)

BLUECOM BT R&D			QA/QC
WRITTEN	CHECK	APPROVAL	CHECK
			
김 경록		김 범석	최 화준
	CHECK	APPROVAL	APPROVAL

- Contents -

1. Revision History

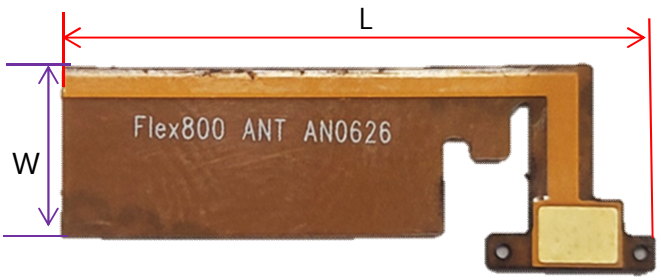
Rev.No	Issued Date	Page	Description	Summary
1.0	4-Sep-23	-	initial release	

2. Introduction

2.1 Introduction of Product

This Product is a Pattern BT Antenna that the thin copper is printed inside PCB

2.2 Specification and Dimension

<table>
<tr><td rowspan="3">size [mm]</td><td>L = 24.8± 0.1</td><td rowspan="3"> 
</td></tr>
<tr><td>W = 6.78 ± 0.1</td></tr>
<tr><td>T = 0.8 ± 0.03</td></tr>
<tr><td>Model</td><td colspan="2">Flex 800</td></tr>
<tr><td>Application</td><td colspan="2">Bluetooth</td></tr>
<tr><td>P/N</td><td colspan="2">Flex 800 Antenna</td></tr>
<tr><td>Revision</td><td colspan="2">1.0</td></tr>
</table>

3. Electrical Characteristics

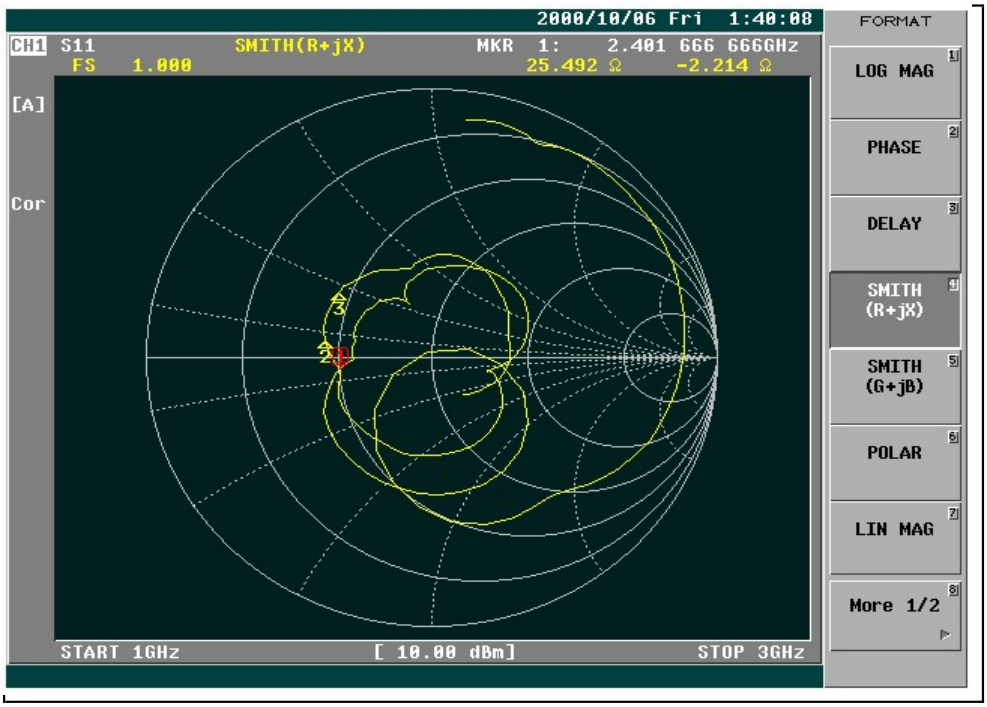
3.1 Set Condition

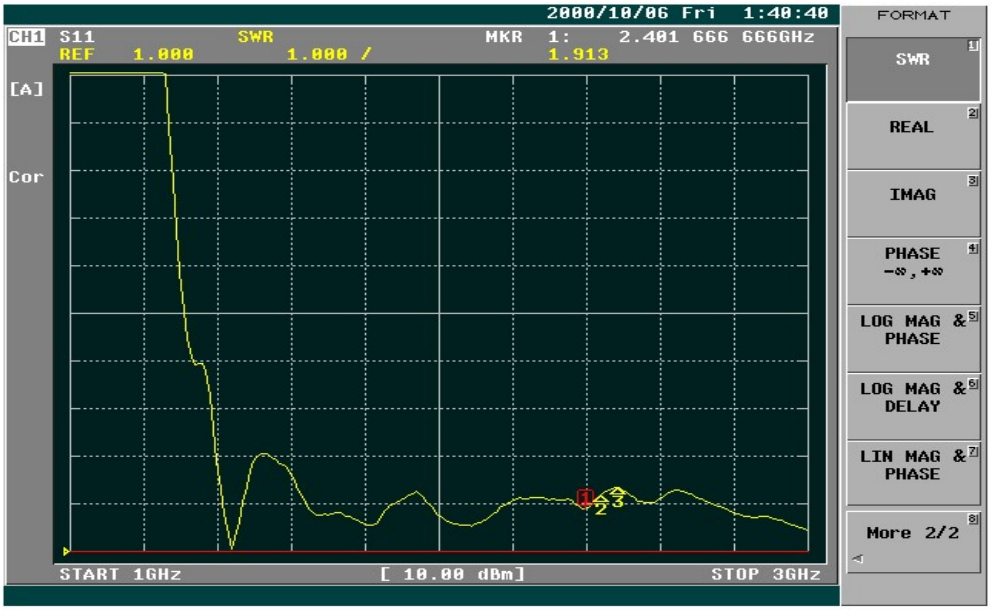
ITEM				SPEC
Frequency Range [MHz]				2400 ~ 2485
VSWR [MAX]				3.0 : 1
Input Impedance [Ω]				50 Ohm
Polarization				Linear
Matching Value of Antenna Matching Circuit		Matching Circuit	shunt 1	N/C
			series	0Ohm
			shunt 2	N/C
Gain[dBi]	Azimuth Plane	Peak		1.34 @2450
		Average		-2.35 @2450
	Elevation1 Plane	Peak		0.8 @2450
		Average		-4.06@2450
	Elevation2 Plane	Peak		1.2 @2450
		Average		-4.32 @2450
	3D	Peak		1.34 @2450
		Min		-5.2 @2450

3.2 Passive Efficiency

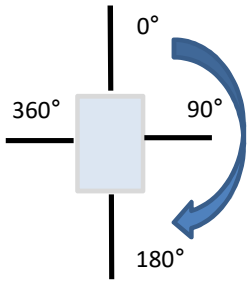
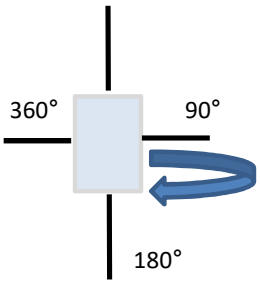
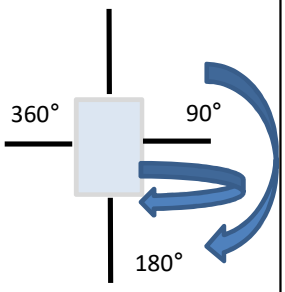
	1	2	3	4	5	6	7	8	9	10	11
Frequency [MHz]	2400	2410	2420	2430	2440	2450	2460	2470	2480	2485	2500
Efficiency [dB]	-4.31	-4.22	-3.87	-3.38	-3.08	-2.76	-3.05	-3.32	-3.50	-3.49	-3.81
Efficiency [%]	37.1	37.8	41.0	46.0	49.2	53.0	49.5	46.6	44.7	44.8	41.6
TRG_θ [dB]	-5.06	-5.00	-4.65	-4.13	-3.87	-3.58	-3.95	-4.23	-4.49	-4.50	-4.90
$Gain_{\theta\ Peak}$ [dBi]	0.11	0.11	0.50	1.00	1.15	1.31	0.80	0.38	0.47	0.55	0.61
$Gain_{\theta\ Min}$ [dBi]	-31.92	-31.65	-38.98	-32.90	-32.25	-30.39	-28.83	-31.44	-33.10	-34.22	-34.45
TRG_φ [dB]	-12.31	-12.09	-11.75	-11.33	-10.88	-10.37	-10.36	-10.53	-10.40	-10.32	-10.34
$Gain_{\varphi\ Peak}$ [dBi]	-4.12	-3.84	-3.44	-2.77	-2.47	-1.81	-1.92	-2.11	-1.95	-1.92	-2.08
$Gain_{\varphi\ Min}$ [dBi]	-42.87	-43.82	-36.64	-37.01	-34.51	-34.37	-40.23	-49.34	-35.88	-39.63	-39.99
UHRG [dB]	-7.50	-7.30	-6.87	-6.35	-6.05	-5.76	-6.09	-6.43	-6.68	-6.71	-7.18
UHRG/TRG [%]	48.0	49.3	50.1	50.4	50.4	50.1	49.7	48.8	48.1	47.6	46.0
H-Plane	-3.81	-3.76	-3.40	-2.86	-2.59	-2.35	-2.80	-3.22	-3.63	-3.76	-4.47
E1-Plane, AVG [dB]	-5.49	-5.38	-5.03	-4.53	-4.29	-4.06	-4.47	-4.77	-5.06	-5.07	-5.52
E2-Plane, AVG [dB]	-5.77	-5.73	-5.37	-4.86	-4.58	-4.32	-4.70	-5.02	-5.24	-5.23	-5.55
Peak Gain [dBi]	0.24	0.26	0.55	1.04	1.17	1.34	0.96	0.70	0.83	0.92	0.84
Directivity [dB]	4.55	4.48	4.43	4.41	4.25	4.10	4.01	4.02	4.33	4.41	4.65

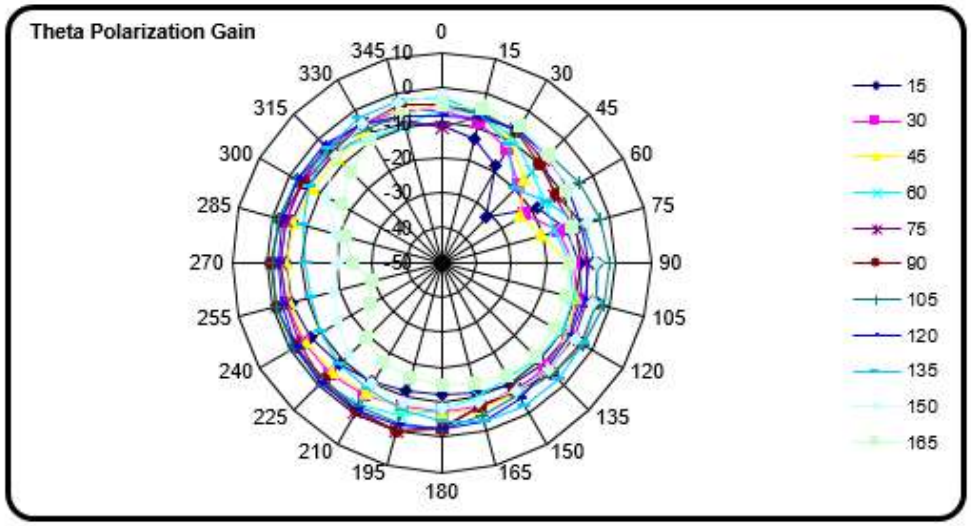
3.3 Graph of Set Condition



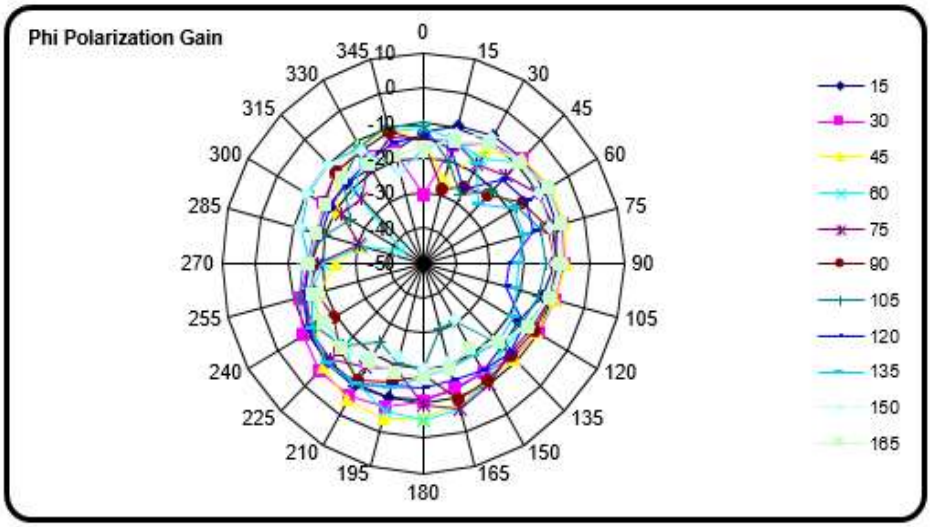


3.4 Radiation Pattern

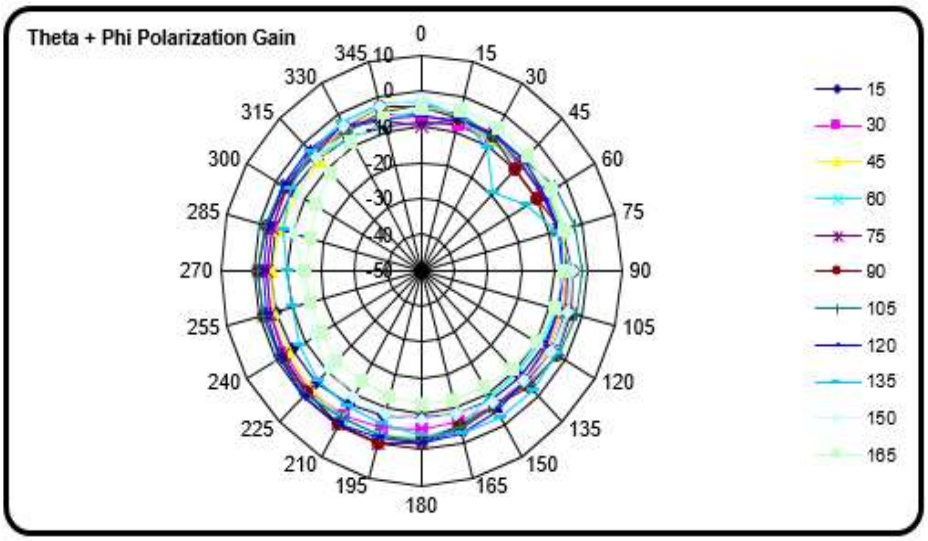
Theta	Phi	Elevation 2 Plane
		

Theta(2400Mhz)


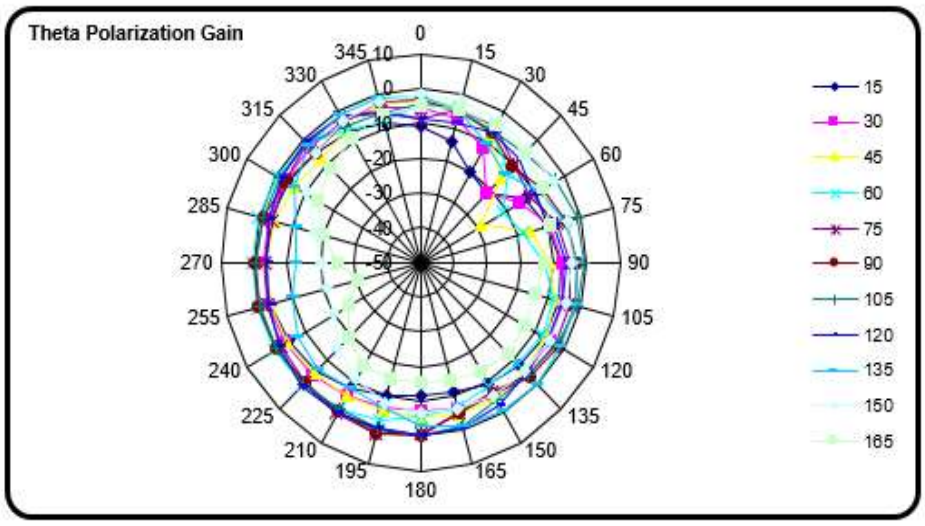
Phi(2400Mhz)



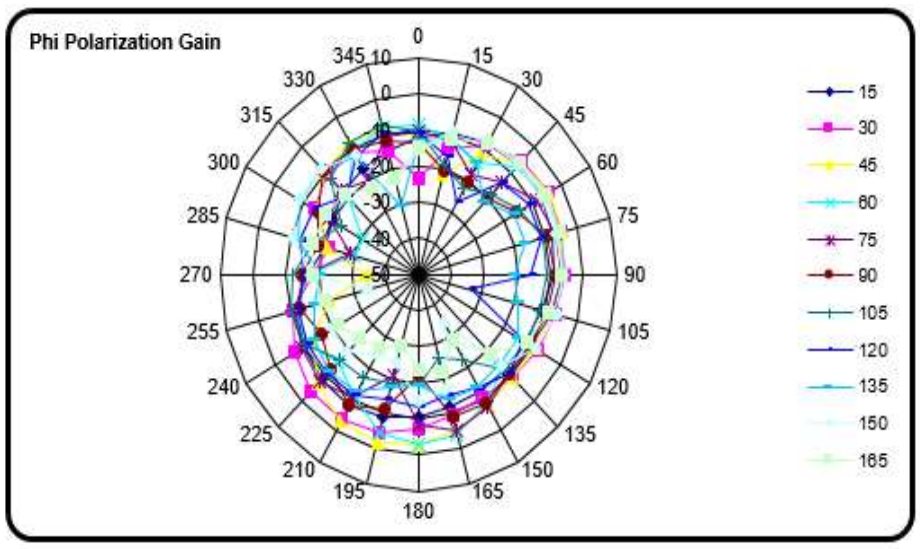
Theta + Phi(2400Mhz)



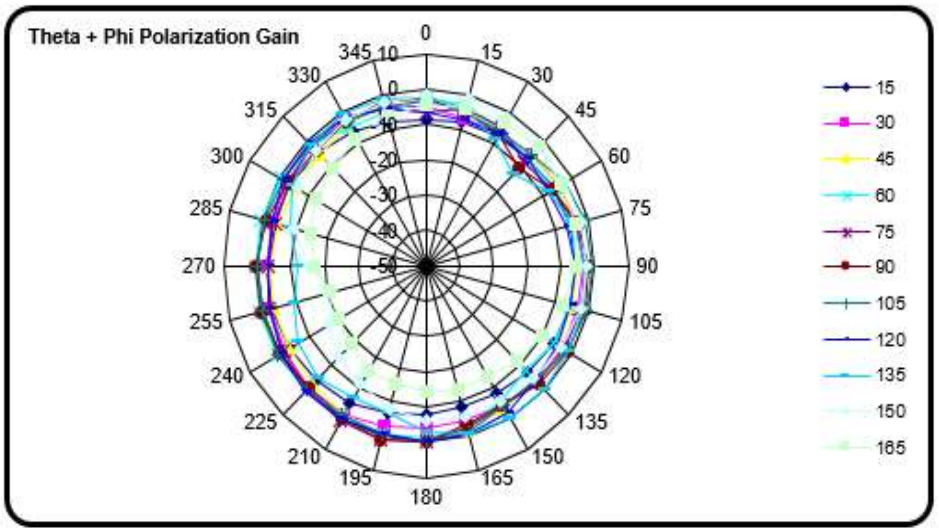
Theta(2450Mhz)



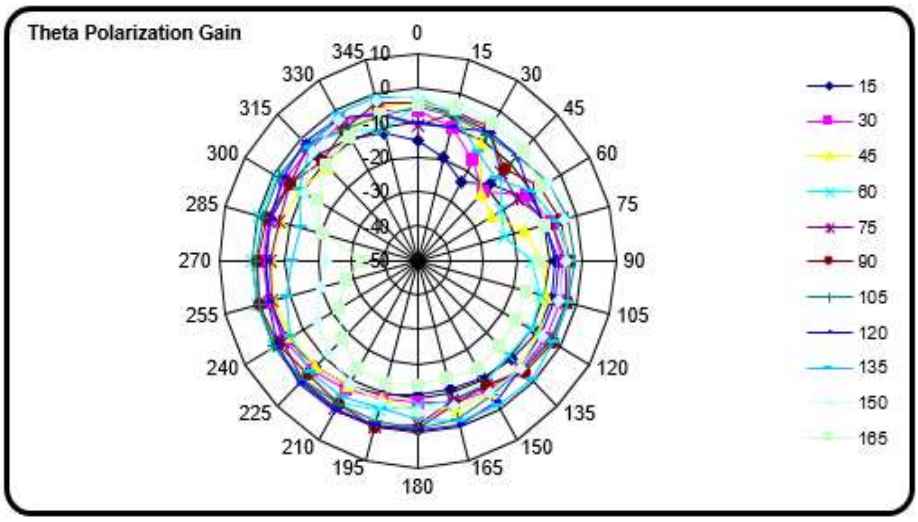
Phi(2450Mhz)



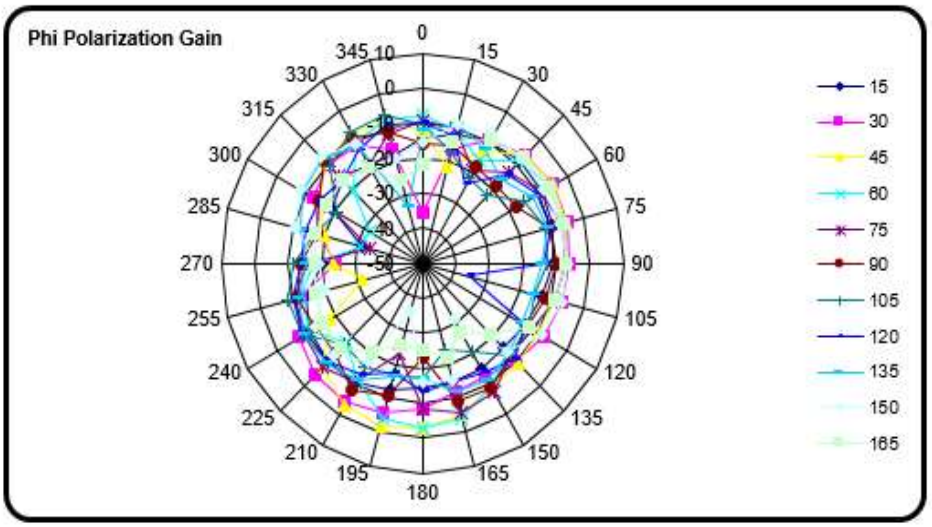
Theta + Phi(2450Mhz)



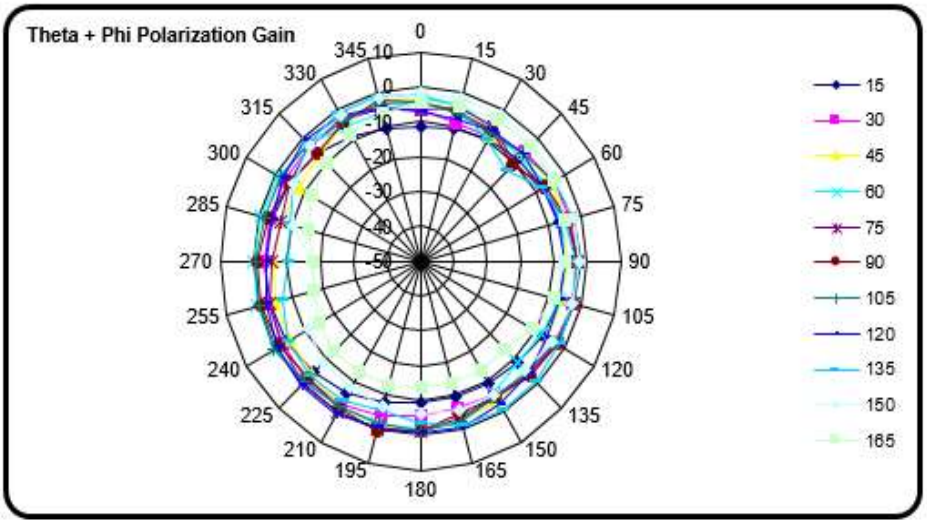
Theta(2480Mhz)



Phi(2480Mhz)

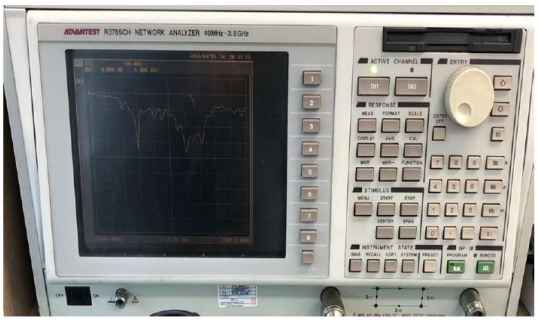


Theta + Phi(2480Mhz)



4. Measurement Process

4.1 VSWR/Returnloss

	Set Condition
Network Analyzer	ADVANTEST R3765CH
Cable	RF Cable (300mm)
Test Condition	

4.2 Gain

- The Antenna Gain is measured using the set at Anechoic Chamber

Anechoic Chamber for Antenna Gain Measurement