

CIKA Antenna Test Report

PDC

2024/3/4



Quanta
Product Design Center

CIKA Antenna Spec.

	CIKA		
Antenna Application	Bluetooth Antenna		
Antenna Type	FPC Antenna		
Antenna Manufacturer	Pulse (Suzhou) Wireless Products co. 99 HUOJU RD, SUZHOU, NEW DISTRICT SUZHOU 215009 P. R. CHINA		
Part Number	TQ23733		
Antenna Placement Photo	 Antenna		
Frequency (MHz)	L(2402 MHz)	M(2441 MHz)	H(2480 MHz)
Efficiency (%)	14.13% (-8.50dB)	14.76% (-8.31dB)	14.22% (-8.47dB)
Peak Gain	-2.51 dB	-2.40 dB	-2.47 dB



CIKA Antenna Drawing

MOD	REVISION DESCRIPTION	DATE / EDITOR	Please follow Pulse Limits for the hazardous substances (RoHS, halogens) in the document "Pulse Hazardous Substances (HS) Limits (RPG002-03)" and "Vendor Survey Questionnaire, Material Composition (LOM-SAF-0040)".		Reliability Test Spec according to WHS7.5.33 (Reliability Test Working Instruction) Default test standard is Test Standard A if no definition	
P01	New Release	2022.04.22 / Alvin				

TEXT INK

PI FILM ADHESIVE

RELEASE PAPER CUTTING LINE

Stack-up

CIK BT ANT
YYMMDD P01

TEXT INK
SCALE 3:1

NOTE :

1. FPC : ED base material Cu:0.5oz PI : 0.5mil
2. Surface Finish : Ni 3um-6um / Au 0.05um
3. Adhesive : 3M 468
4. Word : White Word, H=0.8
5. Mark "*" is key point of control.
6. Mark "#" is CPK of control.
7. Halogen Free require :
Br<900ppm, Cl<900ppm, Br+Cl<1500ppm

1	FPC	19.40 * 7.15 * T0.15mm	1
ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	QTY
5		Functional Characteristics Key : (Cpk requirement : Cpk>) ◇ Process Capability Studies required (total pcs) ◆ Ongoing Statistical Process Control Required (total pcs) * Critical dimension need to be measured, no CPK requirement (total pcs)	

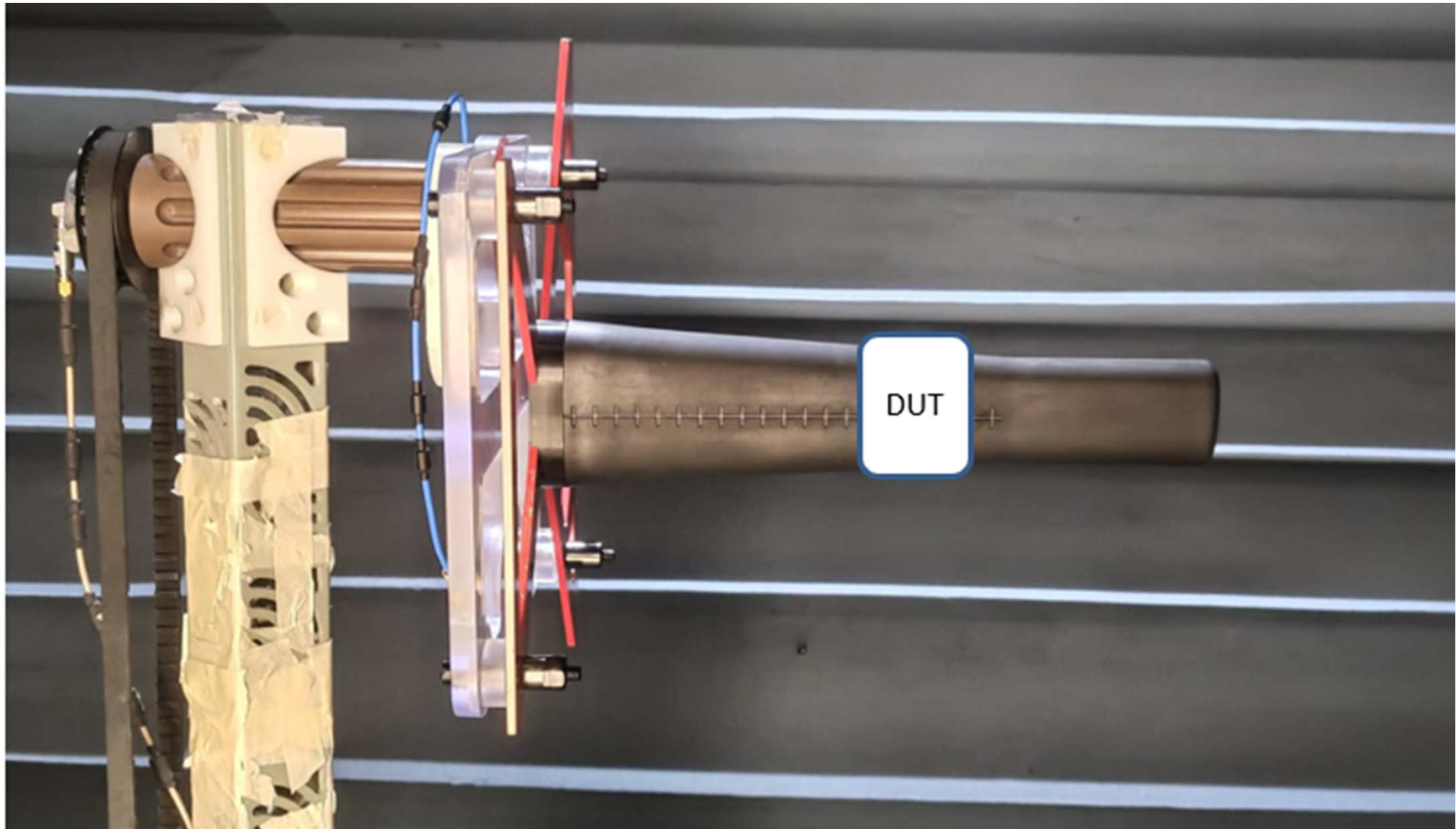
Pulse (Suzhou) Wireless Products Co., Ltd		QUANTA PART NO : DQ602373301	
99 HUGUO RD, SUZHOU NEW DISTRICT SUZHOU 215088 P.R.CHINA WWW.PULSEELECTRONICS.COM/ANTENNAS		HANDLING ISO 27664 ASSOCIATED SCALE 1:1 DESIGNED ALVIN 20220422 CHECKED CHENG 20220422 APPROVED CHENG 20220422	
PRODUCT(S) TQ23733 ITEM NAME CIKA BT ANTENNA		DOCUMENT NUMBER TQ23733 P01 P01 P01 20220422 AMH MOD DATE NAME	

Test Information

Item	Description
Model Name	CIKA EARPIEC
Test condition	Radiation
Test Engineer	Rod Cheng
Company	Quanta Computer Inc
Company Address	NO.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C.)
Test Environment	ETS-Lindgren AMS-8500 Antenna Measurement System
Test Software	ETS-Lindgren EMQuest Data Acquisition and Analysis Software
Test Date	2022/11/24

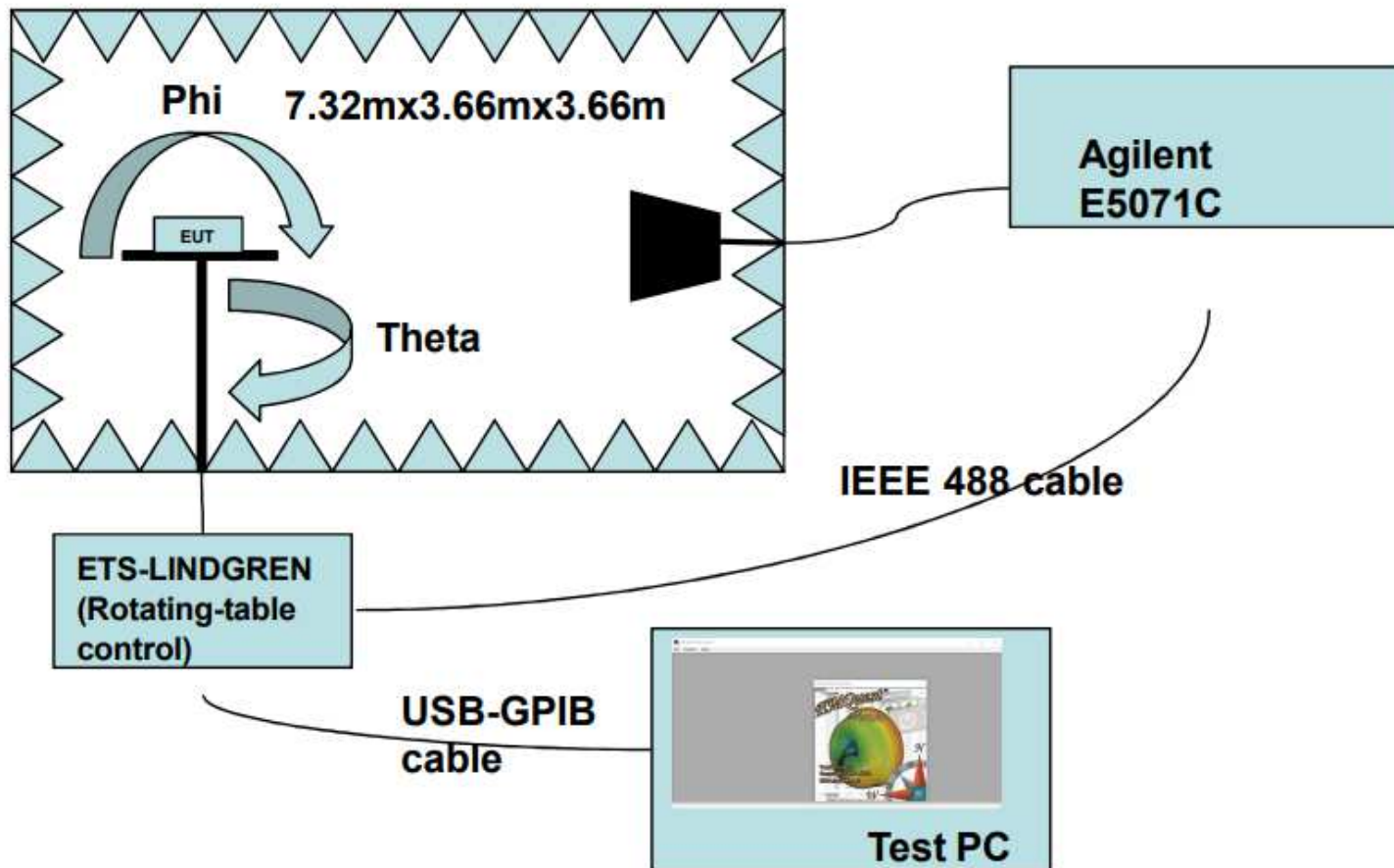


Test Information



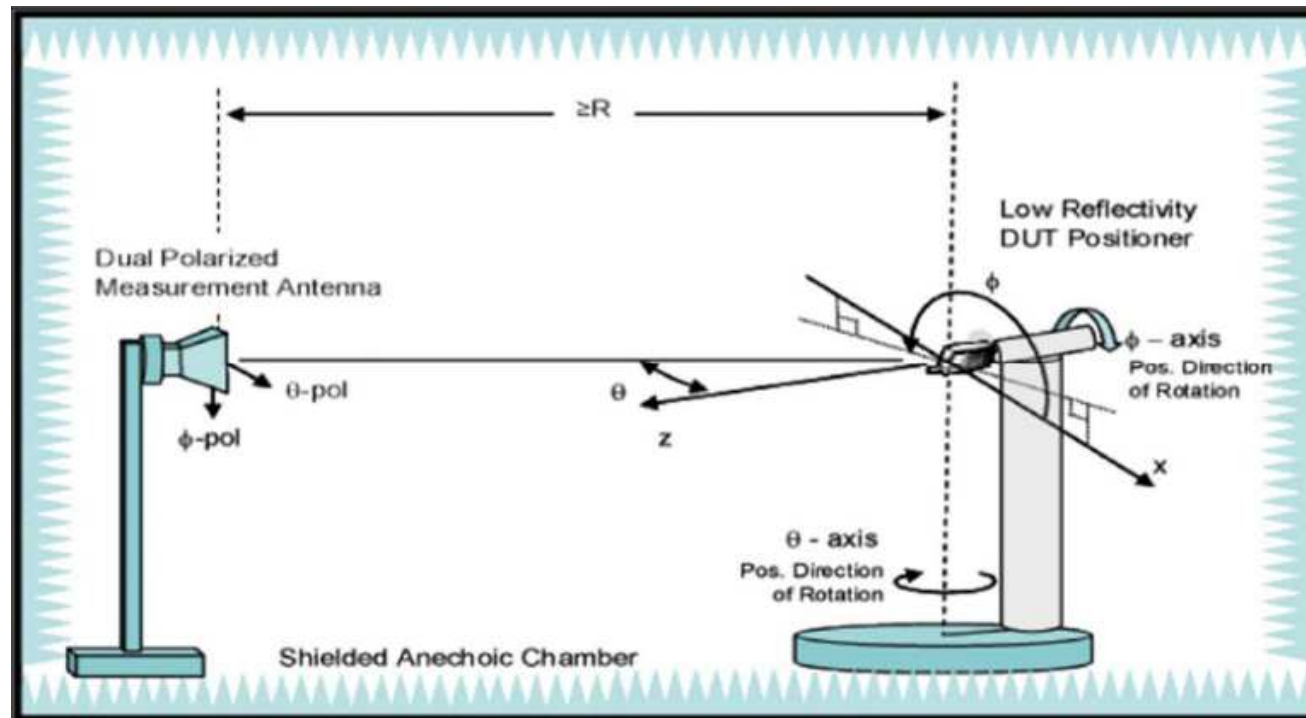
Test Block Diagram

ETS-LINDGREN antenna chamber



Test Configuration

ETS-Lindgren AMS-8500 antenna measurement system with a size of 7.32(L) x 3.66(W) x 3.66 (H) is used for antenna performance test, which is based on the great-circle test method defined by CTIA. The multi-axis positioning system (MAPS) rotates the DUT around two orthogonal axes for full spherical coverage.



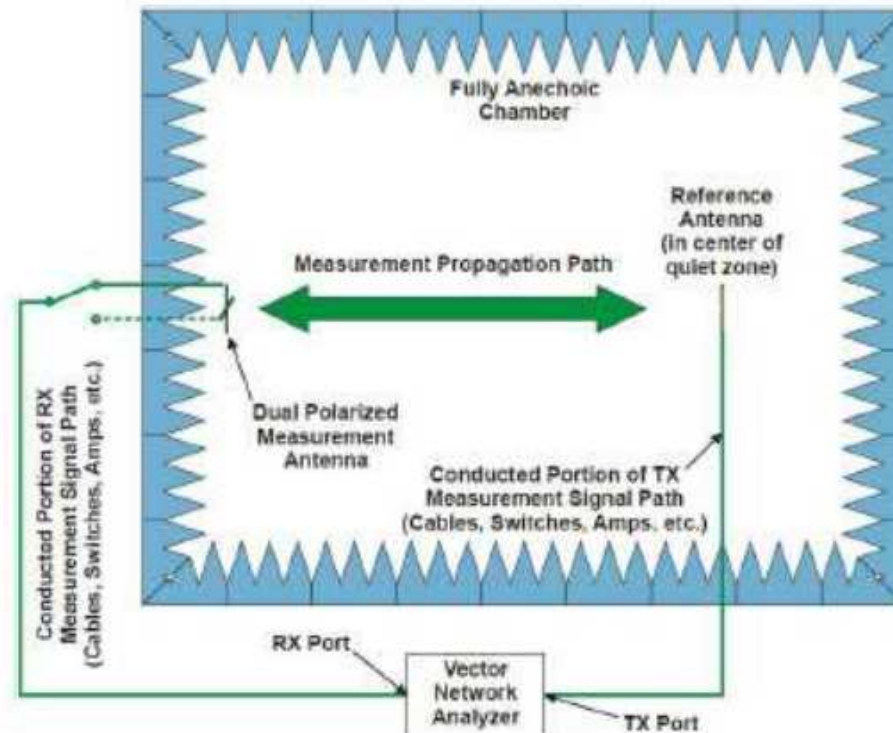
Test Equipment List

Equipment Type	Model	Remark
ENA Series Network Analyzer	Agilent E5071C	100KHz~8.5GHz
Rotating Table Control	ETS-LINDGRE EMC Center	
Chamber	ETS-LINDGREN AMS8500	700MHz~6GHz
Horn Antenna	ETS-LINDGREN 6164-04	700MHz~6GHz
USB-GPIB cable	NI	
IEEE 488 cable	NI	



Test Equipment & Calibration

Network analyzer and reference antennas are used for calibration. Path loss and cable loss for different frequency bands can be checked and calculated



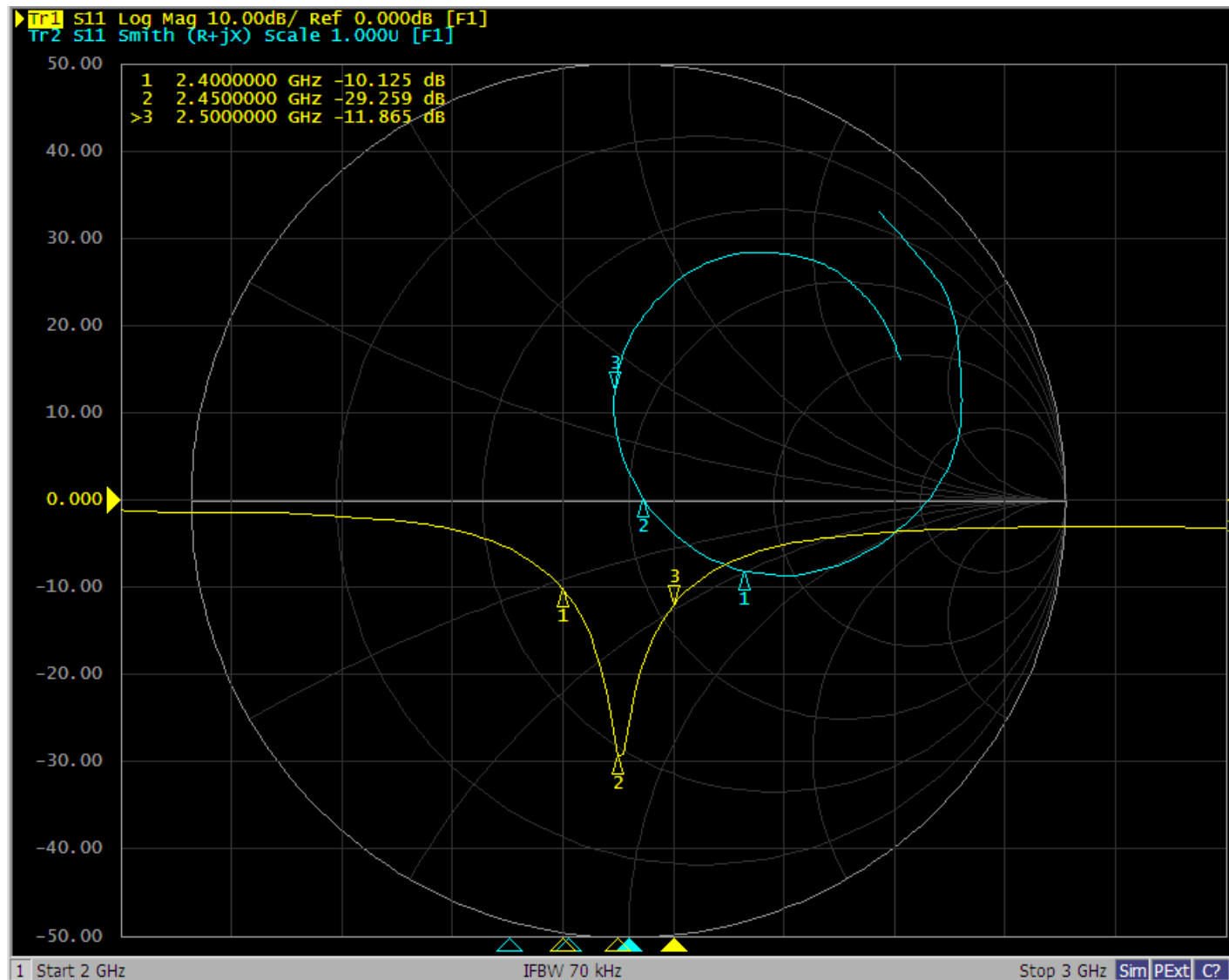
Equipment Description	Model	Model No.	Calibrated Date	Calibrated Until
PXA Signal Analyze	Keysight	N9030A	2022/06/28	2023/06/28
Network Analyzer	Keysight	E5017C	2022/07/04	2023/07/04
Switch Control System	Keysight	3499A	2022/07/04	2023/07/04
Horn Antenna	ETS Lindgren	6164-04	2022/07/04	2023/07/04
Chamber	ETS Lindgren	ASM-8500	2022/07/10	2023/07/10

Antenna Performance

CIKA BT Antenna			
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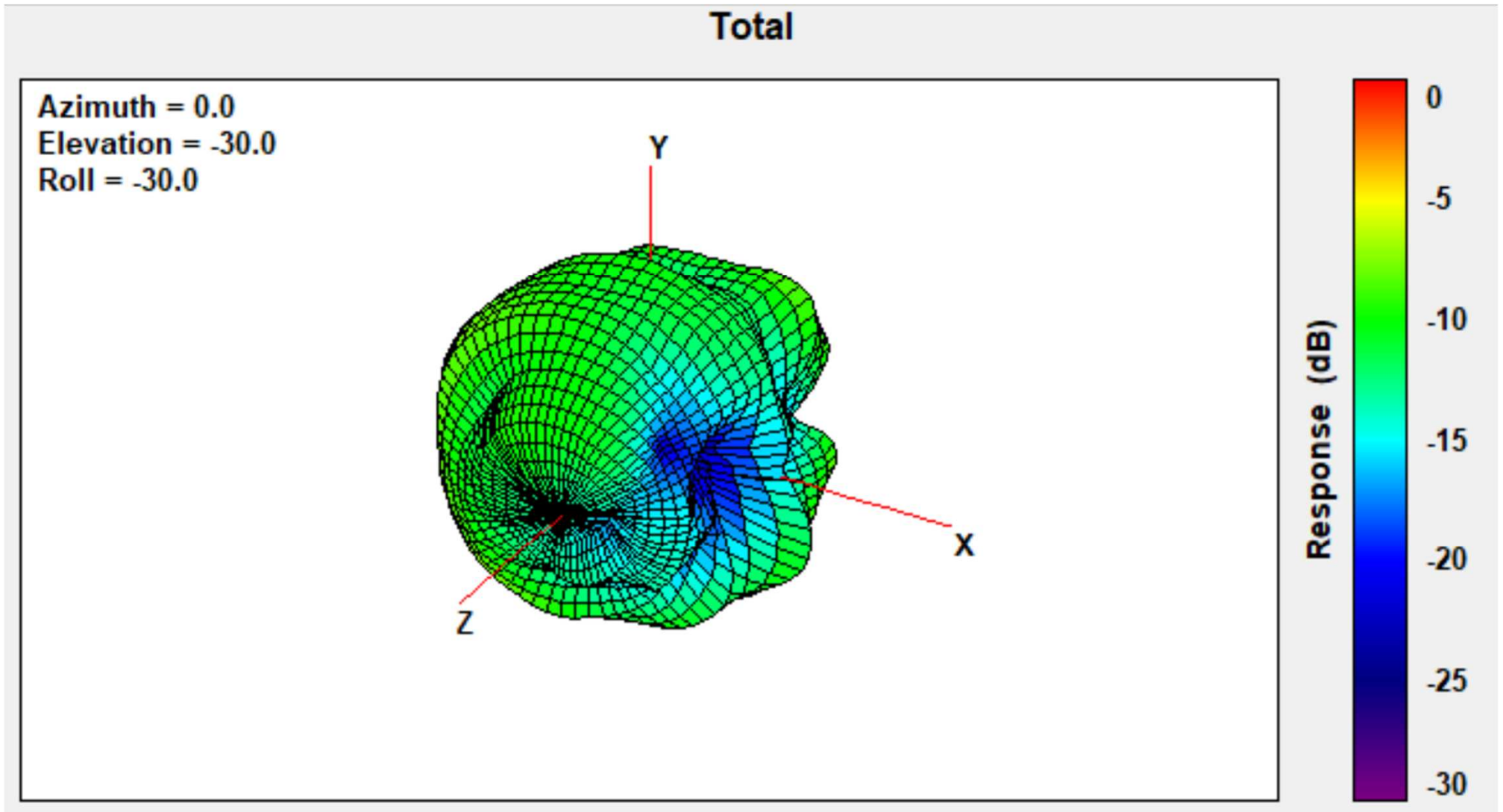


Return Loss



Radiation Pattern of 3D

Radiation Pattern 2402MHz

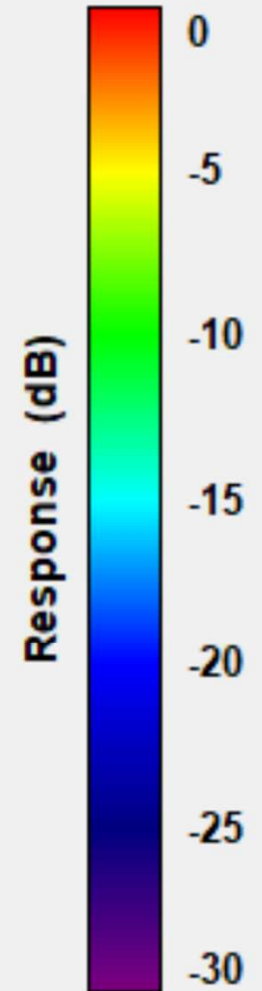
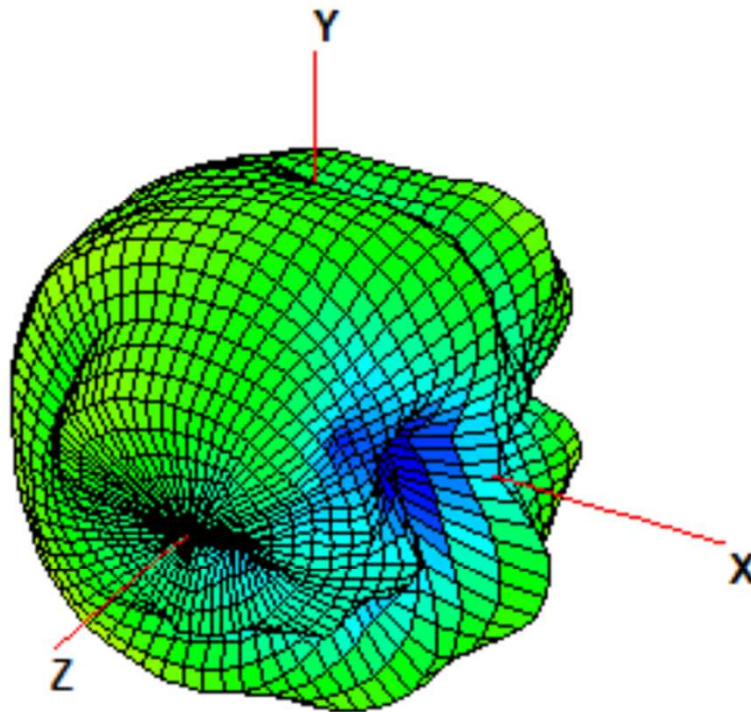


Radiation Pattern of 3D

Radiation Pattern 2441MHz

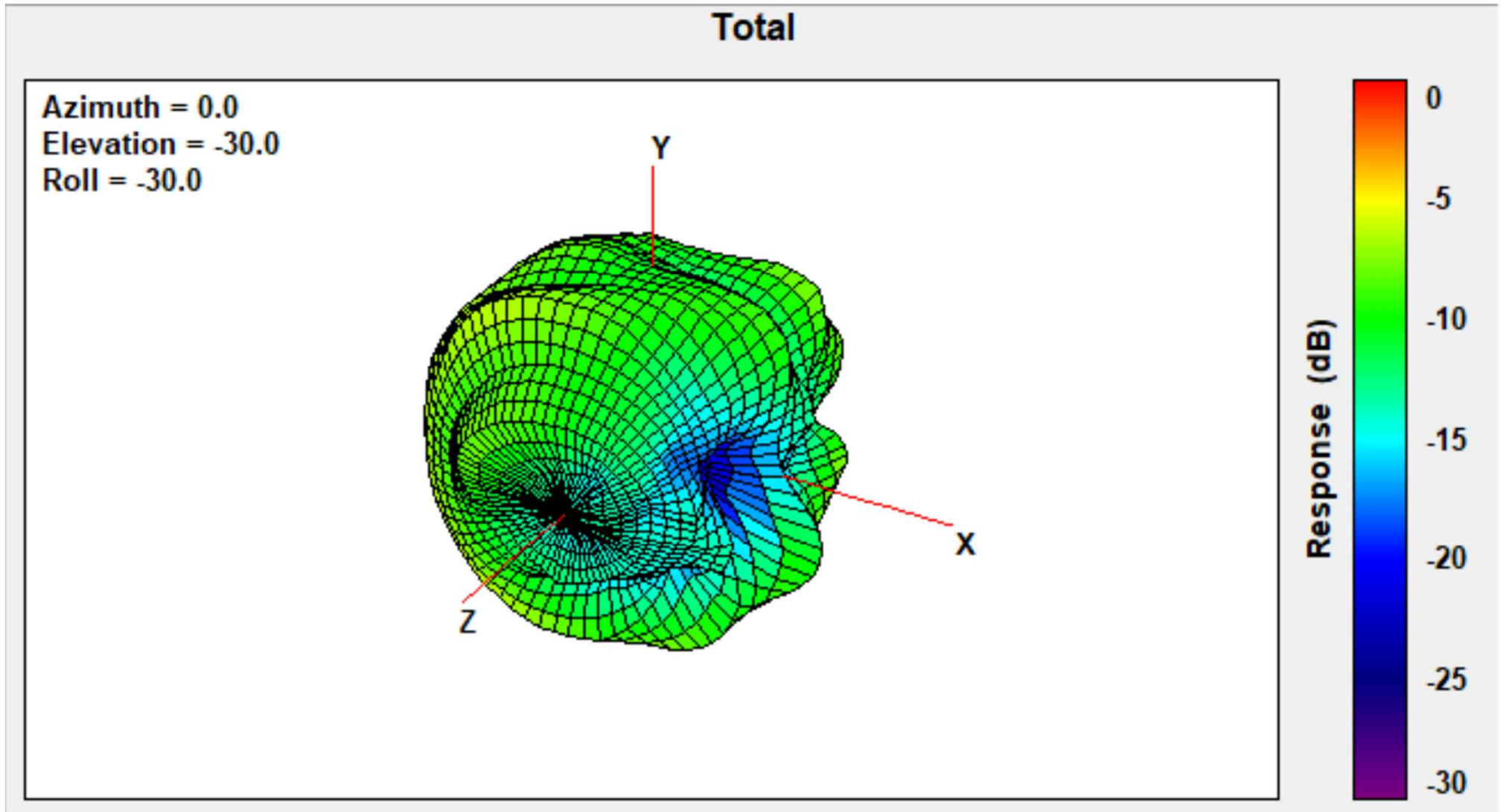
Total

Azimuth = 0.0
Elevation = -30.0
Roll = -30.0



Radiation Pattern of 3D

Radiation Pattern 2480MHz



Test setup and Produce

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test.
2. Set measurement parameters such as frequency range and sample angle.
3. Perform test and then get far-field data. (radiation pattern, gain, efficiency)
4. Repeat test procedure for other antenna.

