Regulatory WLAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)
(OEM/ODM or antenna vendor is required to complete this document with platform antenna information.
Remove Intel references and make this your own document)

Platform information					
Brand	**ODM**	******End product model name**	**Intel platform** (ex: Yes, No or NA)	**Platform type** (ex: regular NB, convertible PC, AIO…etc)	***SAR minimum separation (mm)**
Intel		Dipole reference antenna			

Antenna manufacturer	WIESON
Address	15F., No.237, Sec.1, Datong Rd., Xizhi Dist., New Taipei City, Taiwan
Antenna Part number	Main/Aux: ARY121-0009-002-H0
Antenna type	Dipole

Test Location	JUST RF Testing Lab
Address	No. 99, Anzhong Road, Xindian District, New Taipei City, Taiwan
Test Personnel	Peng Ning Yen
Testing date	2023/7/3

	Peak gain w/ cable loss (dBi)							
2.4GHz 2400-2500MHz	**5.2&5.3GHz** 5150-5350MHz	**5.5GHz** 5470-5725MHz	**5.8GHz** 5725-5850MHz	**5.9GHz** 5850-5895MHz	**6.2GHz** 5925~6425MHz	**6.5GHz** 6425~6525MHz	**6.7GHz** 6525~6875MHz	**6.9GHz** 6875~7125MHz
3.10	4.11	5.17	5.17	5.12	5.06	4.71	4.49	5.34

Antenna Sample / Antenna Data
Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna only	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Tx1, Tx2 & Tx3 antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Tx1, Tx2 & Tx3 antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Tx1, Tx2 & Tx3 antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs and Drawings of Tx1, Tx2, and Tx3 (or Rx3) antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	N/A	Required
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. (S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.	Required	Required	Desired	Required (Photos)	Required (Photos)
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	N/A

Antenna Information

Section 1. Antenna Assembly Specifications

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dB)
P/N: ARY121-0009-002-H0 Main/Aux Antenna	Wieson	Dipole	P/N: AR9851-0009-005-H0 50 ohm Coaxial length: 12cm diameter: 1.1mm	2400-2500MHz 3.10 dBi (peak)	2400-2500MHz _.__ dBi (peak)	2400-2500MHz __.__ max	2400-2500MHz _.__ dBi (peak)
				5150-5350MHz 4.11 dBi (peak)	5150-5350MHz _.__ dBi (peak)	5150-5350MHz __.__ max	5150-5350MHz _.__ dBi (peak)
				5470-5725MHz 5.17 dBi (peak)	5470-5725MHz _.__ dBi (peak)	5470-5725MHz __.__ max	5470-5725MHz _.__ dBi (peak)
				5725-5850MHz 5.17 dBi (peak)	5725-5850MHz _.__ dBi (peak)	5725-5850MHz __.__ max	5725-5850MHz _.__ dBi (peak)
				5850-5895MHz 5.12 dBi (peak)	5850-5895MHz _.__ dBi (peak)	5850-5895MHz __.__ max	5850-5895MHz _.__ dBi (peak)
				5925-6425MHz 5.06 dBi (peak)	5925-6425MHz .__ dBi (peak)	5925-6425MHz __.__ max	5925-6425MHz _.__ dBi (peak)
				6425-6525MHz 4.71 dBi (peak)	6425-6525MHz _.__ dBi (peak)	6425-6525MHz __.__ max	6425-6525MHz _.__ dBi (peak)
				6525-6875MHz 4.49 dBi (peak)	6525-6875MHz _.__ dBi (peak)	6525-6875MHz __.__ max	6525-6875MHz _.__ dBi (peak)
				6875-7125MHz 5.34 dBi (peak)	6875-7125MHz _.__ dBi (peak)	6875-7125MHz __.__ max	6875-7125MHz _.__ dBi (peak)

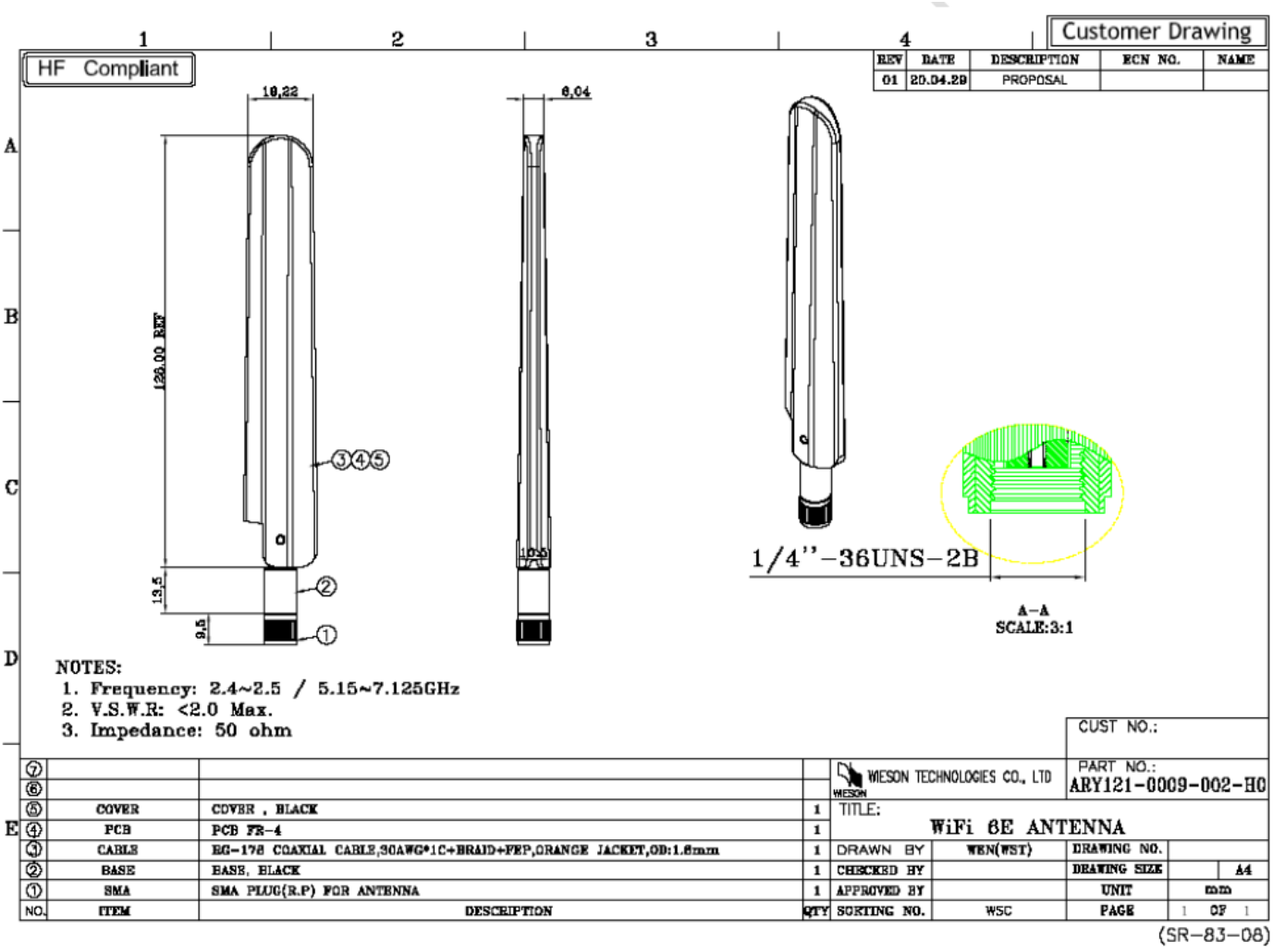
- **Antenna Peak Gain required being test in system basis.**
- **1E frame contend absolutely peak antenna gain include H/V**

Antenna Peak Gain Table:

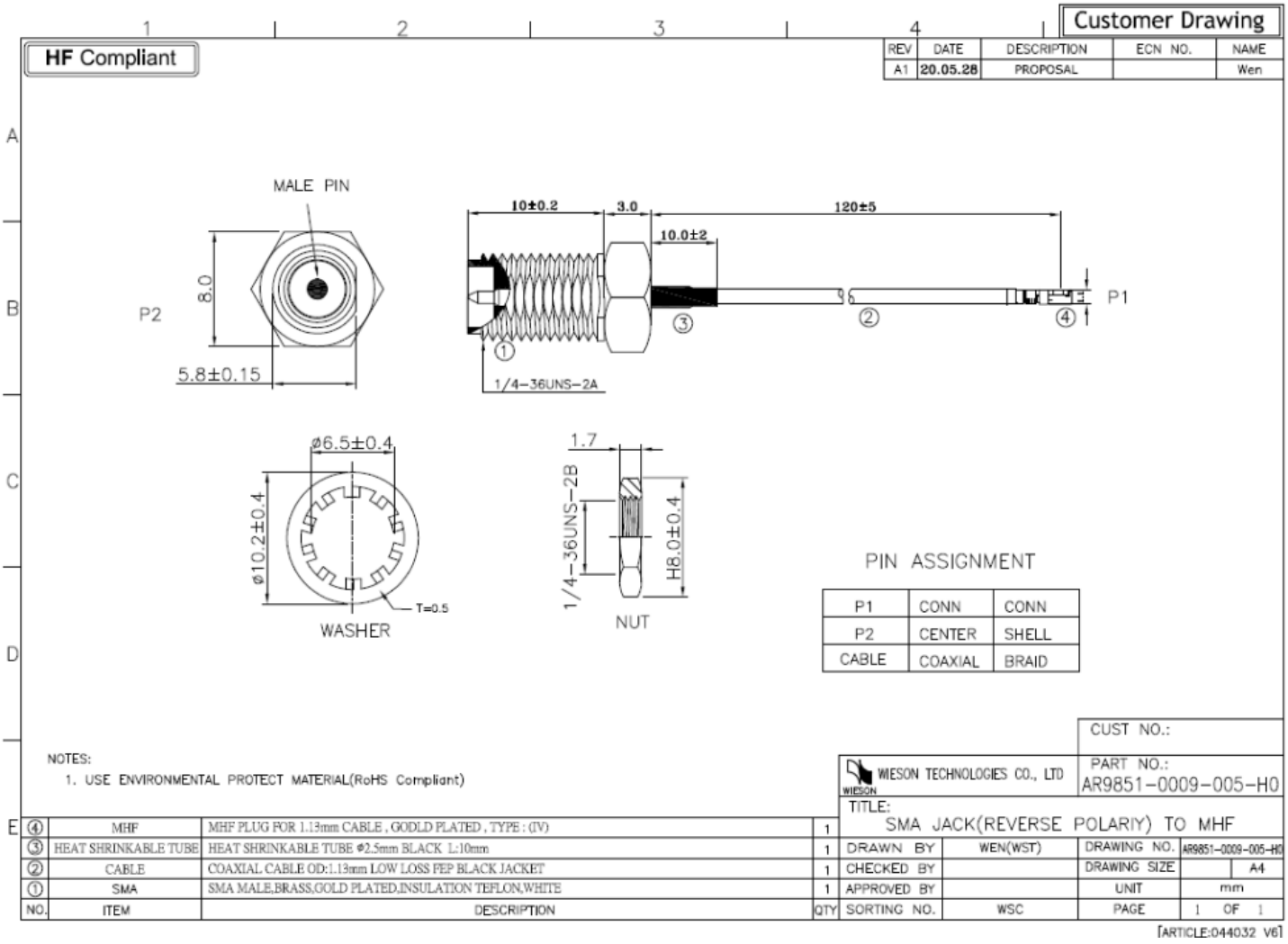
Frequency (MHz)	Main/Aux antenna 3D Antenna Gain Value (Including Cable loss) (dBi)
2400	3.10
2450	2.87
2500	2.46
5150	4.03
5250	4.02
5350	4.11
5470	4.82
5600	4.55
5725	5.17
5785	5.12
5850	4.76
5895	5.12
5925	5.06
6000	4.97
6125	3.72
6225	4.25
6325	4.48
6425	4.71
6525	4.49
6625	4.46
6725	4.32
6875	4.25
6925	4.67
7000	4.55
7125	5.34

Section 2. Dimensioned Photos or Drawings of Antennas

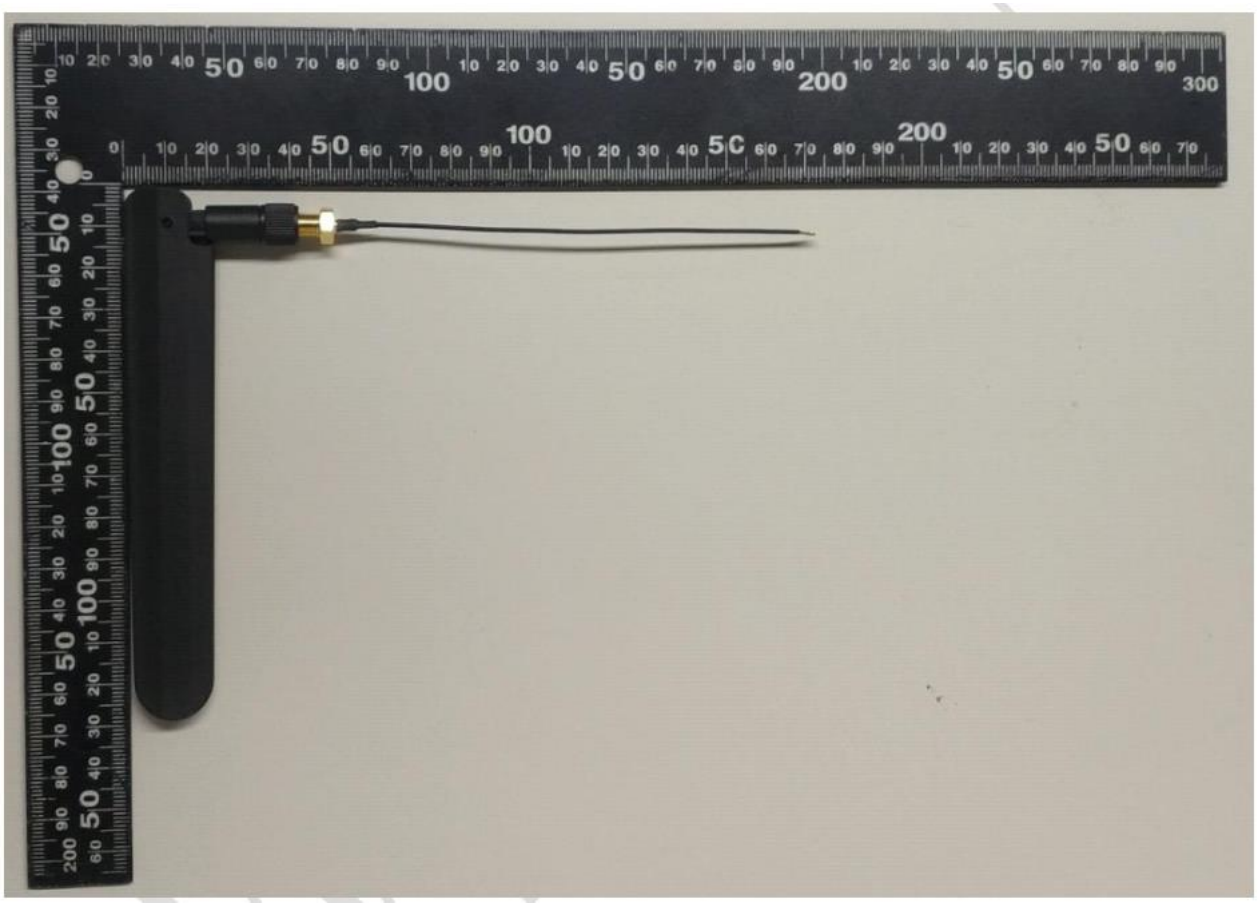
Main/Aux Antenna Dimensioned Drawing:



Cable Drawing:



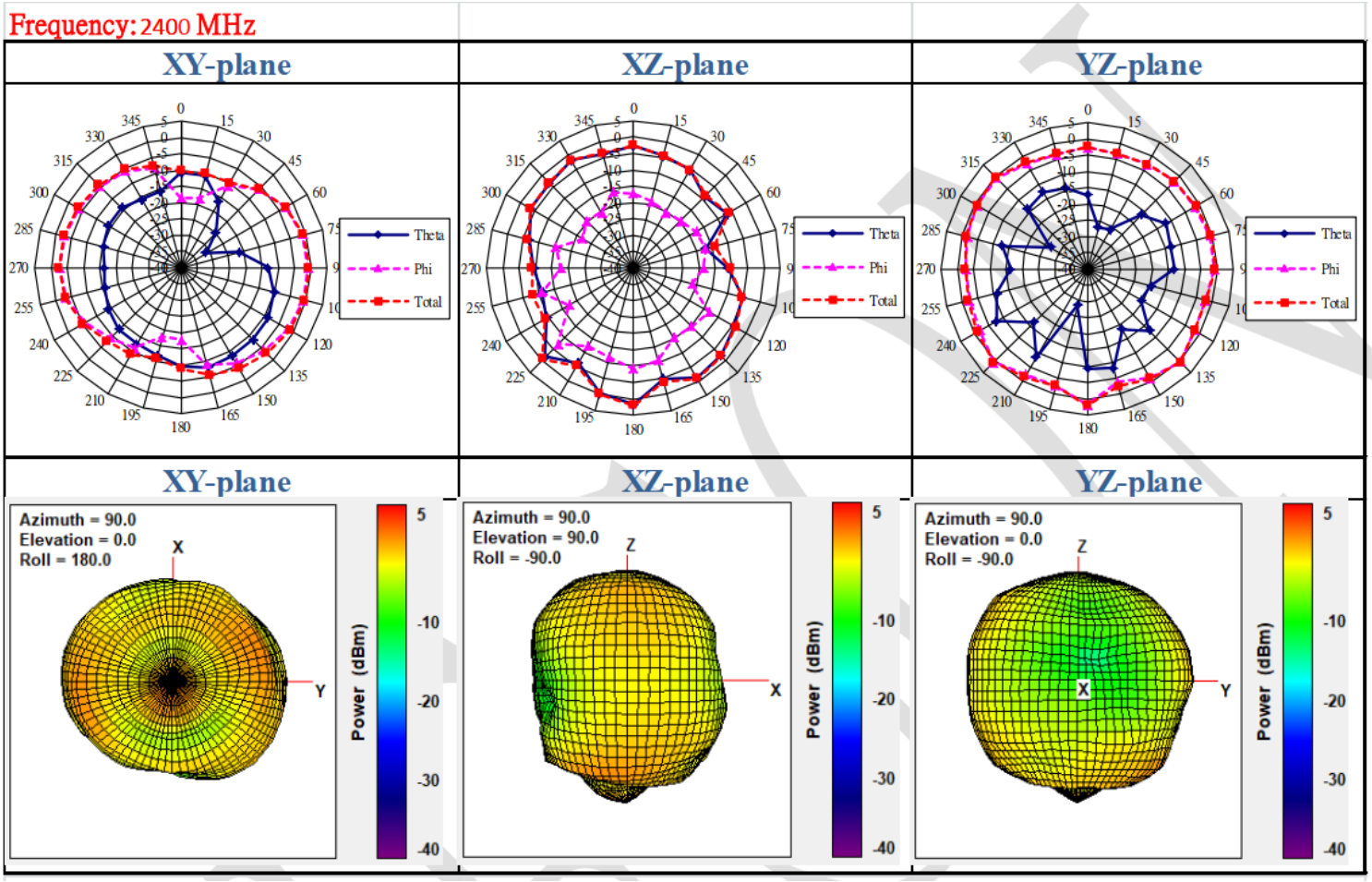
Main/Aux Antenna Photo



Section 3. Radiation characteristics of antennae Loaded in Host Platform

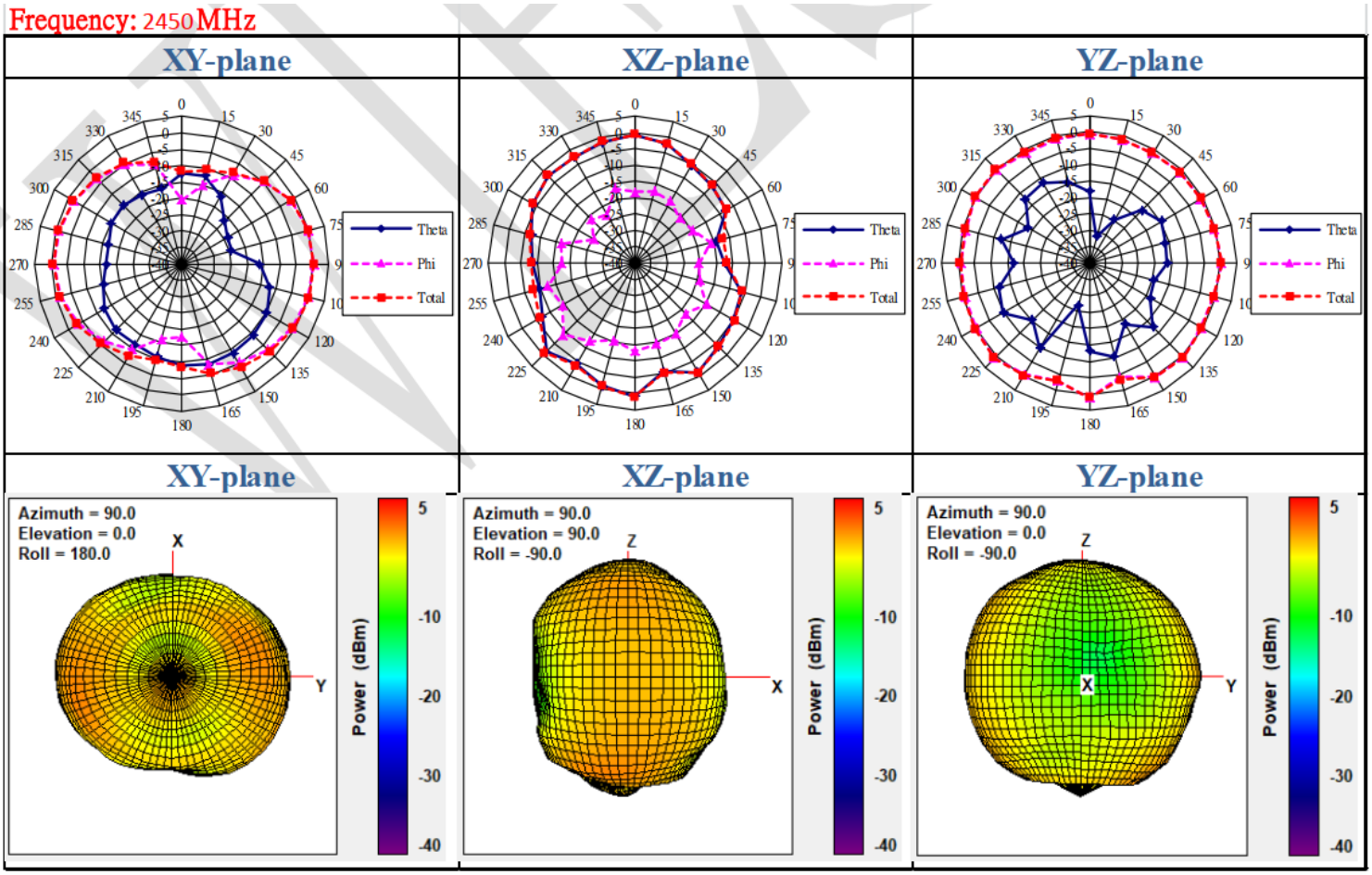
2400-2500MHz radiation characteristic

Main/Aux antenna: 2400 MHz



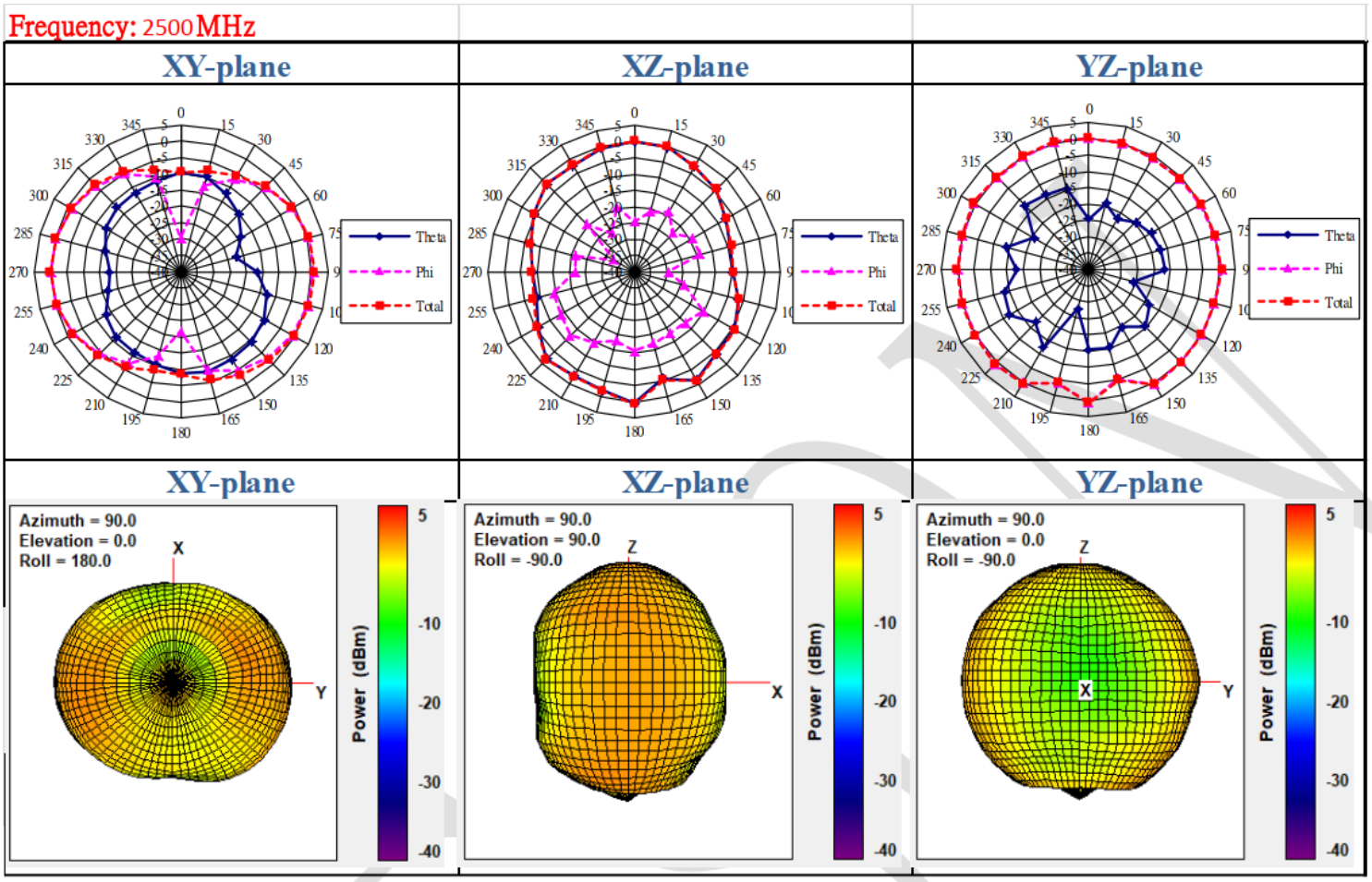
Center Frequency	**2400 MHz**
3D peak(dBi)	**3.10**

Main/Aux antenna: 2450 MHz



Center Frequency	**2450 MHz**
3D peak(dBi)	**2.87**

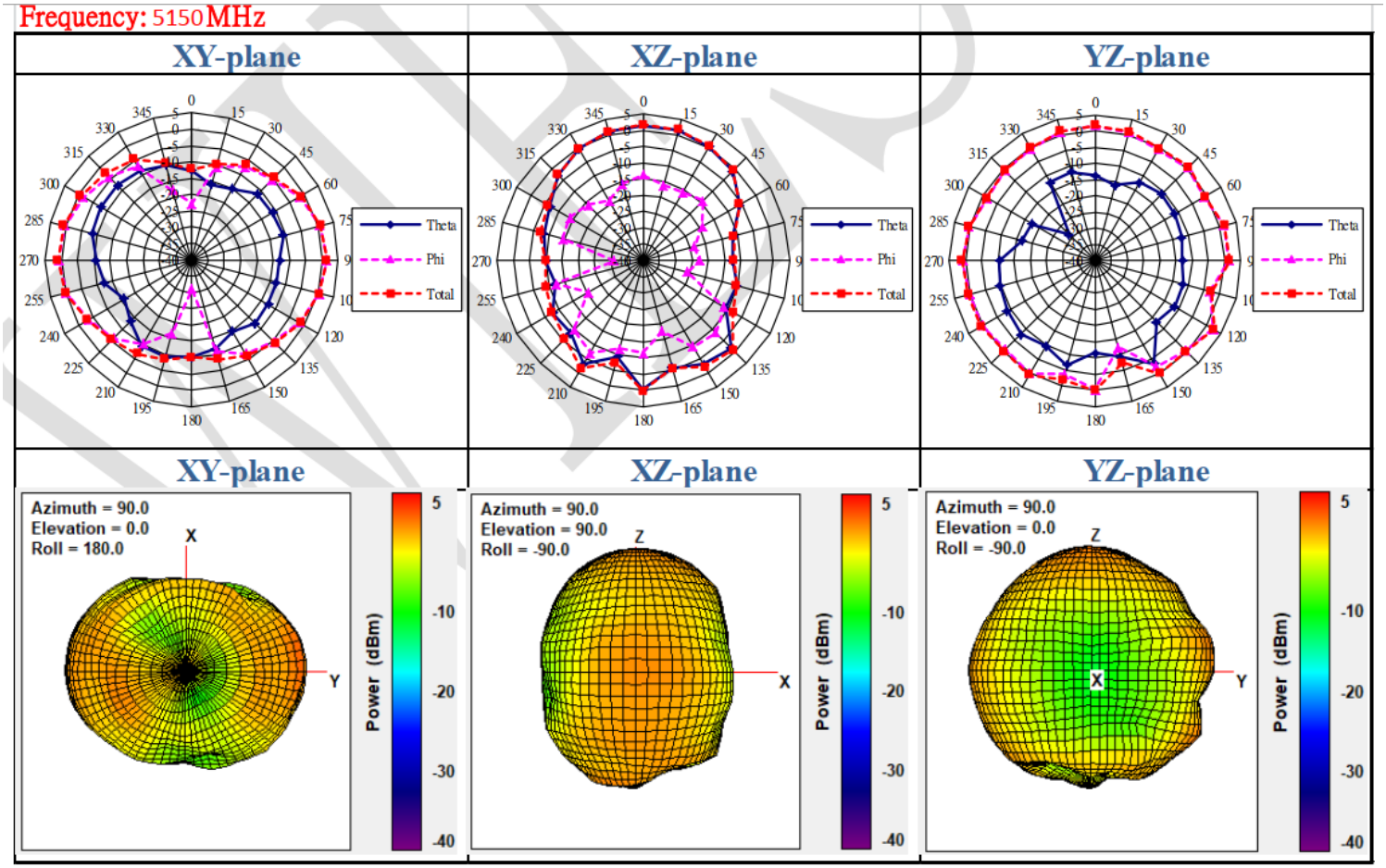
Main/Aux antenna: 2500 MHz



Center Frequency	**2500 MHz**
3D peak(dBi)	**2.46**

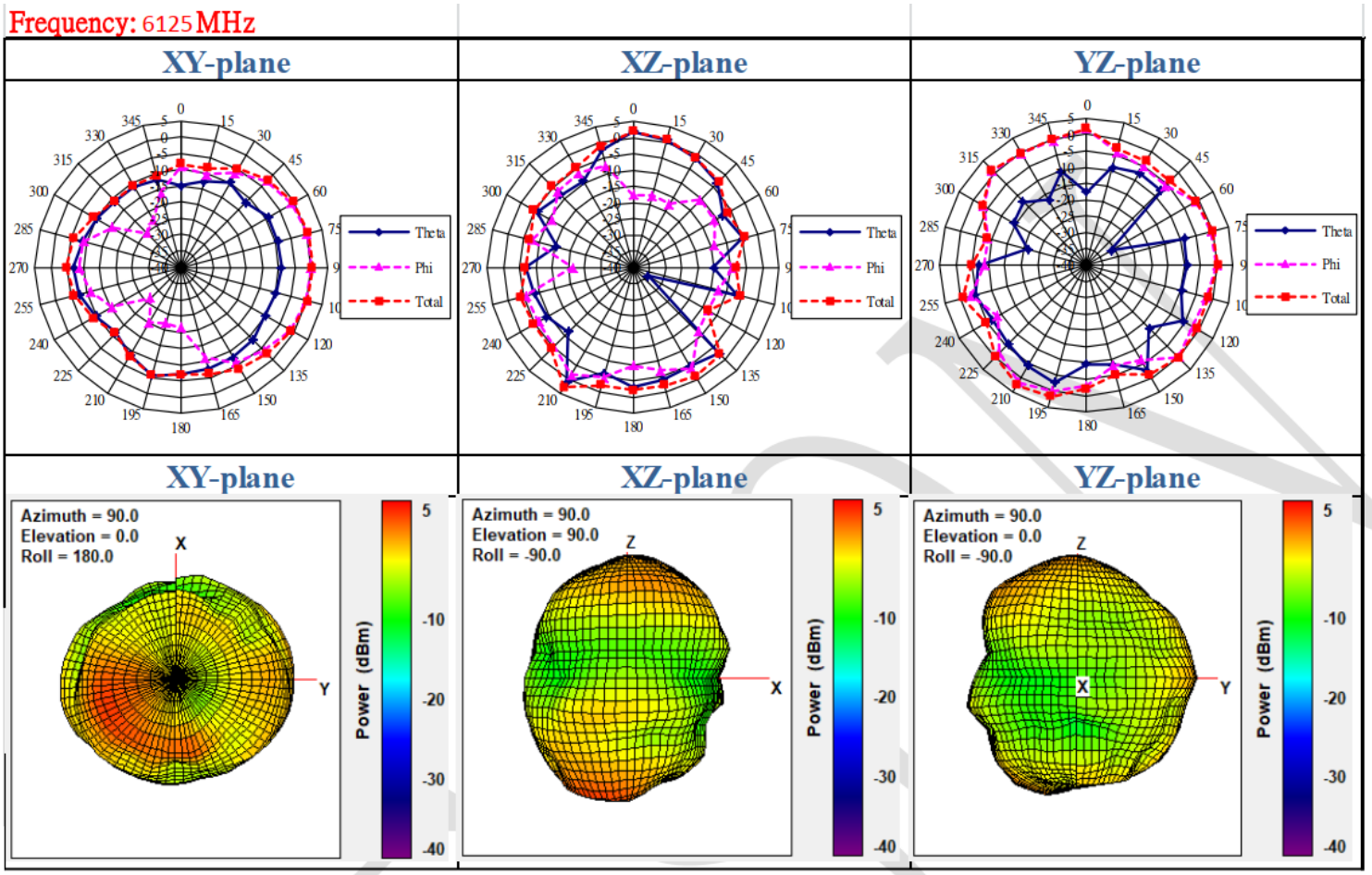
5150-5350 MHz radiation characteristic

Main/Aux antenna: 5150 MHz



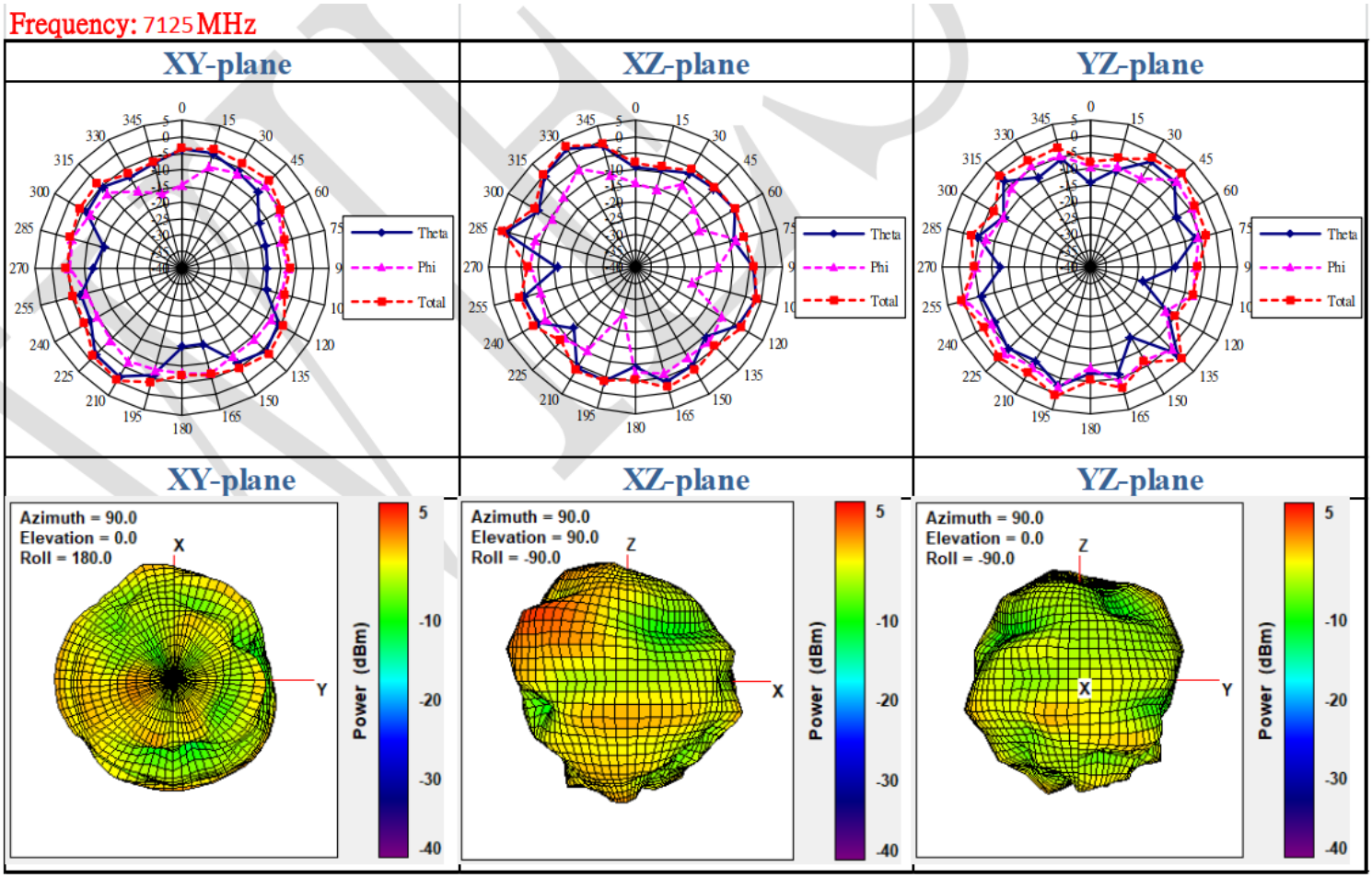
Center Frequency	**5150 MHz**
3D peak(dBi)	**4.03**

Main/Aux antenna: 6125 MHz



Center Frequency	**6125 MHz**
3D peak(dBi)	**3.72**

Main/Aux antenna: 7125 MHz



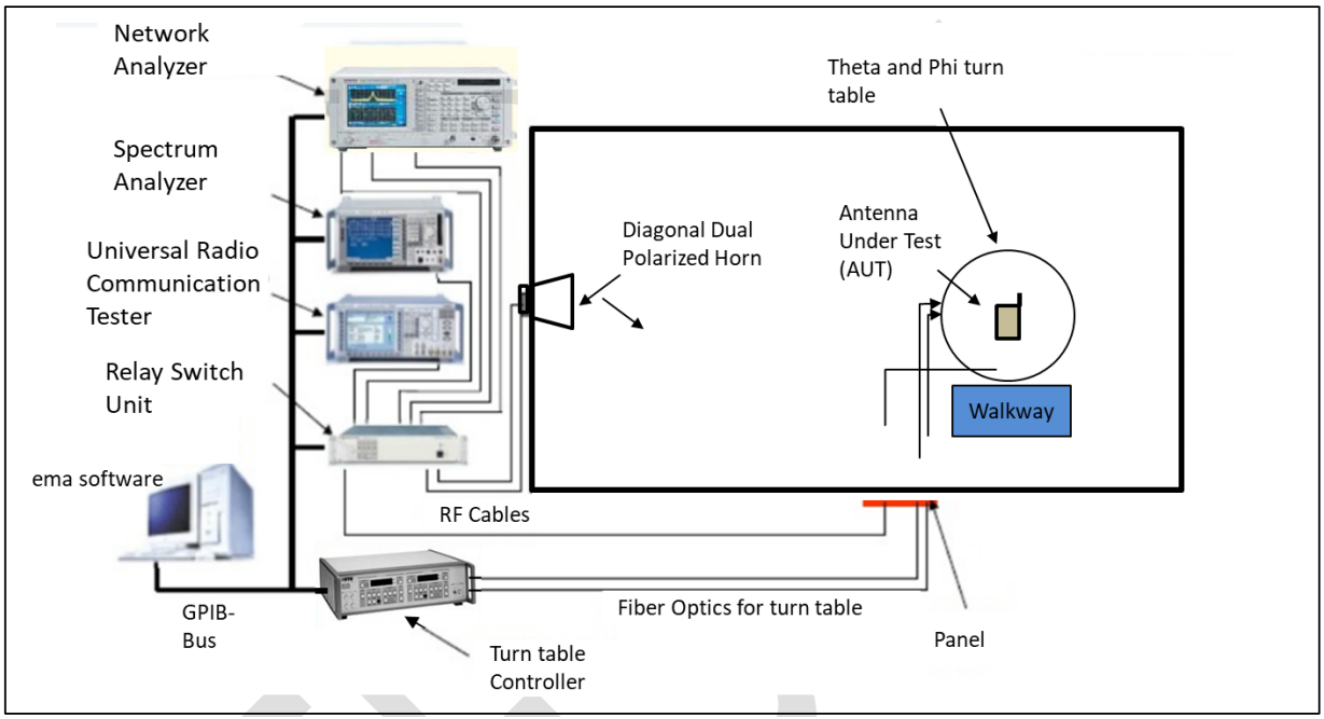
Center Frequency	**7125 MHz**
3D peak(dBi)	**5.34**

4. Test & System Description

4.1 Measurement Method and System

Measurement was performed with a Full Anechoic Chamber

4.2 Test setup



4.3 Equipment list

Device	Type/Model	Serial#	Manufacturer	Cal. Date	Cal. Due Date
Anechoic Chamber	SpaceSacer 26H	3100508-182-00007	ETS-Lindqren	30-Jun-23	30-Jun-24
Dual Polarized Diagonal Horn Antenna	3164	3164-03	ETS-Lindqren	30-Jun-23	30-Jun-24
Spectrum Analyzer(SA)	FSV – FSP	3100505-19-00011	RCHDE&SCHWARZ	24-Mar-23	24-Sep-26
Network Analyzer(NA)	ZNB4	-	RCHDE&SCHWARZ	24-Mar-23	24-Sep-26
Network Analyzer(NA)	R3767CG	130101611	ADVANTEST	24-Mar-23	24-Sep-26
Network Analyzer(NA)	C4209	101548/102977	TS RF Instruments Co., Ltd	24-Mar-23	24-Sep-26
Universal radicommunication tester	CMW500 – CMU200	101548/102977	RCHDE&SCHWARZ	28-May-23	28-Nov-26
Turn table Controller	EMCO 2090	23525	ETS(EMCO)	N/A	N/A
Slot Switch(SW)	Aqilent 3499B	3100508-041-00001	Aqilent	N/A	N/A
Power Amplifier(PA)	ZVE-8G+	SN427201705	PLANAR MONOLITHICS	28-May-23	28-Nov-26
Low-noise Amplifier(LNA)	ZFL-500	3100504-27-00014	Mlnl-Clrcuits	28-May-23	28-Nov-26

Annex A. Photographs

A.1 Setup Photo