1 General Information

1.1 Laboratory Information

Test Site	TÜV Rheinland (Shenzhen) Co., Ltd.
Test Site Location	No. 362, Huanguan Middle Road, Guanghu Street, Longhua District, Shenzhen 518110, P.R. China
Telephone	+86 755 8268 1186
Fax	+86 755 2598 0321
Mail	service-gc@tuv.com
Website	https://www.tuv.com

1.2 Applicant Information

Applicant	Ti-lane Precision Electronic Co., Ltd
Address	No.6 Bldg North, Jiada Indus. Park, Yanluo St. GuangDong, China

1.3 Manufacturer Information

Manufacturer	Ti-lane Precision Electronic Co., Ltd
Address	No.6 Bldg North, Jiada Indus. Park, Yanluo St. GuangDong, China

1.4 Equipment Under Test (EUT) Information

Equipment Under Test (EUT) Information	Plugs and Sockets
Model	
Dimension	35mm*28mm*2mm
Frequency range	
Antenna Designed Type	On board antenna

2 Measurement System Information

2.1 Testing Condition

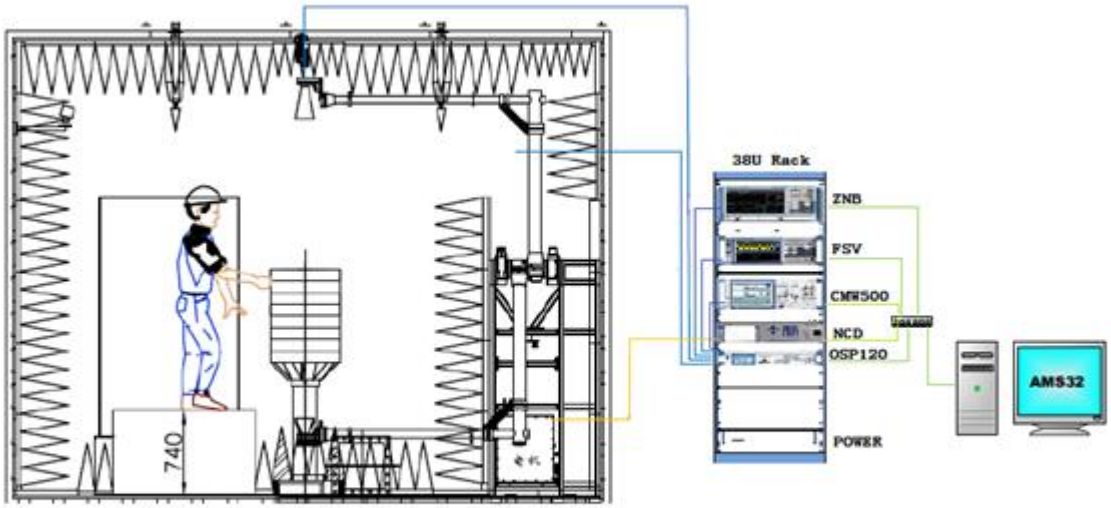
Environment Parameter	Ambient Pressure	Temperature	Voltage	Relative Humidity
Normal Temperature, Normal Voltage (NTNV)	100 to 102 KPa	22.2˚C	AC 220V	57%

2.2 List of Equipment

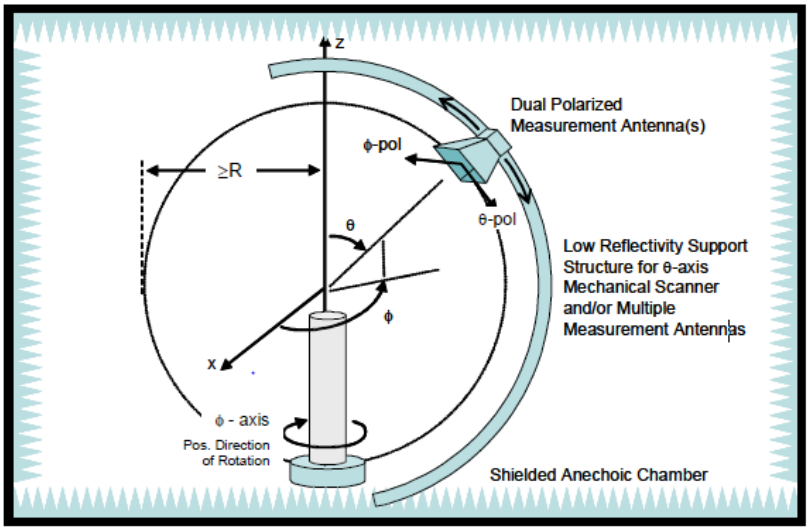
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Vector Network Analyzer	R&S	ZNB 8	107040	2023.07.25	1 year
Signal and Spectrum Analyzer	R&S	FSV 7	103665	2023.07.25	1 year
Open switch and control platform	R&S	OSP120	102054	N/A	N/A
Positioner Controller	R&S	NCD	2367-01	N/A	N/A
Test antenna	R&S	TC-TA18	101198	N/A	N/A

2.3 Test Setup

Measurements are performed in a R&S TS8991 3D fully anechoic test system. The test system includes a high-performance RF-shielded, rectangular anechoic chamber, a Distributed-axes system and R&S AMS32 data acquisition and analysis software.



Typical Setup for R&S TS8991

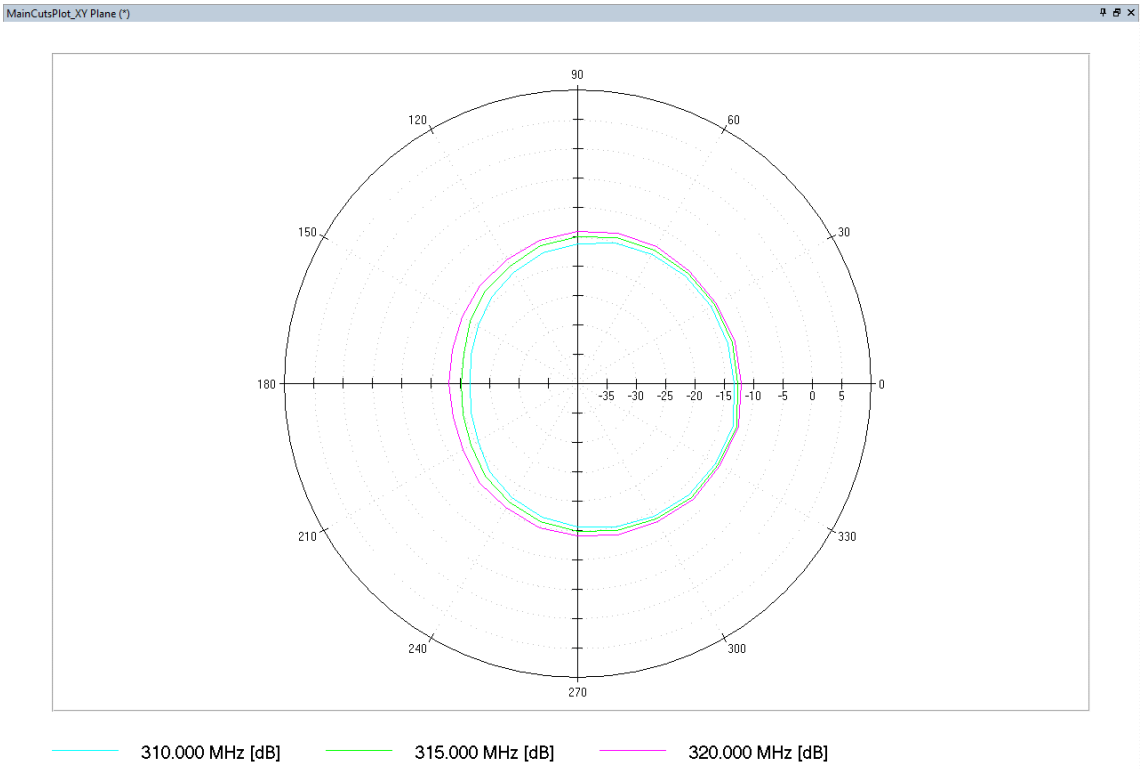


3 Summary of Test Results

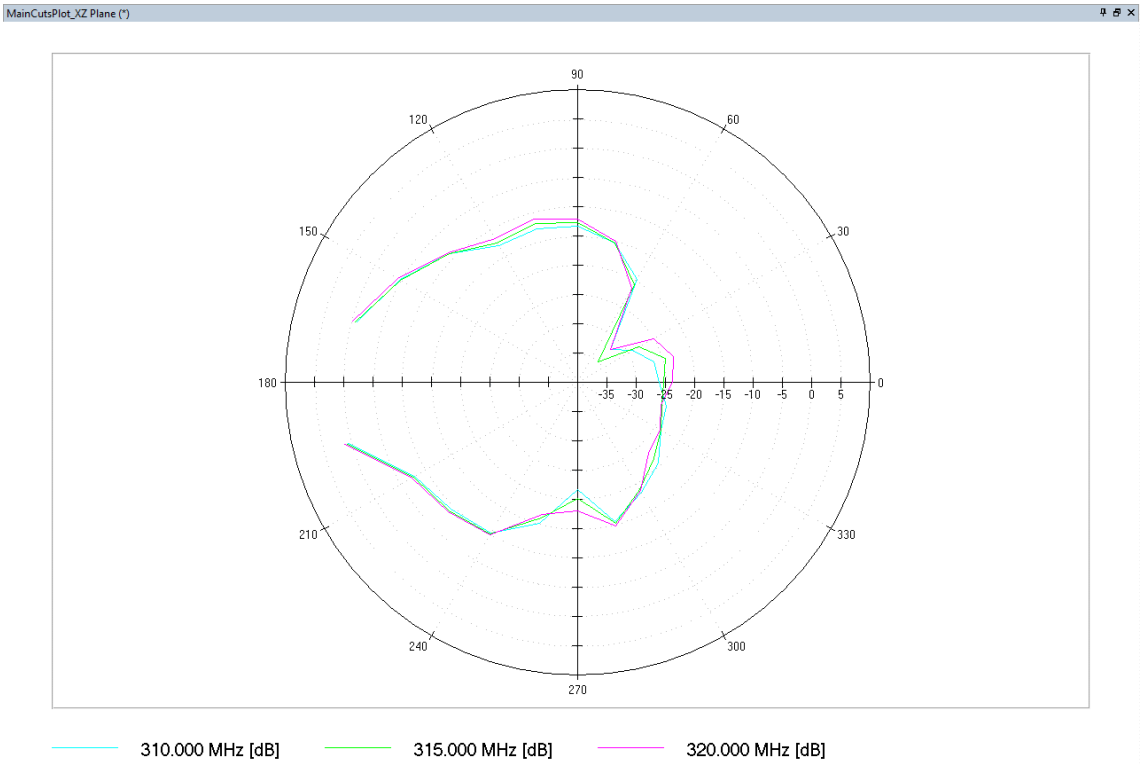
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Peak Gain (dB)
300.00	-10.60	8.71	1.74
305.00	-10.58	8.75	1.66
310.00	-10.56	8.79	1.37
315.00	-10.40	9.13	1.55
320.00	-10.06	9.86	1.83
325.00	-9.91	10.21	1.85
330.00	-9.91	10.20	1.93
335.00	-9.84	10.38	2.14
340.00	-9.57	11.03	2.36
345.00	-9.26	11.86	2.67
350.00	-8.87	12.97	2.99
355.00	-8.40	14.46	3.27
360.00	-7.79	16.64	3.70
365.00	-7.35	18.41	4.03
370.00	-7.14	19.32	4.25
375.00	-7.39	18.25	4.04
380.00	-7.75	16.81	3.54
385.00	-7.94	16.07	3.32
390.00	-8.23	15.02	3.07
395.00	-8.46	14.27	2.91
400.00	-8.65	13.63	3.07

4 Test pattern 2D Plot

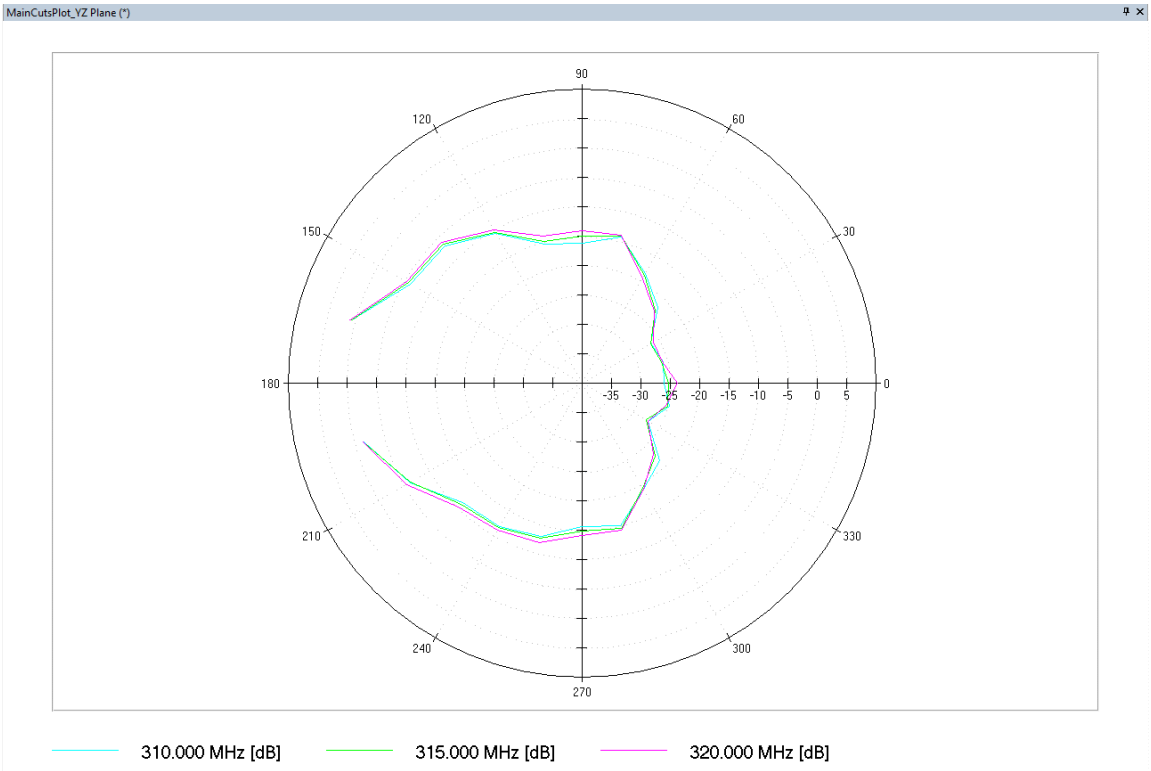
Main Cuts Plot _ XY Plane



Main Cuts Plot _ XZ Plane

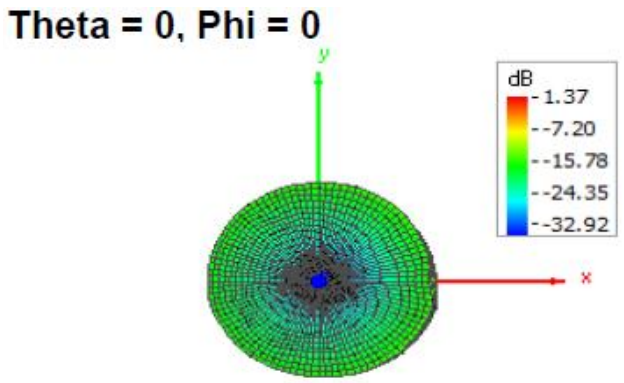
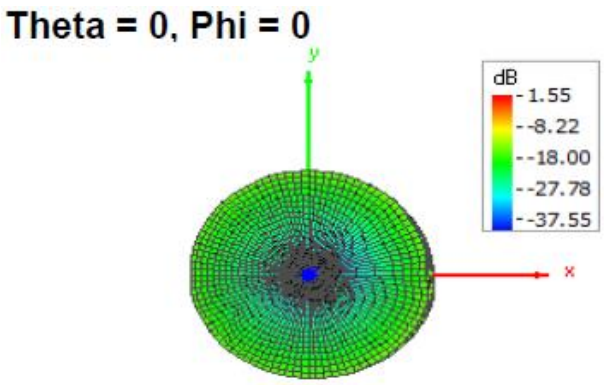
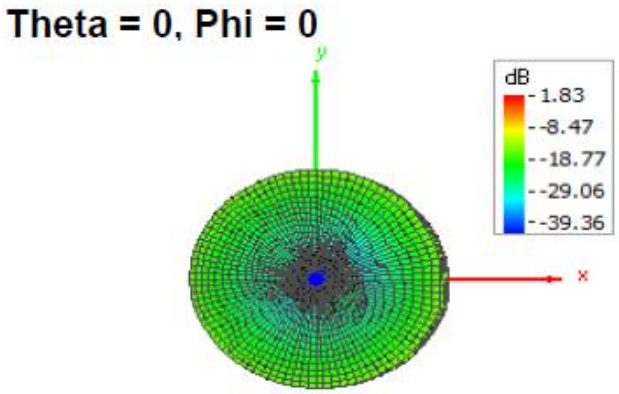


Main Cuts Plot _ YZ Plane



5 Test pattern 3D Plot

All plots in this section show the total EIRP (EIRPθ + EIRPφ) with the +Z-axis pointing out of the page, +X-axis pointing right, and +Y-axis pointing up.

Free Space – EIRP (310MHz)	Free Space – EIRP (315 MHz)
	
Free Space – EIRP (320 MHz)	
	

6 Photograph

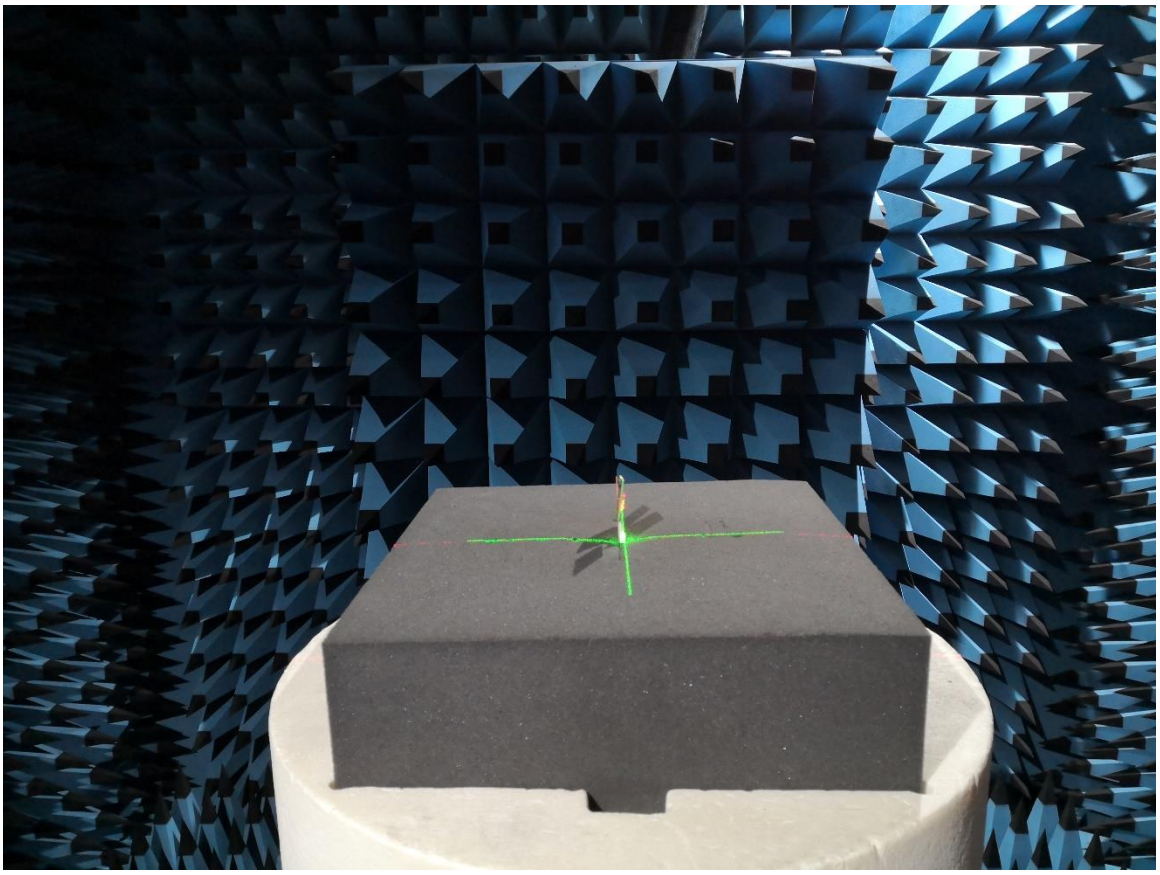


Figure-1: Side View of Free Space Configuration