Antenna Characterization Test Data

Report No.: MAZT01-A2 Rev A

Company: Maztech Industries

Model No.: X4-LRF-2K

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1. TECHNICAL DETAILS

Details	Description
Purpose:	Characterize the BLE Antenna emissions of Maztech Industries X4-LRF-2K
Applicant:	Maztech Industries 1641 Reynolds Ave Irvine, California 92614 USA
Manufacturer:	Maztech Industries
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566, USA
Test report reference number:	MAZT01-A2
Date EUT received:	28th March 2025
Dates of test (from - to):	2nd April 2025
No of Units Tested:	1
Model(s):	X4-LRF-2K
Location for use:	Outdoors

2. TEST SETUP

The chamber uses spherical measurement system. Figure 1. shows the typical setup of the chamber. In addition to the pictured Theta axis rotation, the EUT will have to be rotated about the Z-axis (Phi rotation) in order to perform the full spherical scans. The EUT is placed on a turn table typically rotating 360 degrees (Azimuth). A receiving antenna, typically a horn antenna or patch antenna with dual polarization, is placed on a boom that moves from zero to 180 degrees (Elevation).
The EUT antenna transmits radio waves which are picked up by the horn antenna for the receiving instrumentation. Measurements are recorded continuously at several angles of Elevation (theta = 0 to 180) and Azimuth (Phi = 0 to 360) to provide a 2D or 3D view of the antenna radiation pattern.

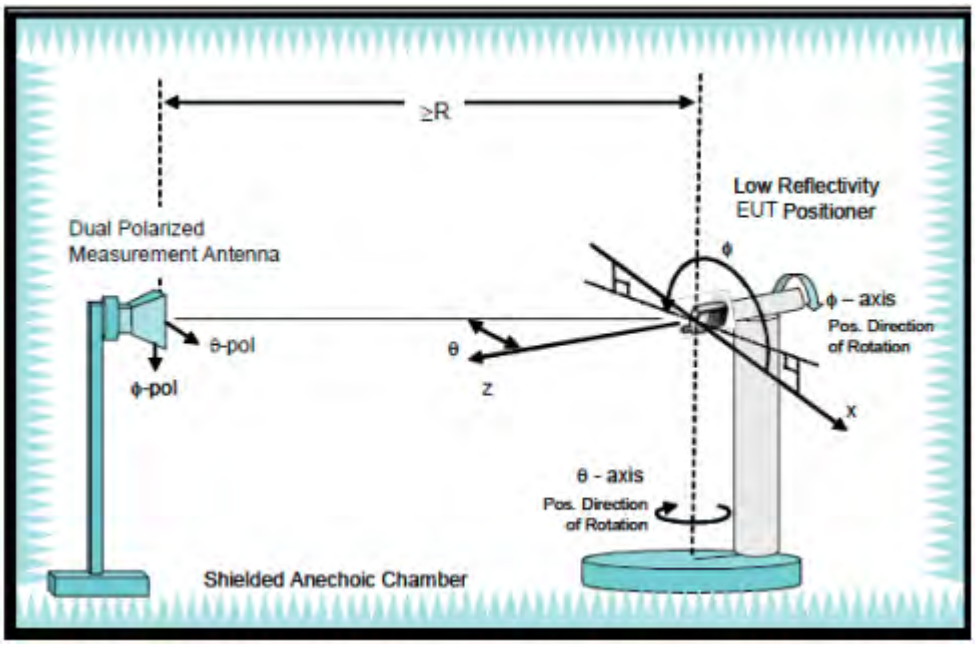


Fig 1. Test Setup

Test Equipment Utilized

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
294	Antenna Measurement Chamber	ETS Lindgren	AMS-8500	008	Not Required
369	Quad Ridge Horn Antenna	ETS-Lindgren	ETS 3164-08	00123798	12 Jan 2026
479	Sleeve Dipole Antenna	MVG	SD2450-265	SD2450-265	20 May 2025
444	SMA Cable Assembly	ETS-Lindgren	RFC-NMS-100-SMS-256 IN	001	Cal when used
499	ENA Series Network Analyzer 100 kHz to 8.5 GHz	Agilent	E5071C	MY46100409	11 Feb 2026
510	Barometer/Thermometer	Digi Sense	68000-49	170871375	4 Jan 2026
900	Test Software for 2D and 3D antenna pattern measurement.	ETS Lindgren	EMQuest V1.08 Build 3151	900	Not Required

3. TEST METHOD

The method is used to measure the antenna 2D or 3D gain of EUT in OTA anechoic chamber. Equipment Under Test (EUT) is placed at the center of the platform. EUT was rotated and data was recorded, step rotation 15^0 on both axis.

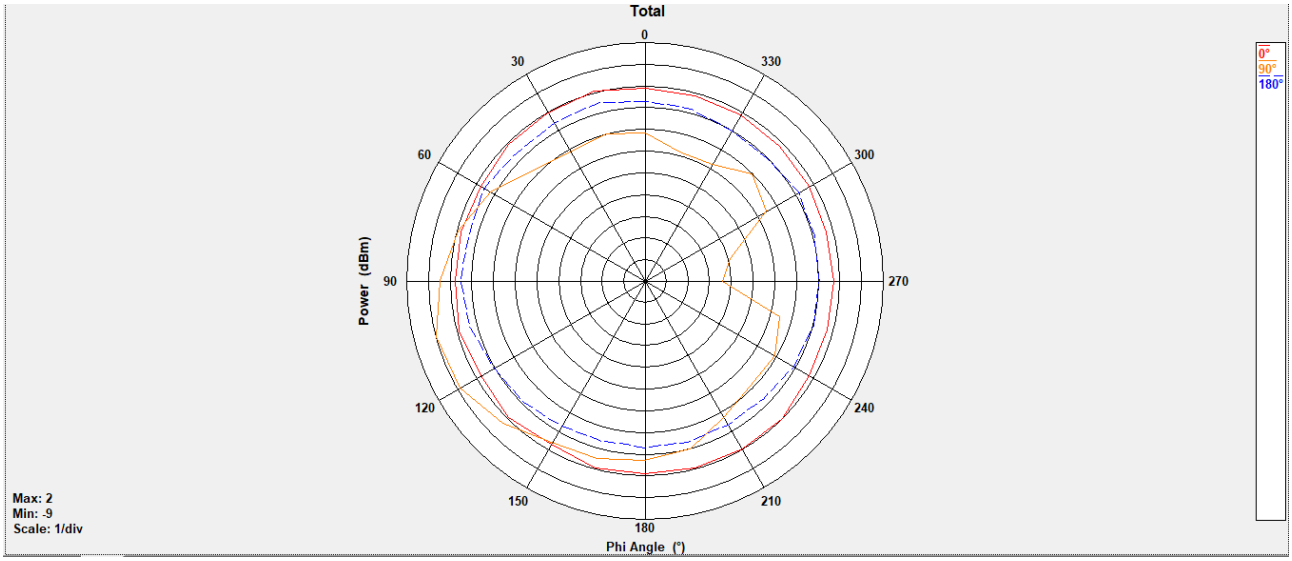
4. EQUIPMENT DETAILS

Type (EUT/ Support)	Equipment Description	Mfr	Model No.	Serial No.
EUT	Laser Rangefinder	Maztech Industries	X4-LRF-2K	LRF000117

5. RESULTS

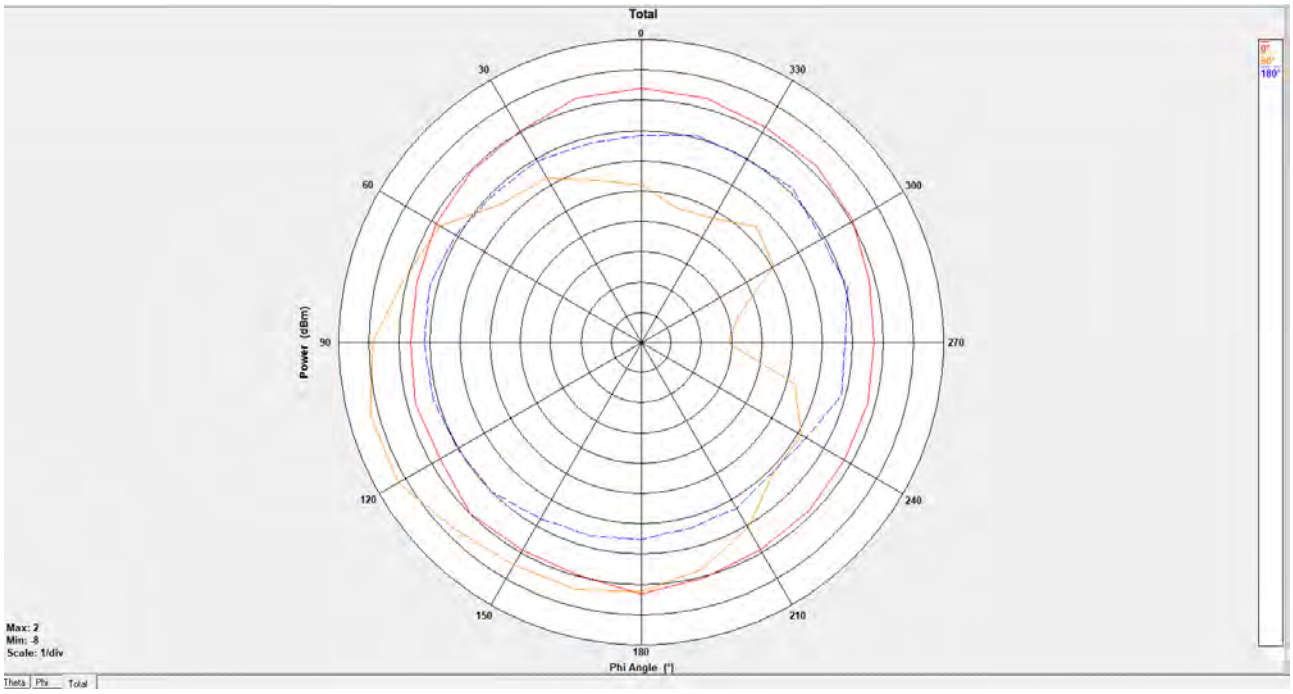
BLE- 2402 MHz

Tot. Rad. Pwr. (dBm)	-1.16669
Peak EIRP (dBm)	1.60568
Directivity (dBi)	2.77237
Efficiency (dB)	-1.16669
Efficiency (%)	76.4418
Gain (dBi)	1.60568



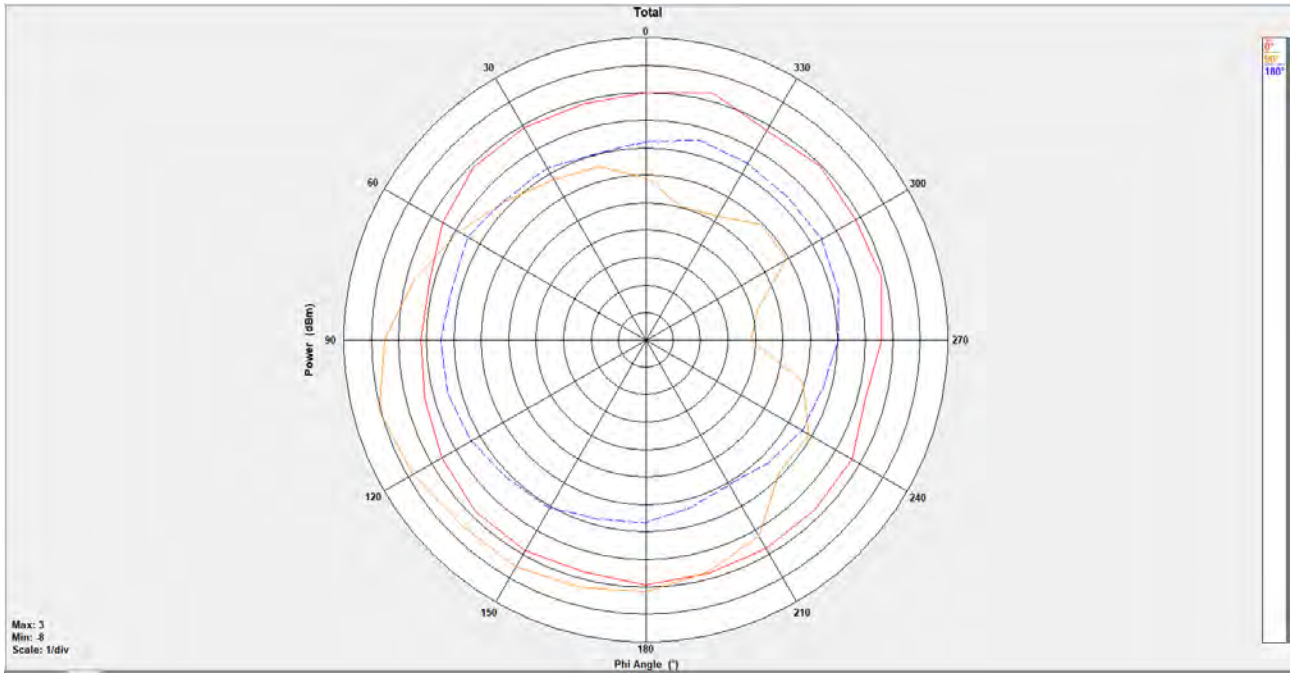
BLE- 2440 MHz

Tot. Rad. Pwr. (dBm)	-0.905766
Peak EIRP (dBm)	1.77305
Directivity (dBi)	2.67881
Efficiency (dB)	-0.905766
Efficiency (%)	81.1752
Gain (dBi)	1.77305

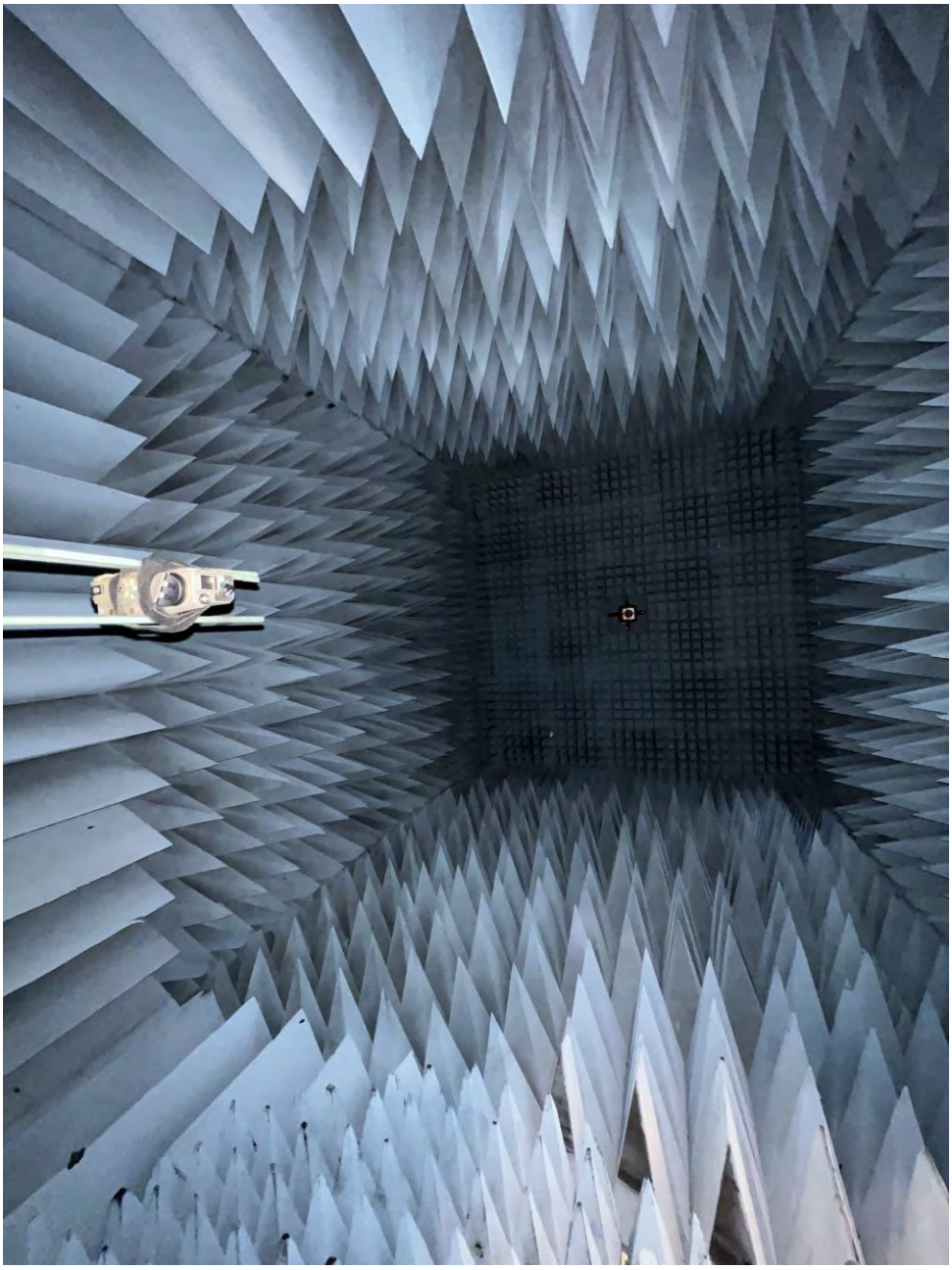


BLE- 2480 MHz

Tot. Rad. Pwr. (dBm)	-0.254269
Peak EIRP (dBm)	2.15318
Directivity (dBi)	2.40745
Efficiency (dB)	-0.254269
Efficiency (%)	94.3133
Gain (dBi)	2.15318



6. PHOTOGRAPHS



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