

FTVARM088

Dual-Band Low Frequency Range (LFR-US) and WiFi Antenna

Custom Built to Serve Your Unique Requirements

Features:

Frequency Band: 902-928 MHz, 2400-2480 MHz

Type: Linear

Dimensions: 38.79 x 16.42 x 0.40 mm

RoHs compliant

Suggested Applications:

- LFR[US], LoRa [US], WiFi



Fig. 1: [Antenna]

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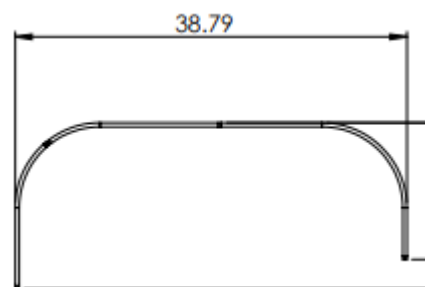


Fig. 2: [Antenna]

PN: FTVARM088 Version 1.0

Status: Released

Performance & Specifications

Antenna Performance						
Parameters	Results (LFR-US)			Results (WiFi)		
Frequency (GHz)	0.9061	0.916	0.9258	2.400	2.442	2.478
Efficiency (dB)	-2.85	-2.60	-2.71	-2.12	-1.70	-2.34
Peak Gain (dBi)	-0.13	-0.29	0.21	2.66	3.20	2.54
VSWR	< 1.5			<1.5		

General Specifications			
Antenna Type	Nominal Impedance	Power Handling	Polarization
LFR & WiFi	50 Ω	10 W	Linear

Mechanical Specifications	
Dimensions (L x W x H)	Material
38.79 x 16.42 x 0.40 mm	Stamp Metal

Efficiency

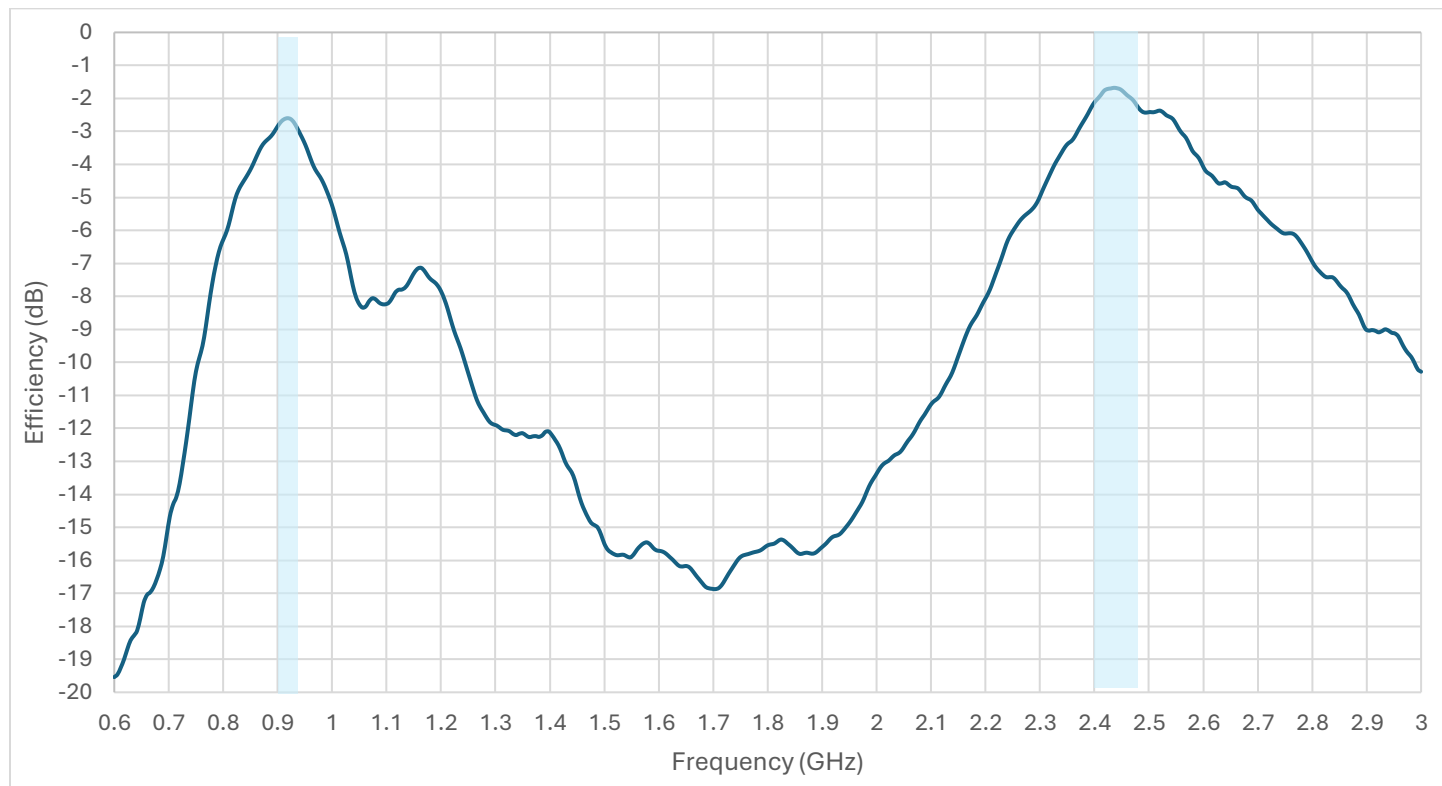


Fig 3. Typical Performance Efficiency

1D Gain Radiation Patterns

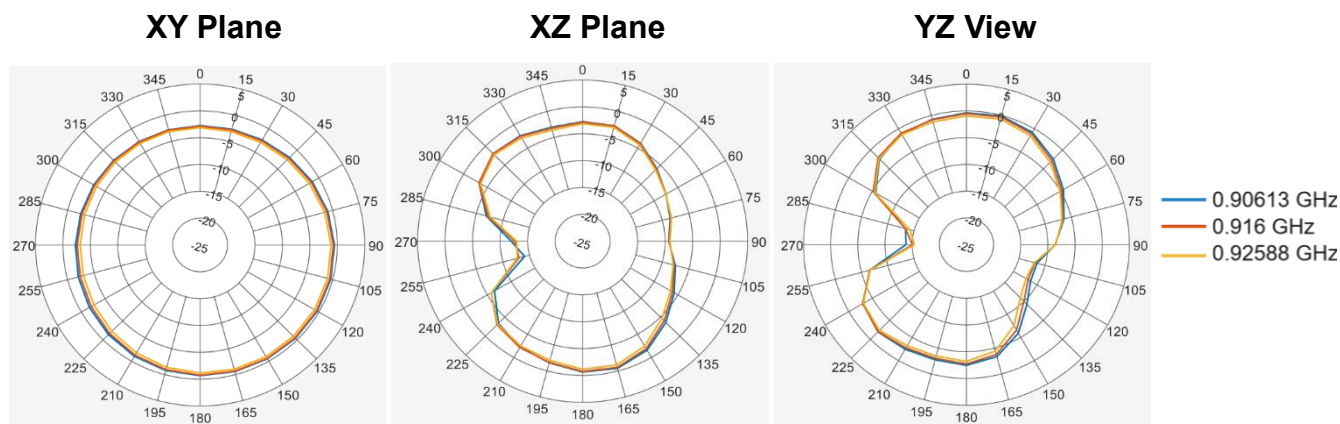


Fig. 4-6: 1D Gain Radiation Patterns for LFR[US]

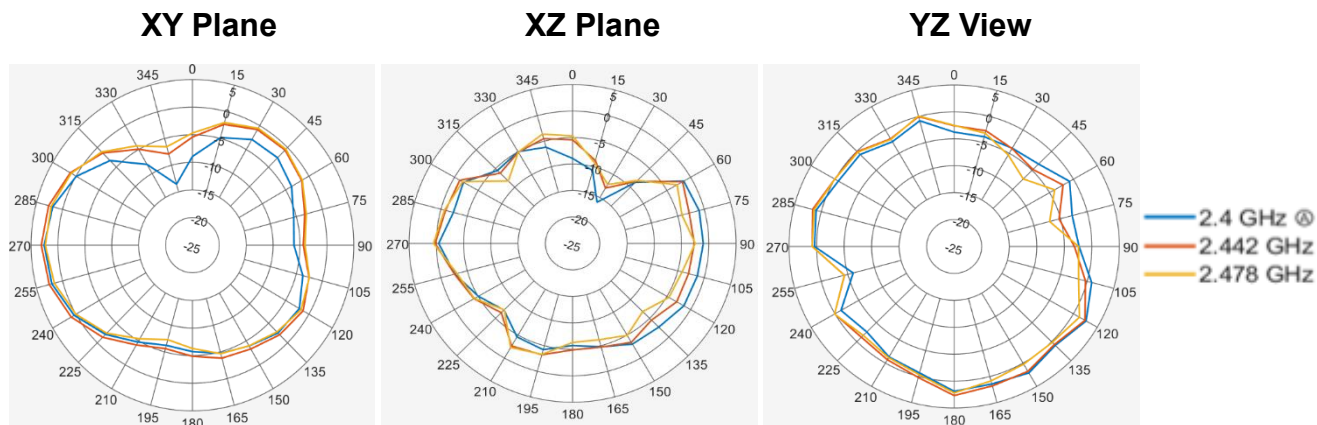


Fig. 7-9: 1D Gain Radiation Patterns for LFR[US]

2D & 3D Gain Radiation Patterns

915 MHz

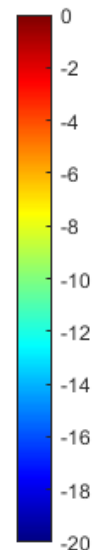
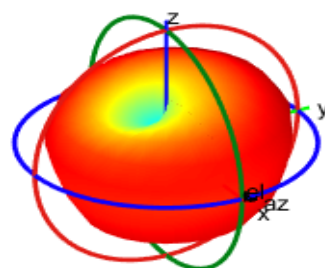
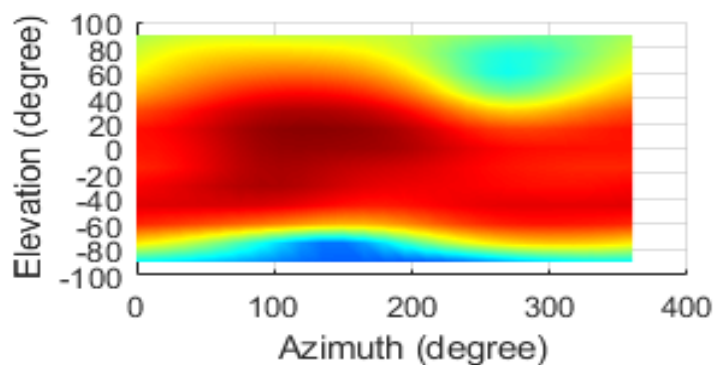


Fig. 10-11: 2D and 3D Gain Radiation Pattern, 915 MHz

2442 MHz

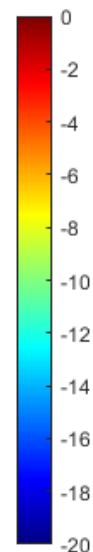
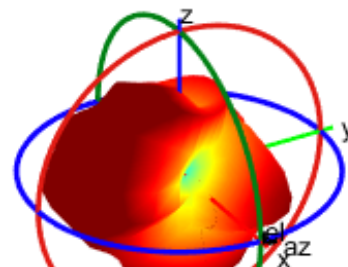
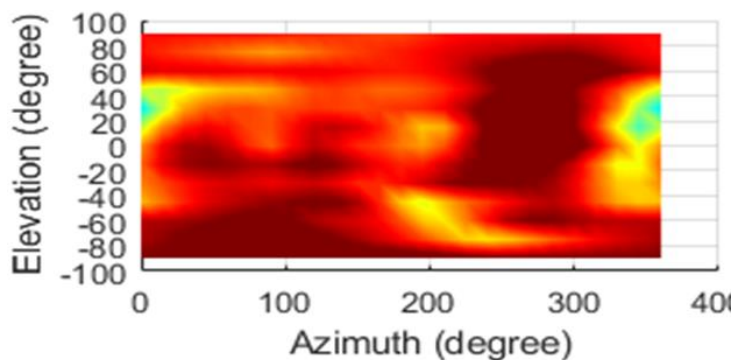


Fig. 12-13: 2D and 3D Gain Radiation Pattern, 2442 MHz

Test Conditions

Results were collected from a passive antenna measurement within a 5-meter fully anechoic antenna chamber equipped with a dual-pol quad-ridged horn receiver antenna and an EL-AZ positioner with laser positioner.

Test Conducted	Passive
DUT SN/PN	Prototype units

Formula & Calculations

Gain:
$$G_{AUT} = \frac{[S_{21}^2]}{[G_{REF}]} \left(\frac{\lambda}{4\pi d} \right)^{-2}$$

Efficiency:
$$\varepsilon = \frac{\pi}{2NM} \sum_N \sum_M \frac{S_{21}^2(\theta_M, \phi_N)}{P_L G_T} \cos(\phi_N)$$

Test Equipment Calibration Status

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Network Analyzer	Anritsu	MS46122B	2135304	8/25/2024	8/25/2025
Quad-Ridge Horn Antenna	ETS-Lindgreen	3164-10	217936	8/25/2024	8/25/2025
5 Meter Anechoic Chamber	Braden Shielding Systems	NA	F70331	NA	NA
RF Cable	ENS Microwave	S160-160-MKS-MKS	3042020	8/25/2024	8/25/2025
RF Cable	ENS Microwave	S160-120-MKS-MKS	12042018	8/25/2024	8/25/2025
RF Cable	ENS Microwave	EMC1-K1K1-72	1GVT4 19002201	8/25/2024	8/25/2025
RF Cable	ENS Microwave	EMC1-K1K1-72	1GVT4 19002202	8/25/2024	8/25/2025
RF Cable	ENS Microwave	EMC1-K1K1-216	1GVT4 19002202 001	8/25/2024	8/25/2025
RF Cable	ENS Microwave	EMC1-K1K1-216	1GVT4 19002202 002	8/25/2024	8/25/2025
DUT Positioner	DE LCC	D6025	NA	NA	NA
RF Switch	Mini-Circuits	RC-1SPDT-A18	1810010005	8/25/2024	8/25/2025

Legal Notices

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REV.	DESCRIPTION	DATE
1	INITIAL RELEASE	3/18/2024
2	INCREASE ELEMENT	5/9/2024
3	SHORTEN ELEMENT	6/10/2024
4	ACTIVE TUNE	10/4/24
5	TUNE	11/19/2024

NOTES UNLESS OTHERWISE SPECIFIED:

- DERIVED FROM CAD FILE AND CUSTOMER ORDER REQUIREMENTS
- DIMENSIONS ARE FOR INSPECTION AND REFERENCE. REFER TO 3DCAD FILE FOR NOMINAL PART GEOMETRY.
- MATERIAL: SS430 0.4mm THICK, HALF HARD (1/2H) HARD FINISH; PRE-PLATED WITH SOLDERABLE NICKEL PLATING. PLATING THICKNESS SHOULD BE 2-4.5 MICRON.
- BURRS SHALL NOT EXCEED 0.05mm AND THEIR DIRECTION SHOULD BE THE SAME AS THE FOLD DIRECTION.
- OXIDATION IS NOT ALLOWED.
- EDGES SHALL BE DRESSED AND DEBURRED FOR SAFE HANDLING AND COSMETIC APPEARANCE.
- UNSPECIFIED FEATURES, RADII, AND DIMENSIONS, PER 3D SOLID MODEL DATA +/-0.25mm; ANGLE TOLERANCE +/-2DEG.
- FRACTURE OR MATERIAL FAILURE ON THE OUTSIDE OF A FORM IS NOT ACCEPTABLE.
- THE PRESENCE OF ACCUMULATED FOREIGN MATERIAL ON A PART IS NOT ASSEPTABLE. MUST BE FOLLOWED BY THE ADDITION OF A SURFACE TREATMENT THAT WILL PREVENT RUST FORMATION.
- MUST BE ROHS COMPLIANT

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS. TOLERANCES: SEE TABLE 1		PROPERTY AND CONFIRMATION	
DATE	ISSUED	DATE	ISSUED
APPROVED	DESIGNED/TRANSMITTED	DATE	ISSUED
REVISION	DATE/REVISION	DATE	ISSUED
NO. OF REV.	NO. OF REV.	DATE	ISSUED
NO. OF REV.	NO. OF REV.	DATE	ISSUED

CONFIDENTIAL

ANTENNA

FIELD THEORY

PART NUMBER: FTVARM088

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