1029 Butterfield Road, Vernon Hills, IL 60061
+1 (847) 801-6330
info@fieldtheoryinc.com
fieldtheoryinc.com

FTLRAM140

Custom Built to Serve Your Unique Requirements

Features:

Type: Inverted F Antenna
Frequency Range:
900 – 930 MHz
2400 - 2484 MHz

Suggested Applications:

- LFR/WiFi

PN: FTLRAM140

Status: Released Date: 09/12/2025

Performance & Specifications

Antenna Performance						
Parameters	**Results**					
Frequency (MHz)	906	914	931	2400	2444	2478
Efficiency (dB)	-3.03	-2.79	-2.84	-2.42	-1.63	-2.35
Peak Gain (dBi)	0.16	0.28	0.05	2.19	3.03	2.32
VSWR	<2.00			<2.50		

General Specifications			
Antenna Type	**Nominal Impedance**	**Power Handling**	**Polarization**
Inverted F	50 Ω	10W	Linear

Mechanical Specifications	
Type	**Material**
Stamp Metal	SUS 304

Efficiency

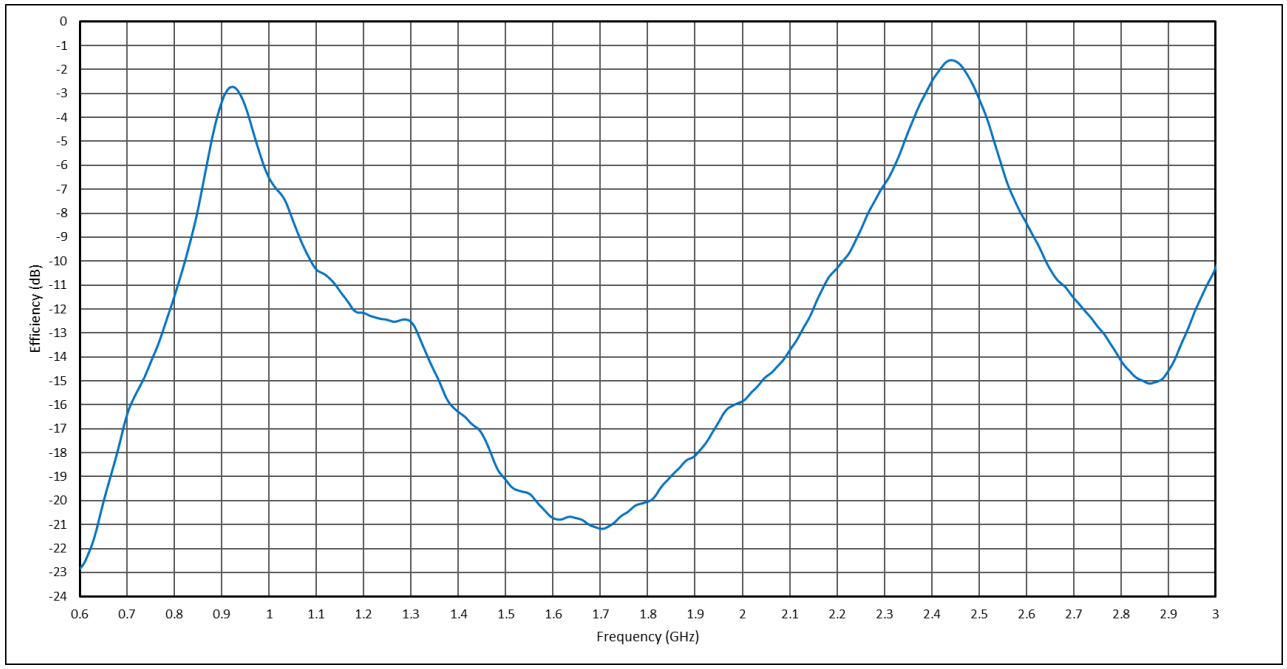


Fig 2. Efficiency vs Frequency

1D Gain Radiation Patterns

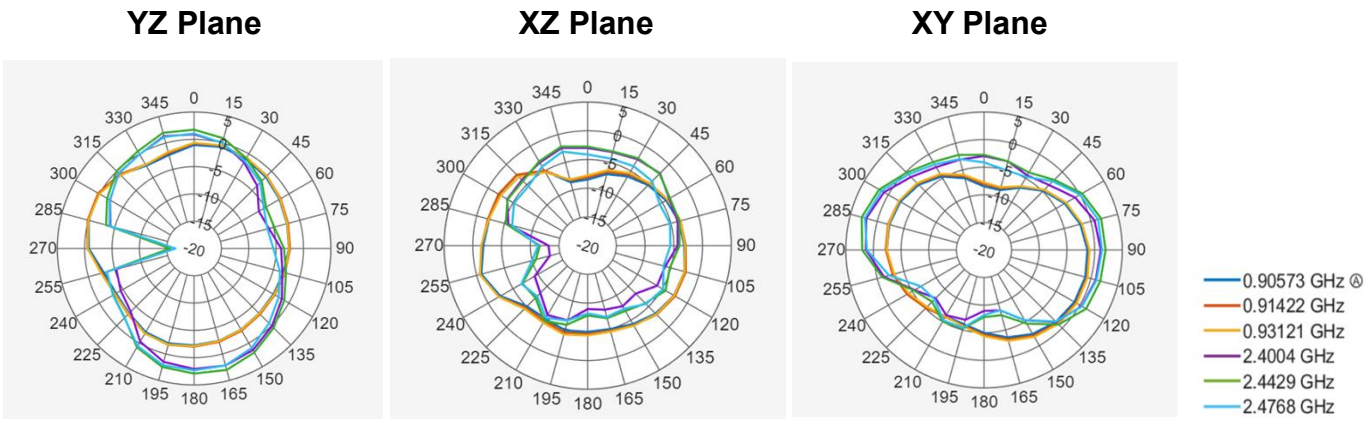


Fig. 3-5: 1D Gain Radiation Patterns

2D & 3D Gain Radiation Patterns

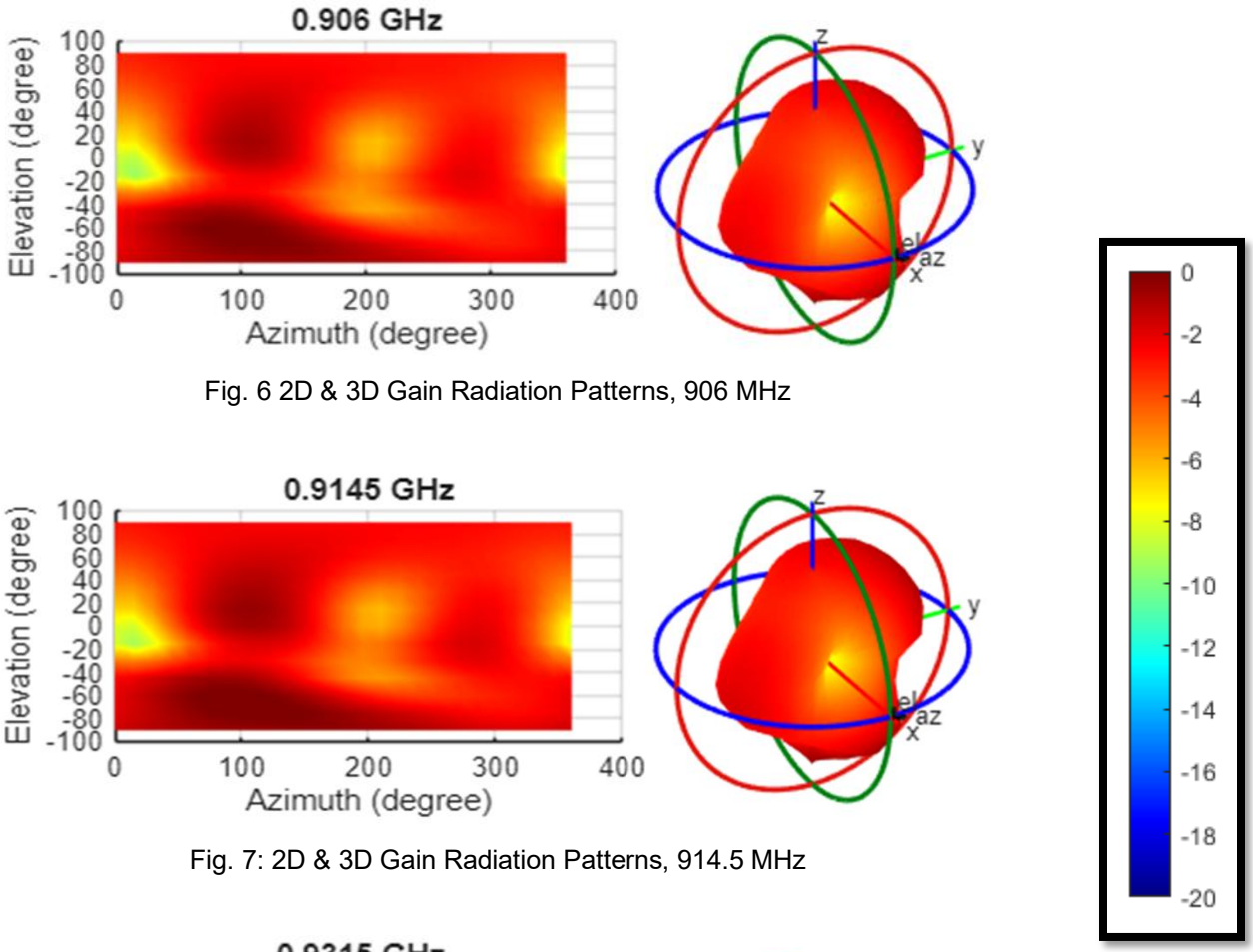


Fig. 6 2D & 3D Gain Radiation Patterns, 906 MHz

Fig. 7: 2D & 3D Gain Radiation Patterns, 914.5 MHz

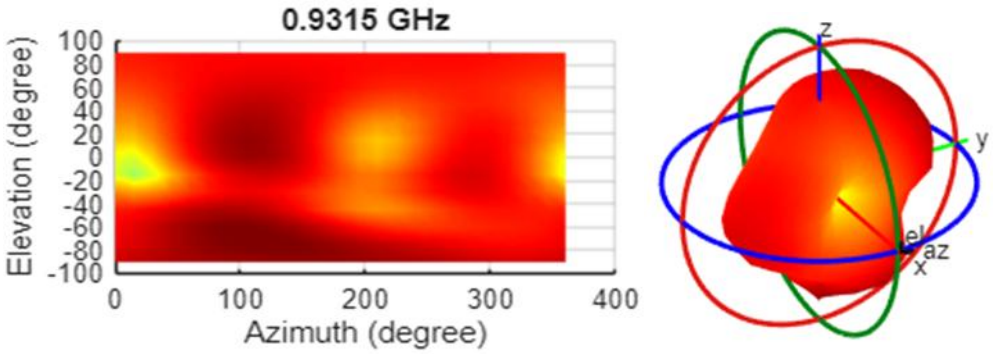


Fig. 8: 2D & 3D Gain Radiation Patterns, 931.5 MHz

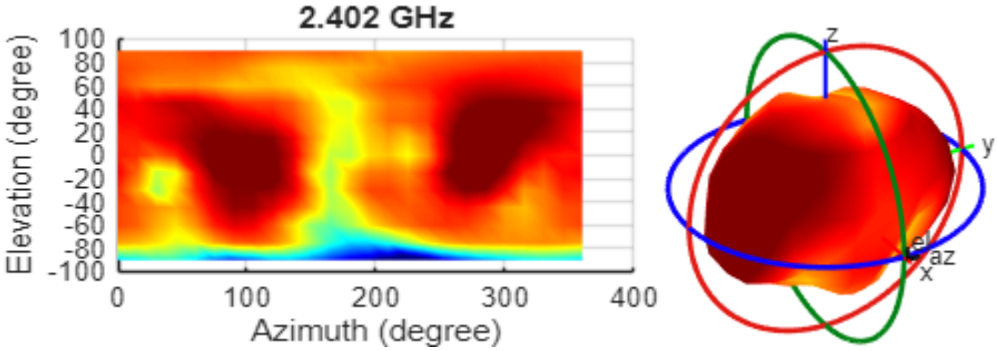


Fig. 9: 2D & 3D Gain Radiation Patterns, 2402 MHz

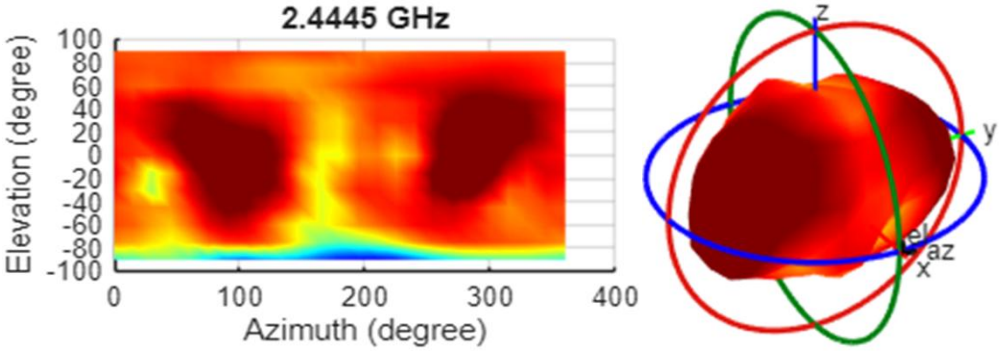


Fig. 10: 2D & 3D Gain Radiation Patterns, 2444.5 MHz

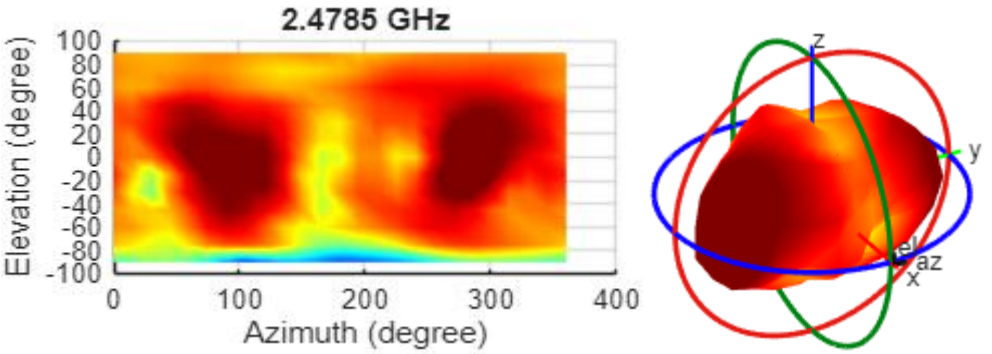
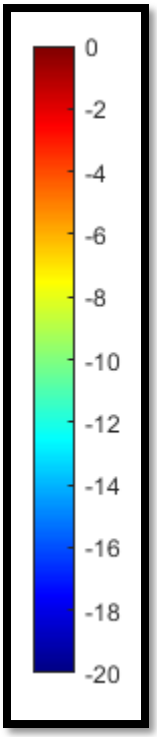


Fig. 11: 2D & 3D Gain Radiation Patterns, 2478.5 MHz



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

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
Spectrum Analyzer	Rohde & Schwarz	FSW13	1312.8000K13-101325-bs	02/2024	02/2026
Quad-Ridge Horn Antenna	ETS-Lindgreen	3164-10	217936	2/06/2025	02/05/2026
5 Meter Anechoic Chamber	Braden Shielding Systems	NA	F70331	NA	NA
RF Cable	ENS Microwave	S160-160-MKS-MKS	3042020	2/06/2025	02/05/2026
RF Cable	ENS Microwave	S160-120-MKS-MKS	12042018	2/06/2025	02/05/2026
RF Cable	ENS Microwave	EMC1-K1K1-72	1GVT4 19002201	2/06/2025	02/05/2026
RF Cable	ENS Microwave	EMC1-K1K1-72	1GVT4 19002202	2/06/2025	02/05/2026
RF Cable	ENS Microwave	EMC1-K1K1-216	1GVT4 19002202 001	2/06/2025	02/05/2026
RF Cable	ENS Microwave	EMC1-K1K1-216	1GVT4 19002202 002	2/06/2025	02/05/2026
DUT Positioner	DE LCC	D6025	NA	NA	NA
RF Switch	Mini-Circuits	RC-1SPDT-A18	1810010005	2/06/2025	02/05/2026