TAOGLAS

Datasheet

Part No:
FXUB1900.07.0100AQ

Description

Flex PCB ADS-B Antenna Vertical Feed with 100mm 1.37mm and I-PEX MHF I

Features:

Flex PCB ADS-B Antenna (Vertical Feed)
Cable: 100mm of 1.37 Coaxial
Connector: I-PEX MHF I
Dims: 80.0 x 12.0 x 0.24 mm
RoHS & Reach Compliant

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1. Introduction

The FXUB1900 is an ultra-thin, flexible PCB antenna designed for ADS-B (Automatic Dependent Surveillance-Broadcast) systems, the global aviation surveillance technology enabling safe and efficient air traffic management. Covering both 1090 ES (Extended Squitter, 1090 ± 5 MHz) and 978 UAT (Universal Access Transceiver, 978 ± 5 MHz) bands, the antenna provides robust and reliable aircraft tracking performance across worldwide deployments.

Built with a flexible polymer substrate, the FXUB1900 offers a unique combination of lightweight design and mechanical adaptability, allowing integration into housings or surfaces where rigid PCB antennas cannot be used. The antenna features a vertical-feed configuration with a 100 mm 1.37mm coaxial cable and I-PEX MHF I connector, simplifying integration into compact systems. With efficiencies up to 63% and a peak gain of 1.66 dBi, it delivers stable omnidirectional coverage with linear polarization.

At just 80 × 12 × 0.24mm and weighing only 0.9g, the antenna's ultra-slim profile makes it ideal for discreet mounting. A 3M 467 adhesive backing ensures secure installation on enclosures or substrates, with performance optimized on a 3 mm ABS ground plane.

Typical applications include:

- ADS-B (Automatic Dependent Surveillance–Broadcast) Ground Stations
- Unmanned Aerial Vehicles (UAVs)
- Avionics and Air Traffic Management Systems
- IoT Tracking and Monitoring Devices
- Transportation and Logistics Infrastructure

Built on a flexible polymer substrate, the FXUB1900 is engineered for long-term reliability in harsh environments. Cables and Connectors can be fully customized based on customer requirements, please contact your regional Taoglas customer support team.

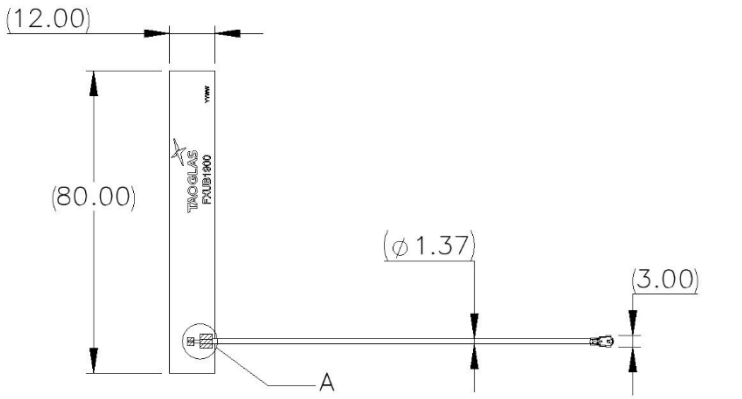
2. Specification

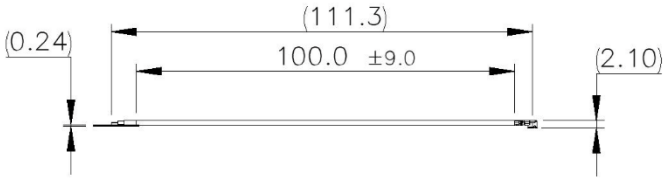
Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
978 MHz	973-983	63.4	-1.98	1.52	50 Ω	Linear	Omni directional	5W
1090 MHz	1085-1095	62.1	-2.07	1.66				

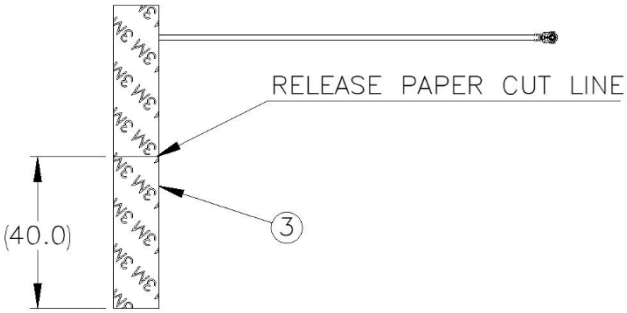
Mechanical	
Dimensions	80mm x 12mm x 0.24mm
Weight	0.9g
Material	Flexible Polymer
Connector	IPEX MHF I (U.FL COMP)
Cable	100mm of 1.37 (Black)
Mount	Adhesive, 3M 467

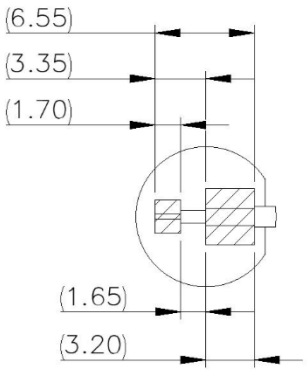
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	Non-condensing 65°C 95% RH

3. Mechanical Drawing

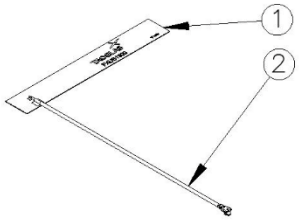








DETAIL A
SCALE 2 : 1



ITEM NO.	DESCRIPTION	Material	Color	QTY.
1	FXUB1900.07.0100AQ L80mm W12mm	Polyimide	Black	1
2	100MM, 1.37MM Black, IPEX MHF I (U.FI Comp.) 1.7-1.65-3.2	N/A	N/A	1
3	Double-Sided Adhesive	3M 467	Brown Paper with 3M Logo	1

4. Packaging

☑ 100 PCS / PE bag

☑ PE bag(mm): 180x280 (Ref)

☑ Weight (g): 99 ±3%

☑ SPQ Label

☑ 3000 PCS/ Carton

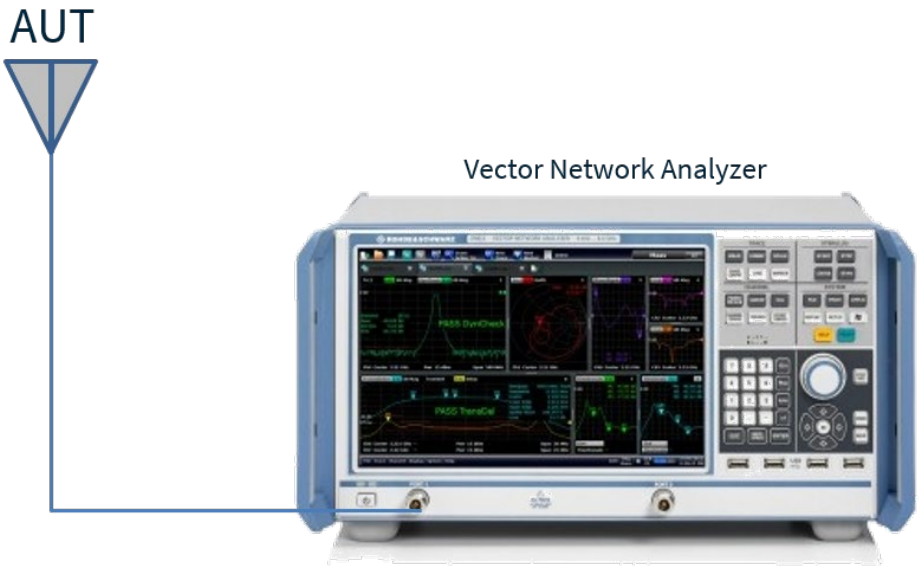
☑ Carton(mm):320x250x290

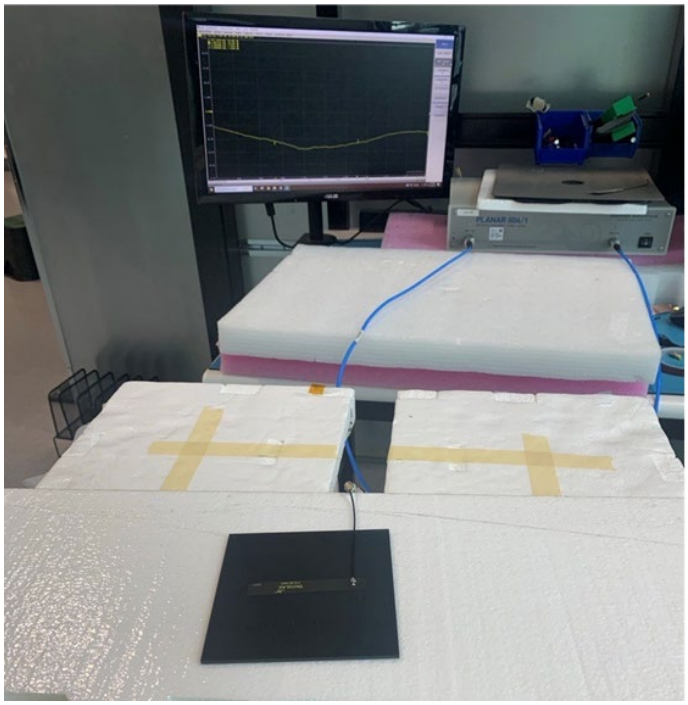
☑ Weight (kg): 3.5 ±3%

☑ Carton Label

5. Antenna Characteristics

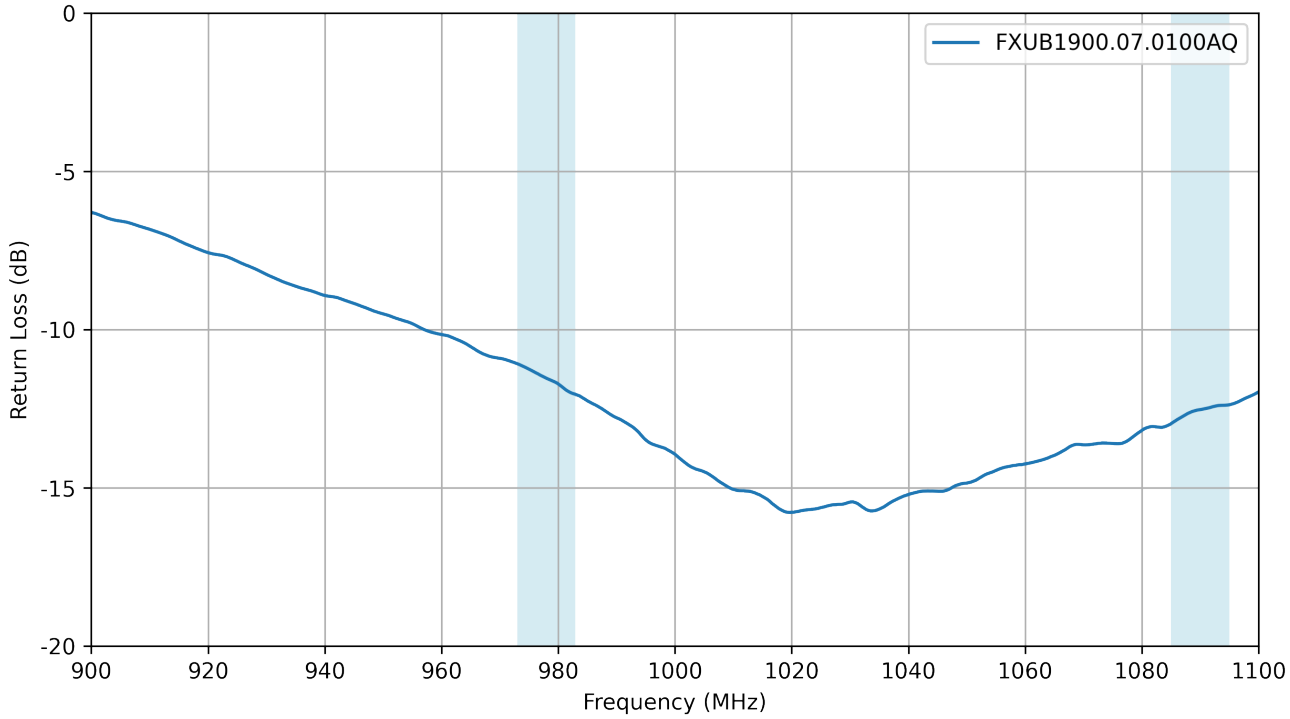
5.1 Test Setup



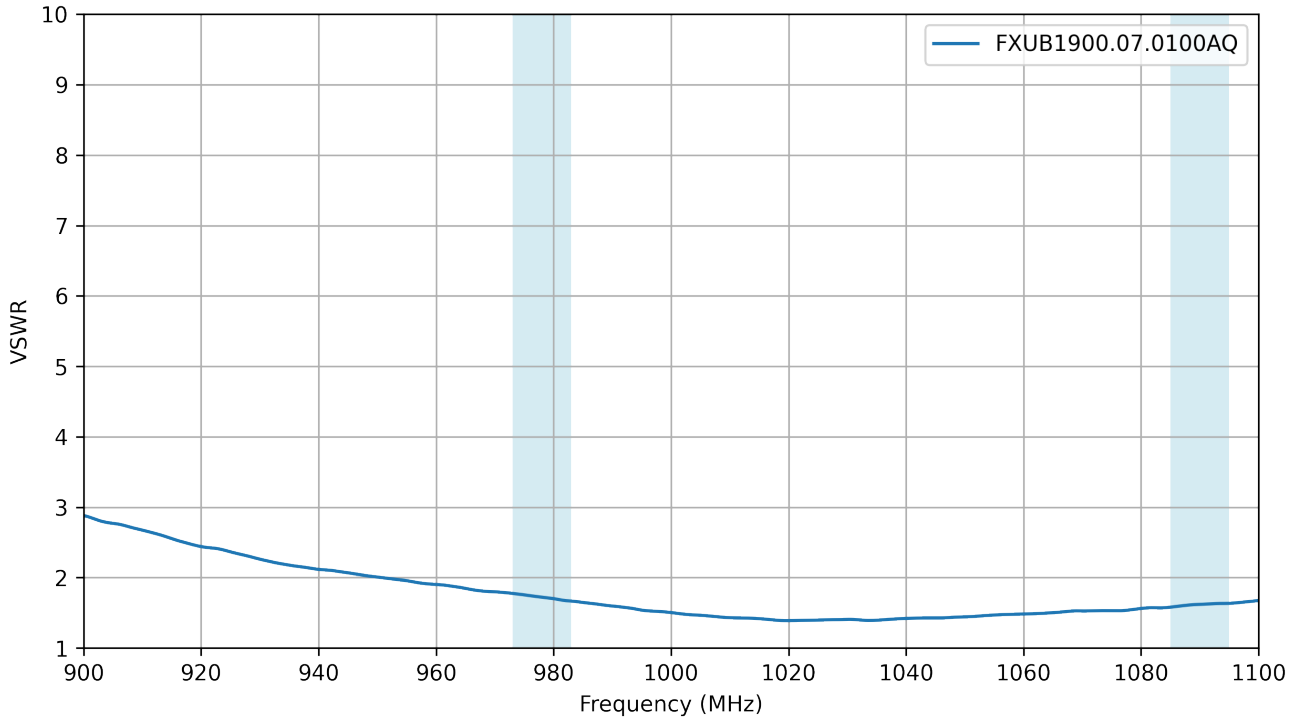


VNA Test Setup on 3mm ABS

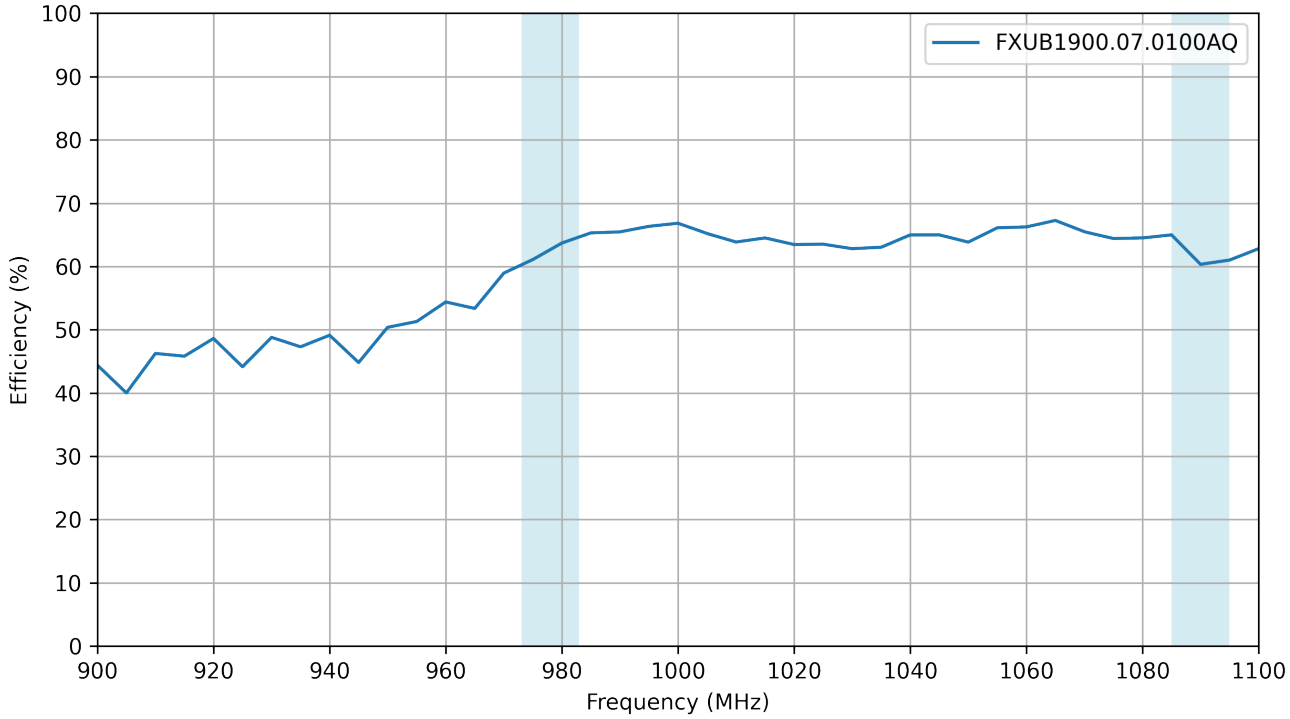
5.2 Return Loss



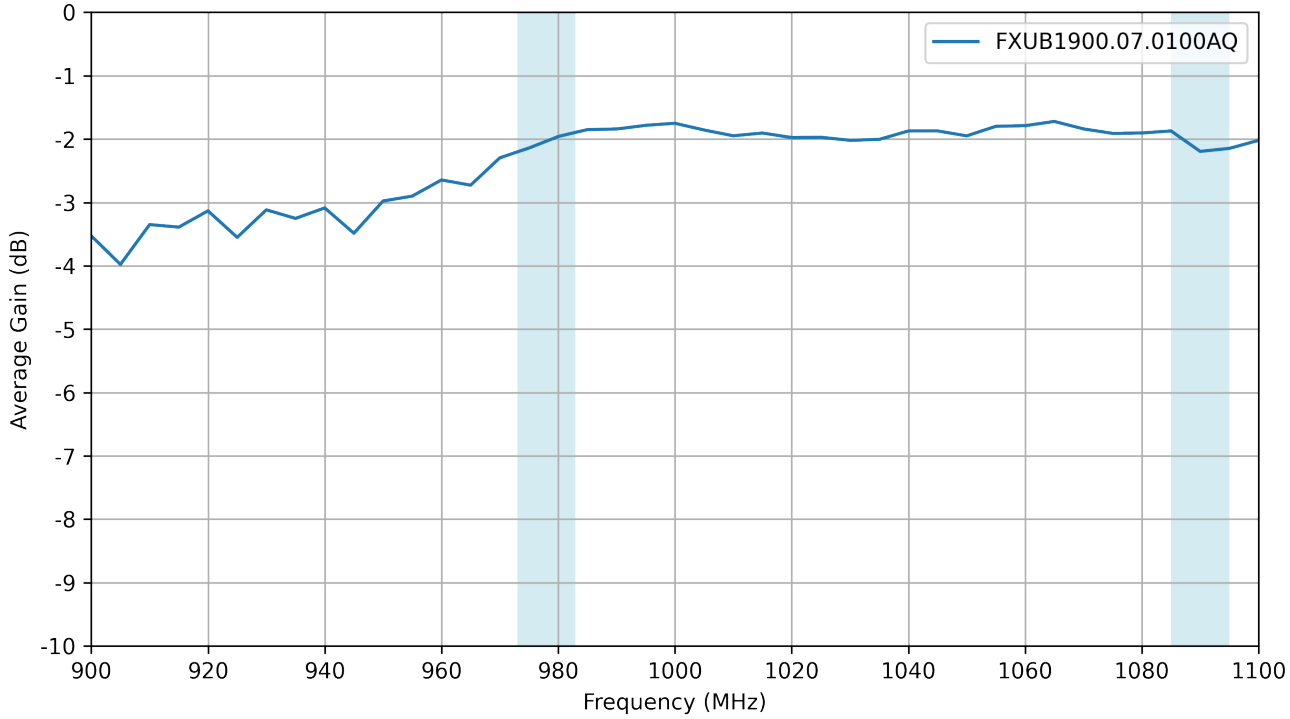
5.3 VSWR



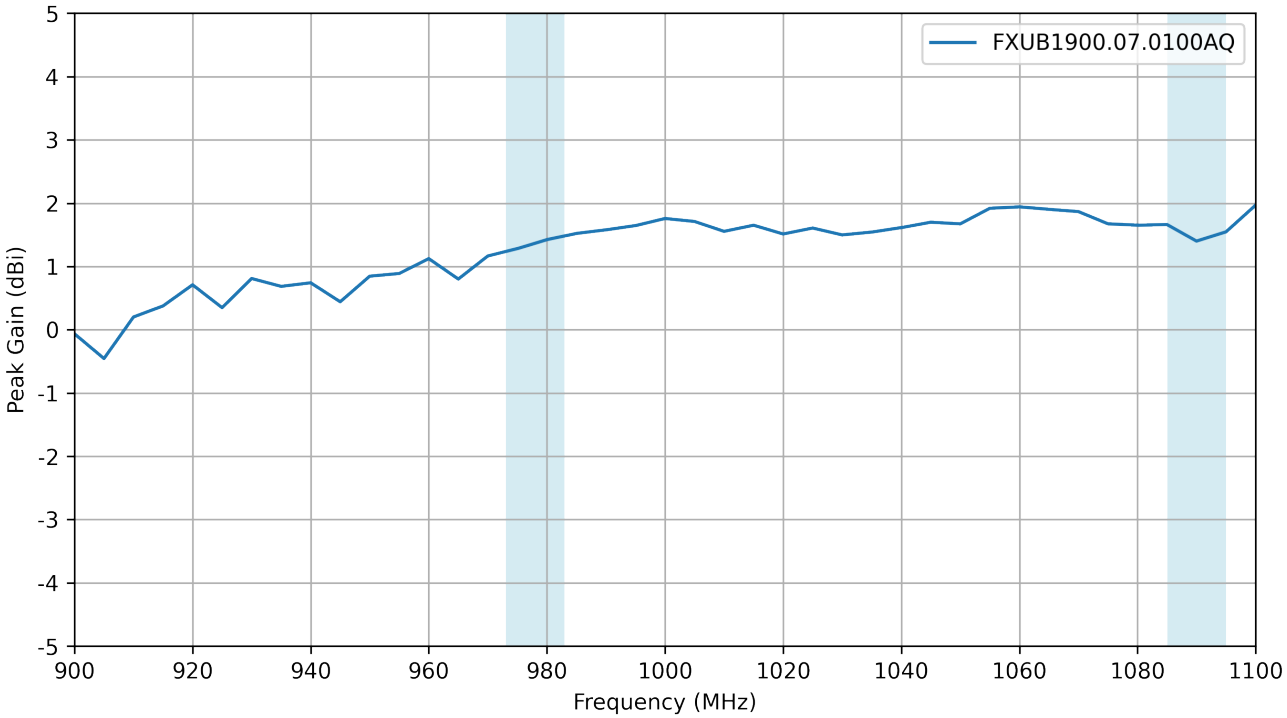
5.4 Efficiency



5.5 Average Gain

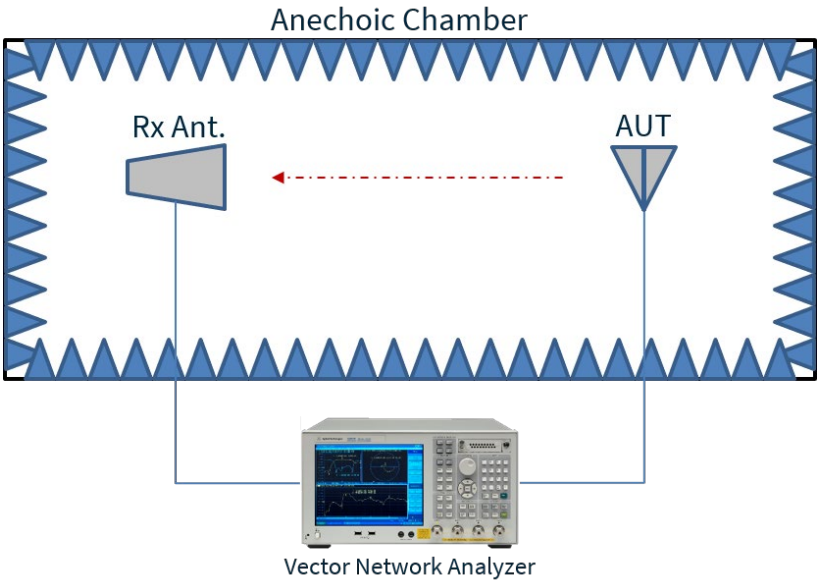


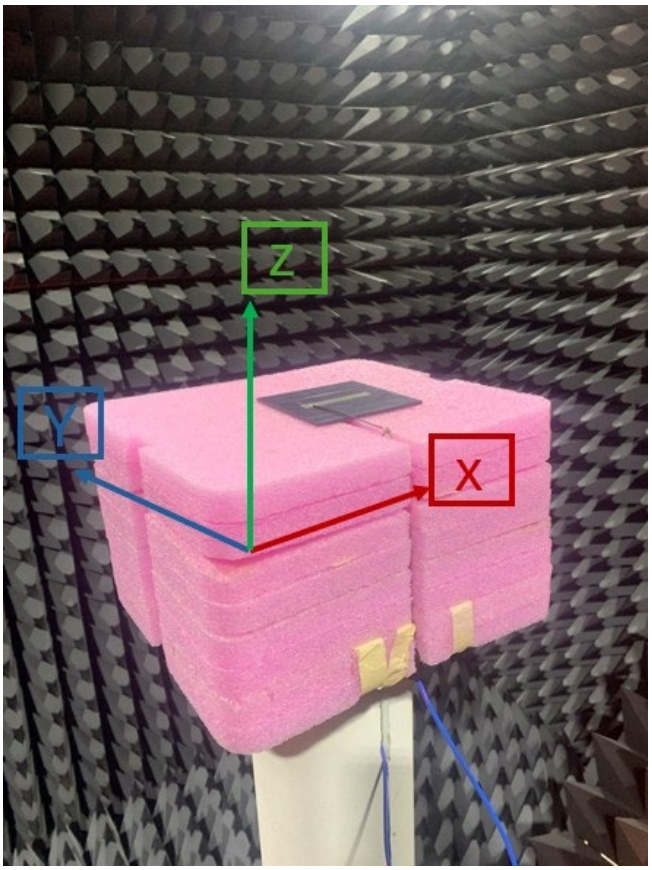
5.6 Peak Gain


FXUB1900.07.0100AQ
Peak Gain (dBi)
Frequency (MHz)
5
4
3
2
1
0
-1
-2
-3
-4
-5
900
920
940
960
980
1000
1020
1040
1060
1080
1100

6. Radiation Patterns

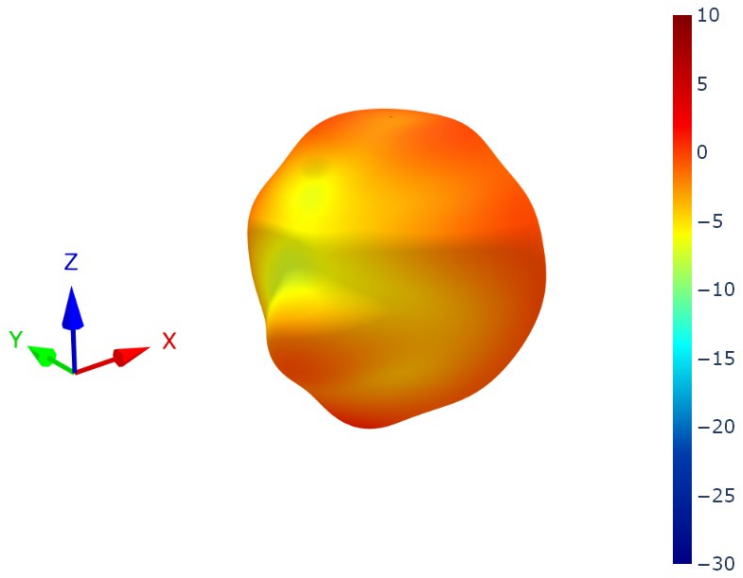
6.1 Test Setup



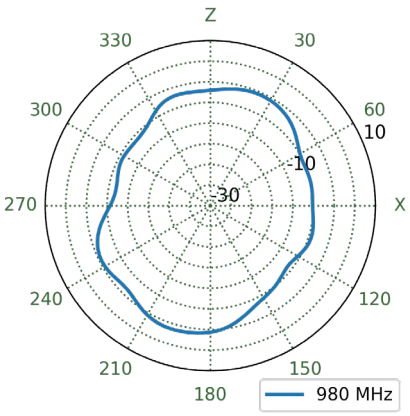


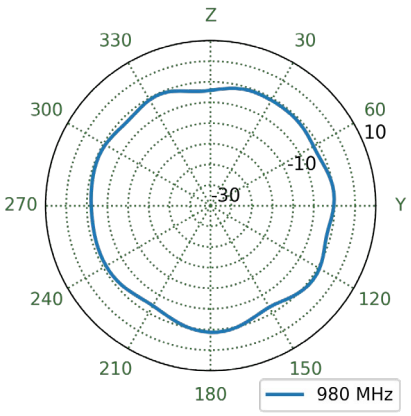
Chamber Test Setup on 3mm ABS

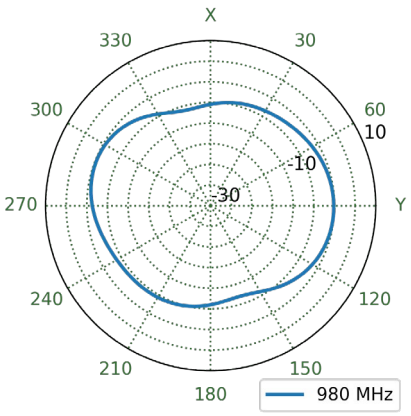
6.2 Patterns at 980 MHz



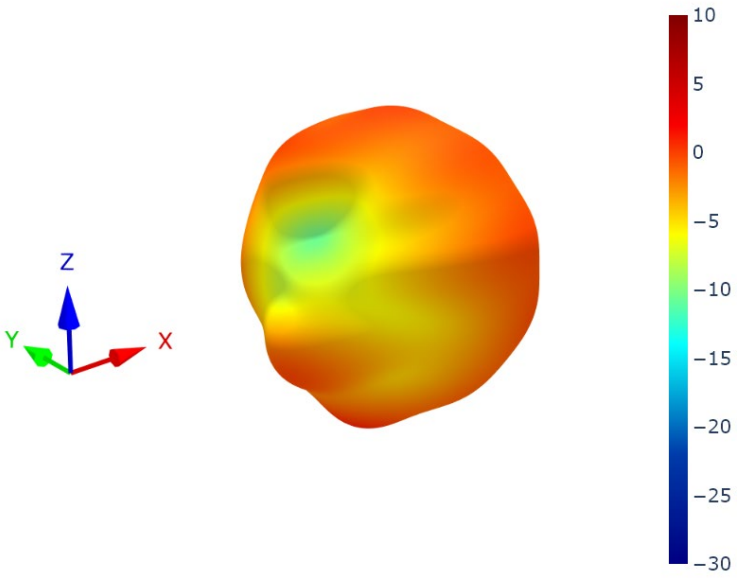
XZ Plane	YZ Plane	XY Plane

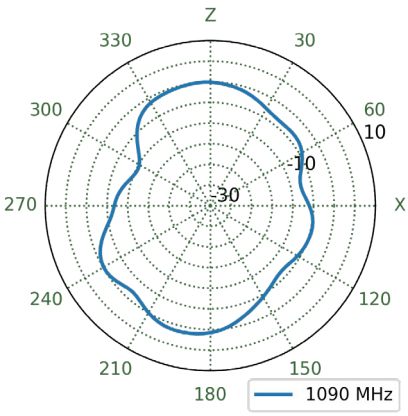
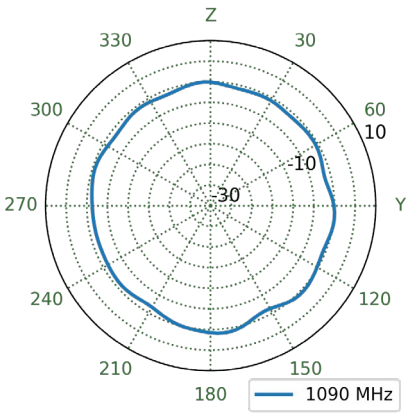
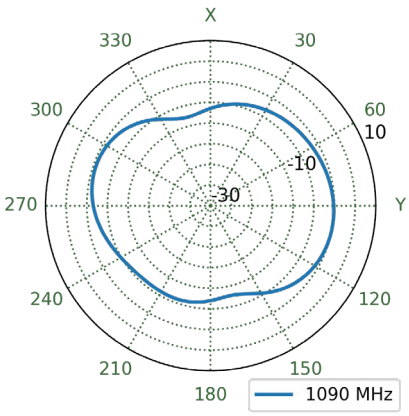






6.3 Patterns at 1090 MHz



XZ Plane	YZ Plane	XY Plane
		

Changelog for the datasheet

SPE-25-8-257 - FXUB1900.07.0100AQ

Revision: A (Original First Release)	
Date:	2025-09-17
Notes:	Initial Release
Author:	Gary West

Previous Revisions

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