



TAOGLAS®



Datasheet

[Model Name]

Part No:
TFX257.A

Description

Wi-Fi Transparent Antenna

Features:

Wi-Fi (including Wi-Fi 6) 2.4-2.5, 4.9-5.8, 5.9-7.125GHz
Transparent – Ultra Low Profile
Dimensions: 32mm * 114mm
Connector: FAKRA Code I (M) Beige
RoHS & Reach Compliant

| | | |
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1. Introduction



The TFX257 is a first of its kind, transparent antenna designed to cover the entire spectrum of Wi-Fi bands. The TFX257 has been expertly engineered by Taoglas with innovation in mind. The transparent flexible antennas are an alternative to standard Flexible PCB antennas where the user may want to install an antenna in a covert area or on a surface they may want to keep semi visible.

Typical Applications Include:

- Automotive and Commercial Transportation
- EV Charging and Parking Bays
- Digital Signage and Display screens
- Point Of Sale Kiosks

The TFX257 is connected via a FAKRA Code I male connector for ease of installation. If a custom connector is required please contact your regional Taoglas customer support team.

2. Specification

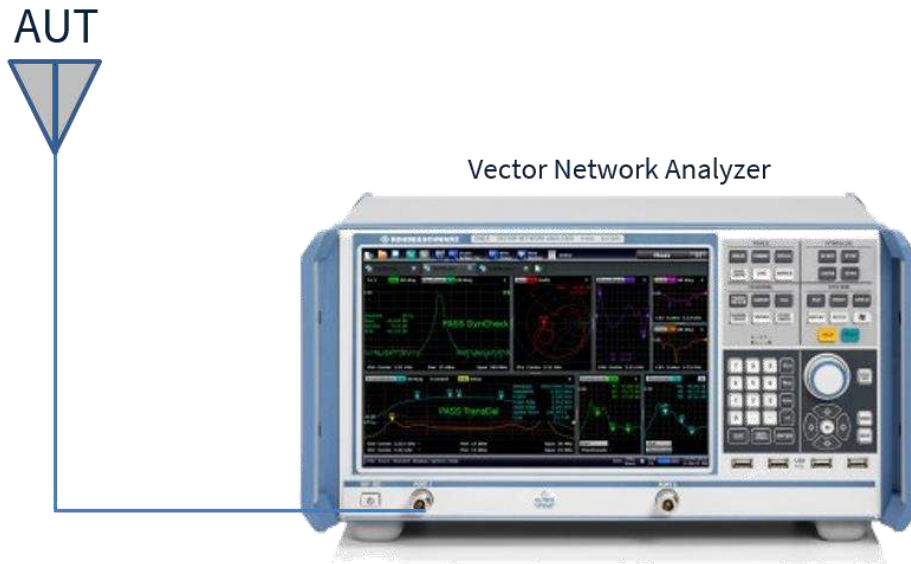
| Electrical | | | | | | | | |
|------------|-----------------|----------------|-------------------|-----------------|-----------|--------------|-------------------|------------------|
| Band | Frequency (MHz) | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern | Max. input power |
| Wi-Fi 2 | 2400-2500 | 55.3 | -2.58 | 4.59 | 50 Ω | Linear | Omni | 2W |
| Wi-Fi 5 | 5150-5850 | 41.6 | -3.81 | 3.58 | | | | |
| Wi-Fi 6 | 5925-7125 | 31.0 | -5.09 | 2.04 | | | | |

| Mechanical | |
|--------------------|------------------------|
| Dimensions | 32 x 114mm |
| Weight | 5g |
| Material (Housing) | ABS/PC |
| Material (Antenna) | PET |
| Connector | Code I FAKRA (M) Beige |

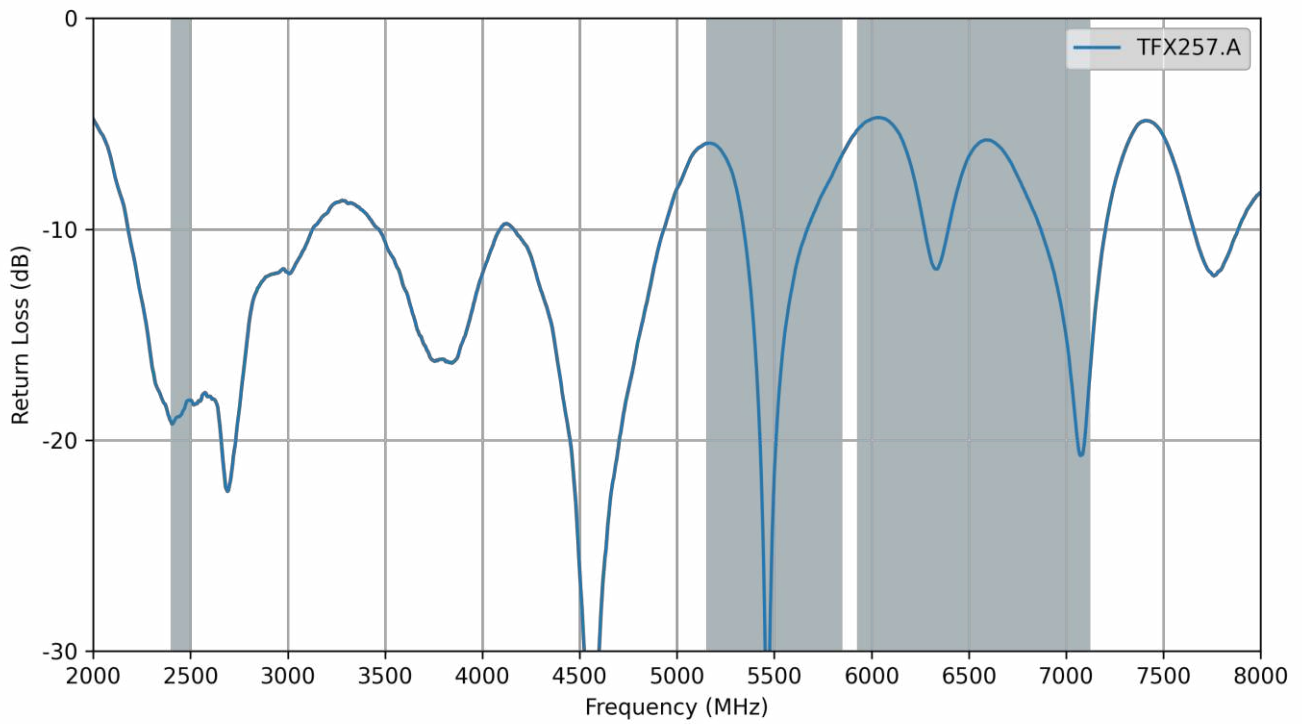
| Environmental | |
|-----------------------|------------------------------|
| Operation Temperature | -20°C to 85°C |
| Storage Temperature | -20°C to 85°C |
| Relative Humidity | Non-condensing TBD°C TBD% RH |

3. Antenna Characteristics

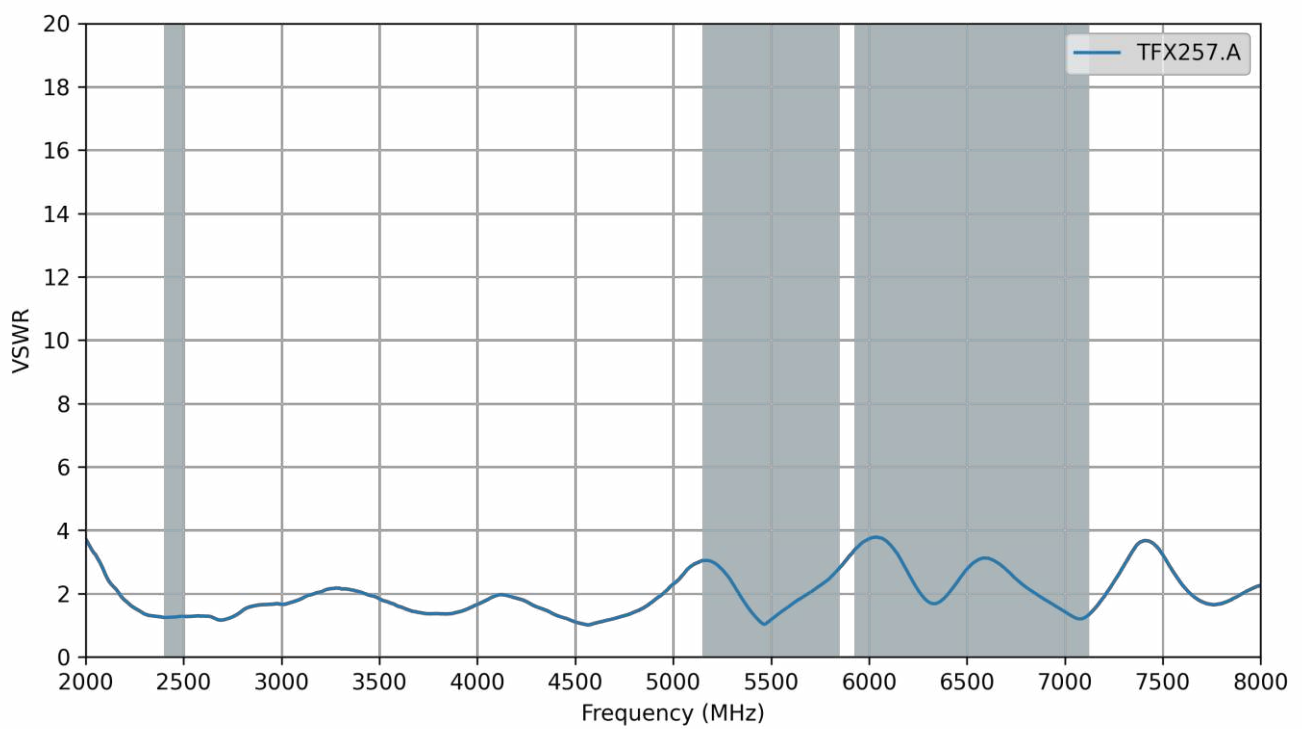
3.1 Test Setup



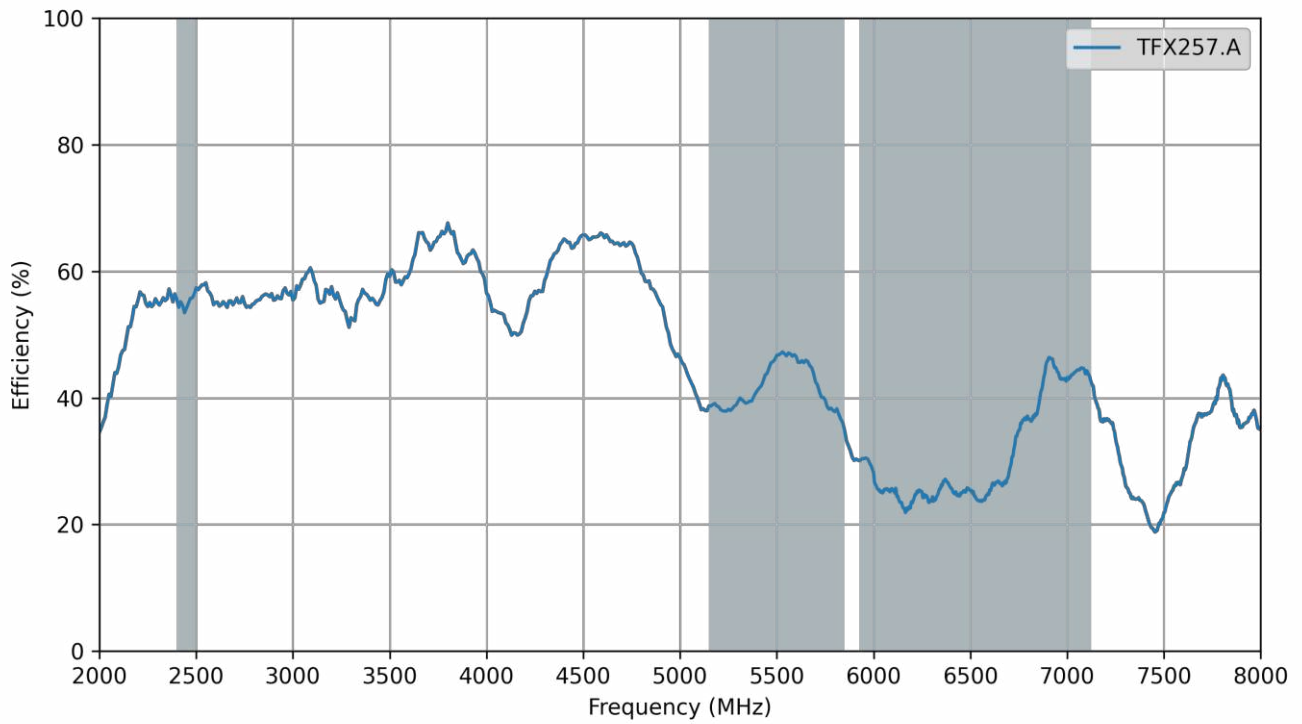
3.2 Return Loss



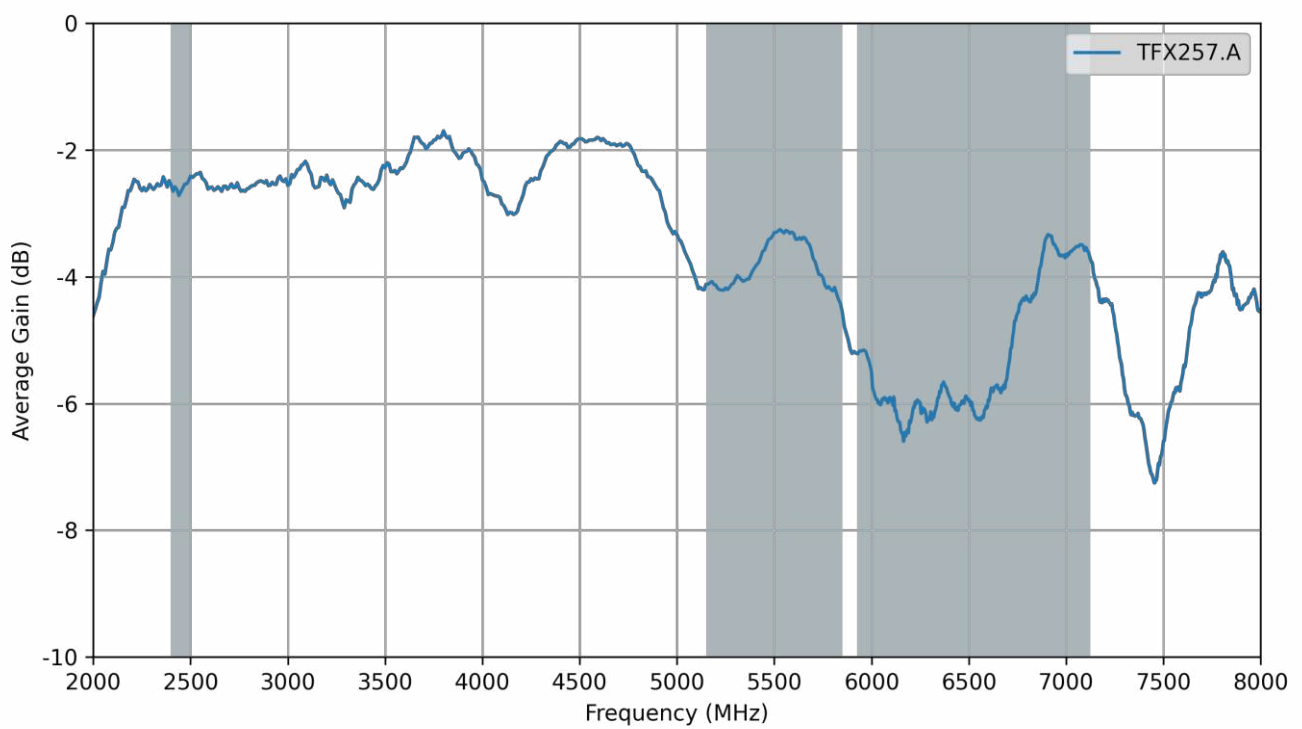
3.3 VSWR



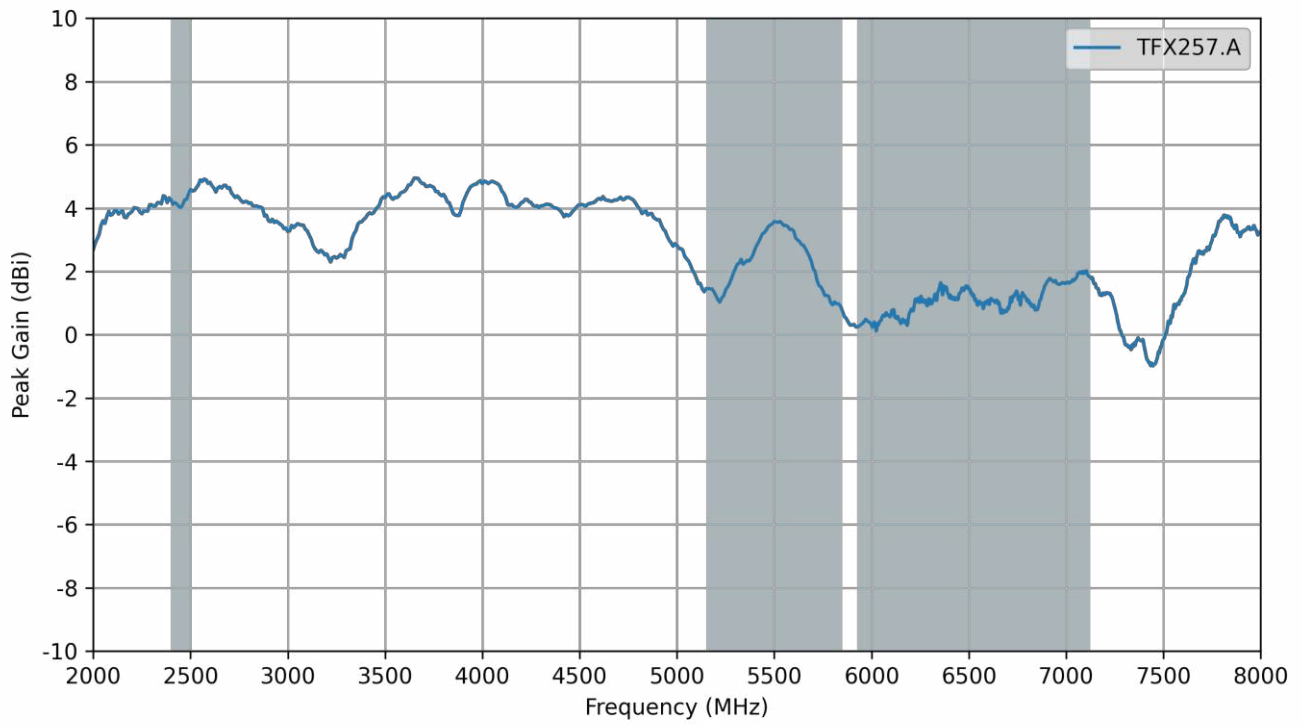
3.4 Efficiency



3.5 Average Gain

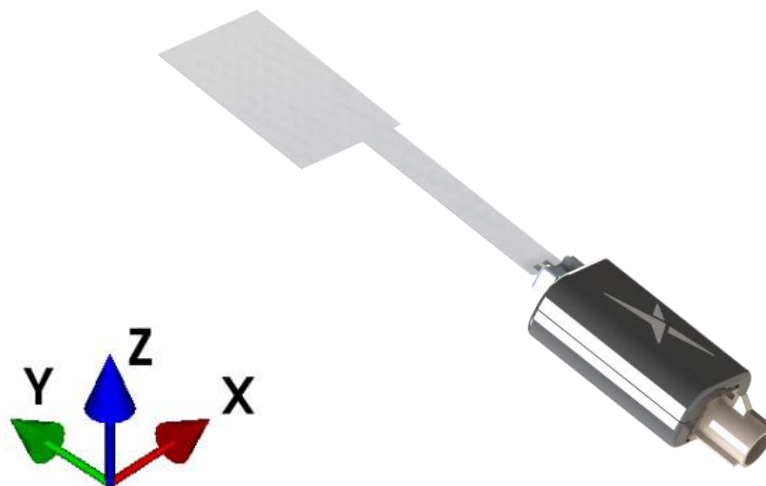
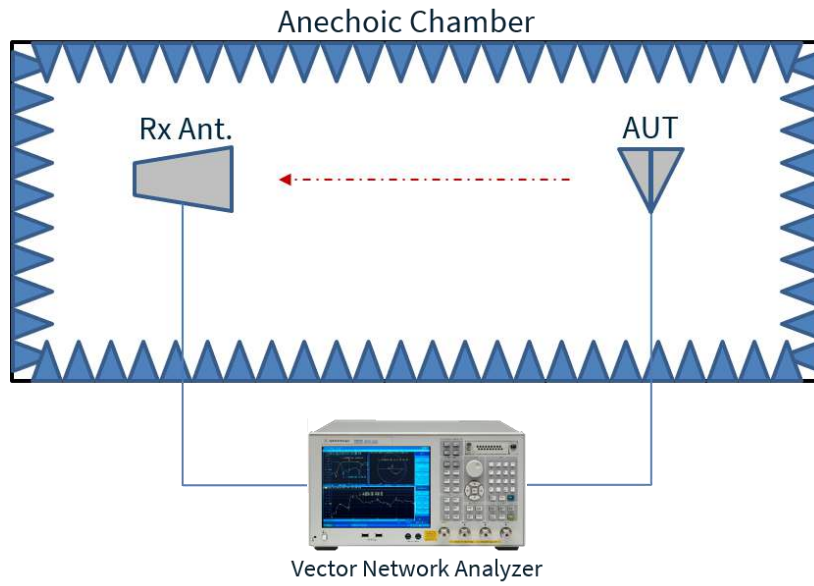


3.6 Peak Gain

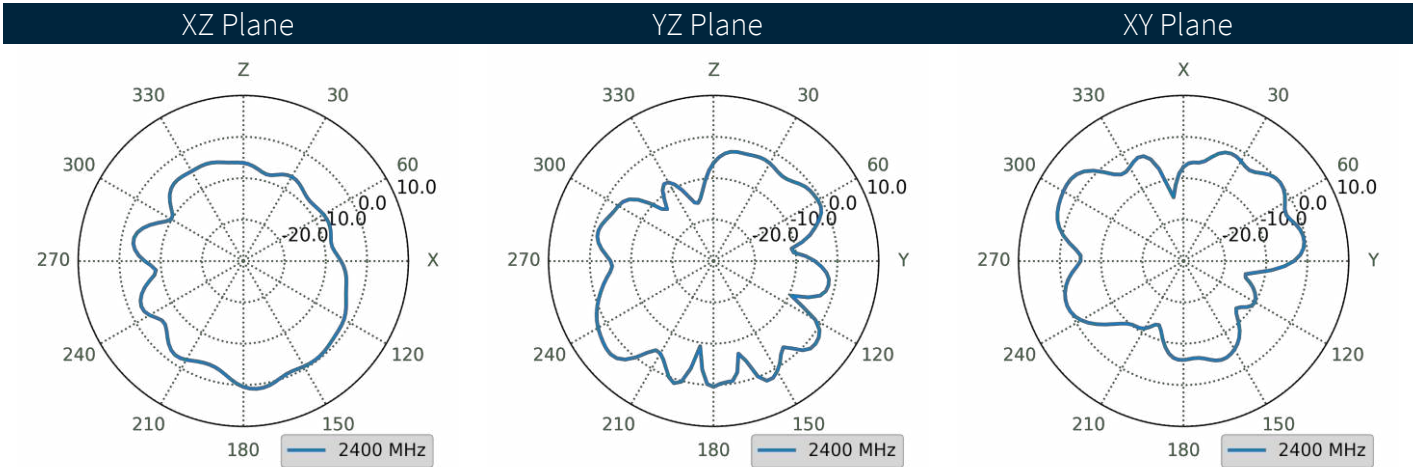
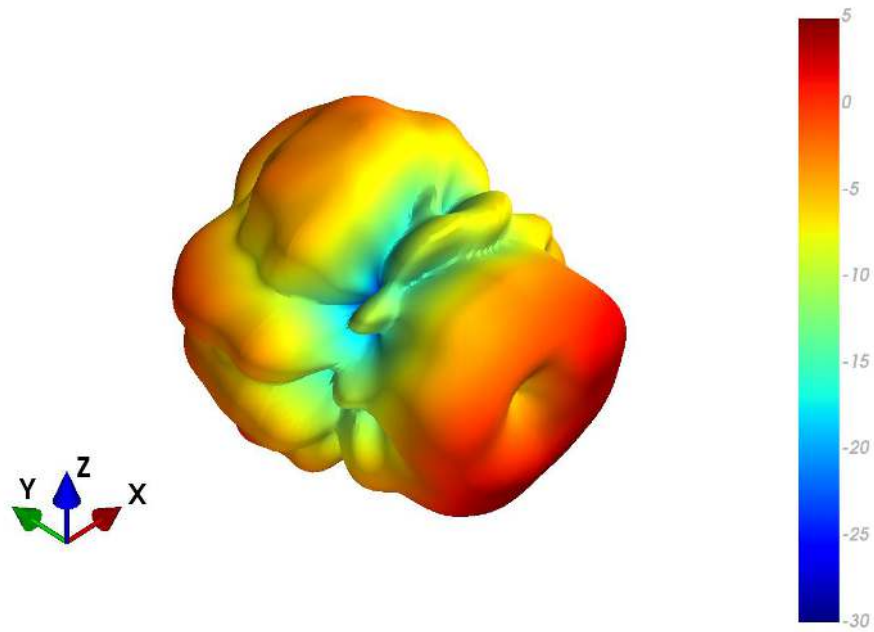


4. Radiation Patterns

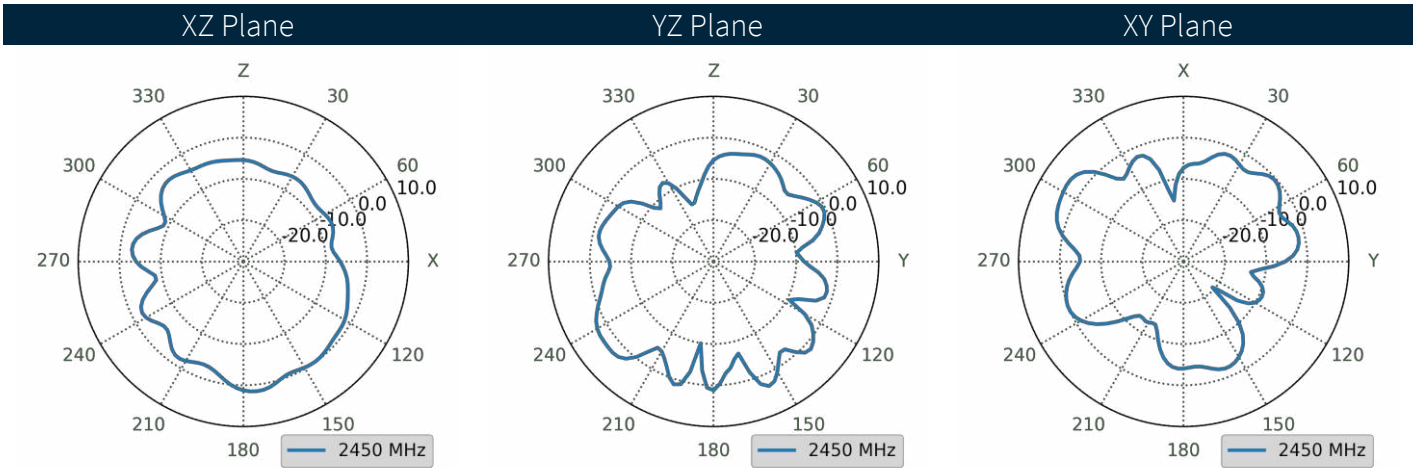
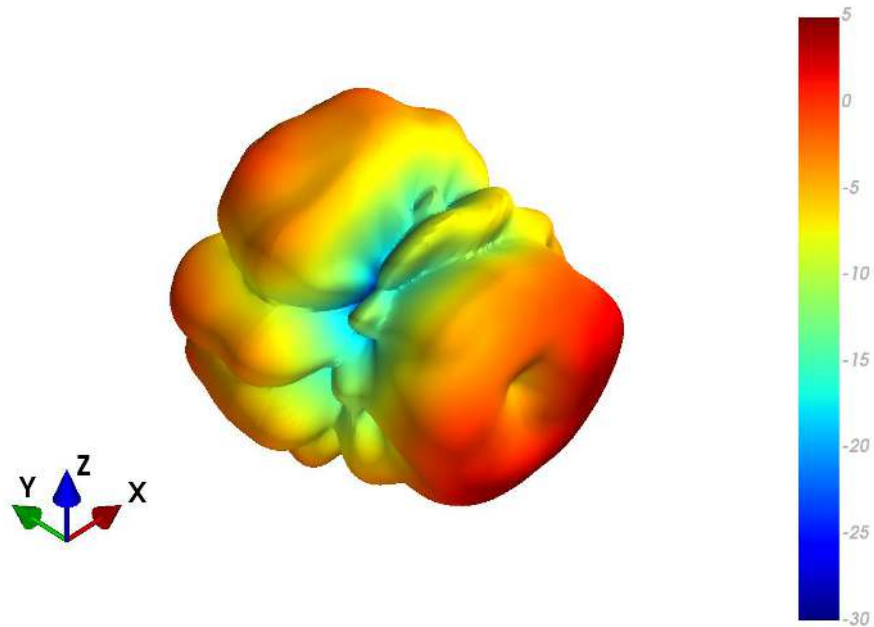
4.1 Test Setup



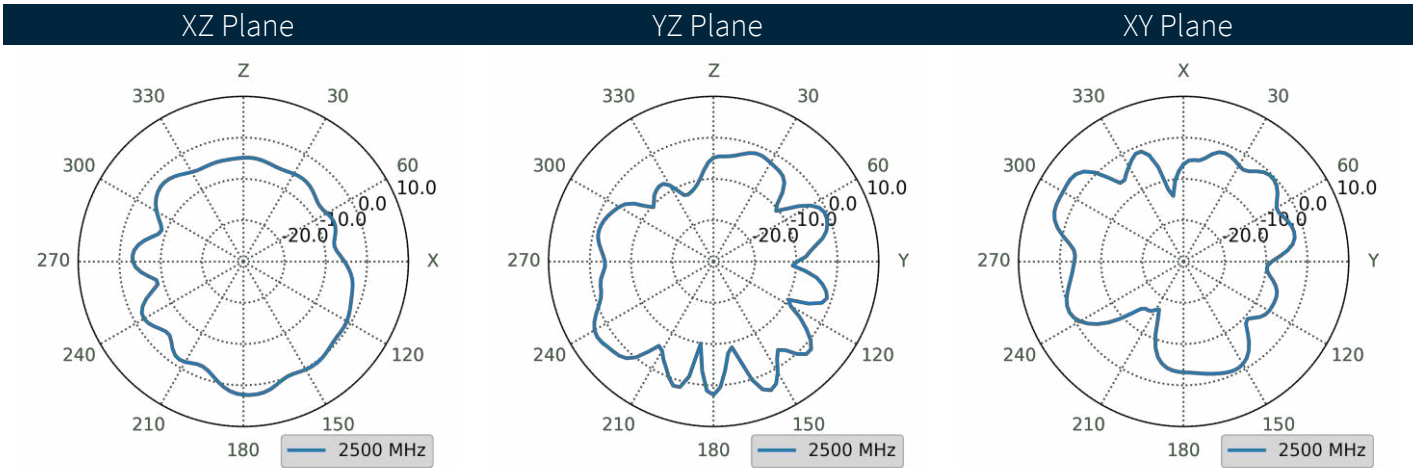
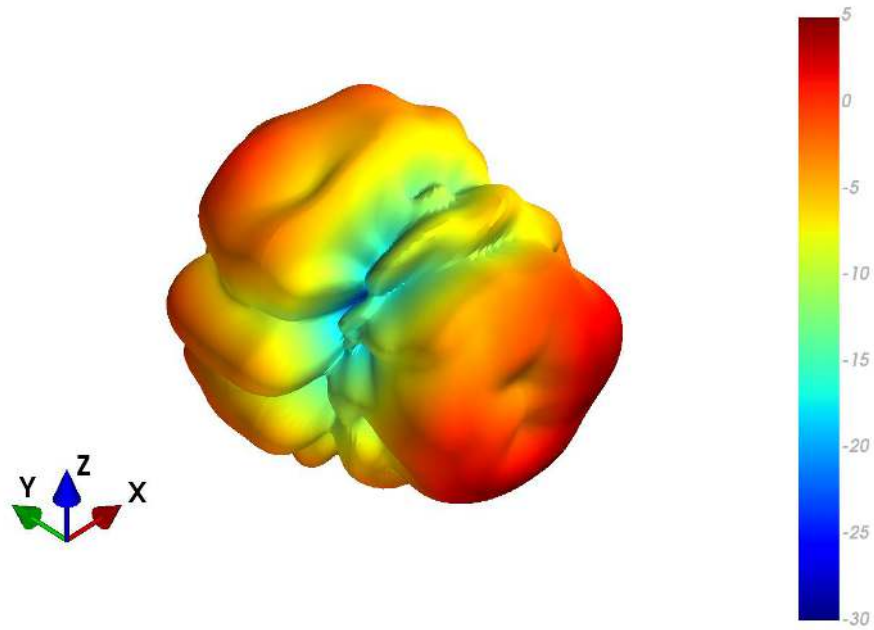
4.2 TFX257.A Patterns at 2400 MHz



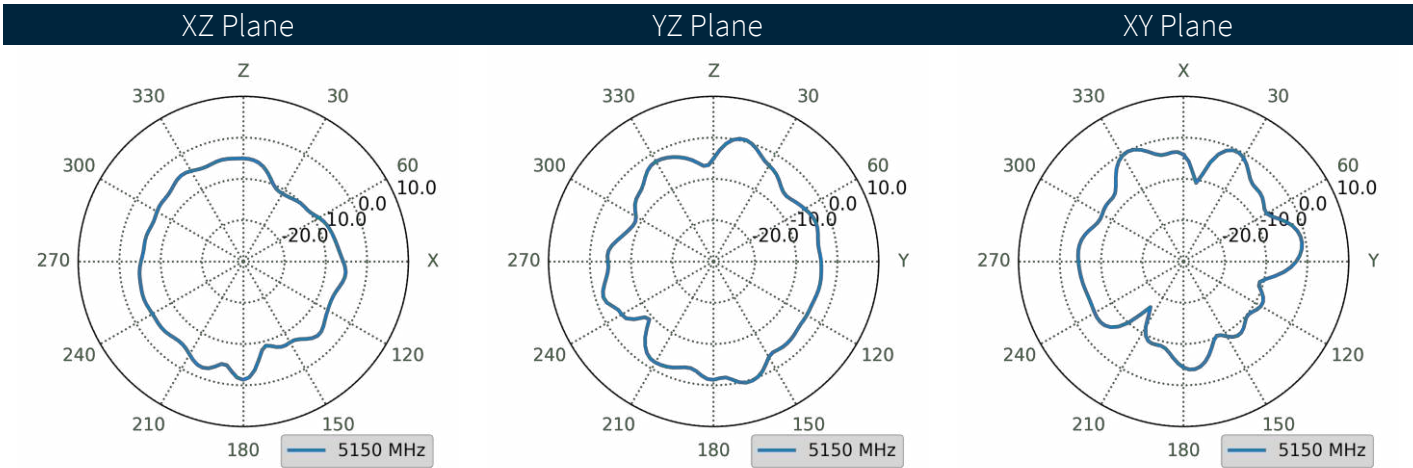
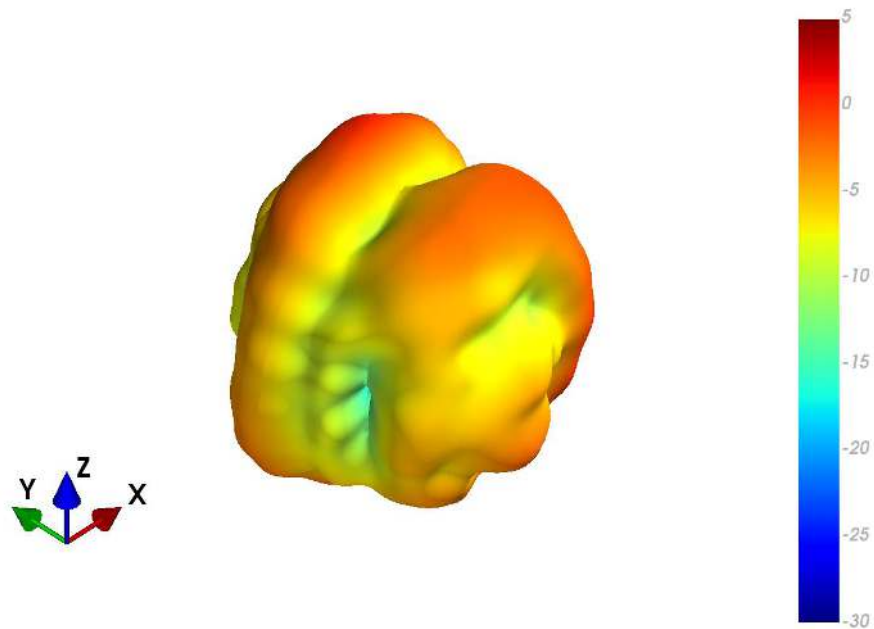
4.3 TFX257.A Patterns at 2450 MHz



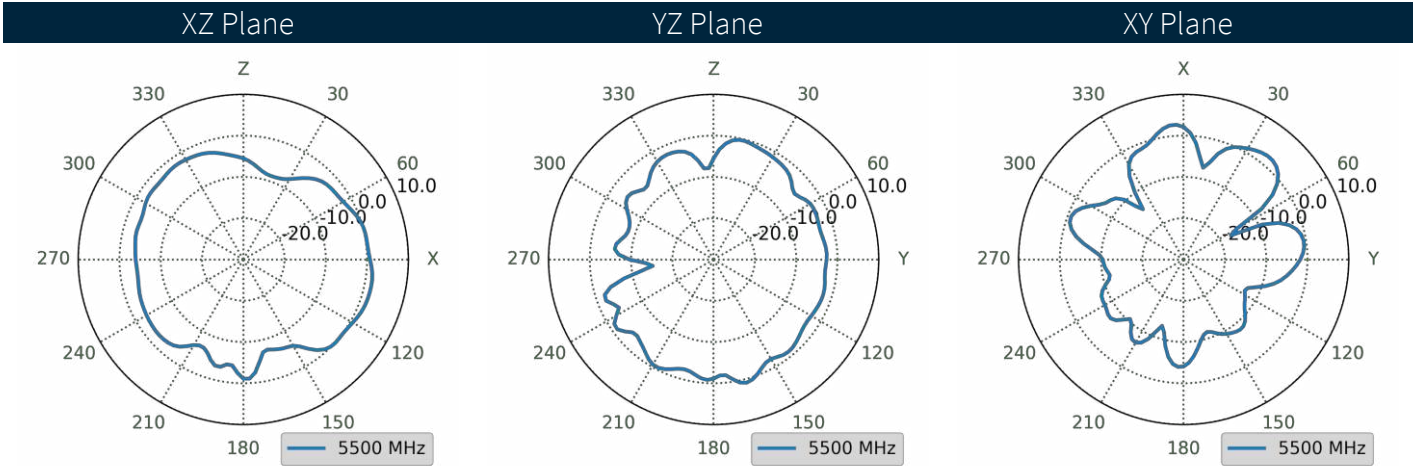
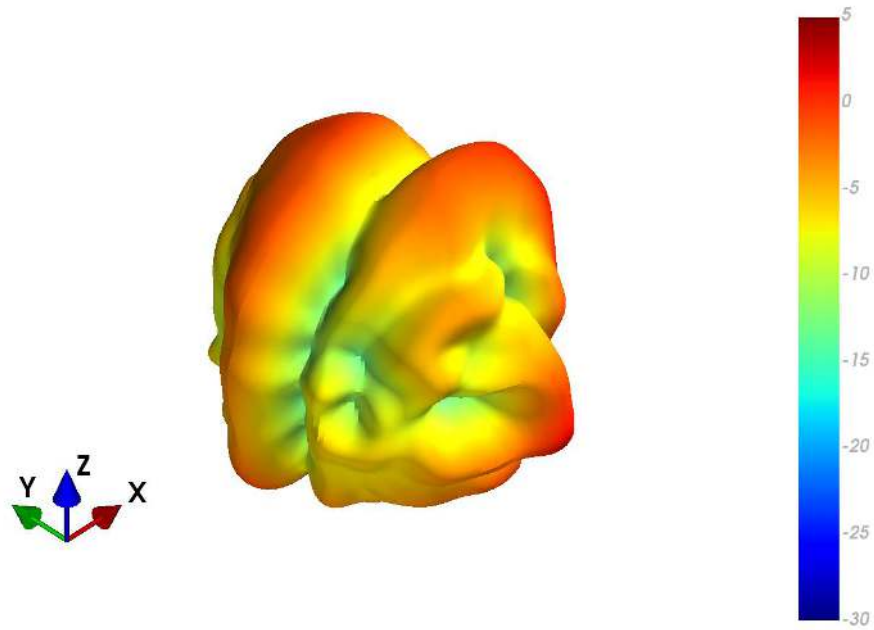
4.4 TFX257.A Patterns at 2500 MHz



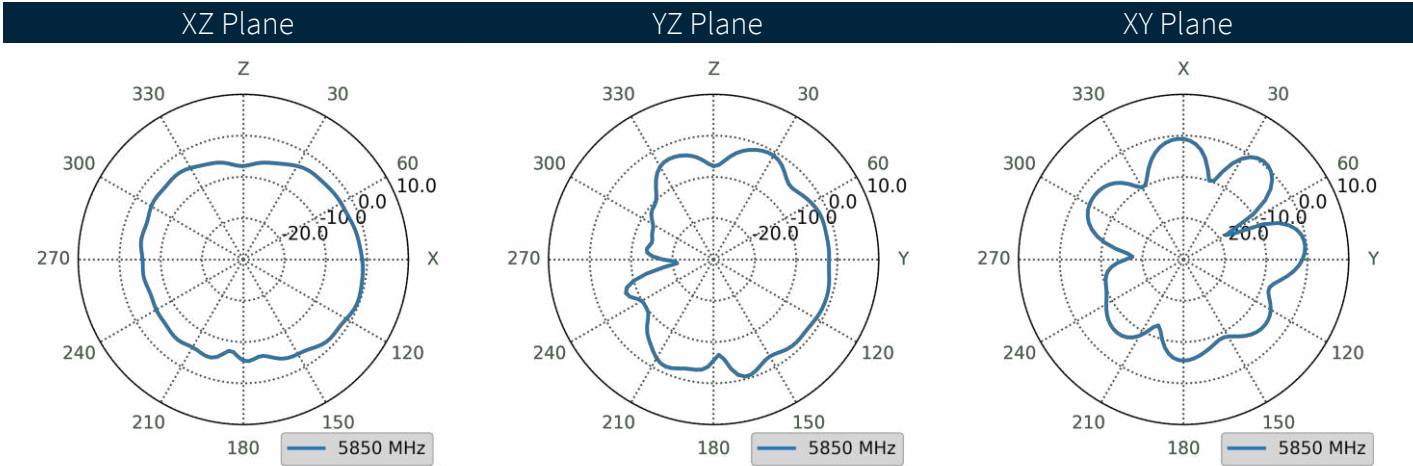
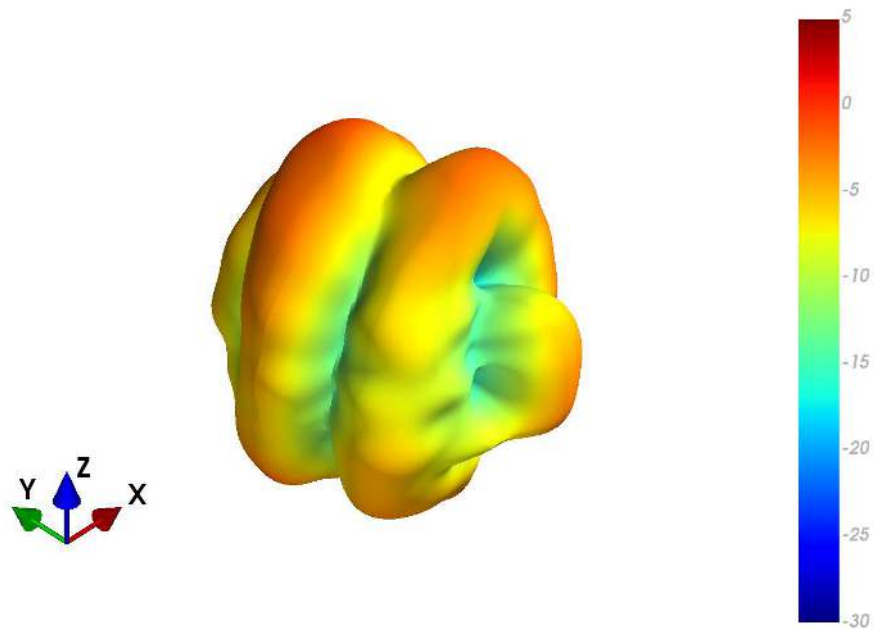
4.5 TFX257.A Patterns at 5150 MHz



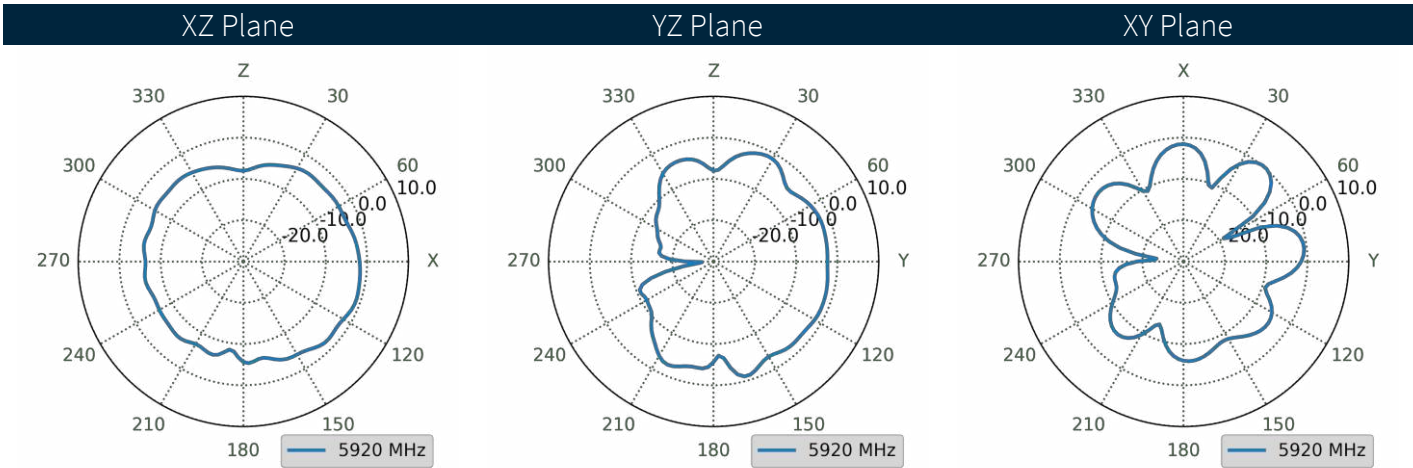
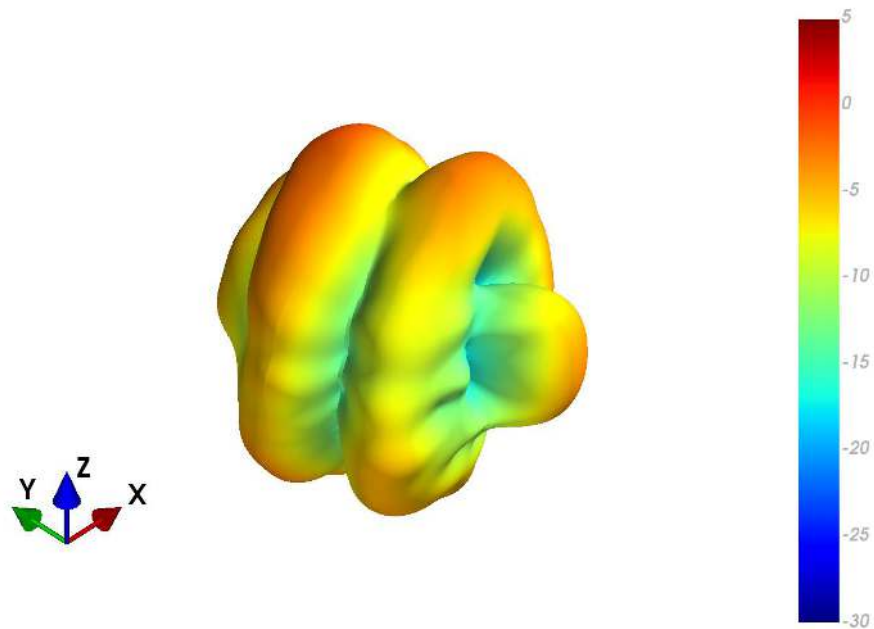
4.6 TFX257.A Patterns at 5500 MHz



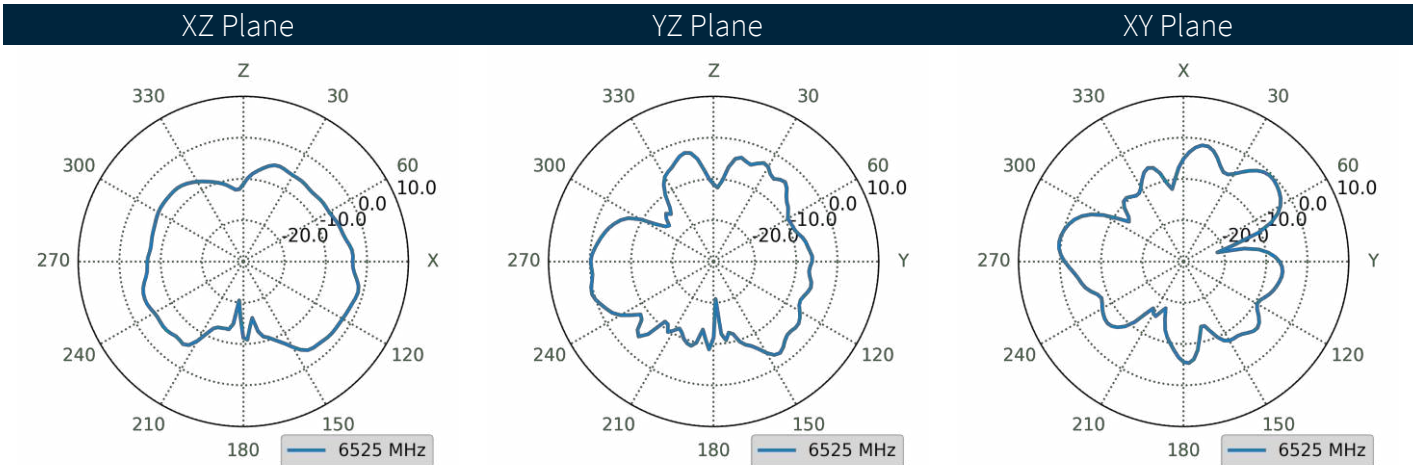
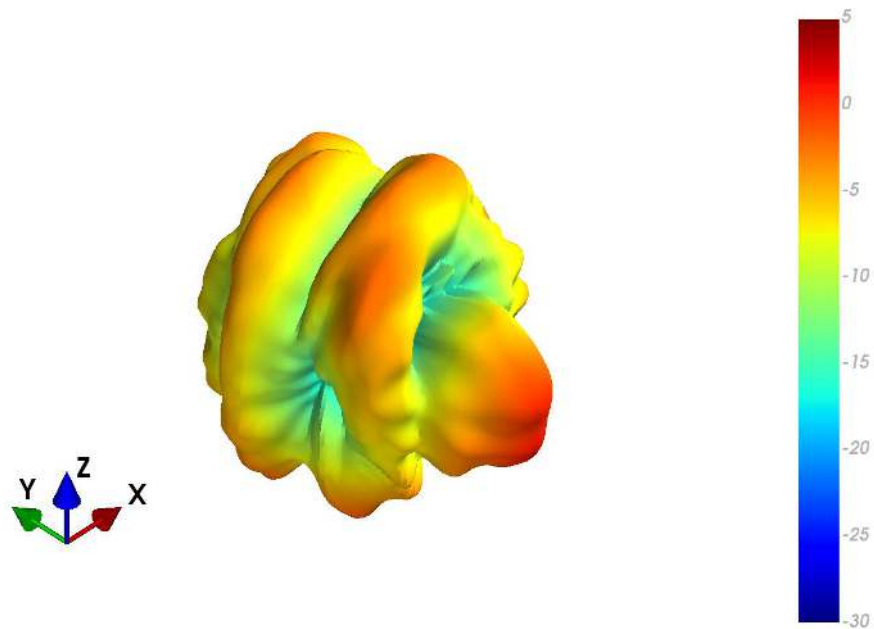
4.7 TFX257.A Patterns at 5850 MHz



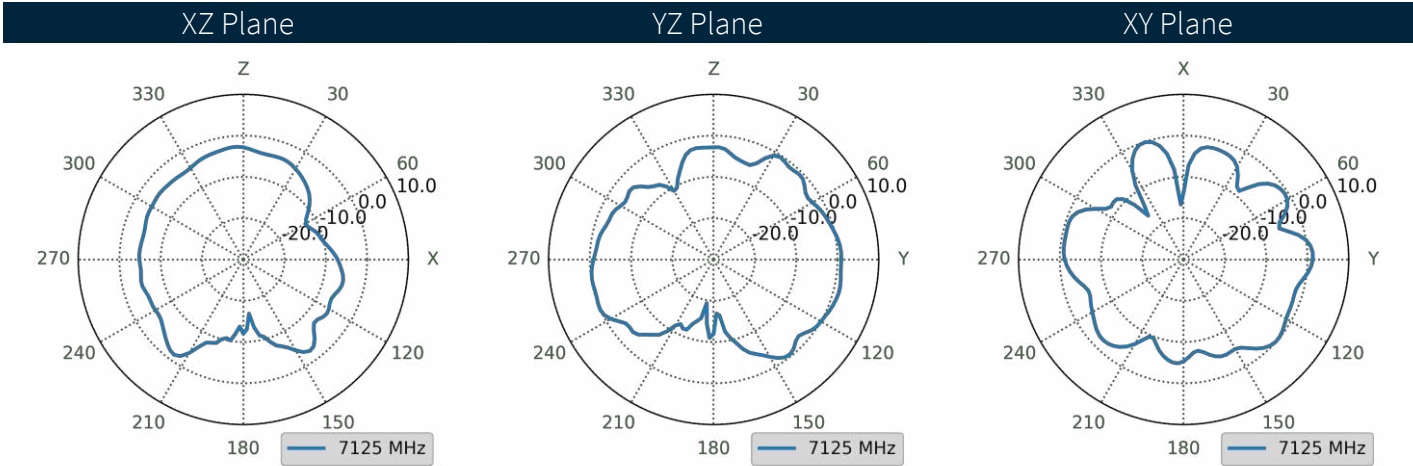
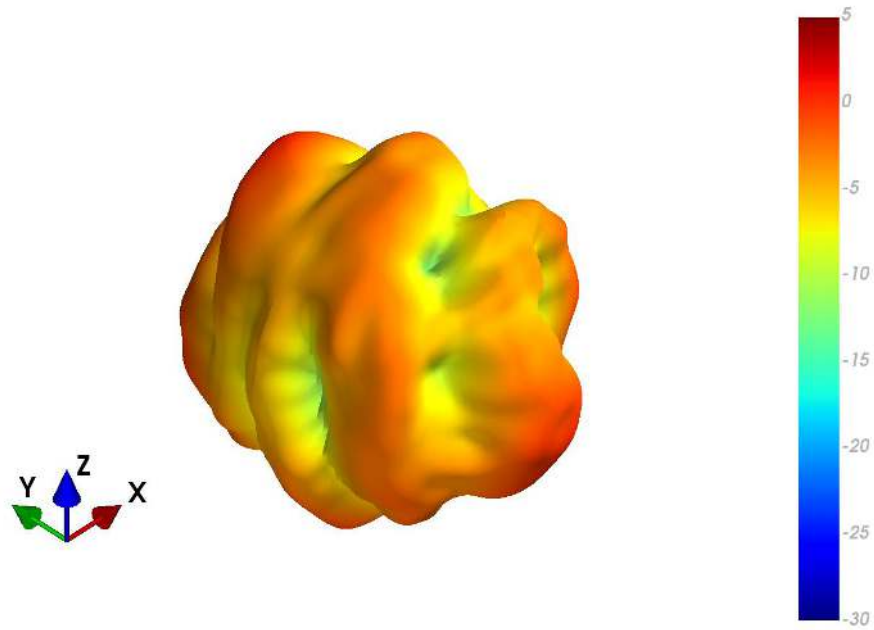
4.8 TFX257.A Patterns at 5925 MHz



4.9 TFX257.A Patterns at 6525 MHz



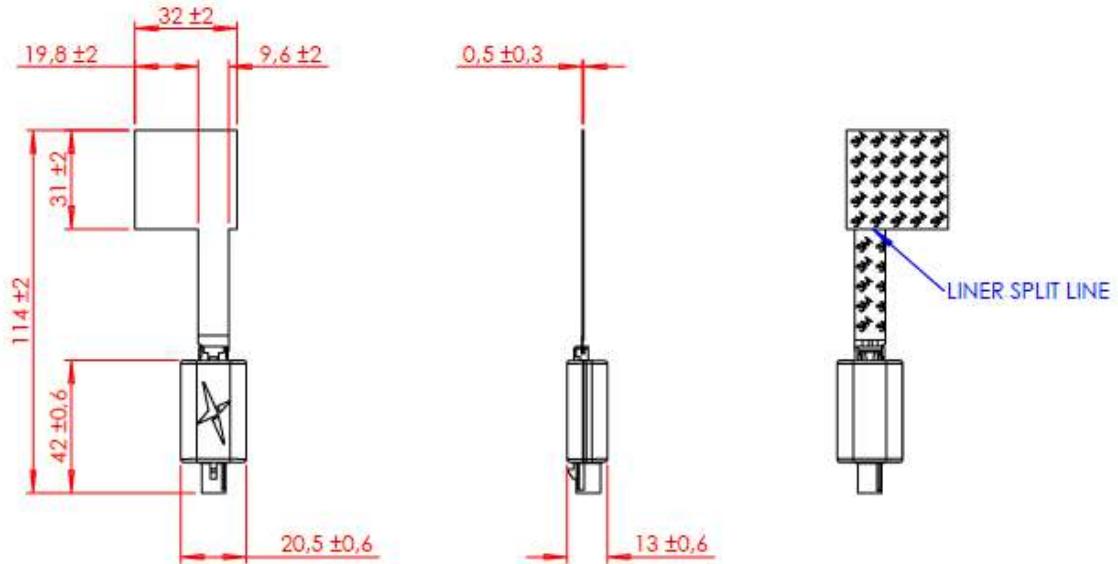
4.10 TFX257.A Patterns at 7125 MHz



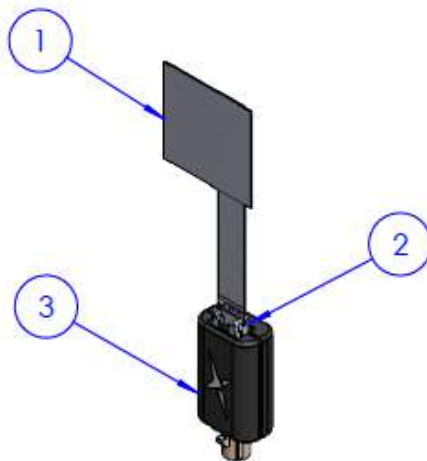
5. Mechanical Drawing

ISO NO.: EDW-22-8-0989
 STATE: RELEASE
 NOTES: 1. ALL MATERIAL MUST BE ROHS COMPLIANT.

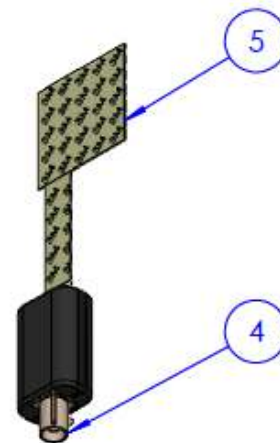
| REVISIONS | | | | |
|-----------|-------------|-----------|----------|----------|
| REV. | DESCRIPTION | DATE | ENGINEER | APPROVED |
| D01 | FIRST ISSUE | 18OCT2022 | SC | WL |



| ITEM NO. | DESCRIPTION | MATERIAL | FINISH | QTY |
|----------|---|------------|-------------|-----|
| 1 | TRANSPARENT FLEX WI-FI ANTENNA COVERING 2.4 - 5 - 7.125 GHz | PET | CLEAR | 1 |
| 2 | FPC-to-BOARD CONNECTOR ADAPTOR 2 CONTACT | LCP | BLACK | 1 |
| 3 | ANTENNA PCB HOUSING | ABS/PC | BLACK | 1 |
| 4 | FAKRA CODE I MALE | NYLON/ZINC | BEIGE | 1 |
| 5 | 3M ADHESIVE + LINER | 3M 8146 | BROWN LINER | 1 |



MODEL VIEW
SCALE 1:2



MODEL VIEW
SCALE 1:2

| | |
|--|--|
| APPROVED BY: NW | <p>This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.</p> |
| CHECK BY: WL | |
| DRAWN BY: SC | |
| DATE: 18OCT2022 | |
| <small>UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:</small> DIMENSIONS: 0.25/0.125/0.05/0.025/0.0125 ANGLES: 0.125/0.0625/0.03125/0.015625 | TITLE: TRANSPARENT FLEX WI-FI ANTENNA COVERING 2.4-5-7.125 GHz w/CONVERTER AND FAKRA CODE I MALE PART NO.: TFX257.A |
| THIRD ANGLE PROJECTION | UNIT: mm SCALE: 1:2 PAGES: 1/1 REV: D01 |

6. Packaging

TBD

Changelog for the datasheet

SPE-22-8-163 – TFX257.A

| Revision: A (Original First Release) | |
|---|-----------------|
| Date: | 2022-10-14 |
| Notes: | Initial Release |
| Author: | Gary West |

Previous Revisions

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