TAOGLAS

Datasheet

Profila Series

Part No:
MA2330.A.ACT.002

Description:

MA2330 CAMPTENNA™ – 3-in-1 GNSS, Wi-Fi & AM/FM Headliner Adhesive Antenna

Features:

3-in-1 Headliner Adhesive Antenna

ASA+PC Housing with FM Metalized Film Antenna

GNSS: FAKRA Code C Blue Connector

Wi-Fi: FAKRA Code I Beige Connector

FM/WB: FAKRA Code A Black Connector

IP21 Waterproof Rated

Manufactured in TS16949 Automotive Approved Facilities

RoHS & Reach Compliant

1. Introduction

The Taoglas Profila Series MA2330.A CAMPTENNA™ antenna is a next generation 3-in-1, embedded solution for vehicles. It comprises of a low profile, robust ABS+PC housing and an ultra-thin metalized PET film antenna. The antenna is approved for use on heavy-duty trucks and meets the strictest OEM heavy-duty truck standards. It supports the following bands: GNSS (GPS/GLONASS/Galileo/BeiDou), Wi-Fi (2.4/5.8GHz), and FM/WB.

The antenna is first tier TS16949 heavy-duty truck approved and is an ideal choice for:

- OEM automotive
- Trucks
- Other vehicles and heavy equipment.

The antenna comes with low-loss RG-174 coaxial pigtail cables as standard, terminating in FAKRA SMB code C for GNSS, FAKRA SMB code A for FM, and with FAKRA SMB code I for Wi-Fi. The FM/WB antenna is passive and utilizes a long metalized film to increase receive signal sensitivity. The antenna is manufactured in TS16949 automotive approved facilities.

Contact your regional Taoglas customer support team for more information or installation guidelines.

2. Specifications

GNSS Antenna	
Frequency	**BeiDou: 1561.098 ± 2.046MHz.** **GPS: 1575.42 ± 1.023MHz** **GLONASS: 1602 ± 5MHz**
Return loss (GPS L1 GLONASS L1)	< -10 dB
Efficiency	57%
Passive Gain at Zenith (GPS L1 and GLONASS L1)	+3.3 dBi
Average Gain	-2.4
Polarization	RHCP
Impedance	50 Ω

Wi-Fi Antenna		
Frequency	**2400~2500MHz**	**5000~5830MHz**
Return loss	<-27.8dB	<-10dB
Efficiency	60%	60%
Peak Gain	4dBi	3.7dBi
Average Gain	-1.9dB	-1.9dB
Impedance	50 Ω	

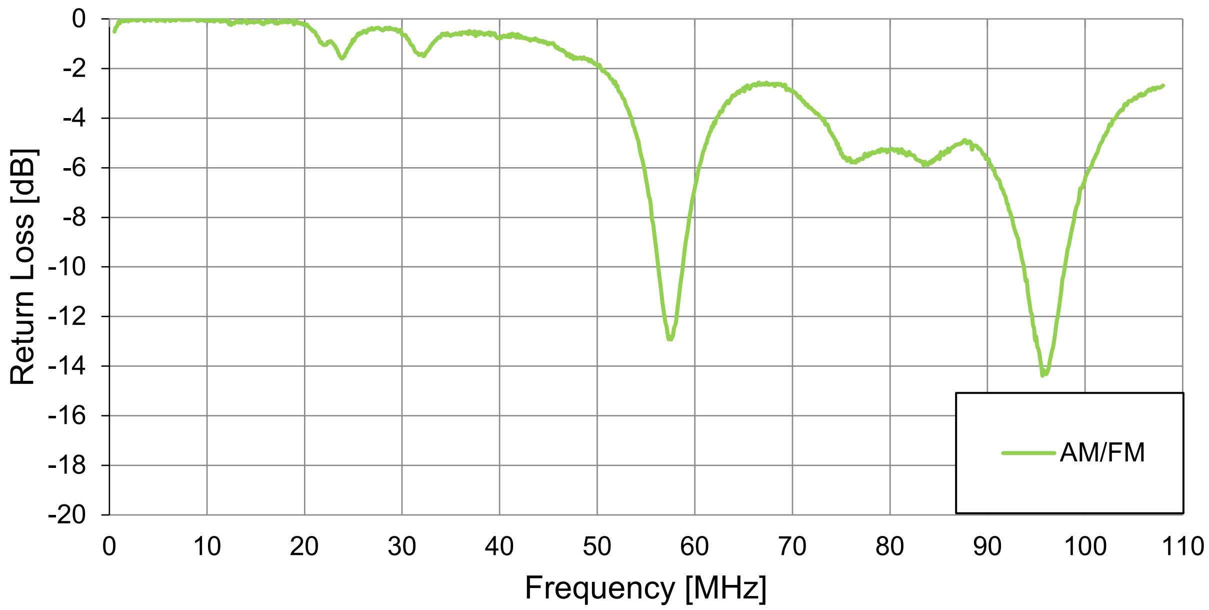
FM Antenna
FM Radio Bands
88~108MHz

Mechanical	
Dimensions	664.33*83.99*14.86mm
Cable	300mm RG-178
Connector	GPS: FAKRA Code C FM: FAKRA Code A Wi-Fi/BT: FAKRA Code I
Casing	ASA+PC w/UV Stabilizer
Adhesive	3M 9448HK on flex 3M VHB 5952 on HSG
Cable Pull	35.59N
Weight	0.145kg
Environmental	
Waterproof	IP21
Temperature Range	-40°C to 85°C
Thermal Shock	IEC 60068-2-14
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

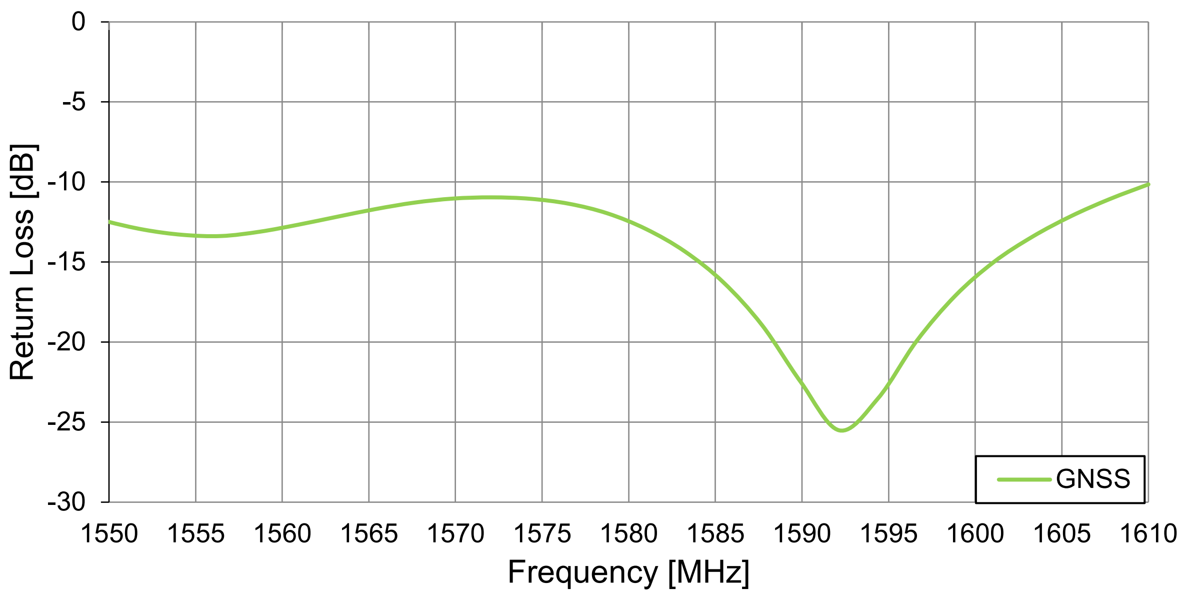
3.1 FM

Return Loss

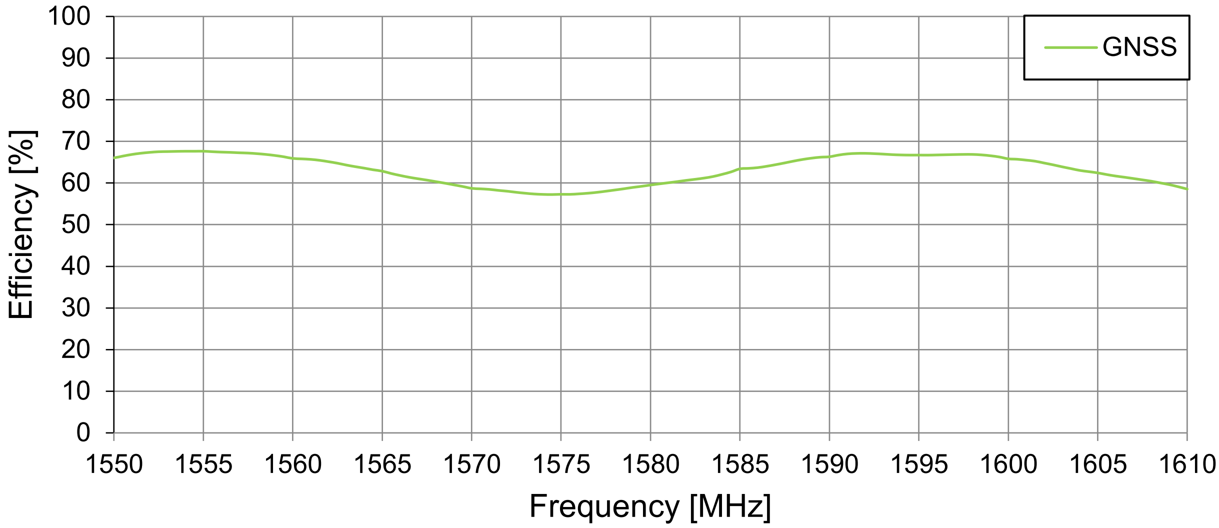


3.2 GNSS

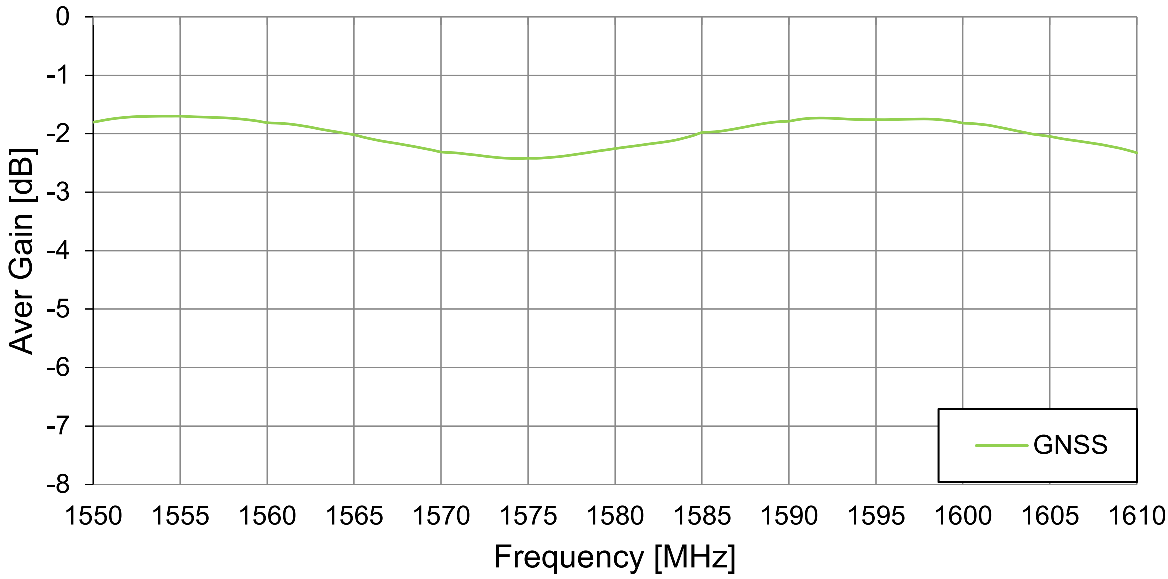
Return Loss



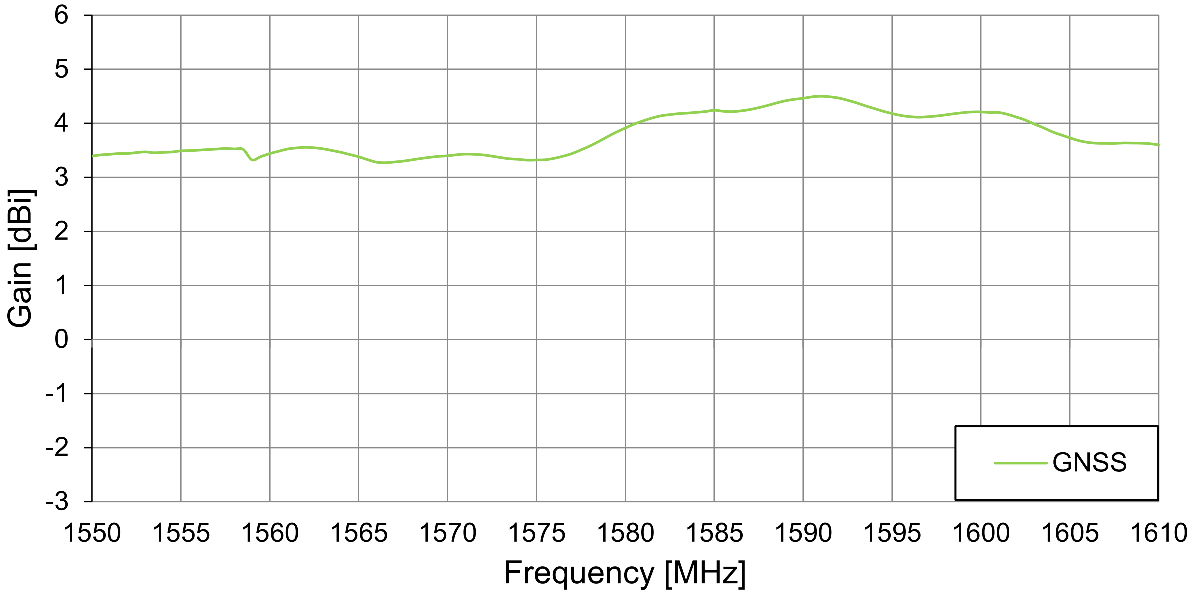
Efficiency



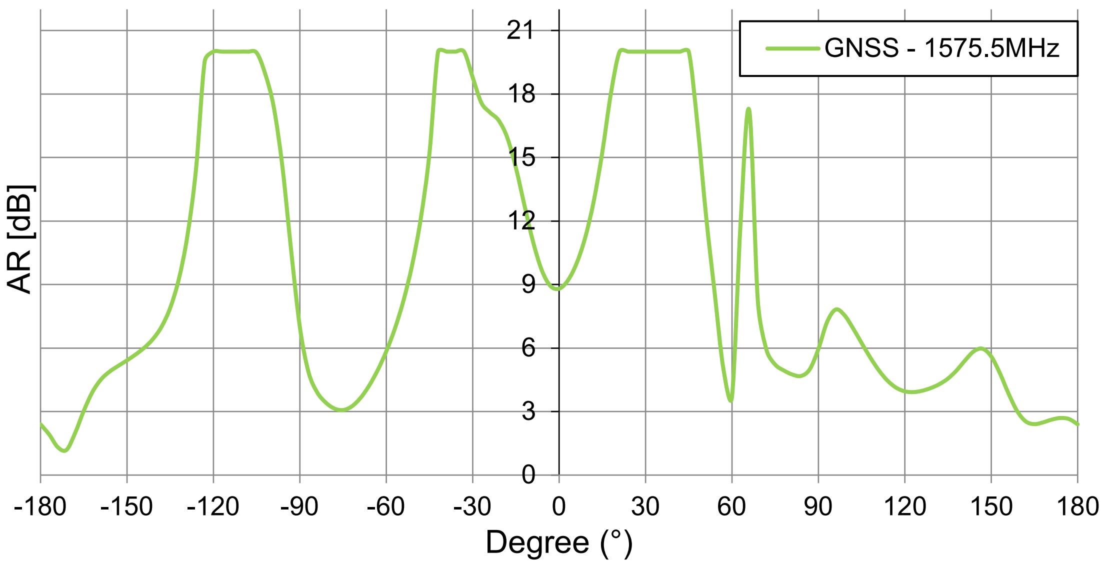
Average Gain



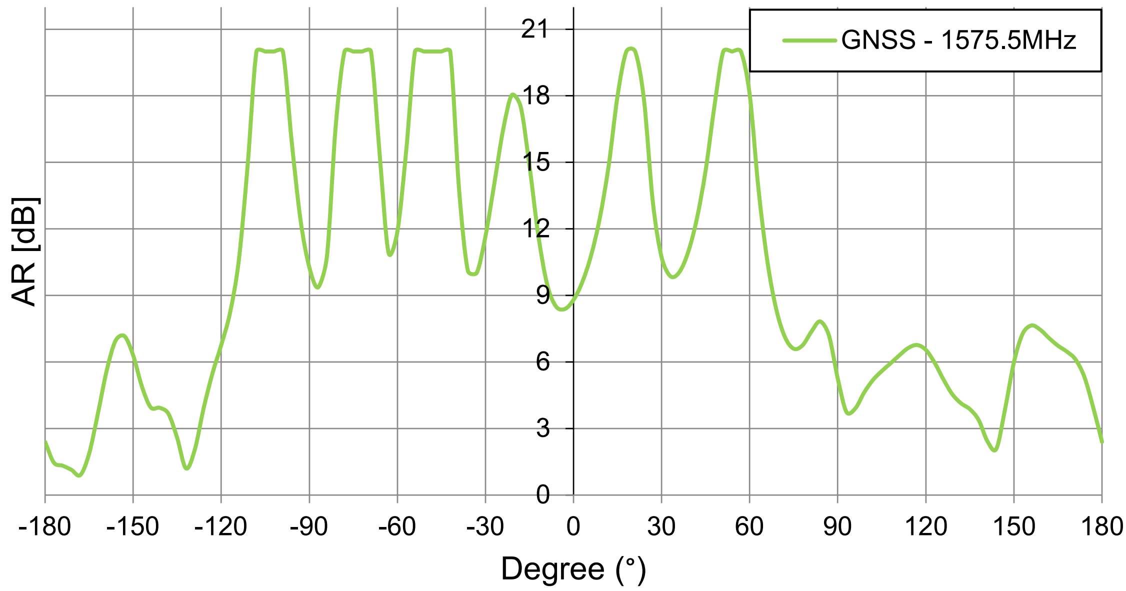
Peak Gain



Axial Ratio XZ Plane @ 1575.5MHz



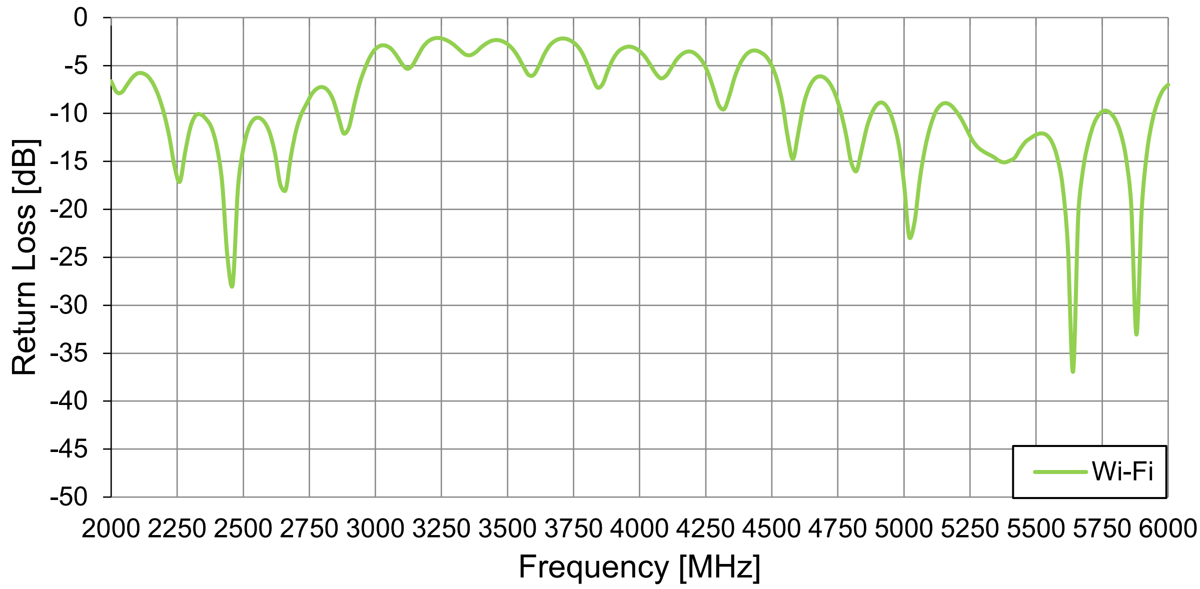
Axial Ratio YZ Plane @ 1575.5MHz



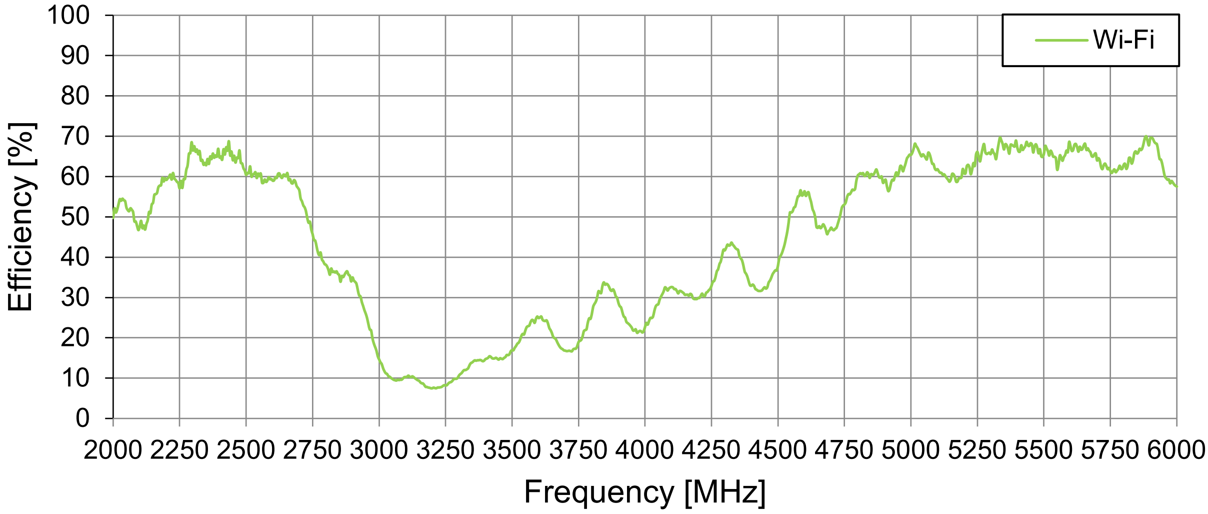
Amplifier		
LNA-10	Frequency Range	1584.5.5±25.5MHz
LNA-20	Gain	31dB Typ
LNA-30	Noise Figure	1.5dB Typ
LNA-40	Output 1dB CP	10.0 dBm Typ
LNA-50	Out Band Rejection	f_0 : 1584.5MHz
		f_0±20MHz 15dB Min
		f_0±50MHz 30dB Min
		f_0±100MHz 40dB Min
LNA-60	Output SWR	2:1 Max
Power		
POW-10	Input Voltage	3.5 ~ 5V
POW-20	Current	30mA Typ

3.3 Wi-Fi Antenna

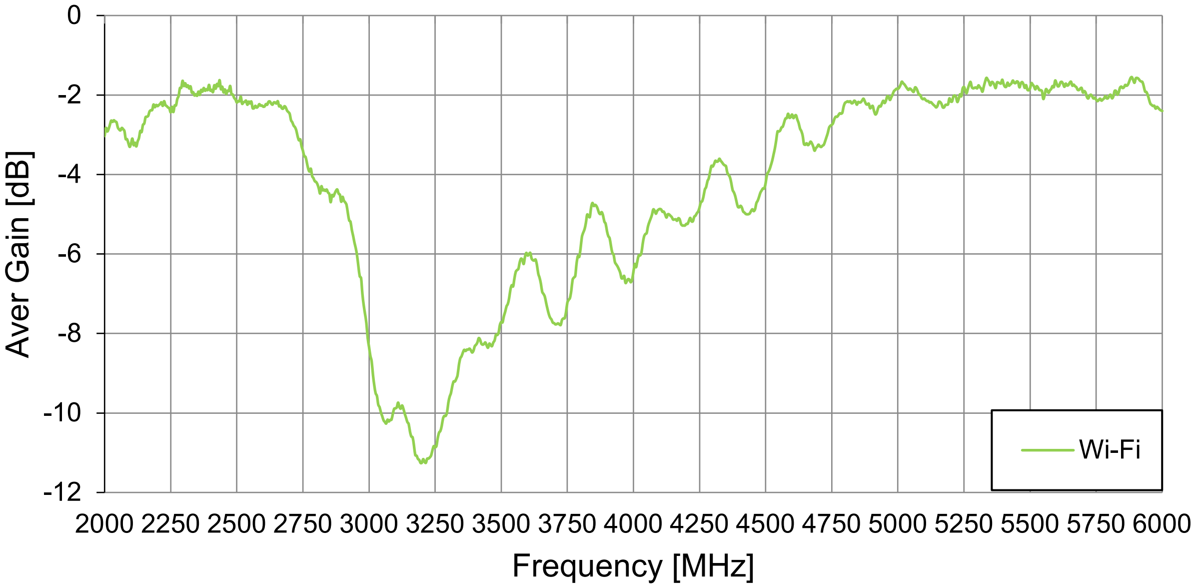
Return Loss



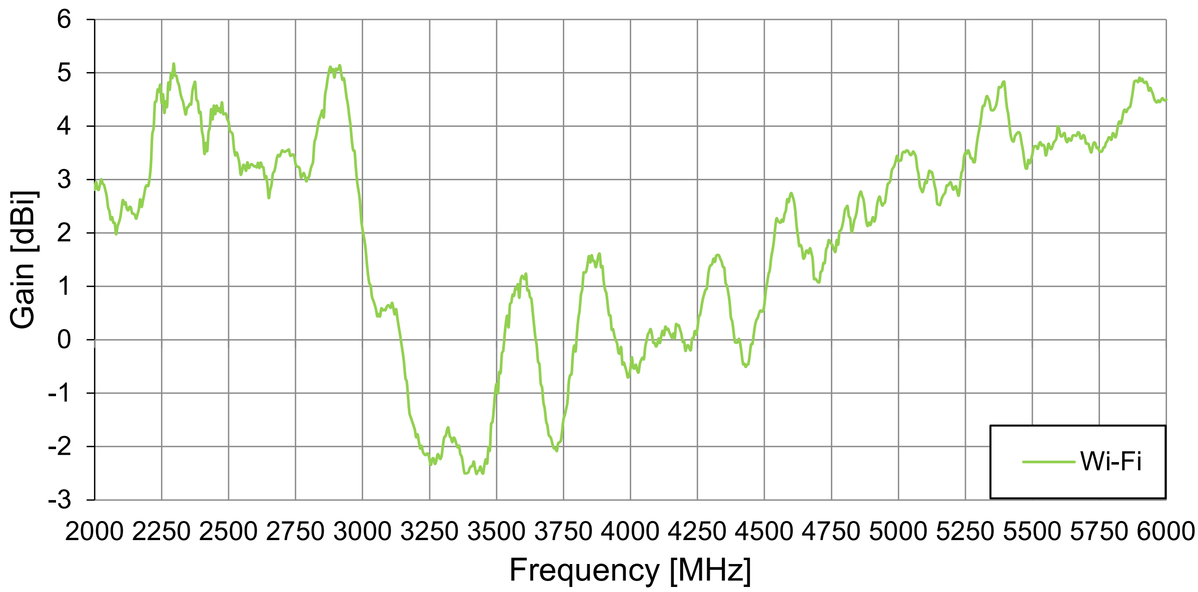
Efficiency



Average Gain

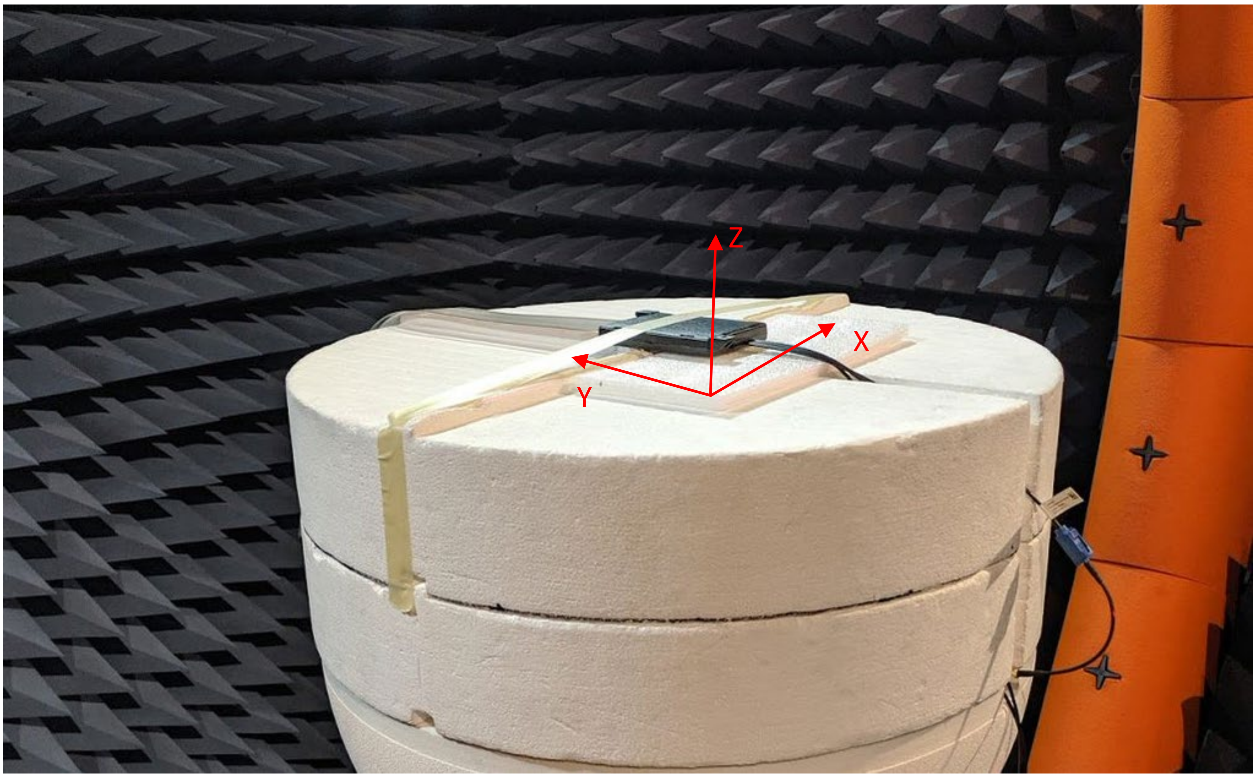


Peak Gain

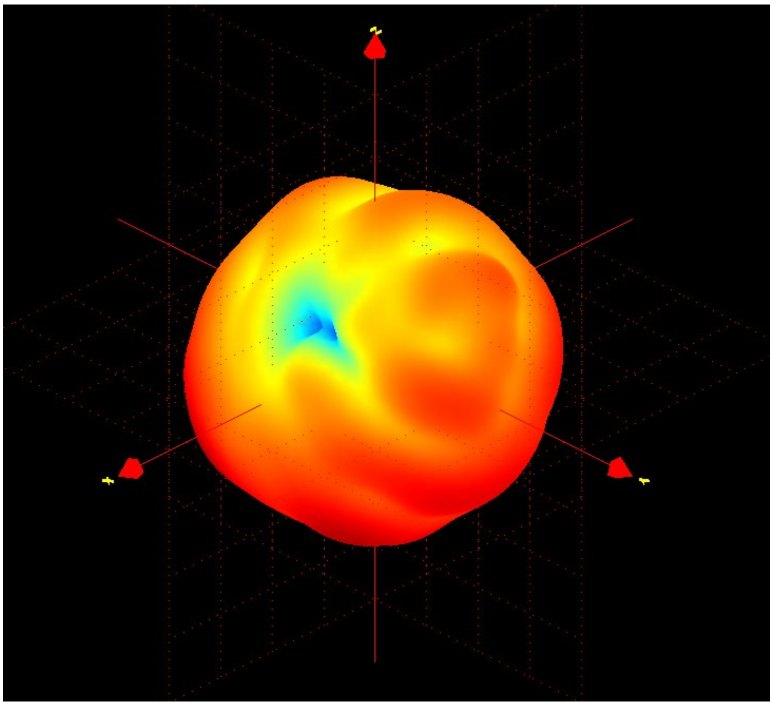


4. Radiation Patterns

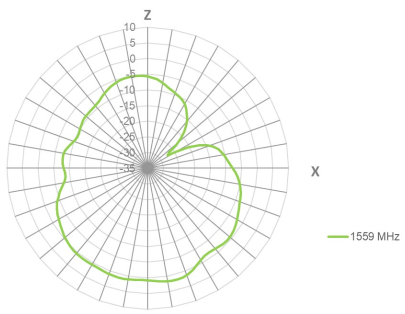
4.1 Test Setup

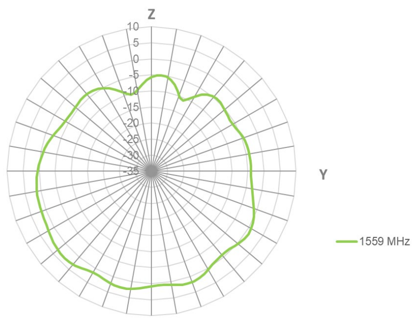


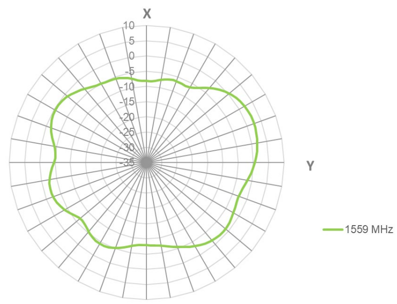
4.2 GNSS 1559MHz 3D and 2D Radiation Patterns



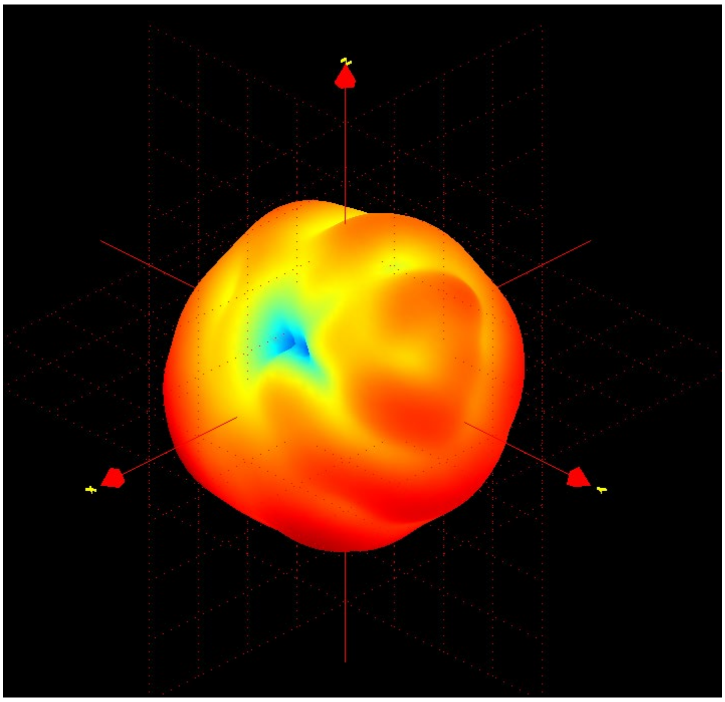
XZ Plane	YZ Plane	XY Plane

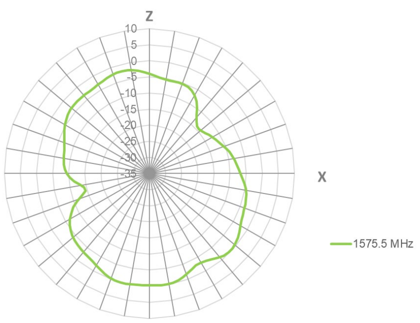
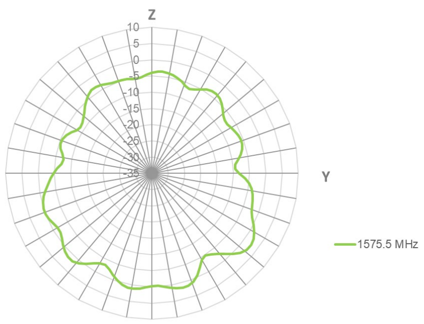
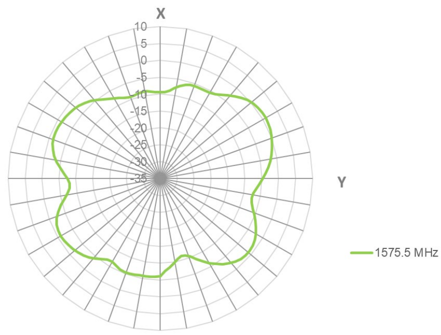




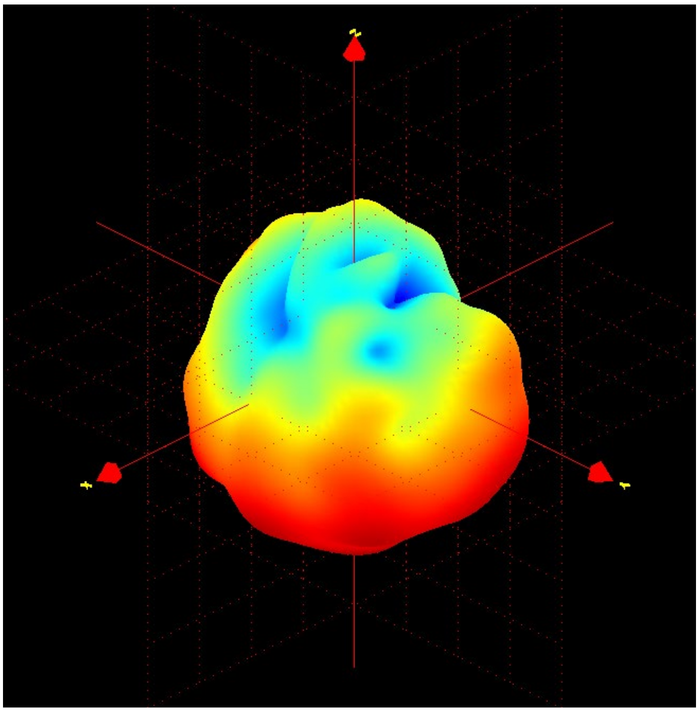


4.3 GNSS 1575MHz 3D and 2D Radiation Patterns

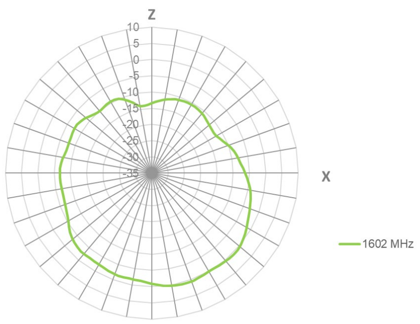


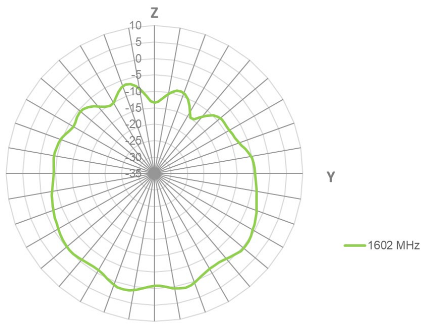
XZ Plane	YZ Plane	XY Plane
		

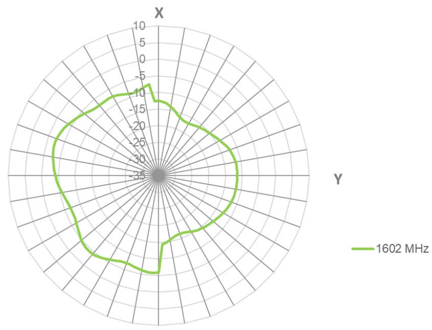
4.4 GNSS 1602MHz 3D and 2D Radiation Patterns



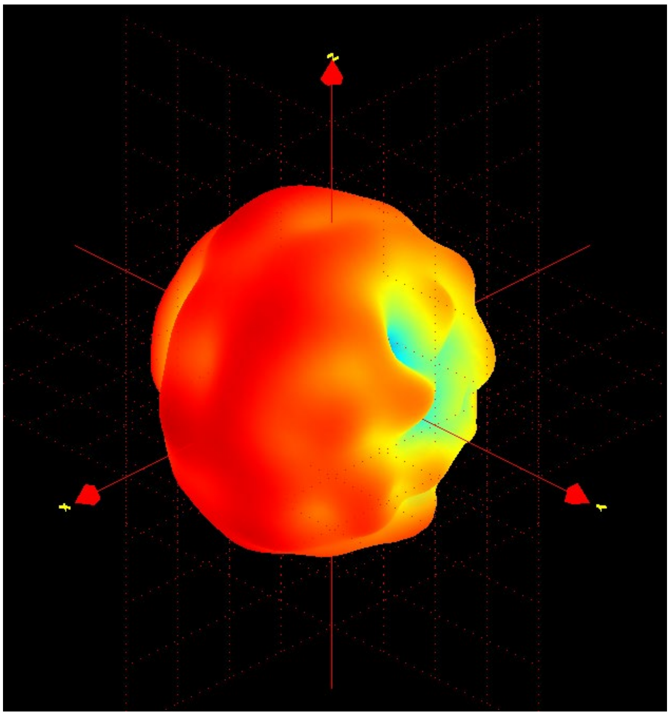
XZ Plane	YZ Plane	XY Plane



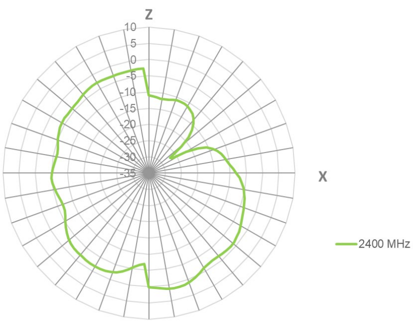


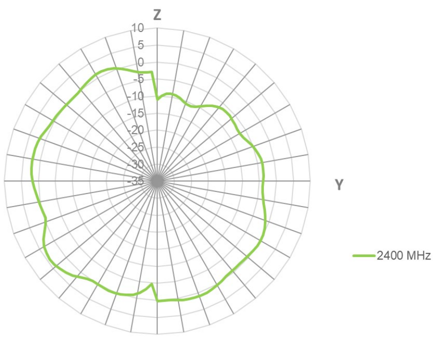


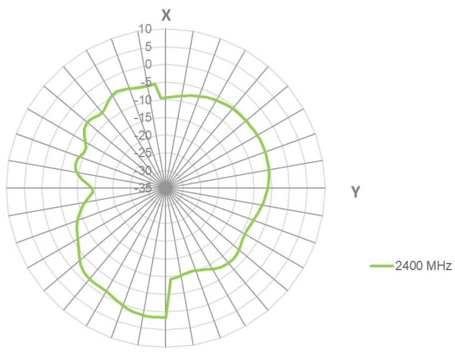
4.5 Wi-Fi 2400MHz 3D and 2D Radiation Patterns



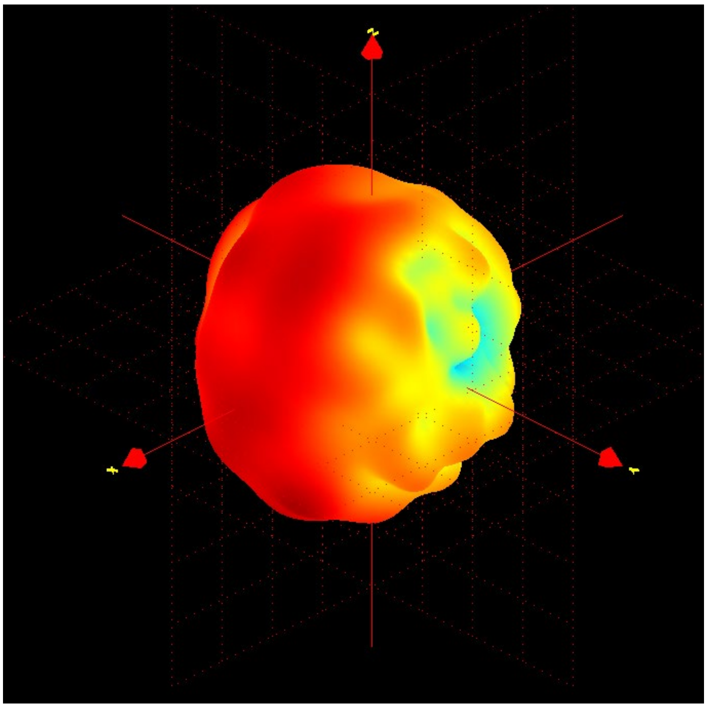
XZ Plane	YZ Plane	XY Plane



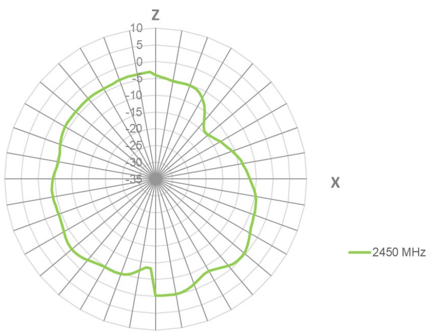


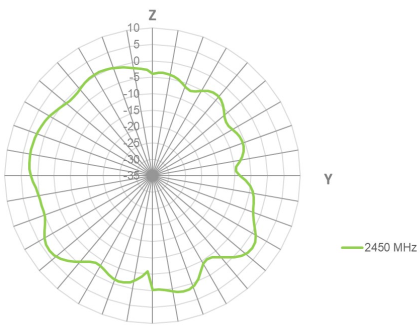


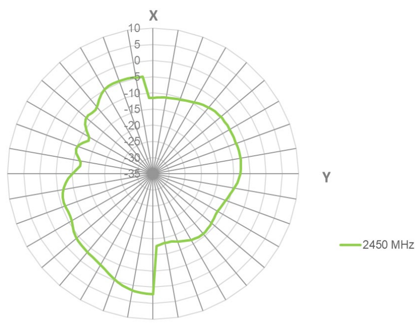
4.6 Wi-Fi 2450MHz 3D and 2D Radiation Patterns



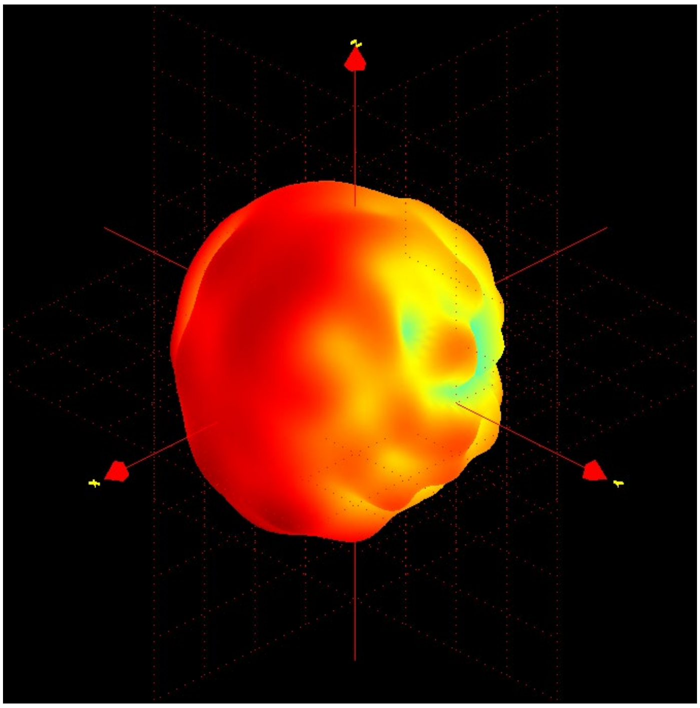
XZ Plane	YZ Plane	XY Plane

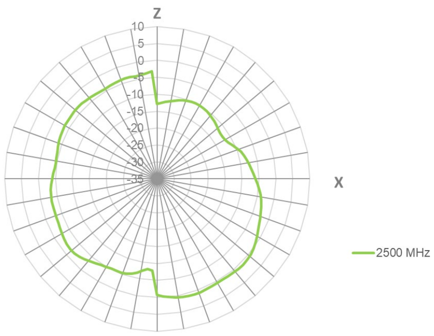
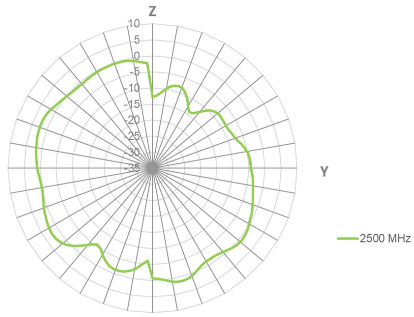
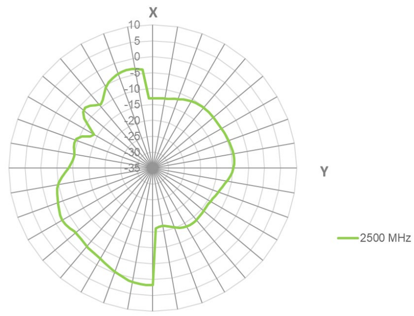




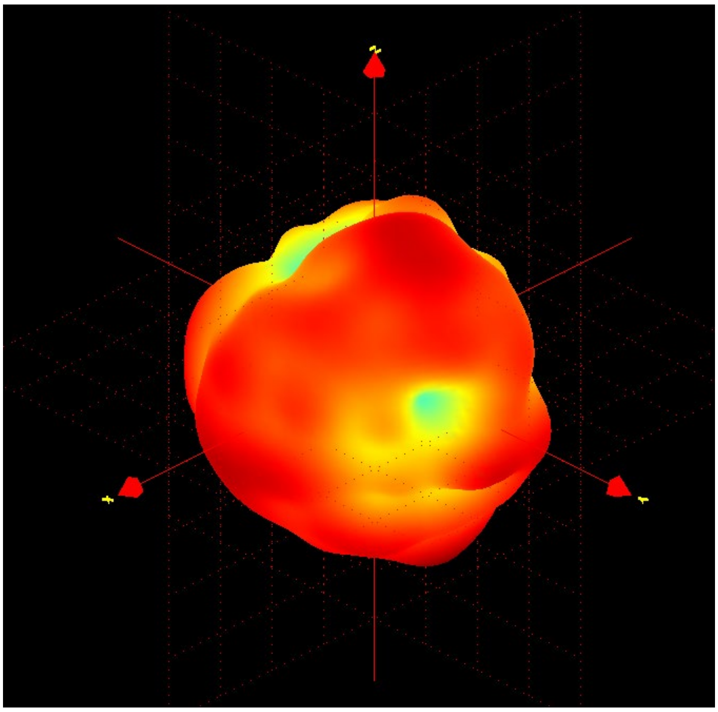


4.7 Wi-Fi 2500MHz 3D and 2D Radiation Patterns

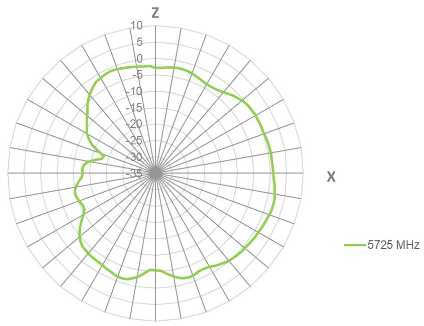


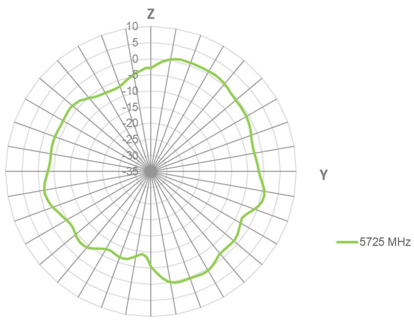
XZ Plane	YZ Plane	XY Plane
		

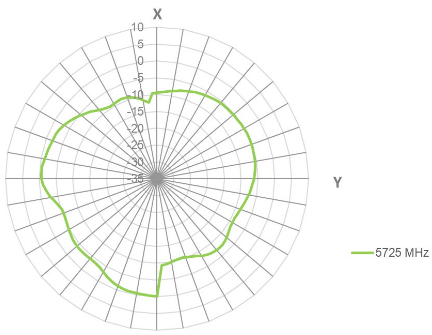
4.8 Wi-Fi 5725MHz 3D and 2D Radiation Patterns



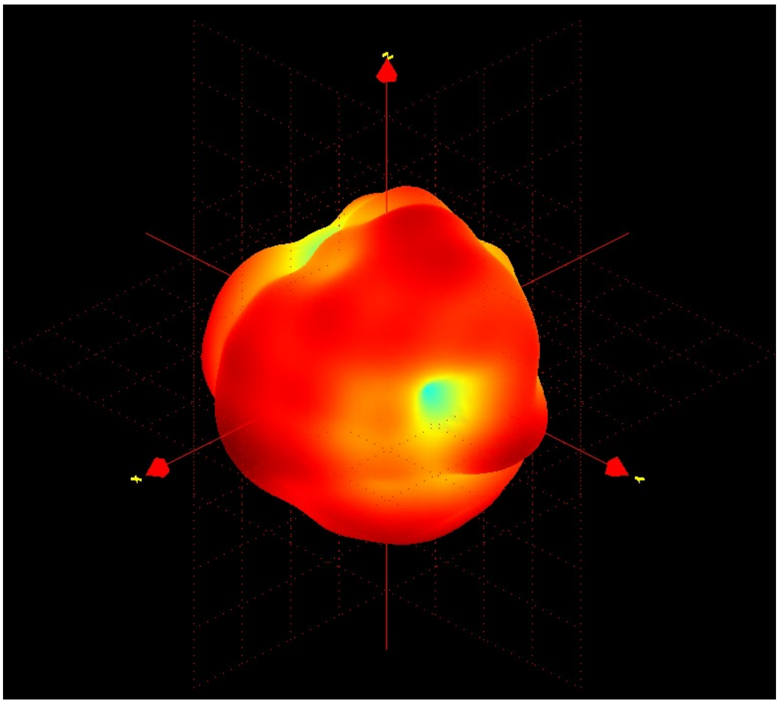
XZ Plane	YZ Plane	XY Plane



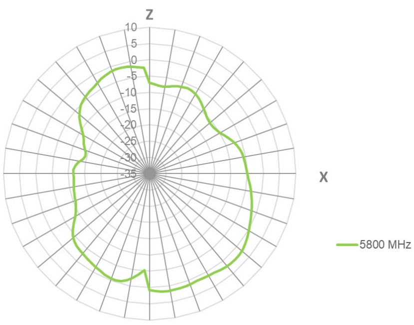


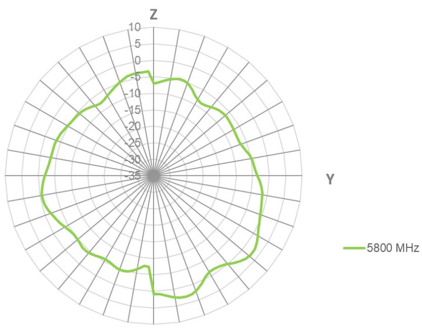


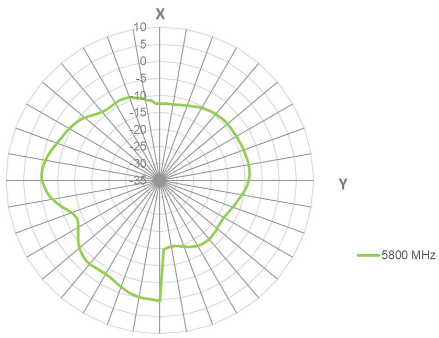
4.9 Wi-Fi 5800MHz 3D and 2D Radiation Patterns



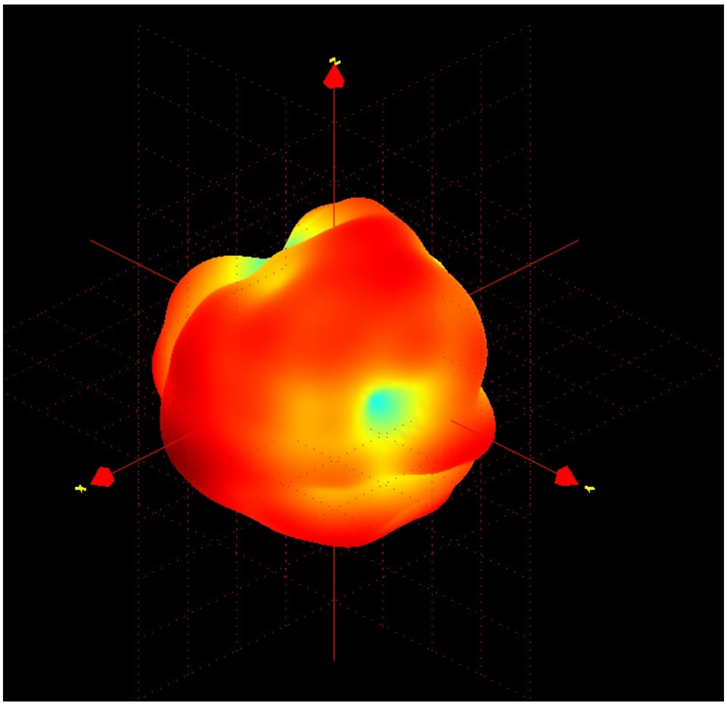
XZ Plane	YZ Plane	XY Plane

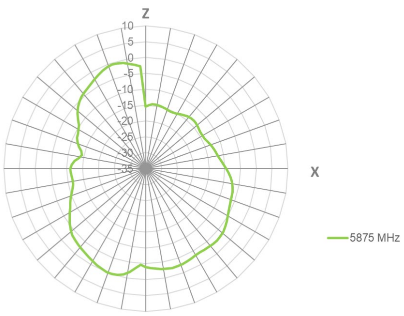
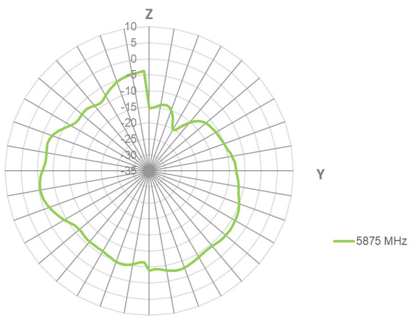
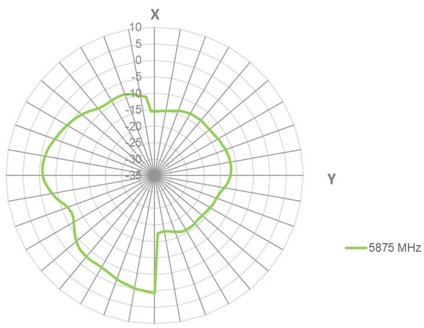






4.10 Wi-Fi 5875MHz 3D and 2D Radiation Patterns



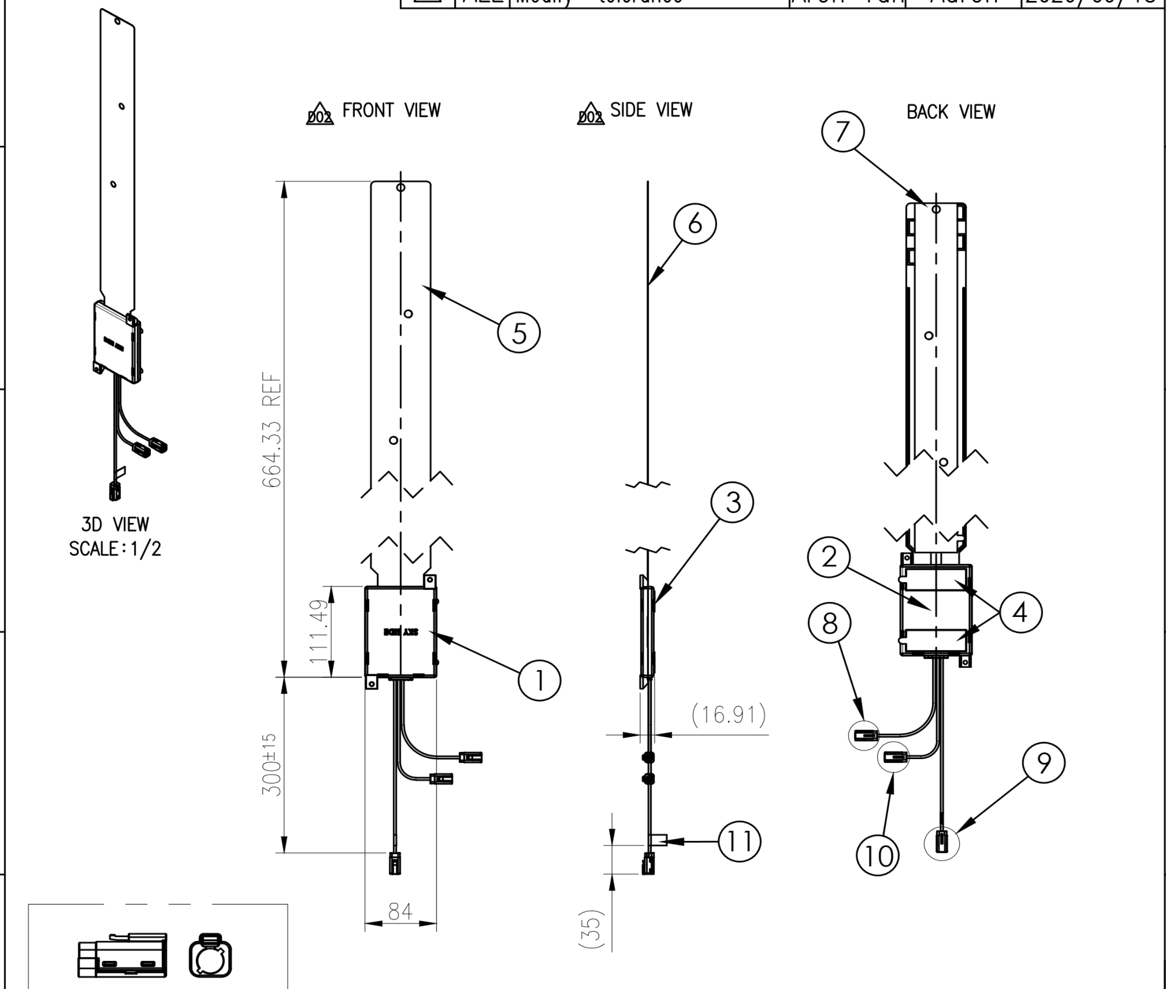
XZ Plane	YZ Plane	XY Plane
		

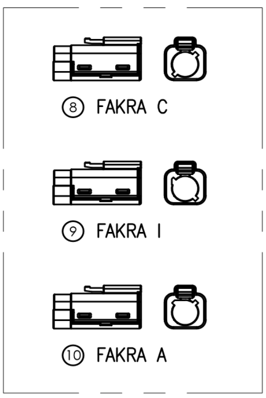
5. Mechanical Drawing (Units: mm)

ISO NO: EDW-19-8-0924

<Release>

REV	ZONE	DESCRIPTION	ENG	APPROVED	ISSUED DATE
D01	ALL	Initial Design	S.Stanton	Aaron	2019/09/04
D02	ALL	Modify tolerance	Aron Yan	Aaron	2020/09/18





SCALE: 2.5/1

	Name	Material	Finish	QTY
1	Top Housing	PC	Black	1
2	Bottom Housing	PC	Black	1
3	Housing Adhesive	3M 5952	Black	2
4	Adhesive Peel Off	PE	Red	2
5	Flex Antenna	PET	Clear	1
6	Flex Antenna Adhesive	3M 300LSE	Clear	1
7	Adhesive Peel Off	PE Coated Paper	Brown	2
8	RG-174 Cable Assembly with FAKRA C (GPS)	PVC	Black & Blue	1
9	RG-174 Cable Assembly with FAKRA I (Wi-Fi)	PVC	Black & Beige	1
10	RG-174 Cable Assembly with FAKRA A (AM/FM)	PVC	Black & Black	1
11	Module Label	Coated Paper	White	1

UNLESS OTHERWISE SPECFIED TOLERANCES ON: .X± 0.2 XX.± 0.5 .XX± 0.1 X.± 0.3 .XXX± 0.05	DATE: 2019/09/04	MAT'L:
	UNIT: mm	FINISH:
	THIRD ANGLE PROJECTION	SCALE: 1/1

APPROVED BY:	CHECKED BY:	DRAWN BY:	CUSTOMERS SIGNATURE / DATE
Aaron	Aaron	S.Stanton	

TAOGLAS. TW Design Centre

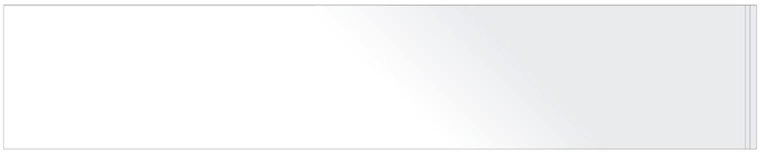
REV D02

TITLE. : 3in1 Adhesive Mount 300mm RG-174 GPS FAKRA C WiFi FAKRA I AM/FM FAKRA A

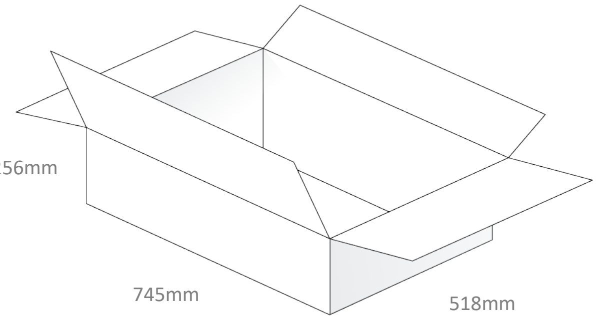
PART NO. : MA2330.A.ACT.002

6. Packaging

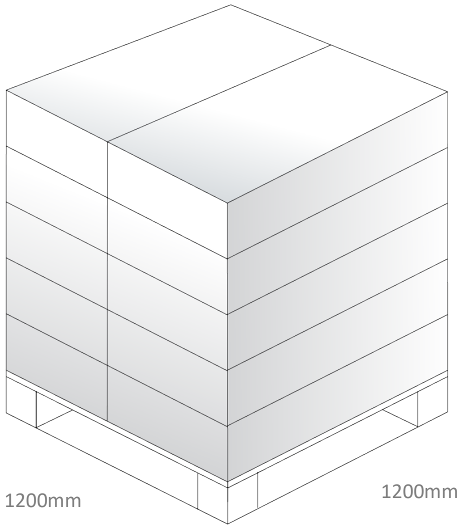
1pc MA2330.A.ACT.002 per Poly Bag
Weight: 145g



100pcs MA2330.A.ACT.002 per Carton
Dimensions: 745*518*256mm
Weight: 14Kg



Pallet Dimensions:
1407*1200*1200mm
16 Cartons Per Pallet
4 Cartons Per Layer, 4 Layers



Changelog for the datasheet

SPE-19-8-116 – MA2330.A.ACT.002

Revision: C (Current Version)	
Date:	2024-11-06
Changes:	Added CAMPTENNA™ to product description and introduction.
Changes Made by:	Conor McGrath

Previous Revisions

Revision: B	
Date:	2020-12-04
Changes:	Renamed to Profila Series
Changes Made by:	Jack Conroy

Revision: A (Original First Release)	
Date:	2019-08-27
Notes:	Initial Datasheet Release
Author:	Yu Kai Yeung

www.taoglas.com