Datasheet

Titan GPS/Galileo Active Antenna

Part No:
AA.105.301621

Description

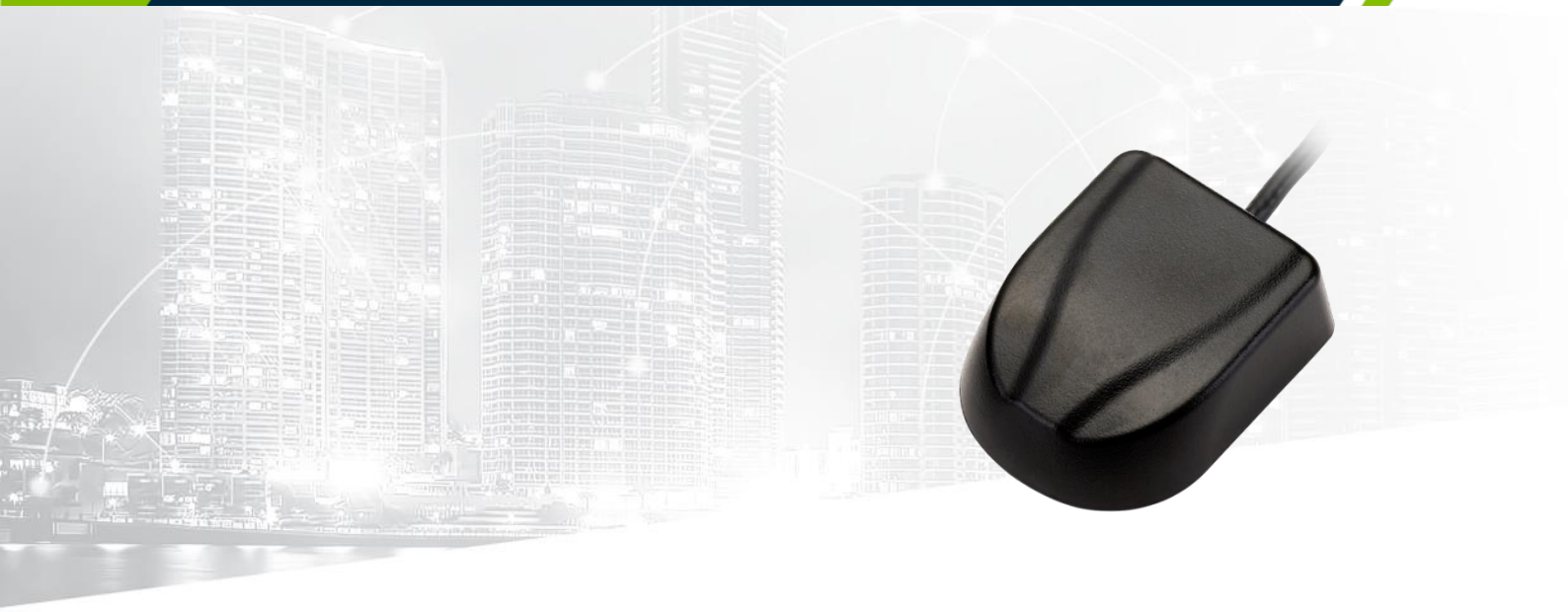
GPS/GALILEO Magnetic Mount Antenna with 3M RG-174 and Fakra Code C Blue SMB(F)

Features:

Magnetic Mount
Covert stylish design
Wide band input voltage
Gain can be adjusted for your application (10dB~31dB)
IP67 Waterproof
Dimensions: 43.3 x 32.7 x 14mm
Cable: 3m RG174
Connector: Fakra Code C Blue SMB(F)
Cable and connector customizable
RoHS and REACH Compliant

1.	Introduction	3
2.	Specification	4
3.	Antenna Characteristics	6
4.	Radiation Patterns	9
5.	LNA Characteristics	11
6.	Field Test Results	12
7.	Mechanical Drawing	13
8.	Packaging	14
	Changelog	15

1. Introduction



The Titan AA.105 is a small magnetic mount external active GPS/Galileo antenna. The Titan AA.105 is ideal for robust, covert installations where durability and small size is paramount. It is fully IP67 waterproof rated for installations where water ingress may be an issue. With a small footprint of just 43.3 x 32.7 mm, the Titan AA.105 can be used in applications where space may be a constraint, and with its magnetic mounting style it is perfect for use in transportation applications.

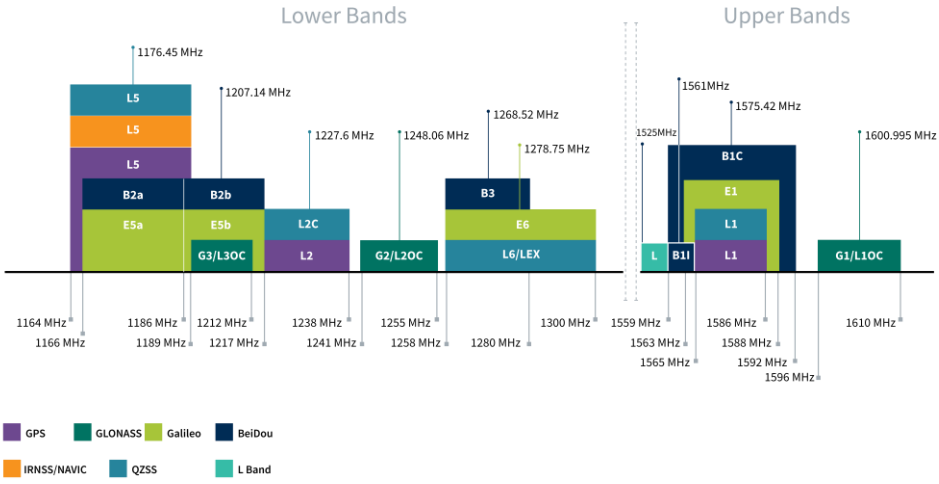
Typical Applications Include:

- Commercial Transportation
- E-Scooters/Electric Vehicles
- Robotics and Autonomous Vehicles
- Asset Tracking

The Titan is also available in an adhesive mount version – AA.108. For further information, please contact your regional Taoglas customer support team.

2. Specification

GNSS Frequency Bands					
GPS	L1 1575.42 MHz	L2 1227.6 MHz	L5 1176.45 MHz		
	■	□	□		
GLONASS	G1 1602 MHz	G2 1248 MHz	G3 1207 MHz		
	□	□	□		
Galileo	E1 1575.24 MHz	E5a 1176.45 MHz	E5b 1201.5 MHz	E6 1278.75 MHz	
	■	□	□	□	
BeiDou	B1C 1575.42 MHz	B1I 1561 MHz	B2a 1176.45 MHz	B2b 1207.14 MHz	B3 1268.52 MHz
	■	□	□	□	□
L-Band	L-Band 1542 MHz				
	□				
QZSS (Regional)	L1 1575.42 MHz	L2C 1227.6 MHz	L5 1176.45 MHz	L6 1278.75e6	
	■	□	□	□	
IRNSS (Regional)	L5 1176.45 MHz				
	□				
SBAS	L1/E1/B1 1575.42 MHz	L5/B2a/E5a 1176.45 MHz	G1 1602 MHz	G2 1248 MHz	G3 1207 MHz
	■	□	□	□	□



GNSS Bands and Constellations

GNSS Electrical	
Frequency (MHz)	**1575.42**
VSWR (max.)	2:1
Efficiency (%)	50.51
Peak Gain (dBi)	0.99
Average Gain (dB)	-2.97
Axial Ratio (dB)	3dB Typ.
Polarization	RHCP
Impedance	50 Ω

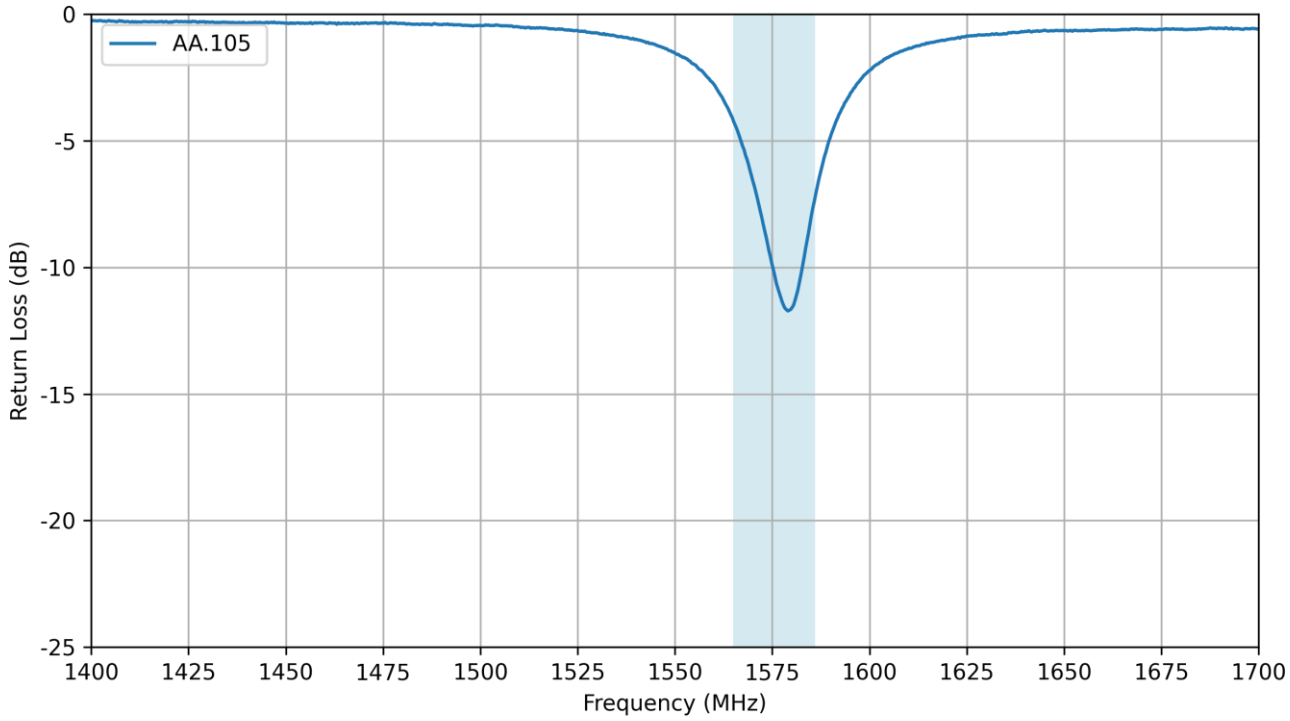
LNA and Filter Electrical Properties	
Frequency (MHz)	**1575.42**
Gain (dB)	29.55
Noise Figure (dB)	1.89
P1dB (dBm)	35.51
Current Consumption (mA)	6
Vin	1.8~5.5V

Mechanical	
Dimensions	43.3 x 32.7 x 14 mm
Weight	64g
Cable	3m RG-174
Connector	Fakra Code C Blue SMB(F)

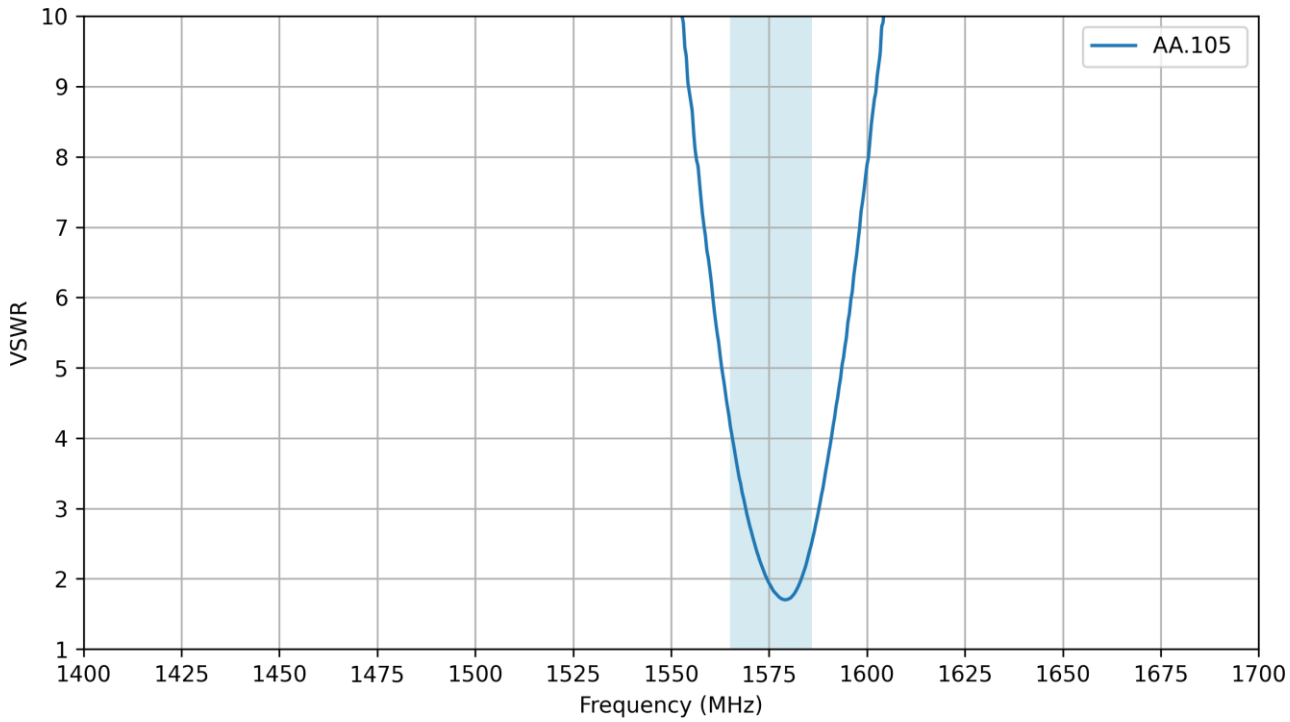
Environmental	
Operation Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +85°C

3. Antenna Characteristics

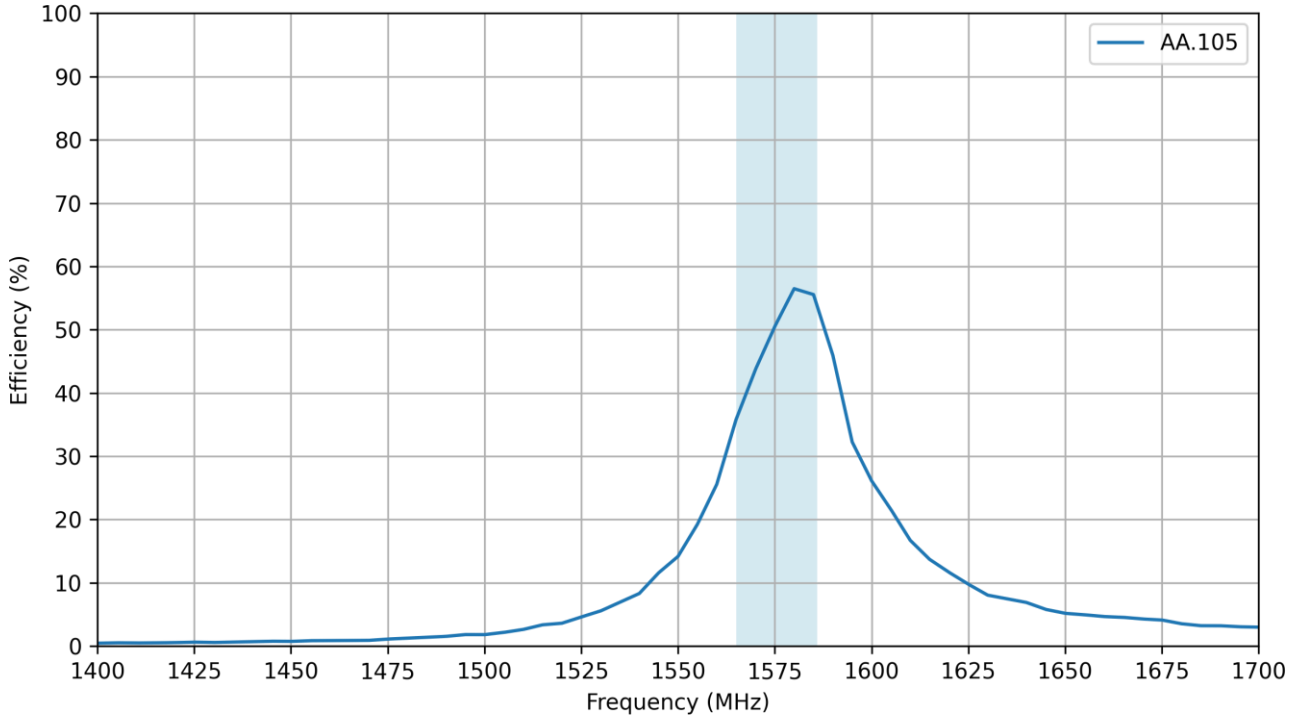
3.1 Return Loss



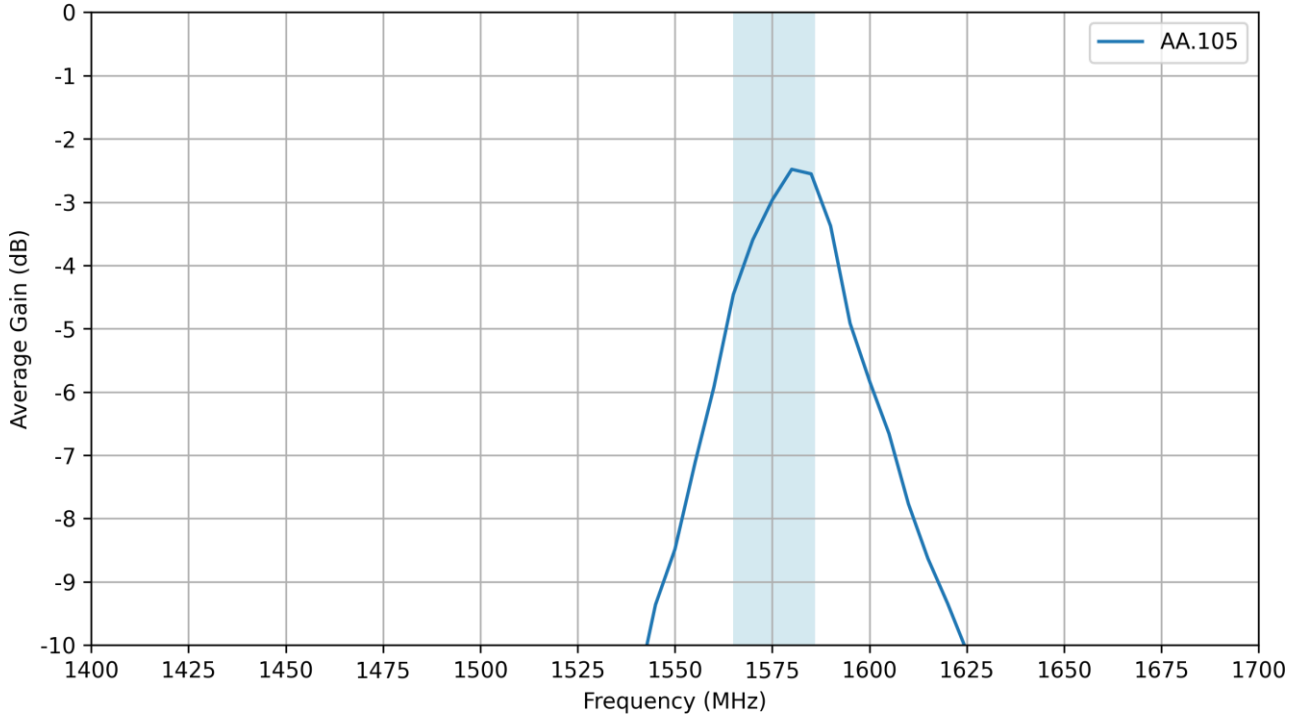
3.2 VSWR



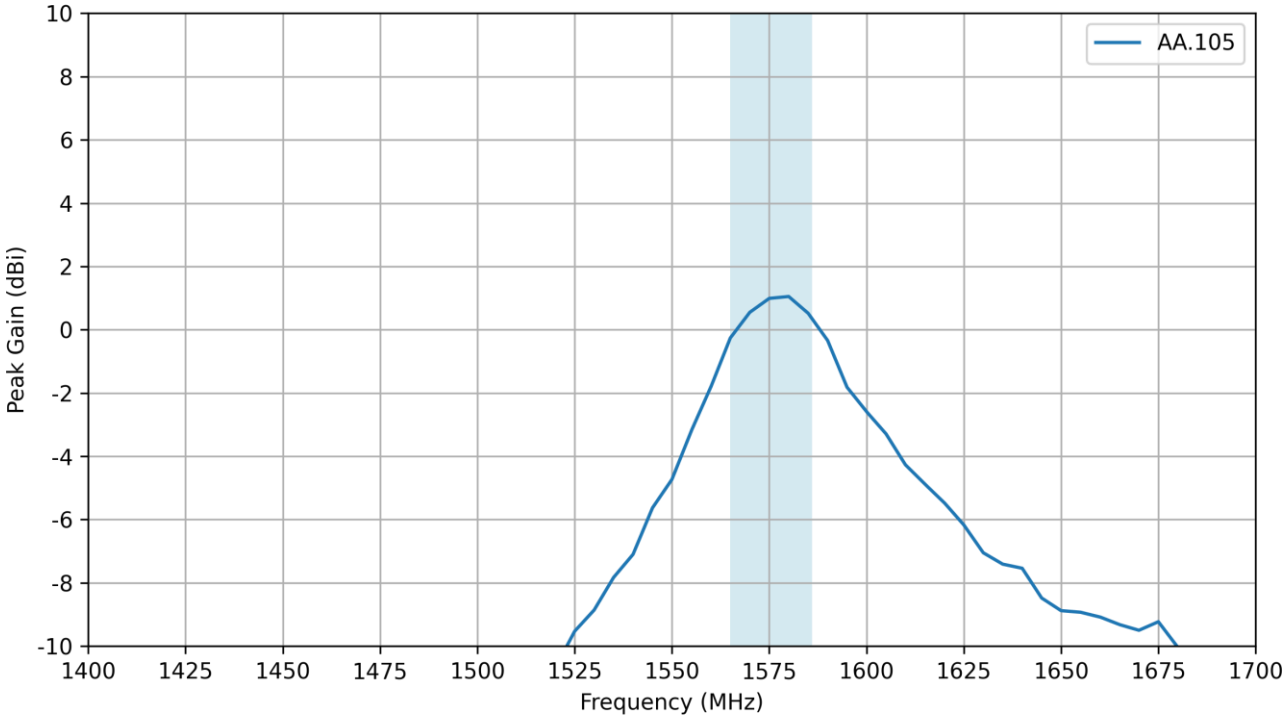
3.3 Efficiency



3.4 Average Gain

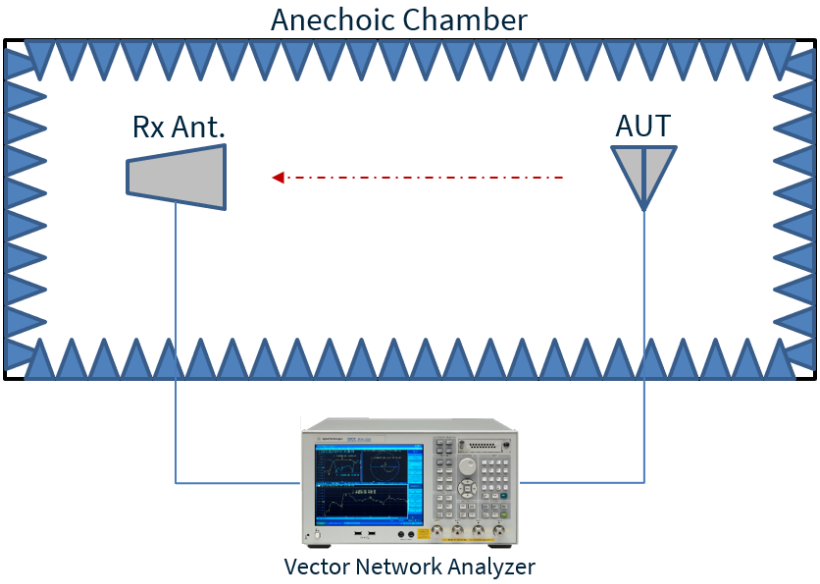


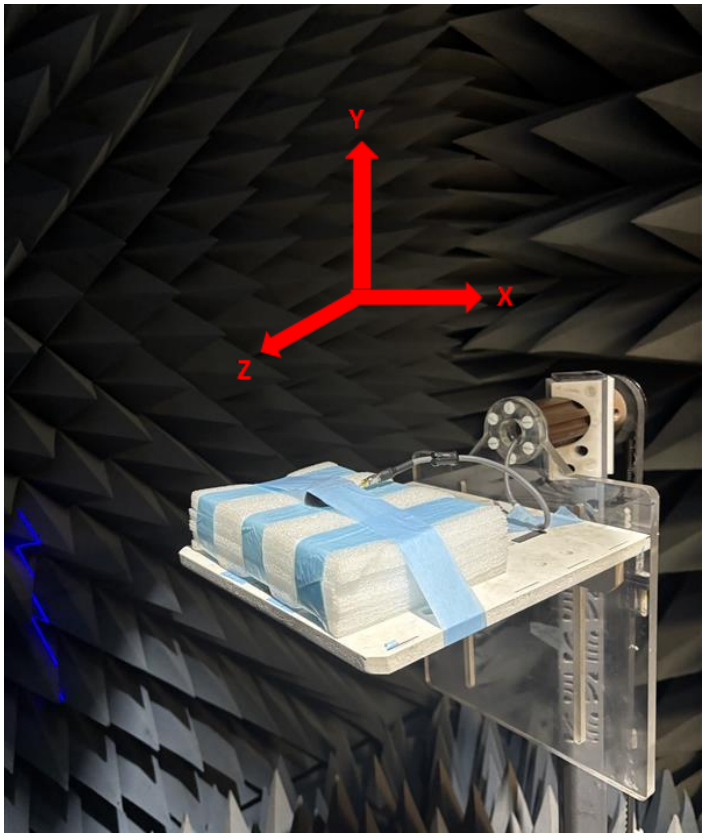
3.5 Peak Gain


AA.105
Peak Gain (dBi)
10
8
6
4
2
0
-2
-4
-6
-8
-10
1400
1425
1450
1475
1500
1525
1550
1575
1600
1625
1650
1675
1700
Frequency (MHz)

4. Radiation Patterns

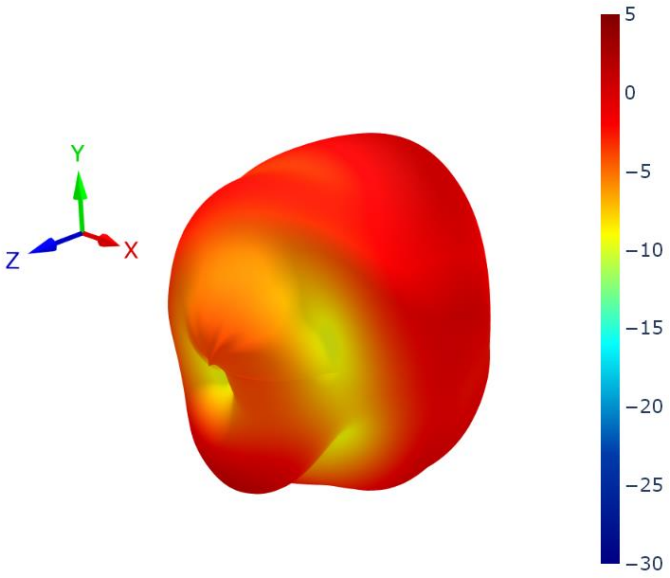
4.1 Test Setup

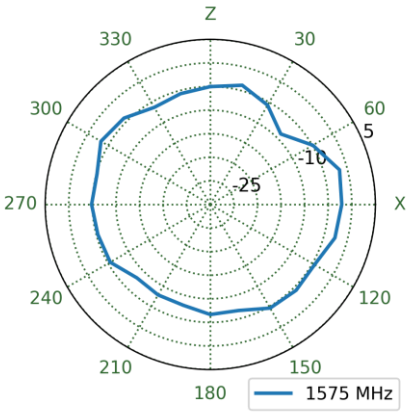
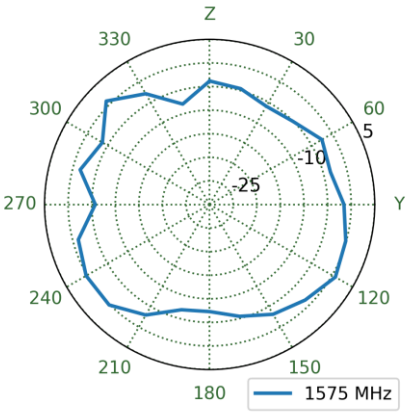
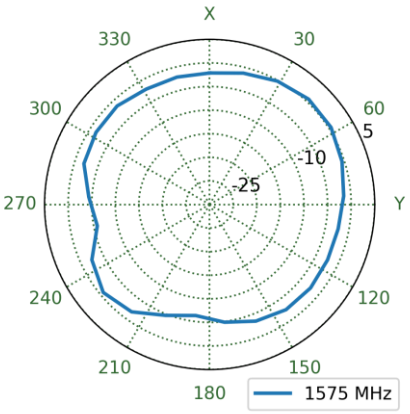




Cahmber Test Set-up

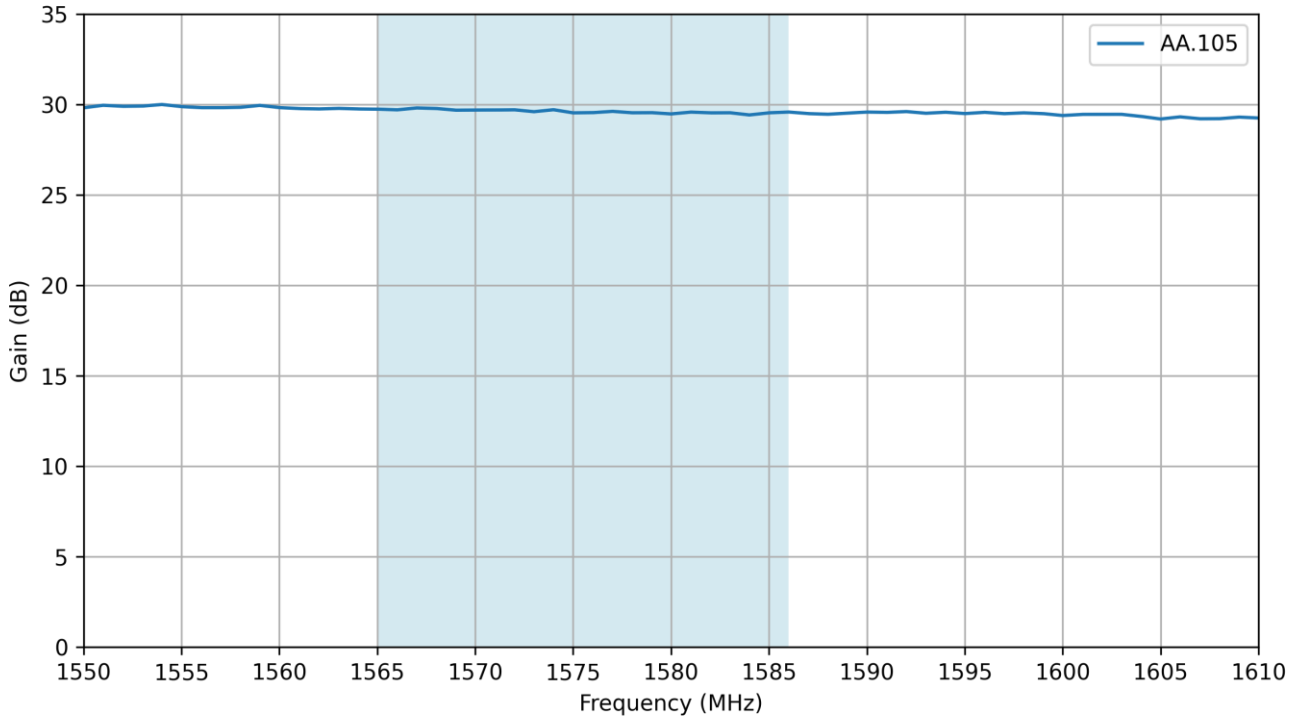
4.2 Patterns at 1575 MHz



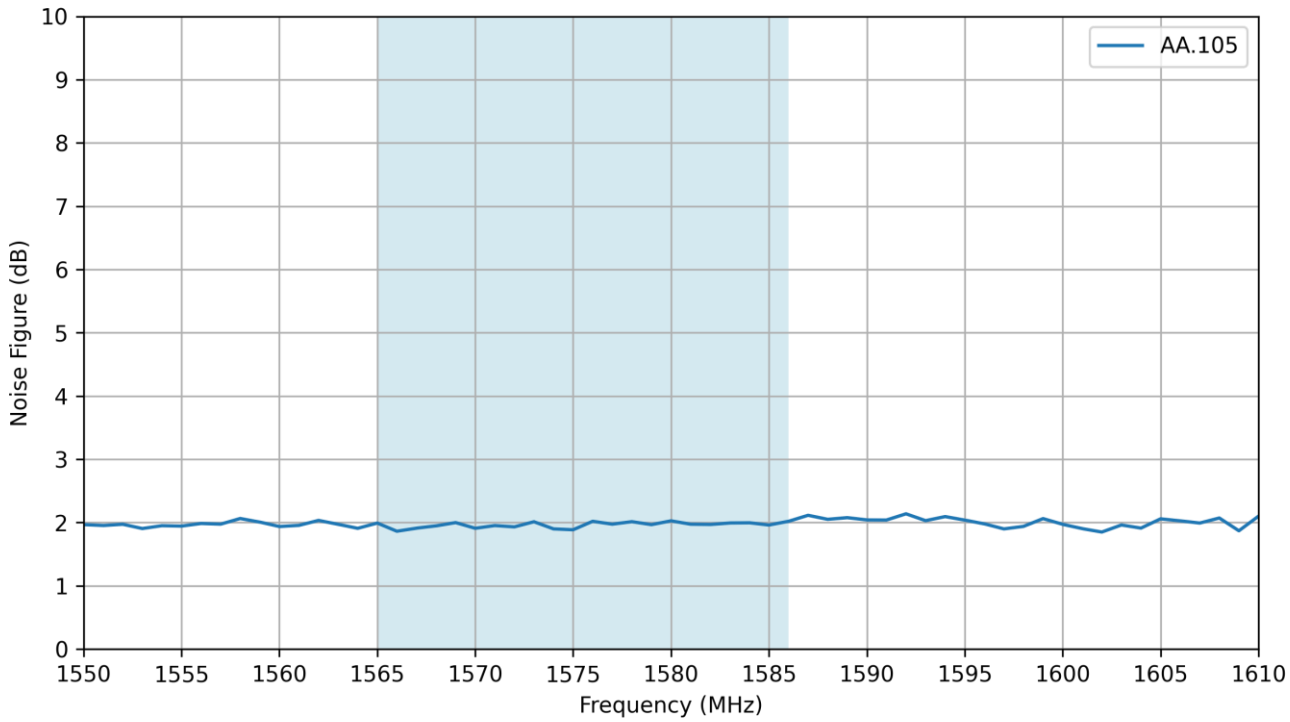
XZ Plane	YZ Plane	XY Plane
		

5. LNA Characteristics

5.1 Gain



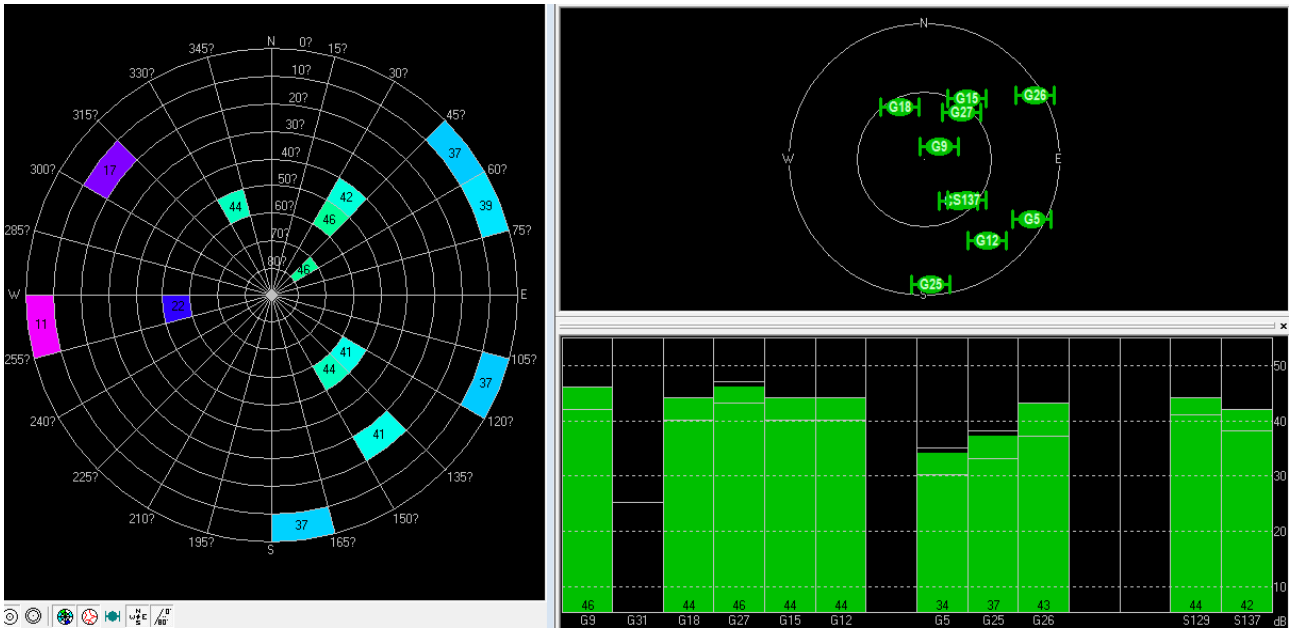
5.2 Noise Figure



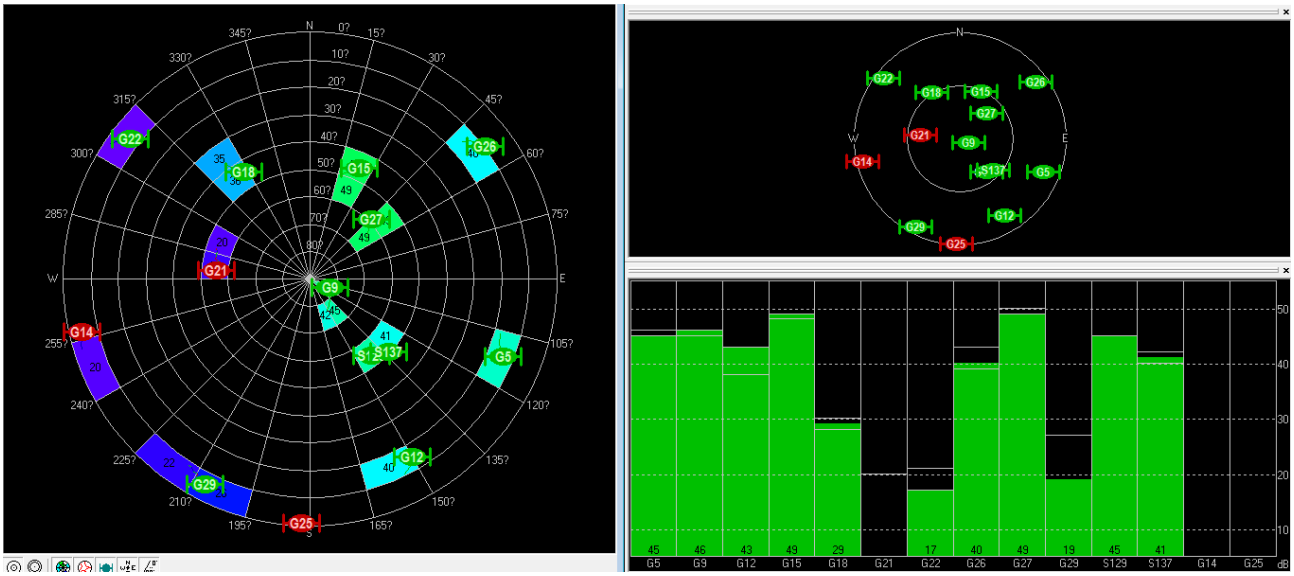
6. Field Test Results

Antenna was connected to a U-blox EVK-6H evaluation kit under open sky conditions.

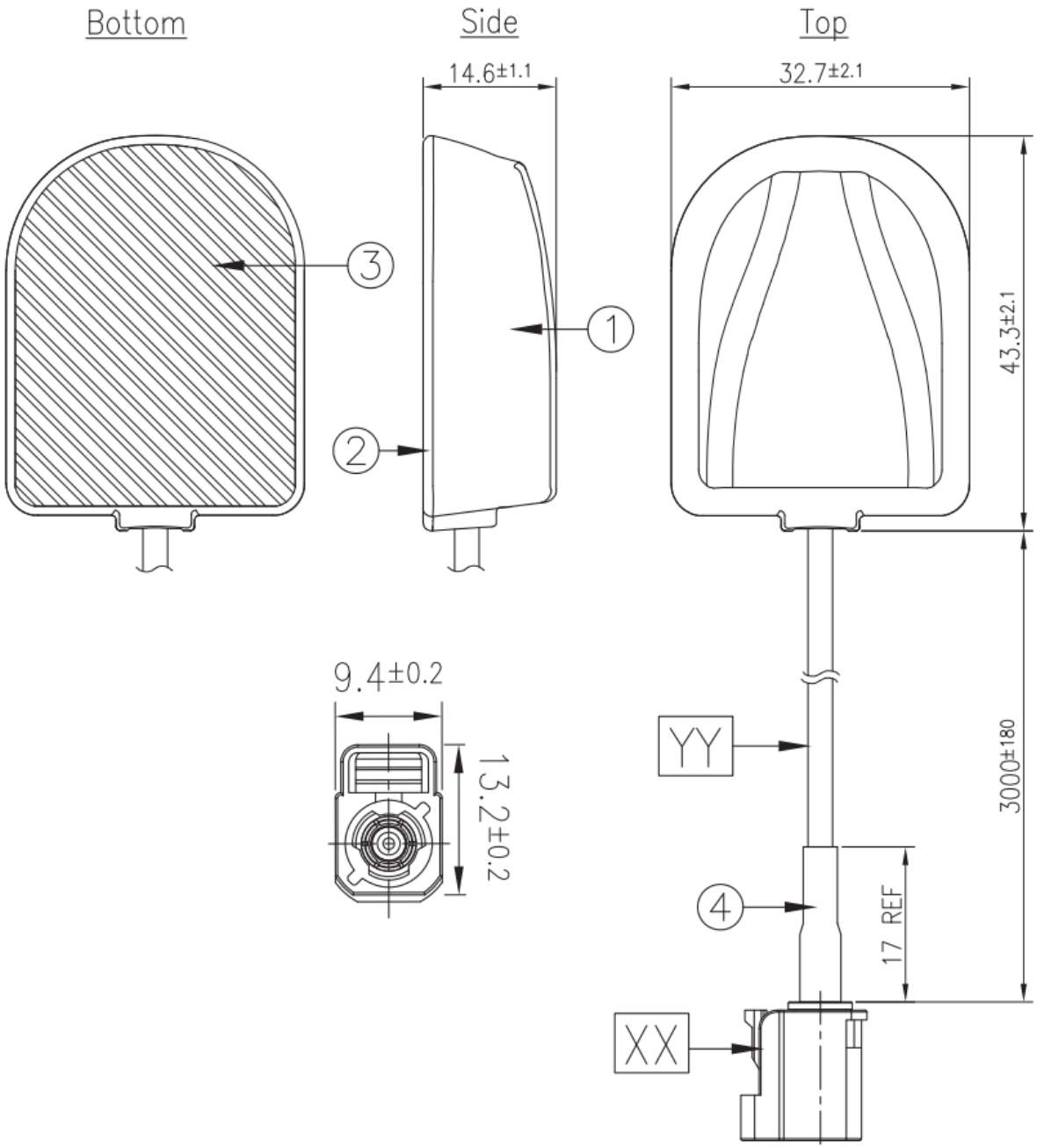
- 1.8 V- Cold Start needs typically 40 seconds.



- 3.3V - Cold Start needs typically 40 seconds.



7. Mechanical Drawing



	Name	P/N	Material	Finish	QTY
1	Housing Top	000111K000015A	PC	Black	1
2	Housing Bottom	000111K010015A	PC	Black	1
3	Sticker	001011J070015A	Matte Silver PET	Silver	1
4	Heat Shrink Tube	001315C020000A	PE	Black	1

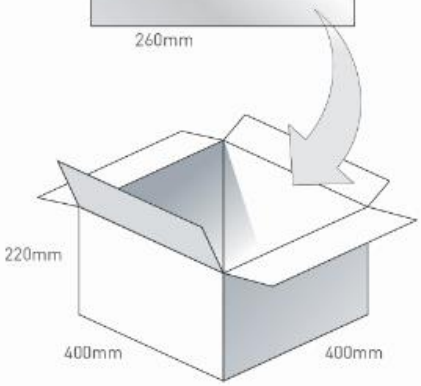
	Name	P/N	Spec	Finish	QTY
XX	Connector Type	202311G010003A	Fakra Code C	Blue	1
YY	Cable Type	301315C000000A	RG-174	Black	1

8. Packaging

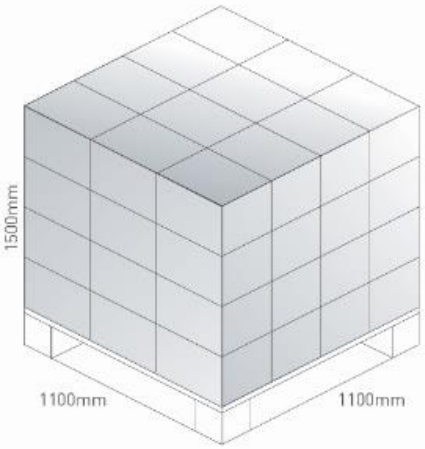
1 AA.105.301621 per PE bag
Bag Dimensions - 220*105mm
Total Weight - 72g

10pcs / PE bags per large PE Bag
Large Bag Dimensions - 260*460mm
Weight - 9.1Kg

12 Large PE Bags per Outer Carton
Carton Dimensions - 400*400*220mm
Weight - 9.6Kg



Pallet Dimensions 1100*1100*1500mm
48 Cartons per pallet
12 Cartons per layer
4 Layers



Changelog for the datasheet

SPE-12-8-025 – AA.105.301621

Revision: G (Current Version)	
Date:	2025-07-07
Changes:	Updated mechanical drawing in datasheet.
Changes Made by:	Conor McGrath

Previous Revisions

Revision: F	
Date:	2025-04-01
Changes:	Updated full datasheet template
Changes Made by:	Gary West

Revision: A (Original First Release)	
Date:	2012-03-08
Notes:	
Author:	Technical Writer

Revision: E	
Date:	2017-07-10
Changes:	Updated as per PCN -17-8-083
Changes Made by:	Andy Mahoney

Revision: D	
Date:	2015-07-05
Changes:	
Changes Made by:	Technical Writer

Revision: C	
Date:	2013-07-18
Changes:	
Changes Made by:	Technical Writer

Revision: B	
Date:	2012-08-21
Changes:	
Changes Made by:	Technical Writer

TAOGLAS®

www.taoglas.com