



# TAOGLAS®



# 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

|           |                                |           |
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## 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.

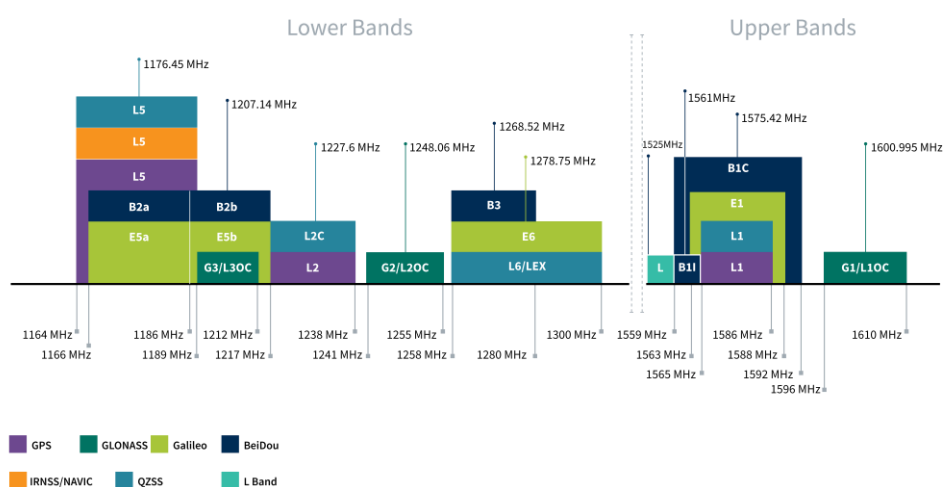
Typical Applications Include:

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

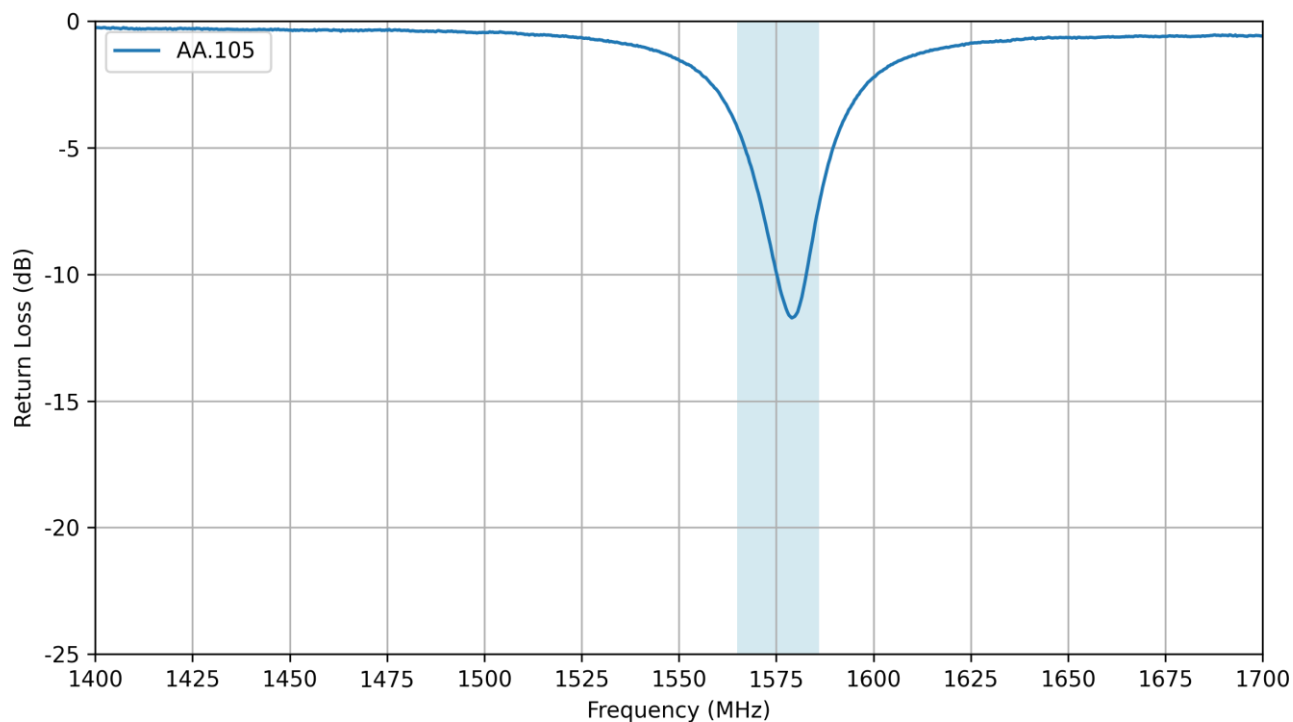
| LNA and Filter Electrical Properties |          |
|--------------------------------------|----------|
| Frequency (MHz)                      | 1575.42  |
| Gain (dB)                            | 29.55    |
| Noise Figure (dB)                    | 1.89     |
| P1dB (dBm)                           | 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) |

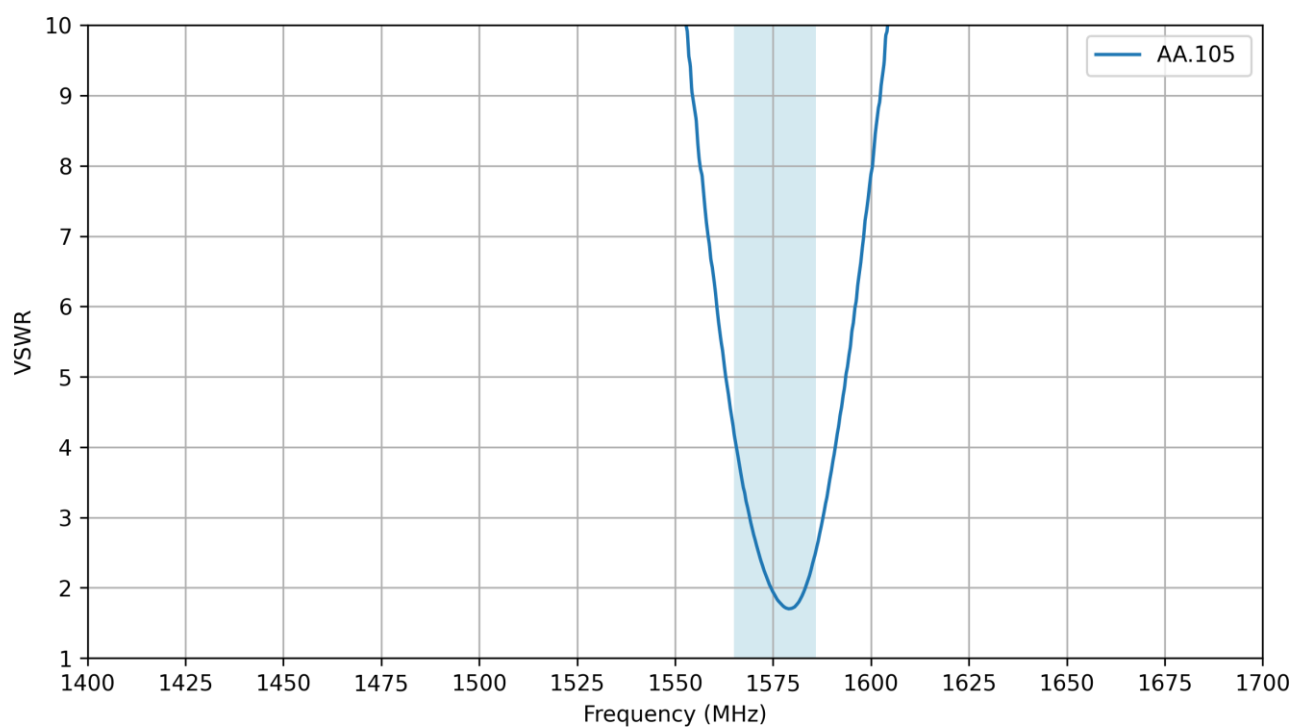
| Environmental         |               |
|-----------------------|---------------|
| Operation Temperature | -40°C ~ +85°C |
| Storage Temperature   | -40°C ~ +85°C |

## 3. Antenna Characteristics

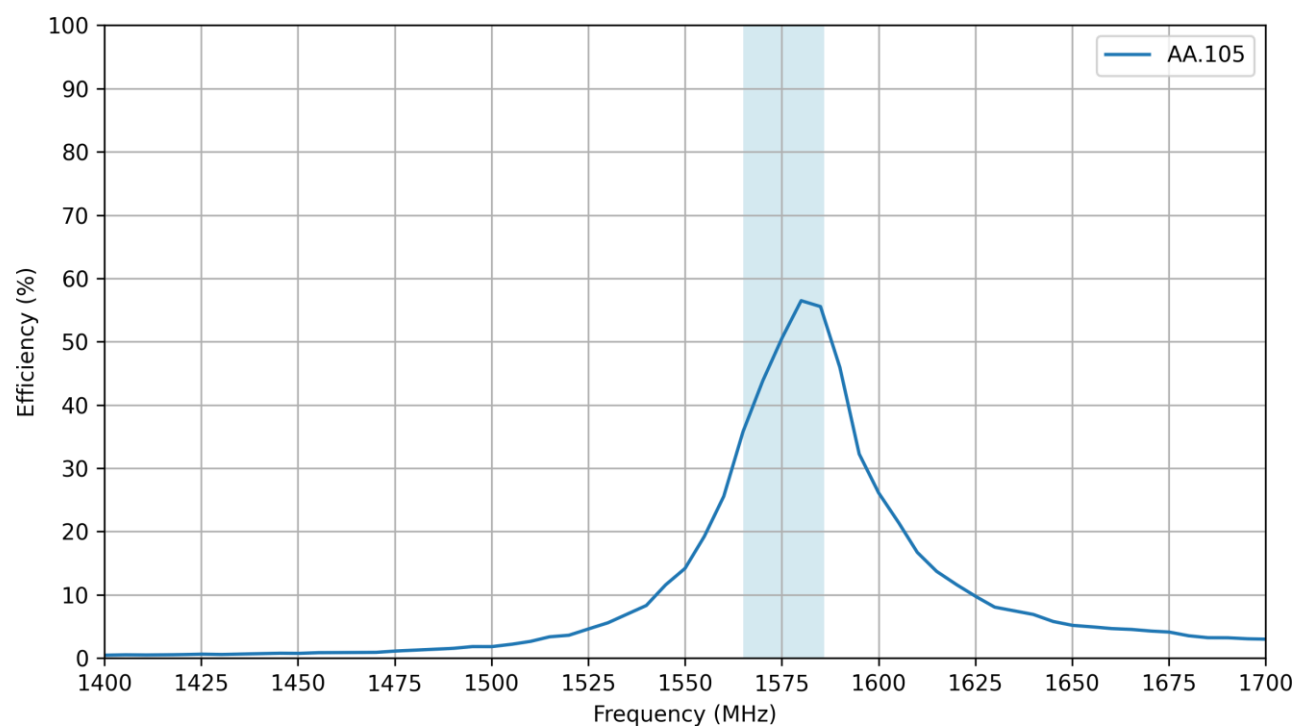
### 3.1 Return Loss



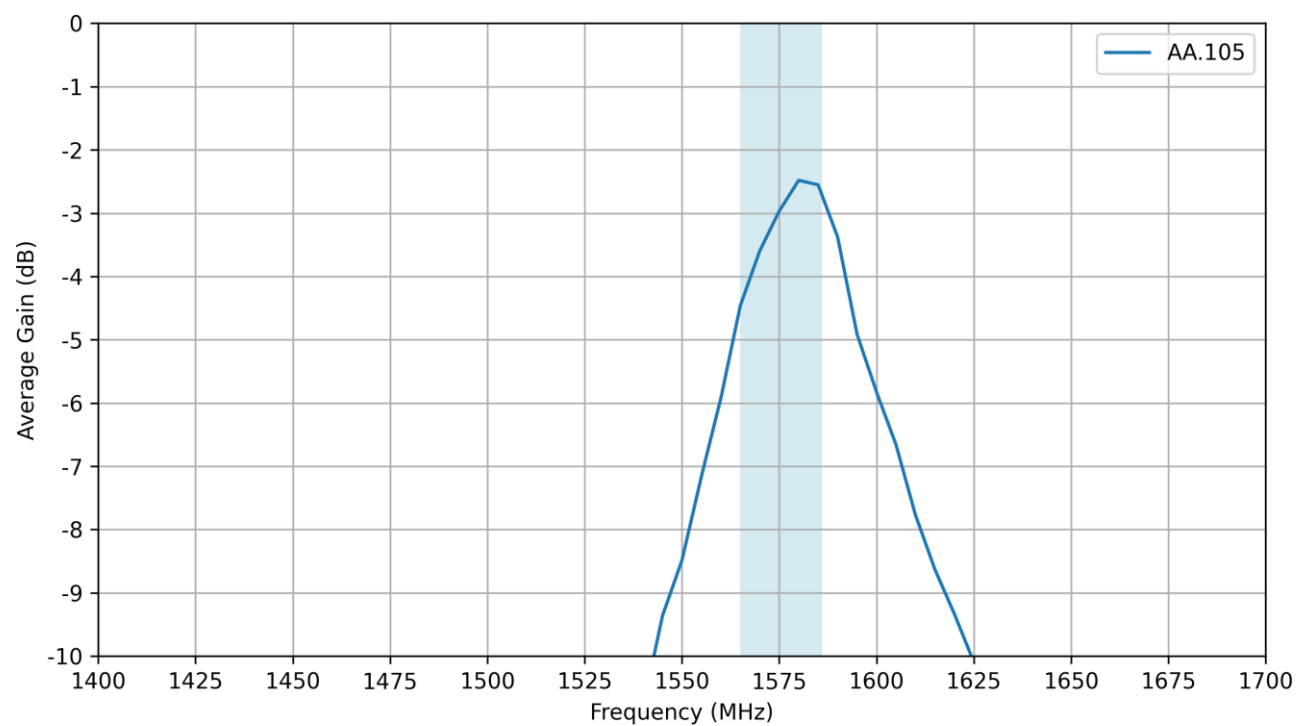
### 3.2 VSWR



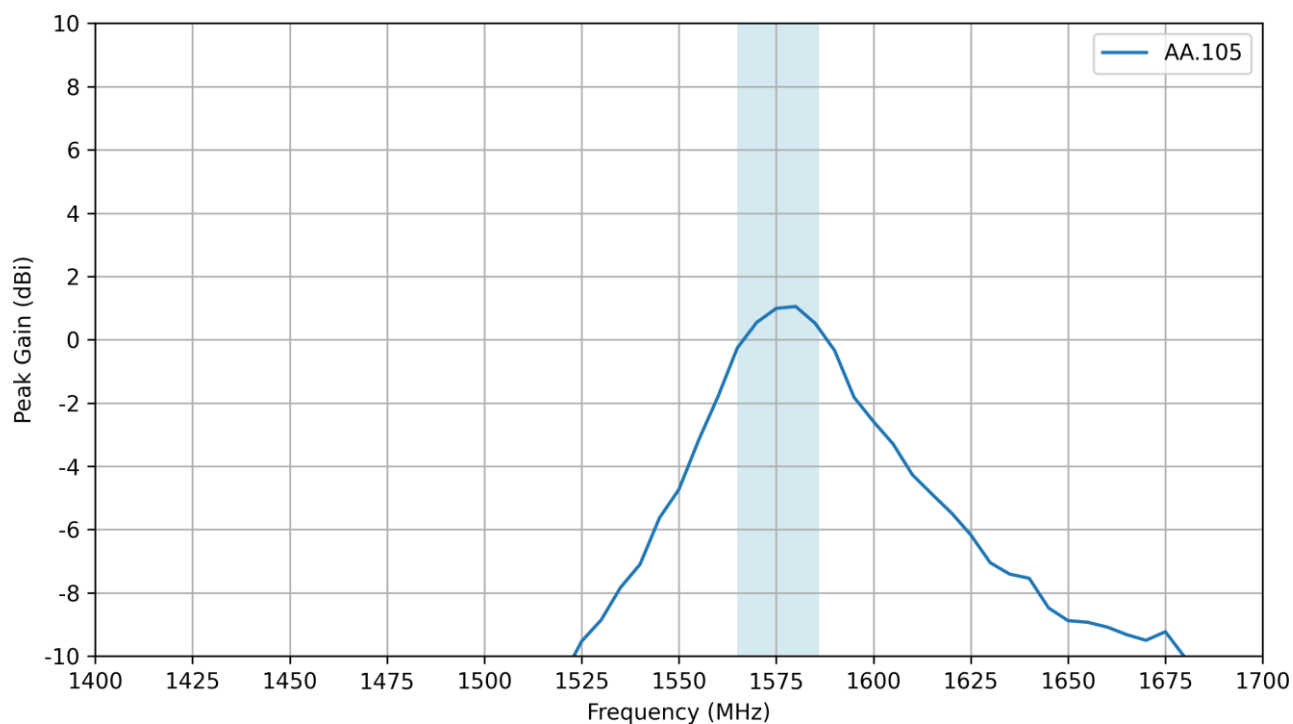
### 3.3 Efficiency



### 3.4 Average Gain

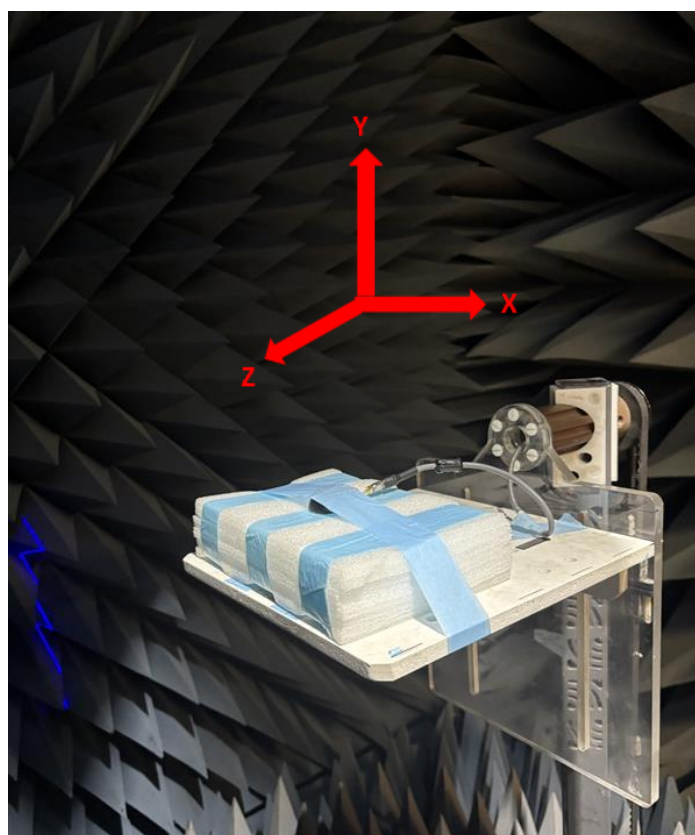
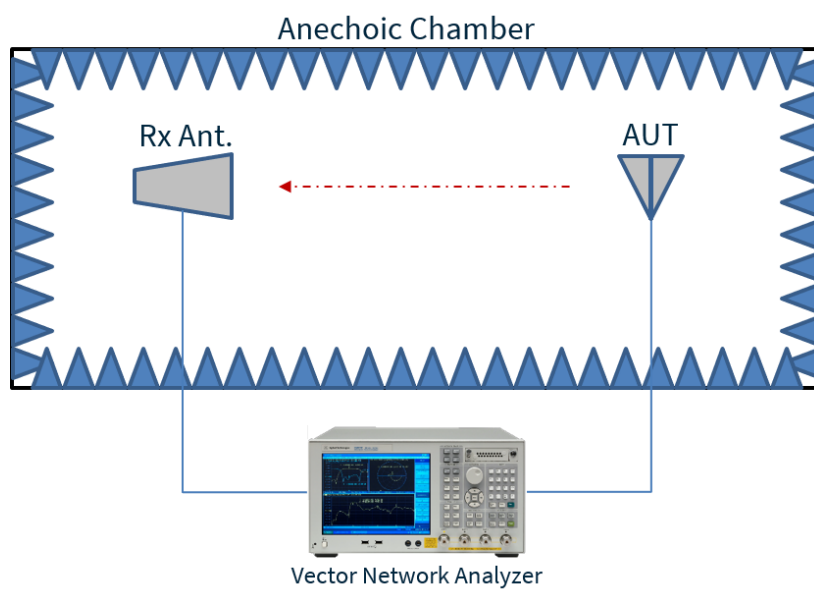


### 3.5 Peak Gain



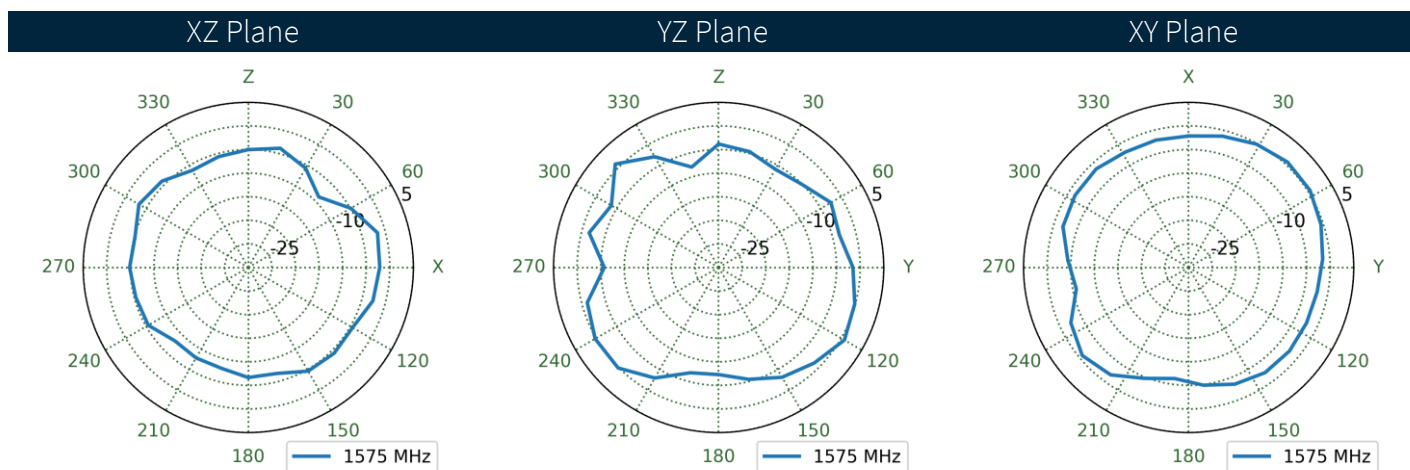
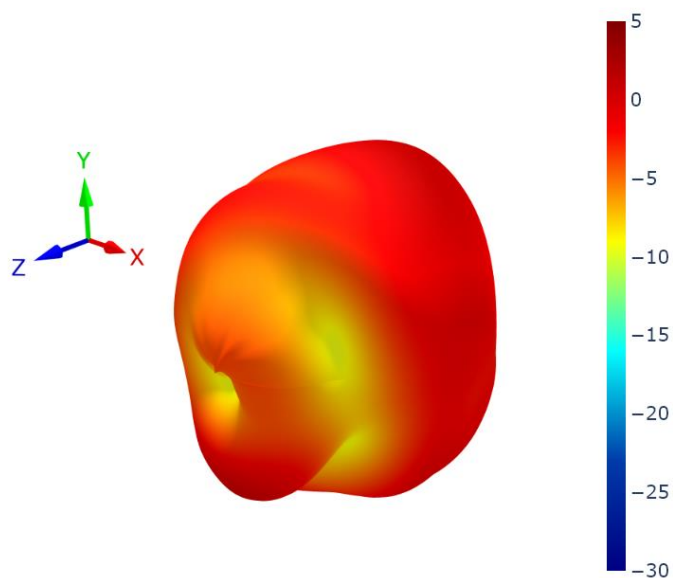
## 4. Radiation Patterns

### 4.1 Test Setup



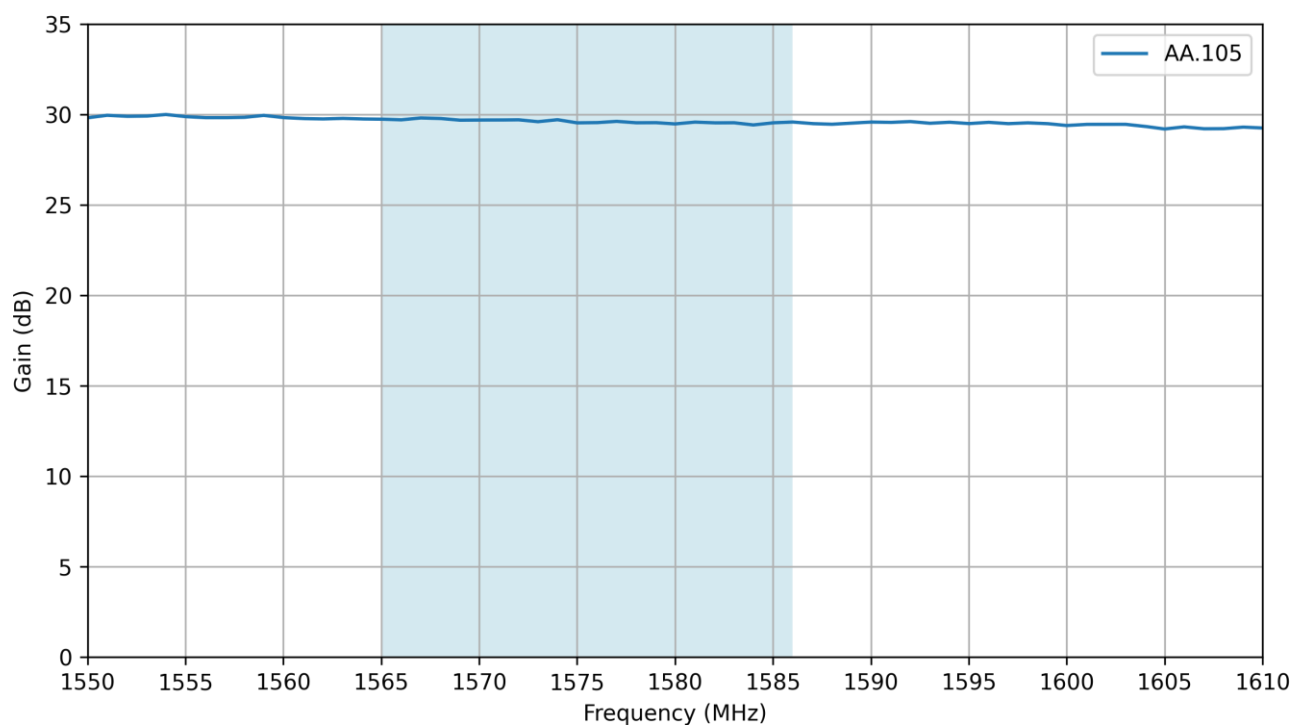
Chamber Test Set-up

## 4.2 Patterns at 1575 MHz

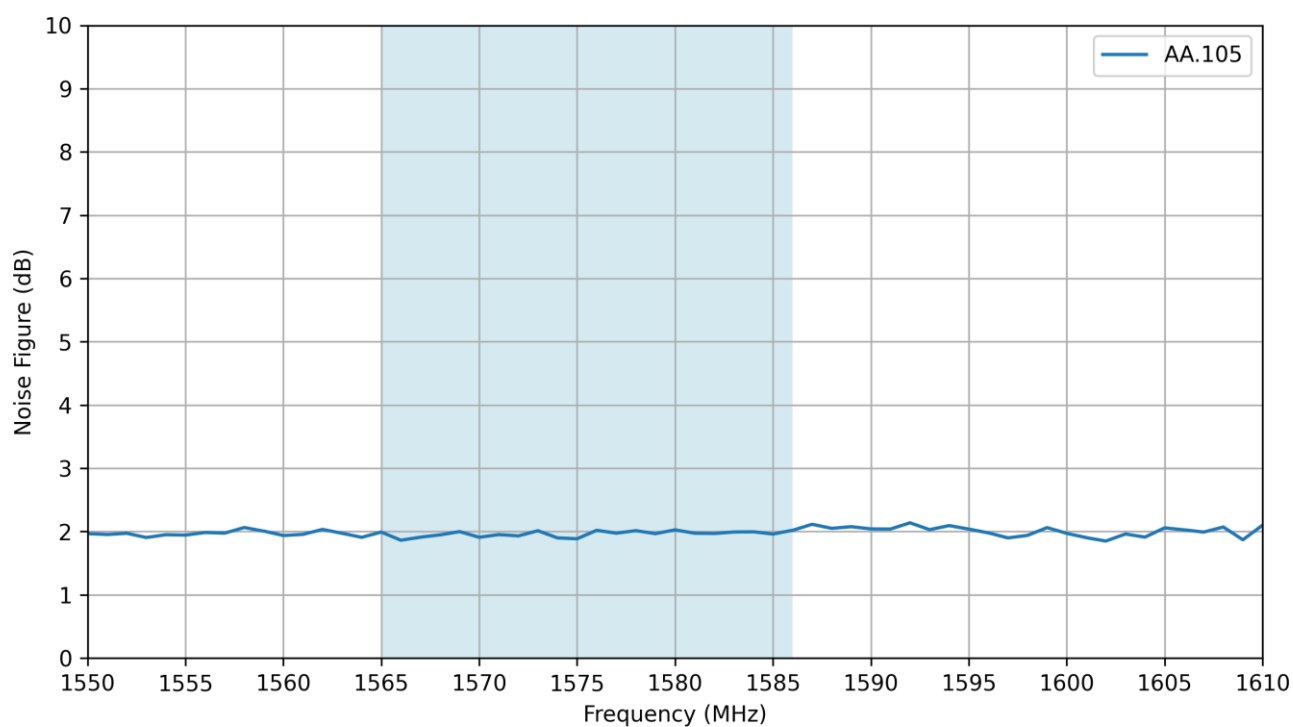


## 5. LNA Characteristics

### 5.1 Gain



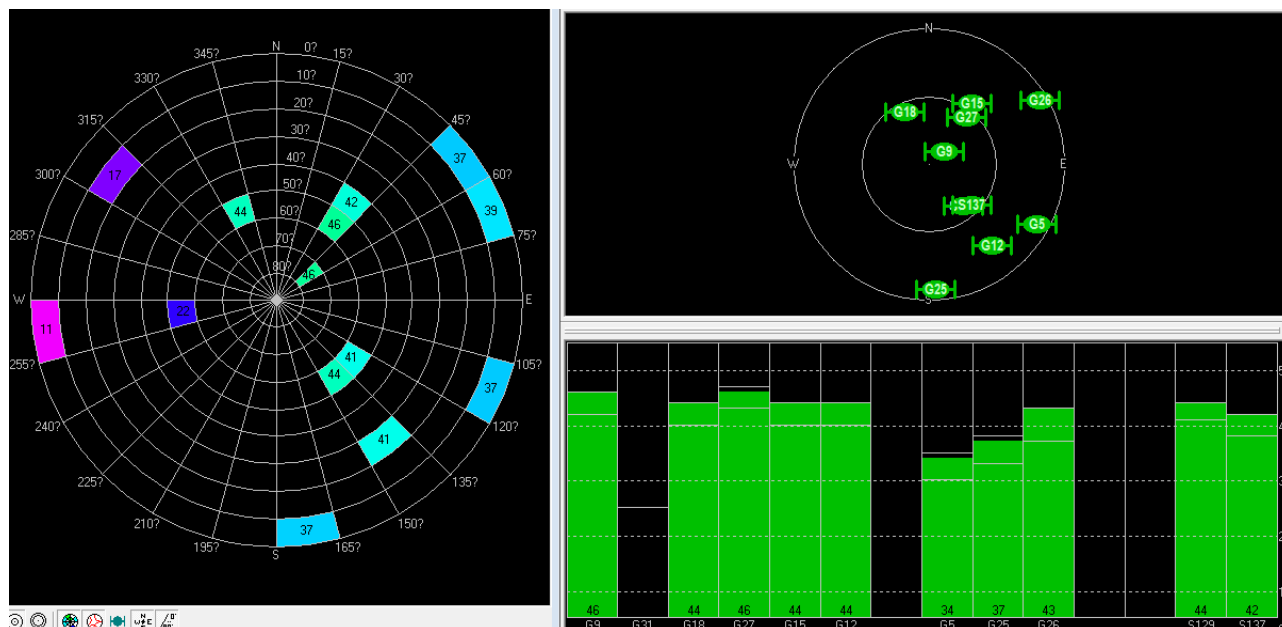
### 5.2 Noise Figure



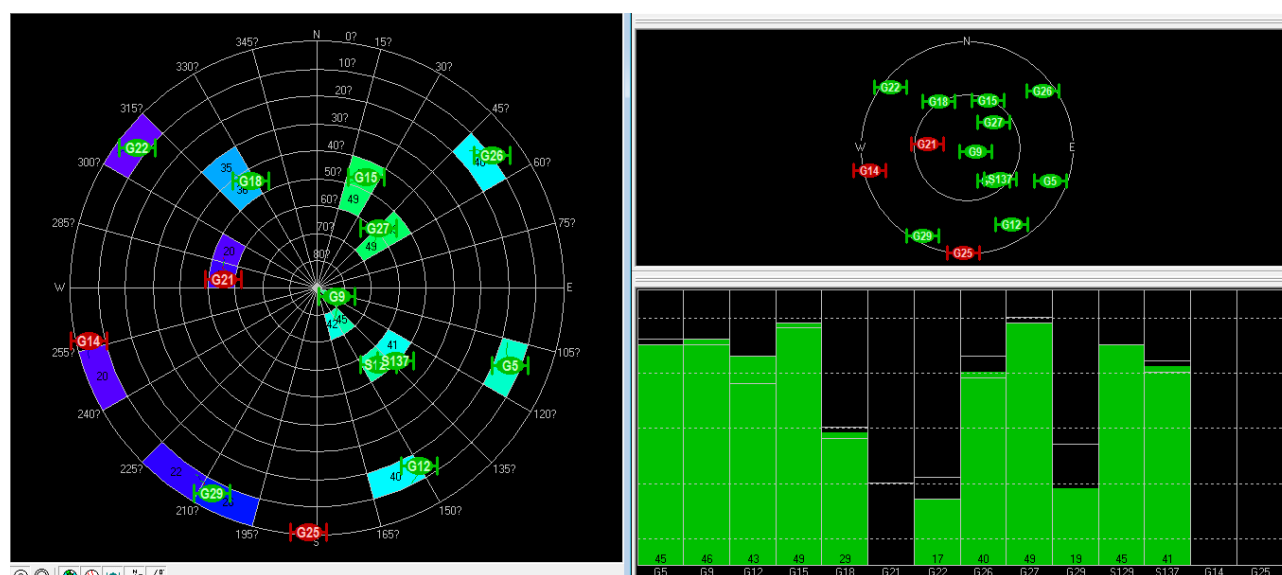
## 6. Field Test Results

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

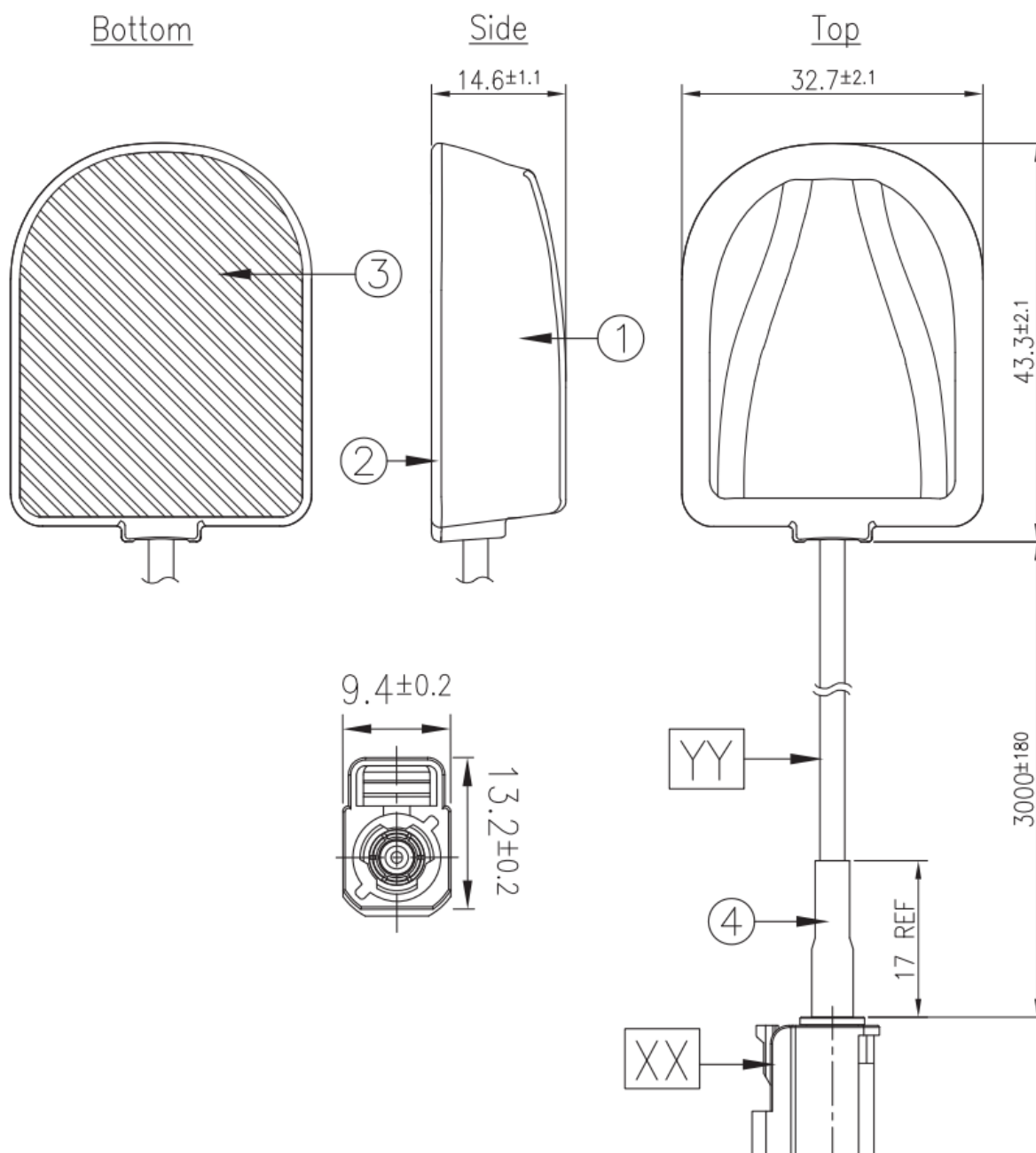
- 1.8 V- Cold Start needs typically 40 seconds.



- 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

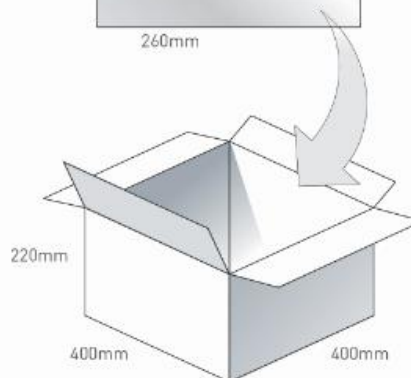
1 AA.105.301621 per PE bag  
Bag Dimensions - 220\*105mm  
Total Weight - 72g



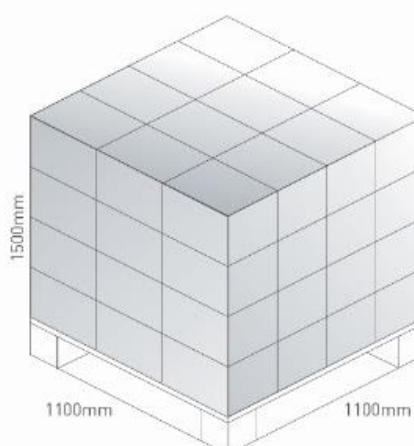
10pcs / PE bags per large PE Bag  
Large Bag Dimensions - 260\*460mm  
Weight - 9.1Kg



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 |



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