

# Datasheet

## AGGBP.SLS.35A Active GNSS Patch

**Part No:**  
AGGBP.SLS.35A.07.0060A

### Description:

35x35mm Single Stage GPS-GLONASS-GALILEO-BeiDou Embedded Active Patch Antenna Module with Front-End and Back-End SAW Filters

### Features:

- Full GPS-GLONASS-GALILEO-BeiDou Coverage
- 13.0 dB One-Stage LNA
- Ceramic Patch Element
- Front-End and Back-End SAW Filters to Reduce Out of Band Interference
- Wide Input voltage +1.8V to +5V
- Cable: 60mm  $\varnothing$ 1.13
- Connector: IPEX MHFI (U.FL)
- RoHS & REACH Compliant

|                               |    |
|-------------------------------|----|
| 1. Introduction               | 3  |
| 2. Specifications             | 4  |
| 3. Antenna Characteristics    | 6  |
| 4. Antenna Radiation Patterns | 8  |
| 5. LNA Characteristics        | 10 |
| 6. Mechanical Drawing         | 11 |
| 7. Packaging                  | 12 |
| <hr/>                         |    |
| Changelog                     | 13 |

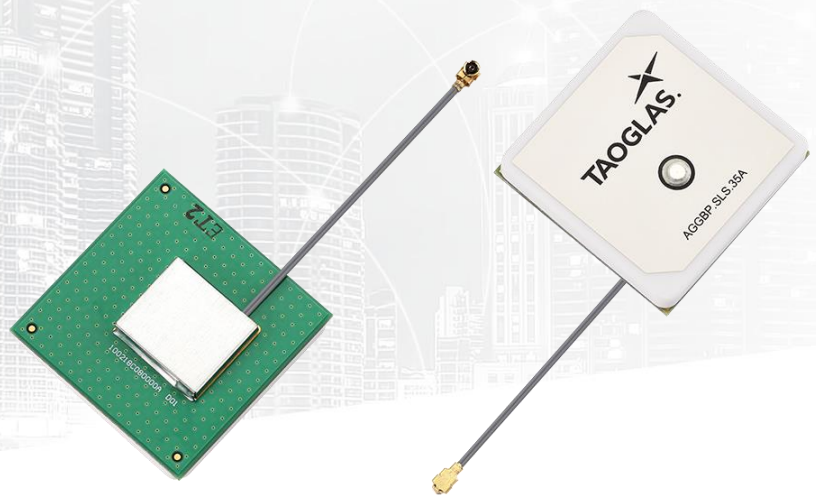
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# 1. Introduction



The Taoglas AGGBP.SLS.35A.07.0060A is an internal GPS/GLONASS/GALILEO/BeiDou active patch antenna with 13.0 dB LNA gain and excellent out-of-band rejection. These characteristics make the AGGBP.SLS.35A ideal for applications where the antenna will be placed near transmitters, such as cellular, Wi-Fi, Bluetooth, etc. within your enclosure.

Typical Applications Include:

- Asset Tracking
- Navigation
- Transportation

The front-end and back-end SAW filters feature very good rejection across all non-GNSS frequencies to prevent overdriving or damaging your GPS receiver from nearby transmitters. At the commonly used LTE frequencies between 700MHz-850MHz, the AGGBP.SLS.35A features greater than 60 dB of rejection. Between 1700MHz-1910MHz, the AGGBP.SLS.35A features greater than 45 dB of rejection.

Even with the excellent out of band rejection, the AGGBP.SLS.35A maintains a very low noise figure of 2.0 dB at 1575.42MHz. This low noise figure minimizes the overall signal degradation typically caused by losses in transmission lines.

For further optimization to customer specific device environments, custom tuned patch antennas can be supplied for a MOQ. For more details please contact your regional Taoglas sales office.

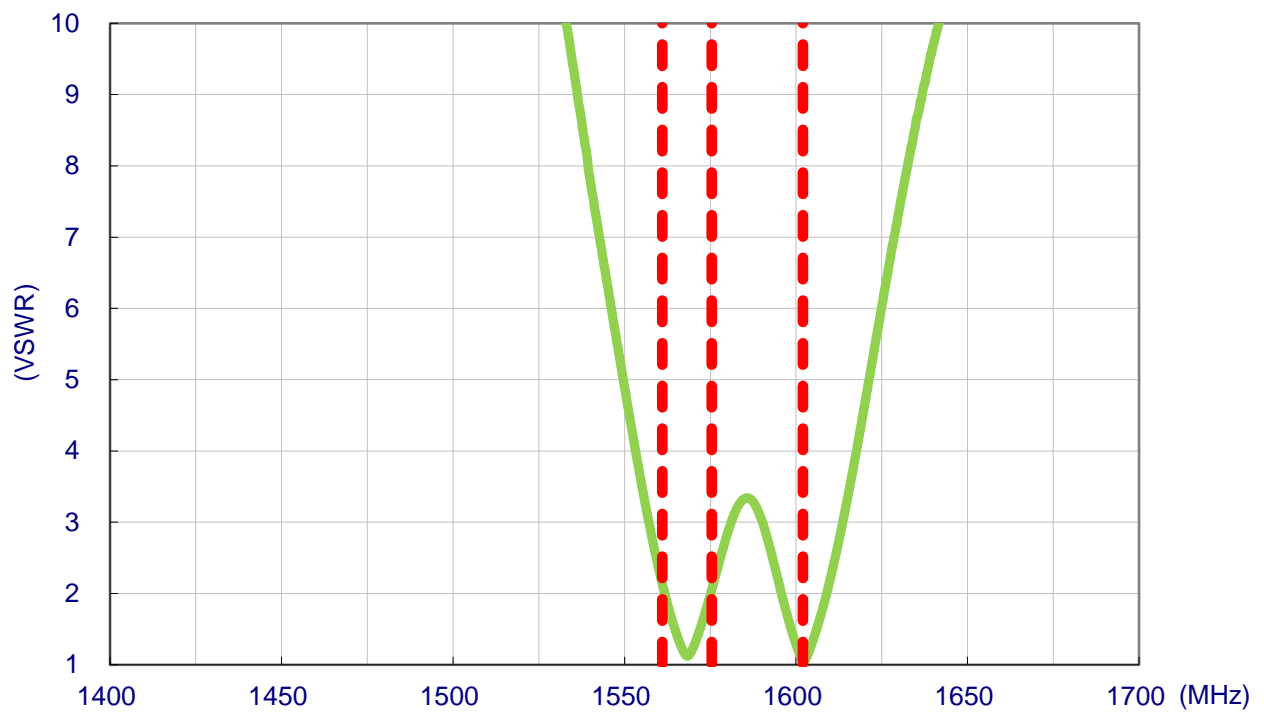
## 2. Specifications

| GNSS Frequency Band |                                     |                                     |                          |                                     |                                     |                          |                                     |
|---------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| GPS/QZSS            | L1<br>1575.42MHz                    | L2<br>1227.6MHz                     | L5<br>1176.45MHz         | L6<br>1278.75MHz                    |                                     |                          |                                     |
|                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            |                                     |                          |                                     |
| GLONASS             | L5R<br>1176.45MHz                   | L3PT<br>1201.5MHz                   | L2PT<br>1246MHz          | L1CR<br>1575.42MHz                  | L1PT<br>1602MHz                     |                          |                                     |
|                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                          |                                     |
| Galileo             | E5a<br>1176.45MHz                   | E5b<br>1201.5MHz                    | E4<br>1215MHz            | E3<br>1256MHz                       | E6<br>1278.75MHz                    | E2<br>1561MHz            | E1<br>1575.42MHz                    |
|                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| BeiDou              | B1<br>1561MHz                       | B2<br>1207.14MHz                    | B3<br>1268.52MHz         |                                     |                                     |                          |                                     |
|                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |                                     |                          |                                     |
| Compass             | E5B(B2)/ E6(B3)<br>1268.56MHz       | E2(B1)<br>1561MHz                   |                          |                                     |                                     |                          |                                     |
|                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                          |                                     |                                     |                          |                                     |
| SBAS                | Omnistar<br>1542.5MHz               | WAAS/EGN OS<br>1575.42MHz           |                          |                                     |                                     |                          |                                     |
|                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                          |                                     |                                     |                          |                                     |

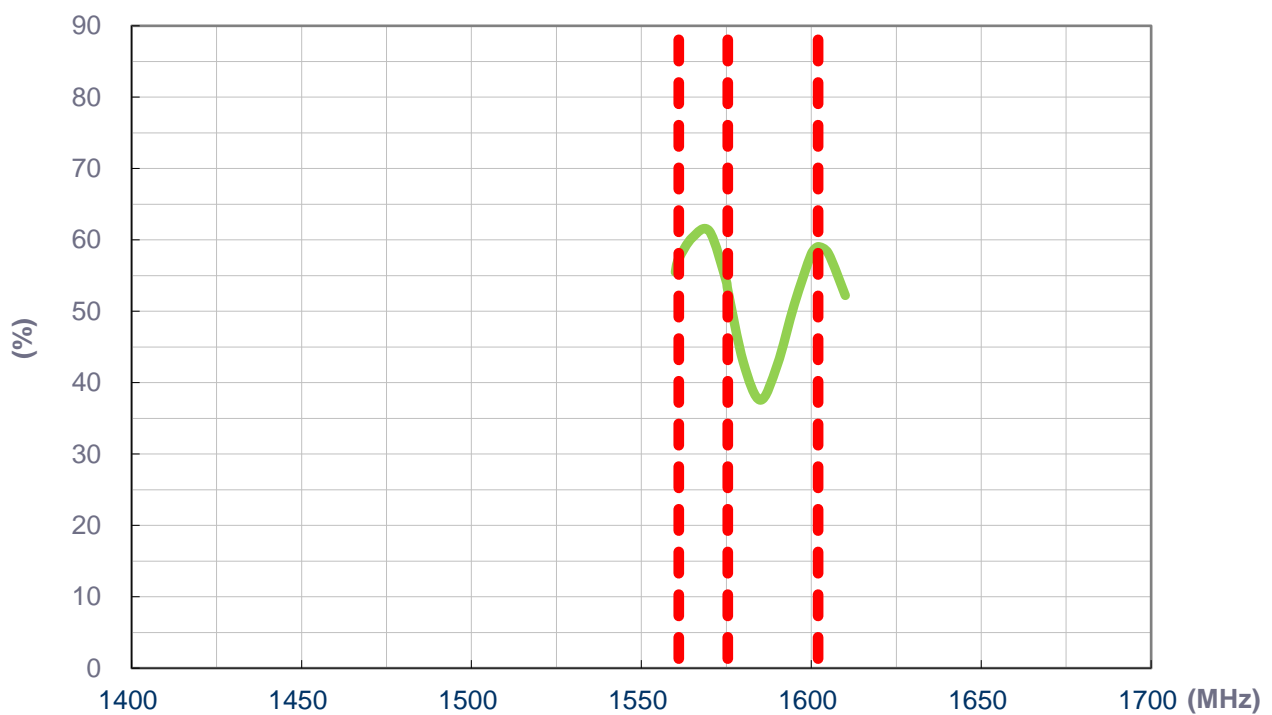
| Electrical                                 |                                  |             |           |
|--|----------------------------------|-------------|-----------|
| Frequency                                  | BeiDou                           | GPS/GALILEO | GLONASS   |
|  | 1561MHz                          | 1575.42MHz  | 1602MHz   |
| Efficiency (%)                             | 57.4                             | 53.0        | 59.1      |
| Average Gain (dBi)                         | -2.41                            | -2.75       | -2.29     |
| Peak Gain (dBi)                            | 2.79                             | 2.23        | 1.32      |
| Impedance                                  | 50Ω                              |             |           |
| Polarization                               | RHCP                             |             |           |
| LNA Specification                          |                                  |             |           |
| Gain (dB)                                  | 13.1 ± 1                         | 13.8 ± 1    | 13.7 ± 1  |
| NF (dB)                                    | 2.5 ± 0.2                        | 2.0 ± 0.2   | 2.3 ± 0.2 |
| Input Voltage                              | +1.8 to +5 VDC                   |             |           |
| Power Consumption                          | 3 to 24.5 mA typical             |             |           |
| Out-Of-Band Attenuation (dB)               | 10-840MHz                        |             | > 60      |
|  | 840-1500MHz                      |             | > 50      |
|  | 1700-2000MHz                     |             | > 45      |
|  | 2000-3250MHz                     |             | > 40      |
|  | 3250-5000MHz                     |             | > 45      |
|  | 5000-6000MHz                     |             | > 30      |
| Mechanical                                 |                                  |             |           |
| Ceramic Dimension                          | 35 x 35 x 3.5mm                  |             |           |
| Total Dimension (Including Shielding Case) | 35 x 35 x 8.6mm                  |             |           |
| Connector                                  | IPEX MHFI (U.FL)                 |             |           |
| Cable                                      | Coaxial Cable ø1.13, length 60mm |             |           |
| Weight                                     | 21g                              |             |           |
| Environmental                              |                                  |             |           |
| Operation Temperature                      | -40°C to 85°C                    |             |           |
| Storage Temperature                        | -40°C to 85°C                    |             |           |
| Humidity                                   | Non-condensing 65°C 95% RH       |             |           |

### 3. Antenna Characteristics

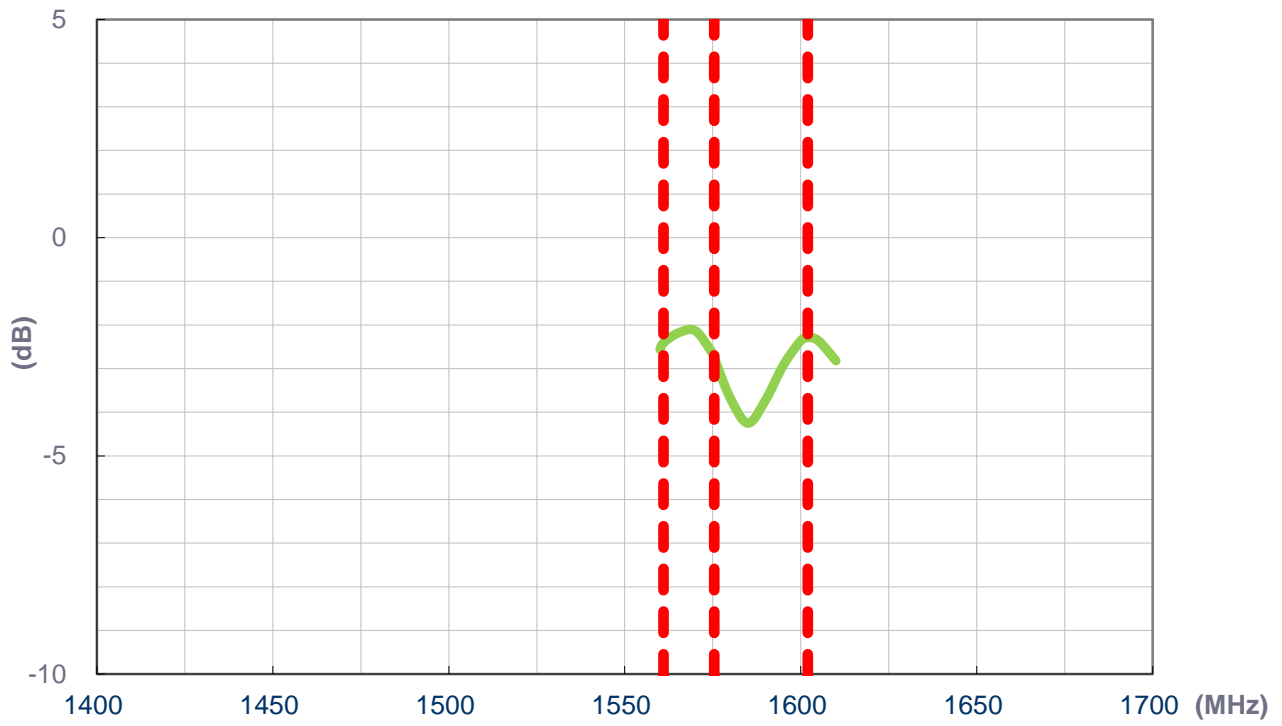
#### 3.1 VSWR



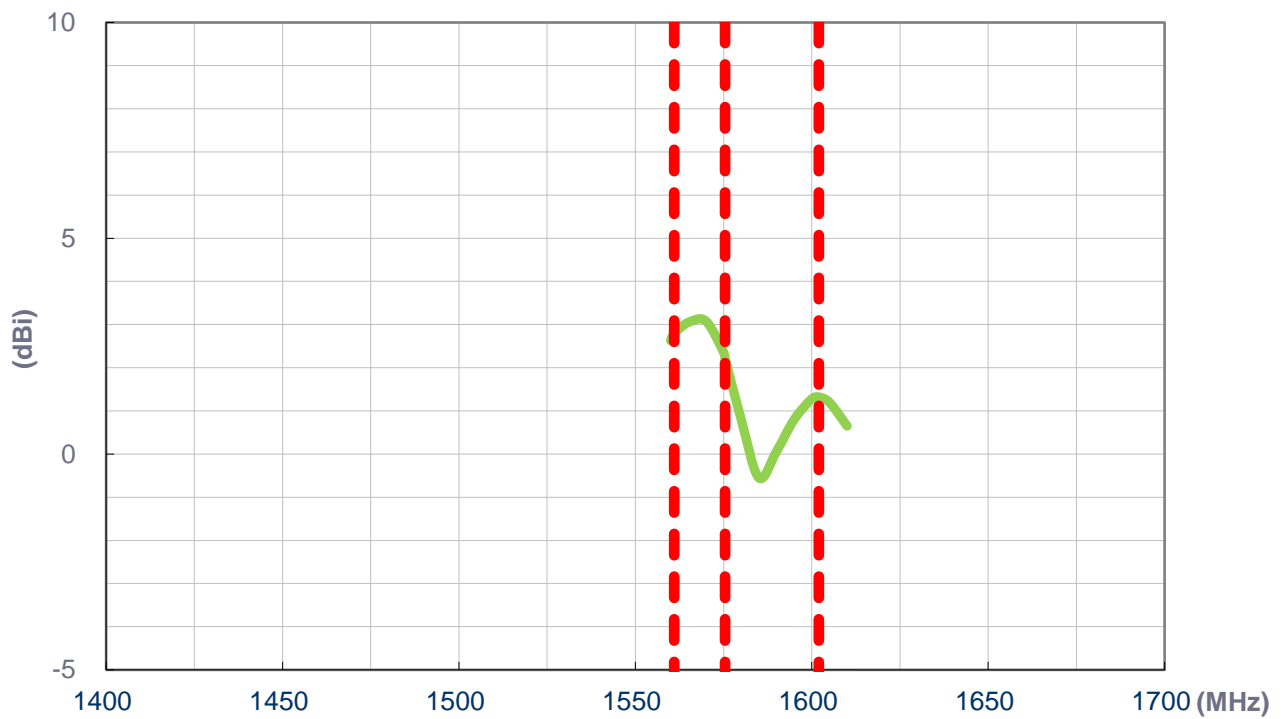
#### 3.2 Efficiency



### 3.3 Average Gain

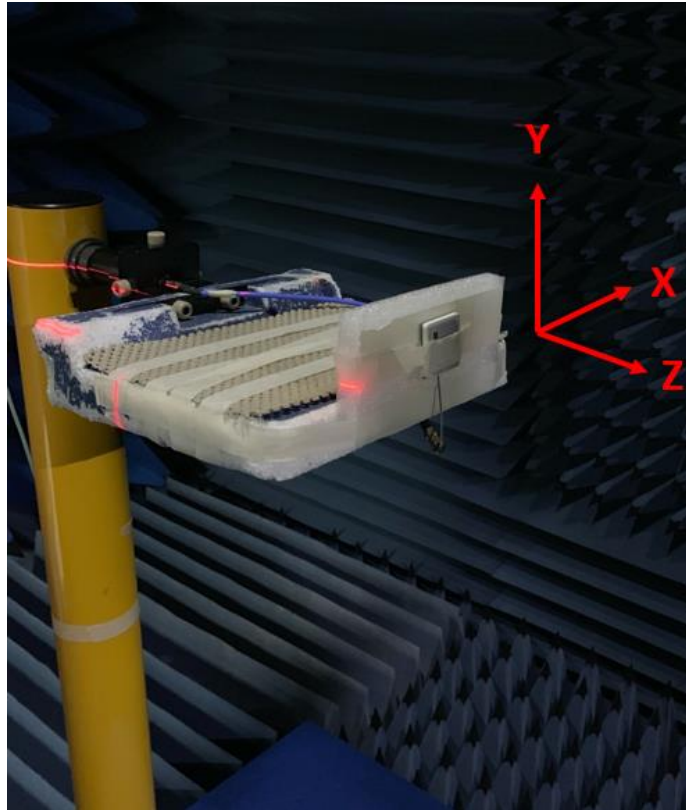


### 3.4 Peak Gain



## 4. Antenna Radiation Patterns

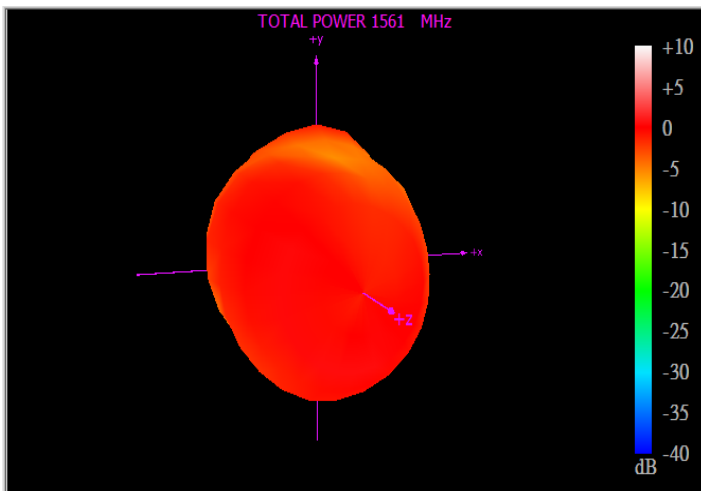
### 4.1 Test Setup



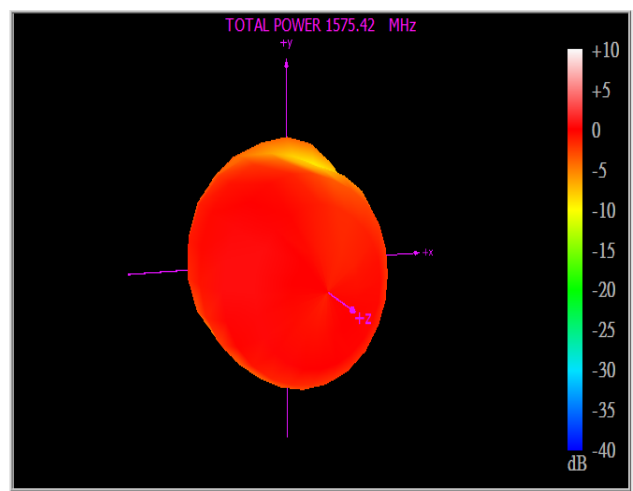
Free Space



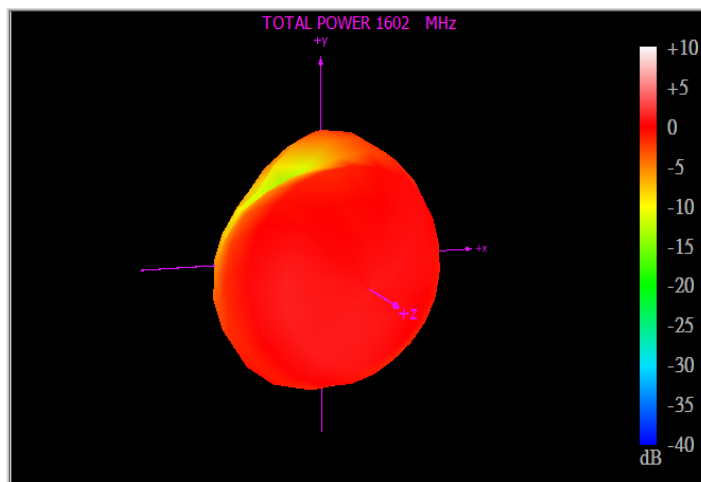
## 4.2 2D & 3D Radiation Patterns



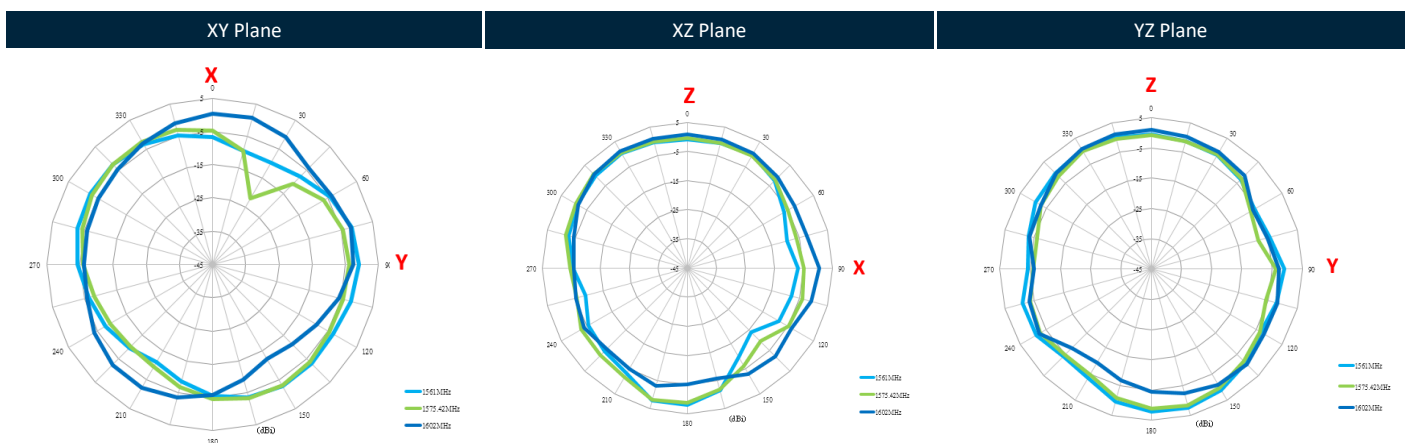
1561MHz



1575.42MHz

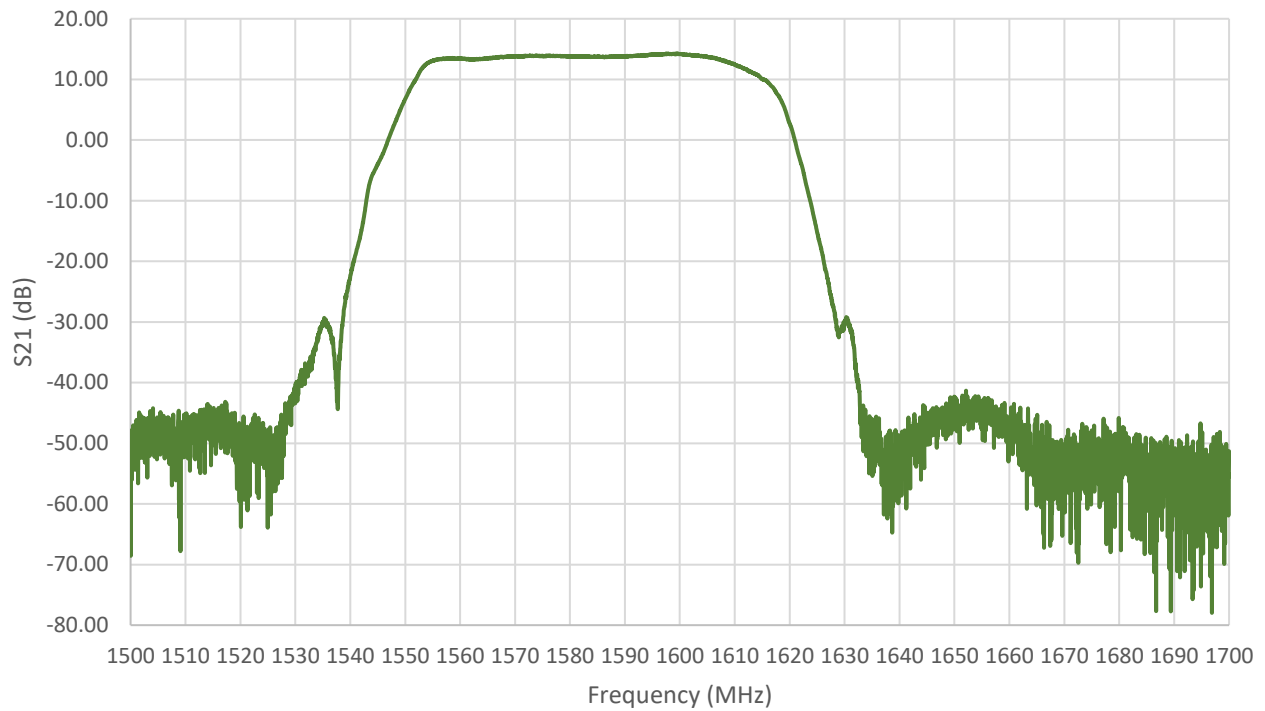


1602MHz

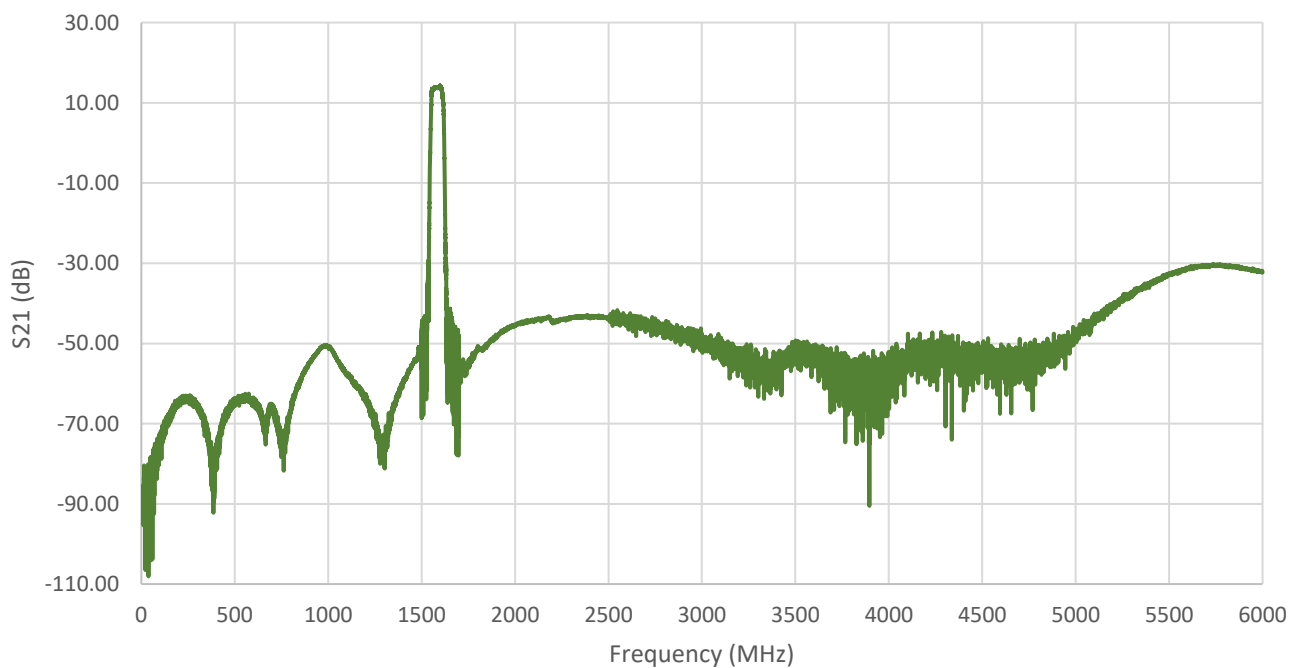


## 5. LNA Characteristics

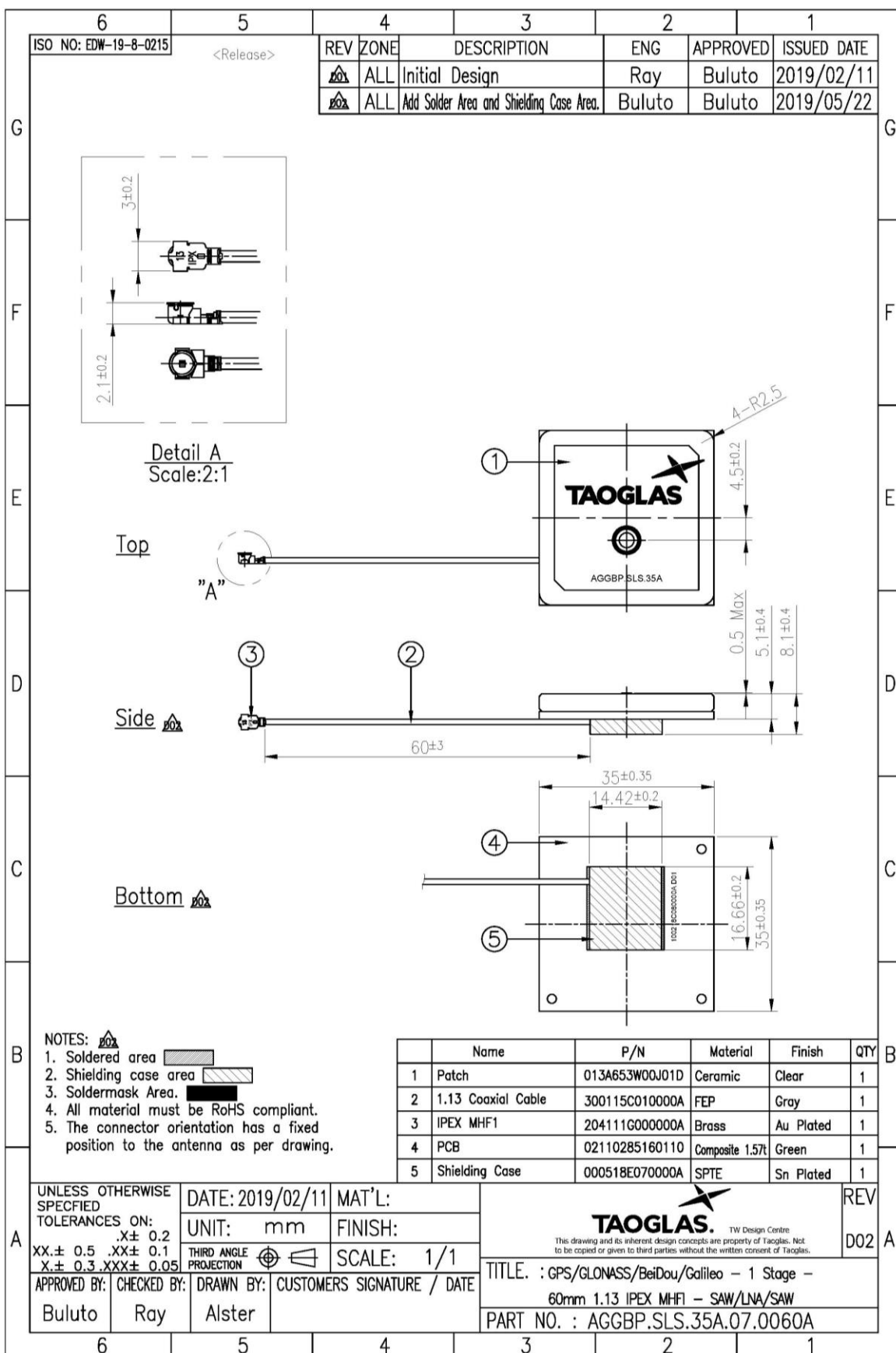
### 5.1 LNA In-Band S21



### 5.2 LNA Wideband S21

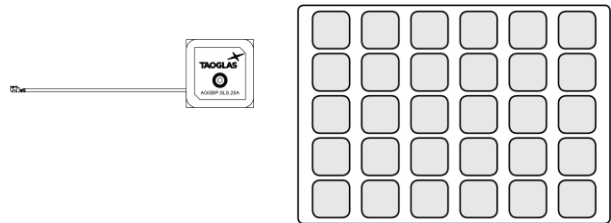


# 6. Mechanical Drawing (Units: mm)



## 7. Packaging

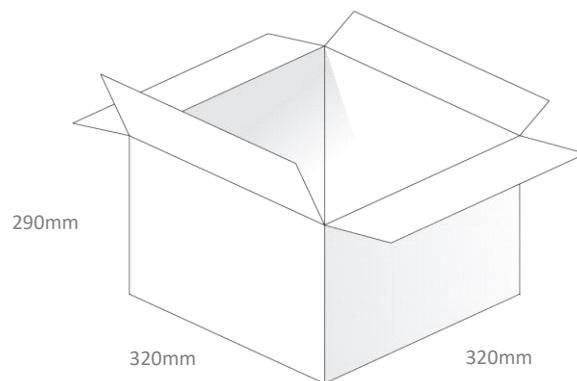
30pcs AGGBP.SLS.35A.07.0060A per Tray  
Weight: 870g



180pcs AGGBP.SLS.35A.07.0060A per PE Bag  
Bag Dimensions: 365\*300\*25 mm  
Weight: 5.22Kg



540pcs AGGBP.SLS.35A.07.0060A per carton  
Dimensions: 390\*320\*290mm  
Weight: 15.66Kg



Changelog for the datasheet

**SPE-19-8-079 – AGGBP.SLS.35A.07.0060A**

**Revision: B (Current Version)**

|         |   |
|---------|---|
| Date:   | 2022-05-13                                  |
| Notes:  | Updated power consumption in LNA spec table |
| Author: | Gary West                                   |

**Previous Revisions**

**Revision: A (Original First Release)**

|         |             |
|---------|-------------|
| Date:   | 2019-06-20  |
| Notes:  |             |
| Author: | Jack Conroy |