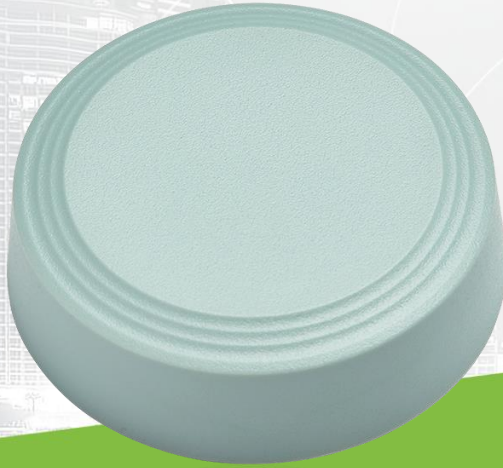




TAOGLAS®



Datasheet

Direct Mount GPS L1 Active Antenna

Part No:
A.60.3A21

Description:

High Gain, High Rejection Active GPS Direct Mount Antenna

Features:

30dB Gain

Rejection >60dB between 1 – 1000MHz
>40dB between 2000 – 6000MHz

Permanent Mount

Wide Input Voltage Range (1.8V to 12V)

Low Profile Vandal Resistant PC/ABS Enclosure

IP67 Rated (When mounted), UV Stabilized Enclosure

Connector: MCX(F)

Dimensions: \varnothing : 44.3mm and Height: 13mm

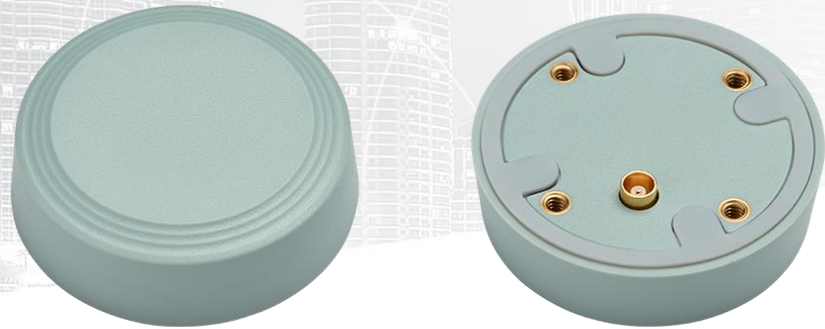
RoHS & Reach Compliant

1. Introduction	3
2. Specifications	4
3. Antenna Characteristics	6
4. LNA Specifications	9
5. 2D Radiation Patterns	10
6. 3D Radiation Patterns	12
7. Mechanical Drawing	13
8. Packaging	14
<hr/>	
Changelog	15

Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited. Copyright © Taoglas Ltd.



1. Introduction



The Taoglas A.60, an active GPS antenna, is a high-performance, high-rejection GPS L1(1575.42MHz), external permanent mount antenna. It has a high gain of 30dB all enclosed in a with a diameter of just 44.3mm and an extremely low height of 13mm. With its miniature enclosure the A.60 is a great direct mount GNSS solution used for timing applications near Wi-Fi and Cellular transmitters.

The integrated SAW filters feature very good rejection across all non-GPS frequencies to prevent overdriving or damaging your GPS receiver from nearby transmitters. At the commonly used LTE frequencies between 700MHz-850MHz, the A.60 features greater than 60 dB of rejection. Between 1700MHz-1910MHz, the A.60 features approximately 50 dB of rejection. Even with the very good out of band rejection, the A.60 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.

The enclosure is IP67 rated and when mounted, making it ideal for use in harsh, humid and wet environments. The enclosure is made from durable UV resistant PC, weighing in at only 26g (<1oz), making it extremely light and economical for shipping. The A.60 antenna has a high efficiency of 63% and system gain of 31.18dB.

Typical applications include:

- Base Stations
- Connected Enterprise
- Navigation

The A.60 comes with a direct mount MCX female connector and 4 x 4-40 UNC screw holes for ease of installation. Contact your regional Taoglas Customer Support team for further information.

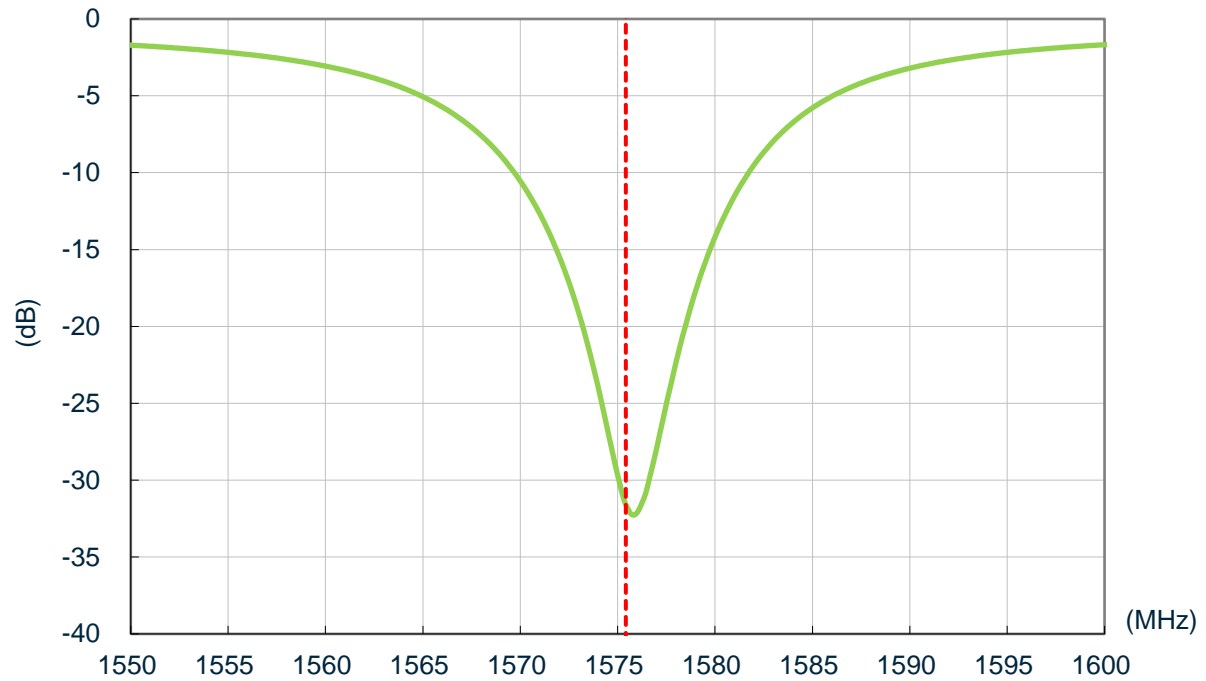
2. Specifications

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

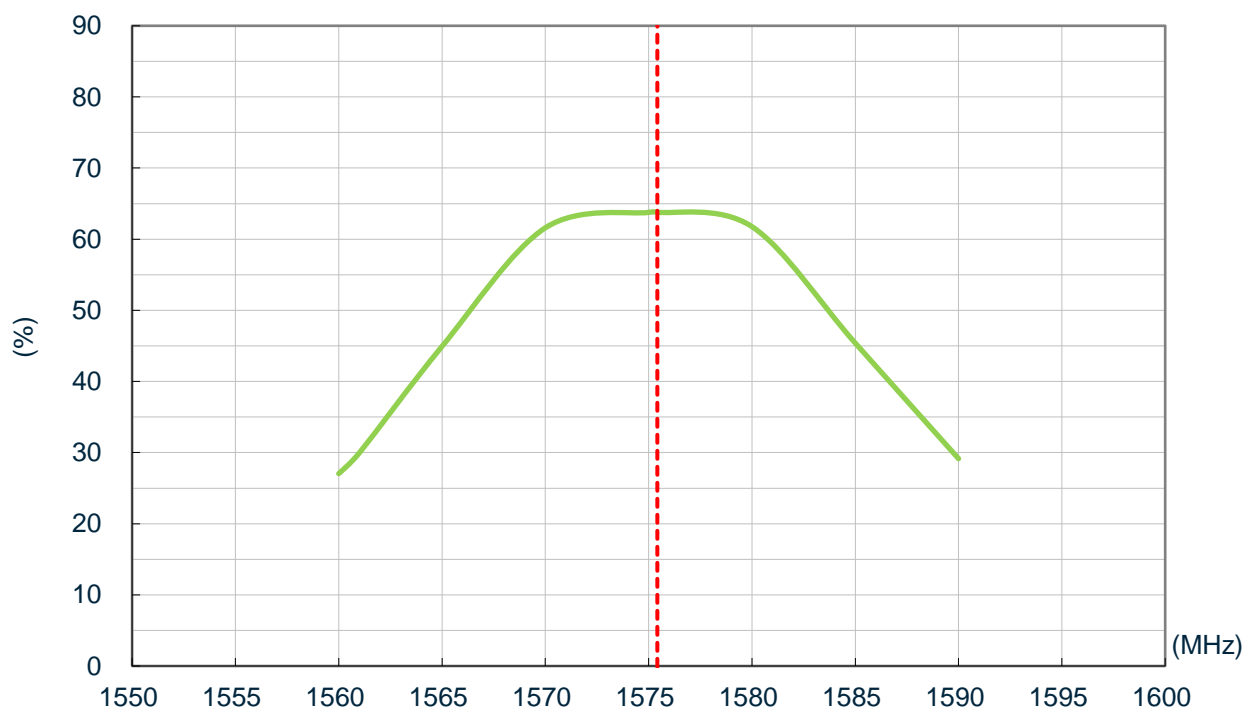
Antenna Specification	
Center Frequency	1575.42 MHz \pm 1.023 MHz
Efficiency	63.8%
Peak Gain(dBi)	1.18
Average Gain(dB)	-1.95
Axial Ratio (dB) at Zenith	1.69
Polarization	RHCP
Impedance	50 Ohms
LNA Specification	
Gain	31.18dB Typical
DC Power Input	+1.9 to +12V
Noise Figure	2.0 dB Typical
Power Consumption	<8 mA Typical
Out of Band Rejection	700-850MHz: >60dB 1700-1910MHz: >50dB
Input P1dB	-29 dBm
Mechanical	
Dimensions	Diameter: 44.3mm : Height: 13mm
Connector	MCX(F) Jack
Weight	26g(<1oz)
Mounting Type	Screw Mount
Enclosure Colour & Material	Federal Grey 26373 - PC/ABS
Environmental	
Storage Temp	-40 to +85C
Operating Temp	-40 to +85C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

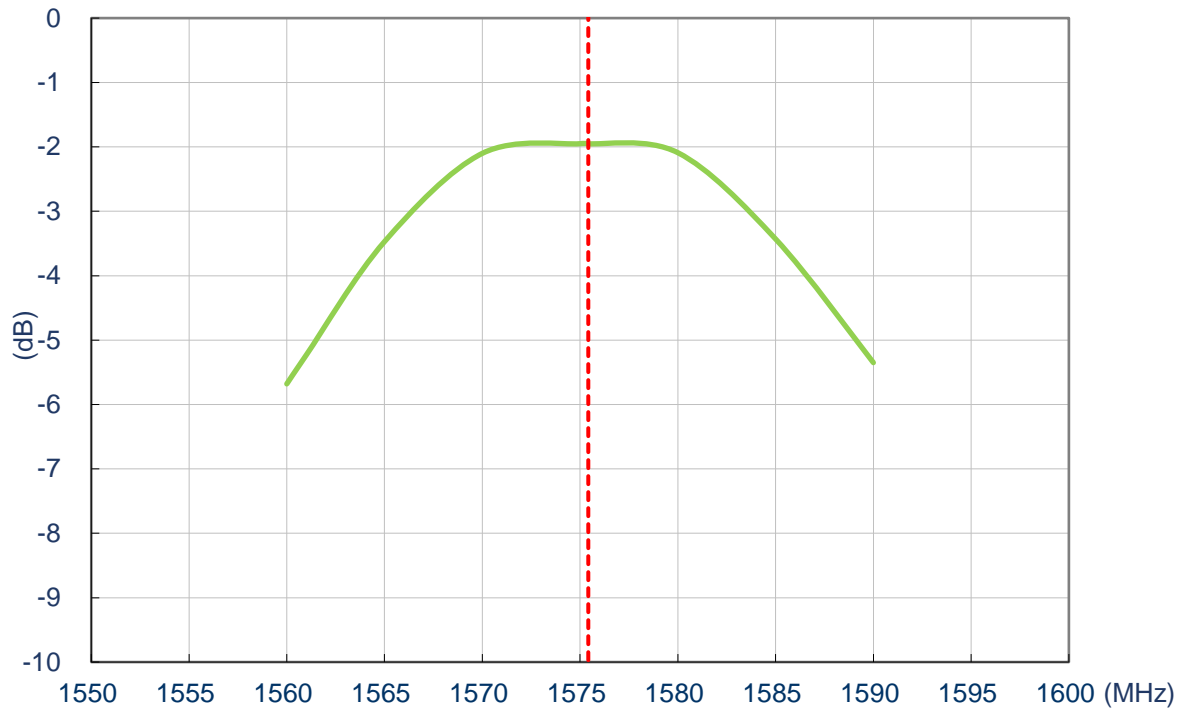
3.1 Return Loss



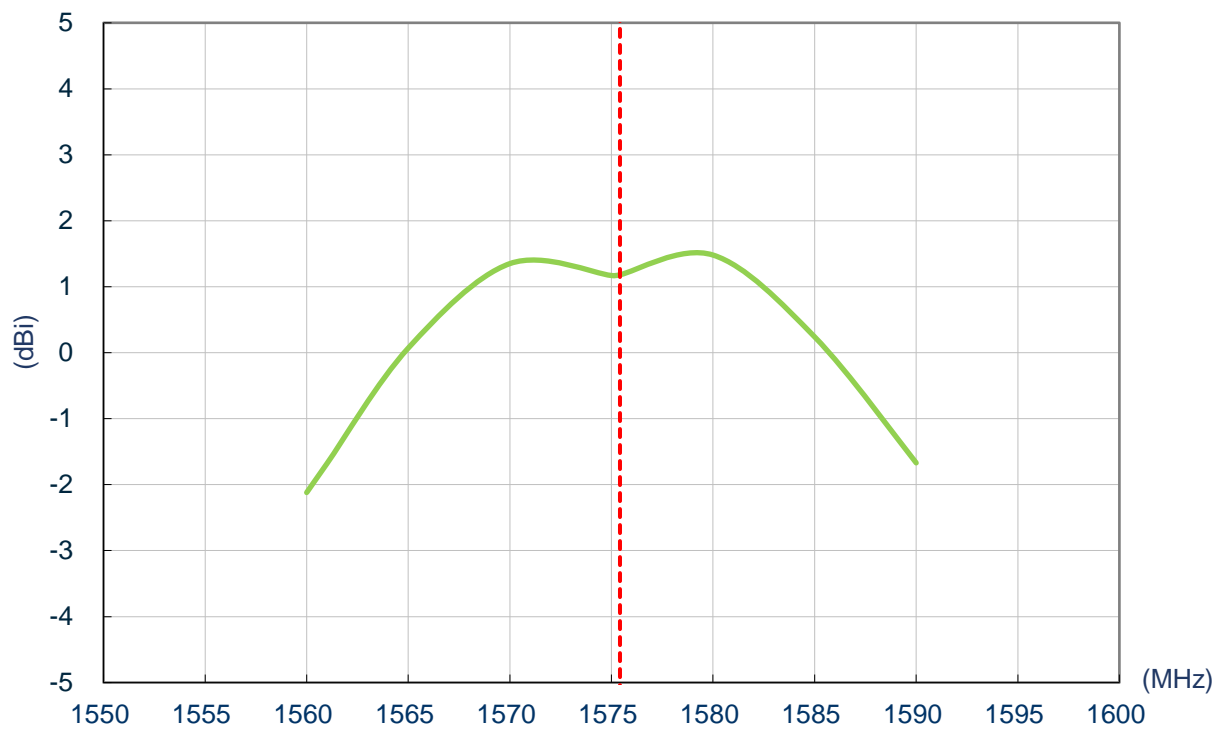
3.2 Efficiency



3.3 Average Gain

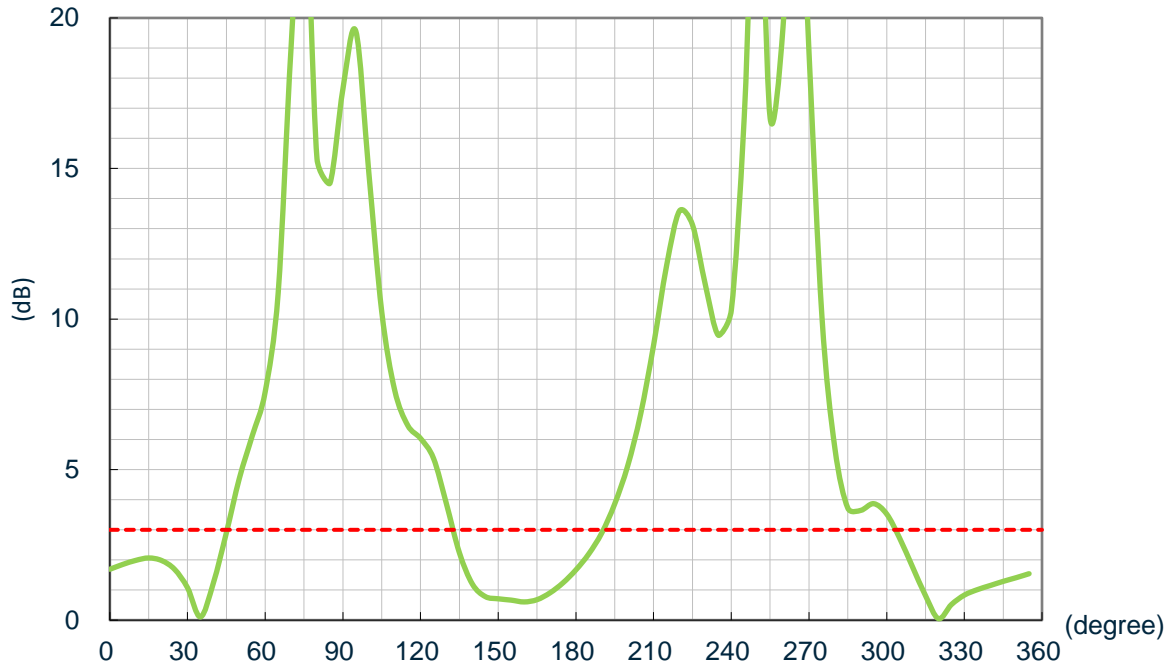


3.4 Peak Gain

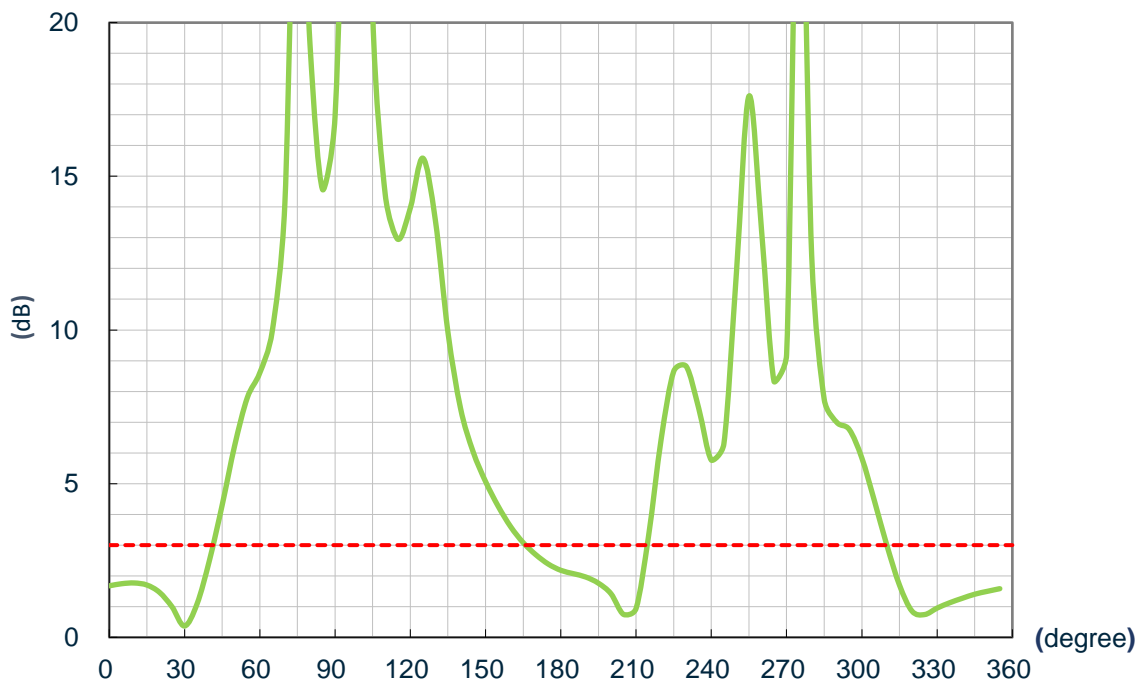


3.5 Axial Ratio

XZ Plane

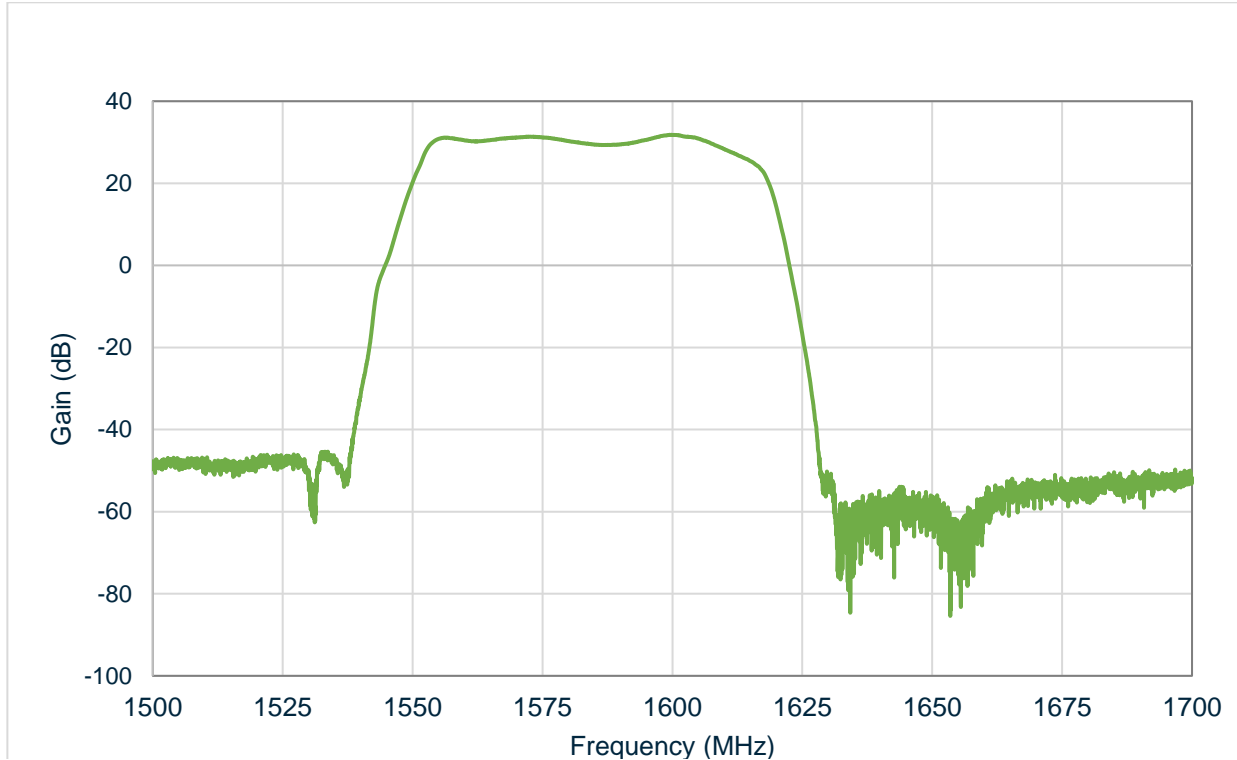


YZ Plane

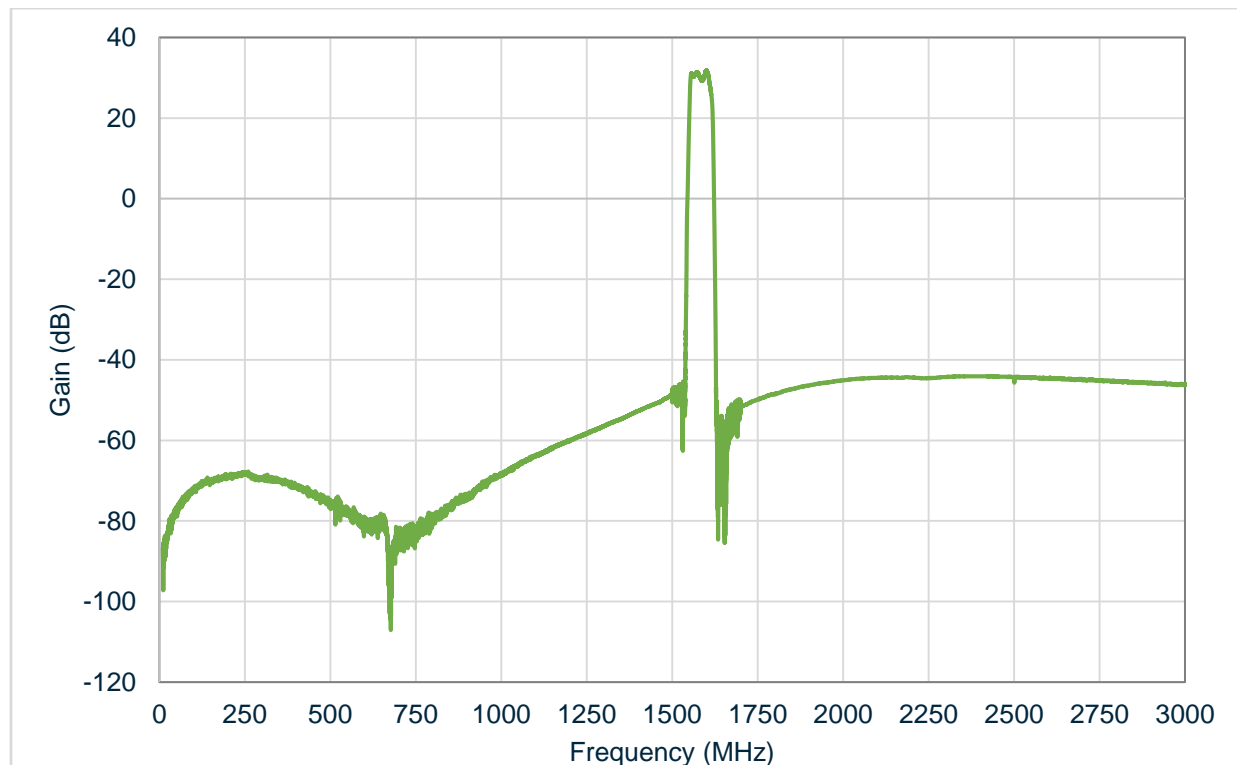


4. LNA Specifications

4.1 Narrowband LNA S21

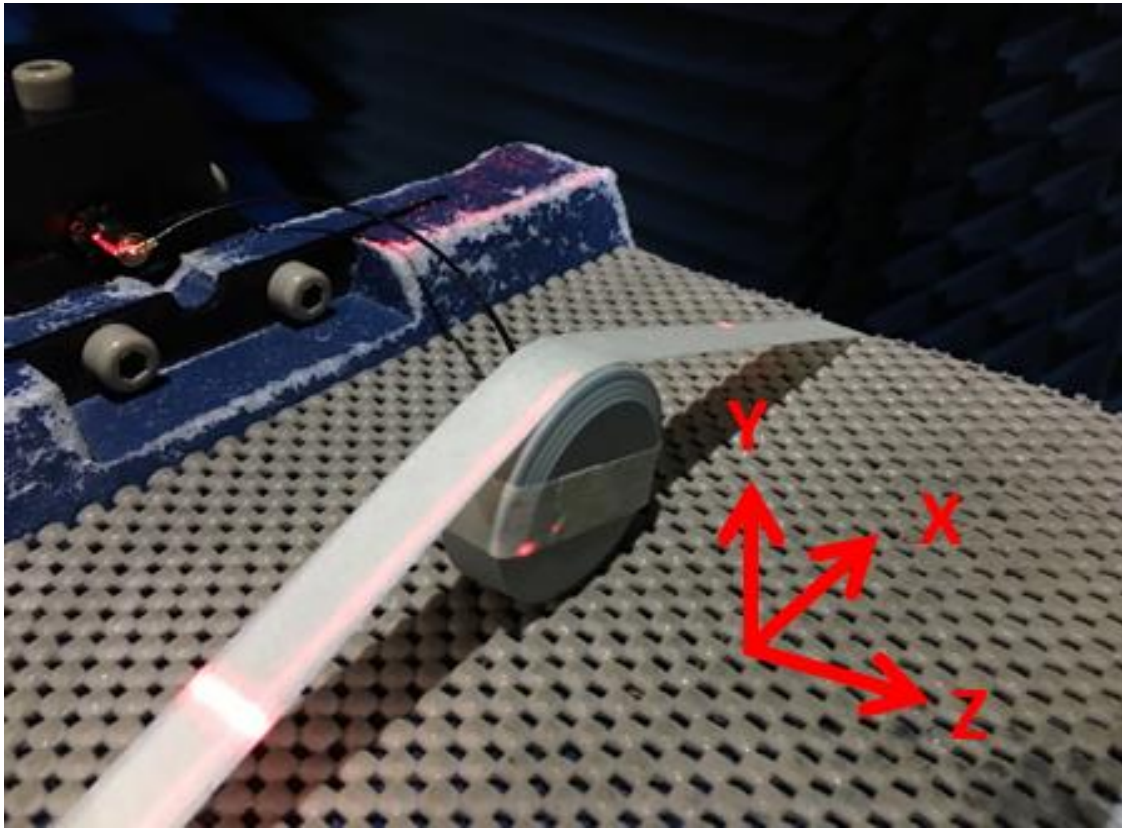


4.2 Wideband LNA S21



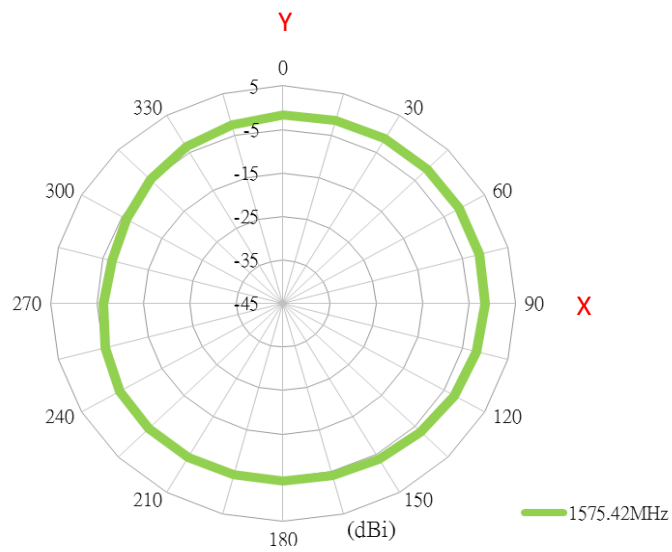
5. 2D Radiation Patterns

5.1 Test Setup

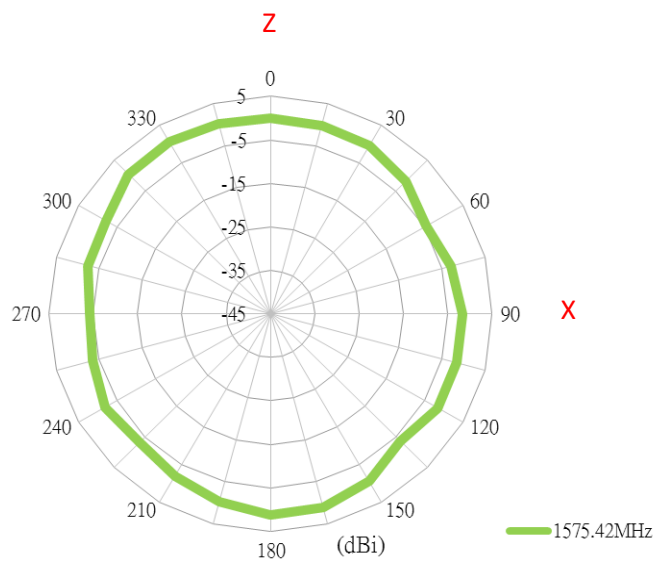


Free space

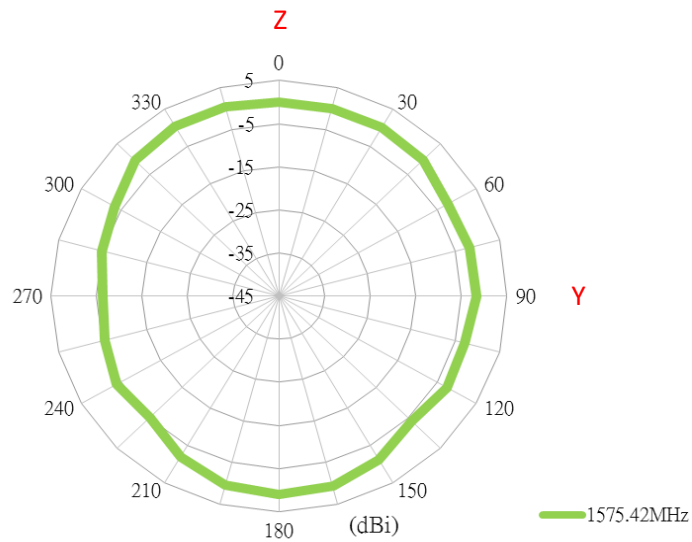
XY Plane



XZ Plane

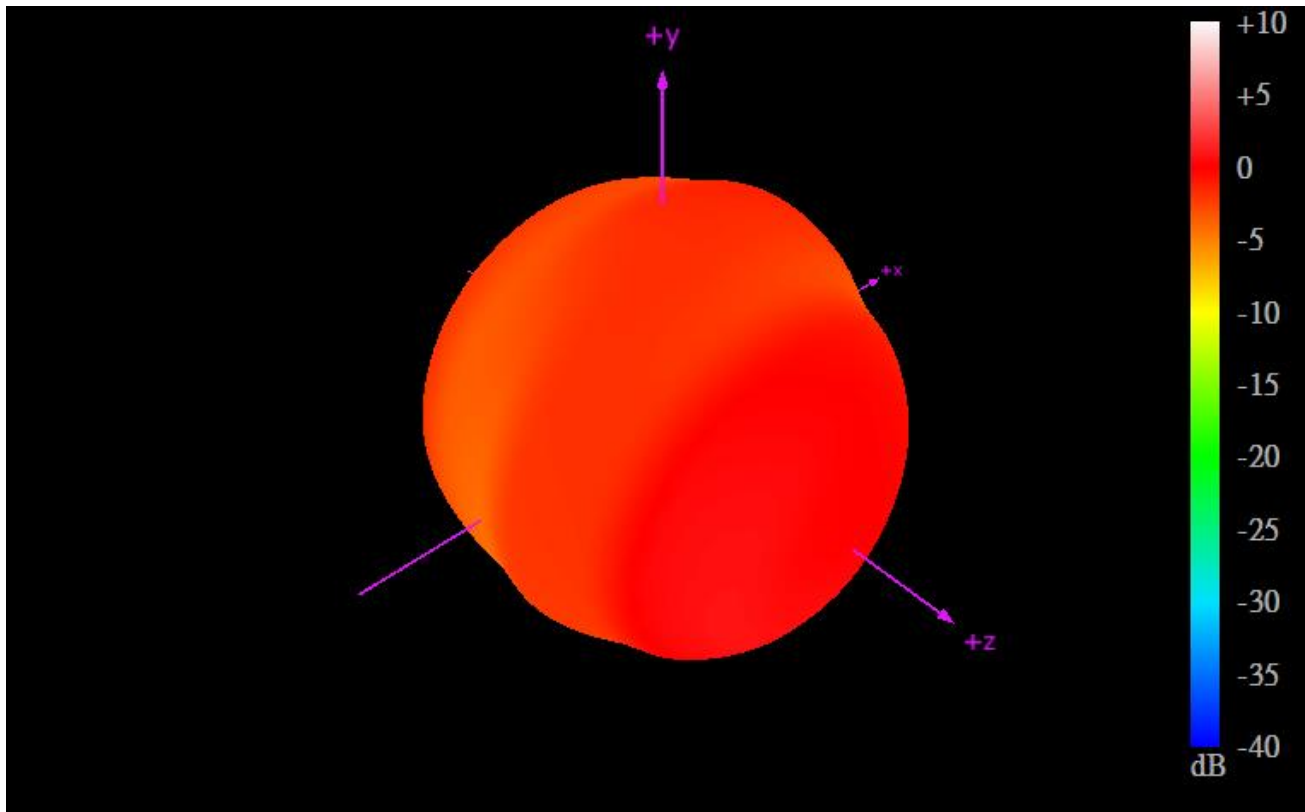


YZ Plane



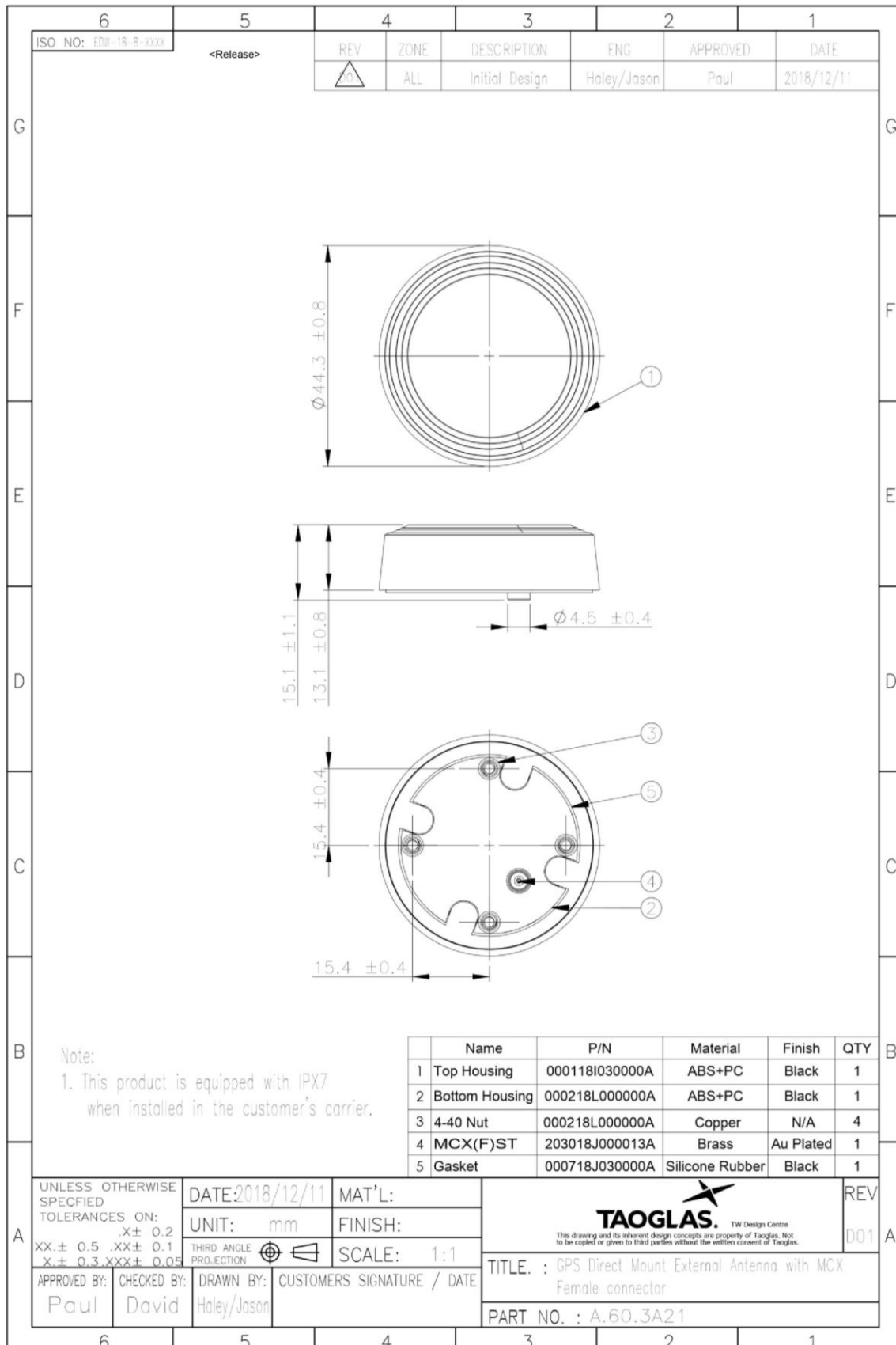
6. 3D Radiation Patterns

6.1 Free Space



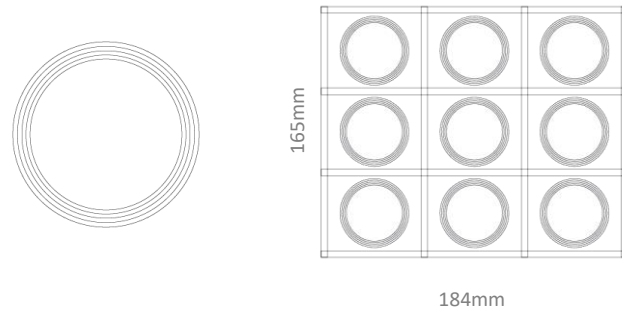
1575.42MHz

7. Mechanical Drawing (Units: mm)

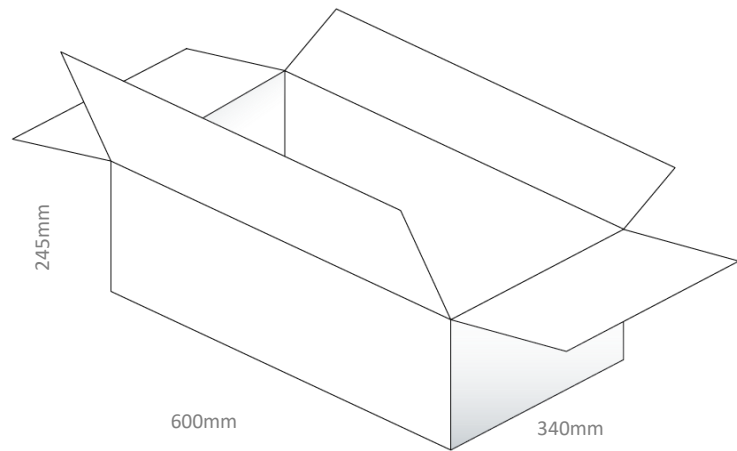


8. Packaging

27pcs A.60.3A21 per Package
 Package Dimensions: 184*165*73mm
 Weight: 0.877Kg



486pcs A.60.3A21 per carton
 Dimensions: 600*340*245mm
 Weight: 15.787Kg



Changelog for the datasheet

SPE-17-8-042 – A.60.3A21

Revision: A (Original First Release)

Date:	2019-05-21
Notes:	Initial Draft Datasheet
Author:	Jack Conroy

Previous Revisions



TAOGLAS®

www.taoglas.com

