



TAOGLAS®



Datasheet

Part No:
AP.17E.07.0064A

Description

17mm One Stage GPS/Galileo Active Patch Antenna Module
with Front End SAW Filter

Features:

17mm x 17mm x 6.3mm
64mm 1.13 I-PEX MHF® I
Wide Voltage 1.8V~5.5V
15dB LNA
Tested in Free space
CE Certified
RoHS and REACH Compliant

1.	Introduction	3
2.	Specification	4
3.	Passive Antenna Characteristics	7
4.	Radiation Patterns	10
5.	LNA Characteristics	12
6.	Mechanical Drawing	14
7.	Packaging	15
<hr/>		
	Changelog	16

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.

Ireland & USA
ISO 9001:2015
Certified



Taiwan
ISO 9001:2015
Certified



1. Introduction



The AP.17E is a one stage 17mm active patch antenna that has been designed specifically for embedded (inside device) integration with GPS/Galileo receiver modules.

The AP.17E combines a 17*17*4mm advanced low profile ceramic patch antenna with a one stage LNA and a front-end SAW filter with ultra thin coaxial cable. It comes with it's own integrated ground-plane. The front end SAW filter reduces the risks where there is a cellular transmitter nearby of interference from out of band frequencies which can cause LNA burn-out, saturation, or radiated spurious emissions.

Typical Applications Include:

- Navigation Systems
- Asset Tracking
- Performance Trackers/Wearables

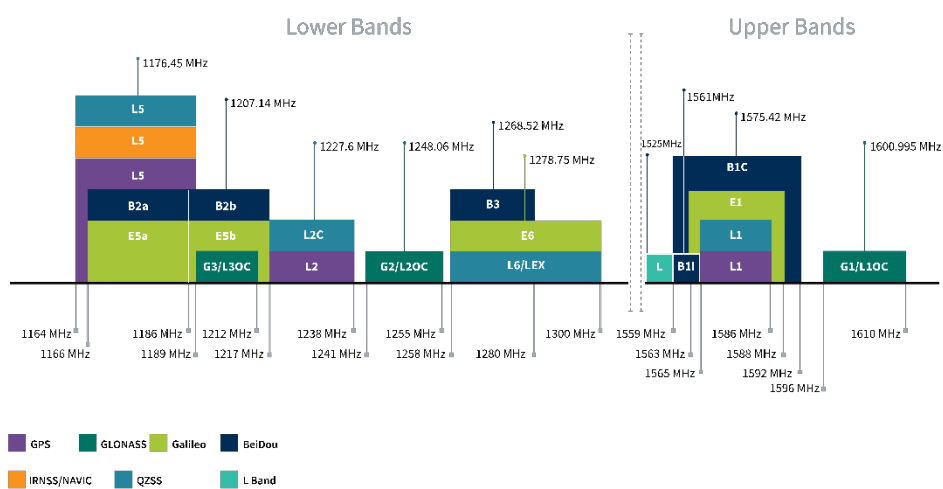
The antenna can work on a wide input voltage from 1.8V to 5.5V with best in class power consumption figures.

If further tuning and optimization specific to a customer device is required Taoglas offers a custom tuned and optimized part service.

Cables and connectors can be customized according to request. 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
Passive Antenna Efficiency (%) (Without cable loss)	33.39
Polarization	RHCP
Impedance	50 Ω
Cable	\varnothing 1.13 RF Coaxial Cable L=64mm \pm 2.5mm
Connector	I-PEX MHF [®] I

LNA and Filter Electrical Properties	
Frequency (MHz)	1575.42
VSWR (max.)	<2.0
Gain@1.8V (dBic)	12.8
Gain@3.0V (dBic)	15.3
Gain@5.5V (dBic)	16.7
Noise@1.8V (dBic)	2.2
Noise@3.0V (dBic)	2.1
Noise@5.5V (dBic)	2.3
Current consumption@1.8V (mA)	1.6
Current consumption@3.0V (mA)	3.5
Current consumption@5.5V (mA)	7.6
P1dB Compression Point (dBm)	-15.0

Mechanical

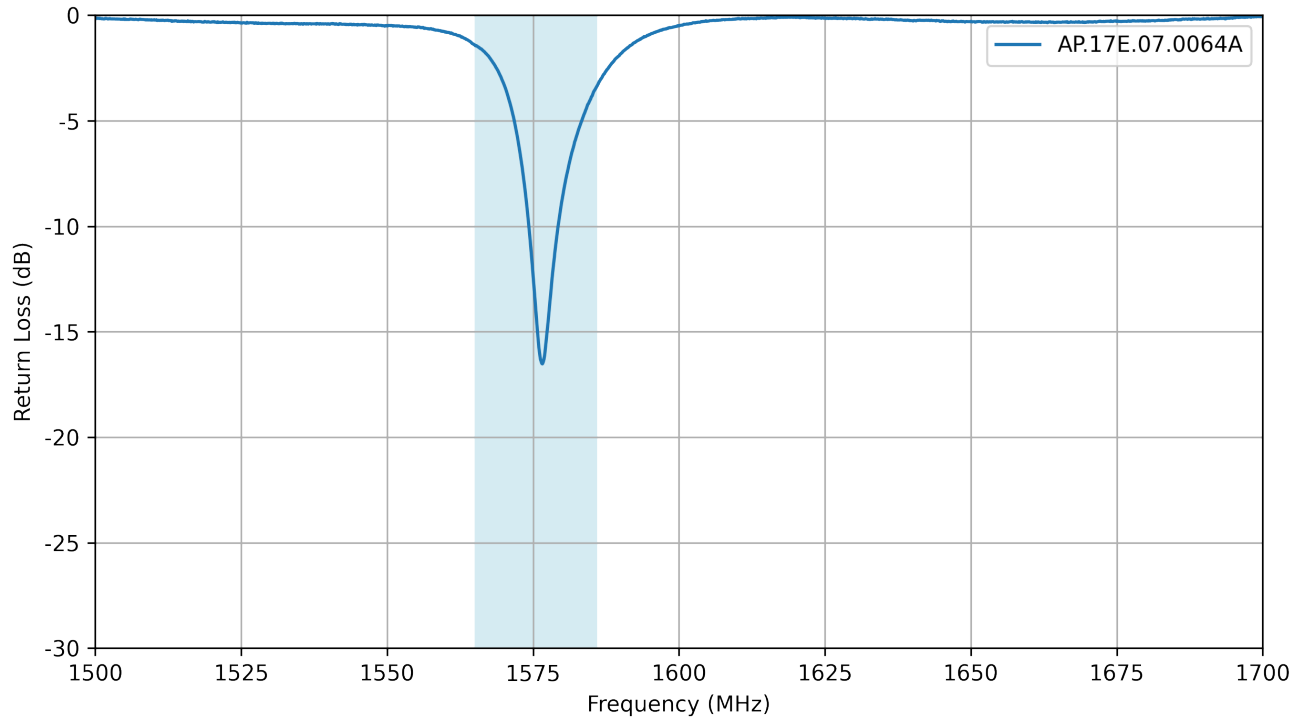
Dimensions	17mm*17mm*6.3mm
RF Cable	Ø1.13 RF Coaxial Cable L=64mm±2.5mm
RF Connector	I-PEX MHF® I

Environmental

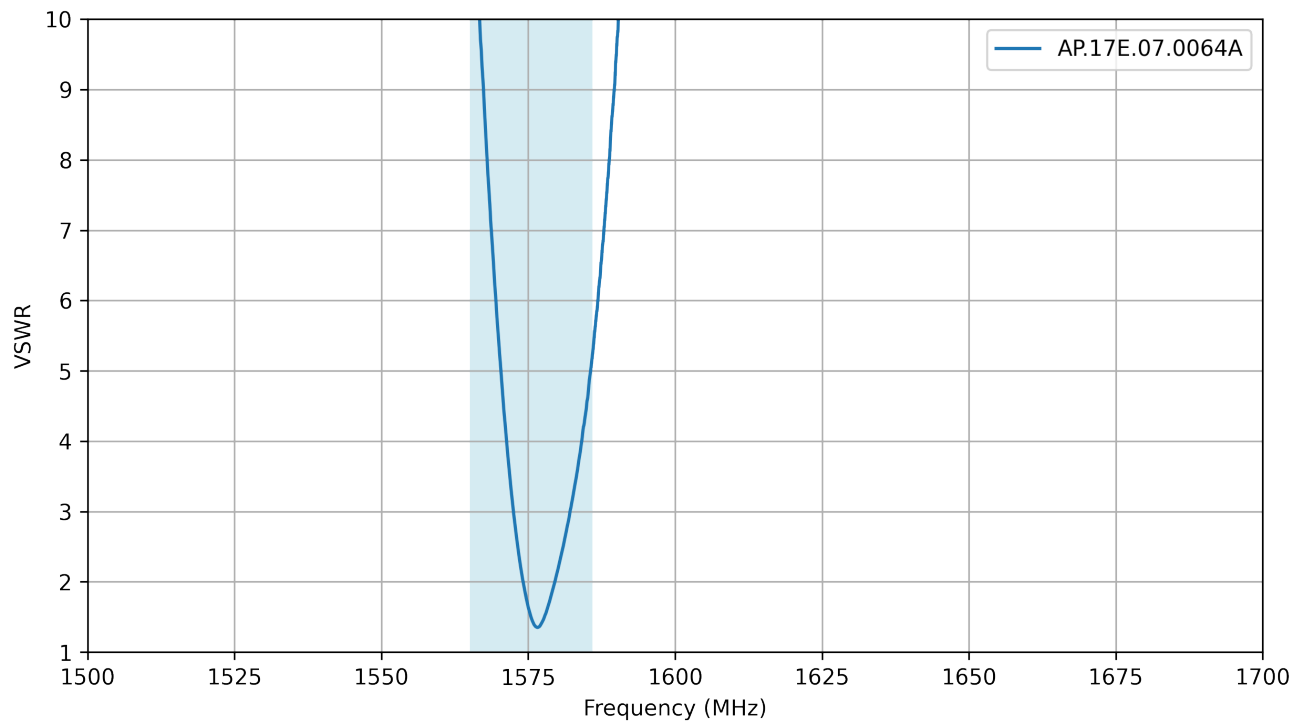
Operation Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 85°C
Relative Humidity	40% to 95%

3. Passive Antenna Characteristics

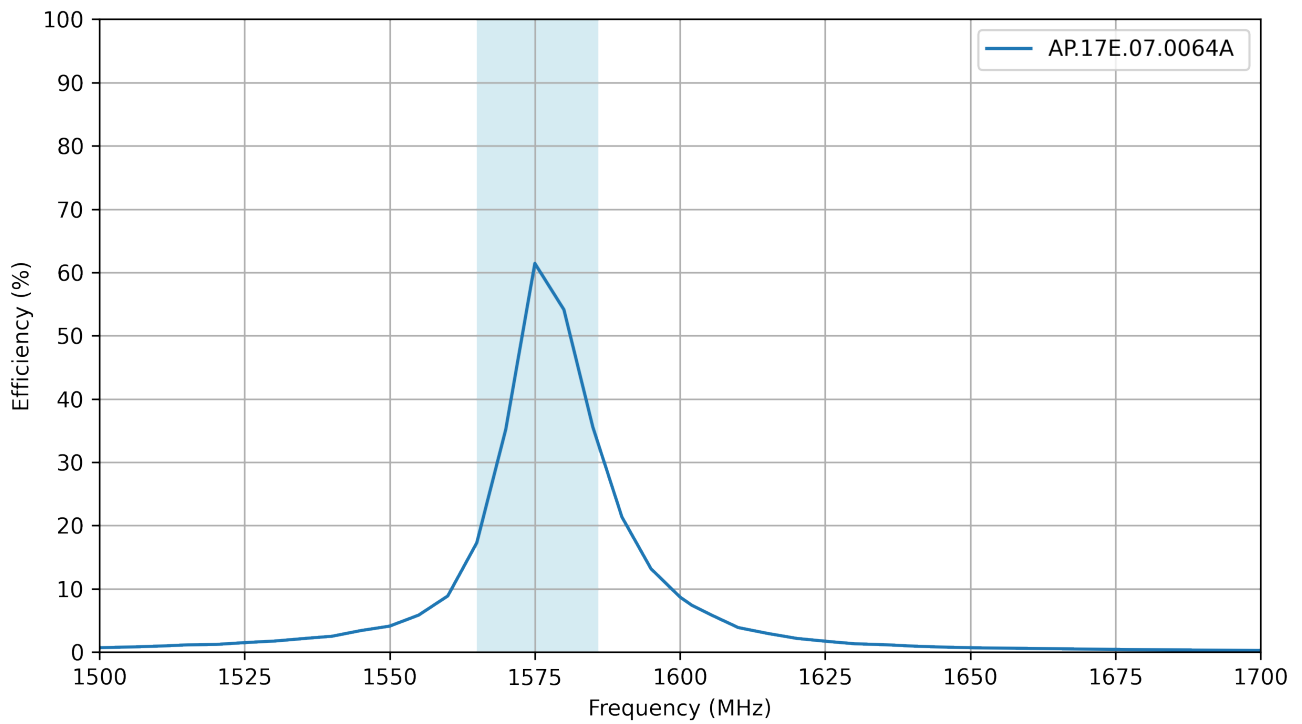
3.1 Return Loss



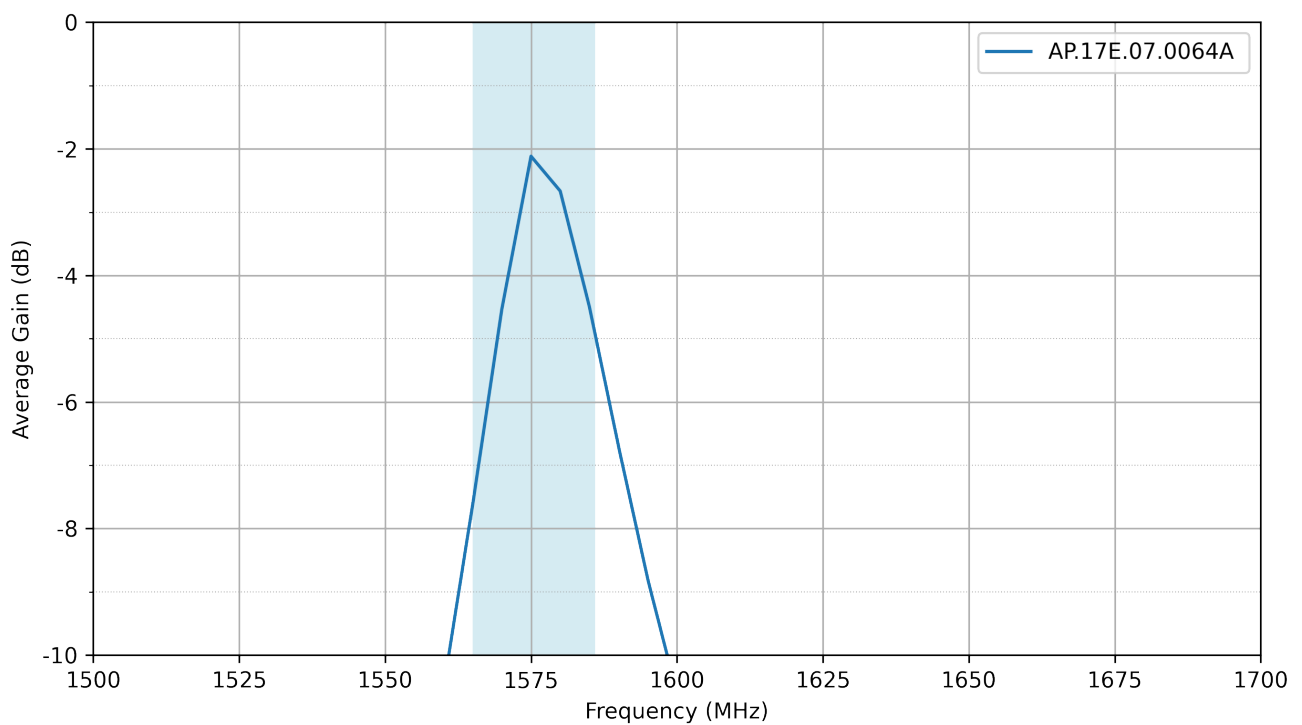
3.2 VSWR



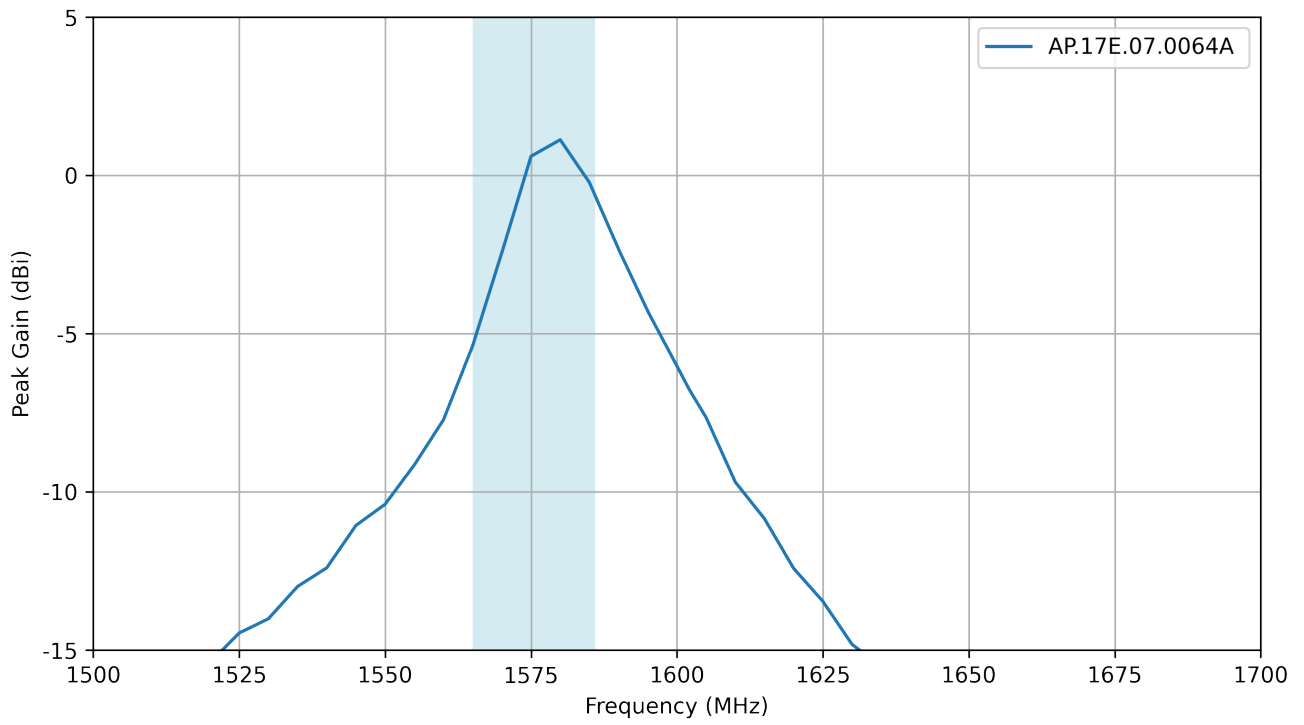
3.3 Efficiency



3.4 Average Gain

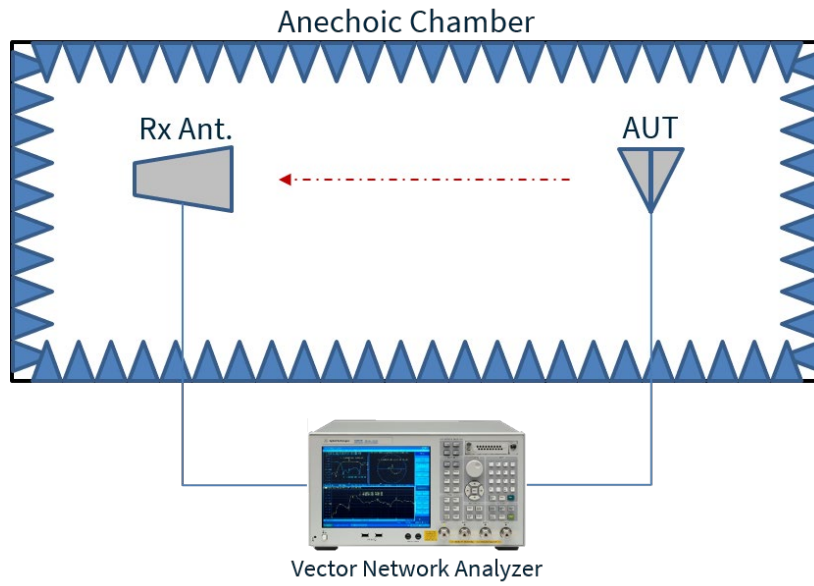


3.5 Peak Gain

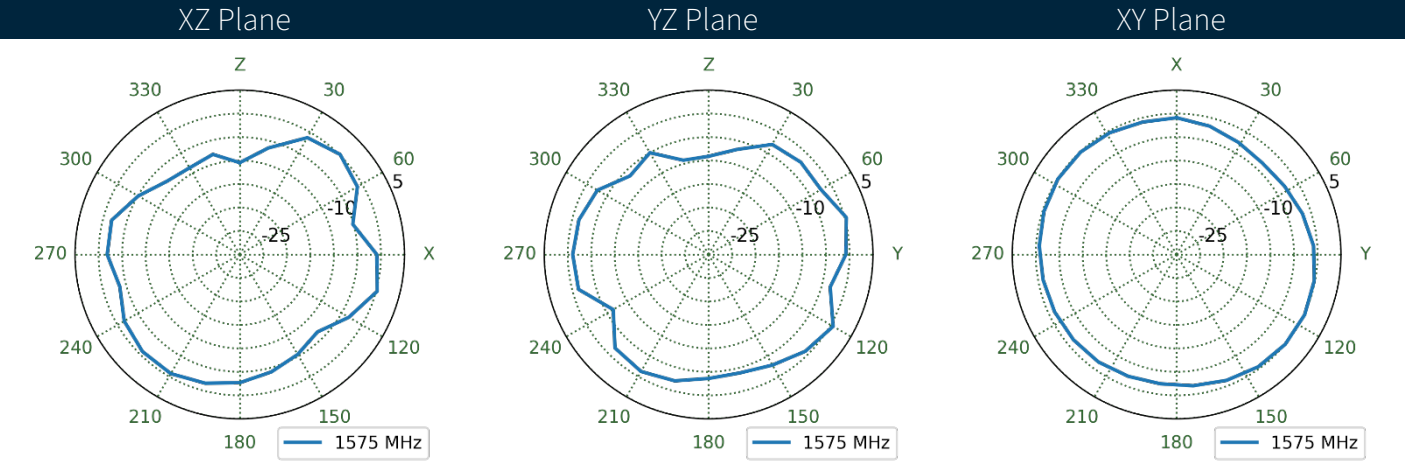
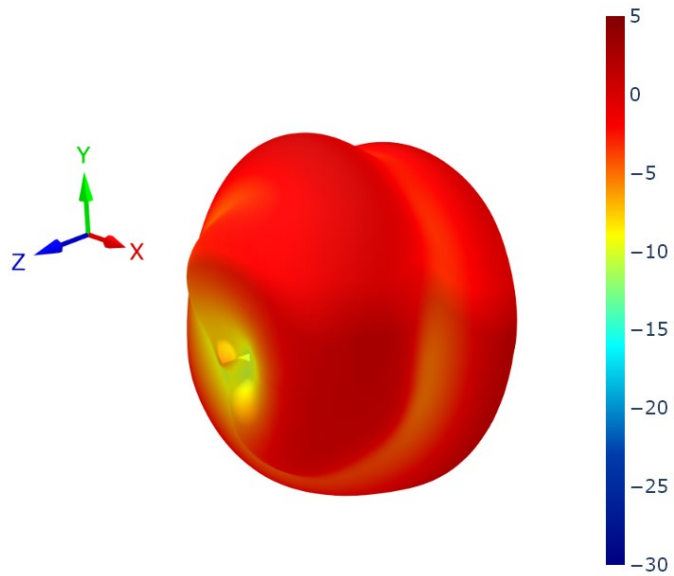


4. Radiation Patterns

4.1 Test Setup

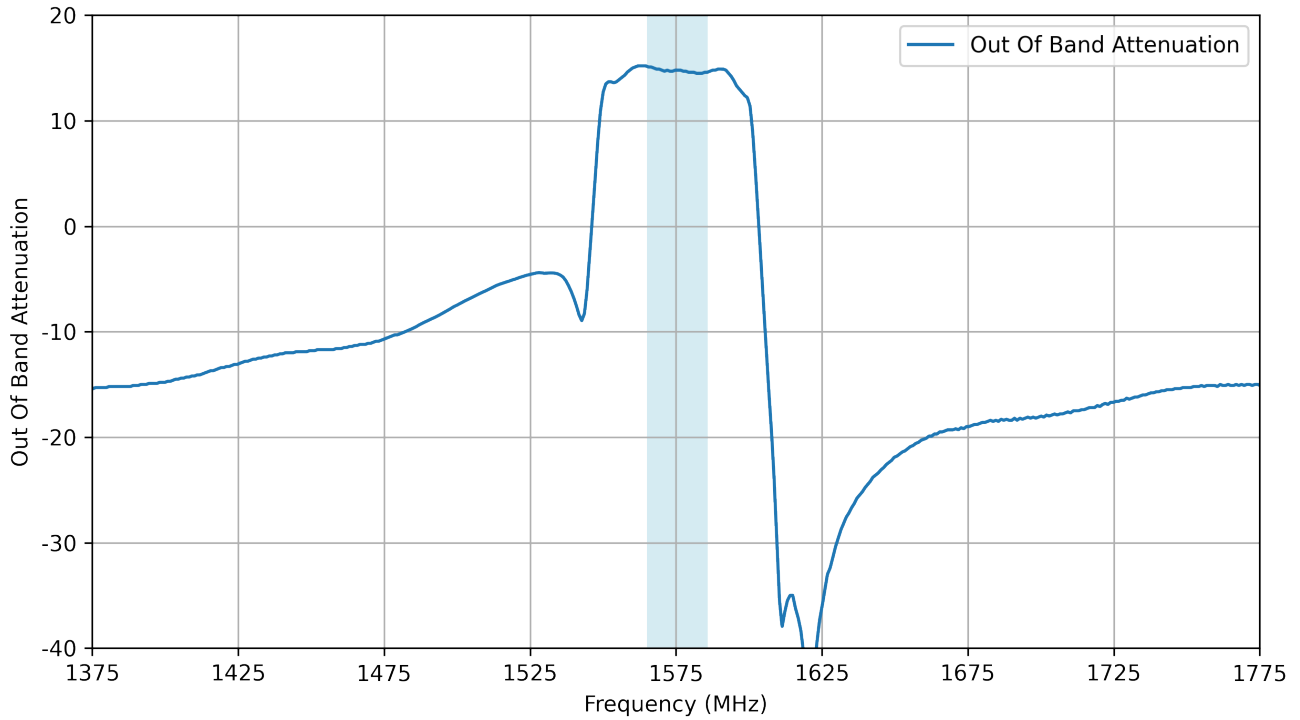


4.2 Patterns at 1575 MHz

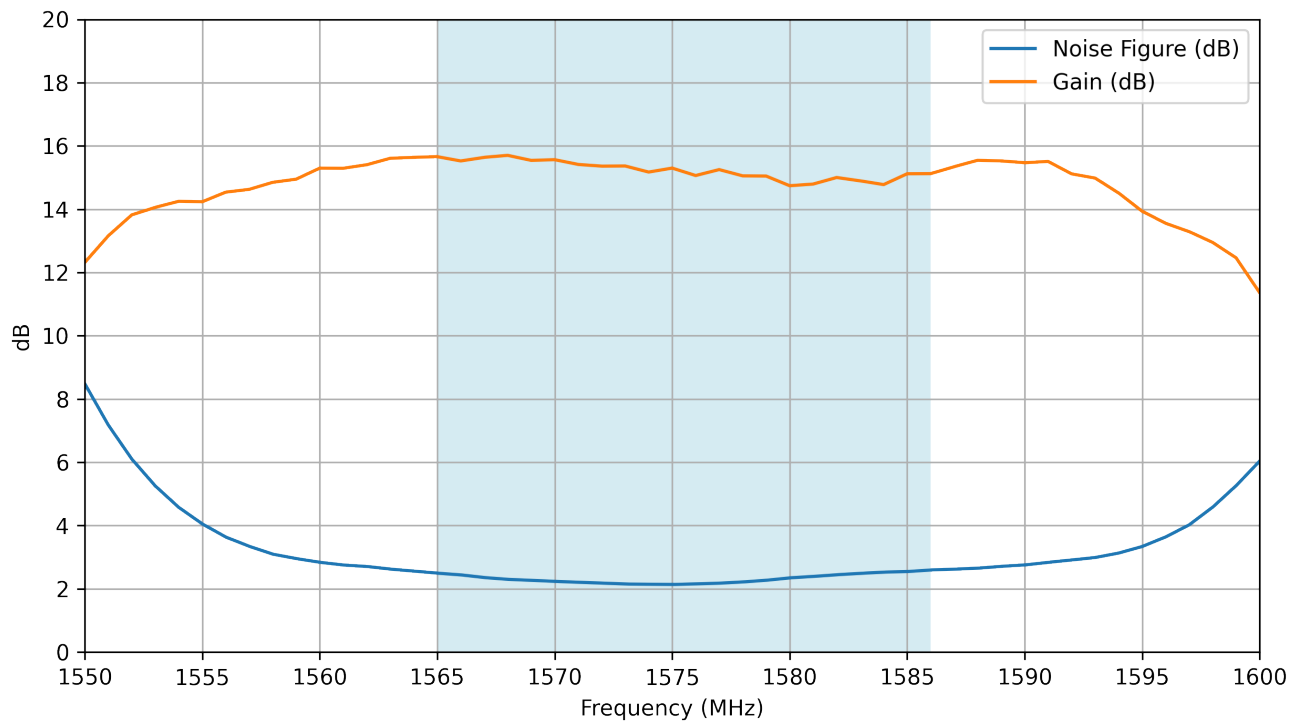


5. LNA Characteristics

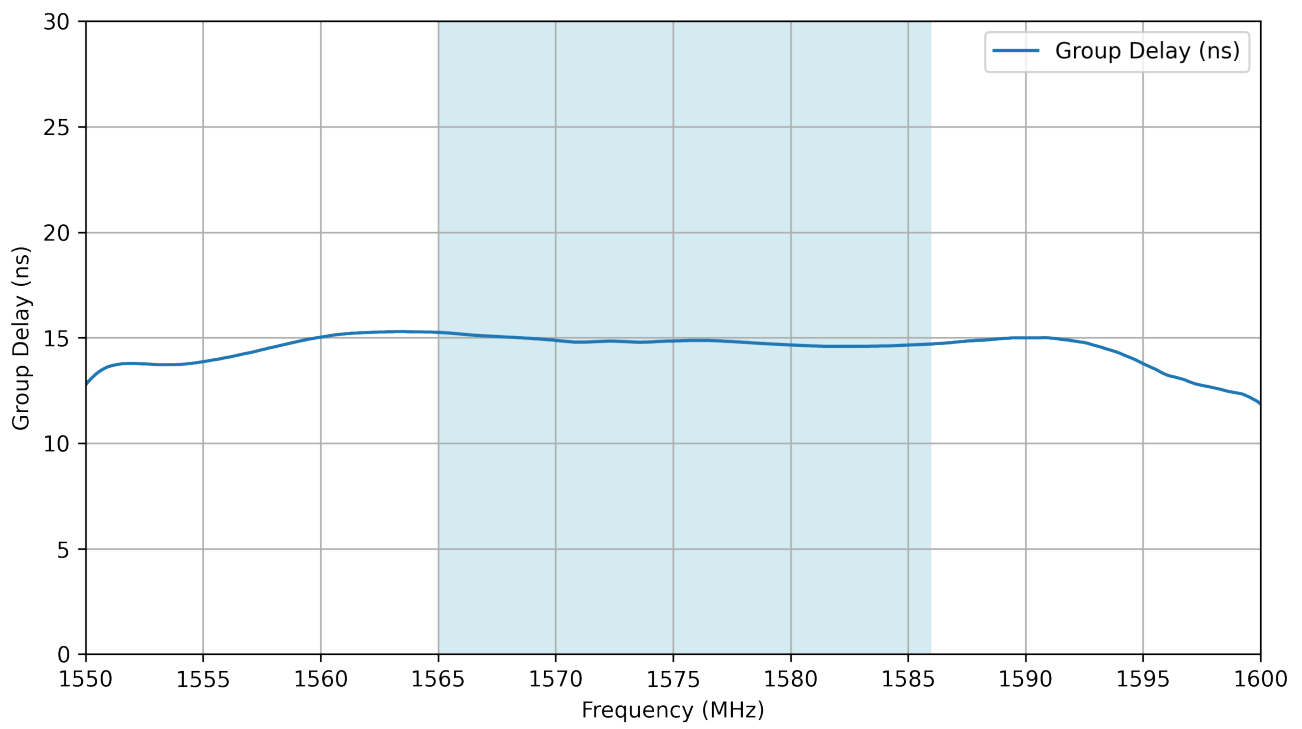
5.1 Out Of Band Attenuation



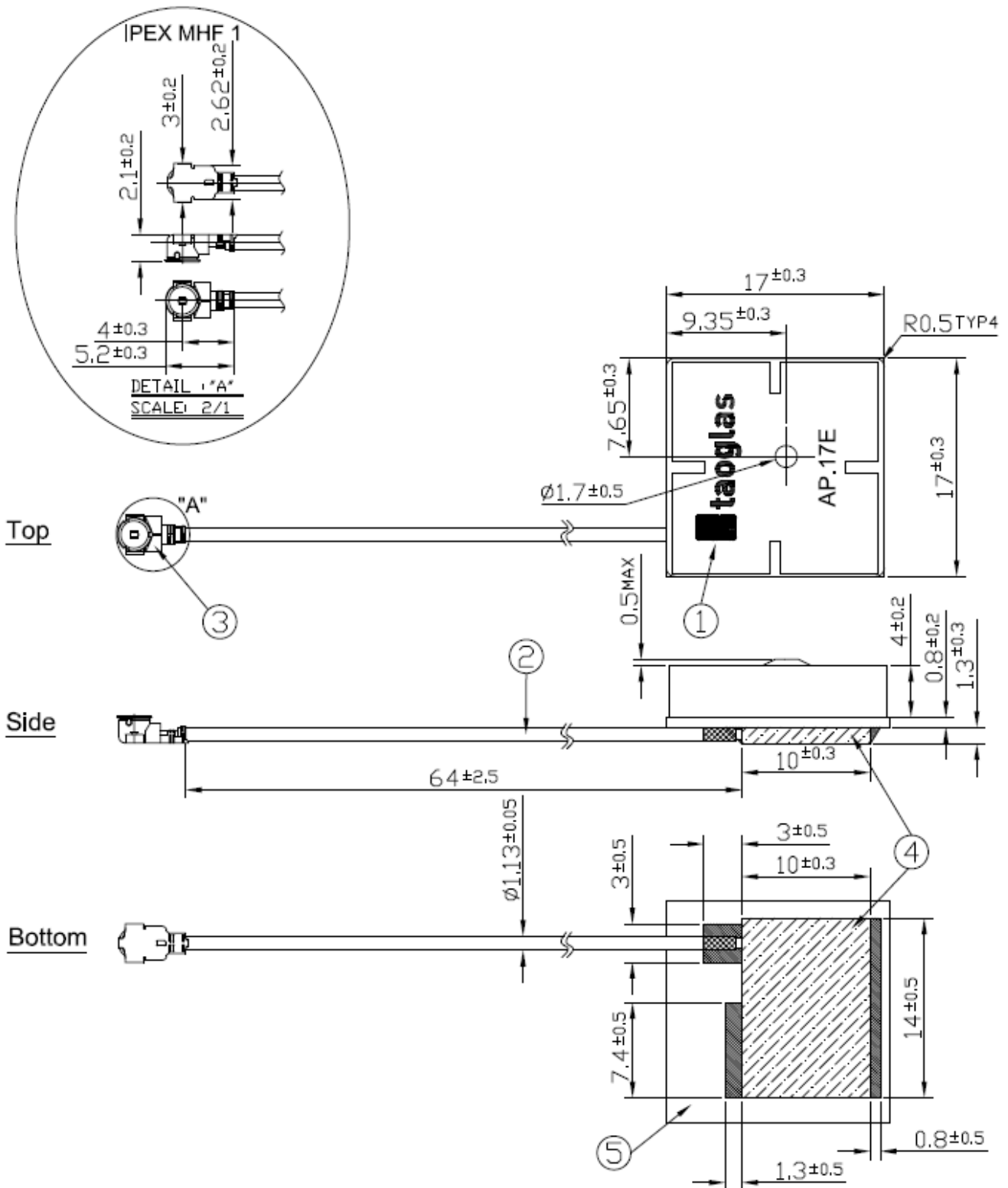
5.2 LNA Gain and Noise Figure @3.0V



5.3 Group Delay



6. Mechanical Drawing



7. Packaging



30 PCS / Tray



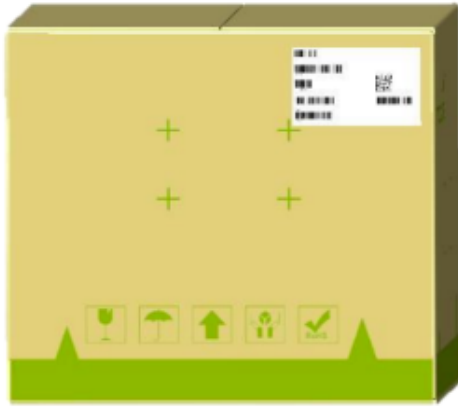
180 PCS / Vacuum package

2 PCS / 3g Desiccant

SPQ Label



180 PCS / Zipper bag



- 540 PCS / Carton
- Carton(mm): 390x320x290
- Carton Label

Changelog for the datasheet

SPE-11-8-144 – AP.17E.07.0064A

Revision: F (Current Version)

Date:	2024-09-13
Changes:	Updated packaging information.
Changes Made by:	Conor McGrath

Previous Revisions

Revision: E

Date:	2023-12-01
Changes:	Retest and updated datasheet
Changes Made by:	Gary West

Revision: D

Date:	2021-11-29
Changes:	Update datasheet template & data.
Changes Made by:	Gary West

Revision: C

Date:	2017-06-19
Changes:	Amended Packaging
Changes Made by:	Peter Monahan

Revision: B

Date:	2011-01-16
Changes:	
Changes Made by:	Technical Writer

Revision: A (Original First Release)

Date:	2011-11-30
Notes:	
Author:	Technical Writer



www.taoglas.com

