

ACTIVE GNSS

DENEb

Multi-band Active GNSS Self-Adhesive Antenna

SZA-N-4G34

BANDS

L1 + L2 + L5

LNA GAIN

17.6 / 18.3 dB

NOISE FIGURE

1.10 dB

SIZE

25.0 × 14.0 × 6.4 mm

LOW BAND **1164 to 1249 MHz** Covers L2, L5

HIGH BAND **1559 to 1609 MHz** Covers L1

Key Features

- 1164 to 1249; 1559 to 1609 MHz, L1, L2, L5
- Dual band integrated antenna and RF front end with dual SAW and LNA
- Dimensions: 25.0 × 14.0 × 6.4 mm
- Cable length: 50 mm, 1.13 mm Ø
- Connector: MHF1 (U.FL compatible)
- RoHS compliant

1 Introduction

Introducing DENEb: a versatile multi-GNSS solution supporting L1, L2, and L5 bands. Designed for simplicity and efficiency, this lightweight and compact solution features an integrated antenna that requires no tuning. Just adhere DENEb inside your enclosure, and it is ready to perform, delivering seamless functionality in any device.

— Features

- ◆ 1164 to 1249; 1559 to 1609 MHz, L1, L2, L5
- ◆ Dual band integrated antenna and RF front end with dual SAW and LNA
- ◆ Dimensions: 25.0 × 14.0 × 6.4 mm
- ◆ Cable length: 50 mm, 1.13 mm Ø
- ◆ Connector: MHF1 (U.FL compatible)
- ◆ RoHS compliant

2 Mechanical Specifications

Part Number	SZA-N-4G34
Name	DENEB
Dimensions (mm)	25.0 × 14.0 × 6.4
Weight	<6 g
Antenna Type	Active antenna + Cable
Cable Length (mm)*	50.0, 1.13 Ø
Connector*	MHF1 (U.FL Compatible)
Part Number with Cable and Connector	SZA-N-4G34-050-01
Adhesive Backing	3M 5952

*Alternate cable length and connectors available on request

3 Antenna Specifications

Frequency Range (MHz)	Efficiency (%)	Peak Gain (dBi)	VSWR	Impedance
1164 to 1249	>40	0.50	<3.3:1	50 Ω
1559 to 1609	>50	1.00	<3.0:1	

4 LNA Specifications

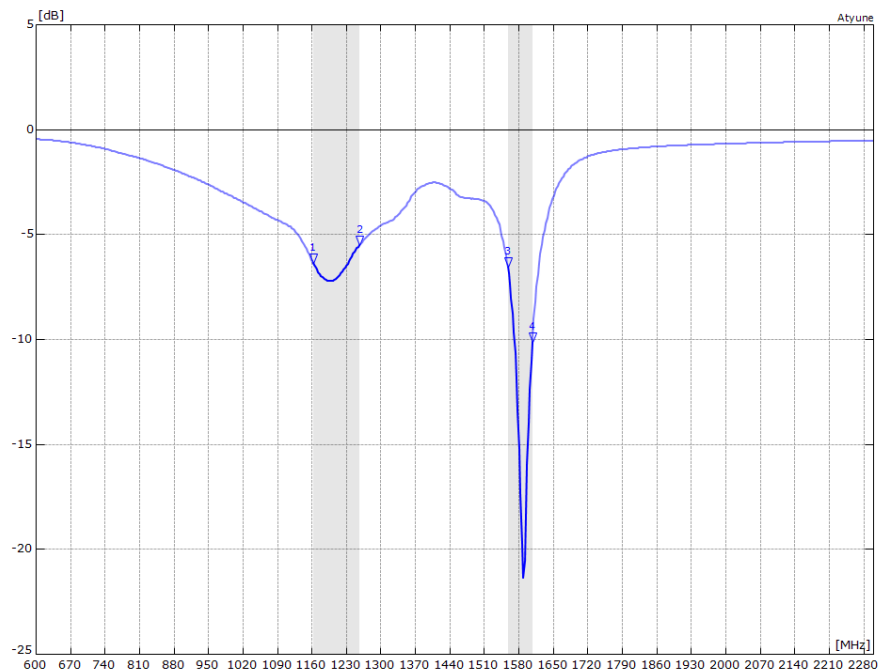
Frequency Range (MHz)	DC Voltage (V)	Current (mA) Typical	Gain (dB)	VSWR	Noise Figure (dB)
1164 to 1249	1.1 to 3.3	4.8	17.6	<2.0:1	1.10
1559 to 1609			18.3		

5 Environmental

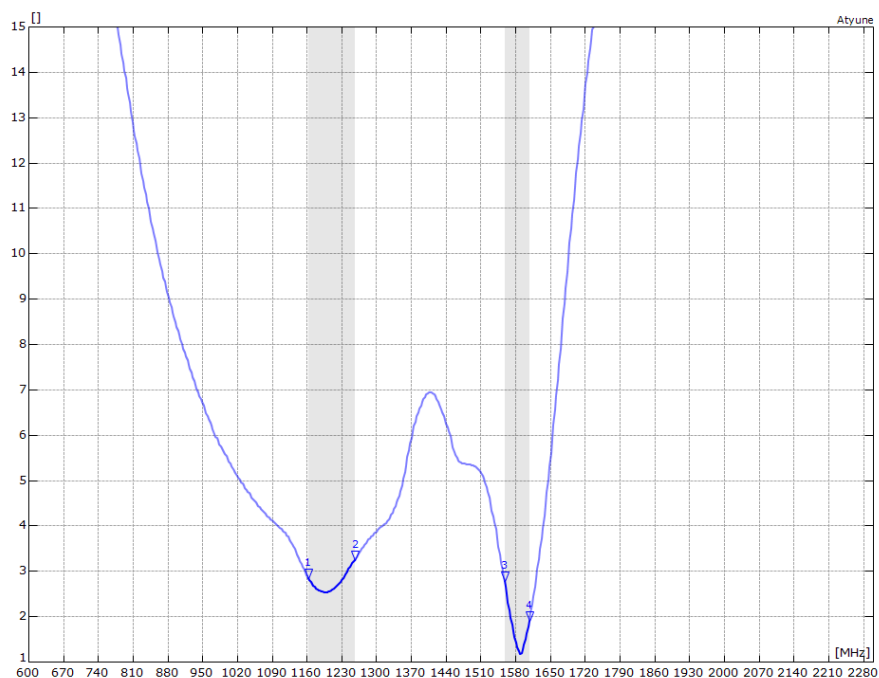
Operational Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Relative Humidity (Storage)	65 ±20% RH
Moisture Sensitivity Level (MSL)	1
RoHS and REACH compliant	Yes

6 RF Characteristics

S11 Parameter



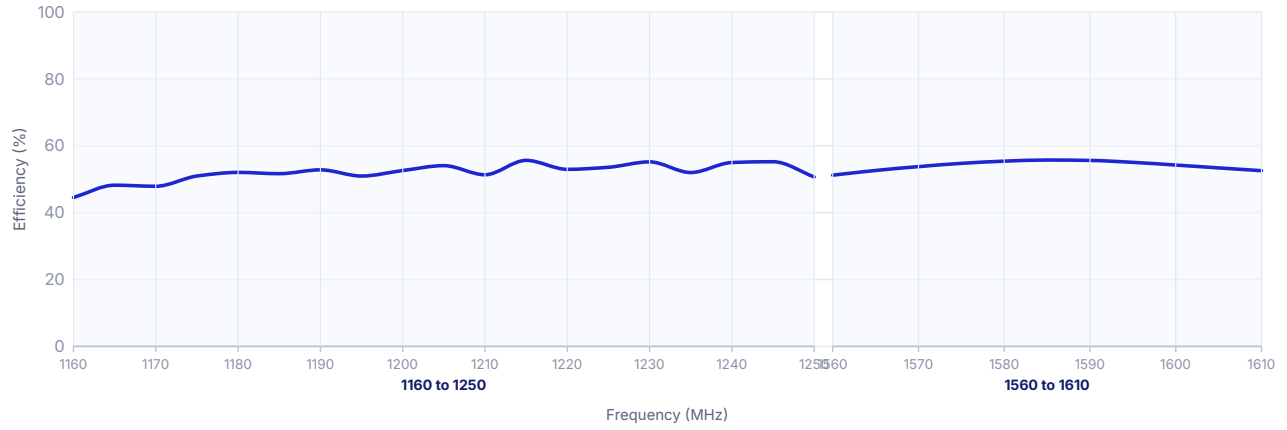
VSWR



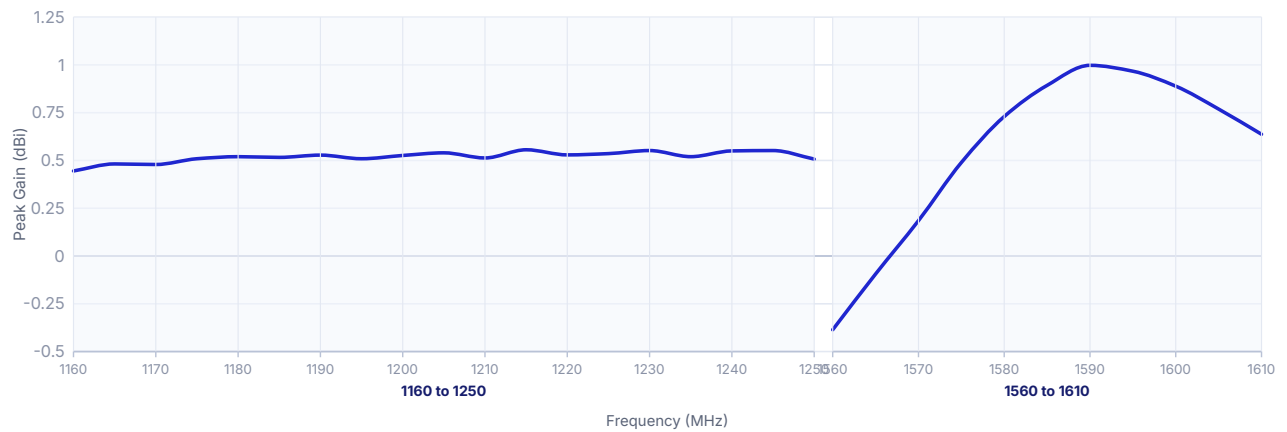
7

Antenna Performance

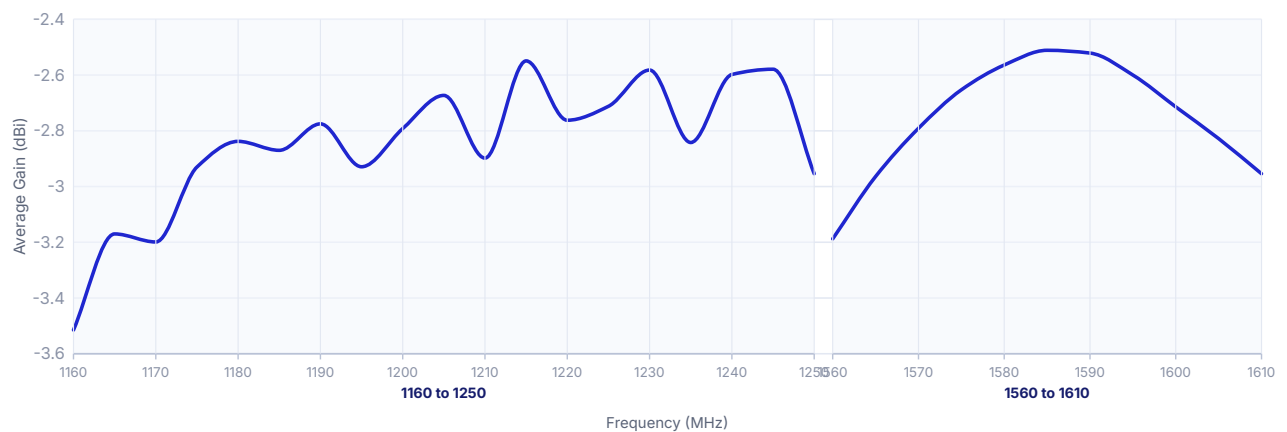
Efficiency



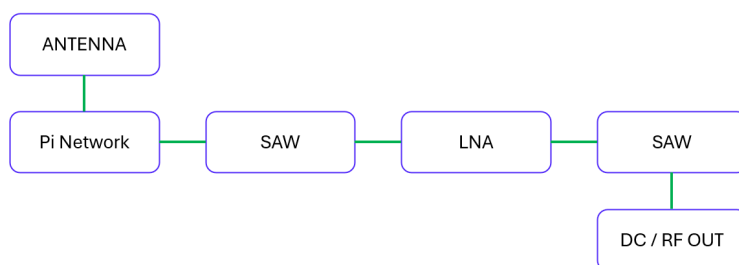
Peak Gain



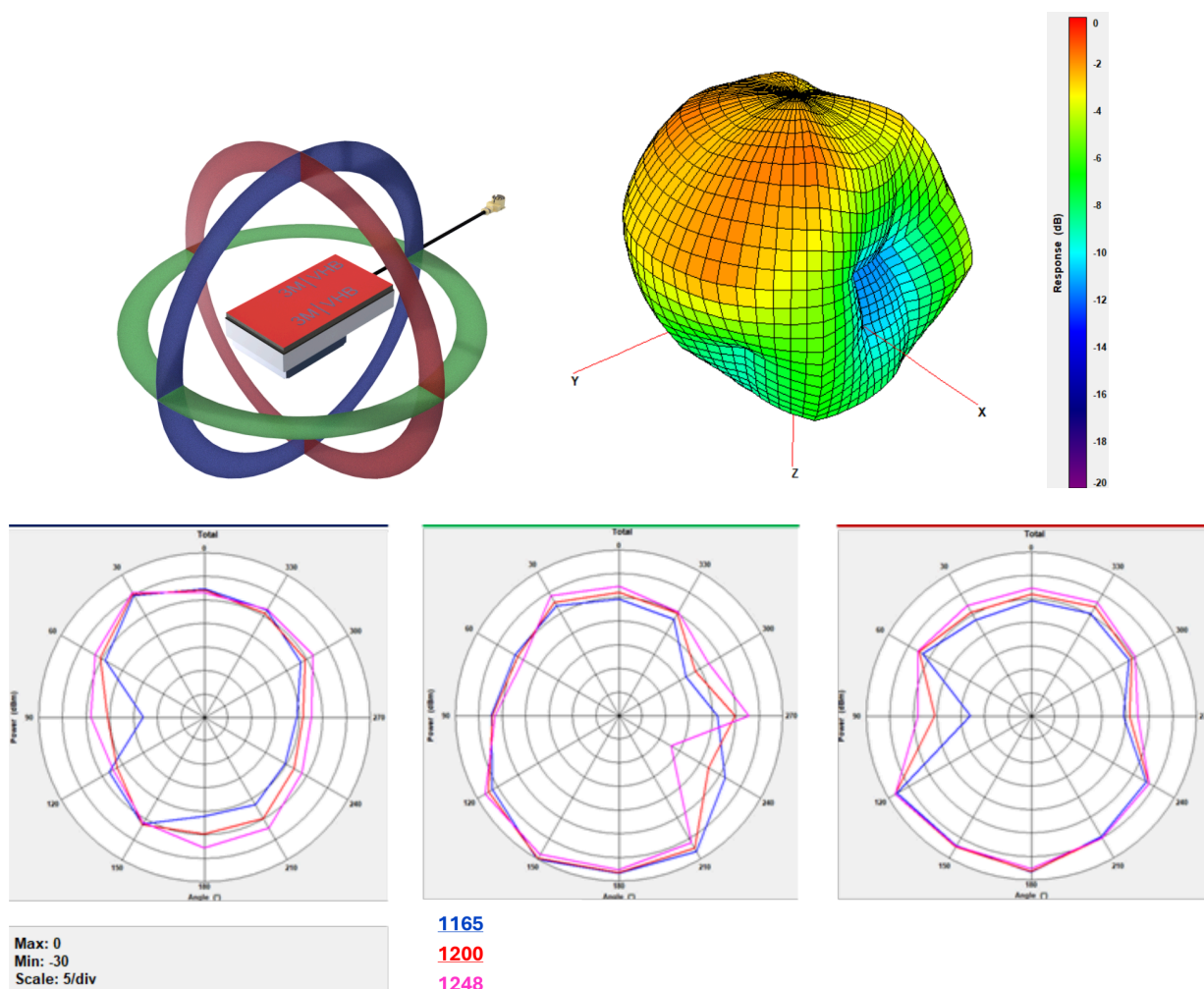
Average Gain



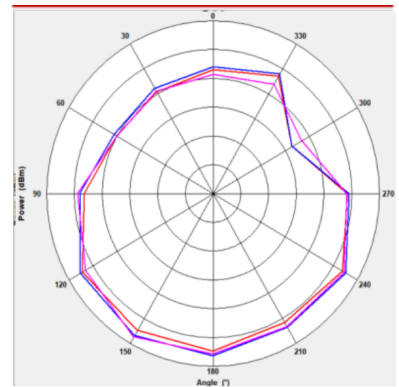
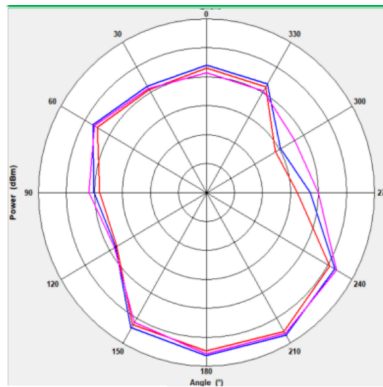
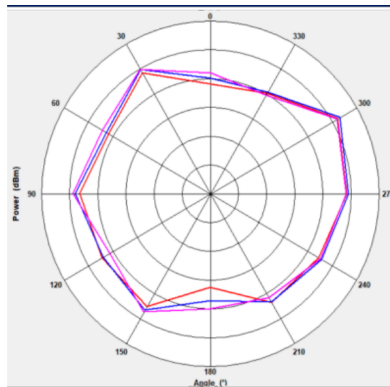
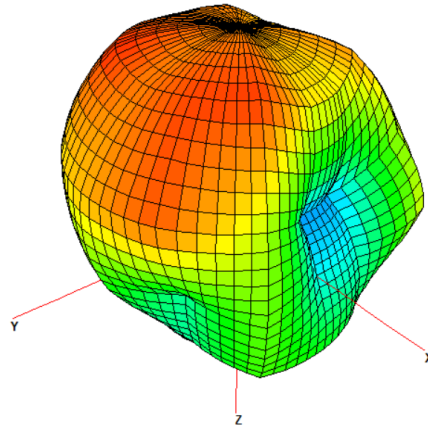
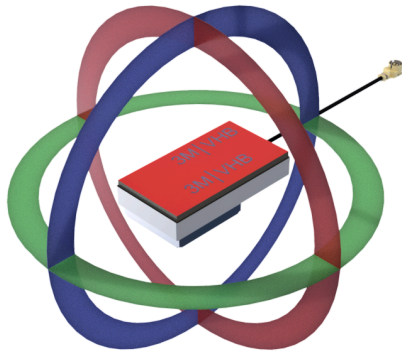
8 Block Diagram



9 Radiation Patterns at 1200 MHz



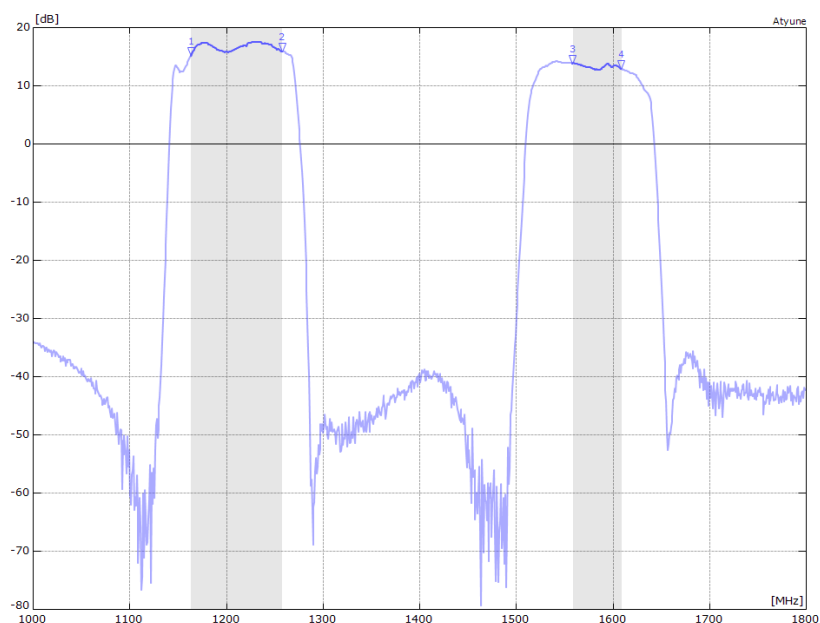
10 Radiation Patterns at 1575 MHz



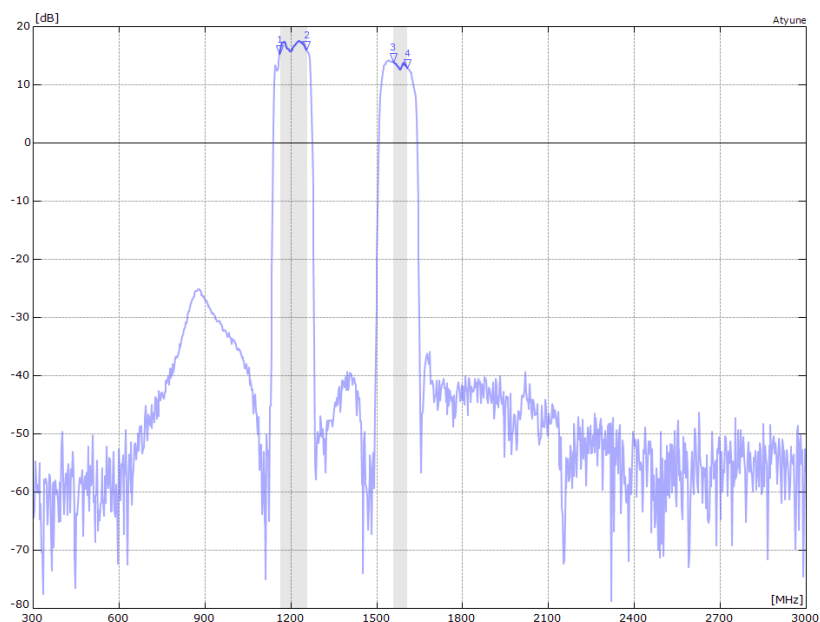
Max: 0
Min: -30
Scale: 5/div

1560
1575
1610

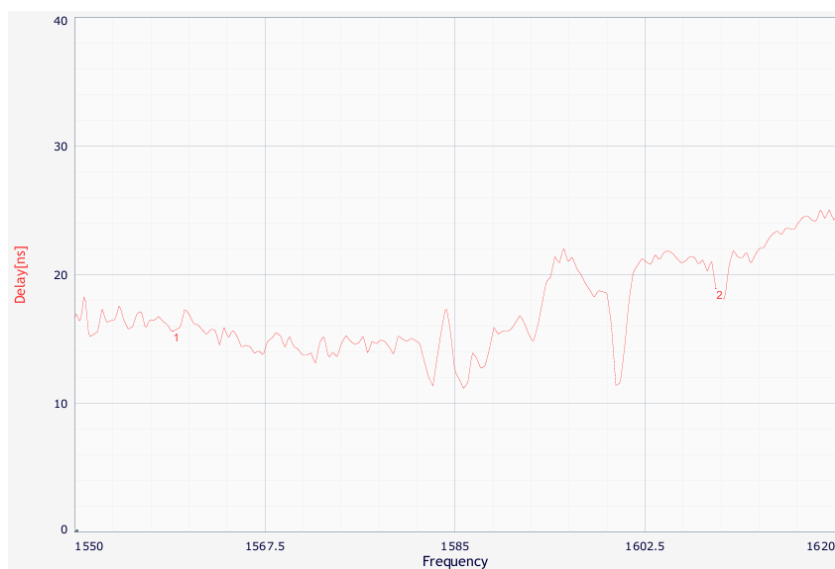
11 Full System Gain with SAW Filters



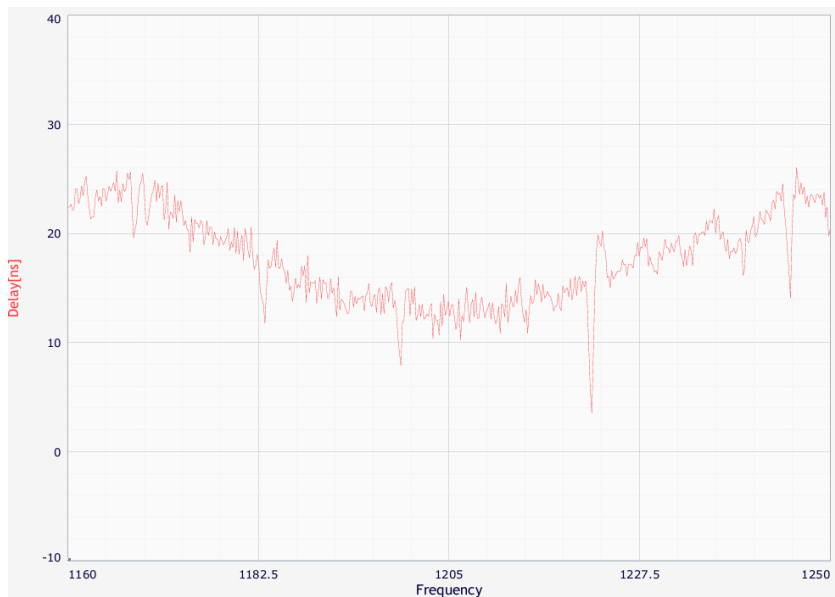
12 Out of Band Rejection



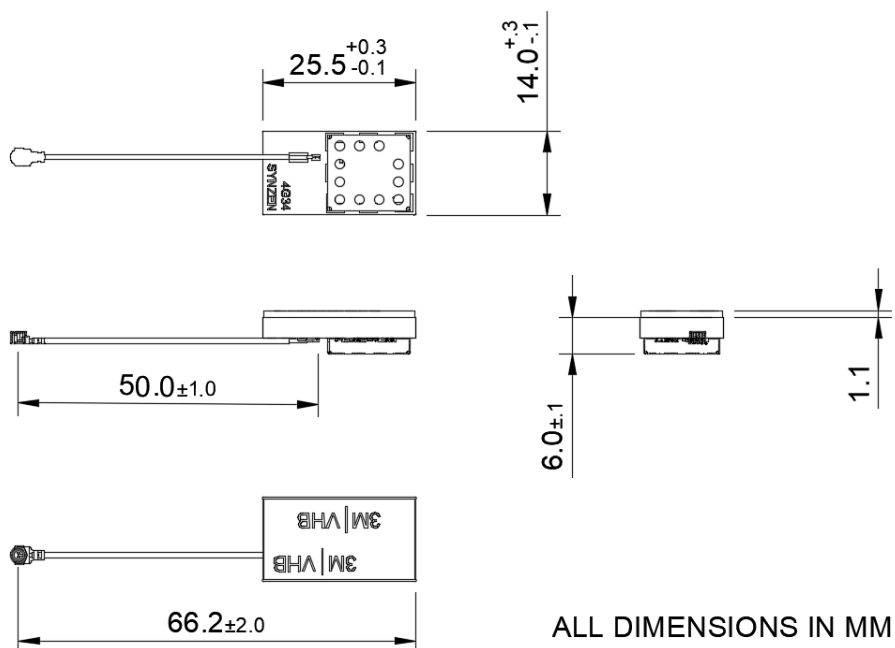
13 Group Delay L1



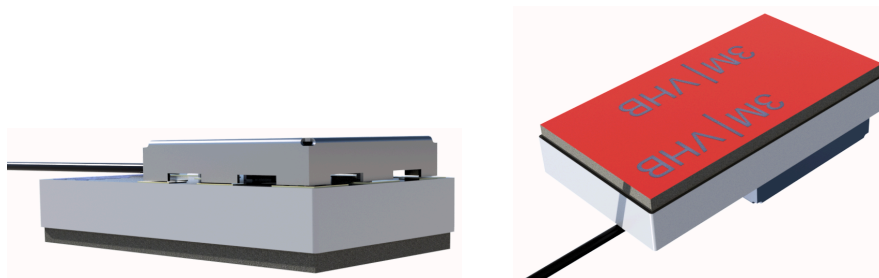
14 Group Delay L2 / L5



15 Mechanical Drawing



16 Adhesive Foam Backing

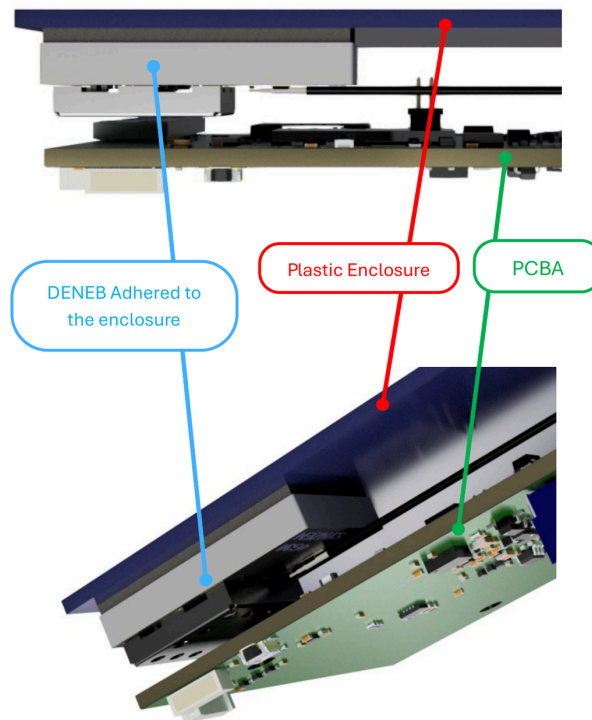


Adhesive foam backing, 1.1 mm thickness. This allows firm adhesion even over contours within the enclosure.

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Placement

Placement for DENEb is very simple. Peel and stick onto the inside of your enclosure where the main direction skyward is located. Keep the placement away from any metal that is adjacent to the antenna.



No need to be concerned with clearance below the antenna, as this is not important.

Placement above the PCBA is not critical to DENEb, but avoid cellular and other antennas which require clearance.

Keep more than 25 mm away from cellular antennas to ensure good isolation.

Shown: DENEb adhered to the plastic enclosure, above the PCBA.

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Compliance

ROHS

Compliant

Conforms to EU RoHS Directive 2011/65/EU as amended by Delegated Directive (EU) 2015/863.

REACH

Compliant

Conforms to EU REACH Regulation (EC) No 1907/2006.

CERTIFICATE

On request

A certificate of conformance is available upon request from sales@synzen.com.tw.

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