

ACTIVE GNSS STACKED PATCH

RHEA

Dual Band Active Ceramic Patch L1 / L5

SZA-N-3G26

BANDS
L1 + L5

LNA GAIN
18 dB

NOISE FIGURE
≤3.0 dB

SIZE
25.0 × 25.0 × 14.0 mm

L5	1176 MHz	Covers GNSS L5
L1	1575.42 / 1602.56 MHz	Covers GNSS L1, GLONASS G1

Key Features

- High LNA gain: 18 dB
- Excellent out-of-band rejection
- Comprehensive GNSS support: GPS / GLONASS / Galileo / BeiDou / IRNSS
- Ideal for transmitter-heavy environments

1 Introduction

Introducing the Synzen RHEA, a cutting-edge internal multi-band active stacked patch for high precision applications.

A compact yet powerful solution for precision applications. With a primary 25 × 25 mm patch tuned to 1176 MHz and a secondary 15 × 15 mm patch for 1575 MHz, each integrated with dual SAW filters and dual LNAs, this antenna ensures exceptional signal purity and strength. These signals combine through an integrated hybrid coupler, which optimizes signal transmission for superior performance in navigation.

Despite its remarkable out-of-band rejection capabilities, RHEA maintains an impressively low noise figure of less than 3.0 dB for both L1 and L5 bands.

For further optimization tailored to specific device environments, Synzen offers custom-tuned patch antennas. Elevate your GNSS experience with RHEA (SZA-N-3G26).

— Features

- ◆ High LNA gain: 18 dB
- ◆ Comprehensive GNSS support: GPS / GLONASS / Galileo / BeiDou / IRNSS
- ◆ Excellent out-of-band rejection
- ◆ Ideal for transmitter-heavy environments

— Applications

- | | |
|--------------------|---------------|
| ◆ RTK | ◆ Automotive |
| ◆ Connected Health | ◆ Agriculture |
| ◆ Transportation | |

2 Mechanical Specifications

Part Number	SZC-N-3G26
Name	RHEA
Dimensions (mm)	25.0 × 25.0 × 14.0
Weight	20 g
Antenna Type	Through Hole Patch
Material	Ceramic
Cable Length (mm)	150
Connector	IPEX MHF1 (U.FL)

3 Antenna

Frequency Range (MHz)	VSWR	Avg Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization	Axial Ratio
1575.42	≤2.0	>60	3.00	50 Ω	RHCP	<5 dB at zenith
1176.0 ±	≤2.0	<50	2.60			

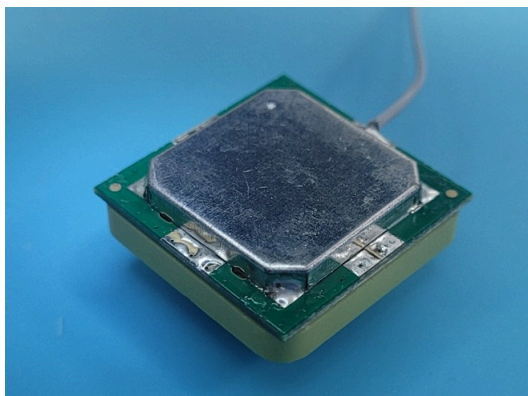
4 LNA

Frequency Range (MHz)	DC Voltage (V)	Current (mA)	Gain (dB)	VSWR	Noise Figure (dB)	Out of Band Rejection
1575.42 ±1.023 / 1602.56 ±4.0	3.0 to 5.0	20 ±3 at 3 V	18.0	≤2.0	≤3.0	≥25 dB

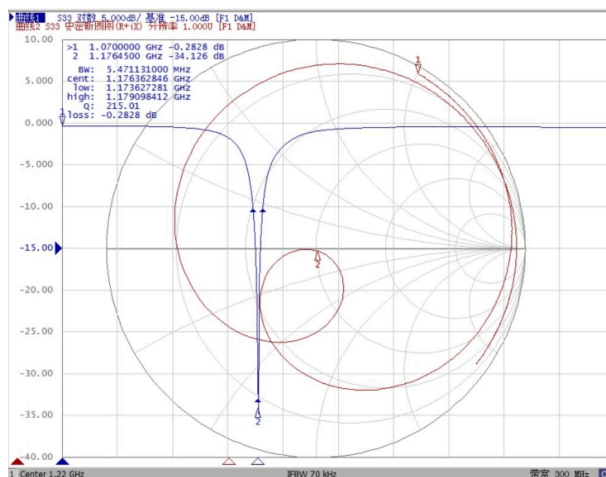
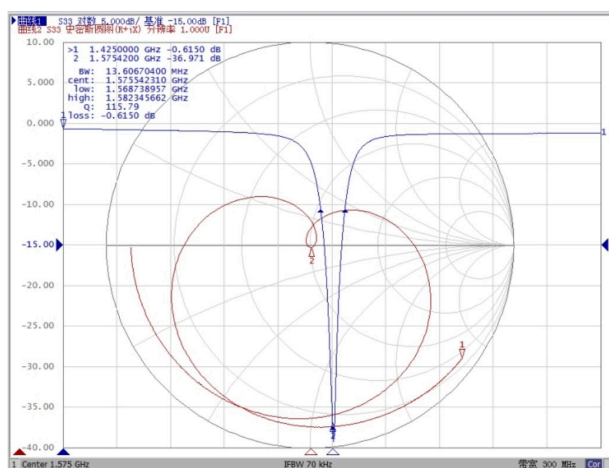
5 Environmental

Operational Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Relative Humidity	≤75%
Vibration	Sine sweep 1g (0-p), 0~55~10 Hz each axis
Moisture Sensitivity Level (MSL)	NA
RoHS and REACH compliant	Yes

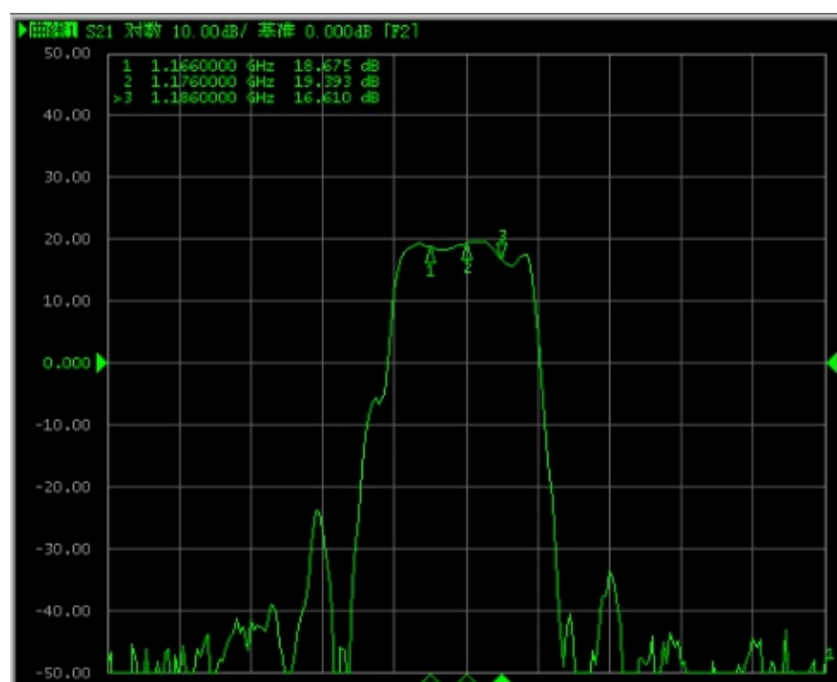
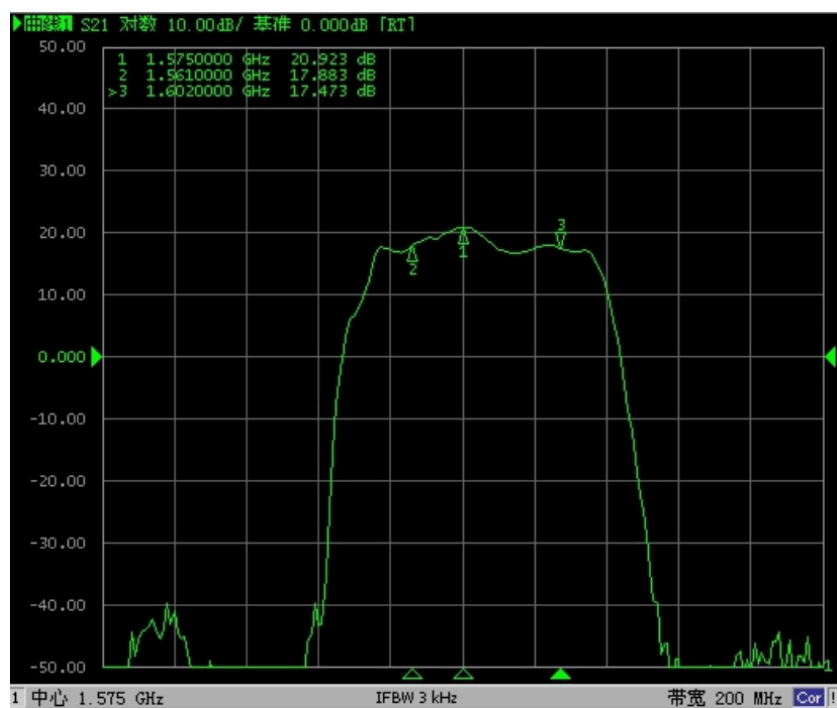
6 Product Views



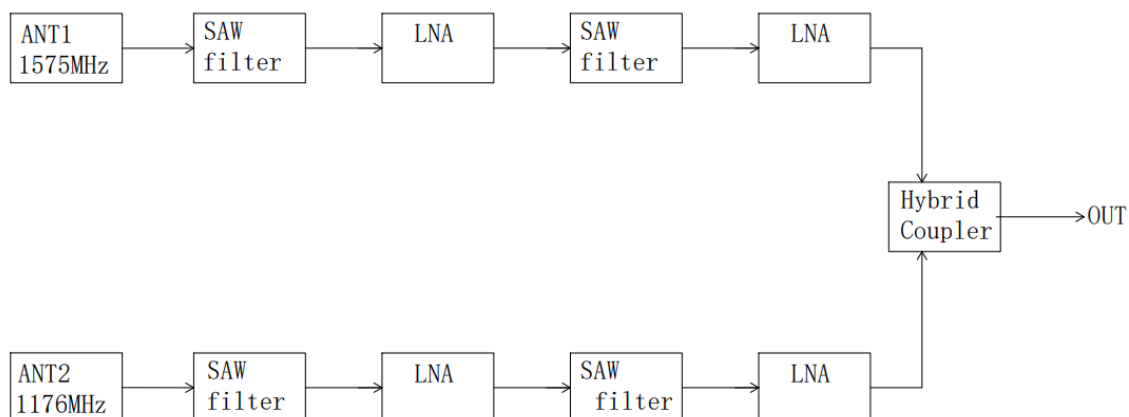
7 S11 / Smith Chart



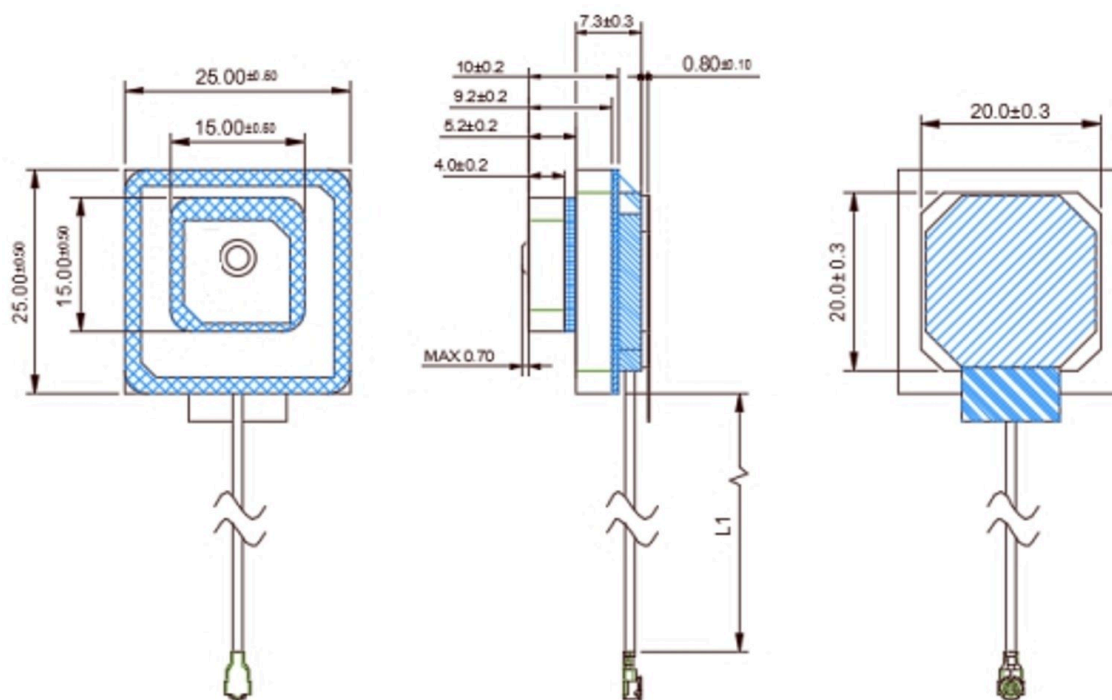
8 LNA Test Curve (Test Condition: DC 3.0 V)



9 Block Diagram



10 Antenna Mechanical Drawing



All dimensions in mm. $L1 = 150 \text{ mm} \pm 3.0 \text{ mm}$

11 Materials

No.	Part Name	Spec
1	Antenna	Dielectric Ceramics
2	PCB	FR4
3	Shielding	Tinplate
4	RF Connector	IPEX-1

12 Packaging



25 pcs per tray

6 trays per vacuum bag

4 vacuum bags per carton

600 pcs per carton

Outer box dimensions: 345 × 210 × 275 cm

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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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