

ACTIVE GNSS PATCH

TETHYS

Active GNSS Patch Antenna

SZA-N-3G24**BAND**
GNSS L1**LNA GAIN**
26 dB**NOISE FIGURE**
≤1.5 dB**SIZE**
18.0 × 18.0 × 6.3
mm

L1	1575.42 ±1.023 MHz	Covers GPS, Galileo, BeiDou
G1	1602.56 ±4.0 MHz	Covers GLONASS

Key Features

- High LNA gain: 26 dB
- Comprehensive GNSS support: GPS / GLONASS / Galileo / BeiDou
- Excellent out-of-band rejection
- Ideal for transmitter-heavy environments

1 Introduction

Introducing the Synzen TETHYS, a cutting-edge internal GPS / GLONASS / Galileo / BeiDou active patch antenna boasting an enhanced LNA gain of 26 dB.

The Synzen TETHYS (SZA-N-3G24) incorporates front-end and back-end SAW filters with exceptional rejection across all non-GNSS frequencies, safeguarding your GPS receiver from potential overdriving or damage caused by nearby transmitters. Specifically, at LTE frequencies (700 to 850 MHz), the antenna provides over 50 dB rejection, and between 1700 and 1910 MHz, it offers greater than 45 dB rejection.

Despite its remarkable out-of-band rejection capabilities, the TETHYS maintains an impressively low noise figure of 2.0 dB at 1575.42 MHz. This low noise figure significantly minimizes signal degradation, typical of losses in transmission lines.

For further optimization tailored to specific device environments, Synzen offers custom-tuned patch antennas. Elevate your GNSS experience with the Synzen TETHYS (SZA-N-3G24).

— Features

- ◆ High LNA gain: 26 dB
- ◆ Comprehensive GNSS support: GPS / GLONASS / Galileo / BeiDou
- ◆ Excellent out-of-band rejection
- ◆ Ideal for transmitter-heavy environments

— Applications

- ◆ Wearables
- ◆ Connected Health
- ◆ Transportation

2 Mechanical Specifications

Part Number	SZC-N-3G24
Name	TETHYS
Dimensions (mm)	18.0 × 18.0 × 6.3
Weight	8.0 g
Antenna Type	Through Hole Patch
Material	Ceramic
Cable Length (mm)	66.0
Connector	IPEX MHF1 (U.FL)

3 Antenna

Frequency Range (MHz)	VSWR	Avg Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization
1575.42 ±1.023	≤2.0	>50	1.8	50 Ω	RHCP
1602.56 ±4.0	≤2.0	<40	1.6		

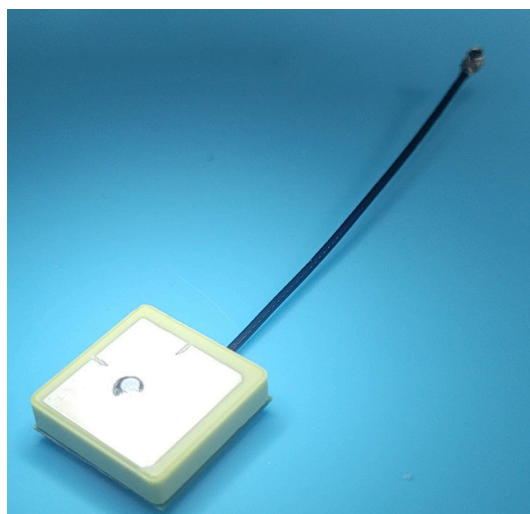
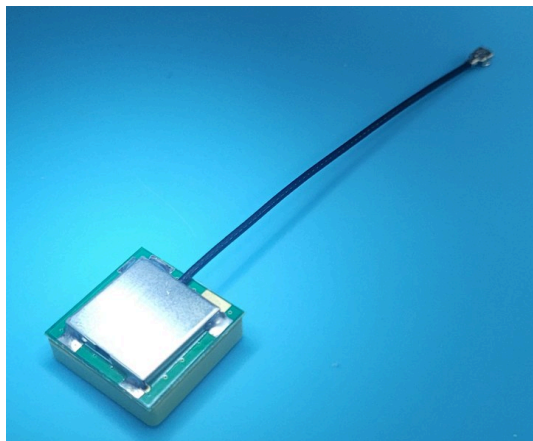
4 LNA

Frequency Range (MHz)	DC Voltage	Current (mA)	Gain (dB)	VSWR	Noise Figure (dB)
1575.42 ±1.023 / 1602.56 ±4.0	3.0 ±0.3 V	13 ±2	26.0	≤2.0	≤1.5

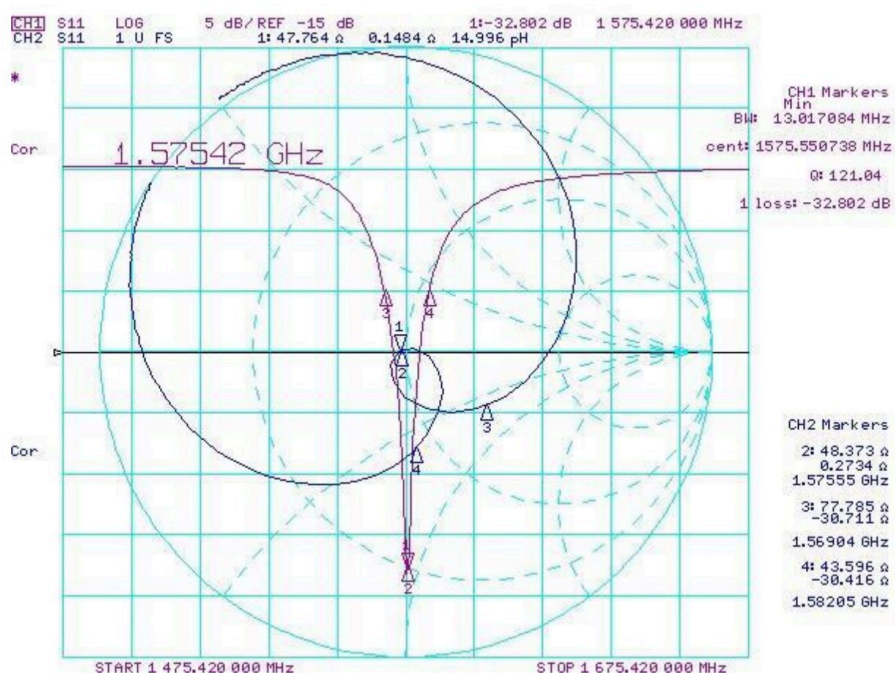
5 Environmental

Operational Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Relative Humidity	≤75%
Moisture Sensitivity Level (MSL)	NA
RoHS and REACH compliant	Yes

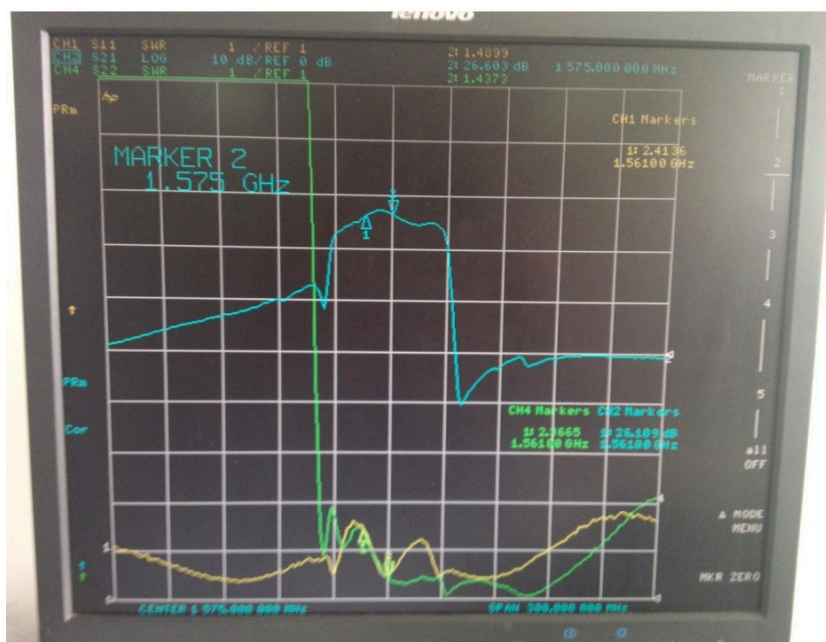
6 Product Views



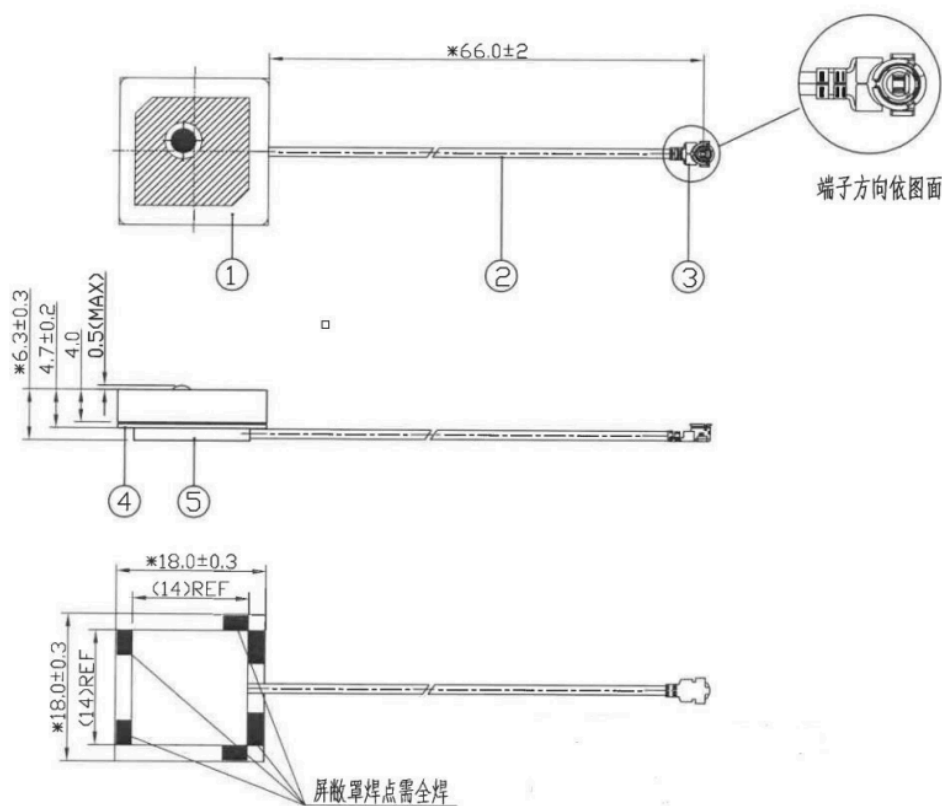
7 S11 / Smith Chart



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



9 Antenna Mechanical Drawing



All dimensions in mm

10 Materials

Description	Material	Specification
Antenna Substrate	Microwave dielectric	65 ±2
Pin	Copper and Ag-plated	4 mm
Electrode	Ag plated	
Adhesive Type	3M 55236	21.5 × 21.5
Sn	Sn:Ag:Cu	96.5:3:0.5

11 Packaging



50 pcs per bag

100 pcs per box

Outer box dimensions: 345 × 210 × 275 cm

12 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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