



— MULTI-GNSS FPC + CABLE

TABIT

Flexible Self-Adhesive Multi-GNSS Antenna

SZK-C-3G22

BANDS

L1 / L2 / L5 / L6

PEAK GAIN

Up to 4.26 dBi

CONNECTOR

MHF1, 120 mm

SIZE

59.0 × 28.0 × 0.2 mm

L5	1164 to 1189 MHz	Covers GPS L5, Galileo E5a, BeiDou B2a, NavIC L5
L2	1215 to 1240 MHz	Covers GPS L2, QZSS L2C
L6 / E6	1278 to 1299 MHz	Covers Galileo E6, QZSS E6/LEX
L1	1559 to 1610 MHz	Covers GPS L1, Galileo E1, BeiDou B1, GLONASS, SBAS

— Key Features

- Multi-GNSS: L1, L2, L5, L6
- GPS, GLONASS, Galileo, BeiDou, NavIC, QZSS, SBAS
- Linear cross polarized, omnidirectional pattern
- VSWR below 2.0 across all bands
- Flexible self-adhesive (3M 468), mounts on plastic enclosures

1 Introduction

TABIT antenna, a versatile multi-GNSS solution covering L1, L2, L5, L6 frequencies and supporting GPS, GLONASS, Galileo, BeiDou, and NavIC constellations. TABIT antenna stands out with exceptional efficiency rates, achieving 90% in the L1 bands and 70% in the L2, L5, and Indian L5 bands.

TABIT is a linear cross polarized antenna and features an omnidirectional radiation pattern, enhancing performance regardless of device orientation, with a VSWR below 2.0 across all bands.

Constructed from robust, flexible substrate, this antenna measures only 58 mm × 28 mm × 0.2 mm and includes a 120 mm cable for straightforward installation. It is engineered for direct mounting on the inner shell of plastic enclosures, eliminating the need for PCB space and requiring only a minimal clearance from the PCB ground for optimal performance. The antenna attaches securely to non-metal surfaces with 3M 468 adhesive, making it suitable for plastic housings.

TABIT is a forward-looking solution, supporting current and future signal bands, ensuring longevity and cost-efficiency in product manufacturing. Alternative cable lengths and connector options are available. We also provide a free integration service to ensure your product is fully optimized.

— Features

- ◆ Multi-GNSS: L1, L2, L5, L6
- ◆ GPS, GLONASS, Galileo, BeiDou, NavIC, QZSS, SBAS
- ◆ Linear cross polarized, omnidirectional pattern
- ◆ VSWR below 2.0 across all bands
- ◆ Flexible self-adhesive (3M 468), mounts on plastic enclosures

— Applications

- ◆ Telematics
- ◆ Positioning
- ◆ Fleet Management

2 Mechanical Specifications

Part Number	SZK-C-3G22
Name	TABIT
Dimensions (mm)	59.0 × 28.0 × 0.2
Weight	<2 g
Antenna Type	FPC + Cable
Cable Length (mm)	120.0, 1.13 Ø
Connector	MHF1 (U.FL Compatible)
Adhesive Backing	3M 468

3 Electrical / RF Specifications

Band	Frequency Range (MHz)	Efficiency (%)	Peak Gain (dBi)	VSWR	Impedance
L1 / E1	1563 to 1587	77.3	4.25	1.51:1	50 Ω
L2	1215 to 1240	59.0	0.51	1.29:1	
L5	1164 to 1189	55.6	1.11	1.67:1	
L6 / E6	1278 to 1299	48.0	1.41	1.64:1	
GLONASS	1593 to 1610	74.5	4.22	1.28:1	
BeiDou	1559 to 1591	77.3	4.26	1.58:1	

Note: The antenna performance was measured on a 2 mm thick ABS plastic sheet.

4 Environmental

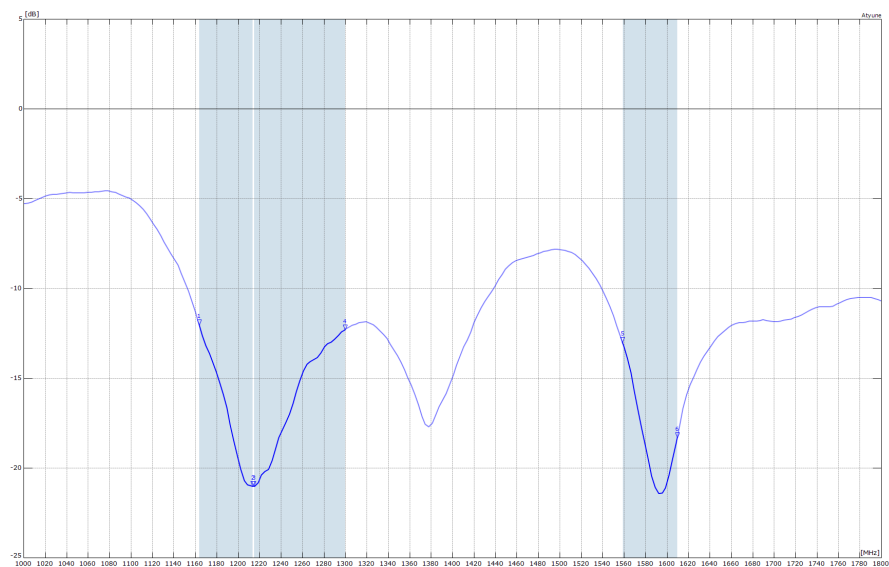
Operational Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Relative Humidity (Storage)	65 ±20% RH
Moisture Sensitivity Level (MSL)	1
RoHS and REACH compliant	Yes

5 GNSS Supported Band List

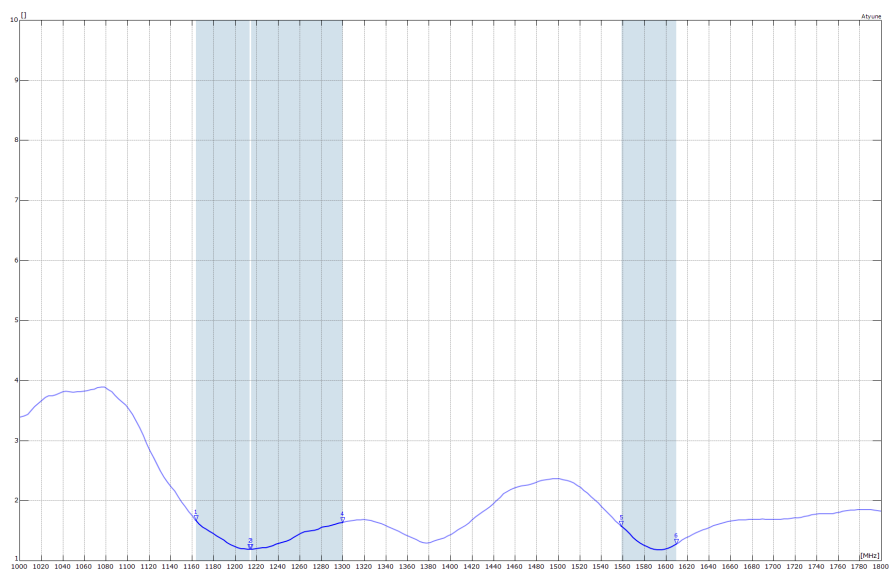
Constellation	Bands
GPS	L1, L2, L5
GLONASS	L1, L2, L3, L5
Galileo	E1, E5a, E5b, E6
BeiDou	B1, B2a, B2b, B3
QZSS	L1, L2C, L5, E6/LEX
NavIC	L5
SBAS	L1

6 RF Characteristics

S11 Parameter

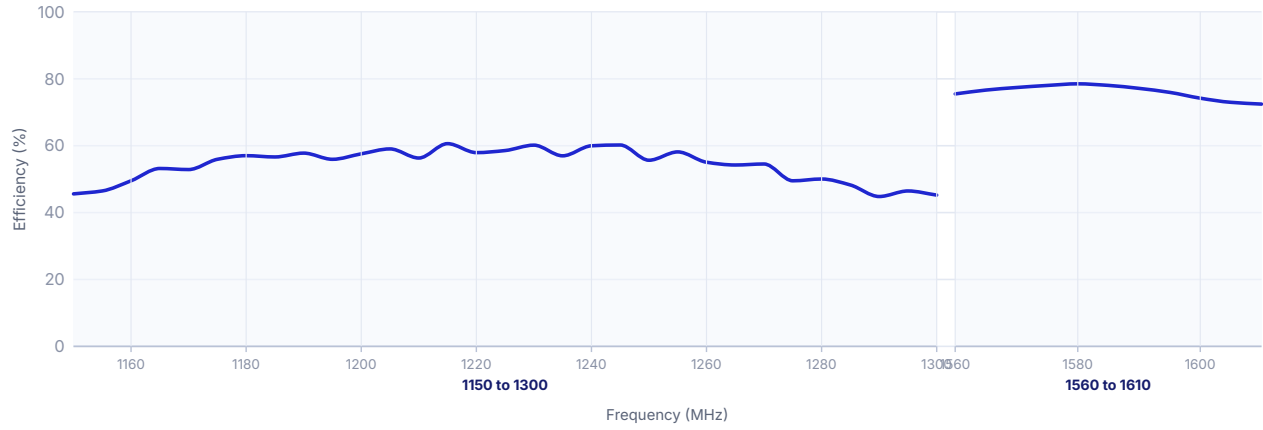


VSWR

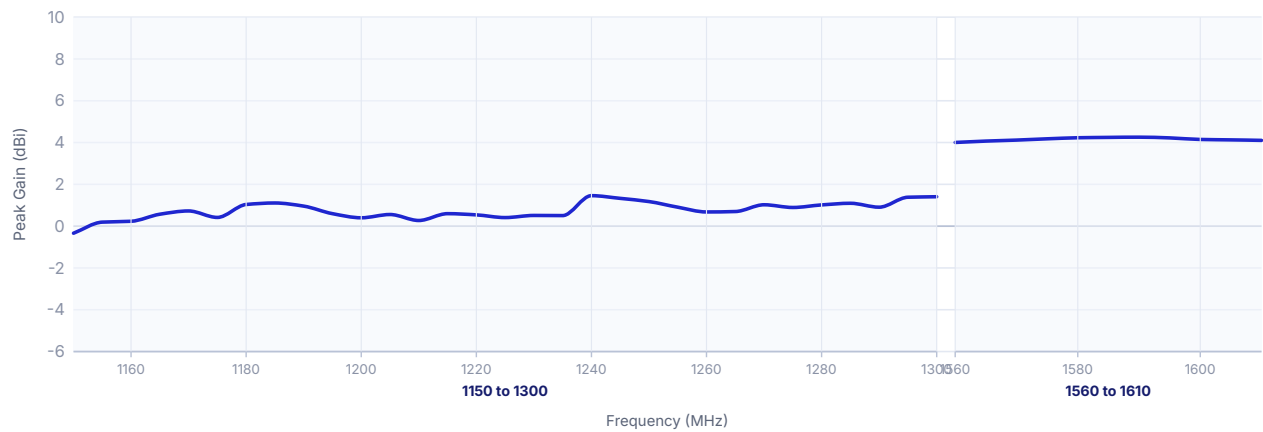


7 Antenna Performance

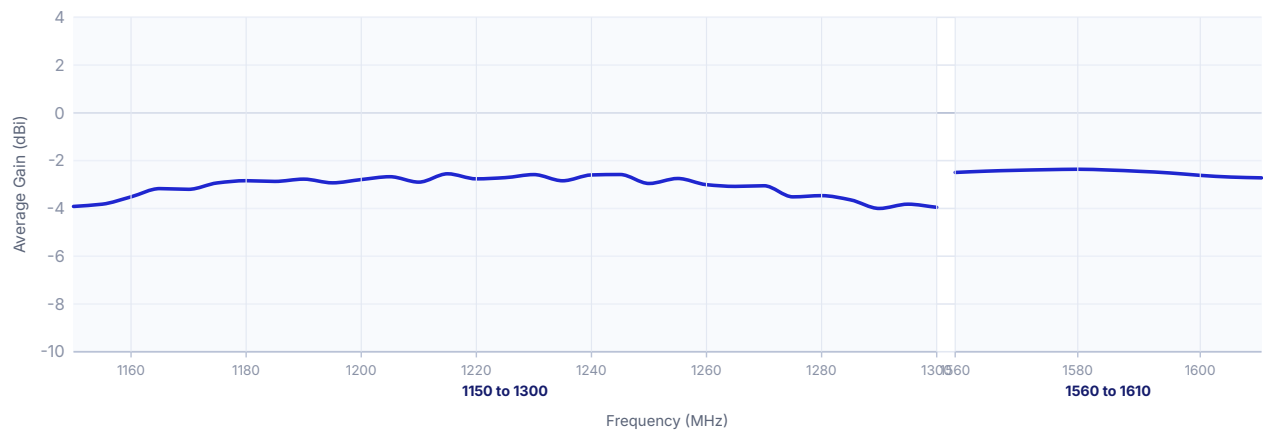
Efficiency



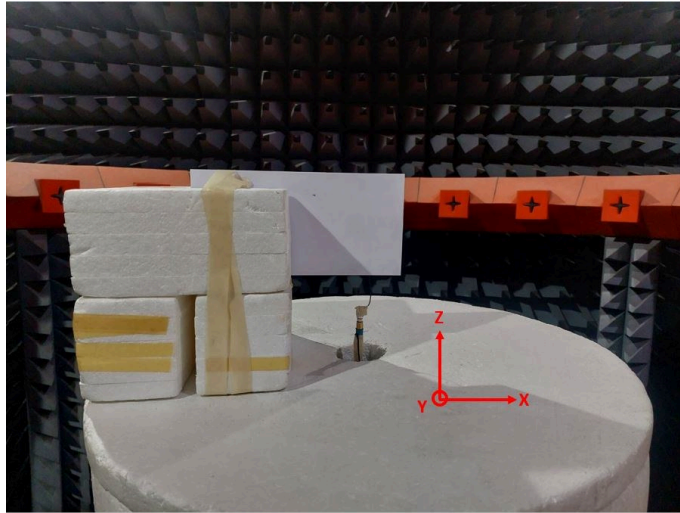
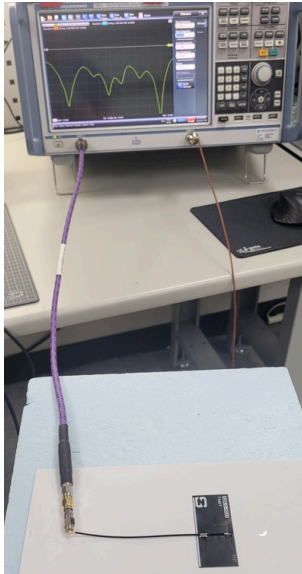
Peak Gain



Average Gain



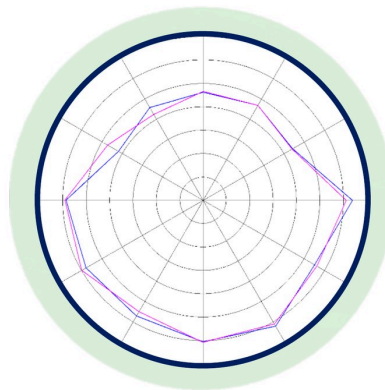
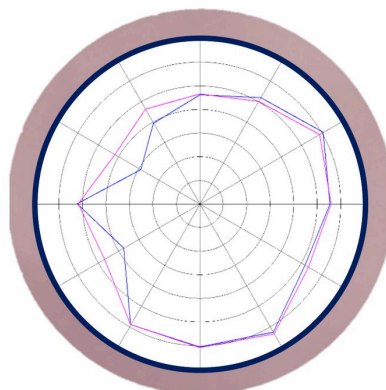
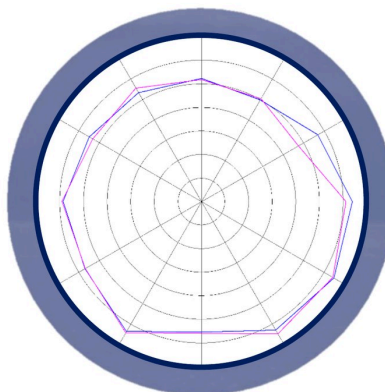
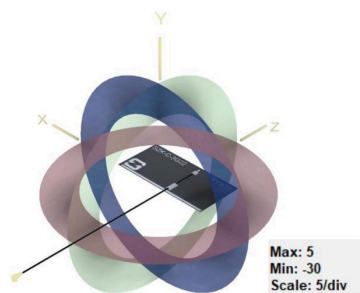
8 Test Setup



Left: analyzer test setup. Right: chamber test setup.

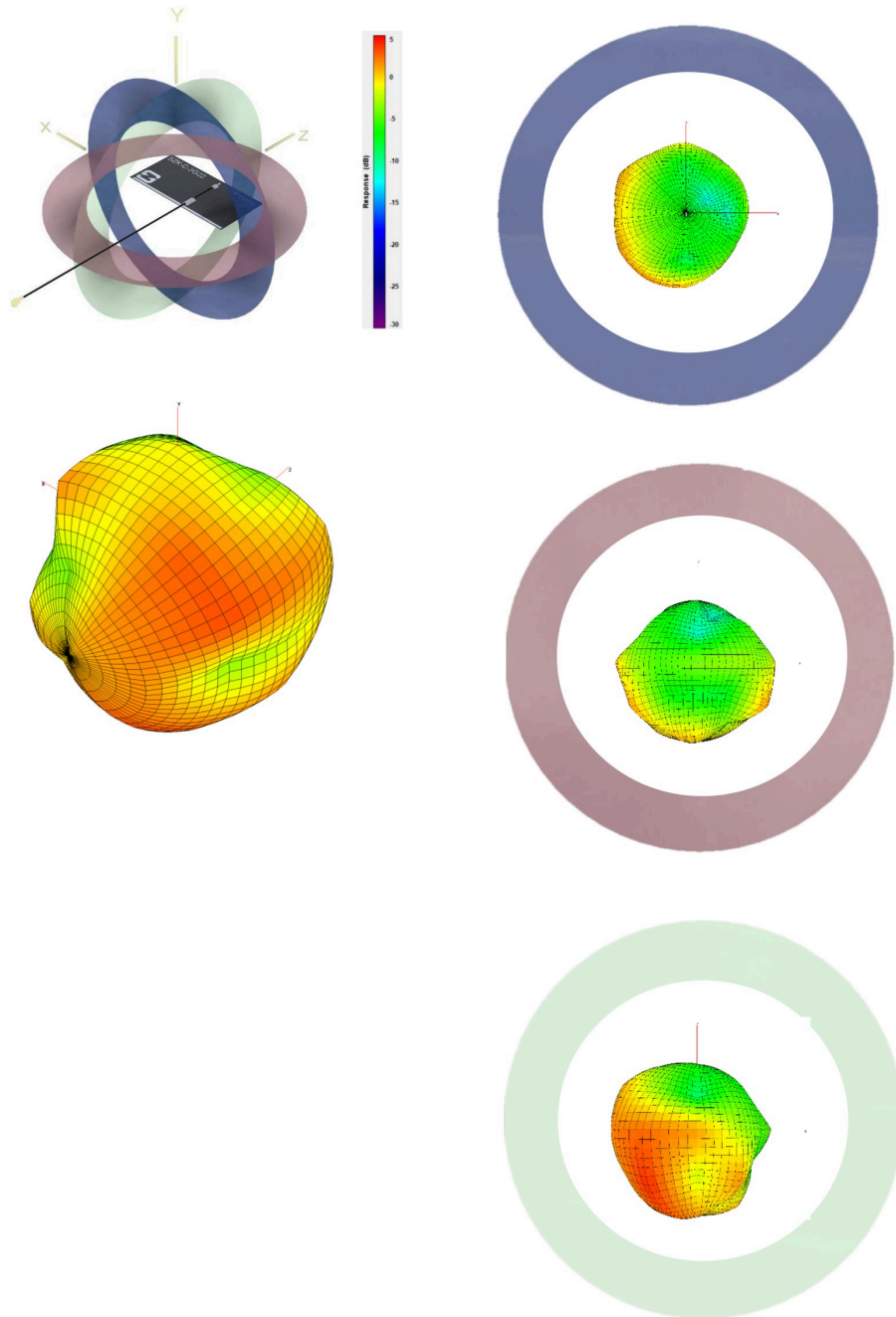
9 RF Radiation Patterns: 2D

MEASURED ON A 2 MM THICK ABS PLASTIC SHEET

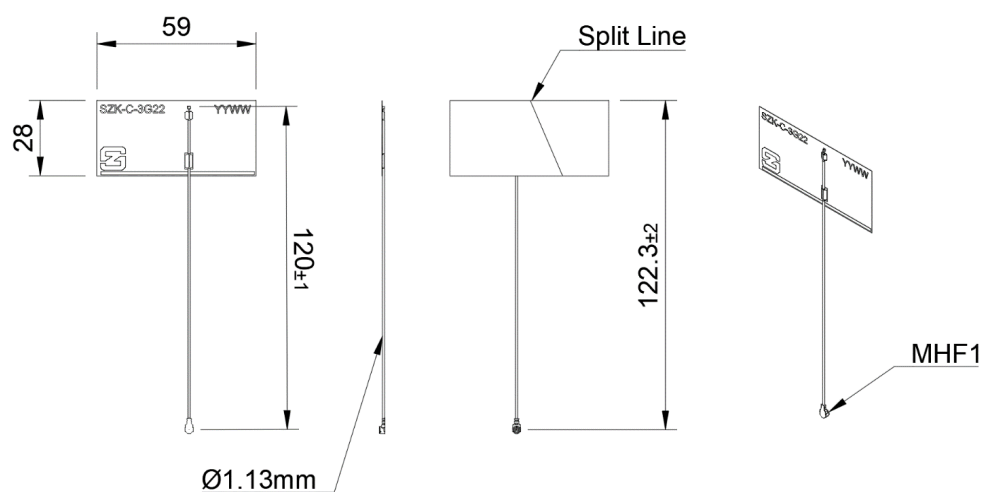


10 RF Radiation Patterns: 3D at 1575 MHz

MEASURED ON A 2 MM THICK ABS PLASTIC SHEET, FREQUENCY POINT 1575 MHZ



11 Mechanical Drawing



ALL DIMENSIONS IN MM

All dimensions in mm

12 Antenna Detail



13 Packaging

- ◆ Antennas packed in PE bag (20 per bag)
- ◆ Small bag dimensions: 28.5 × 9.5 cm
- ◆ 100 pcs per larger PE bag with product label
- ◆ Bag dimensions: 30 × 19 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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