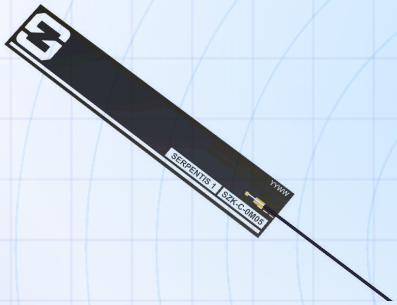
SP TECHNOLOGY

PRODUCT DATASHEET



SUB-GHZ FPC + CABLE

SERPENTIS 1

433 MHz ISM / LPWA / LTE FPC Antenna

SZK-C-0M05

FREQUENCY	PEAK GAIN	CONNECTOR	SIZE
410 to 467 MHz	-2.90 dBi	MHF1, 180 mm	88.0 × 15.0 × 0.2 mm

LTE 410	410 to 427 MHz	Covers B87, B88
ISM 433	430 to 435 MHz	Covers ISM 433, LoRaWAN
LTE 450	450 to 467 MHz	Covers B31, B72, B73

Key Features

- Ultra-small sub-GHz FPC antenna at only 88.0 × 15.0 mm
- Sub 1 GHz for LTE bands 31/72/73/87/88
- Simple integration, plug and operate the device without designing onboard antenna
- Can be tuned for various environments and plastic thickness with additional Pi network, free tuning service available
- Alternate cable lengths and connectors available upon request, contact sales@synzen.com.tw

Synzen Precision Technology Ltd
Taipei, Taiwan · www.synzen.com.tw · sales@synzen.com.tw

2026
Rev A

1 Introduction

A flexible antenna for Sub-1 GHz and low power wide-area (LPWA) applications including LoRaWAN®. The 433-FPC also performs well in LTE cellular bands 31/72/73/87/88. High performance with an ultra-small form factor for simple integration.

Features

- Ultra-small sub-GHz FPC antenna at only 88.0 × 15.0 mm
- Sub 1 GHz for LTE bands 31/72/73/87/88
- Simple integration, plug and operate the device without designing onboard antenna
- Can be tuned for various environments and plastic thickness with additional Pi network, free tuning service available
- Alternate cable lengths and connectors available upon request, contact sales@synzen.com.tw

Applications

- Industrial / Scientific / Medical
- M2M Industrial
- Smart Meters
- Remote Control
- Remote Monitoring
- Remote Sensing

2 Mechanical Specifications

Part Number	SZK-C-0M05
Name	SERPENTIS 1
Dimensions (mm)	88.0 × 15.0 × 0.2
Weight	<2 g
Antenna Type	FPC + Cable
Cable Length	180 mm, Black
Cable Type	Mini Coax Ø 1.13 mm
Connector	MHF1 (U.FL Compatible)
Adhesive Backing	3M 468

3 RF Specifications

Frequency Range (MHz)	Average Efficiency	Peak Gain (dBi)	S11 (max) dB	VSWR (max)	Impedance
410 to 427	>30%	-3.00	<-7.5	2.65:1	**50 Ω**
430 to 435	>45%	-2.90	<-11.5	1.80:1	
450 to 467	>30%	-3.00	<-10.0	2.00:1	

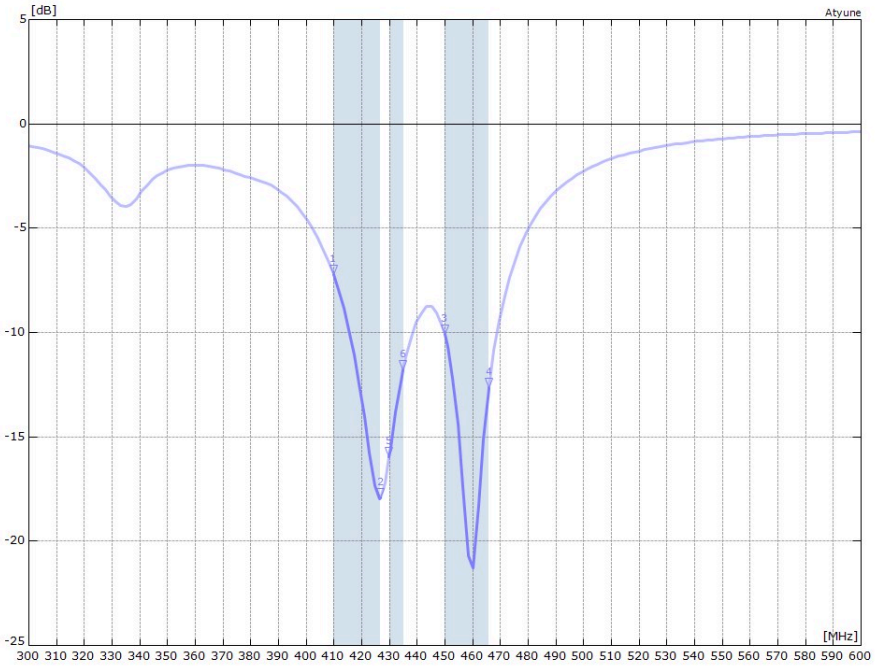
Polarization: Linear. Max input power: 5 W.

4 Environmental

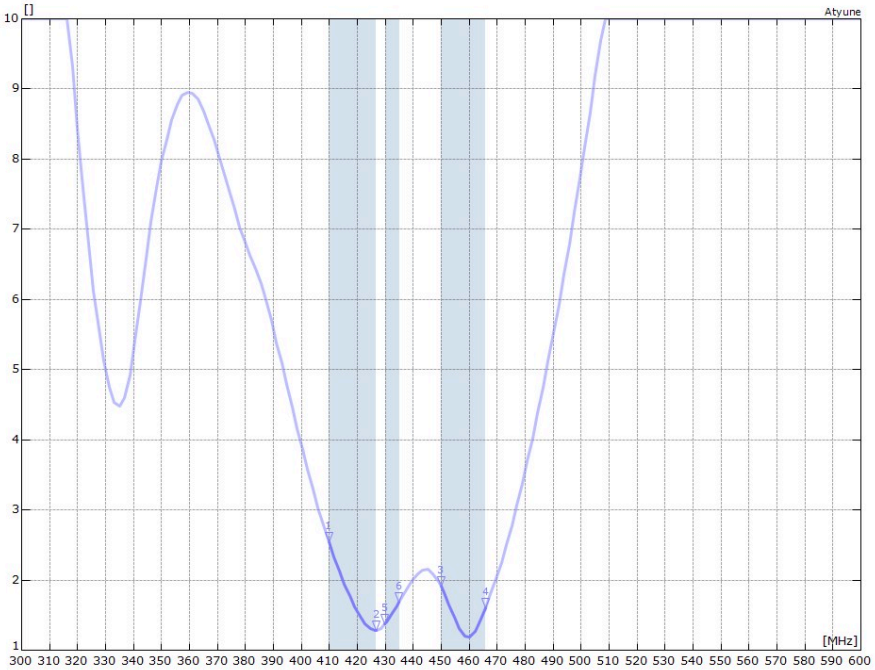
Operational Temperature	-40 to +85°C
Storage Temperature	-10 to +40°C
Relative Humidity	≤75%

5 RF Characteristics

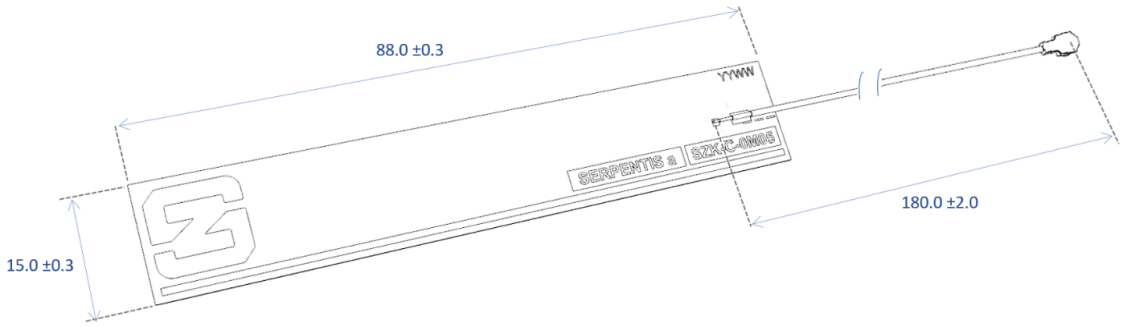
S11 Parameter



VSWR



6 Antenna Mechanical Drawing

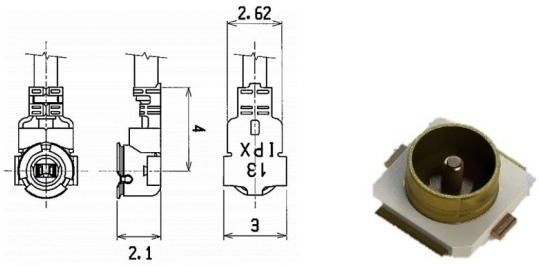


All dimensions in mm. The plug connector on the antenna is an IPEX MHF1.

7 Antenna Detail

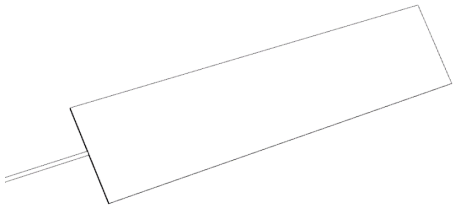


8 Suitable PCB Mating Connector (U.FL)



Example: Joymax CT-MPB01X (www.joymax.com.tw)

9 Adhesive Backing



The antenna comes with 3M 468 adhesive backing upon a PI Kapton substrate. An easy peel cut is on the back side for easy cover removal.

10 Bag and Packaging Information



Antennas packed in PE bag (20 antennas per bag)

Small bag dimensions: 9.5 × 28.5 cm

100 pcs per larger bag with product label

Bag dimensions: 19 × 30 cm

1000 pcs per carton

Carton dimensions: 33.7 × 32.2 × 10 cm

11 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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