



SYNZEN

PRODUCT DATASHEET

ARIEL1 | THROUGH HOLE CERAMIC PATCH | ISM 868

Part Number / Name

- SZC-N-3M13
- ARIEL1

Description

- ISM868 ceramic through hole patch

Features

- GPS/GALILEO/GLONASS constellations
- Through hole mount
- High Gain
- Dimensions: 25.0 x 25.0 x 4.0 (mm)





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Introduction

ARIEL1 (SZC-N-3M13) by Synzen is ceramic patch antenna tailored for exceptional performance within the 868MHz frequency range. 25x25x4mm. It's an ideal solution for applications demanding a high-performance directive antenna while simultaneously conserving valuable board space.

When affixed to a 70x70mm ground plane, ARIEL1 ceramic patch antenna exhibits remarkable efficiency, boasting an impressive 60% and a peak gain of 2.00dBi. Additionally, it offers right-hand circular polarization with an outstanding axial ratio of less than 3dB. This combination guarantees maximum link reliability, even when devices constantly change their orientation in relation to one another.

The ARIEL1 (SZC-N-3M13) stands as the perfect choice for compact fixed wireless applications operating within the 868 MHz ISM band. Its versatility shines in a variety of use cases, including remote instrumentation and RFID applications. Furthermore, it delivers exceptional performance in Low-Power Wide-Area Networks (LPWAN) operating at 868 MHz, such as LoRa, allowing users to harness the benefits of low-power, long-range communication capabilities provided by these networks.

It's worth noting that antenna performance may vary depending on the surrounding device environment and ground-plane conditions compared to the specified parameters. To address this variability, Synzen offers custom tuning services tailored to specific device environments and ground planes.

Choose ARIEL1 for a reliable, high-performance antenna solution that excels in a variety of applications. Enhance your connectivity with the support of Synzen custom tuning services and mechanical integration resources, ensuring your wireless communications perform at their best.

Typical Applications

- Asset Tracking
- Precision agriculture
- Automotive
- Fleet management
- Emergency response



General

Mechanical Specifications

Part Number	SZC-N-3M13
Name	ARIEL1
Dimensions	25.0 x 25.0 x 4.0 (mm)
Weight	<8g
Antenna Type	Through Hole Patch
Material	Ceramic

Electrical / RF Specifications*

Band	Frequency Range (MHz)	Avg Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization
ISM 868	863-870	>60	2.0	50Ω	RHCP

Axial Ratio	Avg Gain
<3.0	-2.0

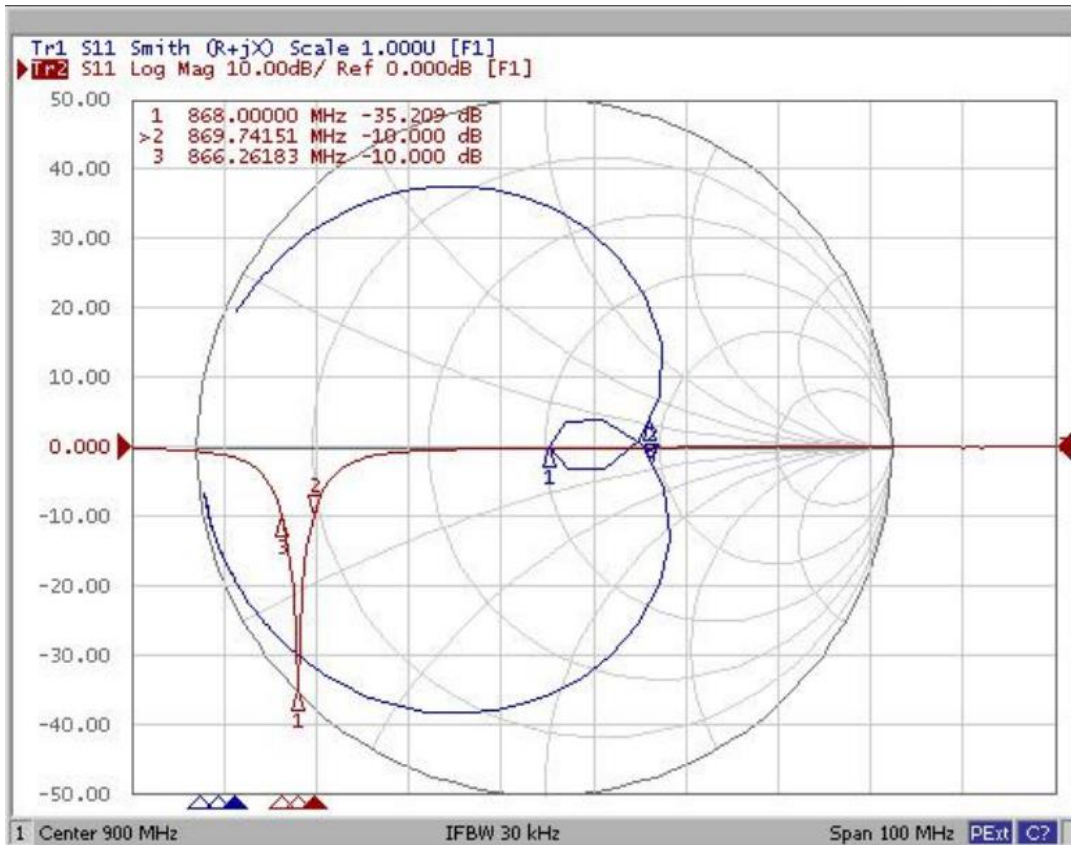
*All performance stated is measured of SZDV-C-3G31 evaluation kit.

Environmental Specifications

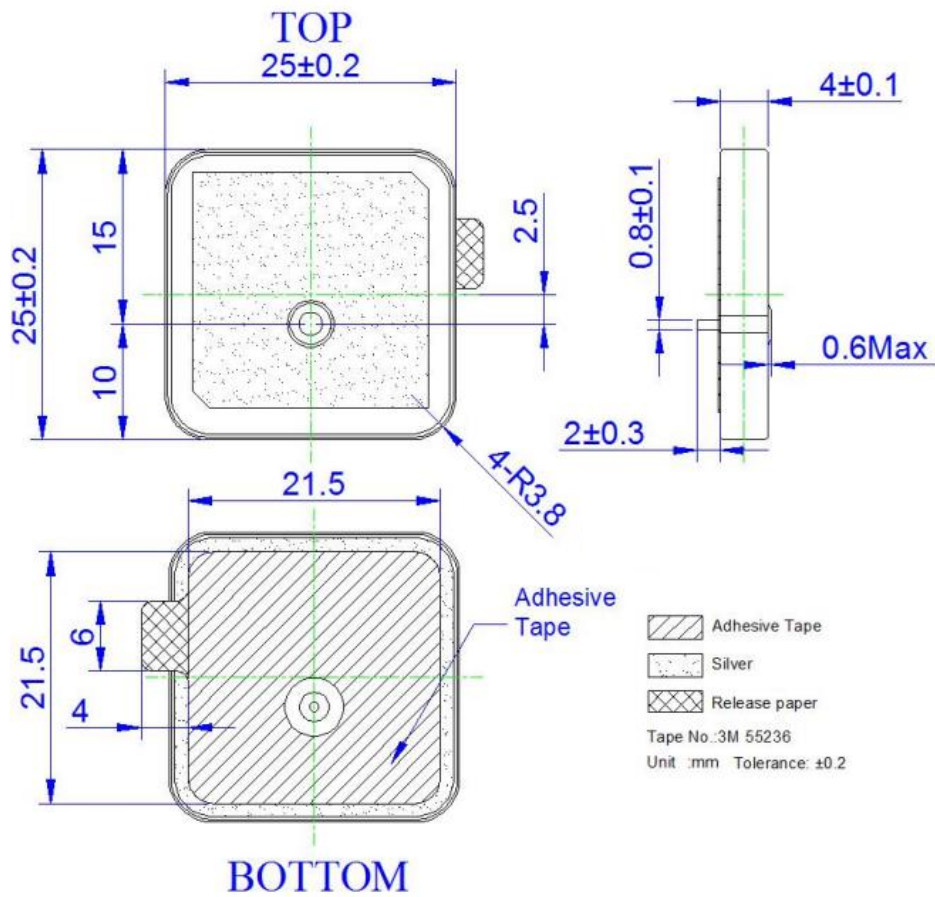
Operational Temperature	-40 to +85 (°C)
Storage Temperature	-10 to +40 (°C)
Relative Humidity	≤75%
Moisture Sensitivity Level (MSL)	NA
RoHs & REACH compliant	Yes

RF Characteristics

S11 / Smith



Antenna Mechanical Drawing

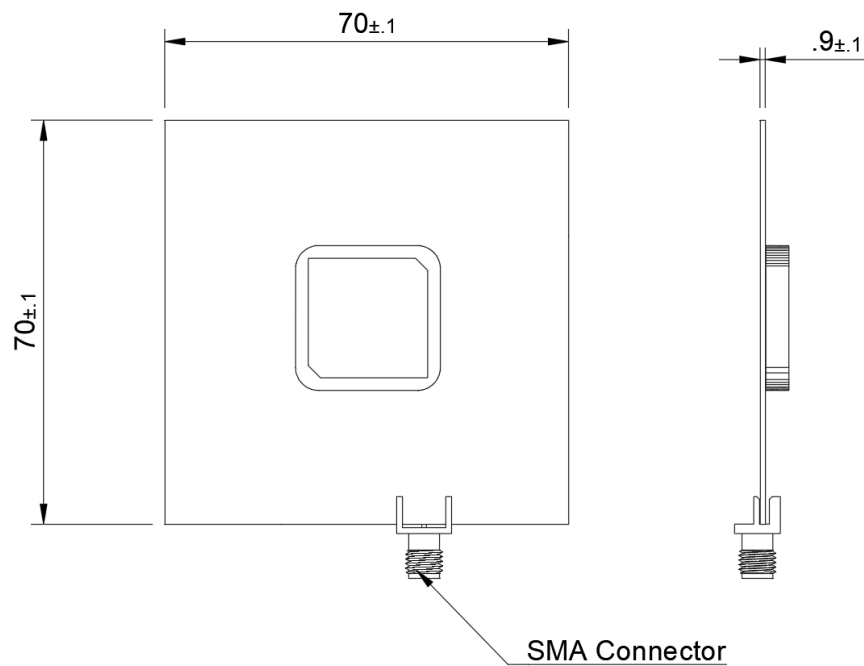


UNLESS OTHER SPECIFIED TOLERANCES ON :
 $X = \pm 0.5$ $X.X = \pm 0.3$ $X.XX = \pm 0.1$
 ANGLES = $\pm 1^\circ$ HOLEDIA = ± 0.1

Evaluation Kit

SZDV-C-3M13 Evaluation Kit

The SZDV-C-3M13 evaluation kit is a PCBA with the antenna (SZC-C-3M13) fitted. Connection to the antenna is made using the fitted female SMA connector.





Packaging

Plastic tray	Inner box	Outside box
40 Pcs/tray	200 Pcs/box	800 Pcs/box

Environmental

Material Regulation

The antenna has been tested to conform to RoHS requirements. A certificate of conformance is available upon request.

Description	Material	Specification
Antenna Substrate	Microwave dielectric	65±2
Pin	Copper and Ag-plated	4MM
Electrode	Ag Plated	
Adhesive Type	3M 55236	S21.5*21.5
Sn	Sn:Ag:Cu	96.5:3:0.5



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