Siretta
Enabling Industrial IoT

Echo 36B

868 / 915 MHz Embedded FPC Antenna



General Description

The Echo 36B is a compact embedded Flexible Printed Circuit (FPC) antenna engineered for reliable connectivity across the 868 MHz and 915 MHz ISM bands. It achieves average efficiencies of 70%, with gain from 1–3 dBi, making it an excellent choice for LPWAN and industrial IoT applications requiring dependable long-range communication.

Its ultra-thin, flexible construction allows the antenna to fit into compact and space-constrained devices where a conventional rigid antenna may be impractical. This provides greater installation versatility, while the adhesive back layer enables quick and secure mounting inside an enclosure. For best performance, the antenna should be mounted on a plastic or non-conductive surface.

The Echo 36B is supplied with a 100 mm coax cable and U.FL/I-PEX connector, providing straightforward connection to embedded wireless modules. Alternative cable lengths and connector types may also be available for higher-volume requirements.

Key Features

- 868 MHz & 915 MHz ISM band support
- High-efficiency performance
- Gain 1–3 dBi
- Flexible ultra-thin FPC construction
- Adhesive back layer for easy installation

Typical Applications

- LPWAN & LoRaWAN devices
- Smart metering systems
- Remote monitoring equipment
- Industrial IoT sensors
- Building automation systems

1–3 dBi	ISM / LPWAN	Industrial IoT	Adhesive Mount
Gain	868 & 915 MHz	Sub-GHz Wireless	Easy Installation

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Electrical Specifications

Usable Frequency Coverage:	863–870 MHz 902–928 MHz
Impedance:	50 Ohm
Polarisation:	Linear
Peak Gain:	
868 MHz:	Up to 7.03 dBi
915 MHz:	Up to 7.19 dBi
Ground Plane:	Tested on 2 mm acrylic sheet

Environmental Specifications

Operating Temperature Range:	-30°C to +75°C

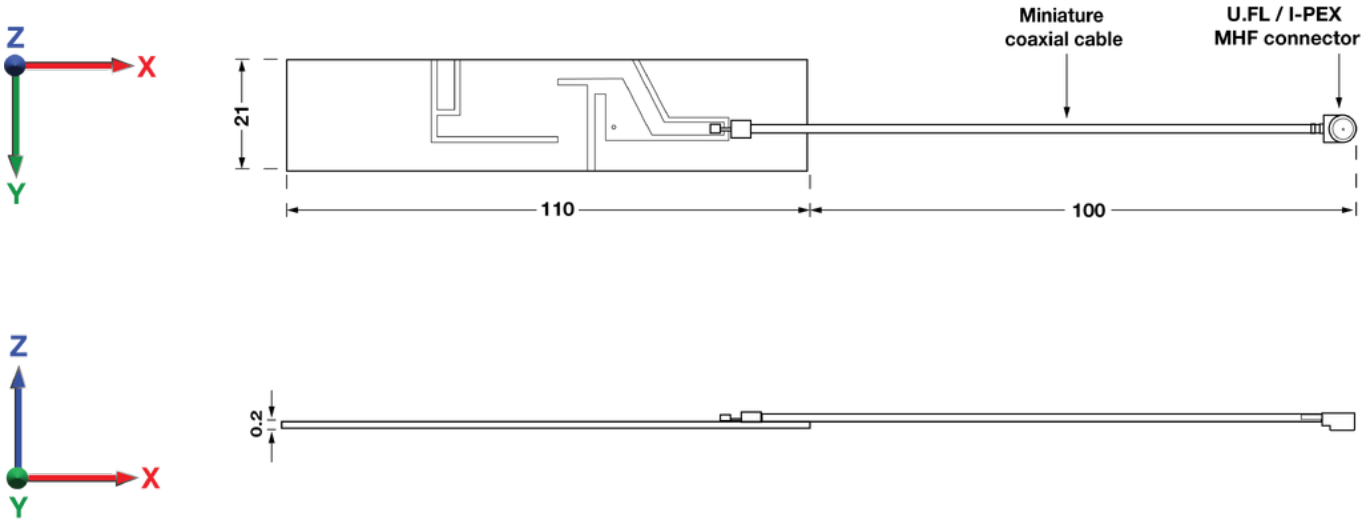
Mechanical Specifications

Dimensions:	110 mm × 21 mm × 0.2 mm (without cable and connector)
Cable:	⌀ 0.81 x 100 mm coaxial
Connector:	U.FL/I-PEX
Mounting Method:	Embedded

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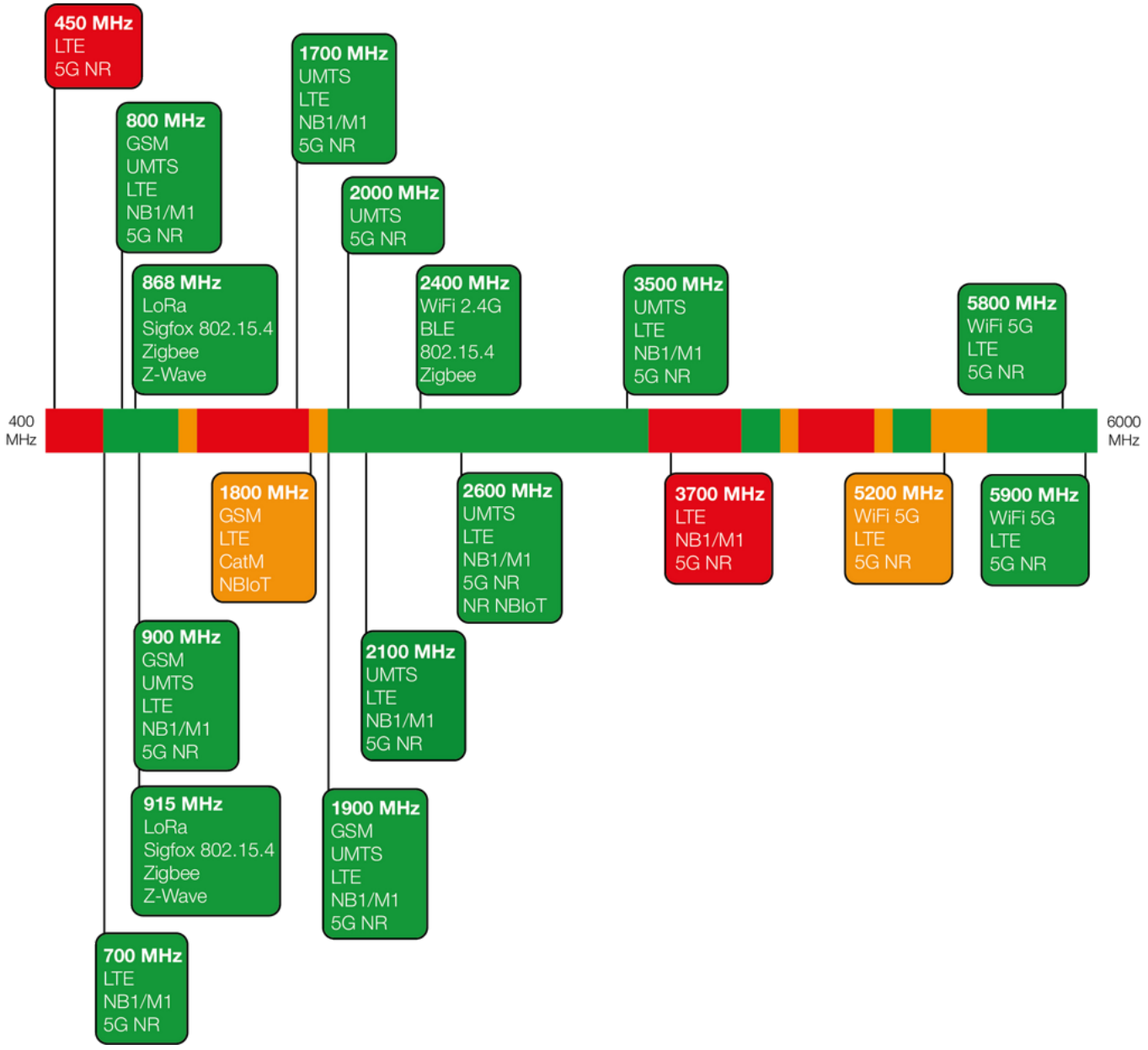
Note: Dimensions in mm

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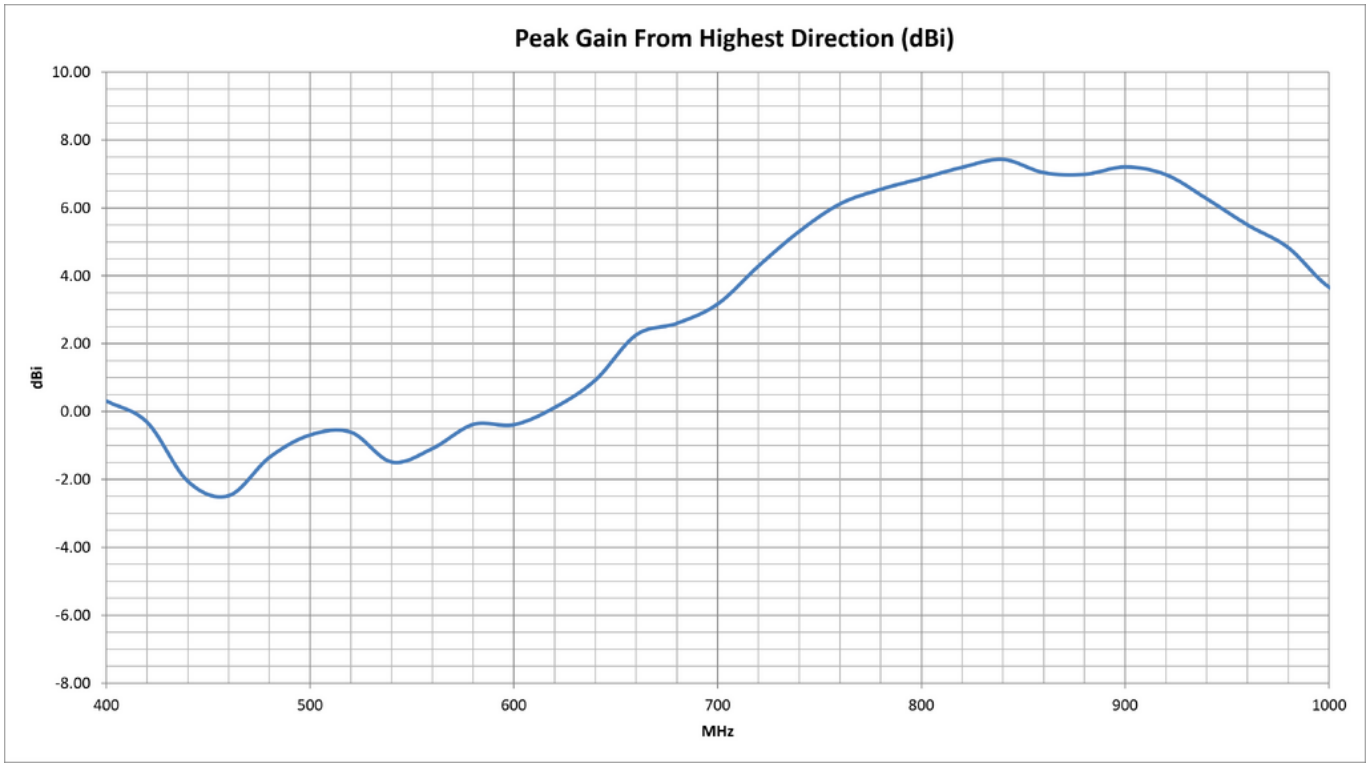
Spectrum Coverage*

The Spectral View Diagram visually describes the performance of the antenna from 400 MHz to 6000 MHz. Key frequencies are marked highlighting the technology used and the colour represents the performance at that frequency, taking into consideration the VSWR and radiated efficiency of the antenna.

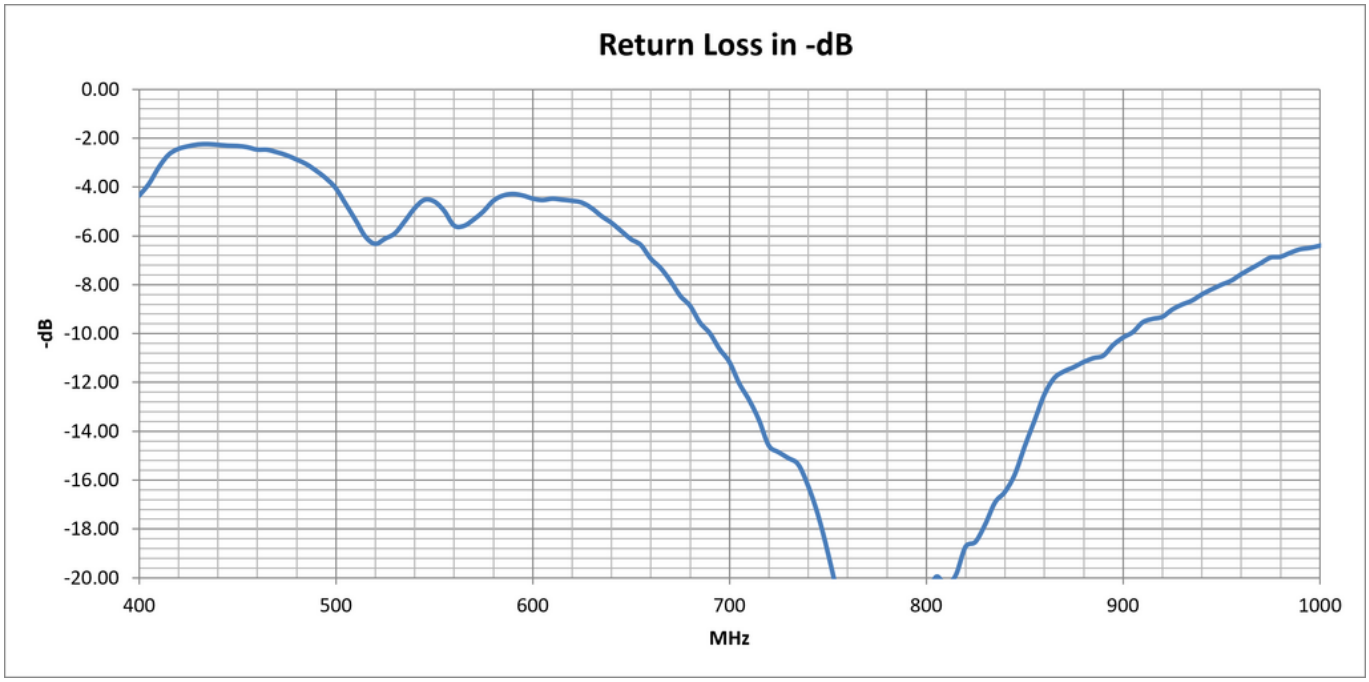


Suitable band Adequate band in good signal conditions Likely to be unsuitable

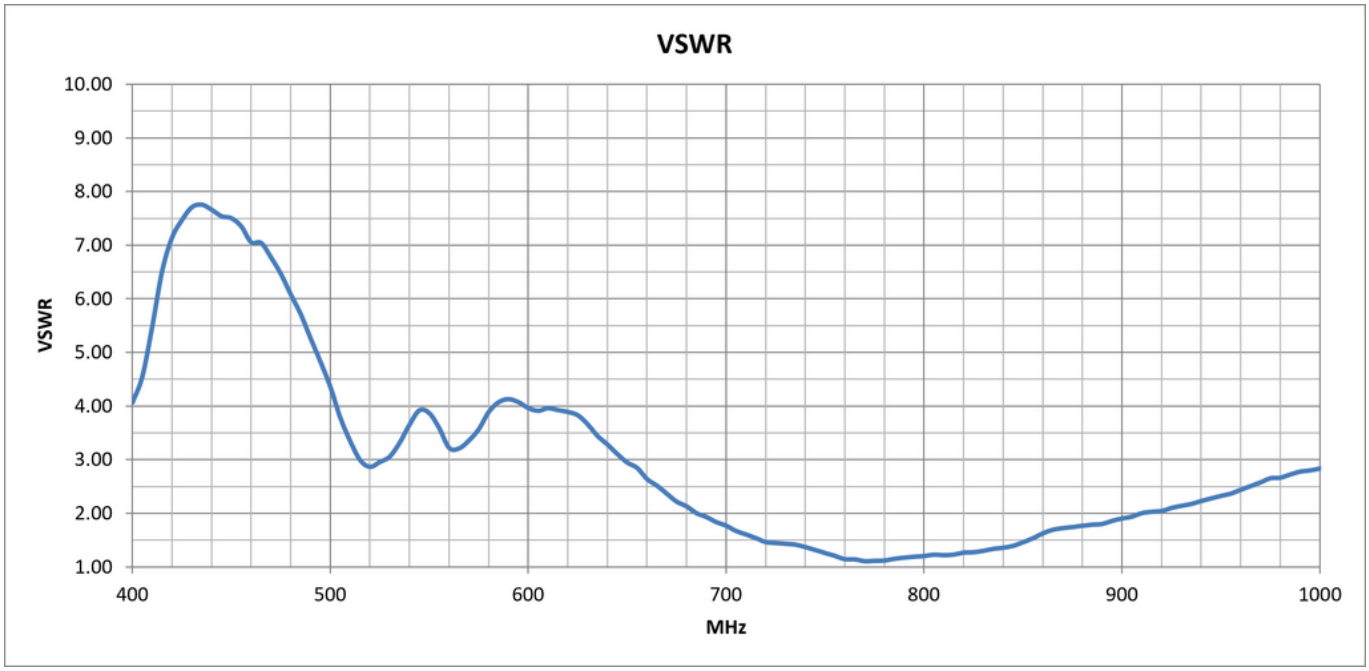
Peak Gain vs. Frequency



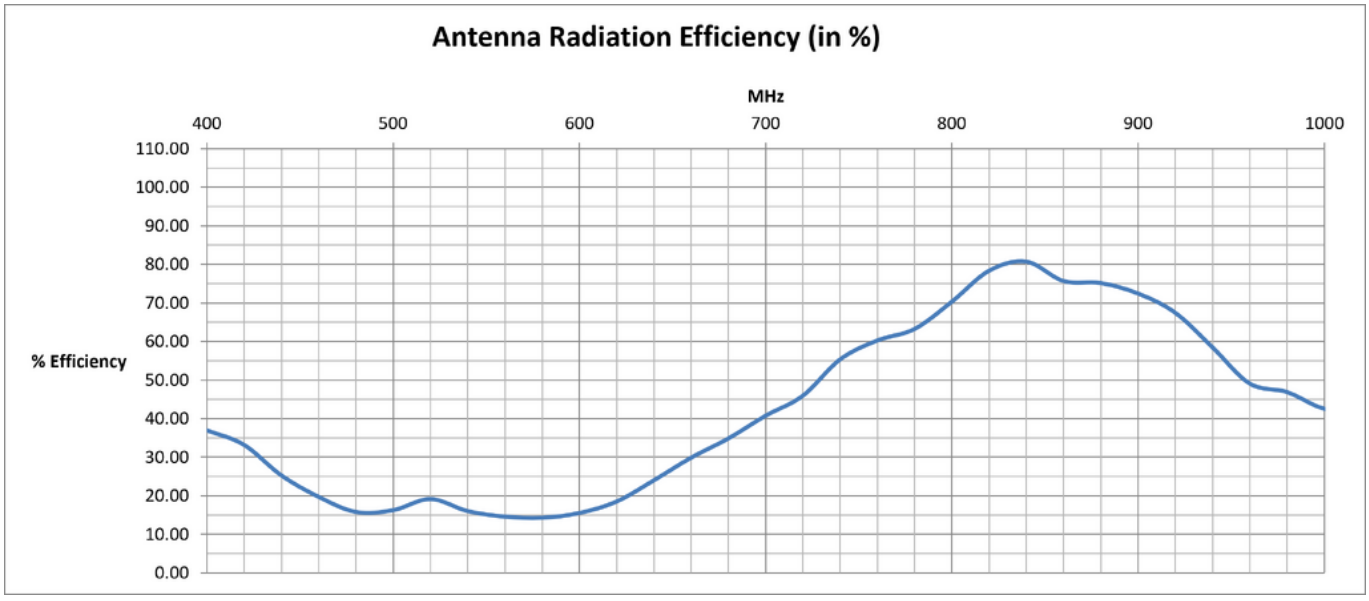
Return Loss



VSWR



Radiation Efficiency

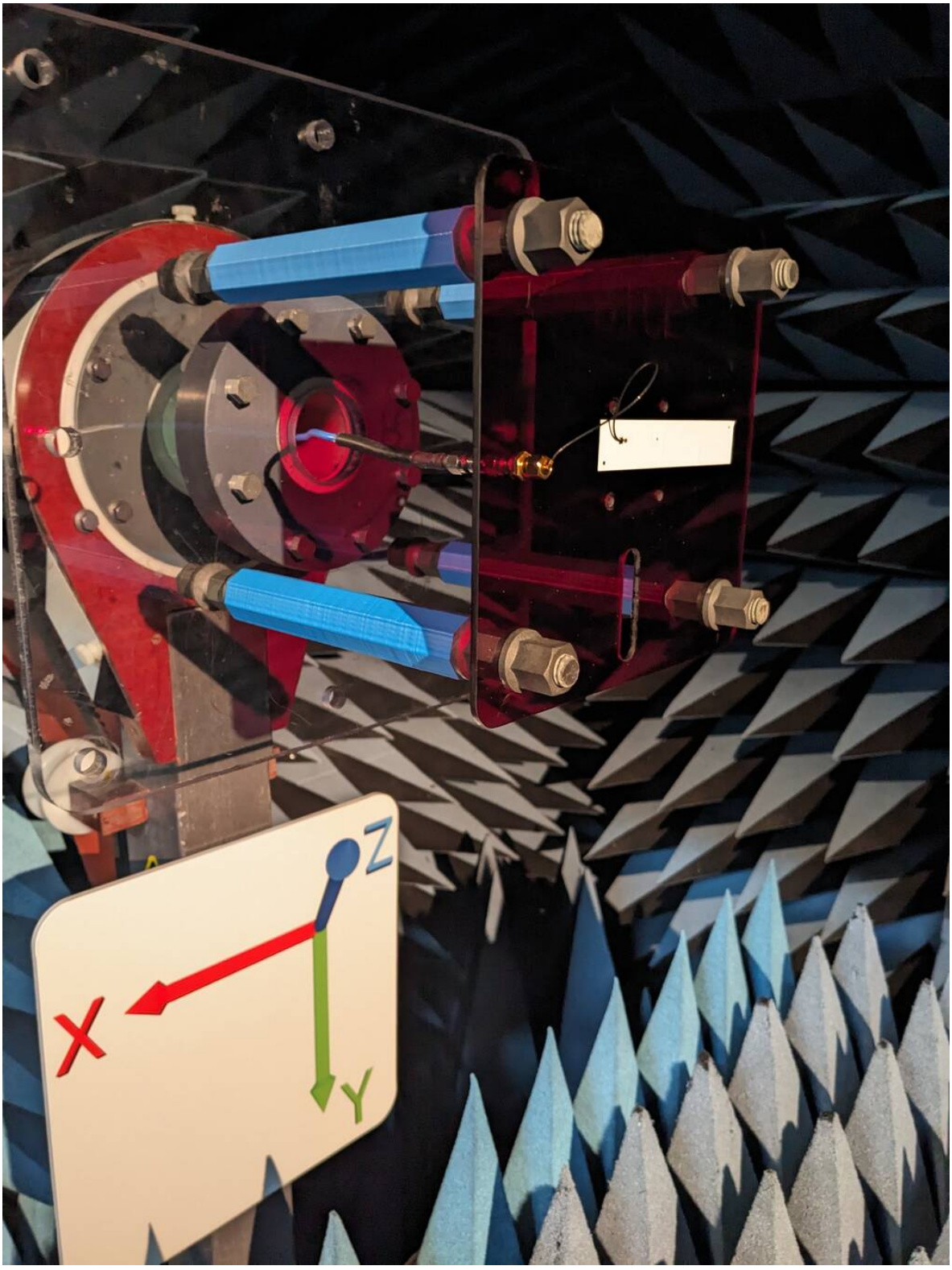


ISM Standards Frequency Support*

Application	Frequency Range (MHz)	Average Efficiency (%)	Maximum VSWR	Peak Gain from highest direction (dBi)	Use Indicator
ISM 868 MHz	863 - 870	75.51	1.72	7.03	↑
ISM 915 MHz	902 - 928	68.45	2.12	7.19	↑

↑ Suitable band □ Adequate band in good signal conditions ↓ Likely to be unsuitable

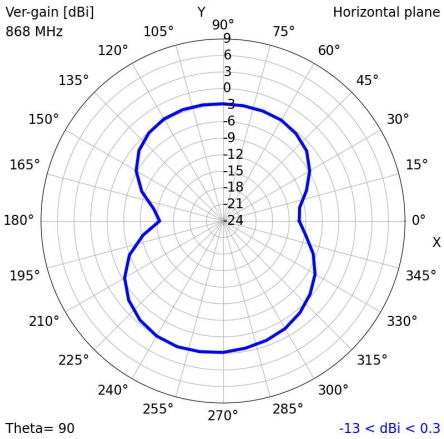
Test Setup (on 2 mm Acrylic Sheet)



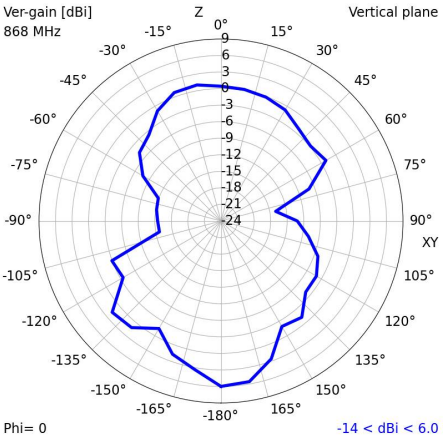
2D Radiation Plots

868 MHz

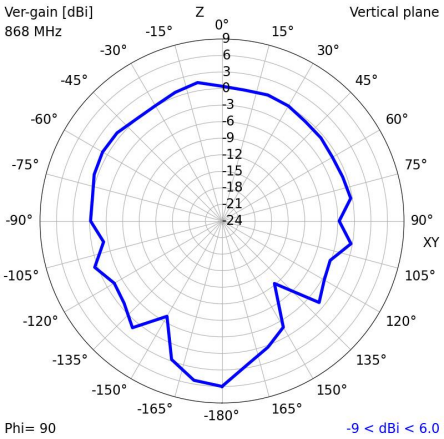
XY



XZ

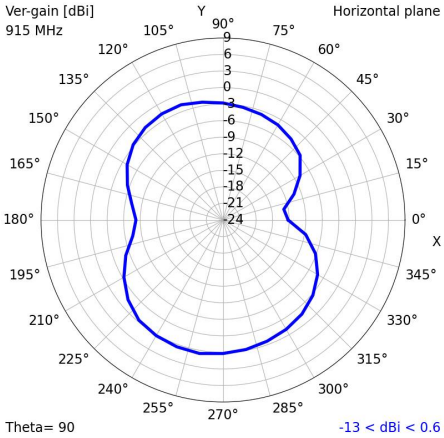


YZ

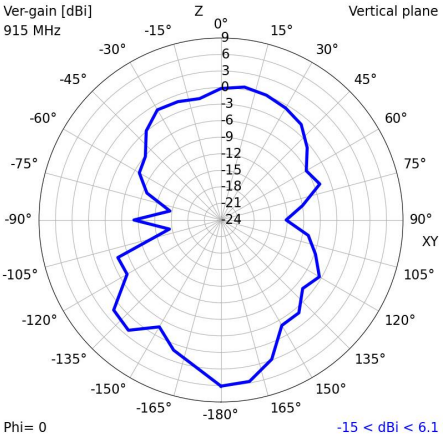


915 MHz

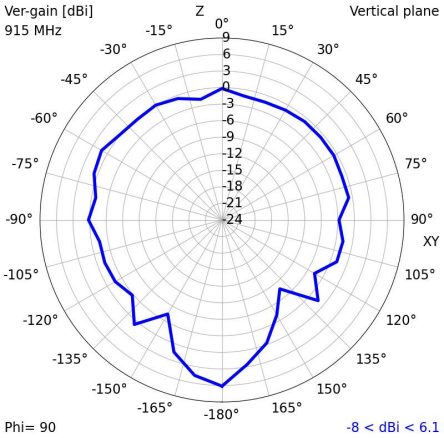
XY



XZ

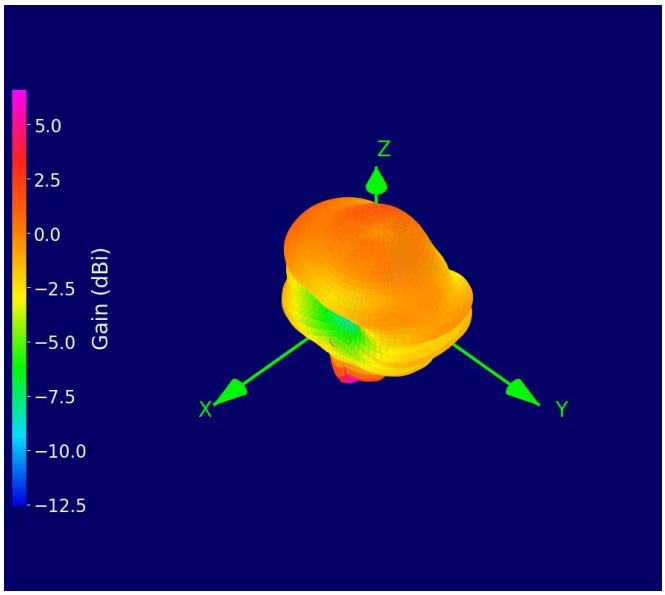


YZ

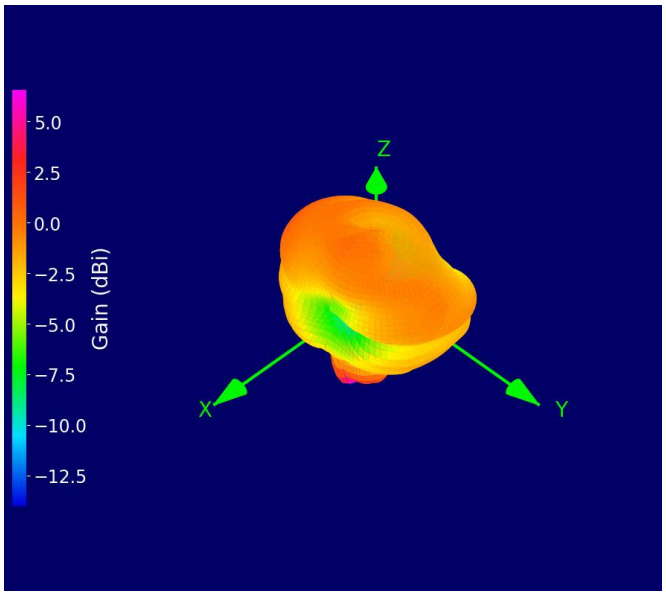


3D Radiation Plots

868 MHz



915 MHz



Ordering Details

Part Number	Description
ECHO36B/0.1M/IPEX/S/S/26	868 / 915 MHz Embedded FPC Antenna UFL Connector 100 mm Coax OD 0.81
ECHO36B/0.25M/IPEX/S/S/26	868 / 915 MHz Embedded FPC Antenna UFL Connector 250 mm Coax OD 0.81

About Siretta

Founded in 1998 and headquartered in Reading, United Kingdom, Siretta is a leading wireless communications company specialising in the design, manufacture, and supply of industrial IoT solutions.

Siretta's product portfolio includes:

- Antennas, plus their associated Cable Assemblies & Adapters
- Cellular Network Analysers
- Industrial Modems
- Industrial Routers
- Associated Cloud Management

Siretta supplies products directly and via a worldwide network of distributors, into numerous markets and applications across the globe.
Siretta’s distribution partners range from industrial IoT specialists through to global catalogue organisations.

Whether “off the shelf” or custom solutions are required, Siretta has a wide portfolio of products to fit many types of application.

Siretta’s extensive knowledge and experience in the wireless market allows support of a wide range of customer applications, focusing on frequencies between 400 MHz to 6 GHz. These encompass modems, routers and antennas for:

- Cellular technologies: GSM / UMTS / LTE / 5G NR (SA & NSA)
- LPWAN technologies: LTE-M / NB-IoT
- Global positioning technologies: GNSS (GPS / GLONASS / Galileo / BeiDou / QZSS / NavIC)
- Short range technologies: Wireless LAN / Bluetooth / Zigbee / ISM band / LoRa / Sigfox
- Satellite technologies: NTN NB-IoT

With a heavy emphasis on design, Siretta has a team of dedicated Engineers and Product Managers, who specialise in wireless applications.
Siretta continually makes significant investment in R&D endeavouring to provide customers with market leading, future-proofed, wireless solutions. Siretta works closely with many technology partners to stay at the forefront of industrial IOT.

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Performance characteristics, coverage, gain, and network operation may vary depending on installation environment, device configuration, network conditions, cable losses, mounting position, and surrounding structures. Any application deployed using Siretta antenna products should be fully evaluated and tested within the intended operating environment prior to deployment.

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Please refer to the Siretta wiki for the latest version of this document.

***IMPORTANT NOTE**
For each frequency band, Siretta provides a traffic light indication to show the suitability of the antenna for use at that frequency band. Determination of exactly what makes an antenna good or bad at any frequency is subjective.

The view presented is that of Siretta's engineering team having taken into account the efficiency and VSWR measurements. The end user is advised to use their own criteria and/or testing to confirm suitability.

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