Product Brief

VHETH Series
868 MHz and 915 MHz Helical Antennas

VHETH series antennas are compact surface mount helical antennas for low-power, wide-area (LPWA) applications including LoRaWAN® and Sigfox®, remote controls, and ISM band applications.

The ANT-868-VHETH antenna operates in the 862 MHz to 876 MHz range while the ANT-915-VHETH antenna is designed for applications in the 902 MHz to 930 MHz range requiring a rugged, compact and omnidirectional embedded antenna.

The connector-style base of the antenna ensures proper mounting for uniform performance in high-volume manufacturing.

Features

- Performance at 862 MHz to 876 MHz
  - VSWR: ≤ 2.7
  - Peak Gain: -0.7 dBi
  - Efficiency: 42%
- Performance at 902 MHz to 930 MHz
  - VSWR: ≤ 2.3
  - Peak Gain: 0.9 dBi
  - Efficiency: 58%
- Direct PCB attachment
- Reflow- or hand-solder assembly
- Omnidirectional radiation pattern
- Compact size
  - 44.3 mm x 7.0 mm x 7.0 mm

Applications

- Low-power, wide-area (LPWA) applications
  - LoRaWAN®
  - Sigfox®
- ISM applications
- Remote control, sensing and monitoring
  - Security systems
  - Industrial machinery
  - Automated equipment
  - AMR (automated meter reading)
- Internet of Things (IoT) devices
- Smart Home networking

Ordering Information

Part Number	Description
ANT-868-VHETH	868 MHz helical antenna with connector-style PCB-mount base
AEK-868-VHETH	868 MHz helical antenna evaluation kit
ANT-915-VHETH	915 MHz helical antenna with connector-style PCB-mount base
AEK-915-VHETH	915 MHz helical antenna evaluation kit

Available from Linx Technologies and select distributors and representatives.

Table 1. Electrical Specifications

ANT-fff-VHETH	868 MHz	915 MHz
Frequency Range	862 MHz to 876 MHz	902 MHz to 930 MHz
VSWR (max)	2.7	2.3
Peak Gain (dBi)	-0.7	0.9
Average Gain (dBi)	-3.8	-2.5
Efficiency (%)	42	58
Polarization	Linear	
Radiation	Omnidirectional	
Max Power	15 W	
Wavelength	1/4-wave	
Electrical Type	Monopole	
Impedance	50 Ω	
ESD Sensitivity	NOT ESD sensitive. As a best practice, Linx may use ESD packaging.	

Electrical specifications and plots measured with a 100 mm x 100 mm (3.94 in x 3.94 in) reference ground plane.

Table 2. Mechanical Specifications

ANT-fff-VHETH	
Connection	Solder pin
Operating Temperature Range	-40 °C to +80 °C
Weight	0.4 g (0.01 oz)
Dimensions	44.3 mm x 7.0 mm x 7.0 (1.75 in x 0.28 in x 0.28 in)

Product Dimensions

Figure 1 provides dimensions of the ANT-868-VHETH and ANT-915-VHETH antennas.

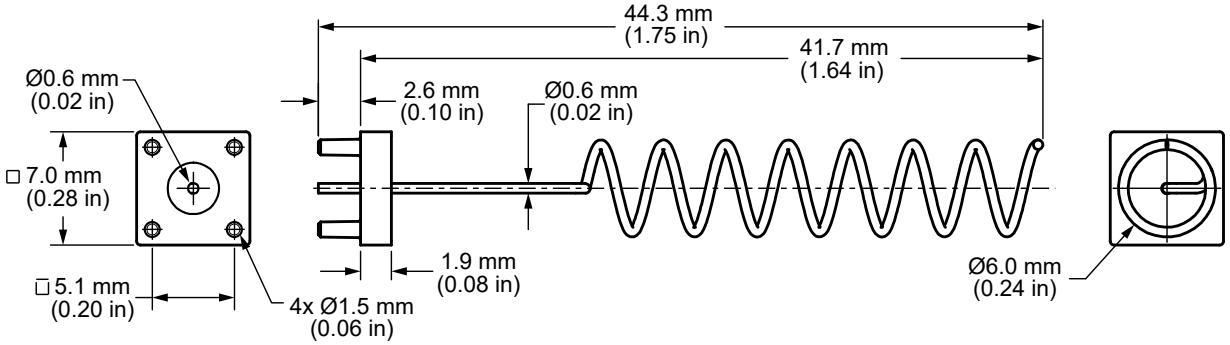

Figure 1. VHETH Series Antenna Dimensions

Antenna Installation

The VHETH series antenna feed is mounted in a non-conductive 4-pin connector-style base which simplifies insertion during manufacturing and helps maintain antenna alignment for consistent end-product performance.

Packaging Information

The ANT-868-VHETH antenna is packaged in a protective plastic tray in quantities of 90 pcs. Distribution channels may offer alternative packaging options.

VSWR

Figure 2 provides the voltage standing wave ratio (VSWR) for the ANT-868-VHETH, and Figure 3 provides VSWR for the ANT-915-VHETH antenna. VSWR describes the power reflected from the antenna back to the radio. A lower VSWR value indicates better antenna performance at a given frequency. Reflected power is also shown on the right-side vertical axis as a gauge of the percentage of transmitter power reflected back from the antenna.

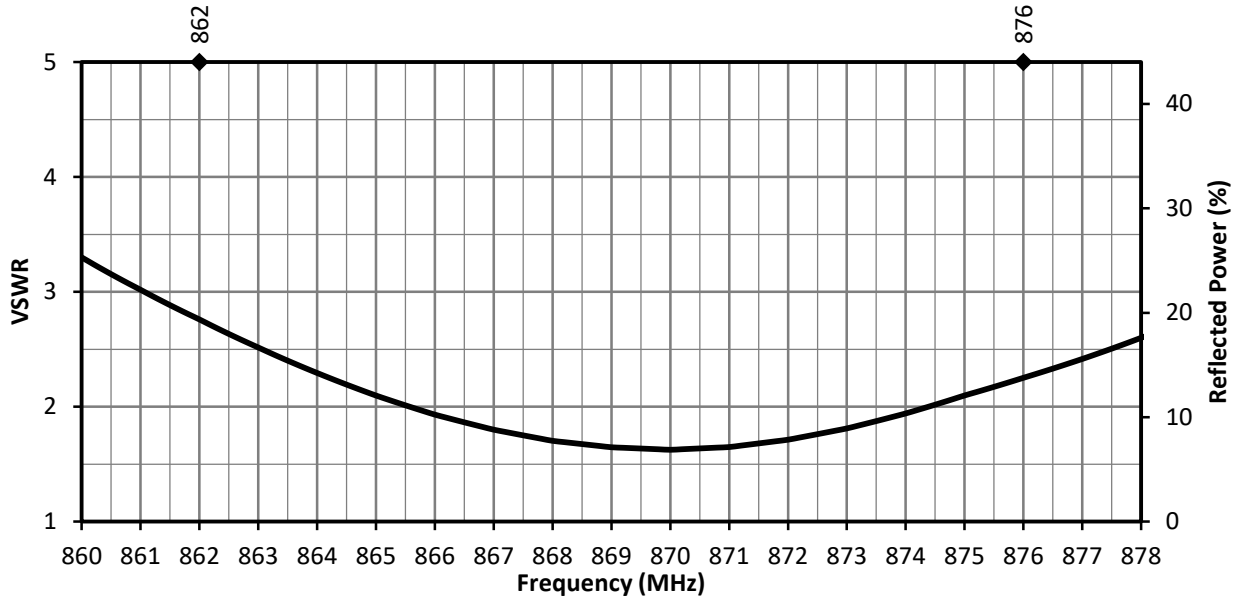

Figure 2. ANT-868-VHETH Antenna VSWR

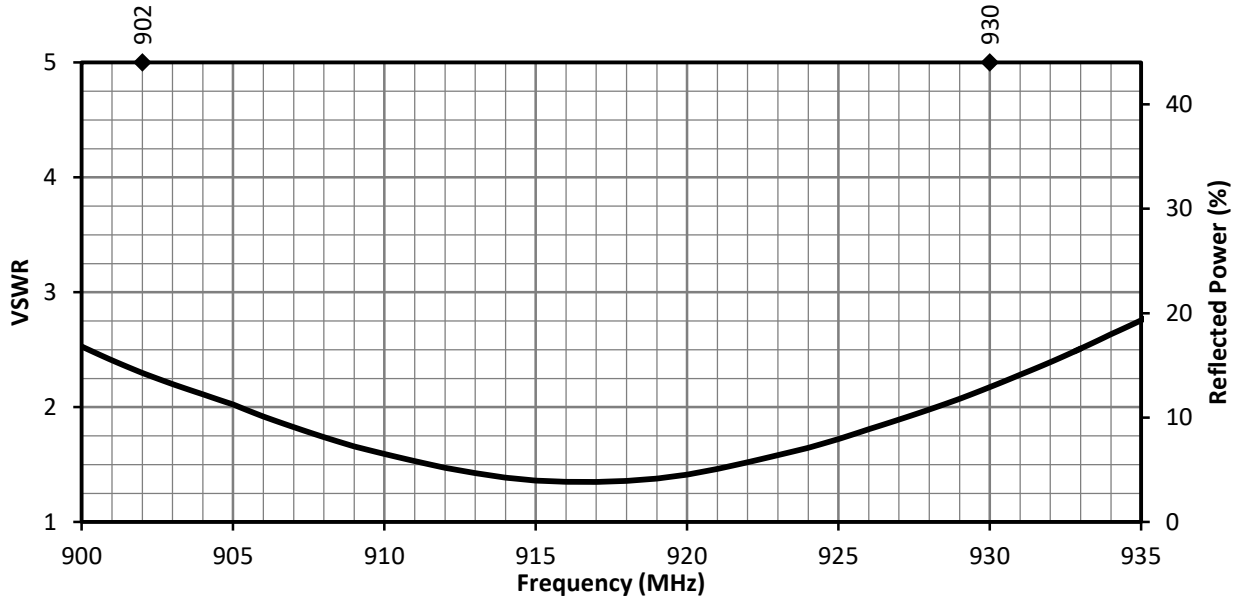

Figure 3. ANT-915-VHETH Antenna VSWR

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