

# ANT-916-JJB-HT-T

## Data Sheet

### Product Description

The JJB-HT Series offers a small helical antenna in a high-temperature, reflow-compatible housing. Designed for both hand and automated assembly, the antennas are RoHS compliant and can withstand reflow processing temperatures up to 255°C. These compact monopole antennas are an ideal solution for OEM applications requiring a low-cost internal or external antenna solution. JJB-HT series antennas are supplied in tape and reel packaging.

### Features

- Reflow compatible
- Low cost
- Ultra-compact package
- Easily concealed internally
- Good for internal or external mounting
- Omni-directional pattern
- Supplied in tape and reel
- Use with plastic\* enclosures

\*Requires proximity ground plane

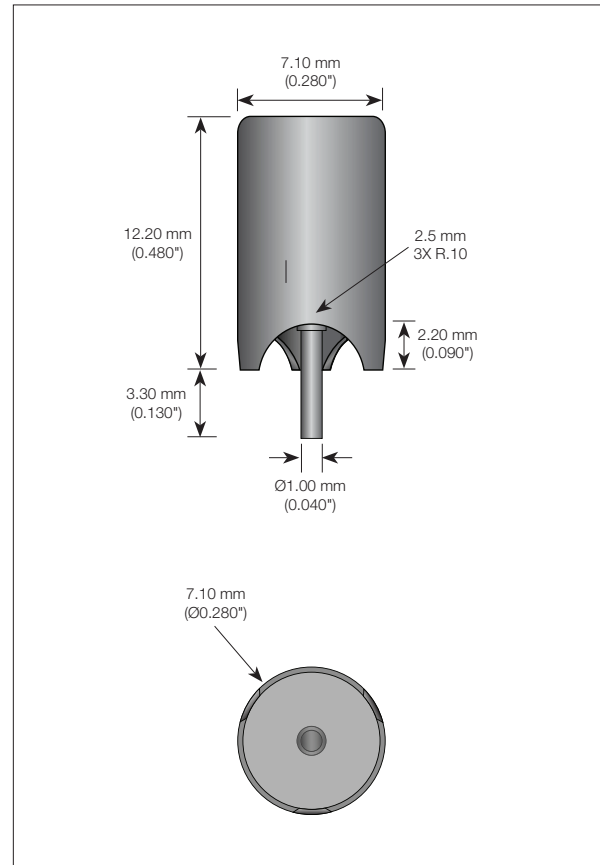
### Electrical Specifications

Center Frequency:	916MHz
Recom. Freq. Range:	902–928MHz
Wavelength:	1/4-wave
VSWR:	≤ 2.0 typical at center
Peak Gain:	–12.3dBi
Impedance:	50-ohms
Connection:	Direct solder
Oper. Temp. Range:	–40°C to +90°C
Max. Reflow Temp.:	255°C
Max. Reflow Time:	15 seconds
Electrical specifications and plots measured on a 8.89 cm x 8.89 cm (3.50" x 3.50") ground plane	

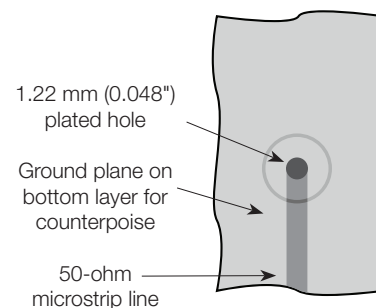
### Ordering Information

ANT-916-JJB-HT-T

Reels are in 250pcs. Quantities less than 250pcs. are supplied in cut tape



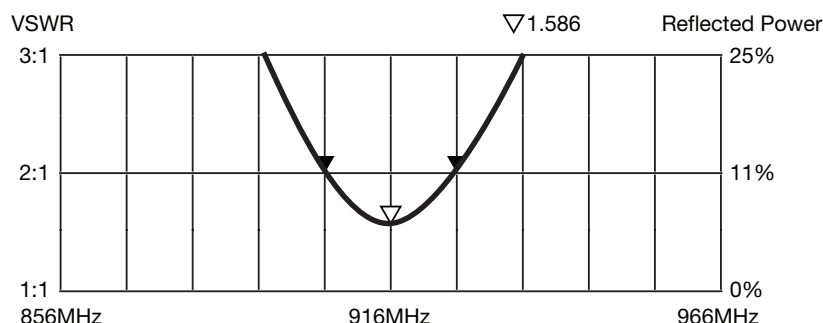
### Recommended Mounting



## Counterpoise

Quarter-wave or monopole antennas require an associated ground plane counterpoise for proper operation. The size and location of the ground plane relative to the antenna will affect the overall performance of the antenna in the final design. When used in conjunction with a ground plane smaller than that used to tune the antenna, the center frequency typically will shift higher in frequency and the bandwidth will decrease. The proximity of other circuit elements and packaging near the antenna will also affect the final performance. For further discussion and guidance on the importance of the ground plane counterpoise, please refer to Linx Application Note AN-00501: Understanding Antenna Specifications and Operation.

## VSWR Graph



### What is VSWR?

The Voltage Standing Wave Ratio (VSWR) is a measurement of how well an antenna is matched to a source impedance, typically 50-ohms. It is calculated by measuring the voltage wave that is headed toward the load versus the voltage wave that is reflected back from the load. A perfect match will have a VSWR of 1:1. The higher the first number, the worse the match, and the more inefficient the system. Since a perfect match cannot ever be obtained, some benchmark for performance needs to be set. In the case of antenna VSWR, this is usually 2:1. At this point, 88.9% of the energy sent to the antenna by the transmitter is radiated into free space and 11.1% is either reflected back into the source or lost as heat on the structure of the antenna. In the other direction, 88.9% of the energy recovered by the antenna is transferred into the receiver. As a side note, since the “:1” is always implied, many data sheets will remove it and just display the first number.

### How to Read a VSWR Graph

VSWR is usually displayed graphically versus frequency. The lowest point on the graph is the antenna's operational center frequency. In most cases, this will be different than the designed center frequency due to fabrication tolerances. The VSWR at that point denotes how close to 50-ohms the antenna gets. Linx specifies the recommended bandwidth as the range where the typical antenna VSWR is less than 2:1.

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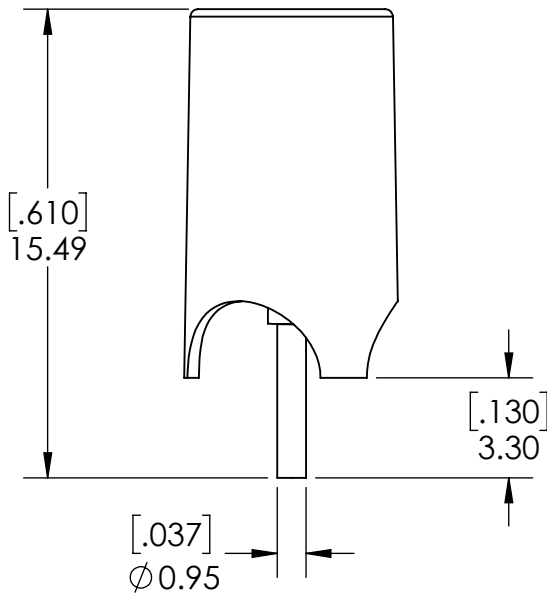
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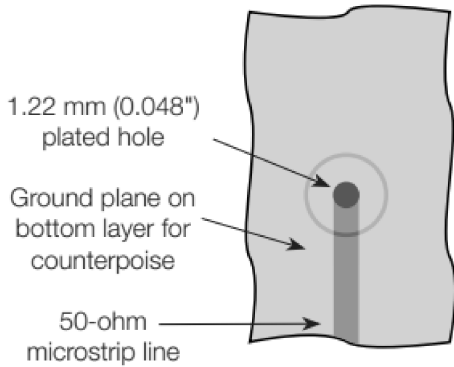
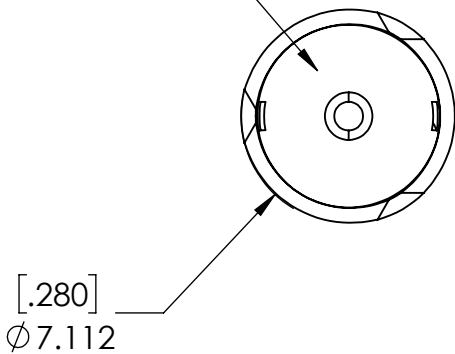
REV	DESCRIPTION	DATE	DWN	APVD
A	INITIAL RELEASE OF CUSTOMER DRAWING	12/4/2023	JH	CM

DWG NO  
ANT-FFF-JJB-HT

THIS DRAWING IS A CONTROLLED DOCUMENT



FREQUENCY  
INDICATOR  
COLOR [SEE TABLE]



RECOMMENDED MOUNTING LOCATION

1. ALL DIMENSIONS ARE IN MM [INCHES].
2. ALL MATERIALS PRODUCT AND PROCESSES MUST MEET REQUIREMENT OF TE CONNECTIVITY ENVIRONMENTAL STANDARD TEC-138-702 CONTAINS NO BANNED OR RESTRICTED SUBSTANCES.
3. NO REACH SVHC SHALL BE CONTAINED ABOVE THE TRESHOLD AS DEFINED IN REACH SVHC COMPLIANCE DEFINITION IN ANNEX "A" OF TEC-138-702.
4. ELECTRICAL DATA SHOWN FOR REFERENCE ONLY.

1. FREQUENCY: See Table

2. MAX POWER: 3W

3. OMNIDIRECTIONAL

4. GAIN: -12.3 dBi

5. IMPEDANCE: 50Ω

6. VSWR <1.9 TYP @ CENTER
5. ANTENNA QUALIFIED IAW INTERNAL TEST DOCUMENT AT LATEST REVISION.
6. MECHANICAL :

1. INTERFACE: DIRECT SOLDER MOUNT. REFLOW CAPABLE.

2. MAX REFLOW TEMP: 255°C

3. MAX REFLOW TIME: 15 SEC

4. OPERATING AND STORAGE TEMPERATURE: -40°C - +90°C
7. CIRCUIT BOARD MOUNT FOR USE IN PLASTIC ENCLOSURES

1. 1.22 [.048] PTH THROUGH HOLE

2. SEAT RADOME ON ANTENNA TO ENSURE LEVEL

3. REQUIRES PROXIMITY TO GROUND PLANE
8. TAPE AND REEL IAW EIA-481F


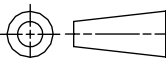
1. PITCH: 24mm

2. TAPE WIDTH: 32mm

3. PARTS LOADED VIRTICAL WITH #1 PIN DOWN.

4. PART CENTERING EMBOSSED CARRIER 15.50 DEEP

PART NUMBER	FREQUENCY	COLOR
ANT-868-JJB-HT-T	868MHz	GREY PCS 429C
ANT-916-JJB-HT-T	916MHz	YELLOW PCS 116C

THIS DRAWING IS A CONTROLLED DOCUMENT.		DWN JHAGER 12/4/23		<div>TE Connectivity</div>							
		CHK CLEWIS 12/4/23									
DIMENSIONS: mm		TOLERANCES UNLESS OTHERWISE SPECIFIED: 0 PLC ± 2.0 1 PLC ± 1.0 2 PLC ± 0.50 3 PLC ± 0.250 4 PLC ANGLES ± 30'		APVD CMURPHY 12/4/23		ANTENNA MINI HI-TEMP Through Hole					
		PRODUCT SPEC -		SIZE A3						CAGE CODE 00779	
		APPLICATION SPEC -									
MATERIAL HTNFR52 30%GF		FINISH		WEIGHT g		CUSTOMER DRAWING					
						SCALE 4:1		SHEET 1 OF 1		REV A	