



## ANT-2.4-FPC-LH Series

### Rigid Embedded Dipole WiFi 6 Antenna

The Linx ANT-2.4-FPC-LH series antennas are 45 mm x 7 mm adhesive flexible printed circuit (FPC) antennas for 2.4 GHz ISM applications including Bluetooth® and ZigBee®, as well as single-band WiFi.

The ANT-2.4-FPC-LH antennas provide a ground plane independent dipole internal/embedded antenna solution. The flexibility and adhesive backing makes the ANT-2.4-FPC-LH series easy to mount in RF transparent (e.g. plastic) enclosures, enabling environmental sealing and for protection from antenna damage.

Connection is made to the radio via a coaxial cable terminated in an MHF1/U.FL-type plug (female socket), MHF4 plug (female socket) or MMCX plug (male pin) connector.

### FEATURES

- Performance at 2.4 GHz to 2.5 GHz
  - VSWR:  $\leq 1.4$
  - Peak Gain: 6.1 dBi
  - Efficiency: 81%
- Ground plane independent dipole antenna
- Compact, low-profile
  - 45.2 mm x 7.2 mm x 0.1 mm
- Adhesive backing permanently adheres to non-metal enclosures using 3M 467MP™/200MP adhesive
- Flexible to fit in challenging enclosures

### APPLICATIONS

- 2.4 GHz ISM
  - Bluetooth®
  - ZigBee®
- Single-band WiFi/802.11
- Sensing and remote monitoring
- Hand-held devices
- Internet of Things (IoT) devices

## ORDERING INFORMATION

Part Number		Description
ANT-2.4-FPC-LH50UF	50 mm (1.97 in)	U.FL
ANT-2.4-FPC-LH100UF	100 mm (3.94 in)	U.FL
ANT-2.4-FPC-LH150UF	150 mm (5.91 in)	U.FL
ANT-2.4-FPC-LH200UF	200 mm (7.87 in)	U.FL
ANT-2.4-FPC-LH50M4	50 mm (1.97 in)	MHF4
ANT-2.4-FPC-LH100M4	100 mm (3.94 in)	MHF4
ANT-2.4-FPC-LH150M4	150 mm (5.91 in)	MHF4
ANT-2.4-FPC-LH200M4	200 mm (7.87 in)	MHF4
ANT-2.4-FPC-LH100MX	100 mm (3.94 in)	MMCX

Available from Linx Technologies and select distributors and representatives.

## TABLE 1. ELECTRICAL SPECIFICATIONS

Parameter	Value
Frequency Range	2.4 GHz to 2.5 GHz
VSWR (max.)	1.4
Peak Gain (dBi)	6.1
Average Gain (dBi)	-1.1
Efficiency (%)	81
Polarization	Linear
Radiation	Omnidirectional
Impedance	50 $\Omega$
Wavelength	1/2-wave
Max Power	2 W
Electrical Type	Dipole

Electrical specifications and plots measured with the antenna on a 2 mm (0.08 in) thick plastic sheet.

## TABLE 2. MECHANICAL SPECIFICATIONS

Part Number	Connection	Coaxial Cable, minimum inside bend radius	Weight
ANT-2.4-FPC-LH50UF	MHF1/U.FL-type plug	1.13 mm: 5.0 mm (0.20 in)	0.4 g (0.01 oz)
ANT-2.4-FPC-LH100UF	MHF1/U.FL-type plug	1.13 mm: 5.0 mm (0.20 in)	0.6 g (0.02 oz)
ANT-2.4-FPC-LH150UF	MHF1/U.FL-type plug	1.13 mm: 5.0 mm (0.20 in)	0.7 g (0.03 oz)
ANT-2.4-FPC-LH200UF	MHF1/U.FL-type plug	1.13 mm: 5.0 mm (0.20 in)	0.9 g (0.03 oz)
ANT-2.4-FPC-LH50M4	MHF4-type plug	1.13 mm: 5.0 mm (0.20 in)	0.4 g (0.01 oz)
ANT-2.4-FPC-LH100M4	MHF4-type plug	1.13 mm: 5.0 mm (0.20 in)	0.5 g (0.02 oz)
ANT-2.4-FPC-LH150M4	MHF4-type plug	1.13 mm: 5.0 mm (0.20 in)	0.7 g (0.02 oz)
ANT-2.4-FPC-LH200M4	MHF4-type plug	1.13 mm: 5.0 mm (0.20 in)	0.8 g (0.03 oz)
ANT-2.4-FPC-LH100MX	MMCX plug	1.13 mm: 5.0 mm (0.20 in)	1.2 g (0.04 oz)
Operating Temp. Range	-40 °C to +85 °C (-40 °F to 185 °F)		
Storage Temp. Range	-40 °C to +85 °C (-40 °F to 185 °F)		
Dimensions	45.2 mm x 7.2 mm x 0.1 mm (1.78 in x 0.28 in x 0.004 in)		

The ANT-2.4-FPC-LH antennas are packaged in bags of 100 pcs. Distribution channels may offer alternative packaging options.

The ANT-2.4-FPC-LH antenna is a flexible, adhesive backed antenna that allows it to be permanently installed onto non-metallic surfaces. The adhesive backing is 3M 467MP™/200MP, which provides outstanding adhesion to high surface energy plastics. The adhesive delivers excellent shear strength to resist slippage and edge lifting, but can be repositioned before the adhesive cures, allowing for accurate positioning. This adhesive is highly resistant to solvents, humidity and moisture, as well as heat up to 204 °C (400 °F) for short periods.

## PRODUCT DIMENSIONS

Technical drawing of the Linx ANT-2.4-FPC-L antenna. The drawing includes the following dimensions and specifications:

- Overall Length:** 45.2 mm (1.80 in)
- Connector Pin Spacing:** 0.1 mm (0.004 in)
- Antenna Length:** 7.2 mm (0.28 in)
- Connector Options:** MHF1, MHF4, and MMCX. The MMCX connector is shown with a right-angle (90 degrees) configuration.
- Dimensions for Connector Mounting:**
  - 50 mm (1.97 in)
  - 100 mm (3.94 in)
  - 150 mm (5.91 in)
  - 200 mm (7.87 in)
- Labeling:** The antenna is labeled "Linx" and "ANT-2.4-FPC-L" with the website "www.linxtechnologies.com" and "© 2022 Linx Technologies".
- Adhesive Backing:** A note indicates "Adhesive backing cut to aid in application, position may vary".

Figure 1. ANT-2.4-FPC-LH Series Antenna Dimensions

## VSWR

Figure 2 provides the voltage standing wave ratio (VSWR) across the antenna bandwidth. 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.

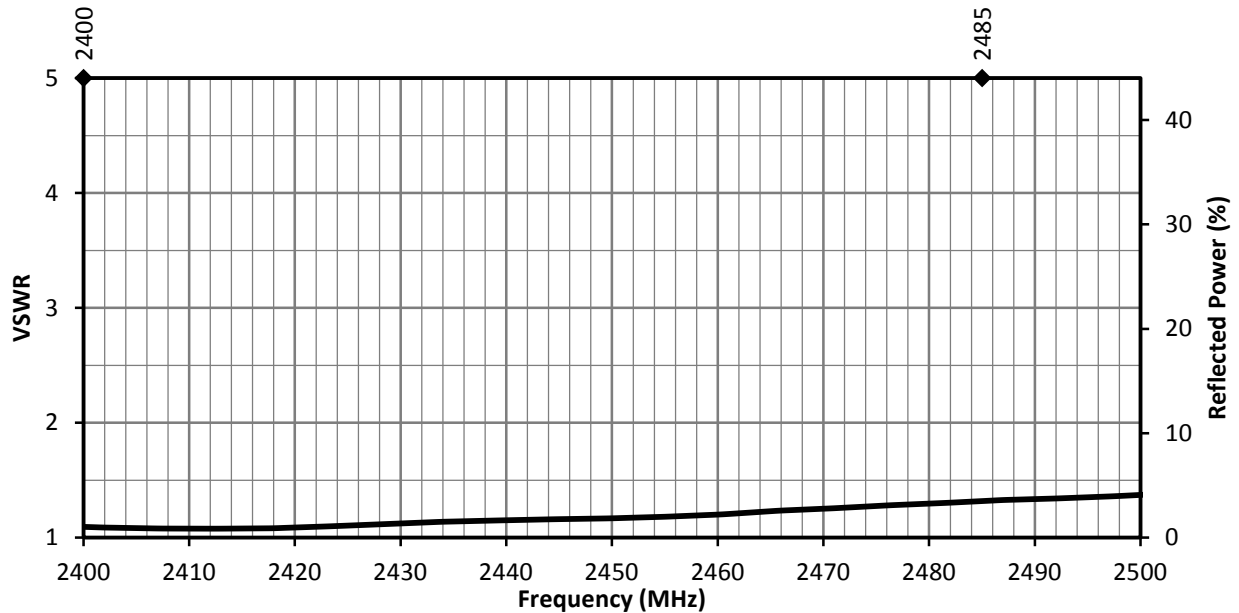


Figure 2. ANT-2.4-FPC-LH Antenna VSWR

## RETURN LOSS

Return loss (Figure 3), represents the loss in power at the antenna due to reflected signals. Like VSWR, a lower return loss value indicates better antenna performance at a given frequency.

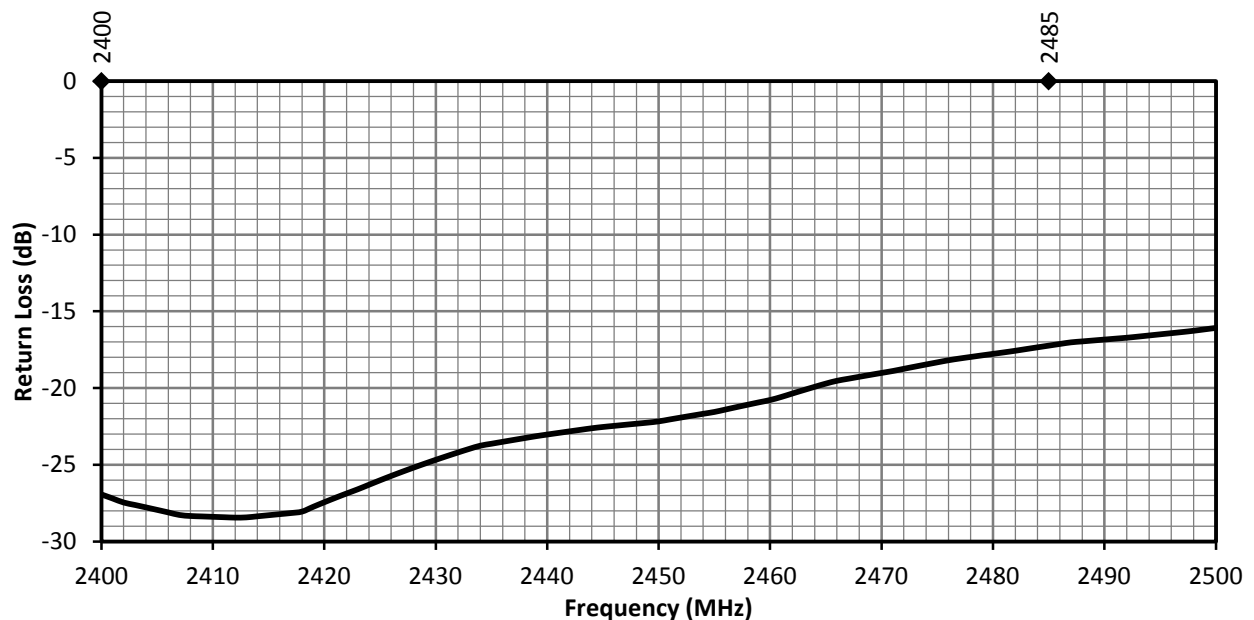


Figure 3. ANT-2.4-FPC-LH Antenna Return Loss