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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Part No. 1001932FT

WLAN / BT / Zigbee Tunable Embedded FPC Antenna

2.4 GHz, 5 GHz

Supports: Wi-Fi applications, Agriculture, Automotive, Bluetooth, Zigbee, WLAN, Smart Home, Healthcare, Digital Signage



Ethertronics' WLAN antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs. These innovative antennas provide compelling advantages for 2.4 GHz and 5.0 GHz enabled devices.

Real-World Performance and Implementation

Antennas may look alike on the outside, but the important difference is inside. Other antennas may contain simple PIFA or monopole designs that interact with their surroundings, complicating layout or changing performance with use position. Ethertronics antennas utilize patented Isolated Magnetic Dipole (IMD) technology to deliver a unique size and performance combination.

FPC WiFi Tunable Embedded Antenna with Cable

2.4 GHz; 5 GHz

KEY BENEFITS

Stay-in-Tune

Ethertronics antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

Quicker Time-to-Market

By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

Reliability

Products are the latest RoHS version compliant.

APPLICATIONS

- Embedded design
- Cellular, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Telematics Tracking
- Healthcare M2M, Industrial devices
- Smart Grid
- OBD-II

Electrical Specifications

Typical Performance using 100 mm cable tested on PC-ABS

Frequency	2.400 – 2.485 GHz	5.150 – 5.825 GHz
Peak Gain	2.5 dBi	4.4 dBi
Average Efficiency	60%	71%
VSWR Match	2.0 :1 max	
Feed Point Impedance	50 ohms unbalanced	
Polarization	Linear	
Power Handling	0.5 Watt CW	

Mechanical Specifications & Ordering Part Number

Ordering Part #	1001932FT-AA10L0100	1001932FT-AA10L0060U
Dimensions (mm)	35.2 x 8.5 x 1.6 (Height up to 1.80 mm at soldering point)	
Weight (grams)	0.6	0.5
Cable/Connector	Length: 100, Diameter: 1.13, Color: Black; u.FI compatible connector	Length: 60, Diameter: 1.13, Color: Black; u.FI compatible connector
Mounting	Adhesive on bottom side of antenna	
Packaging	PE bags	

*Additional variations available with different cable lengths, colors and connectors.

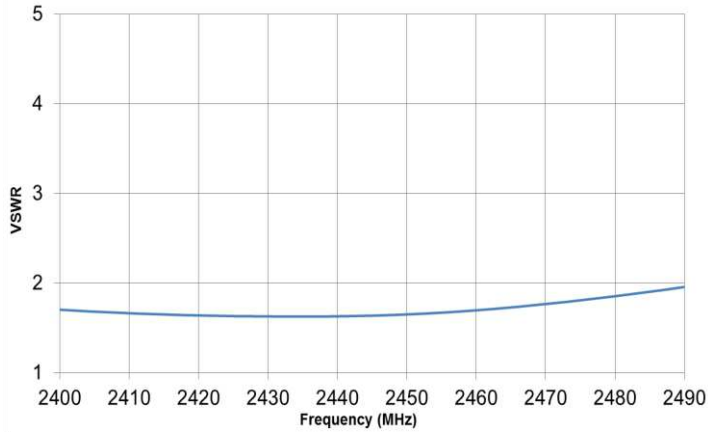


2.4 / 5 GHz Ethertronics' FPC Embedded Antenna Specifications
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

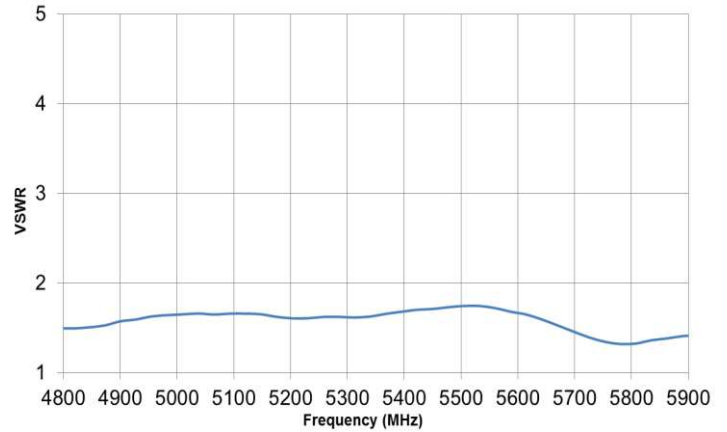
VSWR, Efficiency and Peak Gain Plots

Typical Performance using 100 mm cable tested on PC-ABS

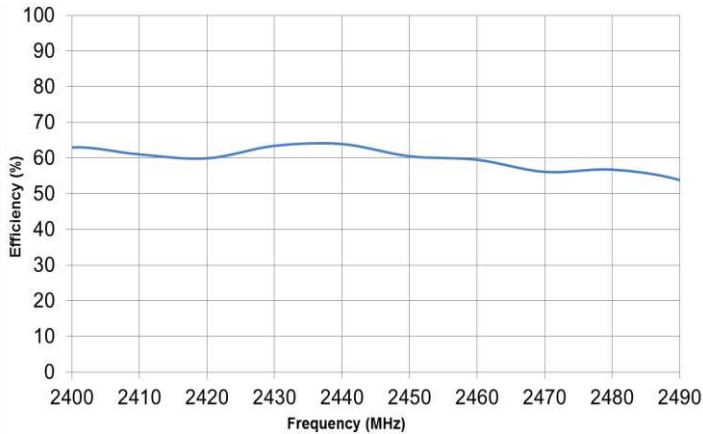
2.4 GHz VSWR



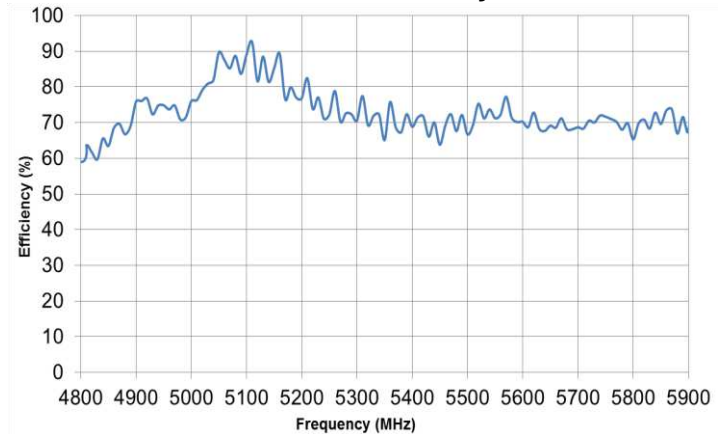
5 GHz VSWR



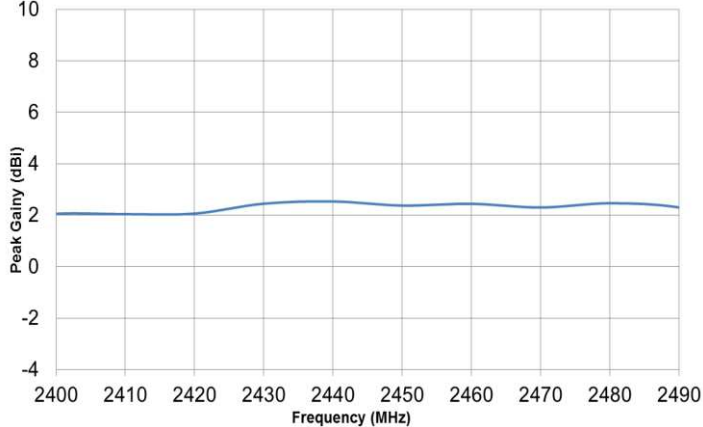
2.4 GHz Efficiency



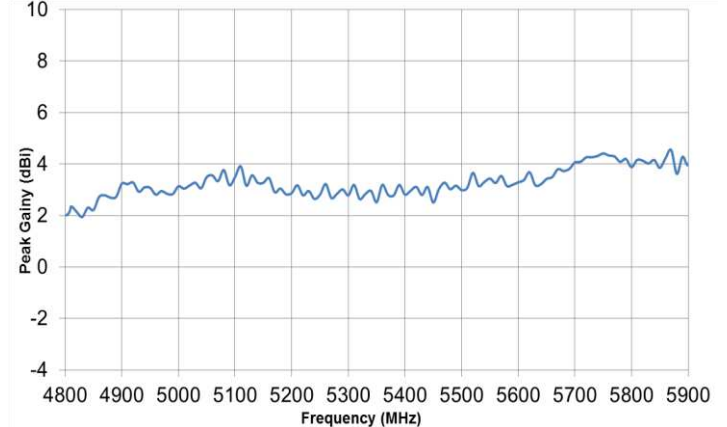
5 GHz Efficiency



2.4 GHz Peak Gain



5 GHz Peak Gain



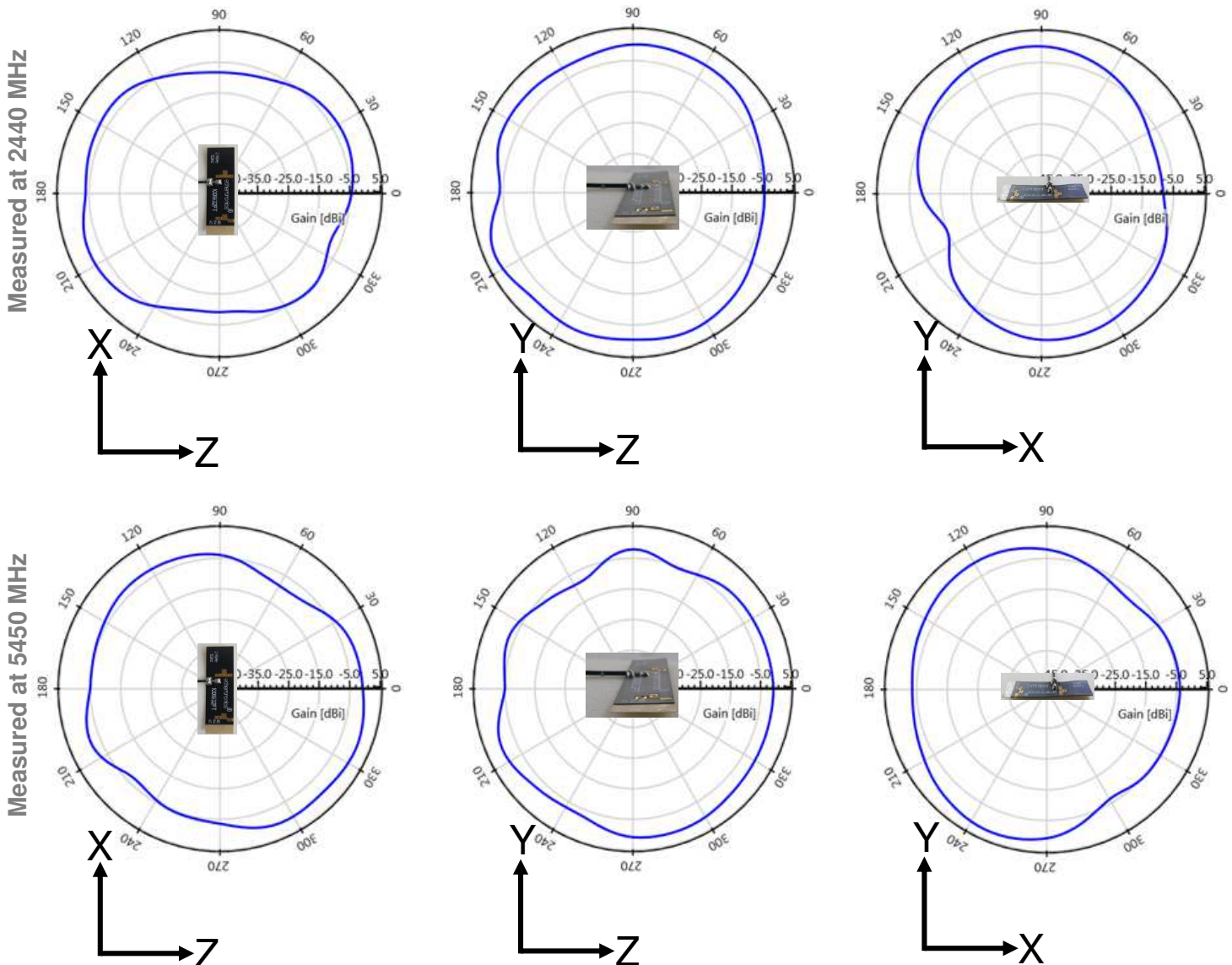
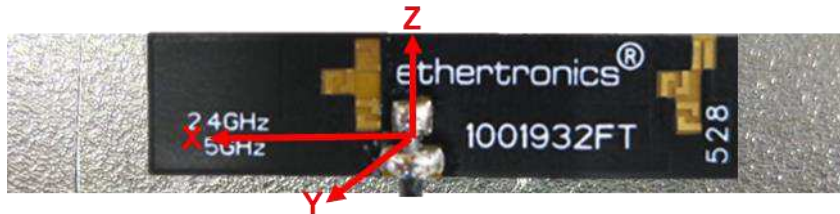


2.4 / 5 GHz Ethertronics' FPC Embedded Antenna Specifications
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

Antenna Radiation Patterns

Typical Performance using 100 mm cable tested on PC-ABS

Measured @ 2440, 5450 MHz





2.4 / 5 GHz Ethertronics' FPC Embedded Antenna Specifications
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Antenna Tuning Options

Typical Performance using 100 mm cable tested on PC-ABS



*This antenna has unique features enabling limited range RF tuning by leaving P1 - P6 and C1 - C2 connected by “solder bridge” or disconnected with a “cut” to the trace. Refer to detailed tuning options below.

Ref: Baseline = Typical performance using 100 mm cable tested on PC-ABS

Options for Tuning: "2.4GHz (Lower)"

<u>MODE</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>
PADS	Connect: P2	Connect: P1	Connect: (P2+P3)	Connect: (P1+P3)
Outcome: (Ref: Baseline)	~200 MHz shift low	~250 MHz shift low	~350 MHz shift low	~370 MHz shift low

Options for Tuning: "2.4GHz (Higher)"

<u>MODE</u>	<u>C1</u>	<u>C2</u>
PADS	Cut: C1	Cut: C2
Outcome: (Ref: Baseline)	~170 MHz shift high	~300 MHz shift high

Options for Tuning: "5GHz (Lower)"

<u>MODE</u>	<u>T5</u>	<u>T6</u>	<u>T7</u>	<u>T8</u>
PADS	Connect: P4	Connect: (P4+P5)	Connect: P6	Connect: (P5+P6)
Outcome: (Ref: Baseline)	~200 MHz shift low	~1500 MHz shift low	~500 MHz shift low	~1900 MHz shift low



2.4 / 5 GHz Ethertronics' FPC Embedded Antenna Specifications
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Mechanical Dimensions

Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	D (mm)	Connector Orientation
1001932FT-AA10L0100	35.2 ± 0.3	8.5 ± 0.3	1.6 (max)	100 ± 3.0	Face Down
1001932FT-AA10L0060U	35.2 ± 0.3	8.5 ± 0.3	1.6 (max)	60 ± 3.0	Face Up

*Total Height of 1.8 mm includes the cable solder connection
*Height "C" of 0.2 mm includes FPC + adhesive thicknesses

*Connector shown in photo below is "Face Down"

