Part No. 1001932PT
WLAN / BT / Zigbee Tunable Embedded PCB 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 a 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.

The 1001932PT is offered in many standard cable lengths ranging up to 200mm. Ordering part number guide is located at end of document for selection ease.

**Electrical Specifications**
Typical Performance using 100 mm cable tested on PC-ABS

<table>
<thead>
<tr>
<th></th>
<th>2.400 – 2.485 GHz</th>
<th>5.150 – 5.825 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Gain</td>
<td>2.5 dBi</td>
<td>4.4 dBi</td>
</tr>
<tr>
<td>Average Efficiency</td>
<td>60%</td>
<td>71%</td>
</tr>
<tr>
<td>VSWR Match</td>
<td>2.0 :1 max</td>
<td></td>
</tr>
<tr>
<td>Feed Point Impedance</td>
<td>50 ohms unbalanced</td>
<td></td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
<td></td>
</tr>
<tr>
<td>Power Handling</td>
<td>0.5 Watt CW</td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical Specifications**

<table>
<thead>
<tr>
<th>Ordering Part #</th>
<th>1001932PT-AA10L0100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (mm)</td>
<td>35.2 x 8.5 x 1.6</td>
</tr>
<tr>
<td>Weight (grams)</td>
<td>0.6</td>
</tr>
<tr>
<td>Cable/Connector (mm)</td>
<td>Length: 100, Diameter: 1.13, Color: Black; u.Fl compatible connector</td>
</tr>
<tr>
<td>Mounting</td>
<td>Adhesive on bottom side of antenna</td>
</tr>
<tr>
<td>Packaging</td>
<td>PE bags</td>
</tr>
</tbody>
</table>

*Additional variations with different cable lengths, colors and connectors are available.*
2.4 / 5 GHz Ethertronics' PCB 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**
  - Frequency (MHz): 2400 to 2490
  - VSWR Range: 1 to 5

- **5 GHz VSWR**
  - Frequency (MHz): 4800 to 5900
  - VSWR Range: 1 to 5

- **2.4 GHz Efficiency**
  - Frequency (MHz): 2400 to 2490
  - Efficiency (%) Range: 0 to 100

- **5 GHz Efficiency**
  - Frequency (MHz): 4800 to 5900
  - Efficiency (%) Range: 0 to 100

- **2.4 GHz Peak Gain**
  - Frequency (MHz): 2400 to 2490
  - Peak Gain (dB) Range: -4 to 10

- **5 GHz Peak Gain**
  - Frequency (MHz): 4800 to 5900
  - Peak Gain (dB) Range: -4 to 10
Antenna Radiation Patterns
Typical Performance using 100 mm cable tested on PC-ABS
Measured @ 2440, 5450 MHz
Ethertronics produces a wide variety of standard and custom antennas to meet user needs. Antenna Tuning Options
Typical Performance using 100 mm cable tested on PC-ABS

\[\begin{array}{|c|c|c|c|}
\hline
\text{MODE} & \text{T1} & \text{T2} & \text{T3} & \text{T4} \\
\hline
\text{PADS} & \text{Connect: P2} & \text{Connect: P1} & \text{Connect: P2+P3} & \text{Connect: P1+P3} \\
\hline
\text{Outcome: (Ref: Baseline)} & \text{~200 MHz shift low} & \text{~250 MHz shift low} & \text{~350 MHz shift low} & \text{~370 MHz shift low} \\
\hline
\end{array}\]

Options for Tuning: "2.4GHz (Lower)"

\[\begin{array}{|c|c|c|}
\hline
\text{MODE} & \text{C1} & \text{C2} \\
\hline
\text{PADS} & \text{Cut: C1} & \text{Cut: C2} \\
\hline
\text{Outcome: (Ref: Baseline)} & \text{~170 MHz shift high} & \text{~300 MHz shift high} \\
\hline
\end{array}\]

Options for Tuning: "2.4GHz (Higher)"

\[\begin{array}{|c|c|c|}
\hline
\text{MODE} & \text{T5} & \text{T6} & \text{T7} & \text{T8} \\
\hline
\text{PADS} & \text{Connect: P4} & \text{Connect: P4+P5} & \text{Connect: P6} & \text{Connect: P5+P6} \\
\hline
\text{Outcome: (Ref: Baseline)} & \text{~200 MHz shift low} & \text{~1500 MHz shift low} & \text{~500 MHz shift low} & \text{~1900 MHz shift low} \\
\hline
\end{array}\]

Options for Tuning: "5GHz (Lower)"

*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

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

**Mechanical Dimensions**
Typical antenna dimensions (mm)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm) Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001932PT-AA10L0100</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>100 ± 3.0</td>
</tr>
</tbody>
</table>

*Total Height “C” measures 1.8 mm includes the cable solder connection + PCB + adhesive thicknesses*
2.4 / 5 GHz Ethertronics’ PCB Embedded Antenna Specifications
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Ordering Part Numbers
Typical antenna dimensions (mm)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm) Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001932PT-AA10L0025</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>25 ± 3.0</td>
</tr>
<tr>
<td>1001932PT-AA10L0050</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>50 ± 3.0</td>
</tr>
<tr>
<td>1001932PT-AA10L0075</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>75 ± 3.0</td>
</tr>
<tr>
<td>1001932PT-AA10L0100</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>100 ± 3.0</td>
</tr>
<tr>
<td>1001932PT-AC10L0100</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>100 ± 3.0</td>
</tr>
<tr>
<td>1001932PT-AA10L0150</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>150 ± 4.0</td>
</tr>
<tr>
<td>1001932PT-AA10L0200</td>
<td>35.2 ± 0.3</td>
<td>8.5 ± 0.3</td>
<td>1.8 (max)</td>
<td>200 ± 4.0</td>
</tr>
</tbody>
</table>

*Total Height "C" measures 1.8 mm includes the cable solder connection + PCB + adhesive thicknesses (AA10L = MHF connector), (AC10L = MHF4L connector)