Ultra Wideband (UWB) PCB Antenna with Balanced Transmission

Transmission-balanced antennas offer high radiation efficiency for better performance and easy installation without the concerns of ground-plane effects.

Features and Benefits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced antenna with ground-plane-independent design</td>
<td>Reduces engineering resources and costs needed to mitigate PCB ground-induced radiation</td>
</tr>
<tr>
<td>High radiation efficiency antenna</td>
<td>Offers total efficiency values of 70% from 3.0GHz to 6.0GHz</td>
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<tr>
<td>Double-sided adhesive tape on antenna</td>
<td>Enables easy peel-and-stick mounting anywhere within the device casing</td>
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<tr>
<td>Coaxial cable to center-fed antenna attachment with over 18N of pull force</td>
<td>Ensures robust antenna reliability and connectivity to radio device</td>
</tr>
<tr>
<td>Wide selection of micro-coaxial cable lengths from 50 to 300mm</td>
<td>Extends connectivity for maximum design flexibility</td>
</tr>
</tbody>
</table>

Applications

Industrial applications
- Real-time location systems
- Scanners
- High-speed Data Exchanges

Medical
- Patient-motion monitors
- Medicine storage monitors
- Medical imaging systems
- Underwater, space or sports-medicine monitors

Automotive applications
- Automatic target recognition systems

Consumer electronics (CE) applications
- Cameras
- Internet access and multimedia services
- Personal navigation devices
- Home networking and electronics

The Series 146184 UWB-ready dual-band antennas come in cable length options of 50, 100, 150, 200, 250 and 300mm.
Specifications

**REFERENCE INFORMATION**
- Packaging: PE film
- Mates With: Surface-mount, micro-coaxial jack (Part Number: 73412-0110)
- Designed In: millimeters
- RoHS: Yes
- Halogen Free: Yes
- Glow Wire Compliant: No

**ELECTRICAL SPECIFICATIONS (UWB) INCLUDE:**
- $f_{\text{start}}$ (MHz): 3000
- $f_{\text{end}}$ (MHz): 6000
- Return Loss $S_{11}$ (dB): Refer to table
- Total Eff. (dB): Refer to table
- Peak Gain (dBi): Refer to table
- Polarization: Linear
- Input Impedance (Ohms): 50

**MECHANICAL**
- Pull Force: > 18 N

**PHYSICAL**
- Thickness: 0.31mm
- Operating Temperature: -30 to +85°C

Ordering Information

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Antenna Dimensions</th>
<th>Miniature Coaxial Cable Lengths (mm)</th>
<th>Operating Frequency Range (GHz)</th>
<th>Return Loss $S_{11}$ (dB)</th>
<th>Peak Gain (dBi)</th>
<th>Total Radiation Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>146184-0050</td>
<td>47.00 by 17.60mm</td>
<td>50</td>
<td>3 to 6</td>
<td>&lt; -6</td>
<td>4.7</td>
<td>&gt; 74</td>
</tr>
<tr>
<td>146184-0100</td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td>4.5</td>
<td>&gt; 70</td>
</tr>
<tr>
<td>146184-0150</td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td>4.3</td>
<td>&gt; 66</td>
</tr>
<tr>
<td>146184-0200</td>
<td></td>
<td>200</td>
<td></td>
<td></td>
<td>4.0</td>
<td>&gt; 62</td>
</tr>
<tr>
<td>146184-0250</td>
<td></td>
<td>250</td>
<td></td>
<td></td>
<td>3.8</td>
<td>&gt; 58</td>
</tr>
<tr>
<td>146184-0300</td>
<td></td>
<td>300</td>
<td></td>
<td></td>
<td>3.5</td>
<td>&gt; 55</td>
</tr>
</tbody>
</table>

www.molex.com/link/standard_antennas.html