2.4/5GHz, Combo GPS* / Wi-Fi† Flexible Antenna with Balanced Transmission

RoHS-compliant, Halogen-free

GPS/Wi-Fi 2.4/5GHz transmission-balanced antennas combine ground-plane independence with high-radiation efficiency to support wide operating frequencies

Features and Benefits

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</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 with 53.0 by 18.0mm strip antenna</td>
<td>Offers average efficiency values of 70% at GPS band, 75% at 2.4GHz band, 70% at 5GHz band and 80% at 3-6GHz UWB band</td>
</tr>
<tr>
<td>Poly-flexible, double-sided adhesive tape on antenna</td>
<td>Enables easy peel-and-stick mounting anywhere within the device casing</td>
</tr>
<tr>
<td>Coaxial cable to center-fed antenna attachment with over 18.0N 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

Telecommunications/Networking

- Wi-Fi devices
- Wireless LAN (WLAN)
- IEEE 802.11b/g/n devices
- GPS/GLONASS/BeiDou**/Bluetooth††/ZIGBEE‡‡ devices
- Ultra Wide Band (UWB)/WiMax*** devices

Industrial applications

- Machine to machine (M2M) communication
- Smartmeters
- 2.4 GHz and 5 GHz Industrial, Scientific and Medical (ISM) band systems and wireless devices
- Product Tracking System

Consumer Electronics (CE) Applications

- Cameras
- Mobile gaming devices
- Personal navigation devices
- Wireless internet TV and audio devices

Smart Home

- Exercise and Health Monitoring
- Pet Care and Pest Control
- Home Theater
- Kitchen TV and Bathroom Built-In
- TV System

Medical

- Telemedicine and telehealth device

Automotive applications

- Bluetooth devices
- Infotainment devices
- Mobile hotspots
- Car Audio
- Smart Rearview Mirror

The Series 146186 GPS/Wi-Fi-ready Combo Flexible Antenna is available in cable lengths of 50, 100, 150, 200, 250 and 300mm

*GPS - Global Positioning System. Civilian GPS uses the L1 frequency of 1575.42 MHz in the Ultra High Frequency (UHF) band spanning 300MHz to 3GHz
†Wi-Fi is a registered trademark of the Wi-Fi Alliance
‡GLONASS, an acronym for Globalnaya Navigatsionnaya Sputnikovaya Sistema is a Russian space-based satellite navigation system working alongside GPS
**BeiDou, known also as BDS (BeiDou Navigation Satellite System) is a satellite navigation system developed by the People’s Republic of China
††Bluetooth is a registered trademark of Bluetooth SIG
‡‡ZIGBEE is a registered trademark of ZigBee Alliance
***WiMax is a trademark and service mark of the WiMAX Forum
2.4/5GHz, Combo GPS*/*Wi-Fi† Flexible Antenna with Balanced Transmission
RoHS-compliant, Halogen-free

Specifications

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

Electrical specifications (1.575-1.602GHz) include:
- f_start (MHz): 1575.42
- f_end (MHz): 1602
- Return Loss S11 (dB): Refer to table
- Total Eff. (dB): Refer to table
- Peak Gain (dBi): Refer to table
- Polarization: Linear
- Input Impedance (Ohms): 50

Electrical specifications (2.4 GHz) include:
- f_start (MHz): 2400
- f_end (MHz): 2483.5
- Return Loss S11 (dB): Refer to table
- Total Eff. (dB): Refer to table
- Peak Gain (dBi): Refer to table
- Polarization: Linear
- Input Impedance (Ohms): 50

Electrical specifications (UWB 3-6 GHz) include:
- f_start (MHz): 3000
- f_end (MHz): 6000
- Return Loss S11 (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: > 18.0N

Physical
Thickness: 0.10mm
Operating Temperature: -30 to +85°C

Ordering Information

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Antenna Dimension</th>
<th>Micro-coaxial Cable Length (mm)</th>
<th>Frequency Range (GHz)</th>
<th>Return Loss S11 (dB)</th>
<th>Peak Gain (dBi)</th>
<th>Total Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>146186-0050</td>
<td>50</td>
<td>1.575-1.602</td>
<td>&lt; -10</td>
<td>3.15</td>
<td>&gt; 72</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 - 2.5</td>
<td>&lt; -10</td>
<td>3.15</td>
<td>&gt; 77</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.15 - 5.85</td>
<td>&lt; -10</td>
<td>4.25</td>
<td>&gt; 74</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-6</td>
<td>&lt; -10</td>
<td>5</td>
<td>&gt; 84</td>
<td></td>
</tr>
<tr>
<td>146186-0100</td>
<td>100</td>
<td>1.575-1.602</td>
<td>&lt; -10</td>
<td>3.0</td>
<td>&gt; 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 - 2.5</td>
<td>&lt; -10</td>
<td>3.0</td>
<td>&gt; 75</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.15 - 5.85</td>
<td>&lt; -10</td>
<td>4.0</td>
<td>&gt; 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-6</td>
<td>&lt; -10</td>
<td>4.7</td>
<td>&gt; 80</td>
<td></td>
</tr>
<tr>
<td>146186-0150</td>
<td>150</td>
<td>1.575-1.602</td>
<td>&lt; -10</td>
<td>2.85</td>
<td>&gt; 68</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 - 2.5</td>
<td>&lt; -10</td>
<td>2.85</td>
<td>&gt; 72</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.15 - 5.85</td>
<td>&lt; -10</td>
<td>3.75</td>
<td>&gt; 66</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-6</td>
<td>&lt; -10</td>
<td>4.5</td>
<td>&gt; 75</td>
<td></td>
</tr>
<tr>
<td>146186-0200</td>
<td>200</td>
<td>1.575-1.602</td>
<td>&lt; -10</td>
<td>2.7</td>
<td>&gt; 65</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 - 2.5</td>
<td>&lt; -10</td>
<td>2.7</td>
<td>&gt; 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.15 - 5.85</td>
<td>&lt; -10</td>
<td>3.5</td>
<td>&gt; 62</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-6</td>
<td>&lt; -10</td>
<td>4.2</td>
<td>&gt; 71</td>
<td></td>
</tr>
<tr>
<td>146186-0250</td>
<td>250</td>
<td>1.575-1.602</td>
<td>&lt; -10</td>
<td>2.55</td>
<td>&gt; 63</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 - 2.5</td>
<td>&lt; -10</td>
<td>2.55</td>
<td>&gt; 68</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.15 - 5.85</td>
<td>&lt; -10</td>
<td>3.25</td>
<td>&gt; 59</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-6</td>
<td>&lt; -10</td>
<td>4</td>
<td>&gt; 67</td>
<td></td>
</tr>
<tr>
<td>146186-0300</td>
<td>300</td>
<td>1.575-1.602</td>
<td>&lt; -10</td>
<td>2.4</td>
<td>&gt; 61</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 - 2.5</td>
<td>&lt; -10</td>
<td>2.4</td>
<td>&gt; 65</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.15 - 5.85</td>
<td>&lt; -10</td>
<td>3</td>
<td>&gt; 56</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-6</td>
<td>&lt; -10</td>
<td>3.7</td>
<td>&gt; 64</td>
<td></td>
</tr>
</tbody>
</table>

www.molex.com/link/standard_antennas.html

Order No. 987651-3851
Printed in USA/KC/2015.10
© 2015 Molex