

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

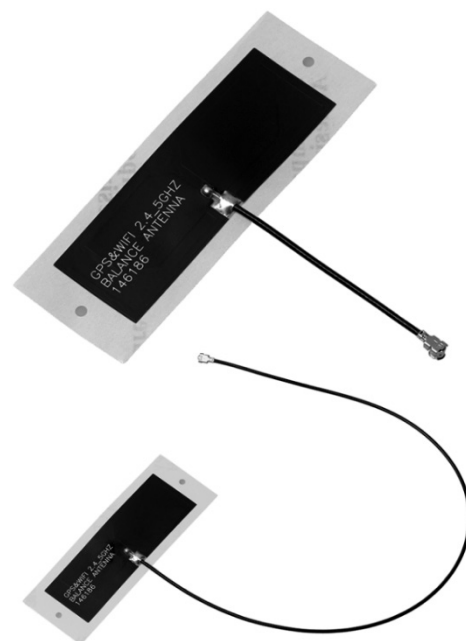
*RoHS-compliant, Halogen-free*

**molex**®

**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

Balanced antenna with ground-plane-independent design	Reduces engineering resources and costs needed to mitigate PCB ground-induced radiation
High radiation efficiency with 53.0 by 18.0mm strip antenna	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
Poly-flexible, double-sided adhesive tape on antenna	Enables easy peel-and-stick mounting anywhere within the device casing
Coaxial cable to center-fed antenna attachment with over 18.0N of pull force	Ensures robust antenna reliability and connectivity to radio device
Wide selection of micro-coaxial cable lengths from 50 to 300mm	Extends connectivity for maximum design flexibility



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

## Applications

### Telecommunications/Networking

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



Telehealth devices



Smartmeters



Infotainment devices



Wireless Internet TV

\*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 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 (5 GHz) include:

f\_start (MHz): 5150  
f\_end (MHz): 5850  
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

Order No.	Antenna Dimension	Micro-coaxial Cable Length (mm)	Frequency Range (GHz)	Return Loss S11 (db)	Peak Gain (dBi)	Total Efficiency (%)
146186-0050	53.00 by 18.00mm	50	1.575-1.602	< -10	3.15	> 72
			2.4 - 2.5	< -10	3.15	> 77
			5.15 - 5.85	< -10	4.25	> 74
			3-6	< -10	5	> 84
146186-0100		100	1.575-1.602	< -10	3.0	> 70
			2.4 - 2.5	< -10	3.0	> 75
			5.15 - 5.85	< -10	4.0	> 70
			3-6	< -10	4.7	> 80
146186-0150		150	1.575-1.602	< -10	2.85	> 68
			2.4 - 2.5	< -10	2.85	> 72
			5.15 - 5.85	< -10	3.75	> 66
			3-6	< -10	4.5	> 75
146186-0200		200	1.575-1.602	< -10	2.7	> 65
			2.4 - 2.5	< -10	2.7	> 70
			5.15 - 5.85	< -10	3.5	> 62
			3-6	< -10	4.2	> 71
146186-0250	250	1.575-1.602	< -10	2.55	> 63	
		2.4 - 2.5	< -10	2.55	> 68	
		5.15 - 5.85	< -10	3.25	> 59	
		3-6	< -10	4	> 67	
146186-0300	300	1.575-1.602	< -10	2.4	> 61	
		2.4 - 2.5	< -10	2.4	> 65	
		5.15 - 5.85	< -10	3	> 56	
		3-6	< -10	3.7	> 64	

[www.molex.com/link/standard\\_antennas.html](http://www.molex.com/link/standard_antennas.html)