

# 2.4/5GHz WiFi Flexible Antenna with Balanced Transmission

146153 RoHS-compliant, Halogen-free

**Dual-band transmission-balanced antennas combine ground-plane independence with high-radiation efficiency for better connectivity and faster wireless device processing**

## 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 34.90 by 9.00 mm strip antenna	Offers total efficiency values of 75% minimum in the 2.4GHz band and 70% minimum in the 5GHz 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

## Applications

### Telecommunications/Networking

- Wi-Fi devices
- Wireless LAN (WLAN)
- IEEE 802.11b/g/n devices

### Industrial applications

- Machine to machine (M2M) communication
- Smartmeters
- 2.4GHz <sup>§</sup>ZigBee IEEE 802.15.4 devices
- 2.4 GHz and 5 GHz Industrial, Scientific and Medical (ISM) band systems and wireless devices

### Consumer Electronics (CE) Applications

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

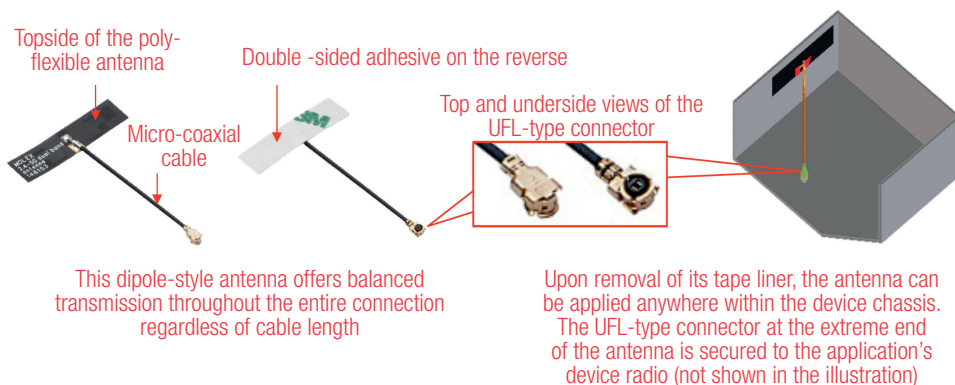
### Medical

- Telemedicine and telehealth device

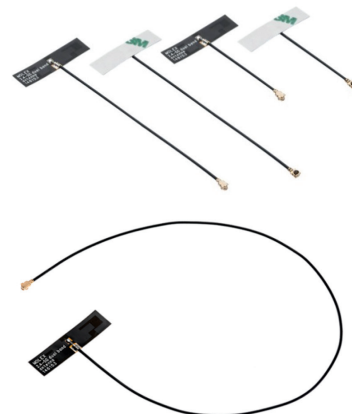
### Automotive applications

- <sup>†</sup>Bluetooth devices
- Infotainment devices
- Mobile hotspots

## Product Features



**molex**<sup>®</sup>



Series 146153 <sup>†</sup>WiFi-ready dual-band antennas



Telehealth devices



Smartmeters



Infotainment devices



Wireless Internet TV

<sup>†</sup>Wi-Fi is a registered trademarks of the Wi-Fi Alliance. <sup>†</sup>Bluetooth is a registered trademark of Bluetooth SIG.  
<sup>§</sup>ZIGBEE is a registered trademark of trademark of ZigBee Alliance.

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**molex**<sup>®</sup>

## 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 (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

### Mechanical

Pull Force: > 18.0N

### Physical

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

### 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

## Ordering Information

Order No.	Flexi-Antenna Dimensions	Miniature Coaxial Cable Lengths (mm)	Frequency Range (GHz)	Return Loss S11 (db)	Peak Gain (dBi)	Total Efficiency (%)
<a href="#">146153-0050</a>	34.90 by 9.00mm	50	2.4 - 2.5	< -10	3.2	> 78
			5.15 - 5.85	< -10	4.75	> 75
<a href="#">146153-0100</a>		100	2.4 - 2.5	< -10	3.0	> 75
			5.15 - 5.85	< -10	4.5	> 70
<a href="#">146153-0150</a>		150	2.4 - 2.5	< -10	2.8	> 72
			5.15 - 5.85	< -10	4.2	> 66
<a href="#">146153-0200</a>		200	2.4 - 2.5	< -10	2.6	> 69
			5.15 - 5.85	< -10	4.0	> 62
<a href="#">146153-0250</a>		250	2.4 - 2.5	< -10	2.4	> 66
			5.15 - 5.85	< -10	3.7	> 58
<a href="#">146153-0300</a>		300	2.4 - 2.5	< -10	2.2	> 63
			5.15 - 5.85	< -10	3.3	> 55

## Unique And Useful Differentiation vs. Similar Molex Product

Attribute	Product and Technical Differences	
	2.4/5GHz WiFi Flexible Antenna with Balanced Transmission (Series 146153)	2.4/5GHz Standalone Antenna (Series 47950)
Operating Frequencies	2.4/5GHz	2.4/5GHz
Dipole-style, Center-feed design	Yes	Yes
Ground-plane independence	Yes	Yes
Total Radiation Efficiency with 34.9 by 9.00 mm (1.37 by 0.34") version antenna	Total Efficiency values of 75% minimum in the 2.4GHz band and 70% minimum in the 5GHz band [Remark: Signal attenuation along cable affects Total Radiation Efficiency]	Total Efficiency values of 75% minimum in the 2.4GHz band and 60% minimum in the 5GHz band [Remark: Signal attenuation along cable affects Total Radiation Efficiency]
Transmission characteristics	Antenna resonance is not affected by cable length of balanced antenna. Consistent antenna performance	Cable length affects transmission balance. Antenna performance varies greatly with cable length
WiFi-ready	Yes	Yes
Micro coaxial cable lengths	50, 100, 150, 200, 250, 300mm	100, 150, 200mm
Environmentally sustainable	Yes, RoHS-compliant, Halogen-free	Yes, RoHS-compliant, Halogen-free

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