

# 2.4/5GHz Wi-Fi<sup>†</sup> Flexible Antenna with Balanced Transmission

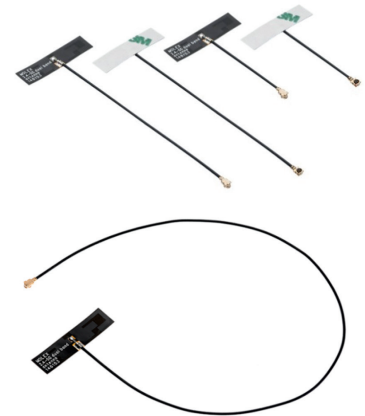
146153 RoHS-compliant, Halogen-free



**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



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

## 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



Telehealth devices



Smartmeters

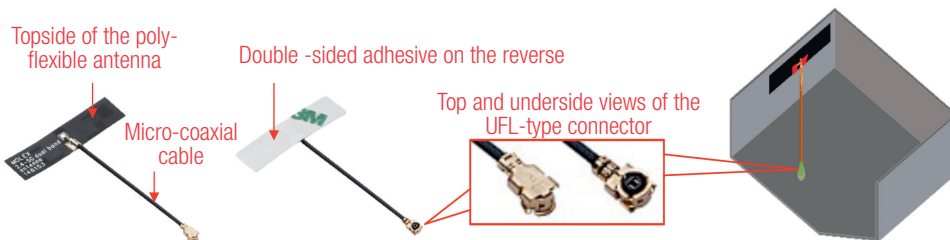


Infotainment devices



Wireless Internet TV

## Product Features



This dipole-style antenna offers balanced transmission throughout the entire connection regardless of cable length

Upon removal of its tape liner, the antenna can be applied anywhere within the device chassis. The UFL-type connector at the extreme end of the antenna is secured to the application's device radio (not shown in the illustration)

<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.

# 2.4/5GHz Wi-Fi Flex Antenna with balanced transmission

146153 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 (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 Wi-Fi 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
Wi-Fi-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)