

2.4/5GHz Wi-Fi[†] Flexible Antenna with Balanced Transmission

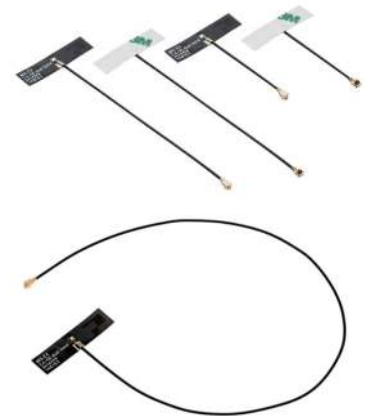
146153 RoHS-compliant, Halogen-free



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 [†]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 [§]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

- [†]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)

[†]Wi-Fi is a registered trademarks of the Wi-Fi Alliance. [†]Bluetooth is a registered trademark of Bluetooth SIG. [§]ZIGBEE is a registered trademark of trademark of ZigBee Alliance.

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

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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 (%)
146153-0050	34.90 by 9.00mm	50	2.4 - 2.5	< -10	3.2	> 78
146153-0100			5.15 - 5.85	< -10	4.75	> 75
146153-0150		100	2.4 - 2.5	< -10	3.0	> 75
146153-0200			5.15 - 5.85	< -10	4.5	> 70
146153-0250		150	2.4 - 2.5	< -10	2.8	> 72
146153-0300			5.15 - 5.85	< -10	4.2	> 66
146153-0050		200	2.4 - 2.5	< -10	2.6	> 69
146153-0100			5.15 - 5.85	< -10	4.0	> 62
146153-0150		250	2.4 - 2.5	< -10	2.4	> 66
146153-0200			5.15 - 5.85	< -10	3.7	> 58
146153-0250		300	2.4 - 2.5	< -10	2.2	> 63
146153-0300			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