2.4/5 and 2.4GHz SMT Molded Interconnect Device (MID) Chip Antennas



Requiring no ground-plane clearance, Wi-Fi*-ready MID chip antennas enable wireless device makers to achieve higher level of product integration with fewer components and lower costs









(Left to Right) 2.4, 5 GHz (Series 146175) and 2.4GHz (Series 47948) SMT MID Chip Antennas

Applications

Telecommunication

Wi-Fi* and Bluetooth† devices

Wireless LANs (WLAN)

IEEE 802.11b/g/n devices

Headsets, Tablet PCs

Internet of Things (IoT) devices

Industrial

Machine-to-machine (M2M) communications

Smart meters

Lighting controls

ZigBee§ IEEE 802.15.4 devices

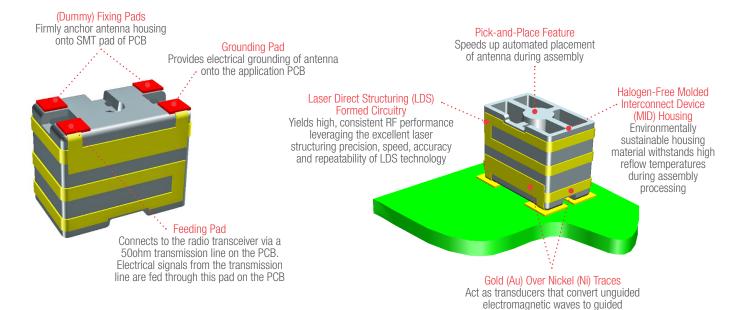
Consumer

Small Office Home Office (SOHO) networks

Smartphones and wearable devices

electromagnetic waves and vice versa

Features and Advantages (Series 146175)



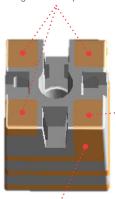
*Wi-Fi is a registered trademark of the Wi-Fi Alliance
†Bluetooth is a registered trademark of Bluetooth SIG
§ZIGBEE is a registered trademark of trademark of ZigBee Alliance

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Product Features and Advantages (Series 47948)





· · · Feeding Pad

Connects to the radio transceiver via a 500hm transmission line on the PCB. Electrical signals from the transmission line are fed through this pad on the PCB

Gold (Au) Over Nickel (Ni) Radiator Traces

Act as transducers that convert unguided electromagnetic waves to guided electromagnetic waves and vice versa

Pick-and-Place Feature
Speeds up automated placement
of antenna during assembly

Footprint for Soldering on PCB
Facilitates PCB layout

Halogen-Free Molded Interconnect Device (MID) Housing

Environmentally sustainable housing material withstands high reflow temperatures during assembly processing

Series 146175 has a clearance zone limit of 6.0(L) by 4.0(W) while that of Series 47948 is 4.0(L) by 4.0mm (W).

Specifications

Reference Information

Packaging: Tape on reel

Reference Platform: 100mm by 40mm by 1mm

Designed In: mm RoHS: Yes Halogen Free: Yes

Ground Clearance:

6.0(L) by 4.0(W) for Series 146175; 4.0(L) by 4.0mm (W) for Series 47948

SMT Compatible: Yes

Electrical

RF Power (Watt): 2

Return Loss - S11(dB): <-6

Average Total Radiation Efficiency(%): >70

Peak Gain (dBi):3.0 Polarization: Linear

Input Impedance (Ohms): 50

Mechanical

Peeling Force (min.): 8N

Physical

Housing:

LCP-LDS, Vectra E840ILDS, 40% mineral-filled

LDS grade

Flammability: UL 94V-0

Plating:

Hatched Area

— 0.1µm Gold (Au) min. (47948)

— 0.05µm Gold (Au) min. (146175)

MID Plane — $2.0\mu m$ Nickel (Ni) min.

Under-plating — 12µm Copper (Cu) min.

Operating Temperature: -40 to +125°C

Ordering Information

Series No.	Frequency Band(s) (MHz)	Dimensions (mm)
<u>146175</u>	2400 to 2483.5 5150 to 5850	5.00(L) by 3.00(W) by 4.00 (H)
<u>47948</u>	2400 to 2483.5	3.00(L) by 3.00(W) by 4.00 (H)

www.molex.com/link/standard_antennas.html