molex®

868, 915 MHz ISM Standalone Antenna with MobliquA™ Technology

105262 868, 915MHz ISM Standalone Antenna

Molex's 868 and 915 MHz ISM Standalone Antenna with leading-edge MobliquA™ technology combines high performance without ground-plane restrictions for significant cost savings and easy integration into wireless devices

Designed for compact industrial and other wireless applications operating the license-free 868 and 915MHz frequencies, Molex's 868, 915 MHz ISM Standalone Antennas give smart meter, medical device and automotive makers a run for their investments.

Featuring Molex's patented MobliquA™ bandwidthenhancing technology, the antenna's indirect radiatorfeed design enables dual-band ISM operation with reduced antenna-volume of 75% compared with conventional dipole-type antennas. The small 79.0 by 10.0mm footprint of the antenna offers greater space savings than any equivalent standalone antenna in the industry over the same frequency bands.

An important feature of this antenna is its balanced feed-structure. It facilitates true ground-plane-independence which enables easy integration of the antenna without the concerns of PCB-size limitations and land-ground-induced currents. It also frees up additional costs associated with electronic circuitry and engineering resources normally required for antenna frequency tuning and optimization over these bands.

Molex's unique ISM antenna design provides reflection coefficient values of -11dB to -16dB in both bands. Combined with radiation efficiencies of between 50-67%, this high-performance standalone antenna is ideal for applications that need superb performance and mechanical robustness.

The 105262 series of standalone antennas are very easy to use. Simply peel off the poly-flexible adhesive tape on the underside of antenna and stick it on any desired location within the device casing. Next, mount the *UFL-type coaxial connector at the end of the micro-coaxial cable to the device radio and the antenna is ready to use. For added convenience and design flexibility, the micro-coaxial cables come in lengths of 100, 150 and 200mm.

For additional information visit our website at:
www.molex.com/link/standard_antennas.html

A typical 79.00 by 10.00mm, dual-band, 868, 915MHz ISM Standalone Antenna with micro-coaxial cable

Features and Benefits

- Built on proprietary MobliquA™ technology enables significant antenna volume reduction of up to 75% compared with conventional designs
- Dual-band antenna operating at 868 and 915MHz ISM bands eliminates the need for regional antenna variants for greater logistics and cost reductions
- Balanced, ground-plane independence significantly cuts costs and engineering resources needed for additional circuitry, frequency tuning and electronic component integration
- Minimum total radiation efficiency of 50% and 67% (respectively) for the 868 and 915 MHz bands improves communication range and coverage
- Poly-flexible, double-sided adhesive tape for easy peel-and-stick mounting anywhere within the device casing
- Choice of several miniature coax cable length options (100, 150 and 200mm) enables flexible antenna placement within the device housing

*Surface-mount, micro-coaxial Jack (Molex Part Number: 73412-0110).
Refer to Molex's product datasheet (Order No. 987650-3242)

molex®

868, 915 MHz ISM Standalone Antenna with MobliquA™ Technology

Specifications

Reference Information
Packaging: Tray
Mates With:
Micro-coaxial SMT Jack
(Part no. 73412-0110)
Use in:
Any ground-plane-independent environment
RoHS: Yes
Halogen Free: Yes
Glow Wire Compliant: No

Electrical specifications (ISM 868)
Frequency Band: 863-870MHz
Reflection |S11|: < -11dB
Total Efficiency: > 50 % (>-3 dB)
Peak gain: 0.4dBi
Polarization: Linear
Input Impedance: 50Ohm (balanced)
Max PWR: 2W / 33dBm

Electrical specifications (ISM 915)
Frequency Band: 915-928MHz
Reflection |S11|: < -13dB
Total Efficiency: > 67% (>-1.75 dB)
Peak gain: 1.4dBi
Polarization: Linear
Input Impedance: 50Ohm (balanced)
Max PWR: 2W / 33dBm

Physical
Contact: Micro coaxial
(< 2.5 mm mating height).
PCB Thickness: 0.10 mm (0.004”)
Operating Temperature: -30 to +75 °C

Mechanical
Connector Mating Force:
Initial 20N max.; 15N after 30 mating cycles
Connector Unmating Force:
Initial 2N min.; 1.5N after 30 mating cycles
Connector mating cycles: 30
Cable pull force: 18N max.

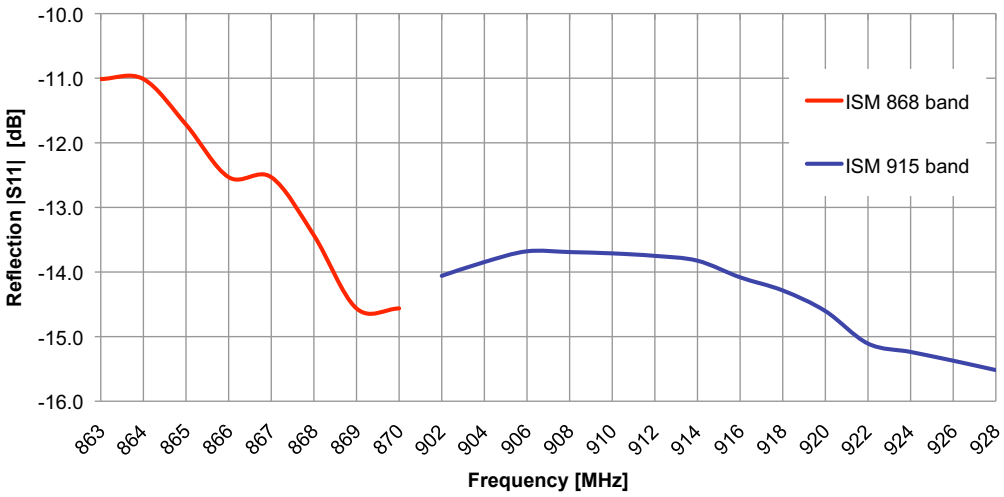


Figure 1: Reflection |S11| for 868 and 951MHz frequencies measured using a standalone antenna with 100mm microcoaxial cable, mounted on a 2.50mm-thick PC-material plate

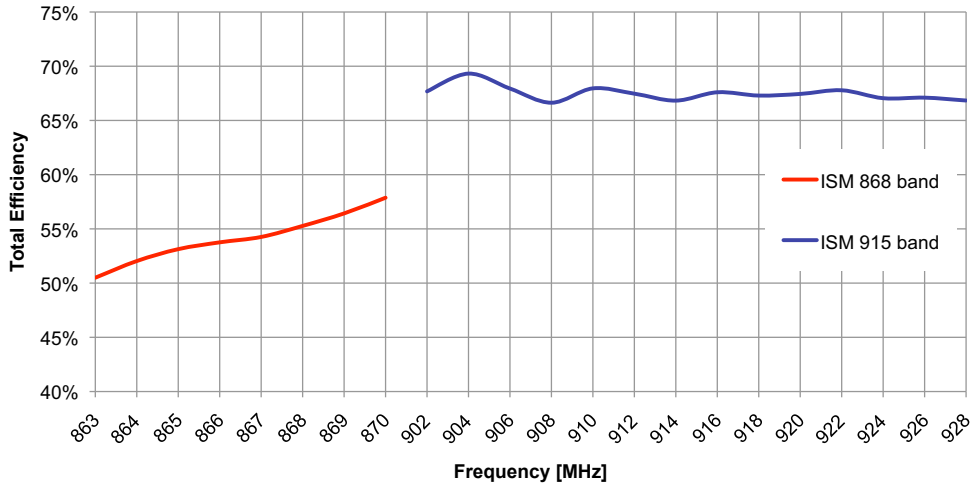


Figure 2: Total Radiation Efficiencies for 868 and 951MHz frequencies measured using a standalone antenna with 100mm micro-coaxial cable, mounted on a 2.50mm-thick PC material plate

molex®

868, 915 MHz ISM Standalone Antenna with MobliquA™ Technology

Specifications

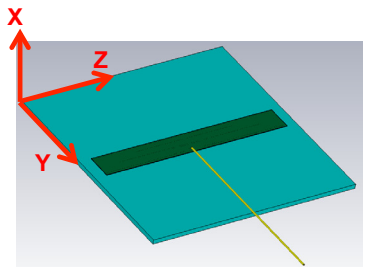


Figure 3a: Antenna mounted on a 2.50mm-thick PC material plate including 100 mm micro-coaxial cable

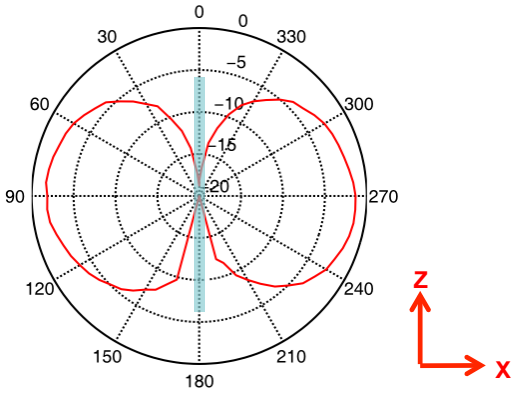


Figure 3c: Radiation pattern at XZ plane, Total Gain [dBi] at 866MHz

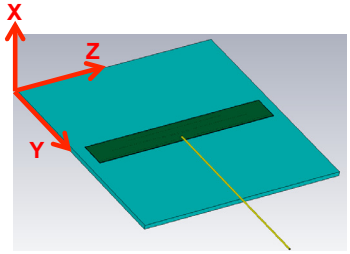


Figure 3e: Antenna mounted on a 2.50mm-thick PC material plate including 100 mm micro-coaxial cable

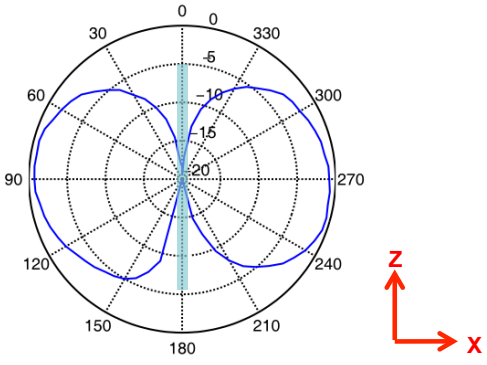


Figure 3g: Radiation pattern at XZ plane, Total Gain [dBi] at 915MHz

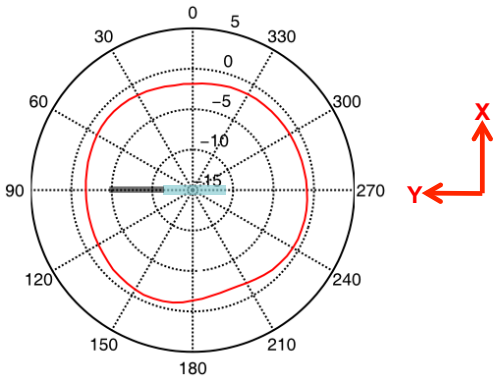


Figure 3b: Radiation pattern at XY plane, Total Gain [dBi] at 866MHz

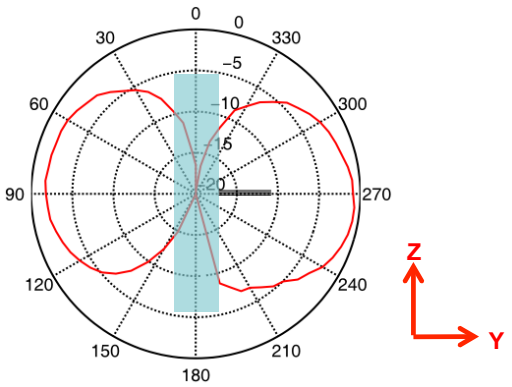


Figure 3d: Radiation pattern at YZ plane, Total Gain [dBi] at 866MHz

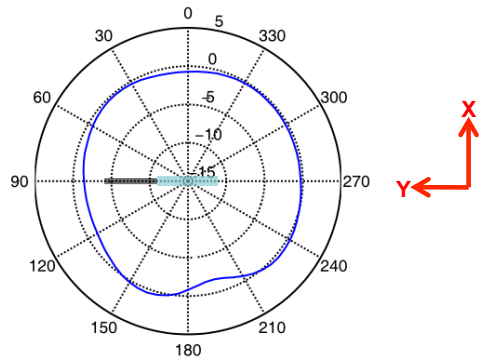


Figure 3f: Radiation pattern at XY plane, Total Gain [dBi] at 915MHz

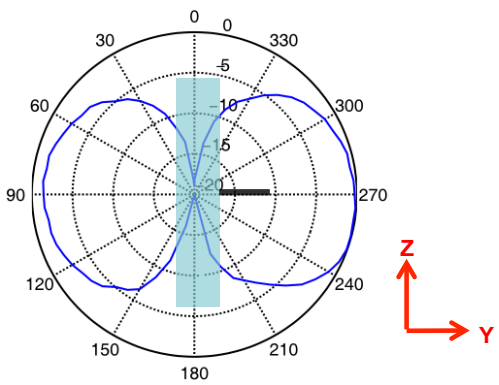
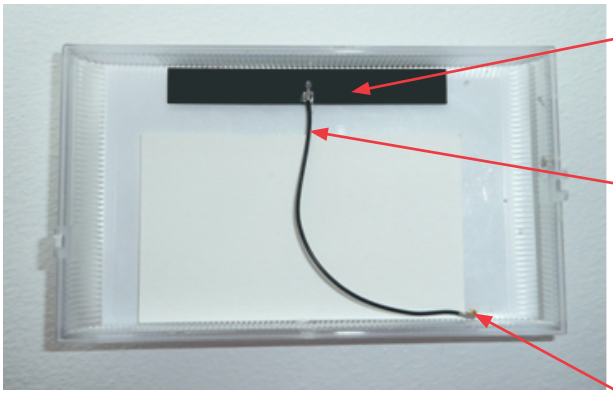


Figure 3h: Radiation pattern at YZ plane, Total Gain [dBi] at 915MHz

868, 915 MHz ISM Standalone Antenna with MobliquA™ Technology

Product Features



Peel-and-stick antenna is mounted on the housing chassis of the wireless device

Flexible micro-coaxial cable is available in 3 different lengths to facilitate connectivity to radio device

UFL-type coaxial connector

Applications

Industrial Applications
- Smart meters
- Smart grid concentrators
- Remote sensors
- Home energy displays
- Electronic locks
- Alarm and monitoring equipment
- ZigBee IEEE 802.15.4 devices
- Z-wave devices
- Wireless M-bus devices

Medical Applications
- Telemedicine and telehealth devices

Other Markets
- Building automation products
- Automotive communication devices

Telemedicine and telehealth devices

Smart meters

Ordering Information

Antennas

Order No.	Cable Length
105262-0001	100 mm (3.94”)
105262-0002	150 mm (5.91”)
105262-0003	200 mm (7.87”)

www.molex.com/link/standard_antennas.html