



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

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)

868, 915 MHz ISM Standalone Antenna with MobliquA™ Technology

105262 868, 915MHz ISM Standalone Antenna



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

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

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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.

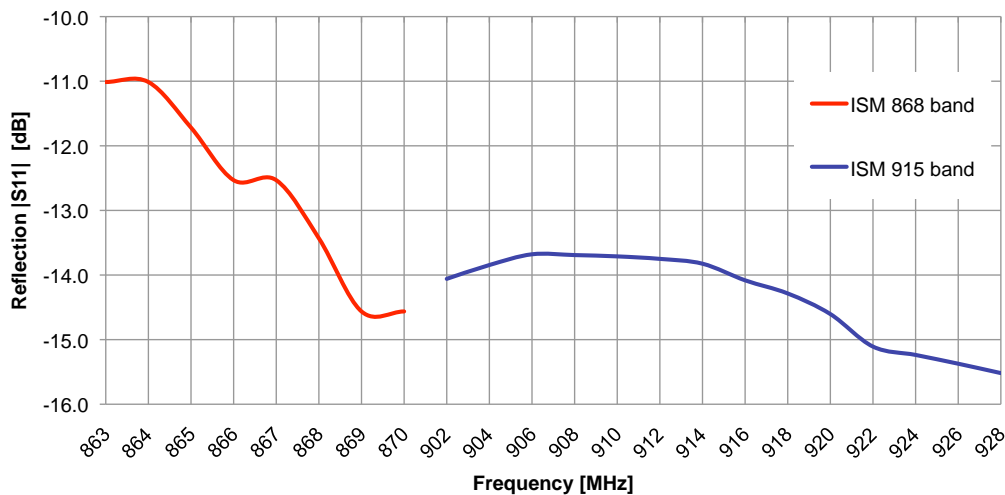


Figure 1: Reflection |S11| for 868 and 915MHz frequencies measured using a standalone antenna with 100mm microcoaxial cable, mounted on a 2.50mm-thick PC-material plate

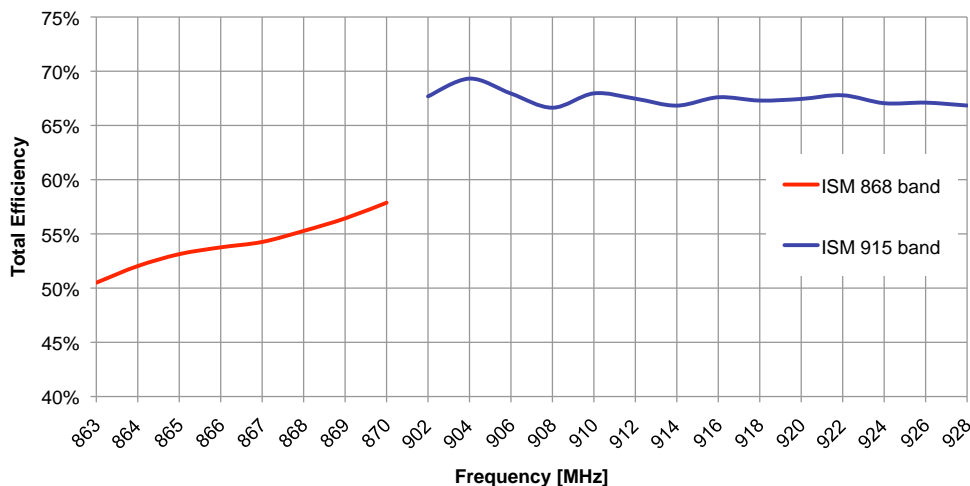


Figure 2: Total Radiation Efficiencies for 868 and 915MHz frequencies measured using a standalone antenna with 100mm micro-coaxial cable, mounted on a 2.50mm-thick PC material plate

Specifications

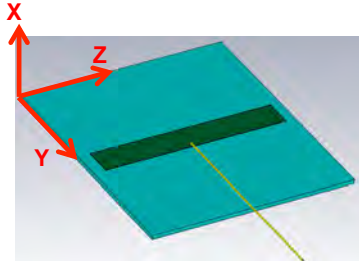


Figure 3a: Antenna mounted on a 2.50mm-thick PC material plate including 100 mm micro-coaxial cable

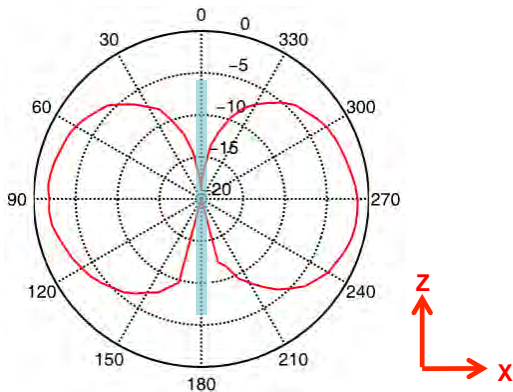


Figure 3c: Radiation pattern at XZ plane, Total Gain [dBi] at 866MHz

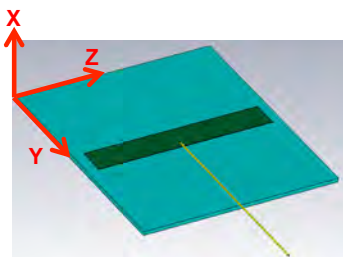


Figure 3e: Antenna mounted on a 2.50mm-thick PC material plate including 100 mm micro-coaxial cable

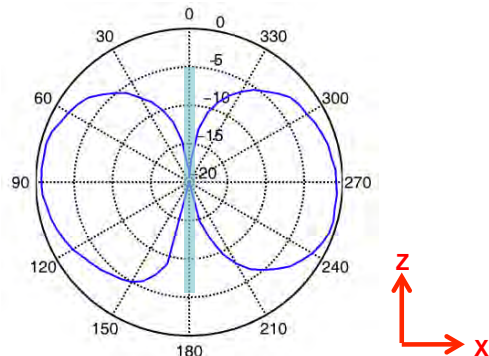


Figure 3g: Radiation pattern at XZ plane, Total Gain [dBi] at 915MHz

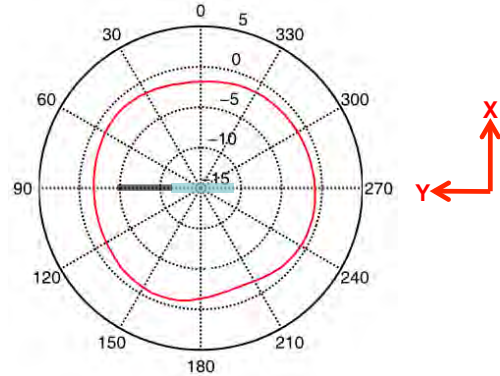


Figure 3b: Radiation pattern at XY plane, Total Gain [dBi] at 866MHz

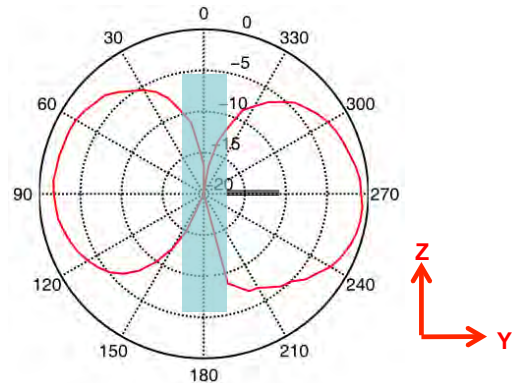


Figure 3d: Radiation pattern at YZ plane, Total Gain [dBi] at 866MHz

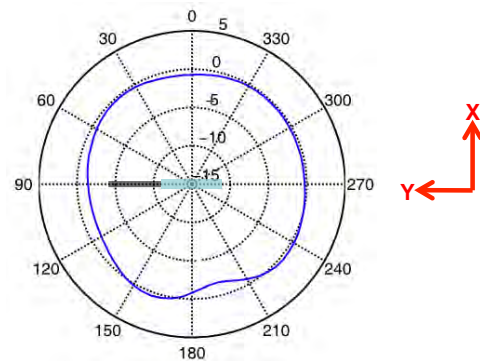


Figure 3f: Radiation pattern at XY plane, Total Gain [dBi] at 915MHz

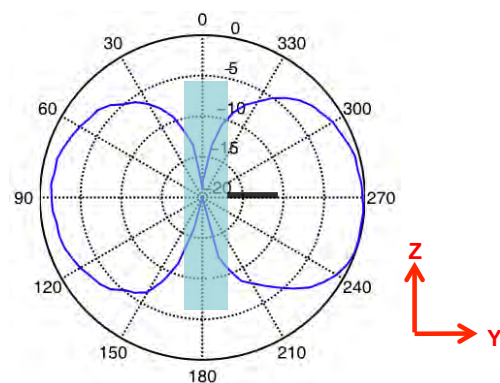
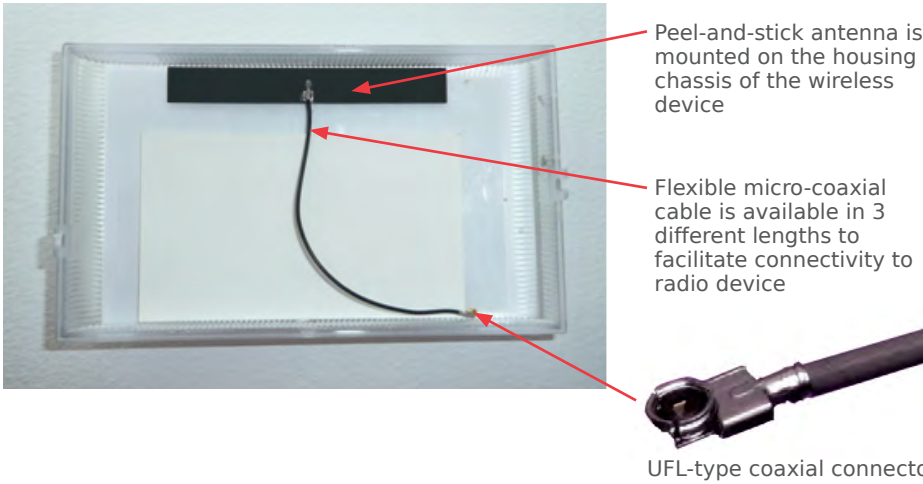


Figure 3h: Radiation pattern at YZ plane, Total Gain [dBi] at 915MHz

Product Features



**868, 915 MHz
ISM Standalone
Antenna with
MobliquA™
Technology**

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") |

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