Description: ISM 868/915MHz PCB Antenna with coax feed

PART NUMBER: W3312XXXXXX

Features:

- 863-928MHz
- Size 75x15 mm
- Flexible PCB thickness 0.1 mm with adhesive tape
- Mounting with 3M467 adhesive tape on back side
- 100mm 1.13mm OD coax cable with U.FL connector

Applications:

- Devices with ISM 868MHz / 915MHz radios
- M2M, IoT
- Metering, Industry automation
- Instrumentation

All dimensions are in mm / inches

Issue: 1912

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Suzhou New District
Jiangsu Province, Suzhou 215009 PR China
Tel: 86 512 6807 9998
**Description:** ISM 868/915MHz PCB Antenna with coax feed

**PART NUMBER:** W3312xxxxxx

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>863-928 MHz</td>
</tr>
<tr>
<td>Nominal Impedance</td>
<td>50 Ω</td>
</tr>
<tr>
<td>Return loss</td>
<td>-8 dB</td>
</tr>
<tr>
<td>Efficiency</td>
<td>45 %</td>
</tr>
<tr>
<td>Peak Gain</td>
<td>0.8 dBi +/- 1 dB</td>
</tr>
<tr>
<td>Polarization</td>
<td>linear</td>
</tr>
<tr>
<td>Power withstanding</td>
<td>2 W</td>
</tr>
</tbody>
</table>

Note: All RF data measured with 1.5mm polycarbonate plate to simulate loading effect of real device housing.
**Description:** ISM 868/915MHz PCB Antenna with coax feed

**PART NUMBER:** W3312XXXXXX

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**This document covers all product variants of the following product family**

<table>
<thead>
<tr>
<th>Antennas</th>
<th>Color</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3312B0100</td>
<td>Green</td>
<td>1.13mm OD coax cable with U.FL connector</td>
</tr>
<tr>
<td>W3312BB0100</td>
<td>BLACK</td>
<td></td>
</tr>
</tbody>
</table>
**Description:** ISM 868/915MHz PCB Antenna with coax feed
**PART NUMBER:** W3312XXXXXX

### MECHANICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB type</td>
<td>Flexible</td>
</tr>
<tr>
<td>Radiator size</td>
<td>15[0.59] x 75[2.95] mm[inch]</td>
</tr>
<tr>
<td>Adhesive</td>
<td>3M467</td>
</tr>
<tr>
<td>Total thickness (Radiator+adhesive)</td>
<td>0.1[0.004] mm[inch]</td>
</tr>
<tr>
<td>Weight</td>
<td>0.74g</td>
</tr>
<tr>
<td>Cable type</td>
<td>OD 1.13mm coax</td>
</tr>
<tr>
<td>Cable length</td>
<td>100[3.94] mm[inch]</td>
</tr>
<tr>
<td>Connector</td>
<td>U.FL compatible</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-40/+85 °C</td>
</tr>
</tbody>
</table>
Description: ISM 868/915MHz PCB Antenna with coax feed
PART NUMBER: W3312xxxxxx

Series: Internal Antenna

MECHANICAL DRAWING
Description: ISM 868/915MHz PCB Antenna with coax feed
PART NUMBER: W3312XXXXXX

Series: Internal Antenna

CHARTS

Return loss

Return loss vs Frequency measured with 1.5mm polycarbonate plate
W3312B0100 measured in PSU, September 18, 2016

Frequency, MHz
Return loss, dB

W3312B0100 spec
Description: ISM 868/915MHz PCB Antenna with coax feed

PART NUMBER: W3312XXXXXX

Efficiency

Efficiency vs Frequency measured with 1.5mm polycarbonate plate
W3312B0100 measured in PSU, September 18, 2016

Issue: 1912

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Description: ISM 868/915MHz PCB Antenna with coax feed

PART NUMBER: W3312XXXXXX

Peak Gain

Peak Gain vs Frequency measured with 1.5mm polycarbonate plate
W3312B0100 measured in PSU, September 18, 2016

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Series: Internal Antenna

Description: ISM 868/915MHz PCB Antenna with coax feed

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CHARTS

Gain Plots

XY Plane

Power (dBm)

Phi Angle (°)

XY Plane

863MHz
Avg (dBi) = -5.79
Peak (dBi) = -3.95
Avg -3 (deg) = 290

895MHz
Avg (dBi) = -6.48
Peak (dBi) = -4.29
Avg -3 (deg) = 250

928MHz
Avg (dBi) = -6.32
Peak (dBi) = -3.34
Avg -3 (deg) = 175

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Series: Internal Antenna

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CHARTS

Gain Plots

ZX Plane

- **863MHz**
  - Avg (dBi) = -2.93
  - Peak (dBi) = -0.43
  - Avg -3 (deg) = 215

- **895MHz**
  - Avg (dBi) = -3.20
  - Peak (dBi) = -0.74
  - Avg -3 (deg) = 235

- **928MHz**
  - Avg (dBi) = -2.15
  - Peak (dBi) = 0.26
  - Avg -3 (deg) = 265

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**Charts**

*YZ Plane*

- **863MHz**
  - Avg (dBi) = -4.76
  - Peak (dBi) = -0.36
  - Avg -3 (deg) = 120

- **895MHz**
  - Avg (dBi) = -5.11
  - Peak (dBi) = -1.14
  - Avg -3 (deg) = 150

- **928MHz**
  - Avg (dBi) = -4.07
  - Peak (dBi) = -0.77
  - Avg -3 (deg) = 190

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Series: Internal Antenna

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PACKAGING

10PCS/PE bag
10 PE bag/foam bag
15 foam bag/carton box

Total 1500PCS/carton box