

**Description:** ISM868/915MHz, 2.4GHz Antenna

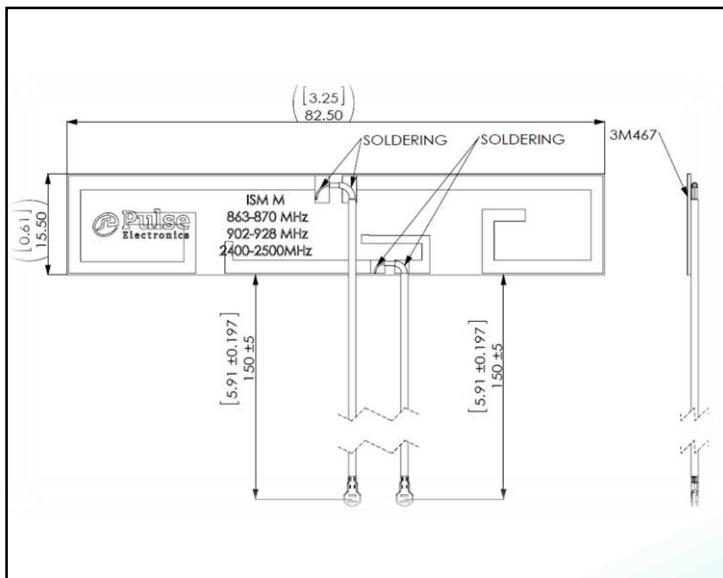
**Series:** Internal

**PART NUMBER:** W3332B0150



**Features:**

- Tri-band dual feed ISM antenna
- PCB radiator with two pigtail coax feeds (815/915MHz and 2.4GHz)
- Size 15.5x82.5x0.5mm
- U.FL compatible connectors



**Applications:**

- Devices using ISM band radios 868MHz, 915MHz, 2.4GHz
- Machine to Machine, IoT
- Data terminals and routers using ISM bands
- 2.4-2.5GHz band also applicable for Bluetooth, BLE Zigbee. WiFi

All dimensions are in mm / inches

Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

For more information:

Pulse Worldwide Headquarters  
12220 World Trade Drive  
San Diego, CA 92128  
USA  
Tel:1-858-674-8100

Pulse/Larsen Antennas  
3611 NE 112<sup>th</sup> Ave  
Vancouver, WA 98682  
USA  
Tel: 1-360-944-7551

Europe Headquarters  
Pulse GmbH & Do, KG  
Zeppelinstrasse 15  
Herrenberg, Germany  
Tel: 49 7032 7806 0

Pulse (Suzhou) Wireless Products Co, Inc.  
99 Huo Ju Road(#29 Bldg,4<sup>th</sup> Phase  
Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



**Description:** ISM868/915MHz, 2.4GHz Antenna

**Series:** Internal

**PART NUMBER:** W3332B0150

**ELECTRICAL SPECIFICATIONS**

Cable 1

|                    |         |          |
|--------------------|---------|----------|
| Frequency          | 863-928 | MHz      |
| Nominal Impedance  | 50      | $\Omega$ |
| Return loss(max)   | -5      | dB       |
| Peak Gain          | 0.2     | dBi      |
| Average Efficiency | 55      | %        |

Cable 2

|                    |           |          |
|--------------------|-----------|----------|
| Frequency          | 2400-2500 | MHz      |
| Nominal Impedance  | 50        | $\Omega$ |
| Return loss(max)   | -10       | dB       |
| Peak Gain          | 4.1       | dBi      |
| Average Efficiency | 64        | %        |

Isolation between cable 1 and cable 2

|               |     |    |
|---------------|-----|----|
| @863-928MHz   | -16 | dB |
| @2400-2500MHz | -11 | dB |

**Description:** ISM868/915MHz, 2.4GHz Antenna**Series:** Internal**PART NUMBER:** W3332B0150**MECHANICAL SPECIFICATIONS**

|               |                 |
|---------------|-----------------|
| PCB material  | FR4             |
| PCB thickness | 0.5 mm          |
| Adhesive      | 3M467           |
| Cable type    | OD 1.13mm coax  |
| Cable length  | 150 mm          |
| Connector     | U.FL compatible |

**ENVIRONMENTAL SPECIFICATIONS**

|                       |             |
|-----------------------|-------------|
| Operating temperature | -40/+85 ° C |
|-----------------------|-------------|

Description: ISM868/915MHz, 2.4GHz Antenna

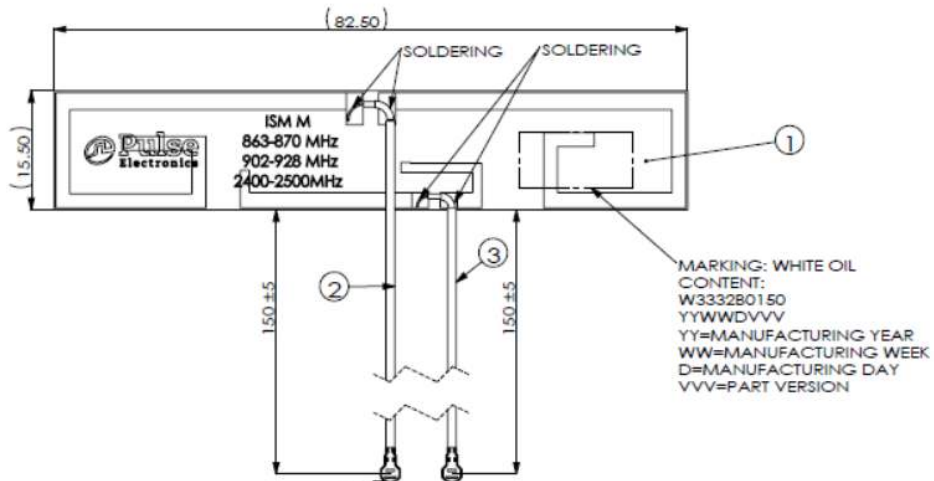
Series: Internal

PART NUMBER: W3332B0150

MECHANICAL DRAWING

Confidential:  
This is a proprietary information of Pulse Finland Oy.  
No reproduction / copying is allowed without permission.

| ITEM | P/N          | DESCRIPTION             | QUANTITY | NOTE |
|------|--------------|-------------------------|----------|------|
| 1    | 025-6139.001 | PCB WITH 3M467 ADHESIVE | 1        |      |
| 2    | 055-2240.001 | CABLE 1                 | 1        |      |
| 3    | 055-2241.001 | CABLE 2                 | 1        |      |



NOTES:

1. RoHS COMPLIANT.
2. NORMAL IMPEDANCE 50Ω.
3. CABLE1: 863-928 MHz, RETURN LOSS (MAX.)-5dB, PEAK GAIN:0.2dBi,AVERAGE EFFICIENCY:55%  
CABLE2:2400-2500MHZ,ETURN LOSS (MAX.)-10dB, PEAK GAIN:4.1dBi,AVERAGE EFFICIENCY:64%
4. ISOLATION BETWEEN CABLE 1 AND CABLE 2:  
@863-928MHz, -16dB  
@2400-2500MHz, -11dB
5. ANTENNA MOUNTING METHOD: ADHESIVE
5. VISUAL QUALITY PER PULSE PQ5.030.000 CLASS III

BOTH CONNECTOR FACE DOWN

| Mod | Explication                             |
|-----|---|
| 01  | COPY FROM W3332 REV12 AND FIRST RELEASE |

|  |                                      |  |                 |                   |                |  |
|--|--------------------------------------|--|-----------------|-------------------|----------------|--|
| <br>Pulse Finland Oy<br>Automaatite 1<br>90440 Oulunsalo, Finland<br>Tel: +358 207 935 500<br>Fax: +358 207 935 501<br>www.pulseelectronics.com/antennas | <br>Scale<br><b>2:1 (A3)</b>         | Sheet number<br>1/1                              |                 |                   |                |  |
|  | Document number<br><b>W3332B0150</b> | General Tolerance<br>Customer number<br>20160905 | Drawn<br>WinZhu |                   |                |  |
|  | Part Version<br><b>P01</b>           | Document Version<br><b>01</b>                    | Mod<br>01       | Date<br>05-Sep-16 | Name<br>WinZhu |  |

Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

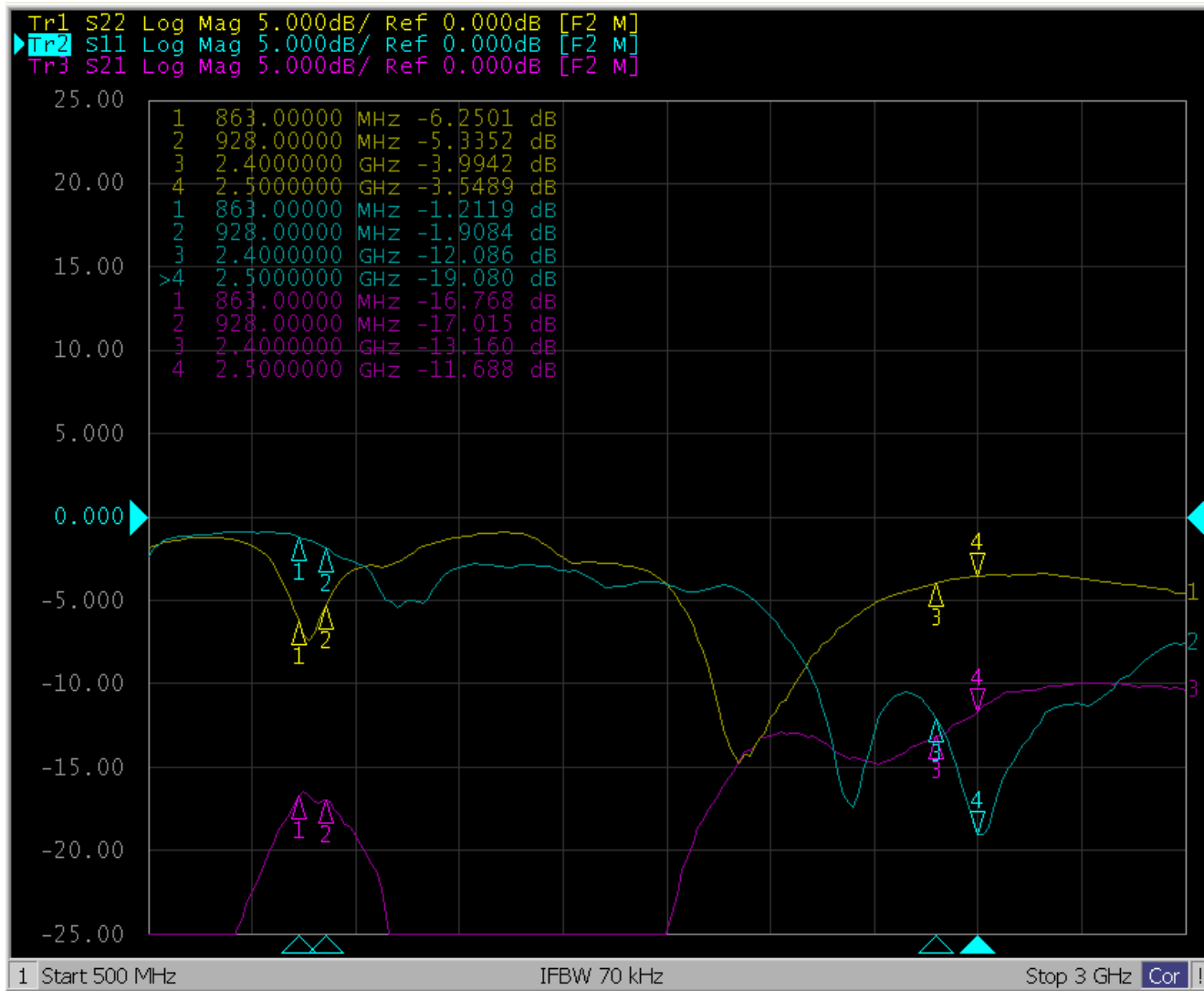
Description: ISM868/915MHz, 2.4GHz Antenna

Series: Internal

PART NUMBER: W3332B0150

CHARTS

Return loss



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.



Description: ISM868/915MHz, 2.4GHz Antenna

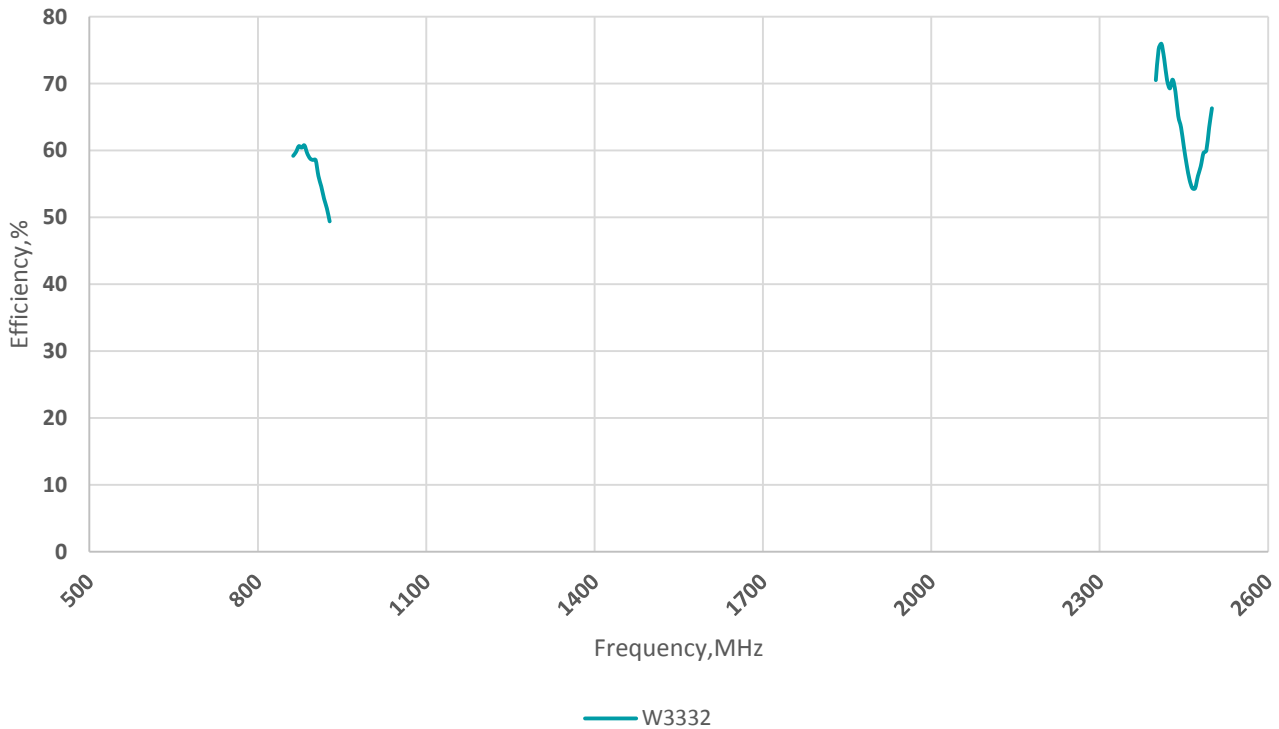
Series: Internal

PART NUMBER: W3332B0150

CHARTS

Efficiency

Efficiency vs Frequency measured in free space  
W3332 measured in PSU



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: ISM868/915MHz, 2.4GHz Antenna

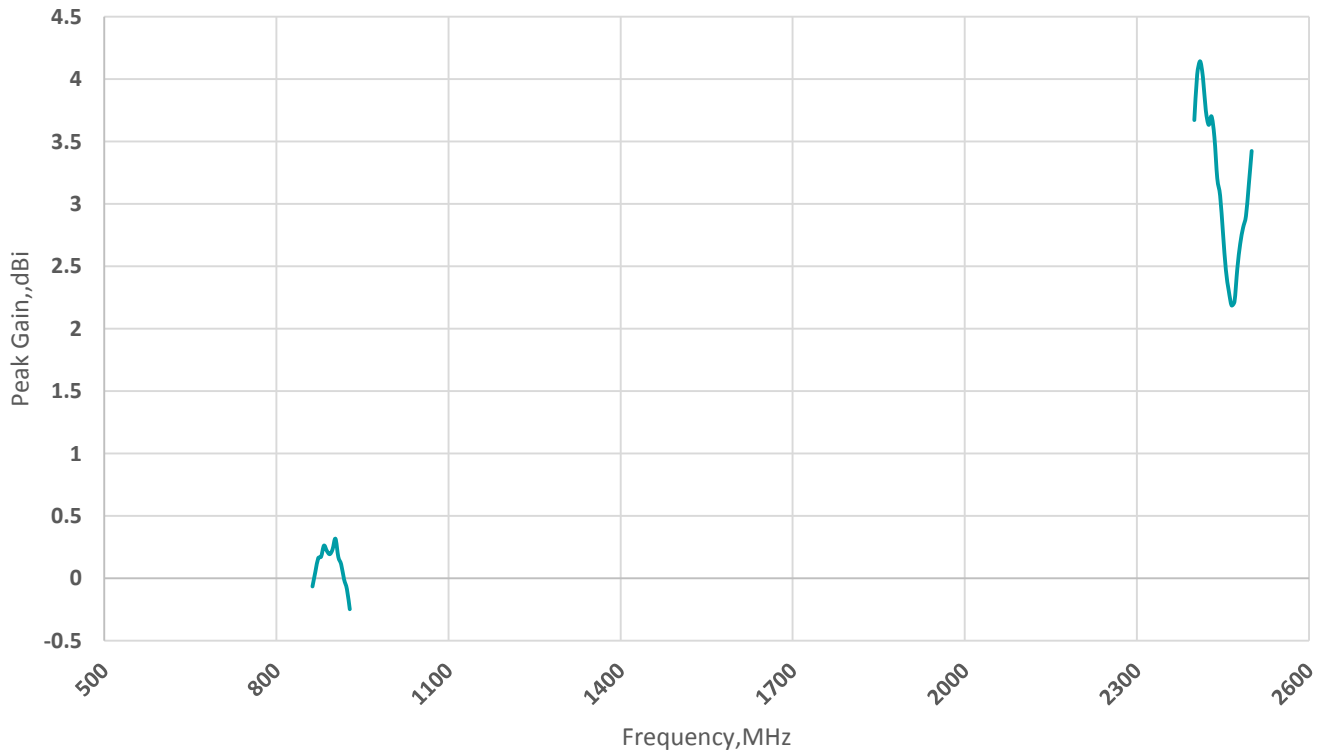
Series: Internal

PART NUMBER: W3332B0150

CHARTS

Peak Gain

Peak Gain vs Frequency measured in free space  
W3332 measured in PSU



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

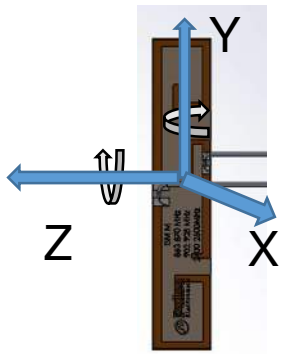
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: ISM868/915MHz, 2.4GHz Antenna

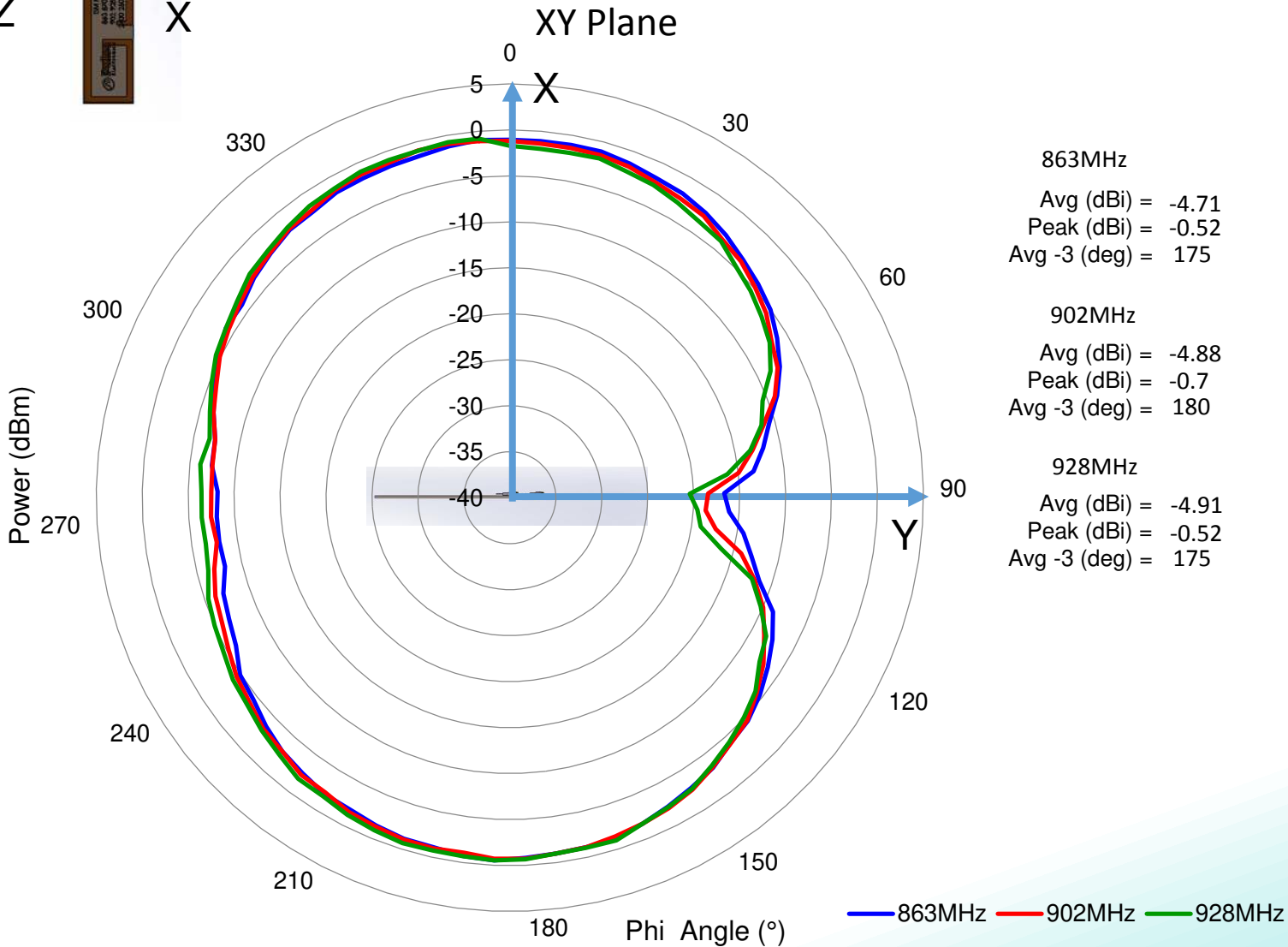
Series: Internal

PART NUMBER: W3332B0150

CHARTS



Radiation Pattern  
863-928MHz



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

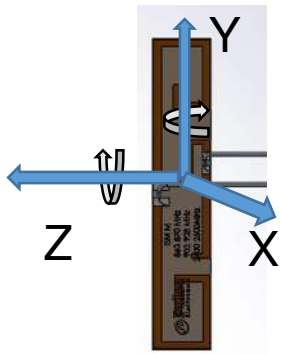


Description: ISM868/915MHz, 2.4GHz Antenna

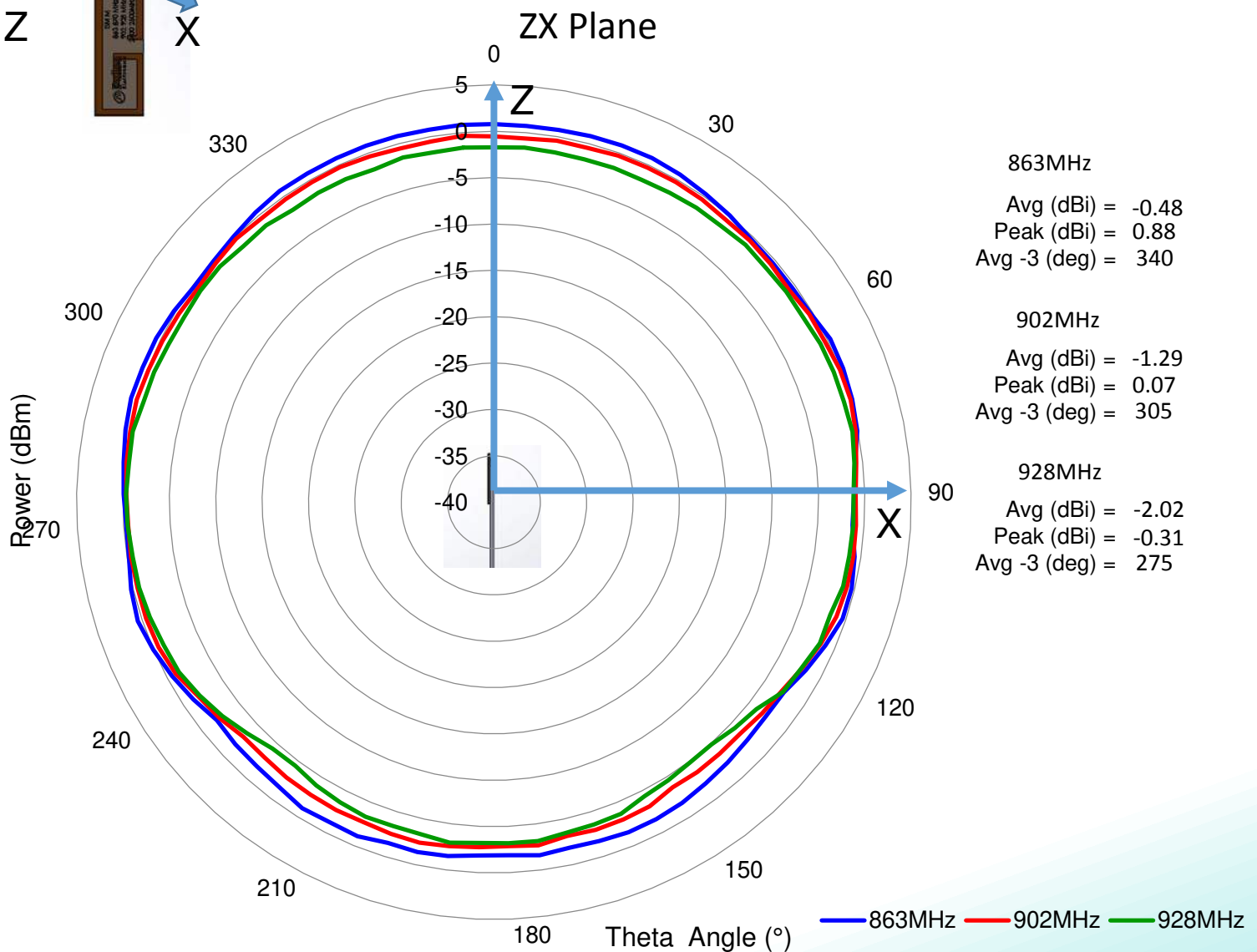
Series: Internal

PART NUMBER: W3332B0150

CHARTS



Radiation Pattern  
863-928MHz



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

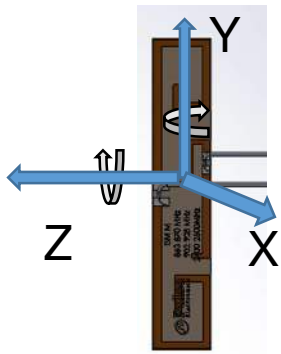
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: ISM868/915MHz, 2.4GHz Antenna

Series: Internal

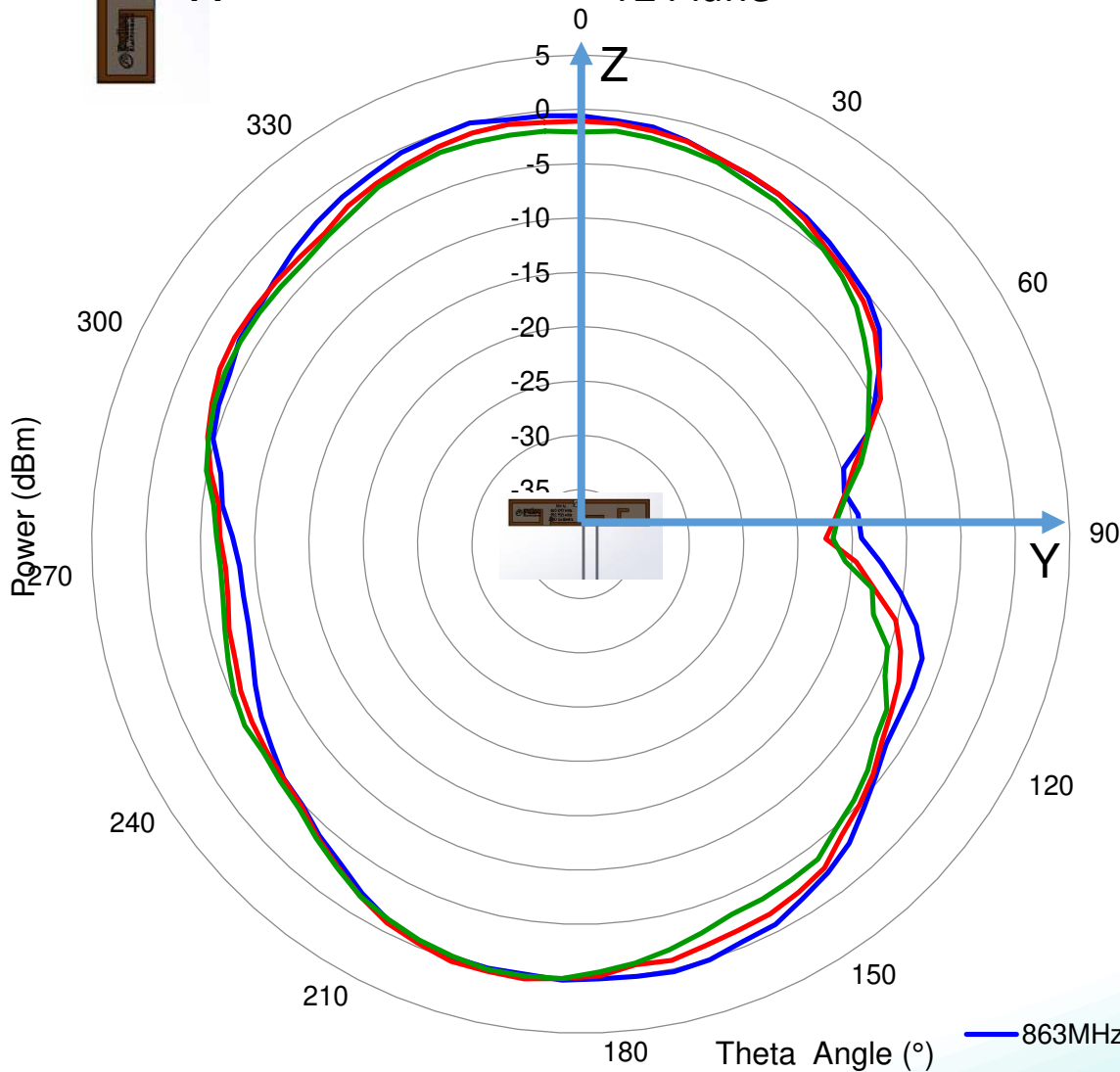
PART NUMBER: W3332B0150

CHARTS



Radiation Pattern  
863-928MHz

YZ Plane



|                    |
|--------------------|
| 863MHz             |
| Avg (dBi) = -4.40  |
| Peak (dBi) = 0.25  |
| Avg -3 (deg) = 145 |
| 902MHz             |
| Avg (dBi) = -4.66  |
| Peak (dBi) = 0.33  |
| Avg -3 (deg) = 130 |
| 928MHz             |
| Avg (dBi) = -5.08  |
| Peak (dBi) = 0.08  |
| Avg -3 (deg) = 110 |

— 863MHz — 902MHz — 928MHz

Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

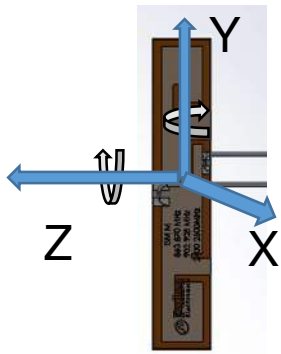
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: ISM868/915MHz, 2.4GHz Antenna

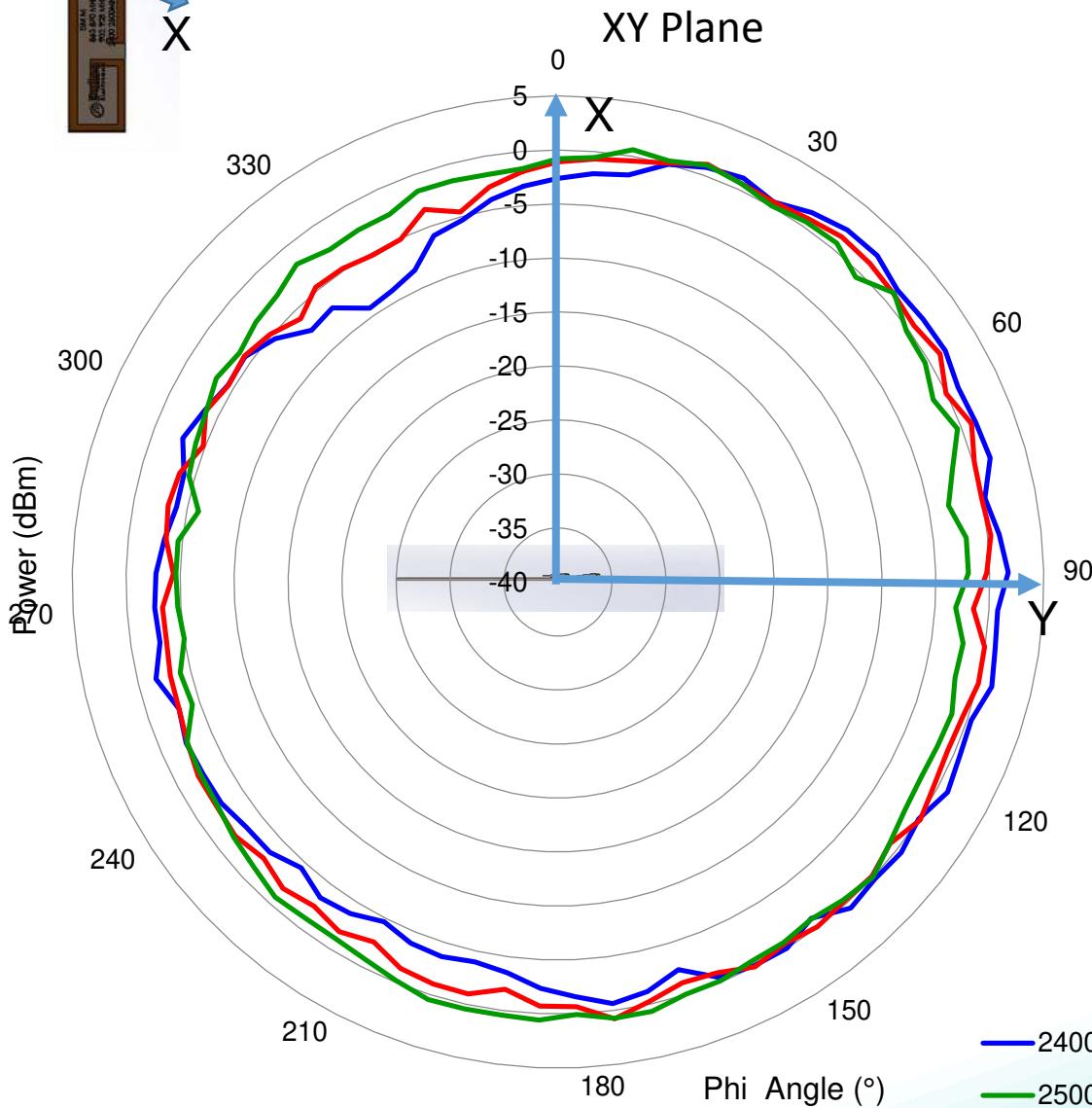
Series: Internal

PART NUMBER: W3332B0150

CHARTS



Radiation Pattern  
2400-2500MHz



2400MHz  
Avg (dBi) = -1.91  
Peak (dBi) = 2.27  
Avg -3 (deg) = 145

2450MHz  
Avg (dBi) = -1.54  
Peak (dBi) = 1.39  
Avg -3 (deg) = 185

2500MHz  
Avg (dBi) = -1.52  
Peak (dBi) = 1.06  
Avg -3 (deg) = 225

— 2400MHz — 2450MHz — 2500MHz

Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

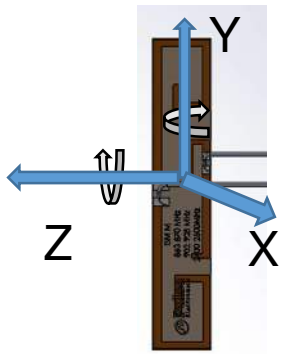
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: ISM868/915MHz, 2.4GHz Antenna

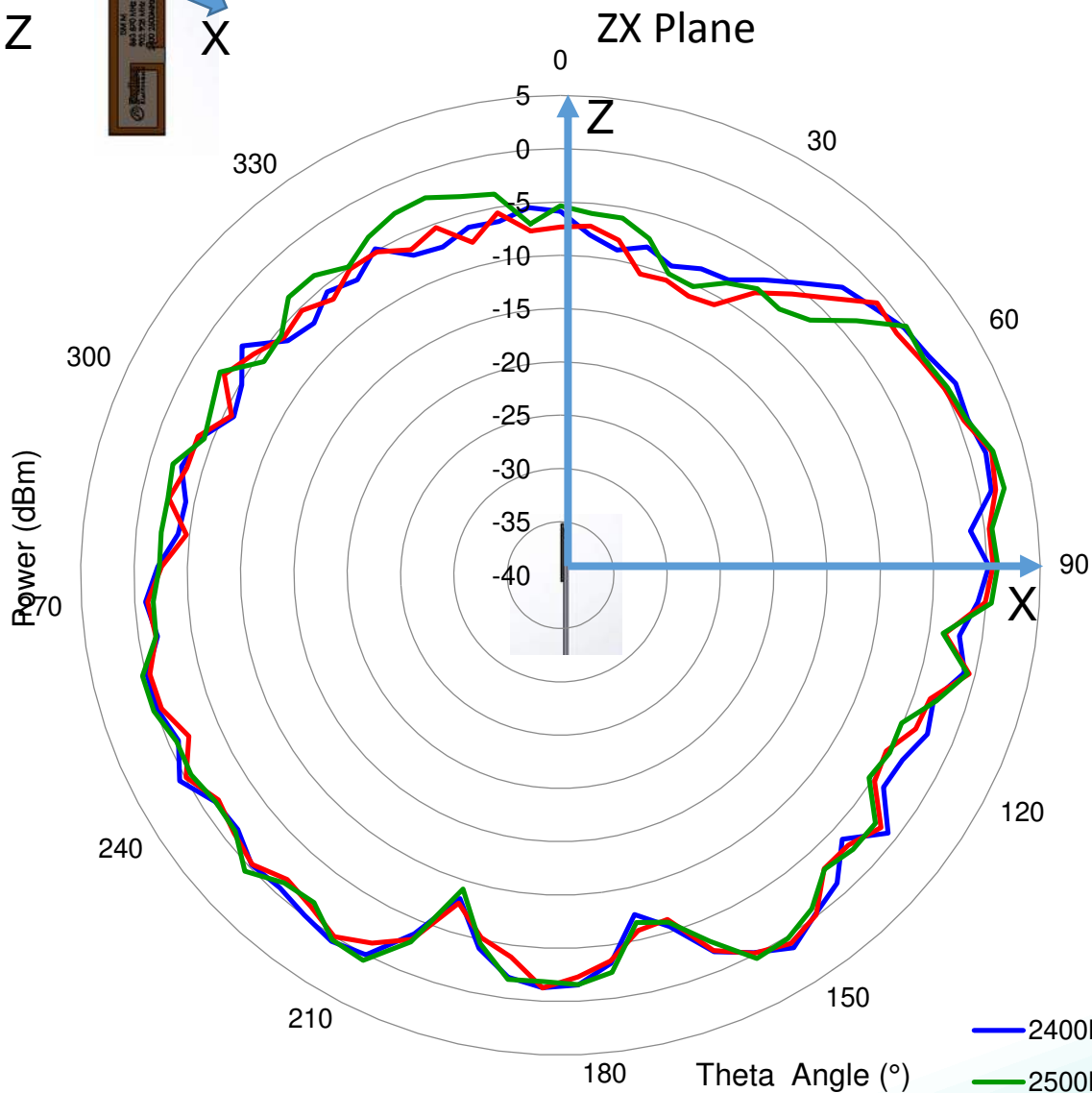
Series: Internal

PART NUMBER: W3332B0150

CHARTS



Radiation Pattern  
2400-2500MHz



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

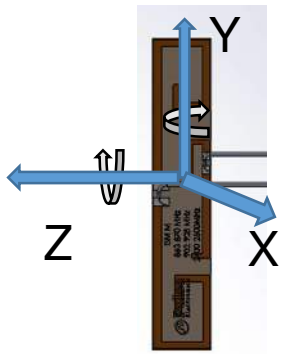


Description: ISM868/915MHz, 2.4GHz Antenna

Series: Internal

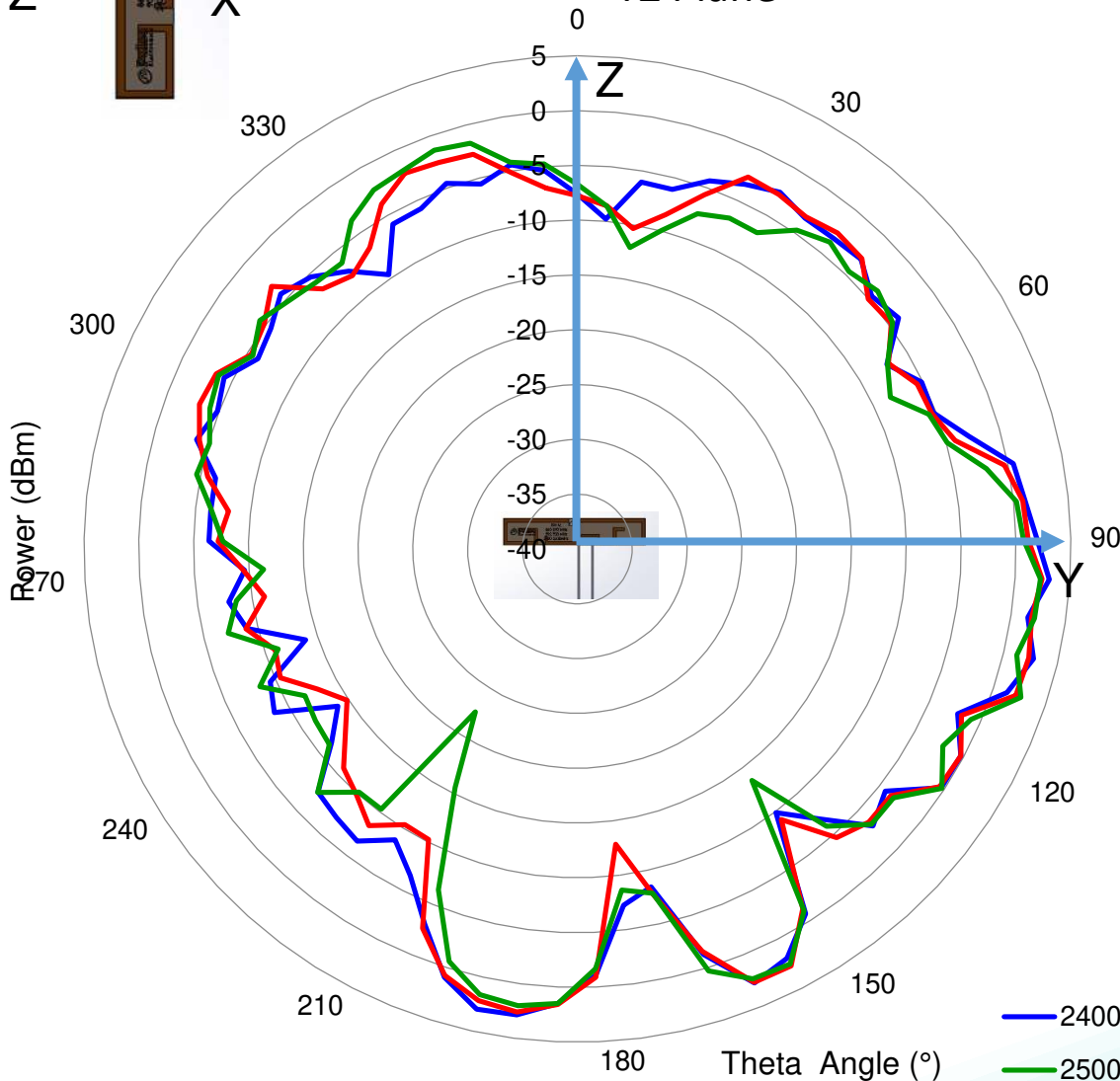
PART NUMBER: W3332B0150

CHARTS



Radiation Pattern  
2400-2500MHz

YZ Plane



2400MHz  
Avg (dBi) = -4.48  
Peak (dBi) = 3.12  
Avg -3 (deg) = 60

2450MHz  
Avg (dBi) = -4.77  
Peak (dBi) = 2.73  
Avg -3 (deg) = 60

2500MHz  
Avg (dBi) = -5.09  
Peak (dBi) = 2.65  
Avg -3 (deg) = 60

— 2400MHz — 2450MHz  
— 2500MHz

Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

**Description:** ISM868/915MHz, 2.4GHz Antenna

**Series:** Internal

**PART NUMBER:** W3332B0150

## PACKAGING

10PCS/PE bag

1000PCS/box



Issue: 1649

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.