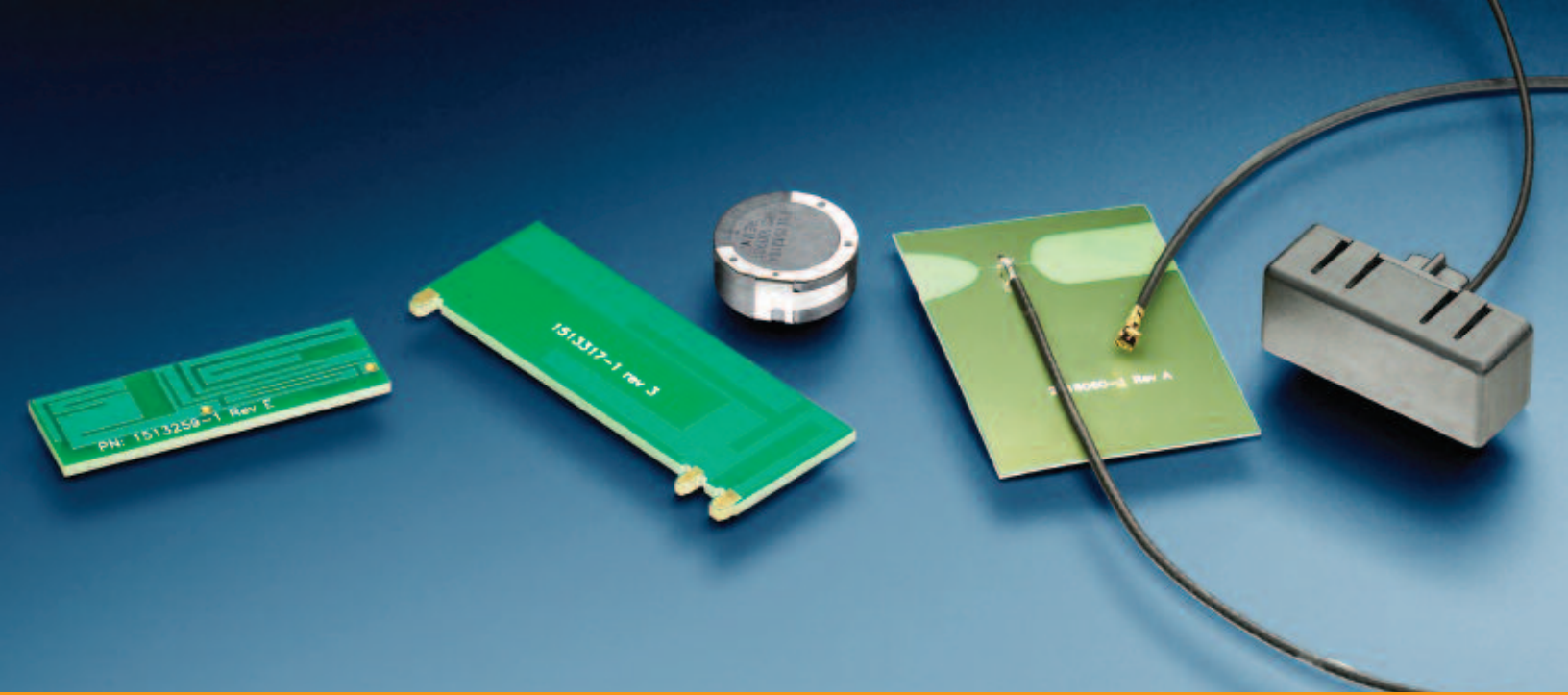




Standard Antenna Solutions

Selector Guide

Part Number	824-894 MHz GSM / CDMA 850	880-960 MHz GSM 900	868-870 MHz ZB EU	902-928 MHz ISM / ZB US	1565-1585 MHz GPS	1710-1880 MHz GSM 1800	1850-1990 MHz GSM / CDMA 1900	1920-2170 MHz UMTS	2300-2700 MHz WiMAX	2300-3800 MHz WiMAX	3300-3800 MHz WiMAX	2400-2483.5 MHz BT / Wi-Fi / ZB	3100-6000 MHz UWB	4900-5875 MHz Wi-Fi	5150-5875 MHz Wi-Fi	Page Number
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1513712-1								X		X			X			45
1513797-1											X					18
2118016-1											X			X		26
2118059-1									X		X					20
2118060-1									X		X			X		28

Legend: ZB = ZigBee
BT = Bluetooth

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Wi-Fi is a trademark of Wi-Fi Alliance.
WiMAX is a trademark of WiMAX Forum.
ZigBee is a trademark of ZigBee Alliance.

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ZigBee is a trademark of ZigBee Alliance.

Other logos, product and Company names mentioned herein may be trademarks of their respective owners.

824 – 894 MHz Single Band Antenna (US Cellular and includes frequencies of ZigBee EU)

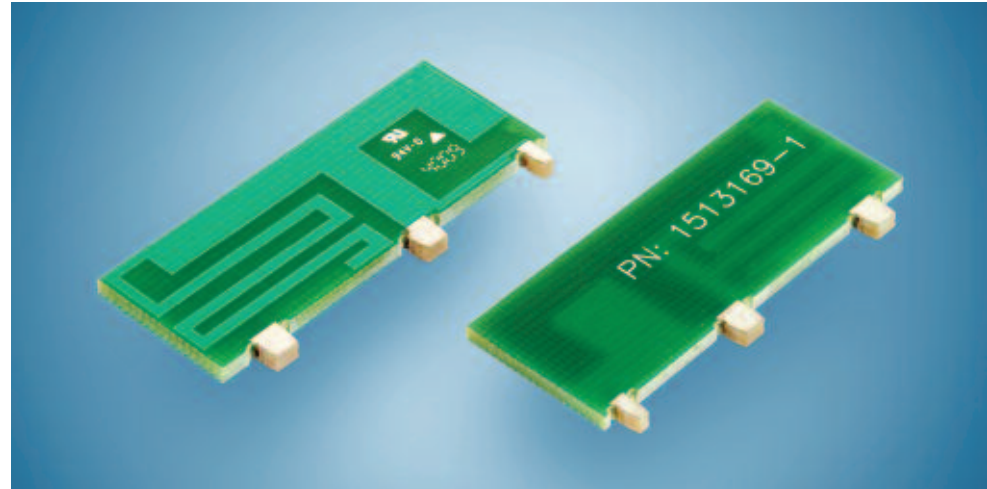
Part Number: 1513169-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 100 mm.



Specifications

Frequency Range (MHz) — 824 – 894

Peak Gain — +2 dBi

VSWR — < 2.5:1

Polarization — Linear

Azimuth Beamwidth — Omni-directional

Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

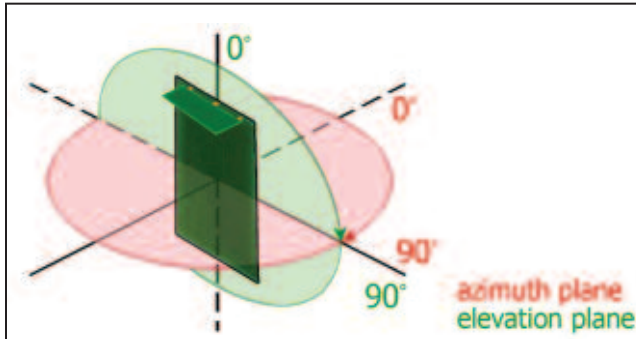
Size — 38.10 mm x 15.24 mm x 1.57 mm

Weight — < 2 g

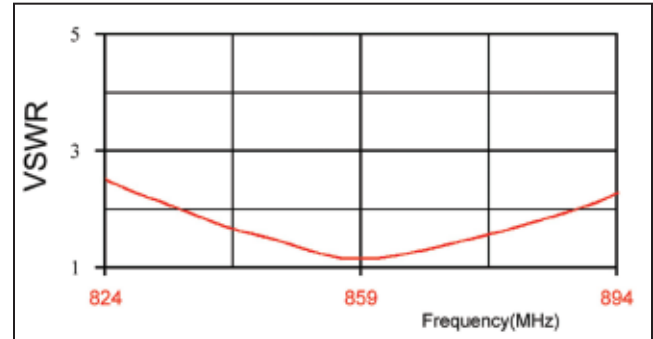
Mounting — Tab mounted with plated through holes. See next page

Keep Out Area — See diagram on next page

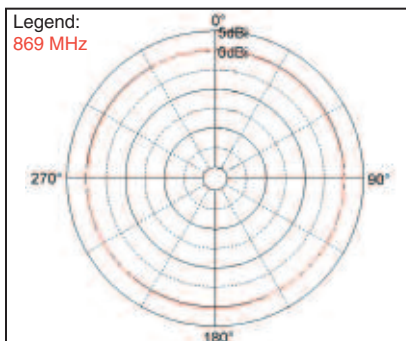
Test Orientation in Free Space



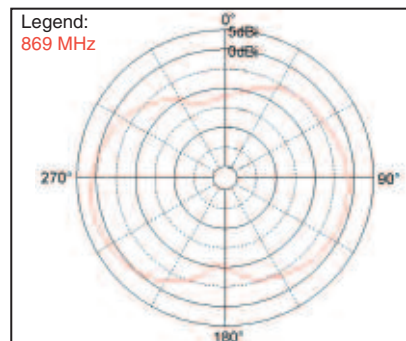
VSWR



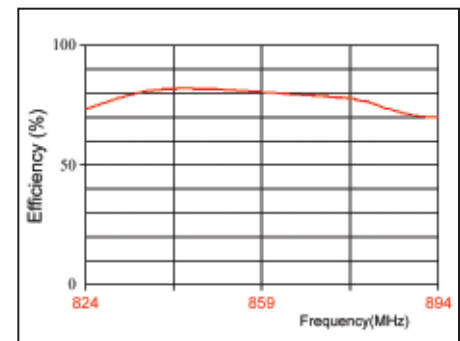
Azimuth



Elevation



Efficiency

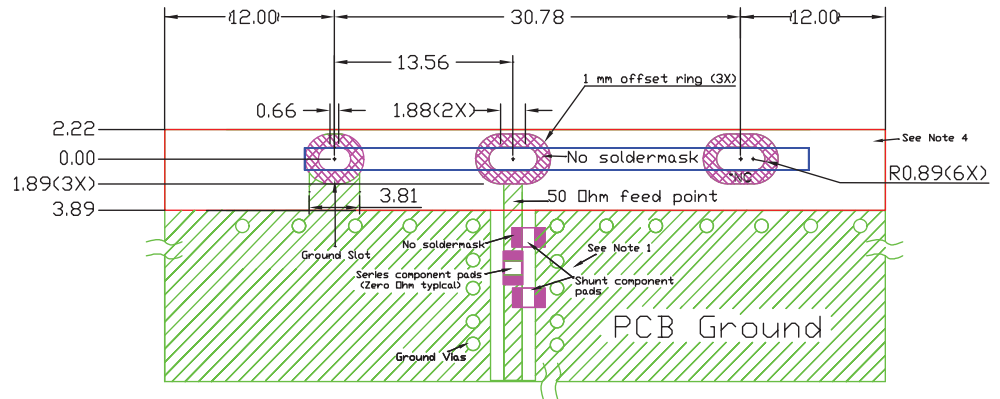


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824 – 894 MHz Single Band Antenna (US Cellular and includes frequencies of ZigBee EU) (Continued)

Part Number: 1513169-1
(Continued)

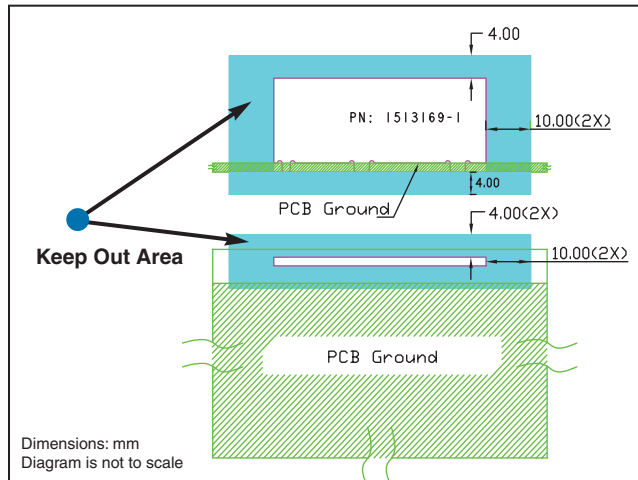
Mounting Guide



- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

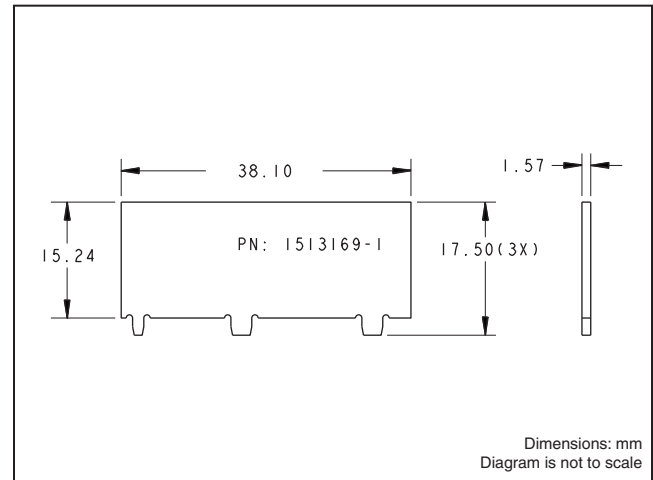
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

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902 – 928 MHz Single Band Antenna (includes frequencies of 915 ISM and ZigBee US)

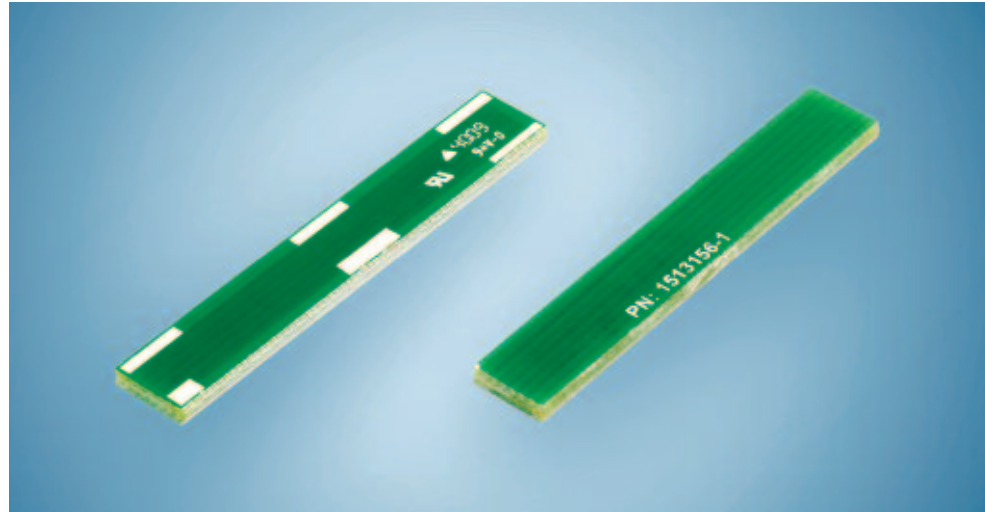
Part Number: 1513156-1

Product Facts

- Small and lightweight
- Available in tape & reel
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 90 mm.
- PCB ground is to be on top layer

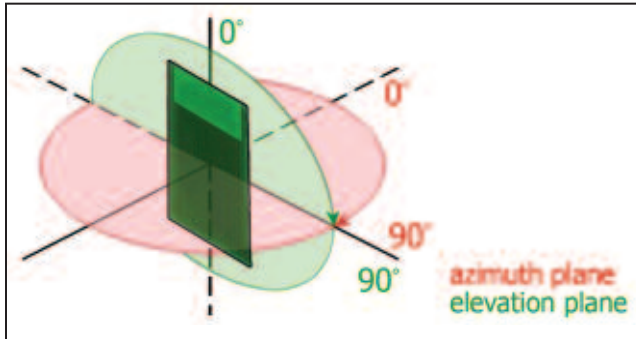


Specifications

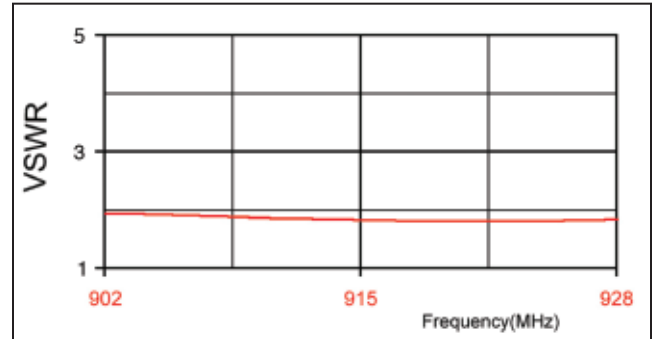
Frequency Range (MHz) — 902 – 928
Peak Gain — +1 dBi
VSWR — < 2.5:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms unbalanced

Size — 38.10 mm x 6.60 mm x 1.57 mm
Weight — < 0.9 g
Mounting — Surface-mount technology. See next page
Keep Out Area — See diagram on next page

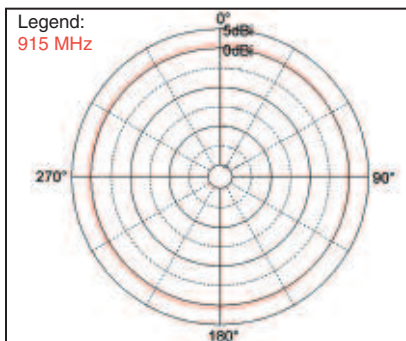
Test Orientation in Free Space



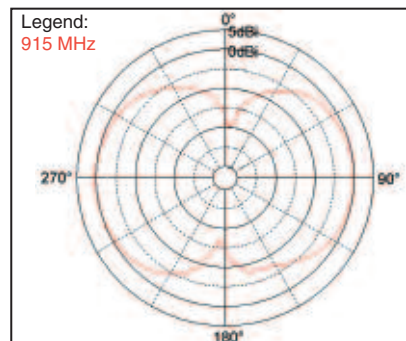
VSWR



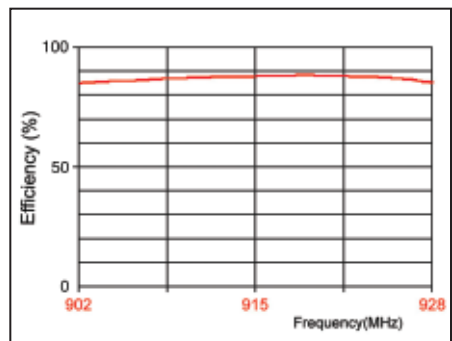
Azimuth



Elevation



Efficiency

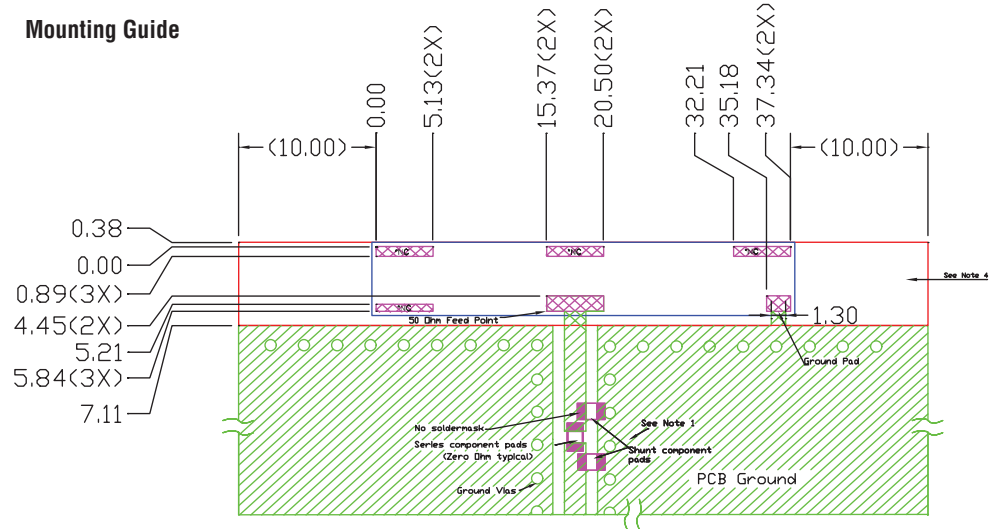


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902 – 928 MHz Single Band Antenna (includes frequencies of 915 ISM and ZigBee US) (Continued)

Part Number: 1513156-1
(Continued)

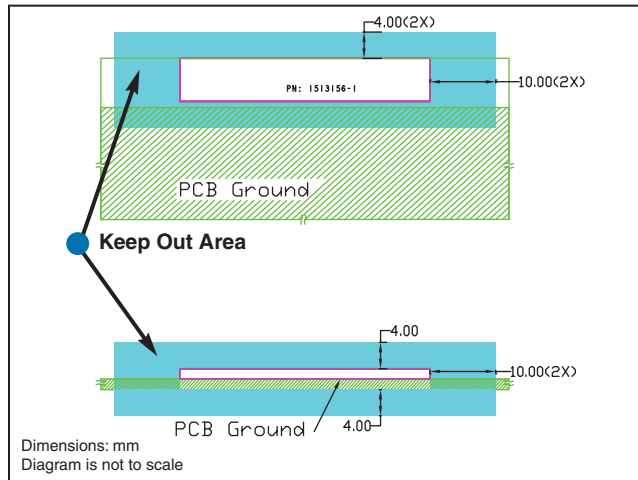
Mounting Guide



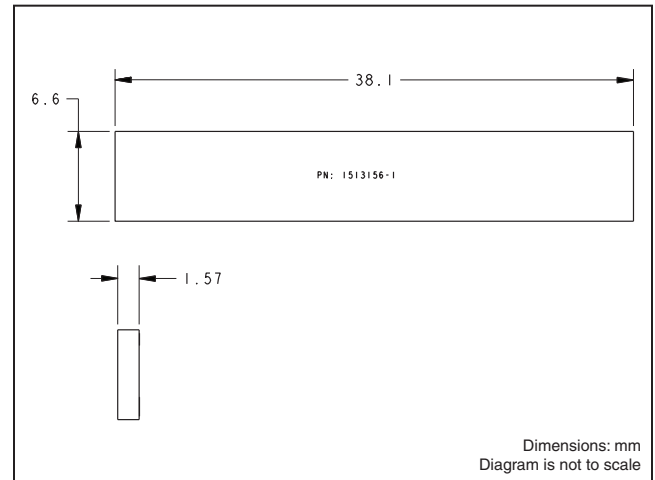
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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902 – 928 MHz Single Band Antenna (includes frequencies of 915 ISM and ZigBee US)

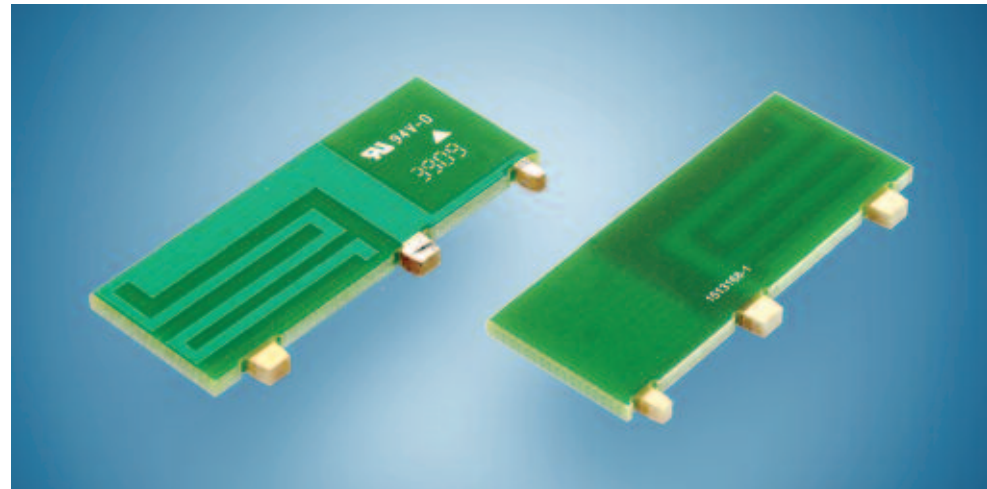
Part Number: 1513168-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers
- Small and lightweight
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 90 mm.



Specifications

Frequency Range (MHz) — 902 – 928

Peak Gain — 0 dBi

VSWR — < 2.0:1

Polarization — Linear

Azimuth Beamwidth — Omni-directional

Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

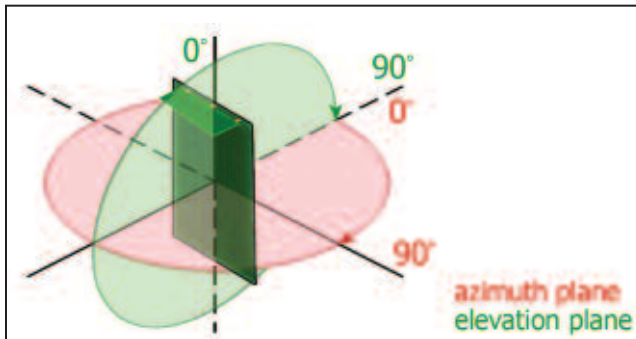
Size — 38.10 mm x 15.24 mm x 1.57 mm

Weight — < 2 g

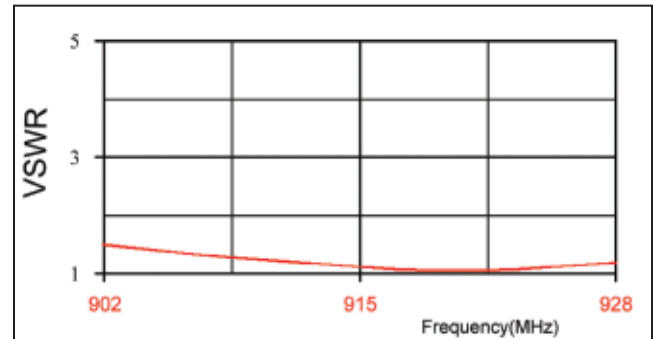
Mounting — Tabmounted with plated through holes. See next page

Keep Out Area — See diagram on next page

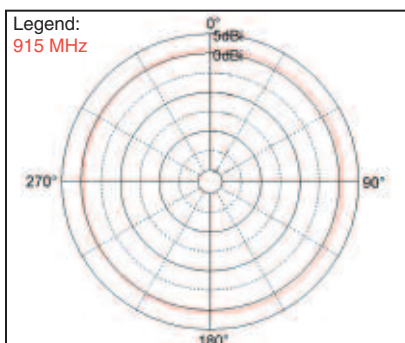
Test Orientation in Free Space



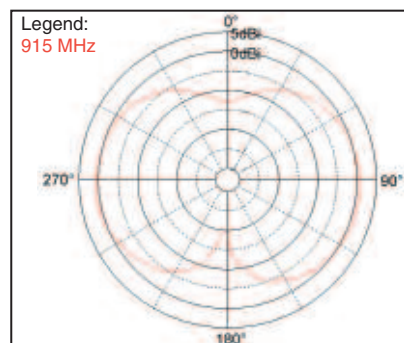
VSWR



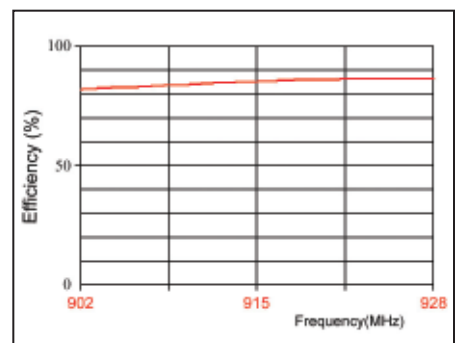
Azimuth



Elevation



Efficiency

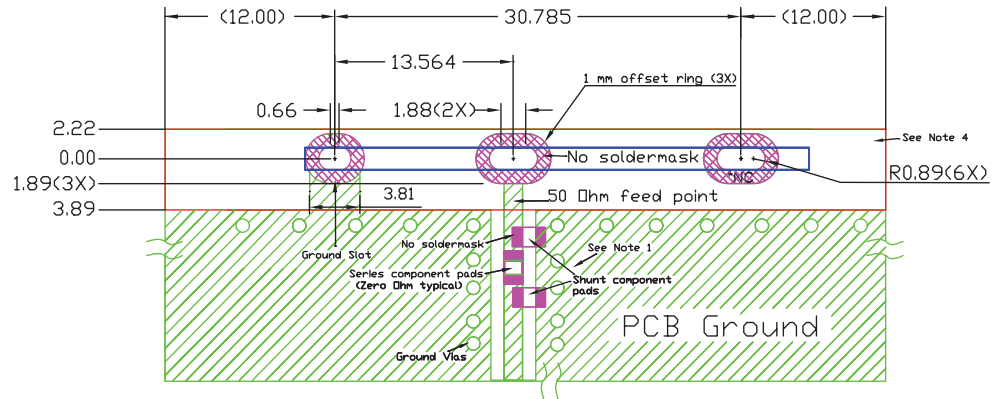


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902 – 928 MHz Single Band Antenna (includes frequencies of 915 ISM and ZigBee US) (Continued)

Part Number: 1513168-1
(Continued)

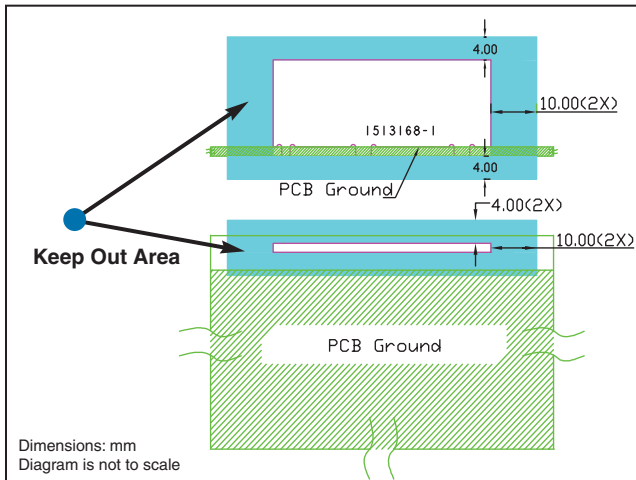
Mounting Guide



- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

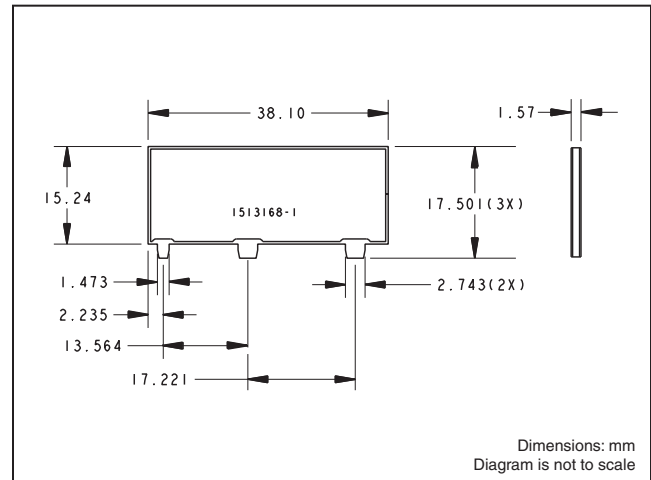
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

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2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

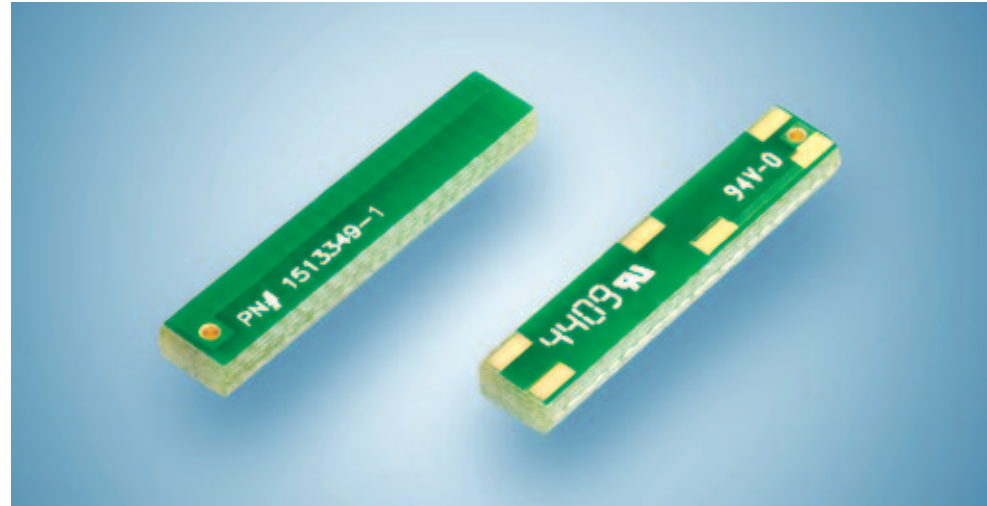
Part Number: 1513349-1

Product Facts

- Small and lightweight
- Available in tape & reel
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer

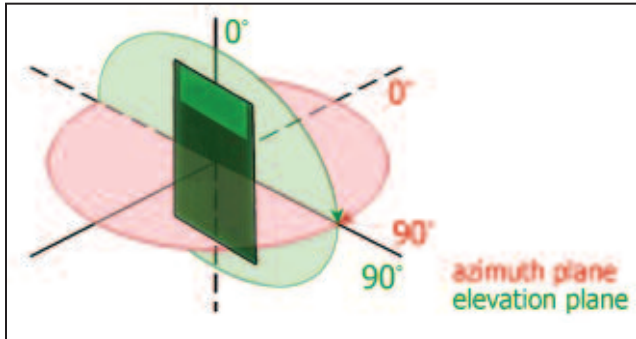


Specifications

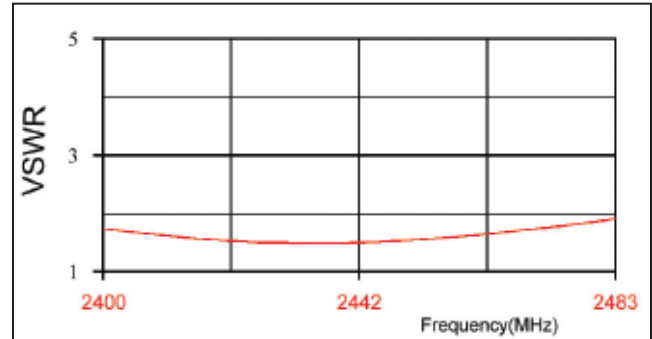
Frequency Range (MHz) — 2400 – 2483.5
Peak Gain — 0 dBi
VSWR — < 2.0:1
Polarization — Linear, Vertical
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms unbalanced

Size — 18.03 mm x 3.76 mm x 1.57 mm
Weight — < 0.5 g
Mounting — Surface-mount technology. See next page
Keep Out Area — See diagram on next page

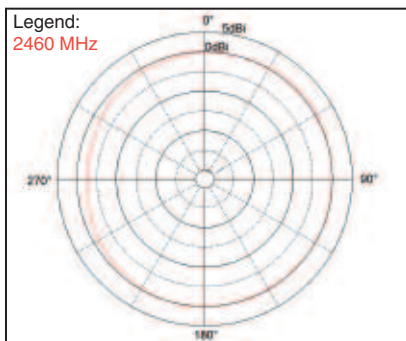
Test Orientation in Free Space



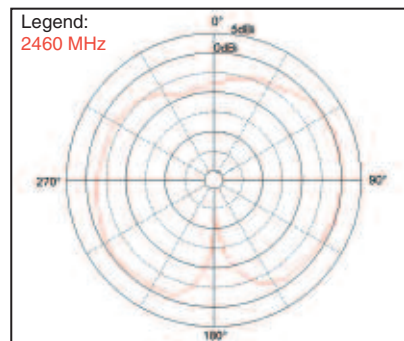
VSWR



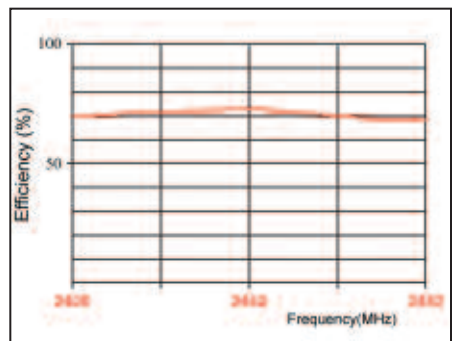
Azimuth



Elevation



Efficiency



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Wi-Fi is a trademark of Wi-Fi Alliance.

ZigBee is a trademark of ZigBee Alliance.

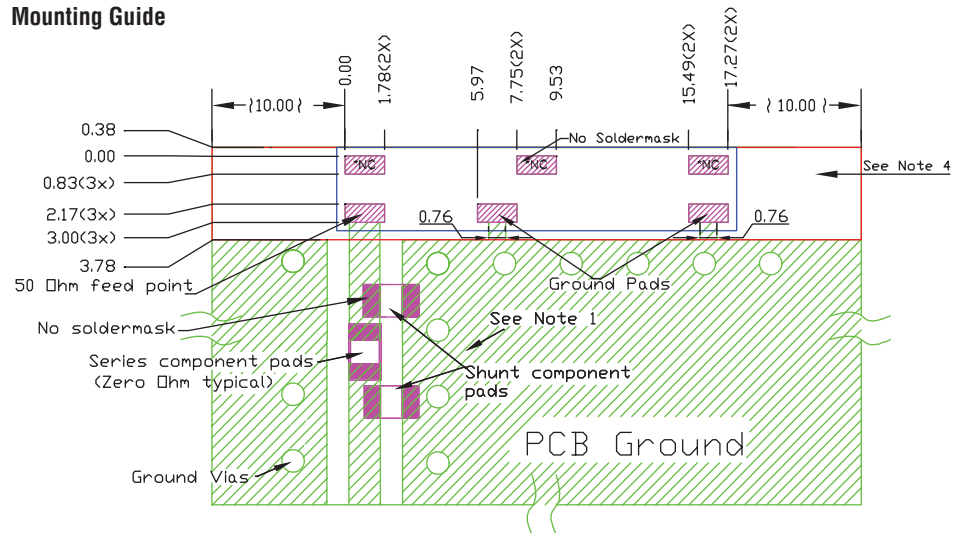
2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513349-1

(Continued)

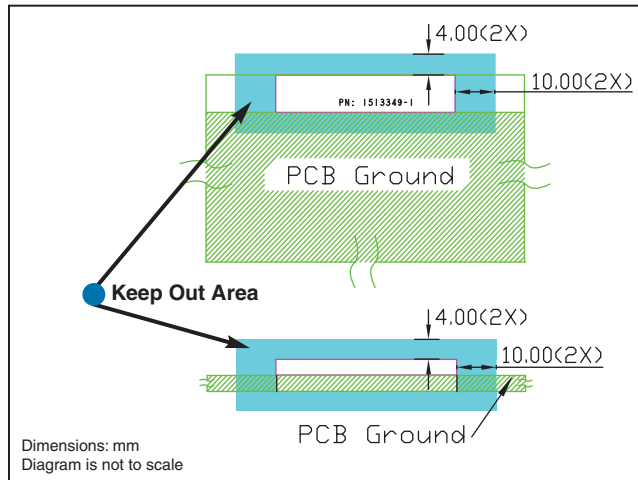
Mounting Guide



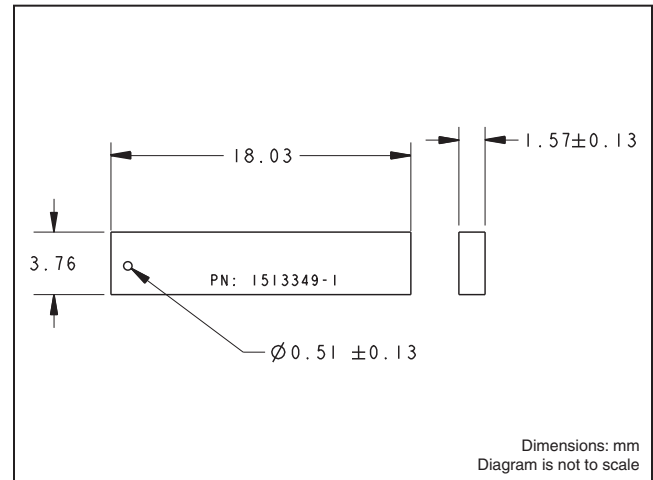
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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ZigBee is a trademark of ZigBee Alliance.

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2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Part Number: 1513353-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.



Specifications

Frequency Range (MHz) — 2400 – 2483.5

Peak Gain — +2 dBi

VSWR — < 2.0:1

Polarization — Linear

Azimuth Beamwidth — Omni-directional

Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

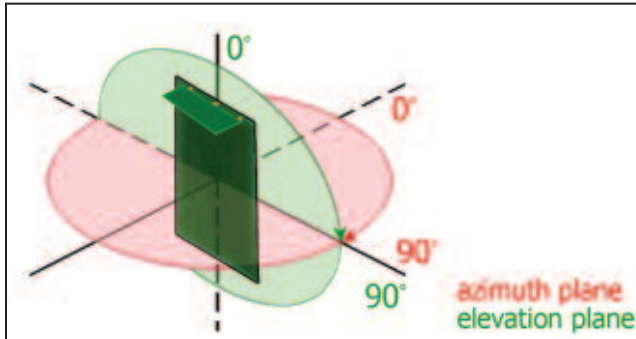
Size — 12.70 mm x 12.70 mm x 0.78 mm

Weight — < 0.5 g

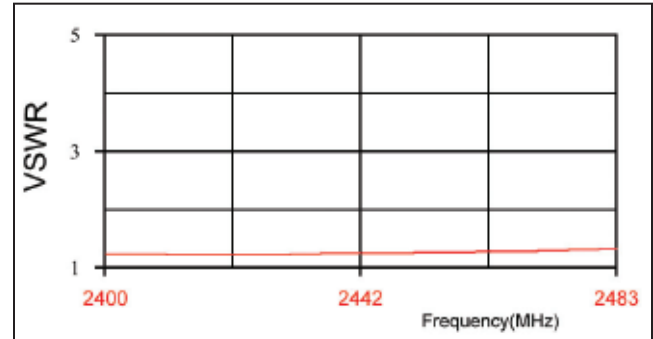
Mounting — Tab mounted with plated through holes. See next page

Keep Out Area — See diagram on next page

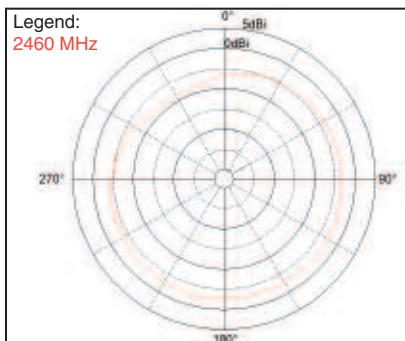
Test Orientation in Free Space



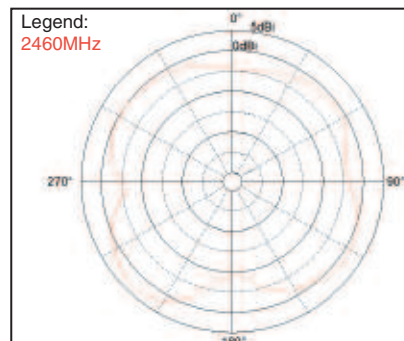
VSWR



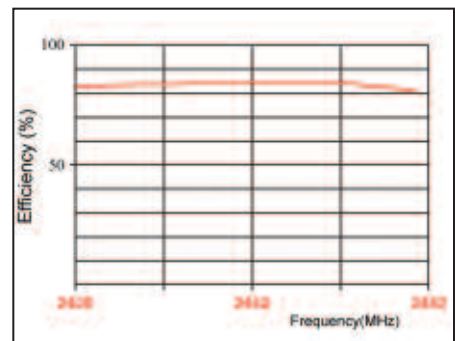
Azimuth



Elevation



Efficiency



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ZigBee is a trademark of ZigBee Alliance.

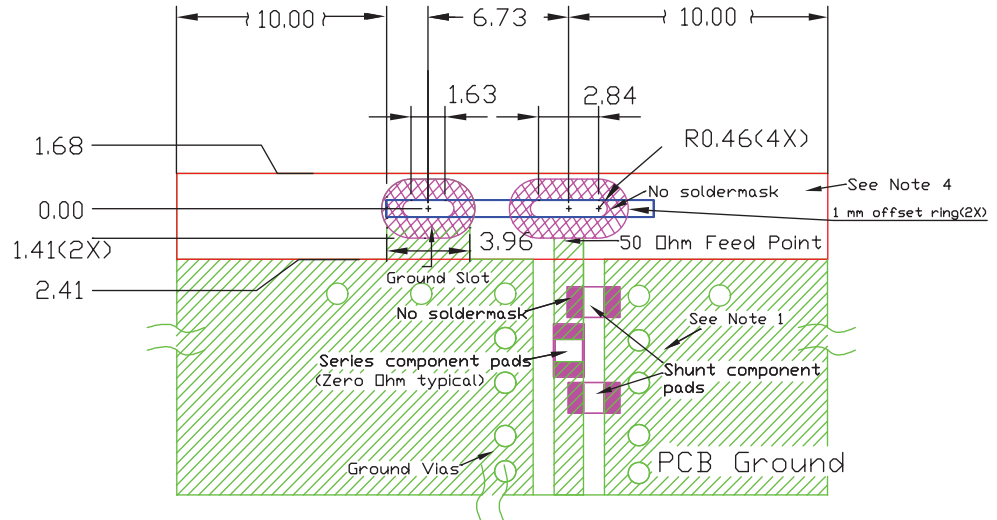
2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513353-1

(Continued)

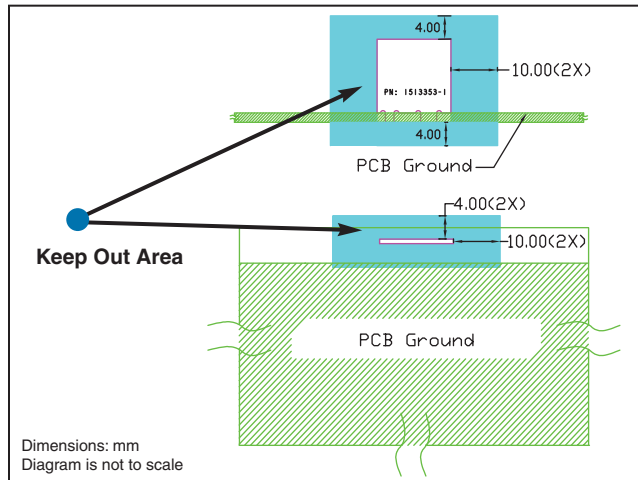
Mounting Guide



- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

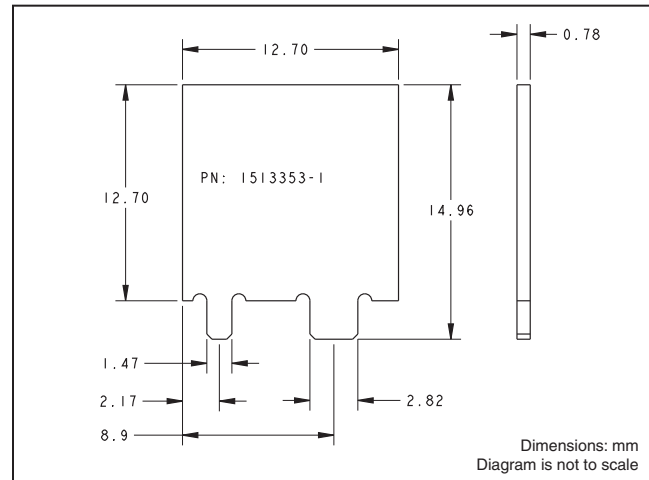
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

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2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

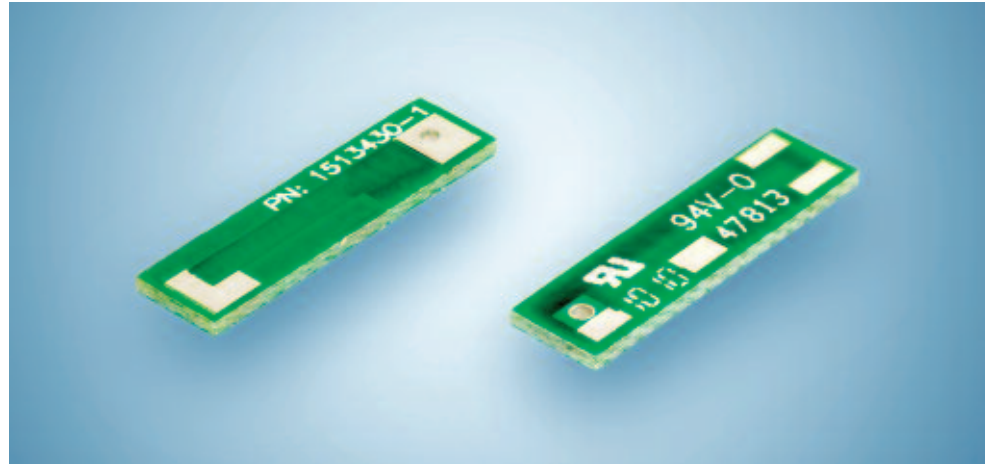
Part Number: 1513430-1

Product Facts

- Small and lightweight
- Available in Tape & Reel for automatic mounting
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer

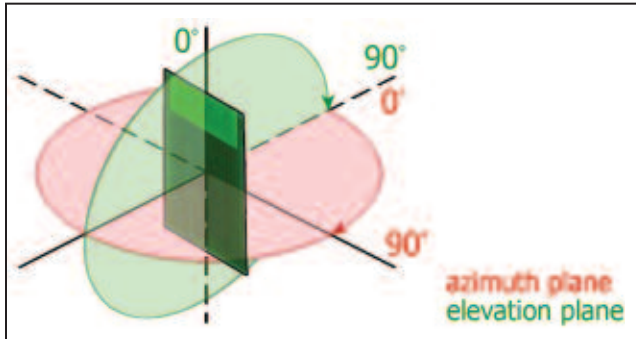


Specifications

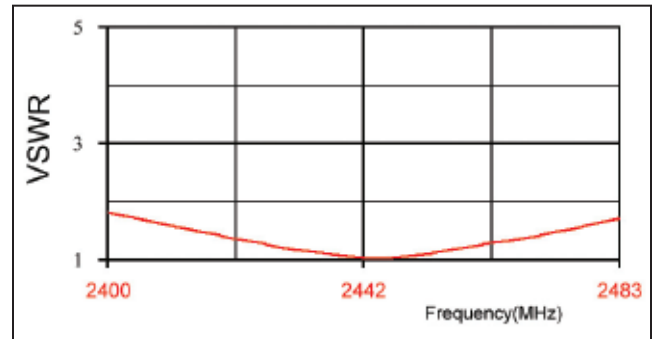
Frequency Range (MHz) — 2400 – 2483.5
Peak Gain — 0 dBi
VSWR — < 2.0:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms unbalanced

Size — 12.85 mm x 3.76 mm x 0.79 mm
Weight — < 0.5 g
Mounting — Surface-mount technology. See next page
Keep Out Area — See diagram on next page

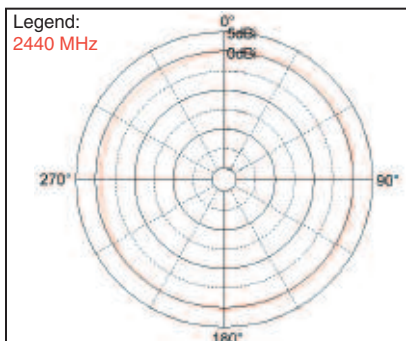
Test Orientation in Free Space



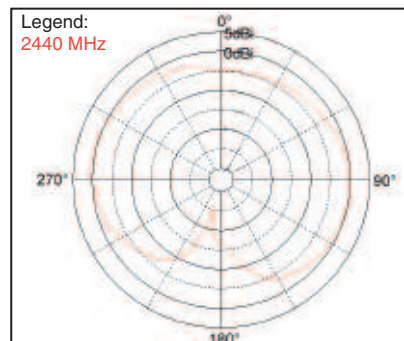
VSWR



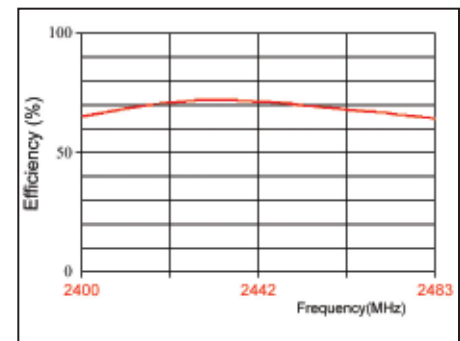
Azimuth



Elevation



Efficiency



Bluetooth is a trademark of Bluetooth SIG, Inc.

Wi-Fi is a trademark of Wi-Fi Alliance.

ZigBee is a trademark of ZigBee Alliance.

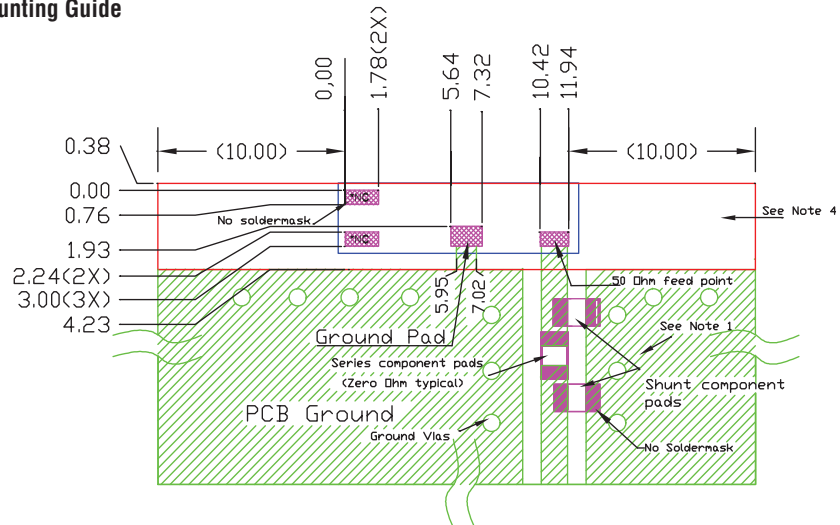
2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513430-1

(Continued)

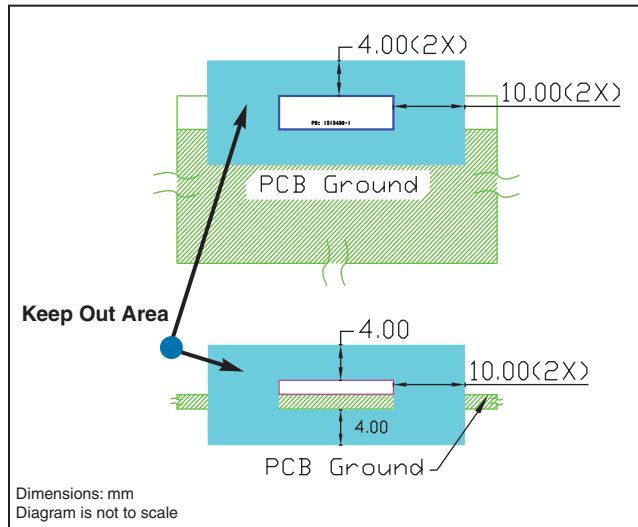
Mounting Guide



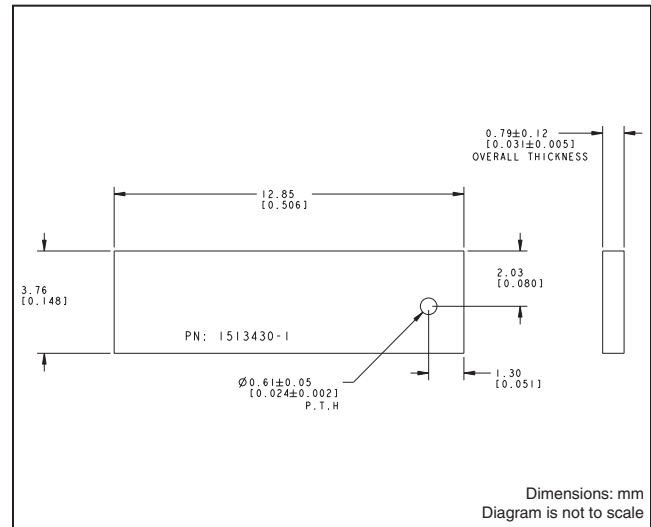
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

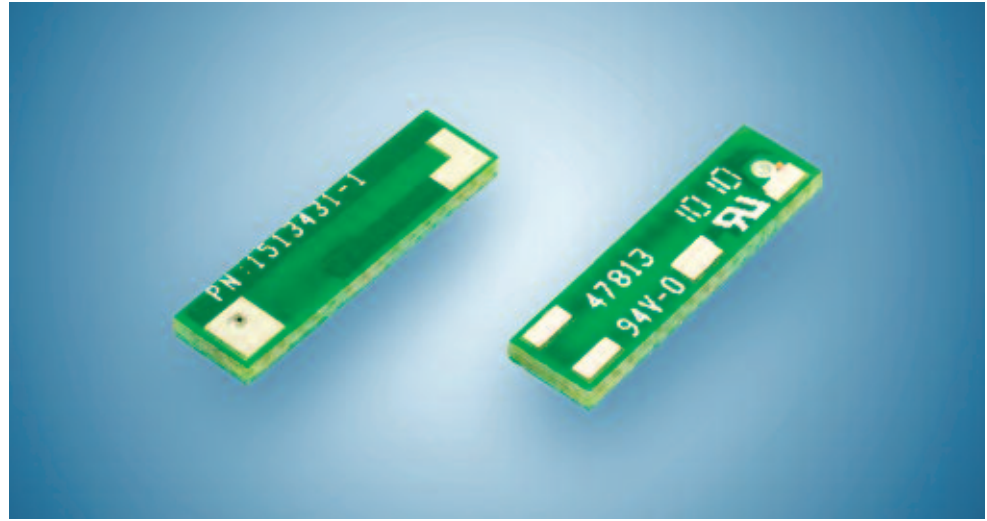
Part Number: 1513431-1

Product Facts

- Small and lightweight
- Available in tape & reel for automatic mounting
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer

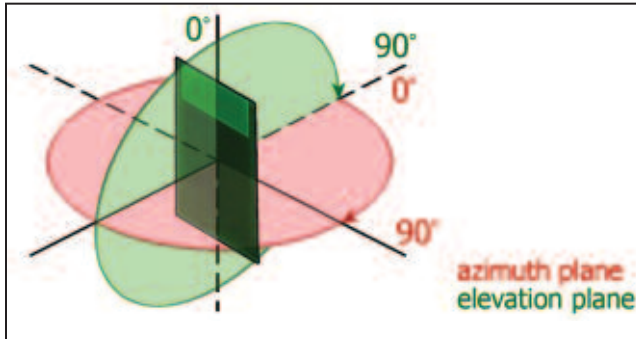


Specifications

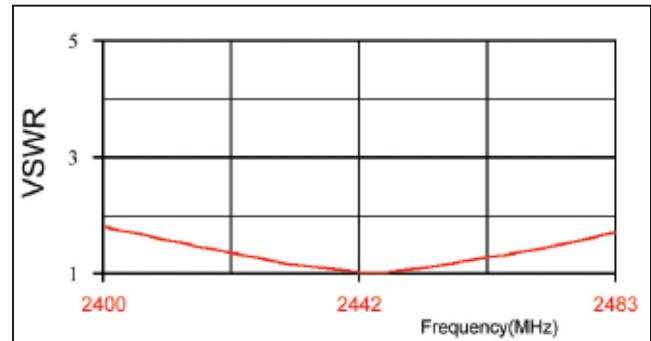
Frequency Range (MHz) — 2400 – 2483.5
Peak Gain — 0 dBi
VSWR — < 2.0:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms

Size — 12.85 mm x 3.76 mm x 0.79 mm
Weight — < 0.5 g
Mounting — Surface-mount technology. See next page
Keep Out Area — See diagram on next page

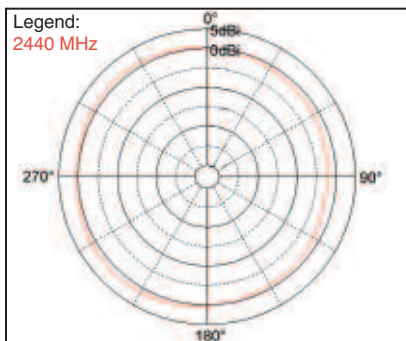
Test Orientation in Free Space



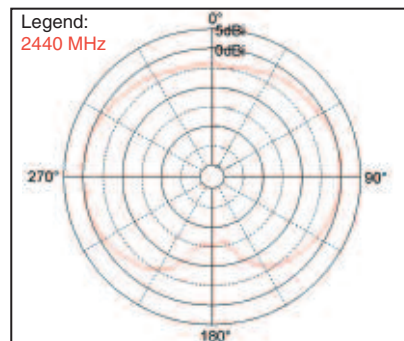
VSWR



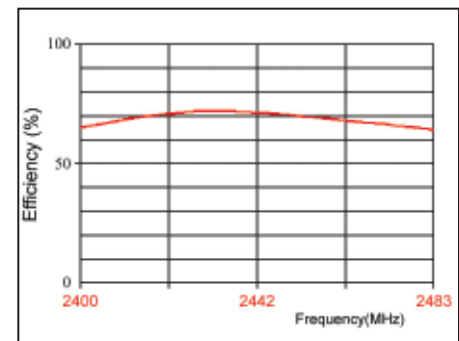
Azimuth



Elevation



Efficiency



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ZigBee is a trademark of ZigBee Alliance.

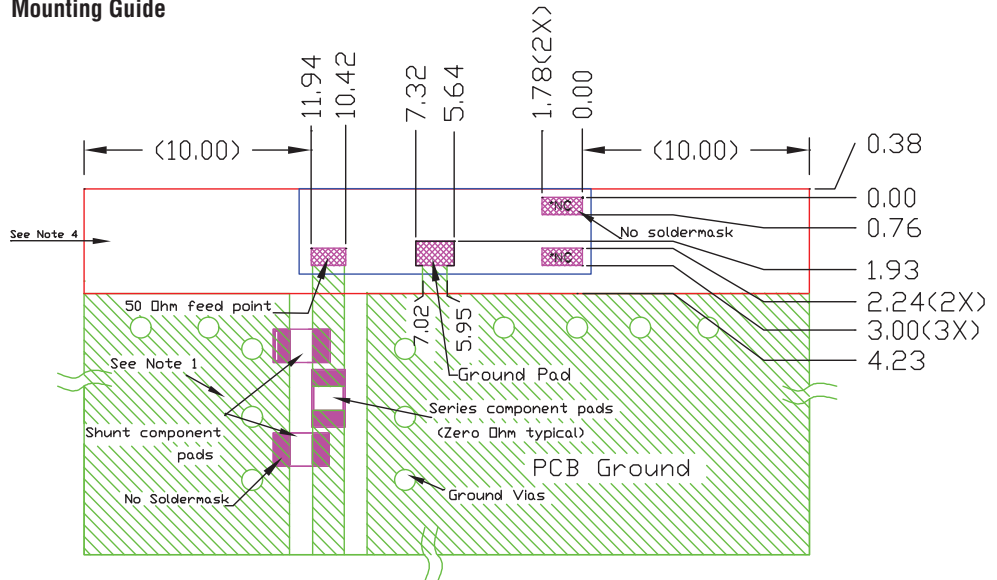
2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513431-1

(Continued)

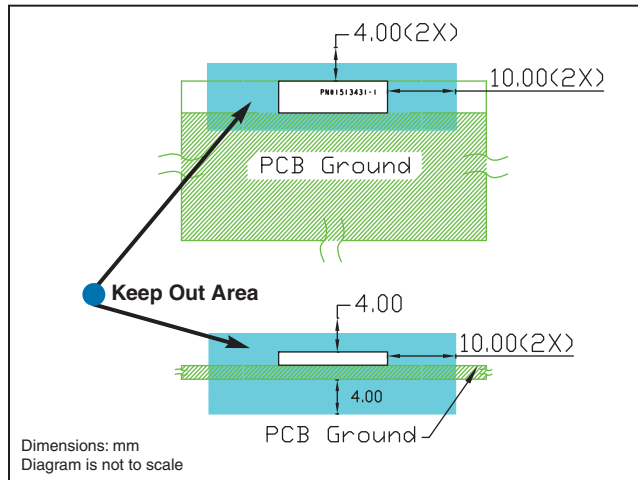
Mounting Guide



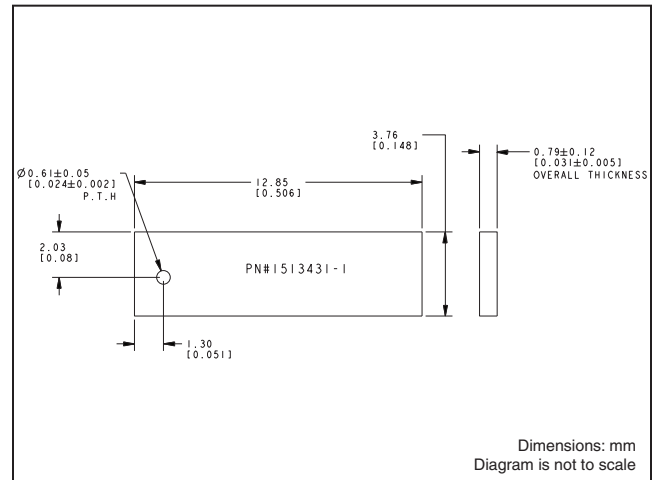
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Part Number: 1513504-1

Product Facts

- Wide bandwidth and high gain in a compact size
- Enhanced hemispherical pattern improves RF link reliability of portable devices
- Available in tape & reel
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer



Specifications

Frequency Range (MHz) — 2400 – 2483.5
Peak Gain — +2 dBi
VSWR — < 2.5:1
Reflow Temperature — 275°C max.
Polarization — Linear
Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

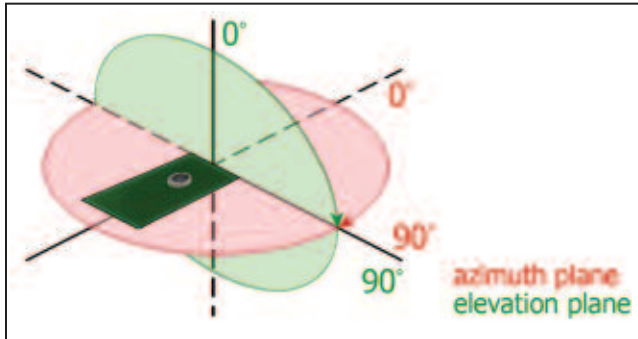
Size — 16.00 mm dia. x 6.05 mm

Weight — < 1 g

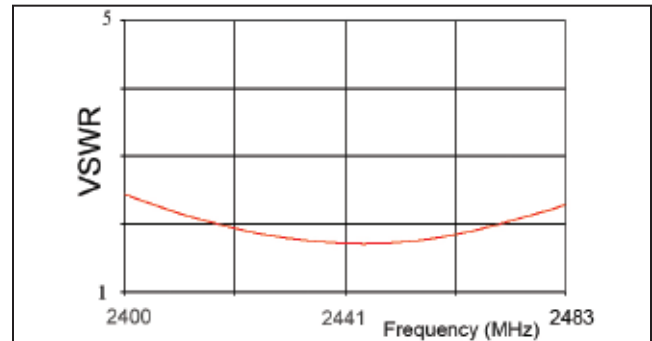
Mounting — Surface-mount technology. See next page

Keep Out Area — See diagram on next page

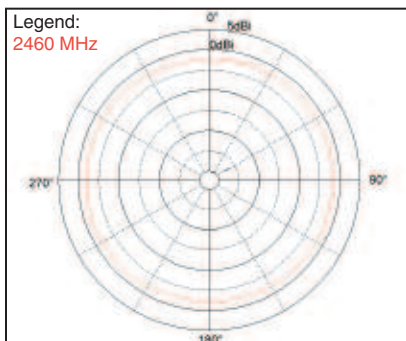
Test Orientation in Free Space



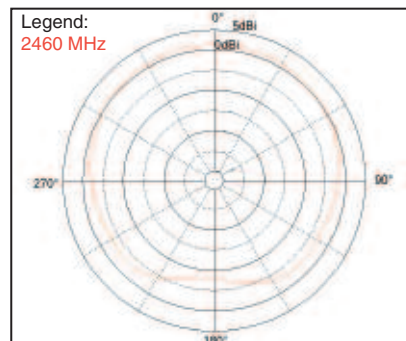
VSWR



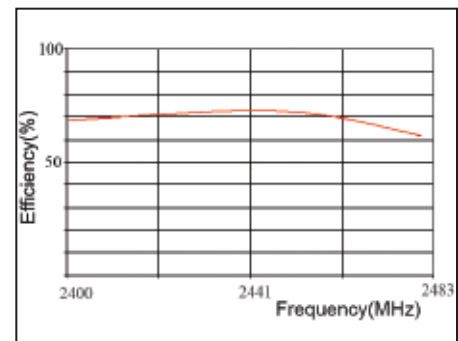
Azimuth



Elevation



Efficiency



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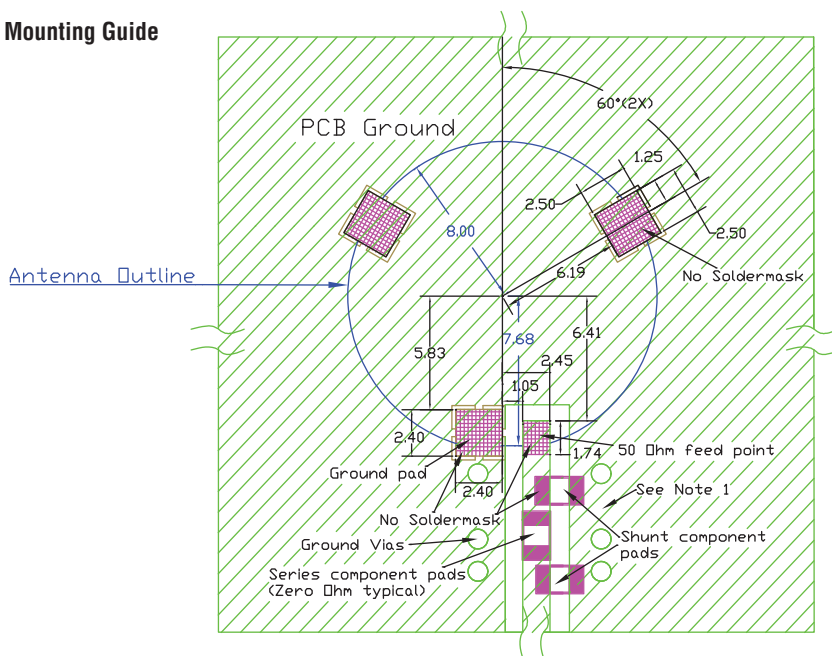
Wi-Fi is a trademark of Wi-Fi Alliance.

ZigBee is a trademark of ZigBee Alliance.

2400 – 2483.5 MHz Single Band Antenna
(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513504-1
(Continued)

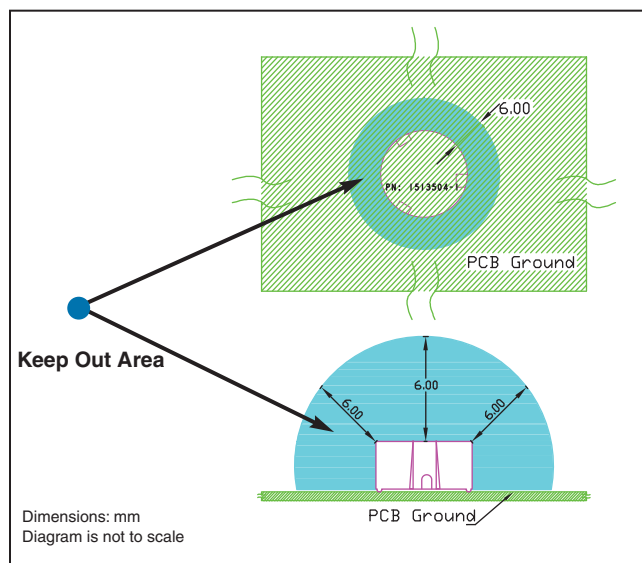
Mounting Guide



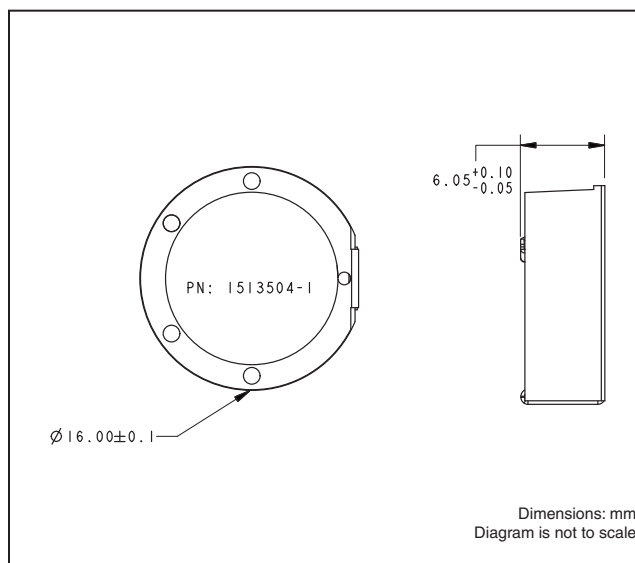
NOTES: 1. Suggested matching component pads.
2. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

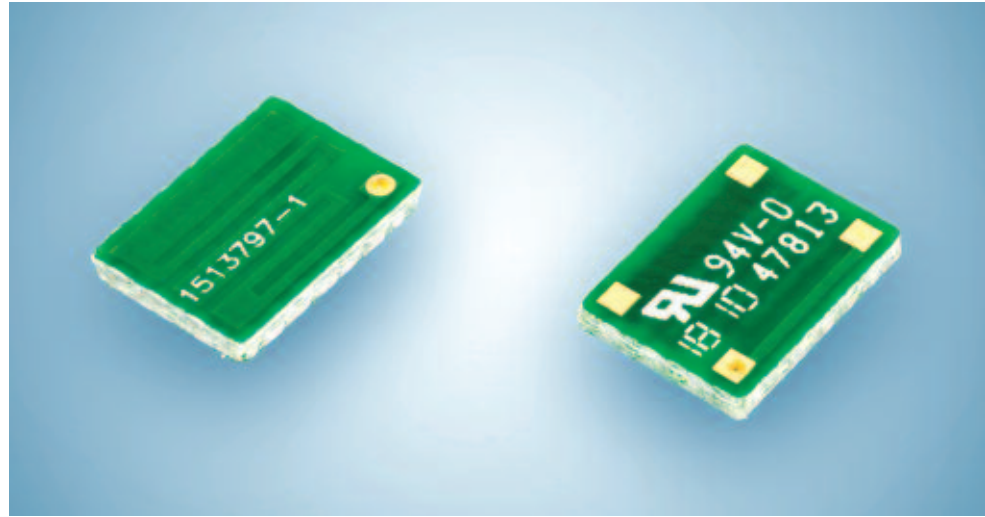
Part Number: 1513797-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, adjustment-free antenna technology for handling during assembly and implementation by developers
- Available in tape & reel
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer

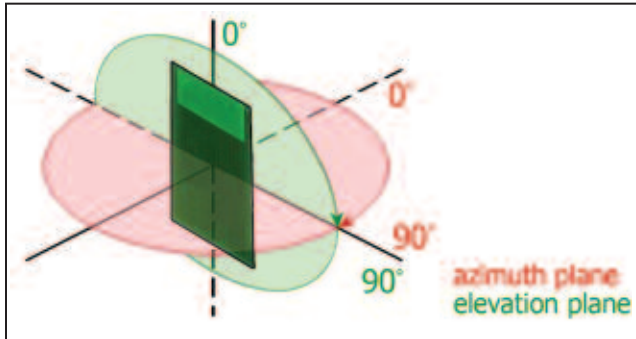


Specifications

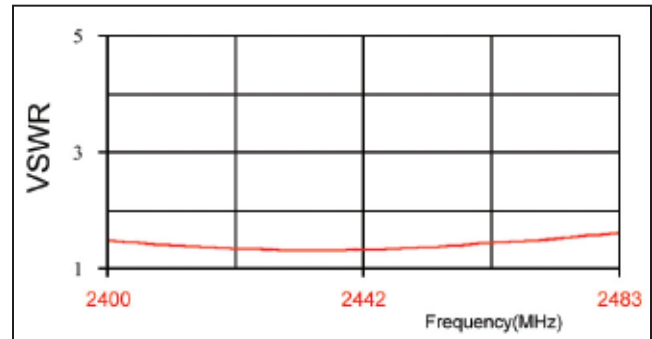
Frequency Range (MHz) — 2400 – 2483.5
Peak Gain — +1 dBi
VSWR — < 2.5:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms

Size — 8.45 mm x 6.40 mm x 0.79 mm
Weight — < 0.2 g
Mounting — Surface-mount technology.
 See next page
Keep Out Area — See diagram on next page

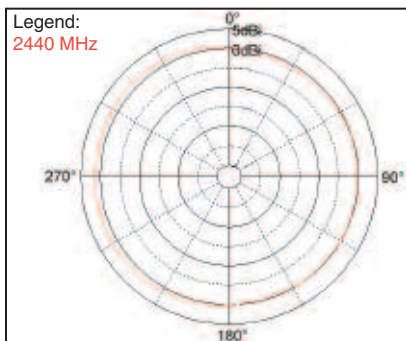
Test Orientation in Free Space



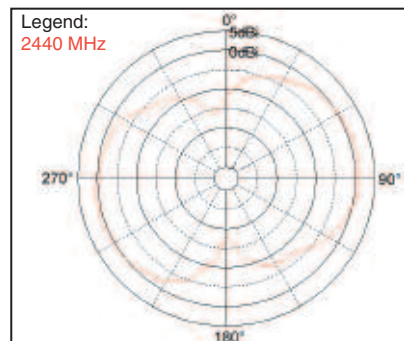
VSWR



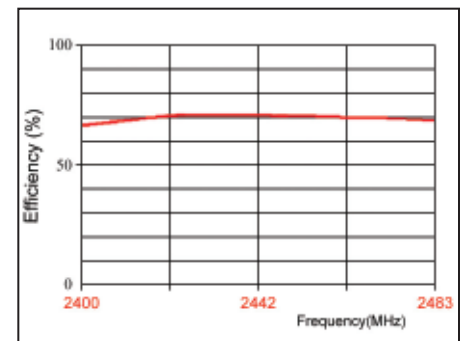
Azimuth



Elevation



Efficiency



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ZigBee is a trademark of ZigBee Alliance.

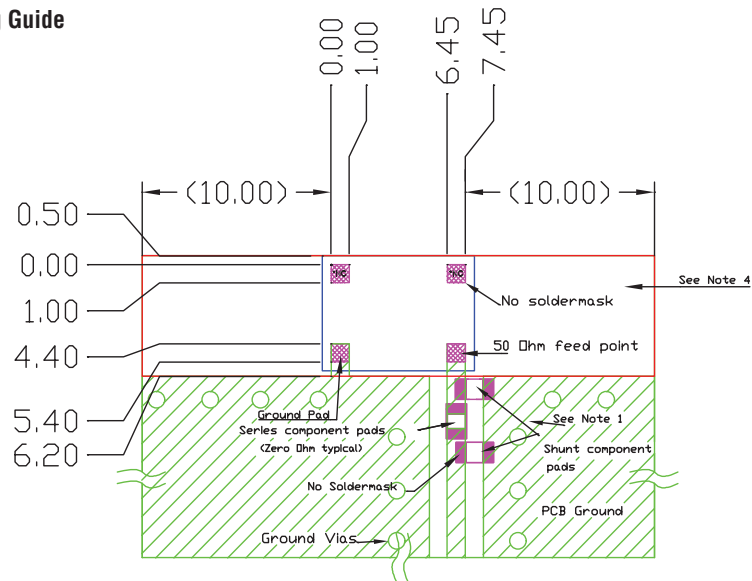
2400 – 2483.5 MHz Single Band Antenna

(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513797-1

(Continued)

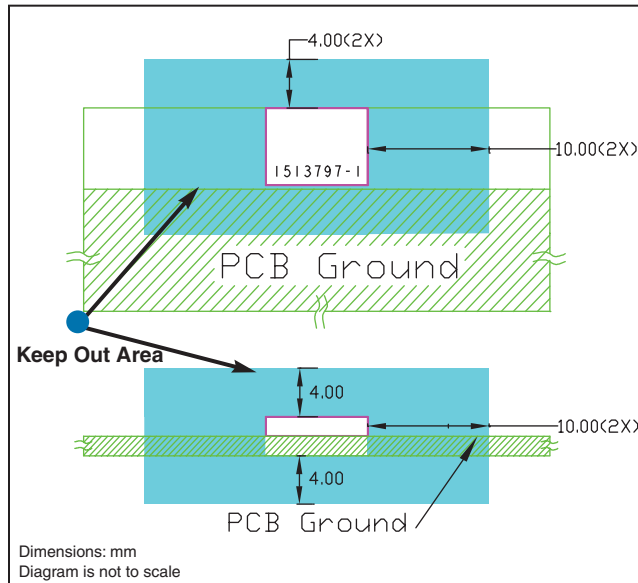
Mounting Guide



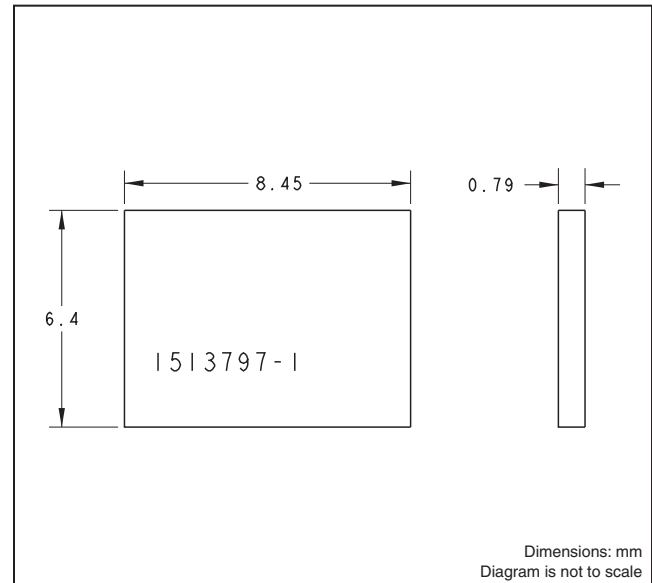
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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2300 – 3800 MHz Single Band Antenna

(802.11 b/g, includes frequencies of Bluetooth, ZigBee, Wi-Fi, and WiMAX products)

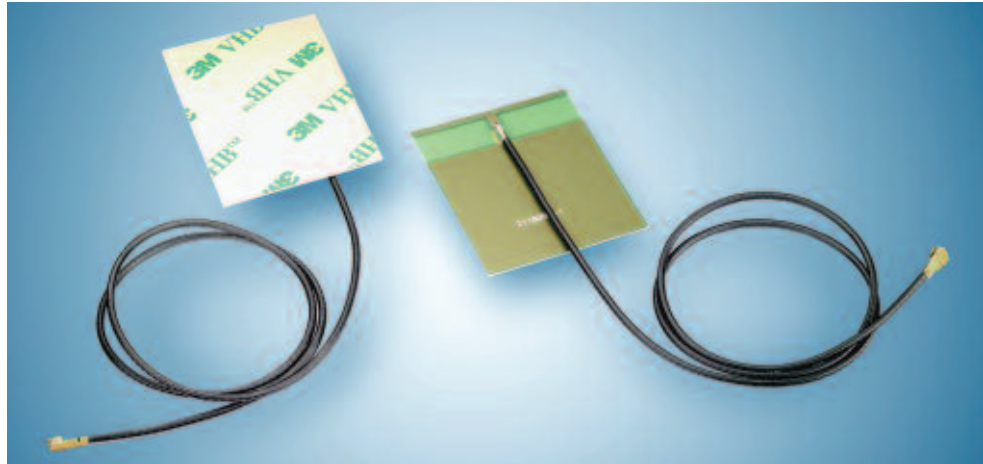
Part Number: 2118059-1

Product Facts

- Small and lightweight thin PCB antenna assembly
- RoHS compliant

Recommendations

- For best performance follow Mounting Guide and Keep Out Area on next page



Specifications

Frequency Range (MHz) —
2300 – 3800

Peak Gain — +4 dBi

VSWR — < 3.0:1

Polarization — Linear

Azimuth Beamwidth —
Omni-directional

Power Handling — 3 Watt

Feed Point Impedance — 50 Ohms
unbalanced

Size — 30.60 mm x 36.85 mm x
0.304 mm

Weight — < 3.3 g

Mounting — Adhesive. See diagram
on next page

Keep Out Area — See diagram on
next page

Cable / Connector — 350 mm length.
1.37 mm dia. with U.FI connector

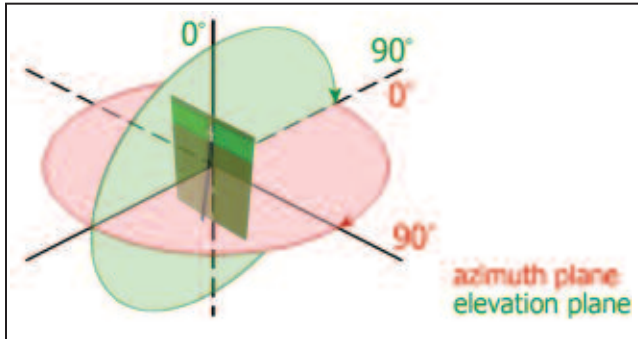
Bluetooth is a trademark of Bluetooth
SIG, Inc.

Wi-Fi is a trademark of Wi-Fi Alliance.

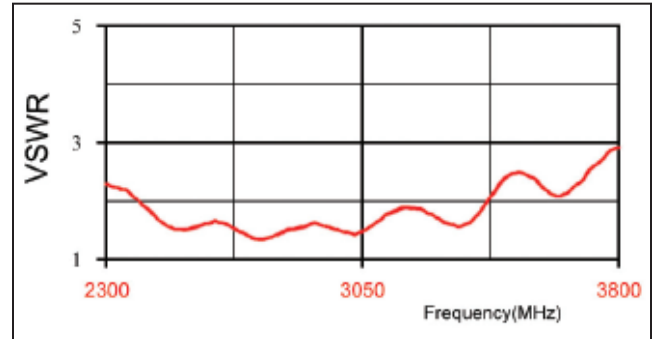
WiMAX is a trademark of WiMAX Forum.

ZigBee is a trademark of ZigBee Alliance.

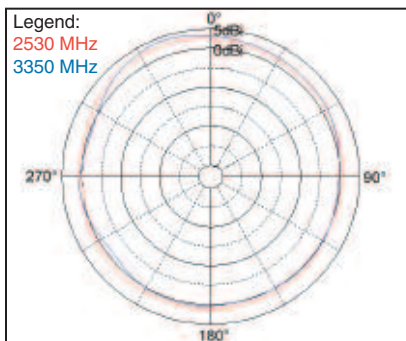
Test Orientation in Free Space



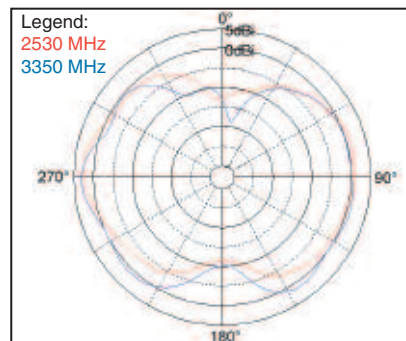
VSWR



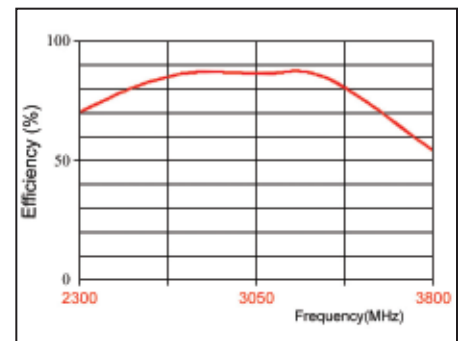
Azimuth



Elevation



Efficiency



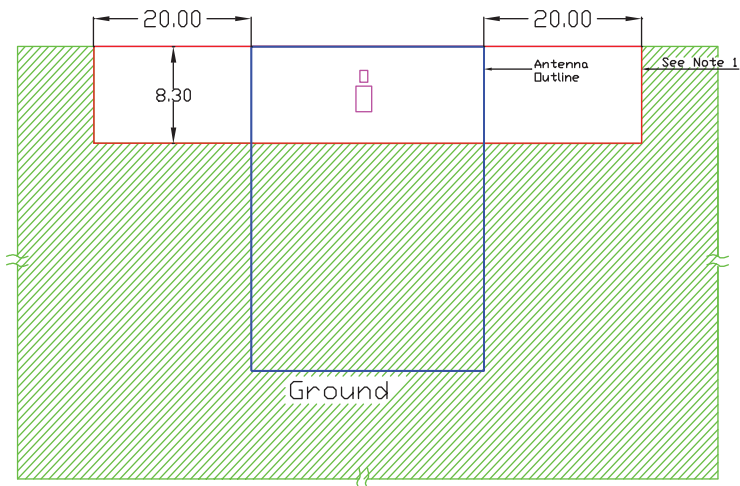
2300 – 3800 MHz Single Band Antenna

(802.11 b/g, incl. frequencies of Bluetooth, ZigBee, Wi-Fi, and WiMAX products) (Continued)

Part Number: 2118059-1

(Continued)

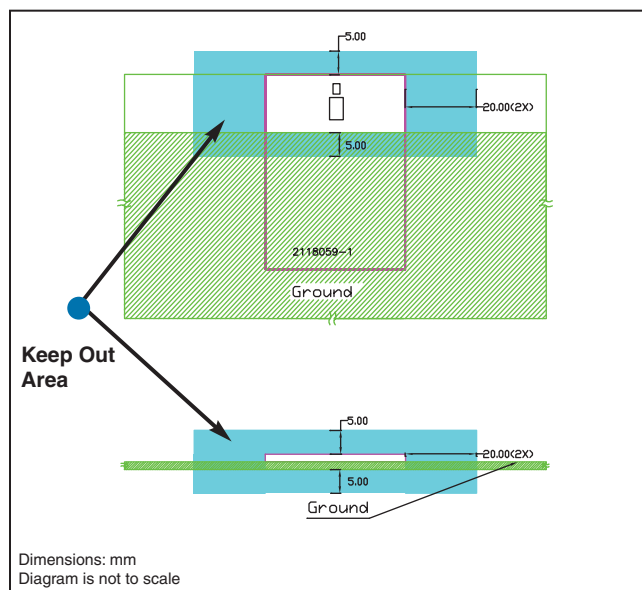
Mounting Guide



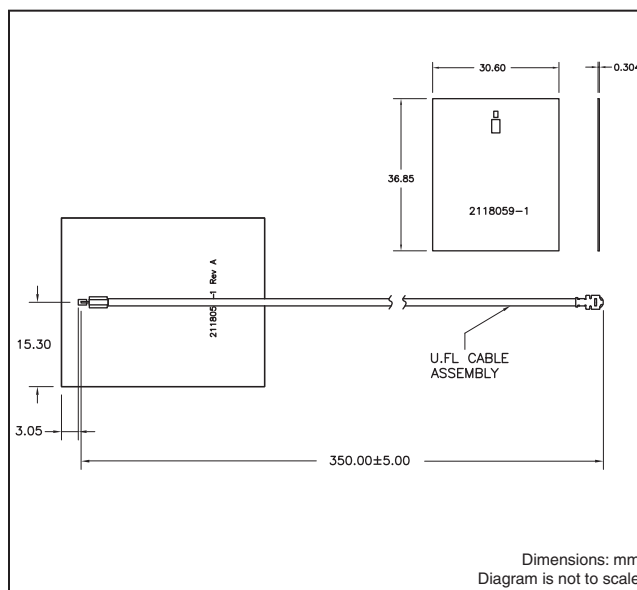
- NOTES: 1. No copper allowed in designated area on all PCB layers –
5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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2400 – 2483.5 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Part Number: 1513164-1

Product Facts

- This is a surface-mount dual-band antenna intended for use in Bluetooth, and 802.11 a/b/g/n applications. This antenna provides excellent performance at a low cost.
- Available in tape & reel
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer



Specifications

Frequency Range (MHz) — 2400 – 2483.5; 5150 – 5875

Peak Gain — +4 dBi

VSWR — < 2.5:1

Polarization — Linear

Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

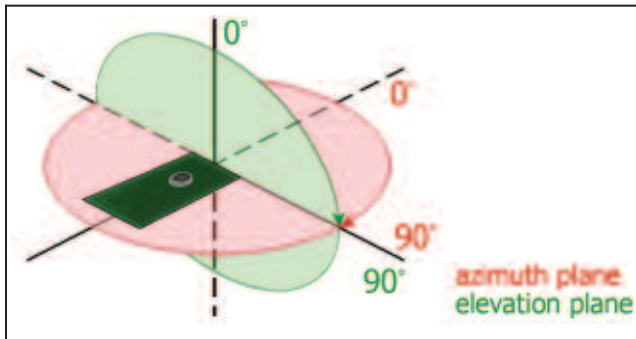
Size — 16.0 mm x 6.0 mm

Weight — < 1 g

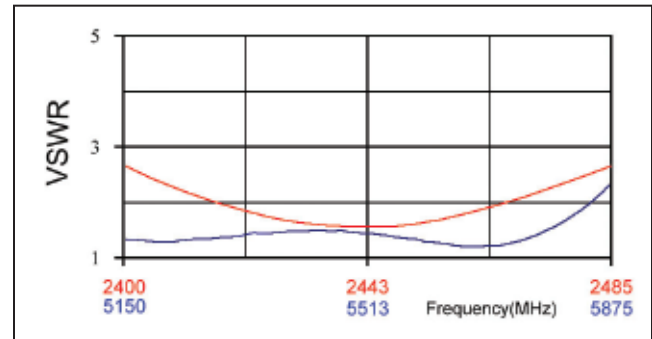
Mounting — Surface-mount technology. See next page

Keep Out Area — See diagram on next page

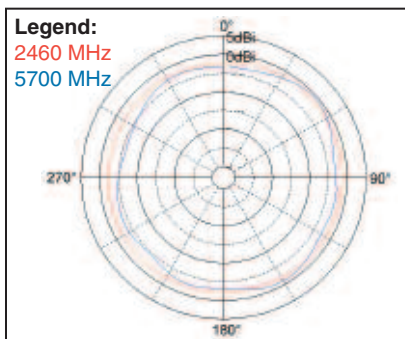
Test Orientation in Free Space



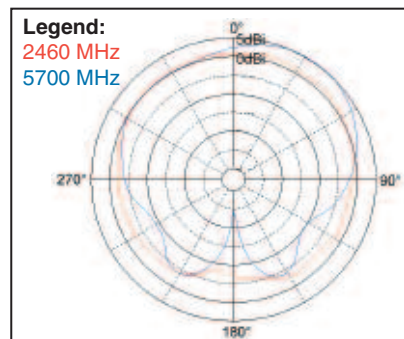
VSWR



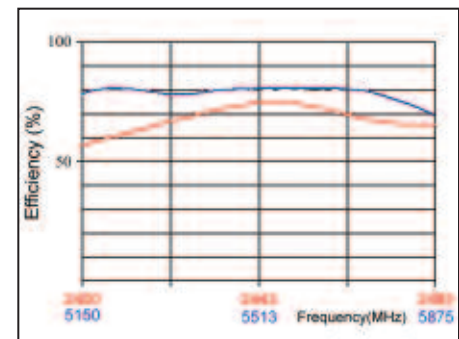
Azimuth



Elevation



Efficiency



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ZigBee is a trademark of ZigBee Alliance.

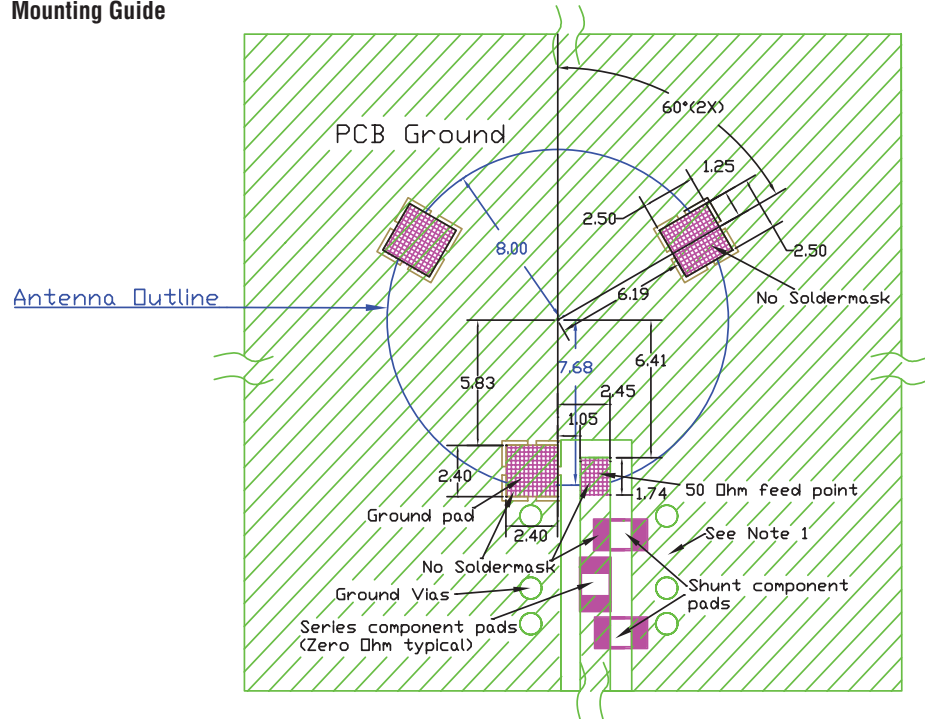
2400 – 2483.5 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513164-1

(Continued)

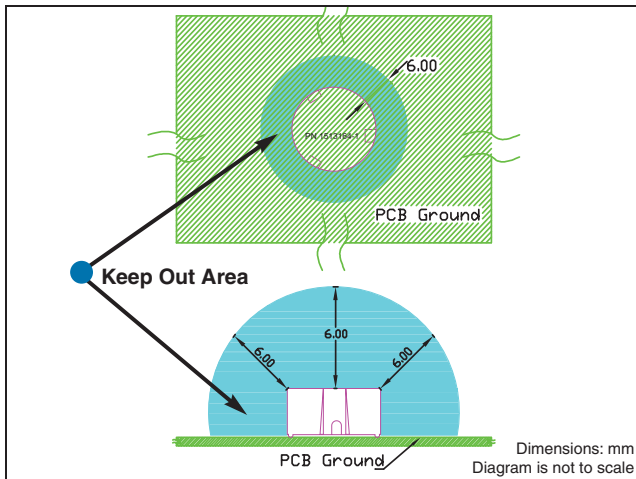
Mounting Guide



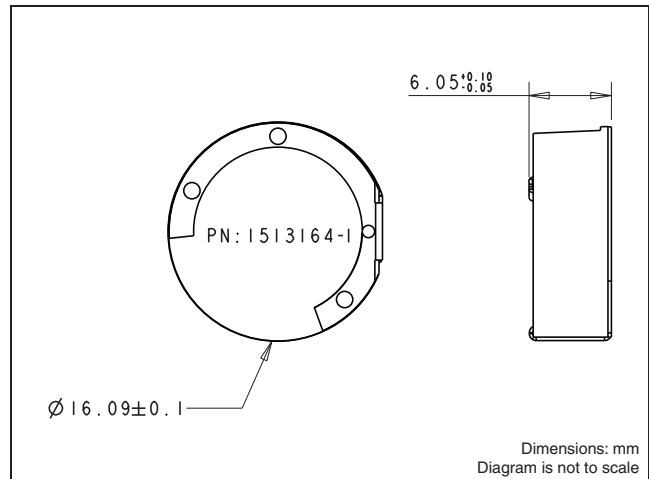
- NOTES: 1. Suggested matching component pads.
2. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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ZigBee is a trademark of ZigBee Alliance.

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For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

2400 – 2483.5 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Part Number: 1513472-5

Product Facts

- Universal antenna module assembly
- RoHS compliant

Recommendations

- Antenna is to be mounted on a metal chassis
- Panel thickness must be between .8 mm and 1 mm
- Performance and bandwidth is dependant on chassis size



Specifications

Frequency Range (MHz) — 2400 – 2483.5; 5150 – 5875
Peak Gain — 3 dBi
VSWR — <3.0:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms unbalanced

Size — 29.00 mm x 12.00 mm x 10.00 mm

Weight — < 5.5 g

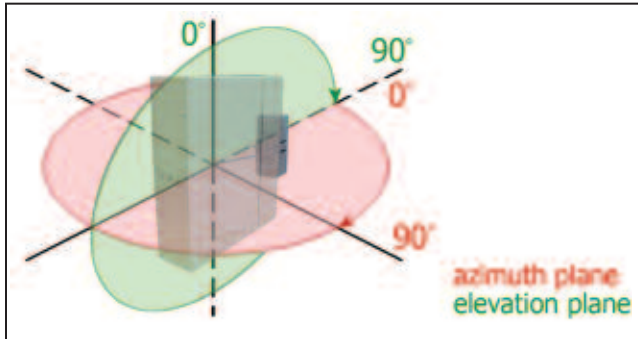
Mounting — Universal Antenna Module

Keep Out Area — See diagram on next page

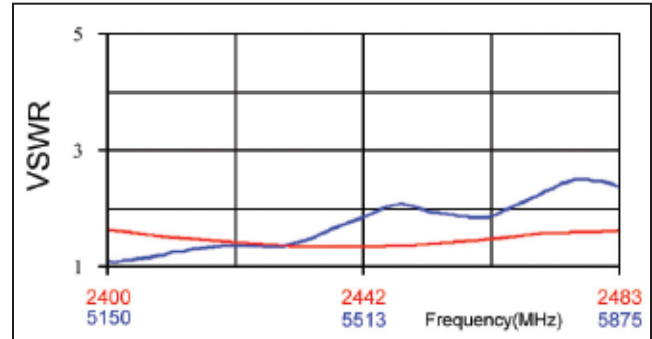
Cable / Connector — 360 mm length. 1.13 mm dia. with U.FI connector

Note — Data shown was taken on a nominal size metal chassis

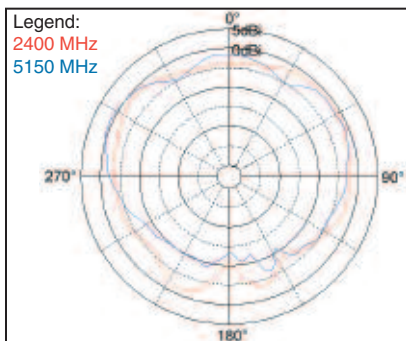
Test Orientation in Free Space



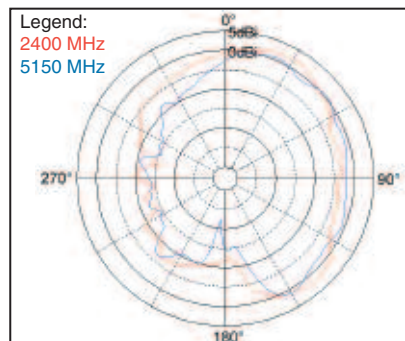
VSWR



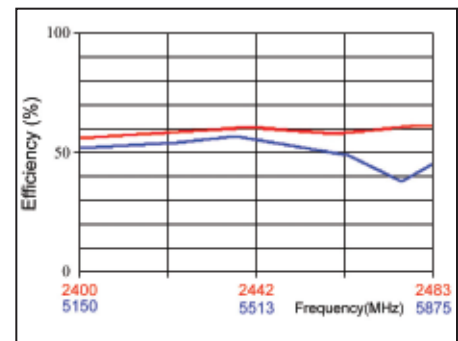
Azimuth



Elevation



Efficiency



Bluetooth is a trademark of Bluetooth SIG, Inc.

Wi-Fi is a trademark of Wi-Fi Alliance.

ZigBee is a trademark of ZigBee Alliance.

2400 – 2483.5 & 5150 – 5875 MHz Dual Band Antenna

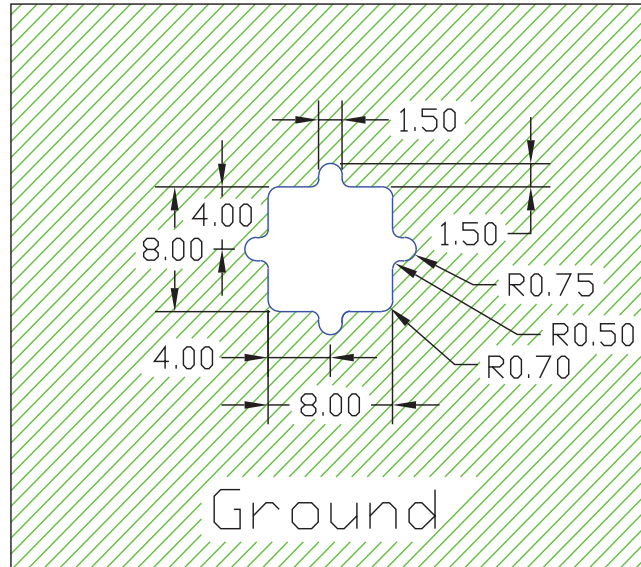
(802.11 a/b/g/n, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 1513472-5

(Continued)

Mounting Guide

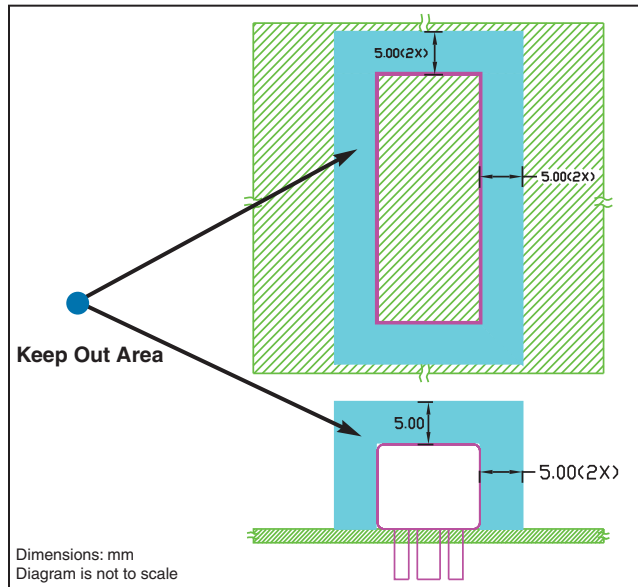
NOTE:
Panel thickness must be between
0.8 mm and 1 mm.



- NOTES: 1. Antenna must be mounted on a metal chassis.
2. For more information please call TE.

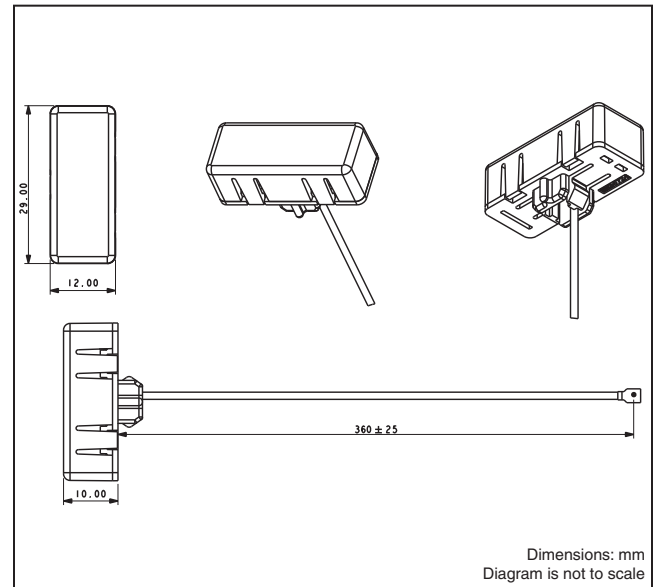
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

Bluetooth is a trademark of Bluetooth
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Wi-Fi is a trademark of Wi-Fi Alliance.
ZigBee is a trademark of ZigBee Alliance.

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For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

2400 – 2483.5 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

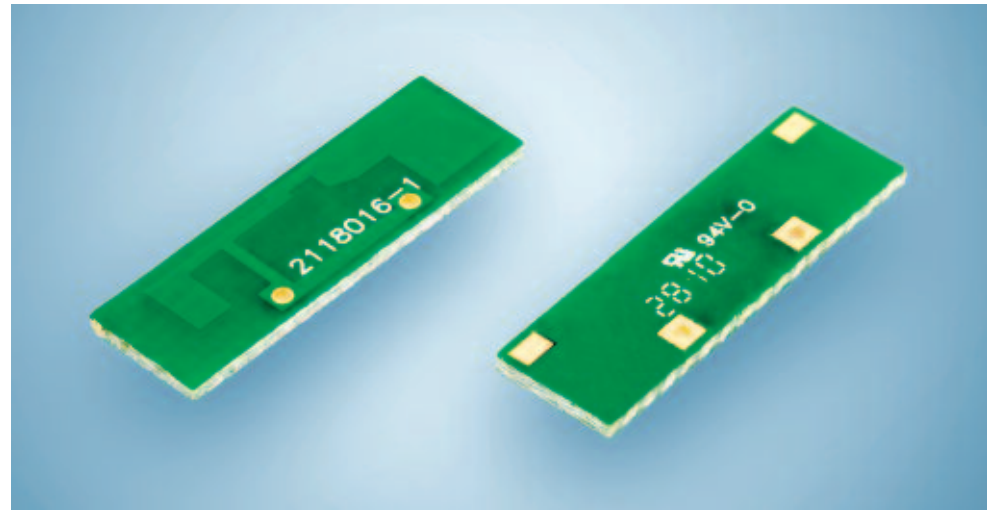
Part Number: 2118016-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, adjustment-free antenna technology for handling during assembly and implementation by developers
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 30 mm.
- PCB ground is to be on top layer

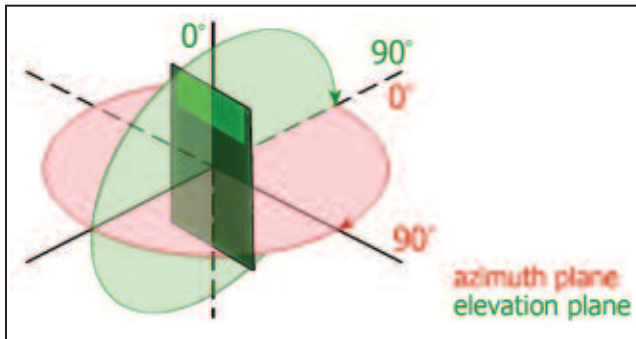


Specifications

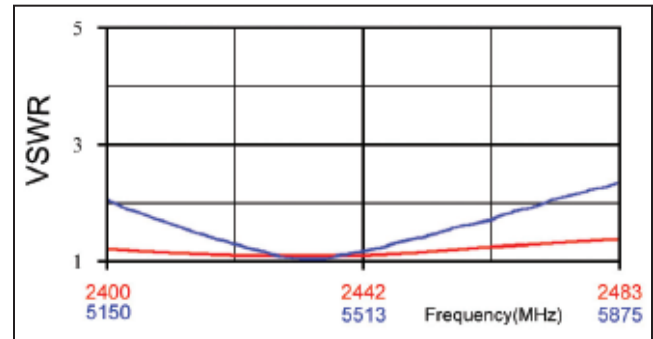
Frequency Range (MHz) — 2400 – 2483.5; 5150 – 5875
Peak Gain — +2 dBi
VSWR — < 3.0:1
Polarization — Linear
Azimuth Beamwidth — Omni-directional
Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced
Size — 18.90 mm x 6.20 mm x 0.79 mm
Weight — < 0.3 g
Mounting — Surface-mount technology. See next page
Keep Out Area — See diagram on next page

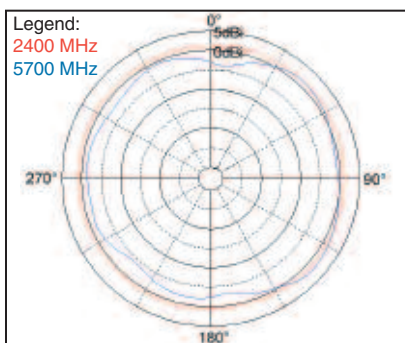
Test Orientation in Free Space



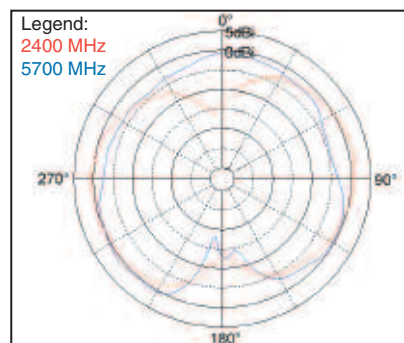
VSWR



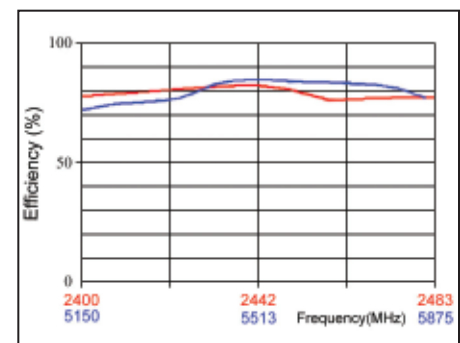
Azimuth



Elevation



Efficiency



Bluetooth is a trademark of Bluetooth SIG, Inc.

Wi-Fi is a trademark of Wi-Fi Alliance.

ZigBee is a trademark of ZigBee Alliance.

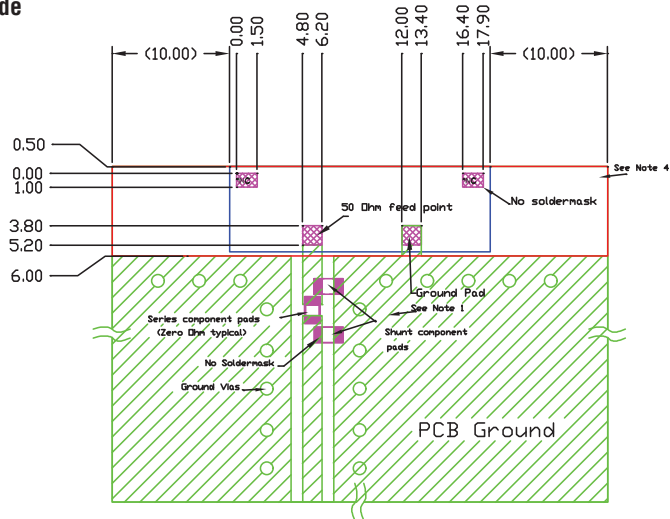
2400 – 2483.5 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, incl. frequencies of Bluetooth, ZigBee, and Wi-Fi products) (Continued)

Part Number: 2118016-1

(Continued)

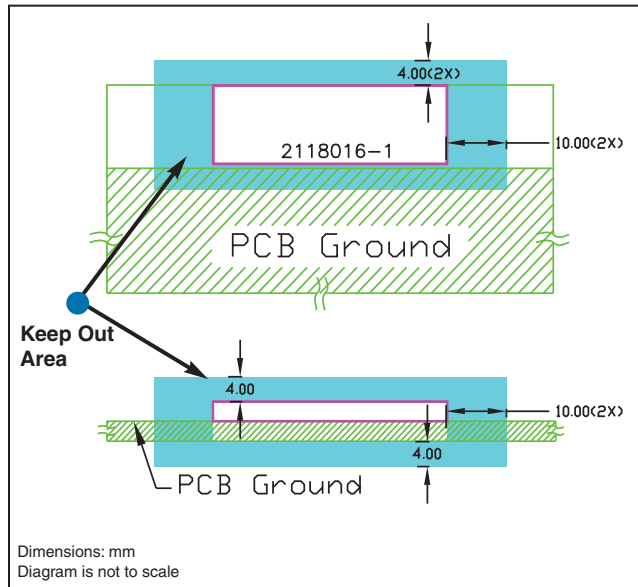
Mounting Guide



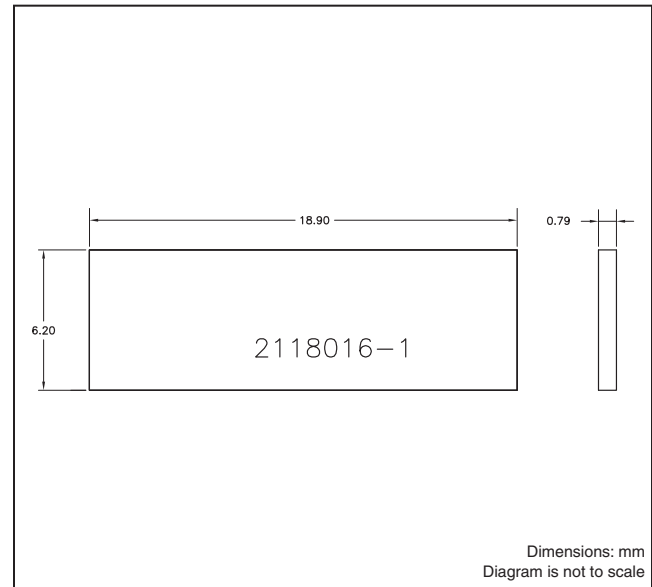
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



Bluetooth is a trademark of Bluetooth
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Wi-Fi is a trademark of Wi-Fi Alliance.
ZigBee is a trademark of ZigBee Alliance.

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For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

2300 – 3800 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, includes frequencies of Bluetooth, ZigBee, Wi-Fi, and WiMAX products)

Part Number: 2118060-1

Product Facts

- Small and lightweight thin PCB antenna assembly
- RoHS compliant

Recommendations

- For best performance follow Mounting Guide and Keep Out Area on next page



Specifications

Frequency Range (MHz) — 2300 – 3800; 5150 – 5875

Peak Gain — +2 dBi

VSWR — < 3.0:1

Polarization — Linear

Azimuth Beamwidth — Omni-directional

Power Handling — 3 Watt

Feed Point Impedance — 50 Ohms unbalanced

Size — 29.60 mm x 41.24 mm x 0.304 mm

Weight — < 3.3 g

Mounting — Adhesive. See diagram on next page

Keep Out Area — See diagram on next page

Cable / Connector — 350 mm length. 1.37 mm dia. with U.F.I connector

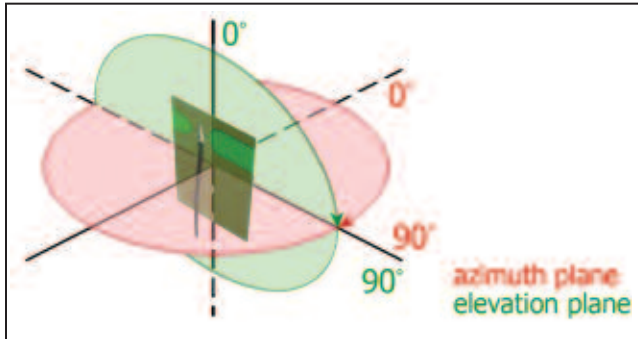
Bluetooth is a trademark of Bluetooth SIG, Inc.

Wi-Fi is a trademark of Wi-Fi Alliance.

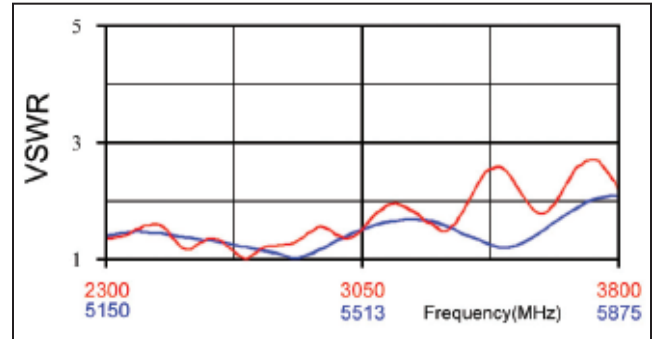
WiMAX is a trademark of WiMAX Forum.

ZigBee is a trademark of ZigBee Alliance.

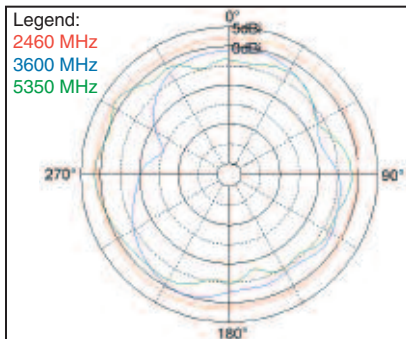
Test Orientation in Free Space



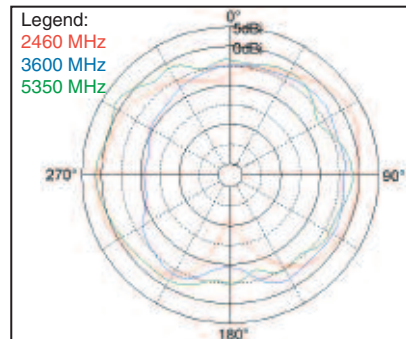
VSWR



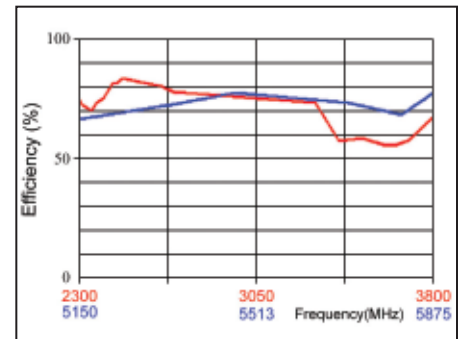
Azimuth



Elevation



Efficiency



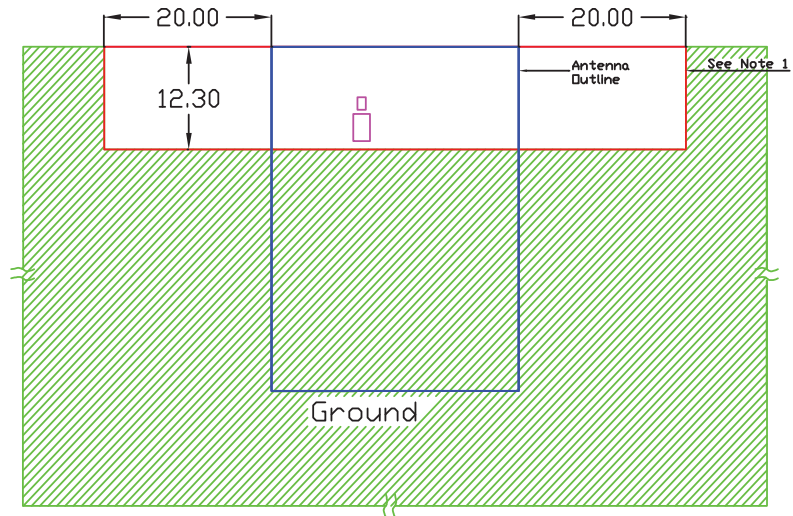
2300 – 3800 & 5150 – 5875 MHz Dual Band Antenna

(802.11 a/b/g/n, incl. frequencies of Bluetooth, ZigBee, Wi-Fi, and WiMAX products) (Continued)

Part Number: 2118060-1

(Continued)

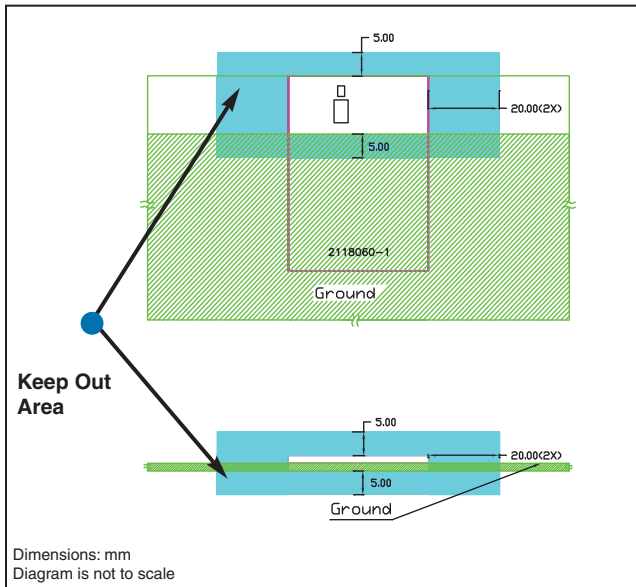
Mounting Guide



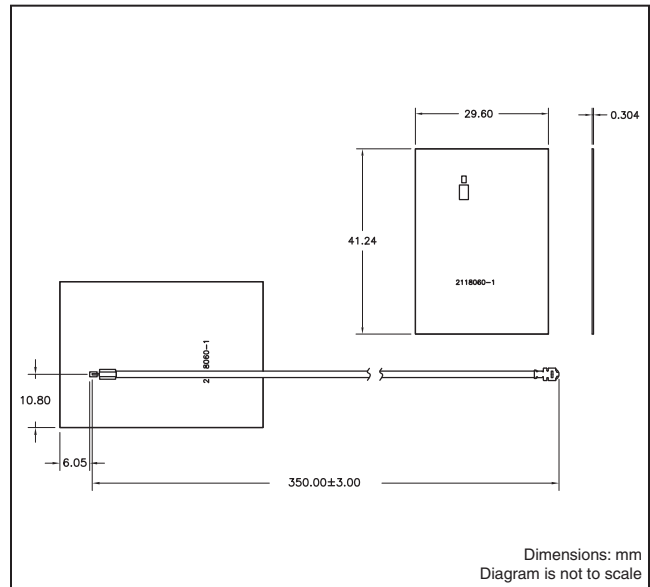
- NOTES: 1. No copper allowed in designated area on all PCB layers –
2. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

824 – 894 & 1850 – 1990 MHz Dual Band Antenna (US Dual Band)

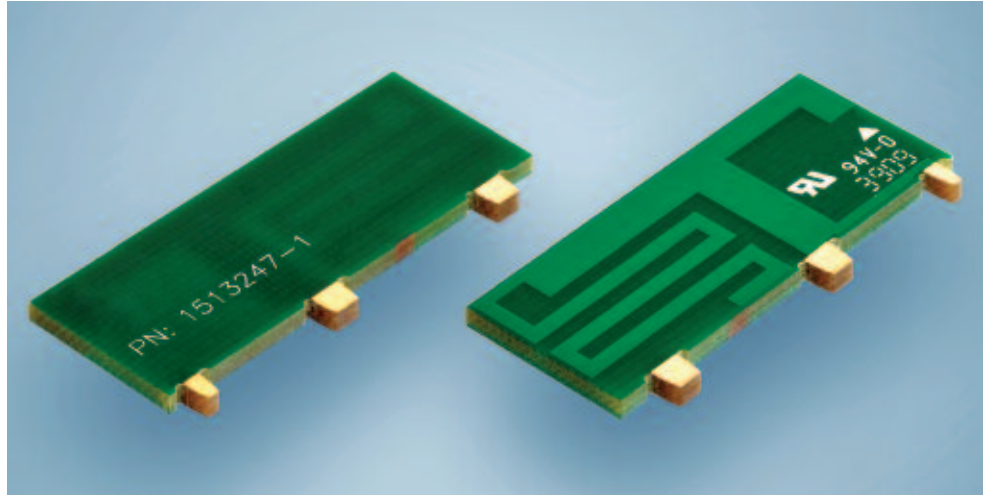
Part Number: 1513247-1

Product Facts

- Small and lightweight
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 100 mm.



Specifications

Frequency Range (MHz) — 824 – 894; 1850 – 1990
Peak Gain — 0 dBi; +3 dBi
VSWR — < 3.0:1; < 3.0:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms

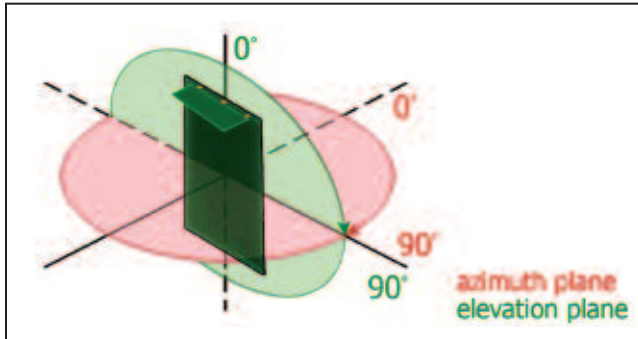
Size — 38.10 mm x 15.24 mm x 1.57 mm

Weight — < 2 g

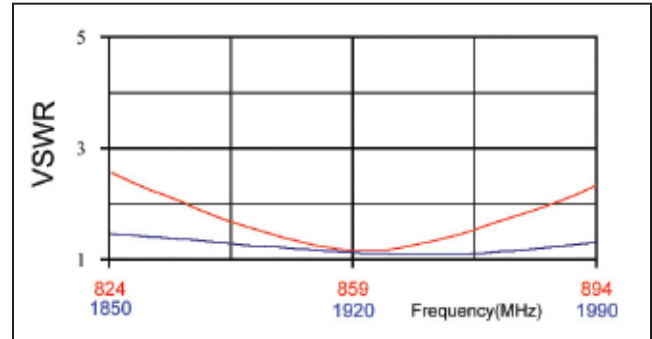
Mounting — Tab mounted with plated through holes. See next page

Keep Out Area — See diagram on next page

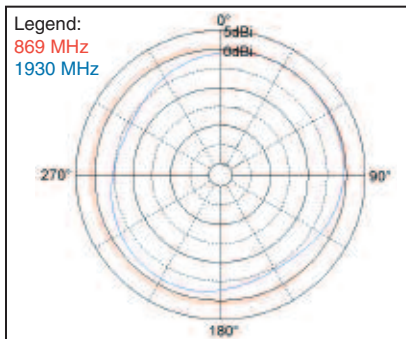
Test Orientation in Free Space



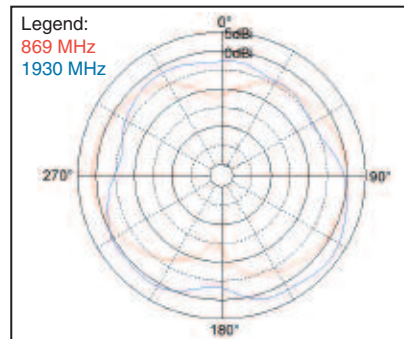
VSWR



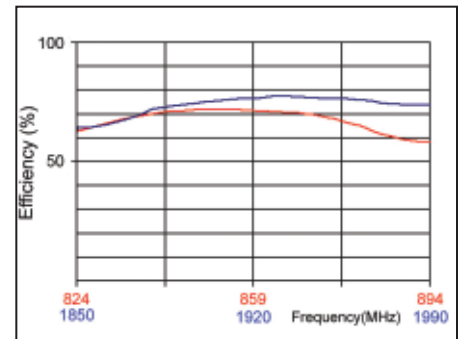
Azimuth



Elevation



Efficiency

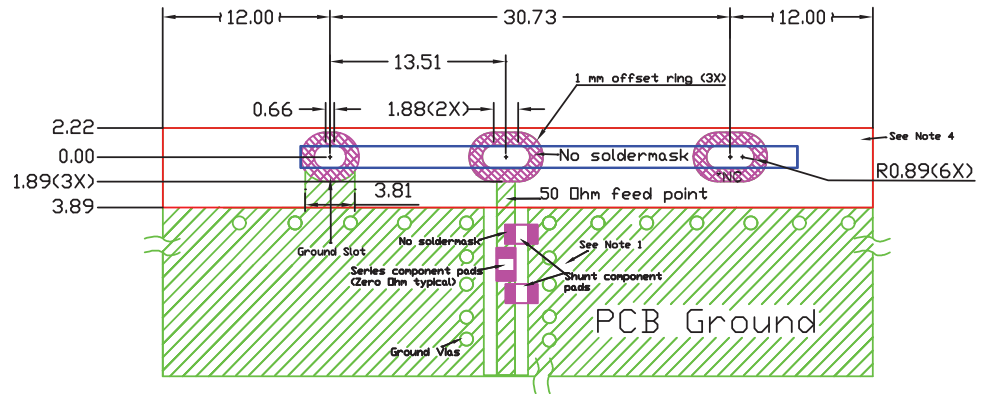


824 – 894 & 1850 – 1990 MHz Dual Band Antenna (US Dual Band) (Continued)

Part Number: 1513247-1

(Continued)

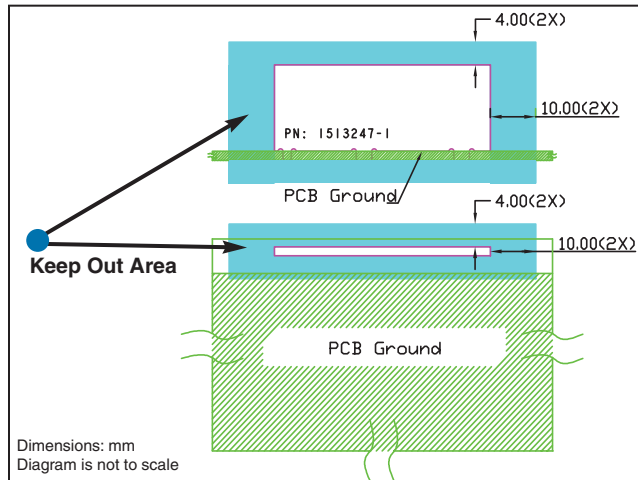
Mounting Guide



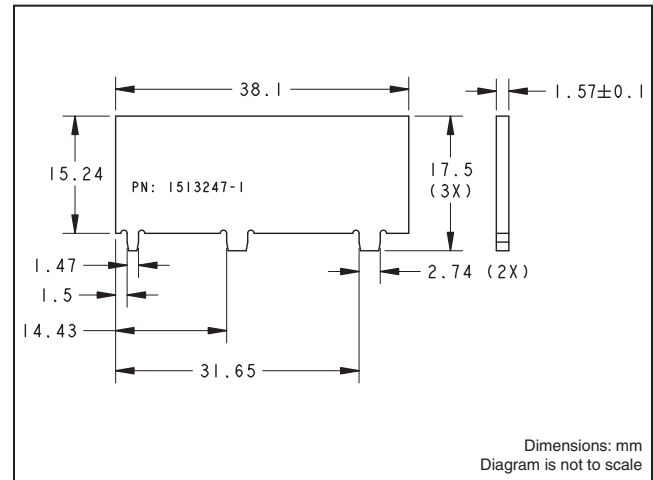
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



824 – 960 & 1710 – 1990 MHz Quad Band Antenna (US Dual and EU Dual Band)

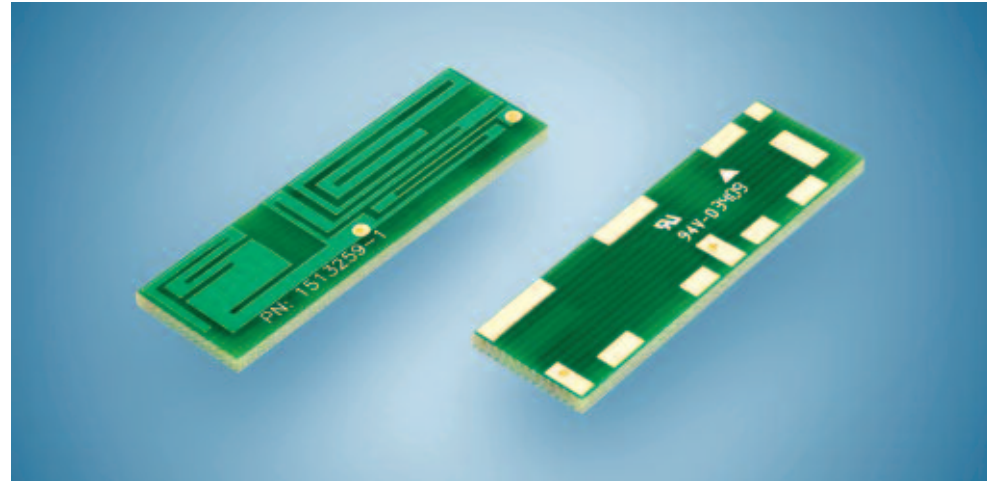
Part Number: 1513259-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers
- Also available in tape & reel (P/N 1513259-9) for automatic mounting
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 100 mm.
- PCB ground is to be on top layer



Specifications

Frequency Range (MHz) — 824 – 960; 1710 – 1990
Peak Gain — +1 dBi
VSWR — < 3.0:1
Polarization — Linear
Azimuth Beamwidth — Omni-directional
Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

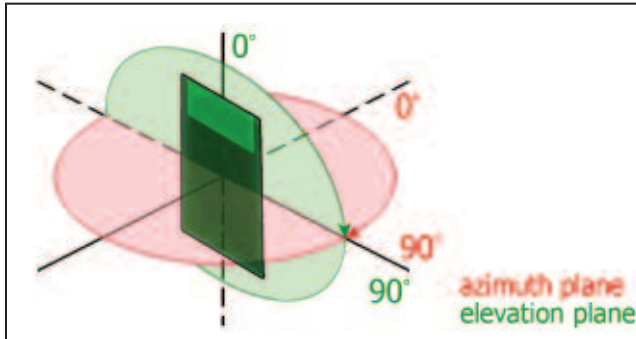
Size — 37.59 mm x 11.94 mm x 1.57 mm

Weight — < 1.6 g

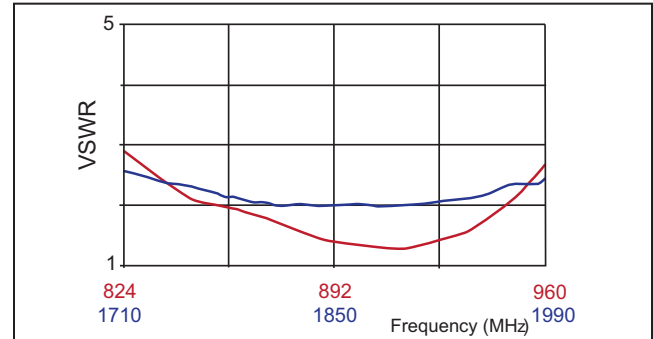
Mounting — Surface-mount technology. See next page

Keep Out Area — See diagram on next page

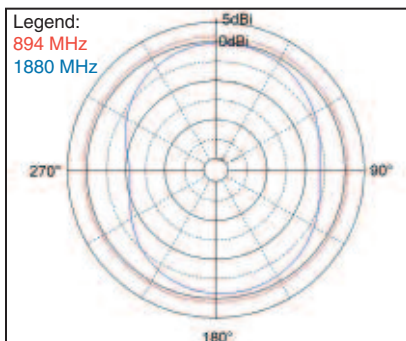
Test Orientation in Free Space



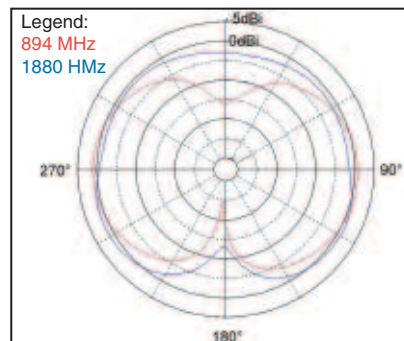
VSWR



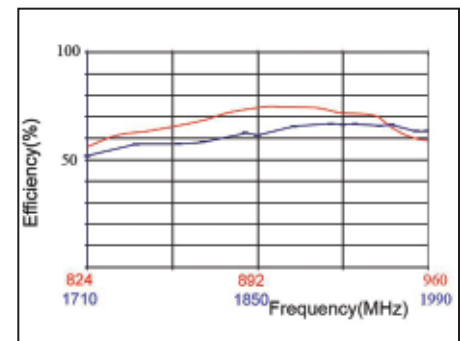
Azimuth



Elevation



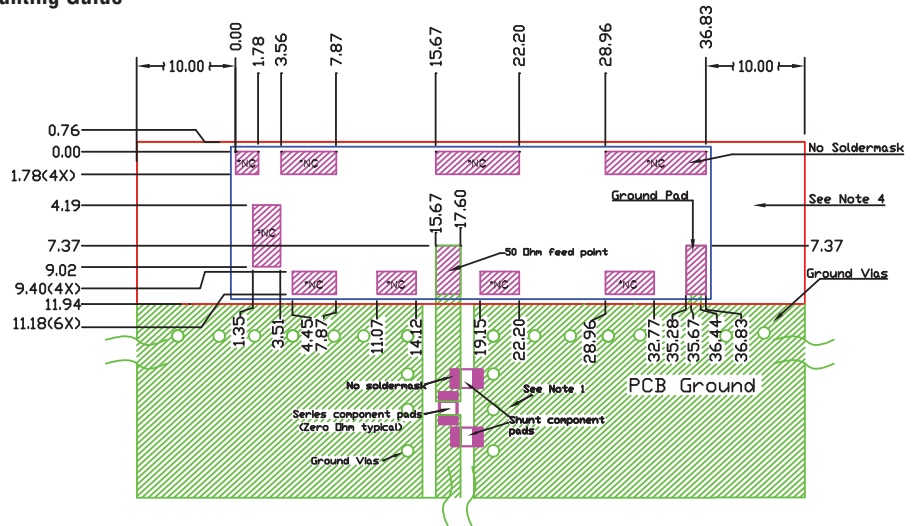
Efficiency



824 – 960 & 1710 – 1990 MHz Quad Band Antenna (US Dual and EU Dual Band) (Continued)

Part Number: 1513259-1
(Continued)

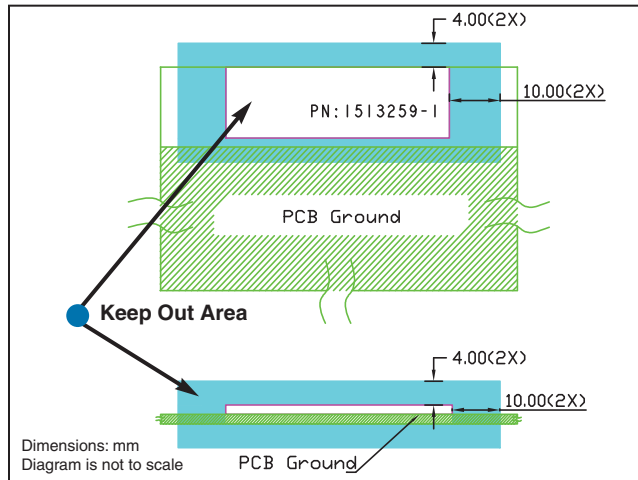
Mounting Guide



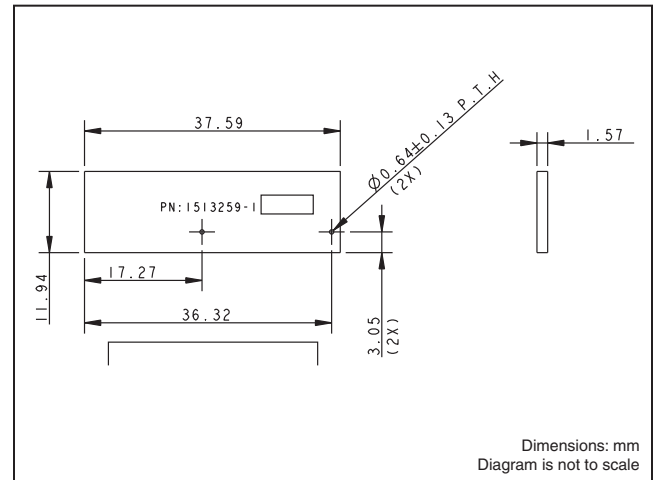
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



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For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

824 – 960 & 1710 – 1990 MHz Quad Band Antenna (US Dual and EU Dual Band)

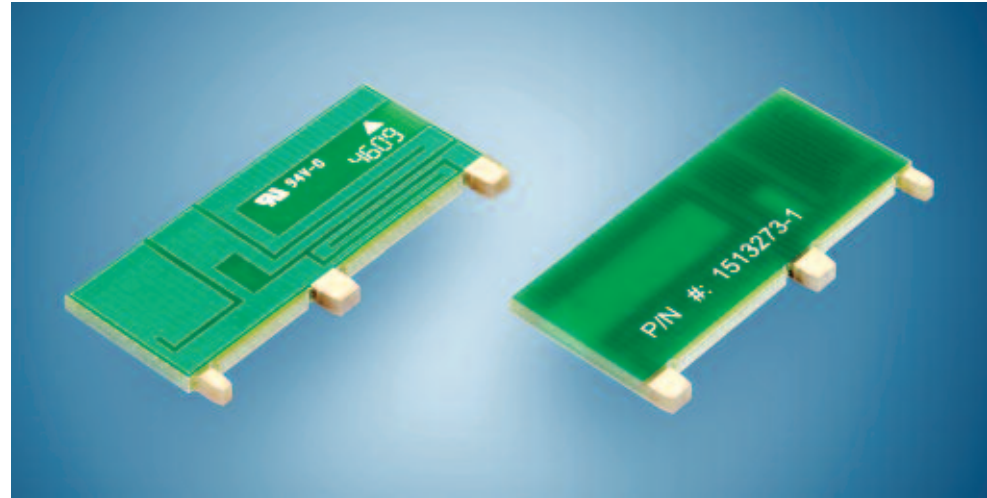
Part Number: 1513273-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 100 mm.

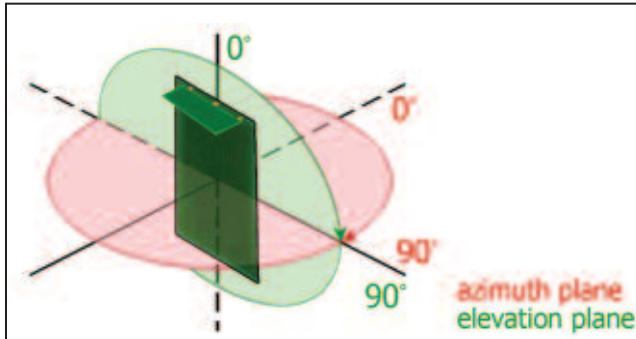


Specifications

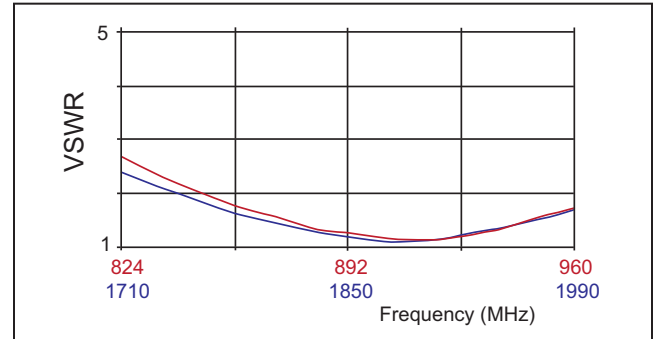
Frequency Range (MHz) — 824 – 960; 1710 – 1990
Peak Gain — +2 dBi
VSWR — < 3.0:1
Polarization — Linear
Azimuth Beamwidth — Omni-directional
Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced
Size — 35.56 mm x 15.11 mm x 1.57 mm
Weight — < 1.8 g
Mounting — Tab mounted with plated through holes. See next page
Keep Out Area — See diagram on next page

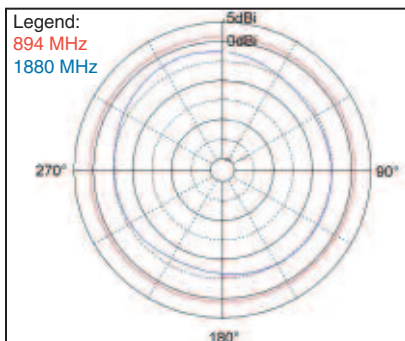
Test Orientation in Free Space



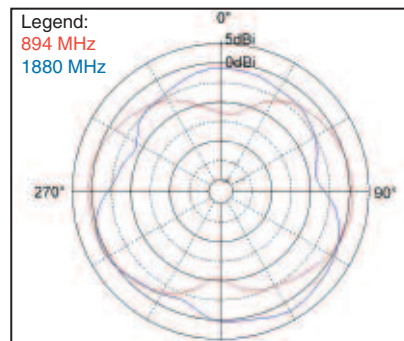
VSWR



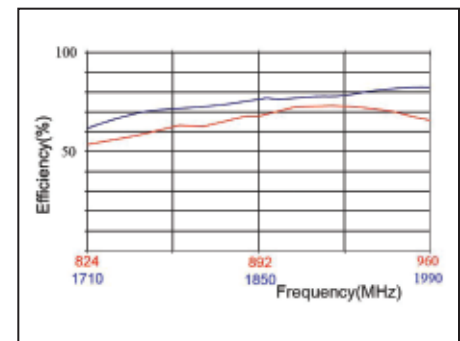
Azimuth



Elevation



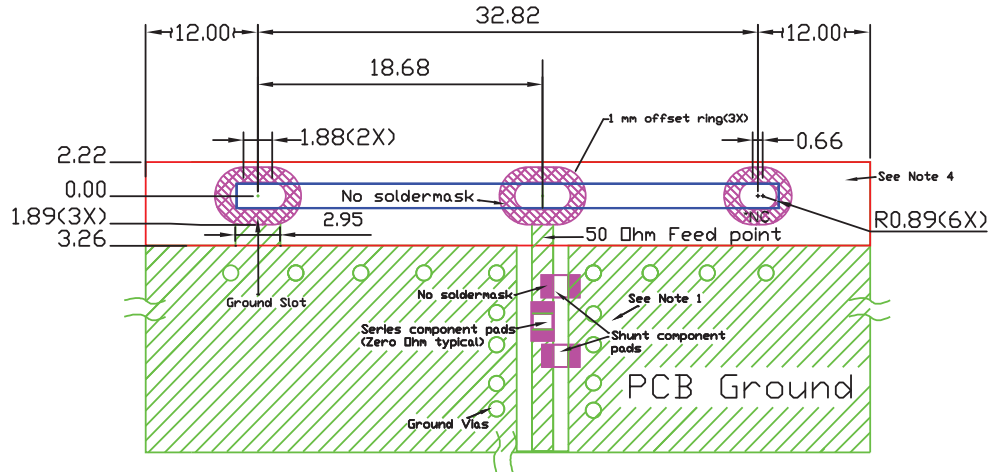
Efficiency



824 – 960 & 1710 – 1990 MHz Quad Band Antenna (US Dual and EU Dual Band) (Continued)

Part Number: 1513273-1
(Continued)

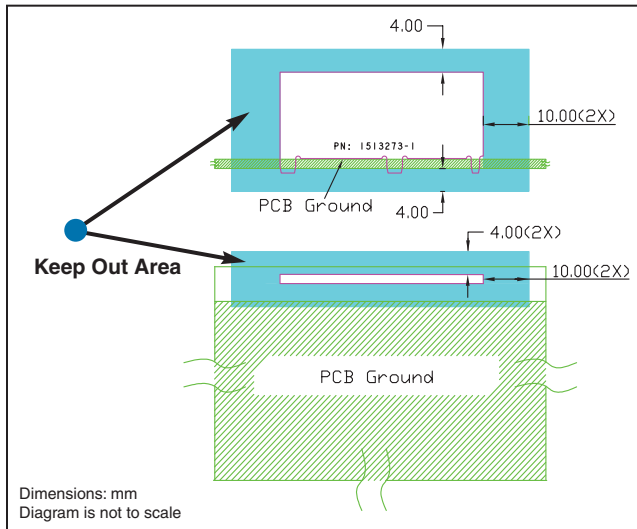
Mounting Guide



- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

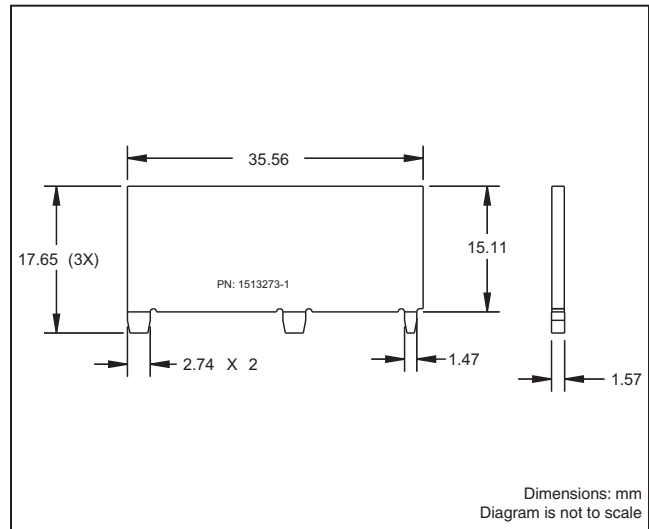
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

For design support in USA, please send an e-mail to antenna.AMER@te.com
For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

824 – 960 & 1710 – 2170 MHz Penta Band Antenna (UMTS, US Dual, EU Dual, and WCDMA)

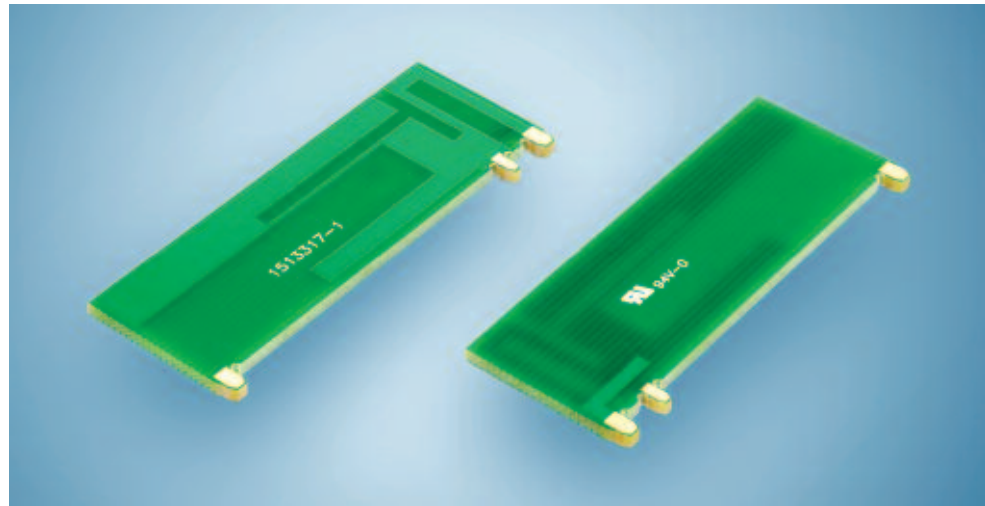
Part Number: 1513317-1

Product Facts

- This small embedded antenna provides the most reliable easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 100 mm.



Specifications

Frequency Range (MHz) — 824 – 960; 1710 – 2170
Peak Gain — +3 dBi
VSWR — < 3.0:1
Polarization — Linear
Azimuth Beamwidth — Omni-directional
Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

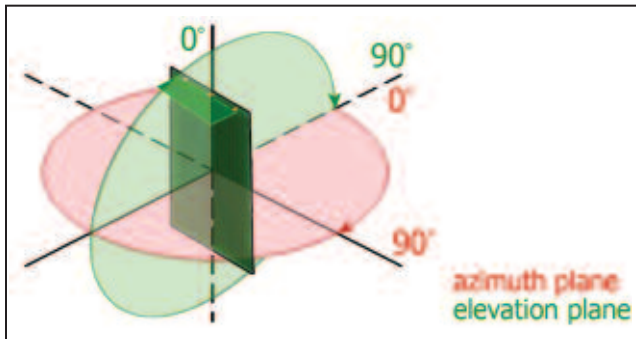
Size — 49.90 mm x 20.27 mm x 1.58 mm

Weight — < 2.9 g

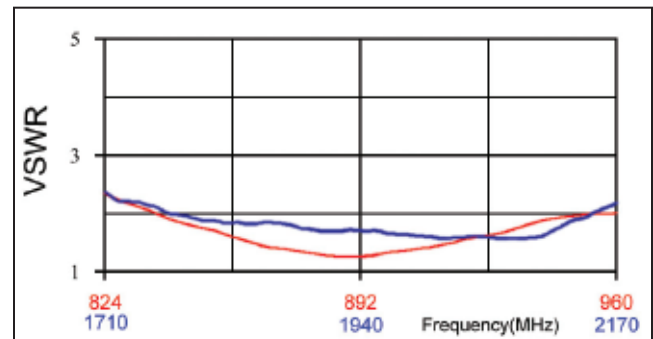
Mounting — Tab mounted with plated through holes. See next page

Keep Out Area — See diagram on next page

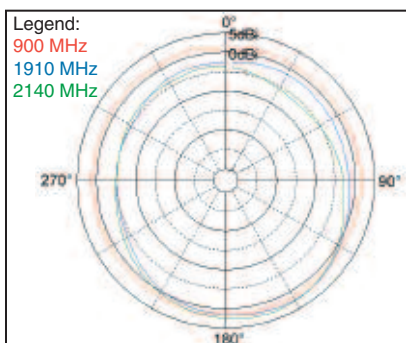
Test Orientation in Free Space



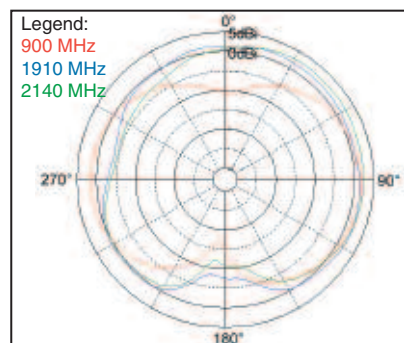
VSWR



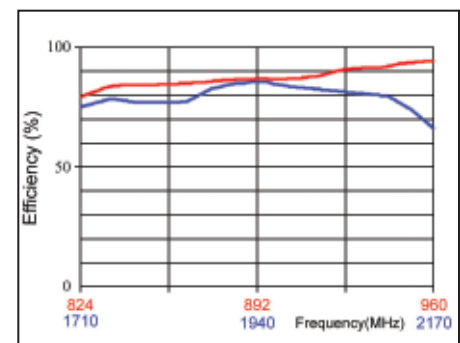
Azimuth



Elevation



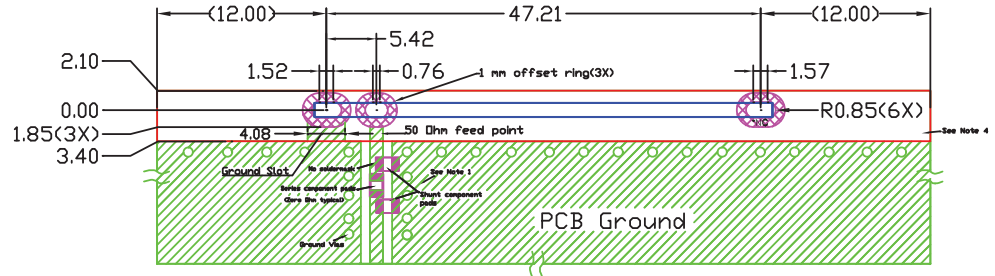
Efficiency



824 – 960 & 1710 – 2170 MHz Penta Band Antenna (UMTS, US Dual, EU Dual, and WCDMA) (Continued)

Part Number: 1513317-1
(Continued)

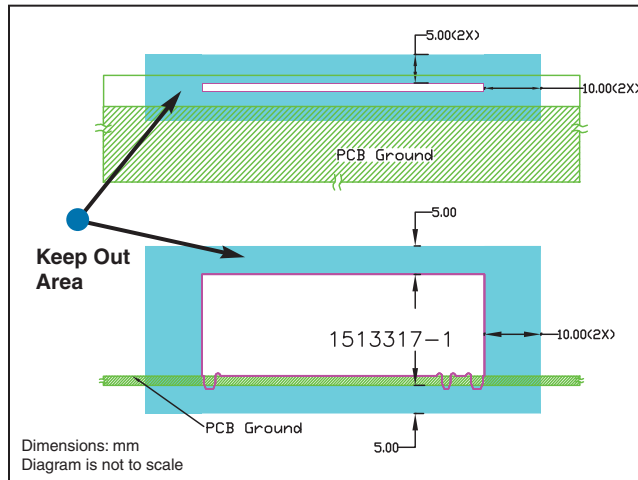
Mounting Guide



- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

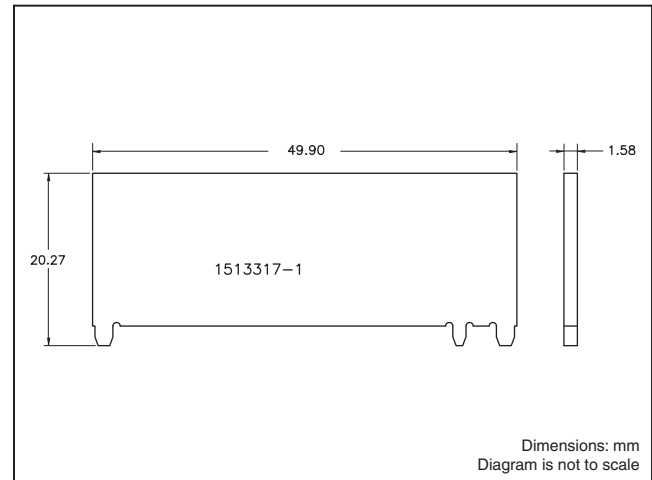
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

For design support in USA, please send an e-mail to antenna.AMER@te.com
For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

880 – 960 & 1710 – 1880 MHz Dual Band Antenna (EU Dual)

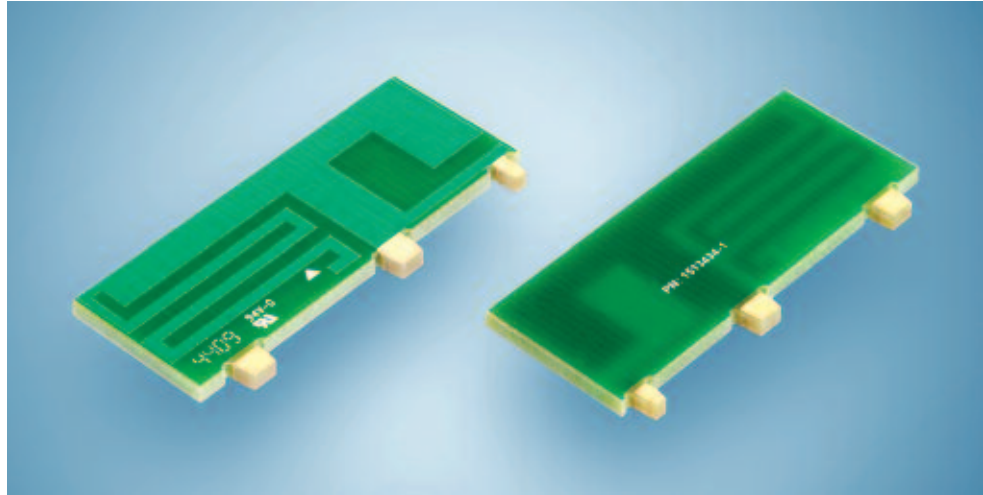
Part Number: 1513434-1

Product Facts

- Small and lightweight
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 90 mm.



Specifications

Frequency Range (MHz) — 880 – 960; 1710 – 1880

Peak Gain — 0 dBi; +1 dBi

VSWR — < 2.5:1

Polarization — Linear

Azimuth Beamwidth — Omni-directional

Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

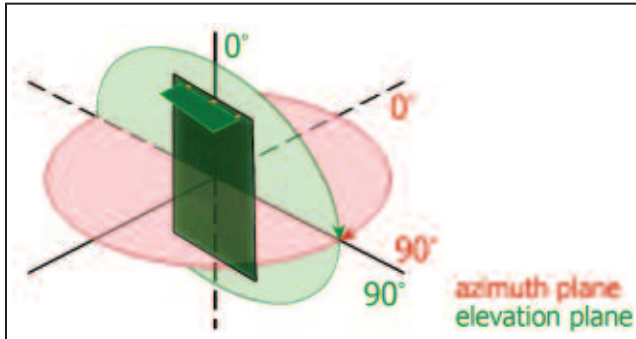
Size — 38.10 mm x 15.20 mm x 1.57 mm

Weight — < 2 g

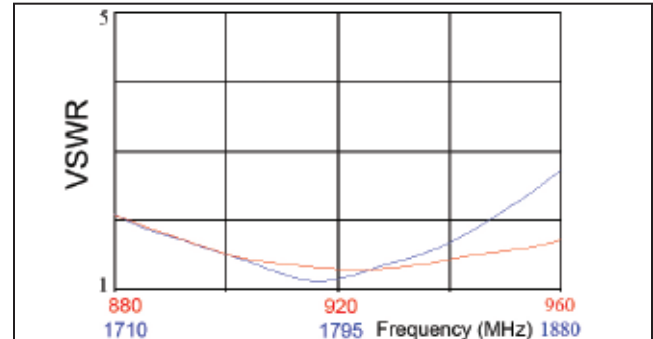
Mounting — Tab mounted with plated through holes. See next page

Keep Out Area — See diagram on next page

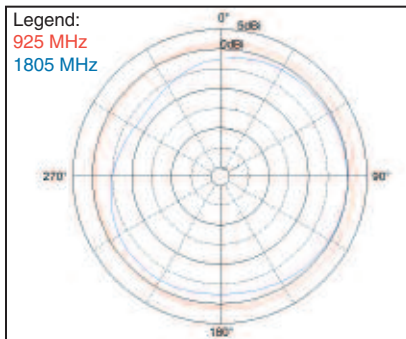
Test Orientation in Free Space



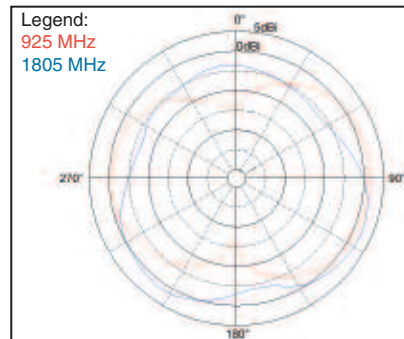
VSWR



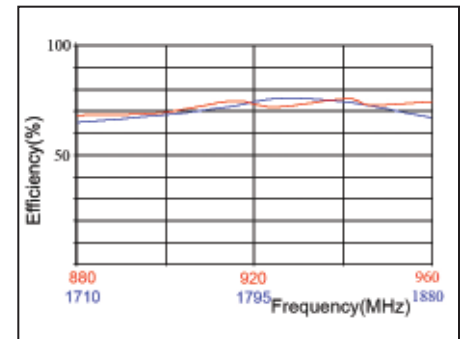
Azimuth



Elevation



Efficiency

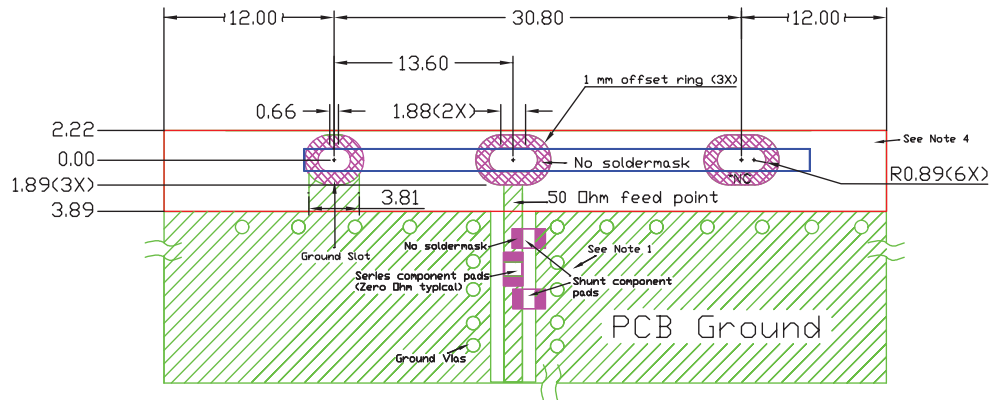


880 – 960 & 1710 – 1880 MHz Dual Band Antenna (EU Dual) (Continued)

Part Number: 1513434-1

(Continued)

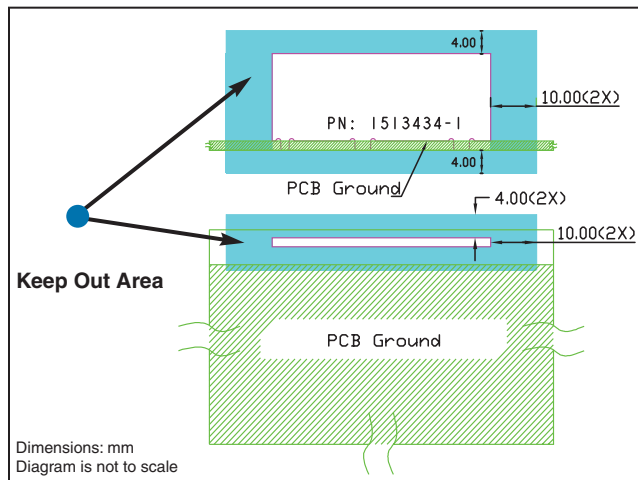
Mounting Guide



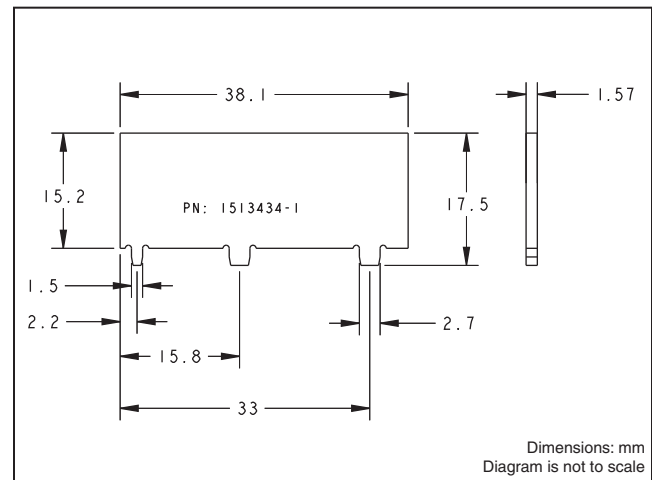
- NOTES:
1. Suggested matching component pads.
 2. Antenna must be mounted on the edge of PCB.
 3. NC = No connection (mechanical mounting pads).
 4. No copper allowed in designated area on all PCB layers –
 5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area



Approx. Dimensions



For design support in USA, please send an e-mail to antenna.AMER@te.com
For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

1565 – 1585 MHz Single Band Antenna (GPS)

Part Number: 1513634-1

Product Facts

- Small form factor enables use in virtually any wireless device
- Available in Tape & Reel
- RoHS compliant

Recommendations

- Minimum or no matching circuits required
- Bandwidth and performance is dependent on ground plane size. Suggested minimum ground plane length from the antenna feed is 50 mm.
- PCB ground is to be on top layer



Specifications

Frequency Range (MHz) — 1565 – 1585

Peak Gain — 0 dBi

VSWR — < 3.0:1

Polarization — RHCP (right-hand circular)

Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms unbalanced

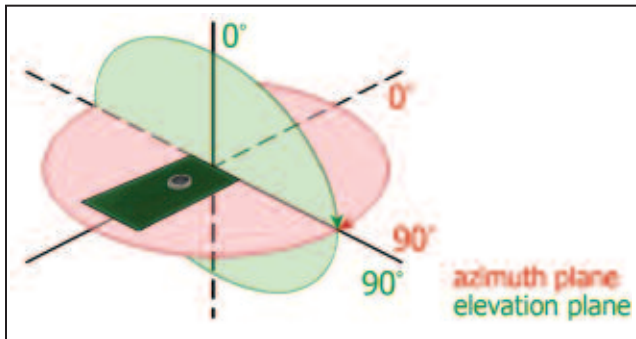
Size — 16.00 mm dia. x 6.05 mm

Weight — < 1 g

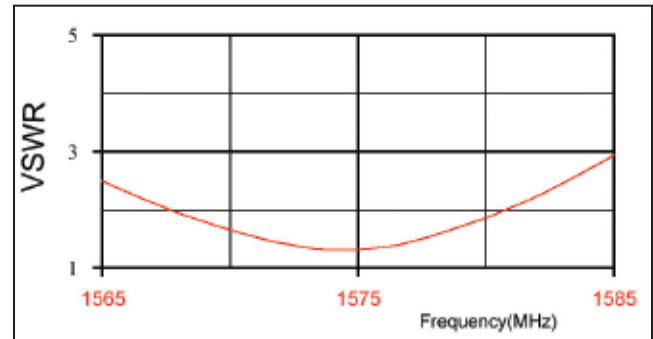
Mounting — Surface-mount technology. See next page

Keep Out Area — See diagram on next page

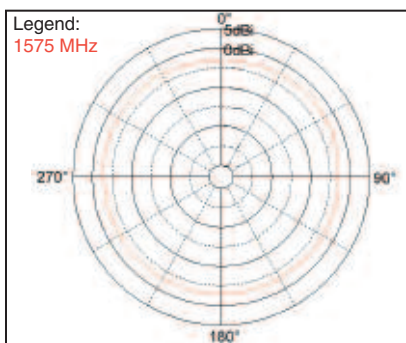
Test Orientation in Free Space



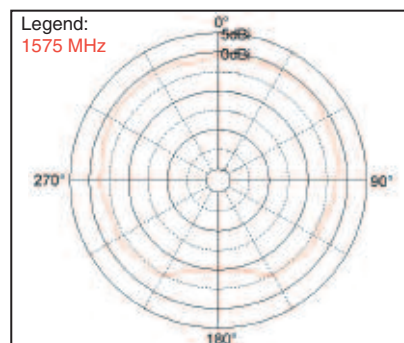
VSWR



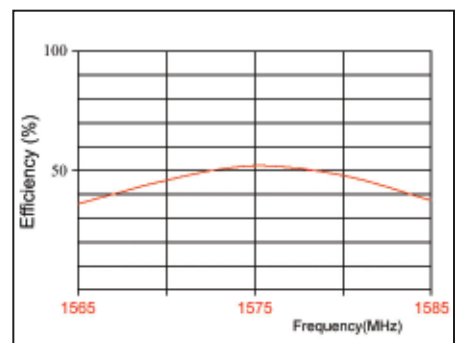
Azimuth



Elevation



Efficiency

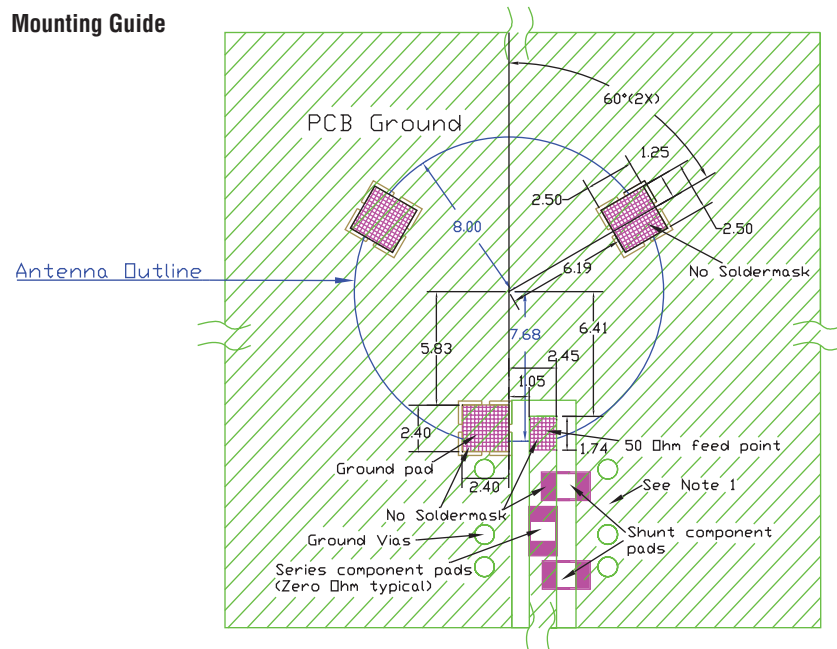


1565 – 1585 MHz Single Band Antenna (GPS) (Continued)

Part Number: 1513634-1

(Continued)

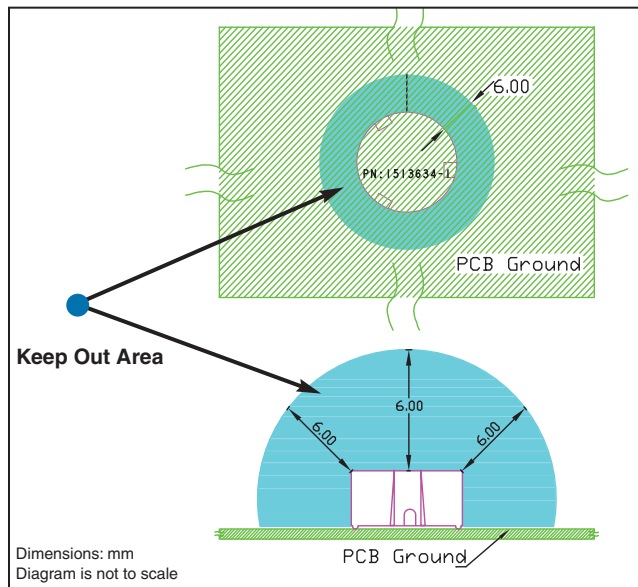
Mounting Guide



- NOTES: 1. Suggested matching component pads.
2. For more information please call TE.

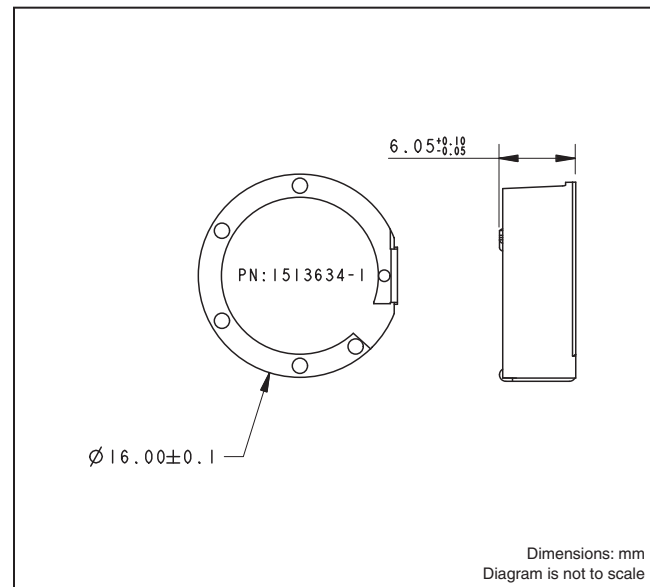
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

For design support in USA, please send an e-mail to antenna.AMER@te.com
For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

3100 – 6000 MHz Single Band Antenna (UWB)

Part Number: 1513381-1

Product Facts

- Universal antenna module assembly
- RoHS compliant

Recommendations

- Antenna is to be mounted on a metal chassis
- Panel thickness must be between .8 mm and 1 mm
- Performance and bandwidth is dependant on chassis size

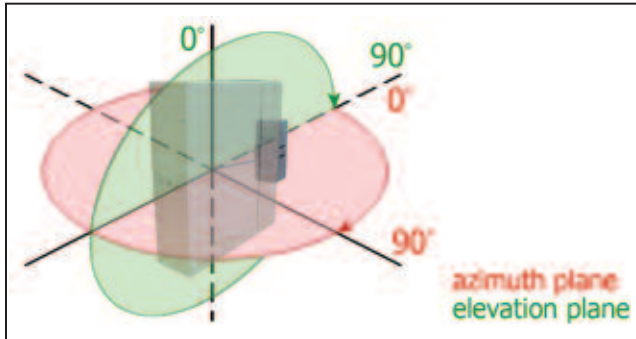


Specifications

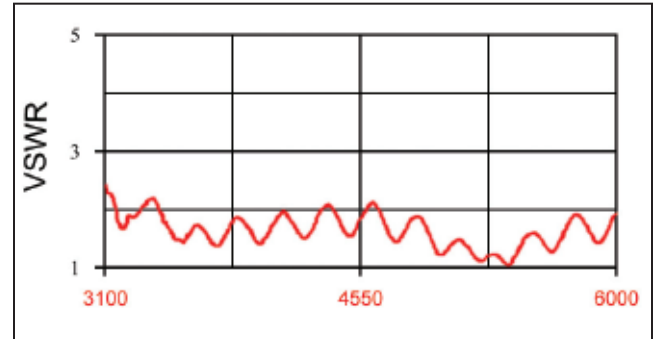
Frequency Range (MHz) — 3100 – 6000
Peak Gain — 4 dBi
VSWR — < 3.0:1
Polarization — Linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms unbalanced
Size — 29.00 mm x 12.00 mm x 10.00 mm

Weight — < 5.5 g
Mounting — Universal Antenna Module. See next page
Keep Out Area — See diagram on next page
Cable / Connector — 365 mm length. 1.13 mm dia. with U.FI connector
Note — Data shown was taken on a nominal size metal chassis

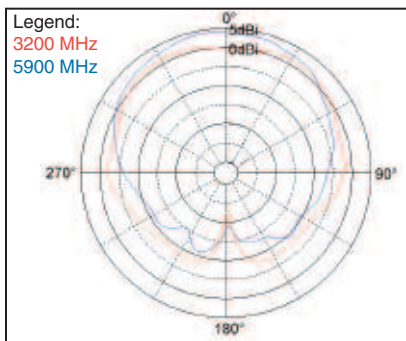
Test Orientation in Free Space



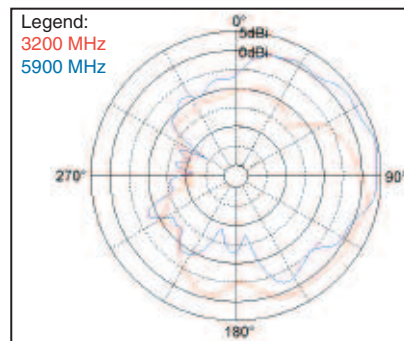
VSWR



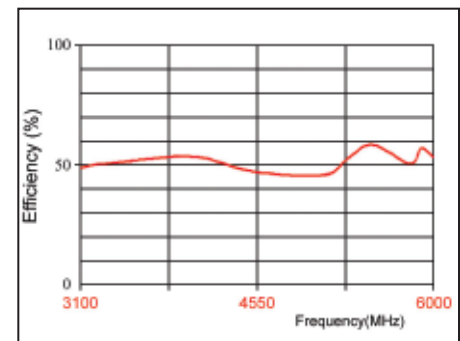
Azimuth



Elevation



Efficiency



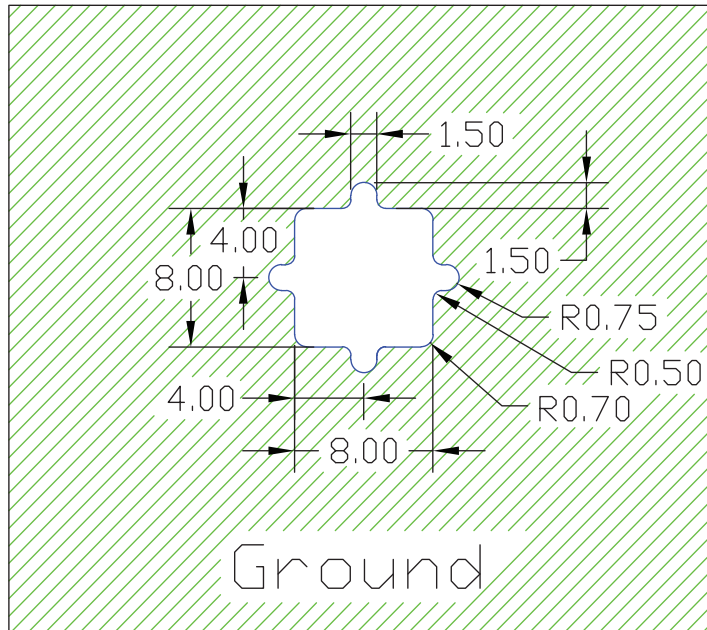
3100 – 6000 MHz Single Band Antenna (UWB) (Continued)

Part Number: 1513381-1

(Continued)

Mounting Guide

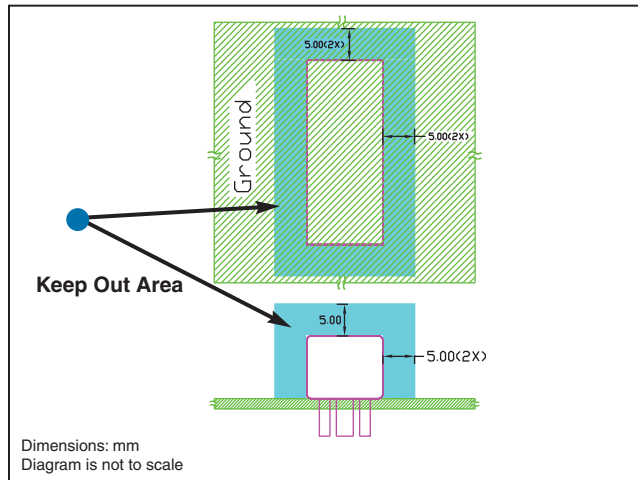
NOTE:
Panel thickness must be between
0.8 mm and 1 mm.



NOTES: 1. Antenna must be mounted on a metal chassis.
2. For more information please call TE.

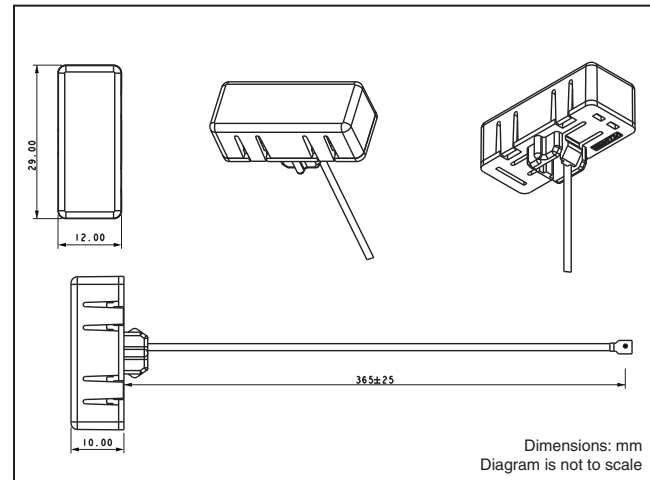
Dimensions: mm
Diagram is not to scale

Keep Out Area



Dimensions: mm
Diagram is not to scale

Approx. Dimensions



Dimensions: mm
Diagram is not to scale

For design support in USA, please send an e-mail to antenna.AMER@te.com
For design support in Europe, please send an e-mail to antenna.EMEA@te.com
For design support in Asia Pacific, please send an e-mail to antenna.AP@te.com

2300 – 2700 & 3300 – 3800 & 4900 – 5875 MHz Quad Band Antenna (802.11 a/b/g/n, includes frequencies of Bluetooth, ZigBee, and WiMAX products)

Part Number: 1513711-1

Product Facts

- 3 element quad-band vertically polarized omnidirectional, hemispherical antenna with 0.8 meter cable and QSL type 3 port connector (RPSMA optional)
- QSL test adaptor with SMA launches — Part number 1513743-1
- 802.11 a/b/g/n and WiMAX frequency coverage
- RoHS compliant



Specifications

Frequency Range (MHz) —
2300 – 2700; 3300 – 3800; 4900 – 5875

Peak Gain — 0 dBi @ 2300 MHz;
3 dBi @ 3500 MHz; 2 dBi @ 5470 MHz

VSWR — < 2.5:1

Operating Temperature —
–40°C to 70°C

Polarization — Vertical linear

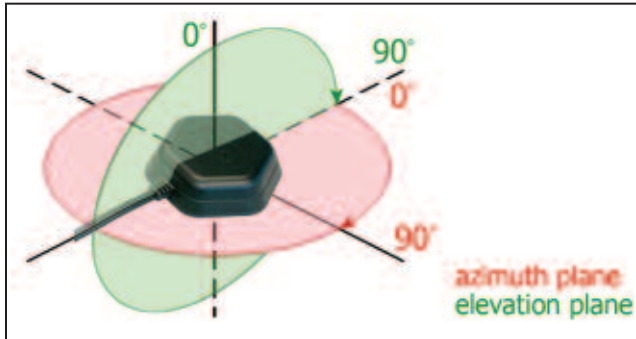
Power Handling — 10 Watt cw

Feed Point Impedance — 50 Ohms

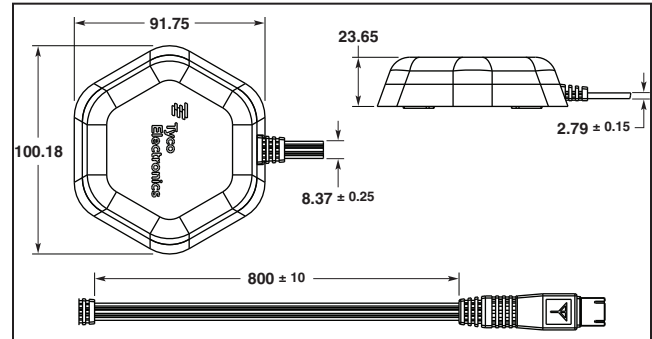
Size — 100.18 mm x 91.75 mm x
23.65 mm

Weight — < 130 g

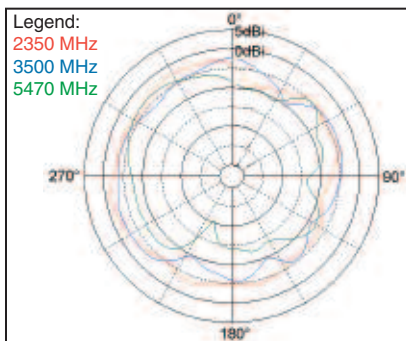
Test Orientation in Free Space



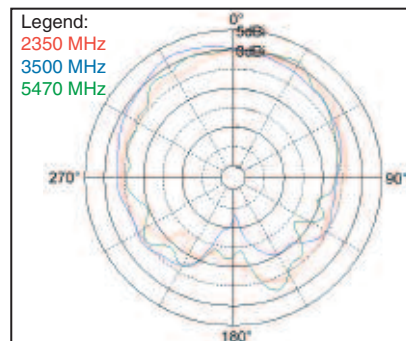
Approx. Dimensions



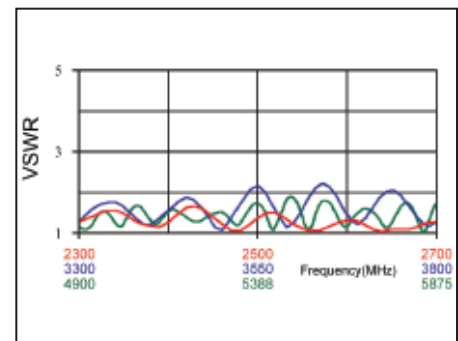
Azimuth



Elevation



VSWR



Bluetooth is a trademark of Bluetooth SIG, Inc.

WiMAX is a trademark of WiMAX Forum.

ZigBee is a trademark of ZigBee Alliance.

2300 – 2700 & 3300 – 3800 & 4900 – 5875 MHz Quad Band Antenna (802.11 a/b/g/n, includes frequencies of Bluetooth, ZigBee, and WiMAX products)

Part Number: 1513712-1

Product Facts

- 3 element quad-band vertically polarized omnidirectional, hemispherical antenna with 0.8 meter cable and QSL type 3 port connector with attachment screws and flange (RPSMA optional)
- QSL test adaptor with SMA launches — Part number 1513743-1
- 802.11 a/b/g/n and WiMAX frequency coverage
- RoHS compliant

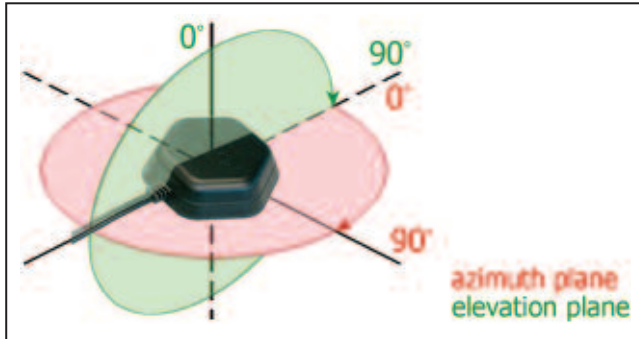


Specifications

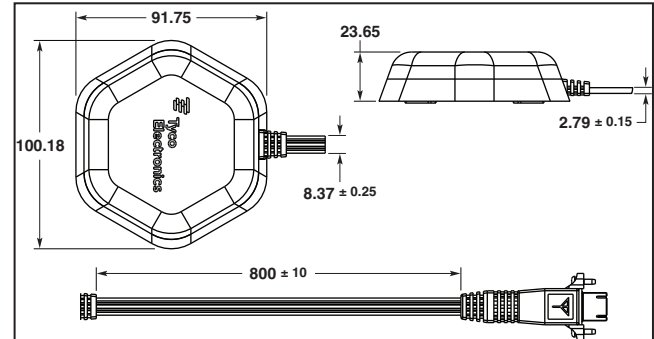
Frequency Range (MHz) —
2300 – 2700; 3300 – 3800; 4900 – 5875
Peak Gain — 0 dBi @ 2300 MHz;
3 dBi @ 3500 MHz; 2 dBi @ 5470 MHz
VSWR — < 2.5:1
Operating Temperature —
–40°C to 70°C

Polarization — Vertical linear
Power Handling — 10 Watt cw
Feed Point Impedance — 50 Ohms
Size — 100.18 mm x 91.75 mm x
23.65 mm
Weight — < 130 g

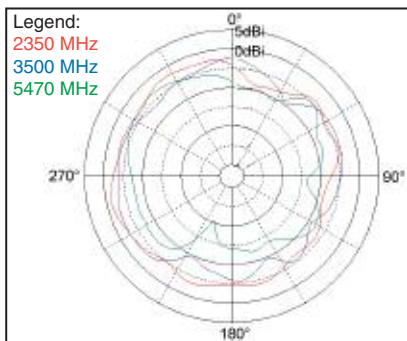
Test Orientation in Free Space



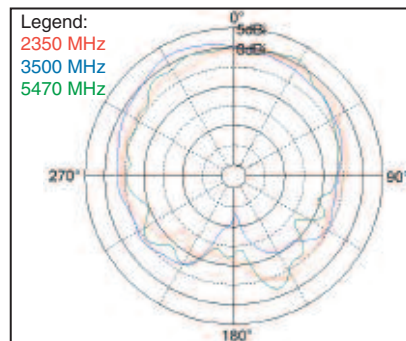
Approx. Dimensions



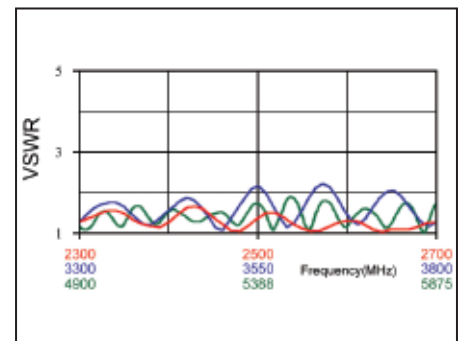
Azimuth



Elevation



VSWR



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WiMAX is a trademark of WiMAX Forum.

ZigBee is a trademark of ZigBee Alliance.

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