Standard Antenna Solutions
### Selector Guide

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Legend: ZB = ZigBee  
BT = Bluetooth

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.

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

For other country numbers go to:  
www.te.com/supportcenter

Dimensions are in inches and millimeters unless otherwise specified.  
Values in brackets are metric equivalents.  
Specifications subject to change.
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### Cell, LTE, & WiMAX

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### External QSL Antennas

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Disclaimer

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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

Azimuth

Legend:
869 MHz

Elevation

Legend:
869 MHz

Efficiency

ZigBee is a trademark of ZigBee Alliance.
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

Approx. Dimensions

Diagram is not to scale

ZigBee is a trademark of ZigBee Alliance.
Standard Antenna Solutions

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

ZigBee is a trademark of ZigBee Alliance.
**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.

**Keep Out Area**

**Approx. Dimensions**

ZigBee is a trademark of ZigBee Alliance.
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

Legend: 915 MHz

ZigBee is a trademark of ZigBee Alliance.
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

ZigBee is a trademark of ZigBee Alliance.
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.
Keep Out Area — See diagram on next page

Test Orientation in Free Space

VSWR

Azimuth

Elevation

Efficiency

Legend:
2460 MHz

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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

- Dimensions: mm
- Diagram is not to scale

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.

Keep Out Area

- Dimensions: mm
- Diagram is not to scale

Approx. Dimensions

- Dimensions: mm
- Diagram is not to scale

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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
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

Legend:

- 2460 MHz

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.
Part Number: 1513353-1

Mounting Guide

![Mounting Guide Diagram]

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

![Keep Out Area Diagram]

Approx. Dimensions

![Approx. Dimensions Diagram]

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
**Standard Antenna Solutions**

**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**

**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: 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

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: 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

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range (MHz)</td>
<td>2400 – 2483.5</td>
</tr>
<tr>
<td>Peak Gain</td>
<td>0 dBi</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt; 2.0:1</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
</tr>
<tr>
<td>Power Handling</td>
<td>10 Watt cw</td>
</tr>
<tr>
<td>Feed Point Impedance</td>
<td>50 Ohms</td>
</tr>
<tr>
<td>Size</td>
<td>12.85 mm x 3.76 mm x 0.79 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>&lt; 0.5 g</td>
</tr>
<tr>
<td>Mounting</td>
<td>Surface-mount technology. See next page</td>
</tr>
<tr>
<td>Keep Out Area</td>
<td>See diagram on next page</td>
</tr>
</tbody>
</table>

Test Orientation in Free Space

VSWR

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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

Keep Out Area

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.

Approx. Dimensions

Dimensions: mm
Diagram is not to scale

Specifications subject to change.
Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.
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ZigBee is a trademark of ZigBee Alliance.
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

Legend:
2460 MHz

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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)

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

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: 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
- Legend: 2440 MHz

Elevation
- Legend: 2440 MHz

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: 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

Dimensions are shown for reference purposes only.
Specifications subject to change.

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Values in brackets are metric equivalents.

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Catalog: 4-1773459-7
Revised 05-14
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Catalog: 4-1773459-7
Revised 02-14
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Standard Antenna Solutions

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.Fl connector

Test Orientation in Free Space

VSWR

Azimuth

Legend:
2530 MHz
3350 MHz

Elevation

Legend:
2530 MHz
3350 MHz

Efficiency

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Values in brackets are metric equivalents.
Specifications subject to change.

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Standard Antenna Solutions

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

Dimensions: mm

Diagram is not to scale

NOTES: 1. No copper allowed in designated area on all PCB layers — Dimensions: mm

5. For more information please call TE.

Diagram is not to scale

Keep Out Area

Keep Out Area

Dimensions: mm

Diagram is not to scale

Approx. Dimensions

Dimensions: mm

Diagram is not to scale

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For design support in USA, please send an e-mail to antenna.AMER@te.com
Part Number: 2118309-1

2400-2483.5 & 4900-5875 MHz Dual Band Antenna
(IEEE 802.11 a/b/g/n/ac/ad, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Product Facts
- Small and lightweight PCB antenna assembly.
- RoHS compliant.

Recommendations

Specifications
- Frequency Range (MHz) — 2400–2483.5; 4900–5875
- Peak Gain — +3.7 dBi
- VSWR — < 2.0:1
- Polarization — Linear
- Azimuth Beamwidth — Omni-directional
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced
- Size — 40.0 mm x 8.0 mm x 1.0 mm
- Weight — 1.4 g.
- Mounting — Adhesive. See diagram on page 2.
- Keep Out Area — See diagram on page 2.
- Cable / Connector — 120 mm length, 1.13 mm dia. with U.FL connector

Test Orientation in Free Space

VSWR

Azimuth Elevation Efficiency

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Specifications subject to change.
2400-2483.5 & 4900-5875 MHz Dual Band Antenna
(IEEE 802.11 a/b/g/n/ac/ad, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Mounting Guide and Keep Out Area

NOTES:
1. Antenna designed to be mounted on plastic cover.
2. Area in blue above indicates Keep Out Area.
3. For more information please call TE.

Approx. Dimensions

Dimensions are shown for reference purposes only.
Specifications subject to change.

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2400-2483.5 & 4900-5875 MHz Dual Band Antenna
(IEEE 802.11 a/b/g/n/ac/ad, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Part Number: 2118315-1

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.
- Available in tray (2118315-2) or tape & reel (2118315-1) for automatic mounting
- RoHS compliant.

Product Facts

Specifications
- Frequency Range (MHz) — 2400–2483.5, 4900–5875
- Peak Gain — +4.3 dBi
- VSWR — < 2.5:1
- Polarization — Linear
- Azimuth Beamwidth — Omni-directional
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced

Size — 35.95 mm x 6.05 mm x 4.28 mm
Weight — 1.2 g.
Mounting — Surface-mount technology. See diagram on page 2.
Keep Out Area — See diagram on page 2.

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.

Test Orientation in Free Space

VSWR

Azimuth

Elevation

Efficiency
2400-2483.5 & 4900-5875 MHz Dual Band Antenna
(IEEE 802.11 a/b/g/n/ac/ad, includes frequencies of Bluetooth, ZigBee, and Wi-Fi products)

Part Number: 2118315-1

(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. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area

Approx. Dimensions

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Dimensions are shown for reference purposes only. Specifications subject to change.

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ZigBee is a trademark of ZigBee Alliance.

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Standard Antenna Solutions

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

Legend:
2460 MHz
5700 MHz

Legend:
2460 MHz
5700 MHz

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ZigBee is a trademark of ZigBee Alliance.
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**

Dimensions: mm
Diagram is not to scale

**Approx. Dimensions**

Dimensions: mm
Diagram is not to scale

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Standard Antenna Solutions

**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.FL connector

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

**Test Orientation in Free Space**

**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: 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

Approx. Dimensions

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Specifications subject to change.

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Dimensions are shown for reference purposes only.
Standard Antenna Solutions

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

Product Facts

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

Legend:
2400 MHz
5700 MHz

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(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 → Dimensions: mm
5. For more information please call TE.

Keep Out Area

Approx. Dimensions

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Dimensions are shown for reference purposes only. Specifications subject to change.
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Standard Antenna Solutions

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.Fl connector

Test Orientation in Free Space

VSWR

Azimuth

Legend:
2460 MHz
3600 MHz
5350 MHz

Elevation

Legend:
2460 MHz
3600 MHz
5350 MHz

Efficiency

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WiMAX is a trademark of WiMAX Forum.
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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

Dimensions: mm
Diagram is not to scale

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

Keep Out Area

Dimensions: mm
Diagram is not to scale

Approx. Dimensions

Dimensions: mm
Diagram is not to scale

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

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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.
Part Number: 2118316-1

4900-5875 MHz Single Band Antenna
(IEEE 802.11 a/g/n/ac, includes frequencies of Wi-Fi products)

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.
- Available in tray (2118316-2) or tape & reel (2118316-1) for automatic mounting.
- RoHS compliant.

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.
- Available in tray (2118316-2) or tape & reel (2118316-1) for automatic mounting.
- RoHS compliant.

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.
- Available in tray (2118316-2) or tape & reel (2118316-1) for automatic mounting.
- RoHS compliant.

Specifications
- Frequency Range (MHz) — 4900–5875
- Peak Gain — +4.9 dBi
- VSWR — < 2.5:1
- Polarization — Linear
- Azimuth Beamwidth — Omni-directional
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced

Specifications
- Frequency Range (MHz) — 4900–5875
- Peak Gain — +4.9 dBi
- VSWR — < 2.5:1
- Polarization — Linear
- Azimuth Beamwidth — Omni-directional
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced

Specifications
- Frequency Range (MHz) — 4900–5875
- Peak Gain — +4.9 dBi
- VSWR — < 2.5:1
- Polarization — Linear
- Azimuth Beamwidth — Omni-directional
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
For other country numbers go to: www.te.com/supportcenter

Catalog: 4-1773459-7
Revised 05-14

Catalog: 1-1773726-5
Revised 02-14
Part Number: 2118316-1
(Continued)

4900-5875 MHz Single Band Antenna
(IEEE 802.11 a/g/n/ac, includes frequencies of Wi-Fi products) (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. For more information please call TE.

Keep Out Area

Approx. Dimensions

Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.

Wi-Fi is a trademark of Wi-Fi Alliance.
4900-5875 MHz Single Band Antenna
(IEEE 802.11 a/g/n/ac, includes frequencies of Wi-Fi products)

Part Number: 2118326-1

Product Facts
- Small and lightweight PCB antenna assembly.
- RoHS compliant.

Recommendations

Specifications
- Frequency Range (MHz) — 4900–5875
- Peak Gain — +2.4 dBi
- VSWR — < 2.5:1
- Polarization — Linear
- Azimuth Beamwidth — Omni-directional
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced

Size — 15.0 mm x 10.0 mm x 1.0 mm
Weight — 1.0 g
Mounting — Adhesive. See diagram on page 2.
Keep Out Area — See diagram on page 2.
Cable / Connector — 120 mm length. 1.13 mm dia. with U.FL connector

Test Orientation in Free Space

VSWR

Efficiency
4900-5875 MHz Single Band Antenna
(IEEE 802.11 a/g/n/ac, includes frequencies of Wi-Fi products) (Continued)

Part Number: 2118326-1
(Continued)

Mounting Guide and Keep Out Area

NOTES:
1. Antenna designed to be mounted on plastic cover.
2. Area in blue above indicates Keep Out Area.
3. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Approx. Dimensions

NOTES:
Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
Specifications subject to change.

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

Wi-Fi is a trademark of Wi-Fi Alliance.
Part Number: 2118308-1

698-960, 1710-2170 & 2300-2700 MHz LTE/Cell Band Antenna
(includes frequencies of LTE, UMTS, US Dual, EU Triband, and WCDMA products)

Product Facts
- This MetaSpan antenna product uses metamaterial technology to cover virtually all cell bands in one compact antenna assembly.
- RoHS compliant.

Recommendations

Specifications
- Frequency Range (MHz) — 698-960, 1710-2170, 2300-2700
- Peak Gain — +3.9 dBi
- VSWR — < 3.0:1
- Polarization — Linear
- Power Handling — 3 Watt cw
- Feed Point Impedance — 50 Ohms unbalanced
- Size — 110.0 mm x 14.0 mm x 1.31 mm
- Weight — 4.2 g.
- Mounting — Adhesive. See diagram on page 2.
- Keep Out Area — See diagram on page 2.
- Cable / Connector — 120 mm length. 1.13 mm dia. with TE MCIS connector

Test Orientation in Free Space

Azimuth

Legend:
- 710 MHz
- 824 MHz
- 925 MHz
- 1755 MHz
- 1880 MHz
- 2170 MHz
- 2500 MHz

Elevation

Legend:
- 710 MHz
- 824 MHz
- 925 MHz
- 1755 MHz
- 1880 MHz
- 2170 MHz
- 2500 MHz

Efficiency

Legend:
- 710 MHz
- 824 MHz
- 925 MHz
- 1755 MHz
- 1880 MHz
- 2170 MHz
- 2500 MHz

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
For other country numbers go to: www.te.com/supportcenter

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
For other country numbers go to: www.te.com/supportcenter
**698-960, 1710-2170 & 2300-2700 MHz LTE/Cell Band Antenna**
(includes frequencies of LTE, UMTS, US Dual, EU Triband, and WCDMA products)

**Part Number:** 2118308-1

(Continued)

**Mounting Guide and Keep Out Area**

NOTES:
1. Antenna designed to be mounted on plastic cover.
2. Area in blue above indicates Keep Out Area.
3. For more information please call TE.

**Approx. Dimensions**

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MetaSpan is a trademark.

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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

Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
Part Number: 2118310-1

Product Facts
- This MetaSpan antenna product uses metamaterial technology to cover virtually all cell bands in one compact antenna assembly.
- RoHS compliant.

Recommendations
- Minimum or no matching circuits required.
- Bandwidth and performance are dependent on ground plane size.
  Suggested minimum ground plane length from the antenna feed is 120 mm.
- PCB ground is to be on top layer.

Specifications
- **Frequency Range (MHz)**
  - 698–960, 1710–2170, 2300–2700 MHz
- **Peak Gain**
  - +3.5 dBi
- **VSWR**
  - < 3.0:1 tunable
- **Azimuth Beamwidth**
  - Omni-directional
- **Power Handling**
  - 3 Watt cw
- **Feed Point Impedance**
  - 50 Ohms unbalanced

- **Size**
  - 74.0 mm x 10.56 mm x 1.57 mm
- **Weight**
  - 2.55 g.
- **Mounting**
  - Tab mounted with plated through holes. See page 2.
- **Keep Out Area**
  - See diagram on page 2.

Test Orientation in Free Space

VSWR

Azimuth

Elevation

Efficiency

*Capacitors used to optimize low band performance.

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Specifications subject to change.

For other country numbers go to:
USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
China: +86 (0) 400-820-6015

Catalog: 4-1773459-7
Revised 05-14

www.te.com
www.antenna.te.com

Catalog: 1-1773726-5
Revised 02-14

Standard Antenna Solutions
Part Number: 2118310-1
(Continued)

698-960, 1710-2170 & 2300-2700 MHz LTE/Cell Band Antenna
(includes frequencies of LTE, UMTS, US Dual, EU Triband, and WCDMA products)(Continued)

Mounting Guide

NOTES:
1. Suggested matching component pads.
2. Antenna must be mounted on the edge of PCB.
3. No copper allowed in designated area on all PCB layers.
4. Capacitor used to optimize low band performance.
5. For more information please call TE.

Dimensions: mm
Diagram is not to scale

Keep Out Area

Approx. Dimensions

Diagram is not to scale

MetaSpan is a trademark.
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

Azimuth

Elevation

Efficiency

Legend:

869 MHz
1930 MHz

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.
Specifications subject to change.
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

Dimensions: mm
Diagram is not to scale

Approx. Dimensions

Dimensions: mm
Diagram is not to scale
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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range (MHz)</td>
<td>824 – 960; 1710 – 1990</td>
</tr>
<tr>
<td>Peak Gain</td>
<td>+1 dBi</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt; 3.0:1</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
</tr>
<tr>
<td>Azimuth Beamwidth</td>
<td>Omni-directional</td>
</tr>
<tr>
<td>Power Handling</td>
<td>10 Watt cw</td>
</tr>
<tr>
<td>Feed Point Impedance</td>
<td>50 Ohms</td>
</tr>
<tr>
<td>Size</td>
<td>37.59 mm x 11.94 mm x 1.57 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>&lt; 1.6 g</td>
</tr>
<tr>
<td>Mounting</td>
<td>Surface-mount technology. See next page</td>
</tr>
</tbody>
</table>

Test Orientation in Free Space

- Azimuth
- Elevation
- Efficiency

Legend:
- 894 MHz
- 1880 MHz

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Specifications subject to change.

For other country numbers go to:
- USA: 1-800-522-6752
- Canada: 1-905-475-6222
- Germany: +49 (0) 6251-133-1999
- UK: +44 (0) 800-267666
- Netherlands: +31 (0) 73-6246-999
- China: +86 (0) 400-820-6015
824 – 960 & 1710 – 1990 MHz Quad Band Antenna
(US Dual and EU Dual Band) (Continued)

Part Number: 1513259-1
(Continued)

Mounting Guide

Keep Out Area

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

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 – 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

Legend:
894 MHz
1880 MHz

Elevation

Legend:
894 MHz
1880 MHz

Efficiency

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.
Standard Antenna Solutions

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

Keep Out Area

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

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
Netherlands: +31 (0) 73-6246-999
China: +86 (0) 400-820-6015

For other country numbers go to: www.te.com/supportcenter

Catalog: 4-1773459-7
Revised 05-14
www.te.com
www.antenna.te.com

Catalog: 4-1773459-7
Revised 02-14
www.te.com
www.antenna.te.com
Standard Antenna Solutions

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

Legend:
900 MHz
1910 MHz
2140 MHz

Legend:
900 MHz
1910 MHz
2140 MHz

Legend:
900 MHz
1910 MHz
2140 MHz

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions shown for reference purposes only.
Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
China: +86 (0) 400-820-6015
UK: +44 (0) 800-267668
Netherlands: +31 (0) 73-6246-999
For other country numbers go to: www.te.com/supportcenter

Catalog: 4-1773459-7
Revised 05-14
www.te.com
www.antenna.te.com
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.

Keep Out Area

Approx. Dimensions

Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
Specifications subject to change.
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

Dimensions: mm
Diagram is not to scale

Dimensions: mm
Diagram is not to scale
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

Azimuth

Elevation

Efficiency

Legend:
925 MHz
1805 MHz

Legend:
925 MHz
1805 MHz

Legend:
925 MHz
1805 MHz

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.
Specifications subject to change.
For other country numbers go to: www.te.com/supportcenter
Part Number: 1513434-1
(Continued)

Mounting Guide

Dimensions are shown for reference purposes only. Specifications subject to change.

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

For more information please call TE.
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

Legend:
1575 MHz

Legend:
1575 MHz

Legend:
1575 MHz
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

Catalog: 4-1773459-7
Revised 05-14

www.te.com
www.antenna.te.com

Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Germany: +49 (0) 6251-133-1999
China: +86 (0) 400-820-6015

For other country numbers go to: www.te.com/supportcenter
### 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.Fl connector

**Test Orientation in Free Space**

**VSWR**

**Azimuth**

**Elevation**

**Efficiency**

---

**Legend:**
- 3200 MHz
- 5900 MHz

---

**Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.**

---

**For other country numbers go to:**
- USA: 1-800-522-6752
- Canada: 1-905-475-6222
- Germany: +49 (0) 6251-133-1999
- China: +86 (0) 400-820-6015
- UK: +44 (0) 800-267668
- Netherlands: +31 (0) 73-6246-999

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**USA Catalog:** 4-1773459-7

**Revised 02-14**

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**Other (GPS, UWB) Solutions**

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**Dimensional illustrations are shown for reference purposes only. Specifications subject to change.**

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**www.te.com**
**www.antenna.te.com**
Part Number: 1513381-1
(Continued)

Mounting Guide

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

Keep Out Area

Keep Out Area

Dimensions: mm
Diagram is not to scale

Approx. Dimensions

Dimensions: mm
Diagram is not to scale

Panel thickness must be between 0.8 mm and 1 mm.
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 omni-directional, 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

Legend:
2350 MHz
3500 MHz
5470 MHz

Bluetooth is a trademark of Bluetooth SIG, Inc.

Elevation

Legend:
2350 MHz
3500 MHz
5470 MHz

WIMAX is a trademark of WIMAX Forum.

VSWR

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**

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**Legend:**
- **Azimuth:**
  - 2350 MHz
  - 3500 MHz
  - 5470 MHz

**Legend:**
- **Elevation:**
  - 2350 MHz
  - 3500 MHz
  - 5470 MHz

**Legend:**
- **VSWR:**
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