

The TiWi-SL Module is a radio module that implements an 802.11 b/g WLAN (Wireless Local Area Network) transceiver, on a Texas Instruments CC3000 SOIC (System on Integrated Circuit). The WLAN transceiver is supported by a FEM (Front End Module), which implements the Power Amplifier Section (PA). All of the radio functions use an on-module 26 MHz Temperature Compensated Crystal Oscillator (TCXO) as the station frequency reference. The radio is supported by an on-chip ARM Cortex processor. An additional on-module 32 kHz oscillator is used for low-power operation of the on-chip ARM processor.

The data source/sink and command interface for the WLAN transceiver is through a 5-wire SPI (Serial Peripheral Interface).

The WLAN transceiver section is based on a direct-conversion vector (I-Q) transmitter and receiver architecture. The local oscillator is generated at four times the carrier frequency, phase-locked, and divided by four for the quadrature LO injections. The transmitter signal is routed to the FEM and amplified by the PA section. The WLAN receive section is fully realized in the SOIC and the FEM only provides a passive transmission path through the device. A bandpass filter is included on the common path between the FEM and the antenna terminal.

The radio transceiver and station reference (26 MHz TCXO) power supplies are provided by on-module voltage regulators.

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## 2.4 GHz – 2.5 GHz Dipole 2dBi Antenna for Reverse Polarity SMA

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### ORDERING INFORMATION

| Order Number | Description  |
|--------------|--|
| 001-0001     | 2.4 GHz dipole antenna for reverse polarity SMA connector. |

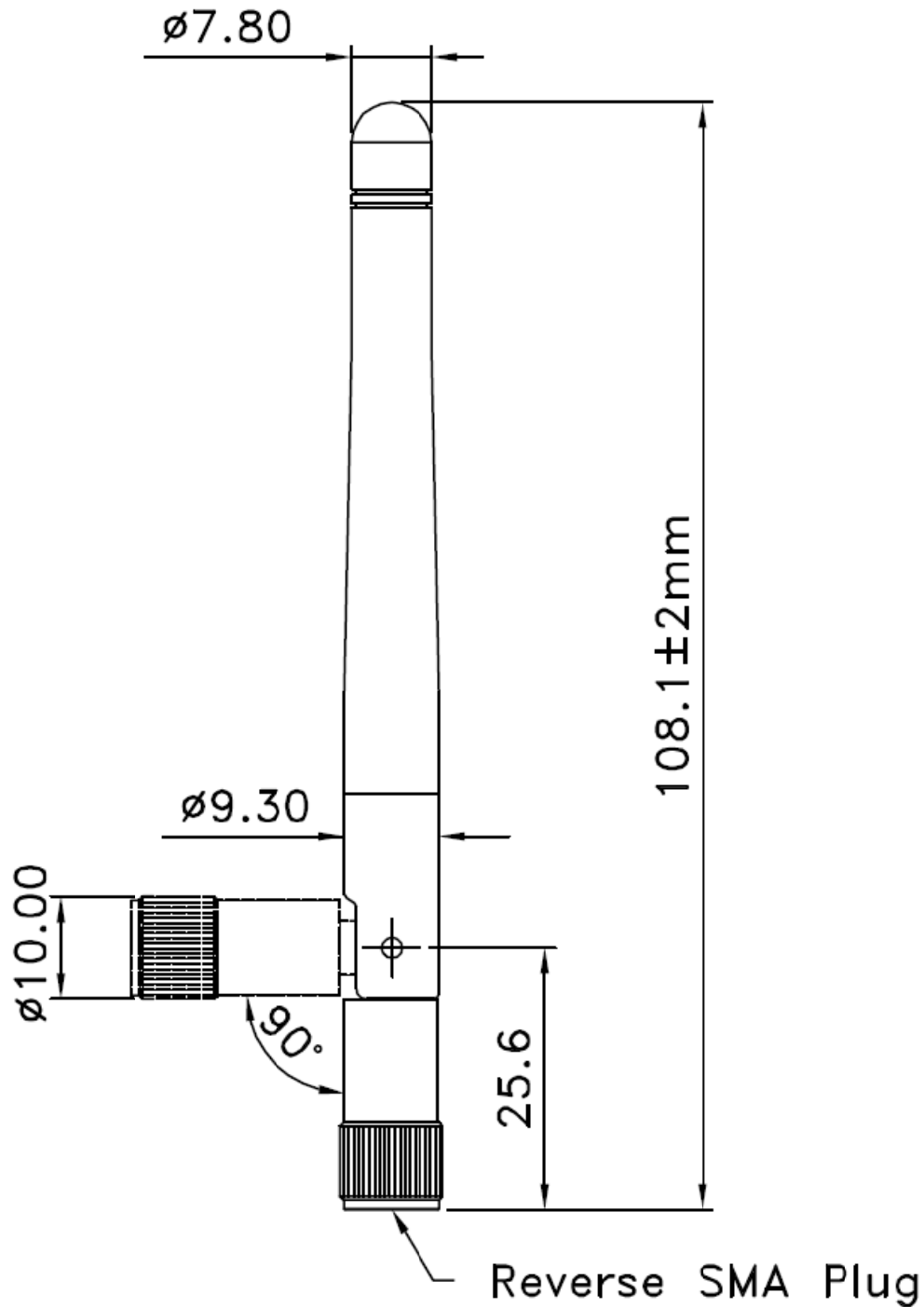
### SPECIFICATIONS

| Specification | Value             |
|---------------|-------------------|
| Gain          | +2 dBi            |
| Impedance     | 50 ohms, Nominal  |
| Type          | Dipole            |
| Polarization  | Linear Vertical   |
| VSWR          | ≤2.5 : 1, Maximum |
| Frequency     | 2400-2500MHz      |
| Weight        | 13g               |
| Size          | 105x10 mm         |
| Antenna Color | Black             |

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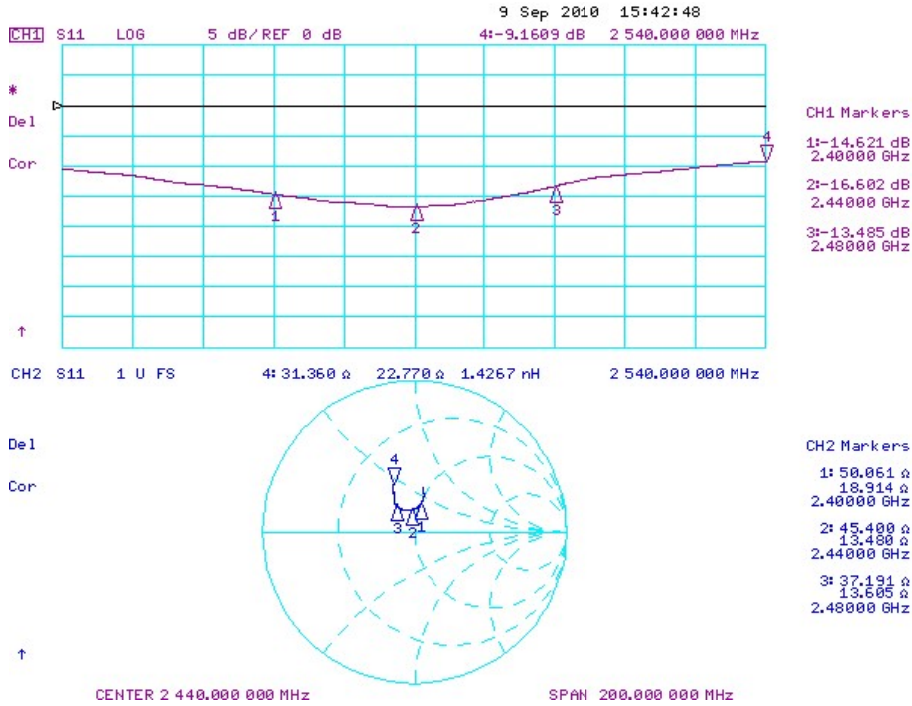
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Confirm the data is current by downloading the latest revision from [www.lsr.com](http://www.lsr.com).

**PHYSICAL DIMENSIONS (MM)**

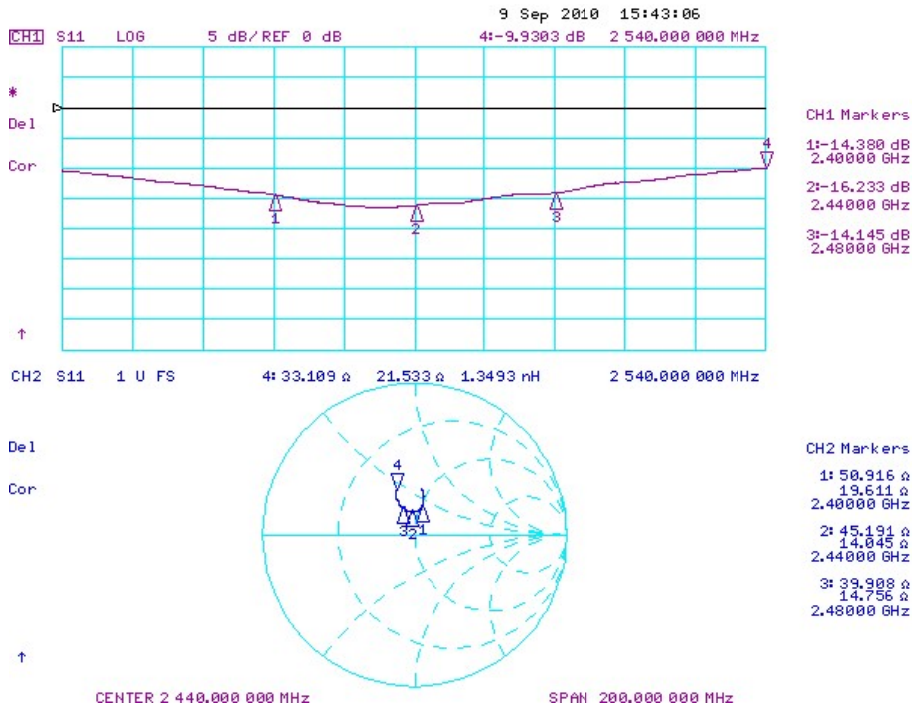


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**TYPICAL ANTENNA REFLECTION PERFORMANCE**



**Figure 1 Reflection Parameters for Extended Configuration (S11)**

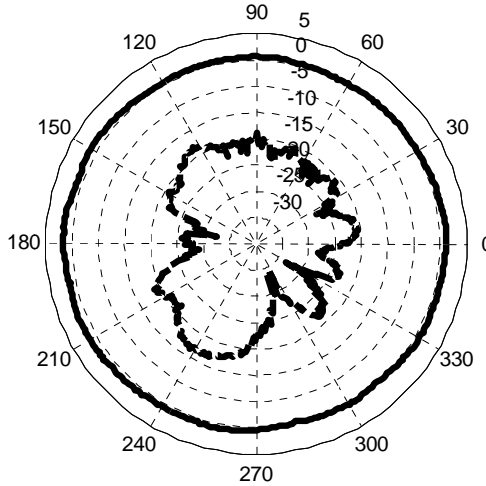


**Figure 2 Reflection Parameters for Folded Configuration (S11)**

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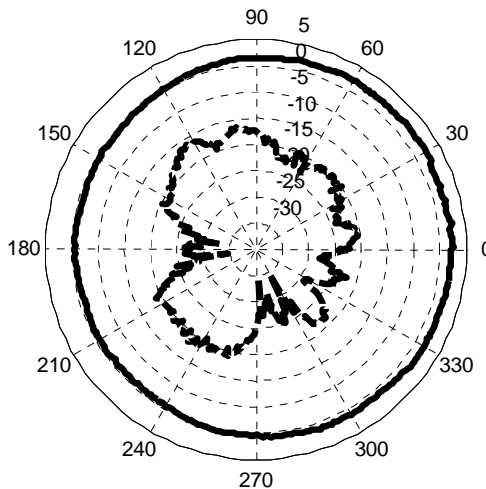
**TYPICAL ANTENNA RADIATION PERFORMANCE**

**LSR ANTENNA STRAIGHT 2405 MHz**



\_\_\_\_ Vertical Polarization Gain (dBi)  
----- Horizontal Polarization Gain (dBi)

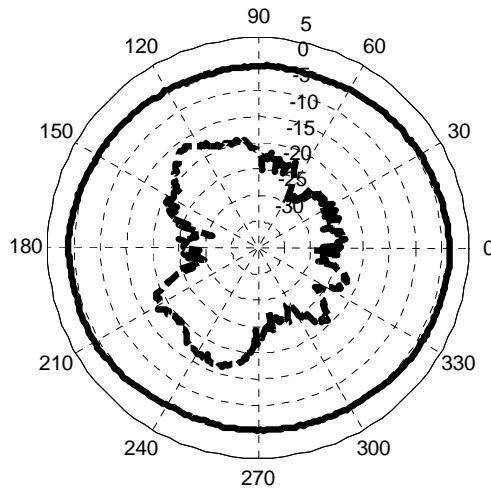
**LSR ANTENNA STRAIGHT 2440 MHz**



\_\_\_\_ Vertical Polarization Gain (dBi)  
----- Horizontal Polarization Gain (dBi)

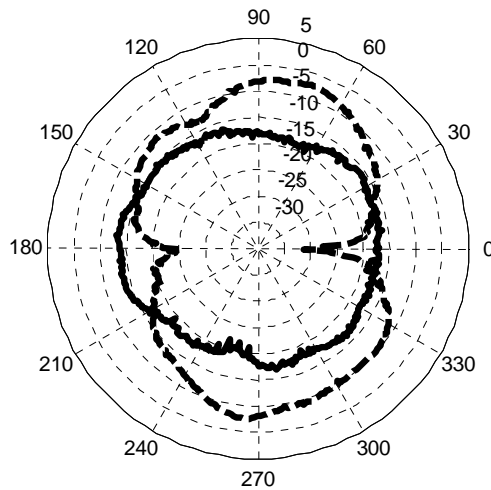
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**LSR ANTENNA STRAIGHT 2480 MHz**



\_\_\_\_ Vertical Polarization Gain (dBi) |  
 ----- Horizontal Polarization Gain (dBi) |

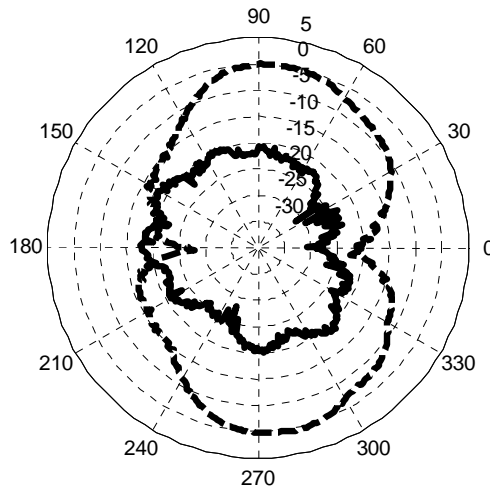
**LSR ANTENNA BENT 2405 MHz**



\_\_\_\_ Vertical Polarization Gain (dBi) |  
 ----- Horizontal Polarization Gain (dBi) |

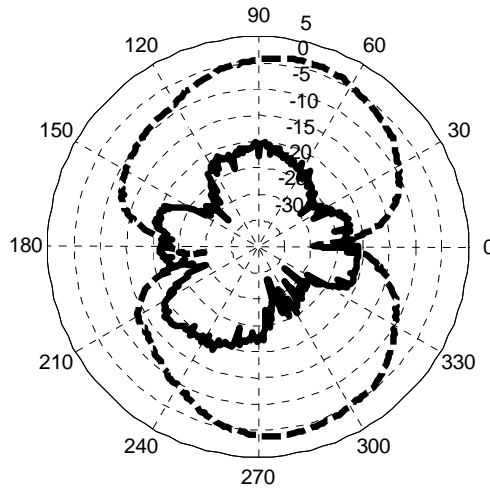
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**LSR ANTENNA BENT 2440 MHz**



\_\_\_\_ Vertical Polarization Gain (dBi)  
----- Horizontal Polarization Gain (dBi)

**LSR ANTENNA BENT 2480 MHz**



\_\_\_\_ Vertical Polarization Gain (dBi)  
----- Horizontal Polarization Gain (dBi)

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# "High Frequency Ceramic Solutions"

**2.4 GHz WLAN, Home RF, Bluetooth Antenna**

**P/N 2450AT43B100**

NEW with Ground Clearance Requirements Minimized

Detail Specification: 09/04/08

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### General Specifications

|                 |                      |
|-----------------|----------------------|
| Part Number     | 2450AT43B100         |
| Frequency Range | 2400 - 2500 Mhz      |
| Peak Gain       | 1.3 dBi typ. (XZ-V)  |
| Average Gain    | -0.5 dBi typ. (XZ-V) |
| Return Loss     | 9.5 dB min.          |

|                       |  |
|-----------------------|--|
| Input Power           | 2W max.                                      |
| Impedance             | 50 Ω   |
| Reel Quantity         | 1,000  |
| Operating Temperature | -40 to +85°C                                 |
| Storage Temperature   | +5 to +35°C, Humidity: 45-75%RH, 12 mos. Max |

|        |                 |            |                        |                          |
|--------|-----------------|------------|------------------------|--------------------------|
| P/N    | Packaging Style | Bulk       | Suffix = S             | Eg. 2450AT43B100S        |
|        |                 | T & R      | Suffix = E             | Eg. 2450AT43B100E        |
| Suffix | Termination     | 100% Tin   | Suffix = None          | Eg. 2450AT43B100(E or S) |
|        | Style           | Tin / Lead | Please consult Factory |                          |

### Terminal Configuration

| No. | Function   |
|-----|------------|
| 1   | Feed Point |
| 2   | NC         |
| 3   | NC         |
| 4   | NC         |

### Mechanical Dimensions

|    | In                 | mm             |  |
|----|--------------------|----------------|--|
| L  | 0.276 ± 0.008      | 7.00 ± 0.20    |  |
| W  | 0.079 ± 0.008      | 2.00 ± 0.20    |  |
| L1 | 0.102 ± 0.008      | 2.60 ± 0.20    |  |
| W1 | 0.020 ± 0.008      | 0.50 ± 0.20    |  |
| T  | 0.079 +.004/-0.008 | 2.00 +0.1/-0.2 |  |
| a  | 0.020 ± 0.012      | 0.50 ± 0.30    |  |

