



**With Battery**

**Without Battery**

## 4311B - Wideband Test Receiver

*Ultra-Compact and Diverse Measurement Capability*

The DRT4311B provides a miniature, yet powerful, receiver measurement capability for testing and monitoring for the wireless industry. DRT's advanced SDR (software-defined radio) architecture coupled with the flexibility of a wideband receiver offers a versatile measurement solution that is optimized for today's complex cellular environments and protocols. This test receiver uses the latest in digital signal processing (DSP) and microprocessor technology to provide the following capabilities:

- Wideband tuners allow coverage of all bands within the system's frequency range. Two frequency range versions available: 2 MHz to 3 GHz; 2 MHz to 6 GHz.
- Support of the most common wireless scanner measurements.
- Multi-protocol and simultaneous support for TD-SCDMA, GSM, cdma2000, 1xEV-DO, UMTS WCDMA, FDD-LTE and TD-LTE. LTE-Advanced (capable).
- Simultaneous multi-band or MIMO measurements with dual or triple receiver configuration.
- Removable flash device for localized logging.
- Embedded application ideal for OEM use.
- Internal GPS receiver for frequency and timing discipline.
- Bluetooth connectivity.
- True SDR: Wideband front-end + user-defined bands + Field upgradeable software.
- 100 Mbps Ethernet and USB 2.0 interfaces to the host allow for high throughput of logged test data and remote operation.
- Small size, low power consumption, lightweight.
- Optional long-life battery operation.
- 100% DRT warranty for three (3) years.

Non-technical / Administrative Data Only. Not subject to EAR or ITAR Export Regulations.

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**The One  
Measure for  
Wireless  
Performance**

## Available Protocols and Measurements<sup>1</sup>

### GSM:

Channel Average Power  
Spectral Display  
BSIC  
C/I  
Cell Identity  
MCC/MNC/LAC  
RACH Parameters  
Neighbor Cell List  
Cell Selection Parameters  
GPRS Indication  
GPRS PBCCH Info

### cdma2000 / 1xEV-DO:

Channel Average Power  
Spectral Display  
Pilot Measurements  
Code Domain  
Sync Information  
Paging System Information  
Paging Channel Access Information  
Extended Paging System Information  
Code Channel Allocation

### UMTS WCDMA:

Channel Average Power  
Spectral Display  
Synchronization Channel  
CPICH Pilot Measurements  
Code Domain  
Network Identification Info  
Cell Selection Parameters  
Common Channel Configuration  
Dynamic and Interference Parameters  
Measurement Control Info  
Neighbor Cells

### TD-SCDMA:

DwPTS: RSSI, Ec/Io  
P-CCPCH:  
RSCP, C/I, Ec/Io, TS0 RSSI,  
Time Offset, Delay Spread,  
Cell Scrambling Code

### FDD/TD-LTE:

Channel Average Power  
Spectral Display  
Synch Detection  
Reference Signals  
Interface Analysis  
MIMO  
Auto-Detect  
Bandwidth  
TX Port  
Duplexing Mode (FDD/TDD)  
Cyclic Prefix (CP)  
Decode  
MIB  
SIB1  
SI Messages

## Specifications

### RF:

**Band Coverage:** All bands covered within the system's frequency range. Available frequency ranges: 2-3000 MHz or 2-6000 MHz.

**Amplitude Accuracy:**  $\pm 1$ dB (-100 dBm to -25 dBm)  
**Frequency Accuracy:** 1.0 ppm  
0.05 ppm with GPS (20 min holdover)  
**Noise Figure:** 11.0 dB Typ. (6.0 dB with pre-amp)  
**Input 3rd Order Intercept:** -10.0 dBm  
**Phase Noise:** -90 dBc Typ. at 10 kHz offset  
**VSWR:** 2.5:1  
**Internal Generated Spurs:** -114 dBm  
**Maximum Safe Input:** +30 dBm

### Physical:

**Dimensions w/o Battery:** **V1/V2:** 1.32 in. H x 3.0 in. W x 6.82 in. D (3.4 cm H x 7.6 cm W x 17.3 cm D)  
**V3:** 1.6 in. H x 3.0 in. W x 6.82 in. D (4.1 cm H x 7.6 cm W x 17.3 cm D)

**Dimensions with Battery:** **V1/V2:** 1.6 in. H x 3.0 in. W x 10.0 in. D (4.1 cm H x 7.6 cm W x 25.4 cm D)  
**V3:** 1.6 in. H x 3.0 in. W x 10.0 in. D (4.1 cm H x 7.6 cm W x 25.4 cm D)

**Weight w/o Battery:** **V1:** 1.36 lbs. (617 g); **V2:** 1.59 lbs. (721 g)  
**V3:** 1.97 lbs. (894 g)

**Weight with Battery:** **V1:** 2.21 lbs. (1002 g); **V2:** 2.44 lbs. (1107 g)  
**V3:** 2.82 lbs. (1279 g)

**Operating Temp:** +32° to +122°F (0° to +50°C)  
**Storage Temp:** -40° to +185°F (-40° to +85°C)

**Humidity:** 95%, Non-condensing  
**Power Consumption:** **V1:** < 8 W; **V2:** < 10 W; **V3:** < 13 W  
**Power Required:** 9-30 VDC

### Interfaces:

**Connections:** Ethernet 100Base-T  
Mini-USB 2.0  
Bluetooth via adapter

### Interfaces: (continued)

**RF Input:** SMA - 50 $\Omega$   
**Internal GPS:** SMB - 50 $\Omega$   
**Terminal:** Mini DB-9  
**Removable Flash:** High-Speed SD

## Select Performance Data<sup>1</sup>

**RSSI Scan Rate:** 500 channels / sec  
**BSIC Scan Rate:** 150 channels / sec  
**Pilot Scan Rate:** 50 channels/sec  
**Ec/Io Sensitivity:** -21 dB  
**LTE Scan Rate:** 25 channels / sec  
**Spectrum Analyzer:** 1 kHz to 20 MHz RBW

## Ordering Information

Single Receiver System: DRT4311B-V1  
Dual Receiver System: DRT4311B-V2  
Triple Receiver System: DRT4311B-V3  
Protocol measurement software separately priced. Consult DRT for details.

## Available Accessories

External AC Power Adapter & Cables  
Cigarette Lighter Adapter Cable  
Ethernet LAN Cable  
USB Cable  
GPS Antenna  
Omni-directional Antenna with Magnetic Mount and Coaxial Cable  
API Development Software  
Operator's Manual  
Hard Carrying Case  
Battery Pack  
Battery Charging Station

<sup>1</sup> Consult DRT For Detailed Specifications



ROHS Compliant

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