



## 4301A - Miniature Test Receiver – cdma2000 / EV-DO

### *Ultra-Compact and Diverse Measurement Capability*

The DRT4301A provides the telecommunications industry with a miniature, yet powerful, receiver measurement capability to test and monitor wireless signals. DRT's advanced architecture offers a variety of solutions that are optimized to process different cellular protocols. These test receivers use the latest in digital signal processing (DSP) and microprocessor technology to provide the following capabilities:

- cdma2000 and EV-DO pilot screening and measurements.
- Real time decoding of cdma2000 broadcast messages.
- Support for the most common wireless scanner measurements.
- Integrated Spectrum Analysis Tool for all protocols and bands.
- Embedded application ideal for OEM use or with DRT-supplied Pioneer™ collection tool.
- Internal GPS receiver with frequency and timing discipline.
- Optional network discipline for indoor operation.
- Optional removable flash device for localized logging.
- Quad-band model for switched support—band coverage of forward channels or dual-band model for both forward and reverse channels.
- cdma2000 protocol support for measurements and decoding features with additional model software supporting GSM, WCDMA, WiMAX, TD-SCDMA, LTE...
- 100 Mbps Ethernet interface to the host allows for high throughput of logged test data and remote operation.
- Small Size, Low Power, Light Weight.
- 100% DRT warranty for three (3) years.

The products described in this document are subject to the export regulations of the Commerce Department. An export license may be required for the sale of these products outside the United States.

## Measurements and Features

### General:

Quad Band Support  
Option for Dual-Band Forward and Reverse Channel Support  
Removable Flash memory Card  
Integrated GPS Navigation and Disciplined Reference  
Software Defined Architecture  
Autonomous Operation  
Sleep Mode

### cdma2000 / EV-DO Measurements:

Channel Average Power  
Spectral Display  
Pilot Measurements  
-Ec/Io  
-Pilot Time Domain  
-Delay Spread  
-Auxiliary Pilots\*  
-Diversity Pilots\*  
Code Domain\*  
Broadcast Data Decode\*  
\* cdma2000 Support Only

### cdma2000 Decoding:

Channel Number  
Pilot PN Offset  
Sync Information  
-SID / NID  
-Pilot PN Offset  
-Page Data Rate  
-Protocol Revision  
-Minimum Protocol Revision  
-CDMA Channel Number  
Paging System Information  
-Station ID  
-Latitude / Longitude  
-Number of Paging Channels  
-Pilot Detection Threshold  
-Pilot Drop Threshold  
-Extended Sys Parameters  
-Neighbor List Message  
-Global Redirect Message  
-Home Registration  
-Registration Period  
-Registration Distance  
Paging Channel Access Information  
-Number Access Channels  
-Max Capsule Size  
-Max Preamble Size  
-Nominal Transmit Power Offset  
-Initial Transmit Power Offset  
-Power Increment  
-Time Randomization  
-Authentication Mode  
-Random Value  
Extended Paging System Information  
-Preferred MSID Type  
-TMSI / IMSI\_T Supported  
-Add / Drop Active Pilot Threshold  
-MCC  
-IMSI\_11\_12  
CDMA Code Channel Allocation  
-Sync Code Channel  
-Paging Code Channel  
-Walsh Code

## Receiver Specifications

### Frequency Coverage:

ITU Quad-Band Tuner

400-500 MHz  
925-960 MHz  
1805-1880 MHz  
2110-2170 MHz

690-800 MHz  
869-894 MHz  
1930-1990 MHz  
2110-2170 MHz

(Other frequency bands are available.)

### Amplitude Accuracy:

-100 dBm to -25 dBm  $\pm$  1dB  
-110 dBm to -100 dBm  $\pm$  2dB  
-21 dB; 2048 taps (cdma2000)

### Ec/Io Sensitivity:

-21 dB, 16 half-slots (EV-DO)  
10 - 250 msec; 2048 taps (70 msec typ.)

### Pilot Scan Time:

7.0 dB

### Noise Figure:

-10 dBm

### Input 3rd Order Intercept:

-95 dBc at 10 kHz offset

### Phase Noise:

<2.5:1

### VSWR:

<-115 dBm

### Internal Generated Spurs:

+15 dBm

### Maximum Safe Input:

## Physical

### Dimensions:

1.3" H x 3.0" W x 6.2" D  
(3.3 cm H x 7.6 cm W x 15.7 cm D)  
1.25 lbs. (567 g)

### Weight:

### 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:

8 W (max)

### Power Required:

6-30 VDC

## Interfaces

### DC IN:

Lemo P/N EXG.OB.304.HLN

### Host Link:

RJ45 - Ethernet 100Base-T

### RF Input:

SMA - 50 $\Omega$

### Internal GPS:

SMB - 50 $\Omega$

### Terminal:

Mini DB-9

### Removable Flash Memory Card:

Multimedia Card (MMC)

### Standard system ships with:

- External AC Power Adapter & Cables
- Cigarette Lighter Adapter Cable
- Ethernet LAN Crossover Cable
- Omni-directional Cellular/PCS Band Antenna with Magnetic Mount and Coaxial Cable
- Internal GPS with Antenna
- Operator's Manual

### Options:

- Multimedia Card (MMC)
- API Development Software
- DRT Pioneer™ Data Collection Software
- Enhanced Pilot and Code Domain Software
- PCCPH Broadcast Data
- 802.11 Wireless Control
- Additional Software Enabled Protocols and Measurements
- Fully configured Laptop PC

Receiver  
Shown  
Full Size.

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