Digital Receiver Technology, Inc.

The One Measure for Wireless Performance

4201A – Interference Test Receiver

An Advanced Platform for Interference Detection and Identification

DESCRIPTION

The DRT4201A is an advanced platform providing unique measurement capability to address the problem of interference in wireless cellular networks. Effective techniques including the latest in digital signal processing (DSP) and microprocessor technology have been combined with advanced receiver technology to create a test solution with the following capabilities:

- Support for a single protocol covering all appropriate bands, including both forward and reverse channels.
- Advanced spatial processing and timing techniques for improved interference investigation.
- Coherent receiver technology
- Real-time direct detection and identification of interferers.
- Additional Measurements for Host Application Interference Methods.
- Support for up to 2,000 user scheduled measurement entries.
- Integrated Spectrum Analysis Tool for all protocols and bands.
- Support of most popular drive test measurements along with data decoding capability beyond normal drive-test scanners.
- Support of indoor IS-95 pilot measurements without the need for GPS.
- Ability for time slot based measurements for IS-136 and GSM.
- 100 Mbps Ethernet interface to the host allows for high throughput of logged test data and remotable operation.
- Small size and low weight.
- Low power

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Measurements Supported

GSM Receiver:
- Channel Average Power
- CW Power
- Time Slot Power
- Spectral Display
- RF Channel BSICs
- RFN
- TQB Offset
- Channel Profile
- Interference Offset
- Cell Identity
- MCC/MNC/LAC
- RACH Parameters
- Neighbor Cell List
- Cell Selection Parameters
- GPRS Indication
- Other Broadcast Messages
- Forward and Reverse Channel Support
- EDGE Modulation Support*
- GPRS PBCCH Info

*WCDMA Receiver:**
- Primary and Secondary Pilots Scans
- Receive Diversity Enhancement
- PSCH,SSCH Scans
- PCCPCH Messages
- Spectral Display
- Pilot Multipath
- Code Domain
- Slot Format
- Forward and Reverse Channel Support

* Future

IS-136 Receiver:
- Channel Average Power
- CW Power
- Time Slot Power
- Spectral Display
- SAT, DCC,
- RF Channel DVCCs
- Channel Profile
- Interference Time
- System Identity
- DCCH Structure
- Neighbor Cell Information
- Registration Parameters
- Access Parameters
- Selection Parameters
- Other Broadcast Messages
- Forward and Reverse Channel Support

cdma2000 Receiver:
- GPS Assisted Pilot Scan
- Indoor Pilot Scan
- Receive Diversity Enhancement
- Spectral Display
- Pilot Multipath
- Code Domain
- System Parameters
- Access Parameters
- Neighbor Cell List
- Channel List
- Quasi Orthogonal Channels
- 1XRTT, 1XEV-DO/DV Support*
- Sync Message
- Forward and Reverse Channel Support

iDEN Receiver:
- Channel Average Power
- SubCarrier Power
- CW Power
- Time Slot Power
- Spectral Display
- RF Channel DCCs
- Channel Profile
- Interference Time
- Cell Identity
- MCC/NDC/LAI
- Access Parameters
- Neighbor Cell List
- Handover Parameters
- Reselection Parameters
- Forward and Reverse Channel Support

WLAN Receiver:
- Channel Average Power
- Packet Length
- Protocol Version
- Packet Type
- Packet Subtype
- STA-AP, AP-AP Indication
- WEP Indication
- BSSID
- MAC Parameters
- Rate/Symbol Type
- Code Multipath
- Diversity Enhancement
- Spectral Analysis

Radio Specifications

Band Coverage:
Selected protocol bands in the range of 400-2500 MHz.

Amplitude Accuracy	
-100dBm to -25 dBm	+/- 1dB
RSSI Scan Rate	
Contiguous, single protocol	150 channels/sec
Pilot Scan Time:	
GPS assist IS-95/cdma2000:	500 msec
Indoor IS-95/cdma2000:	1400 msec
WCDMA:	480 msec
Frequency Accuracy:	0.06 ppm
Noise Figure:	10.0 dB
Input 3rd Order Intercept	-5 dBm
Phase Noise	-90 dBc at 10 kHz offset
VSWR	2.5:1
Internal Generated Spurs	-110 dBm
Maximum Safe Input	+15 dBm

Physical

Dimensions:	3.05 cm H x 15.49 cm W x 17.02 cm D (1.2"H x 6.1" W x 6.7"D)
Weight:	1.32 kg (2.9 lbs.)
Operating Temp:	0° to +50° C. (+32 to +122° F.)
Power Consumption:	12 W
Power Required:	6-34 VDC

Interfaces

Host Link:	RJ45 - Ethernet 100 Base T
RF Inputs:	SMA - 50Ω
Internal GPS:	SMB - 50Ω
External GPS Data:	Mini DIN – RS232
Dead Reckoning Input	Mini DIN

Host Application OS: Windows 2000, NT, XP

Standard system ships with:
- External AC Power Adapter & cables
- User Requested Default Protocol
- Basic Measurements
- User-friendly software with online help
- Ethernet crossover cable
- Custom antenna assembly with magnetic mount and coaxial cables
- Carrying Case
- Battery Cable
- Cigarette Lighter Adapter Cable

Options:
- Fully configured Laptop including installed Ethernet card & CD-ROM Drive
- Application Programming Interface Drivers and Documentation
- Internal GPS
- Internal GPS with Dead Reckoning
- Training Video on CD-ROM
- Additional Software Enabled Protocols

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