Digital Receiver Technology, Inc.

Without Power Amplifier

With 2 Watt Power Amplifier

4303A Wireless Test Transceiver

4303A – Wireless Test Transceiver - WCDMA

The Benefits of Scanner and Phone Based Measurements, Combined

Network operators know when it comes to wireless network performance, it is important to find the problems and diagnose the causes. To address this need, DRT has created a transceiver solution that possesses the capability of both test mobiles and scanners. The 4303A has the following features:

- Support for multiple protocols covering all appropriate bands, including both forward and reverse channels.
- Combined phone and scanner capability for more accurate representation of the subscriber experience.
- Onboard set management to emulate multiple phone operation.
- Cell reselection and handover processes managed within the platform.
- Support of most popular drive test measurements along with data decoding capability beyond normal drive test scanners.
- Support of indoor measurements without the need for GPS.
- Better QoS analysis through measurements that can follow channels that hand-off or are frequency hopped.
- Phone obsolescence no longer a problem.
- Transceiver software customizable for other applications.
- 100 Mbps Ethernet interface to the host allows for high throughput of logged test data and remote operation.
- Integrated Spectrum Analysis Tool for all protocols and bands.
- Small Size, Low Power, Light Weight.

The One Measure for Wireless Performance

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Rev 1.1

Specifications

Frequency Coverage (MHz)*

3GPP Band	RX	TX
I	2110 – 2170	1920 – 1980
II	1930 – 1990	1850 – 1910
III	1805 – 1880	1710 – 1785
V	869 – 894	824 – 849
VIII	925 – 960	880 – 915

*Consult factory for availability of alternate frequency bands.

Internal Frequency Accuracy: ±0.1 PPM

Receiver

Measurement Accuracy: ± 1dB; -25 dBm to -100 dBm
± 2dB; -100 dBm to -110 dBm
Ec/Io Sensitivity: -21 dB; 2048 taps
Pilot Scan Time: 10 - 250 msec; 2048 taps (70 msec typ.)
Noise Figure: 7.0 dB
Input 3rd Order Intercept: -10 dBm
Phase Noise: -95 dBc at 10 kHz offset
VSWR: <2.5:1
Internal Generated Spurs: < -115 dBm
Maximum Safe Input: +15 dBm

Transmitter

Max. Transmit Power: +24 dBm; +1 / -3 dB (Class 3)
Power Control Range: 32 dB; 1 dB Steps
Off Transmit Power: < -50 dBm
Unintended Emissions: Meets 3GPP 25.101 Para 6.6
Transmit Intermodulation: Meets 3GPP 25.101 Para 6.7
Modulator Performance: Meets 3GPP 25.101 Para 6.8
VSWR: <2.5:1

Physical

Dimensions: 1.3" (33mm) x 3.0" (76mm) x 6.2" (157mm)
Weight: 1.25 lbs. (567 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
Input Power: 9-24 VDC
Power Consumption: 8 W (max)

Interfaces

Host Link: RJ45 – 100 Base-T Ethernet
RX In / TX Out: SMA - 50Ω
GPS In: SMB - 50Ω

Specifications (with option 2PA)

Meets all specifications above except:

Max. Transmit Power: +33 dBm; +1 / -3 dB (Class 1) for Band I
Dimensions: 1.3" (33mm) x 6.1" (155mm) x 6.2" (157mm)
Weight: 3.6 lbs. (1633 g)
Power Consumption: 15 W (max)

WCDMA Operational Characteristics

TX Parameters
- Band Selection / ARFCN / Scrambling Code
- Code Channel / Spreading Factor
- Transmit Power
- Frame Time Offset / Active Slots [1-15]
- Transmission Interval (Preset / Continuous)
- Transmission Mode (Packet / Continous)
- Channel Type
  - PRACH
  - DPDCH / DPCCH
- Message Contents
  - Fixed User Data
  - Random Data
  - Layer 3 Message

Standard RX Measurements (Opt. FW0)
- Channel Average Power
- Synchronization Channel (Ec/Io, time)

Enhanced RX Measurements (Opt. FW1)
- CPICH Pilot (Ec/Io, Delay Spread, Time Domain)
- Code Domain

PCCPCH Decoding (Opt. FW2)
- Channel Number
- Scrambling Code
- Identification Info
  - Cell ID / PLMN Type / MCC / MNC / URA ID
- Cell Selection Parameters
  - Search Thresholds / RAT / Qual Min / RxLev min
  - Hysteresis / HCS Serving Cell / Max UL Power
  - Cell Barred / Operation Reservation / Access Class
- Common Channel Configuration
  - PICH Power Offset / AICH Power Offset / PRACH Info
  - PCCPCH Diversity Indication / Primary CPICH TX Pwr
  - PRACH Power Offset / RACH Params / AICH Info
  - SCCPCH Info / FACH/PCH Info / CTCH Allocation Period
- Dynamic and Interference Parameters
- CPCH Information
- Measurement Control Information
- Neighbor Cells
  - Idle / Connected Mode Neighbors (MCC, MNC)

Options

2PA 2 Watt Power Amplifier
MMC Support for MMC Flash Devices
FWx WCDMA Processing (See Operational Characteristics)
Xxx Fully Configured Laptop Computer

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