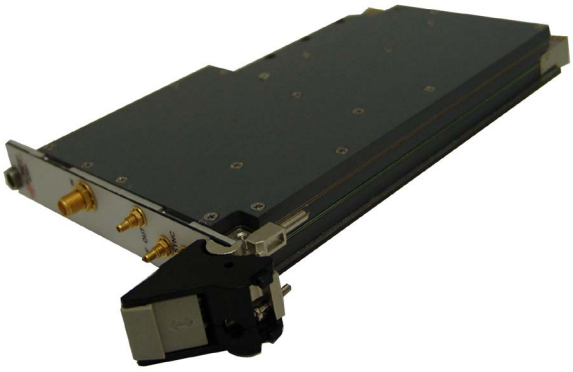
Digital Receiver Technology, Inc.

The One Measure for Wireless Performance



DRT4031- Synthetic RF Signal Analyzer

Diverse Measurement Capability in a Single Slot PXI Form Factor

DESCRIPTION

The DRT4031 provides a miniature, yet powerful, RF test and measurement capability for general purpose measurements, and protocol-specific measurements for a variety of wireless standards. The module combines a 30 MHz to 3000 MHz RF downconverter, high-speed ADC sampling circuitry, and DSP processing to provide the following capabilities:

- Wideband support of multiple protocols covering all appropriate bands, including both forward and reverse channels.
- Digital IF processing circuitry provides greater flexibility for signal analysis.
- Integrated Spectrum Analysis Tools for all protocols and bands.
- Integrated Wireless Protocol Tools for multiple protocols including IS-136, iDEN, GSM, WLAN, IS-95, IS-2000, and WCDMA.
- Convenient Single Slot 3U PXI format.
- Integrated Modulation Analysis Tools for common measurements including FM deviation, carrier offset, phase error, and more.
- Software defined architecture allows for additional support of customized or proprietary protocols.
- Advanced DSP algorithms for accurate and fast spectrum and vector signal analysis.
- High performance, compact radio technology for low distortion and high sensitivity over a broad operating range.

Preliminary – July 2005
Rev. 1.1

Platform Features

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Spectrum Analyzer Tools:

The 4031 Module performs signal processing to implement a synthetic spectrum analyzer function with the following capabilities:

Adjustable RBW
Adjustable Span
Adjustable Start and Stop Frequencies
Adjustable Reference Level
Power Averaging
Peak Hold
Spectrogram

Modulation Analyzer Tools:

The 4031A architecture lends itself to advanced modulation analysis capabilities:

AM Depth
FM Deviation
Signal Constellation
State Transitions
Carrier Offset
IQ Imbalance
Error Vector Magnitude
Eb/No
Eye Diagram
Phase Trellis
Phase Error
Cumulative Distribution
Signal Quality Estimate
Rho Factor
Burst Profile

Wireless Protocol Analyzer Tools:

Convenient measurement toolsets are available to perform customary measurements for many of the most popular wireless protocols. The following is a sampling of some of the features available for protocol operation:

IS-136
- Channel Power
- SAT Color, DCC, DVCC
- Burst Profile

iDEN
- Channel Power
- DCC
- Burst Profile

GSM
- Channel Power
- BSIC
- Burst Profile

WLAN
- AP MAC List
- Multipath Profile
- Ec/Io

CDMA 2000
- Channel Io
- Pilot Scans
- Code Domain

WCDMA*
- Channel Io
- Pilot Scans
- Code Domain

* Future

Physical

Dimensions:	4.0"H x 0.75"W x 6.75"D 10.16 cm H x 1.9 cm W x 17 cm D
Weight:	2.8 lbs. (1.2 kg)
Operating Temp:	0 to +50° C. (+32 to +122°F)
Power Consumption:	10 W

Radio Specifications

RF Coverage:	30 MHz to 3000 MHz
Amplitude Accuracy	
-100dBm to -25 dBm	+/- 1dB
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

Interfaces

Host Link:	PXI / Compact PCI
RF Input:	SMA - 50Ω

Host Application OS: Windows 2000, NT, XP

Standard system ships with:

- All necessary drivers
- User-friendly software with online help
- Spectrum Analyzer Tool

Options:

- Wireless Protocols, select from
  - IS-136
  - iDEN
  - GSM
  - WLAN
  - CDMA2000
  - WCDMA
- Modulation Analysis

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