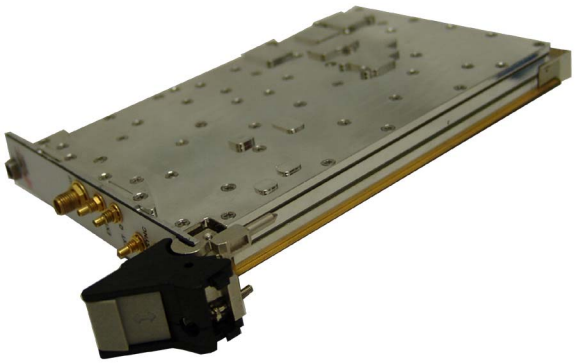
Digital Receiver Technology, Inc.

The One Measure for Wireless Performance



# DRT4032- Synthetic RF Signal Source

*Diverse Signal Generator Capability in a Single Slot PXI Form Factor*

## DESCRIPTION

The DRT4032 provides a miniature, yet powerful, RF test and measurement capability for general purpose signal creation, and protocol-specific generation for a variety wireless standards. The module combines a 30 MHz to 3000 MHz RF upconverter, high speed DAC reconstruction 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 generation.
- General purpose analog and digital modulation styles.
- Integrated Wireless Protocol generation for multiple protocols including IS-136, GSM, WLAN, IS-95, IS-2000, and WCDMA.
- Convenient Single Slot 3U PXI format.
- Rapid power control for burst communications test.
- Software defined architecture allows for additional support of customized or proprietary protocols.
- Advanced DSP algorithms for accurate and fast signal modulation and pattern generation.
- High performance, compact radio technology for low distortion and signal output level range over a broad operating frequency range.

**Preliminary – July 2005**
**Rev. 1.1**

# Platform Features

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### *Analog Modulation Capabilities:*

The 4032 Unit performs analog modulation in the digital domain for the following generic methods:

- **CW**
- **AM**
- **FM**
- **Wideband FM**
- **Single Sideband**
- **External I/Q**

### *Wireless Protocol Formats:*

Modulation capabilities including framing of baseband user data is available for the following air interfaces:

- **IS-136**
- **GSM**
- **EDGE**
- **CDMA 2000**
- **WCDMA**
- **802.X**
- **Bluetooth**

### *Generic Digital Modulation Capabilities:*

The 4032 also uses its digital processing to create the following digital RF formats:

- **OOK**
- **PAM**
- **ASK**
- **BPSK**
- **QPSK**
- **OQPSK**
- **DQPSK**
- **8PSK**
- **FSK**
- **MSK**
- **GMSK**
- **QAM**
- **FHSS**
- **DSSS**
- **OFDM**

### *Signal Impairments:*

Distortion and noise impairments can be applied to signals for robustness testing:

- **Non-linearity**
- **Multipath**
- **Noise**
- **Scattering**
- **Dispersion**
- **Doppler**

## 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 +10 dBm<br>+/- 1dB |
| **Frequency Accuracy:** | 0.06 ppm |
| **Carrier to noise:** | -80 dBc |
| **Output 3rd Order Intercept** | +45 dBm |
| **Phase Noise** | -90 dBc at 10 kHz offset |
| **VSWR** | 2.5:1 |
| **Internal Generated Spurs** | -75 dBc |
| **Maximum power output** | +15 dBm |

## Interfaces

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

**Host Application OS:** Windows 2000, NT, XP

**Standard system ships with:**

- All necessary drivers
- User-friendly software with online help
- Generic Analog and Digital Modulation

**Options:**

- Wireless Protocols, select from
  - IS-136
  - GSM
  - EDGE
  - CDMA 2000
  - WCDMA
  - 802.X
  - Bluetooth
- Signal Impairments



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