

DragonRF Subsystem

The benchmark RF Test Solution for 4G and Beyond



Automotive



Consumer



Flat Panel Display



IoT/loV & Optoelectronics



Industrial & Medical



Wireless/RF



Mobility

Productivity

- Designed to deliver high performance RF test capability for the complete spectrum of connectivity and mobility standards while offering new levels of manufacturing test efficiencies
- Extensive suite of new capabilities designed to provide the lowest cost of test without any compromise in RF test performance
- Innovative flexible architecture enables lower priced configurations without trade off in test coverage or test time

Key Features

- Configurable with 16 or 32 Universal RF ports per module with an optional port to pin expander, doubling the number of RF ports to 64 pins
- 6 GHz RF modulated source and 8 GHz RF measure
- <1 ms RF settling time on level and frequency change
- Quad site and octal site RF source with single and dual synthesizer respectively
- Up to 8 receiver paths each with an analog bandwidth exceeding 200 MHz for octal site parallel RF measurements

- Each receiver is connected to a Hummingbird digitizer with 16 bit @ 250 Msps or 14 bit @ 400 Msps
- Real time Dynamic Range Enhancer (DRE) per RF measure path
- Full modulation capability using SWG instrument providing 16 bits @ 250 Msps
- Compact footprint RF generators

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Devices and Applications

DragonRF is designed to support the latest wireless communication standards whether it's an RF Power Amplifier or a RF SOC application. Leveraging the extensive Cohu wireless modulation and demodulation library, DragonRF supports the complete set of tools to test cellular GSM, Edge, GPRS, HSDPA, HSUPA, CDMA, LTE and connectivity devices including BT, BT EDR, BT4.0, GPS, 802.11 a/b/g/n/ac/p and other emerging standards.

DragonRF provides up to 200 MHz IF bandwidth, enabling whole spectrum capture by receiver to support ever-increasing bandwidth in the newer wireless communication standards. Combined with leading Signal-to-Noise Ratio performance and optimized algorithm, DragonRF achieves the fastest and most accurate EVM measurement to test the comprehensive performance of today's complex RF devices with shortest test time.

Universal Port with Configuration Flexibility

DragonRF is designed with universal vector port architecture that delivers the required level of performance with flexible configuration to match the customers' device testing needs. Each DragonRF can be configured with 16, or 32 universal vector ports and up to 2 DragonRF are available on some configurations. DragonRF can also be configured with 1, 2, 3, or 4 RF synthesizers to provide octal site modulated RF stimulus to the devices, and with 2, 4, or 8 RF measure paths for true parallel octal site RF measurements.

DragonRF Configuration Flexibility			
RF Pins	32	64	128
RF Ports	16	32	64
IF Paths	2 4	2 4 8	4 8 16
RF Sources	1 2	2 3 4	4 6 8

Industry-leading Settling Times

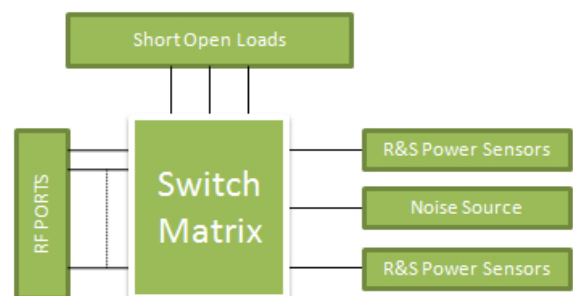
DragonRF uses the latest technology in RF synthesizer and RF control circuitry in its design. The R&S SGS100 RF source is used as the synthesizer in DragonRF, which utilizes the latest synthesizer architecture and software. Combined with all CMOS RF paths in the new DragonRF module, DragonRF provides fast level and frequency settling time to 0.05 dB less than 1ms, greatly enhancing the test throughput, and lowering the cost of test.

RF Auto Calibration

DragonRF fully automated calibration process allow greater tester up-time and reduces operator induced error and variations. The DragonRF Auto Calibration kit offers a single self-contained calibration unit that provides:

- Calibration of RF source, scalar measure, noise, and S-parameter measure
- Internal R&S power sensors
- NIST traceable integrated RF power meter and noise source
- Factory calibrated RF Autocal fixture

RF Autocal Loadboard block diagram



The RF Autocal switch matrix allows every port to be fully calibrated for all source and measurement types

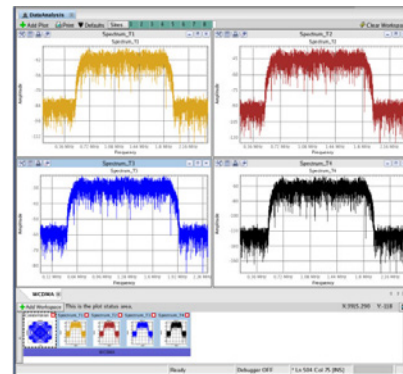
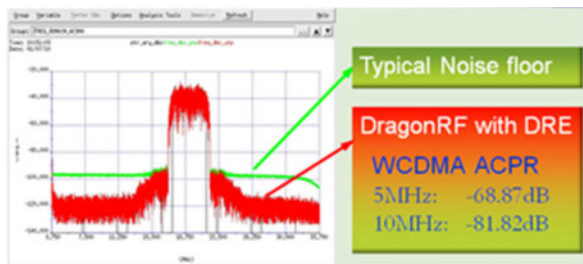
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Better Yield with Dynamic Range Enhancer

Every RF receiver is equipped with real time Dynamic Range Enhancer (DRE) with embedded DSP capability. With DRE enabled, DragonRF provides more than 90 dB dynamic range, which is critical for RF parameters, especially ACPR measurement. This enables faster test time, faster correlation between ATE and bench-top instrument, and improved yield with extra margins above the noise floor.



	Condition	Specification
Number of Vector Ports		32 Ports per DragonRF Module
Source		
Level Range	@ 3 GHz	-130 dBm - +16 dBm
Accuracy	@ 3 GHz	+/- 0.5 dB
Resolution		0.1 dB
Settling Time	Frequency and Level	<1 ms
Modulation Bandwidth		>200 MHz
Source Port Isolation	@ 3 GHz	>100 dB
Measure		
Frequency Range		10 MHz to 8 GHz
Level Range	@ 3 GHz	-130 dBm - +23 dBm
Accuracy	@ 3 GHz	+/- 0.5 dB
Receiver IF Bandwidth		200 MHz
Numerical Precision	Max ADC sample rate with digital filtering + DRE	27 Bits
Measurement Type	Single Conversion Heterodyne with Real-time DSP	
Real-Time DSP Features	Digital Down Conversion, time domain averaging, decimation	
Modulation & Demodulation	Pre-correlated Library supplied by Cohu including: GSM, Edge, GPRS, HSDPA, HSUPA, CDMA, LTE and connectivity devices including BT, BT EDR, BT4.0, GPS, 802.11 a/b/g/n/ac/p and other emerging standards.	
Software	Environment: Unison Operating System: High-speed PC-based controller using a Linux operating system	

Specifications subject to change without notice.
For detailed performance specifications, please contact Cohu.