PAx Test System

High Volume RF PA/FEM, 5G, Wi-Fi 6/6E/7 and mmWave


Automotive


Mobility


IoT/IoV & Optoelectronics


Computing & Network


Industrial & Medical


Consumer

Productivity

- Flexible RF configurations for single or multisite testing
- Optimal UPH with ultra-fast settling time, less than 1 ms
- 8 true parallel receive paths for higher throughput
- Fully automated, system level RF calibration
- Flexible source configuration to develop lower cost solutions and increased multisite
- Backward compatible to 2G/3G/4G
- Integrated manipulator standard

Key Features

- Increased modulation support for 5G NR FR1 and FR2 FEM sub-8.5 GHz
- Immediate Wi-Fi 6/6E/7 including the 7.125 GHz band
- Building blocks for 5G NR FR2 mmWave 24.25 - 48.5 GHz
- Integrated S-parameter testing for VNA-level capability
- Only ATE in the market targeted to meet the stringent RF measurement needs of RF PA/FEM
- Largest commercially available RF PA/FEM ATE at OSAT installed base
- System to system correlation

- **Only cost optimized ATE solution that covers sub-8.5 GHz with instrument extension to 18 GHz with high power**
- **Single platform covering <4G, 5G sub-8.5 GHz, Wi-Fi 6/6E/7 and mmWave**
- **Small form factor**
- **Air cooled architecture and instruments**
- **Compact low power technology**

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RedDragon RF

Scalable Solution

- Base configuration offers Quad site testing in parallel. Up to Octal site testing in parallel
- Scales up 4 to 8 sites in parallel
- Mid-band HVM configuration (split-mode) to wide-band full configuration
- Backward compatible to 2G/3G/4G

Single shot EVM, ACPR and Gain Test Capture

- Provides up to 2.5 GHz IF bandwidth, enabling whole spectrum capture by receiver to support ever-increasing bandwidth from sub-8 GHz to mmWave
- Combined with leading Signal-to-Noise Ratio performance and optimized algorithm, RedDragon achieves the fastest and most accurate Error Vector Magnitude (EVM) measurement down to -55 dB across frequency and level

Universal RF Ports

- Test head resident port modules provide 16 vector ports operating between 100 MHz and 8.5 GHz
- All ports in 8.5 GHz port modules have up to 2.4 GHz IF bandwidth
- Each vector port can be modulated using PXI based modulation source that provides 3 channels @ 1.28 Gbps by 16 bits
- Each vector port can be demodulated using WDSP capture instrument that provides 4 channels @ 2.5 Gbps by 14 bits

VNA

- Single acquisition high accuracy S-parameter sweeps
- Vector port architecture enables full S-parameter testing using Cohu's Swept S technology enables high-speed VNA like single sweep

IQ Waveform Generation

- SWG: 2 channel 150 MHz bandwidth per channel (250 MHz modulation bandwidth)
- 5G AWG: 3 channel 540 MHz bandwidth per channel (1,080 MHz modulation bandwidth)

Digital Capture

Enhanced data processing and transfer engines improvement with high-speed Digitizer

- WDSP Data Bus Manager - hardware accelerators optimized for real-time signal analysis
- WDSP Sample Tunnel - 8 channel tunnel provides high-speed data transfer directly to threaded DSP engines

Fast Noise Figure Measurement

- Available on all ports, calibrated, provides accurate noise tests

RF Harmonic Measure Module

- HMM 8 to 18 GHz low cost measurement option
- Add on simplifies loadboard configuration by reducing RF switch count and eliminatig the need for external filtering

RF Generators

- The R&S RF/LO 12.75 GHz source is used as the synthesizer which utilizes the latest synthesizer architecture and software, provides fast level and frequency settling time to 0.05 dB less than 1 ms, greatly enhancing the test throughput, and lowering the cost of test

Pre-correlated RF Libraries

- Pre-built PA/FEM RF application libraries drop into existing programs for efficient program development and fastest test times

Seamless On-Site Field Upgradable

- Same Test Head footprint
- Reuse existing application libraries
- Backward compatibility
- Upgrade tester hardware based on device complexity
- Same spares network
- Maintain complete software, DIB, calibration and docking compatibility and leverage existing production investment
- Same Field Application and Service support structure

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Specifications

General

Instrument Slots - 20

Digital Pin Count - up 256

Thermal Management - Air cooled

Prober and Handler Interfaces - standard interfaces available for probers and handlers

Test Head Dimensions
- 26.5" W x 32.5" W x 21" D
- 67 cm H x 82 cm W x 53 cm D

Test Head Weight
- 360 lbs (159 kg)

Mainframe Dimensions
- 66.5" W x 53.5" T x 26.25" D
- 169 cm W x 136 cm T x 68 cm D

Mainframe Weight
- 1,100 lbs (500 kg)

Facilities Requirements
- Electrical: single phase 208 VAC, ±10%
- Ethernet: required
- Other: no compressed air or chilled water required

Manipulator
- Integrated manipulator is standard. Full featured manipulator is optional

RF Instrumentation

DragonRF
- Frequency: 10 MHz to 8 GHz
- Resolution/Range: -130 to +16 dBM
- Low Jitter Clock Option
  - Frequency: 1 MHz to 6 GHz
  - Resolution/Range +10 to -20 dBm
- SWG-HSG
  - Resolution/Range: 16 Bits
  - Max Sample Rate: 250 Ms/s
- Hummingbird digitizer
  - Resolution/Range: 16 Bits +DRE
  - Max Sample Rate: 400 Ms/s

DC and Power Instrumentation

HCOVI
- Max Current: 1 A, ganged to 8 A per card
- Max Voltage: -2 V to +8 V

OVI
- Max Current: 1 A, ganed to 3 A per card
- Max Voltage: ±16 V

QFVI
- Max Current: 5 A pulsed, 1.5 A continuous
- Max Voltage: -60 V to ±60 V

PADPS1
- Max Current: 2 A/8 A
- Max Voltage: -2 V to +16 V

Digital Instrumentation

FX2
- Max Data Rate: 400 Mbps/400 MHz clock
- Max Voltage: -2.0 V to 6.5 V

Optional Instrumentation

Time Measurement Instrumentation
- Quad Time Measurement Processor (QTMP)

Calibration
- X-Series System and RF Auto Calibration Kit

Software

Test 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.

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