

Nighthawk

Benchtop Portability with ATE Performance



Productivity

- Comprehensive set of RF features at a fraction of the price of traditional RF ATE systems
- Four analyzers endure parallel testing
- Low operating cost
- Portable between Cohu Diamondx and Diamond10 test systems

Key Features

- Configurable for simultaneous test of multiple connectivity standards
- Air cooled, 100 W power consumption
- 4 RF source and receive ports supporting up to 6 GHz
- Modulation/demodulation bandwidth up to 200 MHz
- Built-in low jitter clock and baseband signaling
- Source output -110 dBm to +5 dBm accuracy ± 0.7 dB
- Source settling (frequency & amplitude) <2ms
- Dynamic range enhancer (DRE) enabling up to 120 dB range
- Clock and carrier detect synchronization (CDS)



Automotive



Consumer



Flat Panel Display



IoT/loV & Optoelectronics



Industrial & Medical



Wireless/RF



Mobility

- Ultra compact RF instrument (0.18 cu.ft.)
- Easy to install - ~30 minutes
- Designed to meet complete range of RF connectivity applications
- Dual configurations can simultaneously test two different connectivity standards

Nighthawk

Benchtop Portability with ATE Performance

New Technology Collapses Test Cost

Nighthawk's design leverages the same RF semiconductor innovations that enable today's consumer connectivity solutions. The goal is to match the ever shrinking semiconductor ASP with a high performance, low-priced RF test system. Nighthawk accomplishes this by embedding all required source, measure and DSP modules into a small air cooled package. This not only reduces the cost of the RF system, but replaces expensive tester instrumentation. The result is a flexible package providing true quad site parallel transceiver test capability at a fraction of the cost compared to traditional test systems. In addition, all popular connectivity modulation standards are included in the system price.

Uncompromised Feature Design

Nighthawk is the culmination of decades of DSP and RF test innovations pioneered by Xcerra. Features include:

- Dynamic Range Enhancement (DRE) provides over 120 dB of dynamic range enhancement enabling accurate measurements under low and noisy input conditions
- 2 Millisecond frequency and amplitude settling assures optimum production throughput
- Industries widest analog bandwidth digitizer provides for accurate, single capture testing of all communication standards

Test time is further enhanced by a powerful parallel processing FPGA providing real time Decimation and Dynamic Range Enhancement (DRE). Each of the 4 IF/ Baseband digitizers are backed with extensive "test any device" 16 mega sample capture memory.

Carrier Detection Synchronization (CDS)

Advanced carrier detection capability virtually eliminating excessive capture sample sets associated with transmission latency commonly encountered with embedded RF MCU devices. CDS simplifies test programming and reduces processing resulting in optimized test time

Source and Measure Direct Baseband Signals

Nighthawk is not just an RF carrier based system, it can directly source, measure and decode a wide variety of baseband schemes. Each of the four built in digitizers has both a 50 ohm and high independence input for flexible capture of baseband signals. Additionally, two AWG outputs are available for direct source of I-Q and other baseband formats. Data is captured simultaneously in all four digitizer channels resulting in virtually zero multi-site overhead.

Concurrent Test of Multisite and Multiple Connectivity Formats

Configuring Nighthawk in a dual module array per test system allows either:

- Octal site testing with 8 active receiver paths or
- Each module can be programmed to test a different connectivity format

For example, a device which covers both Bluetooth and Wi-Fi formats can be tested in parallel by configuring one Nighthawk module to test the Wi-Fi standard and the other module to simultaneously test the Bluetooth standard.

Production Friendly Designed

Production cost and efficiency is more than just capital expense and throughput. It is the combination of factors including time to market, production utilization, reliability and flexibility. Nighthawk is an air cooled unit consuming less than 100 watts of power. The ultra-low operating cost and minimal supporting infrastructure set a new operational standard for high performance RF production test.

- Ultra compact RF instrument (0.18 cu.ft.)
- Designed to meet complete range of RF connectivity applications

- Easy to install - ~30 minutes
- Dual configurations can simultaneously test two different connectivity standards

Nighthawk

Benchtop Portability with ATE Performance

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	Half Duplex	4 Receive Ports / 4 Source Ports
Source		
Level Range	@ 3 GHz	-110 dBm - +5 dBm
Accuracy	@ 3 GHz	+/- 0.75 dB
Resolution		0.25 dB
Settling Time	Frequency and Level	<2 ms
Modulation Bandwidth		>200 MHz
Frequency Accuracy		0.1 ppm
Measure		
Frequency Range		80 MHz to 6 GHz
Level Range	@ 3 GHz	-110 dBm - +30 dBm
Accuracy	@ 3 GHz	+/- 0.75 db
Receiver IF Bandwidth		>200 MHz
Measurement Type	Digital down conversion, time domain averaging, decimation	
Real-Time DSP Features		
Modulation & Demodulation	Pre-correlated Library supplied by Cohu including: Bluetooth (2.0, 3.0, 4.0) FM , 802.11 a/b/g/n/ac, Zibgee 802.15.4, DVB, DAB, GPS	
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.