

Phase Noise Analyzer Accurately Characterizes Oscillators and Components

This instrument includes comprehensive noise measurement capabilities to aid in the development and analysis of high performance microwave oscillators and components

Poseidon Scientific Instruments has introduced its new ODIN-320A phase noise analyzer, developed specifically for easy and accurate measurement of phase and amplitude noise of RF and micro-

wave oscillators, as well as the residual noise of components. The ODIN-320A incorporates a user-selectable system configuration, self-calibrating features, and comprehensive, real-time analysis capabilities. Dual channel measurement capability, a built-in 10 MHz signal source and PLL circuits are combined to give engineers in the electronics, defense and communications industries operational convenience and unmatched performance.

Real Time Noise Measurements.

Engineers are used to waiting several minutes to view a phase or amplitude noise measurement, and may spend significantly longer setting up their measurement. Now users can see real time measurement data with this single instrument, speeding up design and fault finding. ODIN also performs many of the setup steps automatically, allowing users to get on with other tasks. Engineers are paid in real time; the ODIN-320A lets them work in real time. Overworked engineers can get more done in less time.

ODIN simplifies phase noise measurements. The ODIN-320A's plug-in modules are designed to perform residual phase noise measurements and two oscillator phase noise measurements with minimal setup from the user. Automatic calibration of the detector

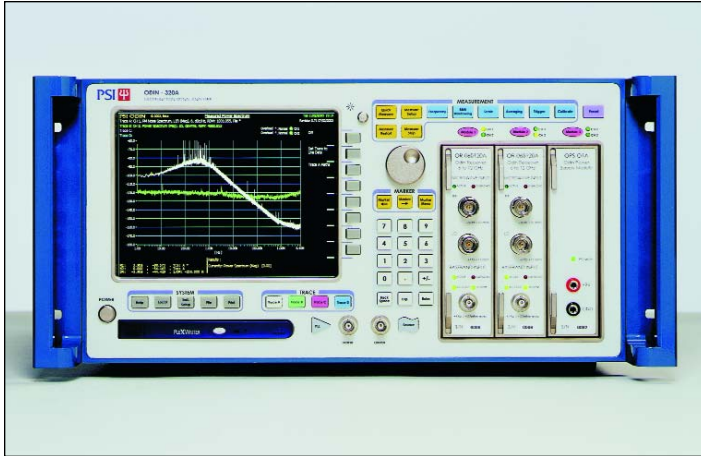


The PSA ODIN-320A simplifies phase noise and residual noise measurements for RF and microwave oscillators and components, using a modular approach and industrial PC-based architecture.

sensitivity eliminates a laborious and error-prone part of phase noise measurement. The ODIN-320A includes in-built PLL circuitry for easy phase locking of oscillators for phase noise measurements.

Jesse Searls, PSI's Managing Director says "With ODIN, we have built a tool to help engineers better understand their systems. The ODIN-320A provides users with automatic and precise measurement of phase noise in oscillators and residual noise in components, as well as amplitude noise measurement capabilities. The noise measurement methodologies used in the ODIN-320A are those preferred by industry leaders and standards laboratories."

ODIN is easily user-configurable. The ODIN-320A is a dual channel FFT instrument



This front panel view shows the plug-in modules that allow the user to obtain the desired configuration. Modules will soon be available for 5 MHz to 12 GHz measurements.



A detailed display permits fast and accurate evaluation during circuit development. Real-time measurement allows fast tuning and optimization.

with an integral bay for three plug-in modules. This modular architecture is easy to configure, and allows the user to buy only those modules suited to their specific functional and frequency requirements, or to expand to new features in the future. The ODIN-320A is capable of controlling up to seven external modules for added expandability.

ODIN's dual channel measurement capability allows users to monitor both the stimulus signal and their system's response to that stimulus. One application of this capability is in analyzing the vibration sensitivity of oscillators, where being able to view the stimulus and the response simultaneously greatly improves an engineer's intuitive understanding of what is happening in his or her system.

Integral Features

The ODIN-320A's built-in PLL circuitry features multiple decades of bandwidth selection and programmable voltage range for easy phase locking of oscillators for phase noise measurements. The instrument is also provided with a DC to 10 MHz 12 bit amplitude resolution, 48 bit frequency word, digitally synthesized

signal source with DC offset and range capabilities. A built-in 1 Hz to 10 MHz white noise source provides even greater analysis capabilities.

ODIN is easy to integrate. The ODIN-320A instrument is based on an industrial PC with a two channel 20 Msample/second 12 bit A/D converter, yet it retains the look and feel of a stand-alone instrument. The PC architecture allows easy storage, manipulation, exchange, networking and printing of data. The in-built CD-RW writer provides a modern storage solution for measured data.

Price and Availability

Prices for ODIN-320A start at US\$51,250. Current plug-in modules are available for the 6 GHz to 12 GHz frequency range, and also feature a DC to 6.4 MHz baseband input. Pricing starts from US\$14,100 for the 6 GHz to 12 GHz module. A range of accessories is also available, including high isolation cables, transport case and preformatted storage media.

Modules for the 5 MHz to 1 GHz frequency range, and the 1 GHz to 6 GHz frequency range will be available soon, and new modules will be announced as other frequency ranges and capabilities become available.

Company Background

Poseidon Scientific Instruments is a signal generation, control and measurement technology company. The company manufactures exceptionally low phase noise microwave oscillators, which are applied in premium radar and communications systems, and standards laboratories. Other products include sapphire loaded cavity oscillators that the company claims is the lowest noise microwave signal source available, an accessory low noise frequency divider and a high performance signal distribution amplifier.

PSI's innovative design approach and expertise in noise control and measurement required for development of maximum-performance oscillators has been brought to bear in this mainstream test and manufacturing instrument.

See the company web site for a list of U.S. and worldwide sales representatives. PSI is an ISO9001:2000 accredited company.

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