

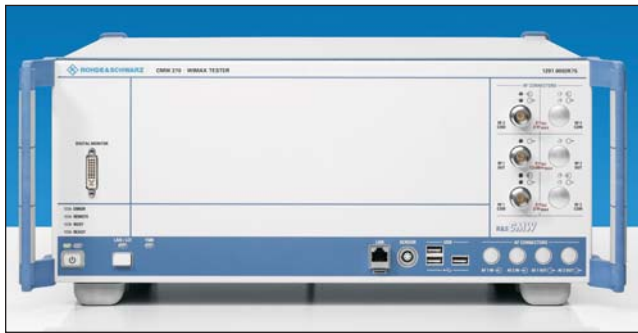
Advanced Manufacturing Relies on Flexible and Accurate Test Equipment

Many new instrumentation products are being developed for the production environment. Some are specifically designed for production, but increasingly, cost-effective instruments are being targeted for both production and less-critical laboratory applications. In the report, we present information on four of the latest test instruments, each of which represents a different approach to production test issues.

A WiMAX Tester Made Specifically for Production

Instruments intended for the production line often do not have full-feature front panel controls, since their operation is computer controlled along with additional test functions. One recent trend is instrumentation for specific technologies and transmission standards. These units may be newly developed, or they may be adapted from one or more units in the company's standard equipment lineup.

Rohde & Schwarz (www.rohde-schwarz.com) has announced the upcoming introduction of the R&S CMW270, a single-instrument solution for evaluating the performance of components and subsystems designed to be deployed in mobile WiMAX (IEEE-802.16e). The R&S CMW270 combines production test capabilities including signal analysis, signal generation and measurements for transmit and receive in a single instrument thereby simplifying set-ups while adapting to different test strategies. It is designed for both production and service testing of WiMAX mobile stations and customer premise equipment according to IEEE-Standard 802.16e and the WiMAX Forum Mobile System Profiles.



A front panel may not be needed in a production environment, as demonstrated by the new Rohde & Schwarz CMW270 Mobile WiMAX tester.



Programmed Test Sources' new PTS 1600 X-142 adds features that allow it to be used for additional test procedures needed for today's developing standards.

Signal Source Adds Modulation and Up/Down Conversion Capabilities

Many instruments are designed for production test systems, but as general-purpose units rather than standard-specific. These units must have a range of features and performance specifications that can handle the requirements of today's rapidly developing applications.

Model PTS 1600 X-142 from Programmed Test Sources (www.programmedtest.com) is an enhanced version of their basic PTS 1600 test signal generator, featuring new external narrow-band modulation capabilities. AM/FM/PM is injected via an external modulated signal, generally in the 900 MHz range, to modulate the output signal within the range of 10 – 1600 MHz.

The PTS 1600 X-142 covers its range with direct architecture using both analog and digital technologies. It has excellent close-in phase noise as well as the ability to switch rapidly from one frequency to another. High-speed remote control is provided through the standard TTL-level parallel interface port, but for easy integration into testing environments a GPIB interface is also available. By employing dedicated control hardware, the GPIB interface still provides 50 μ s or better frequency switching, significantly faster than typically found under GPIB control. The PTS 1600 features a keyboard and LCD display, with resolution of 1 Hz. It reproduces the accuracy and stability of an internal frequency standard, or accepts 5 or 10 MHz external standards.



Signal Analyzer Supports Both Production and Laboratory Use

Instrument companies have seen that efforts to reduce cost for production line test equipment often result in an instrument that is only slightly less capable than its full-featured counterparts. With this in mind, there is a growing trend for “mid-level” instruments that are cost-effective choices for production, and for all but the most critical laboratory applications.

Agilent Technologies Inc. (www.agilent.com) has introduced the EXA signal analyzer (pictured above), a fast economy-class signal analyzer. Its speed and accuracy, coupled with its excellent performance and application coverage, provides development and manufacturing engineers with the capabilities to cost-effectively troubleshoot new designs and

increase manufacturing throughput.

The Agilent EXA signal analyzer provides flexible, scalable signal analysis. At a lower performance point than Agilent's MXA signal analyzer, EXA seamlessly integrates the same broad range of standards-based measurements with Agilent's industry-leading 89600 vector signal analysis (VSA software—all in a single instrument. Optional measurement application software provides preconfigured test routines for GSM/EDGE, 802.16e Mobile WiMAX, W-CDMA, HSDPA/HSUPA, and phase-noise applications.

Jitter Test Option Supports Digital Communications Testing

An operating software upgrade is often all that is needed to add capabilities to a production instrument. In the realm of high-speed digital communications, Anritsu Company now offers the MU181000B 12.5 GHz 4-port synthesizer, MU181000A/B-001 Jitter Modulation Option, and MX180005A Jitter Application Software for its MP1800A Signal Quality Analyzer series. These new options allow the

MP1800A series to conduct highly accurate jitter tolerance measurements on devices with up to four channels, such as multi-channel CPU boards, PC boards, and optical devices forming interconnects in routers, servers, and super computers.

Connection compatibility tests for ports, backplanes, and optical devices used in communications equipment interconnects are done in one quarter the time with the MP1800A when it's configured with the new options. Skew, crosstalk, and emphasis can be measured along with jitter tolerance, making the MP1800A series a low-cost, compact, easy-to-use, efficient test system for verifying connection compatibility. Jitter up to 80 MHz can be added with the MP1800A, allowing jitter tolerance measurements to be in compliance with nearly all industry standards, including ITU-T, ANSI, IEEE, XFI, and EI. Jitter tolerance Go/No-Go evaluation functions of the MX180005A help reduce measurement times on production lines.