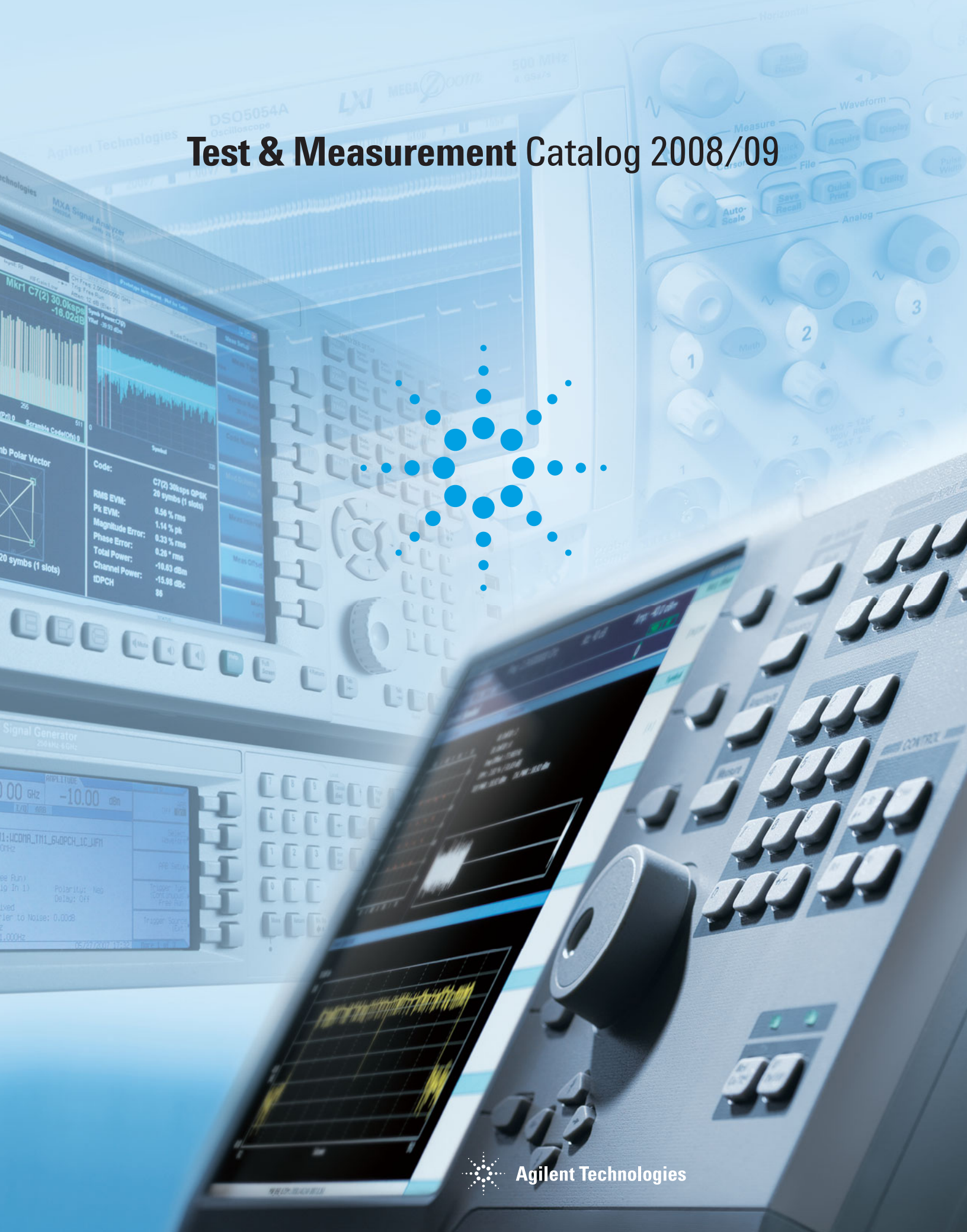


Test & Measurement Catalog 2008/09



Agilent Technologies

Welcome to **Agilent Technologies**

Dear Valued Customer,

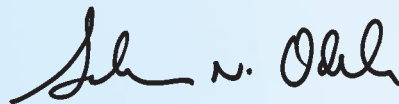
I'm pleased to present the 2008/09 edition of the Agilent Test and Measurement Catalog. As you look through it, you will find unmatched depth and breadth of products, solutions and services to help you improve your business results.

As the world's premier measurement company, Agilent Technologies Electronic Measurements Group is firmly committed to being a measurement solutions partner to every engineer and scientist in the electronics markets.



Agilent people around the world value strong customer relationships. We count on your feedback to ensure that we continue to meet your needs. We hope you'll always look to Agilent for innovative products and solutions to help you achieve your business results.

Sincerely,

A handwritten signature in black ink that reads "Saleem Odeh". The signature is fluid and cursive.

Saleem Odeh
Vice President and General Manager
Agilent Technologies, Inc.
Electronic Measurements Group
Sales, Service and Support

A Singular Focus on Measurement

Today's world runs on electronics from the cell phones in people's pockets to anytime-anywhere internet access. For advancing these and other essential applications and products, one company stands at the forefront: Agilent, the leader in electronic measurement.

Agilent's Electronic Measurement business provides standard and customized solutions that are used in the design, development, manufacture, installation, deployment and operation of electronic equipment and systems and communications networks and services. These solutions include test and measurement instruments and systems, automated test equipment, communications network monitoring, management and optimization tools and software design tools and associated services.

The company's 19,000 employees serve customers in more than 110 countries. These customers include many of the world's leading high-technology firms, which rely on Agilent's products and services to increase profitability and competitiveness, from research and development through manufacturing, installation and maintenance. Agilent enables its customers to speed their time to market and achieve volume production and high-quality precision manufacturing.



Agilent Technologies



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Prices are subject to change without notice.

Product	Base Price	Features and Measurements	DC Accuracy	Reading Speed	Connectivity	Type	Measurements
U1252A	US\$ 429 3 weeks	Handheld Multimeter, 50000 counts, dc & ac voltage, dc & ac current, resistance, frequency, continuity with beeper, capacitance, temperature, frequency counter, square wave output	0.025 %	7 rdgs/s	• USB	• Handheld	• Current • Resistance • Frequency • Temperature • Voltage • Continuity • Diode test • Capacitance
U1251A	US\$ 399 3 weeks	Handheld Multimeter, 50000 counts, dc & ac voltage, dc & ac current, resistance, frequency, continuity with beeper, capacitance, temperature	0.03 %	7 rdgs/s	• USB	• Handheld	• Current • Resistance • Frequency • Temperature • Voltage • Continuity • Diode test • Capacitance
U1242A	US\$ 220 4 weeks	Handheld Multimeter, 10000 counts, dc & ac voltage, dc & ac current, resistance, frequency, continuity with beeper, capacitance, temperature, switch counter, harmonic ratio, dial and differential temperature	0.09 %	7 rdgs/s	n/a	• Handheld	• Current • Resistance • Frequency • Temperature • Voltage • Continuity • Diode test • Capacitance • Switch

Make the right purchase decision

- Product details, side-by-side comparison, evaluation tool, FAQ, interactive demo
- Find latest promotions, special offers, bundles, discounts
- Find information about trade-in and leasing
- Information on recommended replacements for discontinued products

Get more done with less

- Technical support, self-help resources, manuals, drivers, application notes, parts, repair and calibration
- Training courses, seminar schedules, tutorials

www.agilent.com/find/products (English)

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www.agilent.com.tw/find/products (Traditional Chinese)

www.agilent.co.kr/find/products (Korean)

www.agilent.co.jp/find/products (Japanese)

www.agilent.fr/find/products (French)

www.agilent.de/find/products (German)

www.agilent.es/find/products (Spanish)

Agilent Email Update Service

The screenshot shows the Agilent Technologies website with the following elements:

- Header: Agilent Technologies logo, Search bar, Site Map, Contact Us, Login, Home.
- Navigation: About Agilent, Products & Services, Industries, International, Online Stores.
- Breadcrumbs: Home > Products & Services > Email Update Service.
- Section: Agilent Email Updates. Includes a 'Select Language' dropdown set to 'English (default)'.
- Text: 'Welcome to the Agilent Email Update Service. Stay current on the latest Agilent product, support and application information – customized for your interests and preferences. Subscribe to Agilent's free Email Updates.'
- Section: 'What would you like to do?' with three bullet points:
 - Subscribe to the Email Update Service
 - Modify my subscription to the Email Update Service
 - Unsubscribe from the Email Update Service
- Text: 'Of course, you can always send your questions or comments to emailupdates@agilent.com'.
- Text: 'Agilent participates in the Better Business Bureau On-line Privacy Seal and adheres to all of the standards of the program to privacy_advocate@agilent.com'.
- Privacy Seal: BBS On-Line Privacy Seal logo.
- Text: 'To send feedback about this site: [Contact Webmaster](#)'.

The screenshot shows the Agilent Technologies website with the following elements:

- Header: Agilent Technologies logo, Search bar, Site Map, Contact Us, Login, Home.
- Navigation: About Agilent, Products & Services, Industries, International, Online Stores.
- Breadcrumbs: Home > Products & Services > Email Update Service > Subscribe to Email Update Service.
- Section: Welcome First-Time Subscriber!
- Text: 'There are three steps to completing the subscription process:'
- Steps:
 - 1 click here
 - 2
 - 3
- Text: 'Start With Step 1: [Subscribe](#) Tell Us Your Email Preferences Register'.
- Text: 'Be assured that Agilent will never sell or rent your information. Nor will Agilent share this information with other companies without your expressed consent. We make a commitment to you that we will respect and protect your privacy. Please see the details of this commitment in our [Privacy Statement](#)'.
- Text: 'To send feedback about this site: [Contact Webmaster](#)'.

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Get the latest information on the products and applications you select.

Summary SEM ACLR Mean Pow RRC Pow



Range (MHz)	Pass/Fail	Level (dBc)	Margin (dB)
-10	Pass	-57.88	14.88
-5	Pass	-56.65	23.65
5	Pass	-56.90	23.90
10	Pass	-56.21	13.21

Spectrum Monitor Results

Summary Graphic

Graph Control
 Center: Auto
 Span: Auto

Ref Level: Auto
 dB/Div: Auto

RFAM Freq: 295.000000 MHz
 Meas Span: 10.000000 MHz
 RBW: 30.0000 MHz
 Meas BW: 0.250 MHz

Center: 0.000000 MHz Display Span: 10.000000 MHz

Markers

Frequency	Freq Meas (MHz)	Level	Mode
1: Diff	MHz	—	—
2: Diff	MHz	—	—
3: Diff	MHz	—	—
4: Diff	MHz	—	—
5: Diff	MHz	—	—

Mode
 Frequency: Relative
 Markers: Normal
 Peak Track:

Define Wafer

Wafer size: 200 mm
 Wafer shape: notch
 Notch Location: Top
 Left Right Bottom
 Map Origin:

Die Info: Rows = Columns =
 ASUR

Wafer name: ASUR
 Die X Step(um): 20000
 Die Y Step(um): 20000
 Ctr X Index: 3
 Ctr Y Index: 5
 X Offset(um): 0
 Y Offset(um): 0
 Align Die X: 4
 Align Die Y: 7
 Align Module X: 0
 Align Module Y: 0

Apply Reset

Load Save Clear All Select Whole Done Cancel

Setup Measure Analyze Utilities Help

80.000 MHz

Color Grade Scales

More (1 of 2)
 Delete All

2

NEW PRODUCTS & APPLICATIONS

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High Speed Digitizers	36
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5000 Series Oscilloscopes



See what you've been missing with your current bench scope.

- See more time at a higher resolution with 1 M points **MegaZoom III** memory
- See the most elusive signal details with up to 100,000 waveforms per second update rate and high-resolution display
- Have more connectivity options with LXI class C compatibility and standard USB/LAN/GPIB ports

Users of general-purpose portable oscilloscopes have, until now, had to work through everyday debug tasks using oscilloscope technology from the 1990s. Engineers need tools capable of handling today's design challenges. The new 5000 Series oscilloscopes tackle these needs with:

- Deep memory
- Fast update rates
- A high-resolution XGA display system
- Up to 12 bits of vertical resolution in both repetitive and single-shot modes

The 5000 Series is also LXI compatible with USB, LAN, and GPIB ports all standard (as well as XGA out).

See what you've been missing with traditional bench scopes. Ask for a DS05000 Series demo today.

► See page 56
www.agilent.com/find/dso5000

6000L Series Low Profile Oscilloscopes



The 6000L Series scope is the highest performance and lowest cost automated test oscilloscope in its class.

- 4 channel scope in only 1U (43.6 mm space)
- Up to 1 GHz bandwidth, 4 GSa/s sample rates and up to 8 M memory
- Built in web browser for control with standard USB, LAN, GPIB interfaces, XGA out and LXI class C compliance

The Agilent 6000L Series oscilloscopes give you just the right performance in a compact (1U) package. This family of oscilloscopes consists of three 4-channel models for automated test applications. They provide unbeatable performance in this price range, with measurement capabilities ideal for functional and qualification testing.

The three digital storage oscilloscopes (DSOs) combine the best in signal viewing with patented MegaZoom III technology and 2 Mpt standard MegaZoom deep memory allowing you to capture long, non-repeating signals, while maintaining high sample rates and good timing resolution. With standard USB, LAN, GPIB connectivity interfaces, XGA out and LXI class C compliance these oscilloscopes are easily integrated into your new or existing automated test system.

► See page 63
www.agilent.com/find/6000L

N2780A Series AC/DC Current Probes



N2780A Series current probes and N2779A power supply.

- Various bandwidths: DC to 2 MHz, 10 MHz, 50 MHz, and 100 MHz
- Superior 1% accuracy, flat frequency response and high signal-to-noise ratio
- Direct connection to high-impedance 1 M Ω BNC input of oscilloscope

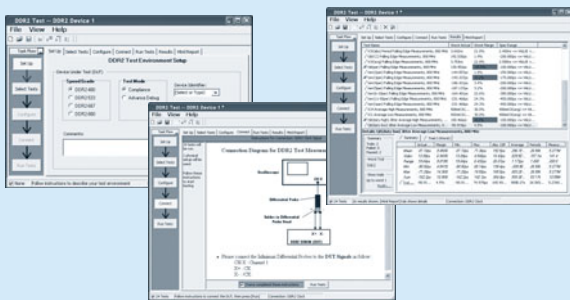
Compatible with any oscilloscope with a high-impedance BNC input, the new N2780A Series current probes offer accurate and reliable solution for measuring DC and AC currents.

Using hybrid technology that includes a Hall-effect sensor and an AC current transformer, the probes provide accurate measurement of DC or AC currents up to 500 Arms (for model N2780A) or DC – 100 MHz (for model N2783A), without breaking into the circuit.

The current probes feature broad measurement ranges that make the probes ideal for measuring steady state or transient current of motor drives, switching power supplies, and flat-panel displays. External power supply (model N2779A) lets you connect up to three N2780A Series current probes to a single power supply.

► See page 92
www.agilent.com/find/N2780A

N5413A DDR2 Compliance Test Application



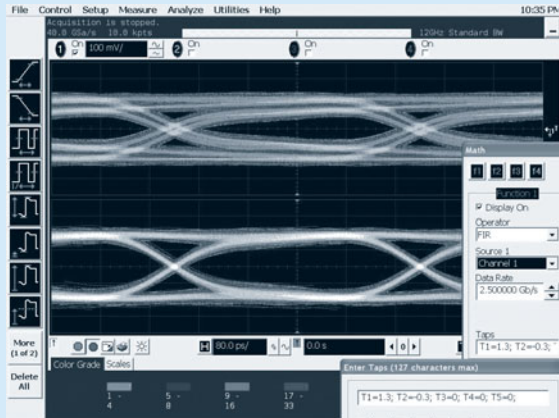
- Easy operation reduces test time
- Powerful analysis and debug
- Thorough performance reporting

With Agilent Technologies' DDR2 compliance test application, you can perform automated testing and margin analysis based on the JEDEC specifications. The application automatically configures the oscilloscope for each test and provides informative results. It includes margin analysis indicating how close your device comes to passing or failing.

The demand of signal integrity performance for DDR2 measurement is critical to achieve accurate and repeatable measurements. Agilent's Infiniium 80000 Series oscilloscope, the winner of Test and Measurement World's 2007 Best-In-Test Product of the Year offers industry's lowest noise floor, lowest trigger jitter and flattest frequency response. It is an excellent tool for DDR2 characterization.

► See page 71
www.agilent.com/find/n5413a

N5430A User Defined Function Software



2

The top is a live signal eye pattern with an ISI (inter symbol interference) effect from its transmission line. The bottom is an equalized eye pattern after applying 5 tap FIR filter through N5430A User Defined Function.

- Enhance your Infiniium oscilloscope with the analysis power of MATLAB®
- Develop custom analysis functions directly on Infiniium oscilloscopes
- Live waveform update from a seamless gateway to the MATLAB

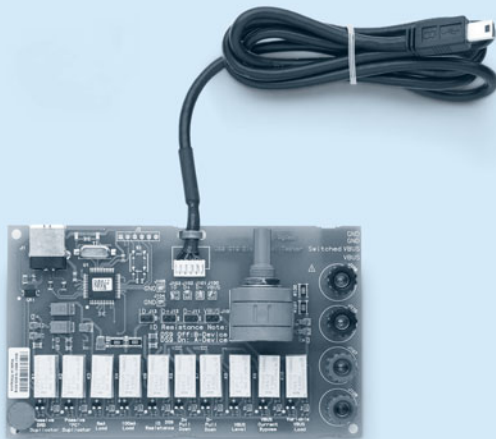
The Agilent N5430A Infiniium User Defined Function software allows you to create and execute your own custom math and analysis functions using the power of MATLAB software environment from The MathWorks.

With a seamless integration to MATLAB, Agilent Infiniium oscilloscopes allow you to display your math and analysis functions created in MATLAB live on the oscilloscope screen, just like any of the other scope's standard functions. Or, you can interactively analyze and visualize your results in the MATLAB environment, such as graphically plotting results or auto generating reports.

The User Defined Function comes with standard example functions like "5 TAP FIR equalization filter", "Butterworth low pass filter", "Linear Feedforward Equalization" and more.

► See page 68
www.agilent.com/find/udf

N5417A USB OET (On-the-go Electrical Test Fixture)



USB On-the-go (OTG) Electrical Test Fixture.

- Automated through Infiniium oscilloscope running N5416A USB 2.0 automated test software
- N5417A USB OET (On-The-Go Electrical Test Fixture) verifies USB On-The-Go electrical test
- USB-IF recognized automated USB OTG compliance test fixture

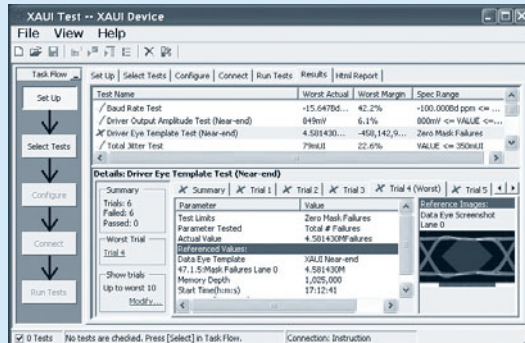
USB On-the-go is the latest addition to USB, the most popular interconnect for PC and CE interfaces. USB OTG allows dynamic role switching between host and device. This can be done without the need of the standard PC host to improve portability.

Agilent now offers N5417A USB on-the-go electrical tester as part of the complete USB electrical compliance test solution that supports USB 1.1, USB 2.0 and USB OTG. The N5417A USB OET (On-the-Go Electrical) verifies USB OTG specific electrical test in the USB OTG compliance test.

The N5417A OTG electrical fixture requires the DSO80000B-Series oscilloscope, N5416A USB compliance test software, 34401 DMM and E3631A power supply to support USB-OTG fully automated electrical compliance tests.

► Visit www.agilent.com/find/n5417a

N5431A XAUI Electrical Validation Application



Improve your efficiency with the powerful reporting capabilities of the N5431A which provides fast and accurate XAUI validation.

- The industry's only XAUI & 10GBASE-CX4 automated test solution
- Fast and accurate XAUI validation with advanced test control and debug
- Superior probing system with unmatched flexibility

The N5431A XAUI electrical validation application is the industry's only XAUI automated test solution that helps you improve your efficiency by providing fast and accurate XAUI validation.

With the superior signal integrity and probing provided by the Agilent 80000 Series oscilloscopes, you will have confidence that devices which pass testing with the N5431A are in conformance to the XAUI specifications as described in IEEE 802.3-2005.

The application also provides support for the XAUI-derived 10GBASE-CX4 specification, as well as bit-rates and masks for the CPRI, OBSAI; and Serial RapidIO specifications. Easily set up, configure and test your XAUI devices with an intuitive task flow which automatically generates reports you can share with your managers, colleagues, and customers.

► See page 71
www.agilent.com/find/n5431a

U2000 Series USB Power Sensors



Setup is as easy as plugging a U2000 sensor's USB cable into your PC, and you can start your measurements right away with the Power Analysis Manager.

- Performs power measurements without a power meter
- Frequency range: 9 kHz to 24 GHz
- Power range: -60 dBm to +20 dBm (Higher range up to +44 dBm will be available early 2008)

The Agilent U2000 Series of standalone USB-based power sensors enable simpler and more affordable power measurements – without a power meter.

These sensors make fast, accurate average power measurements at up to 1000 readings/s*, and with plug-and-play USB setup. Measurement results are displayed on a PC or other selected Agilent instrument, such as the signal source, spectrum analyzer or network analyzer. Because these sensors are USB-powered and provide built-in triggering, they don't require external power adapters and triggering modules for synchronization with external instruments or events.

Each sensor's capabilities are extended with the feature-packed N1918A Power Analysis Manager software, for better monitoring and troubleshooting.

Other benefits include its portability for field applications and zeroing without disconnecting from the device-under-test.

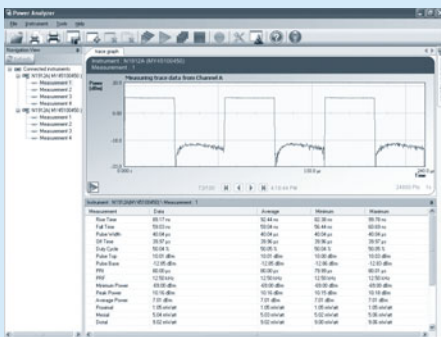
* When operating at buffered mode

► See page 233
www.agilent.com/find/usbsensor

N1918A Power Analysis Manager



Adopt versatile viewing all on one screen with multiple display formats – and even multiple tabs.



Analyze pulses easily with N1918A's complete pulse characterization capability.

- Various display formats: numerical, analog, strip chart, trace graph and multi-list view (>10 channels)
- 15-point parameter display for complete pulse characterization
- Limit and alert settings for easy deviation monitoring

The Agilent N1918A Power Analysis Manager software extends the capabilities of the U2000 Series USB power sensors, P-Series power meters and P-Series modular power meter. This feature-packed software not only enables performance monitoring and data collection, but also simplifies post-data analysis and speeds up troubleshooting. Other features of the N1918A include the following:

- Overlay of traces
- Channel mathematics
- Waveform mathematics
- Recording and playback – of up to 7 days of data – for easy analysis and troubleshooting
- PDF, CDF or CCDF statistical computations in graph and tabular formats

The N1918A is available in two versions: the basic Power Panel and the advanced Power Analyzer – for full access to its features and capabilities. Power Panel can be accessed immediately upon installation, while Power Analyzer's license (N1918A-100) is available for purchase separately.

▶ See page 233 www.agilent.com/find/N1918A

N8262A P-Series Modular Power Meter



The compact LXI-based solution for power measurements.

- Slim, compact build (1U half-rack size) for easy deployment
- LXI C compliant for seamless integration into an ATE system
- Online web browser for real-time remote operation

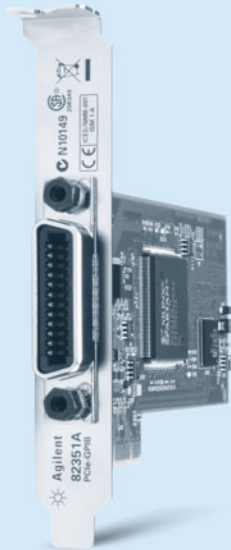
The Agilent N8262A P-Series modular power meter enables LAN-based automated measurements of peak, peak-to-average ratio and average power. Its slim build enables fast, efficient, and cost-effective creation of your ATE system. The N8262A offers seamless interoperability with existing assets in the system – where minimal programming and re-configuration are required.

The N8262A contributes to a lower cost of ownership with its LAN interface, much unlike PXI or VXI-based interfaces. Other features include its 30 MHz wide video bandwidth and its code-compatibility with P-Series power meters.

By helping you build greater assurance in system readiness, the N8262A frees you to focus where it counts most.

▶ www.agilent.com/find/N8262A

82351A PCIe™-GPIB Interface Card



Leveraging from PCIe™ – the new standard for high-speed internal devices.

- Half-height card (68.9 mm)
- High transfer rate of 1.4 MB/s
- Highly flexible via up-plugging (into x4 and x8 slots)

The 82351A is a half-height PCIe™-GPIB interface card that is designed for integration into next generation PCIe™-based PCs or workstations with smaller form factors. PCIe™ (PCI Express) is an evolutionary version of PCI that offers a higher transfer rate across a low number of wires, hence increasing the bandwidth to execute applications faster.

► www.agilent.com/find/82351A

N6705A DC Power Analyzer



N6705A DC Power Analyzer.

- Integrates capabilities of power supply, DMM, scope, arbitrary waveform generator and datalogger
- Easy to use R&D tool for sourcing and measuring DC voltage and current into the DUT
- Connections and controls color-coded to the display
- Intuitive, dedicated physical controls for common functions
- Access all capabilities without programming

The Agilent N6705A DC power analyzer provides unrivaled productivity gains when sourcing and measuring DC voltage and current into a device under test (DUT). This tool, which R&D engineers can use to gain insights into the DUT's power consumption in minutes without writing a single line of code, represents an entirely new instrument category for R&D engineers.

The Agilent N6705A DC Power Analyzer is a highly integrated instrument that combines up to four advanced DC power supplies, DMM, oscilloscope, arbitrary waveform generator and datalogger. It provides an easy-to-use interface, with all sourcing and measuring functions available from the front panel.

► See page 375
 ► www.agilent.com/find/N6705

L4411A Low Profile 6½ digit Enhanced Performance DMM



L4411A 6½ digit enhanced performance DMM.

- Fastest reading rates with 1 M reading memory
- Expanded measurement ranges and functions
- USB, GPIB, and LAN standard – LXI class C compliant

The newest 6½ digit enhanced performance digital multimeter has all the capability of the 34411A in a smaller compact package. The built-in web interface allows the user to very quickly connect to the instrument and start taking measurements.

If this instrument is replacing the E1412A or 34401A in a system, use the compatibility mode to ensure the easiest transition to the new hardware while you take advantage of faster test throughput. Measurement ranges have been expanded, and capacitance and temperature measurements are included!

▶ See page 226
www.agilent.com/find/L4411A

E8663B Analog Signal Generator



The E8663B replaces the 8663A as the performance leader in RF signal generation.

- High output power
- Excellent phase noise performance
- 100 kHz to 9 GHz frequency coverage

The E8663B analog generator for LO substitution and component test applications offers high output power, ultra-low phase noise from 1 MHz to 9 GHz, superior level accuracy, and code compatibility with other Agilent microwave signal generators such as the 8662A/8663A family.

The E8663B is also an excellent tool for advanced communication testing of receiver quality, transmitter sensitivity and selectivity, offering low harmonics, low spurious, ultra-low phase noise, flexible analog modulation formats: AM, FM, Φ M and pulse, internal modulation with sine, square, triangular, ramp, and noise waveforms, and narrow pulse modulation (20 ns) down to 10 MHz.

▶ See page 282
www.agilent.com/find/E8663B

MXG Signal Generators



Agilent MXG signal generators provide fast switching speeds, industry-best ACPR, and simplified self-maintenance.

- Frequency range from 100 kHz to 1, 3, or 6 GHz
- ≤ 1.2 ms switching speed, -76 dBc ACLR performance, and designed for reliability and easy self-maintenance
- Signal Studio software includes W-CDMA, cdma2000®, WLAN, mobile WiMAX™ and more

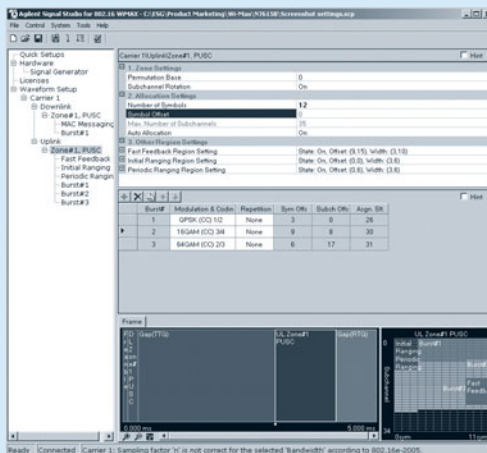
The MXG analog and vector signal generators provide better value for your investment by increasing throughput, reducing measurement uncertainty, maximizing uptime, and saving rack space. The innovative hardware design offers high reliability and simplified self-maintenance – all in two rack units (2RU).

The Agilent MXG's fast frequency, amplitude and waveform switching, is ideal for high-volume manufacturing of components used in cellular and wireless connectivity systems. And with scalable capability and outstanding signal quality, including industry-leading ACPR and EVM performance, the Agilent MXG is a cost effective solution that provides accurate and repeatable reference signals for:

- LO/clock substitution
- CW and AM, FM, Φ M, pulse, ASK, FSK, PSK modulated interferers
- Testing PA/MCPAs, filters, modulators, transmitters, receivers, etc.

► See page 293
www.agilent.com/find/mxg

N7615B Signal Studio for 802.16 WiMAX (mobile)



Build WiMAX and WiBro waveforms with N7615B Signal Studio for 802.16 WiMAX.

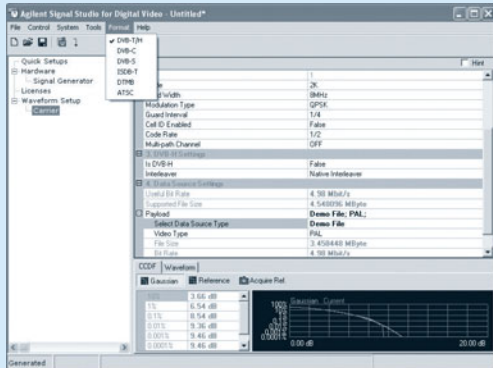
- Single- and multi-carrier 802.16 mobile WiMAX and WiBro
- Flexible downlink and uplink (or both) frame configuration: zones, bursts, and MAC PDUs
- Support for matrix A (STC), matrix B (2x2 MIMO), and uplink collaborative spatial multiplexing

N7615B Signal Studio for 802.16 WiMAX enables you to easily create waveforms that comply with WirelessMAN-OFDMA PHY in the IEEE 802.16-2004 and 802.16e-2005 standards. The software's intuitive graphical user interface provides convenient access to the physical and basic MAC layer parameters, including bandwidth, cyclic prefix ratio (G), and frame length, providing the versatility you need to configure waveforms for both component and receiver design verification and testing. Download WiMAX waveform files to N5182A MXG, E4438C ESG, and E8267D PSG vector signal generators for instant playback.

Optional capabilities provide application-specific customization with basic capabilities targeted for component design and test or advanced capabilities for receiver design and test. The flexible licensing product structure allows for fixed or transportable and perpetual or time-based licenses.

► See page 327
www.agilent.com/find/signalstudio

N7623B Signal Studio for Digital Video



N7623B Signal Studio for Digital Video.

- Create standard-compliant DVB-T/H/C/S, ISDB-T, ATSC, and DTMB reference signals for component and receiver test
- Compatible with E8267D PSG, N5182A MXG, and E4438C ESG vector signal generators
- Control frequency, amplitude, ALC, waveform scaling, triggers, markers, and more

With N7623B Signal Studio, easily create DVB-T/H/C/S, ISDB-T, ATSC and DTMB waveforms. Play back waveforms using the N5182A MXG or E4438C ESG high-performance vector signal generators that support a wide range of applications including cellular and wireless connectivity communications.

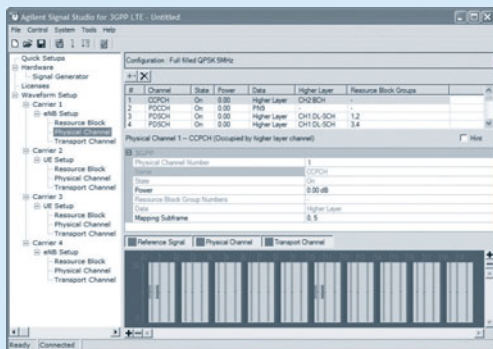
From a simple graphical user interface, specify channel coding and modulation parameters, OFDM frame structure, and seamless TS stream to create video signals that meet your specific receiver and component test needs.

- Support DVB-T/H/C/S, ISDB-T, ATSC and DTMB digital video formats
- Trimming and editing input Transport Stream (TS) files for seamless video file playback
- Low cost with good mod quality and spectral purity for video component test (Amplifiers, mixers, etc.)

Free upgrades provide equivalent DVB-T/H/C/S functionality for N7623A.

► See page 331
www.agilent.com/find/signalstudio

Signal Studio for 3GPP LTE



Signal Studio for 3GPP LTE user interface showing the resource block configuration of a downlink signal.

- Create single- and multi-carrier 3GPP LTE signals
- Configure uplink and downlink channel parameters
- Generate physical and transport layer coded signals for component test and receiver test

Agilent-validated and performance-optimized 3GPP LTE reference signals

The N7624B Signal Studio for 3GPP LTE is a powerful software tool that simplifies the creation of standards-based 3GPP LTE signals. Modify transport and physical layer parameters for component testing applications. Easily generate complex 3GPP LTE reference signals which are validated and optimized for baseband/RF performance. Create your own user-defined signals with the use of an intuitive graphical interface (GUI).

► See page 316
www.agilent.com/find/signalstudio

N9310A RF Signal Generator, 9 kHz to 3 GHz



N9310A RF signal generator provides superior quality, significantly reduces cost of test.

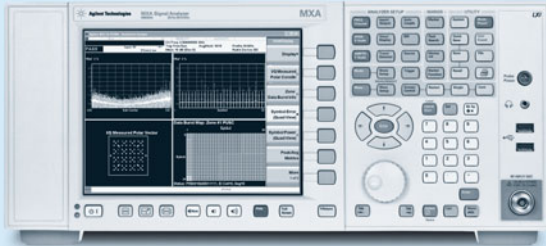
- Professional performance compact size with an affordable price
- Easily generate CW, AM/FM/phase modulation, pulse and IQ modulated signals from one instrument
- Save operation time with easy-to-use RF stimulus and multi-language user interface

The Agilent N9310A RF signal generator is the first in this new entry level of RF basic instruments. It is ideal for electronic manufacturing test for modern consumer products like cordless phones, digital radios, GPS modules, RFIDs and wireless LAN devices, base station installation and maintenance, education teaching labs, as well as low cost research and development.

N9310A generates common RF signals from 9 kHz to 3 GHz. With its built-in analog modulation capabilities, it can generate modulated AM, FM, Φ M and pulse signal easily. By adding the optional analog IQ input capability, it can generate complex IQ modulated signals such as GSM, cdma and OFDM signals from custom IQ inputs. Multi-language UI and USB connectivity make it easy to operate and store data.

► See page 275
www.agilent.com/find/n9310a

X-Series Signal Analyzers



The highest performance in a midrange signal analyzer with the industry's fastest signal and spectrum analysis.



The Agilent EXA Economy Signal Analyzer offers unprecedented speed, accuracy, and application coverage for an economy class instrument.

2

Whether you're focused on time-to-market or cost of test, your signal analyzer should help you save both time and money. The X-Series Signal Analyzers accomplish this and are the newest addition to Agilent's Spectrum Analyzer portfolio. The X-Series will be able to share code seamlessly, except where hardware options differ, and provide customers with an enhanced feature set. For example, control these instruments from across the room or around the world through the Open Windows XP operating system via GPIB, 100Based-T LAN or one of 7 USB ports. Move seamlessly from development into manufacturing with common X-Series advanced measurement applications on the MXA and EXA signal analyzers.

The common features include:

- Fastest Signal Analysis – Measurements 30% to 300% faster than other analyzers
- Broadest set of applications – Optional built-in Mobile WiMAX, W-CDMA, HSDPA/HSUPA, GSM/Edge, phase noise, noise figure and analog demodulation
- Over 50 demodulation formats with the unmatched 89601A vector signal analysis software internal to the instrument
- Control of instrument from across the room or around the world with Open Windows XP operating system
- World-class connectivity standard with 7 USB ports, GPIB or 100Based-T LAN interface
- Analyze your signals with 12 independent markers, 6 different traces, and trace math

N9020A MXA Signal Analyzer

The Agilent MXA signal analyzer drives signal and spectrum analysis to the next level by offering the highest performance in a midrange analyzer for development engineers.

Features offered only on the N9020A MXA Signal Analyzer:

- Analyze low level signals on the only midrange analyzer to offer a choice of fully calibrated internal preamplifiers up to 26.5 GHz
- Frequency ranges: 20 Hz to 3.6, 8.4, 13.6, or 26.5 GHz
- Make measurements of mobile or fixed WiMAX, multi-carrier W-CDMA, and other wideband signals using optional 25 MHz analysis bandwidth

MXA performance:

- 0.3 db absolute amplitude accuracy
- +15 dBm third order intercept (TOI)
- -163 dBm/Hz displayed average noise level (DANL)
- -103 dBc/Hz Phase Noise, 10 kHz offset
- 78 dB W-CDMA ACLR dynamic range (with noise correction on)

► See page 115

www.agilent.com/find/mxa

N9010A EXA Signal Analyzer

The Agilent EXA economy-class signal analyzer is the next-generation replacement for your current economy-class instrument.

Features offered on the N9010A EXA Signal Analyzer:

- Frequency ranges: 9 kHz to 3.6, 7.0, 13.6, or 26.5 GHz
- 10 MHz standard analysis bandwidth
- Zoom in on your signals with optional 2 dB fine step attenuator or 1 dB electronic attenuator (also on available on the MXA)

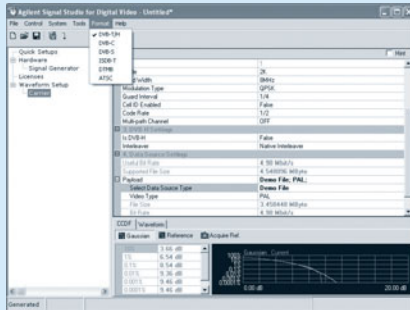
EXA performance:

- 0.4 db absolute amplitude accuracy
- +13 dBm third order intercept (TOI)
- -160 dBm/Hz displayed average noise level (DANL)
- -98 dBc/Hz Phase Noise, 10 kHz offset

► See page 121

www.agilent.com/find/exa

Dig Deeper into your Signals with the 89600 Series VSA



Now with RFID analysis.

- Powerful new MB-OFDM and RFID modulation analysis
- A new link to Simulink simulation results
- 89600 software runs in the new signal analyzers: MXA and EXA

Use the powerful measurements and displays of the 89600 to troubleshoot RFID systems. Analyze the forward (interrogator) and return (tag) signals of the most popular standards. Troubleshoot multi-band OFDM PHY layer signals, such as certified wireless USB, with the industry's most complete set of easy-to-use measurement tools. Team the software with the Agilent DSO80000 Series oscilloscopes for ultra-wideband signal capture and analysis.

Apply the power of the 89600 VSA software measurements and displays to Simulink-based designs. This new capability provides a VSA block set designed to work with Simulink tool sets and block sets.

The MXA/EXA signal analyzers take signal and spectrum analysis to the next generation, offering the highest performance in a midrange signal analyzer with the industry's fastest signal and spectrum analysis. The 89600 VSA software now runs on the MXA/EXA's internal PC offering full functionality.

► See page 124
www.agilent.com/find/89600

2

N9330A Handheld Cable and Antenna Tester, 25 MHz to 4 GHz



N9330A cable and antenna tester boosts your troubleshooting and testing speed with optimized usability at competitive price.

- With 4 hours battery operating time, N9330A enhances field test effectiveness
- N9330A supports USB connectivity for both memory stick and PC connection to offer the user most efficient way to manage test data
- The optional electronic calibrator fulfills calibration with one connection very quickly and enhances the field test efficiency

N9330A is a basic handheld cable and antenna tester with optimized usability and fast test speed at a competitive price. It is an ideal choice for installation and maintenance of wireless service (GSM/CDMA/3G/PHS/wireless LAN), military communications, broadcasting and radio links.

N9330A offers fast scan speed which enables one time multi-frequency scan completed in 1.6 seconds. The trace resolution can be up to 521 points. It also provides trace resolution of 261 and 131. The N9330A is able to store 200 traces and 15 setups, and supports USB memory stick for data and screen saving. The N9330A's usability is optimized for field use with four-hour battery operating time, USB connectivity for both memory stick and PC connection, 11-language UI, 7.2" sunlight-viewable LCD, smart electronic calibrator, and powerful post analysis PC software.

The compact, light weight (approximately 2.6 kg) and portable design, together with the standard soft carrying case make the N9330A an ideal tester for field installation and maintenance tasks.

► www.agilent.com/find/n9330a

N1996A CSA Spectrum Analyzer



CSA Portable Spectrum Analyzer.

- Frequency range: 100 kHz to 3 or 6 GHz
- Stimulus/response suite 10 MHz to 3 or 6 GHz
- Optional AM/FM Tune and Listen and optional AM/FM modulation analysis

The compact design of the CSA features a small foot print and light weight while offering a bright, 21 cm, XCA display. The battery life is 2 hours (typical). The CSA is a great measurement tool for the field as well as the R&D bench top. The CSA's modern connectivity makes it an excellent low cost solution for automated testing.

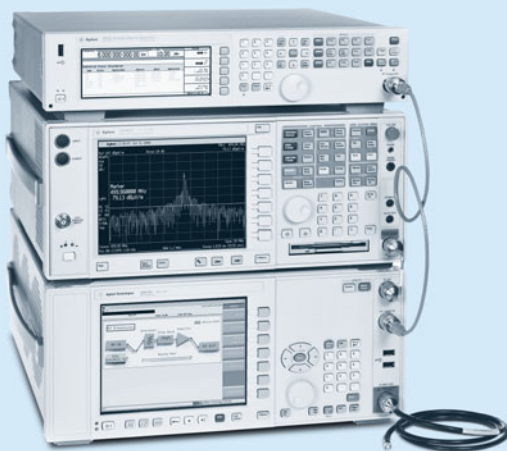
This compact spectrum analyzer offers impressive specifications:

- DANL of -146 dBm with preamplifier on
- Phase noise of -124 dBc at 1 MHz offset
- Resolution bandwidth of 10 Hz to 200 kHz in 10% steps, 250 kHz, 1, 3, 5 MHz
- Amplitude accuracy of ± 0.5 dB at 1 GHz (95% Confidence)

There is a wide range of accessories including a stimulus/response calibration kit, soft carrying case and transit case.

► See page 135
www.agilent.com/find/CSA

EMI Measurement Receiver and RF Preselector N9039A



EMI Measurement Receiver.

- RF Preselection from 9 kHz to 1 GHz
- CISPR bandwidths and Detectors
- CISPR 16-1-1 compliant

Combine the world-class performance of the E4440A PSA Series spectrum analyzer and the new N9039A RF preselector and the result is an accurate, fast EMI measurement receiver to 50 GHz.

Measurement accuracy and repeatability:

- Radiated emissions bands sensitivity to 1 GHz is -152 dBm
- Absolute amplitude accuracy ± 1.0 dB, 9 kHz to 1 GHz
- Input VSWR 1.2:1
- Preselected TOI is $+11$ dBm
- Span accuracy at 100 MHz 20 kHz typical

► See page 141
www.agilent.com/find/emi

N9320A RF Spectrum Analyzer; 9 kHz to 3 GHz



N9320A spectrum analyzer packs full functions with competitive price/performance.

- **Fast measurement speed – best for mass production manufacturing tests, service and repair tasks**
- **Light weight and portable – good for field installation and maintenance tasks**
- **Full function spectrum analyzer with an affordable price – fits your tight budget and helps you reduce cost**

The new economy N9320A RF spectrum analyzer offers fast swept speed (9.2 ms), lowest displayed average noise level (–148 dBm), narrowest resolution bandwidth (10 Hz), third order intercept (+13 dBm) at a very attractive price. It is best choice for quality-conscious and cost-sensitive customers.

As an entry-level spectrum analyzer, Agilent armed N9320A with enhanced usability designs to convenient end users. Multi-language user interface helps you to recognize the software menu faster and easier, accelerating front panel operations. Adequate logical hard keys and interface, USB connectivity, and SCPI compatible make either front panel operation or remote control easy to start-up.

Now, with the exceptionally price/performance of the N9320A RF spectrum analyzer, you can afford to own Agilent test equipment you always wanted.

► See page 136
www.agilent.com/find/n9320a

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N9340A Handheld RF Spectrum Analyzer, 100 kHz to 3 GHz



N9340A handheld spectrum analyzer offers best-in-class performance and usability for variety of industry applications.

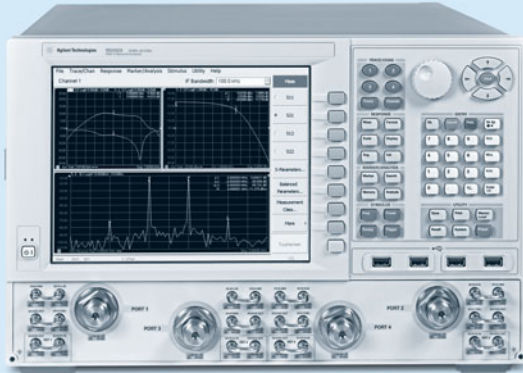
- **Truly understand all the signals in your spectrum**
- **Quickly locate and identify elusive, transient interference signals**
- **Easily operate in direct sunlight for a full 4 hours per battery**

The Agilent N9340A handheld RF spectrum analyzer provides exceptional performance and optimized usability for installation & maintenance tasks in the field, such as interference test, spectrum monitoring, and on-site repair. N9340A offers:

- **Exceptional performance.** The unrivaled sweep time (10 ms at non-zero span) dramatically reduce field time and enhance productivity. Narrow RBW (30 Hz minimum) helps to resolve close-in signals. Low DANL (–144 dBm with preamp on) allows you to detect low level signals such as spurious and noise. Low SSB phase noise helps to detect low signals close to the carrier
- **Usability optimized for field use.** The USB connectivity easy PC control and data transfer; four-hour battery life enables extended field time; 7.2 inch sunlight-viewable LCD; multi-language UI makes operating easier
- **Light weight, rugged and portable.** At 3.5 kg (with battery) the N9340A is specifically designed for field installation and maintenance tasks for military, wireless service providers (WSP), TV & broadcasting, and spectrum management authority

► See page 137
www.agilent.com/find/n9340a

N5242A PNA-X – The Premier-Performance Microwave Network Analyzer



- 10 MHz to 26.5 GHz, 2 or 4-ports
- IMD, hot-S₂₂ and mixer test using the internal combiner and built-in 2nd source
- Built-in pulse generators and modulators for fast pulse measurements

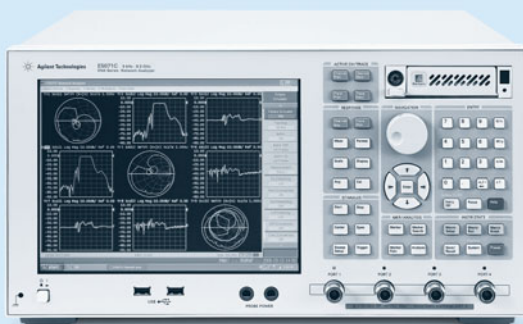
The premier-performance PNA-X network analyzer offers a unique single-connection solution for two-tone and swept LO measurements, featuring an integrated second source and signal-combining network. The PNA-X also can be configured with internal pulse modulators and generators for fast and simplified pulse measurements.

The new signal routing architecture transforms it from a pure network analyzer to an RF measurement solution for amplifiers and frequency converters. With two internal signal sources – each with high output power (+13 dBm), low harmonics (–60 dBc), a wide power sweep range (38 dB), and a built-in pulse modulator and signal combiner, the PNA-X can easily perform amplifier intermodulation distortion, hot-S₂₂, traditional S-parameter and pulsed-S-parameter measurements along with harmonic and compression measurements.

► See page 156
www.agilent.com/find/pna-x

2
 4-port PNA-X network analyzer – the ideal solution for your amplifier test needs.

E5071C RF Network Analyzer, 9 kHz to 8.5 GHz



- Wide dynamic range: >123 dB
- Low trace noise: <0.004 dB rms at 70 kHz IFBW
- Fast measurement speed: 39 ms at full 2-port cal, 1601 points

Featuring an integrated 2- or 4-port, the highest performance, extended lower frequency range, and fastest speed in its class, the Agilent E5071C ENA Series RF network analyzer is the ideal solution for manufacturing and R&D engineers evaluating RF components and circuits from 9 kHz to 8.5 GHz. The ENA Series significantly reduces engineers' cost of test through its ability to cover such a wide frequency range with a single instrument. The Agilent ENA Series addresses a broad array of component and circuit tests including EMC-related applications and automotive, wireless communications, aerospace and defense, education, and medical applications.

► See page 153
www.agilent.com/find/ena

The standard in RF network analysis.

E5052B Signal Source Analyzer, 10 MHz to 7 GHz



Get a 10X Increase in Measurement Throughput.

- World's fastest throughput and best usability in low phase noise evaluation
- Phase noise and jitter measurements with 100 MHz offset range and fs resolution
- X100 memory and enhanced triggers make transient measurements much easier

The new E5052B features a number of enhanced characteristics. 100 MHz offset range, 16 dB improved close-in residual phase noise @1 Hz offset and 100 times longer data memory are designed to increase its versatility.

The E5052B's frequency range can be extended up to 26.5 GHz with the E5053A, and up to 110 GHz with the E5053A plus Agilent 11970 Series mixers, along with a cross-correlation method.

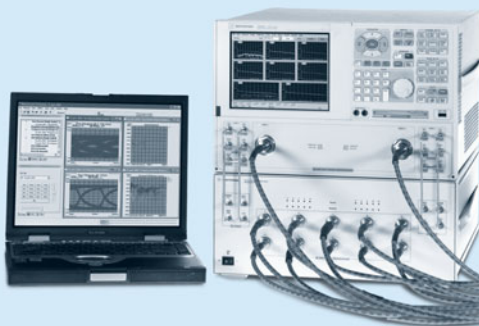
Newly added AM noise and baseband noise measurement modes provide more comprehensive real-time analysis of noise sources. An optional precision clock jitter analysis capability enables better usability with utilizing femto-second resolution.

The E5052B is suitable for use in a wide range of applications including RF/uW/mmW oscillators, VCOs, system reference clocks, LAN modules, high-speed timing modules, SerDes chips and high-speed data converter.

► See page 268
www.agilent.com/find/ssa

2

Physical Layer Test System 4.0/PLTS Studio



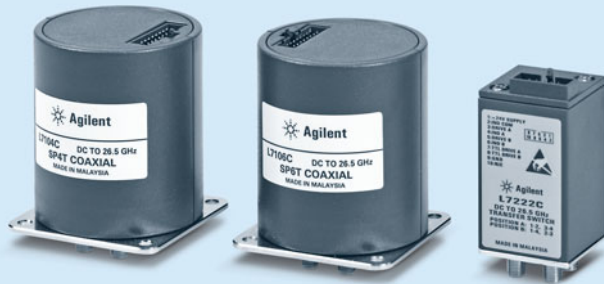
- 12-port VNA implementation for multiple aggressor differential crosstalk analysis
- Advanced file import for building .s12p files from .s4p files quickly
- Low-cost analysis package for post-measurement characterization of interconnects

Featuring new multiport enhancements, PLTS 4.0 is a robust calibration, measurement and analysis platform that is ideal for signal integrity engineers doing high-speed digital design and encountering microwave transmission line effects in their printed circuit boards, cables, IC packages and backplanes.

Included in PLTS 4.0 is Agilent's PLTS Studio software package for data analysis. Economically priced, PLTS Studio enables budget-minded engineers to fully correlate measurement-based interconnect models in a digital-friendly user environment. Designed to simplify signal integrity characterization with powerful analysis tools, it features the same multiport analysis enhancements now available with PLTS 4.0. The PLTS Studio analysis engine provides valuable insight that helps the engineer fix signal integrity problems faster.

► See page 554
www.agilent.com/find/plts

L Series EM Coaxial Switches



L7104C/L7106C multiport switches and L7222C transfer switch.

- Guaranteed 0.03 dB insertion loss repeatability up to 2 million cycles (5 million cycles typical)
- Unmatched Isolation, 90 dB minimum at 12 GHz
- Economically priced

Agilent's economically-priced L Series electromechanical (EM) switches provide the long life cycle, repeatability and reliability required to achieve higher performance in automated test and measurement, signal monitoring and routing applications. These high-performance switches reduce measurement uncertainty for 2 million cycles with a guaranteed 0.03 dB insertion loss repeatability and unmatched isolation. This not only minimizes measurement uncertainty, but also reduces the downtime for recalibration and improves testing efficiency.

The L Series offers a full selection of switch configurations: terminated and un-terminated, SP4T and SP6T multiport and a transfer, from DC to 26.5 GHz. These switches deliver the required functionality over their life expectancy while providing the flexibility to deal with the most complex switch matrix and automatic test equipment applications.

► See page 651
www.agilent.com/find/lswitches

High-performance FET Solid State Switches, 8 to 18 GHz



U9397A/C FET solid state switches.

- Low video leakage, <10 mVpp
- Industry leading settling time, 350 μ s
- Exceptionally high isolation, 100 dB

Agilent U9397A/C FET solid state switches, SPDT provide superior performance in terms of video leakage, isolation, settling time, and insertion loss across a broad frequency range. The U9397A/C are particularly suitable for measuring sensitive devices and components, where video leakage may cause damage or reliability issues. High isolation minimizes crosstalk between measurements, ensuring accurate testing and improving yields.

The U9397A/C switches incorporate a patented design which reduces the settling time to <350 μ s, measured to 0.01 dB of the final value, making them ideal for high-speed RF and microwave SPDT switching applications in instrumentation, communications, radar, and other test systems.

► See page 646
www.agilent.com/find/mta

Synthetic Instruments



Typical synthetic instrument system.

- Small, flexible, and easily reconfigured
- Provides the longest future support life architecture
- Lowers the total cost of ownership

Agilent's new synthetic instrument modules provide a new measurement methodology for automated test systems. This new concept maximizes the flexibility of a measurement system, provides greater system longevity, while also minimizing the cost of the system over its lifetime.

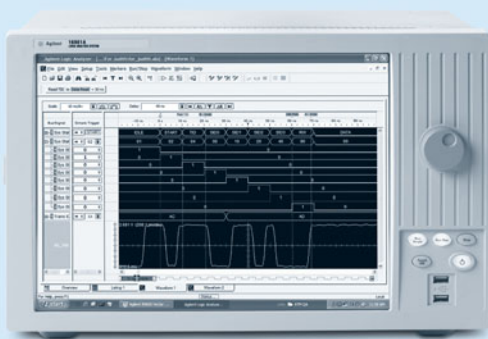
The synthetic instrument concept breaks the measurement instrumentation into its most basic functional components, which consist of a frequency converter, data converter, and numeric processor. Using these basic functional modules as building blocks, a wide variety of different types of measurements can be synthesized.

To meet the needs of this new measurement methodology, Agilent has introduced several new synthetic instrument modules. Agilent's frequency converter modules consist of a downconverter and two upconverters. For data converter modules, a variety of new arbitrary waveform generators and digitizers are available.

► See page 420
www.agilent.com/find/synthetic

2

16800 Series Portable Logic Analyzer, Built-in Pattern Generator



Portable logic analyzers with performance you can use, priced to fit your budget.

- 15-inch (38.1 cm) color display (touch screen available) allows you to see more data and gain insight quickly
- Up to 32 M memory depth enables you to identify the root cause of a problem widely separated in time from the symptom
- Models with a built-in 48-channel pattern generator provide stimulus and response in a single instrument

The Agilent 16800 Series portable logic analyzer delivers an exclusive combination of logic analysis, pattern generation, application software and innovative probing... all at a price that will fit your budget. Select from a variety of configurations that range from 34 to 204 channels. Models with a built-in pattern generator allow you to verify operation across a variety of test conditions. Upgradeable memory depth and state speed enable you to purchase the capability you need now, then upgrade as your needs evolve.

► See page 183
www.agilent.com/find/16800

16901A 2-slot Modular Logic Analyzer Mainframe



Modularity provides configuration flexibility to meet your measurement needs – now and in the future.

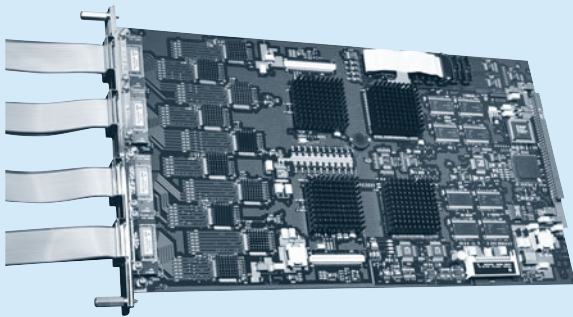
- 2-slot modular logic analyzer mainframe supports multiple timing/state logic analyzer and pattern generator modules
- 15-inch (38.1 cm) color touch screen display
- Intuitive user interface and the familiarity of Windows®

The 16901A 2-slot modular logic analyzer provides high-performance, system-level debugging of digital designs. Expandability is the key to the system's long-term value.

Customize your modular logic analyzer for your specific needs with innovative probing, high-performance measurement modules, and application specific analysis tools. Agilent provides a wide variety of FPGA, bus, protocol, processor and analysis solutions for use with your logic analyzer system. In addition, View Scope seamlessly integrates your scope and logic analyzer waveforms into a single, time-correlated display.

► See page 180
www.agilent.com/find/16900

16950B/16951B Logic Analyzer Modules with the Industry's Deepest Memory



Combine multiple acquisition modules when you need to make measurements across many channels.

- 4 GHz (250 ps) timing zoom with 64 K memory, 1.2 GHz/600 MHz timing with deep memory (half/full channel)
- State clock rates up to 667 MHz and data rates up to 1066 Mb/s (Dual Sample)
- Memory depths up to 256 M (512 M in half-channel timing mode)

The 16950B and 16951B state and timing modules for the Agilent 16900 Series logic analysis systems deliver the performance and capabilities needed to debug and validate today's high-speed applications. The module's automated threshold/sample position setup provides accurate measurements on high-speed buses.

Simultaneous eye diagrams on all channels identify problem signals quickly. Deep memory allows you to maximize the time covered by your measurement, helping you to identify the root cause of a problem widely separated in time from the symptom.

► See page 181
www.agilent.com/find/logic

B4656A FPGA Dynamic Probe for Altera FPGAs



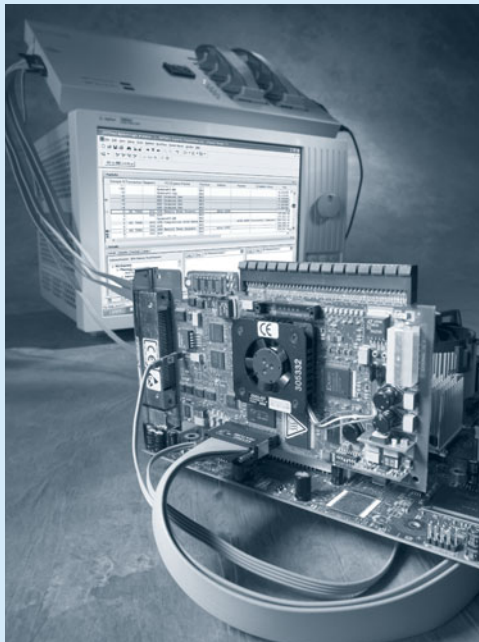
Save days to weeks when debugging your Altera FPGA-based designs with unprecedented insight into internal FPGA activity.

- Quickly access internal Altera FPGA signals
- Make new measurements in seconds without changing design timing
- Access up to 256 internal signals for each FPGA pin dedicated to debug

You rely on the insight a logic analyzer provides to understand the behavior of your Altera FPGA in the context of the surrounding system. The Agilent FPGA dynamic probe, used in conjunction with an Agilent logic analyzer, provides the most effective solution for simple through complex debugging of systems incorporating Altera FPGAs. Supported Altera FPGAs: Stratix Series, Cyclone Series, MAX Series, APEX Series, and Excalibur Series.

▶ See page 185
www.agilent.com/find/fpga

FSI-60112 PCI Express Packet Analysis Probe



Non-intrusively probe PCI Express slots and chip-to-chip links with Agilent's FSI-60112 PCI Express Packet Analysis Probe.

- Non-intrusive probing of PCI Express slots and chip-to-chip links (link widths: x4, x2, x1)
- Supports PCI Express at full frequency (2.5+ GT/s) and ALL PCI Express Modes: Squelch, Link training, TLP, DLLP, 10b/8b
- Trigger on and decode a PCI Express bus at the packet level

The FSI-60112 packet analysis probe, provides packet-based trigger and display for a PCI Express bus. With this probe you can capture and view data traveling across PCI Express in high-level format on the 16800 Series portable logic analyzer. The tool decodes the PCI Express data to present a packet-based listing and packet view format.

Packet viewer and Transaction Viewer software provides viewing of transmit and receive path in the same window. The FSI-60112 PCI Express analysis probe decodes a number of pre-defined PCI Express packets and also allows for user-defined packet setup.

▶ See page 188
www.agilent.com/find/pciexpress

N4850A DigRF v3 Digital Acquisition Probe and N4860A DigRF v3 Digital Stimulus Probe



Rapidly deploy your DigRF v3-based designs using Agilent logic analyzer and RF tools for stimulus and analysis in the digital and RF domains.

- Validate and troubleshoot devices incorporating the DigRF v3 digital serial bus across a wide variety of 2.5G and 3GPP over-air standards
- Simultaneously acquires Tx/Rx bidirectional traffic, displaying control and data packets at the protocol level
- Provides continuous DigRF v3 stimulus to replace a missing BB-IC or RF-IC

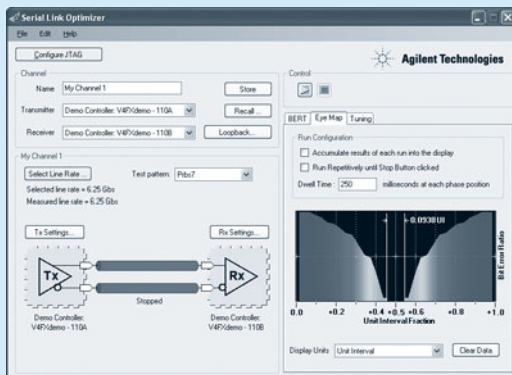
In many mobile wireless device designs, the traditional analog interface between the BB-IC and RF-IC is being replaced by the DigRF v3 digital serial bus to enable interoperability between different vendors, reduce costs and extend battery life. Spectrum analyzers and signal generators that were traditionally used to measure and stimulate the BB-IC and RF-IC interface are incapable of making the measurements on the new digital serial bus.

Agilent's N4850A acquisition probe and N4860A stimulus probe operate in conjunction with Agilent 16800 and 16900 Series logic analyzers to provide the digital serial acquisition and stimulus capabilities required for DigRF v3 based IC evaluation and integration.

The integration of DigRF v3 logic analysis tools with the Agilent RF portfolio provides the cross-domain solutions that will help you rapidly deploy your DigRF v3-based designs.

► See page 189
www.agilent.com/find/digRF

E5910A Serial Link Optimizer for Xilinx FPGAs



Automatically tune Xilinx MGT-based serial links for optimal performance.

- Graphical margin analysis with eye mapping
- Automatic optimization of your serial link's BER
- On-chip measurement via JTAG means no external instrumentation
- Available from Xilinx worldwide distributors Avnet and Nu Horizons

Agilent's E5910A Serial Link Optimizer is a software tool that extends the Xilinx ChipScope Pro Serial IO Toolkit and provides easy-to-use BERT, eye mapping, and automatic channel tuning for optimal bit error ratio on your gigabit serial bus implemented with Xilinx FPGAs.

The Serial Link Optimizer is used together with the internal bit error ratio tester (IBERT) core from the Xilinx ChipScope Pro Serial IO Toolkit. This extended analysis and automatic optimization capability saves you considerable time and expense in optimizing the BER of your serial link.

► See page 185
www.agilent.com/find/serial_IO

E2960B Series for PCI Express 2.0



E2960B Series Analyzer for PCIe 1 & 2.



- Non-Intrusive analyzer provides authentic system view with genuine and unaltered signal characteristics
- LTSSM (Link Training Status State Machine) exerciser for effective link negotiation testing, isolates failures for expedited troubleshooting
- Protocol to Logic Gateway (P2L Gateway) for correlation to the Agilent Logic Analyzers, enabling broad visibility into all parts of the system

Building on the success of its test equipment for PCI Express 1.0, Agilent is first with a complete, transaction and link layer test solution for PCI Express 2.0. This consists of a protocol analyzer, a full-featured LTSSM exerciser, including probing solutions that draw on Agilent's extensive experience in probing.

The E2960B helps you resolve demanding test situations from the physical layer through to the transaction domain. The modules continue to use Agilent's well-known N2X multi-services test solution chassis, and you can use these cost effective components independently, to ensure the highest use of test assets.

The protocol analyzer works together with Agilent's logic analysis system providing tight integration between the two test solutions. Full system viewing is facilitated using the Protocol to Logic gateway (P2L gateway), enabling time correlated cross bus measurements with cross triggering.

► See page 192
www.agilent.com/find/pcie2

1736 1, 2, 4 and 8G Fibre Channel Test Solution



1736B Fibre Channel Test Platform.

- 1, 2, 4 & 8 Gb/s Fibre Channel test platform
- One system multiple applications – Protocol analysis, traffic generation or device emulation
- Fully featured and intuitive tool with easy error duplication and sophisticated traffic generation capabilities
- Modular and expandable hardware to suit specific test configurations

The Agilent SAN test system provides an efficient way for network equipment manufacturers, storage solution integrators and semiconductor manufacturers to introduce high-quality products to the market. The SAN Tester accelerates the configuration, validation, characterization and debugging of Fibre Channel SAN devices, while Protocol Analysis helps identify and resolve the root-cause issues faster.

A traditional Fibre Channel test environment includes active test tools that generate traffic conditions needed to test all of the fabric and equipment capabilities, together with passive protocol analyzers to transparently monitor traffic information within the network. Significant challenges are related to the integration of heterogeneous test tools and various APIs in a common test environment. The Agilent modular, scalable test solution combines Fibre Channel Protocol Analysis, Traffic Generation and Fabric Performance Measurement in a common versatile, multi-user N2X chassis, helping you get instant insights into your system with multiple applications and analysis tools.

► See page 200
www.agilent.com/find/8Gig

N4903A J-BERT Pattern Generator



Quick and accurate receiver stress test with the N4903A pattern generator with built-in jitter sources.

- Simplifies worst-case jitter tolerance testing with built-in and calibrated jitter sources for random jitter (RJ), periodic jitter (PJ) and bounded uncorrelated jitter (BUJ), inter-symbol interference (ISI) and amplitude noise. Optional spread spectrum clocking
- Covers all popular data rates between 150 Mb/s to 12.5 Gb/s
- Accurate results with excellent output signal performance with 20 ps transition times and 9 ps pp jitter

The Agilent J-BERT N4903A 7 Gb/s and 12.5 Gb/s pattern generator options offer complete built-in jitter injection capabilities. Serial gigabit device ports can be stimulated with pattern streams with and without all types of jitter modulation, enabling higher-quality characterization of device performance.

The J-BERT pattern generators can be used in combination with oscilloscopes, built-in error ratio test (BIST) or other analyzers. The jitter injection capabilities include RJ, PJ, BUJ, ISI for eye closures >0.5 UI. In addition built-in sinusoidal interference can be used for vertical eye closures. The pattern sequencer, spread spectrum (SSC) option and the flexible sub-rate clocking significantly simplifies stimulating serial computer bus ports, such as PCI Express, SATA, fully-buffered DIMM and Display Port.

► See page 206
www.agilent.com/find/n4903

2

N4916A De-Emphasis Signal Converter



- Inject a de-emphasized signal with variable post-cursor for accurate receiver characterization and stress test
- Covers data rates up to 13.5 Gb/s
- Convenient operation via the user interfaces of Agilent J-BERT N4903A and 81141/42A serial pulse data generator
- Robust receiver and board designs by injecting de-emphasized signals with N4916A

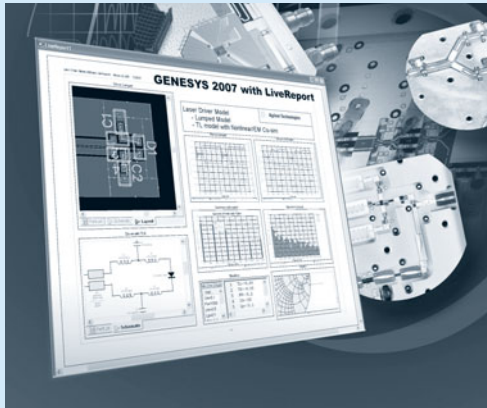
The Agilent N4916A is the industry's first de-emphasis signal converter. It enables design and test engineers to accurately and conveniently characterize gigabit-speed ports and channels that operate with de-emphasized signals.

De-emphasis is a commonly used technique for transmitting electrical signals at gigabit rates over a PC board trace.

The new N4916A de-emphasis signal converter allows characterizing high-speed devices by injecting de-emphasized signals. The receiver's behavior can be analyzed including the channel effects of a real-world PC board environment under various de-emphasis level and signal conditions. It is operated via the user interfaces of the Agilent J-BERT N4903A or the 81141/42A serial pulse data generator.

► See page 210
www.agilent.com/find/N4916

GENESYS 2007



- Integrated, easy-to-use EDA environment optimized for RF & microwave component designers
- Save RF board turns and achieve first-pass RF design success up to 50 GHz with accurate new EM capabilities
- Configurations start at just US\$3995, buy online at www.agilent.com/find/eesof-genesys-core

Genesys is an integrated electronic design automation (EDA) environment for independent workgroups doing traditional RF board and microwave component design. From initial system architecture through final documentation, Genesys provides state-of-the-art performance in a single easy-to-use design environment that is fast, powerful, and affordable.

Revision 2007 is now available, and includes:

- LiveReport: A living notebook page that collects live views of schematics, graphs, equations, notes, and tables into a single page
- Updated vendors parts libraries, with over 30,000 commercial parts
- New localized user interface in 5 languages: Russian, Japanese, Korean, Chinese (simplified), and Chinese (traditional)

► See page 529

www.agilent.com/find/eesof-genesys-evaluation

2

E6651A Mobile WiMAX Test Set



- Base station emulation supporting network entry, traffic connection and functional test
- Logging and analysis tools for protocol verification, expandable to protocol conformance test (PCT)
- Physical layer RF test suite, and optional test automation software

The E6651A represents a significant breakthrough in Mobile WiMAX testing enabling 802.16e-2005 subscriber station designers and manufacturers to rapidly move from development to volume production, and improve the integrity and quality of their products while reducing cost.

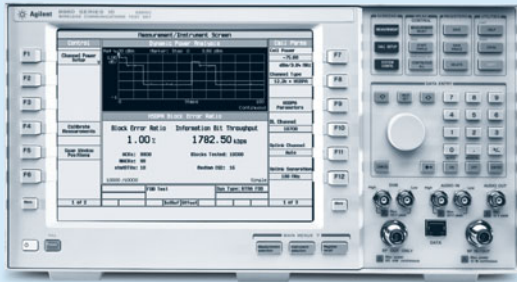
The Agilent E6651A is a WiMAX base-station emulator providing a test environment for verifying network entry and basic data connection. It includes a suite of RF measurements for PHY testing of WiMAX transmitters and receivers. Multi-profile support is provided using flexible RF signal generation and signal analysis up to 6 GHz.

A number of software applications are available, which significantly enhance the capabilities of the test set and make it an indispensable tool for: Repeated RF testing, end-to-end application testing, protocol logging & analysis and protocol conformance test (PCT) using TTCN-3 protocol scripting.

► See page 505

www.agilent.com/find/E6651A

E6720A Lab Application Annual Contract

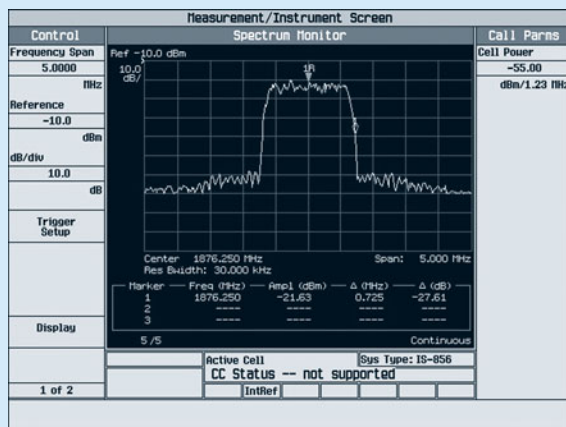


- Provides individualized early notification and access to pre-release revisions of lab application product updates and enhancements during the term of the contract for no additional charge
- New firmware and licenses (if required) are delivered electronically on demand via the web
- Order Option 001 for E6701E, Option 003 for E6703D, and Option 006 for E6706A

With rapidly evolving standards and the continuing stream of new product features, the E6720A lab application annual contract offers an edge for getting reliable products to market quickly. By ordering an annual contract, you get all new releases coming out in the next year for Agilent's powerful lab applications. The E6720A optimizes your ability to quickly isolate and resolve product faults and incompatibility issues, and prevent manufacturing delays.

► See page 483
www.agilent.com/find/E6720A

1xEV-DO FTM Test Application



- E5515C generates forward link physical channels
- No call processing to bring up connection, automation through Qualcomm Serial Interface Command Set
- Independent receiver measurements on phone's transmitted signal

The Agilent E1976A 1xEV-DO Factory Test Mode Test Application is the subset of the E1966A 1xEV-DO Mobile Test Application for Release 0 and Release A. It is also the first one-box test set solution to support 1xEV-DO Rel A Factory Test Mode supported by Qualcomm® allowing engineers to test the terminal's physical channel performance through test mode, rather than call processing. The test requires external serial port control of mobile device. Order the E1976A-102 to receive the Release A Factory Test Mode functionality.

The E1976A meets the needs of mobile manufacturers, developers and designers of leading edge 1xEV-DO wireless access terminals. Designed for use with Agilent's 8960, it ensures efficient test times, accuracy, and repeatability in 1xEV-DO test processes.

► See page 491
www.agilent.com/find/E1976A

E6601A Wireless Communications Test Set



E6601A is the next generation of mobile phone manufacturing test.

- Reduce the cost of test for high volume mobile phone manufacturing with the E6601A 3.5G ready Wireless Communications Test Set
- Mobile phone technology specific software applications optimized for high volume manufacturing test
- Advanced fast calibration techniques provide state of the art test speeds

The Agilent E6601A is the next-generation solution for 2G, 2.5G, 3G, and 3.5G mobile phone/cell phone calibration and non-signaling test. Combining industry-leading measurement speed and integrity, buy only what you need architecture, and an integrated Windows® PC, the E6601A helps you achieve the lowest cost of test in wireless device manufacturing.

E6601A non-signaling test performance complements the industry-leading full call processing performance of the 8960 Wireless Communications Test Set which is continually evolving to meet mobile test needs in R&D, manufacturing, and repair.

► See page 497
www.agilent.com/find/E6601A

2

E6890A General Purpose Application for the E6601A



- CW/AM/FM/DSB-SC source
- High-speed TX Measurements: channel power, settable fixed channels from 1 kHz to 5 MHz, frequency error, power vs time (zero span spectrum monitor)
- High-performance spectrum monitor (spectral analysis in a Windows interface) and optional IQ capture for waveform sampling

The Agilent E6890A general purpose application for the E6601A test set provides a calibrated source and receiver for wireless device test. This general purpose application, designed for non-signaling test in re-work and troubleshooting stations, and development can play an important role in meeting your time-to-market goals and reducing your cost of test.

This general purpose test solution is based on the new, next-generation, high-performance E6601A test set. With an application focused on basic RF generation and measurement, flexible connectivity (LAN, GP-IB, USB) and access via Windows Remote Desktop, the next-generation capabilities of this test set offers a general purpose solution that can increase your efficiency and reduce your test costs.

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www.agilent.com/find/E6890A

E6831A GSM/GPRS/EGPRS Cal Application for the E6601A



- GSM/GPRS ARB source for flexible phone receiver (RSSI) testing
- Full set of high-speed transmitter measurements support all GSM/GPRS chipset calibration
- Dynamic Power provides fast series of power measurements for high-speed amplitude characterization (requires chipset support) and optional Phase and Amplitude versus Time measurement for high-speed characterization of phase-varying amplifiers (requires chipset support)

The Agilent E6831A GSM/GPRS/EGPRS cal application for the E6601A test set provides all the necessary capabilities to calibrate your GSM, GPRS and EGPRS mobile devices. This cal application, designed for non-signaling test in high-volume manufacturing, helps you achieve your time-to-market goals while lowering your cost of test for GSM, GPRS and EGPRS wireless devices.

This GSM/GPRS/EGPRS test solution is based on the new, next-generation, high-performance E6601A test set. With applications focused on calibration, flexible licensing, a built-in PC and high-speed measurements, the next-generation capabilities of this test set offers a UMTS calibration solution that can increase your throughput and reduce your test costs.

► See page 499
www.agilent.com/find/E6831A

E6832A W-CDMA Cal Application for the E6601A



- W-CDMA ARB source for flexible phone receiver (RSSI) testing
- Full set of high-speed transmitter measurements support all W-CDMA chipset calibration
- Dynamic Power provides fast series of power measurements for high-speed amplitude characterization (requires chipset support) and optional Fast Device Tune capability combines dynamic power, frequency hopping and simultaneous source (RSSI) for high-speed transmitter and receiver characterization of supported chipsets

The Agilent E6832A W-CDMA cal application for the E6601A test set provides all the necessary capabilities to calibrate your W-CDMA and HSDPA mobile devices. This cal application, designed for non-signaling test in high-volume manufacturing, helps you achieve your time-to-market goals while lowering your cost of test for W-CDMA and HSDPA wireless devices.

This W-CDMA/HSDPA test solution is based on the new, next-generation, high-performance E6601A test set. With applications focused on calibration, flexible licensing, a built-in PC and high-speed measurements, the next-generation capabilities of this test set offers a UMTS calibration solution that can increase your throughput and reduce your test costs.

► See page 500
www.agilent.com/find/E6832A

E6833A cdma2000/1xEV-DO Cal Application for the E6601A



- cdma2000/1xEV-DO ARB source for flexible phone receiver (RSSI) testing
- High-speed transmitter measurements support cdma2000/1xEV-DO chipset calibration
- Dynamic Power provides fast series of power measurements for high-speed amplitude characterization (requires chipset support) and optional Fast Device Tune capability combines dynamic power, frequency hopping and simultaneous source (RSSI) for high-speed transmitter and receiver characterization of supported chipsets

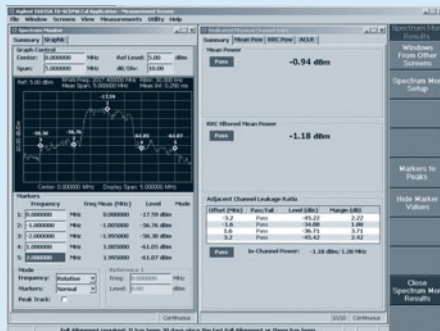
The Agilent E6833A cdma2000/1xEV-DO cal application for the E6601A test set provides all the necessary capabilities to calibrate your cdma2000 and 1xEV-DO mobile devices. This cal application, design for non-signaling test in high-volume manufacturing, helps you achieve your time-to-market goals while lowering your cost of test for cdma2000 and 1xEV-DO wireless devices.

This cdma2000/1xEV-DO test solution is based on the new, next-generation, high-performance E6601A test set. With applications focused on calibration, flexible licensing, a built-in PC and high-speed measurements, the next-generation capabilities of this test set offers a UMTS calibration solution that can increase your throughput and reduce your test costs.

▶ See page 501
www.agilent.com/find/E6833A

2

E6835A TD-SCDMA Cal Application for the E6601A



- TD-SCDMA ARB source for flexible phone receiver (RSSI) testing
- High-speed transmitter measurements support TD-SCDMA chipset calibration

The Agilent E6835A TD-SCDMA cal application for the E6601A test set provides all the necessary capabilities to calibrate your TD-SCDMA mobile devices. This cal application, designed for non-signaling test in high-volume manufacturing, helps you achieve your time-to-market goals while lowering your cost of test for TD-SCDMA wireless devices.

This TD-SCDMA test solution is based on the new, next-generation, high-performance E6601A test set. You gain the benefits of industry leading measurement speed, optional time-based and portable licensing, and an integrated open Windows PC. With applications focused on calibration, flexible licensing, a built-in PC and high-speed measurements, the next-generation capabilities of this test set offers a TD-SCDMA calibration solution that can increase your throughput and reduce your test costs.

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www.agilent.com/find/E6835A

MXZ-1000 WiMAX Manufacturing Test System



- **High performance** – Based on the MXA signal analyzer which offers the industry's fastest signal and spectrum analysis, MXG signal generator provides the fastest switching speeds in its class
- **Beceem's chipset certified** – The MXZ-1000 is the first WiMAX manufacturing test system in industry that is certified with Beceem's chipset library. It is optimized to communicate Beceem MS120 baseband and RF chipset and the WiMAX modem software thus enabling the highest possible measurement throughput. Beceem will certify Agilent's test systems for use by manufacturers that are developing mobile WiMAX products based on the MS120 chipset
- **Supports fixed and mobile WiMAX** – Enables both fixed (802.16-2004) and mobile (802.16 OFDMA) "last mile" broadband wireless access (BWA) systems using a point-to-point or point-to-multipoint architecture

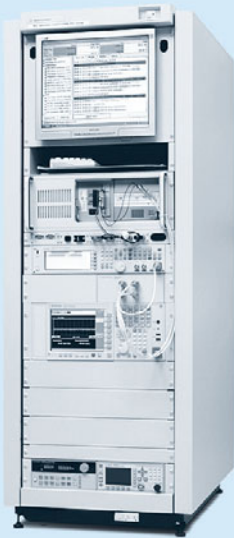
The Agilent MXZ-1000 is a fully integrated WiMAX calibration and tuning test solution offering exceptional test speed, superior measurement performance and capability, a user-friendly GUI environment, and world-wide global delivery and support.

Agilent MXZ-1000 is the industry's first WiMAX manufacturing test system offering a library of proprietary chipset communication and calibration profiles for WiMAX manufacturers seeking a WiMAX calibration solution optimized for high-volume environments.

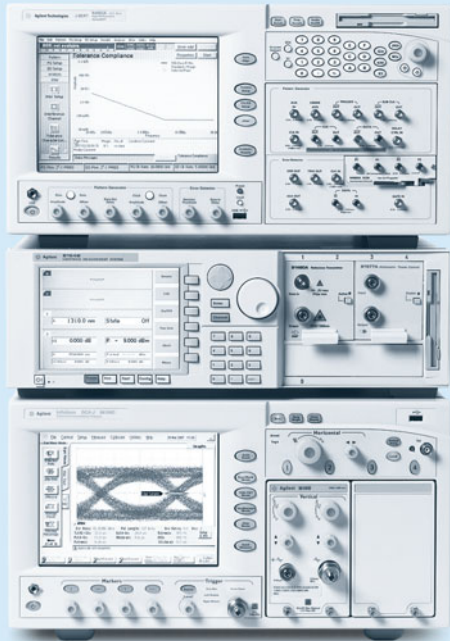
The MXZ-1000 is ideal for:

- Reference designers and contract manufacturers for modules
- Original equipment manufacturer (OEM) for consumer products like PC/PDA/handset
- Access point (AP) manufacturers and reference design houses (RDH) using OEM reference chipsets

► www.agilent.com/find/mxz1000



N4917A Optical Receiver Stress Test Set



Complete optical receiver stress test with the N4917A.

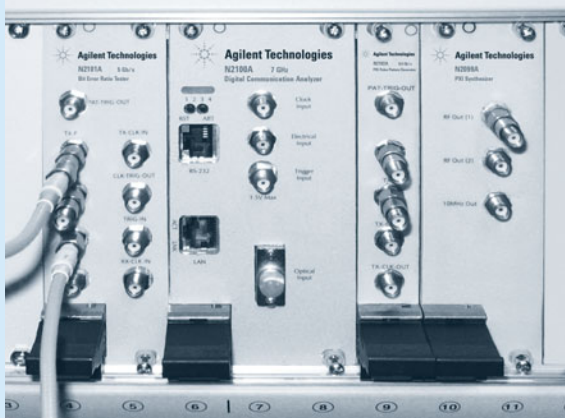
- Calibrated injection of extinction ratio (ER), optical modulation amplitude (OMA) and vertical eye closure penalty (VECP)
- One reference transmitter for 1310 nm and 1550 nm single mode
- Targets 10 Gb Ethernet and Fibre Channel

The Agilent N4917A is a complete optical receiver test set. It allows repeatable and calibrated characterization and standard compliance test of optical transceivers and ROSAs (receiver optical sub-assemblies) operating at data rates up to 12.5 Gb/s. Calibrated injection of ER, VECP and OMA is now easy. A calibration and automation software controls all instruments and allows the user to inject compliant and custom stress to the receiver under test. Together with the accessory kits measurements are now reproducible across different test sites. The reference transmitter supports 1310 nm and 1550 nm single mode fibers, reducing the amount of test equipment needed when testing devices for multiple standards.

► www.agilent.com/find/optical_stress

2

PXIT Modular Transceiver Test Platform



Cost-effective manufacturing optimization with the PXIT Modular Transceiver Test Platform.

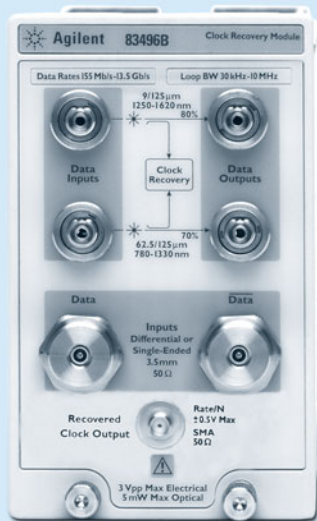
- Cost-effective transceiver test solution including BER and eye diagram measurement solutions
- Large selection of instruments and modules
- Small, compact, rugged form factor

The PXIT family of products are high performance optical and electrical PXI modules used to test a wide range of photonic components in the telecommunications and data communications industry. Products include a 10.7 Gb/s Bit Error Ratio Tester, 8.5 Gb/s Digital Communication Analyzer (DCA), 11.1 Gb/s Pulse Pattern Generator, and a PXI Synthesizer.

PXI is a modular instrumentation platform designed specifically for measurement and automation applications. This new instrument set provides easy automation through Microsoft® DLL and Active X support and has a straightforward user interface allowing measurements to be configured quickly from the start.

► See page 212
www.agilent.com/find/pxit

83496B Clock Recovery Module with Phase Noise Analysis



Easy clock recovery, even in the presence of spread spectrum clocking (SSC).

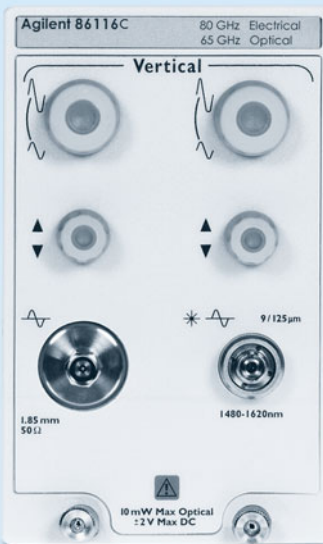
- Provides a standards compliant trigger for waveform measurements, even in the presence of spread spectrum clocking
- Accurate phase noise analysis provides insight into jitter performance of clock and data signals
- Continuous, unbanded tuning from 50 Mb/s to 13.5 Gb/s
- Ultra low residual jitter: <300 femtoseconds rms

The 83496B clock recovery module provides ideal performance for waveform analysis with the 86100C Infiniium DCA-J Digital Communications Analyzer. It can derive a clock from NRZ signals with rates as low as 50 Mb/s, as high as 13.5 Gb/s, and any rate between, providing the ultimate in flexibility. At less than 300 femtoseconds rms, the residual jitter of the output clock is virtually negligible, allowing accurate measurements of very low levels of signal jitter.

The 83496B and phase noise application software reveal root causes of jitter through frequency domain analysis – an effective and easy method of detecting jitter sources. Also, this solution can perform the analysis on both clock and data signals, so the causes of data jitter can be related to system clocks.

▶ See page 72
www.agilent.com/find/83496B

86116C 65 GHz Optical and 80 GHz Electrical Plug-in Module



Accurate analysis of both optical and electrical 40 Gb/s waveforms.

- The widest optical and electrical bandwidths available in one module
- Well designed frequency response for precision waveforms
- Switchable 39.8 and 43.0 Gb/s optical reference receivers

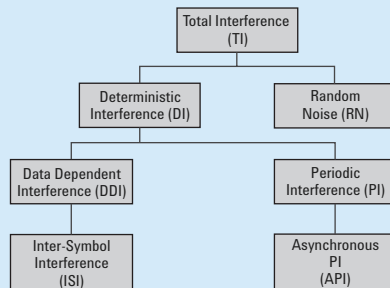
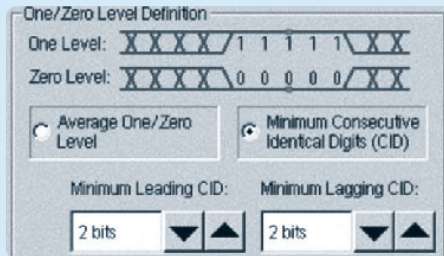
The 86116C Optical and Electrical Module represents one of the fastest solutions available for measuring high-speed communications signals. With 65 GHz optical and well over 80 GHz electrical bandwidth, the 86116C when paired with the 86107A Precision Timebase becomes the ideal solution for ultra high-speed waveform analysis.

The 65 GHz bandwidth setting provides the best pulse fidelity mode for measurement and display of very high-speed waveforms and provides a fast full-width, half-max (FWHM) of 7.4 ps. User selectable bandwidth settings can reduce noise when observing low amplitude signals.

The electrical channel features well over 80 GHz of bandwidth. This yields a 4.4 ps system risetime. Just as important as bandwidth, the channel has a well controlled frequency response to minimize waveform distortion. User selectable bandwidth settings of 55 and 30 GHz can be used for reduced instrumentation noise.

▶ See page 72
www.agilent.com/find/86116C

86100C Infiniium DCA-J Option 300 Amplitude Analysis



Easy Relative Intensity Noise (RIN) measurements and complete eye characterization with interference decomposition of high speed digital signals.

- Advanced technique for determining signal amplitude and its constituent components
- Measure RIN on industry-standard PRBS patterns
- Complete compliance verification in one instrument

The Agilent 86100C Infiniium DCA-J option 300 provides an advanced technique for determining signal amplitude. Users can isolate specific bit sequences to compose a signal amplitude measurement. The impact of various data patterns can be examined. Standards based optical modulation amplitude test, usually requiring a square wave pattern can now be derived from virtually any data pattern.

Option 300 provides the same industry-accepted analysis now translated into the amplitude domain. This enables capabilities such as Relative Intensity Noise (RIN) measurement, a common specification for optical transmitters. In the past, RIN measurements have required expensive or complicated test equipment. Now, with this software, eye-mask test and RIN measurements can be performed quickly and accurately using the same equipment and at the same time. Option 300 also allows separation of interference parameters to extremely low probabilities, providing an accurate measurement of Q-factor, commonly used to estimate bit error ratio.

► See page 72
www.agilent.com/find/dcaj

2

N4373B 67 GHz Lightwave Component Analyzer



67 GHz Lightwave Component Analyzer (LCA) to characterize high speed electro-optical components with fast and accurate turn-key solution.

- Excellent accuracy of absolute and relative responsivity measurements
- Fast time to market with turn-key solution
- Easy and fast measurement setup

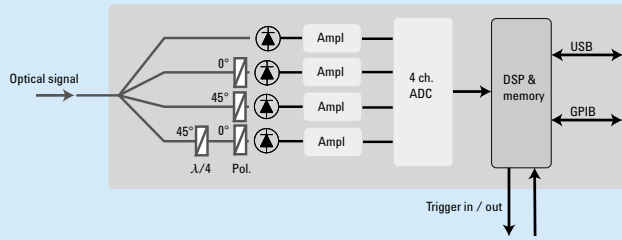
Agilent's N4373B Lightwave Component Analyzer (LCA) is the instrument of choice to test the most advanced 40 Gb/s electro-optical components. With 67 GHz modulation bandwidth it supports also S21 performance test for real 100 Gb/s electro-optical components. The N4373B is the successor of the already discontinued 86030 LCA.

Key benefits:

- High absolute and relative accuracy measurements improve the yield of development and production processes. With the excellent accuracy and reproducibility, measurement results can be compared among test locations world wide
- High confidence and fast time-to-market with a NIST-traceable turn-key solution
- Significantly increased productivity using the fast and easy measurement setup with a unique new calibration process leads to lower cost of ownership

► See page 598
www.agilent.com/find/LCA

N7781A Polarization Analyzer



N7781A polarization analyzer operation diagram.

- Measurement of Stokes Parameters (SOP)
- Measurement of degree of polarization (DOP)
- High-speed operation (>1 M samples per seconds)

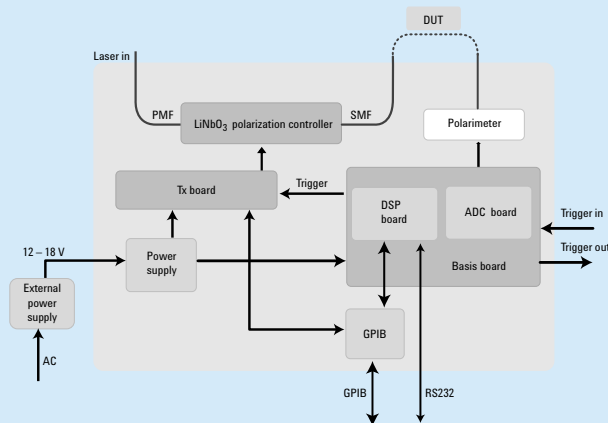
The Agilent N7781A is a compact high-speed polarization analyzer which provides comprehensive capabilities for analyzing polarization properties of optical signals. This includes representation of the State of Polarization (SOP) on the Poincare Sphere (Stokes Parameter). The on-board algorithms together with the on-board calibration data ensure highly accurate operation across a broad wavelength range.

Due to its real time measurement capability (1 M samples/s) the instrument is well suited for analyzing disturbed and fluctuating signals as well as for control applications requiring real time feedback of polarization information.

Analogue data output ports are provided, for example for support of control loops in automated manufacturing test systems.

► See page 594
www.agilent.com/find/pol

N7788A Optical Component Analyzer



N7788A operation diagram.

- Highest accuracy in a single sweep: no averaging over multiple sweeps required
- Complete measurement across C/L-band in less than 10 seconds
- Robustness against fiber movement/vibration and drift

Agilent Technologies pushes the limits of component measurements with the N7788A Component Analyzer. Its proprietary technology is comparable with the well-known Jones-Matrix-Eigenanalysis (JME) which is the standard method for measuring Polarization Mode Dispersion (PMD) or differential group delay (DGD) of optical devices. Compared to the JME, Agilent's new single scan technology offers a range of advantages:

A complete set of parameters:

- DGD/PMD/PDL/2nd order PMD
- Power/Loss
- TE/TM-Loss
- Principal States of Polarization (PSPs)
- Jones and Mueller Matrices

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www.agilent.com/find/pol

J8115A LIN Tester



The J8115A LIN Tester is a very flexible analysis and emulation tool used for the testing and validation of LIN communication systems.

- Full master and slave emulation capability
- Accurate timing measurements with 10 μ s resolution
- LIN Go editor to connect signals to graphical objects in the PC environment
- Extensive online and offline protocol analysis capabilities

The Agilent J8115A LIN Tester is the “Complete Test in a Single Tool” solution for LIN. The efficient analysis and emulation capabilities in real time on the compact hardware, in durable housing, make the LIN Tester the foremost LIN test tool.

The complete analysis of protocol data, the precise analysis of the protocol timing parameter with a resolution of 10 μ s and flexible triggering make the analysis and error tracing in LIN networks fast and effective.

The real time emulation implemented on the LIN Tester hardware permits precise communication timing, the flexible programming of protocol timing errors and the dynamic changes between operational mode and timing schedules.

Through the use of a LIN Tester, the development of robust LIN networks becomes possible with only one tool.

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www.agilent.com/find/lintester

2

J8120A VPT501 Vehicle Protocol Tester Series 500



J8120A VPT501 is your indispensable tool for identifying and solving network related communication faults, that otherwise may be unidentifiable through traditional testing methods.

- 2 CAN, 2 LIN interfaces
- Integrated transceivers for high speed and fault tolerant CAN
- 8 configurable digital I/O
- Standalone data logger mode

Engineered on innovation, the Vehicle Protocol Tester series 500 (VPT501) ensures effective network testing results by providing: a truly efficient configuration process, expansive testing methodologies, and highly reliable measurement data.

VPT501 efficiently enables reuse of existing communication system databases by fully supporting import of standard database formats (.dbc, .ldf, .mcf), while being expandable to include more detailed timing parameters critical to system testing. As a result of the complete database definition, the VPT501 is efficiently configured for rest bus emulation and testing without requiring any custom developed code. The highly configurable and flexible test environment automatically identifies communication patterns which are not in accordance with specifications, enabling the identification and insight required for solving complex communication problems related to data throughput timing, gateway delays, data synchronization, error frames, and missing data.

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www.agilent.com/find/vpt501

U1065A Acqiris DC282, DC252, DC222 High-Speed 10-bit PXI/CompactPCI® Digitizers



- Quad-, dual- and single-channel models
- Up to 8 GS/s sampling rate with 10-bit ADC resolution
- Choice of mezzanine front ends with input protection
- Standard input option, 2 GHz bandwidth, 50 Ω , DC or AC-coupled, with internal DC calibration
- High-frequency input option, 3 GHz bandwidth, 50 Ω , DC-coupled
- High-impedance input option, 1 GHz bandwidth, 50 Ω /1 M Ω , DC or AC-coupled with internal DC calibration

The Agilent U1065A Acqiris DC282, DC252 and DC222 PXI/CompactPCI 10-bit digitizers can each achieve a dazzling single channel sampling rate of 8 GS/s, and offer a choice of front-end input mezzanines providing up to 3 GHz input bandwidth or switchable high impedance input coupling. This front-end flexibility, coupled with astounding data conversion performance, makes these digitizers ideal for implementation in applications such as high-resolution radar, lidar, and ultrasound, as well as semiconductor test and large scale physics research experiments.

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www.agilent.com/find/acqiris

U1071A Acqiris DP1400 Dual-Channel PCI Digitizer Card

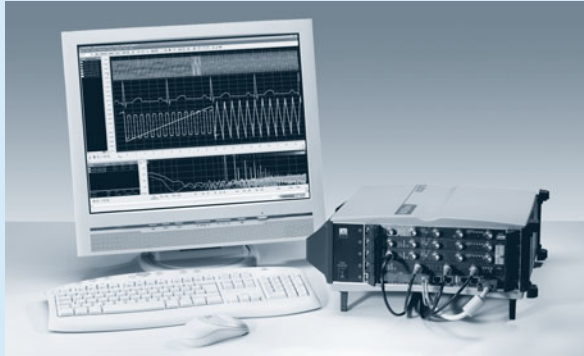


- Dual-channel, 8-bit digitizer
- 1 GS/s real-time sampling rate on each channel, up to 2 GS/s in single-channel mode
- 1 GHz bandwidth guaranteed over 50 mV to 5 V full scale ranges
- Power requirements <15 W
- Auto-synchronous bus system for trigger and clock signal distribution to multiple modules (up to 3 modules)

The Agilent Acqiris DP1400 high-speed digitizer is designed to provide optimized data conversion performance and maximum data throughput. It offers a very high level of integration, and features exceptional low power consumption in a compact package. The digitizers' front-end includes both signal conditioning and a high-speed analog to digital converter (ADC) components.

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www.agilent.com/find/acqiris

U1056A AcqirisMAQS Multichannel Data Acquisition



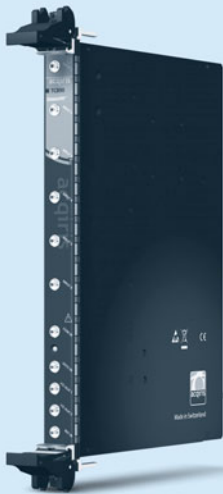
- A turnkey solution for measurements and analysis of up to 28 high-speed signals
- Multi-waveform display on a large high resolution screen
- Complete overview of your system hardware
- Parameter measurements and analysis
- Compact and low power for portable applications

The Agilent U1056A Acqiris MAQbox delivers essential multichannel oscilloscope capabilities in a compact package. It offers a benchtop standalone solution to multichannel data acquisition and eliminates the need for extensive software development. MAQBox is a modular instrument providing a wide range of capabilities. Its scope-like GUI has been optimized for the set-up of multiple digitizers. MAQbox incorporates innovative features to easily display, compare, store and analyze large numbers of waveforms.

► See page 472
www.agilent.com/find/acqiris

2

U1051A Acqiris TC890 High Resolution Multi-start, Multi-stop Time-to-Digital Converter



- 6 channel multi-stop time-to-digital converter (TDC) with multi-start acquisition mode
- 50 ps timing resolution
- Ideal for measurement in time-of-flight applications including mass spectrometry and LIDAR and for various pulse-timing measurements
- Large internal memory buffer, with up to 4 million events
- Low jitter (<3 ps rms) stable (± 2 ppm) internal clock source

The Agilent Acqiris TC890 features six independent stopwatches for precise timing measurements from a common start event to multiple stop events at a high resolution. The TC890 is ideal for time measurement applications including LIDAR for 3D mapping and navigation, fluorescence lifetime spectrometry and ion counting in time-of-flight mass spectrometry (TOFMS). Many pulse timing measurements, such as period, frequency and time interval analysis (TIA), also benefit from the new TDC's precise measurement technology.

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www.agilent.com/find/acqiris

U1062A Acqiris DC152 and DC 122 High-Speed 10-bit 3U PXI/CompactPCI® Digitizers



- Dual- and single-channel models
- Up to 4 GS/s sampling rate with 10-bit ADC resolution
- Dual-channel 50 Ω front end (DC152 only), with 2 GHz bandwidth, software selectable interleaved single-channel mode, on either input
- Choice of single-channel front-end mezzanines (DC122 only)
- Standard input option, with 2 GHz bandwidth, 50 Ω , DC or AC-coupled, with internal DC calibration
- High-frequency input option, with 3 GHz bandwidth, 50 Ω , DC-coupled

The Agilent U1062A Acqiris dual-channel DC152 and single-channel DC122 digitizers significantly increase data acquisition and testing rates, each achieving a dazzling single-channel sampling rate of 4 GS/s. The digitizers are ideal for high-speed applications such as telecommunications, ATE, and semiconductor testing, where test time should be limited only by the speed limits of the device under test (DUT).

► See page 474
www.agilent.com/find/acqiris

4080 Series of Parametric Testers



Fast and efficient production test of current and next-generation semiconductor processes, including support for parallel test, flash cell test, and RF test.

- Decrease test times by up to 50% via Virtual Multiple Testhead Technology that supports both synchronous and asynchronous parallel test
- Meet the characterization demands of advanced Flash memory cell technologies with ± 40 V output capability, 20 ns rise/fall times, and 3-level output capability
- Improve throughput and increase flexibility of RF production testing via an 8 x 10 RF matrix with 20 GHz capability

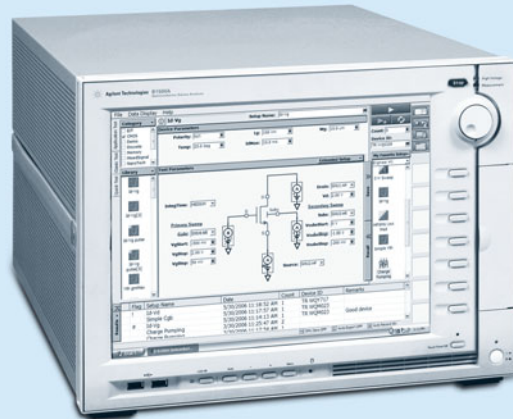
Agilent 4080 Series is a new production parametric test platform that provides unprecedented throughput and performance for advanced and next-generation processes. The 4080 Series is available in three models.

1. The 4082A Parametric Test System, which provides greatly enhanced measurement throughput via architecture enhancements and parallel test capabilities.
2. The 4082F Flash Memory Cell Parametric Test System, which supports new pulse generator units optimized for performing advanced Flash memory cell evaluation.
3. The 4083A DC/RF Parametric Test System, which provides RF S-parameter characterization to 20 GHz and offers an optional 8 x 10 20 GHz RF matrix for additional measurement flexibility.

These modular and expandable production test platforms have the capabilities to meet all of the parametric characterization challenges posed by the most advanced semiconductor processes.

► See page 614
www.agilent.com/see/4080

B1500A Semiconductor Device Analyzer



A complete CV/IV parametric characterization solution, including support for quasi-static CV, medium-frequency CV (to 5 MHz), and high-voltage pulsed applications such as flash cell test.

2

- The PC-based B1500A comes with Agilent's innovative EasyEXPERT software, which makes every user into a parametric test expert. The intuitive GUI-based EasyEXPERT interface makes setting up a measurement quick and easy even for a novice user, and the over 180 furnished application tests help to reduce the start-up time. EasyEXPERT software is also available in a stand-alone desktop version, which enables an external PC to control the B1500A, the 4155B/C, and the 4156B/C
- The B1500A is a complete, single-box CV/IV parametric measurement solution. The B1500A can measure current and voltage with 0.1 femtoamp and 0.5 microvolt resolution. It also has quasi-static CV measurement capability and supports a capacitance measurement unit that can measure capacitance up to 5 MHz
- The B1500A supports a semiconductor pulse generator unit (SPGU) module for non-volatile memory test. The high-voltage SPGU (HV-SPGU) has ± 40 V output and tri-level pulse capability to meet the most demanding test challenges posed by non-volatile memory testing

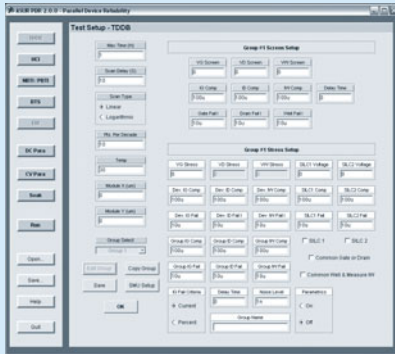
The Agilent B1500A is a complete parametric test solution. It supports all aspects of parametric test, from basic manual measurements to test automation across a wafer in conjunction with a semiautomatic wafer prober. The B1500A utilizes the Microsoft Windows XP Professional operating system, making it easy to integrate into your PC-based work environment. The B1500A's modular configuration, with ten available module slots, makes it easy to configure the B1500A exactly the way you want.

Currently available modules include several types of source/monitor units (SMUs), a multi-frequency capacitance measurement unit (MFCMU), and a high-voltage semiconductor pulse generator unit (SPGU). The integrated B1500A solution eliminates many of the common measurement errors associated with using rack-and-stack instruments and provides improved measurement performance.

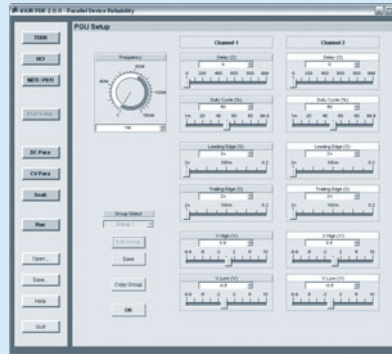
► See page 622

www.agilent.com/see/b1500a

C1280A ASUR Parallel Device Reliability (ASUR PDR)

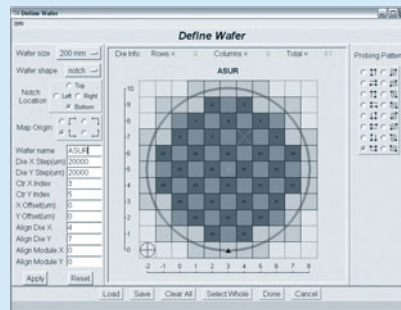


Example of PDR DC TDDB Test Module.



Example of PDR AC Test Module.

2



ASUR PDR Prober Server for semi or fully automated probers.



ASUR PDR Off-line Test Development and Test Verification.

- ASUR PDR is a topology scalable parallel multi-device and multi-site on wafer DC and AC reliability tool for accelerated to long-term tests. Those tests include device conditioning, pre- and post-test programless parametric, and JEDEC compliant [J|V] TDDB with SILC, VRAMP, BTS, [N|P] BTI, HCI, EM, etc.
- The scalability of PDR provides seamless expansion beyond fast E5270, E5260 or B1500 SMU mainframes and E5250 or B2200 switching matrix units, where multiple mainframes can be used for high-pin count tests. In addition, various type of resources such as multi-channel PGU can be added to the topology to expand the solutions into AC reliability
- The PDR test modules do not require programming and each having especial value added features included but not limited to non-relaxation techniques, fast microsecond measurements, device conditioning to simulate actual circuit stress conditions, pre- and post-stress electrical tests, compensation for over- and under-shoot due to cable and systems parasitics, on-the-fly techniques, etc.

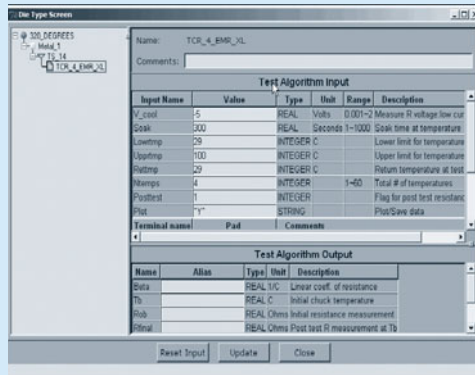
ASUR PDR provides parallel, multi-site, on-wafer DC and AC (Pulsed) TDDB, BTS, HCI, N|P BTI and EM accelerated to long-term reliability tests. Advanced features allow detection of novel effects found in advanced materials such as high-k and low-k dielectrics, copper and transition silicide barrier metallization.

ASUR PDR builds upon and extends the popular PDQ-WLR[®] algorithms to cover reliability studies from accelerated to long-term stress allowing users to selectively test devices whether individually (per-pin), in sets (groups) or a combination of those (quasi-per-pin) at different stresses, polarities, etc. with no relaxation.

ASUR PDR architecture supports Kelvin, Pseudomorphic Kelvin and non-Kelvin wiring configurations for different operating regimes of devices, test techniques, instrumentation, etc.

► See page 631
www.agilent.com/see/reliability

C1281A ASUR Single Device Reliability (ASUR SDR)



Example of ASUR SDR Algorithm and Test Plan Development.

- ASUR SDR is a high-performance, low-cost, accelerated reliability and pre- and post-stress parametric for single-site device testing that incorporates the proven accelerated techniques of PDQ-WLR using instruments-based solutions
- The Interactive Measurement Tool (IMT) is used to perform device or parameter exploration for rapid turnaround or as the basis for the industry's most advanced programless user-assisted custom algorithm builder
- ASUR SDR provides the flexibility to standardize and expand test cells and methodologies with different instruments. It is mission ready; same testing capabilities and structure as industry standard 4070 PDQ-WLR

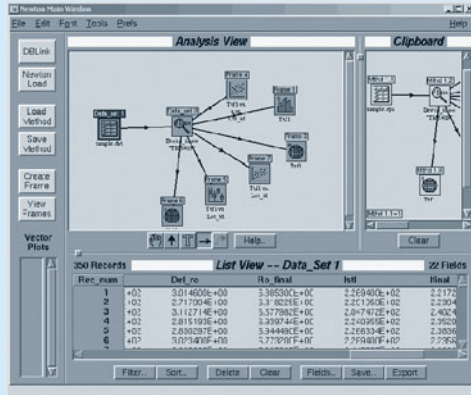
ASUR SDR is a high-performance, low-cost, accelerated reliability and pre- and post-stress parametric for single-site device testing that incorporates the proven accelerated techniques of PDQ-WLR using instruments-based solutions. Methods, including microsecond on-the-fly techniques where appropriate, are provided for reliability testing of gate oxides, bias-temperature stress (BTI), hot-carrier injection (HCI), electromigration, etc. User custom algorithms are supported via BASIC, C or automatically generated from the programless graphical Interactive Measurement Tool (IMT).

All user interfaces in ASUR SDR are designed with the SPECS user in mind. The same test plan hierarchy is observed and simplified for the instrument environment. The application program interface follows the standard TIS and the algorithm builders extend the user's capability to add templates for connectivity.

ASUR SDR architecture supports Kelvin, Pseudomorphic Kelvin and non-Kelvin wiring configurations for different operating regimes of devices, test techniques, instrumentation, etc.

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www.agilent.com/see/reliability

C1282A ASUR Reliability Data Analyzer (ASUR RDA)

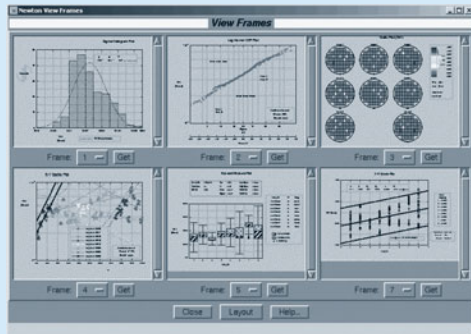


ASUR RDA Main Window.

- ASUR RDA is post-test statistical and physical analysis software. It aids in the analysis of production, development or qualification test data taken by the Agilent ASUR test software
- ASUR RDA provides powerful, built-in EM, HCI and dielectric statistical distribution plotting and lifetime extraction and automatic parameter extraction (APEX)
- ASUR RDA includes standard statistical analysis graphical tools such as Log-Normal Cumulative Distribution Function (CDF) plots with Least Squares Fit (LSF)

ASUR RDA provides powerful, built-in EM, HCI and dielectric statistical distribution plotting and lifetime extraction. Advanced filtering, macro data manipulation and plotting capabilities are tailored for semiconductor reliability test and analysis. Filtering allows large datasets to be pared down to specific analysis datasets and tasks. Macros can be applied to both scalar and vector data over time. Plotting includes wafer mapping and reliability statistical plots. Data tunneling allows outliers and novel points to be traced back to specific wafer die locations, lots and tests facilitating process optimization and failure analysis based on reliability. ASUR RDA includes Automatic Parameter Extraction (APEX) built-in to allow users change failure criteria during post-test analysis.

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www.agilent.com/see/reliability



Example of ASUR RDA Data Plots.

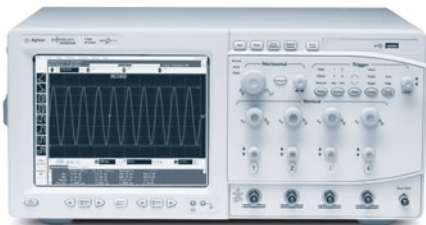
Service Provider Standardizes on Agilent HDMI Equipment



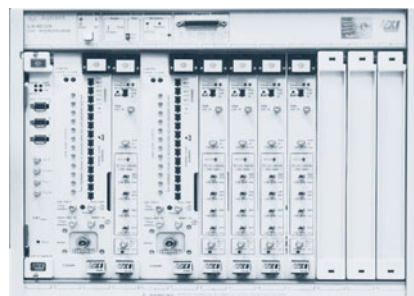
E5071C



86100C



DSO80000B



81250A



N5998A

Agilent’s HDMI 1.3 solution is now shipping to five HDMI Authorized Test Centers worldwide and has been selected as recommended test equipment in the HDMI Compliance Test Specification (CTS) version 1.3 b – HDMI.org’s highest endorsement for test equipment. The Authorized Test Centers confirmed their acceptance of Agilent’s solution because of its completeness as a solution for HDMI compliance tests in Source, Media and Sink testing, its performance, and its dedication in offering industry-leading serial data generation and analysis test capabilities to speed up HDMI 1.3 tests, and beyond.

High Definition Multimedia Interface (HDMI) is the new digital video interface for consumer electronics applications. It builds upon the electrical specifications of the Digital Visual Interface (DVI) standard (video only) by including audio, uses a smaller connector plug, and supports a bigger distance range.

HDMI uses 4 parallel lanes with differential signaling. Three lanes are data lanes for red, green and blue that can operate from 250 Mb/s to 1.65 Gb/s. The fourth lane is a clock lane, which runs at one-tenth the rate. HDMI version 1.3 extends the data rate up to 3.4 Gb/s and introduced deep-color support. Future versions plan higher data rates. Designers need wide bandwidth measurement tools and quality probing to characterize HDMI designs.

Source test	Media test	Sink test	Protocol test
<p>Source</p> <ul style="list-style-type: none"> ✓ DVD players ✓ Set top boxes ✓ ICs ✓ Cameras 	<p>Cable</p> <ul style="list-style-type: none"> ✓ Cables ✓ PC boards ✓ Connectors 	<p>Sink</p> <ul style="list-style-type: none"> ✓ HDTV monitors ✓ Repeaters ✓ ICs 	<ul style="list-style-type: none"> ✓ Sources ✓ Sinks
<ul style="list-style-type: none"> ■ DSO80000B Infiniium real time oscilloscope ■ N5399A HDMI compliance test software ■ N1080A TPA fixtures 	<ul style="list-style-type: none"> ■ 86100C Infiniium DCA-J/TDR <ul style="list-style-type: none"> ■ E5071C ENA RF network analyzer 	<ul style="list-style-type: none"> ■ N4887A TMDS signal generator <ul style="list-style-type: none"> ■ N5990A test automation software <ul style="list-style-type: none"> ■ N1080A TPA fixtures 	<ul style="list-style-type: none"> ■ N5998A HDMI 1.3 protocol analyzer/generator

HDMI Solutions by Agilent

For more information, www.agilent.com/find/HDMI

DSO80000B Infiniium oscilloscopes, see page 69

N5399A HDMI compliance test software, see page 71

N1080A TPA fixtures, see page 81

86100C Infiniium DCA-J/TDR, see page 72

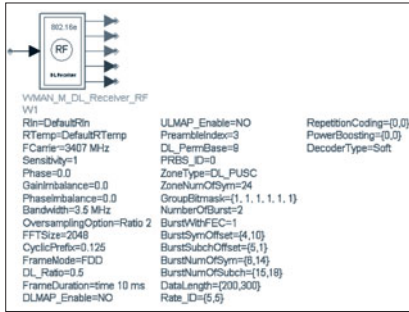
E5071C ENA RF network analyzer, see page 153

N4887A TMDS signal generator

N5990A test automation software, see page 413

N5998A HDMI 1.3 protocol analyzer/generator

As a world leader in test and measurement solutions, Agilent Technologies continues to be at the forefront of this emerging market, offering WiMAX design and test solutions that span the entire technology lifecycle – R&D, design verification & pre-conformance, conformance, manufacturing and installation & maintenance. www.agilent.com/find/WiMAX



Advanced Design System Software

Research and Development

Whether you are working on fixed or mobile WiMAX designs, Agilent can help you get your designs from concept to customer – faster. Only Agilent delivers a complete, integrated R&D design and test environment, including simulation, characterization and evaluation tools.

Agilent's R&D solutions for WiMAX:

- Advanced Design System Software
- E6651A Mobile WiMAX Test Set
- Signal Studio Software with the Agilent MXG and ESG Vector Signal Generators
- 89600 Series Vector Signal Analysis Software
- EXA/MXA Spectrum Analyzer
- PSA Series Spectrum Analyzer
- Digital Vector Signal Analysis (DVSA) with a Logic Analyzer
- PNA-X Network Analyzer
- ENA Series Network Analyzer
- DSO80000 Series Ultra High Performance Oscilloscopes
- Mobile Communications DC Source with Device Characterization Software



Signal Studio Software

89600 Series Vector Signal Analysis Software



E6651A Mobile WiMAX Test Set

Design Verification & Pre-Conformance

Once your design is complete, you need to ensure it conforms to the 802.16-2004 and 802.16e-2005 standards. Agilent's test solutions let you check your new products against RF PHY requirements called for in the WiMAX Forum's RCT documents and IEEE 802.16 specifications. So you can determine if your product will be allowed to operate in the defined geographic region.

Agilent's Design Verification & Pre-Conformance Solutions for WiMAX:

- E6651A Mobile WiMAX Test Set
- Signal Studio Software with the Agilent MXG and ESG Vector Signal Generators
- 89600 Series Vector Signal Analysis Software
- EXA/MXA Spectrum Analyzer
- PSA Series Spectrum Analyzer
- Digital Vector Signal Analysis (DVSA) with a Logic Analyzer
- ENA Series Network Analyzer
- DSO80000 Series Ultra High Performance Oscilloscopes
- Mobile Communications DC Source with Device Characterization Software
- WiMAX Design Verification System



AT4 Wireless MINT T2110
RCT System

Conformance Test

Conformance test ensures interoperability with other WiMAX equipment and a positive end user experience for your customers.

Radio Conformance Test (RCT)

Agilent's range of WiMAX test products incorporate the latest industry-required measurements and are found in the AT4 Wireless MINT RCT System.

AT4 Wireless MINT T2110 combines AT4 systems technology with Agilent's industry-leading E4440A PSA Series high-performance signal analyzer, 89601A Option B7S/B7Y WiMAX demodulation software, and the E4438C ESG vector signal generator. MINT T2110 covers the transmitter and receiver test cases for base stations and subscriber stations according to the WiMAX CS 103 001 test specification.

Protocol Conformance Test (PCT)

Agilent's IEEE 802.16e 2005 Protocol Conformance Test (PCT) Solution is based on the new Agilent E6651A Mobile WiMAX Test Set. When equipped with the PCT capability, Agilent's E6651A Mobile WiMAX Test Set allows equipment developers and test houses to run validated protocol test cases to verify that their implementations conform to WiMAX standards.



The N8300A is a one-box RF parametric test set targeting manufacturing engineers who need a standard-compliant 802.16e – 2005 physical layer (PHY) test tool for mobile WiMAX™ Tx and Rx applications.

Manufacturing

In the manufacturing environment you feel intense time-to-market pressures, especially for new technologies such as WiMAX. You need to get your products to market ahead of your competitors, while protecting your profit potential and ensuring the shortest testing time.

Agilent's Manufacturing Solutions for WiMAX:

- N8300A Wireless Networking Test Set
- E6651A Mobile WiMAX Test Set
- EXA/MXA Spectrum Analyzer
- Signal Studio Software with the Agilent MXG Vector Signal Generator
- 89600 Series Vector Signal Analysis Software
- ENA Series Network Analyzer
- Multifunction RF Switch/Measurement Unit
- Agilent MXZ-1000 WiMAX Manufacturing Test System



Installation & Maintenance

Agilent's market leading Agilent E6474A Drive Test solution encompasses all the key measurements you need to optimize and troubleshoot your WiMAX networks. WiMAX devices based on the Beceem MS120 chipset are supported, together with Agilent's industry leading measurement receiver technology giving you the ultimate toolkit to solve your WiMAX network problems.

- Beceem chipset based devices
- Up to 4 handsets supported on a single PC
- Industry leading data test support
- Open architecture for post processing
- Fast, accurate receiver measurements
- Fully scalable solution from Receiver or Phone to full combo

Agilent's Solutions for High-speed Cellular

	LTE	HSPA	W-CDMA	(E)GPRS	GSM	1xEV-DO Rev A	1xEV-DO	cdma2000®	cdmaOne	TD-SCDMA	Page
Advanced Design System software	■	■	■	■	■	■	■	■	■	■	528
89600 Series vector signal analysis software	■	■	■	■	■	■	■	■	■	■	124
DSO80000B Series ultra high performance oscilloscopes	■	■	■	■	■	■	■	■	■	■	69
8000 Series Infiniium oscilloscopes	■	■	■	■	■	■	■	■	■	■	65
16900 Series logic analyzer	■	■	■	■	■	■	■	■	■	■	180
GS-8800 RF design verification system	■	■	■	■	■	■	■	■	■	■	510
Anite development and conformance test systems	■	■	■	■	■						503
ENA Series network analyzer	●	●	●	●	●	●	●	●	●	●	153
PNA-X network analyzer	●	●	●	●	●	●	●	●	●	●	157
ESG vector signal generator family	●	●	●	●	●	●	●	●	●	●	298
MXG vector signal generator family	●	●	●	●	●	●	●	●	●	●	293
EXA/MXA signal analyzer	●	●	●	●	●	●	●	●	●	●	95
PSA Series spectrum analyzer	●	●	●	●	●	●	●	●	●	●	98
E5515C wireless communications test set	●	●	●	●	●	●	●	●	●	●	476
6000 Series high performance portable oscilloscopes	●	●	●	●	●	●	●	●	●	●	60
5000 Series portable oscilloscopes	●	●	●	●	●	●	●	●	●	●	56
E6601A wireless communications test set		◆	◆	◆	◆		◆	◆		◆	497
14565B and 66319D battery drain analysis tools			◆	◆	◆		◆	◆	◆		367
GS-8000 mobile manufacturing test system	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	516
66300 Series mobile communications power supplies	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	367
acceSS7 surveillance and troubleshooting system		▲	▲	▲	▲		▲	▲	▲		550
Session trace QoS analyzer		▲	▲	▲	▲		▲	▲	▲		550
Roaming management system		▲	▲	▲	▲		▲	▲	▲		550
Business/service analytics		▲	▲	▲	▲		▲	▲	▲		550
NgN analysis system		▲	▲	▲	▲		▲	▲	▲		550
J6900A triple play analyzer		▲	▲	▲	▲		▲	▲	▲		545
J7830A signaling analyzer		▲	▲	▲	▲		▲	▲	▲		542
J6801B distributed network analyzer		▲	▲	▲	▲		▲	▲	▲		543
J6840A network analyzer		▲	▲	▲	▲		▲	▲	▲		544
E6474A wireless network optimization platform	▲	▲	▲	▲	▲	▲	▲	▲	▲		524
E7495B wireless base station test set	▲	▲	▲	▲	▲	▲	▲	▲	▲		521

- Design and development
- Design and development, and manufacturing
- ◆ Manufacturing
- ▲ Network deployment and service assurance