

AEROFLEX

A passion for performance.



3250 Series Spectrum Analyzers

3250 Series

Outstanding performance, exceptional price and innovative design

3251  **1 kHz to 3 GHz**

3252  **1 kHz to 8 GHz**

3253  **1 kHz to 13.2 GHz**

3254  **1 kHz to 26.5 GHz**

Performance and Accuracy

- Powerful RF performance, phase noise -115 dBc/Hz, DANL -145 dBm/Hz
- Vector analyzer with 30 MHz I/Q demodulation bandwidth
- Measurement personality options including GSM/EDGE, UMTS, CDMA2000/1xEVDO, WLAN and WiMAX
- Remote control via LAN, GPIB, RS-232C
- S/W extension based on Windows® XP
- 7" wide touch panel display
- Standard removable hard disk
- Optional battery and DC input
- Optional 3 GHz and 8 GHz tracking generator
- Optional EMI receiver and preselectors
- Portability based on light and compact design

The 3250 Series has been developed to provide market leading performance at a low cost. The innovative compact design 3250 spectrum analyzer employs the latest digital processing and RF technology, providing accomplished accuracy, stability and measurement speed.

To support the constantly evolving wireless communication market, the 3250 incorporates a standard 30 MHz bandwidth digitizer and digital modulation analysis S/W. The instrument has been optimized for various mobile and wireless communication measurements such as GSM/EDGE, UMTS, WiMAX and WiBRO®.

With its powerful RF performance and advanced applications the 3250 Series is ideally suited for RF development, design analysis and testing. All models have a Windows® XP operating system, remote control capabilities via LAN, GPIB and RS-232C as well as a 7" touch panel screen, ensuring ease of operation and exceptional connectivity.

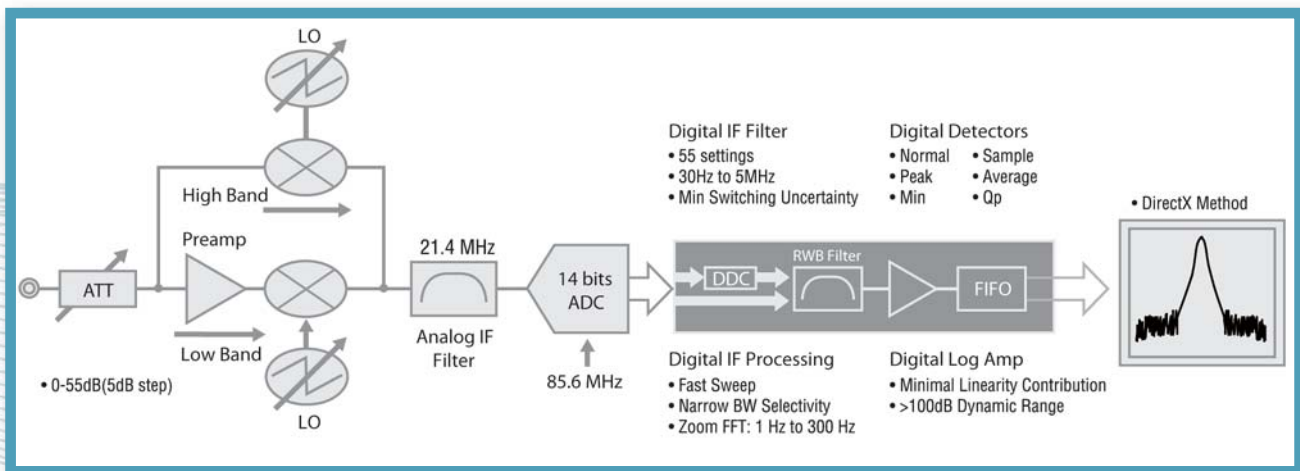
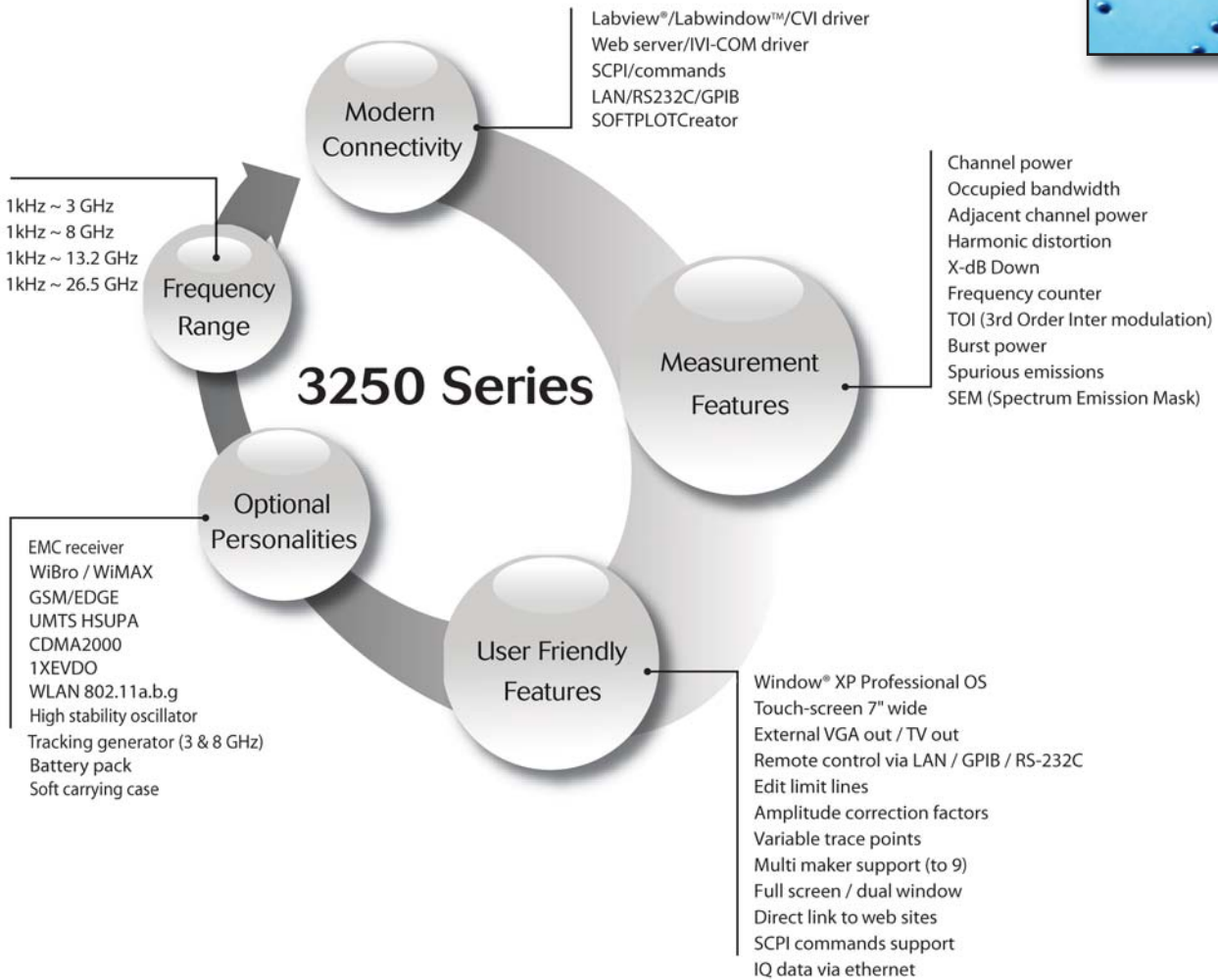
Optional measurement personality libraries for leading wireless communication technologies provide the 3250 Series exceptional measurement and demodulation capability for development and manufacturing engineers to optimize designs, improve throughput or examine signals.

Optional Tracking Generators

Two tracking generator options are available. The tracking generators have a specified frequency range of 9 kHz to 3 GHz or 100 kHz to 8 GHz and a level range from 0 dBm down to -30 dBm with 0.1 dB resolution. The tracking generator can be used to make high dynamic range measurements on components and devices, particularly filters. A normalize function is available to allow the markers to display relative flatness/frequency response.

A popular option is the EMI receiver which adds a full featured pre-compliance EMI measurement application.

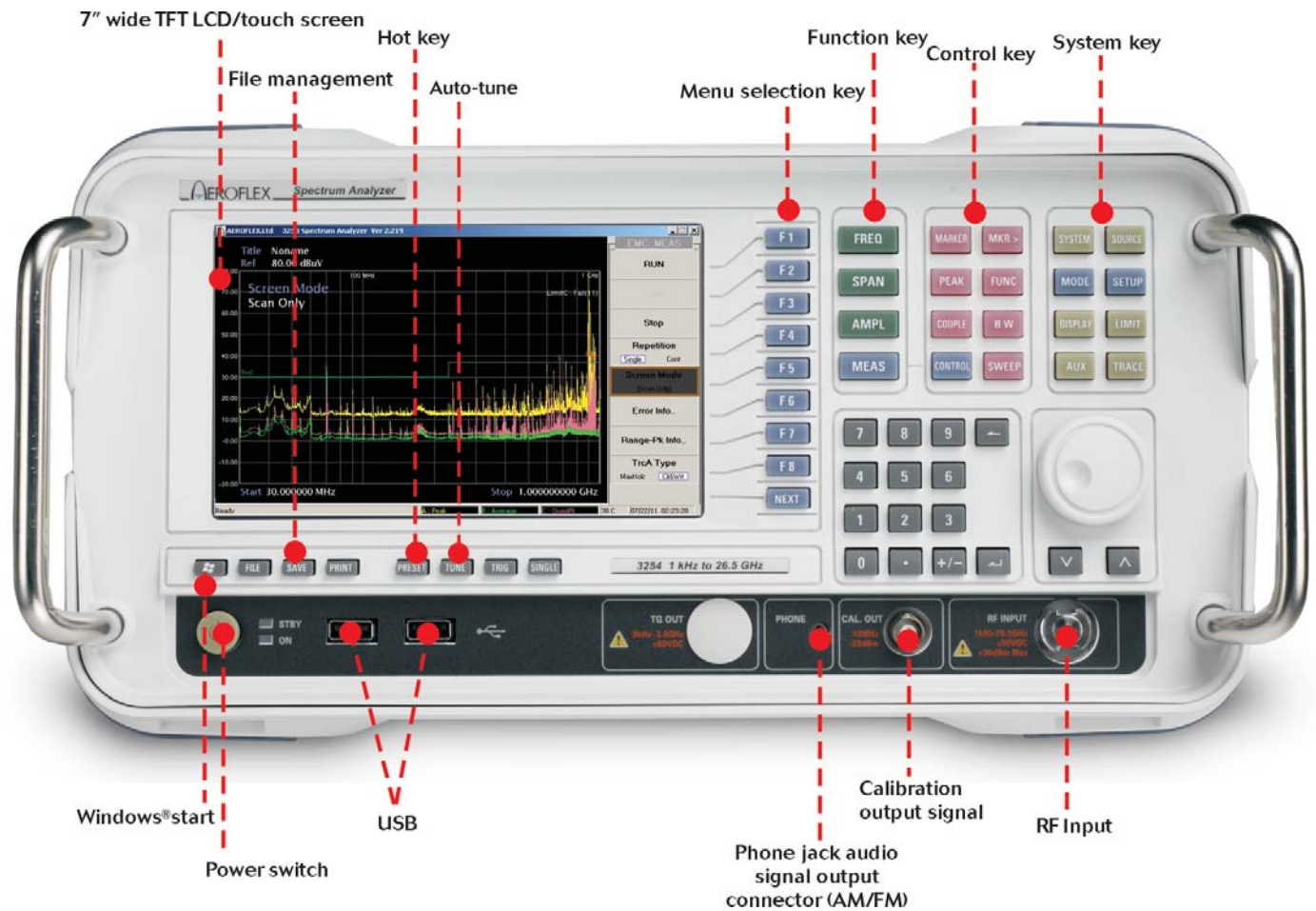
Compact & Digital
Spectrum Analyzer
 3250 Series



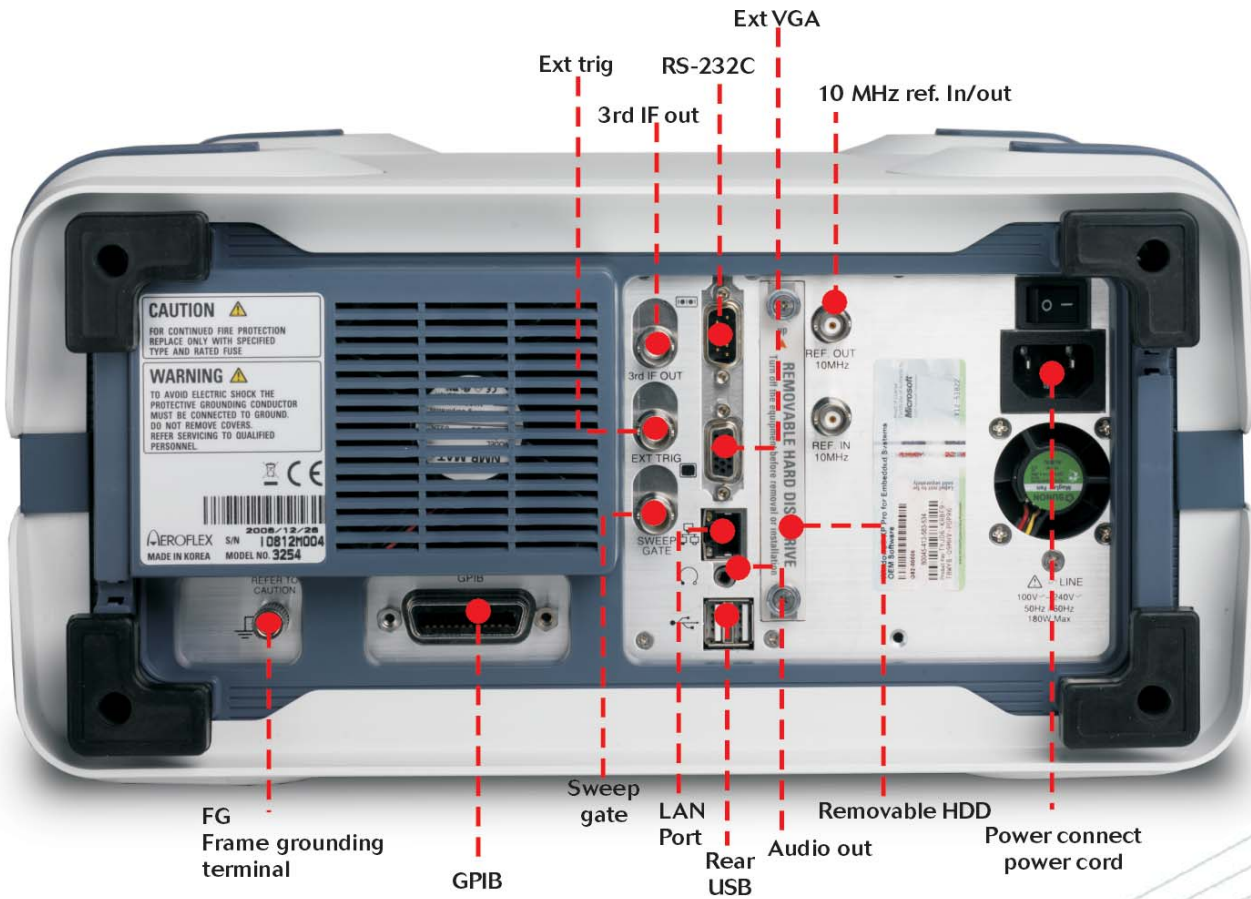
System Block Diagram

3250 Series

Compact Ergonomic Design



Compact & Digital
Spectrum Analyzer
3250 Series



3250 Series

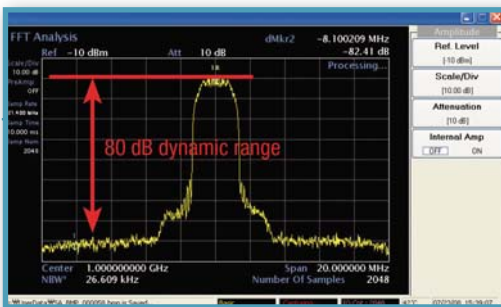
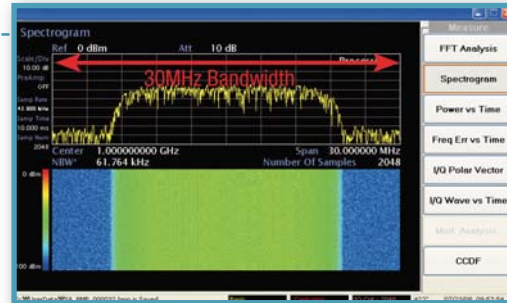
Standard Measurements

Includes the widest 30 MHz bandwidth vector analyzer in its class as well as generic digital modulation analysis S/W as standard on all models.

- 14 bit ADC with 85.6 MHz sampling frequency
- Dynamic range over 80 dB
- 32 M samples data with 128 MBytes memory
- Standard FFT, spectrogram, digital modulation analysis
- Save I/Q data file and extract IQ data over LAN
- Digital modulation analysis of PSK and QAM

Spectrogram Measurement

Display change of frequency in time domain, analyze wide bandwidth digital modulation signals in 30 MHz bandwidth.



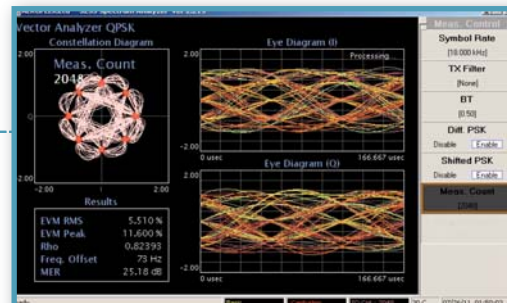
FFT Measurement

Measure and display FFT signal analysis and dynamic range of the input signal.

Modulation Analysis

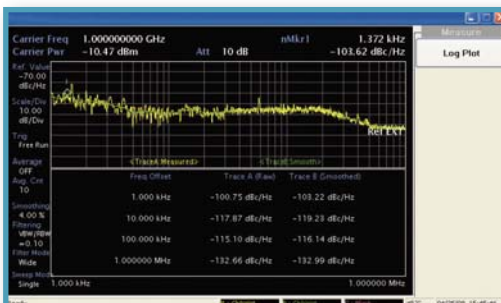
Measure and display the values of I/Q polar vector, I/Q eye diagram, EVM, Rho, MER and frequency offset.

- PSK (8, 16, 64)
- QAM (4, 8, 16, 32, 64, 128, 256)
- BPSK, QPSK.



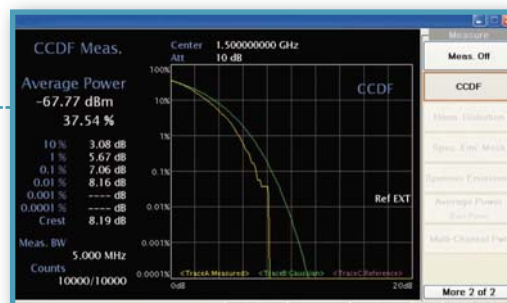
Phase Noise Measurement

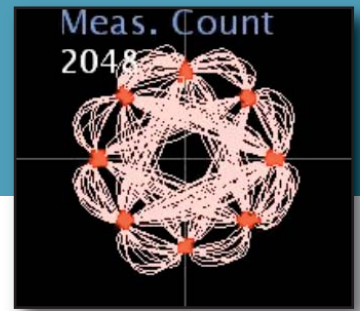
Phase noise is one of the important factors to evaluate short-term stability of signals. Frequency offset values are automatically set by the start frequency, and an accurate phase noise value can be obtained from the smoothed trace.



CCDF

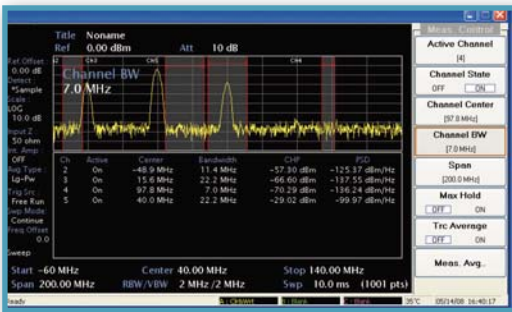
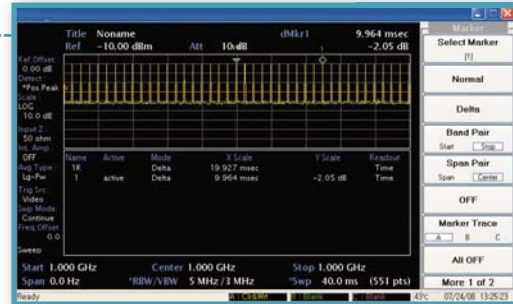
CCDF provides an easy to understand graph of the statistical properties of a signal from which the crest factor is derived - an important measurement when testing amplifiers.





Pulse Measurement

Pulse measurement with video trigger or RF burst trigger based on high performance digital IF signal processing, enabling the user to precisely measure pulse signals, radar and communications applications.

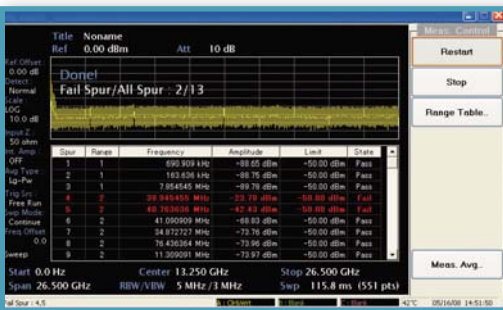
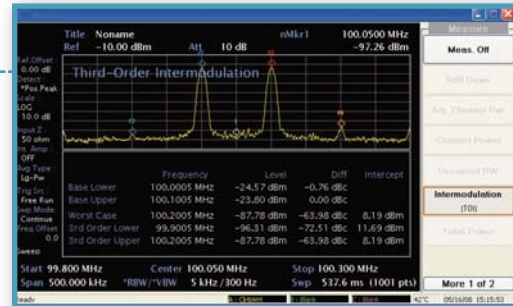


Multi-channel Power and ACP

This function enables the users to measure and display the channel power in up to 9 separate channels at the same time. Adjacent channel power exploits the excellent dynamic range to provide accurate measurements for the transmitters and amplifiers used in modern communications systems.

TOI Function

Third Order Intercept measures the linearity of a device. TOI automatically calculates IP3 values and displays them on the screen. When the two signals are entered and a suitable span is set, a reference and a third order harmonic level are automatically displayed and the IP3 value is accurately calculated.

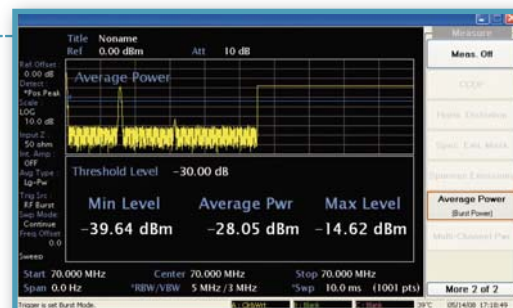


Spurious Emissions

The spurious emissions function intelligently detects over limit emissions from a DUT using a range table which can set up to 200 conditions. This speeds up very long spurious tests by looking only in the area where spurs are known to reside. In these regions the 3250 will slow the sweep speed, reduce the RBW and apply the limit. This technique can shorten a measurement from days to just a few hours.

Average and Total Power

Average power is used to analyze the power characteristics of burst signals in the time domain. This function automatically calculates burst lengths, average power, and min/max power in a zero span condition. The total power value and power spectral density within the frequency span are displayed.



3250 Series

Optional Measurement Personalities

WiMax/WiBro 802.16e Measurement Personality

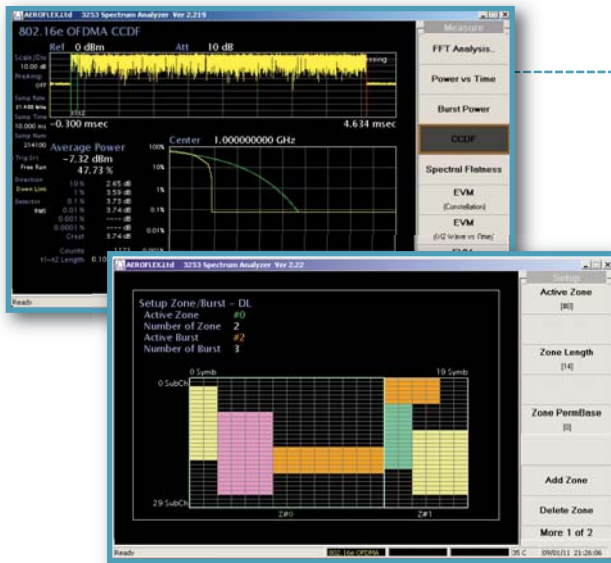
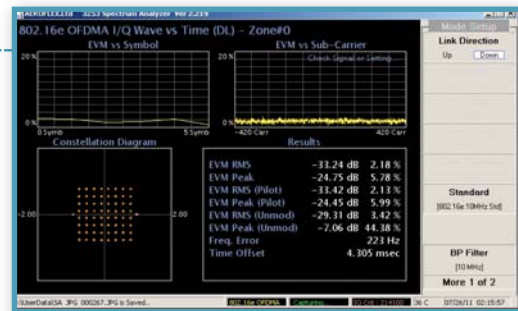
Perform analysis of mobile WiMAX chipset physical layer based on 802.16e OFDMA

- Bandwidth from 1.25 MHz to 20 MHz
- FFT Size (128, 256, 512, 1024, 2048)
- Digital modulation (QPSK, 16 QAM, 64 QAM) the mobile WiMAX standard
- Analysis of EVM vs symbol, EVM vs sub-carrier
- Analysis of frequency error, EVM, unmodulation EVM, pilot EVM
- Analysis of multi-zone and multi-burst

EVM Configuration for 802.16e

Display graphs of I/Q polar vector, symbol vs EVM, sub-carrier vs EVM for mobile WiMAX signal.

- EVM. RMS, EMV, peak
- EVM of unmodulated sub-carrier frequency
- EVM of pilot sub-carrier frequency
- Accuracy of carrier frequency

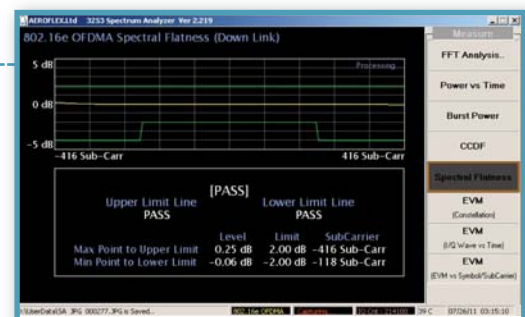


FFT Measurement

Set the complex parameters of zone/burst for 802.16e OFDMA EVM measurement on the designed graphic screen easily. The zone type, symbol length/offset, burst modulation type and sub-channel length offset are fully configurable to ensure that the transmitted signal is correctly analyzed.

Spectral Flatness

- OFDMA used on the WiMAX device transmits data over several sub-carriers. Accordingly, the energy flatness of each sub-carrier affects the modulation directly.
- Frequency flatness specified on IEEE 802.16e
- Display pass/fail from the standard



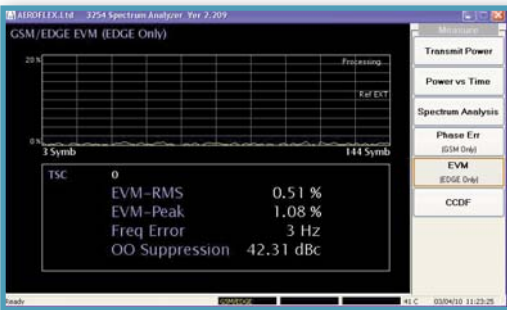
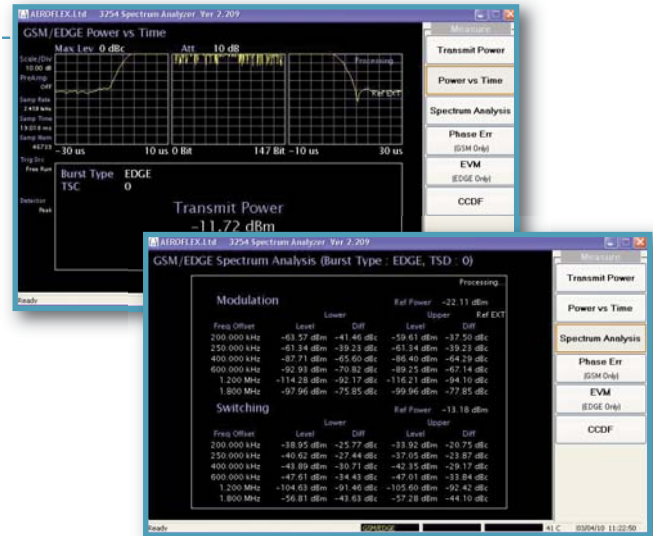


GSM/EDGE Measurement Personality

Perform GSM/EDGE power, spectrum and modulation measurements in accordance with GSM/EDGE standard

Spectrum and Power Measurements

- Transmit power
- Power versus time
- Power statistics CCDF
- Spectrum analysis



Modulation Quality Measurements

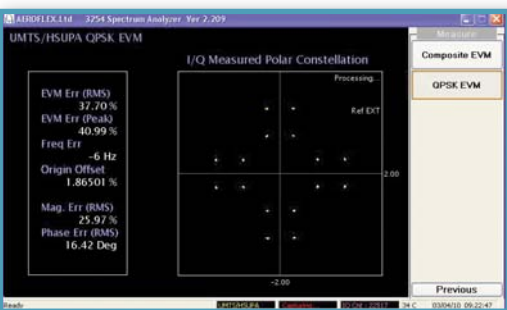
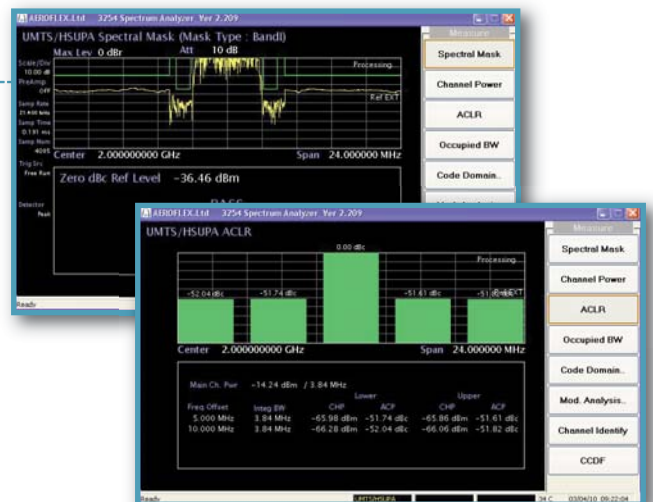
- Phase error
- EVM versus symbol (EDGE)
- Frequency error

UMTS Measurement Personality

Perform Uplink UMTS/HSUPA power, spectrum and modulation measurements in accordance with the 3GPP2 UMTS/HSUPA standard

Spectrum and Power Measurements

- Spectral mask
- Channel power
- ACLR
- Occupied bandwidth



Modulation Quality Measurements

- Code domain analysis
- Modulation analysis
- Channel identity
- CCDF

3250 Series

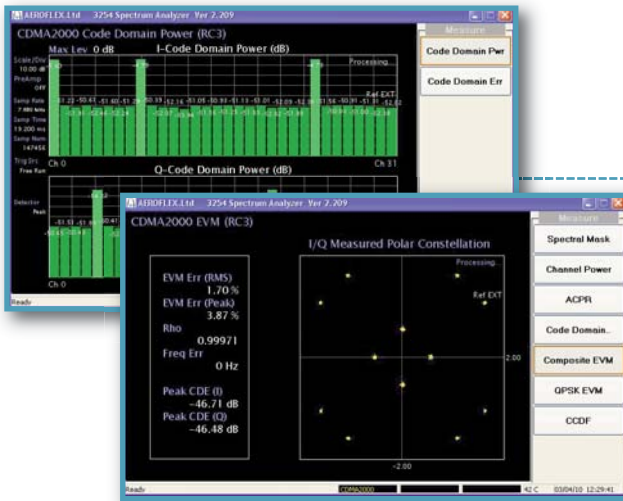
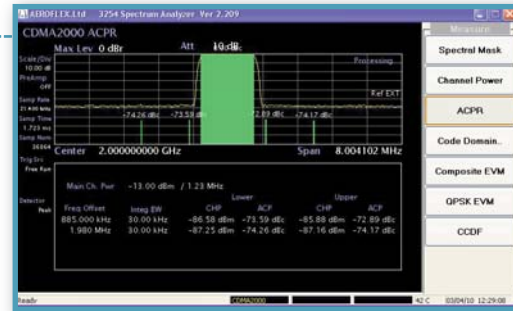
Optional Measurement Personalities

CDMA2000 Measurement Personality

Perform CDMA2000 power, spectrum and modulation measurement in accordance with the 3GPP2 CDMA2000 standard

Spectrum and Power Measurements

- Transmit spectral mask
- Channel power
- ACLR



Modulation Quality Measurements

- Code domain analysis
- Composite EVM
- QPSK EVM
- CCDF

WLAN Measurement Personality

Perform OFDM and DSSS power, spectrum and modulation quality measurements for WLAN standards IEEE 802.11a, b and g

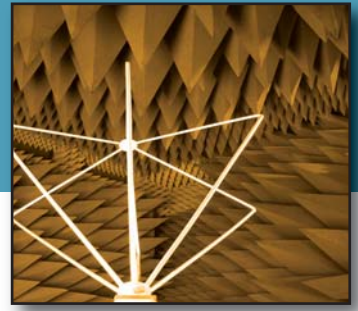
Spectrum and Power Measurements

- Power versus time
- Spectral flatness
- Occupied bandwidth



Modulation Quality Measurements

- Constellation
- EVM
- Frequency error
- CCDF



EMI Measurement Personality (Pre-Compliance)

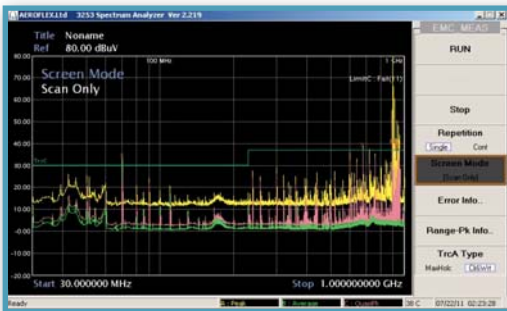
EMI receiver personality for pre-compliance testing to CISPR, KN, EN and FCC standards.

Enables users to pre-test the EMI characteristics and rectify problems during development of electrical and electronic devices. Debug problems in advance of expensive compliance lab testing and save development time and cost. Optional ETS2008 PC software provides control over the 3250, turntable, antenna master and spectrum analyzer to gather and manage measurement results. Use in development, manufacture and field installation and test.

EMI Configuration

Set, save and recall parameters for EMI measurement in up to 10 sub ranges.

- Range start and stop
- Range limit line
- Step size and measurement time
- 6 dB bandwidth
- Attenuator and pre-amp settings
- Correction factors for antenna, cable, user and other corrections

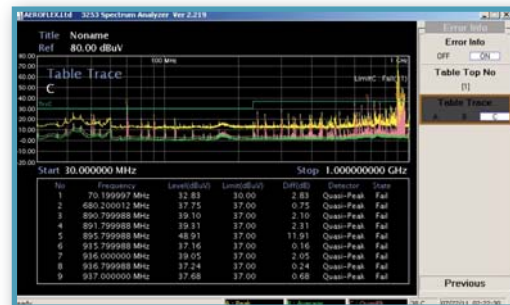


EMI Scan

- Scan according to EMI configuration table
- 3 trace display with peak, average, RMS, log average, CISPR average and quasi-peak detectors
- Limit lines. Pre-configured to suit standards or define your own.

CISPR Data Display

- CISPR data on screen
- Convenient animated bar graph display of instantaneous detector values and scan parameters

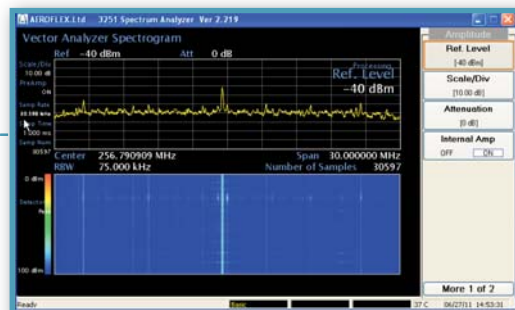


Error Detection and Auto Peak Search

- Pass/Fail against limit
- List of errors over limit line
- List of peaks in each measurement sub-range
- Save error/peak information as Excel CSV file

EMI Fault finding

- Use multi-trace to compare measurements
- Use zoom display to look closer at signals
- Use spectrogram display to trace intermittent signals



SOFTPLOTCreator™ Measurement Management software produces professional graphs and data files from test equipment at the click of a button. No programming effort is required. Connect your spectrum analyzer to your PC using GPIB, RS-232 or LAN, and you have instant access to all the trace data you need as well as powerful remote configuration, scripting and test automation.

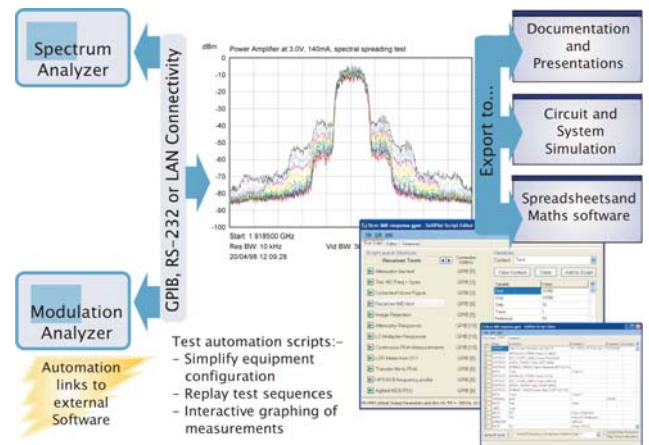


Presentation Quality Graphics

Benefit from sharp, scaleable, vector-based graphics to paste into your document or presentation. Choose from a wide range of graph types, including log and linear cartesian, modulation, antenna, polar and smith charts. Apply markers and limit lines to clarify the information in your measurement. Enter measurement notes below the graph to document your test set-up or to record the changes made in a family of traces.

Automated Measurements with Scripting

A fully-featured scripting editor allows you to automate measurement sequences, including direct control of instruments and full control of operations within SOFTPLOTCreator itself. Perform marker maths or data logging from your spectrum analyzer. Pre-configured scripts automate common functions as simple push buttons to get you started. SOFTPLOTCreator also has a COM and a DDE server built into it which permits control from other programming environments.



- | | |
|-----------------------|---|
| CHINA Beijing | Tel: [+86] (10) 6539 1166 • Fax: [+86] (10) 6539 1778 |
| CHINA Shanghai | Tel: [+86] (21) 5109 5128 • Fax: [+86] (21) 6457 7668 |
| CHINA Shenzhen | Tel: [+86] (755) 3301 9358 • Fax: [+86] (755) 3301 9356 |
| FINLAND | Tel: [+358] (9) 2709 5541 • Fax: [+358] (9) 804 2441 |
| FRANCE | Tel: [+33] 1 60 79 96 00 • Fax: [+33] 1 60 0177 69 22 |
| GERMANY | Tel: [+49] 89 99641 0 • Fax: [+49] 89 99641 160 |
| HONG KONG | Tel: [+852] 2832 7988 • Fax: [+852] 2834 5364 |
| INDIA | Tel: [+91] (0) 80 4115 4501 • Fax: [+91] (0) 80 4115 4502 |
| JAPAN | Tel: [+81] 3 3500 5591 • Fax: [+81] 3 3500 5592 |
| KOREA | Tel: [+82] (2) 3424 2719 • Fax: [+82] (2) 3424 8620 |
| SCANDINAVIA | Tel: [+45] 9614 0045 • Fax: [+45] 9614 0047 |
| SINGAPORE | Tel: [+65] 6873 0991 • Fax: [+65] 6873 0992 |
| UK Stevenage | Tel: [+44] (0) 1438 742200 • Fax: [+44] (0) 1438 727601
Freephone: 0800 282388 (UK only) |
| USA | Tel: [+1] (316) 522 4981 • Fax: [+1] (316) 522 1360
Toll Free: 800 835 2352 (US only) |



Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.