

Spectrum analyzers are essential tools for observing the frequency domain of a signal. Key specifications of spectrum analyzers are dynamic range, phase noise, level accuracy, and resolution bandwidth. These parameters determine how well the analyzer performs common measurement tasks such as frequency, power, modulation, distortion, and noise measurements.

B&K Precision's professional handheld spectrum analyzers are indispensable tools for engineers and technicians who conduct field measurements in the 50 kHz to 8.5 GHz range. Despite their compact form factor and weight of only 1.8 kg, the 2650A series deliver performance and features comparable to many full-size bench spectrum analyzers. For example: The 2650A features a DANL (displayed average noise level) of -127 dBm, which allows it to detect very small signals. In comparison, the 1.05 GHz bench top analyzer model 2630, with a DANL of -100 dBm, is less sensitive, however the performance is sufficient for many applications in service and repair, and an ideal solution for users looking for a very cost-effective, basic spectrum analyzer that comes with extra features such as built-in tracking generator and AM/FM modulation.

Field strength meters characterize the electric field strength of radio and microwave signals, providing users a tool for basic signal investigations at only a fraction of the cost of a full-featured conventional spectrum analyzer.



Model 2652A



Model 2640



SPECTRUM ANALYZERS



Applications

- Detection of signal interference and undesired emissions
- TV and broadcasting
- Antenna alignment
- Electric field strength measurement
- Installation, maintenance, and troubleshooting of wireless communication systems such as W-CDMA/CDMA, GSM, WLAN, WiMAX and Bluetooth

SPECTRUM ANALYZERS

Handheld Spectrum Analyzers



The **2650A series** handheld spectrum analyzers are compact, light weight, and cost-effective instruments for quick and precise signal investigations, especially away from the bench. At a weight of only 1.8 kg, the 2650A series are by far the lightest full-featured spectrum analyzer available, yet they deliver performance and features comparable to full-size bench spectrum analyzers and can operate up to 4 hours on a single battery.

With their ease of use, measurement flexibility, and unmatched portability, the 2650A series analyzers are indispensable tools for engineers and technicians who conduct field measurements in the 50 kHz to 8.5 GHz range.

Applications

- Installation, maintenance, and troubleshooting of wireless communication systems such as W-CDMA/CDMA, GSM, WLAN, WiMAX and Bluetooth
- Detection of signal interference and undesired emissions
- TV and broadcasting
- Antenna alignment
- Electric field strength measurement with dipole antennas optimized for typical frequencies used in wireless systems
- Magnetic field strength measurement with magnetic field probe (PR 26 M)
- Frequency response measurements of passive components such as RF cables, filters, and attenuators using the built-in tracking generator (2652A)



Tracking generator specifications (2652A)	
Frequency range	5 MHz to 3.3 GHz
Output level	-10 dBm ± 1 dB @ 1 GHz (output level is fixed)
Output flatness	± 1.5 dB

Specifications	2650A/2652A	2658A
Frequency range	50 kHz to 3.3 GHz	50 kHz to 8.5 GHz
Resolution bandwidth	3 kHz to 3 MHz (1-3 sequence) and AUTO	
SSB phase noise	-90 dBc/Hz (typical) @ 100 kHz offset	
Average noise level	-127 dBm (typical) @ CF : 1 GHz, RBW : 3 kHz, VBW : 100 Hz, Ref. level < -40 dBm (preamp automatically ON)	
Input VSWR	< 2.0	
Weight	approx. 1.8 kg or 4 lbs (including battery)	
Dimensions	162(W) x 71(H) x 265(D) mm, 6.38 (W) x 2.80 (H) x 10.43 (D) inch.	

Features & Benefits

- Frequency range from 50 kHz – 8.5 GHz
- A truly portable spectrum analyzer weighing only 1.8 kg including the battery
- Impressive 4 hour battery life; easy-to-replace rechargeable Lithium-Ion battery
- USB interface for PC connectivity
- Intuitive PC software for remote control and documentation of measurement results
- Conveniently store measurement results and screen shots in bitmap format to USB flash drive (USB host interface)
- Large easy-to-read color display
- Measurement functions: channel / adjacent channel power, occupied bandwidth, electric and magnetic field strength
- Convenient Auto Tune function automatically sets center frequency to the maximum signal within full span and optimum settings for RBW, VVB and sweep time
- External trigger for zero span measurements
- SCPI-like remote control commands

Superb performance improves your productivity

Advanced synthesizer-based design enables the 2650A series to provide you with an accurate and detailed picture of the spectrum you are investigating.

- Fast sweep speed, minimum 10 ms, to help locate and identify elusive, transient interference signals
- DANL (displayed average noise level) of -127 dBm
- Single sideband phase noise – 90 dBc @ 100 kHz offset

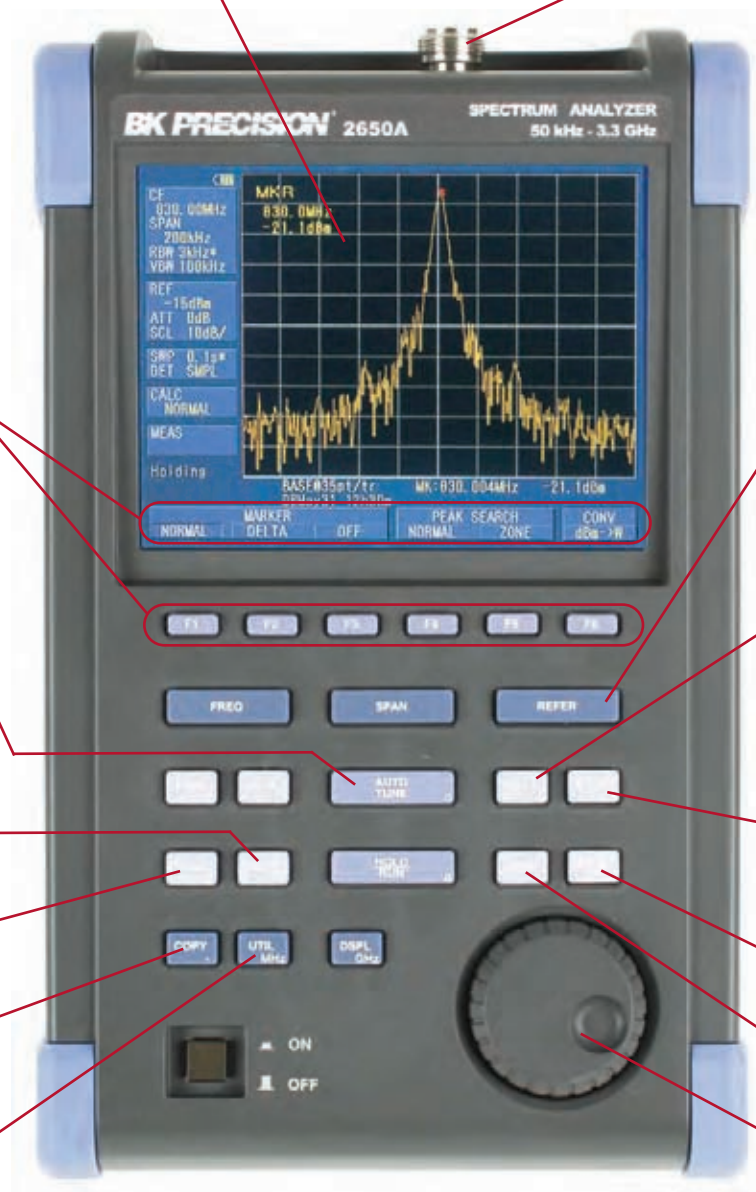
SPECTRUM ANALYZERS

Handheld Spectrum Analyzers

Front Panel

Large color screen (640 x 480 pixels) can be switched to high contrast monochrome display in extreme sunlight with adjustable backlight

RF Input (N-connector), able to withstand 27 dBm (CW average power)/25 V DC max



Simple menu-based operation via soft keys

Set reference level from +1 dBm to -60 dBm in 1 dB steps

- Measurement Functions:
- Channel power
 - Adjacent channel power
 - Occupied bandwidth
 - Electric field strength
 - Magnetic field strength

Automatically tune to maximum level with full span

- Calculation Functions:
- Max hold
 - Min hold
 - Averaging
 - Overwrite

Set sweep time and detection mode

2, 5 and 10 dB/div

Save/Load trace data and setups to/from internal memory or USB flash drive

Store screen images in bitmap format to flash drive or hard copy to USB printer

Marker measurement and peak search

Enter custom labels for filenames, set the time and date

Rotary knob for parameter selection

Interfaces

PC interface - USB device (A plug)

Easily save and recall measurement data and settings in CSV format directly to and from the USB flash drive. Filenames can be customized and have a time and date stamp

External trigger input (SMA)

Charge status indicator



DC power input

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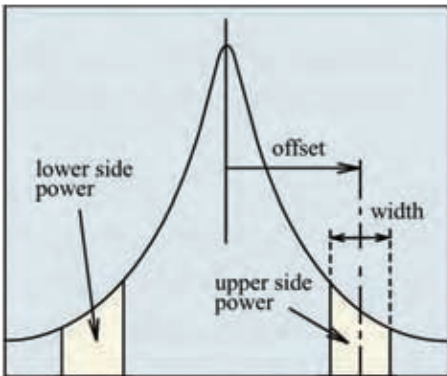
Handheld Spectrum Analyzers

Channel power measurement

Allows you to measure the total power or noise power in a user-specified bandwidth.

Adjacent channel power

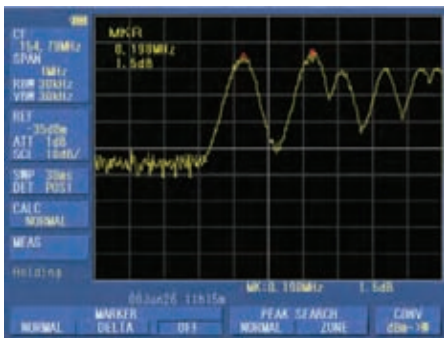
Measure the ratio of power leakage (from the wanted signal) into adjacent channels. Center frequency, adjacent channel bandwidth, and offset between main carrier and adjacent channels can be set.



Marker function

Two different modes are available for marker measurements:

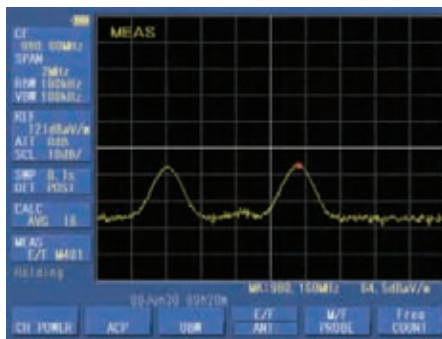
- Normal marker mode measures the frequency and level of the marked point
- Delta marker mode measures the frequency and level differences between the two markers (see image below)



Electric field strength measurement

A dipole antenna (options M401 – M406) connected to the RF input enables the measurement of electric field strength. Users can choose from 6 antennas based on the frequency range under investigation.

Combined with the MAX HOLD function and a 10 ms sweep time, the M404 dipole antenna is capable of measuring the electric field strength of Bluetooth systems and systems using direct sequence spread spectrum/frequency hopping modulation techniques.



Magnetic field strength measurement

Using a magnetic field probe (option PR 26M), the 2650A series is capable of accurately measuring the magnetic field distribution on a PCB (printed circuit board) or IC (integrated circuit) over a wide frequency range of 10 MHz to 3 GHz. Since the probe's compensation data is already pre-loaded into the analyzer, the magnetic field strength is displayed directly in dBuA/m.



Easy operation

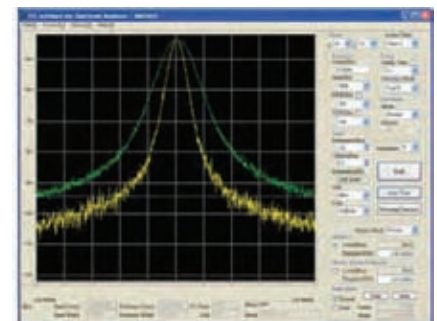
The 2650A series are straightforward to operate and provide many functions to facilitate quick and easy measurements:

- Smart one button "Auto Tune" function which automatically scans the full frequency range, detects and centers the maximum signal, and configures optimum values for RBW, VBW, sweep time and reference level
- Input attenuator and internal preamp are set automatically to optimal values
- 200 setups and reference spectrum measurements can be stored and recalled from either internal memory or USB flash drive

PC software for simple and flexible documentation of your measurements

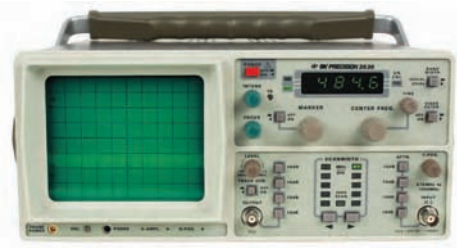
The 2650A series includes easy-to-use software for documentation and further analysis of your measurements. Connect the analyzer via USB cable to your PC, configure the analyzer remotely, then download measurement data and instrument settings for storage and further analysis.

- Continuously sweep and transfer trace data to the PC
- Capture 1001 trace data points (twice the number of display dots) and store the data in CSV format
- Save the screen to a bitmap file



FIELD STRENGTH METER

Handheld RF Field Strength Meter



Model 2630

The 2630 bench top spectrum analyzer with tracking generator is a value packed tool for service and repair professionals in the cable TV industry and telecommunication field that need to investigate signals up to 1.05 GHz.

This analyzer is also suitable for pre-compliance testing during development prior to third party testing. An optional near-field sniffer probe set (PR 261) can be used to locate cable and PC board emission "hot spots" and evaluate EMC problems at the breadboard and prototype level.

The spectrum analyzer/sniffer probe combination is an excellent solution for RF leakage/radiation investigation, CATV/MATV system troubleshooting, cellular telephone /pocket pager test and EMI diagnostics. Convenient carrying case is available.

Key performance specifications

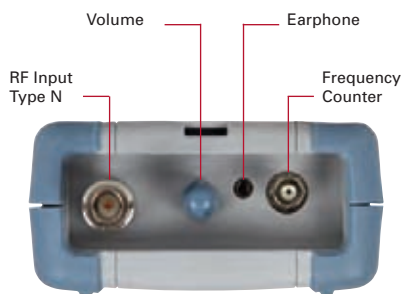
- 150 kHz to 1.05 GHz (1050 MHz)
- Dynamic range 80 dB (113 dB with attenuation)
- AM & FM demodulator included
- 20 and 400 kHz resolution bandwidth
- 150 kHz/hour stability
- Built-in tracking generator



Model 2640

Model 2640 is a battery operated, hand-held RF field strength meter capable of measuring RF levels and electric field strength. The synthesizer-based design provides you with reliable measurements across a wide reception range of 100 kHz to 2000 MHz, a remarkably low noise floor of -110 dBm to detect weak signals and basic spectrum analyzer functionality.

The 2640 provides field technicians and engineers with a cost-effective measurement tool for basic signal investigations at only a fraction of the cost of a full-featured conventional spectrum analyzer.



RF field strength analyzer

- Spectrum: peak search, marker to center, channel power function
- Internal attenuation: The input range can be extended by enabling the internal 10 dB attenuation function
- Sweep mode: single run, free run, squelch run selectable
- Squelch function: the squelch level may be adjusted across the full dynamic range



Features & Benefits

- 100 kHz to 2 GHz measurement range with a maximum display span of 400 MHz
- Hand-held and battery operated portability (0.65 kg, 102 mm x 229 mm x 46 mm)
- Built-in 2 GHz frequency counter
- Detects wide band (180 kHz) and narrow band FM (12.5 kHz), AM & SSB (2.4 kHz) signals
- Phase-locked loop for precise frequency tuning
- Up to 160 channels may be scanned and displayed
- Audio output of the detected signal with built-in speaker
- Detachable antenna included
- Back-lit display
- Storable setups and displays
- RS-232 Interface

Frequency counter

- The 2640's built in frequency counter is independent from the field strength analyzer and measures the signal applied to the external BNC connector
- Frequency range: 35 MHz to 2,000 MHz
 - No. of digits: 7 digits
 - Resolution: 1 kHz