



Agilent U8903A Audio Analyzer

Fast and accurate multi-channel audio analysis made affordable

Ideal replacement
for the HP 8903B!

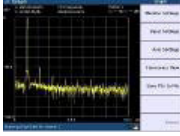


- 5.7-inch color display
- Soft keys for easy function selection
- One-button quick access menu
- USB/LAN/GPIB connectivity
- Dual-channel generator outputs and analyzer inputs with XLR connectors
- Fast and accurate mV measurement and analysis on essential audio parameters
- High-quality test signal generator
- Next generation capabilities – replaces the HP 8903B



Agilent Technologies

Key Features

U8903A feature	Description	Benefits/Value
Scalable structure	<ul style="list-style-type: none"> • Main box + 3 plug-in card slots • Standard main box with two channels 	<ul style="list-style-type: none"> • Upgradable in future – additional analog input for output • Support digital audio in future
Simple 	<ul style="list-style-type: none"> • User-friendly GUI • Easy function selections • Generator/analyzer/graph/sweep mode within a press of a button • Graphical view for FFT analysis and sweep functions 	<ul style="list-style-type: none"> • Designed for convenience – easy to operate • See measurement results at a glance
Extensive selection of filters	<ul style="list-style-type: none"> • Contains standards: LP, HP and weighting filters • User-defined filter can be transferred to U8903A through the USB port 	<ul style="list-style-type: none"> • Easily upload special filters via the USB port
Accurate and versatile	<ul style="list-style-type: none"> • High measurement accuracy • Low inherent distortion and noise (–101 dB) • Offers various selections of detectors and measurement parameters 	<ul style="list-style-type: none"> • Gives accurate characterization of audio frequencies
High quality test signals	<ul style="list-style-type: none"> • Sine/multitones/square/arbitrary/noise/IMD/DFD with low inherent distortion and flatness • Includes user-defined waveform capability via the use of the USB port 	<ul style="list-style-type: none"> • Provides reliable and customizable test signal sources for the DUT

Why Buy an Agilent U8903A Audio Analyzer?

Fast and accurate audio measurements in a single box!

Protect your long term investment:

- Versatile solution (source and measure, user-defined filters and output waveforms, multiple test functions, frequency, time domain, and more)
- Scalable platform with up to eight independent input/output channels for future upgrades
- Built on Agilent’s proven record of excellent quality and reliability established by the HP 8903B audio analyzer

Reduce time to market:

- Parallel testing with each independent channel
- 4X more accurate and 7X faster than the HP 8903B

Reduce cost of ownership

- One box solutions with slot-in modules for various applications
- Financial solutions: Easy Buy, Easy Rent, Easy Lease. Find out more: www.microlease.com/agilent

See the improvements for yourself!

U8903A and HP 8903B front panel comparison

Front panel has one button access to:

- Analyzer
- Generator
- Sweep
- Graph – FFT or time domain

- Plug and play USB 2.0



- 5.7-inch color display
- Localized Help function
- Soft keys for easy function selection

- Dual-channel generator outputs and analyzer inputs with XLR connectors



HP 8903B front panel features

- Two, single-line, single color displays
- Fewer connectivity options
- Limited to hard keys – makes operating less user-friendly

More Connectivity on the Back

U8903A and HP 8903B rear panel comparison



- Two DB-25 connectors for multi-channel connections

- Six additional input and output channels

- USB/LAN/GPIB interface



HP 8903B rear panel features

- Former state-of-the art connectivity
- Single input and output channels
- Single interface method

Target Applications for the U8903A

Make the move to the new generation of audio analyzers – the U8903A. This single box delivers fast and accurate measurements. Versatile and scalable, the U8903A can grow along with your application demands, protecting your investment over the long-term. There's also the assurance that comes with an Agilent product: the traditions of performance, quality, and repeatability. Plus, with numerous new features, the U8903A re-defines user-friendly, making it the ideal choice for a variety of applications.



CE audio and pro acoustic

- Amplifier, MP3, TV, STB, walkie-talkie, sound system, mobile phones, and others



Analog IC and component

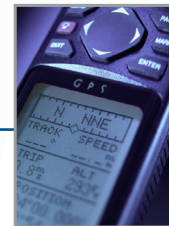
- Amplifier, speaker, DAC, microphone, MEMS, and more

Broadcasting and network operations

- Transmission, repair, maintenance, installation

Auto infotainment

- Radio, car AV/GPS systems



Authority test lab

- Calibration, certification, compliance test

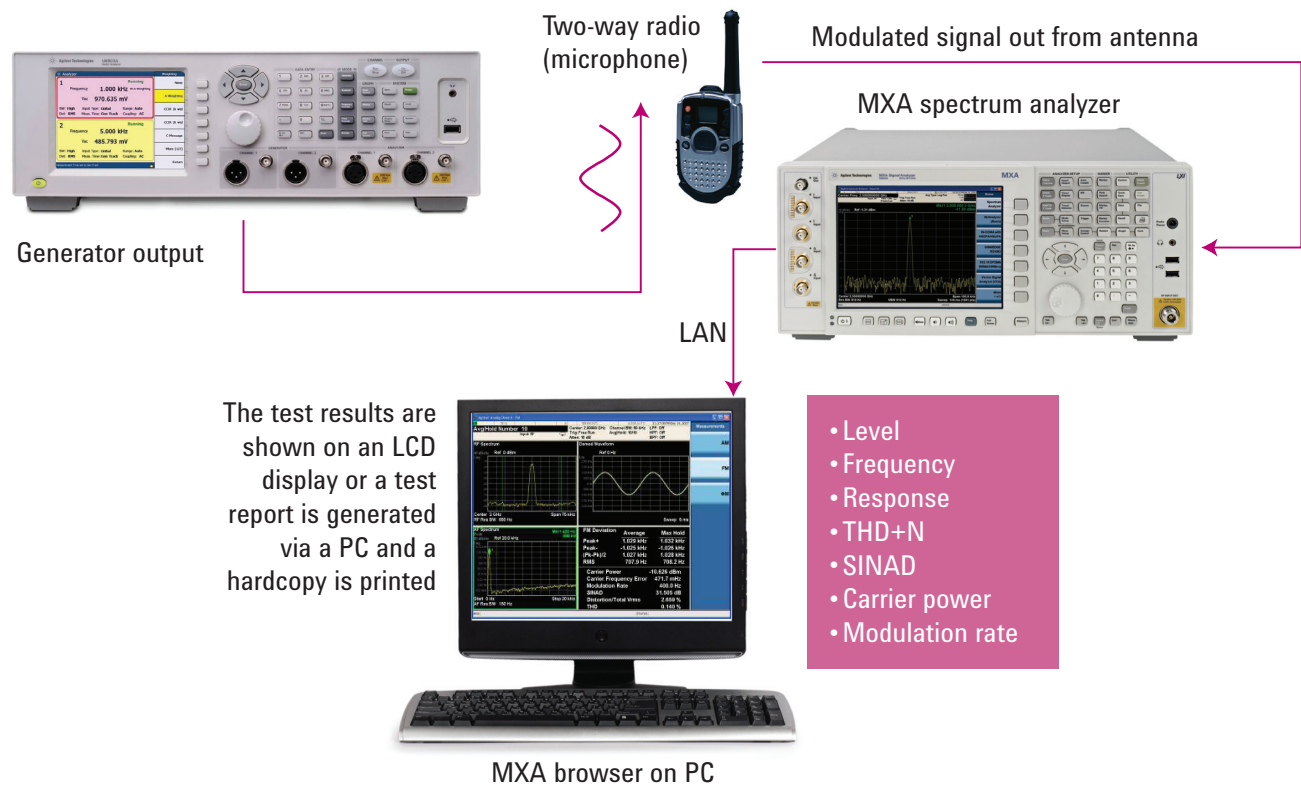
Military and defense

- Military radio, calibration lab



Application Examples

Radio transmitter hardware test



Test procedure

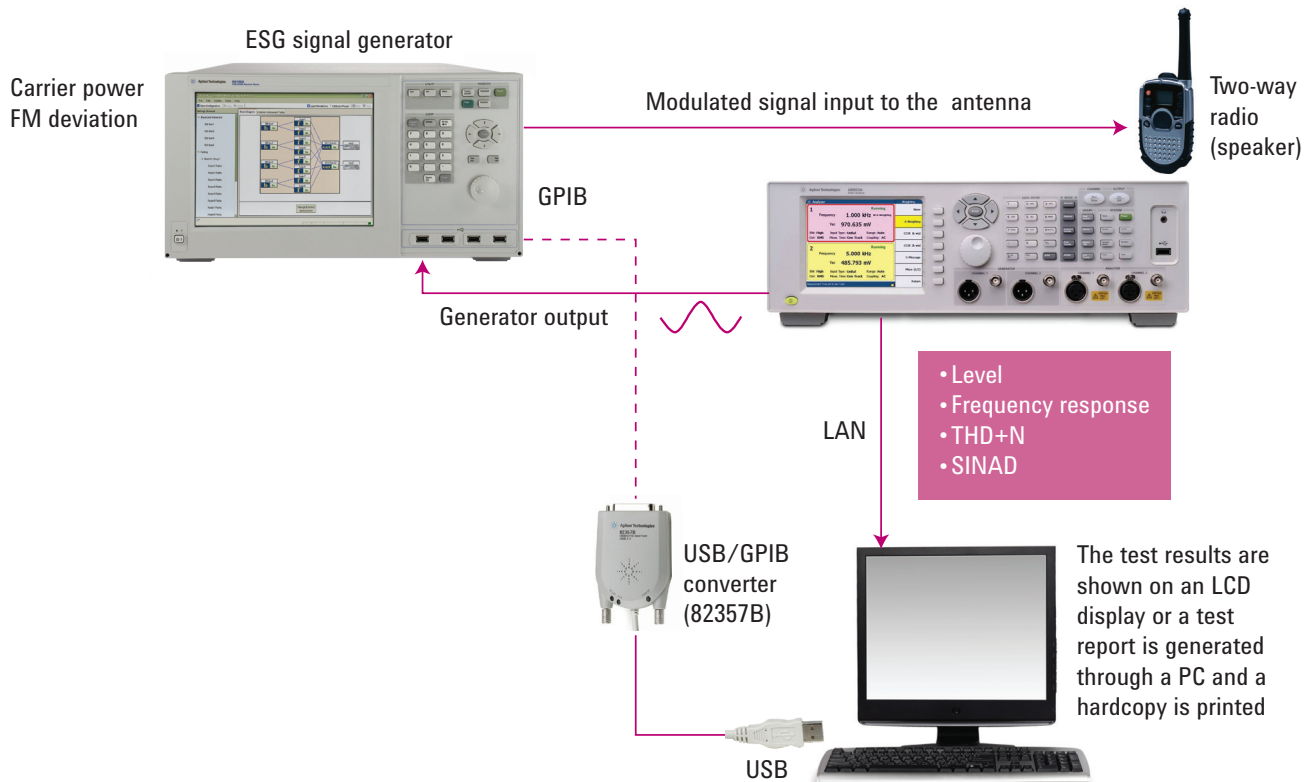
- Connect the microphone of the DUT to the audio analyzer's generator output
- Connect the antenna of the DUT to the spectrum analyzer's input
- Set the spectrum analyzer's frequency to match the DUT's transmit frequency
- Start the test and acquire the test results
- Use the PC to generate a hard copy of the test report

Application Examples

Radio receiver hardware test

Test procedure

- Connect the audio analyzer's generator output to the signal generator's external input
- Connect the output on the signal generator to the DUT's antenna
- Connect the DUT's speaker output to the audio analyzer's analyzer input
- Set the signal generator's frequency to match the DUT's transmit frequency
- Start the test
- Adjust the signal generator's carrier power to achieve SINAD = 12 dB on the audio analyzer
- Acquire the test results
- Use PC to generate a hard copy of the test results

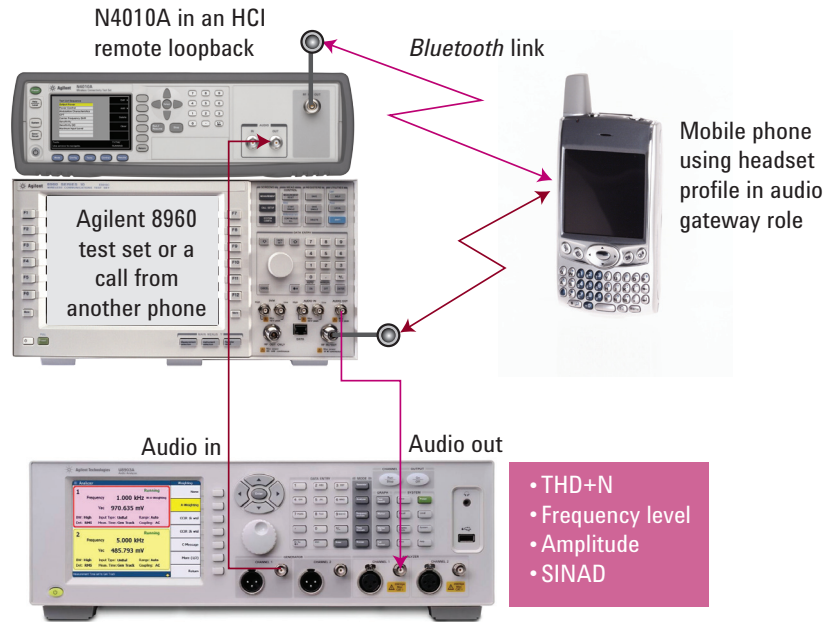


Application Examples

Cell phone audio test

Test procedure

- Use the audio analyzer's generator to output a 1 kHz tone to the audio input of the Agilent N4010A wireless connectivity test set
- Output a Bluetooth® and audio signal from the N4010A antenna
- Verify the Bluetooth signal is detected and received by the cell phone's handset
- Connect the handset to the Agilent 8960 Series 10 wireless communications test set configured for GSM connection
- Verify the 1 kHz audio tone at the 8960 transfers back to the audio analyzer's analyzer input
- Measure THD+N, frequency, level amplitude, and SINAD



U8903A Product Options

Product	Description
U8903A-200	Two-channel audio analyzer
Option	Description
U8903A-101	Male XLR to female XLR, 2 m, 150 Ω , black
U8903A-104	Male BNC to male BNC cable, 2 m, 50 Ω , black
U8903A-108	Male BNC to male RCA cable, 2 m, black
U8903A-908	Rack mount kit
U8903A-ABJ	Japanese User Guide

Please contact Agilent to obtain the local price.

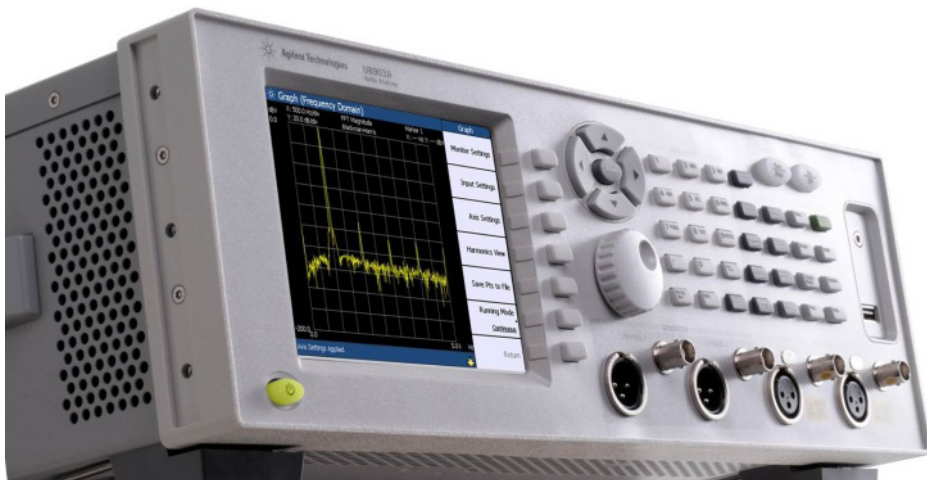
U8903A vs HP 8903B SCPI Commands

To support remote programming, the U8903A uses well-known, easy-to-use SCPI commands, eliminating the need to learn the instrument-specific command set used by the earlier HP 8903B audio analyzer.

While most of the HP 8903B commands have comparable U8903A SCPI commands, the new capabilities of the U8903A make some of the 8903A commands obsolete.

For specific details on U8903A SCPI commands versus HP 8903B commands, refer to the U8903A migration guide:

<http://cp.literature.agilent.com/litweb/pdf/5990-4135EN.pdf>



U8903A Specifications and Features vs the HP 8903B

Features	Agilent U8903A	HP 8903B
Channels (input/output)	2/2 (upgrade to 8/8)	
Display	5.7 inch TFT color LCD display	
I/O interface	GPIB/ LAN/ USB	
Connectors	BNC (unbalanced), XLR (balanced)	
Audio generator		
Impedance	Unbal: 50 Ω , 600 Ω Bal: 100 Ω , 600 Ω	Unbal: 50 Ω , 600 Ω
Frequency		
• Range	• 5 Hz to 80 kHz	• 20 Hz to 100 kHz
• Accuracy	• 5 ppm (0.0005%)	• 0.3%
Output level		
• Range	• 0 V to 16 Vrms (balanced) • 0 V to 8 Vrms (unbalanced)	• 0.6 mV to 6 Vrms (unbalanced)
• Accuracy	• $\pm 1\%$	• Better than 3%
Waveform generation	Sine, dual sine, variable phase, square, arbitrary, IMD, DFD	Sine
Audio generator		
Noise generation	Gaussian and rectangular PDF	No
Multitones generation	60 tones	No
Audio analyzer		
Impedance	Bal: 200k Ω Unbal: 100k Ω	Bal: 100k Ω
Frequency		
• Range	• 10 Hz to 100 kHz	• 20 Hz to 100 kHz
• Accuracy	• 5 ppm (0.0005%)	• 0.004%
Input level		
• AC measurement range	• < 1 μ V to 140 Vrms	• 0.3 mV to 300 Vrms
• AC accuracy	• $\pm 1\%$	• $\pm 4\%$
• DC measurement range	• 0 to ± 200 V	• 4 to 300 V
• DC accuracy	• $\pm 1\%$	• $\pm 1\%$
THD+N/SINAD (20 Hz to 20 kHz)	≤ -101 dB	≤ -80 dB
Audio analyzer		
Audio filters		
• Low pass filter	• 15 kHz, 20 kHz, 30 kHz	• 30 kHz, 80 kHz
• High pass filter	• 20 Hz, 100 Hz, 400 Hz	• 400 Hz
• Weighting filter	• A-weighting, C-message, CCIR-468, CCIR-ARM, CCITT	• A-weighting, C-message, CCIR-468, CCIR-ARM, CCITT
• User-defined filter	• Yes	• No
AC level detection	RMS, peak-to-peak, quasi peak	RMS
IMD and DFD measurement	Yes	No
Phase measurement	Yes	No
Cross talk measurement	Yes	No
FFT analyzer		
• Size/acquisition length	• Up to 32768 points	No
• Window	• Rectangular, Hann, Hamming, Blackman-Harris, Rife-Vincent 1 and 3, Flattop	
Sweep capability	Mode: frequency/amplitude level	Mode: frequency
Price	Check with your local Agilent sales office: www.agilent.com/find/contactus	

Resources for the U8903A

- Data sheet: <http://cp.literature.agilent.com/litweb/pdf/5990-3831EN.pdf>
- User's guide: <http://cp.literature.agilent.com/litweb/pdf/U8903-90002.pdf>
- Programmer's guide: <http://cp.literature.agilent.com/litweb/pdf/U8903-90027.pdf>
- Quick start guide: <http://cp.literature.agilent.com/litweb/pdf/U8903-90006.pdf>
- Migration guide: <http://cp.literature.agilent.com/litweb/pdf/5990-4135EN.pdf>

More details

Web site: www.agilent.com/find/audioanalyzer

For support

Contact your local Agilent office: www.agilent.com/find/contactus



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For more information on repair and calibration services, go to:

www.agilent.com/find/removealldoubt

www.agilent.com

www.agilent.com/find/audioanalyzer

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Revised: October 1, 2009

Product specifications and descriptions in this document subject to change without notice.

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Printed in USA, February 18, 2010
5990-5337EN



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