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# **U8903B**

## **Performance Audio Analyzer**

# Notices

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## Manual Part Number

U8903-90049

## Edition

Edition 4, August 2025

## Printed in:

Printed in Malaysia

## Published by:

Keysight Technologies  
Bayan Lepas Free Industrial Zone,  
11900 Penang, Malaysia

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A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

### WARNING

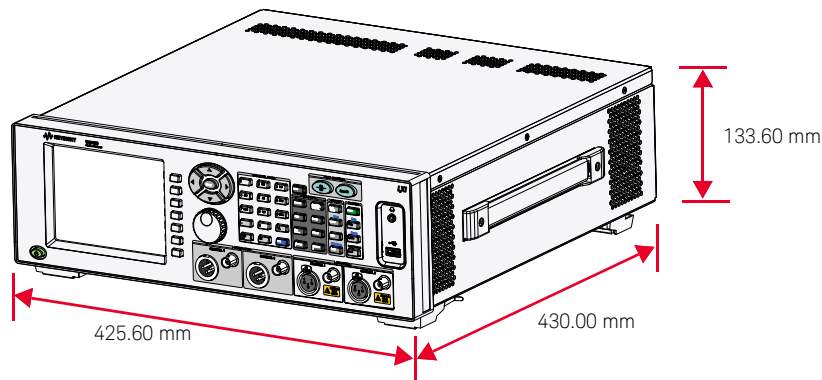
A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

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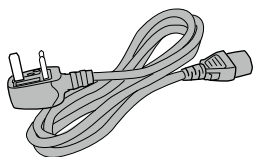
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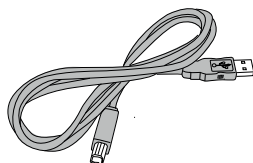
# Standard Shipped Items



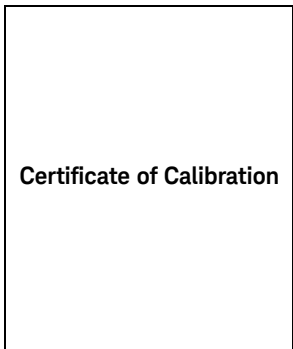
Keysight U8903B Performance Audio Analyzer



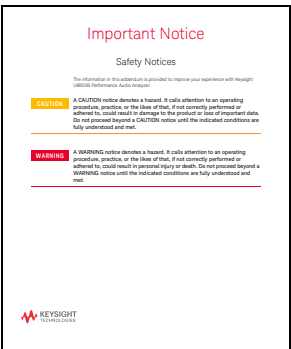
Power cord



USB cable



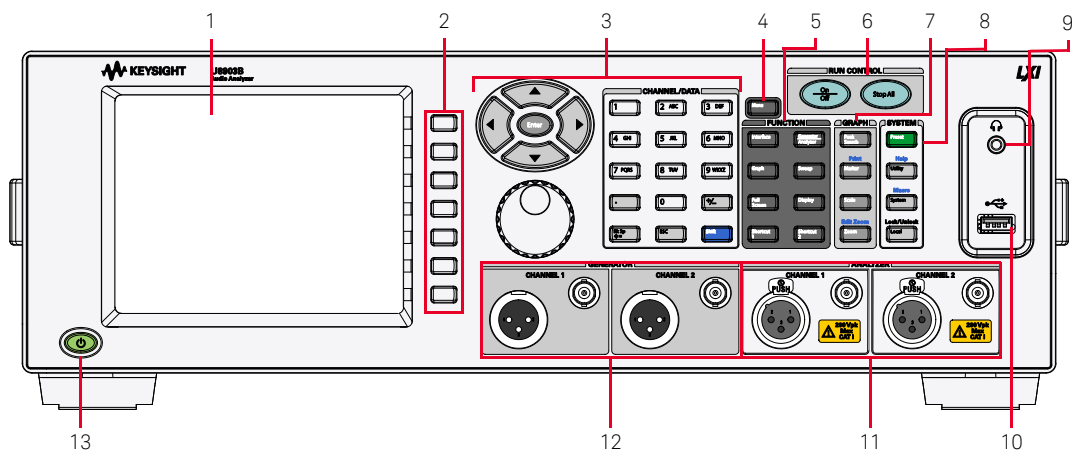
Certificate of Calibration



Safety Notices

# Product at a Glance

## Front panel

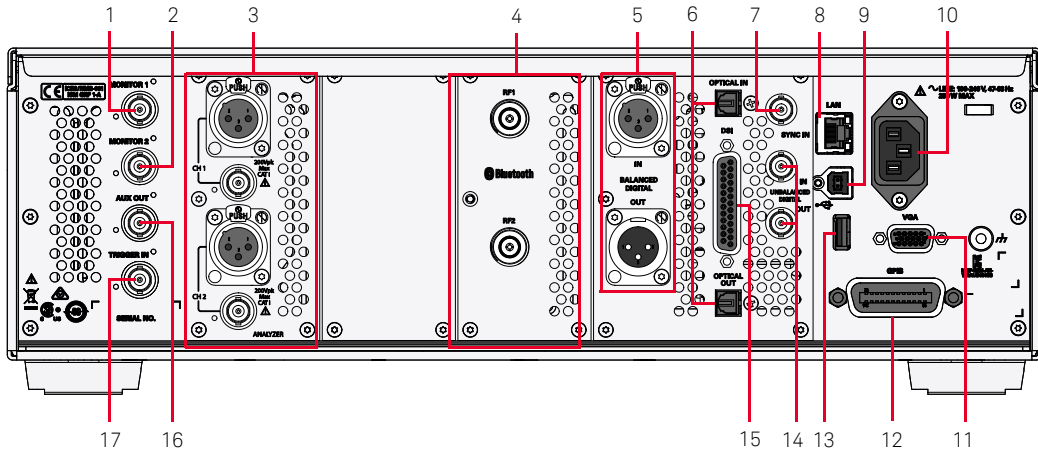


| Item                                 | Item                       |
|--------------------------------------|----------------------------|
| 1 LCD display                        | 8 SYSTEM panel             |
| 2 Softkeys 1 to 7                    | 9 Headphone jack           |
| 3 Navigation and CHANNEL/DATA panels | 10 USB port                |
| 4 Menu key                           | 11 Analog analyzer input   |
| 5 FUNCTION panel                     | 12 Analog generator output |
| 6 Run Control panel                  | 13 Power key               |
| 7 GRAPH panel                        |                            |

### NOTE

For the complete list of all the front panel functions and descriptions, refer to the *Keysight U8903B User's Guide*.

## Rear panel



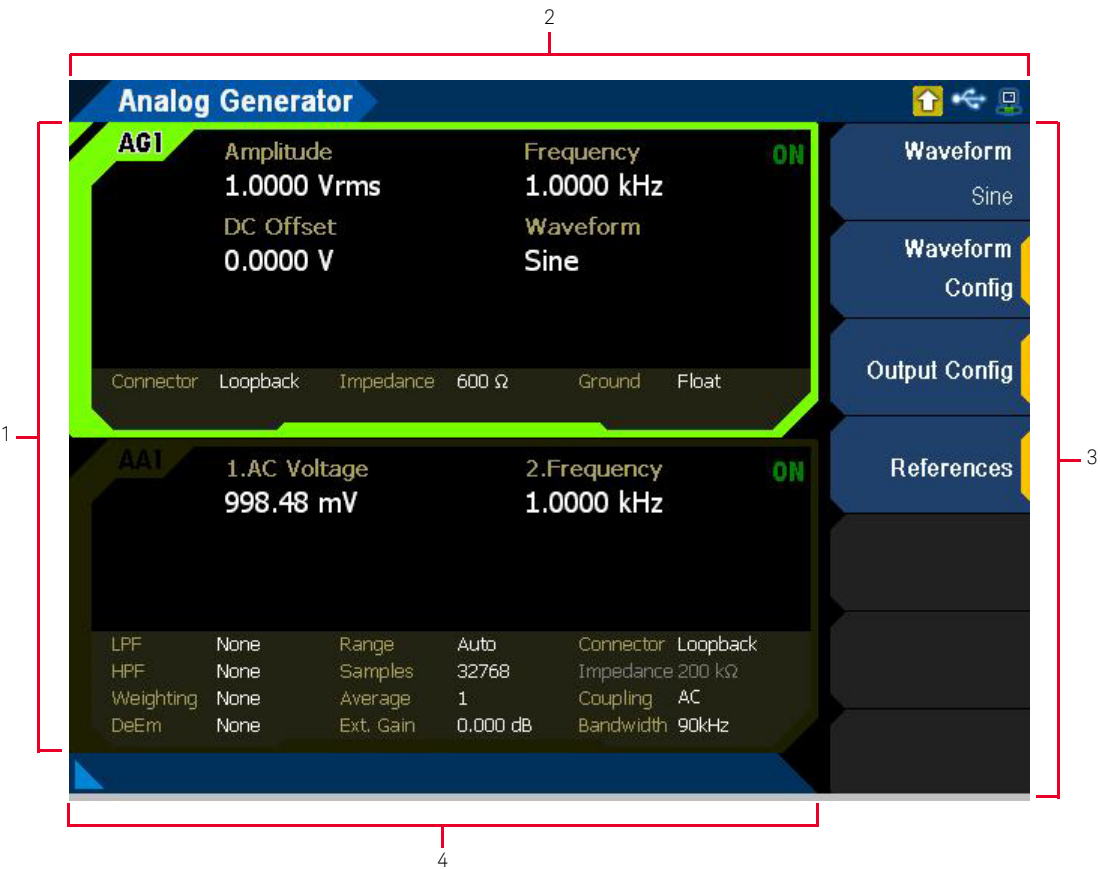
| Item                                        | Item                                              |
|---------------------------------------------|---------------------------------------------------|
| 1 Monitor 1                                 | 10 AC power port                                  |
| 2 Monitor 2                                 | 11 VGA port                                       |
| 3 Analog analyzer input (channels 3 and 4)  | 12 GPIB port                                      |
| 4 Bluetooth RF ports <sup>[a]</sup>         | 13 USB port                                       |
| 5 Digital analyzer input and output (AES3)  | 14 Digital analyzer input and output (AES3/SPDIF) |
| 6 Digital analyzer input and output (SPDIF) | 15 Digital analyzer input and output (DSI)        |
| 7 Sync in                                   | 16 AUX port                                       |
| 8 LAN port                                  | 17 Trigger in                                     |
| 9 USB port (type B)                         |                                                   |

[a] The RF1 port is the default port and the RF2 port can be selected in the U8903B's GUI. Only one RF port can be used at a time.

### NOTE

For the complete list of all the rear panel functions and descriptions, refer to the *Keysight U8903B User's Guide*.

LCD display

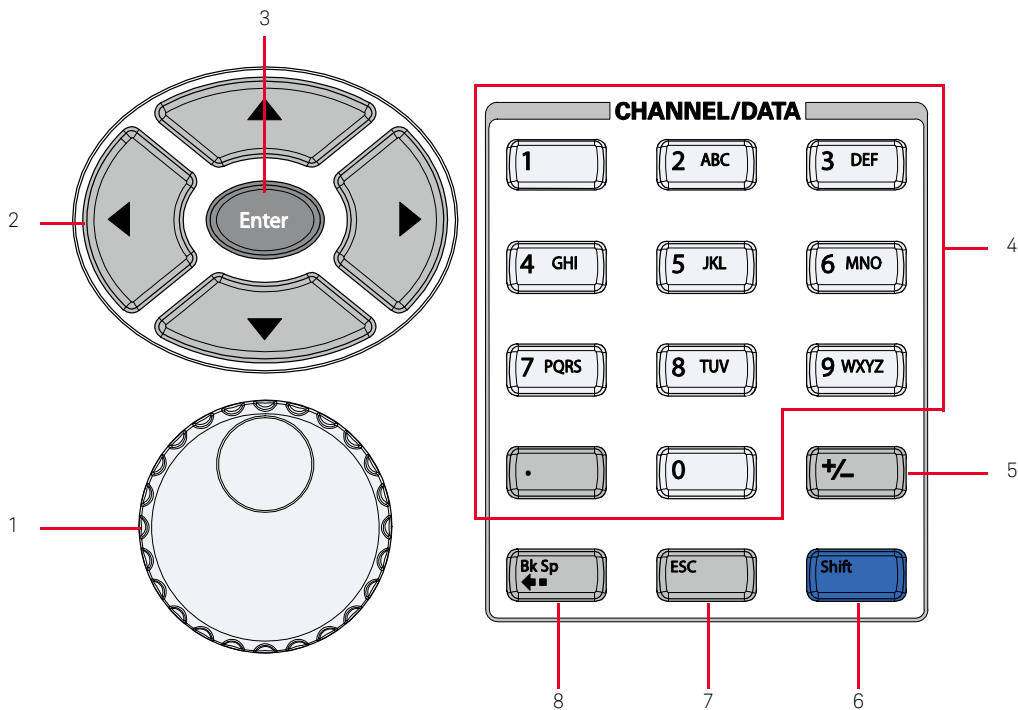


| Item           | Item             |
|----------------|------------------|
| 1 Main display | 3 Softkeys panel |
| 2 Title bar    | 4 Status bar     |

**NOTE** For the complete list of all the LCD display functions and descriptions, refer to the *Keysight U8903B User's Guide*.

# Navigation and CHANNEL/DATA Panels

The navigation and CHANNEL/DATA panels are used to navigate and to set or modify the parameter values.

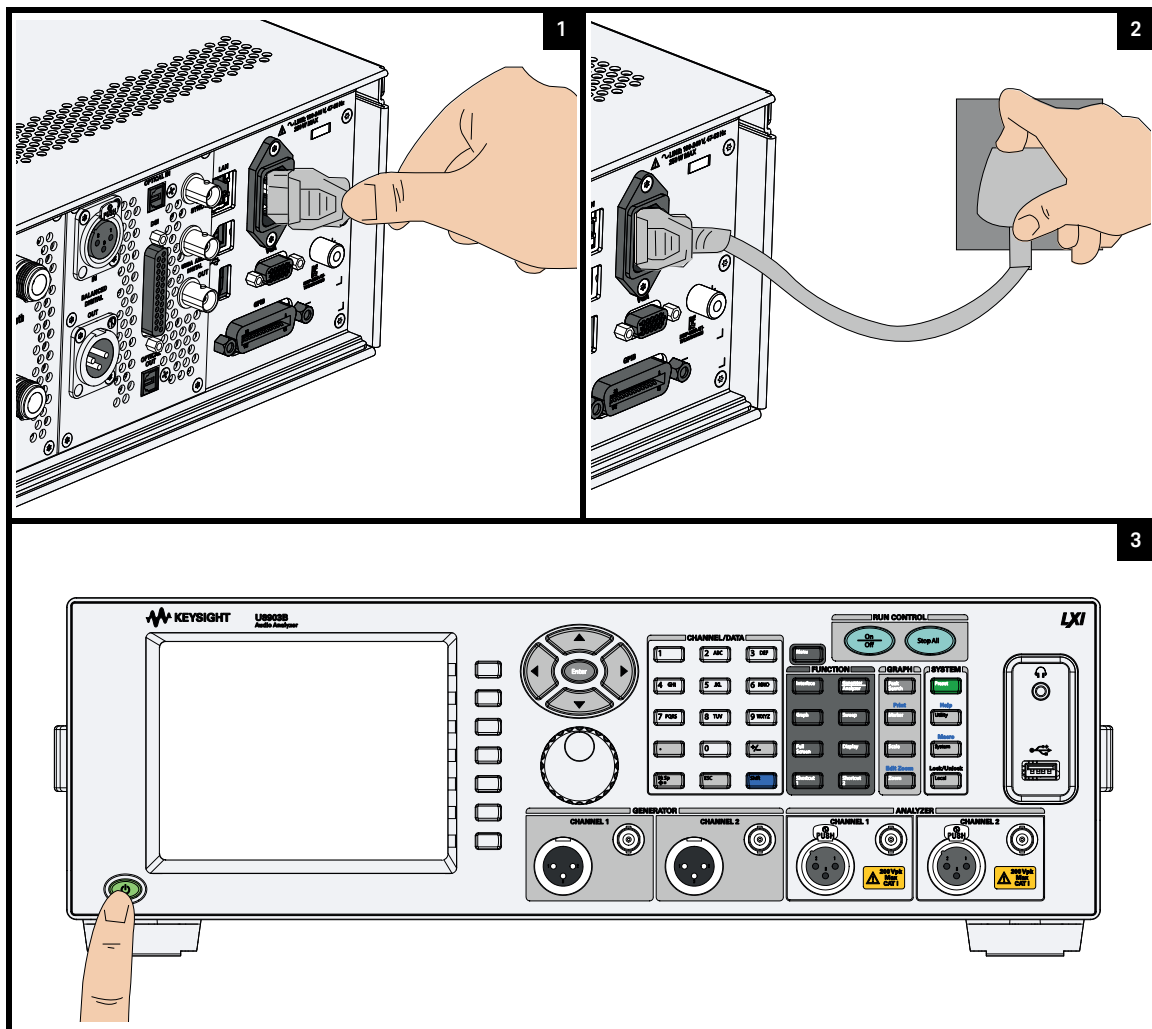


| Item |              | Item |                  |
|------|--------------|------|------------------|
| 1    | Knob         | 5    | Numeric sign key |
| 2    | Arrow keys   | 6    | Shift key        |
| 3    | Enter key    | 7    | Escape key       |
| 4    | Numeric keys | 8    | Backspace key    |

## NOTE

For the complete list of all the navigation and CHANNEL/DATA keys functions and descriptions, refer to the *Keysight U8903B User's Guide*.

## Power On the U8903B



# Preset the U8903B

SYSTEM

Preset

Help

Utility

Macro

System

Lock/Unlock

Local

Press **Preset** to set the U8903B to a known state.

It does not affect the I/O configuration, calibration data, or system configurations (time, date, model number, and serial number).

1

Preset

AG1

Amplitude  
1.0000 Vrms

Frequency  
1.0000 kHz

DC Offset  
0.0000 V

Waveform  
Sine

ON

Connector Loopback Impedance 600 Ω Ground Float

AA1

1.AC Voltage  
997.85 mV

2.Frequency  
1000.0 Hz

ON

LFF None Range Auto Connector Loopback  
HFF None Samples 32768 Impedance 200 kΩ  
Weighting None Average 1 Coupling AC  
DeEm None Ext. Gain 0.000 dB Bandwidth 90kHz

Analog Generator

Save User State

Mode

To Factory Settings

User State

Return

# Access the Help System

SYSTEM

Preset

Help

Utility

Macro

System

Lock/Unlock

Local

Press **Shift** on the CHANNEL/ DATA panel, and press **Utility** to activate or deactivate the U8903B help mode.

The help mode icon will appear at the top-right of the title bar.

The U8903B help mode provides you quick access to the operating information by displaying the description of all the front panel keys and current softkeys.

2

Help mode icon

Analog Generator

AG1

Amplitude  
1.0000 Vrms

Frequency  
1.0000 kHz

DC Offset  
0.0000 V

Waveform  
Sine

ON

Connector Loopback Impedance 600 Ω Ground Float

AA1

1.AC Voltage  
998.46 mV

2.Frequency  
1.0000 kHz

ON

LFF None Range Auto Connector Loopback  
HFF None Samples 32768 Impedance 200 kΩ  
Weighting None Average 1 Coupling AC  
DeEm None Ext. Gain 0.000 dB Bandwidth 90kHz

Waveform

Sine

Waveform Config

Output Config

References

# Access the U8903B Menu



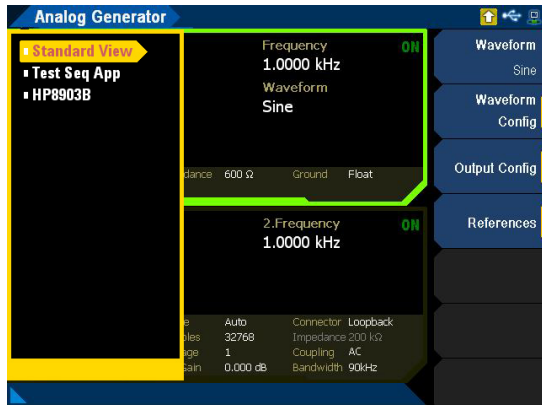
Press **Menu** to display the available U8903B main modes of operation.

Use the arrow keys or knob to select the desired main mode, and press **Enter** on the navigation panel.

1

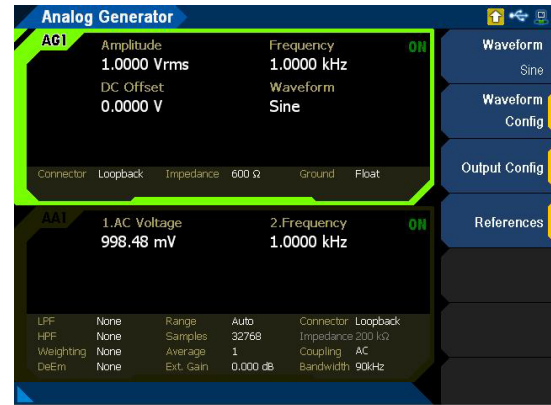
U8903B main mode selection

2



Standard view mode

3



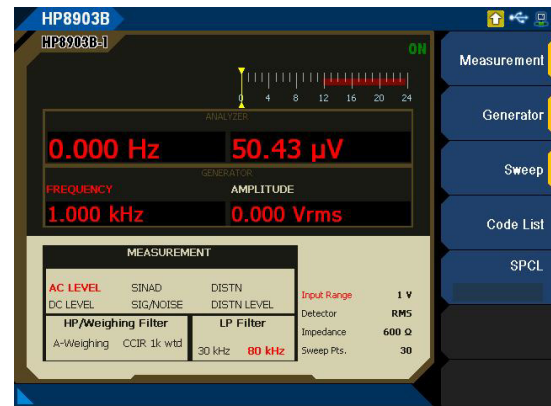
Test sequence application mode

4



HP8903B mode

5



# Switch to 2-Panel, 4-Panel, or 10-Panel View

FUNCTION

Interface

Generator Analyzer

Graph

Sweep

Full Screen

Display

Shortcut 1

Shortcut 2

Press **Display** to switch among the 2-panel, 4-panel, or 10-panel view in the generator and analyzer mode.

2-panel view

Analog Generator

AG1

Amplitude  
1.0000 Vrms  
DC Offset  
0.0000 V

Frequency  
1.0000 kHz  
Waveform  
Sine

ON

Connector  
Loopback  
Impedance  
600 Ω  
Ground  
Float

Waveform

Sine

Waveform Config

Output Config

References

AA1

1.AC Voltage  
998.48 mV

2.Frequency  
1.0000 kHz

ON

LPF  
None  
HPF  
None  
Weighting  
None  
DeEm  
None

Range  
Auto  
Samples  
32768  
Average  
1  
Ext. Gain  
0.000 dB

Connector  
Loopback  
Impedance  
200 kΩ  
Coupling  
AC  
Bandwidth  
90kHz

4-panel view

Analog Generator

Waveform Config

AG1

Amplitude  
1.0000 Vrms  
DC Offset  
0.0000 V

Frequency  
1.0000 kHz  
Waveform  
Sine

ON

Conn  
Loopback  
Gnd  
Imp  
600 Ω  
Float

AG2

Amplitude  
2.0000 Vrms  
DC Offset  
0.0000 V

Frequency  
2.0000 kHz  
Waveform  
Sine

ON

Conn  
Loopback  
Gnd  
Imp  
600 Ω  
Float

AA1

1.AC Voltage  
997.85 mV

2.Frequency  
1.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA2

1.AC Voltage  
1.9974 V

2.Frequency  
2.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

Amplitude

1.0000 Vrms

Frequency

1.0000 kHz

DC Offset

0.0000 V

Return

10-panel view

Analog Generator

Waveform Config

AG1

Amplitude  
1.0000 Vrms  
DC Offset  
0.0000 V

Frequency  
1.0000 kHz  
Waveform  
Sine

ON

Conn  
Loopback  
Gnd  
Imp  
600 Ω  
Float

AG2

Amplitude  
2.0000 Vrms  
DC Offset  
0.0000 V

Frequency  
2.0000 kHz  
Waveform  
Sine

ON

Conn  
Loopback  
Gnd  
Imp  
600 Ω  
Float

AA1

1.AC Voltage  
997.85 mV

2.Frequency  
1.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA2

1.AC Voltage  
1.9974 V

2.Frequency  
2.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA3

1.AC Voltage  
1.0002 V

2.Frequency  
1.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA4

1.AC Voltage  
2.0001 V

2.Frequency  
2.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA5

1.AC Voltage  
997.75 mV

2.Frequency  
1000.0 Hz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA6

1.AC Voltage  
2.0006 V

2.Frequency  
2.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA7

1.AC Voltage  
1.0002 V

2.Frequency  
1.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

AA8

1.AC Voltage  
2.0039 V

2.Frequency  
2.0000 kHz

ON

LPF  
None  
HPF  
None  
W  
None  
DeEm  
None

Conn  
Loopback  
Imp  
200 kΩ  
Coup  
AC  
BW  
90kHz

Amplitude

1.0000 Vrms

Frequency

1.0000 kHz

DC Offset

0.0000 V

Return

## U8903B Options

| Option     | Description                                                                                                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------|
| U8903B-STD | <ul style="list-style-type: none"><li>- 2 channels (analog generator)</li><li>- 2 channels (analog analyzer)</li></ul>            |
| U8903B-AN4 | <ul style="list-style-type: none"><li>- 2 channels (analog generator)</li><li>- 4 channels (analog analyzer)</li></ul>            |
| U8903B-AN8 | <ul style="list-style-type: none"><li>- 2 channels (analog generator)</li><li>- 8 channels (analog analyzer)</li></ul>            |
| U8903B-DGT | Digital audio card                                                                                                                |
| N3431A     | Wide bandwidth option - 1.5 MHz (fixed perpetual license).<br>This is only available for channel 1 and channel 2 analog analyzer. |
| N3432B     | Perceptual Objective Listening Quality Analysis (POLQA) measurement software (fixed perpetual license).                           |



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2023–2025  
Edition 4, August 2025

Printed in Malaysia



U8903-90049

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