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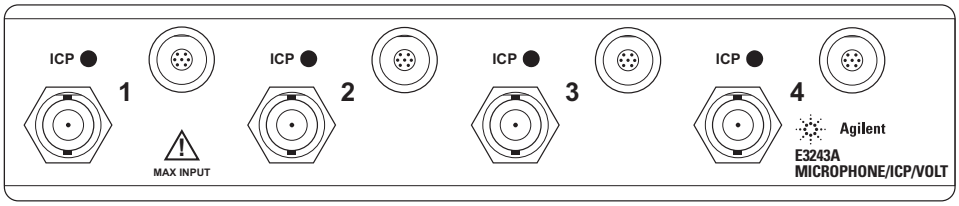
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Agilent E3243A

4-Channel Microphone/Voltage/IEPE* Breakout Box

Technical Specifications



General Characteristics	
Number of input channels	Four
Transducer connectors	Female BNC and 7-pin LEMO for each of 4 channels
Output connection	One 26-pin Amp 750823-1 connector is mounted on the box.
Monitor output	One female BNC connector per channel; buffered version of main output.
Cable to VXI module	One 2-meter cable, terminated at each end with Amp 750833-1 connectors, connects the breakout box to the VXI module.
Optional active extention cable	A 20-meter cable with two 26-pin Amp connectors

The Agilent E3243A Microphone Input Breakout Box is an accessory for the E1432A and E1433A VXI Modules. This Breakout Box provides both BNC and LEMO connection for each channel of the VXI module. Each Breakout Box has four BNC and four LEMO connectors for signal input. A 26-pin connector is provided for connection to the VXI module through an extension cable. Each channel has a program controlled Float/Ground switch to connect the BNC shell to chassis ground, or to allow a differential input.

The microphone input provides polarization and supply voltages for microphone pre-amplifiers. This input has an amplifier with three gain settings and is AC coupled at a very low frequency to minimize low frequency phase match errors.

The BNC input is a direct connection to the VXI module with no amplification. The current source for powering IEPE accelerometer transducers can be switched on or off under program control. A light indicates when the current source is on. A monitor output is also provided which is designed for backup or archival use.

All main output specifications, except as noted, apply with outputs driving either the standard two meter cable or the optional E3242 61620 20-meter cable.

All monitor output specifications apply with the monitor outputs connected to a 100 kΩ load via two meters of BNC coax cable.

* Integrated Electronic Piezo-Electric, current source for powering piezo-electric transducers with internal amplifiers.

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Specifications

Microphone (LEMO) Input	
Input impedance	200 kΩ, nominal
Breakout box gains	-20 dB, 0 dB, +20 dB
Full scale ranges	
With Agilent E1432A:	0.01V to 50V (1, 2, 5 steps)
With Agilent E1433A:	0.001V to 50V (1, 2, 5 steps)
Gain accuracy	± 0.05 dB at 1 kHz
Flatness 10 Hz to 88 kHz, Relative to 1 kHz	± 0.15 dB
Low frequency -3 dB point	< 0.4 Hz
Noise (Referred to input, 20 Hz to 88 kHz, 50Ω input termination, 10 mVp E1433A range) A-weighted total noise is less than 8 dB SPL when used with a 50 mV/Pa microphone.	< 20 nV/ $\sqrt{\text{Hz}}$
Distortion (Relative to full-scale output level of 0.1 Vp to 5 Vp)	
With 2-meter cable	< -75 dBfs
With 20-meter cable:	
Fundamental frequency ≤ 25.6 kHz	-70 dBfs
Fundamental frequency > 25.6 kHz to 44 kHz	-65 dBfs
Spurious responses (Relative to full-scale output level of 0.1 Vp to 5 Vp)	
20 Hz to 25.6 kHz:	-80 dB
25.6 Hz to 88 kHz	-74 dB
dc offset at main output	< ±10 mV
Channel-to-channel crosstalk (20 kHz, 50Ω input termination on receiving channel, full-scale signal on other channels)	**<** -80 dBfs
Channel-to-channel phase match	
50 Hz to 256 Hz	< ± (0.017 - f/ 22000) degrees
256 Hz to 20 Hz	< ± f/ 44700 degrees
20 Hz to 88 Hz	< ± 2 degrees
When used with the E1433A, the phase match meets IEC 1043 Class 1 processor specifications.	
dc polarization voltage (Program Selectable 0V or 200V; sourced through 1 MΩ)	200V ± 0.5%
28 Volt preamp power supply	28 Volts at 5 mA

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BNC input and IEPE supply (All BNC input specifications apply with up to 20V peak signal level)	
Maximum input signal level	20 Vpeak
Gain	1V/V nominal (Straight through connection)
IEPE current	4 mA (nominal)
Open circuit IEPE voltage	24V (nominal)
Noise (IEPE on)	< 50 nV rms / $\sqrt{Hz}$
Monitor output buffer amplifier*	
Maximum output signal level	5V peak
Output impedance	1 kΩ (nominal)
Gain (at 1 kHz)	1V/V ± 1.0%
Flatness DC - 88 kHz, relative to 1 kHz	± 3.0%
Channel-to-channel crosstalk (Refered to input, at 10 kHz, 50Ω input termination on receiving channel, full scale signal on other channels)	< -100 dB typical
Noise (50Ω input termination)	< 300 nV rms / $\sqrt{Hz}$
Distortion	< -70 dBc
Spurious response 50Ω input termination, 10 Hz to 88 kHz	< -103 dBVp
General	
I^2C Programming Interface	Programming is enabled only when I2C_EN is high. The ID register at hex address 7C responds with hex FB. Addresses 72 to 78 control Calibrator switch, Range selection, Mic/BNC selection, Float/Ground selection, and IEPE on/off, and 200V or 0V polarization. Each channel is controlled independently.
Breakout box power requirements (Maximum during normal operation)	
+24V current	250 mA
-24V current	150 mA
Physical characteristics	
Height:	40 mm
Width:	175 mm
Depth:	190 mm
Weight:	1500g
Regulatory Compliance	
Safety standards **Designed for compliance to:**	CSA 22.2, No 1010.1 UL 3111-1
Radiated emissions (Tested in a typical E1432A system)	EN 55011 (CISPR 11, Group 1, Class A)
Immunity	EN 50082-1
Environmental Operating Restrictions, (including temperature, humidity, altitude).	Temp 0 to 50 °C Humidity 20% RH to 90% RH non-condensing

* All monitor output buffer amplifier specifications apply for ≤ 5V peak signal level and 2-meter cable.

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Note:

Typical refers to typical, non-warranted, performance specification included to provide general product information.

Warranty:

This product has a three year warranty period. Agilent Technologies will replace the defective E3243A with a new or rebuilt unit during this time.

Related Agilent literature:

Agilent E3243A product overview
5965-5224E

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