VIDEO DEVICES

PIX-LR

Audio Interface for the PIX-E Series

User Guide

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Manual Conventions

Symbol	Description
>	This symbol is used to show the order in which you select menu commands and sub-options, such as: System > Version Info indicates you use the Control knob to navigate the Main menu and select System followed by Version Info.
+	A plus sign is used to show button or keystroke combinations. For instance, ALT+MENU means to hold the ALT button down as you press the MENU button. Ctrl+V means to hold the Control key down and press the V key simultaneously.
ⓘ	A note provides recommendations and important related information. The text for notes also appear italicized in a different color.
⚠	A cautionary warning about a specific action that could cause harm to you, the device, or cause you to lose data. Follow the guidelines in this document or on the unit itself when handling electrical equipment. The text for cautionary notes also appear bold and italicized in a different color.

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www.sounddevices.com

support@sounddevices.com

Sound Devices, LLC
E7556 Road 23 and 33
Reedsburg, Wisconsin USA

+1 (608) 524-0625
Toll Free: (800) 505-0625
Fax: +1 (608) 524-0655

Revision History

This table provides the revision history of this guide.

Rev#	Date	Firmware Version	Description
2-A	March 2016	v2.00	Preliminary Draft; Initial Official Publication

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PIX-LR Audio Interface

The PIX-LR is an accessory that provides the PIX-E Series with two XLR inputs, two XLR outputs, accurate LED metering, and dedicated transport and gain controls.

The mic preamps within the PIX-LR are some of the highest-quality preamps available, and the same preamps for which Sound Devices, LLC is world-famous. These active-balanced preamps are sonically pure with extremely low self-noise, high headroom, and low distortion. They also include excellent input limiters, which keep the input from overloading, even with unexpected loud noises or shouting right into the microphones. And they include full-spec 48 V phantom for high-quality condenser mics and low-cut filters to cut wind noise and room rumble.

Topics in this section include:

Front Panel

The front panel has the following features:
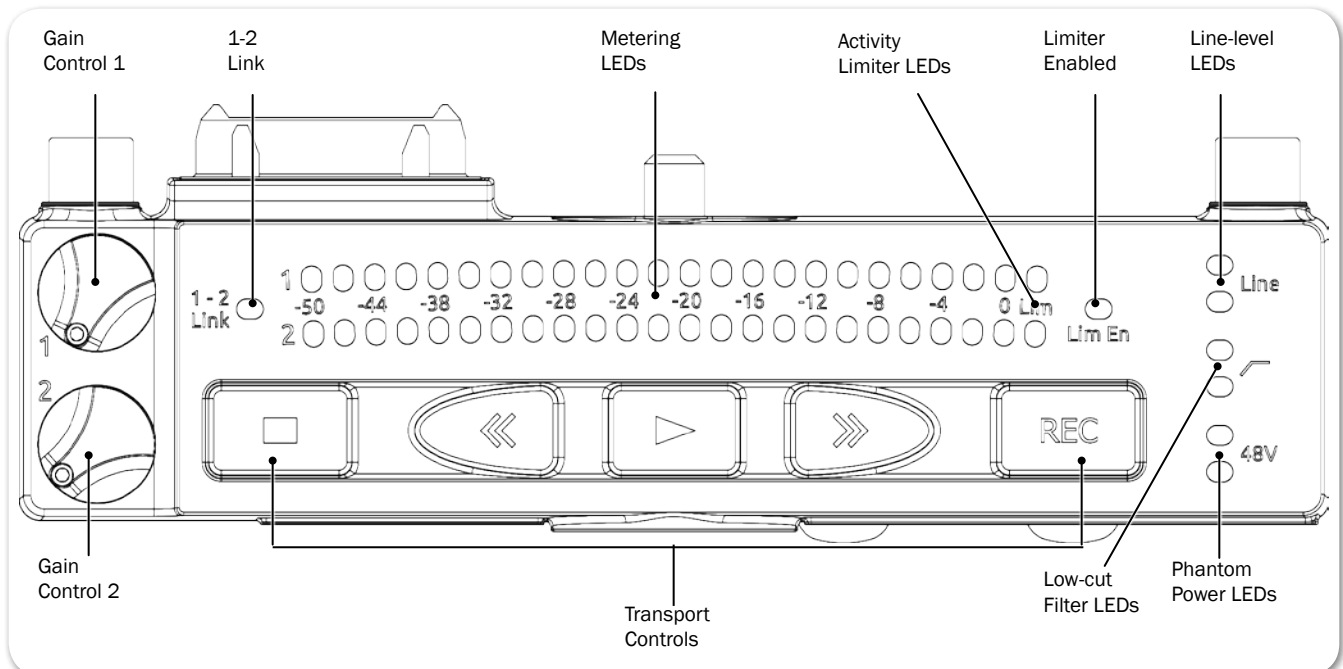
FEATURE	DESCRIPTION
Transport Controls	Five large, backlit buttons for transport controls: Stop, Rewind, Play, Fast Forward, and Record.
Gain Controls (1-2)	Two dedicated gain controls for XLR inputs 1 and 2. Gain range for both XLR inputs is -∞ to +72 dB.
1-2 Link LED	Indicates when XLR inputs 1 and 2 are a linked stereo pair.
Metering LEDs	Track metering LEDs
Active Limiter LEDs	Illuminates when limiting occurs.
Limiter Enabled LED	Illuminates when limiter is enabled.
Line LEDs	Illuminates when XLR inputs are set to line level; Off when set to Mic.
High-Pass Filter LEDs	Illuminates when the low-cut filter is enabled for the XLR input(s)
Phantom LEDs	Illuminates when phantom power (48 V) is active for the input(s).

Top Panel

The top panel provides the multi-pin connector and mounting screw used to connect the accessory to the bottom panel of PIX-E monitors.
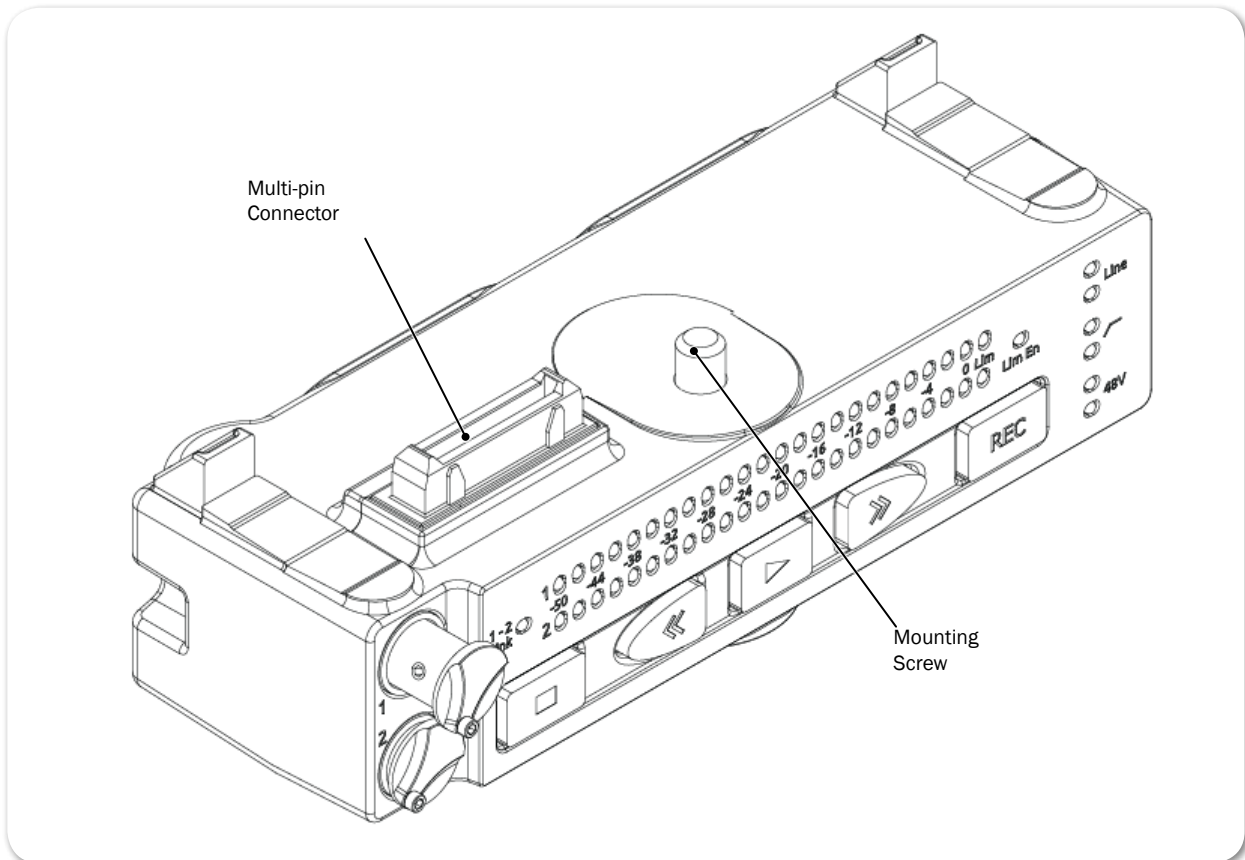
ⓘ *The PIX-LR attaches to the bottom panel of PIX-E monitors. Sound Devices, LLC recommends, as a best practice, the monitor's power be turned off and unplugged before affixing the accessory. Further instructions for attaching the PIX-LR to your monitor is provided in the PIX-LR Quick Start Guide, which is shipped with the accessory. It is also available as a free PDF download from the Video Devices website.*

Back Panel

The back panel has the following connectors:
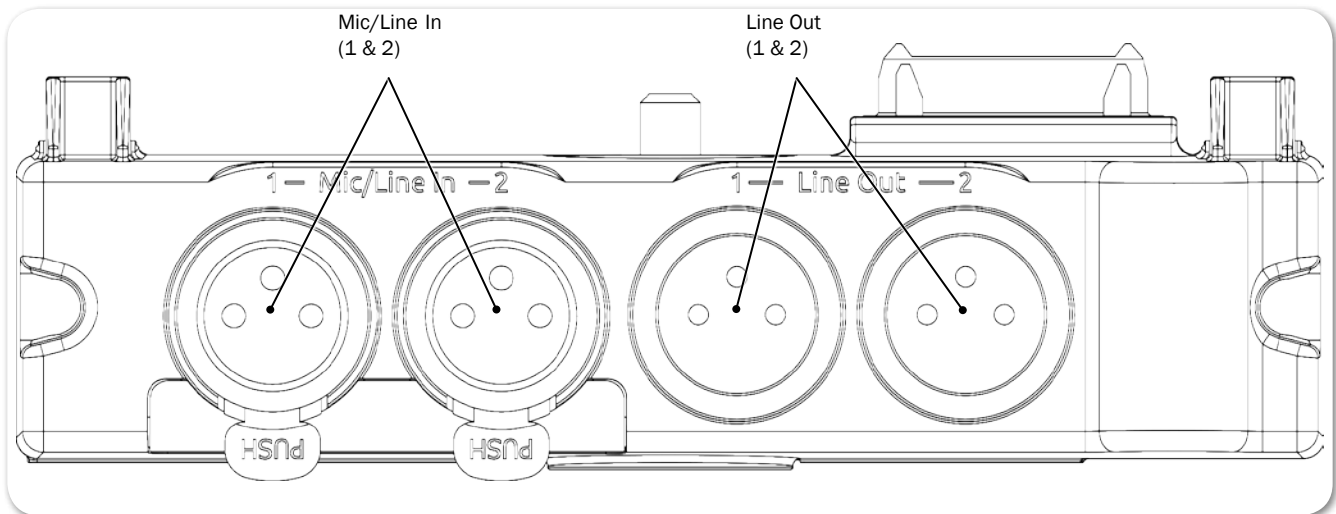
FEATURE	DESCRIPTION
Mic/Line	Two XLR connectors for active-balanced, analog microphone- or line-level inputs (1 and 2). [Pin-1 ground; pin-2 (+); pin-3 (-).]
Line Out	Two standard, 3-pin XLR connectors for balanced, line-level analog outputs. [Pin-1 ground; pin-2 hot (+); pin-3 cold (-).]
	In addition to their use as normal balanced outputs, the XLR outputs may also be connected as unbalanced. When doing so, connect pin 1 to ground, pin 2 to signal, and leave pin 3 unconnected.

Assigning Audio Input Sources to XLR

When the PIX-LR is attached, both XLR 1 and XLR 2 options become viable audio sources for the PIX-E monitor.

To set the audio input source to the PIX-LR inputs:

1. Press the Audio soft key button to access the Audio screen.
1. Use the Control knob to select the track to adjust.
2. Turn and press the Control knob to select the track's Source field.
3. Set the input source to XLR 1 or XLR 2.

ⓘ *The Audio screen is slightly different when the PIX-LR is attached. For more information, see Audio Screen Differences with PIX-LR.*

Modifying Audio Settings

When the PIX-LR is attached to a PIX-E monitor, additional settings become available via the monitor's Audio submenu.

To modify the Audio submenu's PIX-LR settings:

1. Press the MENU button to view the Main menu.
2. Select Audio and adjust settings as needed.

   The settings associated with the PIX-LR are:

SETTING	DESCRIPTION
XLR 1 Input	Sets input type for XLR 1. Default is Line. Options include: Line, Mic, Line 48V Phantom, Mic 48V Phantom
XLR 2 Input	Sets input type for XLR 2. Default is Line. Options include: Line, Mic, Line 48V Phantom, Mic 48V Phantom
	The default setting for both inputs is Mic.
	ⓘ *48 V phantom is needed to power many professional condenser microphones. If using professional dynamic microphones, 48 V phantom is not needed and can be turned off.*
XLR 1 Input Low Cut	Sets low cut frequency for analog XLR input 1. Options include: Off, 40 Hz, 80 Hz, 120 Hz, 160 Hz, 200 Hz, or 240 Hz
XLR 2 Input Low Cut	Sets low cut frequency for analog XLR input 2. Options include: Off, 40 Hz, 80 Hz, 120 Hz, 160 Hz, 200 Hz, or 240 Hz
	Input Low Cut settings for both XLR inputs are off by default.
	ⓘ *The low cut filter removes low-frequency bass sound, such as wind noise or room rumble, to make microphones sound better. If the input sounds too "rumbly," turn on the low-cut filter to the lowest number needed to make the input sound better.*
XLR Input Linking	Selects whether the input levels are controlled independently (unlinked) or as a stereo pair (linked). Options include: Off, 1-2 Linked without Pan, and 1-2 Linked with Pan. Linking is off by default.
	For more information, see *Adjusting Gain with the PIX-LR*.
	ⓘ *Limiters are linked and will act together.*
XLR Input Limiter	Turns XLR input limiter on or off. Limiter is on by default.
	A limiter quickly and automatically turns an input down momentarily, just enough to keep the input from overloading and sounding very distorted. This automatic gain-reduction happens only during the overload, and otherwise does not affect the incoming signal.
	ⓘ *Sound Devices, LLC recommends always keeping the limiter turned on.*

SETTING	DESCRIPTION
XLR Output Source	Sets the XLR output source. Options include: • XLR Input 1,2 • Tracks 1,2 • Tracks 3,4 • Tracks 5,6 • Tracks 7,8 • All tracks summed - mono • All tracks summed - stereo When set to All tracks summed - mono, all tracks (12345678) go to both 1 and 2. When set to All tracks summed - stereo, odd tracks (1357) go to 1 and even tracks (2468) go to 2. By default, the source is set to All tracks summed - stereo. The source chosen for this setting is displayed on the monitor's Audio screen. For instance, when set to the default of All tracks summed - stereo, the Audio screen displays XLR Out: Tracks 1357, 2468 in the upper right corner. ⓘ *When XLR Input 1,2 is chosen as the output source, then XLR 1,2 is used while recording. During playback, however, the source used is Tracks 1,2. Once playback is stopped, the output source reverts back XLR Input 1, 2.*
XLR Output Attenuation	Adjusts output attenuation in 1db increments: 0 to -20dB, Off XLR output attenuation is set to 0 dB by default.
PIX-LR LED Meters	Sets the PIX-LR LEDs to meter specified pairs. Options include: • Tracks 1 & 2 • Tracks 3 & 4 • Tracks 5 & 6 • Tracks 7 & 8 • XLR 1 & 2 By default, LED metering is set to XLR 1 & 2. ⓘ *When XLR 1 & 2 is chosen for LED metering, then metering of XLR inputs 1 and 2 is used while recording. During playback, however, the LEDs show the metering of Tracks 1 and 2. Once playback is stopped, LED metering reverts back to XLR 1 & 2.*

Audio Screen Differences with PIX-LR

The PIX-E monitor's Audio screen differs slightly whenever a PIX-LR is attached. For instance, when the audio input source for any track is set to XLR 1 or XLR 2, the corresponding fields in the Gain column can no longer be selected by using the monitor's Control knob. Additionally, after the XLR Output Source is set, the chosen source is displayed in the upper right corner of the Audio screen.
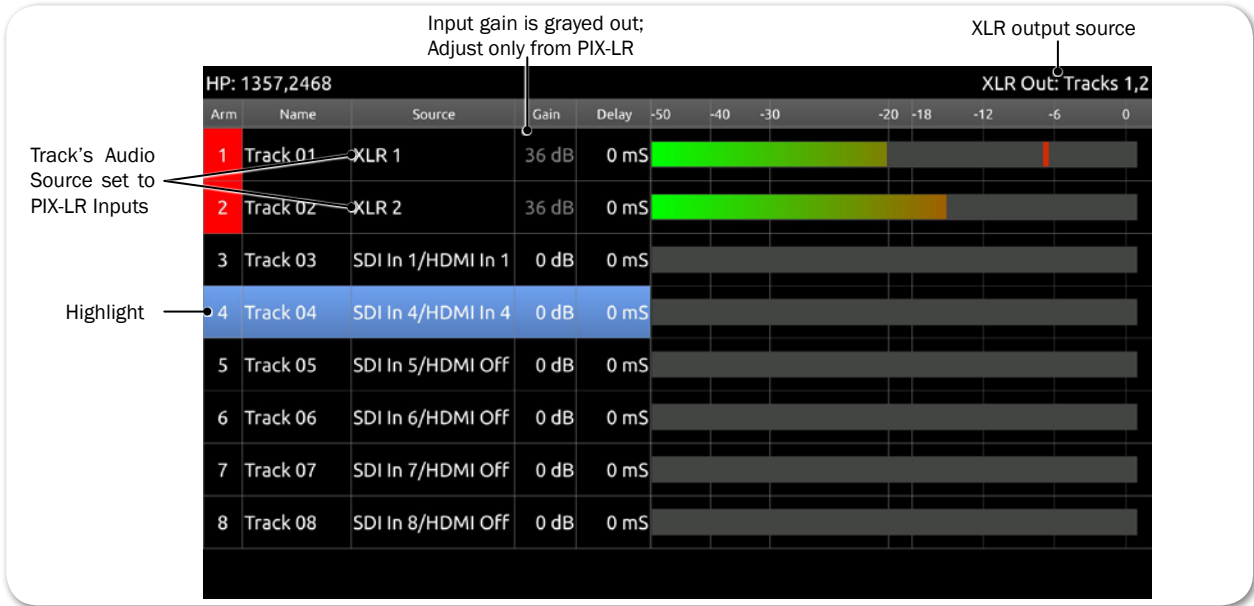
Levels shown in the Gain column of the Audio screen are normally adjusted with the Control knob, but when a track's audio source is set to XLR inputs, level adjustment is transferred to the PIX-LR's rotary gain controls. Therefore, the fields in the Gain column become disabled (grayed out) and are no longer adjustable from the Audio screen, using the Control knob. Although disabled, the fields in the Gain column still display present levels and any adjustments as they are made from the PIX-LR. This is particularly useful when XLR Input Linking with or without Pan is enabled, because the Audio screen shows the changes in gain levels while adjusting overall levels or the balance between inputs.

Adjusting Gain with the PIX-LR

With the PIX-LR attached and a track's audio source set to an XLR input, manual adjustment of gain levels is transferred to the PIX-LR's rotary gain controls.

For instance, if the source for Track 01 is set to XLR 1 and Track 02 is set to XLR 2, then turning gain control 1 adjusts levels for Track 01 on XLR 1, while turning gain control 2 adjusts levels for Track 02 on XLR 2.

This functionality changes, however, when Input Linking is enabled, which may be set with or without pan. When enabled, the linkage is indicated by the amber illumination of the 1-2 Link LED on the front panel of the PIX-LR, and the gain controls operate differently depending on whether pan is included in the configuration.

Audio Screen on PIX-E

PIX-LR: Gain Control 1

Arm	Name	Source	Gain	Delay	-50	-40	-30	-20	-18	-12	-6	0
1	Track 01	XLR 1	36 dB	0 mS								
2	Track 02	XLR 2	36 dB	0 mS								
3	Track 03	SDI In 1/HDMI In 1	0 dB	0 mS								
4	Track 04	SDI In 4/HDMI In 4	0 dB	0 mS								
5	Track 05	SDI In 5/HDMI Off	0 dB	0 mS								
6	Track 06	SDI In 6/HDMI Off	0 dB	0 mS								
7	Track 07	SDI In 7/HDMI Off	0 dB	0 mS								
8	Track 08	SDI In 8/HDMI Off	0 dB	0 mS								

HP: 1357,2468 — XLR Out: Tracks 1,2

1-2 Link

PIX-LR: Gain Control 2 (Disabled)   1-2 Link LED (Amber)

SEE DEMO VIDEO

As shown in the previous illustration, when linking is set to 1-2 Linked without Pan, gain control 1 adjusts the overall gain level of both XLR inputs, while gain control 2 is disabled.

When linking is set to 1-2 Linked with Pan, gain control 1 still adjusts the over-all level of both XLR inputs, but gain control 2 adjusts the balance between the inputs, as shown in the next illustration.

Audio Screen (partial)

Counter-clockwise

Clockwise

- Turning gain control 2 counter-clockwise fully attenuates XLR input 2.
- Turning gain control 2 clockwise fully attenuates XLR input 1.

Equal balance of the two inputs is achieved by setting the controls to center position.

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Choosing a Headphone Source

Every PIX-E monitor features a 3.5 mm headphone output. The audio source for this output is user-definable. When the PIX-LR is attached, existing options are slightly renamed and four new options appear.

To choose a headphone source:

1. Press and hold the MENU button for 1 second to access the Monitor menu.

2. Use the Control knob to select the HP Source tab.

3. Select a headphone source.

Source with PIX-LR	Description	Source Name w/o PIX-LR
Track 1,2	Select this stereo option for routing channel 1 to the left and 2 to the right.	1,2
Track 3,4	Select this stereo option for routing channel 3 to the left and 4 to the right.	3,4
Track 5,6	Select this stereo option for routing channel 5 to the left and 6 to the right.	5,6
Track 7,8	Select this stereo option for routing channel 7 to the left and 8 to the right.	7,8
Track Odd, Even	Select this stereo option for routing odd channels to the left and even channels to the right.	1357,2468
Track All	Select this mono option if you want all audio inputs routed to both sides of headphones.	12345678
XLR 1	Select this option for routing XLR 1 to both sides of headphones.	
XLR 2	Select this option for routing XLR 2 to both sides of headphones.	
XLR 1,2	Select this stereo option for routing XLR 1 to the left and XLR 2 to the right.	
XLR 12	Select this mono option if you want both XLR inputs routed to both sides of headphones.	

The XLR source options provide a low-latency path to the headphone monitor and to the XLR outputs. When monitoring track sources on headphones or the XLR outputs, the track audio is delayed to match the displayed video.

ⓘ *When HP Source is set to any of the XLR options, playback temporarily switches the source for headphone monitoring to Track 1,2. After playback is stopped, the source reverts back to the actual XLR option selected.*

Adjusting PIX-LR LED Brightness

When the PIX-LR is attached to a PIX-E monitor, an additional setting becomes available in the Monitor menu. Called PIX-LR LEDs, this setting may be used to adjust the brightness of the accessory's LEDs as well as its back-lit transport controls.

To adjust PIX-LR LED brightness:

1. Press and hold the MENU button for 1 second. The Monitor menu appears superimposed over the lower portion of the screen.

2. Select the PIX-LR LEDs tab and then adjust the level of brightness from 0% (off) to 100%. By default, the brightness level is set to 70%.

Specifications

The following specifications apply to the PIX-LR.

NAME	DESCRIPTION
Power	Powered by the monitor.
Frequency response	10 Hz - 20 kHz +0,-0.5 dB re 1 kHz
THD+N	0.05% max (20-20kHz filter), 0dBu in, gain +12 dB
Max Gain (mic position)	+72 dB (dBu in to -20dBFS)
Gain (line position)	+45 dB (dBu in to -20dBFS)
Max input level (mic position)	+8 dBu (gain at +12 dB)
Max input level (line position)	+26 dBu (gain at +12 dB)
Equivalent input noise (mic position)	-128 dBu (A-weighted)
Max line output level	+18 dBu (2k load)
Input limiters	40 dB range, 20:1 ratio, 1 mS attack, 200 mS release
Low cut filters	Selectable frequency, 12 dB/oct
48 V phantom	Full 10 mA each
XLR wiring (in and out)	Pin 2 = hot, pin 3 = cold, pin 1 = ground To drive unbalanced source from output, only use pins 2 and 1; leave pin 3 disconnected.
XLR protection (in and out)	Protected against 48V phantom, shorts, and fully RF-filtered
Size (H x W x D)	· 1.3 in x 5.4 in x 2.1 in · 3.3 cm x 13.7 cm x 5.3 cm
Weight	· 8.0 oz · 0.23 kg

Declaration of Conformity

SOUND (S) DEVICES	Declaration of Conformity	
	According to EN ISO/IEC 17050-1:2004	C€

Manufacturer's Name: Sound Devices, LLC
Manufacturer's Address: E7556 State Road 23 and 33
                           Reedsburg, WI 53959 USA

Declares under sole responsibility that the product as delivered

    Series: PIX-E Recording Field Monitors

    Model Number: PIX-LR (Audio Interface Accessory for the PIX-E Series)

    Product Options: This declaration covers all options of the above product

complies with the essential requirements of the following applicable European Directives, and carries the CE marking accordingly:

    EMC Directive (2004/108/EC)
            EN 55022:2005
            EN 55103-2:2009
    RoHS Directive (2011/65/EU)
    WEEE Directive (2012/19/EU)

First date of CE approval December 23, 2015.

This Declaration of Conformity applies to the above-listed product(s) placed on the EU market after:

_____   _____
December 23, 2015

Date   Matt Anderson

                                           President

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