Hill
A U D I O

CH 1 EQ

HI (dB) 12kHz HPF 75Hz
-15 +15

MID (dB) 2.5kHz
-15 +15

LO (dB) 80Hz
-15 +15

AUX

1 PRE
MIN MAX

2 POST
MIN MAX

PAN
L R
PEAK

LEVEL

USER MANUAL

LMD-1402FX
DESKTOP AUDIO MIXER
WITH DSP EFFECTS

Welcome

Thank you for choosing Hill Audio for your sound system. To make sure that this product meets your expectations and provides long-term, reliable performance, please read and follow this instruction manual carefully.

Manual Language

UK	This user manual is written in English. For other languages, visit	www.hill-audio.com
FR	Ce guide est écrit en anglais. Pour les autres langues, visitez:	www.hill-audio.com
DE	Diese Anleitung ist in Englisch verfasst. Für andere Sprachen:	www.hill-audio.com
ES	Este manual está escrito en Inglés. Para otros idiomas, visite:	www.hill-audio.com
PT	Este manual está escrito em Inglês. Para outros idiomas, visite:	www.hill-audio.com
IT	Questo manuale è scritto in inglese. Per altre lingue, visitare:	www.hill-audio.com

Important safety instructions

■ Read these instructions and all markings on the product. Keep these instructions.

■ Heed all warnings and instructions, both in this manual and on the product.

■ Clean only with a dry cloth. Unplug from AC supply before cleaning.

■ Do not use this product near water and avoid any exposure to water.

■ Before connecting this product to any AC supply, make sure to check whether the AC mains voltage and frequency match the indication on the product and its packaging.

■ Only connect this product to an AC supply with sufficient power handling, protective earth connection, ground-fault (earth-fault) protection and overload protection.

■ Disconnect the product from the AC supply during thunderstorms or longer periods of being unused.

■ Make sure any heat sink or other cooling surface, or any air convection slot , is exposed sufficiently to free air circulation and is not blocked.

■ Do not operate this product in environmental temperatures exceeding 35 degrees Celsius and/or 85% relative humidity.

■ Position the product in a safe and stable place for operation, out of reach of unauthorized persons.

■ Make sure any cable connections to and from the product are neither subject to potentially destructive mechanical impact nor present any risk of stumbling or other accident risk to people.

■ Audio equipment may generate sound pressure levels sufficient to cause permanent hearing damage to persons. Always start up at low volume settings and avoid prolonged exposure to sound pressure levels exceeding 90 dB.

■ Do not open this product for service purposes. There are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.

■ Take any precaution required by local law, applicable regulations or good business practice to avoid injury of people or material damage by use of this product.

Explanation of symbols used in this manual and on the product:

ATTENTION!
Read manual
before installation
and operation.

DANGER!
Safety hazard.
Risk of injury or death.

WARNING!
Hazardous voltage.
Risk of severe or fatal
electric shock.

WARNING!
Fire hazard.

Description

The LMD1402FX is desktop audio mixer specifically deisgned for cost-sensitive applications where the ease of use is a key consideration. Offering the flexibility of connecting up to 10 mono and stereo sources, and featuring an internal DSP effects section, plus separate AUX busses for effects and monitoring, the LMD1402FX mixer is an all-in-one solution built from quality components, and grants neutral and linear sound reproduction in many scenarios from live music to home recording.

Health advice

This unit produces and absorbs electromagnetic radiation. The strength of radiation and the sensitivity for disturbing interference matches the CE and FCC requirements. A corresponding sign is printed on the backside of the unit. Any change or modification may affect the behavior of the unit concerning electromagnetic radiation, with the CE requirements eventually not to be met any more. The manufacturer takes no responsibility in this case.

Functional advice

This unit is immune to the presence of electromagnetic disturbances – both conducted and radiated - up to a certain level. Under peak conditions, the unit is classified to show a "class C" performance criteria and may encounter temporary degradation or loss of function which may need manual help to recover. In such case, disconnect the AC power from the unit and reconnect it again to recover.

Environmental advice

This unit is built to conform to the ROHS standards and the WEEE directive 2002/96/EC of the European Parliament and of the Council of the European Union. Under these regulations, the product shall not be discarded into regular garbage at the end of its life, but shall be returned to authorized recycling stations.

Unpacking

Please check that the box contains the following items:

Main parts: 1 pc. LMD1402FX mixer main unit
                1 pc. Power supply
                1 pc. Operation manual

If any part is missing, please contact your dealer immediately for replacement.

Warning

After unpacking, and before plugging the AC cord in the wall outlet, check whether the AC mains voltage and frequency is the same as this product is specified for (see sticker on power supply). Whenever the specified voltage or your AC plug should not match the local conditions, do NOT plug the AC cord into the wall outlet and contact your dealer immediately.

Maintenance and warranty

While we have chosen the best components to make this product as rugged and reliable as possible, some parts in audio products (potentiometers, faders, switches) are subject to wear which is a matter of operation cycles, and not of time. While providing a full time-based warranty according to the country's of purchase requirements on the function of the electronic circuitry, we hence have to limit the warranty on such electro-mechanical parts to 90 days from the date of purchase.

In many cases, malfunction of electro-mechanical parts occurs due to dust contamination, which may require cleaning of such parts. As the inside of such parts is not accessible, a common practice is to use cleaning fluids in the shape of sprays. Please be reminded that many of such fluids contain chemicals which may wash away the dust but at the same time corrode or damage contact surface and may cause cosmetic damage to other parts. We hence explicitly exclude any claims for exchange of damaged part due to mechanical or chemical impact.

QUICK START, Part 1
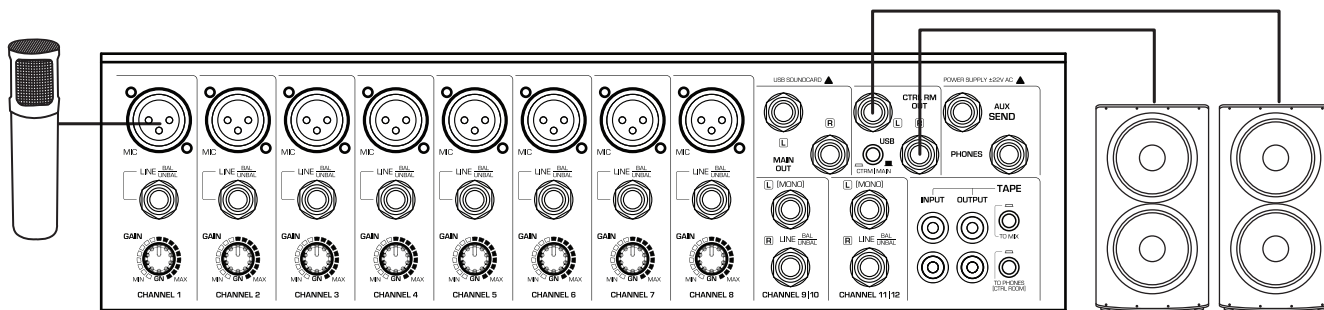
STUDIO QUICK START – PLUG IN A MICROPHONE AND HEAR IT THROUGH YOUR POWERED STUDIO MONITORS

Before we go through each feature on the mixer, we'll show a few common setups so that you can begin using your mixer right away. In the first example, we're going to connect a microphone and listen to it through powered studio monitors. Be sure to follow the directions so that you don't hear loud feedback through your speakers!

1. Turn the CTRL RM|PH knob (under the effects) all the way down, and the GAIN control on channel 1 (top left) all the way down.

2. Plug your powered studio monitors into the CTRL RM OUT left and right. Switch them on if you need to. (You can also follow this example using headphones.)

3. Turn the LEVEL control on channel 1 up about half way.

4. Plug your microphone into the MIC input on channel 1.

5. If you're using a condenser microphone, switch on the PHANTOM POWER function (top right). If you're using a dynamic mic, or don't know which type you're using, leave phantom power off.

6. Turn the MAIN MIX fader up to 0 (¾ of the way up).

7. Turn the GAIN control on channel 1 up about ½ way. If the PEAK light flashes red, turn the gain back down a bit.

8. Slowly turn up the control room level (CTRL RM|PH) while speaking into the microphone.

You should hear your voice through the speakers. Don't hear anything? Here are a few things to check:

• Are your speakers on? Are their level controls turned up?

• Do you need to switch phantom power on? Look at the markings on your microphone. If it says "condenser" then Phantom Power should be switched on. If it says "dynamic" then leave it off, although phantom power won't damage a dynamic mic.

• Are the level and gain knobs turned up on channel 1? Are the Main Mix and Control Room levels turned up?

• If you only plugged in one speaker, make sure that the PAN control is in the center.

• If the meters above Main Mix are moving, then your problem is with the speakers. If the meters aren't moving, something isn't set correctly on the mixer.

ADD REVERB

Now that we have signal running through the mixer, let's try out the effects. Picking up where we left off above:

1. Turn the PRESET knob to #5, "RV Plate."

2. Turn up the FX RETURN knob about ½ way up.

3. Turn up the AUX2 control on channel 1 and speak through the microphone. You should see the green light next to the preset knob light up and hear reverb on your voice.

4. Turn the Preset knob to hear the other presets.

PLAY BACK FROM YOUR COMPUTER OR PORTABLE DEVICE

Next, we're going to play back from a line level device like a computer, smartphone, keyboard, or MP3 player.

1. If still set up as above, turn down the LEVEL control on channel 1. Keep the Main Mix and Control Room levels up.

2. Turn down the Level control for stereo channel 9-10.

3. Plug your computer, smartphone, keyboard, or MP3 player into the LINE INPUT for channels 9 and 10. You'll need ¼" cables, either balanced or unbalanced will work.

4. Turn up the Level for channel 9-10.

QUICK START, Part 2
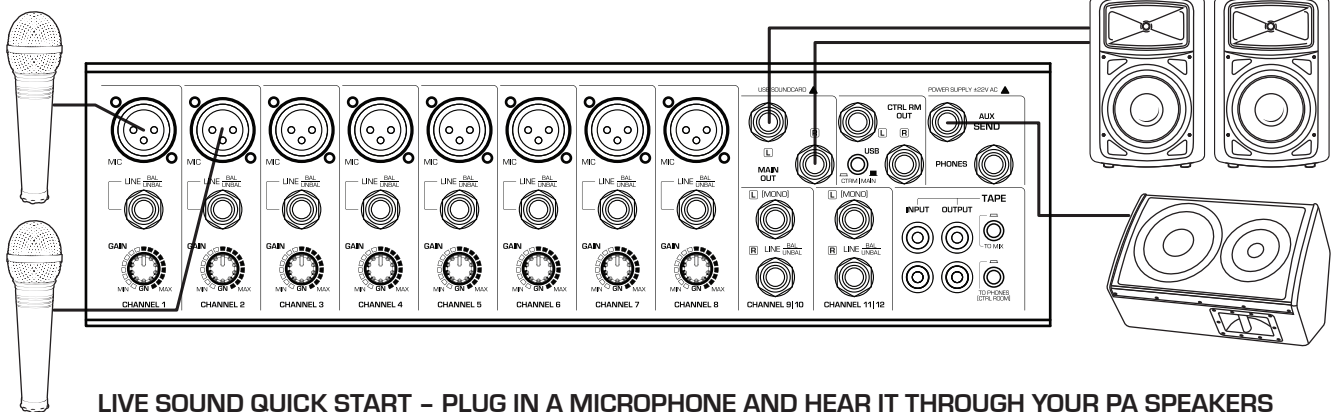
LIVE SOUND QUICK START – PLUG IN A MICROPHONE AND HEAR IT THROUGH YOUR PA SPEAKERS

Here is a typical live sound setup using two microphones, a stereo PA, and an on-stage floor monitor.

1. Turn the MAIN MIX fader (bottom right) all the way down, and the GAIN control on channels 1 and 2 (top left) all the way down.

2. Plug your speakers into the MAIN OUT left and right. Switch on the power amp.

3. Turn the LEVEL control on channel 1 up about half way.

4. Plug a microphone into the MIC inputs on channels 1 and 2.

5. If you're using a condenser microphone, switch on the PHANTOM POWER function (top right). If you're using a dynamic mic, or don't know which type you're using, leave phantom power off.

6. Turn the MAIN MIX fader up to 0 (¾ of the way up).

7. Slowly turn the GAIN control on channel 1 up to about ½ way. Watch the meters above the main fader. If they go up to 0, or if the PEAK light flashes red on your channel, turn the gain back down a bit.

8. Slowly turn up the GAIN on channel 2.

9. Switch on your stage monitor. Turn up the AUX1 knob on any channel you want to hear on stage.

Remember that the more microphones and speakers you use, the more possibilities there are for feedback.

Front Panel Elements - Connections
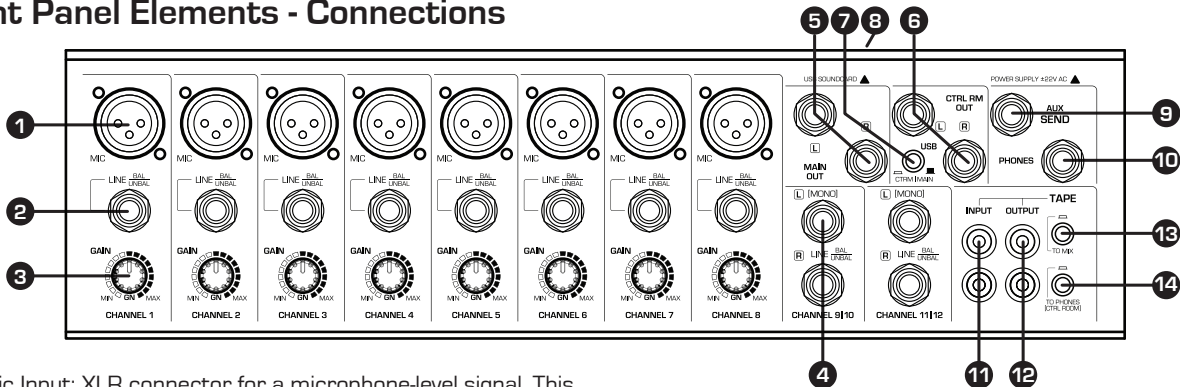
1. **Mic Input:** XLR connector for a microphone-level signal. This input also sends +48V phantom power to a microphone when Phantom Power is switched on.

2. **Line Input:** A ¼" input that accepts a line-level signal. Either a balanced (TRS) or unbalanced (TS) cable can be plugged in here.

3. **Gain Control:** Controls the input gain for the selected channel, from either the mic or line input.

4. **Left/Mono Line Input:** When this input is used and not the input below, it is sent to both the left and right outputs of the stereo channel. If L and R are both used, a stereo signal is sent to the Main Out.

5. **Main Out:** Outputs controlled by the Main Mix fader.

6. **Control Room Out:** Outputs controlled by the Control Room/Phones knob.

7. **USB Routing:** Switches the output of the internal USB audio interface from Control Room to Main

8. **USB connection (rear panel).** Connect your PC here to use the internal USB audio inteface

9. **Aux Send:** Output can be connected to a stage monitor or effects processor

10. **Phones Out:** Stereo output for driving a pair of headphones. The output level is controlled by the Control Room/Phones knob.

11. **Aux RCA Input:** An unbalanced input for a mixdown recorder, MP3 player, computer or other playback source.

12. **Aux RCA Output:** Unbalanced output is useful to send to a recorder, such as a portable recorder or computer to record a live performance.

13. **To Mix:** Sends the Aux RCA Input to the Main outputs for live sound applications.

14. **To Phones (Control Room):** Sends the Aux Input to the headphones and control room outs

Front Panel Elements - Connections
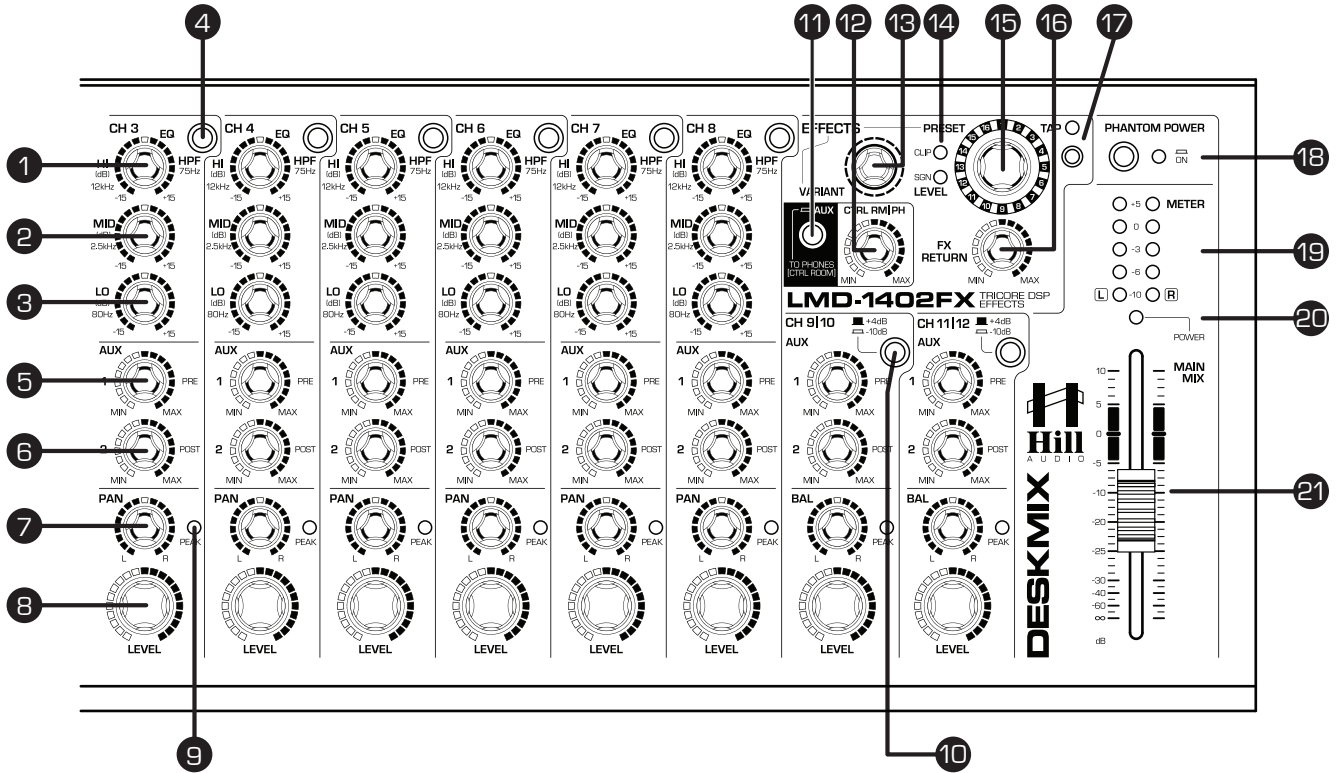
CONTROL SECTION:

1 High EQ: Controls a high shelving EQ, boosting or cutting frequencies from 12kHz and above

2 Mid EQ: A peaking EQ control, boosting or cutting frequen cies centered around 2.5kHz

3 Low EQ: Controls a low shelving EQ, boosting or cutting frequencies 80Hz and below

4 HPF: Cuts all frequencies 75Hz and below

5 Aux1: A pre-fader auxiliary send. It sends the channel to the Aux Send output.

6 Aux2: A post-fader auxiliary send. It sends the channel to the internal effects processor.

7 Pan: Sends the channel to the left output, right output, or somewhere between. In stereo channels, this is BALANCE.

8 Level: Controls the level of the channel going to the Main outputs.

9 PEAK LED. This indicator lights up when the internal level of the mixer approaches the allowed limit. Reduce the setting of the gain control if this indicator lights up continuously.

10 +4/-10 switch: Changes the input sensitivity. Usually balanced signals be set to +4 and unbalanced connections to -10.

11 Aux Send to Phones: When pressed, the aux send is sent to the Headphone and Control Room outputs. When up, the Phones and Control Room outputs are the same as the Main Outputs.

12 Control Room/Phones level: Controls the level going to the Control Room outputs and the Phones outputs.

13 Effects Parameter Variable: Changes the characteristics of the selected effects preset parameters.

14 Effects Level/Clip: Displays the level going to the effects processor. When the clip turns on, the effects are being distorted.

15 Effects Preset: Changes the effects processor preset, as listed on the top of the mixer.

16 FX Return: The overall level from the effects processor that is being sent to the Main outputs

17 TAP button & LED: tapping along the music allows adjustment of the time base for effects which are based on a time-related parameter.

18 Phantom Power: Sends 48V phantom power to the XLR inputs.

ATTENTION
Activating the phantom power supply during normal operation needs to be expedited with care, since pop noises may appear, which represent a risk to your ears and connected equipment. Turn down the output (21) to minimum before activating the phantom power supply.

19 Meter: Shows the signal level being sent to the Main Outs. If the red 0 or +5 lights are on, the output is being distorted.

20 Power LED: Shows that the mixer is switched on.

21 Main Mix: Sets the level to the Main Outs.

MICROPHONE INPUT (MIC)

This XLR connector will accept virtually any professional microphone. It is designed for microphone level signals. If you have a line level source with XLR output, you should get an XLR-to-¼" TRS cable and plug it into the line input (below).

Some microphones, mostly condenser mics, need phantom power to operate. Switch on phantom power on the right side of the mixer. If you're unsure if your mic needs phantom power, check the instructions or the manufacturer's website for information. Phantom power should not hurt most microphones, except for very old or damaged ribbon microphones.

Use the microphone preamp's gain control (explained below) to bring the microphone up to a high enough level to use with the mixer.

LINE INPUT (LINE)

This ¼" input is designed for line-level signals. It accepts either balanced (TRS) or unbalanced (TS) cables. The level of this input is also controlled by the gain control, explained below.

Do not use both the microphone and line inputs on the same channel. The mixer will distort and the noise level will go up.

The line input is not designed to accept an instrument-level signal, such as the output from an electric or acoustic guitar or bass. If you want to plug your instrument into the mixer, you have to use a direct box (also called a DI box) as an interfacing device.

GAIN

Gain controls the level of preamplifcation applied to the microphone or line level signal plugged into the mixer. If the gain is set too low, the output signal will be noisy when you turn it up at the level control. If gain is set too high, it will distort.

For best performance, set the gain while looking at the meters. Turn the Level control so that it's facing straight up. Then turn the gain up until you see the first or second lights on the meters. Don't set it too high – although you might not hear distortion when playing by itself, when all of the channels are playing at that level they may add together and distort the mixer.

AUX SEND

The Aux send 1&2 are separate busses on the LMD1402FX mixer. This means that you can have a different mix on the aux buss 1 and 2 than you do on the main outputs. This comes in handy in a few scenarios:

1) Sending different amounts to the effects section, so that some instruments have more reverb than others

2) Setting up a headphone mix, so that a recording musician can hear exactly what they want while you listen to your own mix

3) Creating a monitor mix on stage, so that band members can hear what they need to perform while you mix for the rest of the club

The LMD1402FX's AUX1 Send is pre-fader. This means that regardless of the channel level settings, the AUX 1 bus remains independent. This is useful for monitoring purposes, and hence is connected to the AUX Send output of the mixer.

On the contrary, the AUX2 Send is post-fader. This means that if the Level is turned all the way down, you can't send anything to the aux buss. This is useful for effects, and hence also connected to the internal effects processor.

Finally, you can send it to the Control Room and headphone outputs by pressing the "Aux Send To Phones" button, next to the Control Room/Phones level control. This allows a musician to hear their own mix while recording with headphones.

If you would like to listen to a different mix through the Control Room than your artist on headphones, you will need to plug the Aux out into a headphone amplifier for the artist while you monitor the main mix.

PAN

The Pan control moves the signal between the left and right outputs. When turned fully to the left, that channel will only show up on the left main output. When turned to the center, it will be send in equal volume to the left and right outputs. Turned fully to the right, you will only hear it through the right output.
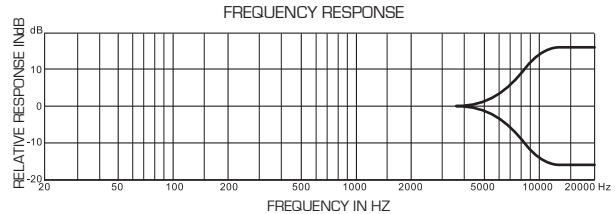
PEAK

The Peak LED lights up when the level coming into that channel is too loud. If you see this light flash, turn that channel's Gain control down and the Level control up.
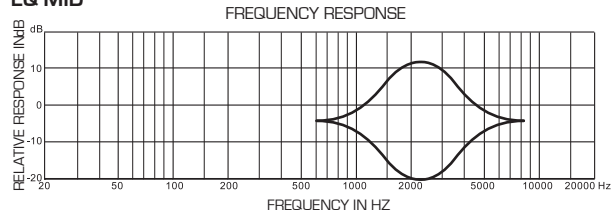
INPUT TYPES

## CHANNELS 1-8: MIC/LINE INPUTS

EQ HI

The high EQ control is a shelving EQ. What this means is that it boosts or cuts from 12kHz and everything above that. Turn it up to bring out the breath of a vocal or the high overtones of the cymbals. Turn it down to reduce finger squeaks on a guitar or bass.

EQ MID   *

The mid EQ is a peaking EQ, centered at 2.5kHz. This boosts or cuts the high midrange of your signal. You might turn it up if your vocal isn't cutting through the mix, or turn it down if a percussion part is too harsh.

EQ LOW
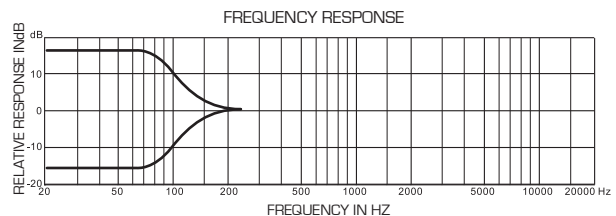
This low EQ boosts or cuts everything from 80Hz or below. You might bring it up for more bottom out of your kick or bass guitar, and turn it down to reduce rumble from a vocal or wind instrument.

HPF
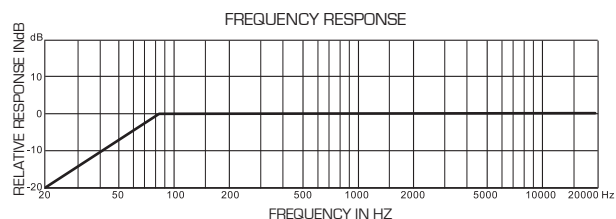
The HPF is a High Pass Filter, centered at 75Hz. This means that it cuts virtually everything below 75Hz. It can be useful for reducing rumble or muddy low tones from an instrument, or as a way to reduce hum in a channel. Try switching on the HPF and boosting the Low EQ for some interesting sounds.

CHANNELS 9-12: STERO LINE INPUTS

LEFT/MONO INPUT

This ¼" input expects a line level signal. It accepts either balanced (TRS) or unbalanced (TS) ¼" cables. If only the Left/Mono input is used on a channel, that signal will be sent to the left and right outputs. If the Right input is also used, this input will be sent to the left output.

RIGHT INPUT

As above, this is a line level input, either balanced or unbalanced. It is sent to the right output.

+4/-10 SWITCH

This switch sets the sensitivity for the channel. It's similar to the gain control, but only has two settings. Generally speaking, if your device has balanced outputs you should use the +4 setting. If your device has unbalanced outputs, use the -10 setting.

The -10 setting actually adds gain to the signal in this case. The number refers to the operating level of the device plugged into the mixer.

AUX SEND

This sends the channel to the aux busses. See the previous section for more information.

BALANCE (BAL)

The Balance knob has a similar effect to the pan control explained in the previous section. But the Balance control just turns down one input or the other. As you turn Balance to the right, the signal coming into the Left/Mono input gets softer. This allows you to control the panning in your mix without collapsing the stereo width of the input.

USB Interface

This unit sports an internal stereo soundcard. To play back audio:
A. Connect your computer to the mixer with a USB cable. Your computer sees the mixer as a device labeled "USB Audio Codec".
B. Select the mixer to playback audio from your system control panel.
C. Audio will play back directly into the master output or the control room buss. Set the volume at your computer.

To record audio
A. Connect your computer to the mixer with a USB cable. Your computer should see the mixer as a device labeled "USB Audio Codec".

OUTPUT TYPES

MAIN OUTS

The Main Outs are line outputs. They will work with either balanced or unbalanced cables. The Main Mix fader controls the level of the Main Outputs. You might plug the main outs into a PA amplifier or a mixdown recorder.

All of the channels should show up at the Main outputs. If they don't, make sure that the "Aux RCA to Mix" button isn't pushed.

CONTROL ROOM OUTPUTS (CNTL RM OUT)

The Control Room Outputs are a separate set of outputs for the mixer to listen to. In a home studio, you might plug these into a set of powered studio monitors. The Cnrl Rm|Ph knob controls the level going to the control room outputs (and the headphones.)

There are three sources that can be sent to the Control Room Outputs. Usually, you listen to the same mix that's coming out of the Main Outs. If the Aux RCA to Phones (Control Room) button is pressed, only the Aux RCA input will be heard through the Control Room outputs. If the Aux Send to Phones (Cntl Room) is pressed down, the aux send will be heard through the Control Room

LEVEL

This controls the level of the channel going to the Main Outs. See the previous section for more information.

AUX RCA INPUT

The Aux RCA Inputs are a pair of unbalanced RCA phono line inputs. They can be used for a variety of applications:
1) Monitoring a mixdown recorder. Since these inputs aren't sent to the Main Outputs, there is no chance of a feedback loop.
2) Playing an MP3 player through the PA between band sets, muting all microphones
3) Sending a signal to the headphone outputs but not to the main outputs. You might plug a set of outputs from a computer inter¬face into these inputs, so that the metronome click can be sent to the headphones but not the main out.

There are two buttons that control where these inputs are heard. One is Aux RCA To Mix and the other is Aux RCA To Phones (Cntl Room.)

When AUX RCA TO MIX is switched on, all of the inputs are muted except for the Aux RCA input. All that you will hear from the L/R outputs is what is playing into the Aux RCA input. You might use this in the example above to play an MP3 player to the PA between sets.

Pressing AUX RCA TO PHONES/CONTROL ROOM means that only the Aux RCA input is heard through the Control Room and Phones outputs. This is useful if you are recording the mix and only want to hear what is coming back from the recorder. This ensures that the recorder is getting the mix that you expect to hear. It also allows you to monitor the recorder output without creating a feed¬back loop in the speakers.

B. Select the mixer to playback and record audio from your system control panel.
C. Setup your mixer to have audio coming in as you normally would.
D. Start up your DAW application on your computer. Make sure it is setup to receive audio from the USB Audio Codec (the mixer)
E. Create an audio track on your mixer and enable it to record. To avoid a feedback loop turn down the fader on channel 11/12 or switch the USB source button (22) to off.
F. Perform your audio on the mixer and record the track on your DAW application. Note that different operation systems may need different gain settings. Specifically Microsoft Windows 7 may require a reduction of input gain. Set the gain carefully to avoid signal overload and distortion.

outputs. This can be useful when preparing a headphone mix for an artist.

PHONES

This is a headphone-level output. It is designed to drive a pair of headphones with a balanced ¼" connector. If your headphones have a 1/8" stereo jack, you will need an adapter to plug them into the mixer (included with most professional headphones.)

Note that the headphones and the control room outputs are linked – both the mix and level. If you press Aux RCA to Phones (Cntl Rm), the Aux RCA input will be sent to both the control room outs and the headphones. If you turn the control room level all the way down, there will be no signal in the headphones.

AUX SEND

This jack sends the AUX1 buss out of the mixer. Turn up the Aux1 knob on any channel to send it to the Aux Send output. See page 9 for more information about the Aux Send.

AUX RCA OUTPUT

This is a pair of unbalanced line level outputs. They are just a copy of the Main Outputs. If you turn the Main Mix fader down, the level is also reduced here.

EFFECTS SECTION

PRESET
The LMD1402FX Effects Processor has 16 presets. Each of these is a different effect type. The preset names are listed on the top of the mixer. They are explained in further detail below.

VARIABLE PARAMETER
This knob changes the character of the effect depending on the effect type. It either changes the length of a reverb, the feedback/repeat amount of a delay, or the depth of a modulation effect. See the preset descriptions below for more information on how this control works.

TAP
On effects presets with delay, press this button twice to set the delay time. This is useful for setting the delay time in tempo with the music. If you want a quarter note delay, press the Tap button on two successive beats of the music and the delay time will jump to that tempo.

SIGNAL/CLIP LEDS
These show the level going to the input of the effects processor. When you send a channel to the effects processor, using the Aux Send knob, you should see the green Sgn light turn on. If the level gets too high, you'll see the red Clip LED turn on. If this happens, turn down the Aux Send knobs on each channel to avoid distorting the effects.
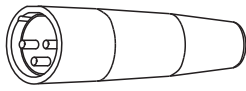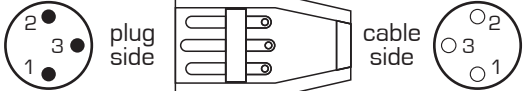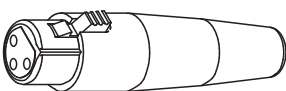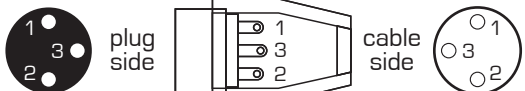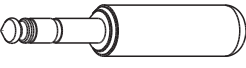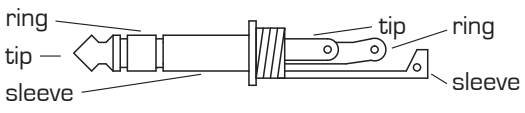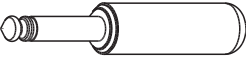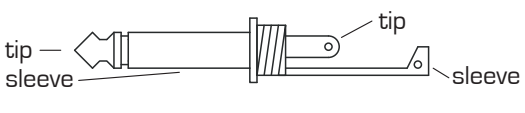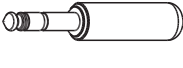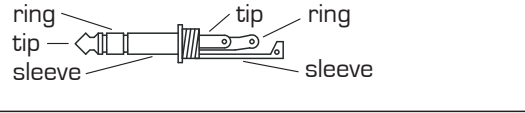
EFFECT PRESET CHART
The chart below describes the presets and what the Variable and Tap controls do for each one.

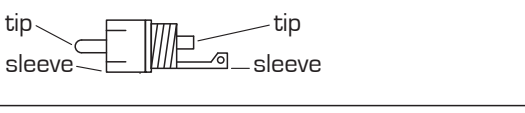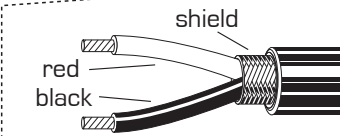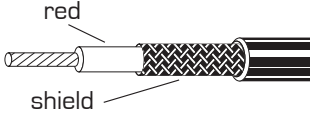| Preset	Name	Variable Paramenter	Tap Control	Description
1	Flanger	Depth, from low to deep	–	Classic stereo flanger with a slow sweep
2	Chorus	Depth, from low to deep	–	Chorus/ensemble effect with short delays
3	Delay-M	Feedback, from single repeat to long repeating echos	Delay Time	Simple mono delay, great for vocals and guitars
4	Delay-PP	Feedback, from single repeat to long echo	Delay Time	Stereo "Ping Pong" delay that jumps from left to right output for complex effects
5	RV Plate	Decay & Brightness - from Short/Bright to Long/Warm	–	Emulation of a '70s plate reverb – a smooth decay for instruments
6	RV PPlate	Decay & Brightness - from Short/Bright to Long/Warm	–	Plate reverb with a short (20ms) pre-delay, perfect for adding space to vocals while keeping them clear and intelligible
7	RV Room	Decay & Brightness - from Short/Bright to Long/Warm	–	Emulates a small studio room, great for adding ambience to drums and instruments
8	RV Hall	Decay & Brightness - from Short/Bright to Long/Warm	–	Gives the sound of a concert hall, ideal for keyboards, string, and wind instruments
9	RV Spring	Decay & Brightness - from Short/Bright to Long/Warm	-	The sound of a spring reverb, adds a funky vintage sound to guitars
10	VocD	Detune amount, light to deep	–	Vocal doubler effect – a Pitch shifter with a slight echo to fatten vocals or guitars
11	Rev+DelM	Reverb decay, short to long	Delay Time	Reverb with a short mono delay
12	Rev+DelPP	Reverb decay, short to long	Delay Time	Reverb with a short stereo ping-pong delay
13	RV+Chorus	Reverb decay, short to long	–	Reverb and chorus multieffect, nice on keyboards
14	RV+Flange	Reverb decay, short to long	–	Reverb and flanger multieffect, interesting with guitar
15	RV+VocD	Reverb decay, short to long	–	Reverb with vocal doubler multieffect, great for pop vocals
16	Rotary	Depth light to deep	–	Emulation of the rotary speaker from an organ, fun for guitars or keyboards

Connections

The LMD series mixers use the below connector types, for which the pin assignment must comply with the following specification. Always make sure to use good connectors and cables to ensure proper operation. Balanced connections are to be preferred over unbalanced connections where applicable and feasible. Avoid unbalanced connections exceeding 2m of cable length.
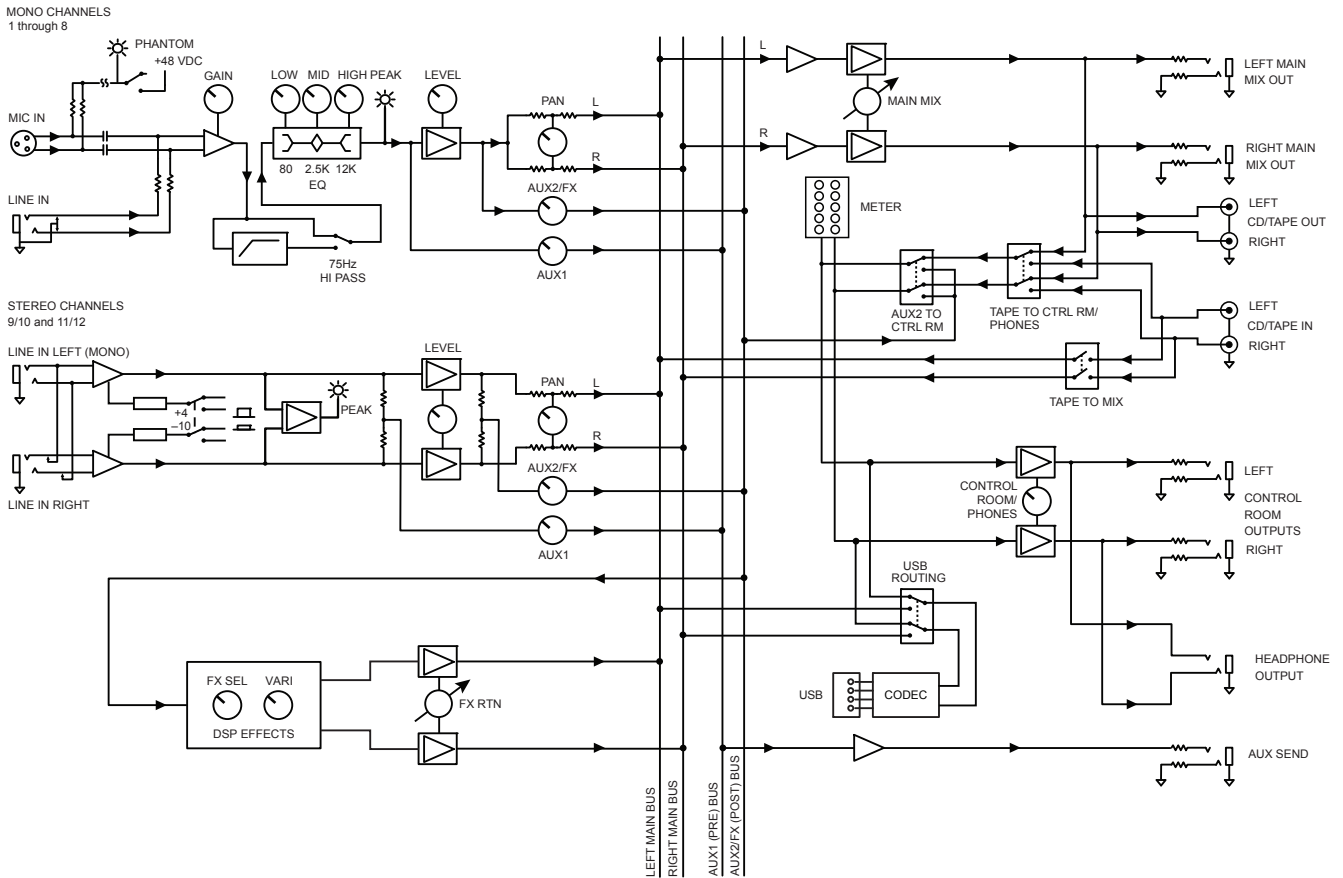
	Structure	Balanced connection	Unbalanced connection
XLR male	plug side (2, 3, 1) / cable side (2, 3, 1)	red = 2 black = 3 shield = 1	red = 2 shield = 1+3
XLR female	plug side (1, 3, 2) / cable side (1, 3, 2)	red = 2 black = 3 shield = 1	red = 2 shield = 1+3
6.35mm TRS-stereo	ring, tip, sleeve / tip, ring, sleeve	red = tip black = ring shield = sleeve	red = tip shield = sleeve+ring
6.35mm TRS-mono	tip, sleeve / tip, sleeve	red = tip black = sleeve shield = uncon.	red = tip shield = sleeve
3.5mm TRS-stereo	ring, tip, sleeve / tip, ring, sleeve	red = tip black = ring shield = sleeve	red = tip shield = sleeve+ring
RCA	tip, sleeve / tip, sleeve	red = tip black = sleeve shield = uncon.	red = tip shield = sleeve

CABLE Types

2-conductor shielded cable
(for balanced connections) — shield, red, black

1-conductor shielded cable
(for unbalanced connections) — red, shield

Technical Specifications

Preamp Noise (EIN) 20 Hz to 20 kHz, (150Ω source)..............-114dB
Residual Output Noise All level controls @ minimum................-95dB
Crosstalk Same channel (stereo separation)..........................-70dB
Frequency response +0 / -1dB..........................10Hz-22kHz

THD Mic In to Main Out, 20Hz to 20kHz.................................0.007%
AC IN (EU version)...............................AC220-250V~ 50Hz
Dimensions................................W372xH255xD60mm
Weight without PSU (PSU=0.55kg).....................................2.6kg

BLOCK DIAGRAM

MONO CHANNELS
1 through 8

PHANTOM
+48 VDC

GAIN

LOW MID HIGH PEAK

LEVEL

MIC IN

LINE IN

80 2.5K 12K
EQ

75Hz
HI PASS

PAN

L

R

AUX2/FX

AUX1

L

R

MAIN MIX

METER

AUX2 TO
CTRL RM

TAPE TO CTRL RM/
PHONES

TAPE TO MIX

LEFT MAIN
MIX OUT

RIGHT MAIN
MIX OUT

LEFT
CD/TAPE OUT
RIGHT

LEFT
CD/TAPE IN
RIGHT

STEREO CHANNELS
9/10 and 11/12

LINE IN LEFT (MONO)

LEVEL

+4
−10

PEAK

PAN

L

R

AUX2/FX

AUX1

LINE IN RIGHT

CONTROL
ROOM/
PHONES

LEFT
CONTROL
ROOM
OUTPUTS
RIGHT

USB
ROUTING

FX SEL VARI

DSP EFFECTS

FX RTN

USB

CODEC

HEADPHONE
OUTPUT

AUX SEND

LEFT MAIN BUS

RIGHT MAIN BUS

AUX1 (PRE) BUS

AUX2/FX (POST) BUS

GLOSSARY OF TERMS

BALANCED

A 3-conductor (including shield), low-impedance connection. Balanced cables are the preferred method for hum-free interconnection of a sound system for their noise-rejection characteristics. (Also see Unbalanced.)

BUS

An output destination in a mixer. For example, the left and right main outputs are called busses, because you can send a channel to one or both of them. Also spelled Bus.

CHANNEL

One of any number of signal paths in an audio circuit, such as input channel, output channel, recording channel, left channel, right channel, etc.

DELAY

Like an echo, this effect duplicates the original signal, then plays it back at a rate you control. The rate at which these repeats occur is the "delay time."

EQUALIZATION

Electronic filters that adjust the level of certain frequencies. Used for tone enhancement or to reduce extraneous sounds. Two types of EQ shapes are Peak and Shelving, described below.

IMPEDANCE

Resistance in an electrical circuit measured in Ohms (Ω). Maintaining proper impedance (between amplifier and speakers for example) is important to prevent damage to the amp.

PEAK EQUALIZER CONTROL

Increase or decrease of a frequency range centered at a specific point, resulting in an EQ curve that looks like a hill (increase) or a valley (decrease).

PHANTOM POWER

A voltage signal that runs through a microphone cable to power condenser microphones. Harmless to microphones that don't need it, except for very old and/or damaged ribbon microphones.

REVERB

An audio effect that emulates the echo reflections and decay time of a large space.

SHELVING EQUALIZER CONTROL

Increase or decrease of all frequencies above or below a specific point. (Compare to Peak Equalizer Control; see pages 8-9 for more information.)

TRS

Acronym for Tip-Ring-Sleeve — the three parts of a three-conductor (including shield) audio plug. TRS phone plugs are often used for "balanced" mono connections, or stereo "unbalanced" (head-phone) connections.

TS

Acronym for Tip-Sleeve, the two parts of an unbalanced, two-conductor (including shield) phone plug. TS connectors are some-times called mono or unbalanced plugs or jacks.

UNBALANCED

A two-conductor (including shield), high-impedance connection. These are most commonly used for instrument connections and cable runs of less than 20 feet.

XLR

The three-pin connector universally used for balanced audio connections. A balanced connection reduces outside noise and interference. (See Balanced above.)

EC Declaration of Conformity

Manufacturer: Adelto Technologies Limited
Address: Unit 2A Springfield Road, Springfield Industrial Estate
                     Burnham-on-Crouch, Essex CMO8UA, England

We declare on our own responsibility, that the equipment

Hill Audio LMD1402FX

is in conformity with the following directives and standards or regulations:

EMC Directive 2004/108/EC
EN55103-1:2009 (Emissions)
EN55103-2:2009 (Immunity)
EN61000-3-2:2006 + A1:2009 + A2:2009
EN61000-3-3:2008

LVD Directive 2006/95/EC
EN60065:2002 A1:2006 + A11:2008 + A2:2010

ROHS Directive 2002/95/EC

and is marked as follows: $C\epsilon$

Burnham-on-Crouch, 09. October 2015
Place and date of issuing   Authorized Signature

www.hill-audio.com

Hill Audio products are developed, manufactured and distributed by
Adelto Technologies
Unit 2A Springfield Road, Springfield Industrial Estate, Burnham-on-Crouch, Essex CMO8UA, England
www.adelto.com | sales@adelto.com