

# ALLEN & HEATH



 **Xone:92**

## USER GUIDE

## Limited One Year Manufacturer's Warranty

Allen & Heath warrants the Allen & Heath - branded hardware product and accessories contained in the original packaging ("Allen & Heath Product") against defects in materials and workmanship when used in accordance with Allen & Heath's user manuals, technical specifications and other Allen & Heath product published guidelines for a period of ONE (1) YEAR from the date of original purchase by the end-user purchaser ("Warranty Period").

This warranty does not apply to any non-Allen & Heath branded hardware products or any software, even if packaged or sold with Allen & Heath hardware.

Please refer to the licensing agreement accompanying the software for details of your rights with respect to the use of software ("EULA").

Details of the EULA, warranty policy and other useful information can be found on the Allen & Heath website: [www.allen-heath.com/legal](http://www.allen-heath.com/legal).

Repair or replacement under the terms of the warranty does not provide right to extension or renewal of the warranty period. Repair or direct replacement of the product under the terms of this warranty may be fulfilled with functionally equivalent service exchange units.

This warranty is not transferable. This warranty does not cover fader wear and tear.

This warranty will be the purchaser's sole and exclusive remedy and neither Allen & Heath nor its approved service centres shall be liable for any incidental or consequential damages or breach of any express or implied warranty of this product.

### **Conditions of Warranty**

The equipment has not been subject to misuse either intended or accidental, neglect, or alteration other than as described in the User Guide or Service Manual, or approved by Allen & Heath.

Any necessary adjustment, alteration or repair has been carried out by an authorised Allen & Heath distributor or agent.

The defective unit is to be returned carriage prepaid to the place of purchase, an authorised Allen & Heath distributor or agent with proof of purchase. Please discuss this with the distributor or the agent before shipping. If the unit is to be repaired in a different country to that of its purchase the repair may take longer than normal, whilst the warranty is confirmed and parts are sourced. Units returned should be packed in the original carton to avoid transit damage.

In certain territories the terms may vary. Check with your Allen & Heath distributor or agent for any additional warranty information which may apply. If further assistance is required please contact Allen & Heath Ltd.

**DISCLAIMER:** Allen & Heath shall not be liable for the loss of any saved/stored data in products that are either repaired or replaced.



XONE:92 Mk2 complies with the European Electromagnetic Compatibility directives 2014/30/EU and the European Low Voltage directives 2014/35/EU.

Any changes or modifications to the equipment not approved by Allen & Heath could void the compliance of the product and therefore the users authority to operate it.

XONE:92 Mk2 User Guide. Issue 1

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<http://www.allen-heath.com>

## Packed Items

Check that you have received the following:

XONE:92 Mk2 mixer



Spare knobs



Dual ground adaptor



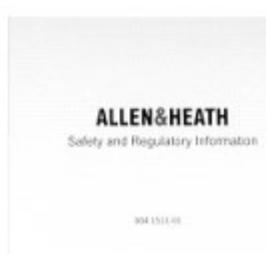
**Mains Lead**  
Check the correct AC mains  
plug is included



Follow the QR link to  
information about the mixer



**Safety and Regulatory Information**



## Introduction

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This user guide presents a quick reference to the **XONE:92 Mk2**. We recommend that you read this fully before starting. Included is information on connecting and operating the console, panel drawings, system block diagram and technical specification. For further information on the basic principles of audio system engineering, please refer to one of the specialist publications available online, from bookshops and audio equipment suppliers.

Whilst we believe the information in this guide to be reliable, we do not assume responsibility for inaccuracies. We are able to offer further product support through our world-wide network of approved distribution partners and their service agents.

You can also access our website for information on our product range and assistance with your technical queries. To help us provide the most efficient service please keep a record of the date of sale, proof of purchase mixer serial number, to be quoted in any communication regarding this product.

Check out our website for information on the company and its pedigree, our full product range and our design philosophy. We also have a section dedicated to the **XONE** Series models.

<https://allen-heath.com>

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## Connecting Mains Power

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Read the **SAFETY INSTRUCTIONS** printed at the front of this User Guide and on the rear panel. Check that the correct mains lead with moulded plug has been supplied with your console. The power supply accepts mains voltages within the range 100-240V without changing any fuses or settings.

It is standard practice to turn connected power amplifiers down or off before switching the console on or off. This prevents any audible switch-on thumps. Ensure that the IEC mains plug is pressed fully into the rear panel socket before switching on.

### Earthing

The connection to earth (ground) in an audio system is important for two reasons:



1. **SAFETY** - To protect the operator from high voltage electric shock, and
2. **AUDIO PERFORMANCE** - To minimise the effect of earth (ground) loops which result in audible hum and buzz, and to shield the audio signals from interference.

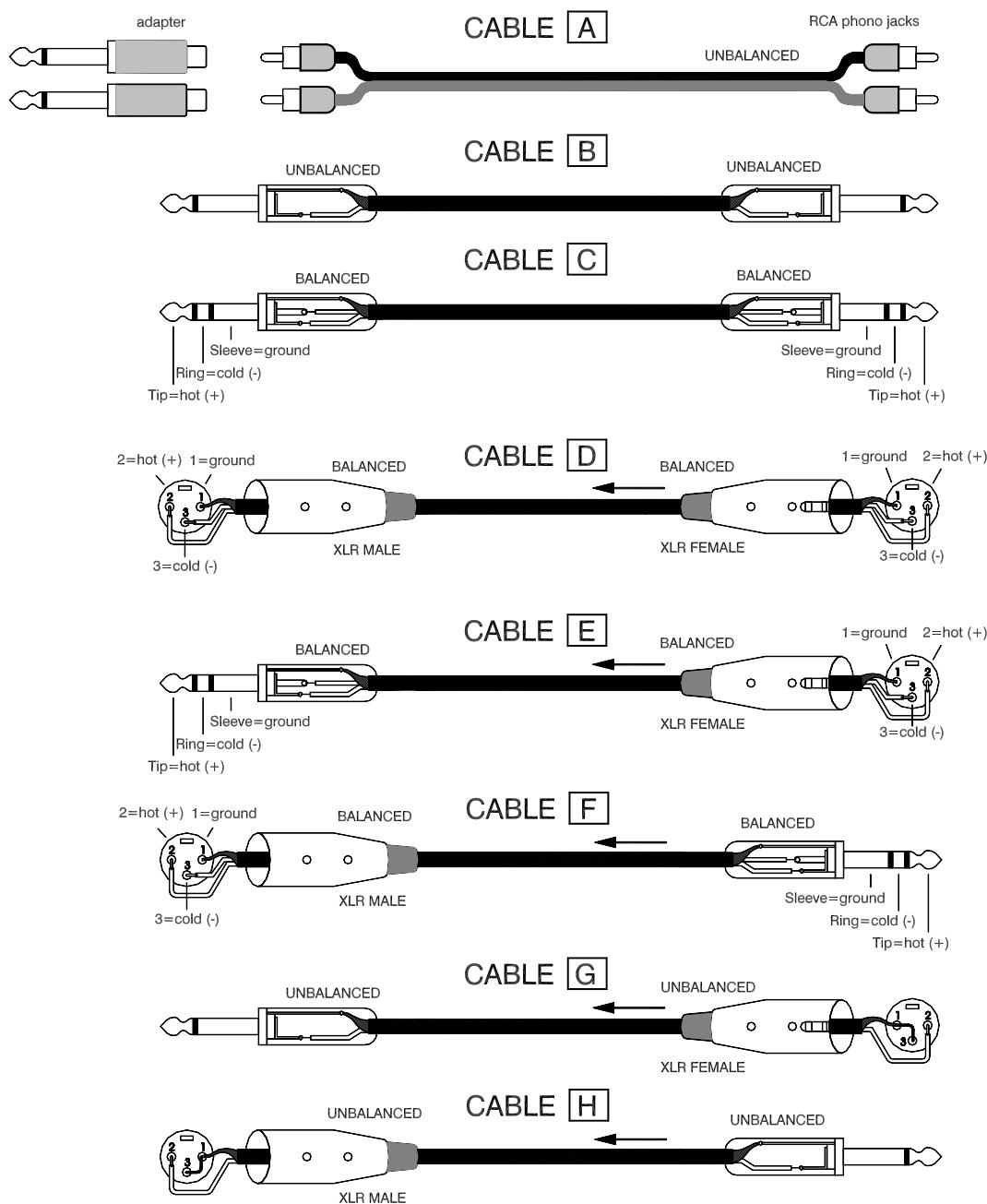
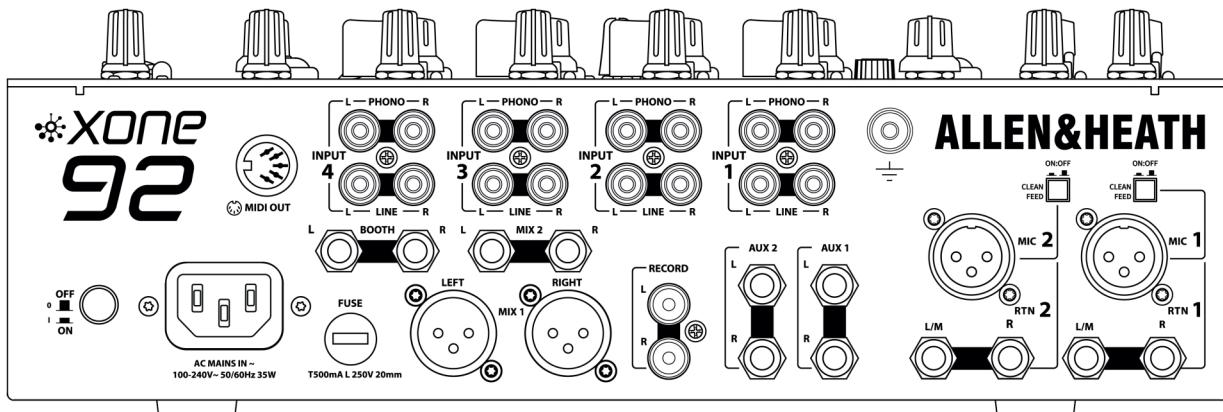
For safety it is important that all equipment earths are connected to mains earth so that exposed metal parts are prevented from carrying high voltage which can injure or even kill the operator. It is recommended that the system engineer check the continuity of the safety earth from all points in the system including microphone bodies, turntable chassis, equipment cases, and so on.

The same earth is also used to shield audio cables from external interference such as the hum fields associated with power transformers, lighting dimmer buzz, and computer radiation. Problems arise when the signal sees more than one path to mains earth. An 'earth loop' (ground loop) results causing current to flow between the different earth paths. This condition is usually detected as a mains frequency audible hum or buzz.

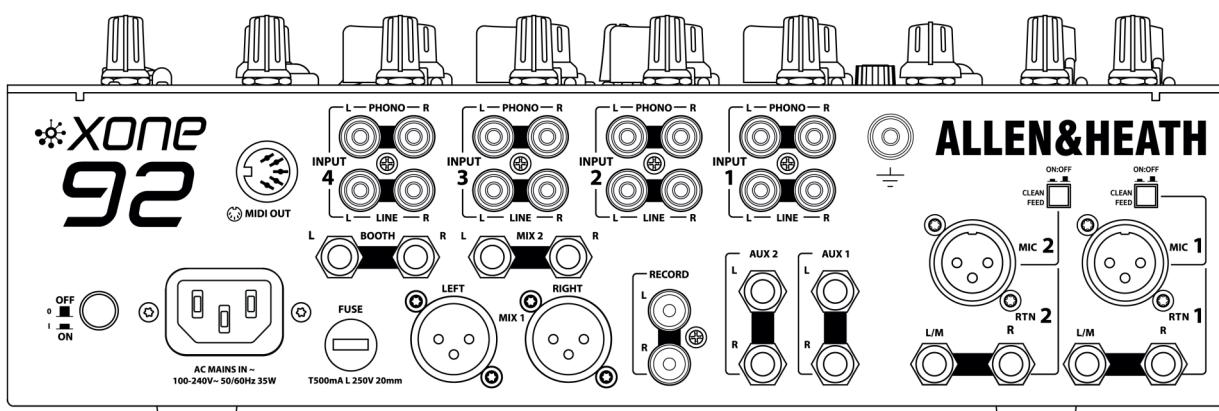
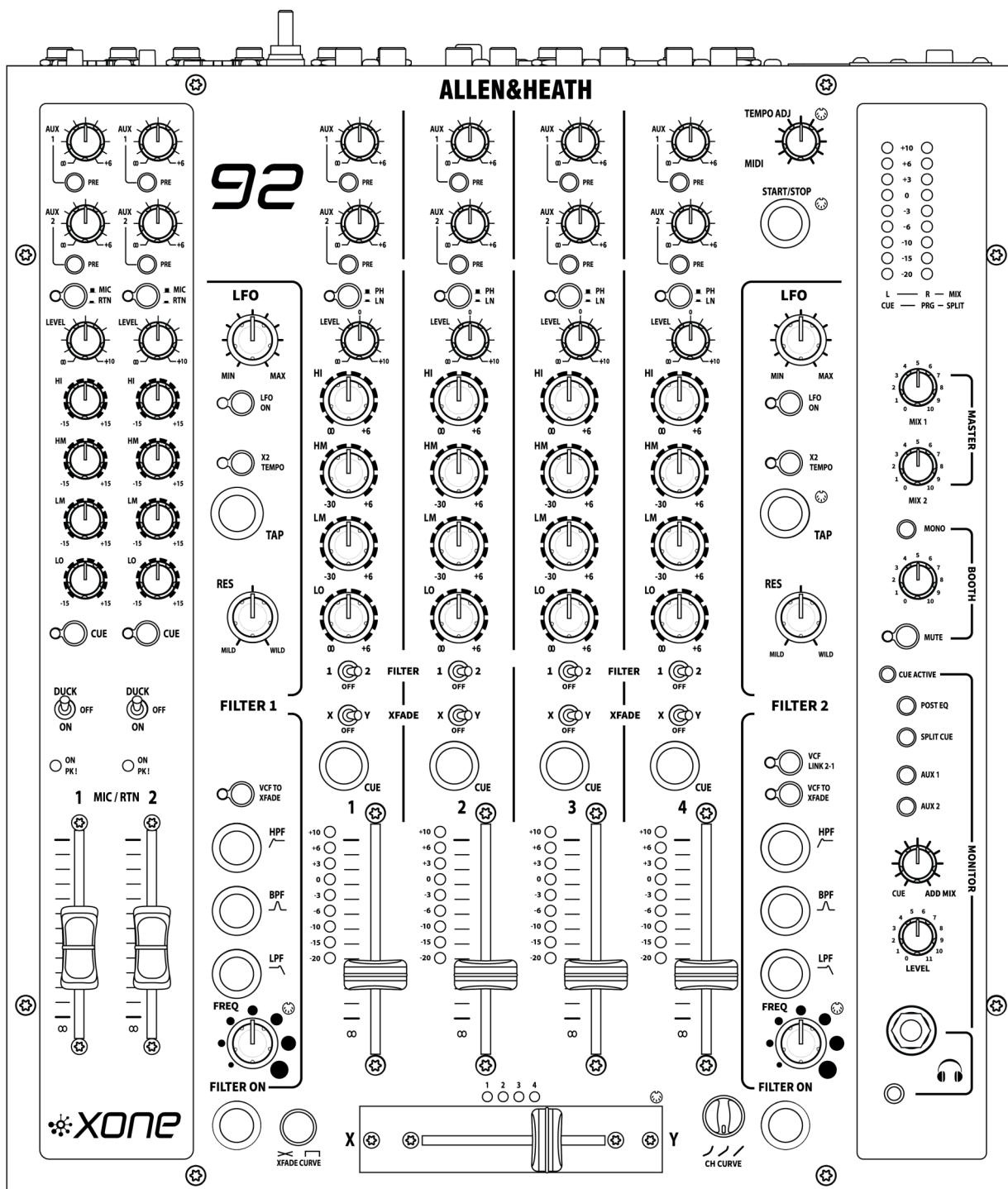
To ensure safe and trouble-free operation we recommend the following:

- **Have your mains system checked by a qualified electrician.** If the supply earthing is solid to start with you are less likely to experience problems.
- **Do not remove the earth connection from the console mains plug.** The console chassis is connected to mains earth through the power cable to ensure your safety. Audio 0V is connected to the console chassis internally. If problems are encountered with earth loops operate the audio 'ground lift' switches on connected equipment accordingly, or disconnect the cable screens at one end, usually at the destination.
- **Make sure that turntables are correctly earthed.** A chassis earth terminal is provided on the console rear panel to connect to turntable earth straps.
- **Use low impedance sources** such as microphones and line level equipment rated at 200 ohms or less to reduce susceptibility to interference. The console outputs are designed to operate at very low impedance to minimise interference problems.
- **Use balanced connections for microphones and mix output** as these provide further immunity by cancelling out interference that may be picked up on long cable runs. To connect an unbalanced source to a balanced console input, link the cold input (XLR pin 3 or jack ring) to 0V earth (XLR pin 1 or jack sleeve) at the console. To connect a balanced XLR output to unbalanced equipment, link the cold output to 0V earth at the console.
- **Use good quality cables and connectors** and check for correct wiring and reliable solder joints. Allow sufficient cable loop to prevent damage through stretching.
- **If you are not sure ...** Contact your service agent or local Allen & Heath dealer for advice.

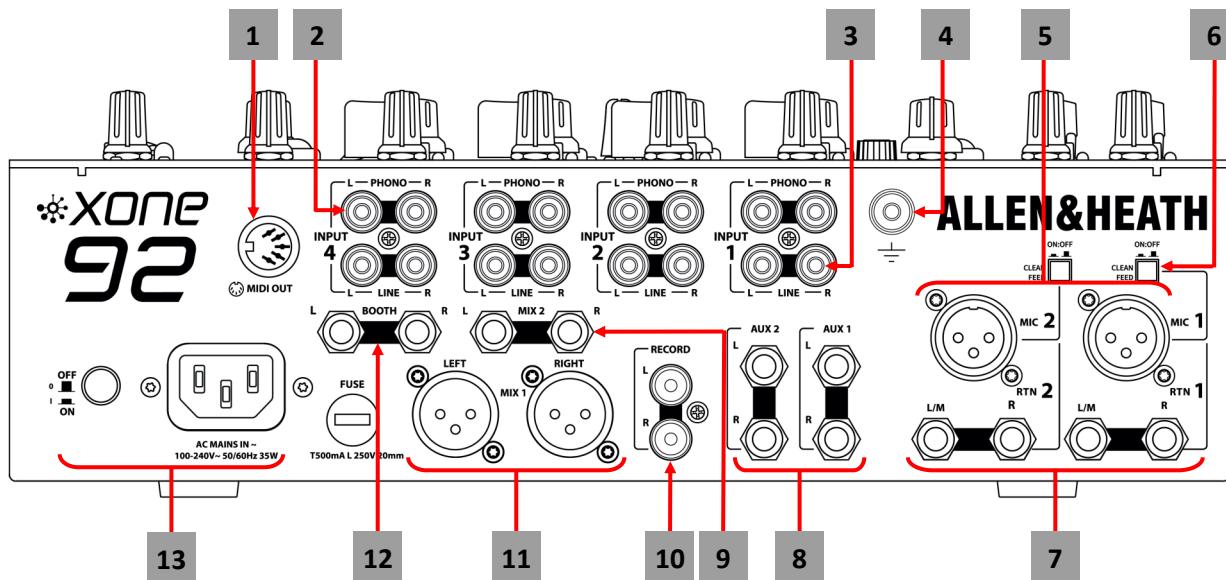
## Cables and connectors



## Panel Drawings



## Rear Panel Overview



### 1 MIDI Output

5 pin DIN socket. Connect to either a MIDI interface, or directly to MIDI compatible equipment using a standard 5 pin DIN (MIDI) lead.

### 2 CH1 - 4 STEREO PHONO Inputs

RCA phono. Plug in turntables with magnetic cartridges requiring RIAA equalisation. For non-RIAA turntables plug into the LINE input instead. Do not plug in line level sources to the phono inputs as these will overload the preamp and cause severe high level distortion. Use high grade versions of CABLE A (refer to p.6 for details).

### 3 CH1 - 4 STEREO LINE Inputs

RCA phono. Connect stereo line level music sources such as media players, drum machines, keyboards or other instruments. Do not connect turntables which require RIAA equalisation. Use CABLE A. Alternatively, you can connect to jack sources using this cable with RCA to jack adapters. Avoid using low grade cables such as those often supplied with domestic equipment as these can quickly prove unreliable in use.

### 4 Chassis Earth Terminal

A screw terminal is provided for connecting the earth straps from turntables. This connection earths the metal parts of the turntable to prevent ground hum, buzz or similar audible noise getting into the system. A dual ground adaptor is also included so two turntables can be connected independently in booth environments. Fix in place using the chassis earth terminal. Orientate horizontally above the MIC inputs for clear access to rear panel sockets.

### 5 MIC/RTN 1 & 2 MIC Inputs

Balanced XLR. Plug in a DJ, guest or announcement microphone here. Use good quality low impedance dynamic mics such as those specifically designed for vocals. Do not use high impedance or unbalanced microphones, or condenser types which require phantom power. Use professional grade balanced cables wired as CABLE D. Use the best cable and connectors you can afford as these are typically subject to intense use and abuse in club environments.

### 6 MIC Clean Feed Switches

The XONE:92 Mk2 implements a 'clean feed' bus for MIC inputs. By default, MIC 1 & 2 inputs do not route to the BOOTH or RECORD outputs, in order to avoid potential acoustic feedback in the booth and to enable music only mix recording. Switches on the rear panel enables the clean feed bus for each MIC input to be turned ON or OFF independently, allowing microphone signals to be monitored from the BOOTH and captured via the RECORD outputs. NOTE: The clean feed switch setting affects routing to both BOOTH and RECORD outputs.

## Rear Panel Overview continued ...

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### **7 MIC/RTN 1 & 2 LINE RETURN Inputs**

Unbalanced TRS jacks. Connect mono or stereo line level sources which do not need to route through the crossfader. For a mono source plug into the L/M input only. For a stereo source plug the left source into the L/M input, and right into the R input. These are 3-pole TRS sockets which can accept balanced or unbalanced TRS or TS jack sources. Depending on the source connector type, use CABLE B, C, E, or G. To connect RCA phono jack sources you can use the standard CABLE A with RCA to jack adapters, or custom make as required.

### **8 AUX 1 & AUX 2 Outputs**

Impedance balanced TRS jacks. Depending on the application of the Aux mix these stereo line level outputs can be used to feed samplers and other effects units, an additional monitor, zone or recorder. Connect to balanced or unbalanced equipment using CABLE B, C, F, or H. To connect RCA phono jack sources you can use the standard CABLE A with RCA to jack adapters, or custom make as required.

### **9 MIX 2 Output**

Impedance balanced TRS jacks. This is an additional output that can feed the house PA system or other remote audio system. Plug into the house processor/amplifier system using balanced CABLE C, or F. It is not usual for unbalanced equipment to be used here.

### **10 RECORD Output**

RCA phono. This provides a Pre-Master level, post-Clean Feed, LR mix output unaffected by the main mix control. Connect to external hardware recording devices or interface to capture the mix. Use CABLE A with or without adapters, or a custom cable, depending on the recorder connector type.

### **11 MIX 1 Output**

Balanced XLR. This is the main output that feeds the house PA system. Plug into the house processor/amplifier system using balanced CABLE D, or E. It is not usual for unbalanced equipment to be used here.

### **12 BOOTH Output**

Impedance balanced TRS jacks. Provides a line level music only stereo feed to the DJ local monitor amplifier system. It is not affected by the master fader or cue system.

Connect to balanced or unbalanced equipment using CABLE B, C, F, or H.

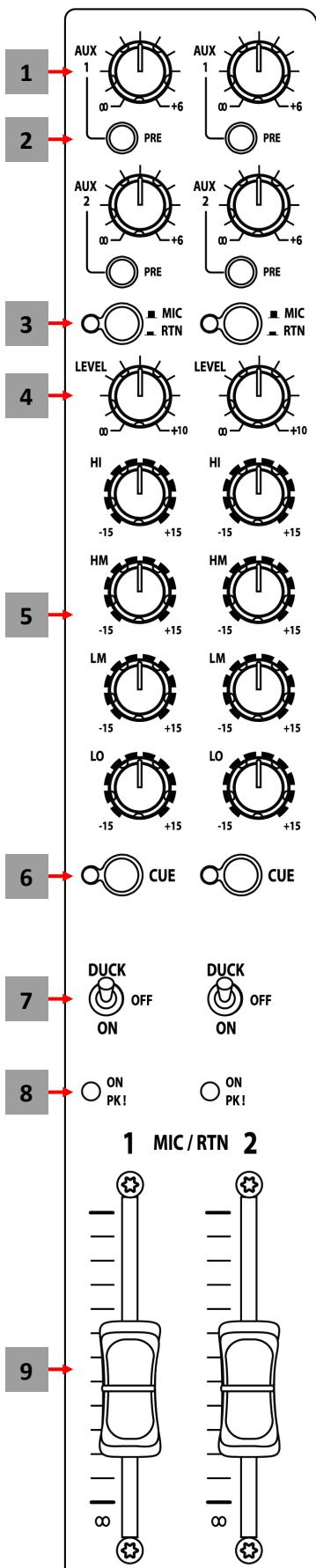
### **13 AC MAINS Input and Power Switch**

Connect (supplied) IEC cable with moulded plug compatible to the local AC mains supply.

Turn the AC supply to the mixer ON/OFF. Please refer to the **Connecting Mains Power** section for more details.

## MIC/RETURN Input channels

These controls adjust the level and tone of each source before they are mixed. Two input channels are provided. Each has two inputs. MIC/RETURN channels 1 and 2 are used for microphone or alternative stereo line sources and provide four-band corrective source equalisation.



### 1 AUX 1 & AUX 2 Sends

Adjust the levels of the channel signals to the stereo Aux outputs. Turn fully anticlockwise to turn the signal off, fully clockwise for a maximum +6dB boost.

### 2 PRE Switches

With the switch in its up position the signal to the Aux mix is sourced post-fader. This means that the Aux send follows the channel fader movements. Press the switch to source the send pre-fader. Set in this way the fader has no affect on the Aux level.

**Post-fade** sends are typically used to send channel signals to effects devices. The amount of signal sent to the device follows the fader level. The processed (wet) signal returned to the mix elsewhere is therefore in proportion to the direct (dry) signal regardless of fader position.

This could, for example, be used to add ambience to the DJ or guest vocal mic. Other post-fade uses include special recording or zone feeds.

**Pre-fade** sends can be used for effects, auxiliary hardware, external interfaces, or to feed monitor speakers such as stage foldback. Here, it is important that fader changes made to balance the house mix do not affect the monitor levels. When working with a sampler or effects device you can use either post, or pre setting. If you wish to cue the sample or effect before raising the source fader into the mix then set it pre-fade. Use the return channel fader to bring up or remove the source from the mix.

☺ You can also use the Aux mix to cue your music when beat or cut mixing. Set all sends pre-fade and select the headphones monitor AUX switch to listen to the selected channels. This lets you listen to the effect of mixing the sources or matching the beat before you bring it into the house mix.

### 3 MIC/RTN Switch

MIC/RETURN Channels 1 and 2 can source either the XLR microphone input or the alternative jack stereo line return input. In the up position MIC is selected, indicated by the green LED. When pressed, RTN is selected, indicated by the LED changing colour to red.

### 4 LEVEL Control

Adjusts the input sensitivity of the channel to compensate for different audio signal sources, matching the connected source to the console 0dB operating level. This provides a 35 - 37dB range with continuous adjustment for line level signals from -15dBu to +20dBu, and -47dBu to - 10dBu for microphones.



Use the Cue system to correctly set the level.

Reduce LEVEL if the red PK! LED flashes.

## MIC/RETURN Input channels continued ...

### 5 MIC EQ

The MIC/RETURN channel 1 and 2 equaliser provides a powerful tool to adjust the tonal quality of the sound to correct source problems such as microphone characteristics, proximity effect, noise and feedback, or to adjust the overall ‘feel’. Start with the EQ controls set to their mid (flat) position. Then adjust to achieve the desired sound. Take time to experiment with these controls.

The XONE:92 Mk2 equaliser provides separate tone control over four frequency bands.

The frequencies in each band may be boosted or cut by up to 15dB. The centre flat position is detented for quick resetting.

#### HI

Turn this control clockwise to boost and anticlockwise to cut the high (treble) frequencies. This has a shelving response with all frequencies above the 12kHz turning point affected. Note that frequencies below 12kHz are affected by a decreasing amount. Use HI boost to brighten up the sound by adding sparkle, and cut to reduce source hiss and ambient high frequency pickup, or to limit or lift the high response of vocal mics.

#### HM

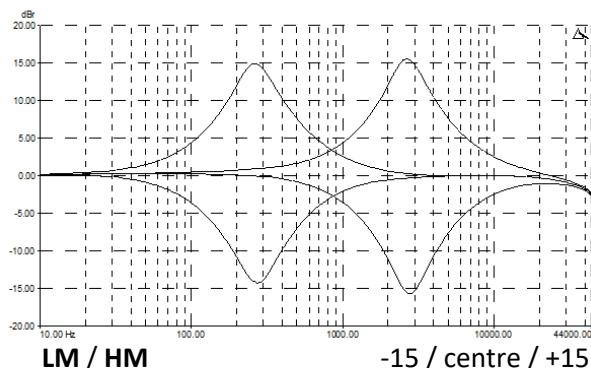
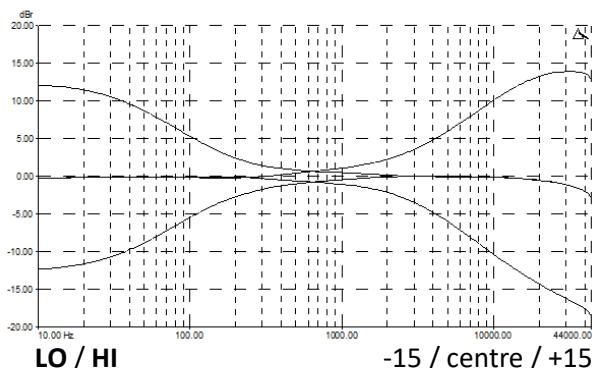
Turn clockwise to boost and anticlockwise to cut the higher midrange frequencies. This has a bell shaped peak/dip response that has maximum effect at 2.7kHz. Boosting can enhance the intelligibility of vocals. On the other hand, some situations may require cutting to notch out a ringing frequency so increasing gain before feedback.

#### LM

This is similar to HM but affects the lower mid frequencies centred at 270Hz. Boosting can enhance the warmth of the sound while cutting can reduce unpleasant resonant or boomy effects.

#### LO

This is similar to the shelving HI control but affects the low (bass) frequencies below the 60Hz turning point. Note that frequencies above 60Hz are affected but by a decreasing amount. Use LO boost to enhance low end punch, or cut to reduce source hum and rumble, or to remove the bassy sound of vocal mic proximity effect.



### 6 CUE switch

Press this switch to listen to the pre-fader channel signal in the headphones and to display its signal on the main meters. This does not affect the house mix or booth speakers and lets you audition the signal to check it before adding it to the mix. Cue is post-EQ for MIC/RTN channels so that you can check the effect of adjusting the EQ. The LED next to the switch illuminates when pressed so that you can see at a glance which channel is cued.

## **MIC/RETURN Input channels continued ...**

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### **7 DUCK / ON switch**

For MIC/RETURN channels 1 and 2 use this to introduce the MIC/RTN signal to the mix outputs. Pushing the switch upwards (non-latching) ‘DUCK’ will add the channel input to the mix outputs until released and will simultaneously duck the stereo channels 1 - 4 by 15dB. Pushing the switch down (latching) ‘ON’ adds the channel input to the mix outputs without ducking channels 1 - 4. The central, default position is ‘OFF’ where the channel inputs are not added to the mix outputs.

### **8 ON / PK! LED**

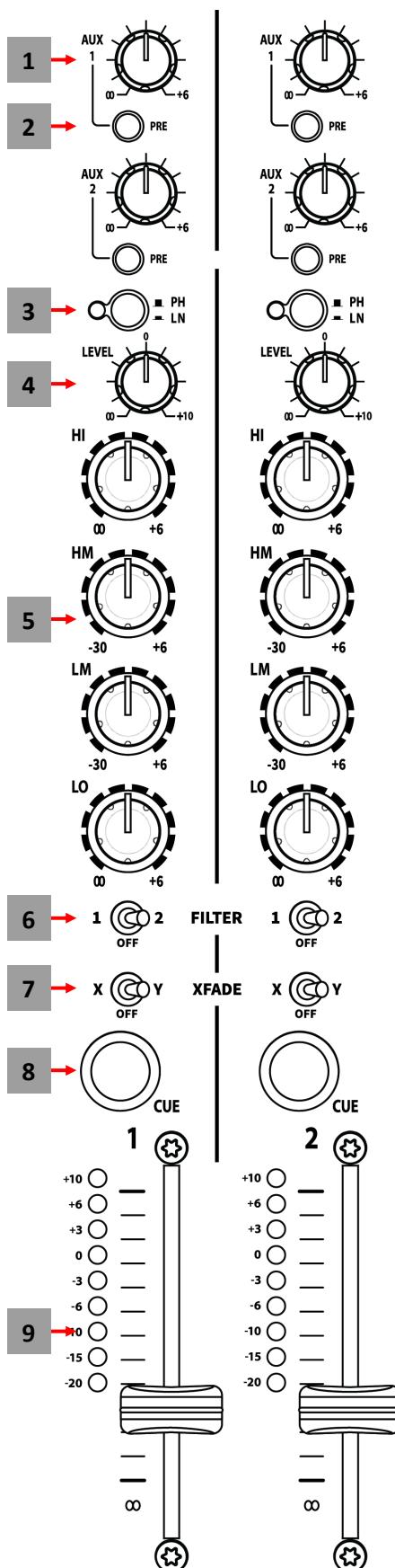
A dual-colour LED simultaneously displays which MIC/RTN channel is switched ON, and warns of channel signal peaks. The LED lights green to indicate that a channel is turned ON. Reduce the gain if the LED PK! flashes red.

### **9 Channel fader**

A 60mm stereo fader adjusts the signal level from off to unity at the top of its travel. This allows smooth fade ins and a visual indication of its contribution to the mix. The fader does not affect the pre-fade Aux sends.

## PHONO/LINE Input channels

These controls adjust the level and tone of each source before they are mixed. Four STEREO music channels are provided. Each has two inputs. STEREO LINE inputs 1 to 4 are used for CD decks or alternative stereo music sources and can be routed through the crossfader and FILTER effects stage. STEREO PHONO inputs 1 to 4 are used for the turntables and can also be routed through the crossfader and filter. These provide effective equalisation to creatively shape the sound during performance.



### 1 AUX 1-2 sends

Adjust the levels of the channel signals to the stereo Aux outputs.

Turn fully anticlockwise to turn the signal off, fully clockwise for a maximum +6dB boost.

### 2 PRE switches

With the switch in its up position the signal to the Aux mix is sourced post-fader. This means that the Aux send follows the channel fader and crossfader movements. Press the switch to source the send pre-fader.

Set in this way the fader has no affect on the Aux level.

**Post-fade** sends are typically used to send channel signals to effects devices such as reverb or delay processors. The amount of signal sent to the device follows the fader level. The processed (wet) signal returned to the mix elsewhere is therefore in proportion to the direct (dry) signal regardless of fader position.

Other post-fade uses include special recording or zone feeds.

**Pre-fade** sends are typically used for DJ effects or to feed monitor speakers such as stage foldback.

Here, it is important that fader changes made to balance the house mix do not affect the monitor levels.

When working with a sampler effects device you could use either post or pre setting. If you wish to cue the sampler effect before raising the source fader into the mix then set it pre-fade. Use the sampler return channel fader to bring up or remove the effect from the mix.

☺ You can also use the Aux mix to cue your music when beat or cut mixing. Set all sends pre-fade and select the headphones monitor AUX switch to listen to the selected channels. This lets you listen to the effect of mixing the sources or matching the beat before you bring it into the house mix.

### 3 PHONO/LINE switch

Channels 1 to 4 are the stereo 'MUSIC' channels. In the up position the switch selects the PHONO input, indicated by the green LED. This input provides standard RIAA equalisation for high quality magnetic cartridge turntables.

When pressed, LINE is selected, indicated by the LED changing colour to red. Use this to select non-RIAA or alternative stereo music sources.

## PHONO/LINE Input channels continued ...

### 4 LEVEL control

Adjusts the input sensitivity of the channel to compensate for different audio signal source levels, matching the connected source to the console 0dB operating level. This provides adjustment for line level signals and to match a wide range of RIAA turntable cartridges. From  $-\infty$  at the fully-anticlockwise position, unity at the centre detent, and +10dBu turned fully -clockwise. Use the Cue system to correctly set the input source signal level.

**Reduce the LEVEL if the RED +10 LED flashes.**

### 5 MUSIC EQ

The XONE:92 Mk2 Stereo Channels 1 to 4 features the classic Xone four band equaliser, providing infinite attenuation of high and low frequencies and -30dB attenuation of mid frequencies. This provides the DJ with effective equalisation to creatively alter and shape the sound during live performance rather than simply correct source problems. This type of equaliser is known as ‘asymmetric’ because the amount of boost and cut is not the same. Boost is restricted to a safe +6dB to highlight selected sounds while preventing system overload through heavy use. Cut on the other hand, is used to reduce the level of frequencies within the EQ control’s range, allowing two or more tracks to be mixed together without vocals, harmonies, beats, or bass lines clashing.

#### HI

Turn this control clockwise to boost and anticlockwise to cut the high (treble) frequencies. This has a shelving response when turned clockwise with all frequencies above the 2.4kHz turning point affected. When turned fully anticlockwise the response changes to a low pass filter (12dB/Oct) with all frequencies above the cut-off point being progressively attenuated. Use HI boost to brighten up the sound by adding sparkle, and cut to eliminate all HF content.

#### HM

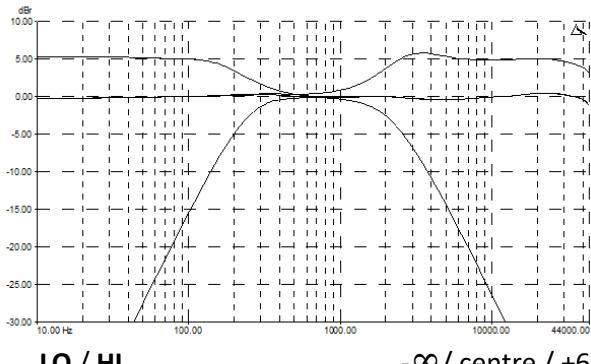
Turn clockwise to boost and anticlockwise to cut the higher mid frequencies. This has a bell shaped peak/dip response that has maximum effect at 1.8kHz. Frequencies in this range can be boosted by 6dB or attenuated by 30dB. The “Q” or frequency bandwidth also alters from a high Q (narrow bandwidth) on boost to a low Q wide bandwidth when cutting. This prevents accumulated gain if all EQ controls are fully clockwise.

#### LM

This is similar to MID 1 but affects the lower mid frequencies centred at 320Hz. Boosting can enhance the warmth of the sound while cutting can reduce unpleasant resonant or boomy effects.

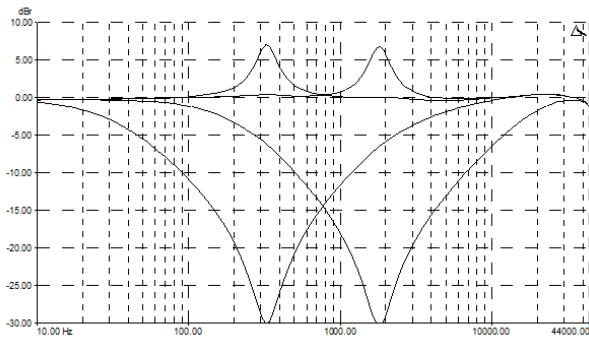
#### LO

This is similar to the HI control but affects the low (bass) frequencies below the 220Hz turning point. When turned fully anticlockwise the response changes to a high pass filter (12dB/Oct) with all frequencies below the cut-off point being progressively attenuated. Use LO boost to accentuate the bass lines/beats, and cut to eliminate all LF content.



LO / HI

$-\infty$  / centre / +6



LM / HM

-27 / centre / +6

## **PHONO/LINE Input channels continued ...**

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### **6 FILTER assign switch**

Toggle this switch to route the channel signal through either of the two FILTER stages. Selecting the switch in the central ‘OFF’ position bypasses both the filters.

The XONE:92 Mk2 implements redesigned, XONE:96 style, analogue soft-switching for enhanced performance, ensuring master mix outputs are unaffected by audible electronic artefacts when hot-switching channel assignments to the Filters.

### **7 XFADE assign switch**

Toggle this switch to route the channel signal to either side of the crossfader. Selecting the switch in the central ‘OFF’ position routes the post-fader signal direct to the mix outputs.

### **8 CUE switch**

Press this switch to listen to the pre-fader channel signal in the headphones and to display its signal on the main meters. This does not affect the house mix or booth speakers and lets you audition the signal to cue a track before adding it to the mix. Cue is typically pre-EQ for music channels so that you do not lose your reference when beat mixing, regardless of the EQ effect, but can be selected to be post EQ by selecting the POST EQ switch in the master section. The CUE light-pipe illuminates so that you can see at a glance which channel is cued.

Selecting one cue will automatically cancel the previous cue. Multiple cues can be selected by pressing two or more together, but make sure all cues are OFF first.

### **9 Channel meter Crossfader**

A 9 LED meter bar always shows the presence of the pre-fader channel signal. Adjust the LEVEL control for normal music averaging 0dB with loudest moments reaching +6. Reduce the level if the red +10 LED flashes.

### **10 Channel faders**

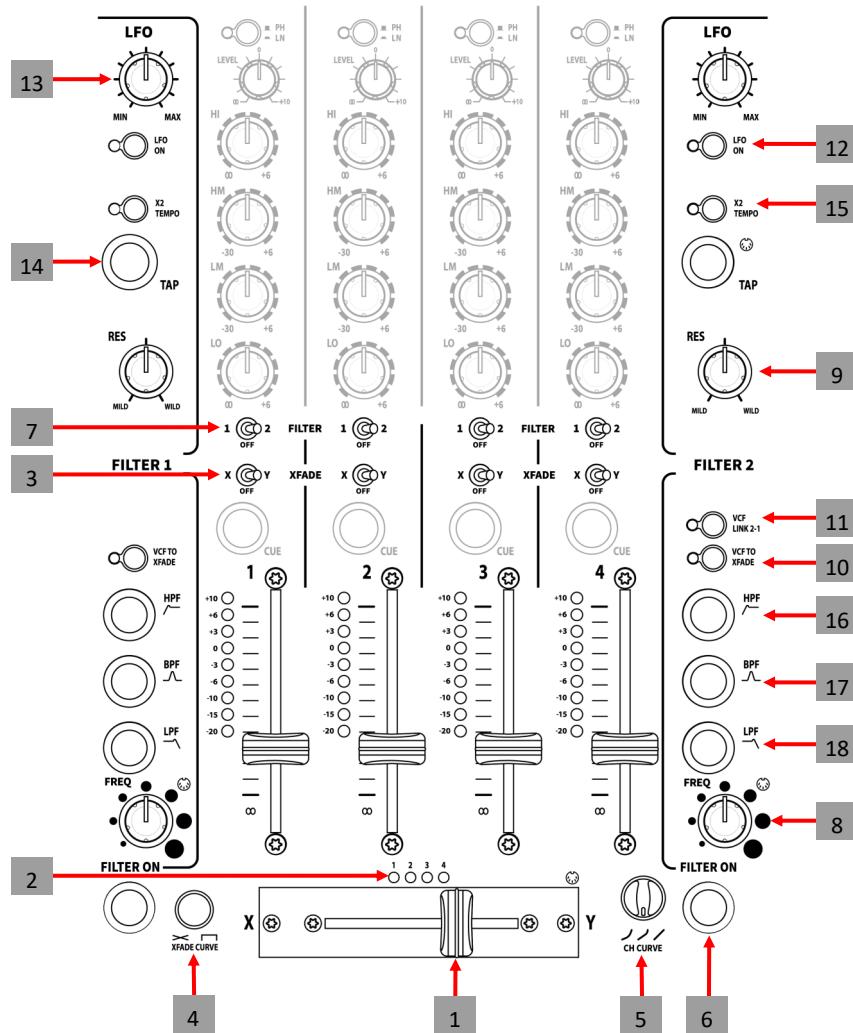
A 60mm linear stereo VCA fader adjusts the signal level from off to the normal top position. This allows smooth fade ins and a visual indication of its contribution to the mix.

The channel fader position does not affect the pre-fade Aux sends.

## Crossfader and VCF

The crossfader is applied to the stereo music channels and lets you transition from one track to another using a single fader. It is also used as a creative performance tool to layer or interact between two sounds when cut or scratch mixing.

The XONE:92 Mk2 uses four stereo high-quality trimmed voltage controlled amplifiers (VCAs) for channels 1 - 4. The robust 45mm crossfader produces a DC control voltage which determines the signal level of the VCAs.



### 1 VCA Crossfader

A custom mini innoFADER® Pro is now implemented as standard in the crossfader position. It is fully assignable from each music channel and can be easily accessed should replacement be required. The XFAADER also sends MIDI CC messages to the rear panel MIDI OUT port. See page 17 for details.

### 2 Crossfader assignment indicators

Four green LEDs above the crossfader help you visually check which channels are routed to the crossfader.

### 3 XFADE select switches

In the central position the music signal level is unaffected by the crossfader. Toggle to route the VCA control signal through the crossfader. To route to the left (X) side make sure the switch is in its left position. Switch to the right position to route to the right (Y) side. The relevant channel crossfader assignment indicator [2] will illuminate.

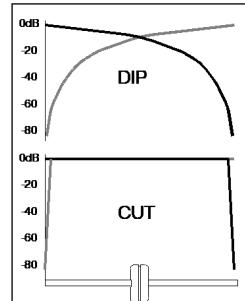
## Crossfader and VCF continued ...

### 4 XFADE CURVE control

The XONE:92 Mk2 allows the response of the crossfader to be altered to match all mixing styles.

Turning the crossfade curve control fully anticlockwise gives a progressive curve with a dip in level at the centre position.

Rotating the control clockwise gradually reduces the centre dip and sharpens the attack. Fully clockwise the response is almost instantaneous and full signal level is reached as soon as the crossfader knob is moved from its end stop.



### 5 CH CURVE switch

The XONE:92 Mk2 also allows the response of the channel faders to be altered to suit different mixing styles. The CH CURVE switch selects a global fader response for channels 1 - 4.

The default switch position is centred, where the response provides the characteristic increase in signal level towards the top of the fader travel that XONE:92 is renowned for.



## The Xone:VCF Filters

Nothing comes close to the sound and power of the acclaimed analogue Xone VCF (Voltage Controlled Filter).

A **Voltage Controlled Filter** is an audio filter where the cut-off frequency is altered by a DC control voltage rather than a variable resistor. This produces a much wider operating range and more control over the filter response to create unlimited combinations of tonal effect.

Using VCFs as live performance tools can be more powerful than an equaliser or kill switches. They produce the same warm analogue resonant frequency sweeping sounds made popular with well-known analogue synthesisers, but using high performance analogue switching technology for quiet, stable operation.

The XONE:92 Mk2 refines the classic VCF design first introduced on the XONE:62, preserving the unmistakable sonic signature of the original enhanced XONE:92 filters, while taking its performance to a new level.

Two stereo VCFs are provided, one either side of the crossfader. Each VCF has its own frequency sweep and resonance controls, either filter can be assigned to any of the four main stereo channel and both can be independently switched in or out of the mix. Two independent Low Frequency Oscillators (LFO) provide filter modulation.

### 6 FILTER ON switch

Each filter has its own ON switch. The blue light-pipe lights when the filter is switched on. The signal is not affected by the filter if the switch is in its off position. Use this to punch the filter effect in or out.

### 7 FILTER assign switch

In the central position the music signal is not affected by the filter. Toggle to route the signal through the filter. To route to FILTER 1 (X) make sure the switch is in its left position. Switch to the right position to route to FILTER 2 (Y).

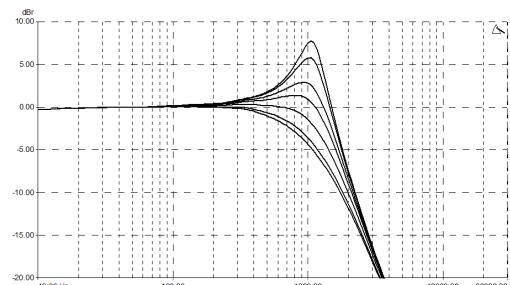
### 8 FREQ - Frequency sweep control switch

The FREQ control sets the cut-off frequency of the filter (-3dB point). Each filter has its own frequency sweep control to adjust the cut-off point anywhere from low to high frequency. Rotating the control during performance produces dynamic sweeping effects or filter sweeps. These large soft touch controls are positioned either side of the crossfader for convenient live operation. .

### 9 RESONANCE control

Adjust this to change the 'Q' or 'sharpness' of the filter. This affects how they respond around the cut-off frequency. At the MILD setting the filters have a gentle roll-off 'knee' giving a subtle, smooth response. At the WILD setting they produce a resonant feedback boost around cut-off resulting in some very dramatic performance effects.

The sound varies according to the filter type selected. To avoid unexpected results it is best to start experimenting with RESONANCE set to a low position. Or set the control to the centre ('twelve o'clock') position for the flattest frequency response.



**High RESONANCE settings can result in significant boost of selected frequencies. Reduce the channel GAIN if the signal levels increase enough to light the red PK LEDs in the output meters. Failure to do so may result in distortion or system overload.**

## LFO Modulation

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### 10 VCF TO XFADER control

Press this switch to assign either filter to the crossfader. The crossfader can then be used instead of the FREQ control to create filter effects whilst crossfading.

### 11 VCF LINK 2-1

Press this switch to link FILTER 2 to FILTER 1. FILTER 2 cut-off frequency can now be adjusted by the FREQ control of FILTER 1. This can be used to synchronise the cut-off point of both filters. For instance, assign Channel 1 to FILTER 1 and Channel 2 to FILTER 2. Select a Low Pass Filter on FILTER 1 and a High Pass Filter on FILTER 2. With both filters ON and the link switch selected, the low frequencies of Channel 1 will be accurately joined to the high frequencies of Channel 2. This can be used to produce incredibly smooth mixes or to mix tracks that would otherwise clash when mixed conventionally.

The XONE:92 Mk2 Voltage Controlled Filters are further enhanced by two independent LFOs. The LFOs can be applied to either filter for additional cyclic VCF modulation effects.

### 12 LFO ON switch

Each LFO has its own ON switch. The red LED lights when the LFO is switched on. The filter is not affected by the LFO if the switch is in its off position. Use this to punch the LFO effect in or out.

### 13 LFO DEPTH control

Rotate control knob clockwise to increase the depth (amount) of the LFO modulation applied to the filter.

### 14 TAP tempo control

'Tapping' the button sets the speed of the LFO in time with the last two button presses. Once set, the light-pipe flashes red in time with the LFO.

### 15 X2 tempo switch

Press this switch to double the LFO speed; determined by setting the TAP tempo [14]

## Filter Type Select

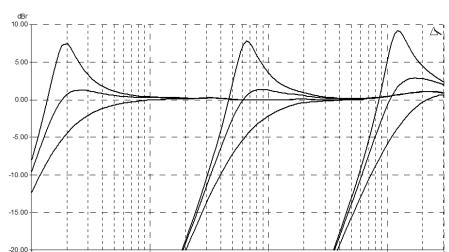
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The filters are 'state variable'. This means that they provide three simultaneous filter types, high-pass, band-pass and low-pass. Three large illuminated switches select which type is active. You can press any combination together to create different response types such as 'notch' and an interesting 'all-pass' effect.

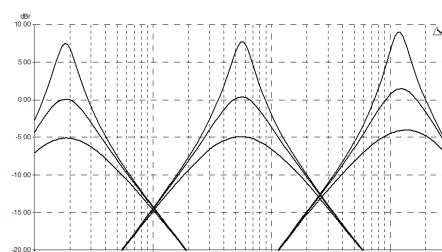
Filter switch controls on the XONE:92 Mk2 implements redesigned analogue soft-switching for enhanced performance, ensuring LR MIX outputs are unaffected by audible electronic artifacts as FILTER 1 and FILTER 2 are turned ON or OFF, when selecting different Filter Types, or if channel assignments to the VCFs are hot-switched.

**NOTE:** the last selected filter type is not saved when power to the mixer is turned off. LPF is selected when power is applied.

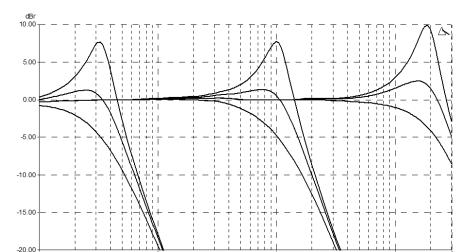
**HIGH PASS FILTER [HPF]**



**BAND PASS FILTER [BPF]**



**LOW PASS FILTER [LPF]**



## The Xone:VCF Filters continued ...

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The graphs on the preceding page show the effect on the audio frequency response for the three filter types. The range of sweep from low to high frequency is shown together with the effect of adjusting the together with the effect of adjusting the filter resonance to MILD, WILD and centred positions: one frequency with FREQ and RESONANCE set at minimum, centre, and maximum positions. The vertical scale shows the amount of cut or boost around the normal 0dB operating level. The horizontal scale shows the change in frequency from low (bass) to high (treble).

### 16 HPF

Press this switch to select the high-pass filter. Frequencies below the cut-off point are removed. The cut-off point is adjusted using the large FREQ control. At minimum little effect is heard as only sub bass frequencies are removed. Sweep clockwise to gradually remove the bass line followed by the higher frequencies.

☺ **Tip** Use the HPF with the FREQ as a mix aid. Set the FREQ control around the ten o'clock position to remove the low frequencies when bringing a track into the mix. Progressively rotate the FREQ control anticlockwise to bring in the bass.

### 17 BPF

Press this switch to select the band-pass filter. Frequencies above and below the cut-off point are removed leaving just a narrow band of sound. Sweep FREQ around its mid position to affect lead sounds such as keyboard and vocals.

☺ **Tip** Try picking out individual sounds such as vocals and mixing them into the beat and bass of the opposite track to create a whole new mix. Add a little resonance to the BPF to lift the sound out of the mix.

### 18 LPF

Press this switch to select the low-pass filter. Frequencies above the cut-off point are removed.

The cut-off point is adjusted using the FREQ control. At minimum only sub bass remains. Sweep clockwise to gradually introduce the bass line followed by higher frequencies into the mix.

☺ **Tip** Try sweeping the LPF anti-clockwise to a low setting to keep the beat and energy going while bringing another track into the mix. Also try punching in the filter and sweeping it back from high to low in time with the beat. Punch it out at the start of the next bar.

In addition to the three basic filter types you can experiment with new effects by selecting combinations of switches together. Press and release the switches together. They illuminate to show which filter types are active. For example:

#### **HPF + LPF = NOTCH**

Used with low (MILD) RES settings you get a phasing effect. Try sweeping the effect across the frequency range.

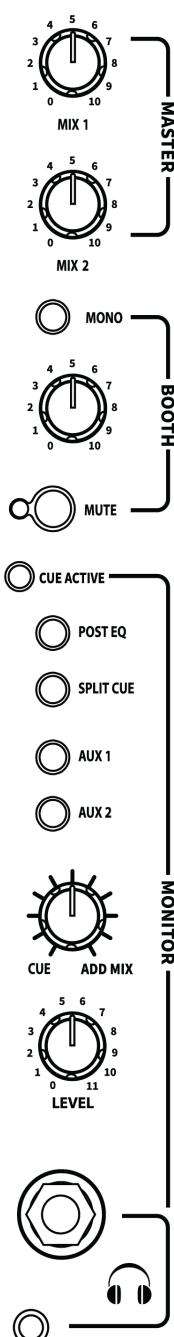
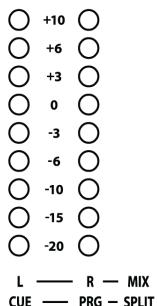
#### **HPF + BPF + LPF = ALL PASS**

A surprising effect considering that all frequencies are 'passed'. However, the filter type interaction around the cut-off point creates an interesting effect that varies from subtle to dramatic depending on the **RESONANCE** setting.

☺ **Tip** Take some time to experiment with the filters before 'going live'

## Master Mix and Monitor System

The XONE:92 Mk2 provides two stereo master mix outputs with independent level control on balanced XLR and jack connections to drive the house PA amplifier system or additional zone feeds.



Full DJ monitoring facilities are available with independent headphones and booth monitors, together with stereo metering system.

Every music channel signal can be checked individually or within any mix, ideal for system setup and performance cueing.

Facilities such as Mono and Split-Cue switching are well suited to the way the professional DJ works.

You can make a music only recording by connecting to the independent record output, or including the MIC signal input with the corresponding channel's clean feed switch set ON.

### 1 MIX 1 & MIX 2 Master Level Controls

Two rotary master controls adjust the output levels feeding the house PA. These are stereo controls which adjust the left and right signals simultaneously. They affect the stereo mix. Note that they do not affect the record and booth outputs. The MIX 1 maximum position represents unity (0dB) gain. The MIX 2 maximum position represents +10dB gain. If you find yourself normally setting the controls in the lower part of their travel then the connected equipment may be too sensitive for the operating level of the console. With the controls set to their maximum positions adjust the input level trim of connected equipment for the loudest level allowed.



In a club or similar installation strict sound level and noise regulations may apply. Check that your system levels are set up to comply.

### 2 MIX / MONITOR Meters

A pair of meter bars displays the level of the selected headphones monitor source. This is either the main LR mix, an Aux mix or Cue. When SPLIT CUE is selected the left meter displays the active CUE signal, the right displays PRG (program), both in mono.

Each meter has 9 LEDs to indicate signal levels from a low -20dB. Green and blue LEDs indicate normal operating levels. The top red LED lights at +10dB still providing a healthy 12dB before clipping. Meter '0' represents +4dBu at the MIX 1 XLR outputs and -2dBu at the MIX 2 LINE outputs. The meters are peak responding with a fast attack and are therefore able to display fast transients accurately.

### 3 CUE ACTIVE Indicator

A large red LED lights when a channel CUE is active. This indicates that the selected channel CUE signal is heard in the headphones and displayed on the monitor meters. It is important to use CUE to set the channel levels correctly to maintain the wide dynamic range achievable with this console. Reduce the gain if the red +10 LEDs flash.

### 4 HEADPHONES Level Control

Adjusts the level of the signal in the stereo headphones. This does not affect the level of the local booth monitor.

Start with the level control set to minimum and raise it until a comfortable listening level is achieved.

## **Master Mix and Monitor System continued ...**

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### **5 POST EQ Switch**

In the normal up position the headphones and meters monitor the Pre-EQ cue signal from each music channel. This means that you will not hear changes made in the EQ, which can be useful if you dramatically alter the frequency response by cutting all LF, but still need to monitor the beats to keep a track in sync. Pressing this switch will allow you to monitor post EQ and hear any changes made to the channel EQ. Toggling between pre and post EQ is useful to compare the effect of the EQ.

### **6 SPLIT CUE Switch**

Press this switch to change the way CUE operates. Normally, pressing a channel CUE switch overrides both left and right monitor program signals with the stereo cue signal. With the switch pressed, CUE overrides just the left channel leaving the program in the right channel. The left monitor meter displays the cue signal, right displays program. This is invaluable in club mixing where the main program should remain audible while cueing other channels ready to bring them into the mix. It is very useful when beat mixing using headphones. Note that Cue does not affect the main output or booth monitor.

### **7 AUX 1 & AUX 2 Switches**

In the normal up position the headphones and meters monitor the main mix. Press these switches to select either of the stereo Aux mixes as the headphones monitor source. Note that this does not affect the main outputs or booth monitor.

### **8 CUE/ADD MIX Control**

Allows the main mix output to be added to the CUE signal. Turned fully anticlockwise, only the active CUE is heard through the headphones when CUE is active. Gradually turning clockwise introduces the main mix output to the headphones, together with the active CUE. Selecting SPLIT CUE will automatically override this control.

### **9 HEADPHONE OUTPUTS**

Stereo TRS jack and mini-jack. To get the best from your system use closed-ear headphones for maximum acoustic isolation. We recommend the use of high quality headphones rated between 35 and 300 Ohms.



**WARNING: Some headphones are more sensitive than others and can produce higher output levels. To avoid damage to your hearing do not drive headphones at high listening levels for long periods of time.**

### **10 MONO switch**

Sums the left and right monitor signals together so that the selected stereo source can be checked in mono. Use this to check for mono compatibility, especially important in dance floor and recording applications. A drop in level or loss of low frequencies when pressed indicates reversed polarity between the left and right signals.

Alternatively, you can select this if you wish to run the booth monitor in mono rather than stereo. Note that the MONO switch does not affect the headphones monitor.

### **11 BOOTH MONITOR level control**

Adjusts the level of the signal to the stereo booth monitor output. This does not affect the headphones.

By default, the microphone signals are not routed to the booth monitor to avoid acoustic feedback. ...

### **12 MUTE switch**

Press to mute the booth monitor output. The red LED lights when the monitor is muted. The headphones and main outputs are not affected.

## MIDI Control of External Devices

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**MIDI** is short for Musical Instrument Digital Interface conceived in the 1980's so that keyboards and other electronic instruments could have a common interface allowing them to communicate with each another. Applications now include sound and lighting consoles, computer sequencing, show control and performance effects control. The XONE:92 was unique in being the first DJ mixer to include MIDI functionality.

The XONE:92 Mk2 retains the original MIDI functionality, equipped with a MIDI out socket, allowing the DJ to control other external MIDI devices from featured front panel controls.

The XONE:92 Mk2 can be used to remotely control effects units, sequencers, drum machines etc via MIDI providing the unit you wish to control is compatible with the MIDI controller codes generated. Most computer sequencing programs allows you to map different controller codes to virtually any function within the software, so providing the greatest flexibility of control. Please refer to the user guide of the device or program you wish to use to check for compatibility. The mixer's default MIDI channel used is 16, this can be changed internally to 15 (Refer to the **Installer Link Options** on p.36 for details).

### Basic Setup

Connect MIDI OUT from the XONE:92 to the MIDI IN of the device you wish to control.

Use a standard 5-pin MIDI lead. Set the peripheral device MIDI channel number to 16. Refer to the device user guide for further details. If you want to use the mixer as a master clock, for instance with a drum machine or sequencer, you need to set the device to receive External MIDI clocks. Once again, please to refer to the relevant user guide for details.

### The XONE:92 as a Master Tempo Controller

Using the XONE:92 Mk2 to sync an external sequencer or drum machine to a pre-recorded source takes practice, but once learned can be achieved quite quickly, and is a great way to add your own loops, patterns and so on to your favourite tracks.

Once you have got the device to respond to the XONE:92 master MIDI clock and stop/start button, use the following method:

Set the Tempo control [1] to its centre (detented) position, with the Stop/Start button [2] OFF.

Tap in the tempo of the track you want to sync to, using the FILTER 2 LFO Tap Tempo button [3].

Accuracy here is very important, try to tap in the beat as precisely as possible; you will find that you get more adept the more you practice. Once you have a near approximation of the tempo, hit the Start button to set off the sequencer on the first beat of a bar.

Depending on how accurately you have tapped in the beat the sequence should play in sync for a short while, but will probably drift. If the tempo is too fast, turn the TEMPO ADJ control anti-clockwise to slow down the MIDI clock, if it is too slow, turn it clockwise to speed it up. After each adjustment restart the sequencer until the clock speed has been set to match the beat and maintain synchronisation. The TEMPO ADJ control has finer effect on clock speed in and around its centre position, and greater effect as it is rotated towards either end. For this reason the more accurate tap tempo you start with the easier it will be to fine tune to stay in sync.

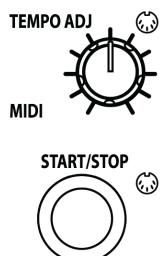
Remember to always return the TEMPO ADJ control to the centre position before tapping in a new BPM.



## MIDI Control Codes

XONE:92 Mk2 control	Controller Code Generated	Controller Name
FILTER 1 FREQ	CC12	Effect Control 1
FILTER 2 FREQ	CC13	Effect control 2
Crossfader movement	CC92	Tremolo Level
Data Controller (internal option)	CC94	Celeste Level
Tap Temp LFO 2	MIDI Clocks	
Start/Stop	MIDI Start/Stop-rewind	

### 1 TEMPO ADJ control.



The default application for this control is to allow adjustment of the MIDI clock speed set by the FILTER 2 TAP TEMPO button 3 . With the control in its mid position the clock speed is unaffected. Rotate anti-clockwise to reduce, or clockwise to increase the clock speed. This allows external sequencers or drum machines to be accurately aligned to the BPM of pre recorded tracks.

An internal jumper can be reassigned to change the function of this control to a dedicated DATA send, and will output Control Change **CC94**.

Refer to the **Installer Link Options** on p.36 for details.

### 2 START / STOP button.

Sends MIDI start/stop data to an external sequencer or MIDI device. The Lights yellow when pressed.

Push once to transmit MIDI start data, push again to transmit MIDI clock stop + rewind data:

**ON** (1<sup>st</sup> press), **STOP/REWIND** (2<sup>nd</sup> press).

### 3 TAP TEMPO button.

The tempo of the MIDI clock is set by tapping it in using the button.

The BPM is determined by the last two button presses.

### 4 FREQ VCF sweep control.

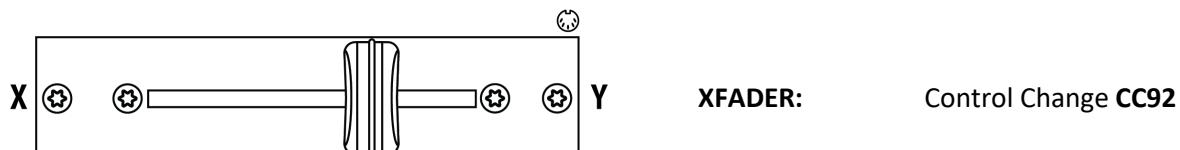
Both controls independently output MIDI data **0** to **127**:

**FILTER 1 FREQ:** Control Change **CC12**

**FILTER 2 FREQ:** Control Change **CC13**

### 5 CROSSFADER:

Move the crossfader to output MIDI data **0** (farthest left) to **127** (farthest right):



### 6 MIDI OUT socket (chassis, rear panel).

5 pin DIN socket. Outputs all XONE:92 Mk2 MIDI data to an external MIDI compatible device.

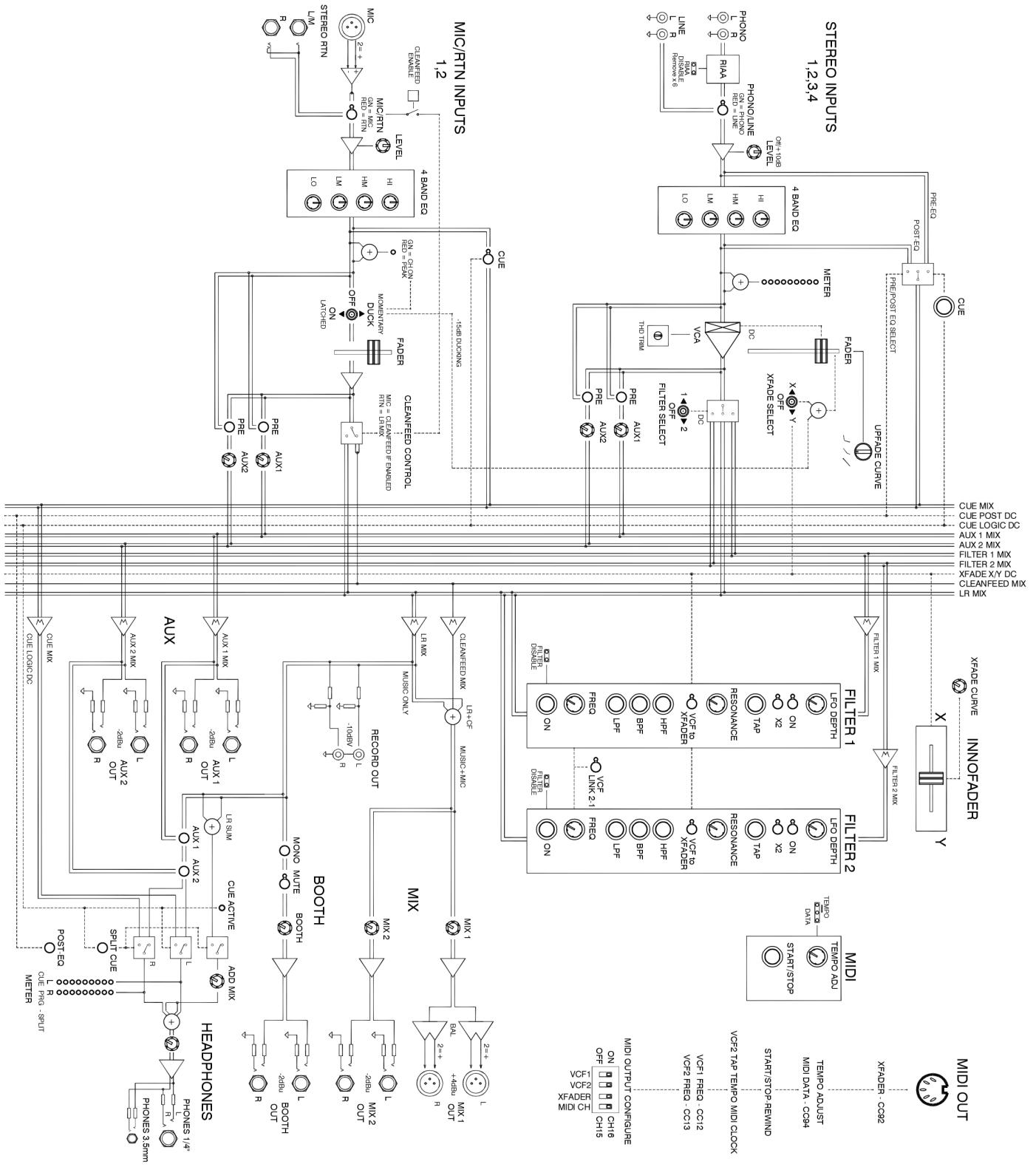


## MIDI Implementation Chart

O = Available    X = Not used

Function	Transmitted	Received	Remarks
<b>Basis Channel</b>			
Default	16	X	
Option	15	X	Internal DIP switch setting
<b>Mode</b>			
Default	X	X	
Messages	X	X	
Altered	X	X	
<b>Note Number</b>	X	X	
<b>Velocity</b>			
Note ON	X	X	
Note OFF	X	X	
<b>Aftertouch</b>			
Keys	X	X	
Channel	X	X	
<b>Pitch Bend</b>	X	X	
<b>Control Change</b>			
12	O	X	
13	O	X	
92	O	X	
94	O	X	Internal jumper option
<b>Program Change</b>	X	X	
<b>System Exclusive</b>	X	X	
<b>System Common</b>			
Song Position	X	X	
Song Select	X	X	
Tune Request	X	X	
<b>System Real Time</b>			
Clock	O	X	
Commands	O	X	
<b>Aux Messages</b>			
Local On/Off	X	X	
All Notes Off	X	X	
Active Sensing	X	X	
System Reset	X	X	

# XONE:92 Mk2 Block Diagram



## Hardware Specifications

<b>Model</b>	XONE:922
<b>Type</b>	Analogue
<b>Channels</b>	6 + 2
<b>EQ</b>	4-Band: CH 1 - 4   MIC/RTN 1   MIC/RTN 2
<b>BOOTH</b>	STEREO/MONO   MUTE   Level
<b>Phono Inputs</b>	4 x RCA: CH 1 - 4
<b>Earth Ground Terminals</b>	x 1
<b>Stereo Line Inputs</b>	4 x RCA [CH 1 - 4] 2 x 1/4" TRS [RTN 1 / RTN 2] Mono/Stereo
<b>Mic Input</b>	2 x XLR [MIC 1 / MIC 2]
<b>MIX 1 Output</b>	1 x XLR [Balanced]
<b>MIX 2 Output</b>	1 x 1/4" TRS [Unbalanced]
<b>BOOTH Output</b>	1 x 1/4" TRS [Unbalanced]
<b>RECORD Output</b>	1 x RCA [Unbalanced]
<b>Stereo Send/Return I/O</b>	2 x 1/4" TRS: AUX1   AUX2 [Mono/Stereo] 2 x 1/4" TRS: RTN 1   RTN 2 [Mono/Stereo]
<b>Aux Sends</b>	2 x CH 1 - 4   MIC/RTN 1   MIC/RTN 2 [selectable Pre/Post]
<b>Filters</b>	2 x Stereo analogue Voltage Controlled Filters HPF / BPF / LPF Response Select   ON/OFF [soft switched] Adjustable FREQ / RES / LFO Assignable CH 1- 4 [soft switched]
<b>Channel 1 - 4 Faders</b>	60mm linear Voltage Controlled Amplifier
<b>Channel 1 - 4 Fader Curve</b>	Switched   3-way Global
<b>Cross Fader</b>	mini innoFADER Pro standard   45mm linear VCA   User replaceable
<b>Cross Fader Curve</b>	Rotary   Progressive transition to Fast-cut
<b>MIDI Assignable</b>	Yes: MIDI CC   MIDI Note ON/OFF
<b>MIDI Out</b>	1 x 5-pin DIN
<b>Power Supply</b>	Internal switch mode power unit [SMPS] with auto sensing mains input
<b>AC Mains</b>	100 to 240V AC   50/60Hz Consumption 30W max Rear panel mounted ON/OFF switch
<b>Mains Adaptor</b>	3 pin IEC socket with cable clamp. Molded AC plug [supplied]

## Technical Specifications

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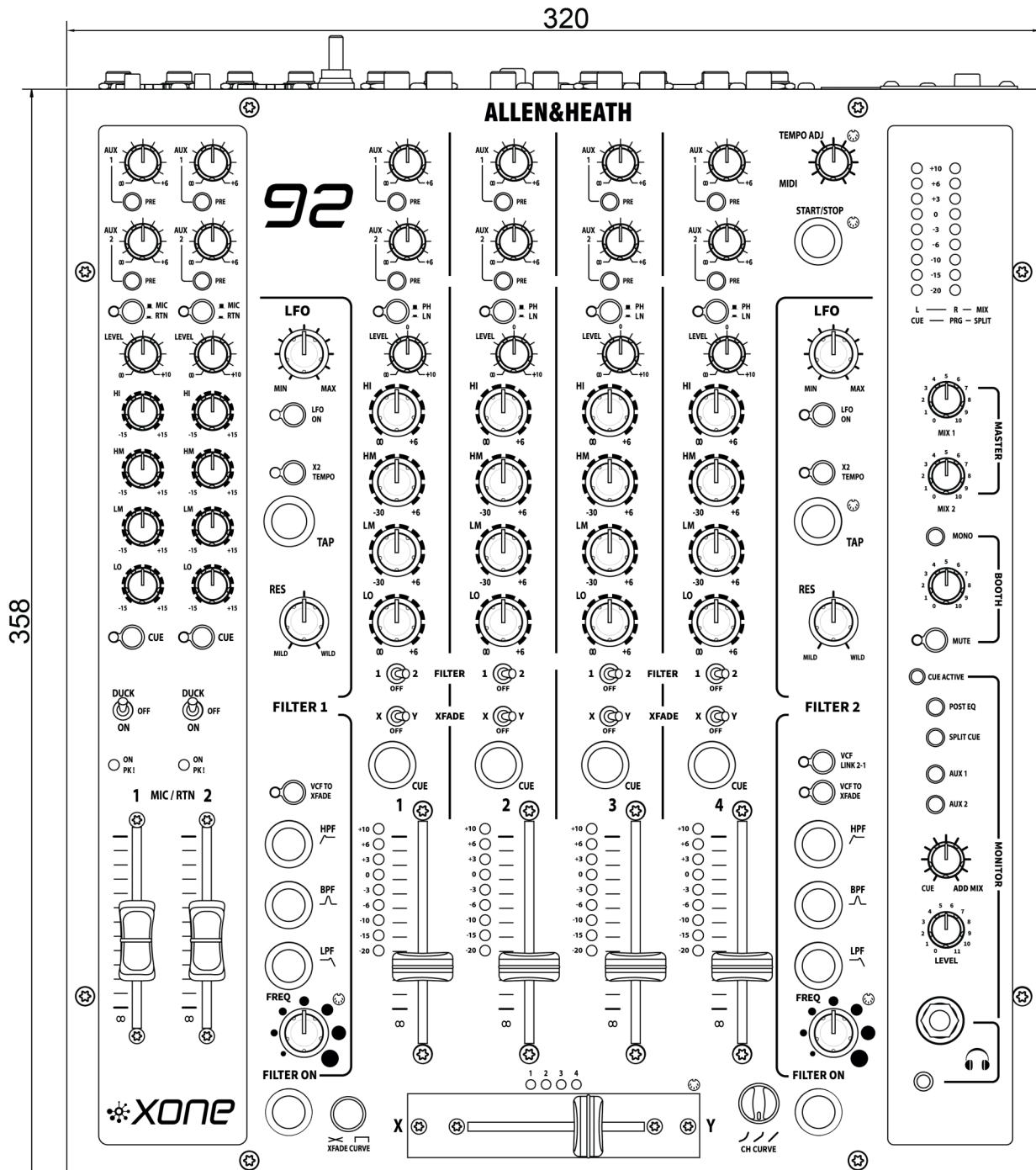
<b>Output Levels;</b> Nom (0VU) / Max	MIX 1	+ 4dBu	/	+ 25dBu
	MIX 2	+ 6dBu	/	+ 21dBu
	BOOTH	+ 8dBu	/	+ 21dBu
	RECORD	- 10dBu	/	+ 12dBu
<b>Internal headroom</b>	Channels	+ 22dB		
<b>Frequency response</b>	LINE IN to MST out	+1/-0.5dB from 20Hz to 30kHz		
<b>Distortion</b>		Typically 0.01% @ 1kHz 0dBu (THD+Noise 22Hz to 22kHz)		
<b>Crosstalk</b>		< -90dB inter-channel @ 1kHz +10dBu		
<b>Residual Noise (22Hz - 22kHz)</b>	MASTER 1	- 85dBu		
	MASTER 2	- 85dBu		
	BOOTH	- 85dBu		
<b>Mix Noise (22Hz - 22kHz)</b>	Master 1	- 81dBu		
	Master 2	- 81dBu		
	Booth	- 81dBu		
	Record RCA	- 90dBu		
<b>Mic Gain</b>		+30dB, EIN = -126dB	(@ 40dB gain with 150R source)	
<b>RIAA Gain</b>		+35dB @ 1kHz	(14mV RMS= 0VU @ 1kHz)	
<b>Channel Meters</b>	9 LED	- 20dBu	to	+ 10dBu
<b>Master Meters</b>	9 LED	- 20dBu	to	+ 10dBu
<b>Channel EQ MIC/RTN</b>	HI	12kHz	+/-15dB	
	HM	2.7kHz	+/-15dB	
	LM	270Hz	+/-15dB	
	LO	60Hz	+/-15dB	
<b>Channel EQ 1-4</b>	HI	2.4kHz	+ 6/-∞dB	
	HM	1.8kHz	+ 6/-30dB	
	LM	320Hz	+ 6/-30dB	
	LO	220Hz	+ 6/-∞dB	
<b>Channel faders 1-4</b>		60mm VCA control individually replaceable.		
		< -82dB shutoff @1kHz +10dBu		
<b>Cross-fader</b>		45mm innoFADER VCA control.		
		Plug in replacement - user replaceable (A&H part#: AI11470 )		
<b>Filters</b>		Dual, stereo, analogue Voltage Controlled Filters.		
<b>Panels</b>		Steel		
<b>PSU</b>		Internal. Switch-mode		
<b>Mains Input</b>	3 pin IEC socket	Power Lead: country dependant.		
<b>AC mains</b>	100V to 240V AC @ 47/63Hz`			
<b>Consumption</b>	30W max	Fuse rating 100-240V AC	T500mA L	

[0dBu = 0.775 Volts rms / +4dBu = 1.23V rms / 0dBV = 1 Volt rms / -10dBV = 316mV rms]

## Weights and Dimensions

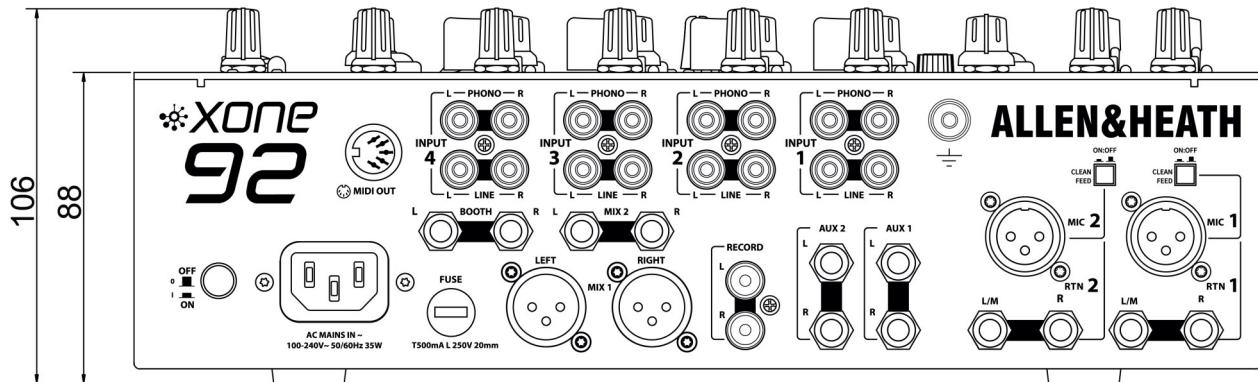
XONE:92 Mk2	UN-PACKED		PACKED	
<b>Height</b>	106mm	4.2"	200mm	7.9"
<b>Width</b>	320mm	12.6"	460mm	18.1"
<b>Depth</b>	376mm	14.8"	495mm	19.5"
<b>Weight</b>	7kg	15.4lbs	8.2kg	18.1lbs

## Top Panel

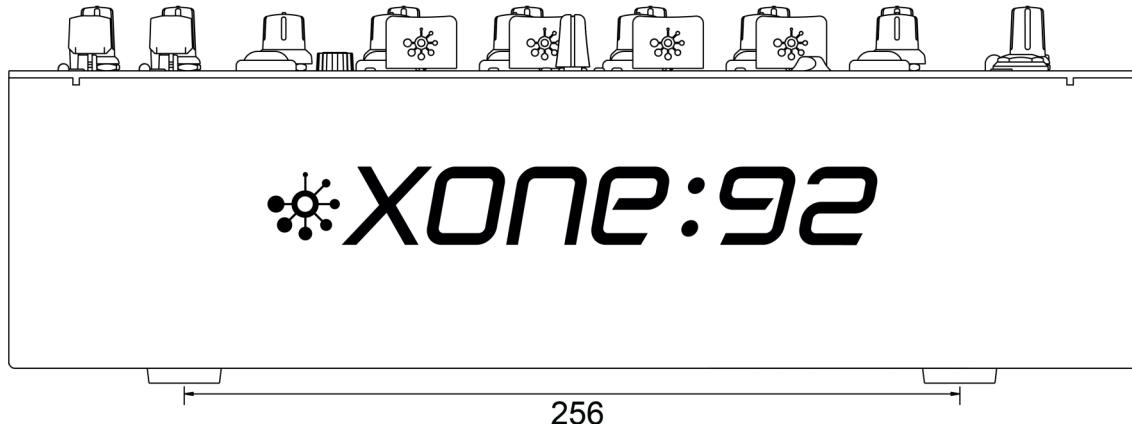


## Weights and Dimensions continued ...

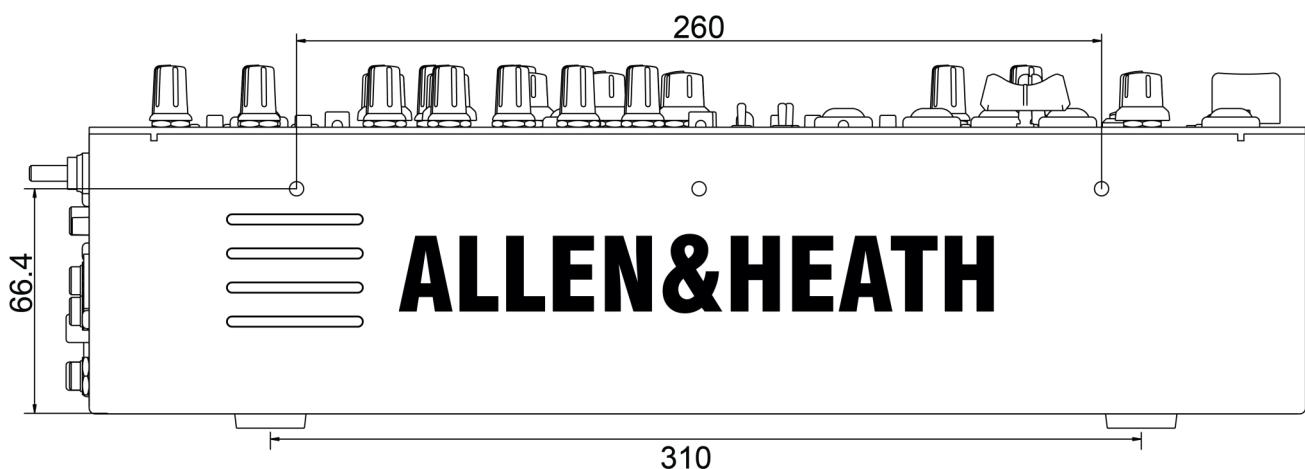
### Rear Panel



### Front Panel



### Side View [Left Panel]



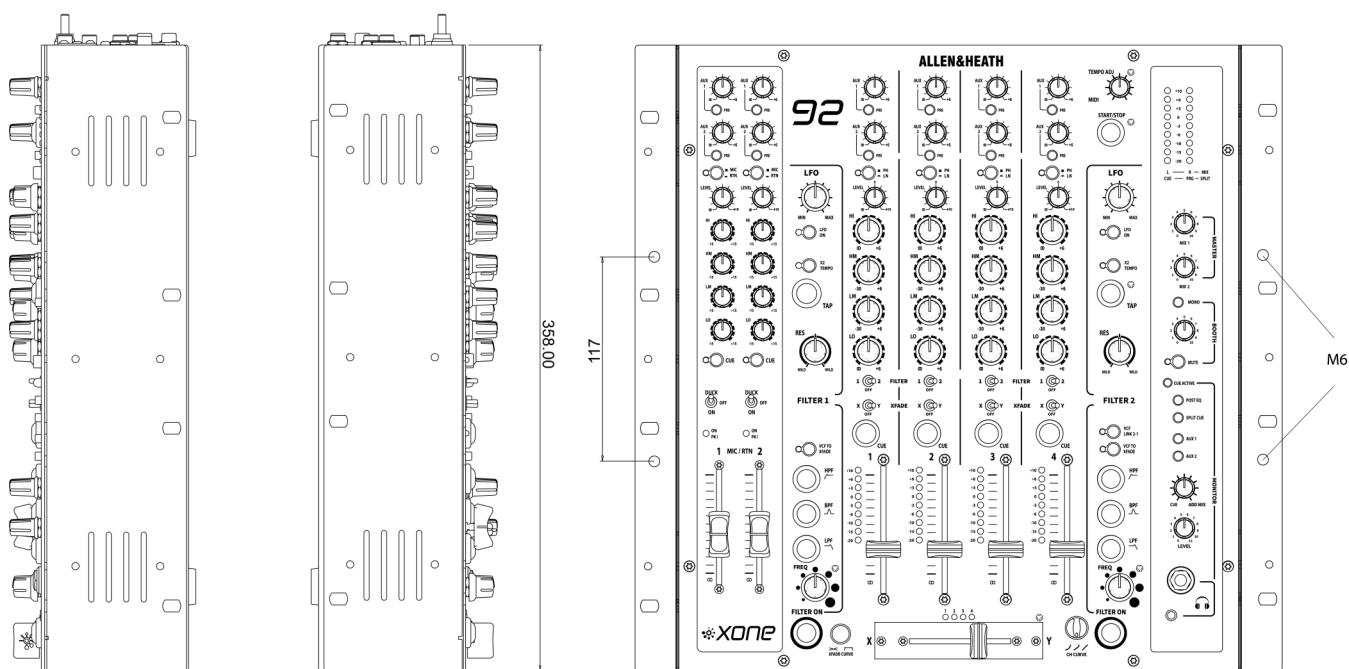
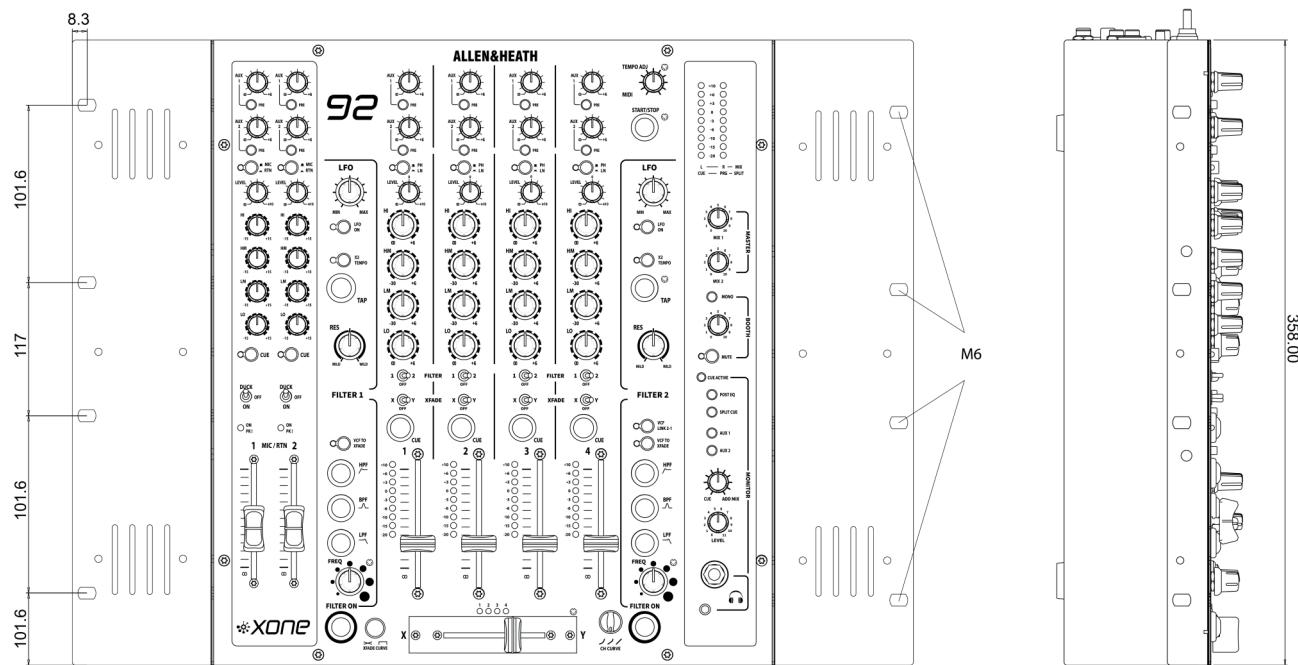
## Rack Ears

The **XONE:92 Mk2** is fitted with rubber feet for desktop operation. A screw fit 19" rack mount accessory kit is available to order from your Xone supplier, enabling permanent fixing for installation or in racking systems.

Part number - **X:922-RK19/X**

The rack ears can be fixed on to the sides of the mixer in three possible orientations, with the flange flush to the top panel, or with the underside of the chassis.

Fix in place using M6 screws or bolts. **Ensure air vents are not obstructed.**



## Operating Levels

It is most important that the system level settings are correctly set. It is well known that many DJs push the level to maximum with meters peaking hard in the belief that they are getting the best from the system.

### THIS IS NOT THE CASE

The best can only be achieved if the system levels are set within the normal operating range and not allowed to peak. Peaking simply results in signal distortion, not more volume.

It is the specification of the amplifier / speaker system that sets the maximum volume that can be achieved, not the console. The human ear too can fool the operator into believing that more volume is needed. Be careful as this is in fact a warning that hearing damage will result if high listening levels are maintained.

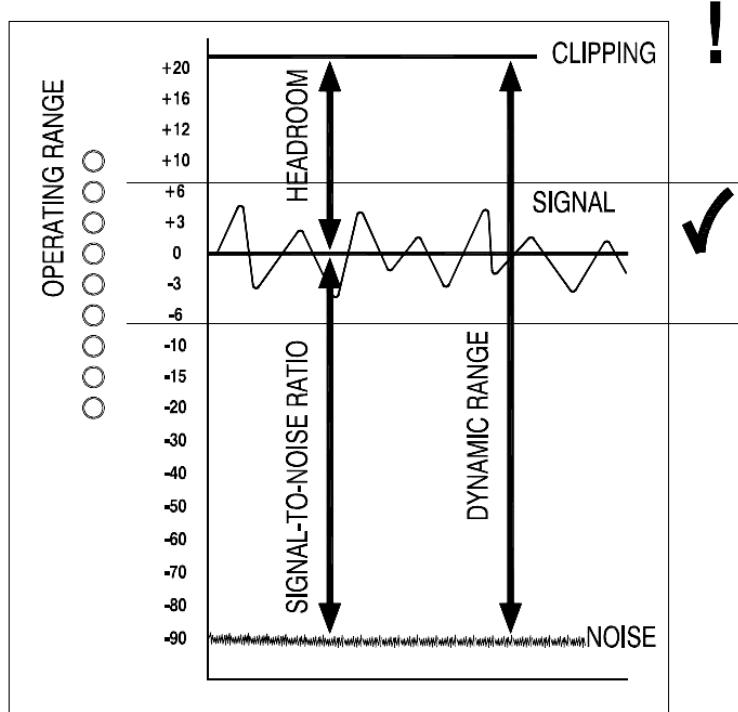
Remember that it is the **QUALITY** of the sound that pleases the ear, not the **VOLUME**.

The diagram below illustrates the **NORMAL OPERATING RANGE** of the audio signal.

For normal music the signal should range between -6 and +6 on the meters with average around 0dB.

This allows enough **HEADROOM** for unexpected peaks before the signal hits its maximum **CLIPPING** voltage and distorts. It also achieves the best **SIGNAL-TO-NOISE-RATIO** by keeping the signal well above the residual **NOISE FLOOR** (system hiss).

The **DYNAMIC RANGE** is the maximum signal swing available between the residual noise floor and clipping.



An important note ...

The human ear is a remarkable organ with the ability to compress or 'shut down' when sound levels become too high.



Do not interpret this natural response as a reason to turn the system volume up further ! As the session wears on ear fatigue may set in, and the speaker cones may become hot so reducing the effectiveness of the system and listeners to gain any benefit from increased volume.



BE SENSIBLE. BE SAFE WITH SOUND LEVELS.

## Installer Link Options



**CAUTION : The following service instructions are for use by qualified personnel only.**

**To reduce the risk of electric shock do not perform any servicing other than that described in the operating instructions unless you are qualified to do so.**

**Refer all servicing to qualified service personnel**

The **XONE:92 Mk2** has several internal option settings designed in. Some of these are primarily for setting up the mixer in a fixed installation situation, and the others can be used to reconfigure the MIDI system.

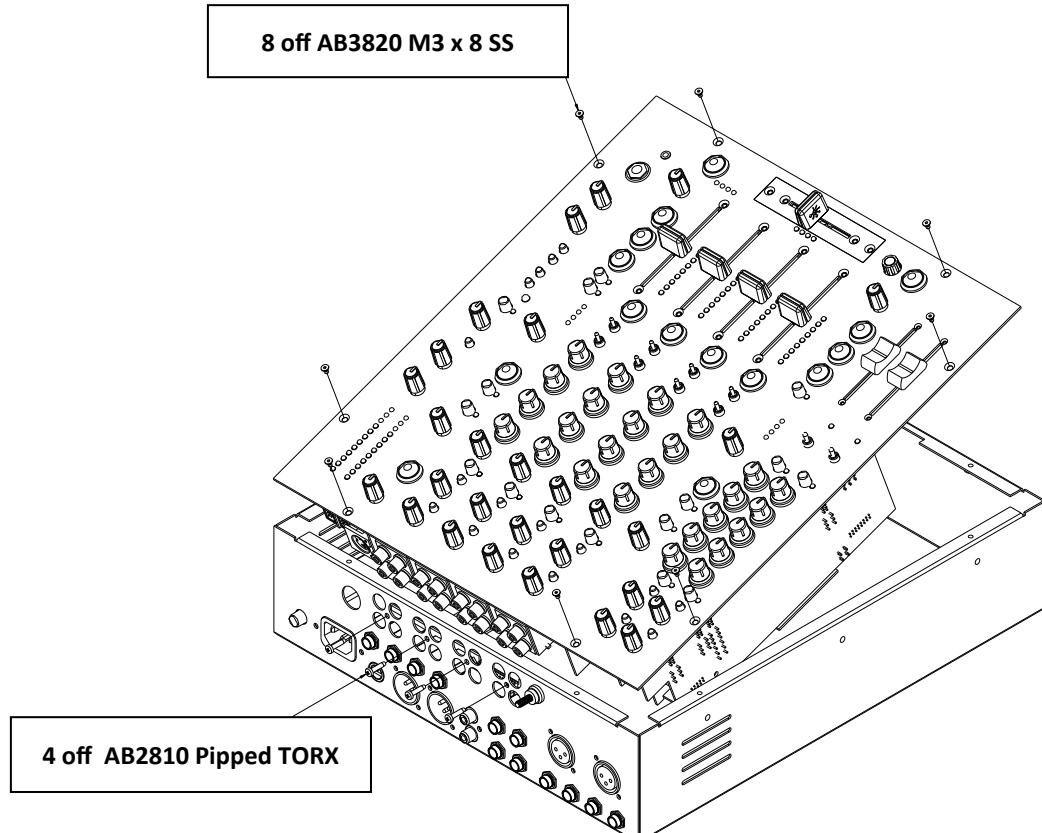
To gain access to these options the top panel assembly needs to be separated from the chassis. This operation should only be carried out by qualified service personnel.

**IMPORTANT! Ensure the AC mains input lead is disconnected before removing the top panel.**

Removal of the top panel requires the use of a Torx T10 screwdriver. Use a good quality tool to prevent rounding the screw heads. First remove the 4 pipped TORX screws located on rear panel in the center of each block of input channel RCA (Phono) connectors, and then undo the 8 M3 x 8 screws that hold the front panel to the chassis. Lift the front edge of the top panel until the two filter PCBs are clear of the chassis, and then pull the top panel gently forward and up until access can be gained to unplug the power cable from the power supply located on the right hand side of the chassis. Continue to lift the front edge of the top panel up until it is possible to unplug the two harnesses from the rear connector PCB and unscrew the M3 nylock nut to remove the orange earth cable.

Lift the top panel clear of the base and place on a clear work surface.

Reassembly is the reverse procedure, but take great care to refit the harnesses correctly and to ensure that the ribbon cables do not get trapped between any of the PCBs and the chassis. Refit the panel screws first and tighten evenly with the chassis held firmly on a flat work surface. Finally refit the rear connector screws.



## Installer Link Options continued ...

### Input Channel

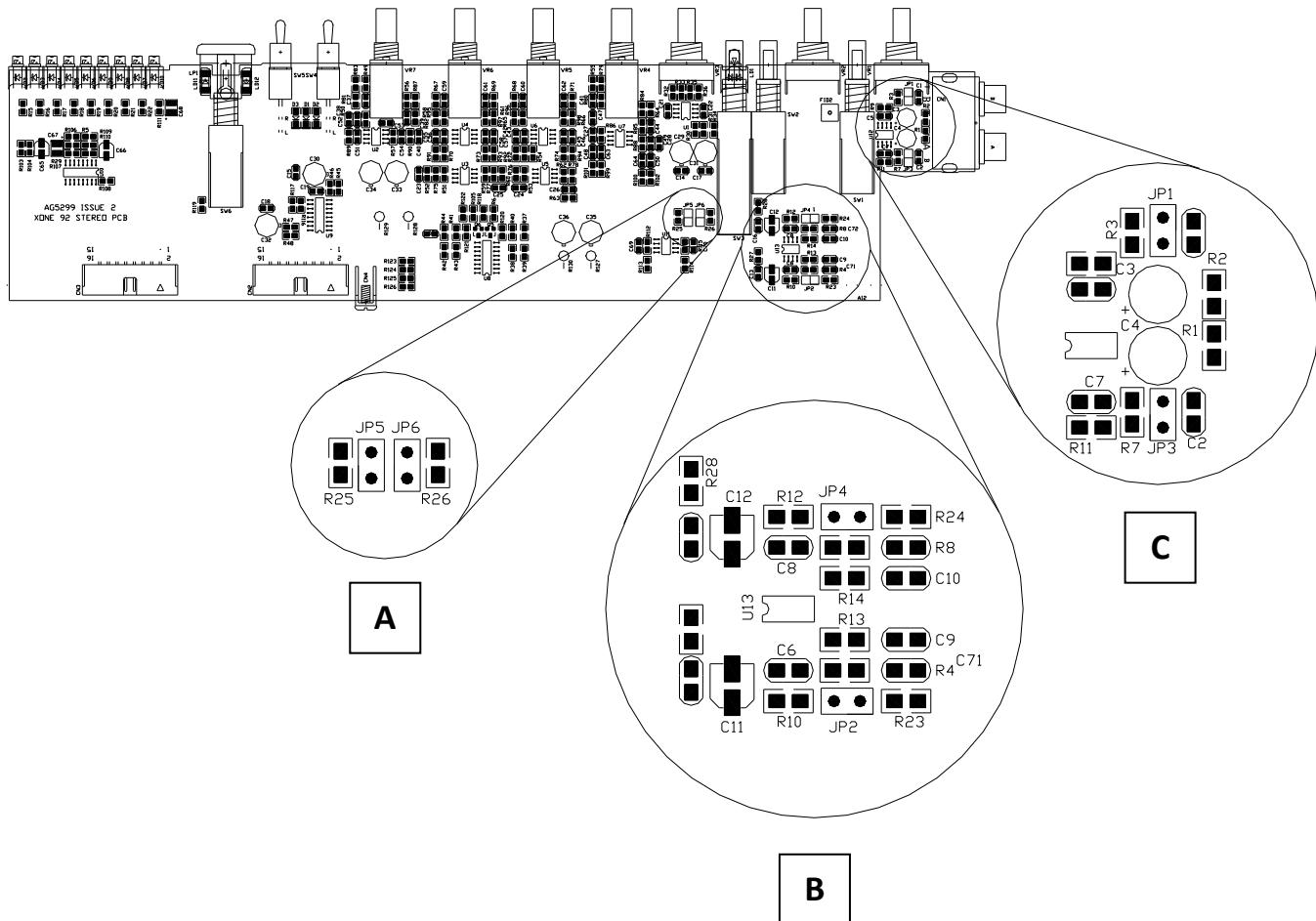
There are two configuration options designed into the input channel; one to convert the RIAA turntable input to operate with Line sources, the other to disable the input level +10dB gain. To disable the functions plug the jumpers on to one leg of the connector. This retains them for future use if needed.

### Input Gain Disable

Locate and remove the two jumper sleeves JP5, JP6 (illustrated in detail A) to disable the input gain. Full clockwise rotation of the input level control will now provide unity gain and not +10dB.

### RIAA Disable

To convert the RIAA phono pre-amplifier to a line level input locate and remove the two jumper sleeves JP2, JP4 (detail B) and the two jumper sleeves JP1, JP3 (detail C).



## Installer Link Options continued ...

### VCF 1 AND 2 Filter PCBA

There are several configuration options on the filter PCB. These are maximum resonance limit, VCF filter disable, and change default MIDI setup (**Filter 2 Only**). To disable the functions plug the jumpers on to one leg of the connector. This retains them for future use if needed.

#### Filter Disable

To prevent the filter from being switched on, locate and remove the DISABLE FILTER jumper sleeve (illustrated in detail **A**). The maximum VCF resonance can also be limited by removing the corresponding RESONANCE jumper sleeves.

#### MIDI ON / OFF

A four way dip switch selects which controls on the **XONE:92** output MIDI data (detail **B**).

The default setting is all ON. Each switch can be set off to prevent the associated control from sending MIDI messages.

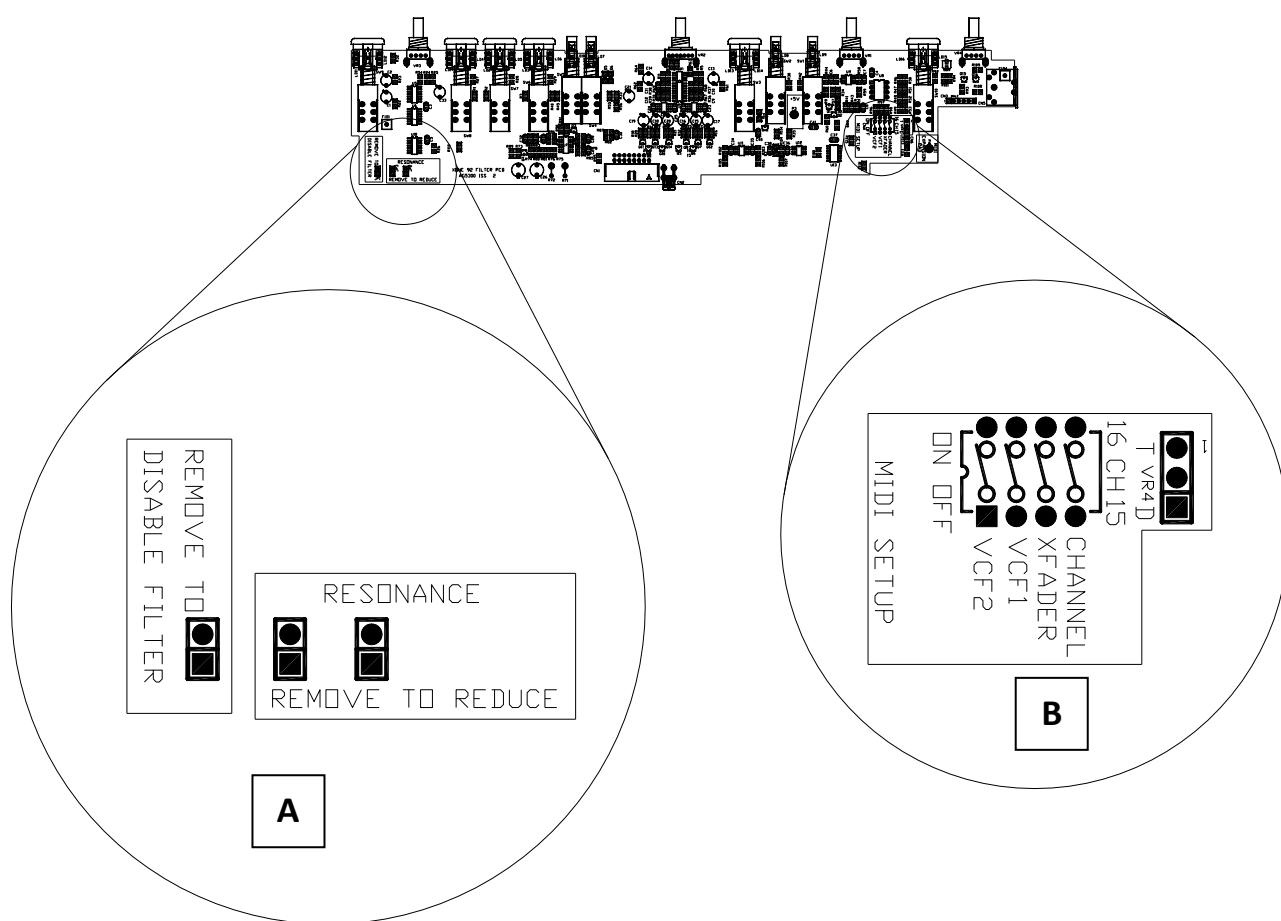
#### MIDI Channel

The MIDI output channel is set to 16 as a factory default. This can be changed to 15 by changing over the "CHANNEL" dip switch.

#### MIDI TEMPO ADJUST / DATA

The TEMPO controller default configuration provides a means of fine tuning the MIDI clock speed. This control can be reconfigured as a dedicated DATA send control (CC94) by moving the VR4 jumper sleeve (detail **B**) from the **T** (Tempo) position to the **D** (Data) position.

Note: MIDI clock will still be transmitted via the LFO 2 TAP tempo button when the jumper is in the **D** position.



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