Soundcraft® NOTEPAD

User Guide

For Soundcraft Notepad 5, 8FX & 12FX

Soundcraft®
by HARMAN

INFORMATION

IMPORTANT
Please read this manual carefully before using your mixer for the first time.

This equipment complies with the Electromagnetic Compatibility directive 2014/30/EU and LVD 2014/35/EU.

This product is approved to safety standards:
    IEC60065:2014 (Eighth Edition)
    EN60065:2014
    UL60065 2015 Ed. 8
    CAN/CSA-E60065:2016 Ed. 2
And EMC standards:
    EN55032: 2012+AC: 2013 Electromagnetic Compatibility of multimedia equipment - emissions requirements
    EN61000-3-2:2014 Electromagnetic Compatibility - Part 3-2: Limits for harmonic current emissions
    EN61000-3-3:2013 Electromagnetic Compatibility - Part 3-3: Limitation of voltage changes, voltage fluctuations and flicker in public low voltage supply systems.
    EN55103-2: 2009 (E2) Electromagnetic Compatibility - product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - part2: Immunity

Warning: Any modification or changes made to this device, unless explicitly approved by Harman, will invalidate the authorisation of this device. Operation of an unauthorised device is prohibited under Section 302 of the Communications act of 1934, as amended, and Subpart 1 of Part 2 of Chapter 47 of the Code of Federal Regulations.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna
* Increase the separation between the equipment and the receiver
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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Harman International Industries Limited

http://www.soundcraft.com

NOTEPAD 5, 8FX, 12FX User Manual

CONTENTS

For clarity, this manual uses section references rather than page numbers. In some instances, one section reference may extend to several pages.

NOTEPAD 5, 8FX, 12FX User Manual

INTRODUCTION TO NOTEPAD

Drawing on over 40 years experience in sound mixing, the Notepad Series combines a superb analogue control surface with the unrivalled British sound of Soundcraft in a powerful, compact, professionally specified mixer.

Built tough for trouble-free performance night-after-night, Notepad Series mixers deliver great sounding results thanks to high-grade preamps, British EQ, and pristine Lexicon® effects - all designed to let you discover your own notable sound.

Soundcraft® Mic Preamps

Class-leading performance with high headroom, wide dynamic range and superb signal to noise ratio.

Hi-Z instrument inputs

Switchable input stage optimised for acoustic guitars, electric guitars, and basses.

Soundcraft® British EQ

Famed for its musical sound and unmistakable 'British' quality

Soundcraft® audio routing

Flexible routing on Aux and FX with powerful switching options as well as dedicated outputs.

Award-winning Lexicon® effects

Studio-grade Reverb, Chorus and Delay with tap tempo, designed to add a truly professional edge to your productions.

USB Digital Audio

USB digital I/O for direct connection to Digital Audio Workstations and digital systems.

Built tough for the long haul

Robust metal construction and premium-quality components: Built to withstand the rigours of extensive use.

INTRODUCTION > SAFETY

SAFETY NOTICES

For your own safety and to avoid invalidation of the warranty please read this section carefully.

Important Symbols

Cautions
Alerts the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warnings
Alerts the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of siuffiecient magnitude to constitute a risk of electric shock to persons.

THIS UNIT MUST BE EARTHED

Under no circumstances should the mains earth be disconnected from the mains lead.

The wires in the mains lead are coloured in accordance with the following code:

Earth: Green and Yellow (Green/Yellow - US)
Neutral: Blue (White - US)
Live (Hot): Brown (Black - US)

As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol.

The wire which is coloured Blue must be connected to the terminal in the plug which is marked with the letter N.

The wire which is coloured Brown must be connected to the terminal in the plug which is marked with the letter L.

Ensure that these colour codings are followed carefully in the event of the plug being changed.

This unit is capable of operating over a range of mains voltages as marked on the rear panel.

The internal power supply unit contains no user serviceable parts. Refer all servicing to a qualified service engineer, through the appropriate Soundcraft dealer.

INTRODUCTION > SAFETY

WARNINGS

• **Read** these instructions.
• **Keep** these instructions.
• **Heed** all warnings.
• **Follow** all instructions.
• **Clean** the apparatus only with a dry cloth.
• **Do not** install near any heat sources such as radiators, heat resistors, stoves, or other apparatus (including amplifiers) that produce heat.
• **Do not** block any ventilation openings. Install in accordance with the manufacturer's instructions.
• **Do not** use this apparatus near water.
• **Do not** defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
• **Protect** the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
• **Only** use attachments/accessories specified by the manufacturer.
• **Unplug** this apparatus during lightning storms or when unused for long periods of time.
• **Refer** all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
• **Use** only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When the cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
• **No** naked flame sources, such as lighted candles or cigarettes etc., should be placed on the apparatus.
• **No user serviceable parts**. Refer all servicing to a qualified service engineer, through the appropriate Soundcraft dealer.

• It is recommended that all maintenance and service on the product should be carried out by Soundcraft or its authorised agents. Soundcraft cannot accept any liability whatsoever for any loss or damage caused by service, maintenance or repair by unauthorised personnel.

• WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not expose the apparatus to dripping or splashing and do not place objects filled with liquids, such as vases, on the apparatus. No naked flame sources, such as lighted candles, should be placed on the apparatus.

• Ventilation should not be impeded by covering the ventilation openings with items such as newspapers, table cloths, curtains etc.

WARNINGS

ADVICE FOR THOSE WHO PUSH THE BOUNDARIES
Although your new console will not output any sound until you feed it signals, it has the capability to produce sounds which, when monitored through an amplifier or headphones, can damage hearing over time.

Please take care when working with your audio - if you are manipulating controls which you don't understand (which we all do when we are learning), make sure your monitors are turned down. Remember that your ears are the most important tool of your trade.

Most importantly — don't be afraid to experiment to find out how each parameter affects the sound — this will extend your creativity and help.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

NOTE: The packaging, in which your console arrived, forms part of the product and must be retained for future use.

NOTEPAD   5, 8FX, 12FX User Manual

INTRODUCTION > SAFETY

WARRANTY

1 Soundcraft is a trading division of Harman International Industries Ltd.
End User means the person who first puts the equipment into regular operation.
Dealer means the person other than Soundcraft (if any) from whom the End User purchased the Equipment, provided such a person is authorised for this purpose by Soundcraft or its accredited Distributor.
Equipment means the equipment supplied with this manual.

2 If within the period of thirty six months from the date of delivery of the Equipment to the End User it shall prove defective by reason only of faulty materials and/or workmanship to such an extent that the effectiveness and/or usability thereof is materially affected the Equipment or the defective component should be returned to the Dealer or to Soundcraft and subject to the following conditions the Dealer or Soundcraft will repair or replace the defective components. Any components replaced will become the property of Soundcraft.

3 Any Equipment or component returned will be at the risk of the End User whilst in transit (both to and from the Dealer or Soundcraft) and postage must be prepaid.

4 This warranty shall only be available if:
   a) The Equipment has been properly installed in accordance with instructions contained in Soundcraft's manual.
   b) The End User has notified Soundcraft or the Dealer within 14 days of the defect appearing; and
   c) No persons other than authorised representatives of Soundcraft or the Dealer have effected any replacement of parts maintenance adjustments or repairs to the Equipment; and
   d) The End User has used the Equipment only for such purposes as Soundcraft recommends, with only such operating supplies as meet Soundcraft's specifications and otherwise in all respects in accordance Soundcraft's recommendations.

5 Defects arising as a result of the following are not covered by this Warranty: faulty or negligent handling, chemical or electro-chemical or electrical influences, accidental damage, Acts of God, neglect, deficiency in electrical power, air-conditioning or humidity control.

6. The benefit of this Warranty may not be assigned by the End User.

7. End Users who are consumers should note their rights under this Warranty are in addition to and do not affect any other rights to which they may be entitled against the seller of the Equipment.

NOTEPAD 5, 8FX, 12FX User Manual

INTRODUCTION > SPECIFICATIONS

TYPICAL SPECIFICATIONS

Frequency Response

20Hz – 20kHz

Mic / Line Input o any Output: +/-1.5dB

Noise

Mic Input E.I.N. at maximum gain with 150Ω source
impedance <-127dBu

Aux, Mix and Masters set to 0dB, faders down   -98dBu

Crosstalk

Input signal 1kHz, +21.5 dBu.

Channel level at max, Master level at 0dB

Adjacent channel level at minimum

Fader cut-off relative to +10dB mark 88dB

CH level @ max, Master Level @ max ,Output +21.5
dBu , and then Master Level @ Min

Mic gain	10dB to 58dB
Line input attenuation	20dB

3-band EQ

HF 12kHz shelf	-12dB to +12dB
MF 2kHz bell	-12dB to +12dB
LF 80Hz shelf	-12dB to +12dB

Maximum input level

Mic Input	+11dBu
Line Input	+30dBu
Hi-Z Input	+17dBu
Stereo Input	+22dBu

Output Level

Mix Output	+22dBu max
Headphones, 150Ω	165mW

Dynamic Range

Frequency response	+/-1.5dB, 20Hz – 20kHz
THD	< 0.01% @ 1kHz
OUTPUT@ 21.5dBu:	
THD	< 0.012% @ 1kHz
OUTPUT= 14dBu	
THD	< 0.019%@ 1kHz

USB

Sample rate	44.1kHz, 48kHz
Frequency response	
20Hz – 20kHz	+/-1.5dB

8FX

Mic input 1,2 to USB with +10dBu input signal
Line input 3&4, 5&6 to USB with +20dBu input signal

THD+N	<0.004%
Signal-to-noise ratio	>100dB

USB to master LR, +12dBu output signal

THD+N	<0.01%
Signal-to-noise ratio	>80dB

12FX

Mic input 1,2,3,4 to USB with +10dBu input signal

THD+N	<0.006%
Signal-to-noise ratio	>100dB

Line input 3&4, 5&6, 7&8 to USB with +20dBu input
signal

THD+N	<0.004%
Signal-to-noise ratio	>100dB

USB to master LR, -20dBFS, +14dBu output signal

THD+N	<0.01%
Signal-to-noise ratio	>88dB

USB to headphone output, -20dBFS, +11dBu output
signal

THD+N	<0.008%
Signal-to-noise ratio	>82dB

NOTEPAD   5, 8FX, 12FX User Manual

GETTING STARTED - AN INTRODUCTION TO THIS MANUAL

Anyone with minimal audio experience should be able to operate the Soundcraft Notepad console without reading too much of this manual, though we do recommend you take the time to go through it. An excellent place to start would be the feature list on the introductory page (section 1.0), which will familiarise you with all of the main possibilities, facilities, and functions.

Please note: Most of the illustrations in this manual are based on the Notepad-12FX console. Where there are differences between operation of Notepad-8FX and Notepad-5, it is noted in the relevant section.

PDF
If you're reading the PDF version of the manual, you can use the thumbnail view and links from the contents page to navigate quickly.

For clarity, this manual uses section references rather than page numbers. In some instances, one section reference may extend to several pages.

GETTING STARTED > INTRODUCTION TO MIXING CONSOLES

The main function of a mixing console is to combine different audio inputs and independently adjust the levels of those contributions to the mix. With this very basic functionality you can control and balance any kind of audio from a one-man-band to an orchestra.

Most mixers however, including the Notepad Series, offer far more than that. A variety of features allow the operator to shape the mix and use routing options to provide the additional conveniences used in audio mixing applications, such as external effect sends, stage monitoring outputs, independent headphone monitoring and USB inputs and outputs.

Mix Level
Rotary knobs make it easy to see and adjust relative levels. They allow you to visualise the mix.

Input Choice
A range of different microphones and instruments are catered for with mic, line, and Hi-Z input types and modes, including 48V phantom power for powered condenser / capacitor microphones. The gain control allows you to optimise the input level for the connected source.

Equalisation
Examples include the high pass filter on an input to reduce unwanted low frequencies, or the three-band EQ (Equaliser) used for tonal 'shaping' of the source.

Output Options
As well as mixing all the input source channels into one Master Stereo output, you can send particular channels into additional outputs, or create different auxiliary mixes of all channels to send to an effects processor or a stage monitor, for example. The headphone output allows the operator to listen to the whole Master Mix, or to a selection of channels via the aux send system.

Internal FX
FX (Effects) processing such as reverb, chorus, and delay are often incorporated into a mixing console so that you don't have to invest in 'outboard' equipment or use up valuable physical inputs and outputs. The Notepad's Lexicon FX processing can be applied in a controlled manner by sending signal from each channel to the internal effects and returning the processed signal to the mix. The auxiliary send control doubles as the effect send to keep the footprint on this console small. Notepad 8FX and 12FX have slightly different signal flow to maximise the flexibility of the controls.

Digital inputs and outputs.
Digital I/O is necessary to work with digital audio systems and computer-based Digital Audio Workstations.
The Notepad series uses a USB interface for either 2 or 4 channel input/output with flexible built-in source routing to provide many recording possibilities. On the Notepad 12FX, the return channels offer additional workstation playback monitoring possibilities.

More Information
You can find out more about individual Notepad features by reading the relevant section of this manual.

GETTING STARTED > PARTS OF THE CONSOLE

Inputs & Outputs

The Notepad console features a variety of physical inputs and outputs for getting audio in and out of the console:
*   XLR inputs for balanced audio from a microphone or line level source
*   TRS balanced jack for line level balanced or unbalanced sources
*   RCA inputs for unbalanced consumer audio sources
*   USB for computer, smart-phone or tablet digital audio.
*   XLR outputs for impedance-balanced signals
*   TRS jack output for impedance-balanced signals
*   Stereo TRS jack output for headphones

Refer to Section 3.0 for more detail and to section 7.0 for detailed information on USB functionality.

Mono Input Channels

Mono input channels control the levels, routing, and EQ on single channel audio inputs.
*   All mono input channels have both microphone and line-level capability.
*   In addition, specific channels feature Hi-Z inputs for high impedance sources such as guitar pick-ups.

Refer to Sections 4.2 and 5.1.1 for more detail.

Stereo Input Channels

Notepad consoles have two types of stereo inputs.
*   Stereo Jacks - Connect left and right signals to the left and right jack inputs. On these channels, a mono source may also be used. In this case, connect a jack only to the left input. Internal contacts on the jack socket route this signal to both left and right of the mix.
*   Stereo RCA - this is the highest numbered stereo channel on the console and offers stereo line level RCA inputs. This channel is also the 'Playback Channel' and stereo audio from USB is summed into this.

Refer to Sections 4.2 and 5.1.2 for more detail.

FX Return (Notepad 12FX only)
The FX return channel takes its input from the output of the internal Lexicon FX processor.
- It is a stereo input channel but without input trim control or EQ.
- Two jack inputs are provided which, when a jack is plugged in replace the internal effects routing to the FX return channel.
Refer to Sections 4.3 and 5.1.3 for more detail.

Aux Output (Notepad 8FX and 12FX)
The Aux output signal is derived frovm a mix of all the contributing channel Aux/FX send controls.
Refer to Sections 4.4 and 5.2 for more detail.

Monitor Output (Notepad 5 only)
Aux (Auxiliary) Master output channels control the output level of the auxiliary bus and global pre-fade/post-fader switching. AFL switching allows aux master solos.
Refer to Sections 4.5 and 5.4 for more detail.

Master Stereo Output
Controls the output level of the Master Stereo bus.
Refer to Sections 4.6 and 5.4 for more detail.

Metering
The meters on the Notepad show Master Left/Right output level.
Refer to section 5.4 and 6.0 for more detail.

Lexicon FX Control
Notepad-8FX and -12FX consoles have an internal Lexicon FX processor and send bus for adding effects such as reverb, chorus and delay. Each effect has a parameter adjustment affecting one or more features of the effect.
Refer to section 8.0 for more detail.

Global Phantom Power
48V phantom power is always active on each of the console microphone inputs so you can use Condenser/Capacitor microphones, active DI boxes, and other devices requiring phantom power. See section 5.1.1 for more detail.

Headphone Level Control
Level control for the monitoring output - either the Master Stereo Output, or the Aux Bus. See section 6.0 for more detail.

NOTEPAD   5, 8FX, 12FX User Manual

INPUTS, OUTPUTS, AND CONNECTIONS

The physical inputs and outputs on the Notepad console are varied, and together with the mic preamps and Hi-Z input control, provide a flexible scheme for any sources you might encounter. To get the most out of the Notepad I/O, read this chapter carefully.

Console inputs can be used for a wide variety of sources. For best results always use the appropriate input connection.

Analog Inputs

USB I/O

Analog Outputs

INPUTS & OUTPUTS > INTRODUCTION TO I/O

The Notepad console offers a choice of industry standard audio inputs and outputs. All Jack and XLR inputs are balanced. RCA inputs are not balanced. Below are some terms used in this manual and on the console labelling that may be of use to you.

AUX (Auxiliary) Output
An output bus made up of the summed auxiliary contributions from input channels. In other words, the AUX output will be a mix of all input channel signals, with levels controlled by the AUX controls on the individual input channels. An auxiliary mix is used for many purposes - alternative mixes for monitoring, processing by external FX units and more.

Balanced
A 'Balanced' signal (Balanced Line) is one where the signal is carried on two conductors with the same impedance / impedance to ground. At a differential input, the differences between the two conductors are summed, so any noise picked up on the wire between output and input is rejected. This is called common-mode rejection.

Hi-Z
High Impedance. Guitar pick-ups generally have 'high impedance' outputs and therefore require a significantly higher than usual input impedance when plugging them directly into a console (straight from the guitar plug - not via an amp or a microphone). Hi-Z Inputs provide this. On the Notepad console selected inputs have Hi-Z input switches to accommodate Hi-Z sources.

Jack
This is the long, quarter-inch connection most commonly used on the Notepad console for line level inputs and outputs such as keyboards, external FX processors, playback and recording devices, and so on. All Notepad series Jack sockets are 'Tip-Ring-Sleeve' 3-pole types. Jack outputs are impedance balanced. It is possible to connect 'Tip-Sleeve' 2-pole unbalanced jacks to these inputs too. In this instance, the ring connection is grounded by the plug which correctly unbalances the input.

Line
For inputs and outputs this refers to a line level signal. This is a higher voltage signal than 'mic level'.

Mic
Microphone. For inputs and outputs this refers to a mic level input. This is a lower voltage signal than 'line level'.

Master
Master Stereo Output: The main stereo group output made up of the summed contributions from any inputs.

RCA
The small line-level connector commonly found on consumer playback equipment. RCA inputs provide a single stereo input channel pair on each Notepad console (Playback Channels).

USB - Universal Serial Bus
Standard serial data connection used by the Notepad console for sending and receiving digital audio streams to and from a computer or tablet.

XLR
The round, three-pin connections with a female version for inputs and a male version for outputs. On the Notepad console they are used for microphone inputs and the main stereo outputs.

INPUTS & OUTPUTS > CONSOLE INPUTS

Console inputs can be used for a wide variety of sources. For best results always use the appropriate input connection.

Mic Input - XLR

Input connection for microphones using standard XLR connection. Pin-2 is the positive, hot terminal.

When using condenser microphones, the 48V phantom power for these connections is always on.
It's best practice to turn down the level control (and Aux send) when plugging condenser microphones into or out of the Notepad mixer.

Line Input - Jack

Balanced line-level connection for all other inputs. Unbalanced signals can also be connected to these inputs by using a mono, 2-pole jack.

A Hi-Z option is provided on selected channels, required by high output impedance sources, such as guitar pick-ups when connecting a guitar directly to the mixer.

Line Input - RCA

Unbalanced input for line level/consumer playback equipment and instruments.

NOTEPAD 5, 8FX, 12FX User Manual

INPUTS & OUTPUTS > CONSOLE OUTPUTS

The console outputs offer connection options depending on the application. Always consider carefully the best output and routing strategy for your particular application.

MASTER

Master Left and Right outputs, XLR connectors

These are impedance-balanced line level outputs. The XLR outputs are labelled 'MASTER L' and 'MASTER R', which refers to Master Left and Right outputs of the main stereo output. These should be connected to the input of your amplifier, PA system, recorder or similar.

AUX

Auxiliary output connector - quarter-inch TRS Jack labelled AUX.

These connections can operate in two modes. The default mode is an impedance-balanced line level output. This is a mono sum of the Auxiliary bus. Pressing the OUTPUT TYPE switch changes the mode of the output for the connection of stereo headphones. On Notepad 8FX and 12FX with this output it is therefore possible to have a second headphone output.
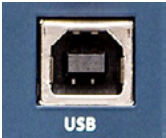
HEADPHONES

Stereo headphone output - quarter-inch Jack.

The headphone signal is always the Master Stereo Output unless the USB RTN 3/4 function is activated on the Notepad-12FX by pressing the button above the phones level control. In that case, the headphone output is switched to route channels 3 and 4 of the USB.
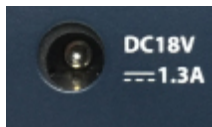
INPUTS & OUTPUTS > OTHER I/O

USB

USB data connection for audio input and output

The Notepad outputs offer a range of connection options depending on the application. Always consider carefully the best output and routing strategy for your particular application. For more detail, please see section 7.

Power Connection

The Notepad console uses an external mid-lead power supply. The power connector is located on the back panel of the console.

Rated at DC18V, 1.3A

A power cord restraint is located on the back of the mixer, to reduce chance of the power supply lead disconnecting from the back of the Notepad mixer by accidental movements. To use the power cord restraint, make a small loop in the power lead and push the loop up through the restraint, hook it over the plastic anchor, then pull back softly on the cable until loop is securely held in place.

CONSOLE ROUTING

Understanding the facilities a console offers for routing and controlling audio is an important step in learning how to operate the Notepad console most effectively.

This Section uses simple flow diagrams and short descriptions to describe the various signal paths and routing options for all channel and bus types. If you have never operated a similar console before, it is worth digesting all these options before you use the console in a critical application.
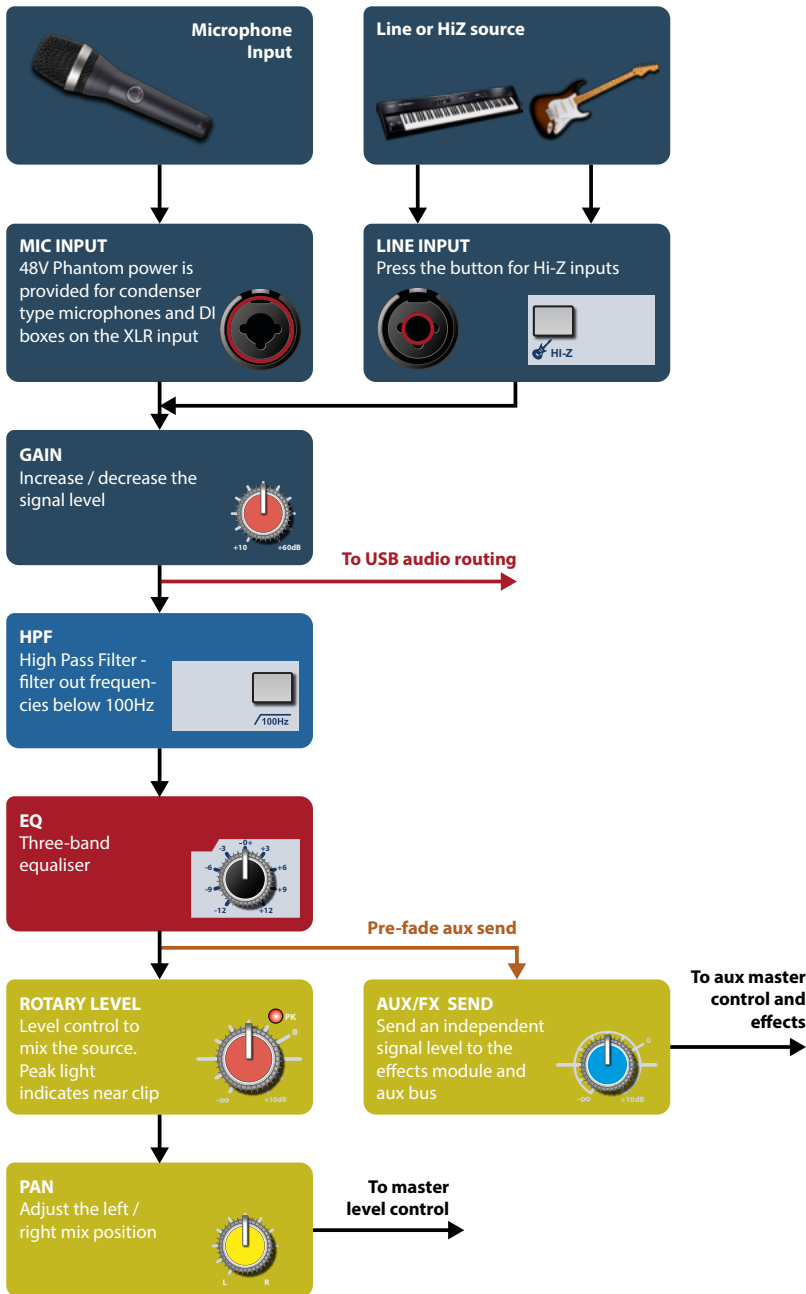
In simple terms, audio signals generally move through a mixing console from the back to the front and from the left to the right. Output signals then leave the mixing console from the back right of the surface.

Signals generally flow through the console in multiple paths simultaneously. On the most basic level, signals flow from an input channel, then as a mix onto a bus (Aux, FX, Master), and through an output (Master Stereo Output, Aux Master Output, Monitor / Headphones Output).

For more basic descriptions of the main routing functions, see section 1.0: GETTING STARTED.

NOTEPAD 5, 8FX, 12FX User Manual

CONSOLE ROUTING > MONO INPUT

Microphone Input

Line or HiZ source

MIC INPUT
48V Phantom power is provided for condenser type microphones and DI boxes on the XLR input

LINE INPUT
Press the button for Hi-Z inputs

HI-Z

GAIN
Increase / decrease the signal level

+10   +60dB

To USB audio routing

HPF
High Pass Filter - filter out frequencies below 100Hz

100Hz

EQ
Three-band equaliser

Pre-fade aux send

ROTARY LEVEL
Level control to mix the source. Peak light indicates near clip

AUX/FX SEND
Send an independent signal level to the effects module and aux bus

To aux master control and effects

PAN
Adjust the left / right mix position

To master level control

MIC   1

LINE= -20dB

HI-Z   100Hz

GAIN
+10   +60dB

HF   -0+   12kHz

MF   2.5kHz

LF   -0+   80Hz

AUX/FX   0
-∞   +10dB

PAN
L   R

LEVEL   PK
0
-∞   +10dB

1

Mono Input Channels

All mono input channels provide the choice of XLR (mic) and Jack (Line) balanced inputs. The odd numbered mono channels have Hi-Z input switches, most often used for direct input from semi-acoustic or bass guitars.

All Mono input channels have 100Hz high pass filters, for reducing the level of frequencies below 100Hz.

All Mono input channels have EQ and can contribute to Aux / FX and Master Stereo buses.

NOTEPAD   5, 8FX, 12FX User Manual

CONSOLE ROUTING > STEREO INPUT

Stereo Line sources

STEREO INPUT
TRS left and right inputs can also be used as a mono input with a single jack in the left socket

LINE
5/L MONO

LINE
6/R

TRIM
Increase / decrease the signal level

-20   +20dB

To USB audio routing

Pre-fade aux send

LEVEL ROTARY
Level control to mix the source.

0
-∞   +10dB

AUX/FX
Send an independent signal level to the effects module and aux bus

0
-∞   +10dB

To aux master control and effects

BALANCE
Adjust the left / right mix levels

L   R

To master level control

LINE
5/L MONO

LINE
6/R

TRIM
-20   +20dB

AUX/FX
0
-∞   +10dB

BAL
L   R

LEVEL
0
-∞   +10dB

Stereo TRS Input Channels
Stereo TRS channels have two TRS input jacks and have the same routing options as mono input channels.
Aux bus contributions from stereo channels are stereo such that when the Aux output is in headphone mode, a stereo mix is heard. These stereo channels have trim controls.

Stereo RCA/USB Input Channel
The Stereo RCA/USB input channel is a stereo sum of the RCA inputs and USB channels 1 and 2. It is usually used as a playback channel and works for convenient 2-track playback functionality from unbalanced consumer audio players into the RCA jacks, or from computer, tablet, or phone connections to the USB jack. There is no trim or EQ on this channel.

Stereo FX Return Channel (Notepad 12FX only)
(See next section: FX Return)

CONSOLE ROUTING > FX RETURN
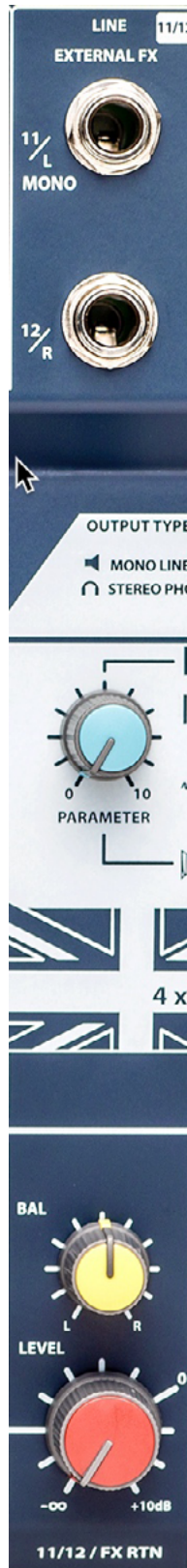
Stereo FX Return Channel (Notepad 12FX only)

The FX Return channel is usually used for return of effects processing from the built-in Lexicon effects. Alternatively this channel takes a return from an external effects processor into the TRS jacks. When jacks are plugged into the External FX sockets, the routing from the built-in Lexicon effects is disconnected.

The FX Return channel can not contribute to the Aux/FX busses (as this would cause a positive feedback loop.)

There is no trim or EQ on this channel.

The output of this channel feeds the Master fader.

CONSOLE ROUTING > AUX MASTER CHANNEL

The Aux Bus sum is sent to the Aux Master output level control. This sum is made up of the aux send pre-fade contributions from each channel. That is, the sends are taken before the input channel fader and are not affected by the input channel fader levels.

The Aux Master Channel can also be used to feed monitors, such as headphones or a stage monitor.

Notepad-8FX
The Aux bus is additionally sent to the built-in Lexicon effects processing after the bus master control.

Notepad 12FX
The Aux bus is additionally sent to the built-in Lexicon effects processing before the bus master control.

See section 6 for more details.

CONSOLE ROUTING > MASTER STEREO OUTPUT

The Master Stereo output is derived from contributions from all input channels to the Master Stereo Bus.

CHANNEL CONTROLS

There are four types of Notepad console input channels:
>   Mono Input with Mic/Line Combi jack
>   Stereo Input with Stereo TRS jacks
>   Playback input with Stereo RCA and USB Return
>   11/12 / FX RTN FX Return Channel

NOTEPAD   5, 8FX, 12FX User Manual

CHANNEL CONTROLS > INPUT CONTROLS

Input channels take sources, process them and route them to one or more buses. The sources catered for by the Notepad consoles include mono (single channel) sources, stereo sources, playback sources and FX Return sources.

HI Z and 100Hz High Pass Filter

Mic Pre Gain

3 Frequency EQ

AUX/FX Send To Effects

Left/Right Pan

Level to Master Bus

The controls are shown in the order they appear on the console channel strip - from top to bottom. This is not necessarily signal path order. Please refer to the relevant signal path diagram (section 4).

Controls common to all input channel types are documented in the Mono Input Channel controls section (5.1.1). Controls or explanations specific to Stereo input channels, Playback channels, and the FX Return Channels are documented in those sections (5.1.2 and 5.1.3 respectively).

CHANNEL CONTROLS > MONO INPUT CONTROLS

PHANTOM POWER 48V

DC voltage of 48V to all microphone inputs

PHANTOM POWER 48V is a DC voltage applied to all microphone inputs. This is for powering condenser microphones and it is sometimes used to power active circuitry in other devices, such as DI boxes. Balanced dynamic microphones (for example) will be unaffected.

Warning: This voltage is always on when the mixer power is on. Some classic studio microphones have issues with phantom power. Users should always be aware of their individual microphone's operation before using them with Notepad or any other mixers with 48v Phantom power.

HI-Z

Switch the line (Jack) input to 'Hi-Z', high impedance mode

Activating Hi-Z by pressing the Hi-Z button presents a much higher load impedance to the source in order to match high-impedance sources such as guitar, bass and other instrument pick-ups that are connected directly to the console. Using the standard impedance mode with the button unpressed on high impedance sources will have a detrimental effect on the high frequency response.
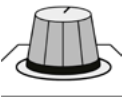
GAIN

Adjust the input gain

The Gain range is 10dB to 60dB. It is advisable to listen to the channel and to check the channel peak LED while increasing gain to avoid distortion due to clipping. Before plugging in a new source, turn the gain down to avoid sudden loud noises.

CHANNEL CONTROLS > MONO INPUT CONTROLS

HPF 100Hz

Activate the High Pass Filter

The High Pass Filter (HPF) is an 18dB/Octave filter that attenuates frequencies below 100Hz. This can be useful for filtering out low 'rumble' from microphones affected by very low frequencies originating from for example, traffic noise, air flow and so on.
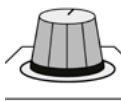
HF Level

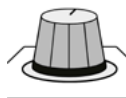Adjust the boost/attenuation of the high frequency shelving filter

The HF shelving filter has a fixed frequency of 12kHz. Frequencies above this will be boosted or attenuated depending on the control setting. See section 1.02 for more detail.
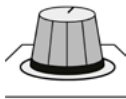
MF Level

Adjust the boost/attenuation of the mid-frequency bell filter

This will adjust the gain or attenuation of the audio band centred according to the MF Frequency. This is an asymmetric EQ, so boost has a wide bandwidth (low Q), and cut has a narrow bandwidth (High Q). See section 1.0.2 for more detail.

LF Level

Adjust the boost/attenuation of the low frequency shelving filter

The LF shelving filter has a fixed frequency of 80Hz. Frequencies below this will be boosted or attenuated depending on the control setting. See section 1.02 for more detail.

CHANNEL CONTROLS > MONO INPUT CONTROLS
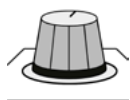
MONITOR (Notepad-5)

Adjust the level of this channel's contribution to the Monitor bus

A Monitor bus is a summed 'alternate' mix of any contributing channels. In other words - for example - the console's Monitor output will consist of all channels whose Monitor rotary controls are greater than -infinity (off, or rotated all the way left) - mixed proportionally according to the relative levels of all the monitor controls. You could use this for a stage monitor mix, or a 'send' to an external FX processor, for example. The source for the Monitor bus send is pre-fader level for each channel.
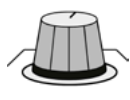
AUX/FX (Notepad-8FX, Notepad-12FX)

Adjust the level of this channel's contribution both to the Aux/FX bus, routing to the AUX ¼ inch TRS output and the Internal Lexicon FX processor.

The Aux and FX are independent, but share the same send level rotary control. The source for the FX bus send is always post-fader so that a source's contribution to an effect is proportional to its contribution to the mix. The source for the Auxiliary bus send is pre-fader level for each channel.
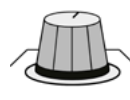
PAN

Adjust a mono channel's stereo position in the mix

Pan affects only the signal's position on the Master (MST) Left/Right output. Turning the control fully right will route the signal only to the right master channel and fully left will route the signal only to the left master channel.

PEAK LED

Lights when signal reaches peak signal level.

The Peak LED is a warning light to let you know when the signal is nearing maximum signal headroom. The peak detection source is taken from a number of key points in the signal path (see section 4.1) where gain is used: After the High Pass Filter, post EQ, and post Fade. If a signal is amplified past the limits of the console's headroom, an undesired 'clipping' noise will occur.

CHANNEL CONTROLS > MONO INPUT CONTROLS

Level

Adjust signal level

The channel level control adjusts level between -infinity (no signal), when rotary is rotated all the way to the left to +10dB when rotated all the way to the right.) The 0dB line indicates unity or no level change. Rotary level knobs are the primary mixing tools during performance; the relative levels of the input channels across the console determine the Master Stereo mix.
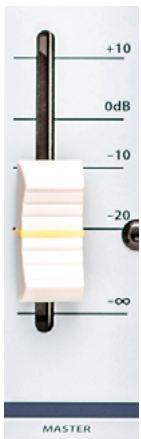
MASTER

All mix channels are routed to the Master left/right bus

Each input channel's output is always routed to the Master left/right bus. The Pan/Balance controls the proportion of the signal send to the left and right Master bus channels.

Stereo TRS input channels function similar to mono input channels with the following differences:

TRIM

Adjust the input line level

This rotary control gives an adjustment range suitable for the typical stereo line-level source for this channel, such as a consumer playback device. The range is -20dB to + 20dB with unity gain in the middle at the centre detent.

Aux / FX

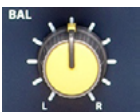Adjust the level of this channel's contribution to the Aux/FX send bus

The Aux/FX controls on a stereo input channel work in the same way as for a mono input channel. The Aux bus is stereo to allow for the output mode when headphones are attached to the Aux socket. The effects input however is a mono sum.

BAL

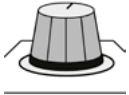Adjust a stereo channel's stereo weighting in the mix.

Balance affects only the signal's position on the Master (MST) Left/Right output. The control adjusts the relative levels of the left and right signals - effectively adjusting the left-right position of the overall stereo image. This allows unbalanced stereo signals to be re-balanced to give the stereo signal desired.

When the stereo input channel is being used as a mono input channel (no Jack in the channel's Right input), the Balance control acts as a Pan control.

CHANNEL CONTROLS > STEREO PLAYBACK CONTROLS

Stereo Playback input channels, that sum the stereo RCA input and USB return signals, function similar to mono input channels with the following differences:

Aux / FX

Adjust the level of this channel's contribution to the Aux/FX send bus

The Aux/FX controls on a stereo input channel work in the same way as for a mono input channel. The Aux bus is stereo to allow for the output mode when headphones are attached to the Aux socket. The effects input however is a mono sum.

BAL

Adjust a stereo channel's stereo weighting in the mix.

Balance affects only the signal's position on the Master (MST) Left/Right output. The control adjusts the relative levels of the left and right signals - effectively adjusting the left-right position of the overall stereo image. This allows unbalanced stereo signals to be re-balanced to give the stereo signal desired.

CHANNEL CONTROLS > STEREO PLAYBACK CONTROLS

Stereo Playback input channel 11/12 FX/RTN, that sum the stereo TRS inputs and Lexicon effects return signals, function similar to mono input channels with the following differences:

BAL

Adjust a stereo channel's stereo weighting in the mix.

Balance affects only the signal's position on the Master (MST) Left/Right output. The control adjusts the relative levels of the left and right signals - effectively adjusting the left-right position of the overall stereo image. This allows unbalanced stereo signals to be re-balanced to give the stereo signal desired.

CHANNEL CONTROLS > FX RETURN CONTROLS

Aux/FX send is pre-fade due to the dual use of the Aux bus. An input channel's contribution to that Aux Send processing field is independent to that channel's Level contribution to the main stereo mix.

Notepad 8FX returns the effects directly to mix at unity.

Notepad 12FX stereo FX Return channel is a cut-down version of the normal stereo channel without trim, EQ, or Aux sends.

An example in use might be running a Reverb algorithm in the processor. Each individual channel's Aux/FX rotary knob will control how much of that source is summed with others, then presented in the reverberant field generated by the processor; the FX return Level knob will then control the return level of that whole reverberant field in the Master stereo bus mix.

CHANNEL CONTROLS > AUX MASTER CONTROLS

The Aux Master control determines the output level of a whole Aux Master mix (the sum of all Aux/FX contributions)
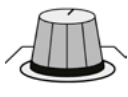
Notepad-8FX Aux Bus

On Notepad 8FX, this control is in the signal path before the Lexicon effects processing so serves as a master effect send control and therefore an effects wet/dry control as the 8FX does not have a dedicated FX return channel. The effects are returned to the master mix at unity.
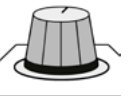
Notepad-12FX Aux Bus

On Notepad 12FX, the aux bus is sent to the Lexicon effects processing before the aux master so while the Aux/FX mix is the same, the overall level of the two destinations - aux output and effects processing are independent.

When the OUTPUT TYPE of the aux output is set to STEREO PHONES, this control additionally serves as a headphone level control.

CHANNEL CONTROLS > MASTER STEREO CONTROLS
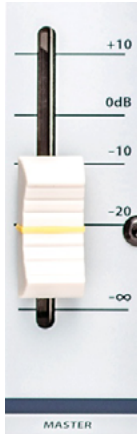
The Master Stereo Output channel determines the output level of the main stereo bus (left and right) mix from the Master L and Master R physical outputs

FADER (Notepad 8FX and 12FX only)

Adjust the overall level of the Master Stereo output

SIGNAL METERING

A bargraph displays the Master Stereo bus level post fader level output.

MONITORING

Monitoring on the Notepad family of consoles is very flexible. It is provided by a monitor bus or by use of the Aux-send bus. On 8FX and 12FX, an additional headphone output is provided with its own flexible routing.

Notepad-5
The monitor output jack can operate in two output modes, selectable via the MONITOR OUTPUT TYPE switch. The default, unpressed state of the switch is intended for connection to a powered monitor speaker and provides a mono sum of the channels routed to it. The signal is impedance balanced, so may be used with a balanced 3-pole jack lead or an unbalanced 2-pole jack lead.

When the MONITOR OUTPUT TYPE switch is pressed, the mode of the jack changes for headphone use. In this mode, a stereo signal is provided for direct connection to headphones.

Two possible sources can be routed to the monitor jack. In the default, unpressed state, the monitor bus on the green knobs is routed.

In the pressed state, the master bus is routed to the jack, but the level is independent of the MASTER level knob. In both source modes, the MONITOR MASTER knob controls the output level to either the monitor speaker or the headphones attached to the monitor jack.

Notepad-8FX
The aux bus output jack can operate in two output modes, selectable via the OUTPUT TYPE switch.
The default, unpressed state of the switch is intended for connection to a powered monitor speaker and provides a mono sum of the channels routed to it. The signal is impedance balanced, so may be used with a balanced 3-pole jack lead or an unbalanced 2-pole jack lead.

When the OUTPUT TYPE switch is pressed, the mode of the jack changes for headphone use. In this mode, a stereo signal is provided for direct connection to headphones.

An additional headphone socket is provided which has its own level control and routing which can be selected from the master mix, button unpressed or the aux bus with the button pressed.

Notepad-12FX
The aux bus output jack can operate in two output modes, selectable via the OUTPUT TYPE switch.
The default, unpressed state of the switch is intended for connection to a powered monitor speaker and provides a mono sum of the channels routed to it. The signal is impedance balanced, so may be used with a balanced 3-pole jack lead or an unbalanced 2-pole jack lead.

When the OUTPUT TYPE switch is pressed, the mode of the jack changes for headphone use. In this mode, a stereo signal is provided for direct connection to headphones.

An additional headphone socket is provided which has its own level control and routing which can be selected from the master mix, button unpressed or channels 3 &4 of the USB streaming with the button pressed. The latter mode is particularly useful to monitor, for example a click track when recording or for a USB monitor bus separate to the USB playback.

USB CONNECTIVITY AND SETTINGS

The Soundcraft Notepad consoles use USB 2.0 audio streaming for sending and receiving digital audio. The Notepad-5 and Notepad-8FX consoles have a two-track USB system while the Notepad-12FX uses a 4-channel system.
All three consoles have built-in source selection to route different channels for recording.

A standard USB-B connector is provided on the top of the mixer surface for connections to computer or tablet.

USB recording channels

2-track USB functionality could be used for recording a mix to a computer or tablet, for example.
USB channels 1 and 2 sent from the Notepad mixer allow direct selection via the driver control panel from a variety of input channel pairs or the Master Stereo output.

The Notepad input channel signals are sent post-gain, pre-EQ signal to their respective USB recording channel.
The Master output selection is routed to the USB channels before the master mix control.

USB stereo return channel

USB return channels 1 and 2 from the connected computer are summed with the RCA input signal on the highest-numbered stereo input channel.

Notepad-5

Using the Soundcraft USB Audio Control Panel for PC on the Soundcraft.com website, users can select the "Audio Routing" tab, to select the point in the console feeding the USB bus to computer.

For Inputs 1+2, users can select from:
>Mic Input 1 + Mono line input 2
>Stereo Input 2+3
>Stereo Input 4+5
>Mix L+R

USB return will come into the input channel 4+5, which is the channel where the USB-B connector is attached. This signal is summed with signal coming in the RCA -10 jacks, before proceeding down the input channel strip.

Notepad-8FX

Using the Soundcraft USB Audio Control Panel for PC on the Soundcraft.com website, users can select the "Audio Routing" tab, to select the point in the console feeding the USB bus to computer.

For Inputs 1+2, users can select from:
>Mic Inputs 1+2
>Stereo Input 3+4
>Stereo Input 5+6
>Mix L+R

USB return will come into the input channel 7+8, which is the channel where the USB-B connector is attached. This signal is summed with signal coming in the RCA 7+8 jacks, before proceeding down the input channel strip.

Notepad-12FX

Using the Soundcraft USB Audio Control Panel for PC on the Soundcraft.com website, users can select the "Audio Routing" tab, to select the point in the console feeding the USB bus to computer.

For Inputs 1+2 the routing is fixed from:
>Mic Inputs 1+2

For Inputs 3+4 the routing can be selected from:
>Mic Input 3+4
>Stereo Input 5+6
>Stereo Input 7+8
>Mix L+R

USB return will come into the input channel 9+10, which is the channel where the USB-B connector is attached. This signal is summed with signal coming in the RCA 9+10 jacks, before proceeding down the input channel strip.

LEXICON EFFECTS

The Notepad console has an internal Lexicon Effects processor with dedicated internal send and return routing. The user may select from combinations of Delay, Chorus, or Reverb audio processing. Audio effects are often also referred to as "FX".
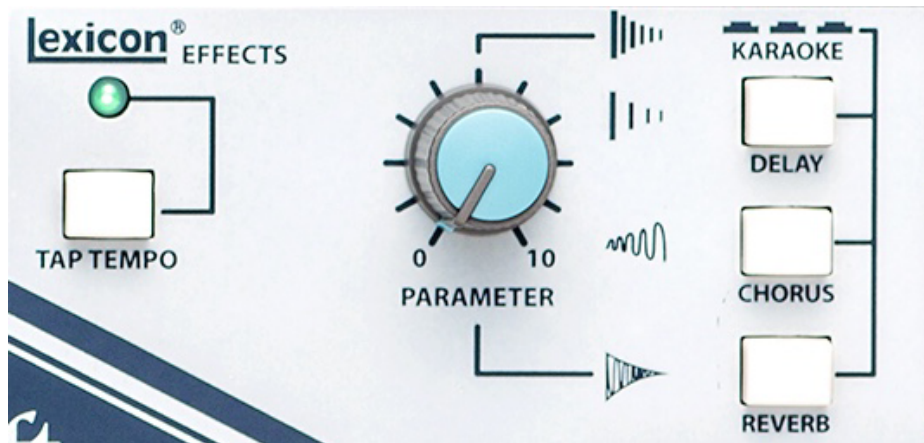
LEXICON FX: FX CONTROL

(Notepad-5 does not have Lexicon effects processing.)

Notepad-8FX and 12FX

The Notepad console has an internal FX processor with internal send and return routing. There are 4 different FX algorithms available, each with at least one adjustable parameter mapped to the PARAM-ETER rotary control.

Notepad 8FX
Aux/FX Sends control input channel contributions to both the FX processor and the Aux output via the Aux master control. The processed signal is returned from the Lexicon FX processor at unity gain to the master mix, so the Aux master acts as the overall wet/dry control.

Notepad 12FX
Aux/FX Sends control input channel contributions to both the FX processor and the Aux output. The effects routing is direct from the bus without passing through the Aux master control.
The FX Return channel is a stereo return channel for the output of the Lexicon FX processor. The signal on this channel can be replaced with that from an external effects processor by inserting jacks 11 and 12.

To use the effects, simply turn up an active input channel's Aux/FX send control; with the effects buttons down for the selected processing algorithm and rotate the PARAMETER knob. Make sure either the Aux master (Notepad 8FX) or the FX RTN (Notepad 12FX) are turned up to hear the effect.
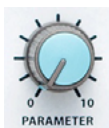
PARAMETER

Adjusts effects parameters mapped to these controls

Different effects algorithms require different parameters for control. When you select a new algorithm, those parameters are assigned to the PARAMETER rotary control.
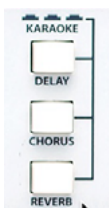
FX TYPE

Select an effects processing algorithm

To engage one or more Lexcion effects algorithms, push down the Reverb, Chorus, or Delay button or any combination of the buttons. With all three buttons pressed, another algorithm for Karaoke is selected.

LEXICON FX > PARAMETERS
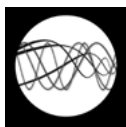
Delay

Delays repeat a sound a short time after it first occurs. Delay becomes echo when the output is fed back into the input (feedback). This turns a single repeat into a series of repeats, each a little softer than the last. The parameter adjustment allows from 1 to 7 repeats, whilst the tap tempo sets the delay time between repeats up to a maximum of 1 second.

Chorus

Chorus creates a lush, full sound by combining the original dry signal with a processed one which varies in pitch very slightly over time. Chorus is commonly used to fatten up tracks and to add body to guitars without colouring the original tone. Chorus can also be used with discretion to thicken a vocal track to make it sound like more than one voice.

The parameter adjusts two variables at the same time - the rate at which the pitch is varied and the amount by which it varies. On the minimum setting, the rate is very slow but the pitch variation is wide. On the maximum setting, the rate is a factor of 10 faster, but the pitch variation is small.

Reverb

Reverberation, or "reverb" for short is the complex effect created by the way we perceive sound in an enclosed space. When sound waves encounter an object or boundary, they don't just stop. Some of the sound is absorbed by the object, but most of the sound is reflected or is diffused. In an enclosed space, reverb is dependent on many features of that space, including the size, shape and the type of materials that line the walls. Even with closed eyes, a listener can easily tell the difference between a cupboard, a locker room and a large auditorium. Reverb is a natural component of the acoustic experience, and most people feel that something is missing without it.

The reverb on Notepad produces an excellent simulation of a small room which is useful for vocal and percussive instrument applications. The parameter control increases the decay time and the simulated room size to vary between the "live" sound of a small room up to a simulation of an auditorium with much longer reverb tails.

LEXICON FX > REVERBS

Delay + Chorus

In this mode, the parameter control sets the number of repeats. The chorus effect is fixed at a mid-range setting.

Tap tempo is also active in this mode to set the repeat time.
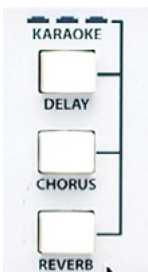
Delay + Reverb

In this mode, the parameter control is mapped to vary all three parameters of the selected effects; the number of repeats, the reverb time and the room size to produce a progressively fuller sound. Delay is processed first such that reverb tails are present on each repeat.
Tap tempo is also active in this mode to set the repeat time.

Reverb + Chorus

In this mode, the parameter control is mapped as it would be for Reverb on its own; the reverb time and the room size. The chorus effect is fixed at a mid-range setting and a small amount of this combined effect is particularly effective on vocals and acoustic guitars.

Karaoke

Pressing down Delay, Chorus and Reverb loads a simple to use slap-echo processing effect for use in Karaoke situations where more depth is required. The Parameter knob controls a combination of the repeat time and effect tail length.

Troubleshooting

A Troubleshooting Guide.
Is an input failing to appear at an output? The best approach is to first make sure the input is valid, and then work through the signal path to find out where the 'break' is... Check the exact audio path of any signal by referring to the signal path diagrams in Chapter 4.

Check Bus Masters

If you have signal to the Master Stereo bus, or you have turned up the channel's contribution to an Aux/FX bus, then the master controls for that bus must be set correctly. For example, even though the signal is always routed to the Stereo master, but the Stereo Master rotary/fader is down, you won't hear anything

---

No FX?

The internal FX routing has three stages - send, processor, and return. All three must be set correctly for the FX to be heard.

For an internal FX to be heard, there must be a source contribution from a valid input. Increase the level to the Aux/FX bus using the Aux/FX control.

For Aux and FX, check that the controls on AUX MASTER rotary control is turned up.

Make sure an effect button is selected. Not having an effect button down may fool a user that they are still listening to only the clean Master bus.

The signal is return through the corresponding FX Return channel. Troubleshoot that this level is turned up.