



ISA430
user's manual

Focusrite
audio engineering



Introduction

Thank you for purchasing the ISA430 brought to you by the Focusrite team – Trevor, Peter, Martin, Helen, Tom, Mick, Phil, Chris, Micky, Pauline, Jo, Chris, Nathan, Rob, Peter and Simon.

The chaps at Focusrite are a jolly hard working bunch and take a great deal of pride in designing, building and delivering products which are considered the best audio units around; we hope your new Focusrite unit lives up to that reputation and that you enjoy many years of productive recording.

If you would like to tell us about your recording experiences then email us at: sales@focusrite.com

The Focusrite Team

Contents

Important Safety Instructions	1
Power Connections	1
Signal Connections	2
Getting to Know the ISA430	3
Metering	3
Input Stage	3
EQ Module	4
Compressor	5
Gate	6
De-Esser	6
Limiter	7
Output	7
Stereo A/D	7
Single/Split Mode	7
Output Modes	8
Applications	9
Specifications	51
Warranty	51
Focusrite Distributors	52

Important Safety Instructions

Read all of these instructions and save them for future reference. Follow all warnings and instructions marked on the unit.

- Do not obstruct air vents in the rear panel. Do not insert objects through any apertures.
- Do not use a damaged or frayed power cord.
- Unplug the unit before cleaning. Clean with a damp cloth only. Do not spill liquid on the unit.
- Unplug the unit and refer servicing to qualified service personnel under the following conditions:

If the power cord or plug is damaged; if liquid has entered the unit; if the unit has been dropped or the case damaged; if the unit does not operate normally or exhibits a distinct change in performance. Adjust only those controls that are covered by the operating instructions.

- Do not defeat the safety purpose of the polarised or grounding-type plug. A polarised plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. When the plug provided does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

WARNING:
THIS UNIT MUST BE EARTHED BY THE POWER CORD

UNDER NO CIRCUMSTANCES SHOULD THE MAINS EARTH BE DISCONNECTED FROM THE MAINS LEAD.

This unit is capable of operating over a range of mains voltages as marked on the rear panel. Ensure correct mains voltage setting and correct fuse before connecting mains supply. Do not change mains voltage settings while mains supply is connected.

To avoid the risk of fire, replace the mains fuse only with the correct value fuse, 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 Focusrite dealer.

Power Connections

There is an IEC mains lead supplied with the unit which should have the correct moulded plug for your country. The wiring colour code used is:

For units shipped to the USA, Canada, Taiwan and Japan:

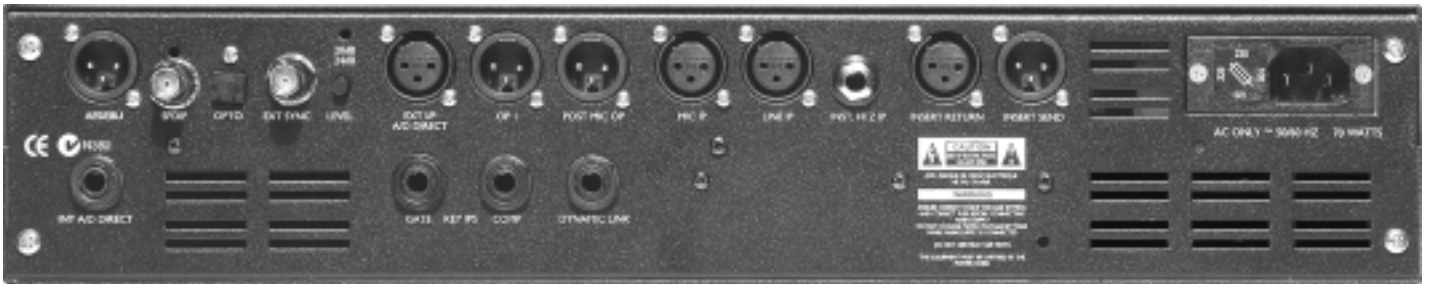
Live - Black **Neutral** - White **Earth** - Green

For units shipped to any other country:

Live - Brown **Neutral** - Blue **Earth** - Green and Yellow

Signal Connections

Optional A/D Card shown



XLR (Audio) Inputs and Outputs

All 3-pin XLR audio connectors (Outputs, Mic/Line Inputs, Insert Send & Return) are wired as follows:

- Pin 1 Screen/Chassis
- Pin 2 Audio 0°
- Pin 3 Audio 180°

Instrument Input, Key IPS, Int A/D Direct and Dynamic Link

1/4" Jack wired as follows:

- Tip Audio 0°
- Ring Audio 180°
- Sleeve Screen/Chassis

Mic IP/Line IP/Inst. Hi Z IP

Any one of these inputs may be used as the main input to the ISA430. Signals routed to these inputs are referred to as the 'internal' or 'Int' signal path.

Insert Return

This is used as the insert input point, or as the input to the dynamics modules in 'split mode' (see 'Dynamics Split' diagram on page 7.)

Insert Send

This is used as the insert output point, or as the analogue output from the dynamics module in 'split mode' (see 'Dynamics Split' diagram on page 7.)

Post Mic OP

This is used as an output from the point immediately after the mic pre (i.e. before EQ and dynamics modules.) It is used as a direct-to-tape ultra-short signal path output. Taking a signal from this 'post mic OP' does NOT interrupt the signal flow from the mic pre to the EQ, dynamics etc., so a direct feed to tape can be achieved, whilst simultaneously allowing processing of the same source.

INT A/D Direct

The 'Internal A/D Direct' input is used to route an external signal directly to the A/D card via the Limiter. It replaces the 'Internal' signal feed to the A/D card (i.e. whatever is connected to the mic, line or instrument input.)

EXT IP A/D Direct

The External A/D Direct input is used to route an external signal to the optional A/D card via the Limiter. The signal is normally fed to the "spare" side of the A/D card not being used by the internal signal, and so does not replace it. However it is possible to also sum the External A/D Direct input together with the main internal signal, (i.e. whatever is connected to the mic, line or instrument input,) using the 'sum' button on the front panel. This will result in whatever is connected to the External A/D Direct input being routed to both sides of the A/D converter. For example, a reverb signal could be processed externally and then be summed with a dry snare drum signal in this way.

OP1

This output is used as the main analogue internal signal output, and is fed by whatever is connected to the mic IP, Line IP or Inst. Hi Z IP, after this signal has been routed through the EQ and dynamics modules (in 'single' mode) or through EQ only (in 'split' mode.)

Dynamic Link

You can connect two ISA430 units (using a standard stereo jack to jack lead between the DYNAMIC LINK sockets) to allow the dynamics sections to behave as a stereo pair of processors. When connected in this way the dynamics processors behave as if both units were receiving the same level of signal, with both units responding to the higher level of the two signal paths. The EQ channels can be matched visually or aurally to be used as a stereo pair if required.

Retrofitting the Optional A/D Card

The optional A/D card can be retrofitted to a standard ISA430 at any time. Full fitting instructions for this option are included with the Card.



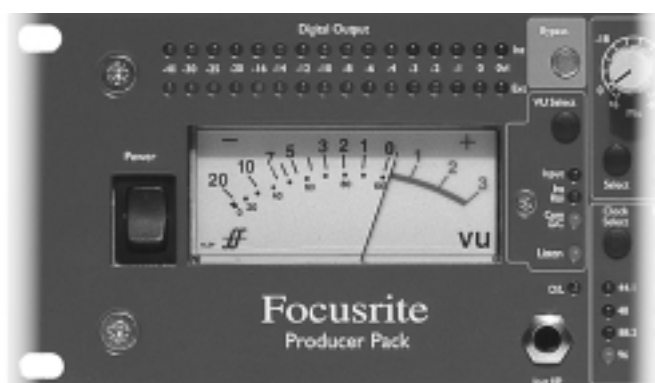
Getting to Know the ISA430

Power

Applies power to the unit. Turn on the ISA430 before powering up devices to which the outputs are connected.

Bypass

The EQ and Dynamics processing modules can be globally switched out using the BYPASS switch, providing a direct route (except for the protection of the multi-band limiter which remains in the circuit) from Line Input or External Input to the A/D inputs. This enables the unit to be used as a 24 bit, 96k stereo converter for final mastering or for analogue transfer to digital.



Metering

VU Select

The VU Meter can display input level, insert return level, or the compressor gain reduction. Press VU SELECT to step through the three sources as indicated by the corresponding LEDs. For the Input and Insert Return, 0VU corresponds to +4dBu. For the Compressor the meter indicates the amount of gain reduction caused by compression, from 0VU (no compression) to -20VU (corresponding to 20dB of gain reduction).

Digital Output Meters

Two LED bargraph meters monitor the Internal signal and the External signal (whatever is connected to the "Ext I/P A/D Direct" XLR input) at a point after the Limiter but before the A/D input. The meters provide a wide range with the O/L LED (lower right side) acting as an Overload indicator to warn of excessively high levels at the input of the A/D converters.

Listen LED

This illuminates when LISTEN is selected on the Compressor, Expander/Gate or De-Esser and indicates that the unit is monitoring the selected side chain frequencies. Note that the VU meter continues to show the signal chosen by VU SELECT and not the LISTEN signal. What you are watching and what you are hearing can be two different things!

O/L LED

This LED illuminates when the peak signal level reaches or exceeds +20dB, or when the peak signal level reaches 6dB below clipping. The signal is monitored at four points: after the input gain TRIM, after the EQ module, after the Dynamics module and after the Insert Return, since each module could cause clipping if incorrectly set up.

Occasional short-duration peaks which may cause the LED to blink will not normally cause audible distortion, but if the LED is lit constantly, the level in the appropriate module should be reduced to prevent overloading.

Inst I/P

Instrument sources may either be connected via the rear panel, or via this front panel jack.



Input Stage

Three input options are provided to give compatibility with Mic, Line or Instrument sources.

An immediately-post-mic pre balanced output ("Post Mic OP") is provided on the rear panel giving an ultra-short signal path to allow for the cleanest possible recordings.

Select

Pressing SELECT steps through each of the three inputs as indicated by the corresponding LEDs. When the Mic LED is lit, the Mic input is active etc. Only one of the 'Mic', 'Line' or 'Inst' inputs can be used simultaneously.

Mic

Mic input sensitivity is switched from -60dB to +6dB in 6dB steps. Phantom power is available on the rear panel XLR for condenser mics when +48V front panel switch is pressed.

Line

A Line input is available on XLR, with a switched gain control giving a range of +/-18dB in 6dB steps.

Inst I/P

An Instrument input is available on 1/4" jacks on either rear panel or front panel. This is suitable for high impedance sources such as guitars or bass pickups (which may be connected directly without the need for a DI box), or synthesisers with low level outputs.

Trim

The TRIM control provides additional variable gain of 0 to +20dB for MIC and LINE inputs (white legend), or 0 to +40dB for the Instrument input (yellow legend).

+48V

Provides +48V powering for condenser mics when pressed.

Phase

Pressing PHASE reverses the phase of the selected input, to correct phase problems with close microphones or incorrect wiring polarity.

Low Pass Filter

A variable control sets a rolloff frequency from 400Hz to 22kHz.

High Pass Filter

A variable control sets a rolloff frequency from 20Hz to 16kHz.

Comp

When the COMP switch is pressed both filters are inserted in the Compressor sidechain for frequency-selective compression. This selection is cancelled if FILTER IN or GATE is pressed.

Gate

When the GATE switch is pressed both filters are inserted in the Gate sidechain to assist accurate drum gating. This selection is cancelled if FILTER IN or COMP is pressed.



EQ Module

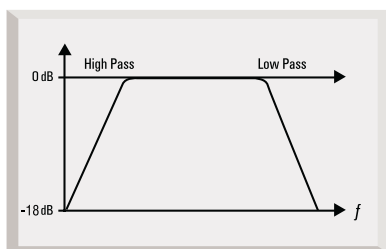
All EQ

Pressing ALL EQ activates all sections of the EQ module (including the Hi and Lo Pass Filters), placing the whole module in the audio path. Toggling ALL EQ allows A/B comparison of EQ settings without having to use BYPASS which switches both EQ and Dynamics modules in or out of the audio path. The COMP and GATE switches on individual EQ sections (see below) operate independently from the ALL EQ switch.

Filter In

Press in to make the Hi and Lo Pass Filters active in the audio path. This selection is cancelled if COMP or GATE is pressed.

Both filters provide 18dB/octave rolloff, and since the filter frequencies overlap they may be configured as a very tight bandpass filter for creative compression and gating; use when you wish to select a specific instrument or narrow frequency band from a complex signal, then feed to the sidechain of the compressor or gate.

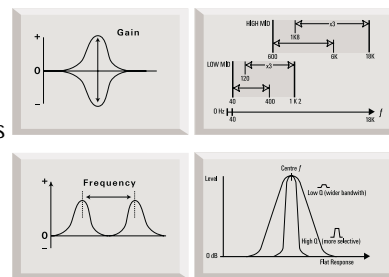


PARAMETRIC EQ

Two separate bands of parametric EQ are provided, each with continuously variable boost/cut with centre detent, sweep control with two ranges, and variable Q. The first band covers the range 40Hz to 400Hz (120Hz to 1k2Hz when x3 is pressed) and the second band covers 600Hz to 6kHz (1.8kHz to 18kHz when x3 is pressed).

Param EQ In

Press in to switch the Parametric EQ into the signal path. This selection is cancelled if GATE or COMP is pressed.



x3

The Sweep controls have two ranges, the higher being selected when the x3 switch is pressed (frequencies shown in yellow on the panel).

Comp

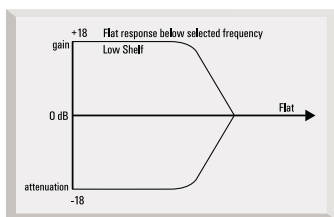
When the COMP switch is pressed, the Parametric EQ is inserted in the Compressor sidechain allowing frequency-selective compression. This selection is cancelled if PARAM EQ IN or GATE is pressed.

Gate

When the GATE switch is pressed the Parametric EQ is inserted in the Gate sidechain for accurate drum gating. This selection is cancelled if PARAM EQ IN or COMP is pressed.

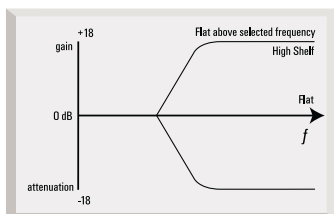
SHELVING EQ

High and Low frequency shelving sections are available, each with continuously variable boost/cut with centre detent, and a six position rotary switch for selection of rolloff frequency.



Shelving EQ In

Press in to switch all the Shelving EQ into the signal path. This selection is cancelled if GATE or COMP is pressed.



Comp

When the COMP switch is pressed the Shelving EQ is inserted in the Compressor sidechain for frequency-selective compression. This selection is cancelled if SHELVING EQ IN or GATE is pressed.

Gate

When the GATE switch is pressed the Parametric EQ is inserted in the Gate sidechain for accurate drum gating. This selection is cancelled if SHELVING EQ IN or COMP is pressed.

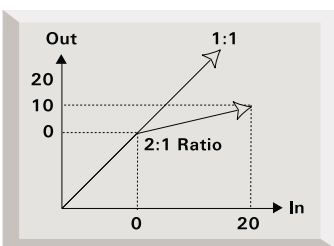
Compressor

Comp In

Press COMP IN to switch the compressor into the signal path. Note that the VU meter can be selected to display the compressor gain reduction (see Metering section).

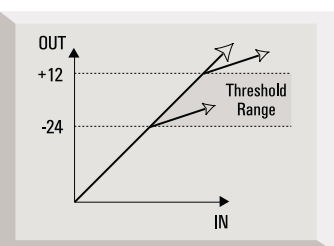
Ratio

The RATIO control determines the rate at which compression is applied to the signal with increasing input, and is the ratio of change in input level compared to change in output level. The control gives a range of 1.5 to 10. Higher Ratio settings will produce more noticeable compression, so for the least obtrusive result, the Ratio should be set at the minimum necessary for the application. For example, using low Threshold and low Ratio will produce less subjectively noticeable effect than a high threshold and high ratio, even though the total amount of compression may be the same.



Threshold

THRESHOLD determines the level at which compression begins, with a range -28dB to +12dB. The lower the Threshold, the more the signal is compressed. Setting a higher Threshold allows quieter passages in the music or speech to remain unaffected; only passages that exceed the Threshold will be compressed.

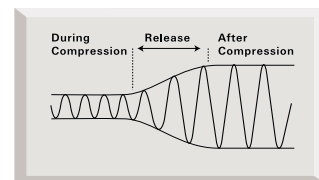
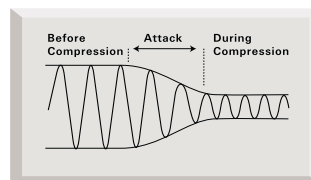


Comp Listen

Press to allow audio monitoring of the compressor sidechain to assist accurate frequency adjustment during setup. The LISTEN LED beside the VU meter illuminates to show that 'Listen' mode is active.

Attack

ATTACK determines how quickly compression is applied once the level of the source signal has risen above the Threshold. When turned anticlockwise the response is very fast, which tends to make the compressor react to the peak levels of the signal. This is sometimes desirable, but can cause unwanted "pumping" of steadier low level components of the signal by short transients. A slower attack will cause the compressor to ignore short transients and respond more to the average loudness of the signal; however this may seem to increase relative volume of the transients.



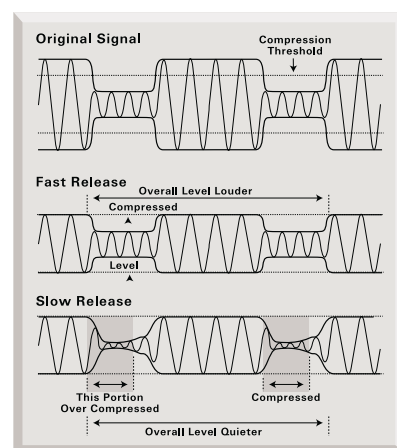
Release

RELEASE determines how quickly compression is removed once the level of the source signal has fallen below the Threshold. When in the anticlockwise position, the compression releases very quickly, which may be appropriate on rapidly varying signals to avoid compressing the beats that follow, but can result in excessive distortion on more sustained material. Clockwise rotation increases the release time, giving a smoother effect, but which at the same time may result in transients causing audible "pumping".

Rotation fully clockwise switches release to AUTO, substituting an adaptive attack/release circuit which essentially varies the release rate to suit the dynamics of the signal. This enables the use of fast attack times without any "pumping" type artefacts, especially effective on complex programme material.

The release rate is probably the most important variable when recording rock music, since it controls loudness.

Loudness is determined by the maintenance of high mean levels: compression increases the proportion of high-level signal content, and as the diagram shows, the faster the unit releases, the more low-level signal is brought to a higher level. Therefore, the faster the release rate, the higher the perceived loudness of the recording.



Ext Key

Pressing EXT KEY switches control of the compressor to an external signal on a rear panel jack socket.

Make Up

Compression results in an overall reduction in level. The MAKE UP control allows you to restore the signal volume back to the original level.



GATE

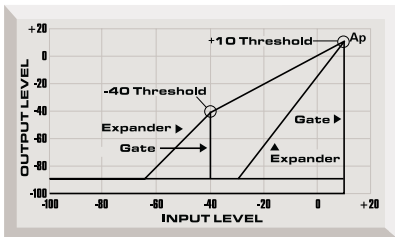
Gate In

Press GATE IN to switch the gate into the signal path.

Expand

Pressing EXPAND causes the Gate to function as an Expander, which gives a similar effect to gating, but instead of cutting off any signal below the threshold, it proportionately decreases it (see diagram). This may give a more natural sound when recording non-percussive sources.

The adjacent LED meter indicates in dB the amount of gain reduction caused by the Expander Gate, and provides additional visual indication of the effect of the RANGE control (see below).



Listen

Press to allow audio monitoring of the gate sidechain to assist accurate frequency adjustment during setup. The LISTEN LED beside the meter illuminates to show that 'Listen' mode is active.

Range

Range determines how much the signal is attenuated when the Gate is closed. The Gate can be set up as a cut (80dB attenuation, control clockwise) or lesser attenuation to 0dB. Maximum attenuation may give an unnatural sound, so keep Range at a low value unless it is essential to reduce high levels of background noise, or unless an obviously gated effect is desired.

Threshold

Threshold determines the level at which the gate opens, (or at which gain reduction finishes when in Expander mode.) The higher the threshold, the more the low-level noise is reduced, and the more extreme the effect.

Hold

HOLD controls the variable delay before the gate release starts. This allows the Gate to be held open until the signal has decayed away sufficiently that the quite rapid onset of gain reduction isn't noticeable: alternatively the signal can be deliberately truncated before its natural end for special effects.

Release

This control sets the Release time, the rate at which the gate attenuation increases, fading out the signal: this Release period begins immediately the signal has dropped below the Threshold. On transient signals a fast release will be appropriate (control anticlockwise), but with other material a slower release (control clockwise) may give a more natural sound. Ideally the Release needs to be slightly slower than the natural decay rate of the signal to avoid audibly cutting it short.

Fast Attack

FAST ATTACK determines how quickly the gate opens once the level of the source signal has risen above the threshold. When the switch is pressed, the response is fast, which may be necessary on some signals to avoid "missing" an initial transient, but could also introduce an undesirable click on smooth, sustained sounds when using a high threshold setting. On such signals a slower attack (switch released) may give a more natural sound.

Hyst

Press to introduce hysteresis; this will prevent the gate oscillating with particular combinations of input signal and threshold settings.

Ext Key

Pressing EXT KEY switches control of the gate to an external signal on a rear panel jack socket.

De-Esser

The DE-ESSER is based on an optical technology design, letting you remove excessive sibilance from a vocal performance (if "ess" sounds are over-emphasised).

De-Ess In

Press in to activate the De-Esser.

Threshold

THRESHOLD determines how much de-essing is being applied to the selected frequency. The lower the threshold (control anticlockwise), the more de-essing is applied.

Freq

This control selects a frequency to remove between 2k2Hz and 9k2Hz.

De-Ess Listen

Press to allow monitoring of only the signals which will trigger activation of the De-Esser rather than hearing the overall effect in a complex signal. The LISTEN LED beside the meter illuminates to show that 'Listen' mode is active.

Active LED

This LED illuminates when the De-Esser is active at the chosen frequency, and shines brighter with increasing level reduction.

Setting up the De-Esser

Press DE-ESS LISTEN with THRESHOLD at maximum and slowly reduce until the selected frequency begins to trigger the De-Esser. Vary the frequency control to find the exact area of the signal which you wish to remove. Once located, switch off DE-ESS LISTEN and adjust THRESHOLD for the amount of reduction required. No further adjustment of FREQUENCY should be required, as the hot spot will have been more precisely found using DE-ESS LISTEN.

LIMITER

Limit In

Press to activate the multi-band limiter. Three separate fixed frequency bands with different limiting properties give true distortion-free limiting.

Active LED

This LED illuminates when the Limiter is active. An upper threshold is fixed at +20dBu to prevent overload of the internal (or an external) A/D converter.

Output

Sum

Press to route both the internal signal and external line input signal (from the "EXT I/P A/D DIRECT" rear panel jack) to the module output. (External signals could be a double track, an extra mic from a second ISA430 or live reverb.)

External

This control adjusts the gain of the external line input, which may be summed into the module output (see above).

Output

A variable control adjusts the module output level (OP1) between -60dB and +6dB.

Mute

Press to mute the output from the unit.

Stereo A/D

The ISA430 can be used as a high quality stereo converter channel for final mastering, or for analogue transfer to digital (by adding the optional ISA430 digital output board.) The external input, and the line input (when BYPASS is pressed) are both fed to the A/D inputs, via the limiter, giving a clean, protected, high quality path to digital. Converter settings are as follows:

Clock Select

Selectable between 44.1kHz, 48kHz, 88.2kHz and 96kHz.

Bit Rate Select

Selectable between 24, 20 and 16 bits.

Ext Sync

Press to select the EXT SYNC input on the rear panel. This allows the ISA430 to be slaved to external wordclock.

Single/Split Mode Selection

The unit can be run as a single channel "Producer Pack", or split to act as two independent processors running discrete audio paths.

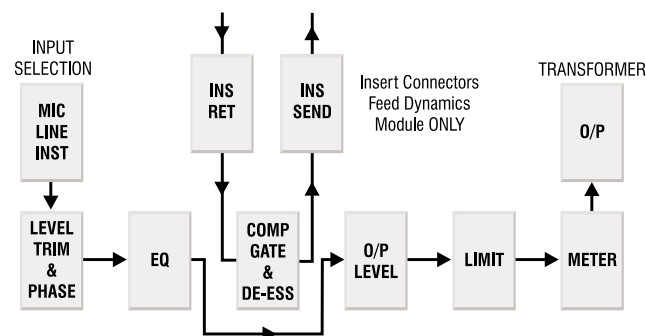
Split mode allows the INSERT SEND and INSERT RETURN connections to act as independent inputs and outputs to the dynamics section only, creating two devices in one, with separate EQ and Dynamics; perfect for mix down.

Dynamics Pre Eq

Normally the EQ section is first in the signal path. Pressing PRE EQ reverses the position of the EQ and Dynamics sections, placing Dynamics first and EQ afterwards.

Split Dynamics

Press SPLIT DYNAMICS to separate the EQ and Dynamics sections, creating two independent modules as shown below.



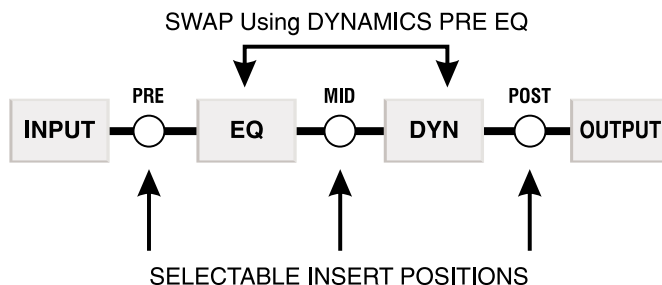
Insert In

Normally the insert is bypassed. Pressing INS IN places the insert in the audio path in the selected position.

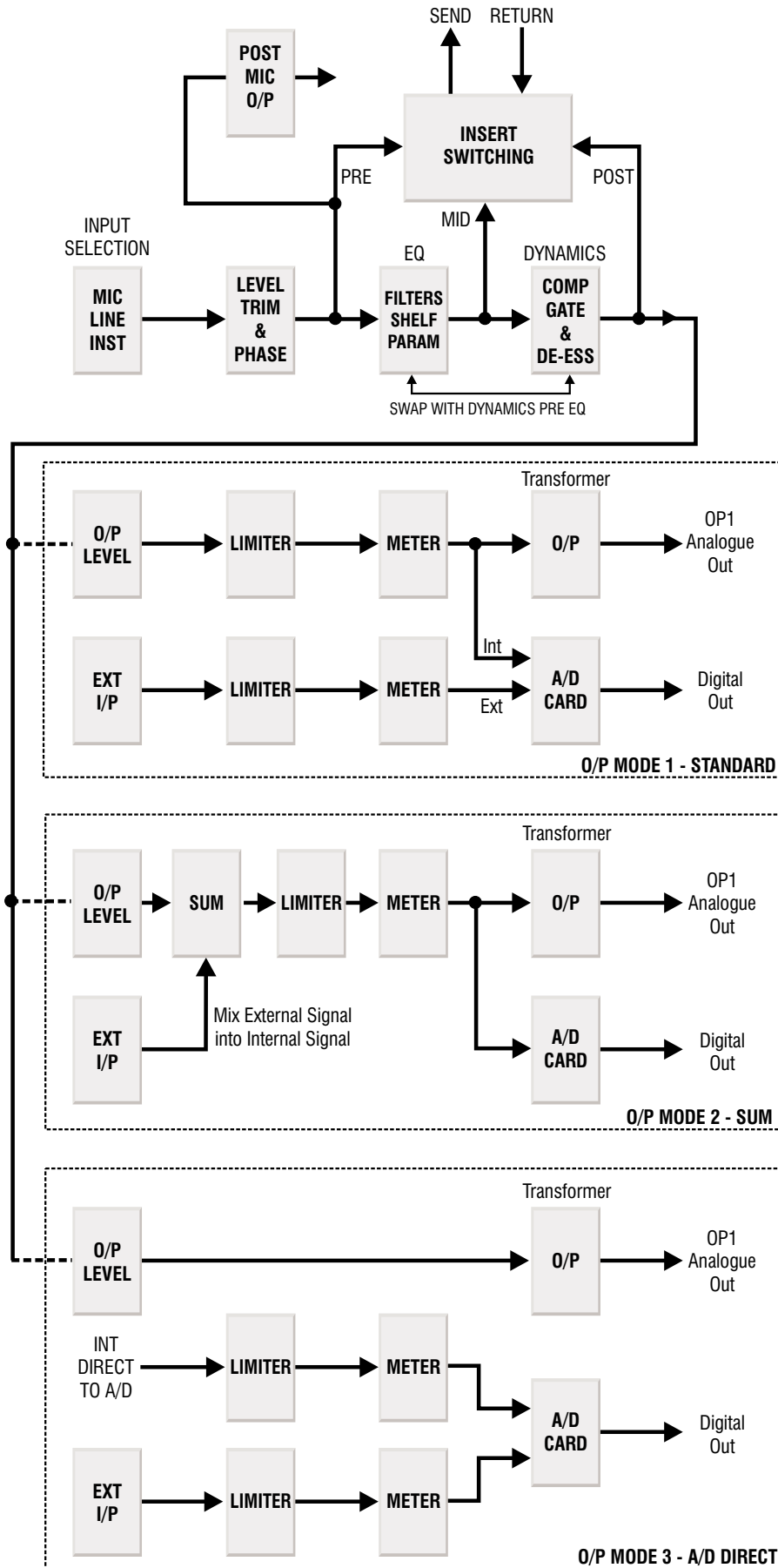
Insert Position

The Insert Send and Return may be positioned in three places within the unit for maximum versatility, as shown in the diagram. Pressing the INSERT POSITION switch steps through the three options, as indicated on the corresponding LEDs.

The options are PRE (Insert is after the input Trim, but before EQ or Dynamics, (depending on the setting of the DYNAMICS PRE EQ switch)), MID (between EQ and Dynamics) or POST (after EQ and Dynamics and before the main output).

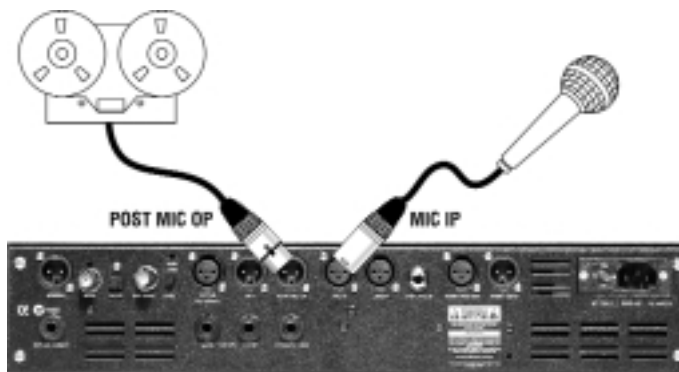


Output Modes



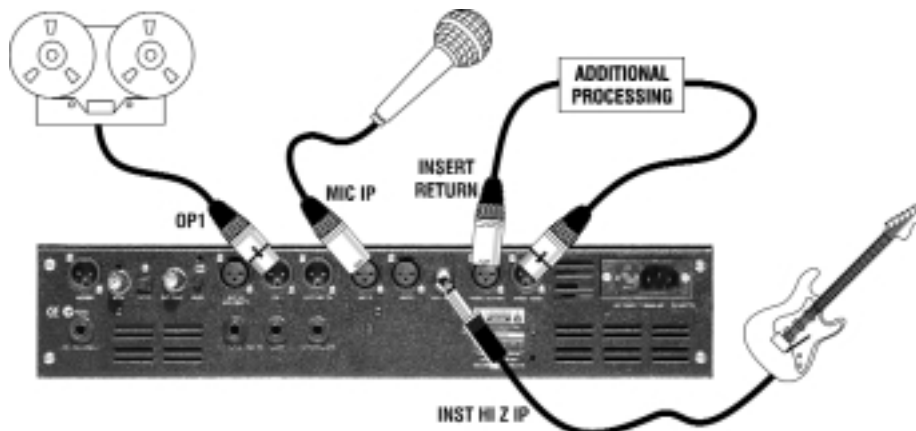
Applications

Super Clean Recording



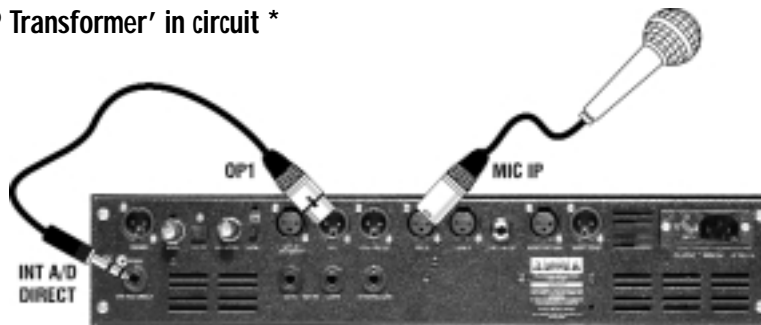
This example shows the shortest possible (lowest distortion) analogue signal path from mic to tape. It bypasses all EQ and Dynamics functions.

Record Channel



This example shows the ISA430 being used for mic or guitar recording. The insert point may be used to add external processing 'in-line' if required.

Record Digital with 'O/P Transformer' in circuit *



This example shows how to record from Mic (or Line/Inst inputs) to the A/D, routing the audio through the output transformer. (In normal use, the "Int A/D Direct" input feeds the limiter and meter, then routing directly to the A/D card.)

* Requires optional ISA430 Digital Output Board

Stereo A/D Converter



The optional A/D card is a stereo device which can convert two tracks simultaneously. Stereo conversion can be accessed by connecting the two audio signals into the EXT A/D DIRECT and INT A/D DIRECT inputs (directly accessing the A/D inputs via the limiter and digital meters). The INT input of the A/D can also be connected in the normal way via the Line I/P, if additional mono processing (EQ and Dynamics) were required on the signal, or if dual mono signals were being converted simultaneously.

Split + Digital Record Mode *

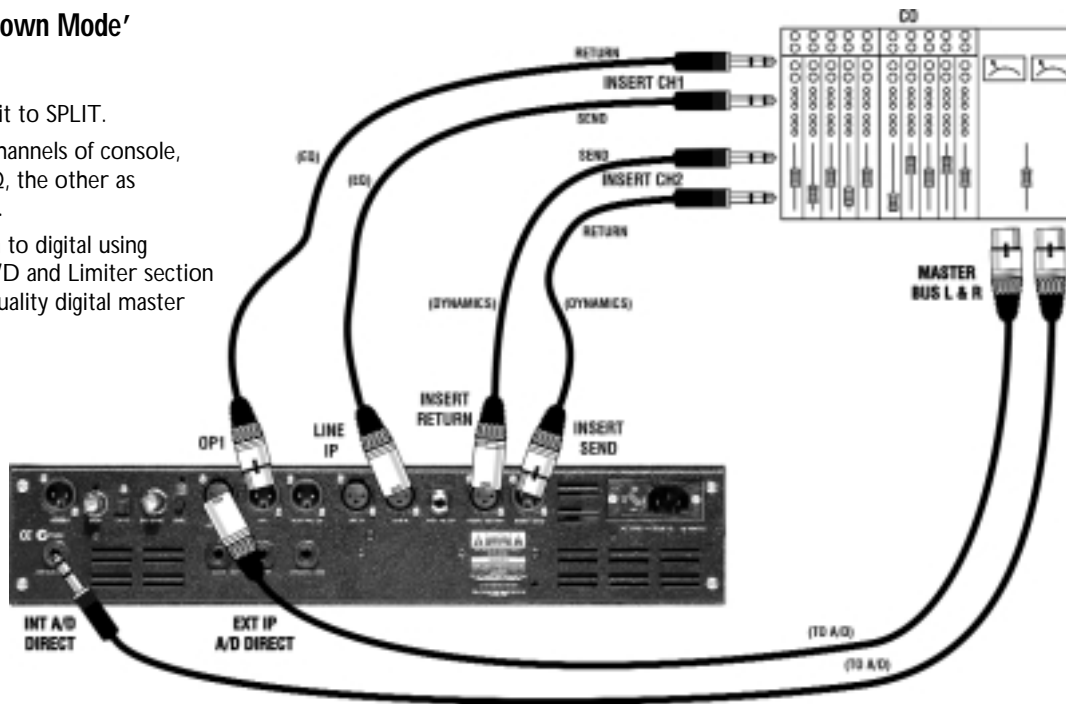


This example shows the insert send feeding the “External I/P A/D Direct” input. This allows an analogue input to be connected to the insert return, and then routed, via the dynamics modules, to the digital output.

* Requires optional ISA430 Digital Output Board.

Split ‘Mix Down Mode’

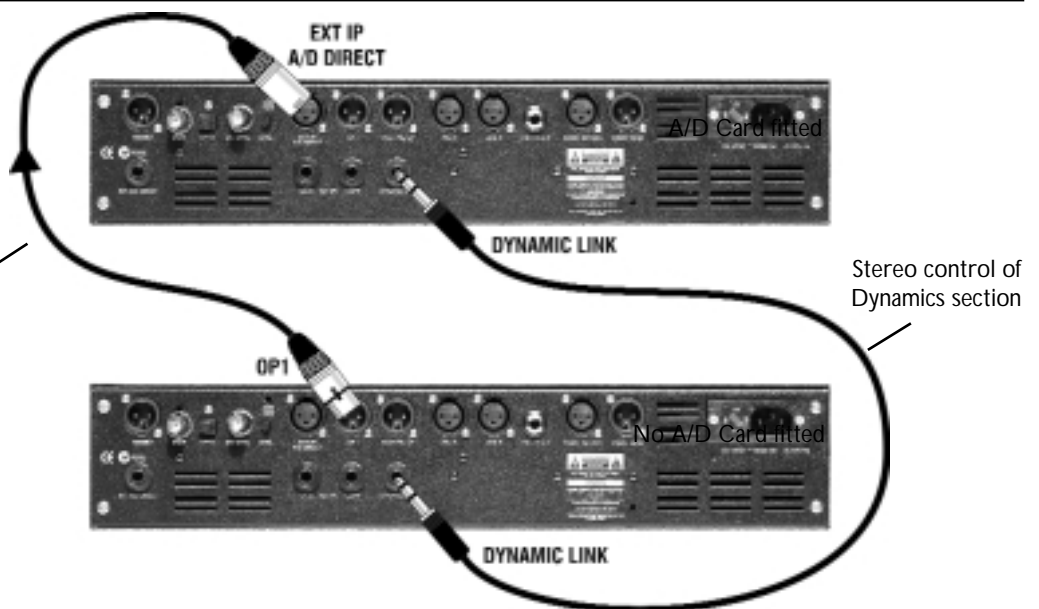
Switch unit to SPLIT.
 Insert 2 channels of console, one as EQ, the other as Dynamics.
 Mix down to digital using ISA430 A/D and Limiter section for high quality digital master



This example shows how to use the ISA430 in split mode as a mixdown tool. The ISA430 is simultaneously allowing EQ processing on audio from the console (CH1) and Dynamics processing on audio from the console (CH2) and allowing A/D digital conversion of the final mix fed from the master L/R console outputs. (Requires optional ISA430 Digital Output Board.)

Stereo ISA430 Units

Send audio from second ISA430 to A/D Card in first ISA430.
 This configuration creates a stereo record channel with only one A/D Card required.



This example shows how to link two ISA430s together, allowing them to be used as a stereo record channel. (Stereo dynamics processing and dual mono EQ (can be used as a stereo channel.)) The stereo channel can then be routed to a single optional ISA430 Digital Output Board allowing A/D conversion of the stereo signal.

Specifications

Rear Panel Connectors

Insert Send

Connector:	XLR
Signal:	Balanced
Operating Level:	+4dBu
Maximum O/P Level:	+26dBu

This output has two modes of operation:

INSERT IN, the connector is an output from the point in the signal path determined by the Pre, Mid and Post selector and the Dyn Pre EQ button.

SPLIT, the connector is the output of the dynamics section of the module.

Insert Return

Connector:	XLR
Signal:	Balanced
Operating Level:	+4dBu
Maximum I/P Level:	+26dBu

This input has two modes of operation:

INSERT IN, the connector is the return or input to the signal path determined by the Pre, Mid and Post selector and the Dyn Pre EQ button.

SPLIT, the connector is the input into the dynamics section of the module.

Inst. Hi Z I/P

Connector:	Mono Jack
Signal:	Unbalanced
(from any high impedance source such as guitar or bass pickups)	
Operating Level:	-10dBu
Maximum I/P Level:	+10dBu
Gain Range:	+10 to +40dB
Input Impedance:	>1M Ω

Line

Connector:	XLR
Signal:	Balanced
Operating Level:	+4dBu
Maximum I/P Level:	+26dBu
Gain Range:	+/-18dB in 6dB steps

Input Impedance:	10K Ω
Noise:	-96dBu
THD:	0.003% with 0dBu 1kHz input and 20Hz-22kHz bandpass filter

Mic

Connector:	XLR
Signal:	Balanced(Transformer)
Operating Level:	+4dBu
Maximum I/P Level:	+26dBu
Gain Range:	-6 to +60dB in 6dB steps

Input Impedance:	1k2 Ω
Noise:	123dB EIN with 150 Ω input resistance
THD:	at 60dB of gain 0.0008%

Post Mic OP

Connector:	XLR
Signal:	Balanced
Operating Level:	+4dBu
Maximum O/P Level:	+26dBu

Signal is routed directly from the Preamp after the gain stage, trim and phase reverse circuits of the input section and can be fed from the Mic, Line or Instrument

OP1

Connector:	XLR
Signal:	Balanced (Transformer)
Operating Level:	+4dBu
Maximum O/P Level:	+26dBu

Signal is the transformer output stage.

Ext A/D Direct I/P

Connector:	XLR/Jack
Signal:	Balanced
Operating Level:	+4dBu
Maximum I/P Level:	+22dBu=0dBFs

Int A/D Direct I/P

Connector:	TRS (Stereo) Jack
Signal:	Balanced
Maximum I/P Level:	+22dBu=0dBFs

Inserting the jack breaks the connection of the A/D input from the signal path and routes the signal from the jack directly to the A/D (Via the meter and limiter).

Gate Key I/P + Comp Key I/P

Connector:	TRS (Stereo) Jack
Signal:	Balanced
Operating Level:	+4dBu
Maximum I/P Level:	+26dBu

Drives the sidechain of the gate or compressor.

Dynamic Link

Links two ISA430 units and control the dynamics section of both from one unit giving accurate stereo dynamics control.

Compressor

Threshold Range:	-28dB to +12dB
Ratio:	1.5:1 to 10:1
Slope:	Soft knee
Attack:	100 μ S to 100mS
Release:	100mS to 4S, variable or auto

(program dependent)

Limiter

Threshold Range:	22dBu
Ratio:	∞ (infinity)
Attack:	Fast

Gate

Threshold Range:	-40dB to +10dB
Gate Range:	0 to -80dB
Attack:	switched fast or slow
Release:	100mS to 5S
Hold:	20mS to 4S
Expander Ratio:	0 to 5:1

De-Esser

Threshold Range:	22dBu
Frequency Range:	2K2 to 9K2
Ratio at Centre	
Frequency	2:1

Accuracy:

Whilst every effort has been made to ensure the accuracy and content of this manual, Focusrite Audio Engineering Ltd makes no representations or warranties regarding the contents.

Copyright:

Copyright January 1999 Focusrite Audio Engineering Ltd. All rights reserved. No part of this manual may be reproduced, photocopied, stored on a retrieval system, transmitted or passed to a third party by any means or in any form without the express prior consent of Focusrite Audio Engineering Ltd.

Warranty:

All Focusrite products are covered by a warranty against manufacturing defects in material or craftsmanship for a period of one year from the date of purchase. Focusrite in the UK, or its authorised distributor worldwide will do its best to ensure that any fault is remedied as quickly as possible. This warranty is in addition to your statutory rights. This warranty does not cover any of the following:

- Carriage to and from the dealer or factory for inspection or repair labour charge if repaired other than by the distributor in the country of purchase or Focusrite in the U.K.

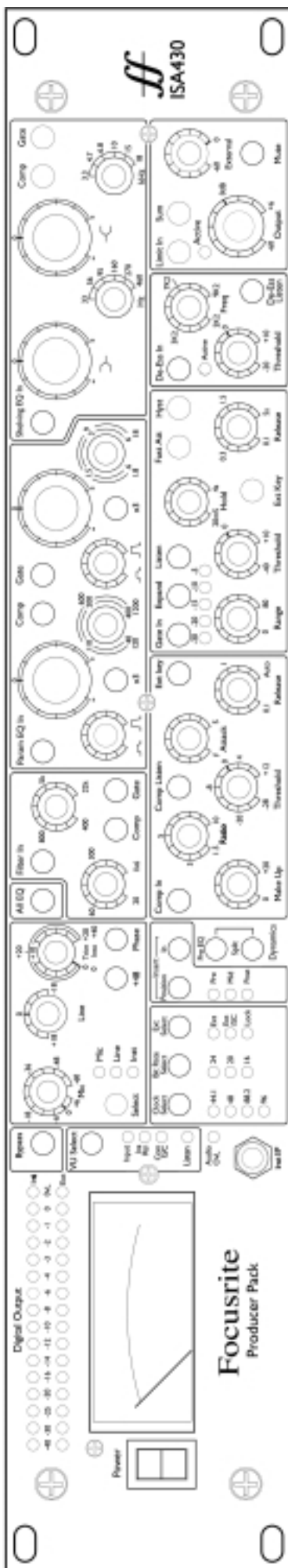
- Consequential loss or damage, direct or indirect, of any kind, however caused
- Any damage or faults caused by abuse, negligence, improper operation, storage or maintenance

If a product is faulty, please first contact your dealer in the country of purchase; alternatively, contact the factory. If the product is to be shipped back, please ensure that it is packed correctly, preferably in the original packing materials. We will do our best to remedy the fault as quickly as possible.

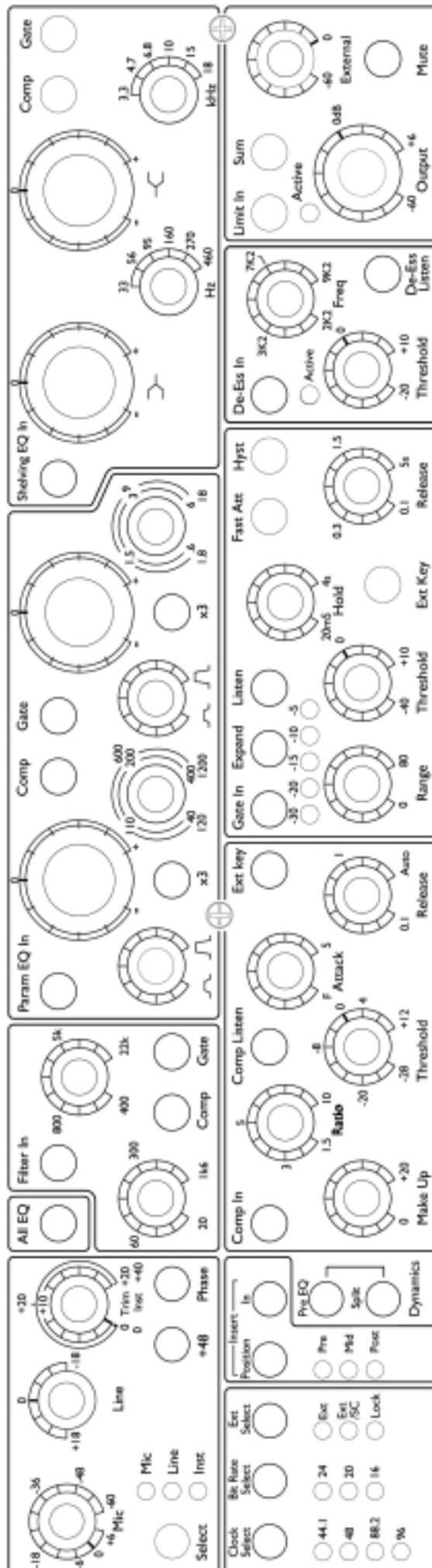
Please help us to serve you better by completing and returning the Warranty Registration Card at the back of this manual. Thank you.

Focusrite Distributors

Argentina	DBA Systems SRL	R. O. Maldives	Island Acoustics
Phone:	00 54 1 545 6800	Phone:	00 960 32 0032
Fax:	00 54 1 545 3668	Fax:	00 960 31 8624
Australia	Electric Factory Pty Ltd	Mexico	Vari
Phone:	00 61 3 9480 5988	Phone:	00 525 604 6946
Fax:	00 61 3 9484 6708	Fax:	00 525 605 9656
Austria	TC Electronic Austria	Netherlands	Total Audio BV
Phone:	0800 201 652	Phone:	00 31 20 4476447
Fax:	0800 201 653	Fax:	00 31 20 4476464
Belgium	EML	New Zealand	Protel
Phone:	00 32 11 23 23 55	Phone:	00 64 4 801 9494
Fax:	00 32 11 23 21 72	Fax:	00 64 4 384 2112
Brazil	Proware	Norway	Lydrommet
Phone:	00 55 11 5585 2866	Phone:	00 47 22 80 94 50
Fax:	00 55 11 5584 6586	Fax:	00 47 22 80 94 60
Canada	Sonoteknik Inc	Poland	Hexagon
Phone:	00 1 416 947 9112	Phone:	00 48 22 44 66 99
Fax:	00 1 416 947 9369	Fax:	00 48 22 44 83 55
Chile	Clio Musical Productora	Portugal	Caius Tecnologias
Phone:	00 56 2 274 9621	Phone:	00 351 2 208 6009
Fax:	00 56 2 294 9575	Fax:	00 351 2 208 5969
Croatia, Slovenia, Bosnia, Macedonia and Serbia	Music Export	Russia	AT Trade
Phone:	00 49 89 746 123 90	Phone:	00 7 095 956 1105
Fax:	00 49 89 746 123 92	Fax:	00 7 095 956 6882
Denmark	New Music AG	Singapore	Team 108 Technical Services Private Ltd
Phone:	00 45 86 190899	Phone:	00 65 748 9333
Fax:	00 45 86 193199	Fax:	00 65 747 7273
Egypt	Alpha Audio	South Africa	Powerhouse Electronics
Phone:	00 202 245 6199	Phone:	00 27 11 728 3102
Fax:	00 202 247 8969	Fax:	00 27 11 728 6789
Finland	Studiotec Ky	Spain	Media Sys S.L
Phone:	00 358 9 5123 5330	Phone:	00 34 93 426 6500
Fax:	00 358 9 5123 5355	Fax:	00 34 93 424 7337
France	DM2J Audio Solution	Sri Lanka	HiFi Centre Ltd
Phone:	00 33 1 48 63 04 43	Phone:	00 94 1 580442
Fax:	00 33 1 48 63 02 01	Fax:	00 94 1 503174
Germany	TC Electronic	Sweden	Polysonic ab
Phone:	00 49 40 531 08 399	Phone:	00 46 31 7069050
Fax:	00 49 40 531 08 398	Fax:	00 46 31 7069110
Greece	Bon Studio S.A.	Switzerland	Bleuel Electronic ag
Phone:	00 30 1 3809605-8	Phone:	00 41 1 751 7550
Fax:	00 30 1 3827868	Fax:	00 41 1 751 7500
Hong Kong/China	Digital Media Technology	Taiwan	DMT (Taiwan) Ltd
Phone:	00 852 2721 0343	Phone:	00 886 2 25164318
Fax:	00 852 2366 6883	Fax:	00 886 2 25159881
Iceland	Exton	Thailand	KEC
Phone:	00 354 551 2555	Phone:	00 66 2 222 8613/4
Fax:	00 354 562 6490	Fax:	00 66 2 225 3173
India	R & S Electronics	Turkey	Imaj Music Yapim VE
Phone:	00 91 22 636 9147	Phone:	Organizasyon Ticaret A.s
Fax:	00 91 22 636 9691	Fax:	00 90 212 216 7180
Indonesia	Paradi	United Kingdom	00 90 212 216 7189
Phone:	00 6221 831 8388	Phone:	Focusrite Audio Engineering Ltd
Fax:	00 6221 8370 3473	Fax:	+ 44 (0) 1494 462246
Ireland	CTI - Control Techniques Ireland	USA	+ 44 (0) 1494 459920
Phone:	00 353 1 454 5400	Phone:	Group One - New York
Fax:	00 353 1 454 5400	Fax:	00 1 516 249 1399 NY
Israel	Sontronics	USA	00 1 516 753 1020 NY
Phone:	00 972 3 570 5223	Phone:	Group One - California
Fax:	00 972 3 619 9297	Fax:	00 1 760 360 8511
Italy	Grisby Music Professional	Venezuela	00 1 760 360 8031
Phone:	00 39 0 71 7108471	Phone:	C&M Audio
Fax:	00 39 0 71 7108477	Fax:	00 58 2 263 8790/264 2050/266 0466
Japan	All Access Inc	Vietnam	00 58 2 267 4319
Phone:	00 81 52 443 5537	Phone:	Vistar
Fax:	00 81 52 443 7738	Fax:	00 84 4 824 3058
Korea	Best Logic Sound Co		00 84 4 825 0099
Phone:	00 82 2 515 7385		
Fax:	00 82 2 516 7385		



Copy this template to record your own control settings for future use.





Focusrite

audio engineering

Focusrite Audio Engineering Ltd, Lincoln Road, High Wycombe, Bucks HP12 3FX England

Tel: +44 (0)1494 462246 FAX: +44 (0)1494 459920

e-mail: sales@focusrite.com www.focusrite.com