

Focusrite
audio engineering

Blue Range

THE COMPLETE MASTERING STUDIO

Blue 315
Isomorphic Mastering Equaliser

Blue 330
Mastering Compressor/Limiter

Blue 260
24-Bit D-A Convertor

Blue 245
20 Bit A-D Convertor

Blue 300
Mastering Controller





legendary compression
and dynamics



a new arrival in the
mastering domain

The Focusrite Mastering Solution.

Since the earliest days of vinyl, the mastering process has been critical to the successful transfer of recordings to the delivery medium. Today the Compact Disc is the primary medium but Compact Cassette and Vinyl discs are still in demand and the mastering engineer will often be asked to master for all three formats plus limited editions for AM and FM broadcast.

The source material may be old or new; recordings in analogue or digital formats and of varying overall quality and bandwidth. The task is to edit and process the recordings to extract the best possible master for the given delivery medium, taking into account the limitations of that medium.

Digital Audio Workstations (DAW's) are replacing analogue transfer consoles used in previous decades. However there is no standard approach to system design within the mastering rooms around the world; typically each engineer has accumulated his chosen selection of equipment with a custom solution to monitoring signals at different stages.

From the experienced gained from supplying some of the world's leading mastering facilities with dedicated Mastering Equalisers and Compressor / Limiters, Focusrite has developed a unique product to tie all the elements together, the Blue 300 Mastering Controller.

With the addition of 20-bit A/D and 24-bit D/A convertors to the Blue Mastering Range, Focusrite is the only company to offer the complete mastering solution - just add your choice of Workstation!

What makes Focusrite Mastering Products so special?

Focusrite is renowned for the highest quality equalisers and dynamics processors for music recording so what could be more logical than to extend that technology to the special requirements of the mastering engineer.

Focusrite's rigorous approach to designing both analogue and digital circuitry results in the highest possible signal integrity with very low noise, distortion and wide analogue frequency bandwidth.

All the rotary controls on the Blue 315 Mastering Equaliser and Blue 330 Mastering Compressor are high quality gold plated switches, for quiet and long life operation, not potentiometers as used in conventional products. They switch the signal between accurately calibrated electronic circuits to ensure channel to channel matching and most importantly to achieve repeatability. Amplitude is adjusted in as little as $\frac{1}{3}$ dB steps.

The mastering process should add nothing to the sound of the recording which is not consciously desired by the mastering engineer. Therefore noise and distortion artefacts are negligible whilst the functions of the processors deliver predictable, sonically enhancing results.

Why do I need analogue processing?

If the recording is analogue you may choose to process it in the analogue domain before converting it to a digital format for editing. However many engineers using DAW's like to convert back to analogue for EQ and Compression because of the results they can only achieve with analogue processors, then reconvert to digital for editing, whether the source recording was analogue or digital. Focusrite 20-bit convertors have been designed to ensure that this process is completely transparent.

How can I find out more about Focusrite Mastering?

You can contact Focusrite by phone, fax or Email or contact your local Focusrite Distributor. We will be delighted to arrange for the products to be made available to you for evaluation in your facility.



the complete
mastering solution

Blue 315 Isomorphic Mastering Equaliser

The ultimate mastering equaliser

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Blue 330 Mastering Compressor / Limiter

Unrivalled precision and performance in dynamic control

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Blue 260 24 Bit D-A Convertor

The highest quality outboard Digital to Analogue

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Blue 245 20 Bit A-D Convertor

The highest quality outboard Analogue to Digital

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Masterplan : System Schematic

The creative possibilities of the Focusrite Blue Range

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Blue 300 Mastering Controller

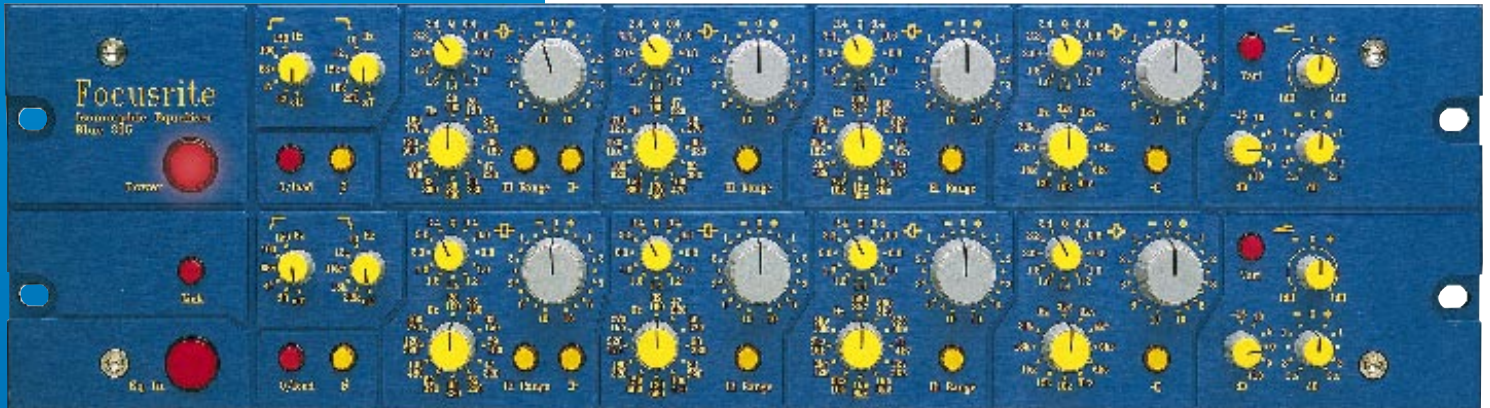
Complete routing and monitoring control

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Blue 315

Isomorphic Mastering Equaliser

The ultimate mastering equaliser



The Blue 315 offers the renowned smoothness and musicality of the Focusrite EQ in a form optimised for the mastering suite. The result is the ultimate mastering equaliser, capable of both creative sweetening and effectively removing troublesome frequencies without unduly affecting the rest of the signal.

There are two channels of 4-band EQ circuitry - two fully parametric mid bands and two fully parametric bands for low and high frequencies which can also be switched to shelving mode. The bass end EQ stage can also operate over an extended frequency range for very low end control for film or dance music applications.



Additional high and low pass filters are included for out of band correctional EQ work. All EQ stages are based on circuit topologies employed in the Focusrite Studio Console with the added sensitivity, accuracy and control required for

mastering applications. The extremely broad frequency response of the Blue 315 - from 5Hz to 140kHz, guarantees smooth frequency and phase response across the much narrower range of human hearing.

Large control knobs on the Blue 315's clearly laid out fascia allow easy adjustment of the switches controls and make it simple to check EQ settings at a glance. The four fully parametric bands feature wide, overlapping frequency ranges. Each offers switching between two frequency ranges, allowing precise frequency selection via rotary switches across the full bandwidth.



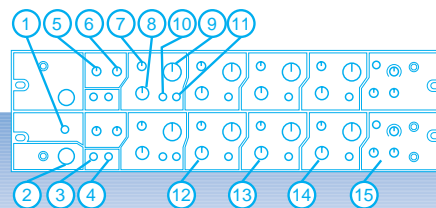
Q is variable over an unusually wide range of 0.4 to 2.4, in 11 discrete steps, with the cut/boost control designed to offer finer control around the null point with larger steps at the extremities.

Precise I/P level control is assured with three separate gain controls for each channel - rotary switches for coarse and fine gain control and a continuously variable trim control.

Thanks to buffering between sections, all EQ bands operate independently and are not affected by any of the other bands.

[For full specifications, please see back page.]

- 13 **High Mid Frequency switch:** Selects the centre frequency at which the effects will take place; Low range 560, 680, 820, 1k, 1k2, 1k5, 1k8, 2k2, 2k7, 3k3 and 3k9 Hz. High range 2k7, 3k3, 3k9, 4k7, 5k6, 6k8, 8k2, 10k, 12k, 15k and 18kHz .
- 14 **High Frequency switch:** Selects the centre frequency at which the effects will take place; 3k3, 3k9, 4k7, 5k6, 6k8, 8k2, 10k, 12k 18k, and 22kHz.
- 15 **Input gain controls:** +10/-15dB rotary switch adjust the input gain in 5dB steps. ±2.5dB rotary switch adjusts the input gain in 0.5dB steps. ±1dB vari potentiometer allows continuous adjustment of the input gain, when enabled. Vari in switch enables the use of the vari potentiometer.



CONTROL FUNCTIONS BLUE 315

- 1 **Link switch:** Allows the push button functions in both EQ sections to be operated simultaneously from either channel.
 - 2 **EQ In switch:** Operates on all EQ sections. A quick press turns on the EQ, another quick press turns off the EQ. When held down the EQ is turned on until released whereby the EQ is turned off, this allows quick comparisons between EQ'ed and non EQ'ed sounds.
 - 3 **O/load indicator:** Illuminates 6dBu below circuit overload takes place.
 - 4 **Ø switch:** Inverts the phase (180°) of the output of the channel.
- Rotary filter switches: Maybe switched out in the vertical position or set to the frequencies indicated.
- 5 **High pass filter:** 12dB/octave at 33, 47, 68, 100 and 150Hz.
 - 6 **Low pass filter:** 12dB/octave at 10, 12, 15, 18 and 22kHz.
 - 7 **Q rotary switch:** Controls the bandwidth of frequencies effected around the centre frequency. Low Q=0.4, high Q=2.4.
 - 8 **Low Frequency switch:** Selects the centre frequency at which the effects will take place; Low range 20, 26, 33, 39, 47, 56, 68, 82, 100, 120 and 180 Hz. High range 100, 130, 150, 180, 220, 260, 330, 390, 480, 590 and 770Hz.
 - 9 **Amplitude rotary switch:** Boosts or cuts the amplitude at the centre frequency by up to 10dB, with increased sensitivity around 0dB.
 - 10 **Hi range switch:** Shifts the operating frequency of the rotary frequency switch into a higher range of frequencies.
 - 11 **Bell/Shelf switch:** Converts the low and high parametric sections from bell filters to shelf filters, when in this configuration the Q control effects the resonance and the roll off slope of the filter.

- 12 **Low Mid Frequency switch:** Selects the centre frequency at which the effects will take place; Low range 39, 47, 56, 68, 82, 100, 120, 150, 180, 220 and 270 Hz. High range 180, 220, 270, 330, 390, 470, 560, 680, 820, 1k and 1k2Hz .

Blue 330

Mastering Compressor Limiter

Unrivalled precision and performance in dynamic control



The Blue 330, employing Focusrite's unique single-VCA circuit design, offers unrivalled precision and performance in dynamic control in a mastering suite. All rotary controls are multi-position precision switches, allowing accurate recall of previous settings.

Very accurate PPMs, switchable to measure gain change, input or output level, offer dual scale operation that allows accurate measurement of a wide range of peak signals. Thanks to the broad range of the threshold control and Focusrite's proprietary circuitry, the Blue 330 can compress very high signal levels - up to +26dB



without distortion. The Limiter too, offers an unusually wide threshold range.

The VCA used is a balanced class A design, offering superb low noise distortion and excellent common-mode rejection.

In order to separate compression and limiting, the sidechain electronics contain three VCAs to generate compression and limiting rather than the more common characteristic of compression that turns into limiting. The sidechain electronics utilise class A design techniques, ensuring superb transient response. Both compression and limiting therefore offer true peak response, not averaging RMS response and control.

The use of high quality audio Class A VCA as the only element between input and output means a very short signal path, and an ability to retain a natural, unobtrusive sound even when significant compression is being applied.

LOOK AHEAD LIMITER

Combines a low distortion Limiter with an audio delay to allow sidechain circuits a finite time to control and limit transients accurately. Designed to protect A/D converters from fast transients, which would normally cause overload when connected through a standard limiter.

Look ahead limiting allows more subtle limiting thresholds to be used while still protecting the A/D input from overload.



[For full specifications, please see back page.]

15 **Threshold rotary switch:** Sets the level at which the limiter will start to limit the signal, 0dB to 22dB.

16 **Limiter action indicator:** Illuminates when the limiter is limiting the signal.

Input gain section:

17 **±11dB rotary switch:** Adjusts left and right input gain in 1dB steps.

18 **±1dB vari potentiometer:** Allows continuous adjustment of the input gain, when enabled.

19 **Vari in switch:** Enables the use of the vari potentiometer.

Meter section:

20 **Peak program meters:** These PPMs accurately display signal transients, low range -20dB to +4dB, high range -4dB to +20dB.

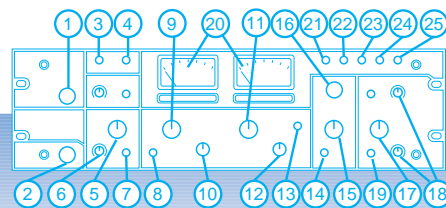
21 **+16dB switch:** Changes the PPMs' operating level to read in the high range.

22 **Input switch:** Selects the input signal to be displayed on the meters.

23 **Key switch:** Selects the key input signal to be displayed on the meters.

24 **Change switch:** Selects the gain change to be displayed on the meters.

25 **Output switch:** Selects the output signal to be displayed on the meters.



CONTROL FUNCTIONS BLUE 315

1 **Power On/Off switch.**

2 **Dynamics In switch:** Turns on all dynamics sections. A quick press turns on the dynamics, another quick press turns off the dynamics. When held down the dynamics are turned on until released whereby the dynamics are turned off, this allows quick comparisons between compressed/limited and non compressed/limited sounds.

3 **O/load indicator:** Illuminates 6dBu below circuit overload takes place.

4 **Key switch:** Feeds the sidechain signal from the external key input.

Make-up gain section:

5 **Make-up gain rotary switch:** Applies gain from 0dB to 22dB in 1dB steps to both left and right channels.

6 **±1dB vari potentiometer:** Allows continuous adjustment of the make-up gain, when enabled.

7 **Vari in switch:** Enables the use of the vari potentiometer.

Compressor section:

8 **High range:** Shifts the operating threshold of the rotary threshold switch into a higher threshold range.

9 **Threshold rotary switch:** Sets the level at which the compressor will start to compress the signal, low range -26dB to -4dB, high range -6dB to +16dB.

10 **Ratio rotary switch:** Sets the input to output compression ratio from 1.2:1 to 20:1.

11 **Attack rotary switch:** Sets the attack time of the compressor from 300µs to 100ms.

12 **Release rotary switch:** Sets the release time of the compressor 100ms to 4s or to auto which will vary depending on source material.

13 **Compressor In switch:** Enables the compressor sidechain, the compressor becomes active when dynamics in switch is engaged.

Limiter section:

14 **Limiter In switch:** Enables the lookahead limiter sidechain, the limiter becomes active when dynamics in switch is engaged.



Blue 260

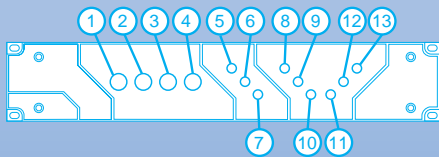
24 Bit D-A Converter

The highest quality outboard Digital to Analogue



CONTROL FUNCTIONS BLUE 260

- 1 Switch 1: Selects AES input 1.
- 2 Switch 2: Selects AES input 2.
- 3 Switch 3: Selects AES input 3.
- 4 Switch 4: Selects AES input 4.
- 5 Indicator 1: Illuminates when any of switches 1-4 are selected.
- 6 Optical switch: Selects optical input.
- 7 S/P switch: Selects S/PDIF input.
- 8 Indicator 32: Displays if a 32kHz sample rate is detected.
- 9 Indicator 44.1: Displays if a 44.1kHz sample rate is detected.
- 10 Indicator 48: Displays if a 48kHz sample rate is detected.
- 11 Error indicator: Displays if an error is detected (e.g. loss of clock data).
- 12 Lock indicator: Displays if the signal is locked.
- 13 Emphasis indicator: Displays if emphasis is detected.



The BLUE 260 24 Bit D/A Converter from Focusrite has been designed to provide the highest quality outboard Digital to Analogue conversion for the world's leading Mastering, Broadcast and Post Production studios.

Utilising the latest Crystal 24 Bit Delta-Sigma Converter with a 128 x Interpolation filter, the BLUE 260 uses static logic in all its digital circuits (there are no DSP circuits or processors) so that the convertor clock is the only clock signal present on the board.

This technique removes a wide variety of digital interference such as Hetrodyning, beating and "birdies" and creates an analogue output signal that has an exceptionally low noise floor and is free from digital interference and crosstalk.

The BLUE 260 has been designed to complement the very high performance of Focusrite's BLUE 245 A/D Converter launched in 1996.

Features include 6 selectable digital inputs (4 x AES, Optical and SPDIF) and a fully regenerated AES output which follows the input selection.

In addition a logic link on the rear panel will allow BLUE 260 to provide digital source selection for the forthcoming Focusrite BLUE 300 Mastering Controller.



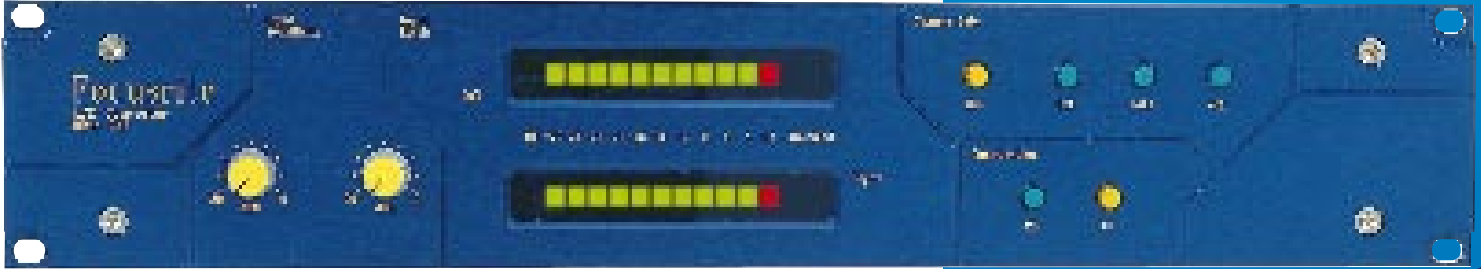
Front Panel Controls include Input Format and AES Selection; sample rate and status indication.

[For full specifications, please see back page.]

Unparalleled fidelity in mastering, transfer and recording

Blue 245

20 Bit A-D Converter



The Blue 245 has been designed to perform to the very high standards established by Focusrite's legendary analogue processors, and provide unparalleled fidelity in mastering, transfer and recording work - quite simply to be the best sounding A-D converter in the world.



By combining Focusrite's traditional attention to detail, and dedication to precision manufacturing techniques, with the expertise of leading digital design specialists, the Blue 245 comes closer to

achieving the potential of 20 bit conversion than any other convertor, with superior noise (<-108dB THD+N) and jitter (<1.6nS) performance.

Based around a precision 20 Bit 64x oversampling delta-sigma chipset, every aspect of the Blue 245's design is optimised to achieve the best possible performance.

No signal processing is performed in the digital domain for good reason. The use of microprocessors and DSPs in a convertor calls for additional clocks that may not be related to the sample frequencies which throws up the problems of cross coupling of clocks into the ADC or other analogue circuits.

Even when working to 16 bit media such as DAT, the 20 bit 245 brings substantial benefits thanks to a proprietary TPDF (Triangular Probability Density Function) dithering system that enables the 20 bit signal to pass into the 16 bit domain with as much honesty as possible.

Combining the Blue 245 with the Blue 260 D/A Convertor creates an outstanding package for entering and leaving the digital domain. The Blue 245 is the last word in A/D conversion from the first name in analogue processing.

[For full specifications, please see back page.]

CONTROL FUNCTIONS BLUE 245

① **Input sensitivity potentiometer:** Sets the analogue level coming into the unit.

② **Peak program meters:** These PPMs' accurately display signal transients and display overload at the far right.

Sample rate section: Allows the selection of different sample rate for the conversion process.

③ **External switch:** Selects the external sample rate provided on the rear panel.

④ **32k switch:** Selects 32kHz sample rate used mainly for broadcast.

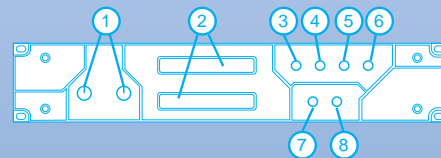
⑤ **44k1 switch:** Selects 44.1kHz sample rate used mainly for consumer replay.

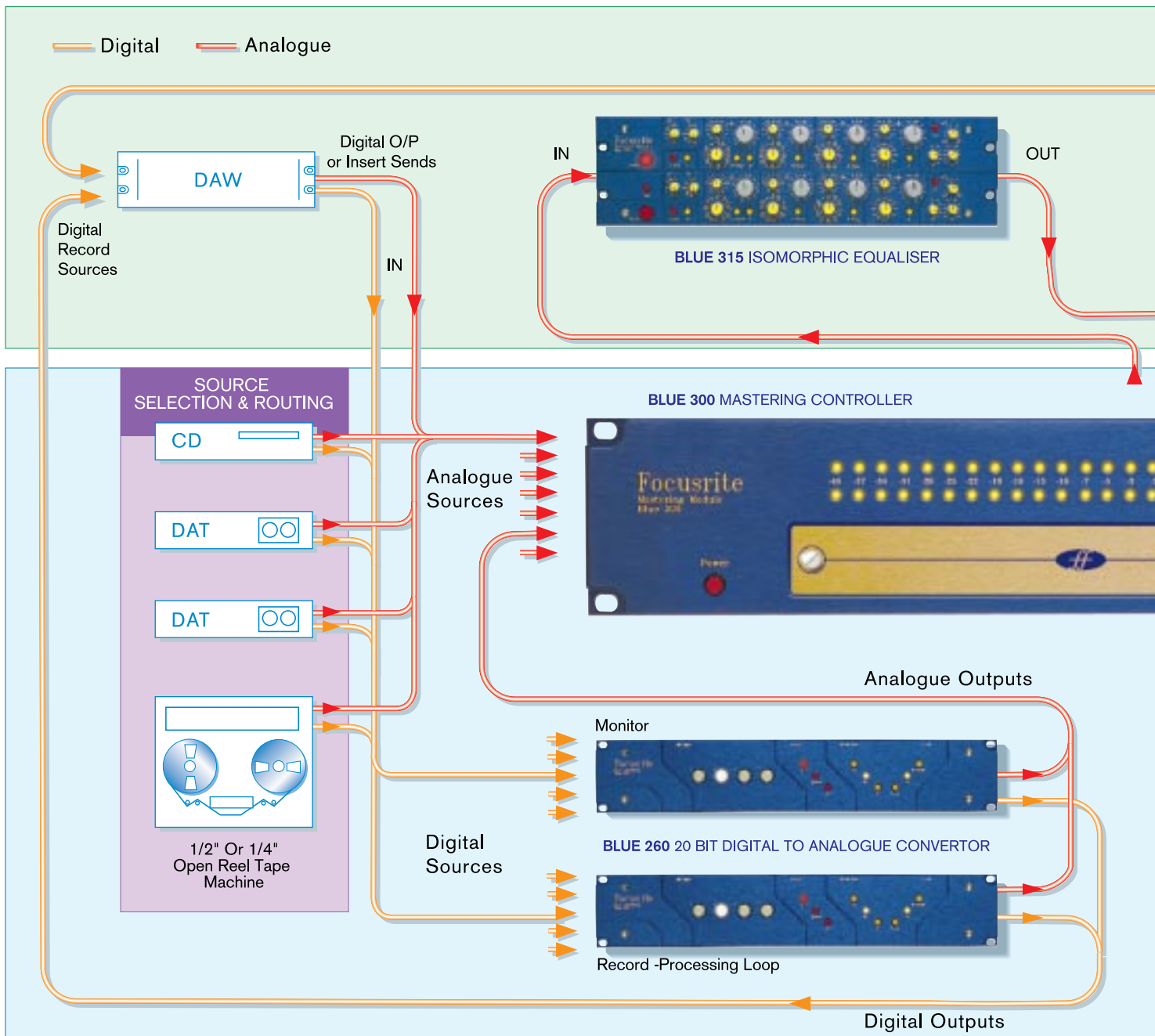
⑥ **48k switch:** Selects 48kHz sample rate used mainly for professional record and replay.

Quantisation section

⑦ **20 switch:** Switches to 20 bit conversion with single bit dither.

⑧ **16 switch:** Switches to 16 bit conversion with 4 bit dither.





This typical system schematic has been created to illustrate the creative possibilities and design concepts of the Focusrite Mastering Solution.

The schematic is broken down into four areas:

- SOURCE SELECTION AND ROUTING**
- RECORD PATH**
- MONITOR PATH**
- DESKTOP**

In the SOURCE SELECTION AND ROUTING section, digital or analogue stereo record sources can be accessed using the Blue 260 D/A Converter (labelled RECORD PROCESSING LOOP) for the digital sources and for the analogue

sources the Blue 300 Mastering Controller.

Using the Blue 300, the stereo record sources can then be routed to the RECORD PATH using Inserts 1 & 2 to pass through the Blue 315 Isomorphic Equaliser and Blue 330 Stereo Compressor Limiter.

The output of the Blue 300's RECORD PATH can be fed to the BLUE 245 A/D Converter to maintain extremely high signal integrity with conversion of the stereo analogue signal into the digital domain.

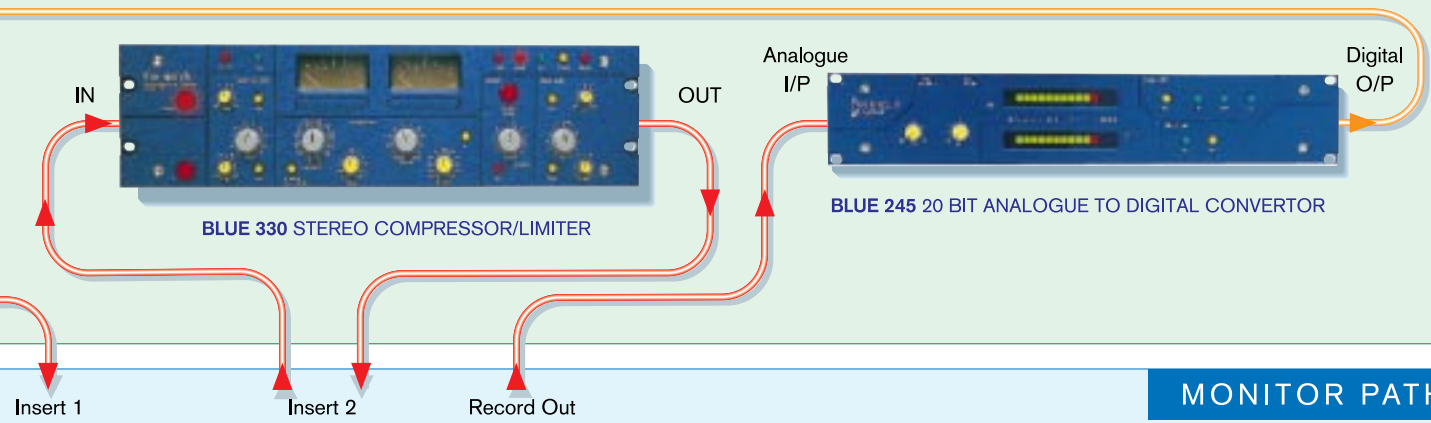
The digital outputs of the BLUE 245 can

then be fed to the last item in the RECORD PATH - the Digital Audio Workstation.

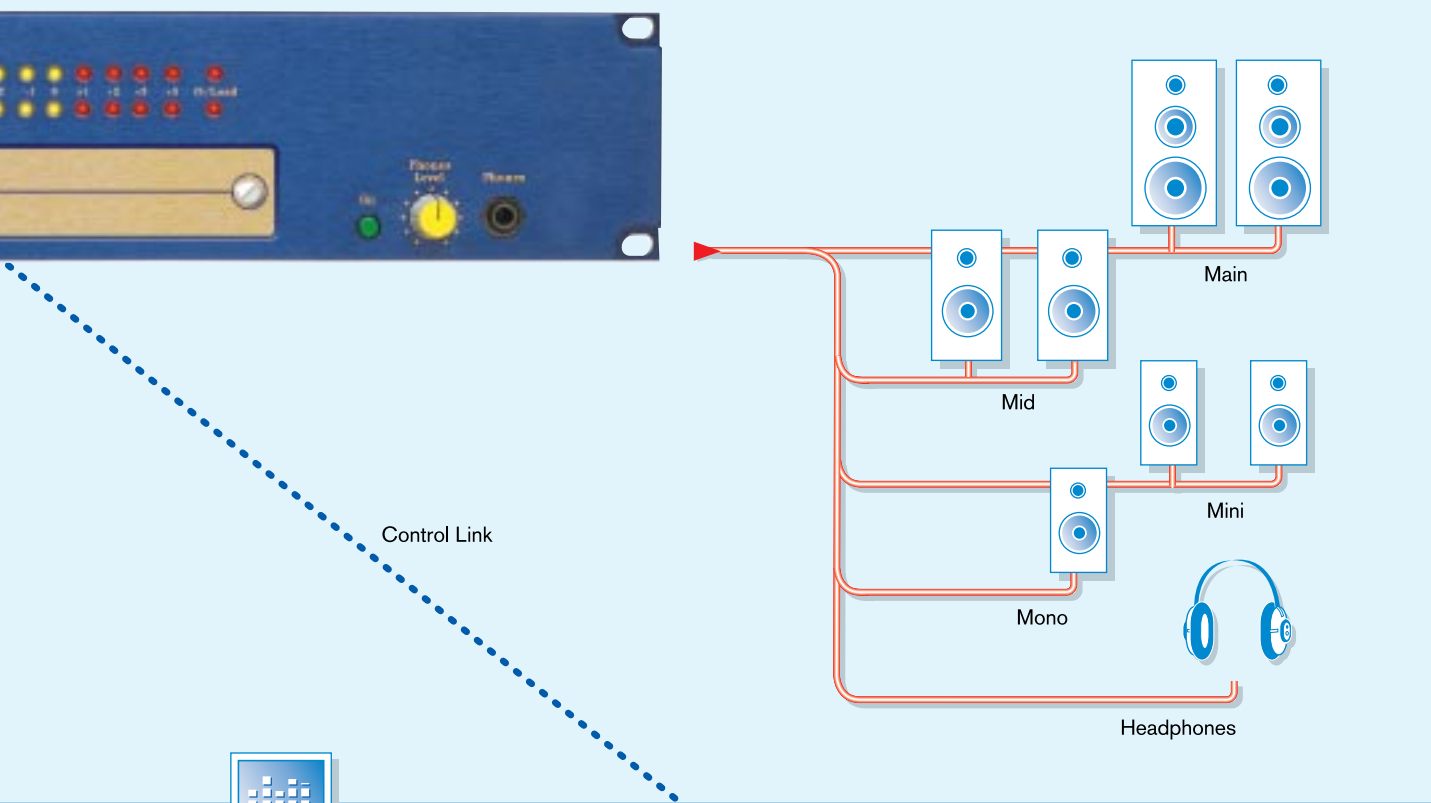
The digital outputs of the workstation return to SOURCE SELECTION AND MONITORING and, using a Blue 260 D/A Converter (labelled MONITOR) and the Blue 300 Mastering Controller, routed to the chosen MONITOR PATH.

Finally, control of the Digital Audio Workstation and the Blue 300 Mastering Controller can be made on the DESKTOP using the keyboard and VDU for the Workstation and the Blue 300's unique oval remote panel.

RECORD PATH



MONITOR PATH



DESKTOP



Blue 300

Mastering Controller

Complete routing and monitoring control



The Focusrite BLUE 300 Mastering Controller has been developed in response to a growing requirement for high quality routing and monitoring control in the mastering facility.

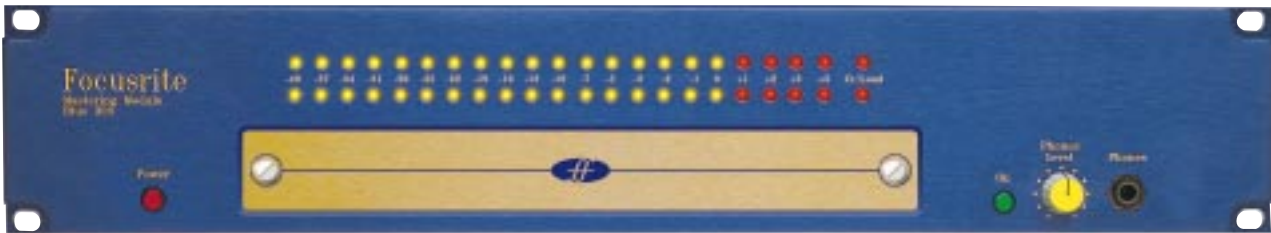
The BLUE 300 provides a comprehensive package which includes analogue and digital source selection, precision monitor control with speaker and headphone selection, record path routing with inserts and high quality stereo VU metering.

Its unusual design approach uses an oval shaped remote panel connected to a 2U master module. This gives the BLUE 300 physical benefits of a free-standing control surface with the sonic benefits of an audio path optimised for wide bandwidth, low noise, low distortion and crosstalk.

The BLUE 300 has eight stereo analogue inputs which can be selected onto two independent stereo signal paths - the Record Path and the Monitor Path.

In addition to the analogue inputs, 6 x digital inputs can be added to the BLUE 300 using the Focusrite BLUE 260 Digital to Analogue convertor.

The Remote panel is divided into four sections Source Selection, Meter, Monitor and Master.



SOURCE SELECTION

The Source Selection section on the left hand side houses the controls for the input selection.

There is also a fader level control for each of the 8 inputs which, at the anti-clockwise end of the fader travel, is calibrated to a 0dB setting.

The faders can be used in conjunction with the Sum switch in the record path to combine two signals together - for example combining an effect such as reverberation with its original stereo signal.

Each fader uses a stepped resistor network which provides a sonically transparent and smooth fade between 0db to -40dB.

There is also a similar trim control fader for the Record Path output; this provides +/- 10dB of gain or attenuation.

Input 1 of the BLUE 300 is designated as the Digital Source Input; which, using the the 6 x Digital source selection buttons, can control the input selection of a Blue 260 D/A Convertor. (4xAES, Optical and SPDIF).

Insert 1 and 2 In switches allow other devices to be inserted into the record path. These inserts can

be used for inserting analogue processing such as Focusrite's BLUE 315 Isomorphic Equaliser or BLUE 330 Stereo Compressor.

MONITOR

The Monitor section controls the monitor output format, for checking the compatibility of stereo signals.

MASTER

The Master section houses the Main Monitor controls which include Mute, Dim, Speaker Select and a large monitor level control. An LED display is included for accurate and repeatable monitoring levels which can be recalled between sessions.

Blue 300

Control Functions

MASTERING CONTROLLER

Source Selection

Record Select	Selects each input exclusively onto the Record Path (see Sum).
Monitor Select	Selects each input exclusively onto the Monitor Path. Switch 9 (Rec) selects the output of the Record path onto the Monitor path.
Digital Select	Selects one of 6 inputs from a BLUE 260 D/A Converter (when connected). (4 x AES, Optical and SPDIF) Selects Input 1 exclusively onto the Monitor Path.
Rec-Mon Link	Copies the monitor path selection onto the Record Path selection.
Sum	Changes source selection of the Record selector from exclusive to additive. Note that digital sources on the BLUE 260 are always exclusive.

Lock

Locks the controls for the Record Path. Specifically Record switches 1-8, Insert switches, Faders 1-8, Trim, Sum and Record Mon Link. Also disables Rec-Mon Link switch. Instant selection; hold for 1 second for release.

Insert 1

Switches Insert 1 into the Record Path.

Insert 2

Switches Insert 2 into the Record Path. Insert 2 is always post insert1.

Monitor

CUT L

Cuts the signal to the Left Monitor Output.

CUT R

Cuts the signal to the Right Monitor Output.

L+R

Adds Left and Right Monitor Signals together and feeds this L + R sum to both Left and Right Monitor Outputs or optional Mono Monitor.

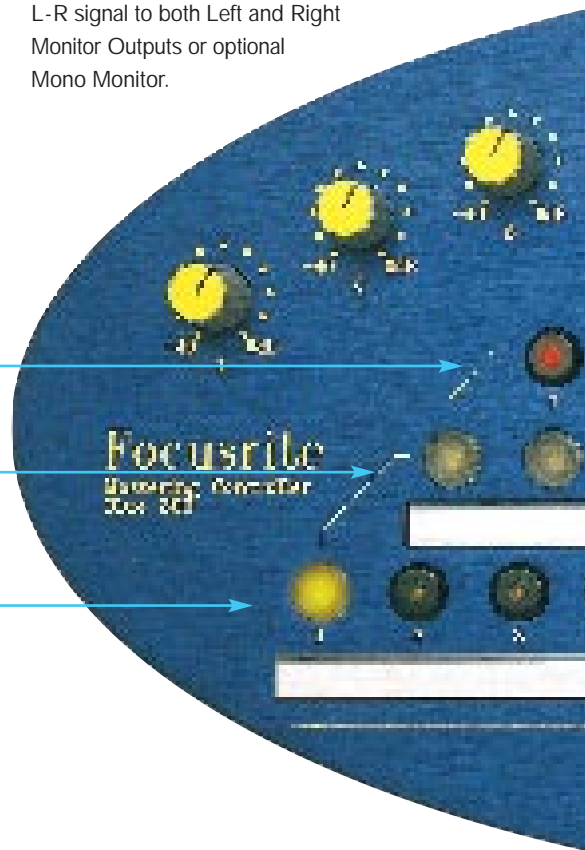
L-R

Subtracts the Left and Right Monitor Signals from each other and feeds this L-R signal to both Left and Right Monitor Outputs or optional Mono Monitor.

Record Select

Digital Select

Monitor Select

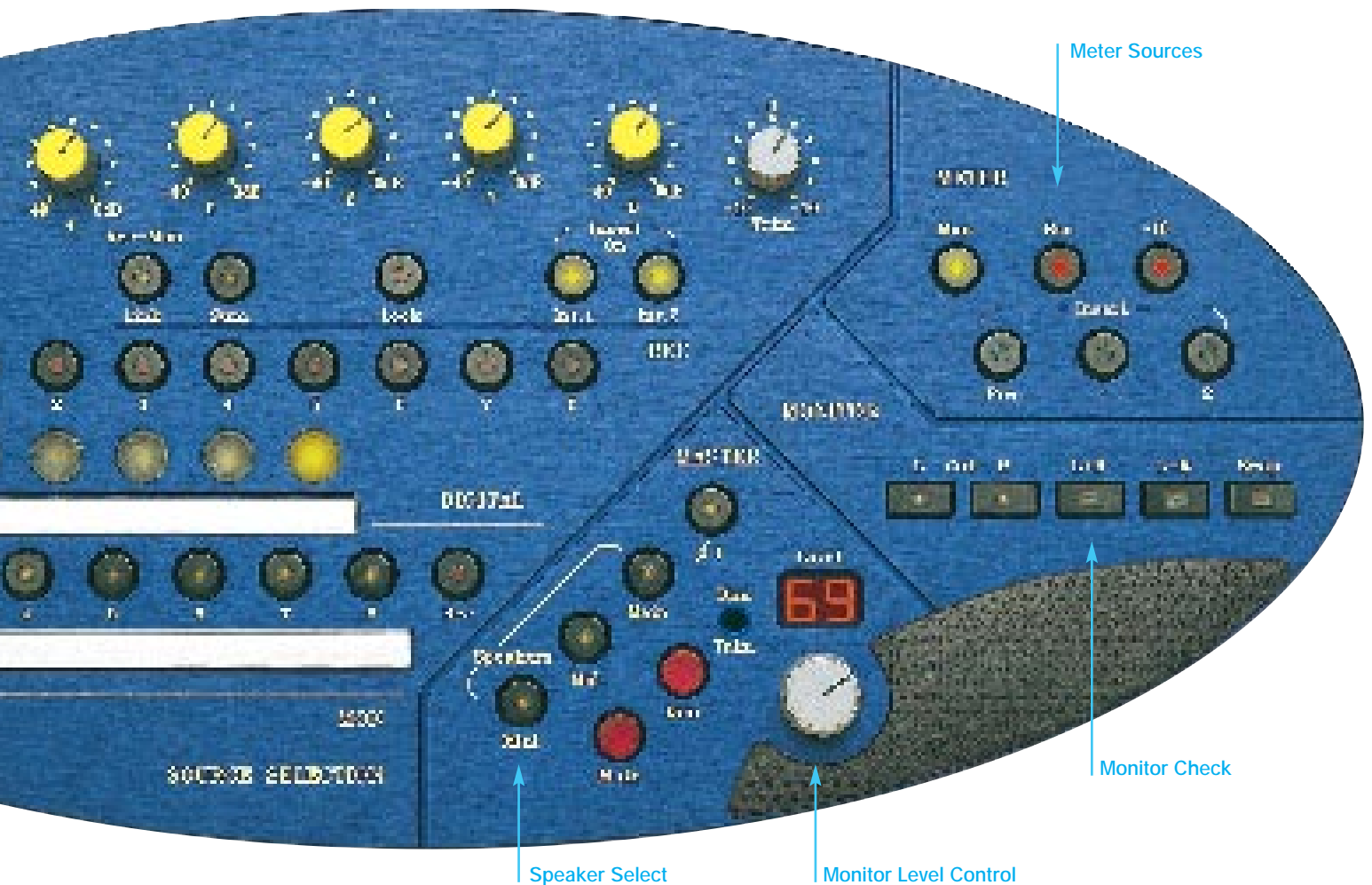


Swap	Swaps the Left signal to the Right monitor output and the Right signal to the Left output.
Master	
Ø	Reverses the Phase (-180°) of the Left Channel.
Main	Selects the Main Monitor LS output.
Mid	Selects the Mid Monitor LS output.
Mini	Selects the Mini Monitor LS output.
Dim	"Dims" the monitor output by a user selected level.
Mute	Mutes the selected monitor LS output.
Monitor Level Control	Attenuates the monitor output in 1dB steps from 0dB to -90dB; attenuation is shown in the display above the control. This allows duplication of levels between sessions and Monitor LS.

Meters

These switches control the inputs to the Left and Right VU meter located on the Master module. In addition this meter selection is also fed to balanced Left and Right Meter outputs on the rear of the Master module.

Pre	Switches Record Path Pre-inserts to the meter.
Insert 1	Switches the Insert 1 Return to the Meter
Insert 2	Switches the Insert 2 Return to the Meter
Record	Switches the Record Path output to the Meter
Monitor	Switches the Monitor Path output to the Meter
-10	Attenuates Meter Level by 10dB





MASTER MODULE

From Left to Right, the master module has:

Power Indicator

Stereo V.U. Meter Range from -40 to +5dB

Headphones On switch, Level control & Jack socket.

Removable Trim Panel;

Input Trim Pots Each input has an individual Left and Right trim which has +/-6dBs gain with level switching for +4dB (professional) or -10dB (consumer) inputs.

User Option There are a number of user option logic selections available on DIP switches located behind the front panel.

There are a number of additional features on the Blue 300 Master Module:

Master Fader Inserts An unbalanced insert point located post Insert 2 but before the Record Path Output. This can be wired to an external audio Record Path Fader. This is switched in or out on the front panel.

Connections

Most audio connections are made via 56 way EDAC connectors on the rear panel of the unit apart from Input 1B, the Mono Speaker Output and the Additional Record Outputs (as follows).

Additional Record Outputs

A parallel set of Record Outputs Left and Right on a pair of XLRs.

Input 1B

Provided on a pair of XLRs, Left and Right. These can be internally linked to become the Inputs to the Monitor path from a second BLUE 260 if required.

260 Control 1 & 2

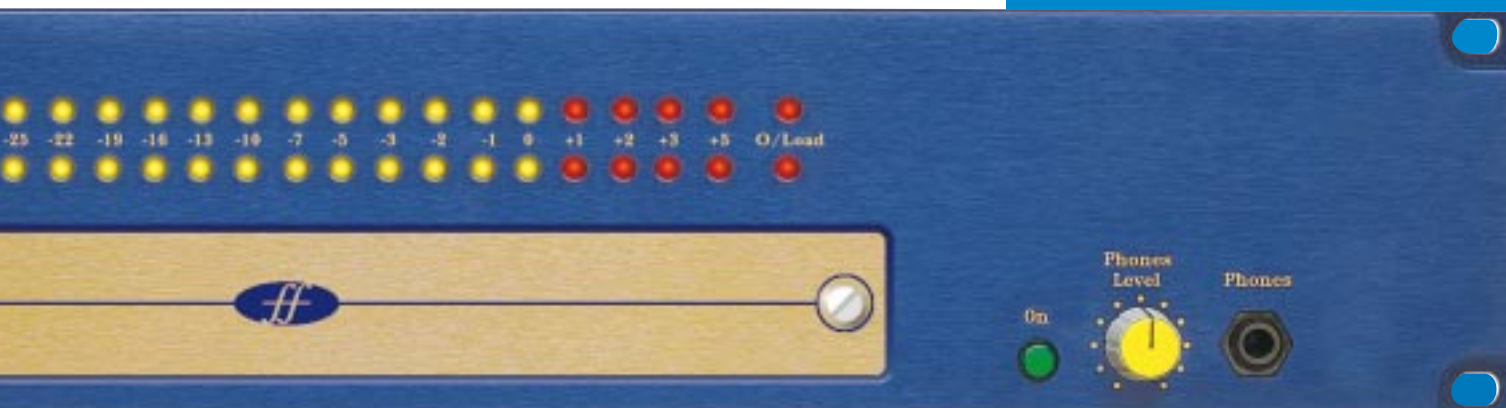
These connectors go to one or two BLUE 260s to allow control of its input selection from the remote panel. If used with two BLUE 260s these can be configured as Record and Monitor units.

GPI Port

This connector can be used in conjunction with a talkback or communications system. There are

Blue 300

Control Functions



three opto-isolated inputs which trigger a LS Mute, LS Dim and Mono speaker interrupt. There is a single balanced audio input which is fed to the Mono speaker when the interrupt is triggered. There are also Relay closures which are triggered by Lock and Mute switches.

Headphones

This connector allows external control of the input select for the headphone circuit.



BLUE 315 Isomorphic Mastering Equaliser

Input sensitivity: -18.5dBu to +13.5dBu
Input impedance: 10k Ω
Frequency response: <10Hz to 65kHz (EQ in, set flat)
 (-0.5dB points passively limited) <10Hz to 200kHz (-3dB points passively limited)
Noise: Better than -89dB below +4dBu output level
Distortion: 0.001% THD+N @10dBu, 1kHz
 0.003% THD+N @10dBu, 10kHz
Output: +26dBm with 600 Ω load balanced and floating
CMRR: -75dB @ 50Hz



BLUE 330 Mastering Compressor Limiter

Input sensitivity: +11dBu to -11dBu
Input impedance: 10k Ω
Frequency response: <10Hz to 80kHz
 (-0.5dB points passively limited)
 <10Hz to 200kHz(-3dB points passively limited)
 <10Hz to 35kHz Limiter In
 (-3dB points actively limited)
Noise: Better than -82dB below +4dBu output level
Distortion: 0.005% THD+N @10dBu, 1kHz
 0.007% THD+N @10dBu, 10kHz
 (Note: distortion predominately 2nd harmonic)
Output: +26dBm with 600 Ω load balanced and floating
CMRR: -75dB @ 50Hz



BLUE 260 24 Bit D-A Convertor

Dynamic Range: 105dB
Noise: -103dB -110dB (Muted)
Distortion: <0.0025% @ 1kHz
Sample frequencies: 28kHz to 54kHz
Output: +22dB 600 Ω load balanced and floating
Output Sensitivity: -2dBu to +22dBu

AES Section

Input impedance: 110 Ω
Input level: 5Vp-p (110 Ω load)

AES Output:

Output impedance: 110 Ω
Output level: 5Vp-p (110 Ω load)
DC offset: <50mV
Jitter: <1.6nS @ 48kHz

SPDIF Section

Input impedance: 75 Ω
Input level sensitivity: 1Vp-p

Toslink Section

Input level sensitivity: 200mV p-p



Blue 245 20 Bit A-D Convertor

Input sensitivity: -14dBu to +4dBu
Input Impedance: >5k Ω
Noise: Better than -85dB below +4dBu output level.
Distortion: 0.003% (20Hz to 20kHz)
Fixed Sample Frequencies: 32kHz, 44.1kHz, 48kHz
Variable Sample Frequencies: Continuously variable between 28kHz and 54kHz, locked to external word clock signal.
Dither 16/20bit: Triangular Probability Density Function, high pass filtered, with inversion between channels.

AES Output

Output Impedance: 110 Ω
Output level: 5Vp-p (110 Ω load)
DC Offset : <50mV
Jitter: <1.6nS @ 48kHz

Toslink Output

Output Level Sensitivity: 200mV p-p

External Synchronisation

AES, Wordclock
Input Impedance: 110 Ω (AES), 75 Ω (Wordclock)
Input Sensitivity: 5Vp-p (AES), 5Vp-p (Wordclock)



Blue 300 Mastering Controller

Input sensitivity: +10dBu to -16dBu
Input impedance: 10k Ω
Frequency Response: <10Hz to 80kHz (-0.5dB points passively limited)
 <10Hz to 200kHz (-3dB points passively limited)
Noise: <-90dB below +4dBu output level
Distortion: 0.001% THD+N@10dBu, 1kHz
 0.003% THD+N@10dBu, 10kHz
Output: +26dBm with 600 Ω load, balanced and floating
CMRR: -75dB @ 50Hz



the art of mastering



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