Range of Audio Interfaces

Analogue & Digital Audio Interface Equipment

Designed and manufactured to the highest specifications, Redbox comprises of a range of analogue and digital audio interfaces for use in a multitude of professional audio applications, including installations at radio stations, TV studios, home studios, video suites, production houses and recording studios.

Started in 1999, the Redbox range has expanded, by customer demand, to include over 20 high quality, useful and reliable units. All of the ideas for new products have come from you, the customers, so if you have a requirement for a new interface, or modifications to an existing one, then let us know by sending an email to sales@sonifex.co.uk.

Manufactured to the highest standards in our UK offices, utilization of the finest components and critical quality control techniques ensure that your Redboxes will work every time for years to come. Each Redbox is tested twice by skilled audio engineers, before being carefully assembled and packed. The Redbox range of products are "fit and forget" because you can set them up, fit them in your installation and then forget about them - they won't trouble you.

Features of the Redbox range :

- All are equipped with IEC mains lead and instruction manual.
- In-house design and manufacture ensures high quality control standards.
- They are manufactured as either 115V 60Hz or 230V 50Hz and all have a front panel LED power indicator.
- Manufactured within ISO9000 standards and guaranteed CE compliant.
- Housed in eye catching red anodised aluminium cases.

August 2002
Brochure Stock Code: 30-210 Version: 1.0 Artwork No.: AW10126A

Ordering

All the Redboxes are screw mountable as standard and are either rack-mounted or have the option to be rack-mounted. The RB-RK1 rack mount kit can be attached to the front of the smaller Redbox products so that they can be rack mounted into a standard 19 inch rack frame in 1U of space. The RB-RK1 can be used with the following products:-

RB-UL1	Unbalanced to balanced single converter
RB-UL2	Dual unbalanced to balanced converter
RB-BL2	Unbalanced to balanced bi-directional converter
RB-MA1	Single microphone amplifier
RB-MA2	Dual microphone amplifier
RB-SM1	Single stereo to mono converter
RB-SM2	Dual stereo to mono converter
RB-DDA6A	AES/EBU digital distribution amplifier
RB-DDA6S	S/PDIF digital distribution amplifier
RB-SC1	Sample rate converter
RB-SL2	Twin mono, or stereo, limiter

Wherever you see this symbol an RB-RK1 rackmount kit can be used.

When ordering a Redbox from Sonifex it is helpful if you can specify your required operating voltage. After the product code add:-

UK for 230V, UK IEC lead 

EC for 230V, EEC IEC lead 

US for 115V, US IEC lead 

AU for 230V, Australasian lead 

e.g: RB-BL2 UK

For more information go to the Sonifex website at www.sonifex.co.uk or for technical enquires email technical.support@sonifex.co.uk

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RB-ADDA Combined A/D and D/A Converter

The RB-ADDA A/D and D/A converter is a 1U rack-mount which produces an AES/EBU or S/PDIF level digital audio output from a balanced XLR or unbalanced phono stereo audio input. It also produces a stereo balanced XLR or unbalanced phono output from an incoming AES/EBU or S/PDIF digital input signal.

The unit operates in four modes:

Master Mode - In this mode the unit receives an analogue audio signal, which is digitised and formatted for digital serial transmission (IEC958). The necessary clock signals are generated internally from an on board master clock at a selectable rate (32kHz, 44.1kHz, 48kHz, 88.2kHz or 96kHz).

Slave Mode - In this mode the unit automatically detects the presence of a digital audio sync signal, if present at the digital input, and synchronises the digital output to it. If no sync is present, no output will be generated.

Auto Mode - Here the unit synchronises to the digital audio sync signal if present at the digital input and uses the internal master clock only if no sync input signal is detected. In this case, the internal master clock is used at the selected sample rate.

Auto Lock Mode - This operates like the auto mode except that if no sync input signal is detected, it will use the internal master clock to sync to the sample rate which was last clocked to.

When operating in sync modes, the front panel power LED flashes whenever the unit is not synchronised to the incoming digital signal.

The analogue inputs have left and right level controls using pre-set potentiometers and DIP switches allowing a signal range from +9dBu to +27dBu. The RCA phono inputs have a further 10dbU gain incorporated to give a total gain range of -1dBu to +17dBu for full-scale digits. The analogue outputs have an output level control, allowing full-scale settings selectable from +12dBu, +18dBu or +24dBu. There are factory-set internal level controls for the analogue outputs allowing gain adjustment of ±1dB.

There are buttons to select either the AES/EBU or S/PDIF input or output for the D/A and A/D sections respectively.

The output bit depth can be selected from 16, 20 or 24 bits. Inputs of a different bit depth to the output are dithered using a psychoacoustic noise filter.

For the digital output, there is a switch available to define the content of the channel status bits embedded within the digital audio stream. The channel status bits will be forced to Professional Mode for sample rates above 48kHz as they are not supported by the Consumer Mode. For sample rates of 32kHz, 44.1kHz and 48kHz, the status bits can be forced to either Professional or Consumer Mode.

Additionally, if de-emphasis is selected, the RB-ADDA will decode 50/15µs emphasis when indicated by certain channel status bits in the

incoming digital audio data.

The RB-ADDA has a calibration routine for optimum performance, which allows the noise floor and dynamic range to improve by 1-2dB.

The calibration cycle operates by calibrating the gain and the zero reference of the A/D converter.

Analogue to Digital Conversion

A/D Audio Specification

Maximum Input Level:	+27dBu balanced inputs, +17dBu unbalanced inputs
Input Impedance:	>10kΩ unbalanced, >20kΩ bridging balanced
Dynamic Range:	>110dB
Gain Range:	Adjustable input gain of ±3dB on 12dBu, 18dBu or 24dBu, ref FSD
Distortion and Noise:	>96dB THD + N at 1kHz

A/D Connections

Analogue Inputs:	2 x XLR 3 pin (balanced) 2 x RCA phono (unbalanced)
Digital Outputs:	1 x AES/EBU XLR 3 pin male 1 x S/PDIF RCA phono
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 10W max

Operational Controls

Analogue Input Select:	XLR or phono, via push-switch
Digital Output Select:	AES/EBU or S/PDIF, via push-switch
Digital Input Select:	AES/EBU or S/PDIF, via push-switch
De-emphasis On/Off:	DIP switch
Input Level Adjust:	DIP switch & preset pots

Physical Specification

Weight:	Nett: 1.6kg Gross: 2.2kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-ADDA:	Combined A/D and D/A converter

Digital to Analogue Conversion

24 BIT 96 kS/s

D/A Audio Specification

Maximum Output Level:	+24dBu balanced output, +14dBu unbalanced output
Output Impedance:	<50Ω balanced, <75Ω unbalanced
Dynamic Range:	>100dB
Gain Range:	Selectable 12dBu, 18dBu or 24dBu output level, ref FSD

D/A Connections

Digital Inputs:	1 x AES/EBU XLR 3 pin female 1 x S/PDIF RCA phono
Analogue Outputs:	2 x XLR 3 pin male (balanced) 2 x RCA phono (unbalanced)

Bit Depth:	16, 20 or 24 bits via DIP switch
Modes & Frequencies:	16 way rotary DIP switch
Channel Status Bits:	Forced to consumer mode or professional mode, via DIP switch
Output Level Adjust:	DIP switch

Ideal for the transfer of digital audio between different digital equipment, the RB-SC1 sample rate converter standardises the sample rate of a digital audio signal to one of 32kHz, 44.1kHz, 48kHz, 64kHz, 88.2kHz or 96kHz, or to a synchronising input.

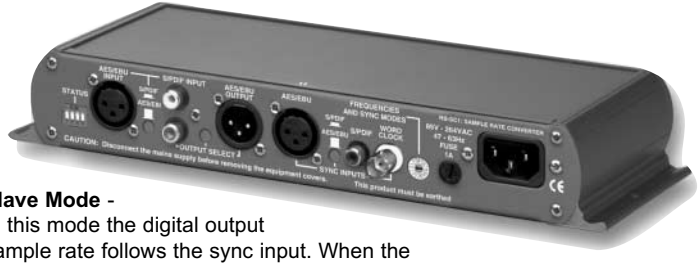
Both audio inputs and outputs have push button switches to select either AES/EBU or S/PDIF. The synchronising input can be selected from one of AES/EBU, S/PDIF or TTL Wordclock.

There are four modes of operation of the RB-SC1 dependant on how you want to synchronise the output to the input :

Master Mode - In this mode the digital output sample rate is simply set by, and locked to, the internal on-board clock generator. No sync signal is used or required.

Auto Sync Mode - In this mode the digital output sample rate follows the sync input. When the sync signal is not present the output sample rate will be set by, and locked to, the internal on-board clock generator at a frequency determined by the switch position.

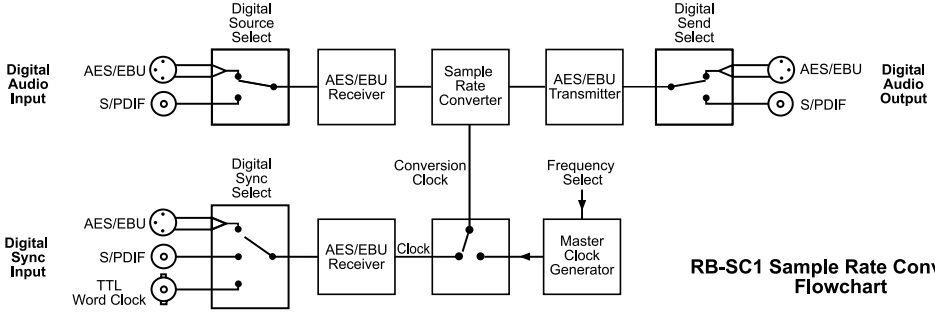
Auto Lock Mode - In this mode no output will be generated until lock is achieved with a sync signal. The digital output sample rate now follows the sync input. If the sync signal is removed then the output sample rate will be set by, and locked to, the internal on-board clock generator at the closest frequency available to the previous sync input.



Slave Mode -
In this mode the digital output sample rate follows the sync input. When the sync signal is not present the digital output is turned off.

There are also switches available to define the content of the channel status bits embedded within the digital audio stream. The channel status bits will be forced to Professional Mode for sample rates above 48kHz as they are not supported by the Consumer Mode. For sample rates of 32kHz, 44.1kHz and 48kHz, the status bits can be either set to follow the input signal type, or can be forced to either Professional or Consumer Mode.

As well as indicating that power is present on the unit, the LED on the front panel has a secondary role to indicate the status of the digital inputs. Fast flashing between red and amber indicates a loss of a digital input signal and slow flashing between red and amber indicates the absence of a synchronising input when not in Master Mode.



RB-SC1 Sample Rate Converter Flowchart

Audio Specification

Dynamic Range:	120dB
Distortion and Noise:	-114dB THD + N at 1kHz, ref 0dB FS
Input Impedance:	75Ω S/PDIF inputs
	110Ω AES/EBU input
	50Ω BNC TTL word clock input
Sample Frequency Range:	30kHz - 100kHz
Bit Depth:	Up to and including 24 bit

24 BIT 96 kS/s

Rear Panel Connections and Controls

Inputs:	2 x AES/EBU XLR 3 pin female (audio and sync)
	2 x S/PDIF RCA phono (audio and sync)
	1 x TTL BNC female (sync)
Outputs:	1 x AES/EBU XLR 3 pin male
	1 x S/PDIF RCA phono
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max
Input Select:	Push button switch between AES/EBU and S/PDIF
Output Select:	Push button switch between AES/EBU and S/PDIF
Sync Select:	Push button switch between AES/EBU and S/PDIF, with DIP switch selection between TTL and the other two inputs.
Operational Modes:	Master mode, auto sync mode, auto lock mode and slave mode, set via rotary switch
Status Bits:	Forced to consumer mode, professional mode, or set to follow input.

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.4kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-SC1:	Sample rate converter

RK1

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RB-DAC1 Digital To Analogue Converter

Using 24 bit, 96kHz capable devices, the RB-DAC1 D/A Converter is a 1U rack-mount which produces a stereo balanced XLR or unbalanced phono output from an incoming AES/EBU or S/PDIF digital input signal. There is also a headphone output with volume control for monitoring purposes.

The analogue outputs have an output level control, allowing full-scale settings selectable from +12dBu, +18dBu or +24dBu. The RCA phono outputs have a further 8.5dbU attenuation incorporated.

There is a button to select either the AES/EBU or S/PDIF input for the D/A converter, which is located on the rear panel. Additionally, if de-emphasis is selected, the RB-ADDA will decode 50/15µs emphasis when indicated by certain channel status bits in the incoming digital audio data.

When operating, the front panel power LED flashes whenever the unit is not synchronised to the incoming digital signal.

Audio Specification

Maximum Output Level:	+24dBu balanced, +14dBu unbalanced +12dBu headphone
Output Impedance:	<50Ω balanced, <75Ω unbalanced
Dynamic Range:	>100dB
Gain Range:	Selectable 12dBu, 18dBu or 24dBu output level, ref FSD
Headphone Output:	Drives 150mW into 32Ω to 600Ω proffesional headphones
Noise & Distortion:	<0.01% THD + N @1kHz
Sample Freq. Range:	30kHz - 100kHz
Headphones:	Drives 150 mW into 32Ω to 600Ω professional headphones
Max Output Level:	+12dBu

Operational Controls

Digital Input Select:	AES/EBU or S/PDIF, via push-switch
Gain Select :	DIP switch
De-emphasis On/Off:	DIP switch

Equipment Type

RB-DAC1:	Digital to analogue converter

Connections

Digital Inputs:	1 x AES/EBU XLR 3 pin female 1 x S/PDIF RCA phono
Analogue Outputs:	2 x XLR 3 pin male (balanced) 2 x RCA phono (unbalanced)
Headphone Output:	1 x 1/4" (6.35mm) A/B-gauge 3-pole stereo jack sockets
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 10W max

24 BIT 96 kS/s

Physical Specification

Weight:	Nett: 1.4kg Gross: 2.0kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

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RB-SP1 Digital Splitter & Combiner

The RB-SP1 Digital Splitter & Combiner is used to interface various double sampling pieces of equipment. Some older equipment uses 2 AES/EBU connectors for double sampling with each connector carrying an audio signal at a normal frame rate, whilst other equipment has a single connector using twice the frame rate. The RB-SP1 can interface between them, either combining the signals from 2 XLR's into 1, or splitting the signal from 1 XLR into 2.

The RB-SP1 can also be used for interfacing stereo and mono signals to digital mixing desks by splitting the left and right signals of a stereo XLR to two separate XLR's, and vice versa by combining them.

Additionally, a sample rate converter on the second digital input can be used to convert the sample rate of the secondary input to that of the primary input. The RB-SP1 can handle sample rates up to 96kHz and sample sizes of 16, 20 and 24 bit.

There are two types of operation : Split 96, and Stereo/Mono. These each have three different switch modes : Split, Bypass and Combine.

Both inputs and outputs can be selected as either AES/EBU or S/PDIF with the resultant digital level following the switch selection.

Technical Specification

Input Impedance:	110Ω ±20% balanced (AES/EBU)
Input Impedance:	75Ω ±5% unbalanced (S/PDIF)
Signal Level:	3V/10V peak to peak min/max (AES/EBU)
	0.5V ±20% peak to peak (S/PDIF)
Bit Depth:	Up to and including 24 bit
Distortion & Noise:	-114dB THD + N at 1kHz, ref 0dB FS
Output Impedance:	110Ω ±20% balanced (AES/EBU)
Output Impedance:	75Ω ±5% unbalanced (S/PDIF)
Sample Freq Range:	30-100kHz (i.e. including 32kHz, 44.1kHz, 48kHz, 64kHz, 88.2kHz and 96kHz)
Dynamic Range:	120dB

24 BIT 96 kS/s

Connections

Audio Inputs:	2 x AES/EBU XLR 3 pin female (balanced)
	2 x S/PDIF RCA phono female (unbalanced)
	(Input button selects between AES/EBU and S/PDIF)
Audio Outputs:	2 x AES/EBU XLR 3 pin male (balanced)
	2 x S/PDIF RCA phono female (unbalanced), (Output button selects between AES/EBU and S/PDIF)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 10W max

Physical Specification

Weight:	Nett: 1.6kg Gross: 2.2kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H)(1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment type

RB-SP1: Digital splitter & combiner

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RB-UL1 Single Stereo Unbalanced To Balanced Converter

The RB-UL1 is a single stereo unit for interfacing domestic or semi-professional unbalanced equipment, such as a CD player, to professional balanced line levels.

The two RCA unbalanced inputs have an impedance of 10kΩ and are routed to two balanced XLR-3 outputs with an output impedance of <50Ω.

The output gain can be individually adjusted for left and right channels by using pre-set potentiometers accessible through the rear panel.

Audio Specification

Maximum Input Level:	+28dBu
Input Impedance:	10kΩ
Output Impedance:	<50Ω
Maximum Output Level:	+28dBu
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output
Common Mode Rejection:	>66dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Balanced output : -15dBu to +15dBu, ref -15dBu into unbalanced RCA input

Connections

Inputs:	2 x RCA phono (Unbalanced)
Outputs:	2 x XLR 3 pin male (Balanced)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.45kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-UL1:	Single stereo unbalanced to balanced converter

RK1

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RB-UL2 Dual Stereo Unbalanced To Balanced Converter

The RB-UL2 is a dual stereo unit for interfacing domestic or semi-professional unbalanced equipment to professional balanced line levels.

All connections are on the rear panel. Four RCA unbalanced inputs have an impedance of 10kΩ and are routed to four balanced XLR-3 outputs with an output impedance of <50Ω.

The output gain can be individually adjusted for left and right channels by using pre-set potentiometers accessible through the rear panel. allowing you to feed both balanced and unbalanced equipment.

Audio Specification

Maximum Input Level:	+28dBu
Input Impedance:	10kΩ
Output Impedance:	<50Ω
Maximum Output Level:	+28dBu
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output
Common Mode Rejection:	>66dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Balanced output : -15dBu to +15dBu, ref -15dBu into unbalanced RCA input

Connections

Inputs:	4 x RCA phono (Unbalanced)
Outputs:	4 x XLR 3 pin male (Balanced)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.05kg Gross: 1.5kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-UL2:	Dual stereo unbalanced to balanced converter

RK1

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RB-UL4 Quad Stereo Unbalanced To Balanced Converter

The RB-UL4 is a 1U rack-mount quad stereo unit for interfacing domestic or semi-professional unbalanced equipment to professional balanced line levels.

All connections are on the rear panel. The eight RCA unbalanced inputs have an impedance of 10kΩ and are routed to eight balanced XLR-3 outputs with an output impedance of <50Ω.

The output gain can be individually adjusted for left and right channels by using pre-set potentiometers accessible through the rear panel.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Input Impedance:	10kΩ
Output Impedance:	<50Ω
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output
Common Mode Rejection:	>66dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Balanced output : -15dBu to +15dBu, ref -15dBu into unbalanced RCA input

Connections

Inputs:	8 x RCA phono (Unbalanced)
Outputs:	8 x XLR 3 pin male (Balanced)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max

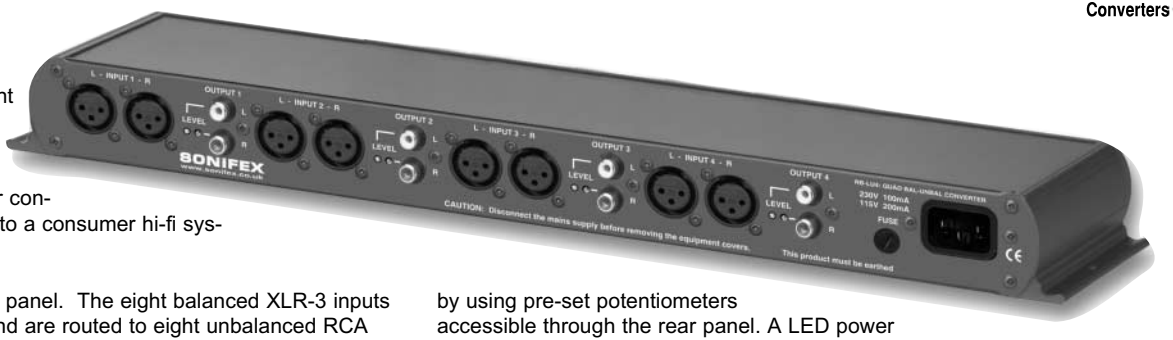
Physical Specification

Weight:	Nett: 1.3kg Gross: 1.9kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-UL4:	Quad stereo unbalanced to balanced converter

RB-LU4 Quad Stereo Balanced to Unbalanced Converter



The RB-LU4 is a 1U rack-mount quad stereo unit for interfacing professional balanced line levels to domestic or semi-pro unbalanced equipment, e.g. for connecting a pro satellite receiver to a consumer hi-fi system.

All connections are on the rear panel. The eight balanced XLR-3 inputs have an impedance of 20kΩ and are routed to eight unbalanced RCA outputs with an output impedance of <50Ω.

The output gain can be individually adjusted for left and right channels by using pre-set potentiometers accessible through the rear panel. A LED power indicator on the front panel displays the power supply connection.

Audio Specification

Maximum Input Level:	+28dBu
Input Impedance (XLR):	20kΩ balanced bridging
Output Impedance (RCA):	<50Ω
Maximum Output Level:	+22dBu
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output
Common Mode Rejection:	>66dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Unbalanced Output : -28dBu to +15dBu, ref -15dBu into balanced XLR input

Connections

Inputs:	8 x XLR 3 pin female (Bal)
Outputs:	8 x RCA phono (Unbal)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.3kg Gross: 1.9kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-LU4:	Quad stereo balanced to unbalanced converter

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RB-BL2 Single Stereo Bi-Directional Matching Converter

The RB-BL2 is a bi-directional stereo unit for interfacing domestic or semi-pro unbalanced equipment to professional balanced line levels, and vice-versa.

The two XLR-3 electronically balanced inputs have an impedance of 20kΩ bridging and are routed to two unbalanced RCA (phono) outputs with an output impedance of <50Ω.

The two RCA unbalanced inputs have an impedance of 20kΩ and are routed to two balanced XLR-3 outputs with an output impedance of <50Ω. All connections are on the rear panel.

The output gain can be adjusted for left and right channels by using preset potentiometers accessible through the rear panel.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Input Impedance (RCA):	10kΩ unbalanced
Input Impedance (XLR):	20kΩ balanced bridging
Output Impedance (RCA):	<50Ω
Output Impedance (XLR):	<50Ω
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output
Common Mode Rejection:	>66dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Unbalanced Output : -28dBu to +15dBu, ref -15dBu into balanced XLR input
	Balanced Output : -15dBu to +15dBu, ref -15dBu into unbalanced RCA input

Connections

Inputs:	2 x RCA phono (Unbal), 2 x XLR 3 pin female (Bal)
Outputs:	2 x XLR 3 pin male (Bal), 2 x RCA phono (Unbal)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.4kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-BL2:	Single stereo bi-directional matching converter

RK1

RB-BL4 Dual Stereo Bi-Directional Matching Amplifier

The RB-BL4 is a dual bi-directional stereo unit for interfacing domestic or semi-pro unbalanced equipment to professional balanced line levels, and vice versa.

The four XLR-3 electronically balanced inputs have an impedance of 20kΩ bridging and are routed to four unbalanced RCA (phono) outputs with an output impedance of <50Ω.

The four RCA unbalanced inputs have an impedance of 20kΩ and are routed to four balanced XLR-3 outputs with an output impedance of 50Ω. All connections are on the rear panel.

The output gain can be adjusted for left and right channels by using pre-set potentiometers accessible through the rear panel.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Input Impedance (RCA):	10kΩ unbalanced
Input Impedance (XLR):	20kΩ balanced bridging
Output Impedance (RCA):	<50Ω
Output Impedance (XLR):	<50Ω
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output
Common Mode Rejection:	>66dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Unbalanced Output : -28dBu to +15dBu, ref -15dBu into balanced XLR input
	Balanced Output : -15dBu to +15dBu, ref -15dBu into unbalanced RCA input

Connections

Inputs:	4 x RCA phono (Unbal), 4 x XLR 3 pin female (Bal)
Outputs:	4 x XLR 3 pin male (Bal), 4 x RCA phono (Unbal)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.3kg Gross: 1.9kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-BL4:	Dual stereo bi-directional matching converter

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RB-DA6 6 Way Stereo Distribution Amplifier

The RB-DA6 is a 1U rack-mount high performance 6 way stereo distribution amplifier for splitting a source into a number of different outputs.

The RB-DA6 has 1 stereo input and 6 stereo outputs. It can also be configured so that 1 mono input can be distributed to 12 outputs by use of a switch which is recessed on the front panel to prevent it being accidentally knocked.

The XLR-3 inputs and outputs are electronically balanced and can be wired unbalanced. Each output is individually buffered so that a short circuit on one output won't affect the others.

The left and right input gain controls (normalising) are pre-set potentiometers accessible through the front panel.

The output gain may be varied from -8dB to 18db which is useful for normalising consumer and professional signals to give outputs of -15dBu and 0dBu respectively.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Adjustable 8dB loss to 18dB gain (L & R adjust)
Common Mode Rejection:	>66dB typically
Input impedance:	20kΩ bridging
Output impedance:	<50Ω
Distortion:	0.01% THD @ 1kHz, ref +8dBu
Noise:	-100dB unity gain, ref +8dB output

Connections

Inputs:	2 x XLR 3 pin female (balanced, can be unbalanced)
Outputs:	12 x XLR 3 pin male (balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.3kg Gross: 1.9kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H)(1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment type

RB-DA6: 6 way stereo distribution amplifier

RB-DDA6A 6 Way AES/EBU Digital Distribution Amplifier

The RB-DDA6A digital distribution amplifier is used for distributing digital audio data in AES/EBU format, repeating both the audio data and the status information of the input whilst re-normalising to standard digital audio levels.

It has a single XLR-3 female AES/EBU audio input which is distributed to 6 XLR-3 male AES/EBU outputs.

Applications include distributing audio from a digital mixing desk to multiple digital recorders, or feeding multiple studios with an output from a DAT machine.

It can accept input sample rates in the range of 30kHz - 100kHz, and bit rates of 16, 20 and 24 bit. So, it can be used for standard CD signal distribution at 16 bit 44.1kHz, as well as for high quality 24 bit 96kHz recording.

Audio Specification

Input Impedance:	110Ω ±20% balanced
Output Impedance:	110Ω ±20% balanced
Sample Freq Range:	30-100kHz (i.e. including 32kHz, 44.1kHz, 48kHz, 64kHz, 88.2kHz & 96kHz)
Signal Level	3V/10V peak to peak min/max

Connections

Input:	1 x AES/EBU XLR 3 pin male (Balanced)
Outputs:	6 x AES/EBU XLR 3 pin male (Balanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Equipment Type

RB-DDA6A:	6 way AES/EBU digital distribution amplifier

Physical Specification

Weight:	Nett: 0.95kg Gross: 1.4kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

24 BIT 96 kS/s

RK1

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RB-DDA6S 6 Way S/PDIF Digital Distribution Amplifier

The RB-DDA6S digital distribution amplifier is similar to the RB-DDA6A except that it is used for distributing digital audio data in S/PDIF format.

It has a single S/PDIF audio input which is distributed to 6 S/PDIF audio outputs at the same level and condition as the input signal. It can accept input sample rates in the range of 30kHz - 100kHz, and bit rates of 16, 20 and 24 bit.

Uses include audio distribution at 16 bit 44.1kHz from a consumer CD player to multiple digital recorders, distribution of high quality 24 bit 96kHz signals from digital mixing desks to recorders and connection ofthe output of, say, a DVD player to multiple studios.

Audio Specification

Input Impedance:	75Ω ±5% unbalanced
Output Impedance:	75Ω ±5% unbalanced
Sample Freq. Range:	30-100kHz (i.e. including 32kHz, 44.1kHz, 48kHz, 64kHz, 88.2kHz & 96kHz)
Signal Level:	Balanced min 0.5V ±20% peak to peak

Connections

Input:	1 x S/PDIF RCA phono (unbalanced)
Outputs:	6 x S/PDIF RCA phono (unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Equipment Type

RB-DDA6S:	6 way S/PDIF digital distribution amplifier

Physical Specification

Weight:	Nett: 0.9kg Gross: 1.35kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

24 BIT 96 kS/s

RK1

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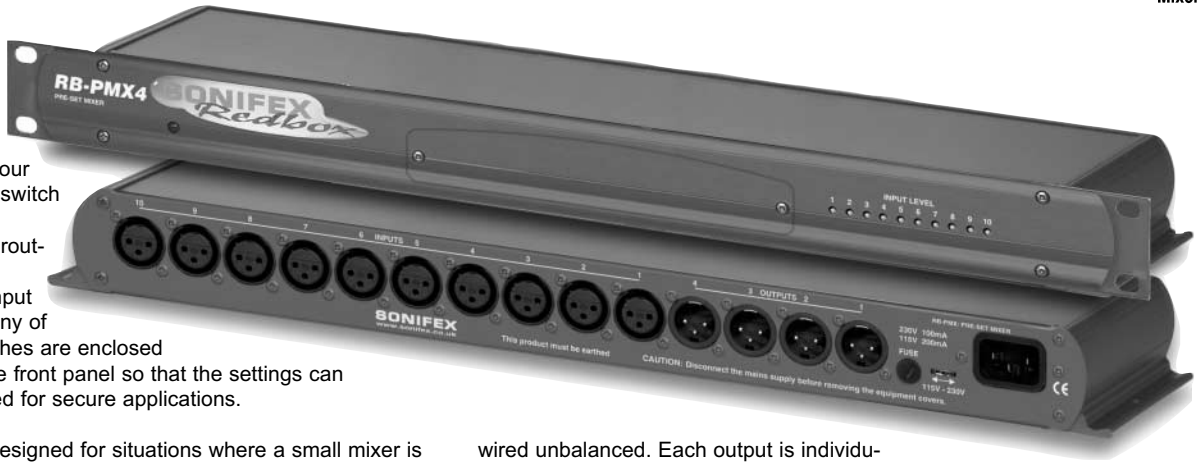
RB-PMX4 10 Input, 4 Output Analogue Preset Mixer



The RB-PMX4 is a high performance 10 mono input to 4 mono output preset mixer. Each of the four outputs has a 10 way DIP switch associated with it to select which of the 10 inputs are routed to it. So, by altering the DIP switches, any of the input sources can be mixed to any of the outputs. The DIP switches are enclosed by a screw-on cover on the front panel so that the settings can not be accidentally changed for secure applications.

The RB-PMX4 has been designed for situations where a small mixer is needed for installations where it will be configured and then only altered occasionally, or never altered. Uses for this product are numerous including a four bus mini-mixer, a 4 zone mixer for pubs and clubs and a quad stereo to mono converter to name a few.

The XLR-3 inputs and outputs are electronically balanced and can be wired unbalanced. Each output is individually buffered so that a short circuit on one won't affect the others. Each input has its own gain control which is a pre-set potentiometer accessible through the front panel. This provides gain adjustment of -8dB to 18db. This is useful for normalising consumer and professional signals to give outputs of -15dBu and 0dBu respectively.

Audio Specification

Input Impedance:	20kΩ bridging
Maximum Input Level:	+36dBu
Frequency Response:	20Hz to 20kHz +/- 0.1dBu (600Ω load,@ 1kHz)
Common Mode Rejection:	>60dBu typically
Noise:	-86dBu RMS 22Hz-22kHz unity gain ref +8dB
Output Impedance:	<50Ω
Maximum Output Level:	+28dBu
Gain Range:	Adjustable 8dBu loss to 18dBu gain.
Off-isolation/Crosstalk:	>90dBu @ 1kHz
Distortion:	<0.01% @ 1kHz, 0dBu to +26dBu

Connections

Inputs:	10 x XLR 3 pin female (Balanced, can be unbalanced)
Outputs:	4 x XLR 3 pin male (Balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 6W maximum

Equipment Type

RB-PMX4:	10 input, 4 output analogue preset mixer

Physical Specification

Weight:	Nett: 1.5kg Gross: 2.2kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H)(1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

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RB-HD1 Stereo Headphone Amplifier

The RB-HD1 is a 1U rack-mount stereo headphone amplifier for driving up to two pairs of professional stereo headphones from a single stereo or mono input. One headphone socket is on the front panel with one on the rear.

The main stereo input is from electronically balanced XLR-3 connectors on the rear panel, which can be wired un-balanced. The output volume for the headphones can be controlled either by a pot situated on the front panel or a VCA signal supplied externally via the remote connector.

A mono input can be mixed into the main headphone feed, for example, for mixing in talkback to the headphones. This has an input level control via a recessed adjustable potentiometer. The mono mix input can also be controlled remotely.

A stereo/mono switch is recessed on the rear panel to prevent accidental knocking. With mono selected, audio is sent to both left and right ear pieces. A LED power indicator on the front panel displays the power supply connection.

Audio Specification

Input Impedance:	20kΩ balanced bridging (main)
Output Level:	Drives 150mW into 32Ω to 600Ω headphones
Mono Mix Input Gain Range:	22dBu
Max Input Level:	+28dBu
Volume Control:	-80dB to +11dB gain

Connections

Main Stereo Inputs:	2 x XLR 3 pin female (balanced, can be unbalanced)
Mono Mix Input:	1 x XLR 3 pin female (balanced, can be unbalanced)
Outputs:	2 x ¼" (6.35mm) A/B-gauge 3-pole stereo jack sockets
Remote Control:	9-pin D-type socket
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 9W max

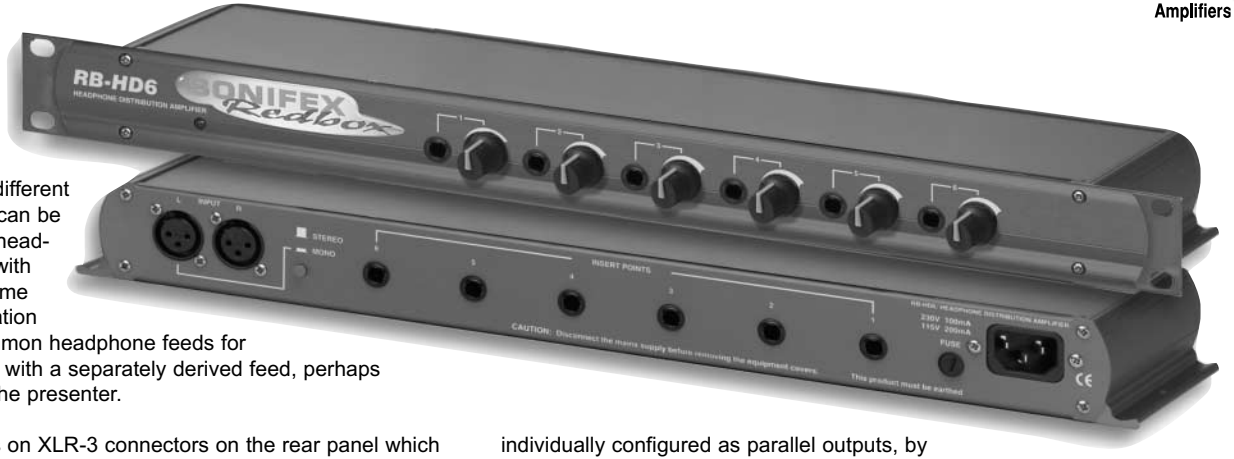
Physical Specification

Weight:	Nett: 1.35kg Gross: 2.0kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)(1U)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-HD1:	Stereo headphone amplifier

RB-HD6 6 Way Headphone Distribution Amplifier



The RB-HD6 headphone distribution amplifier is a 1U rack-mount which distributes stereo audio to up to 6 different sets of headphones, or can be used as 6 independent headphone amplifiers, each with their own input and volume control. A typical application might be to provide common headphone feeds for guests in a radio studio, with a separately derived feed, perhaps including talk-back, for the presenter.

The main stereo input is on XLR-3 connectors on the rear panel which are electronically balanced and can be wired unbalanced. A stereo/mono input select switch on the rear panel sums left and right outputs to provide a mono feed to the headphones. The unit can receive an override audio signal via a jack socket for each output channel. Plugging in the jack plug will divert the headphone output from the master audio signal to the audio present on the jack plug. The override audio inputs can also be individually configured as parallel outputs, by setting internal jumpers.

The master volume control adjusts overall level of the 6 outputs and does not affect the level of channels using the override inputs. The master volume can be disabled by internal jumpers.

Audio Specification

Input Impedance:	20kΩ balanced bridging, 10kΩ unbal override
Output Level:	Drives 150mW into 32Ω to 600Ω headphones
Individual Volume Control:	-60dB to +18dB gain
Max Input Level:	+28dBu
Override Inputs:	+3dBU for full volume at +18dB gain
Master Vol Control:	±10dB gain

Connections

Main Stereo Inputs:	2 x XLR 3 pin female (balanced, can be unbalanced)
Override Inputs/Outputs:	6 x ¼" (6.35mm) A-gauge 3-pole stereo jack sockets (unbal)
Outputs:	6 x ¼" (6.35mm) A-gauge 3-pole stereo jack sockets
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 9W max

Physical Specification

Weight:	Nett: 1.35kg Gross: 2.0kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H)(1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-HD6: 6 way headphone distribution amplifier

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RB-DHD6 Digital 6 Way Headphone Distribution Amplifier

The RB-DHD6 digital 6 way headphone distribution amplifier is a 1U rack-mount which receives a digital input signal, as either AES/EBU or S/PDIF and converts it to 6 individually buffered, jack-plug, headphone outputs, each with their own volume control.

Useful for connection to digital mixing desks, digital routers and matrices, the RB-DHD6 connects directly to an AES/EBU or S/PDIF output to provide the highest quality audio directly to the headphones.

The input connectors consist of a single balanced XLR-3 for the AES/EBU input and a single unbalanced phono connector for the S/PDIF input.

A button located on the rear panel is used to select either the AES/EBU, or S/PDIF, input and de-emphasis on the output can be controlled via dipswitch. If de-emphasis is On the RB-DHD6 will decode 50/15µs emphasis when indicated by certain channel status bits in the incoming digital audio data.

When operating, the front panel power LED flashes red and amber whenever the unit is not synchronised to the incoming digital signal.

Audio Specification

Output Level:	Drives 150mW into 32 to 600Ω headphones
Dynamic Range:	>100dB
Input Impedance:	110Ω ±20% AES/EBU
	75Ω ±15% S/PDIF

Connections

Digital Inputs:	1 x AES/EBU XLR 3 pin female, 1 x S/PDIF RCA phono
Headphone Outputs:	6 x 1/4" (6.35mm) A/B-gauge 3-pole stereo jack sockets
Mains Input:	Filtered IEC, 110V-120V, or 220-240V, fused, 10W max

Operational Controls

De-emphasis On/Off:	DIP switch selection

Equipment Type

RB-DHD6:	Digital 6 way headphone distribution amplifier

Maximum Output Level:	+12dBu unbalanced
Headphone Gain Range:	-80dBu to +12dBu
Sample Frequency Range:	30kHz-100kHz

24 BIT 96 kS/s

Physical Specification

Weight:	Nett: 1.6kg Gross: 2.2kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Digital Input Select:	AES/EBU or S/PDIF, via push-switch

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RB-MA1 Single Microphone Amplifier

The RB-MA1 consists of a low noise microphone pre-amplifier for converting mic level signals to line level, or for driving long lines from microphones to mixing equipment.

The connections and controls are on the rear panel. The microphone input is an XLR-3 type and is electronically balanced. The gain for the input can be adjusted by a recessed pre-set potentiometer which allows for the use of both dynamic and powered microphones.

The line output is of an XLR-3 type and is electronically balanced. It can be wired unbalanced by grounding the non-phase signal, allowing you to feed both balanced and unbalanced equipment.

There is a switch to control a high pass filter (low frequency roll-off at 125kHz) and to provide phantom power at +48V to the connected microphone.

Audio Specification

Maximum Input Level:	-10dBu
Maximum Output Level:	+28dBu
Low Frequency Roll-Off:	125Hz @ 6dB/octave
E.I.N.:	130dB
Common Mode Rejection:	>60dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Input Impedance:	2kΩ nominal balanced
Output Impedance:	<50Ω
Gain Range:	Adjustable 36dB to 75dB gain
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Phantom Power:	48V

Connections

Input:	1 x XLR 3 pin female (Balanced)
Output:	1 x XLR 3 pin male (Balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 0.9kg Gross: 1.35kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-MA1:	Single microphone amplifier

RB-MA2 Dual Microphone Amplifier

The RB-MA2 consists of two independent low-noise microphone pre-amplifiers for converting mic level signals to line level, or for driving long lines from microphones to mixing equipment.

All connections and controls are on the rear panel. The microphone inputs are XLR-3 type and are electronically balanced. The input gain for each input can be adjusted individually by a recessed pre-set potentiometer which allows for the use of both dynamic and powered microphones.

The XLR-3 line outputs are electronically balanced and can be wired unbalanced by grounding the non-phase signal, allowing you to feed both balanced and unbalanced equipment.

For each channel there are independent switches to control a high pass filter (low frequency roll-off at 125Hz) and to provide phantom power at +48V to the connected microphones.

Audio Specification

Maximum Input Level:	-10dBu
Maximum Output Level:	+28dBu
Low Frequency Roll-Off:	125Hz @ 6dB/octave
E.I.N.:	130dB
Common Mode Rejection:	>60dB typically
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Input Impedance:	2kΩ nominal balanced
Output Impedance:	<50Ω
Gain Range:	Adjustable 36dB to 75dB gain (each input)
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Phantom Power:	48V

Connections

Inputs:	2 x XLR 3 pin female (Balanced)
Outputs:	2 x XLR 3 pin male (Balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.45kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-MA2:	Dual microphone amplifier

RB-DMA2 Dual Digital Microphone Amplifier

The RB-DMA2 consists of two independent low-noise microphone pre-amplifiers for converting microphone level signals to a digital AES/EBU or S/PDIF output. Individual analogue balanced line level outputs are also produced for use, for example, to feed talk-back systems. The unit can either be used as two independent microphone amplifiers, or one mic input can be copied to both channels of the digital output.

The microphone inputs are XLR-3 type and are electronically balanced. The input gain for each input can be adjusted individually by a volume control on the front panel enabling the use of dynamic and powered microphones and each has a LED level indicator. For each channel there are independent switches to control a high pass filter (low frequency roll-off at 125Hz) and to provide phantom power at +48V to the connected microphones.

The RB-DMA2 has AES/EBU, S/PDIF and TTL Word Clock sync inputs and has the same sync modes, bit depth selection, channel status bit adjustment, front panel LED synchronisation and calibration routine as the RB-ADDA. Please refer to that product for further information.

Audio Specification

Input Level:	Max -25dBu, Min -62dBu to give FSD
Input Impedance:	2kΩ nominal
Input Gain Range:	37dB
Low Frequency Roll-off:	125Hz @ 6dB/octave
Signal To Noise:	130dB EIN
Dynamic Range:	>110dB
Distortion And Noise:	<0.01% THD + N absolute @ 1kHz
Phantom Power:	48V

24 BIT 96 kS/s

Connections

Microphone Inputs:	2 x XLR 3 pin female (balanced)
Sync Inputs:	1 x AES/EBU XLR 3 pin female (balanced) 1 x S/PDIF RCA phono socket, 1 x TTL BNC female
Analogue Outputs:	2 x XLR 3 pin male (balanced)
Digital Outputs:	1 x AES/EBU XLR 3 pin male (balanced), 1 x S/PDIF RCA phono socket
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 10W max

Physical Specification

Weight:	Nett: 1.6kg Gross: 2.2kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-DMA2:	Dual digital microphone amplifier

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RB-SM1 Single Stereo To Mono Converter

The RB-SM1 converts a stereo input to a fully buffered and balanced mono line output.

The connections, which are on the rear panel, are of an XLR-3 type. The input is electronically balanced with an impedance of 20kΩ bridging. This can be wired unbalanced to accept an output from domestic equipment.

The output is electronically balanced with an output impedance of <50Ω. The output can be wired unbalanced by grounding the non-phase signal, allowing you to feed both balanced and unbalanced equipment.

Output gain adjustment using a pre-set potentiometer for the converter allows a normalised mono output from domestic stereo equipment. This potentiometer is accessible through the rear panel.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Input Impedance:	20kΩ balanced bridging
Output Impedance:	<50Ω, balanced
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Adjust 8dB loss to 18dB gain, ref. 0dB input on L and R
Common Mode Rejection:	>66dB typically
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output

Connections

Inputs:	2 x XLR 3 pin female (Balanced, can be unbalanced)
Output:	1 x XLR 3 pin male (Balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Equipment Type

RB-SM1:	Single stereo to mono converter

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.45kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

RK1

RB-SM2 Dual Stereo To Mono Converter

The RB-SM2 is a dual version of the RB-SM1, consisting of two independent converters which will produce two fully buffered and balanced mono line outputs from two stereo inputs.

All connections are on the rear panel. The XLR-3 inputs are electronically balanced with an impedance of 20 kΩ bridging. These can be wired unbalanced to accept an output from domestic equipment.

The XLR-3 line outputs are electronically balanced with an output impedance of <50Ω. The outputs can be wired unbalanced by grounding the non-phase signal, allowing you to feed both balanced and unbalanced equipment.

Output gain adjustment using pre-set potentiometers for both converters allows a normalised mono output from domestic stereo equipment. The potentiometers are accessible through the rear panel.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Input Impedance:	20kΩ balanced bridging
Output Impedance:	<50Ω, balanced
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Gain Range:	Adjust 8dB loss to 18dB gain, ref. 0dB input on L and R
Common Mode Rejection:	>66dB typically
Distortion:	0.01% THD @ 1kHz, ref +8dBu output
Noise:	-100dB, unity gain, ref +8dB output

Connections

Inputs:	4 x XLR 3 pin female (Balanced, can be unbalanced)
Outputs:	2 x XLR 3 pin male (Balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Equipment Type

RB-SM2	Dual stereo to mono converter

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.45kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

RK1

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RB-SD1 Silence Detect Unit

The RB-SD1 Silence Detect Unit is a 1U rack-mount device used to monitor an unattended stereo studio feed and in the event of the signal going "quiet" after a given period the unit will switch through an alternative stereo audio signal. This signal could be a recorded message (e.g. "normal service will be resumed", etc), a feed from a CD player or minidisc machine, or an alternative recorded program. Controls are provided to start external equipment and to provide remote status indication.

It has 2 balanced stereo audio inputs with the maximum input level being +28dBu. Each input is user-defined as either the main source or auxiliary source and both sources are monitored for failure, each having a remote failure alarm. In the event of the main source dropping below a pre-set level for a pre-determined amount of time, the unit will automatically switch through to the auxiliary signal. The silence detect level is adjustable between -60dBu and -15dBu in 3dB steps via a 16 position rotary switch on the rear panel. The silence interval can be adjusted between 2 seconds to 30 seconds in 2 second steps, or, alternatively, set to 2 minutes 5 seconds also via a 16 position rotary switch on the rear panel. The audio outputs use stereo professional balanced XLR-3 male connectors.

The unit can operate in 2 modes - automatic or manual. In both modes it will automatically switch over to the auxiliary source on detecting silence. When the main signal is again detected it will either return to the main signal automatically or manually depending on the mode chosen.

The RB-SD1 has a number of remote operational features. Remote outputs provide separate relay contact closures for failure of the main and auxiliary inputs. You can also control remotely all of the front panel switches for source selection, mode selection and signal Restore. You can remotely start and stop another piece of equipment on alarm failure and main signal return respectively. Also, the longest silence time (2min 5sec) can be set remotely, which is useful if you are expecting to broadcast a long silence.

The unit can be configured to alarm when either the left or right channel of the main input source fails, or if the whole stereo signal fails. There are also options to set the remote start output as momentary or latched, to disable switching to the auxiliary input on alarming and to increase the gain on the auxiliary input so that an unbalanced input can be used, for example, from a domestic minidisc player.

Front panel LED indicators show individually left and right programme and alarm conditions for both the main and auxiliary inputs. The status of the source, mode and alarm state are also shown on the front panel with LED indicators.

Additionally, the RB-SD1 can be programmed for specific applications which can be defined on power-up of the unit. Contact Sonifex for further

information if you have a particular requirement. (Refer to the handbook on the website for information on current configurations).

The RB-SD1 has been designed to have a passive signal path through the main input, so if power to the unit fails, the signal input will still be routed through to the output. This is essential for applications such as installation at transmitter sites, where a power failure to the unit should not prevent the audio input signal from being output to the transmitter.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Frequency Response:	20Hz - 20kHz ±0.1dB
Gain:	+12dB (for unbal input B - optional)
Distortion:	As input for balanced input, <0.05% ref +8dBu output for unbalanced input
Input Impedance:	>100kΩ balanced
Output Impedance:	As input, except when using unbalanced auxiliary input where output impedance <50Ω
Noise:	<-87dB, unity gain, ref +8dB output for unbal input

Rear Panel Connections and Controls

Inputs (Main & Auxiliary):	4 x XLR 3 pin female (balanced, auxiliary can be unbalanced)
Output:	2 x XLR 3 pin male (balanced)
Remotes:	15 way D-type plug
Power:	Filtered IEC, 110V-120V, or 220-240V, fused, 9W max
Alarm Threshold:	-15dBu to -60dBu in 3dB steps via rotary switch
Silence Detect Duration:	2 - 30 seconds in 2 second intervals & 125 second option via rotary switch
Detection Type:	Mono or stereo, via DIP switch
Silence Switch Defeat:	Disable/enable silence switching, via DIP switch
Remote Start:	Latched or momentary, via DIP switch

Front Panel Controls and Indicators

Controls (with indicators):	Source select, mode select and restore
Indicator:	Program and alarm indicators for left and right source for both main and auxiliary channels

Physical Specification

Weight:	Nett: 1.4kg Gross: 2.0kg
Dimensions (Raw):	48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Boxed):	53cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-SD1:	Silence detect unit

RB-SL2 Twin Mono, Or Stereo Limiter

The RB-SL2 is a stereo, or twin independent mono, VCA limiter for use in news-rooms and other locations where the correct level into recording equipment is required, but not necessarily under the control of an engineer, for example, for overload protection. It can also be used as an inexpensive main output limiter for small scale radio stations, hospital radio and student radio.

The XLR-3 electronically balanced inputs and outputs can be wired unbalanced to accept an output from domestic equipment.

For each channel there is an input gain and a threshold level control. With the limit threshold set to maximum, the input through to output can be normalised using the input potentiometers. Once the unit is acting as a buffer with gain/attenuation, the limit threshold level can be set, with the recovery adjusted for the application. The power LED indicates limiting by flashing.

The rear panel mode switch changes the unit from dual mono to stereo, when only the pre-sets for channel 1 (left) are active and apply to both channels. Stereo limiting operates by limiting both left and right outputs if either left or right input needs to be limited. Dual mono limiting operates by limiting left and right signals individually, so you can use the RB-SL2 as two separate mono limiters.

Audio Specification

Maximum Input Level:	+28dBu
Maximum Output Level:	+28dBu
Input Gain:	Adjustable -8dBu to +18dBu gain
Limit Threshold:	Adjustable -8dBu to +28dBu
Frequency Response:	20Hz to 20kHz ±0.1dB (600Ω load, ref 1kHz)
Noise:	-100dB unity gain, ref +8dB output
Distortion:	0.01% THD @ 1kHz, ref +8dBu output, threshold set at +10dBu
Common Mode Rejection:	>66dB typically
Input impedance:	20kΩ balanced bridging
Output impedance:	<50Ω balanced

Connections

Inputs:	2 x XLR 3 pin female (Balanced, can be unbalanced)
Outputs:	2 x XLR 3 pin male (Balanced, can be unbalanced)
Mains Input:	Filtered IEC, 110-120V, or 220-240V, fused, 6W max

Physical Specification

Weight:	Nett: 1.0kg Gross: 1.45kg
Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H)
(Boxed):	36cm (W) x 20.5cm (D) x 6cm (H)

Equipment Type

RB-SL2:	Twin mono, or stereo, limiter

Notes:-

Notes:-

UK :
Sonifex Ltd, 61 Station Road, Irthlingborough,
Northants, NN9 5QE, UK
Tel : +44 (0)1933 650 700
Fax : +44 (0)1933 650 726
Email : sales@sonifex.co.uk
Internet : http://www.sonifex.co.uk

USA :
Independent Audio, 43, Deerfield Road, Portland,
ME 04101-1805, USA
Tel : +1 207 773 2424
Fax : +1 207 773 2422
Email : info@independentaudio.com
Internet : http://www.independentaudio.com

Denmark :
Interstage AS, Phistervej 31,
DK-2900 Hellerup, Denmark
Tel : +45 39 46 00 00
Fax : +45 39 46 00 40
Internet : http://www.interstage.dk

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