SONIFEX

RB-ADDA2

A/D and D/A Converter, 24 bit 192kHz

2016

Catalogue

RB-ADDA2 A/D and D/A Converter, 24 bit 192kHz

Category: Digital Audio Converters.
Description: Combined A/D and D/A Converter (24 bit, 192kHz Capable) (1U).
Product Function: Converting stereo analogue audio to digital & vice-versa.
Typical Applications:

- Interfacing professional or domestic audio devices i.e. ipods or telephone balance units into digital environments.
- Recording studios/post production where easy access to settings is required.

Features:

- Front panel switches.
- Coax/optical digital I/O.
- Separate sync for A to D and D to A allows independent use.
- RS232 for remote setting/control via Sonifex SCi software.

The RB-ADDA2 A/D and D/A converter is a 1U rack-mount which produces an AES/EBU, S/PDIF or TOSlink optical 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, S/PDIF or TOSlink optical digital input signal.

The RB-ADDA2 is a high performance, enhanced version of the RB-ADDA providing the following additional features:

- It supports higher sample frequency rates up to and including 176.4kHz and 192kHz.
- It has additional independent AES/EBU and Word Clock synchronising inputs, so that the A/D and D/A sections can operate independently, with the digital outputs synchronised to an external master reference clock.
- It has TOSlink optical digital audio I/O.
- It has front panel push-button switches for all the main settings. The buttons are arranged in sets, where pressing the button advances the current selection and LED indicator.

- An RS232 port allows RB-ADDA2 settings to be controlled remotely. The front panel LED indicators alter automatically when using RS232 commands.

The A/D SOURCE push-button is used to select from either the balanced or unbalanced stereo analogue inputs and this push-button also defines the input level for full scale digits at one of +12dBFS, +18dBFS or +24dBFS. These values can then be fine-tuned by using rear-panel pre-set potentiometers which give another ±3dB of gain adjustment, allowing a signal range from +9dBu to +27dBu. The RCA phono inputs have a further 10dB gain incorporated to give a total gain range of -1dBu to +17dBu for full-scale digits.

For the digital output, there are three push-button switches to select the sample frequency, bit depth and status bit modes. FREQUENCY allows selection of the master sample frequency from one of 32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz or 192kHz. BITS sets the output bit depth as one of 16, 20 or 24 bits, and CS DATA defines the content of the channel status bits embedded within the digital audio stream. The status bits can be forced to Professional Mode (PRO), Consumer Mode (CON) or to follow the mode of the input (FOLLOW).

The SYNC button is used to select the synchronisation input, from Word Clock, AES/EBU or the D/A input, and also the synchronisation mode of the digital output. The A/D section of the RB-ADDA2 operates in four selectable 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, 96kHz, 176.4kHz or 192kHz).

Slave Mode - Here the unit is synchronised to an external source, using the digital audio sync or D/A input signal from which the clock signals are stripped, or to the TTL level Word Clock. The FREQUENCY LED indicates the synchronised sample frequency and if no sync is present, no output is generated.

Auto Mode - Here the unit is synchronised to an external source, using the digital audio sync or D/A input signal from which the clock signals are stripped, or to the TTL level Word Clock. If no sync signal is present the unit runs from the onboard master clock at a rate selected by the front panel control (32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz or 192kHz).

Auto Lock Mode - This operates like the auto mode except that if no sync signal is present the unit runs at the closest master clock rate to the last locked incoming signal. The FREQUENCY LED indicates the synchronised sample frequency.

When operating in sync modes, the SYNC button flashes whenever the unit is not synchronised to the incoming digital signal.

The D/A section has a SOURCE push-button which selects the digital input source from AES/EBU, S/PDIF or TOSlink optical and which also sets the analogue output level to be generated for full scale digits, from either +12dBFS, +18dBFS or +24dBFS. There are factory-set internal level controls for fine tuning the analogue output gain adjustment. If no digital audio source is present, the D/A SOURCE button flashes. In both A/D and D/A sections, audio is sent to all of the outputs simultaneously. The RB-ADDA2 automatically decodes 50/15µs emphasis if this is indicated by certain channel status bits in the incoming digital audio data. A red LED indicates when power to the RB-ADDA2 is on.

Specification For RB-ADDA2

Audio Specification	
Analogue to Digital Conversion A/D Audio Specification For RB-ADDA2	
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 selected +12dBu, +18dBu or +24dBu, ref FSD
Distortion & Noise:	>96dB THD + N at 1kHz
A/D Connections	
Analogue Inputs:	2 x XLR 3 pin (balanced) 2 x RCA phono (unbalanced)
Sync Inputs:	1 x AES/EBU XLR 3 pin female 1 x TTL Word clock BNC
Digital Outputs:	1 x AES/EBU XLR 3 pin male 1 x S/PDIF RCA phono 1 x TOSlink optical
Serial RS232:	1 x 9 pin D-type plug
Mains Input:	Filtered IEC, continuously rated 85-264VAC @ 47-63Hz, 10W max
Fuse Rating:	Anti-surge fuse 1A 20 x 5mm
A/D Operational Controls	
Analogue Input Source:	Balanced XLR or unbalanced phono, via A/D SOURCE push-button
Analogue Input Level for FSD:	+12dBFS, +18dBFS or +24dBFS, via A/D SOURCE push-button
Analogue Input Level Adjust:	+9dBu to +27dBu via rear-panel pre-set pots
Sample Frequency Rates:	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz or 192kHz, via FREQUENCY push-button
Bit Depth:	16, 20 or 24 bits, via BITS push-button
Channel Status Bits:	Consumer mode, professional mode or follow input, via CS DATA push-button
Sync Input Select:	AES/EBU, Word Clock or D/A input, via SYNC push-button
Sync Mode Select:	Master, slave, auto, auto lock, via SYNC push-button
Digital to Analogue Conversion D/A Audio Specification For RB-ADDA2	
Maximum Output Level:	+24dBu balanced output, +14dBu unbalanced output
Output Impedance:	<50Ω balanced, <75Ω unbalanced
Dynamic Range:	>110dB
D/A Connections	
Digital Inputs:	1 x AES/EBU XLR 3 pin female 1 x S/PDIF RCA phono 1 x TOSlink optical
Analogue Outputs:	2 x XLR 3 pin male (balanced) 2 x RCA phono (unbalanced)
D/A Operational Controls	
Digital Input Select:	AES/EBU, S/PDIF or TOSlink optical, via push-button
Analogue Output Level for FSD:	Selectable +12dBu, +18dBu or +24dBu output level, ref FSD, via D/A SOURCE push-button
Equipment Type	
RB-ADDA2:	Combined A/D and D/A converter, 24 bit 192kHz
Physical Specification	
Dimensions (Raw):	48cm (W) x 15.8cm (D*) x 4.2cm (H) (1U) 19" (W) x 6.2" (D*) x 1.7" (H) (1U)
(Boxed):	59cm (W) x 27.5cm (D*) x 11cm (H) 23.2" (W) x 10.8" (D*) x 4.3" (H)
Weight:	Nett: 1.6kg Gross: 2.3kg Nett: 3.5lbs Gross: 5lbs

* Note that this product is deeper than standard Redboxes.

SONIFEX

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