

SONIFEX

Redbox RB-FS42

Audio Failover Switcher, 4 Main I/O, 2 Standby I/O

Catalogue²⁰¹⁵



RB-FS42 Audio Failover Switcher, 4 Main I/O, 2 Standby I/O



Category: Synchronisers, Delays & Silence Detectors.

Product Function: To route the source audio signals in to a standby encoder in event of encoder fail. Or to route the destination audio signals from a standby decoder in event of decoder fail.

Typical Applications: As a failover switcher for multi channel audio transport over E1 or IP, typically as performed by APT Oslo, Prodis Nureus, where a N+1 topology is adopted.

Features:

- Relay based switching.
- Dual DC, or AC, power supplies (select when ordering).
- Encoder site (Set via IP): 4 stereo

program inputs, 4 + 2 stereo program outputs where each program input/Output carries: analogue L/R, stereo AES/EBU & RS232.

- Encoder site: Each program output has an alarm detect GP input.
- Decoder Site (Set via IP): 4 + 2 stereo program inputs, 4 program outputs where each program input carries: analogue L/R, stereo AES/EBU & RS232.
- Decoder Site: Each program input has an alarm detect GP input.
- AES/EBU transparent (for Dolby E transport).
- Passive throughput in event of power outage.
- GPO output for signalling RB-FS82 alarm conditions: PSU 1/2 fail, Standby 1/2 active, Summary Alarm.
- Automatic or Manual reversion modes.
- LED indicators on front panel.
- IP control, including Web GUI and SNMP.

The RB-FS42 4 + 2 audio failover switcher is a smaller channel count version of the RB-FS82, offering a lower number of inputs and outputs. It is a more cost effective solution where failover is needed for a smaller number of sources/destinations and supports all of the features of the RB-FS82.

The device has 4 main + 2 standby, stereo analogue audio, AES/EBU digital audio and RS232 connections (both inputs and outputs) and can be configured via Ethernet for two main operational applications:

For switching of program sources to a standby destination in the event of a destination failure ('Standbys to outputs'). Typically this would be audio encoders at a program distribution head end (for audio over IP, E1 or other bearer networks), with "N" x programs feeding "N" x encoders. If an encoder fails the audio destined for that encoder gets routed to a standby encoder so ensuring the continuity of audio to network transport.

Switching of program sources, including standby sources, to destinations in the event of source failure ('Standbys to inputs'). Typically this would be audio decoders at a transmission site with "N" x programs and "N" x decoders feeding "N" x transmitters. If a decoder fails, the audio from a standby decoder, or other audio source such as an mp3 player, overrides the signal path to the transmitter so ensuring continuity on air.

The RB-FS42 supports any configuration of up to 4 main program signal paths ($N \leq 4$) and there are 2 standby program signal paths, in either mode of operation. Each program path simultaneously switches analogue L/R audio, AES/EBU digital audio and RS232 data. Each of these signals is wired on D-Type connectors on the rear panel.

All signal paths are passive and therefore completely transparent utilising relay based switching. This has the benefit of a "straight wire" topology during normal (alarm free) operation and also during any power outage to the device. An additional benefit of the passive signal path is AES/EBU bit transparency allowing throughput of AES/EBU AC3 Dolby E TM signals.

To ensure the passive nature of the device, switching is determined by alarm (General Purpose) inputs, with this alarm signalling in turn being normally provided by the encoder or decoders (or other devices) at site. Recognising the mission critical nature of the system, a high grade of relay is used in the RB-FS42.



The passive design ensures continuity of audio in the event of any power outage. However the RB-FS42 also includes dual redundant power supplies (85V-264V AC with a 12V 1A DC backup as standard). The RB-FS42-DC model accepts two DC power inputs (24 - 48V DC) via locking 2.5mm pin power connectors and both power supplies are monitored by the unit. This means that if either power supply fails, the other is ready to take over. In the extremely unlikely event that both fail, the unit's passive signal path ensures a straight wire connection for all 4 program feeds (analogue, AES/EBU & RS232). This is essential for applications such as installation at transmitter sites, where a power failure to the unit will not prevent the audio input signal from being output to each of the supported 8 transmitters.

A row of LEDs on the front panel confirm the unit status, with each individual program path indicated as being in alarm with either Standby 1 or Standby 2 programs clearly confirmed as actively over-riding the failed signal. Alarm LEDs on the front panel are also indicated for power supply 1 failure and power supply 2 failure and these are mirrored by the device's own General Purpose Outputs so facilitating easy interfacing of the device with the addition of a summary alarm status GPO.

By monitoring and acting on a GPI Alarm pin for each signal path the unit can switch between: Through, Standby 1, Standby2 or Silence. The unit will always attempt to route a Standby path when a Main path

alarm is detected and if both Standby paths are already in use, then one of the two remaining options (Through, Silence) will be used. The unit can be configured to either Automatically restore a Main 'through' path or wait for a Manual button press.

In the event of alarm clearing, the unit will automatically revert to normal operation, but a manual reversion mode is also provided, allowing for engineering investigation without the unit 'hunting' between different signal paths. Two buttons on the front panel, RESTORE 1 and RESTORE 2, allow manual restoration of the previously failed signal paths, away from Standby 1 and Standby 2 respectively.

To facilitate integration with site management systems the RB-FS42 supports SNMP V1 and is configured by a simple web based GUI. All relevant information regarding input/output status, alarms and power supplies is available via SNMP GET requests to the unit. Traps can also be generated for most of the actions which can occur, including power supply fail and input GPI alarms, etc.

Contact Sonifex for further information if you have a particular requirement that isn't catered for by the RB-FS42 as standard.

Specification For RB-FS42

Audio Specification - Digital

The RB-FS42 uses passive fixed switching relays which don't affect the overall audio performance

Audio Specification - Analogue

Crosstalk: >86dB

Front Panel Operational Controls

Manual Switching: Via Restore 1 & Restore 2 push-buttons

Front Panel Indicators

Power LEDs: 2 x Power indicators

Channel Status LEDs: 8 x Standby status indicators, 2 per channel

Standby Restore LEDs: 2 x illuminated buttons

Rear Panel Connections

Analogue Inputs: 4 x differential stereo inputs across 1 x 25 way D-type female

Digital Inputs: 4 x inputs on 1 x 25 way D-type female

Analogue Outputs: 4 x outputs on 1 x 25 way D-type female

Digital Outputs: 4 x outputs on 1 x 25 way D-type female

RS232 Inputs: 4 x RS232 communication lines on 1 x 25 way D-type female

RS232 Outputs: 4 x RS232 communication lines on 1 x 25 way D-type female

GPI/O: 6 Inputs & 5 outputs on 1 x 25 pin D-Type female

Standby 1&2 Inputs: 2 x Analogue differential stereo inputs
2 x Stereo digital inputs
2 x RS232 communication line pairs on 1 x 25 way D-type female

Ethernet Port: 10/100Mbps on 1 x RJ45 socket for IP control, SNMP and web GUI

Mains Input (AC): 1 x Universal filtered IEC, continuously rated 85-264VAC @47- 63Hz, max 20W, plus 1 x 12V 1A DC supply, 2.5mm locking socket fused.
or (Dual DC): 2 x 18V-50V 20W max, DC supply, 2.5mm locking socket fused.

Fuse Rating (AC): 1 x Anti-surge fuse 2A 20 x 5mm

Equipment Type

RB-FS42: Audio failover switcher, 4 + 2 inputs

RB-FS42DC: Audio failover switcher, 4 + 2 inputs, 2 x DC inputs

Physical Specifications

Dimensions (Raw): 48cm(W) x 22cm(D) x 4.2cm(H) 1U
19" (W) x 8.7" (D) x 1.7" (H) 1U

Dimensions (Boxed): 55cm(W) x 28cm(D) x 17cm(H)
21.7"(W) x 11"(D) x 6.7"

Weight: Nett: 2.1kg Gross: 3.5kg
Nett: 4.6lb Gross: 7.7lb

* Note that this product is deeper than standard Redboxes

Accessories

RB-RK3: 1U Rear panel rack kit for large Redboxes

SONIFEX

www.sonifex.co.uk

UK Office:

Sonifex Ltd

61 Station Road, Irthlingborough,

Northants, NN9 5QE, UK

Tel: +44 (0) 1933 650700

Fax: +44 (0) 1933 650726

Email: sales@sonifex.co.uk

Australian Office:

Sonifex Pty Ltd

12/6 Leighton Place,

Hornsby NSW 2077, Australia

Tel: +61 (2) 9987 0499

Fax: +61 (2) 9476 4950

Email: sales@sonifex.com.au