

SONIFEX

RB-OA3, (R&C)
3 Studio On-Air Switcher

Catalogue ²⁰¹⁶





RB-OA3 3 Studio On-Air Switcher



Category: Mixers, Source Selectors & Switchers.

Product Function: To switch the on-air transmission output between multiple radio studios.

Typical Applications: Designed for multi-studio switching & routing the studio output to the transmitter.

Features:

- Controls the offer/accept switching for 3 studios.
- Switches 3 stereo bidirectional channels so allows sharing of equipment between studios, e.g. studio output, codec clean-feeds, telco feeds & other equipment.
- Has a stereo transformer mix input, e.g. for playout system.
- Continuity mode allows switching to/ from a PC playout system, so a 3rd studio can be used as sustaining service allowing other studios to be powered down for maintenance or power saving.
- Latching relay switching means transmission path remains intact on power-fail.
- Expandable to switch 6 stereo channels between 5 studios.
- Last studio to offer bus.

The RB-OA3 is a 1U rack-mount, unity gain on-air switcher, capable of switching three stereo pairs between three studios. Each studio can control the transmission path together with two peripheral paths for equipment such as a codec or hybrid and there is also a “Last studio to offer” bus, allowing for seamless and continuous broadcast from any multi-studio radio network. A “sustain” mode allows for a sustaining system, such as a PC automation system, to control the broadcast.

Multiple RB-OA3 units can be connected together to switch more studios or more stereo pairs.

The switching is achieved using relays, except the “last studio to offer” which is switched by an analogue switch. The transmission path is switched using latching relays. This means that if there is a power failure to the unit, the transmission path will remain selected.

All studios are connected using 25 way D-types for electronically balanced audio signals and control is achieved using 15 way D-types, connecting to an external control unit such as the Sonifex S2-MTBS mixer control panel. A transmission mix connection is included to mix audio which is generic to all studios into the transmission path. This could be used for jingles or adverts for example. The RB-OA3 also allows for the control of a profanity delay to be

shared by all connected studios.

Each studio has the ability to offer the transmission. Once offered, the transmission is fed to the other studios via the “last studio to offer” bus. The next scheduled station can then fade in the transmission and accept at the appropriate time meaning the transmission can be continuous.

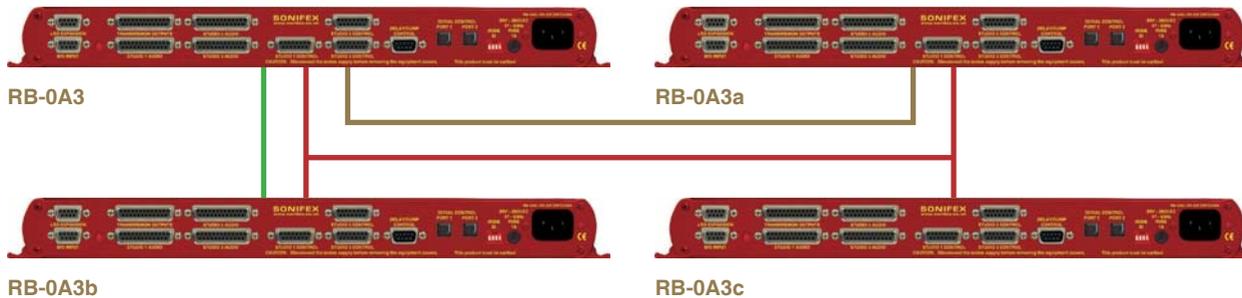
The “sustain” mode can be used to control an automated studio, such as an overnight music system. In this case, station control will switch to the automated system by holding the Offer button down for a number of seconds, pre-determined by a calibration routine. This will select the sustaining studio, set as studio three, which will immediately offer control back to all remaining studios. Any studio can then accept to resume orthodox broadcasting.

The RB-OA3 can be expanded to switch between up to 5 studios or up to 6 stereo pairs by connecting a multiple of units together via RJ45 serial connections. With the addition of a single unit, expansion in “studio” mode allows for 2 additional studios to take control of the transmission path and additional equipment. If the expansion is made in “bus” mode, then three additional stereo channels can be added. 4 x RB-OA3 units can be connected together to switch 6 stereo pairs between up to 5 studios.

The modes are configured by dip switch configurations, on the rear of each unit. Two DIP switches control the unit ID and there are two switches which decide between “studio” and “bus” modes. A master unit, defined by a preset ID, conducts all communication between all units.

Specification For RB-OA3

Audio Specification	
Transmission and Peripheral Path:	
Relays are used for switching these specific paths leading to a passive, transparent audio path.	
LSO Path:	
Input Impedance:	>20kΩ
Output Impedance:	<50Ω
Gain Range:	Unity gain
Frequency Response:	20Hz to 20kHz ±0.1dB
Common Mode Rejection:	< -66dB typically
Distortion:	0.01%THD @ 1kHz
Noise:	-100dB unity gain, ref +8dBu
Mix Audio Transformer Specifications:	
Common Mode Rejection:	< -64dB @ 10kHz
Distortion:	0.5% THD ref 17dBu @ 40Hz
Bandwidth:	±0.5dBu 10Hz to 36kHz
Connections	
Studio I/O:	3 x 25 way D type socket (female)
Transmission I/O:	1 x 25 way D type socket (female)
Dump/Delay Control:	1 x 9 way D type plug (male)
Studio Control:	3 x 15 way D type sockets (female)
LSO Expansion Port:	1 x 9 way D type socket (female)
Mix Input:	1 x 9 way D type socket (female)
Serial Ports:	2 x RJ45
Mains Input:	Filtered IEC, 110V-120V, or 220-240V switchable, fused, 9W maximum
Fuse Rating:	Anti-surge fuse 1A 20 x 5mm
Equipment Type	
RB-OA3:	3 Studio on-air switcher
Physical Specification	
Dimensions	48cm (W) x 15.8cm (D) x 4.2cm (H) (1U)
(Raw):	19" (W) x 6.2" (D) x 1.7" (H) (1U)
Dimensions (Boxed):	59cm (W) x 27.5cm (D*) x 11cm (H) 23.2" (W) x 10.8" (D*) x 4.3" (H)
Weight:	Nett: 1.9kg Gross: 2.5kg Nett: 4.2lbs Gross: 5.5lbs



- Adding RB-OA3a allows 3 stereo channels to be switched between 5 studios.
- Adding RB-OA3b allows 6 stereo channels to be switched between 3 studios.
- Adding RB-OA3a , RB-OA3b and RB-OA3c allows 6 stereo channels to be switched between 5 studios.



RB-OA3R Remote Switcher Panel For RB-OA3

The RB-OA3 has been designed for installation in a central technical area with cabling to custom panels, or selection switches, in each studio. If you don't have any custom switch panels available, you can use an RB-OA3R in each studio.

The RB-OA3R is a 1U rack mount switch unit for use in each studio that needs to be connected to the STUDIO 1-3 CONTROL connectors on an RB-OA3. It takes its power from the RB-OA3 unit so needs no power supply itself.

It contains four buttons which are used to control the functions of the RB-OA3. Each

front panel push button is illuminated by coloured LEDs and controls the OFFER, ACCEPT, DELAY and DUMP functions

Specification For RB-OA3R

Audio Specification

Connections

Studio Control: 1 x 15 way D type plug (male)

Equipment Type

RB-OA3R: 1 Studio on-air switcher

Physical Specification

Dimensions 48cm (W) x 10.8cm (D) x 4.2cm (H) (1U)
(Raw): 19" (W) x 4.3" (D) x 1.7" (H) (1U)

Dimensions 58.5cm (W) x 22.5cm (D) x 7cm (H)
(Boxed): 23" (W) x 8.9" (D) x 2.8" (H)

Weight: Nett: 1.2kg Gross: 1.8kg
Nett: 2.6lbs Gross: 4lbs



Category: Mixers, Source Selectors & Switchers.

Product Function: Remote switch panel for RB-OA3 unit.

Typical Applications:

Allows remote control of the RB-OA3 unit.

Features:

- Powered from the RB-OA3 unit.
- Allows the RB-OA3 unit to be situated in the main control room.
- Illumination of selected button showing status.

RB-OA3C Expansion Unit Cable For RB-OA3

If you add another RB-OA3 to an existing unit to expand either the number of buses or studios, you need additional cables to connect it which are contained in this kit:

1 x Transmission output expansion cable, 25 pin D-type male to 25 pin D-type male, 30cm lead, wired pin to pin.

1 x LSO expansion cable, 9 pin D-type male to 9 pin D-type male, 30cm lead, wired pin to pin.

1 x RS232 expansion cable, RJ45 to RJ45 standard wiring, 30cm lead.

1 x kit should be used for each expansion RB-OA3 being used.



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