

# SONIFEX

Redbox RB-MM1  
Mix-Minus Generator

2014-15  
Catalogue





## RB-MM1 Mix-Minus Generator



**Category:** Talkback & Communications.

**Product Function:** To generate a suitable mix to send to a telephone hybrid or codec from a mixer.

**Typical Applications:** Used with mixers without mix-minus busses.

**Features:**

- Neutrik input and output connectors.
- Output level adjustment.
- Cancellation null adjustment.
- Band pass filter.

Whenever programming originates from outside of the studio, or if listeners/viewers are calling a phone-in using telephone hybrids or codecs, mix-minus feeds are required. Most telephone lines incur delays which prohibit off-air monitoring, because the caller, or remote talent, would hear their own voice in delay which is very disconcerting. The solution is to feed a mix back to the caller minus his or her own voice. Some mixing desks do not have a dedicated telco channel to generate a clean-feed, or mix minus, so the RB-MM1 can be used.

The RB-MM1 is a unit for generating a suitable mix to send to a telephone hybrid or codec. A stereo output is taken from a mixer, together with a post fader output

from the mono telephone fader on the mixer. The caller audio is removed from the station output so that it can be sent to the telephone line via the hybrid.

Analogue audio inputs and outputs are via Neutrik XLR connectors. The output level to the TBU can be adjusted using a rear panel pre-set potentiometer. To control the cancellation null (the amount of the telephone channel which is subtracted from the mixer output signal), 2 multi-turn potentiometers are provided, one for the LF null and the other for the full-band null. Additionally, a band pass filter can be switched in and out, via a rear panel switch, to condition the signal for the telephone hybrid. To use the RB-MM1 unit with full-band ISDN codecs, the band pass filter can be switched out. For stereo codecs, or conference calls, multiple RB-MM1 units can be used.

### Specification For RB-MM1

#### Audio Specification

Maximum Input Level:	+28dBu
Input Impedance:	>20kΩ
Maximum Output Level:	+28dBu
Output Impedance:	<50Ω
Output Gain Range:	Adjustable -15dB to +12dB, ref 0dBu gain via a multi-turn pot
Common Mode Rejection:	>60dB
Band Pass Filter Range:	200Hz to 4kHz, 12dB/octave
LF Null Adjustment:	Better than 40dB at 100Hz
Mix-Minus Null:	Better than 40dB at 1kHz
Frequency Response:	20Hz - 22kHz ± 0.1dB
Distortion:	0.01% THD @ 1kHz, ref +8dBu output (C-Message weighted)
Noise:	-90dBu unity gain +6dBu

#### Connections

Analogue Inputs From Mixer Output:	2 x XLR 3 pin female (balanced) (L & R)
Analogue Input From Telephone Fader:	1 x XLR 3 pin female (balanced) (L & R)
Analogue Output To TBU:	1 x XLR 3 pin male (balanced) (L & R)
Mains Input:	Filtered IEC, switchable 110-120V, or 220-240V, fused, 6W max.
Fuse Rating:	Anti-surge fuse 100mA 20 x 5mm (230VAC) Anti-surge fuse 250mA 20 x 5mm (115VAC)

#### Equipment Type

RB-MM1: Mix-minus generator

#### Physical Specification

Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.3cm (H) 11" (W) x 4.3" (D) x 1.7" (H)
Dimensions (Boxed):	36cm (W) x 20.5cm (D) x 6cm (H) 14.2" (W) x 8" (D) x 2.4" (H)
Weight:	Nett: 1.1kg Gross: 1.5kg Nett: 2.4lbs Gross: 3.3lbs



# **SONIFEX**

[www.sonifex.co.uk](http://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](mailto:sales@sonifex.co.uk)

**Australian Office:**

**Sonifex Pty Ltd**

Unit 12/6 Leighton Place, Hornsby,

New South Wales 2077, Australia

Tel: +61 (2) 9987 0499

Fax: +61 (2) 9476 4950

Email: [sales@innescorp.com.au](mailto:sales@innescorp.com.au)