



Reference Monitors

## Reference Monitors, Meters & Monitor Controllers

The Reference Monitor range of products has been designed to provide an accurate set of audio measurement tools for professional radio, audio and TV studios. Having bright accurate meters with a wide choice of metering ballistics and an unrivalled natural-sounding audio quality, the Reference Monitor products offer the perfect pallet of solutions for monitoring applications.

- Reference Monitors with audible and visual metering.
- Reference Monitor Meters with multiple accurate visual metering solutions.
- Reference Monitor Controllers for use with external audio monitors.





Reference Monitors

## RM-2S4 Reference Monitor, 2 LED Meters & 4 Stereo Channel Inputs

The **RM-2S4** is a 1U rack-mount unit offering quality loudspeaker monitoring and accurate, high-resolution metering of up to four stereo audio sources and more with the addition of optional expansion cards. Sources may be in any mixture of analogue and AES/EBU digital formats, with sample rates up to 192kHz accepted. Audio inputs can be analogue or digital because they are autoswitching using the left Neutrik™ XLR for AES/EBU, or both Neutrik™ XLRs for analogue inputs and they can be used in any combination.

- Superb audio quality, 3-way speaker system.
- High resolution 53 segment LED bar-graph displays.
- Both analogue & AES/EBU digital audio I/O up to 192kHz.
- USB, serial and GPI control.





Reference Monitors

## RM-2S10 Reference Monitor, 2 LED Meters & 10 Stereo Channel Inputs

The **RM-2S10** is a 1U rack-mount unit offering quality loudspeaker monitoring and accurate, high-resolution metering of up to ten stereo analogue and ten stereo digital audio sources and more with the addition of optional expansion cards. Sources may be in any mixture of analogue and AES/EBU digital formats, with sample rates up to 192kHz accepted.

- High resolution 53 segment LED bar-graph displays.
- Modifier buttons for CUT, DIM, phase reversal, mono mix and M&S.
- 5 LED phase meter indication.
- Built-in 5 band parametric EQ.



# RM-4C8 Reference Monitor, 4 LED Meters, 8 Channel Inputs & Dual Source Selectors

The **RM-4C8** offers the same functionality as the RM-2S4 but with an additional source selector so that any of the 4 channels in the selected group, or bank, can be monitored independently on left and right speakers. With 4 x bright high-resolution 26 segment meter displays and separate left and right source selectors, the RM-4C8 is ideal for monitoring audio channels in an SDI group, or groups of de-embedded AES/EBU channels (with the optional RM-HD1 card).

- Superb audio quality, 3-way speaker system.
- High resolution 26 segment LED bar-graph displays.
- Both analogue & AES/EBU digital audio I/O up to 192kHz.
- USB, serial and GPI control.





## Reference Monitors

# RM-4C8-HDE1 Reference Monitor, 4 LED Meters, 8 Channel Inputs & Dual Source Selectors With De-Embedder & Dolby Decoder Card

This version of the Reference Monitor is the **RM-4C8** with the **RM-HDE1** expansion card already fitted. So, it has all of the features of the RM-4C8 as standard together with the ability to de-embed audio from an HD-SDI stream and then decode a Dolby digital audio signal from that de-embedded audio.

- Decode Dolby E or Dolby Digital \* audio streams.
- Monitor visually 8 or 5.1 channels.
- Monitor audibly any 2 channels.
- De-embed from 3G/HD/SD-SDI.

\* TM Dolby Laboratories





Reference Monitors

# RM-4C8-E1X Reference Monitor, 4 LED Meters, 8 Channel Inputs & Dual Source Selectors With Dolby Decoder Card, XLR Input/Output

This version of the Reference Monitor is the **RM-4C8** with the **RM-E1X** expansion card already fitted. So, it has all of the features of the RM-4C8 as standard together with Dolby Decoding.

- Decode Dolby E or Dolby Digital audio streams from XLR input.
- Monitor visually 8 or 5.1 channels.
- Monitor audibly any 2 channels.

\* TM Dolby Laboratories



# RM-4C8-E1B Reference Monitor, 4 LED Meters, 8 Channel Inputs & Dual Source Selectors With Dolby Decoder Card, BNC Input/Output

This version of the Reference Monitor is the **RM-4C8** with the **RM-E1B** expansion card already fitted. So, it has all of the features of the RM-4C8 as standard together with Dolby Decoding.

- Decode Dolby E or Dolby Digital audio streams from BNC input.
- Monitor visually 8 or 5.1 channels.
- Monitor audibly any 2 channels.

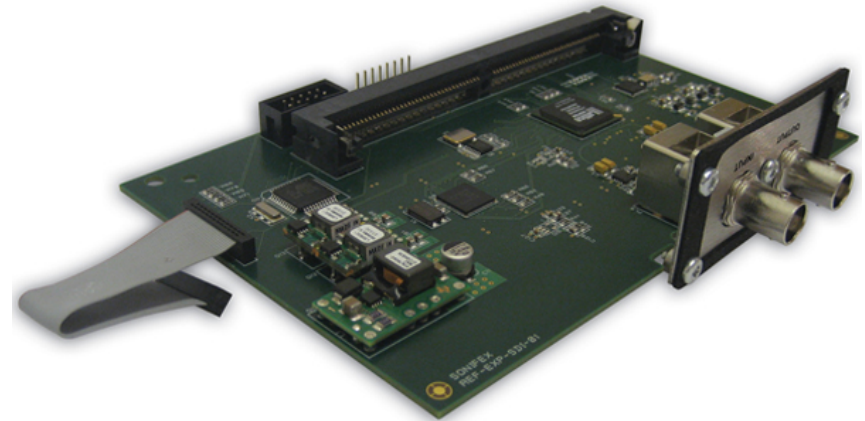
\* TM Dolby Laboratories



# RM-HD1 Reference Monitor HD-SDI Expansion Card

This expansion board allows the monitoring of embedded non-encoded linear PCM audio channels within an 3G/HD/SD-SDI video signal. The RM-HD1 card can be used with the RM-2S4, RM-2S10 and RM-4C8 monitors.

- The expansion board can extract any selected AES/EBU audio group (4 channels) from the video signal.
- The input is autosensing for 3G, SD or HD input formats and the extraction of embedded audio complies with SMPTE-272 (SD) and SMPTE-299 (HD).

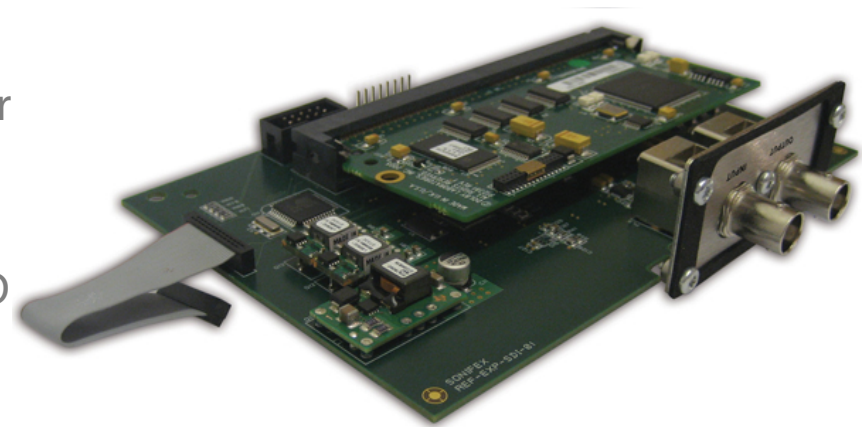


# RM-HDE1 Reference Monitor HD-SDI & Dolby® E Expansion Card

This expansion board allows the monitoring of embedded audio channels within an SD/HD-SDI video signal. The embedded audio can be either non-encoded linear PCM, Dolby® E or Dolby® Digital depending on which card is used.

**Please note:** that the RM-HDE1 card is for use with the RM-4C8 unit only.

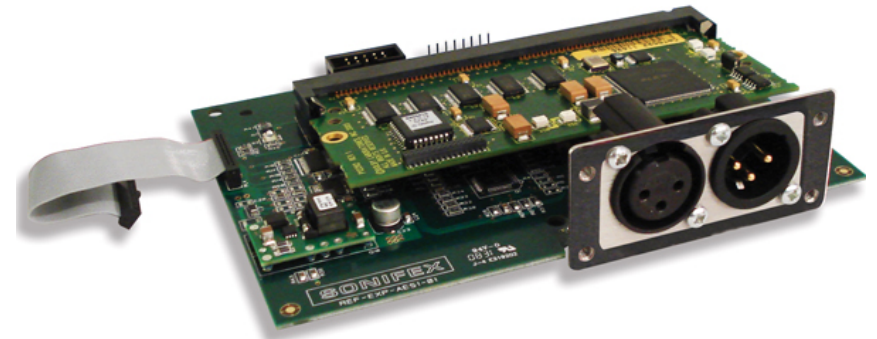
- Each meter is split into 2 sections allowing you to view L, R, C, LFE, Ls, Rs for Dolby Digital and an additional Lt, Rt for Dolby E.
- The input is autosensing for 3G, SD or HD input formats and the extraction of embedded audio complies with SMPTE-272 (SD) and SMPTE-299 (HD).



# RM-E1X Reference Monitor Dolby E Decoder XLR AES Expansion Card

This expansion board for the Reference Monitor RM-4C8 allow the monitoring of a digital audio stream containing either Linear PCM or Dolby\* E or Dolby Digital encoded audio. The RM-E1X has 2 x XLR inputs to accept AES/EBU level inputs.

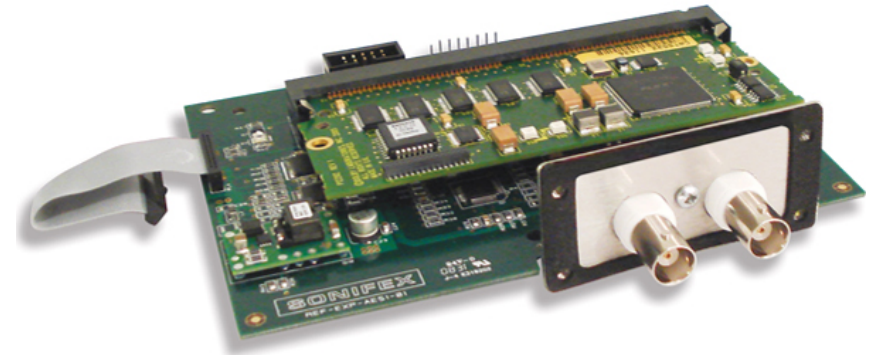
- Dolby data is decoded and passed to the Reference Monitor as either a stereo down-mix or the full complement of individual channels.
- If the signal is standard Linear PCM, then this audio data is simply passed straight through.
- The input is re-transmitted with minimal delay, to allow connection to other equipment.



# RM-E1B Reference Monitor Dolby E Decoder BNC Expansion Card

The expansion boards for the Reference Monitor RM-4C8 allow the monitoring of a digital audio stream containing either Linear PCM or Dolby\* E or Dolby Digital encoded audio. The RM-E1B has 2 x BNC connectors for S/PDIF level inputs.

- Dolby data is decoded and passed to the Reference Monitor as either a stereo down mix or the full complement of individual channels.
- If the signal is standard Linear PCM, then this audio data is simply passed straight through.
- The input is re-transmitted with minimal delay, to allow connection to other equipment.





## Confidence Monitors

# RM-CA2 Confidence Monitor, 2 LED Meters & 2 Analogue Stereo Inputs

The **RM-CA2** is a 1U rack-mount unit offering quality loudspeaker monitoring and 2 channel metering of two stereo analogue audio sources. Input 1 has stereo balanced Neutrik™ XLRs and Input 2 has both stereo balanced Neutrik™ XLRs and stereo unbalanced RCA phono connectors. The balanced analogue inputs can be wired unbalanced if required.

- Can monitor and control the volume/balance of stereo or mono signals.
- Same high quality 3 speaker system as used in the Reference Monitors.
- 8 LED stereo bar-graph with separate phase LED indicator.



# RM-CAD8 Confidence Monitor, 2 LED Meters, 2 Analogue & 6 Digital Stereo Inputs

The **RM-CAD8** has all the features of the RM-CA2 together with the ability to select from an additional 6 stereo digital inputs. As well as the 2 stereo analogue inputs there are also:

- 4 x stereo AES/EBU balanced inputs on XLR 3 pin female.
- 1 x stereo S/PDIF unbalanced input on RCA phono female.
- 1 x stereo TOSlink unbalanced input on an optical connector.



# RM-M1F53 1 Stereo 53 Segment Meter, Free-Standing

The **RM-M1F53** is a free-standing, single stereo channel meter with bright, multi-coloured 53-segment bargraph meters and 5 segment phase meter.

- Each stereo source is auto-switching between either analogue or digital AES/EBU format with sample rates up to 192kHz accepted.
- Selectable accurate meter ballistics and scaling.
- Status monitoring, unit ID functions, plus firmware updates are accessible via the RS232 connection using Sonifex SCi software.



# RM-M1R53 1 Stereo 53 Segment Meter, Rack-Mount

The **RM-M1R53** is a 1U rack-mount version of the RM-M1F53.

- Level of stereo source indicated by a pair of bright, multi-coloured bargraph meters.
- 5 LED phase meters indicate channel correlation or phase error conditions.
- Open-collector alarm outputs provide hardware indication of audio under-level or silence, audio over-level, sustained phase errors above 90 degrees and digital source lock.



# RM-M2F53 2 Stereo 53 Segment Meters, Free-Standing

The **RM-M2F53** is a free-standing, twin stereo channel meter with bright, multi-coloured 53-segment bargraph meters and separate 5 segment phase meter.

- Auto-switching inputs between either analogue or AES/EBU digital.
- Bright, multi-coloured 53 segment meters.
- 9+ scales with accurate ballistics.
- Phase meter, GPOs of under/over level and serial control.



# RM-M2R53 2 Stereo 53 Segment Meters, Rack-Mount

The **RM-M2R53** is a 1U rack-mount version of the RM-M2F53.

- Auto-switching inputs between either analogue or AES/EBU digital.
- Bright, multi-coloured 53 segment meters.
- 9+ scales with accurate ballistics.
- Phase meter, GPOs of under/over level and serial control.



# RM-M4R53 4 Stereo 53 Segment Meters, Rack-Mount

The **RM-M4R53** is a 1U rack-mount which combines 2 x RM-M2R53 units, providing 4 stereo channel monitoring.

- Auto-switching inputs between either analogue or AES/EBU digital.
- Bright, multi-coloured 53 segment meters.
- 9+ scales with accurate ballistics.
- Phase meter, GPOs of under/over level and serial control.



# RM-M1F106 1 Stereo 106 Segment Meter, Free-Standing

The **RM-M1F106** is a single stereo channel free-standing meter but with 2 stereo inputs and a front panel source selector.

- This unit has a pair of multi-coloured 106-segment bargraph meters for greater display accuracy.
- A front panel mounted push-button selects the input source to be monitored, from either of the 2 auto-switching analogue or digital AES/EBU stereo inputs, or from a mono mix of each channel, with channel 1 shown on the left meter and channel 2 shown on the right meter.



# RM-M1R106 1 Stereo 106 Segment Meter, Rack-Mount

The **RM-M1R106** is a 1U rack-mount version of the RM-M1F106 with 2 stereo inputs and a front panel source selector.

- This unit has a pair of multi-coloured 106-segment bargraph meters for greater display accuracy.
- Input source push-button selection the input source.
- Auto-sensing analogue or digital AES/EBU stereo inputs.
- 5 segment phase meter.



# RM-M2R106 2 Stereo 106 Segment Meters, Rack-Mount

A dual rack mount version, the **RM-M2R106**, combines 2 x RM-M1R106 units, giving 4 stereo channel monitoring.

- Selectable metering ballistics.
- 4 x stereo analogue or AES/EBU digital inputs.
- RS232 serial control.
- Alarm GPOs.



# RM-MC1L Monitor Controller, Single Stereo Input & Output With Light Control

The **RM-MC1L** allows you to control the audio level to external monitors and to DIM the audio, or CUT it completely with simple front panel controls, or remote external inputs. It is a stereo unit with a single stereo balanced analogue input and output on XLRs. Useful in a television production environment.

- It has a master volume control that adjusts the attenuation on the output channels from 0dB down to -86dB.
- A CUT control mutes the audio outputs when enabled, whilst a DIM control attenuates the audio output channels by a pre-set amount from -2dB to -23dB.



# RM-MC4L Monitor Controller, 4 Stereo Inputs, 1 Stereo Output With Light Control

The **RM-MC4L** has four stereo balanced analogue inputs with a single stereo balanced output, all using XLR connectors. Four illuminated front panel buttons allow you to simply select the source required at the output.

- The RM-MC4L has the same master volume control, CUT, DIM and light control functions as the RM-MC1L unit.
- See the RM-MCL for information on the light control.



## RM-MC51L Monitor Controller, 5.1 Inputs & Outputs With Light Control

The **RM-MC51L** is a controller for surround sound applications with 6 balanced analogue inputs and 6 balanced analogue outputs all on XLR connectors. It is used in situations where you need to adjust the volume, or CUT, or DIM all of the speakers in a 5.1 surround system. Alternatively, the unit can be used as a global volume control for 6 analogue outputs.

- The RM-MC51L has the same master volume control, CUT, DIM and light control functions and adjustments as the RM-MC1L unit.





## Reference Monitor Controllers

# RM-MCL Monitor Light Controller, 3 Button, TX-STANDBY-REH

The **RM-MCL** is a simple light controller for controlling a TX - STANDBY - REH light system in a production studio. It has no audio inputs or outputs.

- 3 light control buttons: Transmit (TX), STANDBY and Rehearse (REH).
- The remote port has open-collector tally outputs for Transmit (TX), Rehearse (REH), as well as remote input control for the audio controls DIM and CUT & the light controls TX, Standby and REH.
- Buttons can be replaced to act as a general purpose 3 button remote control.

