

# BM-A1-E16SHD

In-Rack Monitoring



## FEATURES

High-quality HD audio monitor with discrete 3G/HD/SD, Dolby® E, Dolby® Digital, Dolby® Digital Plus decoding.

Comprehensive I/O facilities, including 2 x SDI, 4 x AES-3id pairs, 8 x analogue.

Loudness measurement to ITU-R BS.1770-3 / EBU R128

Display, providing input status and metadata.

16 channel monitoring with ability to monitor any channel on either speaker, including combinations and groups.

Intuitive operation, with all controls directly accessible.

High resolution, tricolour level meters with adjustable colour transition points & peak-hold facility. Seven standard scales & ballistics, user assignable.

Auto-scaling facilities are available on the audio outputs when selecting multiple sources.

Fully RoHS compliant and 3 year warranty.

## INTRODUCTION

The Bel BM-A1-E16SHD is a no-compromise, 1U, 16-channel audio monitor suitable for operation in broadcast control rooms or OB vehicles where SDI is the standard video format. It is able to de-embed 16 channels of audio from 3G/HD/SD SDI, display the levels on front panel meters (selectable between channels 1-8 and 9-16), and to provide stereo audio monitoring of any combination of all 16 channels.

The unit is very simple to use: all source selection and main monitoring setup is done from individual controls on the front panel without any necessity for menu navigation.

In addition to two auto-detecting 3G/HD/SD SDI inputs, the monitor has eight balanced analogue inputs (D-sub) and four AES3id pairs (also accepting SPDIF). A re-clocked loop-through output is available for the selected SDI source providing a convenient and cost-effective method of switching SDI feeds to an external monitor. Channels 1-8 (of the selected source) are also routed to four AES3id outputs and eight balanced analogue outputs (D-sub). In addition, the stereo audio monitor mix is available as a separate balanced feed at a pair of XLRs.

Audio levels are metered on eight 26-segment, high-resolution, tricolour LED bargraphs. User setup options allow a choice of four scales and ballistics (including BBC or DIN PPM, VU and AES/EBU), and also colour transition points and peak hold.

The unit will decode Dolby® E, Dolby® Digital or Dolby® Digital Plus bitstreams into their discrete channels. Dolby data may be present on any pair of the incoming SDI audio channels, or connected at any of the AES3id inputs. Metadata may be displayed on the LCD screen.

The BM-A1-E16SHD also performs loudness measurement, compliant with ITU-R BS1770-3/EBU R128, on the signals selected for monitoring. Momentary loudness value is displayed on the LCD screen in numeric form, accompanied by 3 or 10 second average values, the integrated (long-term) value or Loudness Range (LRA).



## BM-A 1-E 16SHD Specifications

<b>Audio Inputs</b>	
Digital AES3-id	4 x 75 Ohm (BNC connector) - Also accepts SPDIF.
Sample Rate	48 kHz
Analogue	8 x differential impedence 25 kohm. 25 way 'D' type connector
<b>Video</b>	
Input	2 x 3G/HD/SD SMPTE 424M, 259M, 296M, 274M, 292M
Output	1 x SDI loopthrough
<b>Meters</b>	
Bar Graphs	26 element tricolour with adjustable colour break points
<b>Analogue Monitor Outputs</b>	
	2 x XLR3M
Max output level	+15 dB
Noise + THD	-98 dB
<b>Analogue Channel Outputs x 8</b>	
	1 x 25 way 'D' type connector
Max output level	+10 dB
Noise + THD	-108 dB w.r.t. clipping
<b>Digital Channel Outputs x 8</b>	
	4 x 75 ohm BNC
Digital AES-3id	
<b>Frequency response</b>	
All analogue outputs	20 Hz to 20 kHz $\pm$ 1 dB
<b>Main drive amp</b>	
Noise + THD	-80 dB w.r.t. maximum output
<b>Speaker driver units</b>	
Peak acoustic level (@2ft)	100 dB SPL
Shielding	Magnetic
<b>Scales and Ballistics</b>	
DIN PPM	Overall dynamic range: 55 dB (+5 to -50 dB) Attack time: 10 ms Fallback: 1.5 sec per 20 dB decay
BBC PPM	Overall dynamic range: (+12 to -12 dB from mark 7 to mark 1) Attack time: 10 ms Fallback: 2.85 sec (from mark 7 to mark 1)
VU	Overall dynamic range 23 dB (+3 dB to -20 dB) Attack time: 300 ms Fallback: 300 ms
AES/EBU	Overall dynamic range 60 dB (0 to -60 dB) Attack time: 1 ms Fallback: 1.5 sec per 20 dB decay
<b>Housing</b>	
	19" Rack Mount: 1U high. Outline Dimensions: 483 mm(W) x 256 mm(D) x 44 mm(H) Outline Dimensions: 19inch(W) x 10inch(D) x 1.7inch(H)
<b>Power</b>	
	90 - 264 VAC 50/60 Hz Autoselect, Fuse 4A HAC
<b>Environment</b>	
	Temperature 0 °C to 30 °C. Humidity 70% max (non-condensing)
<b>Weight</b>	
	4 kg (8.8lbs)

Product specifications subject to change without prior notice. See website for warranty details.