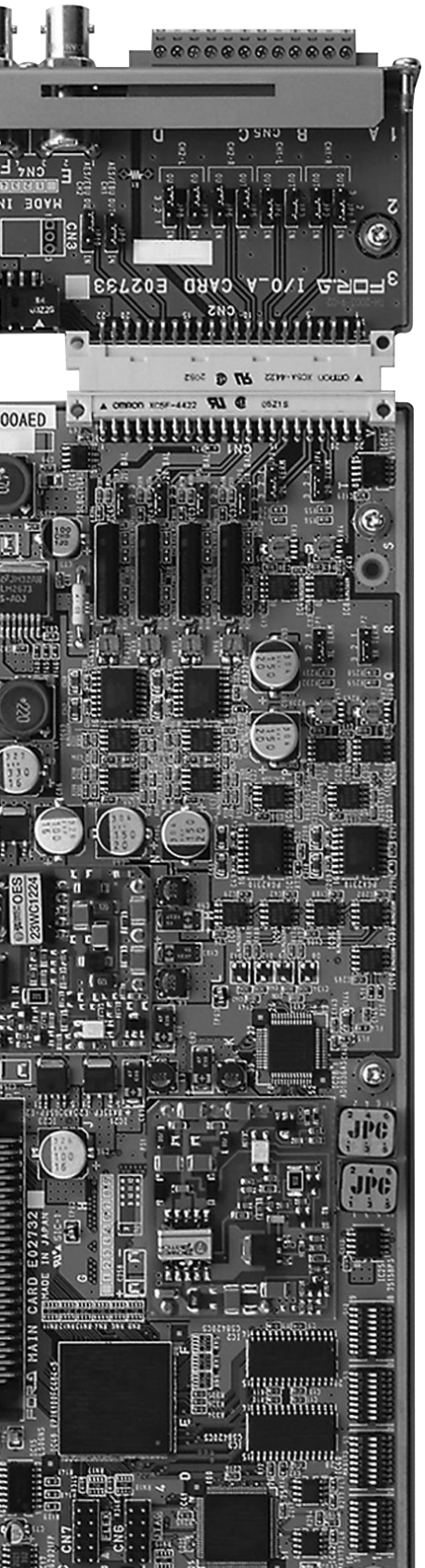
UFM Series

FOR-A
INNOVATIONS IN VIDEO and AUDIO TECHNOLOGY

Audio Interface Module

UFM-100AED

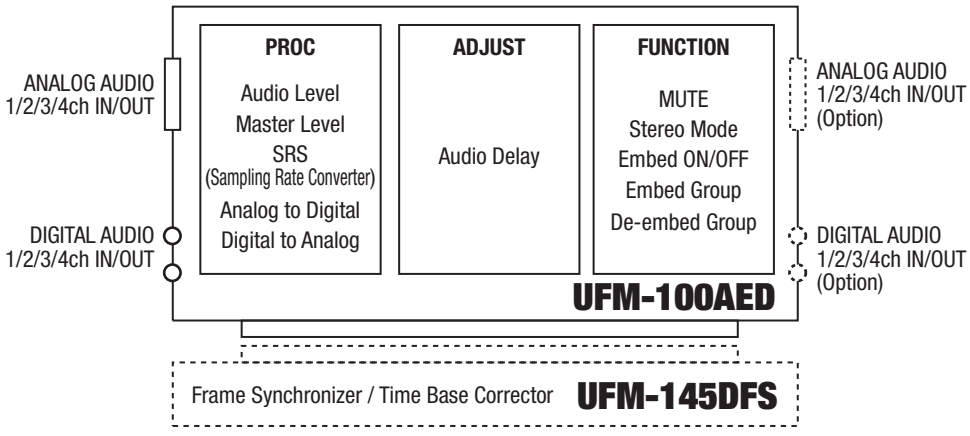


The UFM-100AED, an audio interface for UFM-145DFS, provides audio embedding and de-embedding. Usable in discrete form as an A to D converter, D to A converter, sample rate converter and delay line.

Features

- Support for UFM-145DFS Frame Synchronizer as a audio interface.
- Embedder and de-embedder.
- Accepts both AES/EBU analog and digital input audio, providing analog and digital output audio.
- Two stereo channels (4 monaural channels).
- Built-in variable range (4ms to 999ms) delay line.
- High-quality 24-bit quantizing, 48 kHz sampling frequency audio.
- Usable in discrete form as an A to D converter, D to A converter, sample rate converter (to 48 kHz) or delay line.

Block Diagram



*Input/Output connector is selectable. if you want both, required UFM-100AIO.

MUX & DeMUX

Analog Audio 4ch in/out

Digital Audio 4ch in/out

Audio A/D & D/A Converter

Audio Delay line

Analog Unit Specifications

Input Signal	2 stereo (4 monaural) channels, balanced/unbalanced* +4dB Input reference level can be changed by an internal setting. (-20 / -10 / 0 / +4 / +8dB; factory setting: +4dB)
Input Impedance	600Ω or more than 20kΩ (can be changed by an internal setting; factory setting: 600Ω)
Output Signal	2 stereo (4 monaural) channels, balanced/unbalanced* +4dB Input reference level can be changed by an internal setting. (-20 / -10 / 0 / +4 / +8dB; factory setting: +4dB)
Output Impedance	Low impedance (less than 100Ω) when balanced Low impedance (less than 50Ω) when unbalanced
I/O Connector	12-pin terminal block (ETB86-12P by Osada) x 1 3.5 mm pin pitch, AWG16 - AWG28 wire diameters supported
Sampling Frequency	48kHz
Quantization	24-bit
Max. I/O Level	+24dB (when balanced), +18dB (when unbalanced)
Output Load Resistance	More than 600Ω
D/A de-Emphasis	None or 50/15us (Automatically switched according to input channel status)

*Unbalanced can be supported by signal wire connections. System-based adjustments are required for the signal level.

Digital Unit Specifications

Input Signal	AES/EBU CH1/2, CH3/4 unbalanced 1.0Vp-p, 75Ω, 2ea., BNC SDI embedded audio CH1/2, CH3/4 (using UFM-145DFS connectors)
Output Signal	AES/EBU CH1/2, CH3/4 unbalanced 1.0Vp-p, 75Ω, 2ea., BNC SDI embedded audio CH1/2, CH3/4 (using UFM-145DFS connectors)
Digital Reference Level	-18dBFS, -20dBFS (factory setting: -20dBFS)
Input Quantization	16-bit - 24-bit
Input Sampling Frequency	32kHz / 44.1kHz / 48kHz (AES/EBU) 48kHz (synchronized with SDI embedded audio, video)
Output Quantization	20-bit or 24-bit
Output Sampling Frequency	48kHz
Phase between Channels	Within 10µs
SDI Audio Group	(Embedding/De-embedding) Embedding: Any one of four groups supported De-embedding: Any one of four groups supported *When linked up with UFM-145DFS (internal setting)

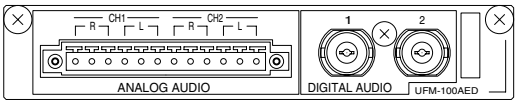
Process Control Unit / Reference Unit Specifications

Analog Output Level Variation Range	±6dB (level changed for each channel using front panel VR controls)
Stereo Mode	Selectable as below Stereo / monaural L / monaural R / monaural SUM / LR reversed
Minimum Delay	4ms
Delay Adjustment Range	4ms - 999ms (1ms step)
Reference Signal	When linked up with UFM-145DFS: Synchronized with Reference Video clock When used in discrete form: Free-running

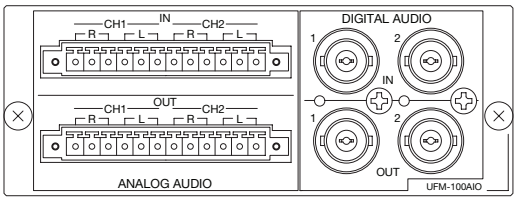
General Specifications

Temperature / Humidity	10ºC - 40ºC / 30% - 90% (no condensation)
Power / Consumption	Supply from UFM Frame, +12VDC - +24VDC / Approx. 8.4W
Draw	+12VDC: Approx. 0.7A, +24VDC: Approx. 0.35A
Dimensions	106 (W) x 303 (D) mm (Front board) 108.5 (W) x 66.1 (D) mm (Rear board)
Weight	Approx. 0.5kg
Necessary Slots	Front panel: 1 slot Rear panel: 1 slot, input-only or output-only Rear panel: 2 slots, input/output supported, when UFM-100AIO (option) is used
Accessories	Operation manual
Options	UFM-145DFS (for embedding, de-embedding) UFM-100AIO (when used in discrete form or for embedding, de-embedding)

Rear View (Standard)

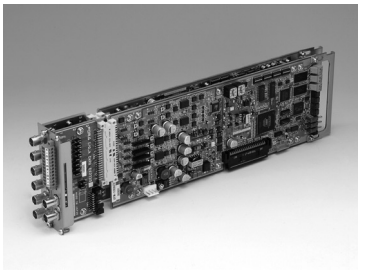


Rear View (Optional UFM-100AIO)



Frame Synchronizer / Time Base Corrector

UFM-145DFS



A modular type TBC/FS with the supreme analog composite to digital component converter, the UFM-145DFS has wide internal genlock capability, so that almost low grade composite video signal can be genlocked.

- Supreme composite to digital component converter.
- 4:2:2 component internal signal processing.
- 10-bit signal processing.
- NTSC/PAL automatic detection.
- Full frame memory to prevent picture field inversion during processing.
- Line FS mode available (Minimum delay).
- SD-SDI ANC data signal pass through.
- SD-SDI signal EDH enable/disable.
- Process control functions (video level, chroma level, setup level and chroma phase).
- Monitoring analog composite available.
- Dedicated optional audio interface, UFM-100AED, enables embedded/de-embedded audio.
- Standalone type FA-145 lineup.

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