

D/ESAM® 8000 DIGITAL EDIT SUITE AUDIO MIXER
TYPICAL OPTIONS
TECHNICAL SPECIFICATIONS

ACCURACY

Internal Audio Data Transfers	24 Bit Precision
Internal Calculations	56 Bit Precision

AUDIO OUTPUTS

Program	8 Output Buses
Monitor	8 Output Buses

DIGITAL PROGRAM/MONITOR OUTPUTS

Number of outputs per card	16 Channels (8 AES Pairs)
AES Format	AES/EBU or SPDIF (24 bits resolution)
Output Impedance	110 Ω / 75 Ω transformer coupled
Output Connectors	15 Pin Sub-D Male, 2 each.

ANALOG PROGRAM/MONITOR OUTPUTS

Number of outputs per card	8 Outputs
Connectors	15 Pin Sub-D Male (2 each)
Coupling	DC - Active Balanced
Source Impedance	50 Ω
Level	+23dBu max. into 600 Ω or greater
Level Deviation	>.2dB
THD+N @ -20 dBFS	>100dB @ 20-20KHz
THD+N @ 0 dBFS	>90dB @ 20-20KHz
Dynamic Range	>102dB
Frequency Response	<+0/- .2dB typ. @ 20-20kHz, -1dBFS, RL = 600 Ohms
Crosstalk	>100dB @ 20-20kHz
Unbalance of output voltage	>54dB

AUDIO INPUTS

Number of channels	Up to 13 input cards either analog, digital or SDI mixed. Mix up to 96 input channels at once Optional input modules available in groups of 8 or 16 (8 AES pairs) input channels
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DIGITAL AUDIO INPUTS

No. of channels	16 inputs per module, (8 AES Pairs)
Format	AES/EBU or SPDIF (24 Bits)
Input Impedance	110 Ω / 75 Ω transformer coupled
Sampling Frequency	30kHz to 50kHz with Sample Rate Converter
Input Connectors	15 Pin Sub-D Female, 2 each.

ANALOG AUDIO INPUTS

No. of channels	8 differential inputs per module
Connectors	15 Pin Sub-D Female, 2 each
Impedance	Bridging (>18k)
THD+N @ +4 dB	>-100dB @ 20-20kHz, -20dBFS
THD+N @ +24 dB	>-90dB @ 20-20kHz, -1dBFS
Dynamic Range	>102 dB
Frequency Response	\pm .1dB 20-20kHz
CMRR	>70dB 20-20kHz
Crosstalk @ 0 dBFS	>100dB @ 20-20kHz

SDI AUDIO INPUTS

No. of channels	8 channels, 2 modes
Input mode selection	2 X 4 Mode: 4 audio channels from group 1 from each of the 2 Video input BNC's 1 X 8 Mode: 8 channels from the Video 1 BNC input, 4 from group 1 and 4 from group 2
Connectors	BNC 75 Ohms (2 each)
Data format	270 Mbit serial digital video, SMPTE 259M
Video	D1, 525 or 625 line with audio, SMPTE 272M
Resolution	24 bit (unless limited by source)

EQUALIZER

Input Channels	24 Standard (32 with Dynamics option)
High frequency shelving filter	
Frequency range	1kHz to 16kHz
Gain range	+/- 15dB adjustable in .5dB steps
Mid bands 1 thru 4	
Frequency range	40Hz to 20kHz
Gain range	+/- 15dB adjustable in .5dB steps
Q	.2 to 3 adjustable in .1 Q increments
Low frequency shelving filter	
Frequency range	40Hz to 1kHz
Gain range	+/- 15dB adjustable in .5dB steps
Band Gain Adjustment	
Gain range	0 to -124dB, .5dB steps from 0 to -32dB, 1dB steps to -124dB

AUDIO DELAY

Input Channels	64 Standard
Output Delay	9.9 Frames NTSC or PAL
Logical Machine Delay	9.9 Frames NTSC or PAL
Virtual Machine Delay	7 Frames NTSC or PAL
Total Maximum Delay Per Channel	17 Frames (682ms max)
Number of Channels	64 Mixing Channels

DYNAMICS PROCESSOR (optional)

Input Channels	24 Standard (adds 8 more channels of EQ as well)
Compressor	
Threshold level	-12 dB to -40 dB, .5db steps to -30dB, 1dB steps below
Reference level	0 dB to -40 dB, .5db steps to -30dB, 1dB steps below
Ratio	Off, 1.12:1 to ∞ :1
Attack time	0.3 msec to 10 msec
Release time	.02 sec to 7 sec
Expander	
Threshold level	-12.5 dB to -90 dB, .5db steps to -30dB, 1dB steps below
Range	0 dB to -40 dB, .5db steps to -30dB, 1dB steps below
Ratio	Off, 1:12.1 to 1: ∞
Attack time	0.3 msec to 10 msec
Release time	.02 sec to 7 sec
Limiter	
Threshold level	0 dB to -12 dB, .5dB steps
Attack time	0.3 msec to 10 msec
Release time	.02 sec to 7 sec

Side Chain
 Level 0 dB to -60 dB, .5db steps to -30dB, 1dB steps below
 Crest factor RMS, RMS + 6dB, 9dB, 12dB, 15dB, 18 dB and 24dB, Peak
 Low frequency cut Off, 10Hz, 14Hz, 20Hz, 30Hz, 50Hz, 70Hz and 100Hz

Miscellaneous
 Output gain adjust 0dB to -60dB, .5db steps to -30dB, 1dB steps below
 Delay Off, 1ms and 2ms

SIGNAL DELAY

Digital IN to Digital OUT 252 uS +/- 20µS (basic system delay)
 Digital IN to Digital OUT W/SRC Add 1.821mS
 Analog OUT Add 409µS
 Analog IN Add 620µS
 Equalizer add 115µS to any channel with equalizer flat (±20µS)

OSCILLATOR (Built in)

Tone Generators 8 Total
 2 Factory set TONE Machine's Tone1: 1kHz @ -20dBFS all 8 channels (factory default)
 Tone8: Multiple Frequencies @ -20dBFS. Channels 1 thru 8 set at
 1, 1.25, 1.6, 2.0, 2.5, 3.15, 4 and 5kHz respectively.
 (May set any level or frequency on all 8 generators through computer setup)

TIMING INPUT

Video 1 BNC Input
 Format NTSC, PAL, HD 60 Field, HD 59.94 Field, HD 48 Field, HD 48/1.001
 HD 25 Frame Progressive, HD 24 Frame Progressive, HD 24/1.001 Progressive
 Audio 1 XLR Input
 Format AES3 48kHz

SAMPLE RATE

Locked to TV field or AES Input connector 48kHz

LEVEL CONTROLS

Input Fader Range +6dB to -∞ (.5db steps +6dB to -22dB, 1dB steps below -23dB)
 Monitor Level Range +6dB to -∞ (.5db steps +6dB to -22dB, 1dB steps below -23dB)

TRANSITIONS

Rates 0 - 999 Frames
 Accuracy Field Accurate (Field Selectable)

INTERFACES

Serial 9-pin D sub-min (RS-422)
 Editor Protocol ESAM II and D/ESAM IV
 General Purpose (GPI) 25 pin D sub-min (on provided computer 1 RU)
 GPI Functions Programmable (Tran Start, Cut, and Mix are the factory default settings)

MEMORY REGISTERS

Standard	9999 D/MEM Registers saved on either hard drive or disk drive
User Configuration	9999 Registers saved on either hard drive or disk drive
Disk Drive	Floppy disk = 1.44MB, DOS format

METERS

Type	8 VU, IEEE PPM, Full Scale AES and AES Meter (user switchable)
Location	LCD Display on Control Panel
Range	-20dB to +3dB (VU); -20 dB to +4 dB (PPM); 0 to -70 (Full Scale AES); +12 to -32 (AES Meter)

POWER

Voltage Requirements	100-240 VAC
Frequency	47-63 Hz
Power Consumption	
Control Panel	44 Watts Maximum
1 RU Computer	48 Watts Maximum
Vadis Frame	169 Watts Maximum (based on maximum amount of highest wattage input cards)

OPERATING TEMPERATURE

Normal	10 - 40 °C
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DIMENSIONS

Control Panel with integrated electronics	22.5" (57.15 cm) Wide x 22.25" (56.52 cm) Deep* Unit is 9" (22.86cm) High at rear and 1" (2.54 cm) High at front
Computer	19" (48.26 cm) 1 RU Rack Mount. 1.725" (4.38 cm) High and 20.5" (52.07 cm) Deep*
Vadis 880 Frame	19" (48.26 cm) 4 RU Rack Mount. 6.9" (17.6 cm) High 21.1" (53.6 cm) Deep (Chassis only)

0dBFS = digital clipping.

0dBu = 0.775V rms

* Allow extra 2" for cabling from back.

Specifications subject to change without notice.