

# Digital Audio Mixer

## DMX 66 – Datasheet



# 1. Technical Specifications

## Global Audio Performance

Frequency response	40 Hz to 20 kHz, -3 dB, LINE selection
Frequency response	160 Hz to 20 kHz, -3 dB, MIC selection
Dynamic range	≥ 108 dBA, 20 Hz to 20 kHz, 0 dB gain
THD input to output	≤ 0.01%, all gain settings 0 dB
Total latency input to output	2,55 ms

## Analog Input Section

Number of balanced inputs	6 (Phoenix 3,81 type connector)
Number of unbalanced inputs	1 (RCA type connector)
Sensitivity MIC-HI	-58 dBu (1 mV <sub>rms</sub> ), dip-switch activated
Sensitivity MIC-LO	-34 dBu (15 mV <sub>rms</sub> ), dip-switch activated
Sensitivity LINE	-19 dBu (87 mV <sub>rms</sub> ), dip-switch activated
Analog gain	from 0 dB up to 30 dB, manual adjustable
Phantom power	+48 VDC stabilized, 16 mA/channel, dip-switch activated
Balanced inputs impedance	5 kΩ @ 1 kHz
Unbalanced inputs impedance	33 kΩ @ 1 kHz
EIN (Equivalent Input Noise)	-126 dB, 20 Hz to 20 kHz weighted, Rs=150 Ω
Input protections	radio frequency interference (RFI) transient voltage spikes external overvoltage

## Analog Output Section

Number of balanced outputs	6 (Phoenix 3,81 type connector)
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Number of unbalanced outputs	1 (RCA type connector)
DAC Dynamic range	120 dB ("A" weighted)
Residual noise of output driver	-100 dBu (20 Hz ÷ 20 kHz)
Nominal level (balanced output)	+0 dBu (0,775 V <sub>rms</sub> )
Maximum level (balanced output)	+20 dBu (7,75 V <sub>rms</sub> )
Balanced outputs impedance	140 Ω @ 1 kHz
Unbalanced outputs impedance	70 Ω @ 1 kHz
Output protections	short circuits

### Analog to Digital Conversion

Sampling Rate	48 kHz
Bit Depths	24 bit
Converter type	sigma delta
SNR	104 dB ("A" weighted @ 48 kHz)
Dynamic range	≥ 104 dB (-60 dB <sub>FS</sub> )
Total harmonic distortion	-93 dB (1 kHz, 0 dB <sub>FS</sub> )
Oversampling factor	512 F <sub>s</sub>

### Digital Signal Processor

DSP	ADSP21261 – SHARC Processor 32-bit / 40-bit, Floating-Point 150 MHz – 6,67 ns instruction cycle Super Harvard Architecture 900 MFLOPS, 1 Mbits SRAM
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### Digital to Analog Conversion

Bit resolution	24 bit
Converter type	sigma delta

Sampling frequency (Fs)	48 kHz
Signal to noise ratio (SNR)	112 dB ("A" weighted @ 48 kHz)
Dynamic range	$\geq 112$ dB ( $-60$ dB <sub>FS</sub> )
Total harmonic distortion (THD)	-94 dB (1 kHz, $-0,1$ dB <sub>FS</sub> )
Delay time	0,58 ms
Oversampling factor	512 Fs

## Digital Processing

### Inputs Blocks (for each channel)

Anti-Hum Filter	Butterworth filter type with cutting frequency at 160 Hz and slope -12 dB/octave	
Lowpass / Highpass filter	Butterworth filter type, slope -12 or -24 dB/octave	
5-PEQs equalizer	Frequency	20 Hz ÷ 20 kHz
	Gain	-15 dB ÷ 15 dB
	Bandwidth	0,014 ÷ 6,672 octave
Noise gate	Threshold	$-60$ dB <sub>FS</sub> ÷ $0$ dB <sub>FS</sub>
	Hold Time	100 ms ÷ 10 s
Dynamic range compressor	Threshold	$-90$ dB <sub>FS</sub> ÷ $20$ dB <sub>FS</sub>
	Ratio	R=1:1 ÷ R=20:1
	Post Gain	$-20$ dB ÷ $20$ dB
	Attack Time	1 ms ÷ 250 ms
	Release Time	10 ms ÷ 2500 ms
Automix function	Adaptive Threshold	
	NOM Gain	
	Max opened channels	1 ÷ 16
	Hold Time	100 ms ÷ 5 s
	Attenuation	$-60$ dB ÷ $0$ dB
	Priority	1 (low) ÷ 5 (high)
Fader level	$-60$ dB ÷ $10$ dB, step 0,5 dB	

**Input / Output Routing Matrix:**

Matrix size	6 In / 6 Out
Matrix cross point level adjusting	-60 dB ÷ 10 dB, step 0,5 dB

**Output Blocks** (for each channel)

5-PEQs equalizer	Frequency	20 Hz ÷ 20 kHz
	Gain	-15 dB ÷ 15 dB
	Bandwidth	0,014 ÷ 6,672 octave
31-Bands graphic equalizer	Gain	-12 dB ÷ 12 dB
	Step	0,5 dB
Lowpass / Highpass filter	Butterworth filter type, slope -12 or -24 dB/octave	
Noise gate	Threshold	-60 dB <sub>FS</sub> ÷ 0 dB <sub>FS</sub>
	Hold Time	100 ms ÷ 10 s
Dynamic range compressor	Threshold	-90 dB <sub>FS</sub> ÷ 20 dB <sub>FS</sub>
	Ratio	R=1:1 ÷ R=20:1
	Post Gain	-20 dB ÷ 20 dB
	Attack Time	1 ms ÷ 250 ms
	Release Time	10 ms ÷ 2500 ms
Limiter	Threshold fixed at 0 dB <sub>FS</sub>	
Automatic feedback suppressor (up to 2 channels)	Up to 5 ultra-narrow notch filters (Q = 0,1) configurable in fixed/dynamic mode	
Delay	0 m ÷ 233 m, 0 ms ÷ 679 ms	
Phase control	0°, 180°	
Output level	-60 dB ÷ 10 dB, step 0,5 dB	
Master level	-60 dB ÷ 10 dB, step 0,5 dB	

**Operative System and services**

Linux 10 (buster)

Icicast 2.4.4 to stream the audio signal over the internet via integrated streaming media server

AVE Media Streaming, a built-in web player allowing users to listen audio stream directly within the browser.

A built-in web server allowing for remote configuration of end-user settings

## Software

AVE Mixer User Control software for DSP setting via Ethernet port

Secure shell (SSH) for OS configuration via Ethernet port

## Data Connections

Front panel Bluetooth 4.1, USB-A 2.0(front panel)

Rear panel Ethernet 802.3, USB-B 3.0(rear panel)

Internal Wi-Fi 802.11 (optional)

## Display

LCD 20 characters x 2 lines

## User Interface

Peak and signal LEDs indicator per input channel on front panel

Peak and signal LEDs indicator per output channel on front panel

Knob for master volume selection, accessible via front panel

Knob for preset selection, accessible via front panel

User Access Protection via front panel with PIN code

Web remote control via LAN connection

USB MP3 decoder player on front panel

Bluetooth 4.1 receiver

### PSU Module

AC range 90 VAC to 264 VAC (Universal Input)

Input frequency 47 Hz to 67 Hz

Power consumption max 33 VA

### Mechanical

Width 483 mm

Height 44 mm

Depth 230 mm

Weight 3,6 kg / 7.93 lbs

### Temperature Range

Indoor 0°C to 40°C (32°F to 102°F)

### Humidity

0-98%, non-condensing

### Compliances

Electromagnetic compatibility EN 55022, class B, FCC part 15, level B

Emissions IEC/EN 61000-3-2 class B

Grounding scheme AES48-2005 grounding scheme

Marking CE

RoHS 2002/95/EC

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