# 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 mVrms), dip-switch activated |
| Sensitivity MIC-LO | -34 dBu (15 mVrms), dip-switch activated |
| Sensitivity LINE | -19 dBu (87 mVrms), 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 |
| Input protections | radio frequency interference (RFI) transient voltage spikes external overvoltage |

| Analog Output Section | |
| --- | --- |
| Number of balanced outputs | 6        (Phoenix 3,81 type connector) |
| 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 $V_{rms}$) |
| Maximum level (balanced output) | +20 dBu (7,75 $V_{rms}$) |
| Balanced inputs impedance | 140 Ω @ 1 kHz |
| Unbalanced inputs 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 $dB_{FS}$) |
| Total harmonic distortion | -93 dB (1 kHz, 0 $dB_{FS}$) |
| Oversampling factor | 512 Fs |

| Digital Signal Processor | |
|---|---|
| DSP | ADSP21261 – SHARC Processor<br>32-bit / 40-bit, Floating-Point<br>150 MHz – 6,67 ns instruction cycle<br>Super Harvard Architecture<br>900 MFLOPS, 1 Mbits SRAM |

| 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 | ≥ 112 dB (-60 dB$_{FS}$) |
|---|---|
| Total harmonic distortion (THD) | -94 dB (1 kHz, -0,1 dB$_{FS}$) |
| 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$_{FS}$ ÷ 0 dB$_{FS}$ |
| | Hold Time | 100 ms ÷ 10 s |
| Dynamic range compressor | Threshold | -90 dB$_{FS}$ ÷ 20 dB$_{FS}$ |
| | 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$_{FS}$ ÷ 0 dB$_{FS}$ |
| | Hold Time | 100 ms ÷ 10 s |
| Dynamic range compressor | Threshold | -90 dB$_{FS}$ ÷ 20 dB$_{FS}$ |
| | 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$_{FS}$ | |
| Automatic feedback suppressor (only for first 2 inputs) | 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) |

| | Icacast 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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