

SONY[®]

Digital Portable Mixer
DMX-P01



Digital audio mixing - stepping into ENG and EFP

Effective audio quality is now more important than ever for Electronic News Gathering (ENG) and Electronic Field Production (EFP) applications because, even with high-quality video, lackluster audio performance will result in a mediocre production.

Introducing the DMX-P01 Digital Portable Mixer, Sony's answer to these high-quality audio requirements. Not only does the DMX-P01 offer outstanding audio quality, it is also one of the most user-friendly mixers in the ENG and EFP markets.

With full 24-bit processing and a sampling rate of either 48kHz or 96kHz, the DMX-P01 provides sound quality comparable to high-end production mixers. Its front panel is human engineered to allow fast, easy, and accurate setting adjustments - essential when working in the field. It also includes other useful features, such as panel-lock and parameter-lock functions, selectable meter scales, camera-audio return-level check, memory function, digital cascade capability, and digital outputs.

All of this functionality and versatility is packaged into one sleek, compact, and lightweight body that can be used effortlessly in field productions. Make the DMX-P01 your first step into the world of portable digital-audio mixing in the field.

▶▶▶ Digital Benefits of the DMX-P01

Excellent Sound Quality/Full Digital Processing

In order to provide outstanding sound quality for ENG and EFP applications, the DMX-P01 offers full digital-audio processing. Its 24-bit A/D and D/A converters provide a high level of linearity for analog inputs and outputs. Internally, the unit utilizes 32-bit digital processing for maximum throughput. In addition, the DMX-P01 has a sampling rate that is selectable from either 48kHz or 96kHz.

High-Quality Digital Limiters/Compressors

By using digital limiters and compressors, the DMX-P01 can provide extremely high-quality sound in one small package. Limiters are available at the input, and both limiters and compressors are available at the output for maximum flexibility.

Full Parameter Controls From The Front Panel

The DMX-P01 puts all of its controls at your fingertips, with a cleanly organized and logical layout on the unit's front panel. The DMX-P01 processes audio digitally, so

parameters that are used less frequently are stored internally and accessed only when needed. Using the front-panel controls and easy-to-read LCD allows full control of every parameter without the need to remove the unit from its audio-organizer case. The LCD panel is also equipped with a backlight, so the unit can be used in low-light conditions too.

Panel-Lock and Parameter-Lock Features

One major concern for audio engineers in the field is the accidental bumping of controls, which can inadvertently change the sound settings. The DMX-P01 safeguards against this with its panel-lock feature, which can be set to secure all of the control settings, or selected individual control settings. With the lock engaged, physical contact with the controls will not alter their settings. In addition, a Parameter-Lock feature also prevents inadvertent parameter changes.

Flexible Meter Scales

Because the DMX-P01 is a digital mixer, the meter calibrations can be easily changed from one type to another without the need to replace the entire meter.

Six easy-to-change meter scale sheets are supplied: VU, PPM1 (BBC-type), PPM2 (DIN-type), PPM3 (NORDIC-type), PPM4 (IEC-type1), and dBFS. Simply insert the desired scale sheet and select the appropriate meter type from the setup menu. The DMX-P01 will display the audio level according to the scale selected.

Camera-Audio Return-Level Check

The DMX-P01 enables users to visually verify that the mixer's audio level matches the level recorded to the camcorder tape. This is done using the camera return-level mode, available in the setup menu. Simply send a reference tone signal to the camcorder and the level difference between the mixer output and camcorder return signal will be displayed. Then adjust the marker to the central position, and the level adjustment is complete.

Memory Function

The DMX-P01 processes audio digitally, so users can effortlessly store and recall parameters from the setup menu. There are two memory functions: "Power-On Memory Recall," and "Scene Memory Recall."

Power-On Memory Recall - When the DMX-P01 is powered

on, the system is capable of recalling parameters in three different ways: with the default factory settings, with the same settings as the last time the unit was used, or with the parameters of one specific scene memory.

Scene Memory Recall - This feature allows users to recall up to ten different user-defined parameter settings or the factory default settings.

In situations where a single unit is required to serve multiple users or multiple shooting scenarios, these features can prove invaluable.

Digital Cascade

For applications requiring additional inputs, DMX-P01 mixers can be cascaded using a digital connection between mixers. The benefit of cascading mixers digitally is that sound quality is not degraded, as it would be when cascading analog mixers.

Digital Output

The DMX-P01 is equipped with a digital output, which can be used to send audio to digital peripheral equipment such as DAT recorders. AES/EBU and S/PDIF (IEC 60958) coaxial interfaces are available for master outputs.



LEFT PANEL



RIGHT PANEL



Features

Inputs

- 4 microphone/line inputs with XLR type balanced connectors
- +48 V power for each microphone input
- Digital cascade input with phono connector
- Microphone/line gain-level control
- Level control knobs with stereo-link facility
- Selectable sampling rate (48 kHz or 96 kHz) for A/D converters

Outputs

- 2 balanced outputs with XLR-type connectors
- Digital AES/EBU output (stereo) with XLR-type connector
- Coaxial output connector for mix-bus output (for cascade) or S/PDIF digital output (selectable)
- Stereo tape output with unbalanced 3.5 mm TRS jack
- Switchable output mode: stereo or monoaural
- Selectable output-level control for L/R master outputs and camera send
- Selectable sampling rate (48 kHz or 96 kHz) for D/A converters

Panning

- Variable pan controls

Low Cut Filters

- Adjustable cut-off frequencies for 2 user settings (A/B)
- Quick parameter-recall switch with OFF/A/B positions

Limiters/Compressors

- Digital limiters on both inputs and outputs
- Digital compressors on outputs
- Precise parameter control on threshold and ratio value, attack and release time
- Link function (ON/OFF switchable)
- LED indicators for output limiter/compressor operation

Link/M-S Operation

- Links input levels, LCFs, and PAN controls for channels 1/2 and 3/4
- Links output levels for master left/right outputs
- Decodes M-S microphone inputs, and links the input levels of channels 1/2 and 3/4
- Phase reverse on channels 2 and 4 (M-S decode)

LCD Panel

- Various level-meter displays: VU, PPM1 (BBC-type), PPM2 (DIN-type), PPM3 (NORDIC-type), PPM4 (IEC-type1), dBFS
- Displays setup menus and allows various parameter settings
- Ten user-scene memory settings (each including level meter, LCF, limiter/compressor, and link status)
- Six scale sheets supplied for different level-meter calibrations
- Back light
- Heated LCD* for low-temperature conditions

Monitoring

- 2 outputs: 1/4-inch phone jack and 3.5-mm mini jack
- Six monitoring modes: left output, right output, stereo output, left/right-mixed monoaural, M/S decode and camera return
- Level-control knob

Camera-Audio Send/Return-Level Control

- Stereo return from a camcorder via 12-pin balanced connector
- Precise level control on LCD with auto-evaluation function for return level
- Monitoring capability with headphones

Oscillator/Talkback (selectable)

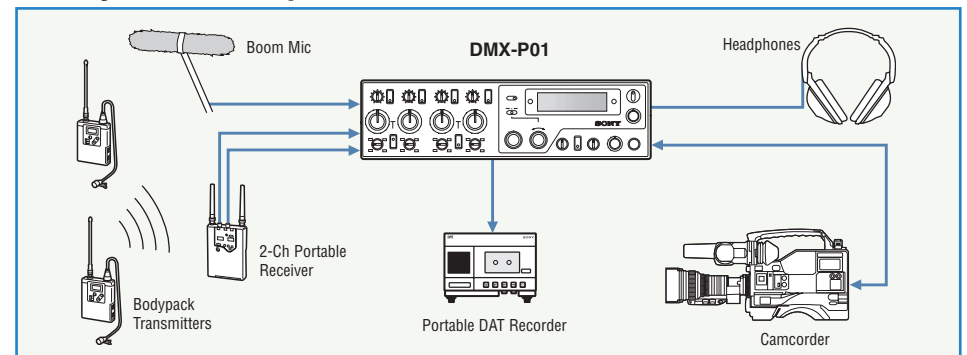
- Oscillator: 1-kHz pilot-tone signal into all outputs
- Talkback: slate into all outputs
- Momentary and alternative modes for both oscillator and talkback

Power

- External DC 10 to 15 V input with 4-pin XLR connector
- External DC 10 to 15 V input with jack connector
- DC 10 to 15 V output* with 4-pin Hirose connector for a wireless microphone receiver
- 8 internal AA-size (LR6) batteries for approximately 5 hours of continuous operation
- Spare battery-compartment for quick battery change

*When operated on alkaline batteries, power is not supplied to the wireless microphone receiver nor is the LCD panel heated.

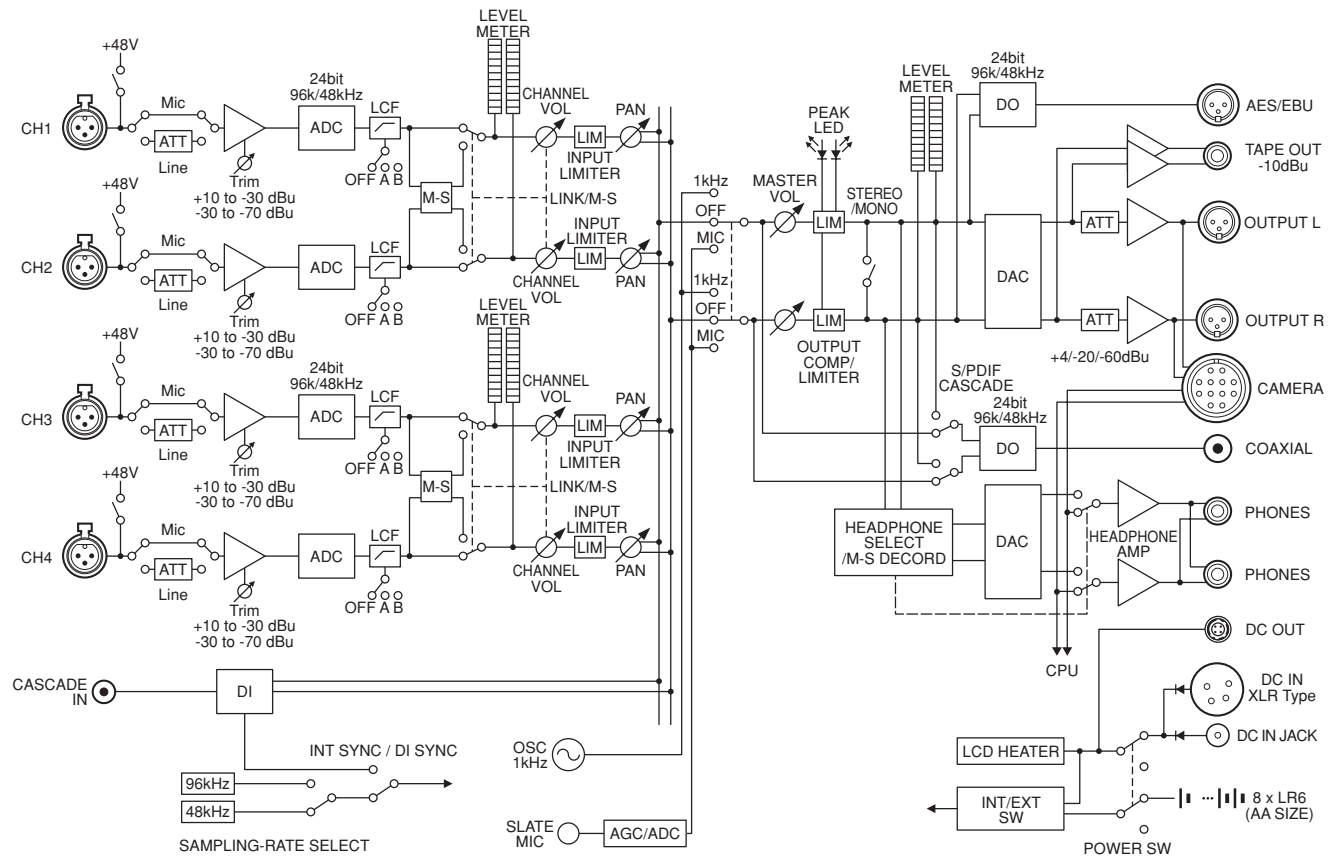
System Example



Specifications

Inputs	
Channel inputs (analog)	4 ch, XLR-3-31 (x 4), electrically balanced, microphone power; +48 V (on/off) Mic level: -70 to -30 dBu (max. -10 dBu), 2.2 k Ω or more Line level: -30 to +10 dBu (max. +30 dBu), 10 k Ω or more
Cascade input (digital)	2 busses (L/R), coaxial, 75 Ω
Outputs	
Master outputs (analog)	2 ch (L/R), -60/-20/+4 dBu (max. +24 dBu), XLR-3-32 (x 2), balanced, 600 Ω load or more
Master outputs (digital)	2 ch (L/R), AES/EBU, XLR-3-32 (x 1), 110 Ω load 2 ch (L/R), IEC 60958 coaxial (x 1), 75 Ω load
Tape outputs (analog)	2 ch (L/R), -10 dBu (max. +10 dBu), 3.5 mm dia. TRS jack, unbalanced, 10 k Ω load or more
Camera send/return (analog)	2 ch (L/R), 12-pin, female, balanced, Send level: -60/-20/+4 dBu (max. +24 dBu), 600 Ω load or more Return level: 0 dBu (max. +20 dBu), 10 k Ω
A/D converter	24 bits
D/A converter	24 bits
Sampling frequency	48 kHz or 96 kHz
Internal signal processing	32 bits
Low cut filter	70 to 400 Hz (at 96 kHz sampling frequency), 12 dB/octave 50 to 400 Hz (at 48 kHz sampling frequency), 12 dB/octave
Input limiter	Threshold: 0 to +20 dB (in 2 dB steps)
Output limiter/compressor	Threshold: -20 to +10 dB (in 2 dB steps) Ratio: 2:1, 4:1, 6:1, or 10:1 Attack time: 0.5 ms, 10 ms, or 100 ms Release time: 0.1 s, 1.0 s, or 2.0 s
Frequency response	20 Hz to 40 kHz +0.5/-3.0 dB (at 96 kHz sampling frequency) 20 Hz to 20 kHz +0.5/-1.0 dB (at 48 kHz sampling frequency)
Total harmonic distortion	0.05% or less
Equivalent input noise	-130 dBu, 150 Ω terminated, IHF-A (mic input, typical)
Crosstalk	-90 dB (1kHz) or less
Delay time	1 ms or less at 96 kHz sampling frequency, including A/D D/A conversions 2 ms or less at 48 kHz sampling frequency, including A/D D/A conversions
Level meter calibration	VU, BBC-type DIN-type, NORDIC-type, IEC-type1, dBFS (selectable)
Headphone output	1/4-inch TRS jack (x 1) and 3.5-mm dia. TRS jack (x 1), 300 mW, 32 Ω load or more
Operating voltage	
Internal	DC 12 V (eight AA-size (LR6) alkaline batteries)
External	DC 10 to 15 V via XLR 4-pin connector and DC jack
Battery life	Approximately 5 hours
(with Sony AA-size alkaline batteries (LR6SG) at 25 °C)	(when the sampling frequency is 48 kHz and the LCD backlight and +48 V microphone power are not used.)
Power supply (to wireless microphone)	DC 10 to 15 V via 4-pin Hirose connector, female
Operating temperature	0 to +45 °C (+32 to +113 °F)
Storage temperature	-20 to +60 °C (-4 to +140 °F)
Dimensions (W x H x D)	266 x 68 x 206 mm (10 1/2 x 2 3/4 x 8 1/8 inches)
Weight	Approx. 2.2 kg (4 lb 13 oz)
Supplied accessories	Spare battery-compartment (x 1), 12-pin male connector (x 1), meter scale sheets (x 1 set), cascading belt (x 1), operating instructions (x 1), rubber foot (x 1 set)

Block Diagram



SONY

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