



BLACKBOX RECORDER

a multi-track for the 21st century



CAPTURING LIVE PERFORMANCE

24 TRACK • 24 BIT • 96kHz



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The **BLACKBOX RECORDER** captures live sound onto a regular USB2 disk in industry standard WAV files for immediate use in your Digital Audio Workstation. No need to take a laptop or delicate DAW to the gig; no file transfer; no wasted time. The simple user interface allows the live engineer to concentrate on the live mix knowing that the capture of the performance is secure.

Whatever happens, you can rely on the **BLACKBOX RECORDER** to capture the real performance.

Robust, rugged, rack-mounted and ready to record.

The **BLACKBOX RECORDER** is housed in a 1U rack-mounted enclosure with a sleek front panel and all the connections to the rest of your live equipment on the rear of the unit. The front panel controls are all touch sensitive to make the unit more reliable with no moving parts - even in the switches. It records to a regular external USB2 drive (not supplied) formatted with the standard FAT32 format so that both PCs and Macs can use the disk. The sort of drive that can be obtained from any internet retailer at a remarkably reasonable price for storing anything from photos to music. A 500GByte drive will store approximately 20 hours of 24 track material at 24 bits / 96kHz (and over 40 hours at 48kHz).

It also records in industry standard mono Broadcast WAV files (B-WAV) that virtually every digital audio workstation can use directly without having to waste any time transferring files. Just unplug the drive from the **BLACKBOX RECORDER** at the end of the gig and plug it directly into your workstation and you're ready to use the performance that you've captured.

The unit can be powered up and ready to record in 10 seconds including logging the disk drive. Just press the Record button and you're away.

As the primary aim of the **BLACKBOX RECORDER** is to capture the performance, certain safeguards have been designed into the unit from the ground up. Once in Record, the Stop button must be held down for 2 seconds or more to end a recording to prevent pressing Stop accidentally. Similarly, the playback facility will normally be locked out after a recording to prevent you inadvertently pressing Play at the wrong time - like in the middle of the performance!



The **BLACKBOX RECORDER** contains 24 channels of analogue inputs using quality 24bit 96kHz converters. The input levels are selectable to accommodate the outputs of your mixing desk and the unit plugs directly into the insert points on your console just after the mic amps - normally the default level of 22dBu = 0dBFS will be fine. The 24 outputs are fed back to the insert returns and provide the increasingly popular Virtual Sound Check facilities previously unavailable on any equipment at this price point. Whenever the unit is not in playback, the inputs are linked directly to the outputs via analogue relays so that the FOH sound will be fully protected in case of a power failure.

In addition, 8 of the insert returns are brought out to TRS jacks on the rear of the unit so that you can still plug external units into your insert points (and hear the effect during any virtual sound checking as well).

A headphone jack allows the user to monitor each track individually or a rough mix of all the tracks being recorded. The overall headphone volume is adjustable and each track is passed through a monitoring compressor to aid audibility in the live environment.

A simple front panel menu driven user interface allows the more detailed set-up options to be adjusted with the data wheel doubling as a locator allowing the placement of marks within songs for creating playback loops while perfecting the front of house or monitor mix for the band.

There is even a keyboard interface so that the individual tracks can be labelled as can the songs themselves.

Dividing a long capture into individual songs can be achieved by pressing the record button during the gaps or by using an optional footswitch to start a new recording. However, these gaps will be sample accurate so that the recordings can be joined back together again perfectly in your workstation. Sample rates are selectable between 44.1kHz, 48kHz, 88.2kHz and 96kHz and word size can be adjusted down to 16bit if preferred.

The whole unit can be synchronised to an external word clock using an AES/EBU or S/PDIF signal. It accepts both Linear Timecode (LTC) and MIDI Timecode (MTC) for time stamping recordings - especially useful when making a multi-track recording to accompany a video shoot.

The unit will also accept commands via the MIDI Machine Control (MMC) protocol or via Sony PII (9-pin) control for track arming, transport control features, and the like.

Optional factory fit digital interfaces are available to enable record and replay via AES/EBU or ADAT format TOSlink interfaces. These interfaces allow direct connection to digital mixing consoles although the ADAT interface is limited to 48kHz operation. The unit is also available with fully balanced i/o for consoles that require it.

Multiple **BLACKBOX RECORDERS** can be linked together to enable sample accurate recordings over more than 24 channels. The slave units take their commands from the master unit so that all the recordings will be synchronous, sample accurate and start on the same sample making remixing much simpler back in the studio.



Specifications:

Sample Rates supported:

44.1kHz, 48kHz, 88.2kHz & 96kHz

Analogue Inputs

levels: -10dB / +4dB switchable
 Max input level: +22dBu = 0dBFS
 A-D conversion: 24 bit, 96kHz
 106dB S/N; 96dB THD+N (typical A-weighted 48kHz)

Timecode

Frame Rates: 24, 25, 29.97 drop and non-drop, 30 fps

Analogue Outputs

levels: -10dB / +4dB switchable
 Max output level: +22dBu = 0dBFS
 D-A conversion: 24 bit / 96kHz
 106dB S/N; 94dB THD+N (typical A-weighted 48kHz)

Physical

19" rack mountable - 1U high
 Dimensions: 425mm x 150mm x 44mm
 Weight: 2.1kg;
 Dc input: 9V - 12V
 Power consumption: <25W

Rear Panel Connections:

Analogue i/o

3 x 25 way Female D-type supplied with looms to 1/4" stereo TRS jacks (for console insert points - tip send, ring return)

(Loop through outputs)

8 x 1/4" stereo TRS jack sockets (Ch 17-24 only: tip send, ring return)

Monitoring

1 x 1/4" stereo TRS jack socket: Headphone output

Control and Synchronisation

1 x 1/4" TRS jack socket: Linear Time Code / Footswitch

1 x 5-pin DIN: MIDI Time code (MTC) and MIDI machine control (MMC) protocol

1 x 9-pin Male D-type: SONY PII protocol

2 x RCA sockets: AES/SPDIF word clock + communications to auxiliary units

Other Connectors

1 x USB2 (480Mb/s) interface to disk drive

1 x mini DIN: PS2 keyboard socket

1 x 2.1mm dc inlet (9Vdc power adapter supplied)

Options (Factory fit only)

AES/EBU interface: provides 24 channels of digital input and output to AES-3 (2003) specification on 3 x 25way D-type connectors

ADAT interface: provides 24 channels of digital input and output via 6 x Toslink optical connections (N.B. This option restricts sample rate to 44.1kHz or 48kHz)

Balanced i/o: the balancing option accepts and provides full electronically balanced inputs and output signals at unity gain. The pin out of the 25 way D-types has been designed so that you can use the same i/o cables as the standard unit.



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