

The Nagra LB - Two channel Universal digital audio recorder



Features

- 2 channels, 24 bit, 192 kHz AD / DA
- MPEG-1 layer II , MP-3 compression
- Compact flash and internal 2GB flash memory
- On-board graphic audio editor
- USB 2.0 and Ethernet communication ports
- Internal speaker, Pre-recording buffer
- Dual colour screens and Bluetooth communication
- Lightweight and battery operated

Product description

The NAGRA LB has been designed as the natural successor to the ARES-C and the ARES-BB+ recorders, and it is specifically designed for broadcast applications although naturally it is also very well suited to a multitude of other recording applications. Similar in size to the ARES-BB+ the LB offers communication possibilities never before seen in a professional broadcast recorder.

Audio inputs

It offers two analogue audio inputs and a single stereo digital input. The Nagra LB will record in either PCM linear audio or in MPEG-1 layer II or MP-3 compressed audio formats. The inputs are equipped with traditional NAGRA microphone pre-amplifiers for dynamic and phantom +48V microphones. The LINE input will accept up to +24dB. The audio levels and current operating mode of the recorder are shown on the colour display mounted on the front of the unit.

Above the potentiometers three leds are fitted to indicate audio levels as on the ARES-PII+, BB+ and Nagra VI. The front display becomes inactive when the editor on the top panel of the machine is in use. The built-in microphone can also be seen in the top left corner of the photograph.



Media

The Nagra LB is fitted with an internal 2GB NAND flash memory which serves two important roles. Firstly as a back-up media should the extractable compact flash card be full, but also as a spontaneous memory for recording while the extractable card is changed. Simply pressing the “Hot Swap” button next to the slot will open a 30 second window allowing the inserted card to be replaced even while the recorder is actually recording.

Editing and communication

The top of the LB is equipped with a built-in audio editing system with its own dedicated colour display. It allows diting of broadcast wave MPEG 1 layer II files and 16 bit PCM files at 32 and 48 kHz. Thus in-the-field editing i spossible and gives a graphic waveform display. Once the editing of the audio material is complete, the file can be transmitted to the studio either over IP (through the ethernet connection using the File Transfer Protocol “FTP” connection) or via a GSM phone through the Bluetooth op-

tion. Naturally the USB port also serves as a generic drive when connected to a computer to file transfer can also be done this way. Removal of the compact flash card is a final possibility for removing the audio from the recorder. The HOST USB port can also be used for an external memory stick for file transfer.

The LB is powered by 8 “AA” batteries in a removable battery compartment. This may be fitted with rechargeable cells if required, which are in turn charged through the Hirose connector on the battery box body using the built-in charger circuit.

Technical Specifications

Recording

Internal storage	2 GB NAND Flash memory
Removable media	Compact Flash type II / III (Hot Swappable)
Disk format	FAT 16 / 32
Recording Method	Linear digital PCM, MPEG 1 layer 2 or MP-3
File type	16 / 24 bit Broadcast Wave File BWF (WAV)
A/D & D/A conversion	24 Bit Sigma Delta
Bit rates	32 kbits/s up to 384 kbits/sec
Tracks	2 individual
Sampling Rate	44.1, 48 kHz, 88.2, 96 and 192kHz
Recording capacity	1hr 24 bit 48 kHz per GB of disk / memory
Pre-recording buffer	Programmable (Maximum 3 seconds)
Display	2 x Colour LCD
Level meters	On colour display AND by LED

Inputs

Digital input	XLR 3-pole
Analogue inputs	2 x XLR Microphone (Dynamic, +48V Phantom) / line
Microphone input sensitivity	2 and 15 mV/Pa selectable
Limiters	On microphone inputs
Line input sensitivity	Adjustable from -6 dBm up to +24 dBm for 0 dBFS recording
THD at 1 kHz	<0.1% Mic, <0.01% line (measured on AES out)
Frequency response	Mic, 10Hz - 48 kHz \pm 0.5 dB, Line \pm 0.2 dB (measured on AES out)
Signal-to-noise ratio	>100 dB
Input level adjustment range	50 dB Mic and from -6 to +24 dB Line
Input filters	LFA (with vortex filtering)
Internal microphone	Electret on the front panel

Outputs

Analogue line output	XLR 4.4V max (+15 dBm)
Digital output	XLR AES-3 (24 bit or 16 bit)
Headphones	Stereo 6.3mm (1/4") Jack 50 Ω
Internal speaker	0.2W

Other

USB Host	USB 2.0 connector type "A"
USB Device	USB 2.0 connector type "B"
M/S Decoder	Switchable
Ethernet	RJ 45

General

Dimensions	175 x 65 x 185mm (W x H x D) (Incl. battery box)
Weight	1.4 kg (3 lbs) (Incl. batteries)
Power supply	External 9 - 15V
Power Consumption	Approximately 2W (160mA on 12V)
Charge time	Approximately 3 hours (with NimH cells)
Battery life	8 hours (8 x NiMh 2500 mAh) Record @ 24 bits 48 kHz with 2 x phantom +48V (2 x 4 mA), continuous recording. Between 5 and 5 1/2 hours with 8 x LR6 dry alkaline cell
Relative humidity	From 10% to 99% (non condensing)