

8 CHANNEL 24-BIT/96kHz LOCATION SOUND RECORDER

PORTADrive



As the role of the modern sound recordist grows ever more complex, portable recording specialists HHB respond with a new breed of location sound recorder. The PORTADrive PDR 2000 combines multichannel recording on a removable hard drive, simultaneous recording of rushes to an external drive, 24-bit/96kHz performance, sophisticated on-board mixing, comprehensive timecode facilities and flexible session based file transfer with Mac and PC workstations, all in a rugged, portable device. And with input from leading sound recordists throughout the development programme, the PORTADrive is packed with essential features and facilities, placing everything just where it's needed to deliver reliable recordings and pristine audio on even the most demanding location.

KEY FEATURES

- Rugged, all in one, portable 8-channel hard disk (HD) audio recorder
- 3 comprehensively equipped 6-in-to-2 digital mixers built-in
- Session based recording using either AES31-3 ADL or Pro Tools V5 formats, simplifying production workflow
- Over 4 hours of uncompressed 8-channel 24-bit/96kHz or around 20 hours of 4-channel 24-bit/48kHz recording on removable 40GB HD
- Simultaneous recording of mono or stereo rushes to external DVD-RAM drive or other storage device
- 6 high gain, very low noise microphone balanced XLR-3 inputs with individual phantom powering, 'gangable' limiters, input pads, high pass filter (HPF), and phase reverse
- Mic inputs also feature adjustable delays to correct microphone time alignment
- 8 balanced line inputs
- Dual analog balanced stereo outputs
- 8-channel AES input and output, stereo SPDIF input and output
- M/S decoding available on inputs and outputs
- Advanced power management
- Built-in battery charging circuitry
- 8-channel metering with clip and limiting indicators
- Built-in slate mic and tone generator
- Extensive headphone monitoring capability including designated 6-in-to-2 mixer
- 6 multi-function rotary encoders
- 10 second pre-record buffer
- Top and front panel LCD and control interfaces
- Comprehensive timecode and synchronization capability
- Supports tri-level synchronization for compatibility with HDTV technology
- 2.5" HDD in robust removable caddy ensures extremely reliable recording
- HD compatible with both PC and Mac platforms (FAT32, HFS)
- Records in industry-standard BWF or SDII audio formats
- Metadata (scene, take, comments) can be stored and transferred with audio files
- SCSI interface
- USB2.0 (USB1 compatible) port for high speed data transfer between the PORTADrive and a computer
- Ethernet port for file transfer and upgrades
- Comprehensive remote control via RS422 (Sony P2) and parallel remote socket
- PS2 for connecting keyboard to ease logging / labelling
- Optional 5.25" PDRDS Docking Station allows removable HD caddy to be plugged directly into a computer drive bay or external drive enclosure
- Optional DC-powered PDRDVDBU DVD-RAM back-up unit for recording or backing up on location

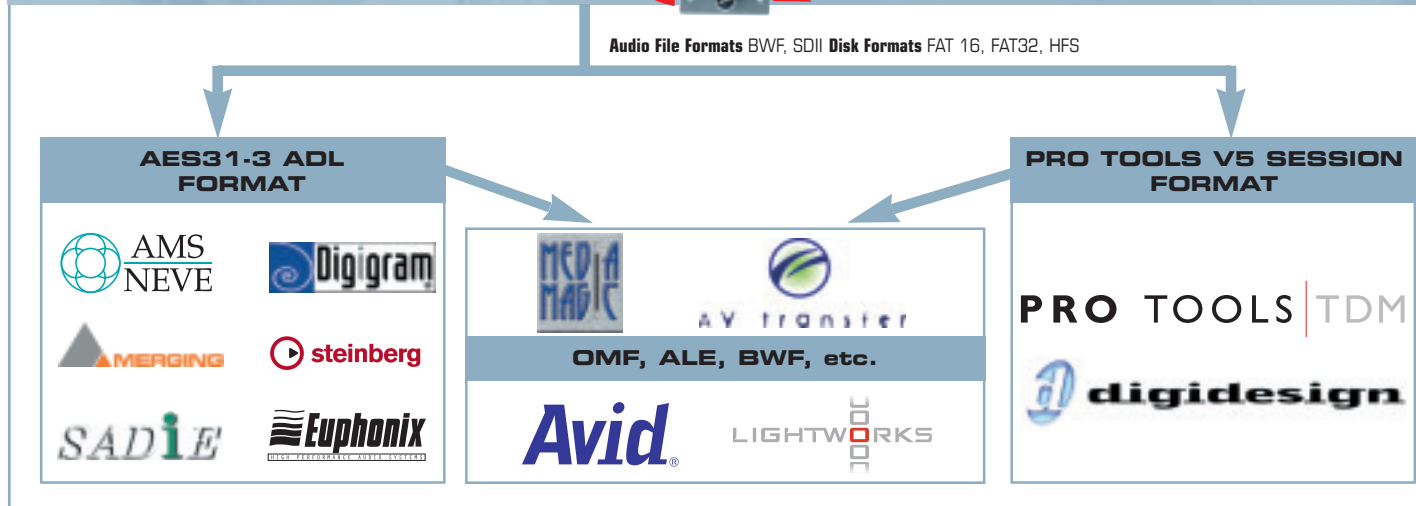
INDUSTRY STANDARD WORKFLOW

Session-based recording in AES31-3 ADL or Pro Tools V5 formats makes it easy to transfer files to Mac and PC-based workstations. The optional PDRDS Docking Station locates into a standard 5.25" IDE drive bay and accommodates the PORTADrive's removable HD directly via a slot on the front panel. The Docking Station can also be housed in a third party enclosure to provide connection to computers via



FireWire, USB or SCSI interfacing.

The PORTADrive also features a comprehensive range of connectivity for direct data transfer including SCSI (for the connection of external devices including HHB's own PDRDVDBU DVD-RAM back-up), Ethernet and USB2.0 (USB1 compatible).



PORTADrive SYSTEM ACCESSORIES



PORTADrive PDR 2000 SPECIFICATIONS

Sampling frequency . . . 44.1, 48, 88.2 & 96kHz (±0.1% for pull up/down) all ±1.0 ppm
Quantization levels 16 & 24-bit
Pre-record buffer 10 secs @ 24-bit/96kHz, adjustable from 1-10 secs
Power supply (external) 12-18V DC: Universal 110-240V AC adaptor supplied
Recording time (battery) ~ 2 hours with NP1 battery, (50 watt L-Ion)
Recording time (40GB disc) 60hr, 2Ch 16-bit/48kHz; 4.8hr, 8Ch 24-bit/96kHz
Metering 8 x 18 segment LED meters with adjustable brightness and modes
Timecode 23.976 - 30FPS input and output on Lemo connector: < ±1.0 ppm
Frequency Response 5Hz - 20kHz ± 0.5dB (@48kHz)

Mic THD Mic input 60dB gain @1kHz <0.02% 22Hz - 22kHz BW
Line THD Line input 0dB gain @1kHz <0.002% 22Hz - 22kHz BW
EIN ≤ -127 dBu 'A' Wtd 22Hz - 22kHz BW @ 60dB GAIN Rs = 150 Ω
Mic input gain Maximum gain 70dB - maximum input level before clip +24dB
Line input gain Maximum gain 24dB - maximum input before clipping +24dB
Front panel display 40 alphanumeric character x 2 row backlit and transreflective
Top panel display 320 x 240 dot matrix backlit and transreflective
Dimensions (WxHxD) 332 x 106 x 224mm / 13.1 x 4.2 x 8.8 inches
Weight 5.2kg / 11.6lbs

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FIRST WE LISTEN

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MIXING AND MONITORING

To ensure maximum flexibility in the field, the PORTADrive incorporates three comprehensive 6-into-2 mixers.



BUS MIXER Provides a mono or stereo mix to disk (internal or external) which can be used to record simultaneous daily rushes / back-up to an external storage device such as the optional PDRDVBu (see below).

BUSMIX INPUT LVL 00:00:01:24 D:86% B:65%
64<-->64 72 79 60 32



OUTPUT MIXER Provides an alternative mix which can be created to suit the requirements of the director, for instance.

OUTMIX PANS 00:00:01:24 D:86% B:65%
MID MID MID MID MID MID



HEADPHONE MIXER Ensures that whatever is seen on the metering is heard through the headphones.

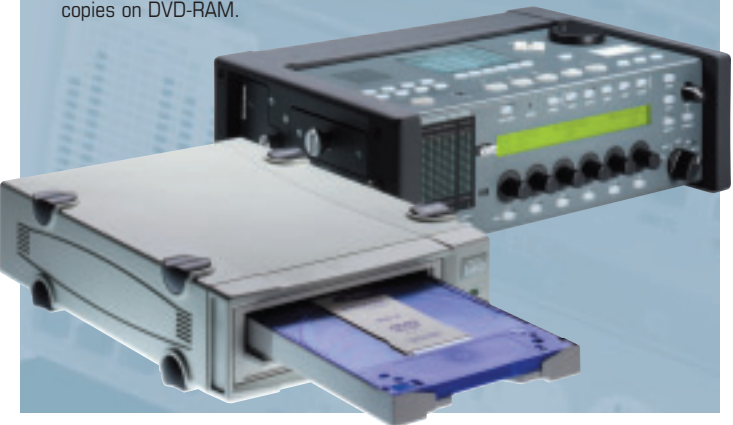
PHONES PRESET 00:00:01:24 D:86% B:65%
USER1 MS Decode:STEREO Src:FOLLOW

In addition to the headphone mixer, 6 instantly recallable headphone presets can be configured to monitor almost any point within the signal path. Each preset can be set to decode the signal in MS, STEREO, MONOL, MONOR or MONOBOTH formats.

18-segment high-visibility LED meters for each channel have variable peak hold time and include digital clip indicators, limiter activity and track record arm status. A tri-colour LED and switchable audible warning in the headphones inform the user of data write errors, TC/sync errors and low battery level.

DVD-RAM BACK-UP

HHB's optional DC-powered (4-pin XLR) PDRDVBu is perfect for creating simultaneous rushes or back-up copies on DVD-RAM.



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Location audio acquisition in the 21st Century is about much more than just 2-channel recording. The modern sound recordist must be able to capture pristine sound from multiple microphone sources onto a durable, high-capacity medium, and produce those recordings on demand in a post-friendly format. And with a director's mix to organise and daily rushes to provide, the demands placed upon the sound recordist have never been greater.

That's why location sound specialists HHB developed the PORTADrive PDR 2000, a 'next generation' location recorder which combines 24-bit/96kHz multichannel recording on a rugged, removable HDD with simultaneous recording to an external device such as the optional PDRDVBu DVD-RAM back-up unit, and all the features and facilities required to enable the sound recordist to work efficiently and effectively in even the most demanding conditions. And because audio is recorded in either AES31-3 or Pro Tools V5 session formats (using BWF or SDII audio files respectively) it's easy to transfer recorded data directly to Mac or PC workstations (see back page).

INTUITIVE OPERATION IN THE FIELD

Simultaneous recording from analog and digital sources is easy, with comprehensive internal routing giving the user complete flexibility. Developed in consultation with leading sound recordists, all the PORTADrive's front panel controls are arranged to give immediate and intuitive access to the most frequently required functions. Using a 5-position rotary transport control to initiate recording, a Lock mode prevents accidental changes to settings during recording. Similarly, a Stop Lock prevents unwanted changes to existing settings while on the move. A Review function allows the user to check the last audio take and a Mark button enables the easy identification of points within a session.

Four front-panel Primary Mode (PMODE) buttons allow rapid access to the control, metering and monitoring of all audio signals (see left). Six rotary encoders operate in conjunction with a large, transreflective LCD for the easy adjustment of any displayed parameter, and Undo, Jam TC, Slate, Tone and Group function buttons are protected from accidental use with an Enable button.

PORTADrive WORKS THE WAY YOU WORK

The facilities on the top panel of the PORTADrive have been arranged into a highly intuitive, hierarchical navigation system (see right), allowing the user to set every system parameter. Although this dictates a considerable number of pages, menus nested within menus have been avoided so the user can quickly locate and adjust any function. Input, Busmix, Track and Output function buttons parallel the front panel Primary Modes and additional Disk, Session, TC and Setup functions allow the operator to configure their recording sessions to suit their workflow, and also to name, store and recall entire system configurations. Pressing any of these 8 menu buttons causes an associated menu to be displayed on the large top panel transreflective LCD (with wide viewing angle). The user can navigate and alter information displayed on this graphical LCD using cursor keys and the large data wheel. Further pages within the selected menu are listed along the bottom of the LCD and are easily accessed through the row of function buttons immediately below the screen.

Large transport controls on the top panel allow convenient operation of the PORTADrive's Locate and Playback functions.

As well as the usual Play, Stop and Cue functions, the Locate button can be used to access audio by whatever means is most suitable to the user – take, marker or timecode value.



COMPREHENSIVE CONNECTIVITY



Extensive audio, synchronization, data and control connectivity includes: 6 high gain, very low noise microphone balanced XLR-3 inputs with individual phantom powering, gangable limiters, input pads, high-pass filter, delay and phase reverse • 8 balanced line inputs • 8 channels of AES digital inputs and outputs on a 25-pin D-sub connector • Balanced analog main and auxiliary outputs • A balanced stereo AES digital output • RCA phono stereo SPDIF digital I/O •



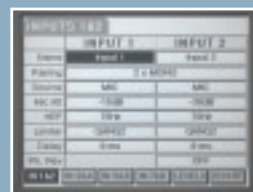
Word clock output on a BNC connector • Sync input (word clock, video, tri-level) on a BNC connector • A 5-pin LEMO socket for timecode interfacing • A 1/4" stereo jack headphone socket • A SCSI interface • An Ethernet interface • A USB2.0 interface (USB1 compatible) • RS422 and parallel remote control interfaces • A PS2 socket for connecting a keyboard

INTELLIGENT POWER

The PORTADrive is powered by a single 50 Watt Lithium Ion NP-1 battery or an AC adaptor, both of which are supplied. Intelligent power safety features provide seamless changeover between external and internal battery power, with the A/C adaptor doubling as a charger for the battery when the PORTADrive is not in use. An optional PDRJL2 dual-bay charger is also available and, when fully charged, the battery provides approximately 2 hours of constant operation, with the 'power remaining' displayed to an accuracy of $\pm 5\%$. Because the PORTADrive can be configured precisely for each job, power conservation is further optimised (for instance by switching off mic inputs that are not in use), and an additional level of flexibility is provided by compatibility with conventional NiMH or NiCad NP-1 batteries.



SESSION-BASED RECORDING



INPUT Allows set-up of each input, including name, pairing, source (48V phantom powering option on mic inputs), attenuation, HPF, limiter, adjustable delay and phase reverse. Input levels can be adjusted and the 2-channel return can be enabled with optional limiter.

INPUT LEVEL 00:00:01:24 D:86% B:65%
12 17 30 80 AES5 41



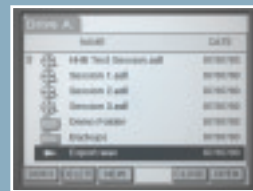
TRACK The source can be specified for each disk track. M/S decoding can be switched in and out as required. This menu also allows the setting of the number of recorded tracks for each take.

TRKS SOURCE/ARM 00:00:01:24 D:86% B:65%
MIC1 MIC2 INP3 INP4 INP5 INP6



OUTPUT For output configuration and creation of the output mix. Source, nominal level and M/S decoding can be set for the Main and Aux outputs. Digital options include source select, sample rate, bit depth, etc.

MAIN SOURCE 00:00:01:24 D:86% B:65%
OUTMIX L/R MS Decode:OFF Level: 0



DISK Allows full control over formatting, naming and file and folder creation/deletion on each disk, with an easy to use navigation system.



SESSION For specifying session parameters (e.g. session name, sampling rate, bit depth). A session can be quickly configured by selecting any one of 20 configuration templates.



TC Timecode menu with internal generator, chase, jam and user-bit capability. Frame rates include 23.976, 24, 25, 29.97df, 29.97nd, 30df and 30nd. FPS, with T.O.D., Rec Run, Free Run and external timecode modes.



SETUP All general system parameters can be altered here. Includes tone generator, slate, power management, LCD contrast, meter and time / date settings.