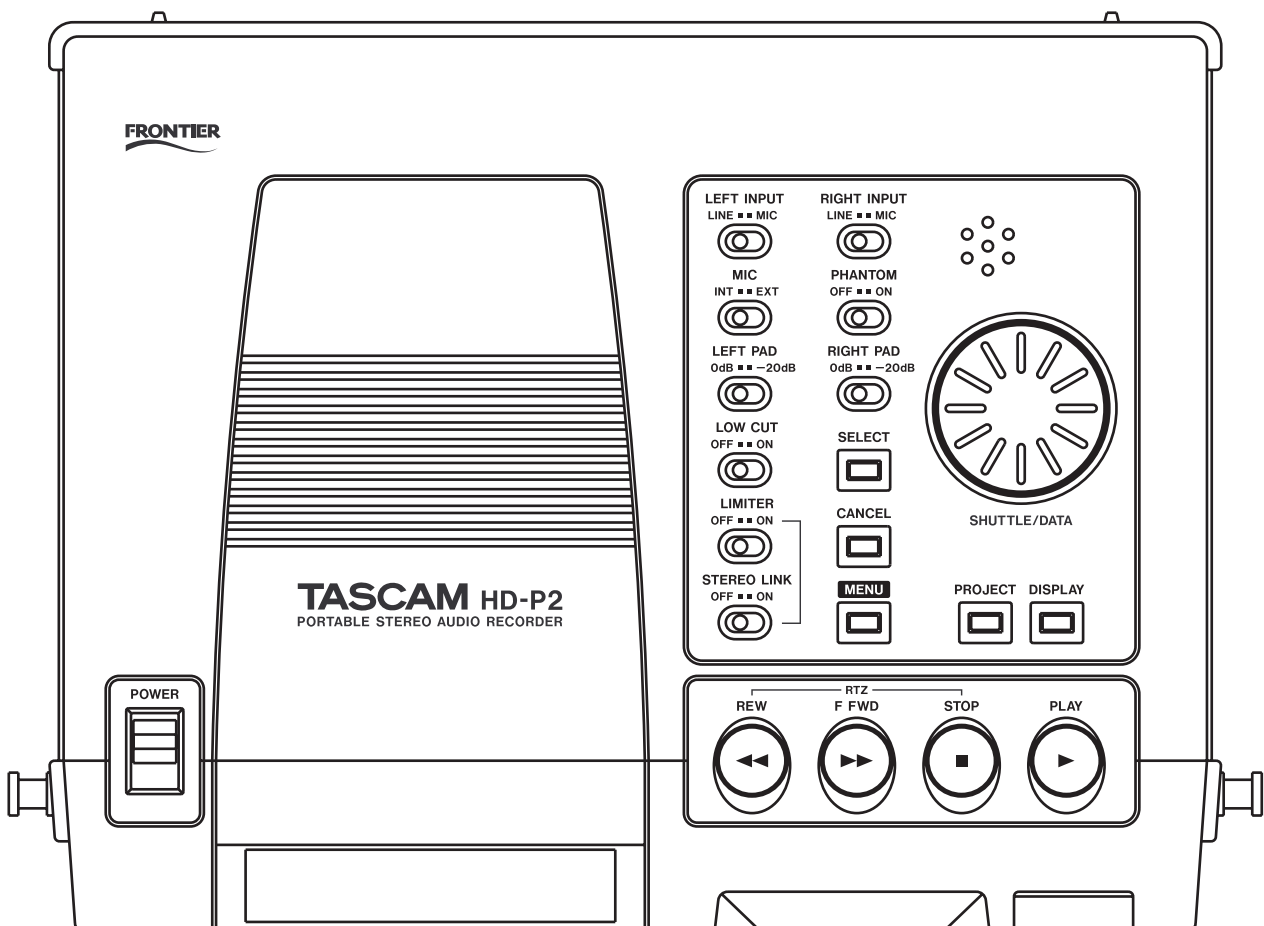# TASCAM
TEAC Professional Division

FRONTIER DESIGN GROUP

HD-P2

Portable Stereo Audio Recorder

OWNER'S MANUAL

Important Safety Precautions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.
Model number _____
Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

For U.S.A.

TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION

Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

For the customers in Europe

WARNING
This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT
Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung
Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen; in diesem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

CE Marking Information

a) Applicable electromagnetic environment: E2, E3, E4
b) Peak inrush current: 600 mA

Important Safety Instructions

1 Read these instructions.

2 Keep these instructions.

3 Heed all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with dry cloth.

7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11 Only use attachments/accessories specified by the manufacturer.

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13 Unplug this apparatus during lightning storms or when unused for long periods of time.

14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

- Do not expose this apparatus to drips or splashes.

- Do not place any objects filled with liquids, such as vases, on the apparatus.

- Do not install this apparatus in a confined space such as a book case or similar unit.

- The apparatus draws nominal non-operating power from the AC outlet with its POWER switch in the off position.

- The apparatus should be located close enough to the AC outlet so that you can easily grasp the power cord plug at any time.

- An apparatus with Class I construction shall be connected to an AC outlet with a protective grounding connection.

Batteries

If batteries are used improperly, or if leakage or breakage occurs, the unit will not function. Please observe the cautions indicated on the batteries and their packaging to ensure proper usage.

When loading batteries into this product, remember the following:

- When inserting batteries be sure of their direction (polarity). Refer to the diagram inside the battery compartment.
- Do not combine batteries of different types or specifications together.
- Do not use an old battery together with a new one. When necessary, change all batteries at the same time with a new set.
- If the product is not used over a lengthy period, remove the batteries to eliminate the possibility of battery leakage which would result in damage to the unit.
- Do not attempt to recharge batteries that are non-rechargeable.

CAUTION

When using the HD-P2, only use the AC adapter and cable supplied.
Do not use the supplied AC adapter and cable with any other product.

Trademarks

Windows and Windows XP are trademarks of Microsoft Corporation.

Macintosh, MacOS 10.3 and higher, and FireWire are trademarks of Apple Computer.

Compact Flash is a trademark of SanDisk Corporation.

Microdrive is a trademark of IBM Corporation.

Table of Contents

Thank you for your purchase of the TASCAM HD-P2 Portable Stereo Audio Recorder. Before using the unit, please take time to read this manual thoroughly to ensure that you understand the operation of its many useful and convenient functions. After you have finished reading this manual, please keep it in a safe place for future reference.

Introduction

The HD-P2 is a compact, lightweight Portable High Definition Stereo Audio Recorder. It uses standard Compact Flash memory cards to record in mono or stereo, 16- or 24-bit, at samples rates from 44.1kHz to 192kHz. An advanced clocking system is included, with the ability to chase external timecode and lock to an outside word clock or video reference signal. The HD-P2 supports digital and analog audio inputs and outputs, and has a built-in microphone and speaker.

The HD-P2 records audio as standard Broadcast Wave Files non-destructively. This means you can record a file, rewind, and record another file at the same location without fear of losing the first recording. A built-in, dynamic Edit Decision List orders file play-back based on file record times. A file edit screen is provided for auditioning (and editing) of individual files.

Document Conventions

Throughout this document the following conventions will be used:

BWF (Broadcast Wave File) – All audio files are stored using this format with the file extension .wav

Time Stamp – The timecode value stored in the BWF audio file header relating to the start time of that file.

Creation Date – The date/time used by the file system to mark files, derived from the real-time system clock.

EDL (Edit Decision List) – Playlist of audio files in a project based on timecode, date, and size attributes.

About this manual

In this manual, we use the following typeface conventions:

- The names of keys, features, switches, and controls are given in the following typface: **ERASE**.
- When the display shows a message, this is shown in the following typeface: Welcome.

- The names of menus shown on the screeen are given in the following typeface: Display Menu.
- The names of sub-menus shown on the screeen are given in the following typeface: *Random*.

Supplied accessories

In addition to this manual, the HD-P2 has been packed with the following:

- AC adaptor 1
- IFFF1394 cable 1
- Shoulder strap 1

Contact your TASCAM supplier if any of these items are missing.

File System

Projects

Projects are a means of organizing files and settings for a specific situation or recording. When a new project is created, you have the option to choose the current system settings for the project or use a project template. These settings control how audio will be recorded as well as what type, if any, of timecode is used. Only one project is active at a time, and all new recordings are saved into that project's audio folder. Each project uses its own EDL, which is dynamically built in memory when the project is loaded. The EDL is not saved to the CF media. This is accomplished by examining each audio file's timestamp and creation date, with the play sequence of files ordered by timestamp and overlapping segments resolved to the most recent file creation date. When playing back the files of a project, if any overlap on the timeline exists, you always hear the most recently recorded material.

Projects can be created and changed using the System Menu, which is covered later.

Files

When the Record button is pressed the HD-P2 creates a new file in the current project's audio folder. The current timecode timestamp (location on the audio timeline) is stored in the file header along with a creation date based on the system clock. The name of the file is automatically created using the file naming preferences of the current project. (File names must be unique within a project.)

Markers

Time-based markers are used to quickly identify and locate specific points in your project. The HD-P2 has dedicated buttons for creating and navigating between markers. Additionally, there are optional project settings for automatically placing markers in the case of events like input signal clipping and timecode dropouts. Markers are not erased during recording.

Markers are part of the current project and not associated with individual audio files. A marker consists of a project time and a name. Marker names are automatically created using the current project's marker naming preferences.

Settings

The HD-P2 maintains Project and System settings in small XML text files. While this is a common file format, it is strongly recommended that you do not edit or modify these files yourself. This format was chosen for ease of troubleshooting and also so you can copy them, as a means of back-up, when the HD-P2 is docked to a host computer.

Media Considerations

The capabilities and performance of your HD-P2 will vary based on the speed and abilities of the Compact Flash (CF) media used. Older and some cheaper Compact Flash (CF) cards use slower memory components and little internal buffering which results in poor recording performance. Newer CF cards, especially those tailored for higher resolution DSLR cameras, not only perform reading and writing faster, but also come in larger storage sizes. The HD-P2 supports Type I and II Compact Flash media. Type I cards are typically FLASH-ROM based and provide higher performance and durability than hard disk cards, while Type II cards are more commonly used for CF hard disks and can offer greater overall storage capacities.

A current list of tested CF cards and their capabilities is maintained and available for viewing on the TASCAM website at www.tascam.com

The HD-P2 can test and display the performance of the CF card being used. For more information on this see the Settings Menu in the Disk Management section on page 19.

File System Format

When a new CF card is first inserted into the HD-P2 a screen pops up offering to format the media. There are two reasons for this.

The first is to ensure that the optimal FAT (File Allocation Table) is being used with the card. The HD-P2 supports both FAT-16 and FAT-32 formats. FAT-16 is for devices with less than 2 GB or less of total storage, while FAT-32 is required for larger media. For media that is smaller than 2 GB we strongly recommend the use of FAT-16. Windows XP, by default, will format these cards using FAT-32, but this will result in a reduction of overall performance. When in doubt, format the card to be FAT-16 using your computer or the built in Format tools on the HD-P2.

Secondly, the FAT file system works best with an 8.3 naming convention. All system and audio files are named using eight characters with a three-character extension. For example:

> TAKE0001.wav
> SETTINGS.xml

By default the HD-P2 names new projects, files, and markers using PROJ, TAKE, and MARK name prefixes. You can change these four letter defaults in the System and Project Settings menus. Projects, files, and markers can be renamed at any point using the built-in renaming screen.

NOTE

The name must be eight characters or less and not use any special (non-FAT supported) characters. Also the name must be unique: projects must be named uniquely on a storage card; audio files must be unique within their project.

Non-FAT supported characters include:

> # , % , & , ' , ( ) , * , + , Comma , " ,
>
> / , : , ; , < > , ?, = , \ , [ ] , ` , { } , ~

The HD-P2 Interface

Keys

Keys are primarily organized into menu navigation and transport functions.

Transport Keys and Hold Switch

REW – Rewinds timeline – pressing this during rewind toggles between fast and faster speeds; audible skip-rewind when used during play.

F FWD – Forwards timeline – pressing this during fast forward toggles between fast and faster speeds; audible skip-fast forward when used during play.

STOP – Stops any transport motion, turns off monitor.

PLAY – Plays timeline beginning at the current timeline location.

PAUSE – Turns on input monitoring mode (**PAUSE** indicator slow blink, **REC** indicator solid).

REC – Initiates new record and turns on monitoring (**REC** indicator solid).

LOCATE ◄◄/►► – Locates to the previous (◄◄) or next (►►) marker/file in time.

MARKER – Drops a new marker at the current time.

RETAKE – Undoes last record: moves file to trash, deletes markers, and repositions time to where the last record began.

HOLD – Locks keys to prevent accidental use.

TIMECODE – Turns on timecode chase when timecode is enabled.
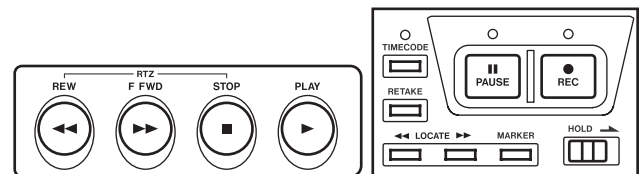

Figure 1 - Transport Keys and Hold Switch

Most of these keys have alternate "shifted" functionality. The main transport keys (**REW**, **F FWD**, **STOP**, **PLAY**, **PAUSE**, **REC**) also work when you are in menu screens. Hitting **REC** while in the menus will automatically switch back to the operational screen.

Menu keys and Shuttle/Data wheel

The rest of the keys are used for navigating the HD-P2's menu interface. The main screen of the HD-P2 has two modes: Operation Mode and Menu Mode. The **MENU** key is used to toggle between these two modes. When in menu mode the following keys are active:

MENU – Toggles between Menu and Operational mode.

SELECT – Selects/activates the currently highlighted menu item.

CANCEL – Deselects/escapes the current item or screen.

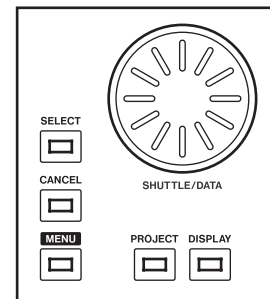**DISPLAY** – Shortcut for Contrast & Brightness adjustment menus (always active).

Figure 2 - Menu keys and Shuttle/Data wheel

PROJECT – Shortcut to Project Menu.

SHUTTLE/DATA – Moves time forwards/backwards and navigates up/down through menu items and settings.

Audio Switches

Located on top of the HD-P2, next to the data wheel are switches for controlling the analog audio inputs and dynamics.

The input switches (**LINE/MIC**) switch between the XLR and RCA jack inputs. The **PAD** switches only apply to signals coming in the XLR jacks.

Limiting can be turned on or off and the **STEREO LINK** switch enables stereo limiting of the left & right channels. When **STEREO LINK** is disabled, each channel has its own mono limiter.
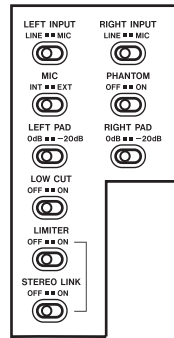
Figure 3 - Audio Switches

PHANTOM can be turned on to provide 48V phantom power to the microphone inputs.

MIC controls whether the left mic input is from the internal microphone or from the normal input source.

Turning on **LOW CUT** provides a -18dB/oct, 100Hz low-cut filter to the analog inputs.

WARNING

Microphones should not be connected to or disconnected from the HD-P2 with phantom power switched on.
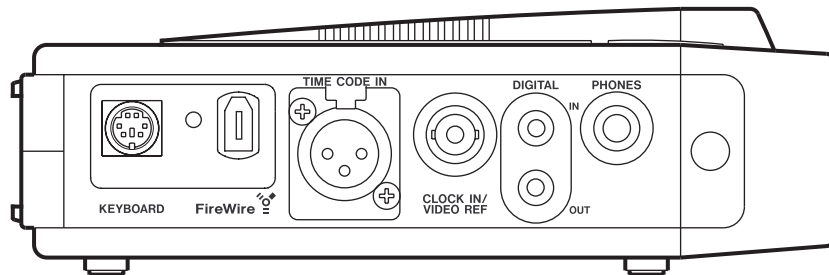*Unbalanced dynamic microphones should never be connected to phantom-powered connectors.*

Left Side

Figure 4 - Left Side Connectors

KEYBOARD – Accepts standard PS/2 keyboard. An external keyboard is useful for quickly renaming files and markers as well as remotely operating the transport.

FireWire – Connects the HD-P2 to a host computer via IEEE.1394 (Windows/Macintosh). When connected to a powered FireWire host the HD-P2 will automatically use that for power, extending battery life.

TIMECODE IN – Standard female XLR input for linear timecode.

CLOCK IN/VIDEO REF – Word Clock/Video Input connector: BNC (75 ohm) internal termination for 5V TTL word clock or 1.0Vpp composite, blackburst, or tri-level video sync.

DIGITAL IN – S/PDIF audio input RCA Jack.

DIGITAL OUT – S/PDIF audio output RCA Jack.

PHONES – Standard 1/4 inch headset jack. Project settings control the type of headset monitoring (stereo, mono).

Right Side
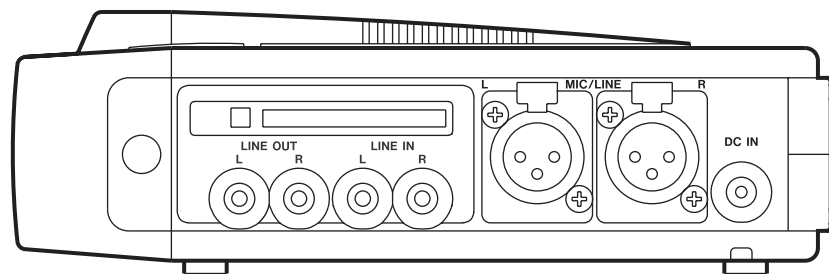
Figure 5 - Right Side Connectors

LINE OUT L/R – RCA output jacks for analog output.

LINE IN L/R – RCA input jacks for analog input.

DC IN – 12VDC input jack for use with the provided AC adaptor.

MIC/LINE – XLR input jacks for either line level or mic level (selected by switch on top) input. A separate switch controls phantom power to the XLR inputs.

Compact Flash Slot – Type I/II Compact Flash slot (top left). Unmount Compact Flash (via menus) BEFORE removing card to ensure file integrity.

Power Setup

Power

The HD-P2 can be powered from the supplied AC power adapter, from eight standard AA batteries (alkaline strongly recommended), or from the FireWire (IEEE.1394) connection when attached to a host computer with a powered (6-pin) 1394 port. Each of these power sources is described below.

AC Power

The HD-P2 comes with an AC adapter that is designed to work in the country where it was sold.

Batteries

The HD-P2 has a compartment on the bottom that holds eight AA batteries. These can be alkaline or zinc-carbon disposable cells or NiMH or NiCD rechargeable cells. The HD-P2 will NOT recharge these batteries. For maximum battery life, alkaline batteries are strongly recommended. For environmental considerations, rechargeable batteries are strongly encouraged.

Inserting Batteries

1. Open the cover and look at the diagram inside the battery compartment.
2. Confirm the +/- polarity of the batteries and insert them according to the diagram.
3. Close the battery compartment cover.

Approximate Battery Life

Continuous recording time when the overload indicator is ON, the headphone output is 80%, and the backlight is OFF:

8 alkaline AA batteries	Up to 5 hours
8 carbon-zinc AA batteries	Up to 3 hours
8 fresh NiCD AA batteries	Up to 3 hours
8 fresh NiMH AA batteries	Up to 3 hours

The HD-P2 automatically uses the highest voltage power source when multiple power sources are connected. If a FireWire voltage that is connected is lower than the voltage of the installed batteries, the battery power will be used causing unexpected reduction in the battery life.

FireWire IEEE.1394 Connector

The HD-P2 can be powered from its FireWire (IEEE.1394) connector. Be aware that not all FireWire devices supply power over the cable. Power can only be supplied by 6-pin connections. DV cameras, computer peripherals, and laptop computers with 4-pin FireWire connections do not supply power. These can usually be identified by having a smaller FireWire connector. FireWire connections on desktop computers typically do supply power and use the large connector.

To power the HD-P2 through its FireWire cable you must connect it to a powered 6-pin interface. The AC power adapter, internal batteries, and a powered FireWire cable can be connected at the same time without any risk.

Power Operation Notes

The HD-P2 will transparently switch from battery power to AC adapter power, or FireWire power, whenever they are available. This will happen without affecting the operation or performance of the HD-P2.

The HD-P2 can display the current charge level of its batteries on its LCD display. If external power (AC adapter or FireWire) is being provided, that is also displayed as a screen icon.

When the detected battery power level is low, a screen will appear with an urgent screen message warning of this condition. If the batteries are not replaced, or an external power source connected, the HD-P2 will automatically shut down, first closing and saving any files that were being recorded.

Phantom microphone power meets the IEC spec with all power sources.

Power Control

Once power is connected to your HD-P2, turn it ON or OFF by momentarily pressing the spring-loaded power switch. The HD-P2 will power up immediately. If, for any reason, the HD-P2 does not respond to a power off attempt, a forced power-down is accomplished by holding the power switch engaged for seven seconds.

Inserting and Removing Media

The Compact Flash media can be inserted into the media slot when the HD-P2 is powered ON or OFF. However you should always unmount media in the main menu, before removing media to avoid data corruption.

Adjusting the Display

The HD-P2 has a 240x160 pixel, backlit LCD display. Depending on operating angle, ambient light, temperature, and other factors, you may need to adjust the display contrast and brightness. Pressing the **DISPLAY** key puts the system into contrast adjust mode where turning the **SHUTTLE/DATA** wheel increases and decreases the contrast. Pressing the **DISPLAY** key again changes to brightness adjust and turning the data wheel increases and decreases the level of display backlight brightness. These display settings are stored in non-volatile memory and are remembered even after you power-down the HD-P2.

The HD-P2 display backlight can be turned off manually or automatically to conserve battery power. To manually toggle the backlight state press and hold the **DISPLAY** key for two seconds. The backlight can also be turned off automatically after a period on non-use by setting the Backlight Timeout in the Display options menu.

Default Project

Once you have applied power to the HD-P2 and have media in place, the HD-P2 will create a default Project and settings, saving them to disk. The default Project Settings are:

- 44.1 kHz sample rate
- 2 Channel, Stereo
- 24-bit Audio
- Auto-Append
- No Pre-Record
- Timecode Disabled
- Analog Input

The sample rate can only be changed when a project has no files. Audio is only played back (and recorded) at the Project's sample rate. If files at another rate have been copied into the project they will be played at the Projects set sample rate, sounding off-speed.

Recording Audio

Recording on the HD-P2 is as simple as pressing the **REC** key. If you are in Auto-Append mode (the default) the HD-P2 moves the timeline to the end of all audio files and starts recording into a new, uniquely named file. The audio monitoring is turned on and the meters reflect input audio levels. The **REC** indicator is lit and the record icon is displayed at the bottom of the screen.

To adjust levels before recording, press the **PAUSE** key. The **PAUSE** indicator blinks and the meters are activated to show the input signal levels. There are switches for choosing between analog inputs as well as an input pad. Digital input can be selected in the Project Settings menu. Press **STOP** to turn off input monitor, or you can tap **RECORD** to begin recording.

While recording you can press **STOP** and the recording ends, the file is closed, and monitoring is turned off. Pressing the **RETAKE** key after a recording brings up a warning dialog to confirm the selection. **CANCEL** will dismiss the request. Pressing **SELECT** moves the most recent audio file into the Project's trash, deletes any markers dropped during the recording, and moves the timeline back to where when the recording started. Holding **STOP** and pressing **RETAKE** performs the retake operation without the dialog warning.

Operation

Playing Audio

Press the **PLAY** key and audio at the current location on the timeline is played back. The HD-P2's playback engine is based on a 24 hour day and will play audio from time 00:00:00.00 to 23:59:59.59. If timecode mode is not enabled, the HD-P2 will stop when it reaches the end of day (during play or while fast forwarding). It also stops if you are rewinding and hit the beginning of the day. See the Timecode section for specific information on its behaviors and settings.

To locate to the beginning of recorded audio, hold **STOP** and press **REW**. Hold **STOP** and press **FFWD** to go to the end of all recorded audio. The **LOCATE** ◄◄/►► keys, by default, locate to previous or next markers and file start points. For example, after recording is stopped you can press the **LOCATE** ◄◄ key to go to the beginning of the recorded file (assuming no markers were dropped) and then hit play to review it.

HD-P2 Playback Considerations

The HD-P2 playback engine maintains an internal, dynamic edit decision list (EDL) to determine what files are played and when. In default auto-append mode (no pre-record) each file abuts the previous file.

09:00	09:01	09:02

Figure 6 – Auto-Append Recording

When auto-append is off (or when chasing timecode) you can locate the timeline to any point in the 24 hour day and start recording, even if there is audio already recorded at that time.

The HD-P2 always records non-destructively, which means previously recorded files are not modified, requiring the playback engine to know which file to play back when it reaches that point on the timeline.

The rules for the internal EDL are quite simple: files are ordered by timestamp and creation time. If two files span the same period on the timeline, the most recently recorded file will be played back.

For example these files show the time of day that they were recorded. The place along the timeline indicates where in time (samples from zero) they were recorded.
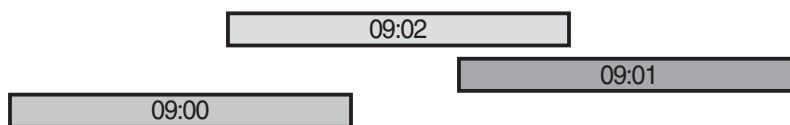
09:02

09:01

09:00

Figure 7 - Logical Audio Timeline

When played back the most recently recorded (time of day 9:02) file is given precedence and played instead of the portions of the first two files recorded at 9:00 and 9:01.

09:00	09:02	09:01

Figure 8 - Rendered Audio Timeline

If the 9:02 file is moved to the trash, then the underlying portions of the other two files will play back once again.

Unless the files need to be located at a specific time on the timeline it may be easier to keep the auto-append option on to avoid confusion. When in doubt you can visit the Project Files menu and audition individual files in their entirety.

Media Space and Recording

While recording, the media space icon and text in the lower right of the screen change to reflect how much space is left. Should the media approach becoming too full, a low level warning is displayed. If recording continues, the HD-P2 will eventually run out of space, automatically stop recording, close the file, and display an out of space message.

NOTE

The FAT file system only supports file sizes up to 2 GB. The HD-P2 will recognize if a file is reaching this limit, close the file, and start a new file without interrupting the recording. The files themselves will abut within your DAW seamlessly.

Monitoring

The HD-P2 features a headset jack and phones adjust knob. In the Project Menu, Settings page there is an option for choosing the type of headset monitoring. The choices include Stereo, Mono Left, Mono Right, Mono Summed, and Follow Record Mode. The Mono

Summed mode can be useful if you are doing mono recordings sometimes from the left and sometimes the right. Follow Record Mode sets the headphone monitoring mode to match the project's channel settings.

Audible Alerts

When the HD-P2 detects low power or low media space it flashes the appropriate icons on the main screen. In some situations, when the screen isn't within line of sight or being monitored, you may want to enable audible alerts. This is an option in the System Menu. When enabled and an alert condition

happens, a series of beeps are sent to the audio output jacks and the headset. A short series of beeps indicates a warning while a longer series indicates a more serious problem, which will soon be followed up by the system stopping recording (media space low) or shutting down (battery power low).

HD-P2 Screens and Menus

Operational Screen

This is the screen you will see when the HD-P2 is first powered up, and is the main screen for operating and monitoring the HD-P2.

Metering – Instantaneous metering values (playback & record) along with peak decay and clip indicators. The response rate and peak hold times are configurable in the Project, Settings menu.

Timeline – Current time in hours:minutes:seconds: tenths/sec in non-timecode mode, hours:minutes: seconds:frames in timecode mode.

Scrub point – Indicates the unit that is changed when the scrub wheel is rotated. This will affect the resolution of the Scrub wheel. Change this by pressing **STOP** + **SELECT**.

Current – Current project, file, and marker. File and marker are based on timeline location and will appear/disappear accordingly.

Pre-Record – Percent of the pre-record buffer filled. Pre-record size varies from ten seconds down to five, depending on sample rate. This bar is updated in Monitor mode only when pre-record is enabled.

Settings – Current project settings in effect.

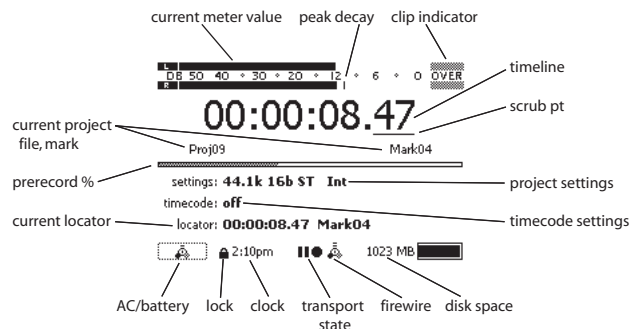Timecode – On/Off, when On it shows some timecode settings.

Figure 9 - Main Screen Layout

Locator – Current (or last) locator position and name. Pressing both Locate L&R together will relocate the timeline to this locator.

Power – Power source: AC adapter, FireWire, or battery (with level).

Lock – Shown when the **HOLD** switch is engaged, all other buttons are disabled.

Clock – Time of day clock, used for file creation time.

Transport – Icons showing the current transport state.

FireWire – Indicates the HD-P2 is connected to a computer via FireWire, not mounted.

Disk Space – Displays text and graphic of free space on the inserted media.

Screen Icons

The Power and Transport sections of the screen change their icons based on their current state. The Power and

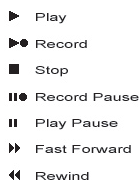Disk icons will blink whenever either approaches a low power or disk threshold, respectively.

Figure 10 - Transport State Icons

Figure 11 - Power Source Icons

Menu Navigation

The HD-P2's settings and utilities are accessed through a menu system. To activate the menu system, press the **MENU** key and the main menu is shown. To go back to the operational screen, press the **MENU** key at any time.

Main Menu

Project Menu – Used to access all of the settings and operations for the current project. Not accessible when media is not present.

Change/New Project – Used to create new projects or load existing projects.

System Menu – Access to all of the system utilities, settings, tools and disk management.

Display Menu – Settings for display contrast, backlight, and power savings.

FireWire Dock – When connected to a Windows XP or Mac OS X computer via FireWire this menu item is used to "dock" the HD-P2 as an external disk.

Unmount CF Media – Used to unmount the Compact Flash card before removing.

The inverted line on the screen indicates the current item (**Project Menu** in the case of Figure 12). Pressing **SELECT** will operate on the item. Items containing sub-menus are indicated with the right arrow icon. When
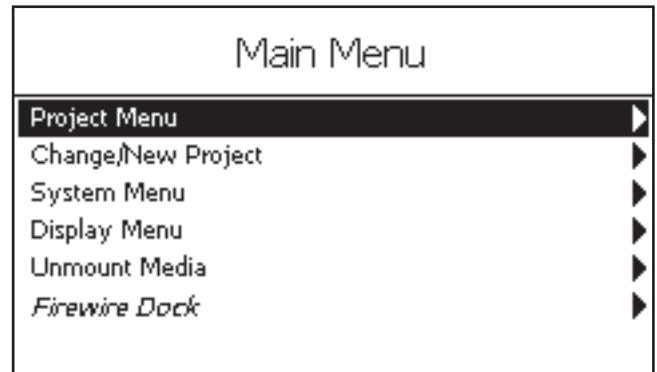

Figure 12 - Main Menu Screen

SELECT is pressed the next menu, a warning dialog, or the operation takes place.

To change the highlighted item, rotate the **SHUTTLE/DATA** wheel. If you have an external keyboard hooked up the HD-P2 you can also use the up/down arrow keys.

Project Menus

Project Main Menu

This menu applies to the active or currently loaded project and provides access to the sub-menus and

Figure 13 - Main Project Menu Screen

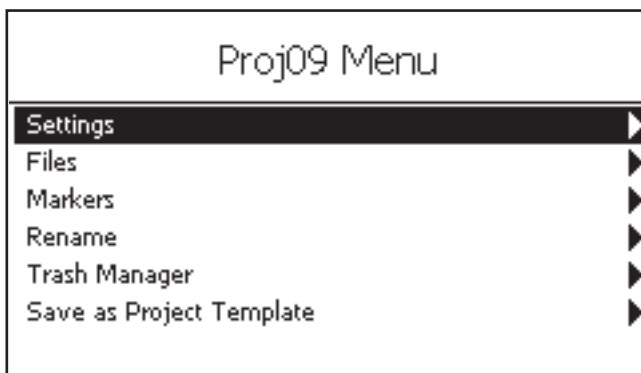actions that can be performed on a project. The top line in Figure 13 shows the project name.

Settings – Sub-menu for changing project settings.

Files – Sub-menu of all project audio files.

Markers – Sub-menu of all project markers.

Rename – Rename this project.

Trash Manager – Sub-menu of all items in project trash.

Save as Project Template – Turn this project's settings into a template that can be used when creating a new project.

Project Settings Menu

This menu provides access to all of the settings related to the current project, including timecode (a sub-menu). Settings are listed with their name on the left side and current value on the right. A setting with its name in italics is disabled and cannot be selected or changed. This may be due to a dependency on another setting (e.g. Timecode Settings cannot be entered unless timecode is enabled), or system states (most settings cannot be changed while the transport is moving). As another example, since this project already has files you cannot change the sample rate.

Continued from the previous page

Figures 14a and 14b are expanded views of all of the project settings and timecode sub-menus (timecode settings are explained in detail in the Timecode section of this manual). The following are details about the Project Settings menu items:

Sample Rate – *44.1, 48, 88.2, 96, 176.4* or *192 kHz.* This cannot be changed once any audio has been recorded into this project. All audio files in a project must be of the same sample rate.

Channels – This sets the record mode. The options are: *Mono Left, Mono Right, Mono Summed,* and *Stereo.*

Sample Width – *16* or *24 bits.*

Input Source – *Analog/Mic* or *S/PDIF* (digital).

Clock Source – *Internal, LTC, Video, Word Clock,* or *S/PDIF.*

Timecode – *Enabled* or *Disabled.*

Timecode Settings – a submenu of timecode parameters.

Headset Monitoring – *Stereo, Mono Left, Mono Right, Mono Summed,* or *Follow Record Mode* ("Channels" field above). Monitoring via the internal speaker follows this setting as well, although Stereo is rendered as Mono Summed.

Auto Markers – The HD-P2 can automatically drop markers when an audio input "over" occurs, or when timecode drops out. The field options are: *None, Audio Overs, TC Dropout, Both.*

Auto Append – This mode, as described previously, is set *Yes* or *No.*

Pre-Record – *Off* or *On.* When *On,* the HD-P2 will store the last several seconds of incoming audio when the input monitor is enabled. When **REC** is pressed, this material is stored to media as well as the following audio. This helps you not miss unexpected and important material.

Locator Types – This can limit where the **LOCATE** keys can position the timeline, to the edge of *Files Only,* to *Markers Only,* or to *Files and Markers.*

Meter Clip Hold – Flash (very brief), *3, 6,* or *10 seconds,* or *Infinite.* When set to *Infinite,* the *Clip* indicator on the display is cleared by pressing **CANCEL.**

Meter Decay Rate – *Slow, Medium,* or *Fast.*

Hold Meter Peak Decay – *Slow, Medium, Fast,* or *Off.*

File Base Name – Audio file names will start with these characters.

Mark Base Name – Marker names will start with these characters.

Figure 14a - Project Settings Screen: Expanded View

Figure 14b - Project Timecode Settings Screen: Expanded View

Project Files Menu

This menu shows a list of all active files in the project. Highlight a file and press **SELECT** to enter the File Edit screen.

The File Edit screen is the only screen that disables the transport keys from normal operation. While in this
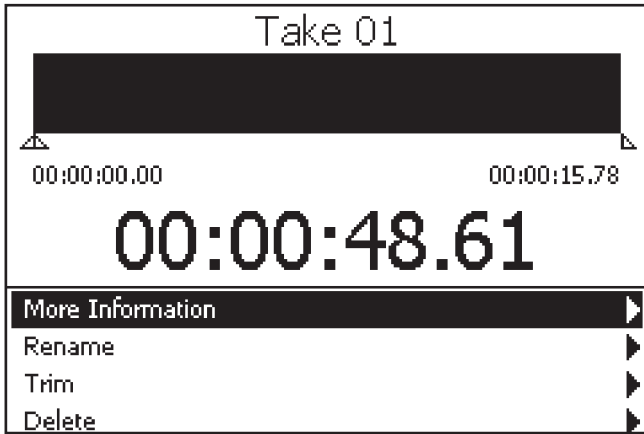
screen you use the **REW/FFWD/STOP/PLAY** keys to audition the current file. The timeline shows where you are in the file. The top left and right time fields indicate the current In and Out points of the file. When you first visit this screen they are set to the start and end location of the file.

Figure 15 - File Edit Screen

Figure 16 - File Edit in Process

The **SHUTTLE/DATA** wheel moves the menu selection as it does in any other menu screen. If you wish to use the **SHUTTLE/DATA** wheel to move the timeline, press and hold the **STOP** key.

While auditioning the file you can change the In and Out points by pressing the **LOCATE** ◄◄/►► keys. The display updates to show the current selection of the file and the small In/Out time displays also update to reflect the new position. This is used to trim unwanted sections of audio from the front and/or end of the audio file.

Figure 16 shows a section of the file from 4 seconds, 670 msecs to 14 seconds, 70 msecs. If you navigate to the Trim menu item and press **SELECT** it will (after a confirmation dialog) permanently remove the grey sections to the left and right from the file.

REW – Rewind skip play.
STOP-REW – Return to beginning of file.

F FWD – Fast Forward skip play.
STOP-F FWD – Go to end of file.
STOP – Stop transport.
STOP-SHUTTLE/DATA – Move timeline forward/backward.
PLAY – Play file starting at position of up arrow.
REC – N/A.
LOCATE ◄◄ – Set IN point.
LOCATE ►► – Set OUT point.
STOP-LOCATE ◄◄ – Locate to IN point.
STOP-LOCATE ►► – Locate to OUT point.

More Information – Leads to detailed file information screen.

Rename – Used to rename the file (up to 8 characters).

Trim – Trim audio from beginning and/or end of file based on In/Out points.

Delete – Removes file from project, moving it into the project trash.

Project Trash Manager

Whenever a "retake" is performed, or Delete is chosen in the File Edit screen, the HD-P2 moves the audio file to the Project's Trash folder. The Trash Manager screen is used to move a file back into the project, or to delete the file(s) permanently.

In Figure 17 there is only one file in the trash, which you can select to delete, or to move back into the project. Selecting the Delete All Files menu option will permanently delete all files from the trash.

For information regarding how much space is being used by all files, in all projects, visit the Media Cleanup menu, located in the Media Management area

Figure 17 - Project Trash Screen

of the System Menu.

Deleting files from one project's trash does not affect files in other projects.

Change/New Project

By default the HD-P2 automatically makes the first project whenever new media is used. To make additional projects, or switch between projects, use the Change/New Project menu from the Main menu.

In Figure 18 the menu shows the currently loaded project (Project 09) and any other projects on this Compact Flash card. If you select a non-loaded project, like Project 02, the sub-menu provides the choices of *Loading* the project or *Deleting*. Deleting a project permanently removes all audio files and settings and cannot be undone.
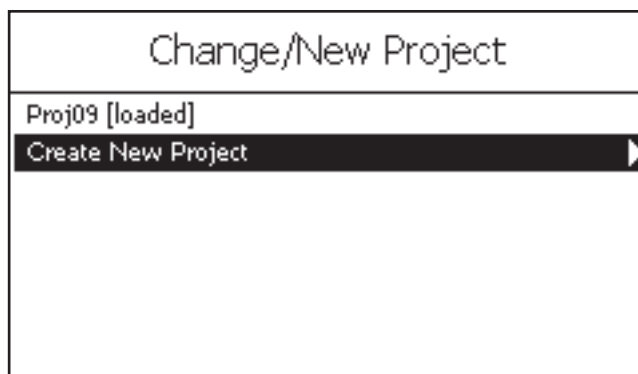

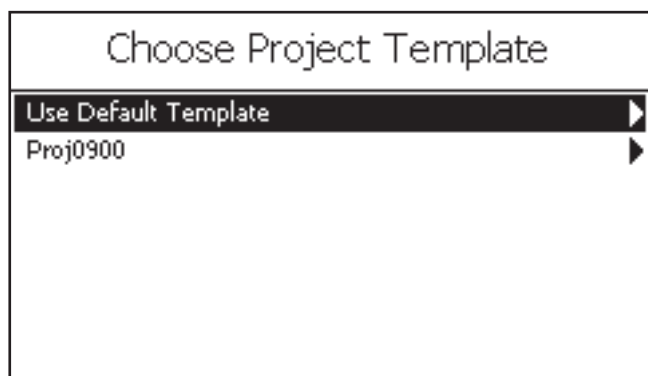**Figure 18 - Change or New Project Screen**

If you select Create New Project you are prompted to choose a Project Template as in Figure 19. The Default Template is based on the Default Project Settings in the System Menu. There may also be a list of templates that you have saved from other projects, like the file **Proj0900** shown in Figure 19.

Figure 19 - Choose Template for New Project Screen

System Menus

System Settings

The System Menu can be accessed at all times, with or without a Compact Flash card inserted. It controls overall settings, information, and tools related to the HD-P2 system as a whole.

Set System Time – Set the HD-P2's internal real-time clock with date and time.

Audible Alerts – When the HD-P2 detects low power or low disk space it will pop up warnings on the screen. If this choice is set to *On* it will also send beep tones to the audio output. These are not recorded.

Power Management – Shows the current voltage levels of AC, FireWire, and Battery power sources.

Audio Clock Information – Displays the measured types and values of the *Word Clock, LTC, S/PDIF*, and *Internal* clocks. Also shows alerts and provides a reset mechanism

Media Management – All media-related tools and information screens (i.e. *Get Info, Clean-up, Scan, Erase* and *Format*).

Software Update – Used to check the current software version and to install software updates.

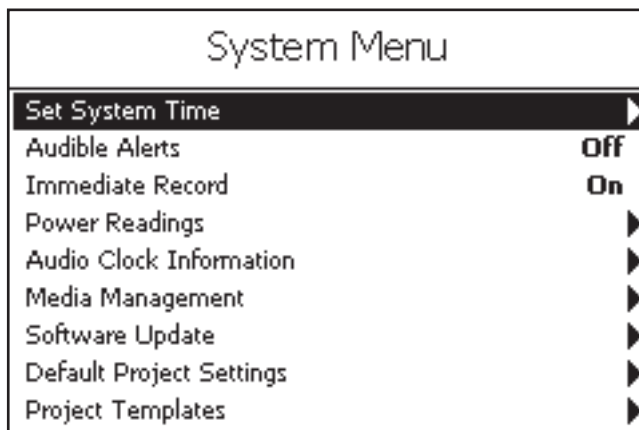**Default Project Settings** – Settings used by default when a new project is created.

Figure 20 - System Menu Settings Screen

Project Templates – List of saved project templates along with menus to delete, or rename them.

Default Project Settings and Project Templates are stored on the CF card internally. These sections remain active if a CF card is not present.

Continued from the previous page
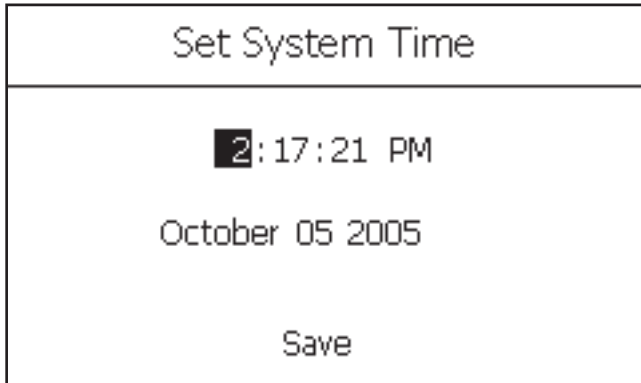
Set System Time

Figure 21 - Set System Time Screen

Figure 21 shows the current time stored in the real-time clock chip of the HD-P2. A backup lithium battery powers this clock. The screen shows the status of this battery.

Power Management

Figure 22 shows the power readings screen. This information screen shows the state of the HD-P2 power system. It reports on the current voltage levels of the three sources of power for the HD-P2. The FireWire Voltage level should be between 8 and 40 Volts, although some FireWire adaptors may not provide power. The Battery Voltage should nominally be above 10 volts and the batteries should be replaced if below eight. The provided AC adaptor provides approximately 12 VDC.

The voltage readings for FireWire and battery will read higher when they are not being used to power the HD-P2. This is because there is no load on them. The HD-P2 automatically switches between AC and

Figure 22 - Power Reading Screen

FireWire when both are present, preferring the higher voltage source.

Audio Clock Management
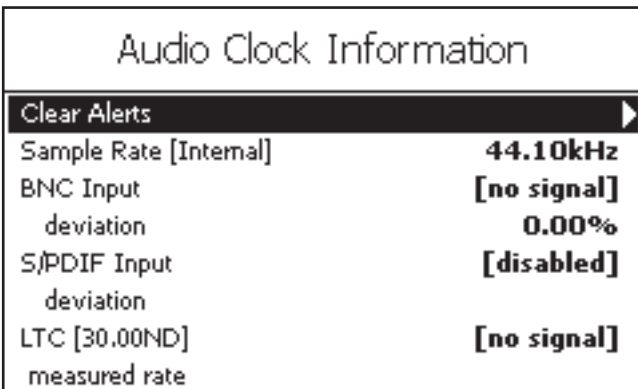
Figure 23 - Audio Clock Information Screen

The HD-P2 supports a number of internal and external clocking options. Figure 23 shows the current sample rate along with the values of any external signals, and the measured deviance between their values and what the HD-P2 expects.

Whenever there is an error with a clock source falling out of spec the HD-P2 shows [error] next to the item. The Clear Alerts option is used to clear these errors.

Media Management

This screen shown in Figure 24 provides tools for checking media useage and formatting/erasing CF media.
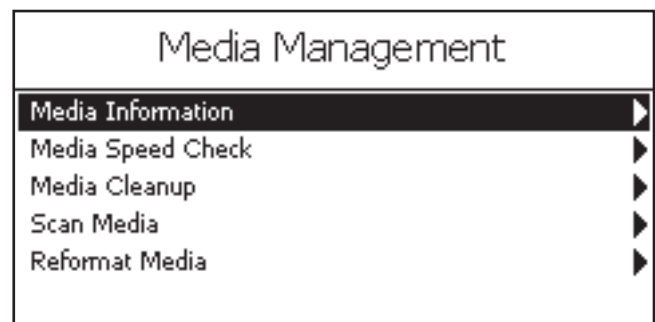
Figure 24 - Media Management Screen

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Media Information

Media Information reports information on the type of CF card/media that is in use.

Figure 25 shows a 512 MB CF card from Toshiba. It has been formatted as a FAT-16 storage device for optimal performance of this size of media.

Figure 25 - Media Information Screen

Media Speed Check

This performs a quick write/read speed check on the inserted CF media. The results are approximate and should be used only as a general guideline. Figure 26 is a results screen from CF media.

Figure 26 - Media Speed Check

Media Cleanup

Media Cleanup lists all of the projects on the CF card, how much space the "active" files are using (shown in parentheses), and how much space is being used by files in the project trash. Selecting the Project will empty its trash after displaying a warning since the action is permanent. There is also the choice to *Empty Trash In All Projects*, which is convenient if you have many projects with files in their trash.

Figure 27 - Media Cleanup Screen

Reformat Media

Formatting media permanently deletes everything on the CF card. This does a low level format. In Figure 28 an example of the warning screen is shown.

Scan Media

This utility is like Scandisk on a normal Windows machine. It will scan the media for file problems and attempt to fix them. It should be used only when needed to try and recover from media problems.

Figure 28 - Reformat Confirmation Screen

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Software Update

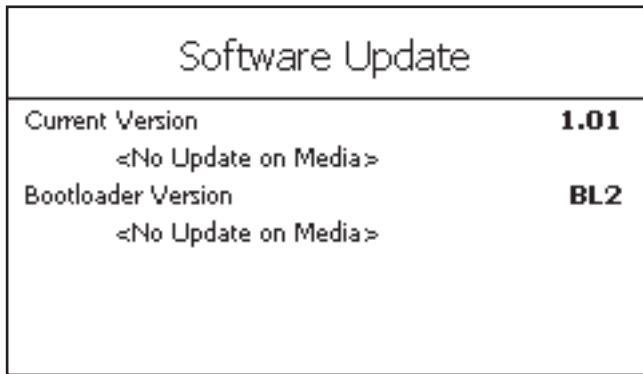**Figure 29 - Software Update Screen w/o Update**

Figure 30 - Software Update Screen w/Update

From time to time new software may be released for the HD-P2. To update the HD-P2 software you will copy the update file (e.g. UPDATE_1_1.BIN) to a CF card and insert it into the HD-P2. You can also copy the update file to the HD-P2 card while the system is docked to a host computer over FireWire.

Whenever the HD-P2 detects an update file on an inserted media (that is a different version from what is currently installed), it will display the Software Update screen. This screen shows the current version of software and the version of software contained in the update file.

The HD-P2 stores two software versions in non-volatile flash memory. There is the default system version, which came from the factory and cannot be changed, and there is the current user version. When updating software it replaces the user version. If there is a problem with the update, you can always boot up the HD-P2 using the default system version by holding the **STOP** key and the **PROJECT** key while powering up.

Once completed, the software update file is automatically deleted from the media.

Default Project Settings

This menu is almost identical to the Project Settings menu except that it changes the system's default set-

tings. When you create a new project without using a project template, the HD-P2 uses these settings.

Project Templates

Figure 31 - Project Templates Screen

You can turn a project's settings into a template, which can then be used when creating new projects. This screen shows all of the saved templates on the CF card. Selecting a template brings up a sub-menu which lets you *Rename* or permanently *Delete* the template.

Display Menu

This menu shown in Figure 32 provides access to display related settings. You can adjust Contrast or Brightness, just as you do when pressing the dedicated **Display** key.

To help save on battery power you can set a timeout for shutting off the display's backlighting. Whenever the system is inactive (no key presses) for greater than the set period of time, the backlight is turned off. The next time you press a key or turn the **SHUTTLE/DATA** wheel the backlight is turned back on and the timeout period starts again.

Figure 32 - Display Menu Screen

Timecode

Overview

The HD-P2 has a wide range of timecode features. It can read incoming linear timecode (LTC) and has many functions including freewheeling, trigger on frame number, and timecode offset. The HD-P2 can also resolve its audio clock to a range of sources including LTC in and video in.

Very briefly, timecode operation works this way (details in the following sections):

1. Enable timecode on the Project Menu/Settings screen.

2. Adjust the timecode settings as needed.
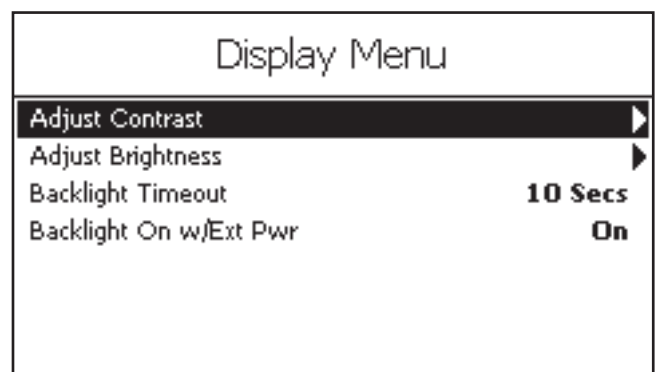
3. Go into timecode chase mode by pressing the **TIMECODE** key. The **TIMECODE** indicator will reflect the state of incoming timecode (blinking if there is no timecode, solid with good timecode). The position on the audio timeline is now controlled by the LTC.

4. Start a timecode operation by pressing the **PLAY** or **REC** key. The **REC** indicator will blink until the op-

eration is triggered by incoming timecode. Once triggered, any blinking light will stay on solid.

5. The operation is stopped when the **STOP** key is pressed, or if power or storage space is low, or if LTC has hit the end of its 24-hour timecode day. If FreeWheel is not infinite (see below), then the operation will also stop if timecode is stopped.

6. Leave timecode chase mode by pressing the **TIMECODE** key. The **TIMECODE** indicator goes out and the transport keys and the **SHUTTLE/DATA** wheel once again control the position on the audio timeline.

7. When timecode is disabled on the Project Menu/ Settings screen, the **TIMECODE** key is no longer active.

There are many variations to how timecode works on the HD-P2, as controlled by the Timecode Settings screen.

Timecode Settings

Timecode operation on the HD-P2 is disabled by default. You cannot access the Timecode Settings menu screen until timecode is enabled. Go to the Project Menu/Settings screen, select the Timecode menu item and change it from *DIS* to *EN* to enable timecode. Then select the Timecode Settings menu item and press the **SELECT** key to enter the Timecode Settings screen which looks similar to Figure 33.

Clock Source

This menu item is a duplicate of the Clock Source field on the Project Menu/Settings screen. There is only one audio clock source and changing either one affects the other. This menu is included in the Timecode Settings for convenience.

The possible audio Clock Source values are:

- *Internal* – The audio clock is crystal-controlled and generated by the HD-P2. Use this only if the HD-P2 is to be the audio clock master in your system, with its S/PDIF digital audio output used to synchronize other audio gear.

- *LTC* – The HD-P2 will lock its audio clock to the incoming LTC, always keeping it in sync to the LTC rate. Please note that even with the audio clock rate locked to incoming LTC, the audio clock can still "drift" with respect to the LTC if it is discontiguous or if there is a mismatch between the expected and received LTC formats (e.g. drop vs. non-drop frame).

- *Video* – A variety of video formats can be fed into the BNC input and used for audio sync, including composite or blackburst NTSC and PAL, and tri-level sync from HDTV systems. Note that the

Figure 33 - Timecode Settings Screen

Frame Rate (described below) must be correctly set to match the incoming video material.

- *Word Clock* – The BNC input can also be sent a standard TTL-level word clock for audio clock sync.

- *S/PDIF* – The audio clock rate can also be derived from an incoming S/PDIF digital audio signal.

The audio clock source and frame rate must be set correctly and fed valid signals to avoid "drift" between the LTC and the audio clock.

Frame Rate

This field lets you specify the expected incoming LTC (and video) frame rate, as well as frame encoding in Drop Frame (DF) and Non-Drop (ND) frame systems.

- *23.976* – Some HDTV setups use a "pull-down" version of 24 frame-per-second video. While the video runs at a slowed down rate, the frames are always "non-drop" frame encoded.

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- *24.00* – This frame rate is used in both film and HDTV systems.
- *25.00* – Used for PAL video.
- *29.97DF* – Standard frame rate for NTSC video with wall time matching the drop-frame video time.
- *29.97ND* – NTSC video with non-drop encoded frames.
- *30.00DF* – True 30 frame-per-second rate but with drop-frame encoded LTC.
- *30.00ND* – 30 frames-per-second, non-drop encoded LTC.

Rate Pull Up/Down

Normally a synchronized audio clock is set to be precisely 44,100 Hz, 48,000 Hz, and so on. There are some cases where it is required to run the audio at pull-up or pull-down rates.

The Rate Pull Up/Down options are:

- *Off* – Normal use
- *29.97 Up* – If and only if the frame rate is 29.97 (DF or ND), then pull-up the audio clock rate.
- *30.00 Down* – If and only if the frame rate is 30.00 (DF or ND), then pull-down the audio clock rate.

FreeWheel

The HD-P2 FreeWheel setting lets you adjust how many bad, missing, or discontiguous timecode frames should elapse before dropping out of a timecode operation (record or play). The options are from *1* to *20* frames, or *Infinite*. After a timecode operation has started when FreeWheel is set to *Infinite* the LTC can be stopped or removed and it will still continue (In this case, you have to press the **STOP** key or run out of memory space or power to stop the timecode operation).

Jam Sync

When timecode is set to *Infinite* freewheel, and a valid timecode source is connected, the internal timecode generator is started. While there is a signal, the HD-P2 will continue to follow the external timecode. Should the timecode stop, the internal timecode generator takes over as the timecode reference until one of the following occurs:

- clock source is changed
- freewheel setting taken off of *Infinite*
- power cycle

This assumes that the internal clock, or something else, does not stop when the LTC is unplugged. You can turn on/off the timecode (via keys) or disable/enable timecode, and the generator will continue to run.

Trigger Mode

When FreeWheel is not set to *Infinite*, a timecode opera-

tion will stop if LTC is lost. If LTC restarts, perhaps in a different position, the HD-P2 will either start another timecode operation (Trigger Mode of *Auto*) or will wait to start another operation until the **REC** or **PLAY** keys are pressed (Trigger Mode of *Single*).

Trigger on Frame

Once a timecode operation has been initiated (by pressing **PLAY** or **REC** with timecode on), the operation will start either once any incoming timecode frame is recognized (Trigger on Frame *Off*) or once a particular timecode frame is recognized (Trigger on Frame *On*).

Trigger-Frame

If Trigger Mode is set to *Single*, then you cam specify the particular trigger frame in HH:MM:SS.FF format (Make sure you select *Save* and press the **SELECT** key once you have entered the frame number).

Timecode Origin

When a project is created with timecode enabled, it has an initial timecode origin of 01:00:00.00. This defines the beginning of a 24-hour "timecode day" for the project. If an operation hits the end of the timecode day (e.g. 00:59:59.29, in this case), it is stopped.

Before recording audio into the project, the user can modify the start/stop points of the timecode day to correspond with the range of external timecode that is expected to be used with the project. For example, if the user is using 30 fps code, and sets the timecode origin to 02:00:00.00, the timecode day will range from [02:00:00.00 to 23:59:59.29] and then from [00:00:00.00 to 01:59:59.29]. In this case, a recording at 00:01:30.00 will be towards the end of the 24-hour timecode day instead of near the beginning. This makes "recording over midnight" possible in time of day applications.

Timecode Offset

The HD-P2 can offset incoming timecode up to +/-12 hours during playback. This is useful when the user wants to line up playback with a timecode source that uses a different timecode range than that used to originally record the material into the project. An *On/Off* selection allows the user to activate and deactivate the offset without having to reenter the numeric offset each time. The word offset appears on the main display when it is *On* letting the user know at a glance that a timecode offset is currently in effect.

Offset

This entry lets you specify the Timecode Offset in HH:MM:SS.FF format (Make sure you select *Save* and press the **SELECT** key once you have entered the offset).

Key Shortcuts

The HD-P2's keys are mapped to the most commonly used functions, to quickly perform an action or navigate to a menu. There are additional key shortcuts that, while not necessary to the more common operations of the HD-P2, might prove useful in some situations.

Shortcuts

Shifted MENU Keys

Pressing and holding the **MENU** key and pressing one of these additional keys will perform the following menu shortcut:

MENU-PROJECT – Jump to Change/New Project Menu

MENU-DISPLAY – Jump to System Menu

MENU-SELECT – Jump to Project File List Menu

MENU-RETAKE – Jump to Project Trash List Menu

MENU-MARKER – Jump to Project Marker List Menu

MENU-TIMECODE – Jump to Project Timecode Settings (if enabled)

Shifted STOP Keys

Similarly, there are four shortcuts that use the **STOP** key as a shift key.

STOP-RETAKE – Perform Retake without Warning Dialog

STOP-REW – Locate to beginning of recorded audio

STOP-F FWD – Locate to end of recorded audio

STOP-SELECT – Change timeline scrub units (default is frame)

External PS/2 Keyboard Equivalents

When a PS/2 external keyboard is hooked to the
HD-P2 the following keyboard equivalents can be
used to operate the system:

	Keyboard a4	Function	Main Screen	Everywhere*
Transport	Space Bar	Play/Stop	x	x
	F-5	Rew	x	x
	F-6	F Fwd	x	x
	F-7	Stop	x	x
	F-8	Play	x	x
	F-9	Pause	x	x
	F-10	Record	x	x
	F-12	Drop Marker	x	
	Left Arrow	Locate Left	x	
	Right Arrow	Locate Right	x	
	HOME	RTZ	x	
	END	End of Project	x	
Shortcuts	T	Toggle Timcode Chase	x	
	Z	Retake	x	
	R	Relocate	x	
Menus	P	Project	x	
	F-11	Markers	x	
	L	Toggle Locator Menu	x	
	M	Menu	x	
	N	Change/NewProject	x	
	F	Project Files	x	
	S	System Menu	x	
	F-2	Timecode Settings (only when enabled)	x	
	F-3	Display	x	x
	PrintScreen	Screenshot	x	x
	ENTER	Select	x	x
	ESC	CANCEL / Clear Over	x	x
	G	Trash	x	
	Up Arrow	Scroll up menu in any menu list screen		
	Down Arrow	Scroll down menu in any menu list screen		
	HOME	Go to top of entire menu list		
	END	Go to bottom of entire menu list		
	* except renaming screen			

When using the Rename screen for renaming a proj-
ect, file, or marker, the keyboard operates normally
allowing you to edit, (pressing the backspace key to
delete) and type in a new name.

FireWire Dock

When the HD-P2 is connected to a host computer supported by Windows XP or Mac OS 10.3 via FireWire, this Main Menu item is enabled and can be used to dock the HD-P2 to the host computer.

The HD-P2, when docked, shows up on the host com-

Figure 34 - FireWire Docked Screen

puter as an externally mounted FireWire hard drive. On the HD-P2 the screen appears as shown in Figure 34.

The only way to safely un-dock the HD-P2 from the host device is to "eject" it on the host's file system. On the Macintosh this means dragging the HD-P2 disk icon to the Trash (which becomes an eject button), or clicking the eject icon next to the disk in the Finder window. On Windows you can right click the HD-P2 disk and select Eject.

> **CAUTION**
> *While the HD-P2 is docked you should not try to remove or change the CF card. Doing so will corrupt the data on the card.*

Once the host computer ejects the HD-P2, the warning screen goes away, and the HD-P2 reloads the CF card just as it does on power-up and card insertion.

Compact Flash Card Layout

Figure 35 is an example of a typical CF card with two Projects as seen from a Macintosh OS X computer:

Note that Project PROJ0001 and all its files use default system names. The other Project (PressConf) has been renamed, as have the active audio files.

The HD-P2 automatically takes care of organizing the file system. When docked to a host computer, or when using a CF card reader, you can refer to this organization chart to find and copy the audio files to your DAW. If you have custom settings that you use all of the time, turn them into a Project Template (.tpt extension) which allows you to keep a master copy on your computer that can be copied to new HD-P2 media before heading to the field.
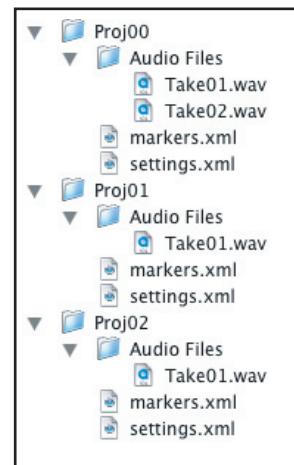

Figure 35 - CF Disk Layout

HD-P2 Conform Application

The HD-P2 includes a standalone application supported by both Windows XP and Mac OS 10.3 for conforming (or rendering) a project into a single audio file. The application reads in the audio files for a selected project (all files must share the same sample rate), evaluates the timeline position and file creation date & time for each audio file, and writes out the "flattened" or "conformed" audio into a single file. The file can be saved with 16- or 24-bit sample depth and in Stereo, Dual Mono, Mono Left, Mono Right, or Mono Summed (L+R) formats. Various application uses follow:

Choose Project

Using file dialog navigate to the project and click

Open. Once a valid project is chosen the status line will show the start and end times of audio within, along with the size of the output file at the current settings. The Conform Project button will also be enabled.

Choose Output File Setting

Set the Width and Channel format you wish the output file to have.

Conform Project

Upon clicking this key you will be presented with a file Save As dialog. Choose where you would like the file saved and what name. An extension of .wav is required.

Docking and Conforming

Continued from the previous page

During the conforming process a dialog is shown, with a progress bar that tracks the approximate amount of the process that has completed. If you click Cancel button during conforming the process is interrupted and the incomplete file is deleted.

The application uses the same playback algorithms as the HD-P2 to ensure that the final file sounds like what you would hear if the project were played on the HD-P2. If the project has silence between files the application will write silence into the output file.

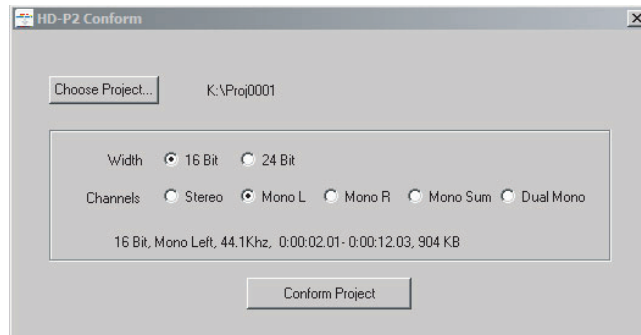## HD-P2 Conform Application Screens

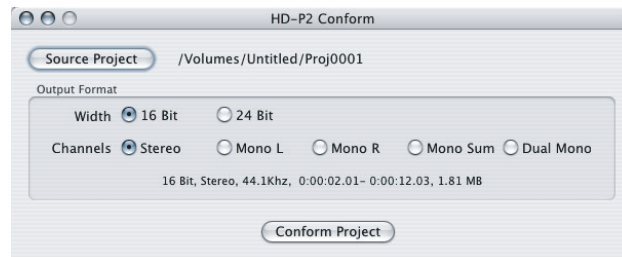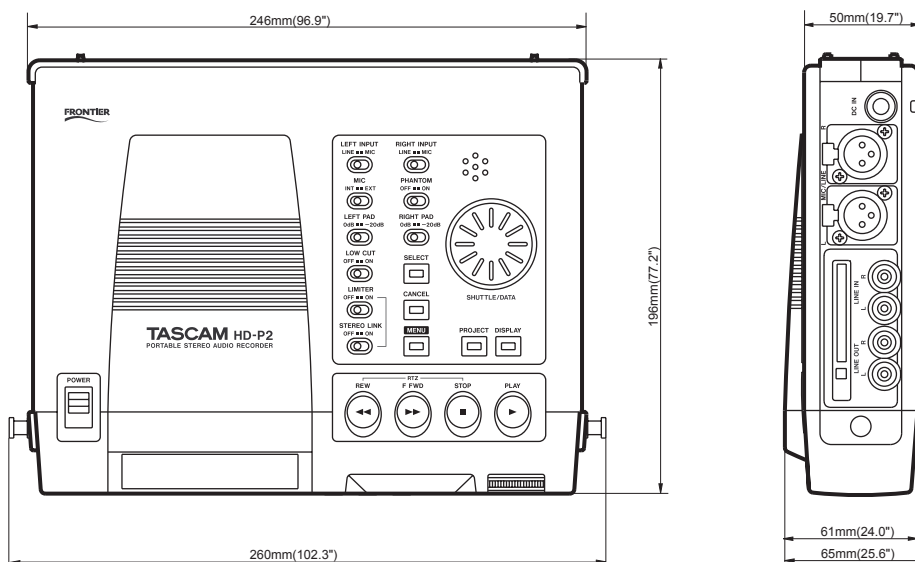**Figure 36 - Windows Conform Screen**

Figure 37 - Macintosh Conform Screen

Dimensional Drawing

Due to product improvement, specifications and external appearance are subject to change without notice. Also, the actual unit may appear differently from the illustrations in this operation manual.

Specifications

Recording Media: Compact Flash, Microdrive
File Format: BWF Broadcast Wave File (FAT16/FAT32)
Recording time: 24 minutes (256 MB Compact Flash, Fs=44.1 kHz 16 bit stereo)
Operating time: 5 Hours
Sample Rates: 44.1/48/88.2/96/176.4/192 kHz
Sample Clock refs: S/PDIF, Video (NTSC or PAL), LTC, WORD
Quantization: 16/24 bit
Pre-record buffer: Up to 10 seconds
Time code types: 23.976, 24, 25, 29, 29.97 DF/NDF, 30 DF/NDF

Frequency response

Nominal level: 20 Hz to 20 kHz ±1.0 dB (44.1 kHz/48 kHz)
MIC to LINE OUT: 20 to 40kHz 0.5dB/–4.0dB (88.2 kHz/96kHz)
20 to 80 kHz 0.5 dB/–20 dB (176.4 kHz/192 kHz)
Noise level Trim Max (22 Hz to 22 kHz): Up to –55 dBu MIC to LINE OUT
THD+N
MAX LEVEL at 1 kHz: Up to 0.01% MIC to Line Out
TRIM MIN: Up to 0.01% 22 kLPF
Crosstalk at 1 kHz: Over 80 dB MIC to Monitor Out
Delay: 44.1 kHz 1.5 msec
192 kHz 0.7 mesc
Limiter: Attach time Up to 25 usec
Release time Up to 50 msec
Low Cut: High pass 100 Hz cut off –18 dB/OCT
Phantom Power: +48 Volt, 10 mA

Input/Output Connectors

Analog I/O
MIC Input
Connector: XLR–3–31 type
Input Impedance: 1.3 kΩ Balance
Mic Input Level: –60 dBu (Trim Max) to 13.8 dBu (Trim Min)
Internal Mic level: –60 dBu (Trim Max) to 13.8 dBu (Trim Min)
Headroom: 16dB/22dB (with limiter)
Maximum Gain: 46.2 dB
Pad: 20 dBS

LINE Input

Connector: RCA Pin type
Input Impedance: 10 kΩ
Input Level: –46.2 dBV (Trim Max) to 0 dBu (Trim Min)
Headroom: 16 dB
Maximum Gain: 46.2 dB

LINE Output

Connector: RCA Pin type
Input Impedance: 100 Ω
Input Level: –10 dBV
Head Room: +6 dBV

Headphone Output

Connector: 6 TRS PHONE jack (Tip: L, Ring: R, Sleeve: GND)
Output Power: 55 mW+55 mW (32 Ω)

Speaker Output:

500 mW (16 Ω)

Digital I/O

COAXIAL INPUT/OUTPUT

Connector: RCA Pin type
Input Impedance: 75 Ω
Format: IEC60958 (S/PDIF)
Quantization: 24 bit

Other Inputs

LTC INPUT

Connector: XLR–3–31
Input Impedance: 75 Ω

VIDEO INPUT

Connector: BNC
Input Impedance: 75 Ω

KEYBOARD

Connector: PS/2

FIREWIRE

Connector: IEEE.1394 (6 Pin)
Format: IEEE.1394 (Asynchoronous)
Baud Rate: 400 Mbps

Display

LCD: 240x160 dots with backlight

Power

AC ADAPTOR

Input: USA/Canada 120 V AC, 60 Hz
Europe/U.K. 230 V AC, 50 Hz
Australia 240 V AC, 50 Hz
Output: DC 12 V
Rash Current: 600 mA
Power Consumption: 6 W (CompactFlash)

Battery

8 x AA type dry cell (NiMH recommended)

Operating temperature: 0° to 35° C

Dimensions (w x d x h): 245 x 188 x 60

Weight: 1.2 kg (without the batteries)

Compatible Operating Systems:

Windows XP and Macintosh OSX ~10.3

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HD-P2

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