





# Section 4

## Players & Recorders

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# SONY

## TC-D5 PROII

RECORDERS

416

### Portable Stereo Cassette Recorder

A compact recorder designed for rigorous field use, the TC-D5 PROII provides stable, high performance stereo recording with complete lightweight portability. Measuring 9 $\frac{5}{8}$ " x 11 $\frac{5}{16}$ " x 6 $\frac{7}{8}$ " and under 4 lbs. with batteries, the TC-D5 PROII lets you slip onto the scene easily and come back with high quality stereo sound. Features include record-level limiter, large VU meters and XLR-balanced inputs for direct connection with professional microphones.



#### Basics

- ◆ Stereo low impedance XLR mic inputs
- ◆ Stereo RCA line outputs
- ◆ Dolby B noise reduction
- ◆ Built-in speaker and stereo 1/4" headphone jack let you check your recordings immediately.
- ◆ Record-level limiter eliminates clipping, while a microphone attenuator suppresses excess input signal levels by 20dB to prevent distortion.
- ◆ Runs for 5-1/2 hours with two "D" size alkaline batteries. Also connects to a car battery via a car battery cord.

#### VU-Metering

- ◆ Large, easy-to-read backlit VU meters. One switch illuminates the VU meters and at the same time indicates the battery condition on the L-channel meter. Light shuts off after 10 seconds to save power. LED peak indicator illuminates at +7 dB.

#### Disc-Drive System

- ◆ Featuring a coreless design, the motor is as small as an "AA" size battery but delivers strong torque. Reliable transport mechanism results in increased accuracy and stability and contributes greatly to the exceptional compactness of the TC-D5 PRO II.

#### Specifications

**Frequency Response (CrO2):** 40Hz-15kHz

**Winding Time:** 150 sec. with C60 cassette

**Headphones:** Stereo phone jack x 1

**Speaker:** 5cm (2") diameter, 200mW

**Power Requirements:** Two "D" size batteries or DC-12v car battery with DCC-127A cord

**Dimensions (W x H x D):** 9 $\frac{5}{8}$ " x 11 $\frac{5}{16}$ " x 6 $\frac{7}{8}$ "

**Weight:** 3 lb. 12 oz. with batteries

**TC-D5PRO II**

With carrying case and shoulder strap...**00.00**



# MARANTZ

## PMD-101/201/221/222/430

### Portable Professional Cassette Recorders

The world standard for field recording, the PMD line is also the value leader. They all feature RCA line input/outputs, 1/4" headphone jack, built-in speaker, pause control, audible cue and review, tape counter, full auto shut-off and low battery indicator. Used professionally by journalists, law enforcement agencies, aural historians and musicians.



**ONE HOUR FREE PARKING**

AT 349 W. 34th STREET (with purchase of \$100 or more)

# MARANTZ

## PMD-101/201/221/222/430

- ◆ Record limiter and Automatic Level Control (ALC) are great in news gathering. Connect a mic, press record, and get the story while the recorder takes care of levels.
- ◆ They run up to 7½ hours on three 'D' cell batteries, or up to 5½ hours with the optional RB430 rechargeable battery.
- ◆ Built-in electret condenser microphone is a great back-up in a pinch.
- ◆ Modular telephone jack lets you record phone interviews and gives you the ability to play back over a telephone line as well.
- ◆ Microphone attenuation is adjustable in three settings from 0 to -20dB
- ◆ 3-position ANC (Ambient Noise Control) switch, (flat, low-cut, or low-and-high cut.
- ◆ All except the PMD-430 have 1/2 speed playback/record capability. With 1/2 speed playback, musicians can slow down complicated passages for analysis. And when played back at 1/2 speed, the pitch is lowered by exactly one octave, so the notes are still musically correct—great for figuring out complicated solos or picking patterns.
- ◆ At 1/2 speed, a three hour meeting can be recorded on a single tape. Built-in speaker makes transcription convenient.
- ◆ 1/2 speed recording is great for churches, because 90 minutes can be recorded on a single side—no interrupting your recording to flip the tape over. Line inputs make it easy to use and connect to your existing sound system.

### Optional Accessories

**CLC221 Vinyl Carrying Case:** Cutouts and flaps allow complete operation while in the case, and provides protection against scratches and dents. Fits all except the PMD-430.

**WPC221 Weather Resistant Case:** Fits all PMD recorders. Cutouts and flaps allow for complete operation while in the case.

**RB430 Nicad Rechargeable Battery:** Provides 3 hours of playback or 2.5 hours of recording on a 8 hour charge. Can be recharged in the unit.

**CA221 Car Adapter:** Plugs into a standard automotive cigarette lighter, and powers any of the PMD portable cassette recorders.

General	PMD-101	PMD-201	PMD-221	PMD-222	PMD-430
<b>Stereo/Mono</b>	Mono	Mono	Mono	Mono	Stereo
<b>Heads</b>	2	2	3	3	3
<b>Inputs/Outputs</b>					
<b>Mic Input</b>	1/4-inch	Miniplug	Miniplug	Mini/XLR	1/4-inch
<b>Condenser Mic</b>	Built-In	Built-In	Built-In	Built-In	—
<b>Remote Jack</b>	—	Yes	Yes	Yes	—
<b>Modular Telephone Jack</b>	—	Yes	Yes	Yes	—
<b>External Speaker Jack</b>	—	Yes	Yes	Yes	—
<b>Record Controls</b>					
<b>VU Meters</b>	—	1	1	1	2 (Illuminated)
<b>2-Speed Recording</b>	Yes	Yes	Yes	Yes	—
<b>Dolby B NR</b>	—	—	—	—	Yes
<b>dbx NR</b>	—	—	—	—	Yes
<b>Mic Attenuation</b>	—	0, -10dB, -20dB	0, -10dB, -20dB	0, -10dB, -20dB	0, -15dB, -30dB
<b>Ambient Noise Cont.</b>	—	Yes	Yes	Yes	—
<b>MPX Filter</b>	—	—	—	—	Yes
<b>Manual Level Control</b>	—	Yes	Yes	Yes	—
<b>Limiter</b>	—	Yes	Yes	Yes	Yes
<b>ALC</b>	Yes	Yes	Yes	Yes	—
<b>Peak Indicator</b>	—	—	Yes	Yes	—
<b>Playback Controls</b>					
<b>Pitch Control</b>	±20%	±20%	±20%	±20%	±6%
<b>Bias Fine Adj.</b>	—	—	—	—	Yes
<b>Tone Control</b>	Yes	Yes	Yes	Yes	—
<b>Half-Speed Playback</b>	Yes	Yes	Yes	Yes	—
<b>Memory Rewind</b>	—	—	Yes	Yes	Yes
<b>Price</b>	<b>199.95</b>	<b>279.95</b>	<b>319.95</b>	<b>339.95</b>	<b>459.95</b>

# SONY

## MZ-NE410

RECORDERS

418

### High-Speed Net MD Walkman Recorder

The MZ-NE410 is a high-speed Net MD Walkman Recorder that lets you record your MP3s or CDs at up to 32x normal speed and playback ATRAC3 Audio, MP3, WMA, and WAV files. Enjoy up to 56 hours continuous playback on one AA battery (LP4 Mode), and record up to 5 hours of music on one 80 minute disc. Skip-Free G-Protection Technology enables a smooth listening experience, and the "Easy Skip" Group/Folder Function allows for easy navigation between multiple file folders. Finally, take advantage of the supplied music management software including SonicStage Software and the Net MD Simple Burner Application.



### FEATURES

#### Recording

- ◆ MDLP (MiniDisc Long Play) lets you record 2X (LP2) or 4X (LP4) longer on a standard 80-minute MiniDisc for up to 320 minutes (over 5 hours) of music.
- ◆ Records from various sources as well as multiple Internet audio formats (MP3, WMA, WAV files) for flexible transfer
- ◆ Select from three recording modes: standard mode gives the richest sound quality or two different long play modes for the most effective use of space on a single MD.

#### Playback

- ◆ Playback modes include: Normal and Repeat (1-track, All-tracks) and Shuffle.
- ◆ Digital sound presets let you recall the sound quality settings you like for listening to different discs
- ◆ Skip-Free G-Protection for perfect playback without skipping, even while running or jogging. Provides shock recovery up to 10-times faster than conventional systems.

#### High Performance

- ◆ MiniDiscs are re-recordable, scratch-resistant, low-cost high-capacity media
- ◆ Up to 56 hours playback (16 hours recording) on a single AA battery
- ◆ Internal battery compartment holds one "AA" type battery
- ◆ "Easy Skip" Group/Folder Function allows for easy navigation between multiple file folders transferred from playlist

#### Net MD Technology

- ◆ Breaks the speed limit with a direct USB connection that transfers 80 minutes of music from PC to MD in less than three minutes.
- ◆ Bundled SonicStage Software enables you to rip, import and transfer your digital music files (MP3s or CDs) to the Net MD recorder at up to 32x speed from your PC. The title/track information is automatically transferred to the Net MD Recorder.

- ◆ Bundled Net MD Simple Burner application enables you to dub your CD tracks directly your CD-Rom drive. This gives you all the music you want without storing music on your hard drive
- ◆ Compatible with RealOne Player—a music management system which lets you download, create playlists and transfer music to your Net MD recorder

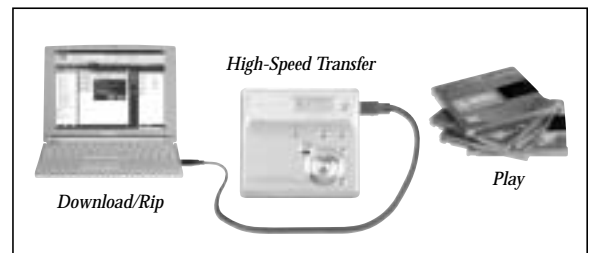
#### Conveniences

- ◆ Fits a jacket pocket for entertainment on the go. Includes MDR-027LP headphones
- ◆ Optional digital cables are available to connect to CD/DAT or home systems
- ◆ LCD displays remaining battery power and time left on the disc

- ◆ Easy pop-up eject mechanism makes it fast and easy to insert or remove MiniDiscs
- ◆ Automatic End Search Recording Function informs you how much unrecorded time remains on a disc and begins additional recording from that point,

Download music files from the Internet or rip your CDs. Net MD technology lets you perform high speed transfer from your PC to MD, providing up to 32x speed transfer directly to the recorder.

The supplied SonicStage software makes it a simple task to manage your music and create custom playlists. The SonicStage software also allows you to choose your recording level quality among standard LP2 or LP4 Mode, which allows you to store over five hours of music on one 80 minute disc. Best yet, you can transfer Multiple Audio Codecs to your NetMD recorder. They also play back ATRAC3 and support MP3/WMA/WAV files.



For Any Inquiries Regarding Your Order, Call Our Customer Service:  
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## MZ-N510CK/NF610/NF810CK

### MZ-N510CK

The all-blue MZ-N510CK is the same as the MZ-NE410 with the added convenience of an editing remote control, and a Bookmark function. It also comes supplied with a car kit to connect the player to an in-car audio system, as well as an AC adapter.

### MZ-NF610

The all-blue MZ-NF610 doesn't include a car kit, but adds a AM/F/TV Weather Band tuner and a NH-7WMAA rechargeable battery. A car kit (CPA-9C) is available as an option.

### MZ-NF810CK

The all-silver MZ-NF810CK steps up with an external mic jack, supplied car kit and a battery charging stand. The stand lets you access the MZ-NF810CK while simultaneously charging the battery by simply placing the recorder in the stand.

It is also equipped with a 6-band Graphic EQ (4 presets/2 custom) gives you more flexibility in choosing which sound setting best suits the music. The four presets are Heavy, Pop, Jazz and Walkman Unique. You can also create different listening environments by digitally adjusting sound resonance. The four presets are Studio, Live, Club and Arena.

### SIMPLE BURNER INTERFACE



The bundled Sony NetMD Simple Burner/Quick Rip CD dubbing application gives you all the music you want without storing or managing music on your hard drive.

Sony's NetMD Simple Burner provides an easy to use CD dubbing application that makes dubs at accelerated speed. It gives you the freedom to dub straight from CDs to a NetMD recorder. Easy to use, simply insert the CD and double click the NetMD Simple Burner icon on the desktop. This opens the dubbing application with the CD tracks displayed on the left. All that's left to do is select the tracks to be transferred to the NetMD recorder, select recording mode (LP2, LP4) hit the record button, and the selected tracks are transferred to the recorder.

With the Simple Burner, Quick Rip CD dubbing application, transferring music from CD to MD is faster and easier than ever.

## MZ-N10

### 64x Net MD Walkman Recorder

The pinnacle of the Net MD Walkman line, the MZ-N10 packs a wealth of features into a compact silver magnesium body that weighs just 3oz. Besides recording MP3s and CDs from your PC at up to 64x speed, the MZ-N10 also makes creating custom music mixes even easier with a backlit LCD editing remote and a three-line dot matrix display right on the unit that enables you to view nine characters per line for easy song searches and edits. Sony's Jog Dial navigator scrolls through the list vertically to search for songs and groups. By simply rotating the dial with one finger the pushing it, the desired point is accessed. The MZ-N10 is supplied with a matching USB Cradle for direct connection to the SonicStage jukebox software.

#### Same features as MZ-NF810CK (no car kit) PLUS—

- ◆ USB Cradle connects the MZ-N10 directly to the PC while at the same time recharging the internal battery.
- ◆ 3-line dot matrix display features track number, MDLP recording mode, elapsed time, song title, artist name, play mode, depending on the mode chosen.
- ◆ Backlit LCD remote with editing functions provides direct access to the recorder's functions and is easy to see, even in low light.



## MDP-500 'PortaDisc'



### Professional Portable MiniDisc Recorder

An advanced portable professional MiniDisc recorder, the MDP500 'PortaDisc' is designed and engineered without compromise to handle the most demanding field recording applications. Built on a rigid steel chassis and based around a rugged, professional MD drive, the MDP-500 combines advanced sound quality with a full complement of professional features, comprehensive connectivity and flexible powering options. Ideal for journalists, broadcasters and sound recordists in radio, TV, film and music recording applications, the MDP-500 offers XLR balanced mic inputs with switchable phantom power, digital I/O and even a USB interface which allows realtime recording of audio into a laptop or desktop computer for later editing.



#### FEATURES

##### High Quality

- ◆ Advanced V4.5 ATRAC recording algorithm combines with high performance mic preamps, precision DACs and on-board limiters and bass roll-off to deliver recordings of exceptional quality.
- ◆ For maximum reliability, the PORTADISC uses a dependable, professional MiniDisc drive - not a low-cost consumer device
- ◆ 40-second memory buffer ensures consistent, glitch-free recording on the move
- ◆ Pre-buffer continuously records 6 seconds of audio before the Record switch is pressed to ensure that you never miss a take.
- ◆ Comprehensive range of connectivity includes balanced XLR Mic/Line inputs, unbalanced RCA/phono line outputs, and both coaxial and optical S/PDIF digital I/Os.



- ◆ Mic inputs feature switchable attenuation, (0dB, -15dB, -30dB, Bass Roll-off (Off, 75Hz, 150Hz), Limiter (On, Off, Ganged, AGC) and 48V phantom power.

##### High Performance

- ◆ Auto Start feature with variable threshold makes the PORTADISC ideal for use in noise monitoring applications.
- ◆ Recording from digital sources is easy with a built-in sample rate converter accepting 32 and 48kHz signals and auto sync recording with CD and DAT IDs converted automatically to MD tracks.
- ◆ In addition to disc and track naming, basic editing lets you go directly to a particular point in a track, combine two tracks together to make one, divide one track into two, move and erase tracks.
- ◆ The recorder is housed in a tough 1.2mm steel chassis with transport keys and function buttons protected by a durable rubber molding.
- ◆ Tracks can be numbered manually during recording with the Mark button, or automatically with the threshold level variable from 30dB to 60dB in 10dB increments. Tracks can be accessed directly using the AMS Forward and Back keys.
- ◆ In the event of a microphone or cable failure, the Portadisc even includes an on-board microphone for back-up.
- ◆ Headphone monitoring is available in Stereo, Mono-L, Mono-R and Both modes, with an additional, mono internal speaker provided for non-critical monitoring.

##### USB Interface

- ◆ Unique to the PORTADISC is a USB interface enabling the transfer of files to and from a PC. This allows suitably equipped journalists and sound recordist to record and edit finished programs and news pieces in the field and transfer them via e-mail or write them to CD.

##### Ease of Use

- ◆ Using a simple, intuitive menu you can configure and store up to 5 User Set-Ups selecting input sources, mic limiting /bass roll-off, phantom power, headphone monitoring formats, time /date display formats, auto track increment, threshold levels, etc.
- ◆ The main LCD display is large and clear with switchable illumination and can be viewed from a wide range of angles. 19 segment metering is provided with switchable peak hold and a margin indicator accurate in 1dB steps to -60dB.
- ◆ Record level controls are lockable, the phone level control retracts and a Keyhold facility prohibits accidental mis-operation during recording.
- ◆ Handles perfectly in the field. Transport keys, record level controls and all major functions are ideally located for quick, easy access and menu structures are straightforward and logical.

### Professional Portable MiniDisc Recorder

Offering the same basic features as their legendary portable cassette recorders while providing the benefits of a sophisticated digital recorder, the PMD-650 is ideal for interviews, music, multimedia, broadcast video and film production. It includes two XLR-balanced mic/line inputs, a built-in mic, and a monitor speaker. It supports 74 minutes of stereo and 148 minutes of mono record and playback, and has a host of practical features that make quick work of any high pressured production environment. For example, when recording from one mic/line source onto two tracks, the PMD-650 incorporates a dual mono mode that sets the level of the 2nd track 15dB lower than the first, to make sure that a backup track is available in the event of a problem or digital overload.



### FEATURES

#### Versatile Recording

- ◆ Editing capabilities including divide, combine, move, erase allows tracks to be trimmed and combined in order to create custom sound files.
- ◆ Time/Date stamp marks every track recorded on the PMD650 providing a reliable reference for archiving.
- ◆ Pre-Record Audio Cache (up to 2 seconds) provides protection for late starts.w
- ◆ Either one or two mic/line sources can be recorded for 148 minutes onto 1 (LP) or 74 minutes on 2 (SP) tracks.
- ◆ Three record level controls: manual, manual with limiter, and automatic
- ◆ Programmable Level Sync Recording (LSR) automates recording and saves disc space by only recording when there is sound present. LSR parameters include sound threshold level (-10dB to -60dB), time below threshold level (2-10 seconds), and automatic or manual track increment.
- ◆ One touch recording with separate Rec-Pause button

#### High Performance

- ◆ Two position noise cancel filter
- ◆ 40 second (20 sec. 2-track) audio buffer for shock resistance
- ◆ 48v phantom power
- ◆ Variable mic attenuator (0, -15, -30dB)
- ◆ The PMD650 secures all recordings by writing a backup of the Table of Contents (TOC) at the beginning of the track (Pre-UTOC). Even if a recording is interrupted by a power failure, all recorded information can be retrieved.

#### Conveniences

- ◆ Built-in microphone and speaker
- ◆ Backlit LCD display
- ◆ A-B loop playback, Repeat Playback (all or one track)
- ◆ 3-way power: AC adapter, 8 AA batteries, or optional RB-1100 Nicad battery. Has a Low-Battery Alarm
- ◆ Control of SCMS (on or off)

#### Inputs/Outputs



Full complement of professional inputs and outputs allow total integration with professional broadcast studio and field equipment.

- ◆ Stereo XLR mic/line inputs
- ◆ Stereo RCA analog line outputs
- ◆ S/PDIF coaxial digital input with sample rate converter and XLR digital output (AES/EBU)
- ◆ Remote control (RC-5) input
- ◆ Headphone jack with level control

Comparison:	MDP 500	PMD 650
Rugged Pro transport	Yes	No
Disc autoloader	Yes	No
MD ATRAC version	4.5	4
AES/EBU	None	Output
S/PDIF (Coaxial)	In/Out	Input
S/PDIF (Optical)	In/Out	None
Bidir. USB interface	Yes	No
Auto start/cut with adjustable level	Yes	Yes
Pre record buffer	6 sec.	2 sec.
User presets for ALL system settings	Yes 5	Limited system only
Split level mono record (2nd track -15dB)	No	Yes
MD edit - divide, combine, move, erase	Yes	Yes
Adjustable display contrast	Yes	No
Meter number of segments	19	14
Numerical margin indicator	Yes	No
Time/date stamp	Yes	No
Input monitor without disc present	Yes	No
Input level lock	Yes	No
Limiters switchable ganged for stereo	Yes	No
Backspace function (last record erase)	No	Yes
Remote control	8 pin mini-din	Marantz RC5 serial
Batteries supplied	Rechargeable	None
Case	Supplied	option
Record time with rechargeable battery	> 3 hours	2.5 hours
SRC Switchable on/off	No	Yes



# DENON

## DN-F20R

RECORDERS

422

### Portable IC Recorder

Weighing just over two pounds and offering a full list of professional broadcast features, the compact DN-F20R is ideal for ENG applications. A portable IC recorder that uses IC memory cards as the recording medium, the DN-F20R does away with cumbersome mechanisms and enhancing reliability. Two card slots provide recording flexibility. Recordings on the DN-F20R are created as sound files in MPEG format which can be easily ported to a PC for editing and manipulation.



### FEATURES

- ◆ Use of an IC memory card as the recording medium does away with moving parts and ensures high reliability. Has 2 slots for CompactFlash cards.
- ◆ The IC memory card complies with the CompactFlash Type 1 standard and supports large memory capacity of 256MB. The card can be read and written to by a PC equipped with a USB CompactFlash adapter or an ATA adapter for a laptop.
- ◆ Inputs include two XLR mic jacks and two RCA line inputs, as well as a parallel remote mini-jack input for external control. Outputs include two RCA line outs and a 1/4" headphone jack with adjustable levels.
- ◆ Audio may be recorded in a choice of MPEG2 Layer2, MPEG1 Layer 2 or Linear PCM (WAVE file) formats, in either stereo or mono modes.
- ◆ Sound quality is also user-selectable (in recording bit rates of 16 to 768 kbps per channel) to suit the application, enabling efficient use of the cards, compression and high sound quality.
- ◆ Concentric rotary controls are provided to adjust the DN-F20R's recording levels. Level metering can be monitored on the unit's backlit LCD display, which also shows recording settings, file names and other various information at a glance.
- ◆ Offers switches for a low-cut filter, limiter and attenuator.
- ◆ To prevent accidental turn-on or misuse while recording, a 'key hold' switch can be activated to lock out the operating buttons.
- ◆ Compact, easy-to-carry A5 size even with XLR terminals.
- ◆ Can be powered by 6 AA batteries or using the included AC adapter.
- ◆ Third-party hardware and software such as Digigrams's MPEG board and Xtrack editing software can be used to edit sound data waveforms in their compressed form after they have been recorded by a DN-F20R.

## SanDisk CompactFlash Cards for Denon and Marantz Recorders



Capture more music and voice recordings with SanDisk flash memory cards, then quickly transfer your data to your computer with an ImageMate drive or CompactFlash adapter. About the size of a matchbook and weighing half an ounce, the cards were designed based on the popular PC Card (PCMCIA) standard and are fully compatible with the Denon DN-F20R and Marantz PMD-680/690 portable recorders.



- ◆ Highest transfer rates for fast copy and download—up to 1.2 MB per second.
  - ◆ High storage capacity
  - ◆ Operating shock rating of 2,000Gs, equivalent to a 10' drop to the floor
  - ◆ Unfazed by drastic weather conditions ranging from blistering heat to arctic cold
  - ◆ Non-volatile solid-state; no moving parts maximizes battery power. Data isn't lost when power is turned off
- |                                 |      |
|---------------------------------|------|
| 32MB CF Card (SACF32MB) .....   | CALL |
| 64MB CF Card (SACF64MB) .....   | CALL |
| 128MB CF Card (SACF128MB) ..... | CALL |
| 192MB CF Card (SACF192MB) ..... | CALL |
| 256MB CF Card (SACF256MB) ..... | CALL |
| 512MB CF Card (SACF512MB) ..... | CALL |
| 1GB CF Card (SACF1GB) .....     | CALL |



For Any Inquiries Regarding Your Order, Call Our Customer Service:  
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# MARANTZ

## PMD-680/PMD-690

### Portable PC Card Recorders

Compact and portable, the PMD-680 (mono) and PMD-690 (stereo) are next generation digital recorders that bridge the gap between real-time audio recording and computers — while keeping the size and functionality of Marantz's renowned portable cassette and MiniDisc recorders. The PMD-680 or PMD-690 record high-quality digital audio files to a CF (Compact Flash) compatible card or IBM Microdrive, where they can be immediately transferred to a computer for archiving, editing, or uploading to the Internet. Designed as a field acquisition tools, the PMD-680 and PMD-690 can record audio as compressed MP2 digital audio files stored as raw MP2 (.mp2) or the Broadcast Wave standard (.bwf), as well as uncompressed using 16-bit/48kHz Pulse Code Modulation (PCM) saved in the true wave (.wav) file format.



#### FEATURES

- ◆ Their Type III PC Card slot is compatible with both compact flash (using an adapter) and ATA-size PC Cards. The slot also accepts cost-effective IBM MicroDrives.
- ◆ Highly reliable, flash memory PC Cards contain no moving parts and are impervious to temperature extremes and shock which might damage recordings.
- ◆ Compressed MP2 digital audio can be stored as raw MP2 (.mp2) or Broadcast Wave (.bwf). files. Uncompressed recording (PCM) can be saved in Wave (.wav) format.
- ◆ They offer three ways to control the recording level: Manual, manual with limiter, and automatic (ALC) record level control
- ◆ Built-in Time and Date generator marks each recording
- ◆ Band or high-pass ANC (Ambient Noise Cancel) filter lets the recorders filter out wanted background noise.
- ◆ Pre-recording memory buffer records 2 seconds of audio before the record button is pressed. This prevents missed or delayed starts of a recording.
- ◆ A silent skip mode (1 to 5 seconds) can be activated based on parameters set in the menu. Sound levels for silent skip can be set from -50 dB to -10 dB in 5 dB steps.
- ◆ Remote input for pausing and un-pausing during recording or playback
- ◆ They can be powered three ways: via the supplied AC adapter, rechargeable Ni-Cad battery pack (optional) 8 AA batteries. 1
- ◆ Inputs and outputs include XLR and 1/4" mic inputs, RCA line output and coaxial RCA digital output (S/PDIF). They also feature a headphone output, built-in microphone and built-in speaker.
- ◆ Each recorder includes an AC adapter, battery holder, and carrying strap.

#### Non-Destructive EDL System

- ◆ They use an on-the-fly system for marking tracks during recording. EDL marking and playback allows either a custom playback sequence to be programmed or the audio between two specific points in the card to be repeatedly played back.
- ◆ During recording EDL marks are placed on the card at the beginning of each new track; when REC/MARK button is pressed; or when the Auto Mark function is active. When Auto Mark is active, an EDL mark is placed every time a recording is paused, manually or by the Silent Skip system.
- ◆ The maximum number of EDL marks per card is 255. EDL marks can be edited by changing the mark types, erasing specific marks, or erasing all the marks.

#### PDM-680 Only

- ◆ Monaural audio recording and playback
- ◆ Has XLR and 1/4-inch mic input with -15/-30 dB attenuator, and RCA line input.
- ◆ Telephone jack for recording and playing back phone conversations. This jack also passes through live recording signals to a telephone line.

#### PDM-690 Only

- ◆ Stereo audio recording and playback
- ◆ Two XLR mic line inputs with -15/-30 dB attenuator. +48v phantom power is available for use with condenser mics.

### Two Different Recording Formats

The MP2 (MPEG1 layer2) file format that is supported by the PMD-680/690 is a world-wide standard for compressed digital audio storage and transmission. Many playback and editing systems are available commercially and through the Internet.

PCM (Pulse Code Modulation) is the most widely used format for coding uncompressed digital audio. The PCM system is used on CD players, DAT recorders, and on computer editing programs that support Wave (.wav) files. Recording in the PCM format will provide the most universally accepted storage format but comes with the limitation that it uses a lot of memory very quickly.

# SONIFEX

## COURIER

RECORDERS

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### *Portable Hard Disk Audio Recorder*



*The Courier is a compact (3 lb.) battery-powered digital audio recorder designed for in-the-field or on location applications. Using industry-standard PCMCIA cards to store only high quality digital audio, the Courier can be used while moving or running. The cards can be changed quickly, and are capable of storing up to 18 hours of audio. Two inputs are available for either a single stereo source, or two mono sources, which can be at mic or line level. Each input has a level control, which can be used separately or ganged together - the record level control is recessed so that it can't easily be knocked. Phantom power and a high pass filter, together with a limiter, can be switched in.*

*When recording in the field you often only get one chance, so it is imperative that you can rely on your recorder. Courier has a confidence monitor - it is able to replay material recorded to disk while still recording. Once you are recording, the 'Autolock' function is activated which disables all other controls, except record levels, so you can't accidentally stop your recording. Courier also features on-board audio editing which allows full edit and audition of clips before sending back to the studio using a number of flexible methods. These include built in ISDN support, software for transfer via standard telephone line or over a digital telephone network via mobile phone or audio playback. Courier is powered via standard camcorder batteries. There is an audible warning when the battery is running low and the battery can even be changed without interrupting the recording process. Includes a carrying case, nicad battery, and universal AC adapter.*

### FEATURES

#### *Control At Your Fingertips*

- ◆ Controls are designed for ease of use. Large, readily identifiable keys are used with added benefits such as 'feel in the dark' operation and accidental switch-off prevention.
- ◆ A confidence monitor confirms that your recording is safe and a backlit LCD display gives you vital information on the recording levels, battery and disk time remaining.
- ◆ A software controlled limiter can be switched in together with a high pass filter for use in noisy surroundings and there are "over level" LEDs for an instant visual check on recording levels. These let you concentrate on your job not your recorder.

#### *Live Audio*

- ◆ Provide your listeners with all the excitement of live commentary. Connect the CO-TBU telephone balance unit and you're ready to broadcast down a telephone line, either by using the mic/line inputs or by playing pre-recorded cuts.

#### *USB Connection*

USB connection allows fast downloads to the PC to be made. The USB port works in addition to the RS232 serial port and the optional ISDN connection.

#### *Record in 'Style'*

- ◆ Courier's superior versatility lets you define 'Record Styles' to make your report perfectly compatible with the majority of editing and broadcast playout systems. Simply define parameters such as sample rate, file format, compression used and whether mono or stereo, then give your recording style a name such as 'Radio' or 'CD'.
- ◆ Up to 20 personalized Record Styles can be configured. Once you've selected your chosen style and finished recording, plug the PCMCIA disk or flashcard straight into your editing or playout system for instant editing or playback. No need for audio dubbing - what could be simpler?

#### *Editing and Transmission*

- ◆ Courier has sophisticated non-destructive accurate editing capabilities. By using the jog shuttle wheel, and watching the waveform on the graphical display, you can place multiple marks, and perform complex editing simply. A playlist can be compiled by taking pieces from any number of cuts, which can be saved in a number of different formats.
- ◆ Once you've finished recording, simply connect Courier to a modem and sit back and relax as it sends data down the phone line. Or you can send your report over a digital phone network

#### *Portable Power*

- ◆ The internal rechargeable battery gives over 1 minute of hot-swap time so you can change the main battery. An optional cigarette lighter adapter recharges batteries on your way to the next assignment. Includes a worldwide AC adapter.



EQUIPMENT LEASING AVAILABLE

# ZAXCOM AUDIO

## DEVA II

### *Portable 4-Channel Hard Disk Recorder/Player/Mixer*

*Deva II a portable 4-track, 24-bit uncompressed hard disk recorder, digital mixer and timecode generator/reader that stands alone as the most reliable way to record in the field. Used for countless feature films and TV shows, you can use it as a replacement for all your current audio field recorders, bringing 48kHz studio-quality recording capabilities into the realm of location production. Pre-Record function records up to 10 seconds of 4 channel audio from just before the record key is presses. That means no more missed cues and plenty of pre-roll time for post! And with an input dynamic range of 110dB, Deva II provides the highest quality field recording available today.*



RECORDERS

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#### FEATURES

- ◆ Using the optional 40GB removable IDE hard drive provides a maximum record length of 68 hours (mono), 34 hours (stereo), or 17 hours (4 channel). The 125 G-force rated disk is immune to dust and humidity changes, and operates over a wide range of temperatures. An optional 4GB drive with 8 hour record capability is available as well.
- ◆ Zaxcom's Mobile Audio Recording Format (MARF) is designed for the specific requirements of multi-channel disk recording, providing the ultimate in data integrity. So robust is MARF's design, Deva II can flawlessly recover audio from a disk that may have had its directory re-initialized.
- ◆ Sophisticated error-checking circuitry provides a fool-proof means to flawless recordings. During recording, Deva II performs a constant Read/Verify routine. If an uncorrectable error should occur, audible (to the headphones only) and visual warnings are generated. It is virtually impossible to unknowingly produce a bad recording.
- ◆ Unlike mechanical movements whose calibration and response may change with temperature, metering, Deva II's LCD display is always calibrated.
- ◆ Zaxcom's exclusive NeverClip technology provides precise input level detection, making it extremely difficult to overload the A-D converter. NeverClip provides smooth, automatic gain manipulation, assuring virtually distortion-free recordings.
- ◆ Deva II incorporates a state-of-the-art digital mixer. Any of the 4 inputs may be mixed to any of the 4 disk channels. Similarly, any of the 4 inputs may be mixed to any of the 4 line outputs – a mix that may be completely different from the disk mix! And unlike analog field mixers, Deva II's pots are immune from the "scratch noise" syndrome.
- ◆ Besides the front panel controls, Deva II's Sony BVW75 emulation permits frame-accurate control via an edit system, telecine, or synchronizer. Deva II also provides a time code chase facility that has a lock time of under one second.
- ◆ Full-function internal timecode reader/generator supports 24, 25, 29.97 (NDF and DF), and 30 (NDF and DF) frame rates. The generator can even automatically tag consecutive recordings with ascending User Bits. Nothing is more flexible and efficient at helping you locate the "buy take."
- ◆ No matter what the monitoring requirements, Deva II's 4 channels of "line level" analog and AES/EBU outputs, along with a user-configured stereo headphone connection, means you always hear what you want.
- ◆ Accepts a wide range of microphones, offering phantom power, when required.
- ◆ High-quality 20-bit A/D and D/A converters on both the mic and line inputs ensure wide dynamic range, while the 24-bit interface guarantees transparent transfers from digital sources.
- ◆ A standard Deva II gives you 48, 48.048 and 47.952 kHz operation as standard. If required, 44.1 is available as an option.
- ◆ 4 channels of 20-bit A/D converters and 24 bit record depth provide 16 times the resolution of DAT in a package that is inherently more reliable and flexible.
- ◆ Deva II remembers up to 100 cue points per disk for instant access to "buy takes" or pre-produced playback audio.
- ◆ Deva II will output files to DVD drives in up to 6 file formats. Sound Designer 2 and Broadcast Wave are both fully supported. External disks can be recorded in the background so at the end of the recording day there is no transfer time.
- ◆ Deva II's internal software allows for replay of audio data even when the disk directory has been erased. It also means that Deva II's software is crash proof. Even if power is lost while recording; Deva II will seamlessly playback audio to the time of the loss
- ◆ What happens if Deva II is accidentally dropped while recording? Probably nothing! A unique mechanical shock-sensing circuit automatically shifts recording to a 24MB RAM buffer. Once Deva II senses that conditions are favorable, the buffer is automatically transferred to disk.
- ◆ Powered via NP1-type camera battery for over three hours of continuous operation. Deva II may also be powered via a separate 12v supply – even a car battery.

ORDER & INFO. (212) 444-5088 • FAX: (212) 239-7770 (800) 947-7008  
1-800-875-6951 • [www.bhphotovideo.com](http://www.bhphotovideo.com)



## PDR-2000 PORTADRIVE

### 8 Track Location Sound Recorder

With 8 tracks of pristine 24-bit/96kHz recording, flexible on-board mixing and comprehensive timecode facilities, the PDR-2000 PortaDrive sets the standard for location sound recording. The PDR-2000 records audio onto a compact, robust, shock resistant removable 2.5" hard drive in industry-standard BWF or SDII formats. This allows full compatibility with Mac and PC-based digital audio workstations, connecting via an optional drive docking station. A comprehensively equipped 6 into 2 digital mixer is built-in, enabling the simultaneous recording of a stereo mix alongside 6 discrete inputs. Microphone inputs are of the highest quality with 6 high-gain, ultra-low noise balanced XLR Mic/Line inputs with individual phantom powering, 'gangable' limiters, attenuation, high pass filter, delay and phase reverse. The 2-channel return input and both the main and auxiliary analog stereo outputs are balanced. Digital connectivity is equally comprehensive with 8-channels of AES I/O on an industry standard 25-pin D-sub connector, S/PDIF input and AES and S/PDIF stereo digital outputs.



### FEATURES

#### 8-Track Location Sound Recorder

- ◆ Rugged, all in one, portable 8-channel hard disk (HD) audio recorder
- ◆ Audio is recorded in industry standard BWF (Broadcast Wave) and SDII (Sound Designer II) formats onto an included 20GB 2.5" hard drive housed in a compact, robust, shock resistant removable caddy
- ◆ Over 2 hours of uncompressed 8-channel 24-bit/96kHz or over 9 hours of 4-channel 24-bit/48kHz recording on removable HD
- ◆ Metadata can be stored and transferred with audio files
- ◆ FAT32, HFS hard drive formatting ensures compatibility with Mac and PC-based digital audio workstations
- ◆ Session based recording using either AES31 ADL or Pro Tools V5 formats, simplifying production workflow
- ◆ 10 second pre-record buffer
- ◆ Built-in slate mic and tone generator
- ◆ Advanced power management

#### Extensive Analog and Digital Inputs and Outputs

- ◆ 6 high gain XLR balanced mic/line input channels with individual phantom powering, 'gangable' limiters, input pads, HPF, delay and phase reverse
- ◆ 2-channel balanced line level analog return input using a single 5-pin connector
- ◆ 8 channels of AES digital inputs and outputs on a 25-pin D-sub connector
- ◆ Balanced XLR analog main and auxiliary outputs
- ◆ Stereo AES/EBU digital output (balanced XLR) and coaxial SPDIF digital I/O
- ◆ 1/4" balanced jack headphone socket

#### 6x2 Digital Mixer

- ◆ The built-in 6 x 2 digital mixer enables the simultaneous recording of a stereo mix alongside 6 discrete inputs
- ◆ M/S decoding is available on inputs and outputs
- ◆ Complete routing flexibility allows you to easily record from analog and digital sources simultaneously
- ◆ Extensive headphone monitoring capability including designated 6-2 mixer

#### Timecode and Sync

- ◆ Reads and generates timecode in all popular international frame rates – a 5-pin LEMO socket is used for interfacing
- ◆ Supports tri-level synchronization used with emerging HDTV technology
- ◆ Dedicated word clock output on a BNC connector
- ◆ Sync input (word clock, video, tri-level) on BNC connector
- ◆ Comprehensive remote control via RS422 (Sony P2) and parallel remote socket



#### Data Communication Interfaces

- ◆ A SCSI interface is provided for data transfer to and from external storage device
- ◆ USB 2.0 and Ethernet ports support high speed data transfer to/from a computer as well as software upgrades
- ◆ A PS2 port allows you to connect an ASCII keyboard to ease logging and labeling



## PDR-2000 PORTADrive

### Front Panel

- ◆ 6 multi-function rotary encoders with collar LEDs allow displayed values to be altered
- ◆ A 5-position rotary transport control allows you to initiate Record (with or without lockout); Stop (with and without lockout); a Review function allows the user to check the last audio take and a Mark button enables easy identification of points within a session
- ◆ Four Primary Mode (PMODE) buttons allow rapid access to the control, metering and monitoring of all audio signals
- ◆ A large transreflective LCD displays the menu associated with the currently selected PMODE and the 6 rotary encoders
- ◆ Undo, Jam TC, Slate, Tone, and Group functions above the display are protected from accidental use with an 'Enable' button
- ◆ A push-lock rotary level control prevents accidental adjustment of the headphone output and built in speaker

### Metering

- ◆ 18-segment high-visibility LED meters for each channel have selectable ballistics allowing variable peak hold time as well as a variety of display modes for power economy
- ◆ Digital clip indicators, limiter activity and track record arm status are also provided
- ◆ A tri-color LED indicates data write errors, TC/sync errors and low battery level

### Top Panel Functions

- ◆ A highly intuitive, hierarchical navigation system is accessed by 8 dedicated menu function buttons – Input, Busmix, Track and Output functions mirror those on the front panel; Disk, Session, TC and Setup functions allow recording sessions to be configured to suit your workflow
- ◆ Four cursor keys and a large data wheel allow you to navigate and alter information displayed on the large transreflective LCD
- ◆ 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
- ◆ Functions can be disabled to avoid mis-operation and to conserve battery life
- ◆ **Large transport controls** – besides the usual Play, Stop and Cue functions, a Locate button allows you to access audio by take, marker or timecode value

### Easy To Navigate Menu System

#### INPUT

- ◆ Set-up of each input, including name, pairing, source, 48V phantom powering, attenuation, HPF, limiter, adjustable delay and phase reverse

INPUTS 1+2		
	INPUT 1	INPUT 2
Name	Vocal Mic L/R Front	Amplified Mic
Pairing	2x MONO	
Source	LINE	MIC
MIC. PH.	OFF	0dB
HPF	OFF	150Hz
Limiter	OFF	ON
Delay	0.0ms	0.0ms
2 <sup>nd</sup> Rev	OFF	OFF
IN 1+2    IN 3+4    IN 5+6    LEVELS    2-CH RETURN		

- ◆ Adjust input levels enable the 2-channel return with optional limiter

#### BUSMIX

- ◆ Create a 2-channel mix of inputs 1-6 with pan, level adjustment and M/S decoding
- ◆ Route the mix to 2 disk tracks – ideal for exporting rushes at the end of a session

#### TRACK

- ◆ Source select for each disk track, M/S decoding as well as setting of the number of recorded tracks for each take

#### OUTPUT

- ◆ Configure the output mix with Source, nominal level and M/S decoding settings for the Main and Aux outputs
- ◆ Digital options include source select, sample rate, bit depth, etc.

#### DISK

- ◆ Controls formatting, file and folder creation/deletion and naming on each disk

#### SESSION

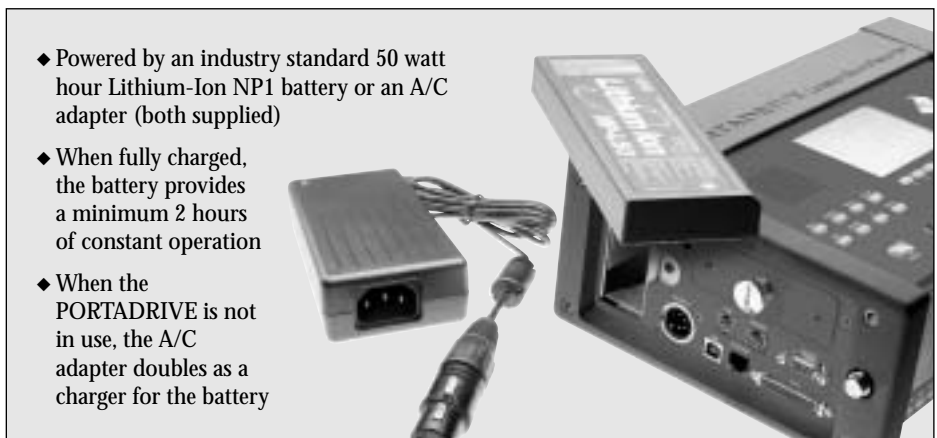
- ◆ Specify disk format, sampling rate, bit depth, number of tracks, TC/sync
- ◆ Sessions can be named, stored and recalled – information is continuously saved

#### 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

- ◆ Controls general system parameters including tone generator, slate, power management, LCD contrast, meter and time / date settings



- ◆ Powered by an industry standard 50 watt hour Lithium-Ion NP1 battery or an A/C adapter (both supplied)
- ◆ When fully charged, the battery provides a minimum 2 hours of constant operation
- ◆ When the PORTADrive is not in use, the A/C adapter doubles as a charger for the battery

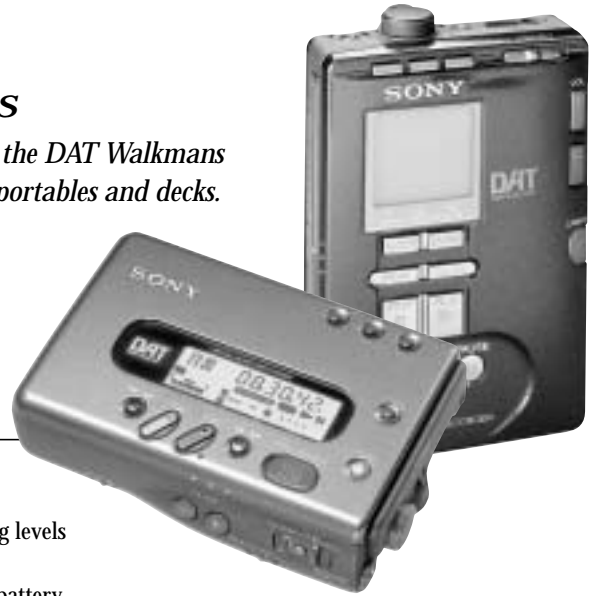


- ◆ An optional 5.25" Docking Station allows the removable HD caddy to be plugged directly into a computer drive bay or external drive enclosure

## TCD-D8/D100/PCM-M1

### Portable DAT 'Walkman' Recorders

Ultra-portable digital audio recorders that fit in the palm of your hand, the DAT Walkmans by Sony feature the same pristine CD sound quality found in high end portables and decks. They feature selectable sampling rates of 48kHz, 44.1kHz and 32kHz. Analog and digital I/O allow them to integrate seamlessly with most hard disk recorders, sound cards, digital samplers and non-linear video editing systems. Ideal for live music, sound effects and dialog recording, they deliver superb audio at an affordable price.



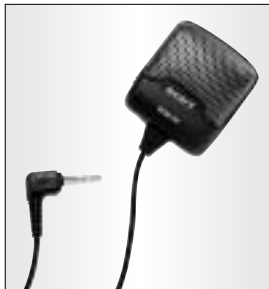
#### FEATURES

- ◆ 16-bit record mode for CD quality sound (12-bit in Long Play Mode)
- ◆ Selectable sampling rates of 48kHz, 44.1kHz and 32kHz for both analog and digital recording.
- ◆ Dynamic range over 87dB
- ◆ Digital input and output.
- ◆ 1/8" (3.5mm) stereo mic/line input
- ◆ 1/8" (3.5mm) stereo line output
- ◆ Long play mode for up to 4 hours of recording on a single 2 hour tape.
- ◆ Automatic and manual recording levels are switchable
- ◆ Large backlit display with level, battery status, time & date and program info
- ◆ ID subcodes can be set either automatically or manually while recording.
- ◆ Hold switch prevents unwanted operation of transport functions.
- ◆ 100x high speed AMS (Automatic Music Sensor) search function finds and plays tracks, skips forward or back up to 99 tracks at 100 times speed.
- ◆ Automatic Volume Limiter System (AVLS) maintains volume output at levels that are below distortion threshold for cleaner sound reproduction.
- ◆ Automatic date function records the date and time for easy track identification.
- ◆ SCMS (Serial Copy Management System)

#### Optional Microphones for DAT/MiniDisc Recorders

##### ECM-MS907 One-Point Stereo Mic

Incorporating a sensitive electret condenser mic and Mid/Side switch, the ECM-MS907 is designed for high-quality instrument recording with Minidisc and DAT recorders. Features Mid/Side (MS) capsules for natural stereo panorama; the Mid capsule picks up mono sound while the Side capsule picks up left/right difference sound. Mid/Side (MS) switch selects pickup angle between left and right channel; choose 90° for a single voice or instrument or 120° to pick up many voices and instruments, arranged across the stage. Supplied with stand/holder, windscreen and carrying case.



##### ECM-717 One-Point Stereo Mic

An ultra-compact, one-point stereo mic, the ECM-717 is ideal for use with portable DAT and MiniDisc recorders— in table-top or clip-on applications for hands-free recording of music performances, meetings, lectures and interviews. One-point stereo recording design is like having two mics in one: Stereo unidirectional (cardioid) pickup pattern is more sensitive to sounds from the front, less sensitive to sounds from the side; rejects extraneous noise and emphasizes what you want to record.

#### TCD-D100 and PCM-M1 Step-Up Features

- ◆ Smallest, lightest DAT Walkmans ever
- ◆ Built-in switchable limiter prevents digital clipping of the audio signal to tape
- ◆ Mic preamps use same components as SBM-1 Super Bit Mapping Adapter
- ◆ On the PCM-M1 (only) SCMS is defeatable

#### DAT Walkmans and Accessories

**TCD-D8** with carrying case, cleaning cassette and AC adapter.....**599.95**

**TCD-D100** with two rechargeable batteries and battery charger, carrying case, cleaning cassette, AC adapter, headphones and remote control.....**Call**

**PCM-M1** with two rechargeable batteries and charger, carrying case, cleaning cassette and AC adapter .....**679.95**

**RMD-100K** Optical/coaxial digital interface with remote control and timer .....**179.95**

**SBM-1** Super-Bit Mapping Adapter ....**419.95**

## TCD-D10 PRO II

### Professional DAT Recorder

Designed for professional recording, the TCD-D10 PRO II provides XLR balanced mic/line inputs, AES/EBU digital I/O and has a 4-motor Direct Drive (DD) transport to ensure consistent and reliable performance. Ideal for field recording, it also features a pistol grip with integrated wired remote control that allows you to mount a microphone while simultaneously controlling the transport of the machine. A built-in speaker allows playback without headphones, and a comprehensive self-diagnostic system monitors vital signs for worry-free operation.



### FEATURES

#### Professional Design

- ◆ Precise 4-motor direct drive tape transport controls the head drum, capstan and reels individually
- ◆ Dual independent analog to digital converters offer improved channel separation
- ◆ Available sampling rates are 48kHz, 44.1kHz and 32kHz for playback and digital recording and 48Khz for analog input.
- ◆ Built in mic limiter and 20dB pad enable audio capture at extremely high SPLs without causing overload or distortion.
- ◆ Multi- functional backlit LCD provides 20 segment peak level metering with overload indicators, 5 segment battery indicator, absolute time, program time, time remaining and a built in calendar and clock.
- ◆ Sophisticated self diagnostics warn of tape trouble due to problems with the head drum, capstan and reels as well as transport and load/unload time. Also has a sensor warning for excessive moisture.

#### Inputs/Outputs

- ◆ Stereo XLR balanced mic/line inputs with independent L/R level controls variable from -60dB mic level to +4dB line level.
- ◆ Unbalanced stereo RCA line output and AES/EBU digital I/O interface.
- ◆ Monitoring is available via 1/4" headphone output and built-in 5cm speaker

#### Supplied Accessories

- ◆ Includes a carrying case, shoulder belt, two NP-22H rechargeable batteries, charger, AC adapter, digital I/O connecting cable and RMT-D10P remote control.

	TCD-D8	TCD-D100	PCM-M1	TCD-D10
<b>Sampling Frequency</b>	48kHz, 44.1kHz, 32kHz	48kHz, 44.1kHz, 32kHz	48kHz, 44.1kHz, 32kHz	48kHz, 44.1kHz, 32kHz
<b>Dynamic Range*</b>	> 87dB	> 87dB	>87dB	>85dB
<b>Quantization Bits</b>	16-bit Linear	16-bit 12-bit non-linear (long time mode)	16-bit (standard); 12-bit non-linear (long time mode)	16-bit Linear
<b>Signal To Noise Ratio*</b>	> 87dB	>87dB	>87dB	>85dB
<b>Total Harmonic Distortion**</b>	< 0.008%	<0.008%	<0.008%	<0.006%
<b>Wow and Flutter</b>	Below Measurable Limits			
<b>Dimensions (WHD)</b>	12½ x 1½ x 3½"	1½ x 3½ x 4½"	3.15 x 4.6 x 1.15"	10 x 2.16 x 7.5"
<b>Weight</b>	1 lb. 15 oz.	13½ oz.	10.2 oz.	4 lbs. 7 oz.

\*@ 1 kHz IHF-A 22 kHz LPF Line in

\*\* (@ 1 kHz 22) kHz LPF Line In

### SBM-1 Super Bit Mapping Adapter

*An all-in-one package for superior analog and digital recording, the SBM-1 is designed for Sony's DAT and MiniDisc Walkman line of portable digital recorders. 20-bit analog to digital converters ensures more natural sound reproduction with lower noise than standard 16-bit A-D converters.*



- ◆ 20-bit quantization, supporting sample rates of 48kHz, 44.1kHz and 32kHz
- ◆ Manual record level for each channel
- ◆ Line inputs via 2 x phono (RCA) jacks
- ◆ Mic inputs via stereo mini jack with plug-in power and 2 x 1/4" phone jacks
- ◆ Connects to any compatible digital interface via standard optical and coaxial S/PDIF I/O
- ◆ Compatible with the entire line of DAT Walkman and MiniDisc recorders
- ◆ Supplied accessories include; carrying case and AC adapter



# ECO CHARGE

## EC-50/EC-90

RECORDERS

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### 6- and 12-volt Lead-Acid Battery Systems for Portable Recorders

The 6-volt EC-50 and 12-volt EC-90 are the first sealed lead acid batteries with a mind of their own. Their advanced design offers a host of features to provide a new level of reliability, flexibility and convenience. They provide two 4-pin XLR output connectors so you can power two recorders from the same battery without the hassle of Y-cables. Each output is protected with automatic short circuit protection for maximum safety. Far more reliable and easier to maintain than any nicad battery pack, there are no inherit memory effects so you never have to fully drain them before recharging. The rugged carrying case offers belt loops for situations when you want to wear the battery.



#### FEATURES

- ◆ Reliable and affordable Sealed Lead Acid technology with no memory effects—less hassle and maintenance
- ◆ Dual XLR output connectors for powering two devices from a single cell
- ◆ Confidence is achieved with the built in LED battery level meter. At the push of a button, the amount of power remaining is indicated with a 4-position LED meter.
- ◆ Both the EC-50 and EC-90 use industry-standard Neutrik XLR connectors to provide the ultimate reliability and convenience. Eco Systems offers a selection of power cables to connect with today's most popular devices.
- ◆ They incorporate an internal smart charger with global (110- 230v) power supply allowing them to cost substantially less without sacrificing quality.
- ◆ They have features to maximize battery life. The smart charger design monitors battery requirements and automatically adjusts to provide the optimum charge cycle. In addition, the intelligent circuitry monitors battery voltage and automatically shuts off power when it's time to recharge.
- ◆ For portability and protection, each battery includes a Cordura heavy duty protective case with belt loop and shoulder strap.
- ◆ The 5.5 lb. EC-90 is available in 3 different voltage combinations:
  - > Dual 12-volt; 12 and 7.5-volt; 12 and 6-volts
  - > The 3 lb. EC-50 is available in dual 6-volt or 6- and 4.5-volt configurations

#### Optional Power Cables for the EC-50/EC-90

Available for: Apogee MINI-ME; LunaTEC V3; Tascam DA-P1; Sony TCD-D8/D100 and PCM-M1; E.A.A. mic preamp; 6v XLR, 12v XLR

### PORTA BRACE Audio Recorder Cases



The custom-tailored, foam-padded Audio Recorder Case is the ideal case for professional portable recording equipment. The flaps, clear vinyl windows and protective coverings provide access to cassettes, batteries, cables, dials and switches. The RM-Multi case is the second component to help organize the most essential accessories. It holds spare cassettes, batteries, wireless microphones, and other small items. A comfortable brown suede shoulder strap is provided.

AR-222 For Marantz PMD-201, 221, 222, 420, 430 .....	173.95	AR-D5 For Sony TC-D5 .....	173.95
AR-D10 For Sony TCD-D10 Pro .....	173.95	AR-DAP1 For Tascam DA-P1 .....	173.95
AR-PD4 For Fostex PD-4 (Special pocket no RM-Multi) .....	193.50		

# TASCAM/FOSTEX

## DA-P1

### Portable Pro DAT Recorder

A full-featured portable DAT recorder, the DA-P1 is built to handle the most rigorous field applications. It has a dual direct drive motor transport for unprecedented reliability, and it offers XLR-balanced mic/line inputs with switchable 48v phantom power for use with condenser mics. When recording from an analog source, sampling rates of 44.1 or 48 kHz can be selected. Coaxial S/PDIF digital I/O allows you to output directly to compatible digital equipment, while the digital input will automatically adjust to sample rates of 32, 44.1 and 48 kHz.



- ◆ Rotary 2 head configuration and dual motor transport for reliable operation.
- ◆ Built in a well-constructed hard shell, that makes ideal for field use but also at home in any studio.
- ◆ A-D converters allow analog recording with selectable sampling rates of 48kHz and 44.1kHz. Digital recording rates of 32, 44.1 and 48 kHz are also supported.
- ◆ Independent L/R level controls
- ◆ A switchable mic limiter and 20dB pad ensures audio capture without distortion.

- ◆ Easy to read backlit LCD displays input and playback levels, ABS (Absolute Time), sampling rate, program number, ID select functions and record margin.
- ◆ A hold switch prevents accidental operation of the transport functions.
- ◆ SCMS (Serial Copy Management System) free recording, allowing unlimited digital tape cloning.
- ◆ Includes 2-hour, long-life rechargeable battery (charges in 30 minutes) as well as a AC adapter and shoulder belt.

#### Inputs/Outputs

- ◆ XLR balanced mic/line inputs accepts a broad range signals from -60dB to +4dB.
- ◆ RCA unbalanced line inputs and outputs
- ◆ Coaxial S/PDIF digital input and output
- ◆ 1/4" headphone jack with level controls

#### Optional Accessories

- BP-D1 Rechargeable Battery.....**84.95**
- CB-D1 Battery Charger.....**69.95**
- CS-D1 Carrying Case.....**109.95**

## FOSTEX PD-4M

### Professional Portable Timecode DAT Recorder



Used in award-winning movies and television shows throughout the world, the PD-4M is a complete, all-in-one portable field recorder that meets all the requirements of the demanding professional on location. Rivaling a studio production DAT recorder in quality and capability, the PD-4M features three XLR-balanced mic/line inputs, confidence monitoring via the four head transport, a unique "anti-jam" transport mechanism, variable frame rates and sampling frequencies including 48.048kHz for digital video. There is also full timecode recording, on-board three channel mixer with mic attenuation, phantom power and a headphone matrix. Weighing less than 7 lbs. the PD-4M is designed for the most demanding field work—whether in film, video, live music or ENG applications.

- ◆ Rotating 4-head drum with off-tape confidence monitoring enables you to hear what is being recorded directly off of the tape not from the input signal.
- ◆ 3 into 2 XLR-balanced mic/line mixer with independent gain control, -20 dB attenuation pads, 3-position pan switches, 48v phantom power and high pass filter variable between 20Hz to 250Hz for each channel and a master output control.
- ◆ Sampling frequencies are selectable between 44.1kHz, 48kHz and 48.048kHz

- ◆ A switchable stereo limiter prevents transient peaks from overloading tape.
- ◆ Choice of monitoring using 1/4" headphone output or the built-in speaker
- ◆ Edit date in Rec/Pause or Stop Mode
- ◆ XLR-balanced AES/EBU and S/PDIF digital I/O
- ◆ Operates for two hours on a single NP-1B battery. Can also be powered by a power belt or optional AD-15 AC adapter.

#### Timecode

- ◆ Timecode reader/generator supports all frame rates including 24, 25, 29.97 DF, 29.97, 30 DF and 30 frames per second.
- ◆ TC modes including external run, free run, record run and 24 hour clock.
- ◆ Jam Sync is selectable for accepting external references and will output external timecode for maximum flexibility.
- ◆ Reel number editing is available in 24 hr Run Mode

# SUPERSCOPE

## PSD-220/PSD-230

### Portable CD Players

Portable, professional-quality CD players designed especially for the performing arts, the PSD-220 and PSD-230 are ideal for music and dance practice, with controls so intuitive that even beginners can operate them. Both are capable of increasing or decreasing the tempo of a song on CD without affecting the pitch, while the PSD230 can also change the key without affecting the tempo. Add to that the ability to loop a segment of music infinitely for repeated listening and practicing, and you have what could be considered the definitive practice tool. Use them for transposing, mastering a solo, rehearsing a vocal harmony, transcribing lyrics—even choreographing a dance step or aerobics.



### FEATURES

- ◆ Simple button controls let you quickly increase/decrease tempo by 50% in 1% increments without changing the key (musical pitch). Slow down a music track as a valuable practice aid.
- ◆ 10-second anti-shock buffer to prevent skips and jumps in the audio when the unit is moved or shaken while playing.
- ◆ Read and playback finalized CD-RW discs.
- ◆ 3-band EQ with bass, mid, and treble controls
- ◆ Single Track Play feature plays one track at a time without having to create a custom play program. While in this mode, the players will cue a selected track at the beginning of audio (cue to music), rather than at the true start of the track.
- ◆ A-B Repeat provides even more control during practice by allowing a segment of a track to be selected and continually replayed (looped) until mastered. Simply select a start and end point with the touch of a button. Makes no difference if you are working on smaller parts of a song or solo, whether a two-bar phrase or an A section
- ◆ Both offer analog stereo line output (RCA) as well as a digital coaxial (RCA) output
- ◆ Built-in speaker allows you to listen or practice with a CD without having to connect to external speakers. They also have a 1/4" headphone jack if private listening is desired.
- ◆ Three-way power capability includes the supplied AC adapter, three 'D'-size alkaline batteries or the optional RB-430 nicad battery. Both have a battery life indicator.

### PSD230 Step-up Features

- ◆ Change the musical key  $\pm 1$  octave in 12.5 cent steps without changing tempo. This makes it easy to play or sing along with a popular song in the key of one's choice.
- ◆ Tuning control on the PSD230 allows an audio CD to be tuned  $\pm 2\%$  in 0.1% increments to your musical instrument—rather than tuning the instrument to the CD player.
- ◆ The PSD230 includes a special processor that can reduce the volume level of the lead vocal track on a CD. The voice reduction system allows a practicing musician to better hear the instrumentals or a vocalist to sing along as the new lead.
- ◆ Mic/line input (1/4-inch or XLR) input allows a microphone or music instrument (line level) source to be mixed together with the CD sound for practice purposes.
- ◆ Mix/Split switch determines how a signal from the Mic/Line input is mixed with the sound from the CD. The MIX position will mix (combine) the input signal with both the left and right channels of the CD playing back. The SPLIT position will separate the input signal and the CD playing back by sending the input signal to the right channel and both channels of the CD to the left channel.
- ◆ Built-in CD-TEXT displays information regarding the disc title, artist name, etc.,



### Optional PSD220/PSD230 Accessories

- FT-200 Play/Pause Foot Pedal—** used to start and stop the CD for music practice or transcription purposes. Offers easy control when your hands are occupied with an instrument.....**19.95**
- MIC300 Wired Handheld Microphone .... Call**
- CA200 Rugged Carry Case—** With storage for adapter, cables & CDs ...**89.95**
- RB430 Nicad Rechargeable Battery ..... Call**
- RC300 Miniature IR Remote with Tempo Control—** Includes wristband, necklace and clip ..**69.95**

# SUPERSCOPE

## PSD-300

### Dual-Drive CD Recorder + CD-R/RW Player for the Performing Arts

The PSD-300 is the world's first CD recording system for the performing arts that combines a professional CD-R/RW recorder with a CD-R/RW player featuring innovative CD manipulation controls. This portable stand-alone system is designed specifically as a valuable portable music rehearsal and performance tool.

In addition to its recording drive, the unit's CD player features the same performing arts controls found on the PSD230 portable CD player. These special controls allow musicians to practice with their favorite artist or a specialized music accompaniment CD and manipulate the key or tempo of that music on the fly.



#### FEATURES

- ◆ The PSD300 can adjust the tempo of any music CD as much as -33% to +50% without changing the music's original key (unlike standard pitch control found on some tape and CD machines).
- It can instantly transpose the music's key in musical half step increments or micro tunings without affecting tempo.
- It can significantly reduce a lead vocal from a song at the touch of a button.
- The unit can also simultaneously change key and tempo.
- Portions of music can be easily slowed down and programmed to continuously loop until a riff has been mastered.
- ◆ This means that using only the PSD300, musicians can play their instruments or sing along to music on CD, manipulate that music dramatically in real-time, and then record their live performance blended with the prerecorded music to blank CD-R or CD-RW discs. Superscope has made it easy for musicians to record ideas and practice sessions and immediately play them back to hear how they sound.
- ◆ To record, simply place the PSD300 on a table-top, plug it in and record live - with programmable mic/line EQ, noise filtering, and manual or automatic level control-- using either the internal microphone or external microphones that attach to stereo XLR or 1/4" mic/line inputs.
- ◆ No external mixer or other equipment is needed. The recordings can be played back on any CD player that reads finalized CD-R or CD-RW data or music discs.

#### Applications

- ◆ For music transcription, the PSD300 can convert a music CD to a half-speed CD-R, CD-RW copy, essentially slowing tempo by 50% and lowering every note by exactly one octave.
- ◆ The PSD300 also functions as a 2x speed stand-alone duplicator, for making perfect digital copies of any disc, including CD-R/RW discs recorded on the machine itself. A music teacher, for example, might record an ensemble's practice session and provide CDs for each student to take home.
- ◆ Plug mics in for stereo recording without the need for a separate mic preamp and mixer. Or use the built-in microphone.
- ◆ Play any music CD and manipulate the key and tempo, create practice loops, or reduce lead vocal tracks all on the fly.
- ◆ Plug in instruments or mics and mix a live musicians with music CD accompaniment (taking advantage of innovative CD manipulation controls). Record the mix to blank music or computer CD-R/RW discs. Track titles can be input using CD-Text.

	PSD-220	PSD-230	PSD-300
<b>CD-R/RW Playback/Recording</b>	Yes/No	Yes/No	Yes/Yes
<b>Shock Protection (10 sec.)</b>	Yes	Yes	Yes
<b>Tempo Control (1% increments)</b>	+50%, -33%	+50%, -33%	+50%, -33%
<b>Key Control</b>		Yes	Yes
<b>Tuning Control (0.1% steps)</b>		Yes	Yes
<b>Voice Reduction</b>		Yes	Yes
<b>3-Band EQ</b>	Yes	Yes	Yes
<b>Single Track Play</b>	Yes	Yes	Yes
<b>Cue-to-Music</b>	Yes	Yes	Yes
<b>Repeat 1, ALL, A-B Loop</b>	Yes	Yes	Yes
<b>Tempo/Key Lock</b>	Yes	Yes	Yes
<b>CD-TEXT Display</b>		Yes	Yes
<b>Display Backlight</b>	Yes	Yes	Yes
<b>RCA Line OUT</b>	Yes	Yes	Yes
<b>RCA Digital OUT</b>	Yes	Yes	Yes
<b>RCA Digital IN (SPDIF)</b>			Yes
<b>Instrument/Mic IN with Mixing</b>		Yes	2 inputs
<b>1/4" Headphone Out/Built-In Speaker</b>	Yes	Yes	Yes
<b>Foot Pedal IN (1/4")</b>	Yes	Yes	Yes
<b>Built-In IR Receiver</b>	Yes	Yes	Yes



# The Professional Audio

SourceBook

## Section 4a

### Players & Recorders

#### DESKTOP & RACKMOUNT 2-TRACK

<b>Alesis</b> .....	<b>435</b>
<b>HHB</b> .....	<b>436</b>
<b>Superscope</b> .....	<b>437</b>
<b>Marantz</b> .....	<b>438-446</b>
<b>Philips</b> .....	<b>447</b>
<b>Sony</b> .....	<b>448-455</b>
<b>Fostex</b> .....	<b>456-461</b>
<b>Denon</b> .....	<b>462-469</b>
<b>Tascam</b> .....	<b>470-483</b>
<b>Telex</b> .....	<b>484-489</b>
<b>Echo Star</b> .....	<b>490</b>
<b>Microboards</b> .....	<b>490-493</b>

## MASTERLINK ML-9600

### High-Resolution Master Disc Recorder

The standard for high-resolution two-track audio, the MasterLink ML-9600 is a standalone system that integrates hard disk recording, digital signal processing, audio editing and CD creation/playback. By bringing together all these capabilities, MasterLink provides an affordable, all-in-one solution for high-resolution mixdown, mastering and CD-burning. Fully compatible with today's CD and digital audio formats plus offering the sonic quality you'll need for tomorrow, the MasterLink ML-9600 is a uniquely versatile and affordable solution for everyone from large commercial audio facilities to project studios and recording musicians.



Head and shoulders above any CD burner, MasterLink lets you capture mixes to the internal hard-disk recorder at up to 24-bit/96 kHz resolution via analog (XLR balanced, RCA unbalanced) or digital (AES/EBU and S/PDIF coaxial) inputs. Once tracks are on the hard drive (up to 25 hours of stereo 16-bit/44.1 kHz audio can be stored), they can be assembled into playlists. There is room for 16 playlists, each of which can contain up to 99 tracks.

Once in a playlist, a track can be edited and processed in preparation for burning to CD. When you've processed and edited the tracks in the playlist to your liking, simply insert a blank CD-R and then hit the Create CD button. The playlist and the tracks are written to a special area of the internal hard drive as a CD image, then the image is burned to the CD in either the Red Book standard or at up to 4-bit, 96 kHz resolution using Alesis' revolutionary CD24-AIFF technology.

### FEATURES

#### Hard Disk Recording

- ◆ Most everything begins when you record two-track audio to the high-capacity 20GB internal IDE hard drive. There is a full complement of connections for bringing in analog or digital audio from your mixer, DAW and other sources. You can even use the integrated CD player as an audio source.
- ◆ During hard disk recording, choose from four sampling rates (44.1, 48, 88.2 or 96 kHz) and three word lengths (16-, 20- and 24-bit). For mixdown, delivery and archiving, choose 24-bit/96kHz as the primary format.
- ◆ State-of-the-art 24-bit digital converters offer better sonic performance than any other affordable mixdown format. For creating standard audio CDs, MasterLink's sample rate conversion and noise shaping technology is specially designed to keep your audio sounding its best at every resolution.

#### Track Editing and DSP Finishing Tools

- ◆ After recording a track on hard disk and assigning it a name, you can set precise start and end points to each each song using MasterLink's cropping features.
- ◆ Built-in mastering toolbox includes non-destructive DSP capabilities: real-time compression, equalization, limiting and normalization. These functions can be adjusted and combined, allowing you to optimize the timbre and dynamics of each individual song, as well as establishing a professional sonic consistency from track to track.

#### Multiple Custom Playlists

- ◆ With MasterLink's multiple playlist capability, you can create, name and edit 16 different playlists containing up to 99 songs in each. Each playlist offers full control of song order, track gain, fade-ins and fade-outs, and length of time between tracks. With MasterLink you can store 16 CD masters worth of music with polished, professional quality and presentation.

#### CD-24

- ◆ After fine-tuning your playlist on the MasterLink hard drive, CD creation is easy. A one-button command records your master onto CD-R using the 16-bit/44.1kHz Red Book standard (compatible with CD players worldwide) or Alesis' 24-bit/96kHz CD-24 format (perfect for high-resolution archiving or delivering mixes to mastering studios). The high-resolution discs can also be accessed by Mac and Windows computers. Since CD-24 uses the ISO 9660 CD-ROM disc format and the standard AIFF audio file format, the discs can be used by digital audio workstations at professional facilities worldwide.

## CDR830/CDR830 PLUS

### 'BurnIT' CD-R/CD-RW Recorders

Housed in a durable, 19" rack-mounting chassis, the CDR830 BurnIT and BurnIT PLUS feature very high-quality 24-bit A/D and D/A converters and an advanced laser assembly that ensures consistently accurate recordings compatible with a wide range of CD players.

The CD-Text facility, enables disc, artist and track names to be stored and displayed, and an SCMS-free digital input and built-in sample rate converter making synchro recording easy from CD, DAT, MD or hard disc. A unique facility for recording

direct from dynamic microphones removes the need for additional pre-amplification equipment thereby increasing the recorder's versatility and range of applications. The addition of a digital record gain control allows level adjustment of digital input signals. The CDR830 BurnIT PLUS steps up with balanced XLR analog inputs and outputs with line/mic input gain switching, balanced XLR digital input and output, word clock input (enabling sync playback at 44.1k or 48k sample rates) and parallel remote input – a range of connectivity that will satisfy the needs of most analog and digital recording environments.



### FEATURES

- ◆ Precise design of the CD laser assembly means that every single CD-R and CD-RW disc is exceptionally accurate, providing greater compatibility with other CD players and recorders.
- ◆ Five CD-RW erase modes for flexibility when compiling recordings. These include erasing individual tracks, several tracks, all tracks, the table of contents or entire disc.
- ◆ Built-in SRC (sampling rate converter) accepts signals from 32kHz to 48kHz so you can record from other digital sources.
- ◆ Three digital and analog synchro recording modes for recording and finalizing CDs : One/All Tracks and All Tracks with Finalize.
- ◆ Left/right digital balance control enables the balance of a CD, DAT, MD or any other source, digital or analog sources to be adjusted before they are recorded.
- ◆ CD Text display input and editing enables you to store disc, track and artist names with every recording. Entries can be up to 120 characters in length, with the title scrolling if it is too long to fit in the display.
- ◆ Fade in and out times can be adjusted from 1 to 12 seconds
- ◆ Digital balance control lets you control the left/right balance of digital or analog sources before they are recorded.
- ◆ IDs can be triggered on both analog and digital recordings by adjusting the auto track increment level threshold from -24 to -78dB in 6dB steps.
- ◆ Signal levels can be monitored during input, recording or playback using the LCD meters
- ◆ SCMS-free digital input lets you record from any CD, DAT, MD or hard disk. Plus, you can set the SCMS status when burning CDs (Copy Prohibit, Copy Once, Permit).
- ◆ Both the coaxial and optical digital inputs have their own digital gain control
- ◆ Digital input gain control can be adjusted using one of the five available scaled values:

- +12dB to -12dB in 0.5dB steps
- +20dB to +12dB in 1dB steps
- -12dB to -24dB in 1dB steps
- -24dB to -48dB in 3dB steps
- -48dB to -84dB in 6dB steps)

#### Warning! Not all discs are the same

HHB produces a wide range of high performance CD recording media, designed specifically for professional audio use.

**CDR74 Gold:** 74 minute audio-optimized CD-R with gold reflective layer. Secure archival life in excess of 100 years.

**CDR74 Silver P:** 74 minute CD-R with printable surface for use with inkjet printers

**CDRW74:** High performance 74 minute rewritable disc. 1000 erase/rewrite cycles

**CDR80 Silver Bulk:** Bulk-packaged 80 minute CD-R discs. Orange Book compatible. Suitable for use with thermal printers

**CDR74 Silver:** 74 minute audio-optimized CD-R with silver reflective layer. Secure archival life in excess of 100 years.

**CDR80 Silver:** Orange Book compatible 80 minute CD-R with an archival life of 200 years

**CDRW80:** 80 minute rewritable disc with exceptional direct over write performance

# SUPERSCOPE

## PAC-750/PAC-770

### Professional Integrated Sound Systems

The 45 lbs. PAC770 (built-in 110-watt stereo amp) and 27 lbs. PAC750 (pre-amplifier only) provide a remarkably easy to use, feature-rich, and cost-effective installation solution for applications requiring music and public address. In one durable, commercial-grade product taking up just 4U of rack space) the PAC770 combines four quality system components: CD player with music playback features specially designed for the performing arts, a full-featured cassette recorder, an elegant mixer that any novice can handle with ease, and a powerful and reliable amplifier. Ideal for small-to-medium sized venues like houses of worship, schools and meeting rooms, they are also portable on an A/V cart or in an optional case.



#### FEATURES

##### CD Player

- ◆ Playing speed can be adjusted from -33% to +50% without changing the key (Tempo Control). This is done in 50 intervals (1% from previous tempo setting).
- ◆ The key of a CD can be altered by  $\pm 1$  octave, in 1/16th note increments (Key Control) without changing tempo.
- ◆ Audio loops can be defined within a CD track utilizing the A-B button.
- ◆ Single or multiple tracks can be programmed for custom repeat playback.

##### Inputs/Outputs

- ◆ 4 mic/line inputs (XLR=1/4")
  - 48v phantom power
  - Pan control and 2-band EQ per channel
- ◆ Aux Line In (RCA x2)
- ◆ CD Line Out (RCA x2)
- ◆ Tape Line Out (RCA x2)
- ◆ Master Effect In/Out (RCA x2)
- ◆ Unbalanced Line Pre-Out (RCA x2)
- ◆ Balanced Line Pre-Out (XLR x2) PAC750
- ◆ Binding Post Speaker Out
- ◆ 1/4" Headphone Out
- ◆ RC5 Remote In/Out (AMX/Crestron)

##### 7-Channel Mixer

- ◆ Simultaneous control of 4 XLR mic/line inputs, tape, CD, and stereo aux inputs.
- ◆ The amount of signal each input sends to the mixer can be easily adjusted using each input's gain control knob. Easier still, the auto gain feature will set an optimal level for the mic/line inputs.
- ◆ Master output volume, EQ, and balance are simply controlled from the front panel, while individual mic/line EQ, panning, phantom power, and input attenuation are designed to be "set-once" on the back panel.
- ◆ Parametric EQ and speaker processing can looped through the unit.
- ◆ Voice reduction circuit can reduce the lead vocals from CD, tape and aux sources.
- ◆ For paging applications, the unit can be set to automatically duck music when any mic/line input is active, either eliminating levels or reducing them by -15dB.

##### Cassette Recorder

- ◆ Quick Auto Reverse - optical sensing of leader reverses the direction of tape transport, for seamless double-sided recording.
- ◆  $\pm 12\%$  pitch (tempo + key) control
- ◆ Dolby B/C/HX Pro noise reduction
- ◆ Manual and automatic (ALC) record levels
- ◆ Memory point; music search; normal speed dubbing

##### Amplifier or Preamp Only

- ◆ The PAC750 is built with a preamplifier only, enabling flexible installation. The PAC770, however, comes with a high performance amplifier. It includes:
  - ◆ Stereo or Mono Bridge Modes - The unit allows stereo or monaural amplification.
  - ◆ Power Protection Circuit - The amplifier is designed to protect itself from running at levels that can cause damage.

##### Optional Accessories

**RC5PMDSW Infrared Remote Kit** (includes handheld IR remote, IR receiving eye). Can control tempo remotely ..... **Call**  
**WRC200 MKII Wired Remote Control** ..... **Call**

**RC300 Miniature Wearable IR Remote** (includes a wristband, necklace and clip) ..... **69.95**  
**MIC300 Wired Handheld Mic** ..... **Call**



# MARANTZ

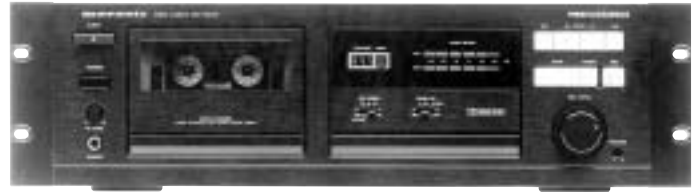
## PMD-501/PMD-502

### Single-Well Cassette Decks

Versatile and reliable, both the entry level PMD-501 and the full featured PMD-502 are workhorse cassette decks, ready for demanding everyday use in commercial recording and broadcast facilities, project studios, houses of worship and A/V rental houses. The easy to

use PMD-501 has a host of intelligent features that are found across the Marantz cassette deck line including: optically sensing quick auto reverse, Dolby B noise reduction, remote capabilities, auto tape type select and more.

The PMD-502 adds Dolby "C" noise reduction with HX Pro headroom extension, optional XLR balancing kit,  $\pm 15\%$  pitch control, defeatable automatic level control and front panel microphone/auxiliary line level inputs. Of course they both offer the world-class sonic integrity that Marantz products are famous for.



Marantz's line of professional single and dual well cassette decks combine thoughtful engineering with uncompromising audio quality. From their entry level single well PMD-501 to the top of the line PMD-520 dual deck, they offer problem solving solutions for the most demanding mastering, dubbing and installation systems. All are housed in a 3RU high chassis and are easy to use.

- ◆ Optically sensing quick auto reverse detects leader at the end of a tape and automatically flips the tape with a minimum of audio loss or, in the case of a dual deck, will activate the second deck when the first has completed recording on both sides.
- ◆ Automatic tape type selector detects the type of tape formulation such as CrO2 or normal bias cassettes and adjusts the bias for optimum recording performance.
- ◆ Dolby B noise reduction
- ◆ Large transport control buttons with LEDs
- ◆ Recessed record balance control
- ◆ Marantz CD player equipped with RC-5 interface can control the start and stop of a PMD-series cassette deck placed in the REC/Pause mode (CD synchro recording).
- ◆ One-piece 3RU high chassis

#### Inputs/Outputs

- ◆ Unbalanced RCA inputs and outputs
- ◆ Headphone output with level control
- ◆ Marantz RC-5 remote control I/O. This remote interface also allows seamless integration of any PMD cassette deck with an AMX or Crestron control system.
- ◆ Optional wired and wireless remotes allow simultaneous control of multiple units for synchronized dubbing and other remote capabilities.

- ◆ Output level control
- ◆ Pitch control ( $\pm 15\%$ )
- ◆ Front panel microphone/auxiliary inputs
- ◆ Digital linear time-based counter
- ◆ Memory rewind
- ◆ Front panel input select switch
- ◆ Dolby C and HX Pro

#### PMD-502 Only

- ◆ Fluorescent peak holding bargraph meters
- ◆ Defeatable automatic level control (ALC) overrides the manual input level control and sets the input to its optimum level.
- ◆ MPX FM filter eliminates the 19kHz pilot tone associated with FM radio signals — essential for proper Dolby B encoding.
- ◆ Optional XLR502PMD balanced-XLR kit

#### Accessories for PMD-Series Cassette Decks

##### RC-5

##### Infrared Remote Control

- ◆ RC-5 can control multiple cassette decks simultaneously using RCA cables connected serially in between units. Ideal for realtime duplication systems.
- ◆ Two mounting options include a 1 unit rack panel and a single gang wall plate.
- ◆ Infrared receiver can be mounted up to 30 feet away; ideal for situations where decks need to be heard and not seen such as boardrooms and houses of worship.
- ◆ Includes handheld infrared remote controller, infrared receiver and AC adapter (RCA connection cable optional).

##### WRC

##### Wired Remote Control

- ◆ Hard wired rugged table top remote control for PMD series recorders and players.
- ◆ Includes 6 foot RCA to RCA patch cable to interface with RC-5 interfaces.
- ◆ Yellow and green LED indicates current control over CD or tape. Ideal for duplication systems with decks serially connected via RC-5.

##### XLR Balancing Kits

- ◆ Add +4dB balanced XLR inputs and outputs to the PMD-series cassette decks.
- ◆ Kits consist of rear panel assembly and ribbon cables for solderless installation.



ONE HOUR FREE PARKING

AT 349 W. 34th STREET (with purchase of \$100 or more)

### Independent Dual-Well Cassette Deck

The PMD-510 is one of the most comprehensive and flexible dual well cassette decks ever made for professional use. Each of the two wells is a completely independent cassette deck (simultaneous playback on well A while recording on well B or vice versa), with their own distinct set of stereo inputs and outputs, pitch control, stereo bargraph meters, linear time counter, Dolby B/C selector, and large transport buttons. In addition to independent operation, the two wells can work together to record from one input.

An extension remote port allows the connection of several PMD-510s for long term continuous recording and playback. All auto-reverse, well-switching, and cascade operations are optically sensing for minimal audio loss in continuous record and play modes. The PMD-510 also features a headphone output that is switchable between well A, well-B, or both wells. The remote port is compatible with Marantz (RC-5), AMX, and Crestron control systems.



#### Same features as the PMD-502 (except no ALC) PLUS—

#### Dual Deck Operation

- ◆ Each deck features independent large transport buttons with LEDs. Each deck also has level, balance, pitch and noise reduction controls as well as independent LED bargraph meters and linear (minutes and seconds) time counters.
- ◆ Perform synchronized dubbing from deck to deck at normal and high speed (2x). Normal and high speed programmed dubbing of up to 16 tracks in any order is also possible.
- ◆ Pressing Play button twice on either well sets the current track to loop continuously.
- ◆ Up to 15 tracks can be programmed to play back in any order.
- ◆ Continuous (serial) play or recording from deck A to deck B or deck B to deck A.
- ◆ Simultaneously record to both decks from an external source (parallel recording)
- ◆ Independent inputs allow recording on each deck from different sources.
- ◆ Link several PMD-510s together in series for continuous playback or recording using the cascade (EXT) connectors.
- ◆ All auto reverse functions for well switching and cascade operations are optically sensing for a minimum of audio loss during record and playback modes.

- ◆ You can record on one well while playing back on the other.
- ◆ Independent outputs allow simultaneous playback of a tapes in both deck A and B.
- ◆ QMS (Quick Music Search) will fast wind to the beginning of the next or previous track. QMS can advance up to 15 tracks.
- ◆ AMS (Auto Music Scan) mode fast winds and plays the first ten seconds of the next track.
- ◆ While recording, Quick Rewind function automatically returns the tape to its initial record position and enter the stop mode.
- ◆ Optional XLR510PMD balanced-XLR kit

### PMD-505

*Marantz's most economical dual-well cassette recorder, the PMD-505 features auto play/record on power up, normal*



*and high speed dubbing, auto tape select, record mute with auto-pause, music search (QMS), Dolby B/C/HX Pro noise reduction, record balance control, ±10% pitch control (compared to ±15% on the other PMD-500 series decks) and timer record/play function. It is equipped with RCA line input/output, RC5 remote input/output, headphone output (without level controls) and unlike the other Marantz dual-well cassette decks, it doesn't offer an optional balanced-XLR kit.*

# MARANTZ

## PMD-520

RECORDERS

440

### *Independent Dual Well 3-Head Cassette Deck*

*The top-of-the-line PMD-520 has all the capabilities of the PMD-510 plus adds three uniquely distinct features. It has three stationary heads allowing direct off-tape (confidence) monitoring in realtime. This is useful for tracking master recordings and live audio capture and is an efficient way of spot checking tapes during extended duplication runs. The next two*

*features are unique for any deck. Direct tape insertion/removal eliminates tape doors for easier access to cassettes while the tape mechanisms can be removed allowing servicing of installed decks with a minimum of fuss. The cascade recording feature is also taken to the next level by allowing a three minute overlap when recording from one well to another. The loop through outputs are perfect for cascading multiple decks for duplicating or serial recording. Also offers a 25-pin connector for customized remote control in addition to the Marantz RC-5 interface.*



#### Same features as the PMD-502 PLUS—

- ◆ Stationary 3-head mechanisms in each deck provides confidence monitoring. The monitor button switches between tape and source (input) for comparison of the input versus off tape signals.
- ◆ Direct tape insertion/removal eliminates mechanical problems (no eject mechanisms or hinged doors). Makes reloading more efficient during large duplication runs.
- ◆ Innovative construction allows each tape mechanism to be completely removed for service if needed, while the other remains available for use.
- ◆ When cascading multiple decks (up to 100 units can be chained together) for duplication, the stereo Loop-through outputs carry the input signal out to the next deck in the chain, freeing up the standard outputs for monitoring (eliminates the need for a distribution amp) and ensuring that the input to each deck in the chain is unaffected by the previous decks electronics.
- ◆ To prevent any loss of audio during long format recording, an overlap series recording feature automatically engages the next deck cascaded in the chain 3 minutes before the current deck runs out of tape.
- ◆ To ensure optimum performance, a microcomputer controlled automatic tape calibration adapts the bias, record gain, mid-frequency gain, high-frequency gain and high frequency peak of the deck to the specific tape(s) being used.
- ◆ Individual bias reset button returns the bias settings to their factory default.
- ◆ Recessed, front panel  $\pm 3\%$  fine speed control allows you to fine-tune motor speed without having to unrack the unit.
- ◆ 25-pin contact closure control port to control transport functions and bias control.
- ◆ Stereo LED meters with peak hold
- ◆ Auto rewind when the tape ends
- ◆ Tape stop alarm uses a buzzer to indicate a tape has stopped playback or recording
- ◆ Tape time button selects the length of tape being used (60/90/120/10/20/30/46 minute) ensuring that the counter display will show accurate information.
- ◆ Optional XLR520PMD balanced-XLR kit



### **PMD-511** *Dual Well Cassette Deck*

*The PMD-511 is one of the most versatile and functional dual well cassette decks ever made for professional applications. In addition to all the features expected from an independent dual-well cassette deck, it includes stereo microphone inputs and a built-in recording mixer. Mics input to the PMD-511 can be mixed with an incoming line level source and then recorded onto either tape well. A front panel Mix Level control adjusts the amount of mic signal that is mixed with the line signal. The PMD-511 also features a high (2x) speed mode, allowing either high-speed duplication or ultra-high quality recording, a sophisticated ALC (Automatic record Level Control) system for worry-free recording, and 25-pin GPI port that allows contact closure control of the PMD-511.*

### CD with MP3/Cassette Combo Deck

Marantz combines the strongest attributes of their CD player and cassette recorder/reproducer technology in the 3RU PMD-351 combo deck. Designed to offer maximum flexibility for everything from mastering and dubbing applications to broadcast, installation and DJ rigs, the PMD-351 is equally competent as an independent CD player and tape deck, as it is an integrated combo deck.



#### CD Features

- ◆ Cue to music feature allows instant start of program material.
- ◆ A-B rehearse function loops audio between any two points in a track.
- ◆ Program play up to 20 tracks in any order
- ◆ Repeat function (all tracks on the disc or in the current program list)

#### Cassette Deck Features

- ◆ Optically sensing quick auto-reverse
- ◆ Defeatable automatic level control (ALC) as well as manual level control with a recessed left/right record balance control
- ◆ Dolby B, C and HX Pro noise reduction
- ◆ Memo button stores a specific point on tape allowing you to FF or REW to that point from anywhere on tape.
- ◆ Automatic tape type selector sets the bias and equalizer levels for the tape (Normal, Chrome, Metal) you are using.

#### Rear Panel

- ◆ Separate and mixed RCA tape and CD outputs
- ◆ Left and right 1/4" high impedance mic inputs
- ◆ Coaxial digital output
- ◆ Multiple Marantz decks (equipped with RCA-EXT cascade connector) can be looped together for extended playback or recording. When the first deck completes both sides of a tape, the next deck starts.
- ◆ MPX Filter switch eliminates sub and ultra sonic frequencies transmitted during FM broadcasts that can interfere with Dolby noise reduction operation.
- ◆ Independent fader start jacks - when receiving a dry switch contact closure the CD will switch between Play/Pause and Play, and the tape deck between play and stop mode
- ◆ Marantz RC-5 Remote I/O allows basic remote control for a single unit or synchronized control of multiple units.

#### Front Panel Functions

- ◆ One-Touch Automatic Dubbing (from CD to cassette) function scans the CD to find the peak level, sets the optimum recording level using the Automatic Level (ALC) Control and commences recording.
- ◆ Multi function display indicates the operating status of the main functions for both the CD and cassette deck.
- ◆ Large transport buttons with LED inset
- ◆ Separate  $\pm 12\%$  pitch controls for tape and CD
- ◆ Headphone output with source selector switch; CD, Tape or Mix

#### Additional Features

- ◆ One-piece 3U rackmount chassis
- ◆ Optional balanced XLR kit (XLR350PMD)
- ◆ Optional wired or infra-red controls
- ◆ AMX and Crestron compatible

	PMD-501/PMD-502	PMD-510	PMD-505	PMD-520	PMD-511	PMD-351
Number of Heads	2	2	2	3	2	
Head Type	Hard Metal Alloy	Hard Metal Alloy		Hard Permalloy	Hard Metal Alloy	
Number of Motors	2x DC Servo	2x DC Servo	2x DC Servo	2x DC Servo	2x DC Servo	
Wow and Flutter (JIS weighted)	0.07%	0.07%	<0.08%	<0.07%	<0.07%	0.07%*
Output Level	500mV / 2.2k $\Omega$	500mV / 2.2k $\Omega$	460mV / 47k $\Omega$	540mV/47 $\Omega$	500mV/3k $\Omega$	500mV/1.5k $\Omega$ *
Input Level	100mV / 47k $\Omega$	100mV / 47k $\Omega$	100mV / 50k $\Omega$	100mV/100k $\Omega$	100mV / 47k $\Omega$	100mV / 47k $\Omega$ *
Power Requirements	120V AC, 60 Hz	120V AC, 60 Hz	120V AC, 60 Hz	120V AC, 60 Hz	120V AC, 60 Hz	120V AC, 60 Hz
Power Consumption	22W	22W	0.13A	30W	35W	25W
Freq. Resp. Metal (Type IV) tape	20-18kHz ( $\pm 3$ dB)	20-18kHz ( $\pm 3$ dB)	20-18kHz ( $\pm 3$ dB)	20-18kHz ( $\pm 3$ dB)	20-18kHz ( $\pm 3$ dB)	20-18kHz ( $\pm 3$ dB)
Freq. Resp. CrO2 (Type II) tape	20-17kHz ( $\pm 3$ dB)	20-17kHz ( $\pm 3$ dB)		20-17kHz ( $\pm 3$ dB)	20-17kHz ( $\pm 3$ dB)	20-17kHz ( $\pm 3$ dB)
Freq. Resp. Normal (Type I) tape	20-16kHz ( $\pm 3$ dB)	20-16kHz ( $\pm 3$ dB)		20-16kHz ( $\pm 3$ dB)	20-16kHz ( $\pm 3$ dB)	20-16kHz ( $\pm 3$ dB)
No Noise Reduction <sup>1</sup>	56dB	56dB		58dB	58dB	56dB
Dolby B <sup>1</sup>	66dB	66dB		67dB	67dB	66dB
Dolby C <sup>1</sup>	72dB (PMD502 only)	72dB	74dB	75dB	75dB	76dB
Dimensions (H x W x D)	5.2 x 18.9 x 11.0"	5.2 x 19 x 13.2"	5 $\frac{1}{16}$ x 17 $\frac{1}{16}$ x 12 $\frac{1}{16}$ "	5.2 x 19 x 15.4"	5.2 x 18.9 x 13.2"	5.3 x 19 x 11"
Weight	11.5 lbs.	15 lbs.	8.58 lbs.	15.4 lbs.	18.1 lbs.	13.4 lbs.

<sup>1</sup> Signal-to-noise ratio "A" weighted \* Tape section

# MARANTZ

## CDR-300

RECORDERS

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### *Portable Desktop CD Recorder with Built-in Mic Preamp*

*Designed for stand-alone portable recording, the CDR-300 is a professional CD recorder that offers the functionality of a professional tape recorder—while recording directly to blank CD-R/RW media. Once finalized, recorded discs will play back in virtually any CD player*

*To record, simply place the compact and lightweight CDR300 on a table-top, power it up via 120v AC or 12v DC power and record live using either the internal mic or external microphones that attach to stereo XLR or 1/4" mic/line inputs.*

*Because it has a built-in preamp, an external mixer or mic*

*preamp is not required. A built-in speaker or headphone jack conveniently allows recordings to be monitored. High and low EQ and high and band pass filtering can be independently adjusted for each mic/line input in the preset menu. 48v phantom power is available for condenser microphones. The CDR-300 also provides manual or automatic level control, limiter, and digital level meters.*



### FEATURES

- ◆ The CDR-300 records to both music and computer CD-R and CD-RW discs. Track titles can be input using CD-Text. It can make a perfect digital copy of any CD.
- ◆ Built-in mic preamp with phantom power and onboard mixing capabilities means you can plug quality microphones straight into the XLR or 1/4" mic/line inputs for stereo recording of live events. No need for a separate mic preamp and mixer.
- ◆ Capture ambient room sound with a pair of mics and mix in the stereo feed from a larger sound system to make a great live CD recording of any musical event.
- ◆ Record CDs from any analog or digital source including LP, DAT, cassettes, or MiniDisc.
- ◆ Internal AC power supply, plus a 4-pin DC power input that enables it to be used with external 12v battery packs.
- ◆ Portable design and easy operation enables convenient direct-to-CD recording anywhere - from churches, band and practice rooms, to classrooms, auditoriums and outdoor venues.
- ◆ For CD playing you can add (mix in) your own microphone or instrument input, connect to an amplifier/speaker system, connect to an external CD recorder, connect an additional CD player (or other line input) to the CDR-300 and mix that input
- ◆ Built-in microphone and full range speaker allows listening to a CD without having to connect to other equipment for amplification.
- ◆ Tone controls include:
  - TREBLE High frequencies (6 kHz)
  - MID Middle frequencies (2 kHz)
  - BASS Low frequencies (150 Hz)
- ◆ 3-band master EQ
- ◆ Programmable mic/line EQ
- ◆ Programmable mic/line high and band pass filtering
- ◆ Manual or automatic level control (ALC) for recording
- ◆ On-board switchable limiter
- ◆ Stereo XLR & 1/4" mic/line inputs
- ◆ Computer CD-R/RW disc compatible
- ◆ 48V Phantom Power
- ◆ RCA line out
- ◆ Stereo RCA Aux input
- ◆ Digital S/PDIF coaxial input and output
- ◆ Includes full function IR remote control
- ◆ An optional foot pedal (FT200) can provide Play/Pause control for the CDR drive



Portable design and easy operation enables convenient direct-to-CD recording anywhere. And it is designed to be as easy to use as a portable tape recorder. Just place the CDR-300 on the table at your next meeting, record using the built-in condenser mic and automatic record level control, and capture every word with clarity. You can start and stop recording just like a tape, and you can even erase the disc or last track if you use rewritable discs.



For Any Inquiries Regarding Your Order, Call Our Customer Service:  
(800) 221-5743 • (212) 239-7765 • FAX: (800) 947-2215 • (212) 239-7549

# MARANTZ

## CDR-500/CDR-631

### CDR-631 CD-R/CD-RW Recorder

Offering superb flexibility and reliability in a rugged rack-mount design, the CDR-631 is a next-generation



digital recorder that lets you create your own custom CDs from any audio source. Powerful feature set includes a rich assortment of I/Os including balanced XLR analog and AES/EBU digital for connecting to other analog and digital gear. Also offers a sample rate converter, memory buffer, complete SCMS programmability, remote control input and the ability to use a variety of CDs, including computer discs.

#### CDR-500 & CDR-631 Both Feature

- ◆ CD-Text function lets you save the CD title, artist and track names via the menu using simple input controls.
- ◆ For a wider choice in media with greater flexibility and additional cost savings, they accept CD-R and CD-RW discs, including 1X-speed discs for computer use.
- ◆ Sync recording mode for fast and easy duplication of CDs, MiniDiscs, and DATs. Track increments are automatically detected, and for analog source material, a silence of 2.7 seconds is automatically detected as a track increment.
- ◆ Automatic sample rate conversion handles any source from 11 kHz to 56 kHz and converts it to the 44.1 kHz CD standard (44.1 kHz sources bypass the converter).
- ◆ They have a memory buffer that prevents the beginning of tracks from getting cut off
- ◆ Auto Stop Control allows dynamic sources (eg. classical music) to be recorded effectively
- ◆ 2x speed disc finalization
- ◆ Program up to 99 tracks to play in any desired sequence
- ◆ Coaxial digital input includes loop-out for unprocessed connection to other digital equipment.
- ◆ RC5 remote control input for installed (AMX/Crestron compatible) controllers
- ◆ Bypass SCMS copy protection when duplicating a disc. Or select among copy protection options when recording your own discs.

### CDR-500 CD-R/CD-RW Recorder and Player

CD-R/RW recording and playback has never been easier. The CDR500 features two



independent drives: one for CD-R/RW playback and recording and a second drive for playback only. This means it can operate as a stand-alone 2X CD-R/RW duplicator; make a recording from any analog or digital source; program a playlist that selects tracks from both CD drives; play from both drives at the same time.

	CDR-631	CDR-500
CD Recorder/Player Drive	•	•
CD Player Drive		•
High Speed 2x Dubbing		•
Disc-at-Once Dubbing		•
Pro & Consumer CD-R/CD-RW discs	•	•
Audio Buffer	•	•
Programmable Copy Protection	•	•
Digital & Analog Record Level	•	•
Record Balance Control	•	•
Record Mute	•	•
Manual Track Increment	•	via remote
Auto Stop On/Off	•	•
CD-TEXT Display + Encoding	•	•
10-key Pad	•	via remote
Program Play	•	•
Repeat 1/ALL	•	via remote
Random Play	•	via remote
Rackmount Height	2U	2U

#### INPUTS & OUTPUTS

RCA Line IN/OUT	•	•
XLR Line In	•	•
Coaxial Digital IN/OUT	•	•
Coaxial Digital Loop-OUT	•	•
Optical Digital In	•	•
XLR Digital IN (AES/EBU format)	•	•
Sample Rate Converter (SRC)	•	•
Headphone OUT (1/4") with level	•	•
RC5 Remote IN/OUT	•	•
Included IR Remote	•	•
Power Consumption	19W	21W

#### DIMENSIONS

Width	19.0"	19.0"
Height	3.9"	3.9"
Depth	13.4"	13.4"
Weight	10.4 lbs.	11.7 lbs.

# MARANTZ

## PMD-325

### Industrial CD Player

The PMD-325 offers great versatility and reliability for music playback, background music, and other applications. In addition to playing CDs it will play finalized or unfinalized CD-R (write-once) and CD-RW (rewritable) discs, as well as MP3 files on

CD-R/RW. And, equipped with RS-232 serial control, will revolutionize music playback for your professional A/V system. Customization options for audio playback give you full control over how the music plays—single-track, randomly, or by time without requiring a monitor or touch panel display. In addition to RS-232 and standard CD functions, other features include pitch control, direct track access, A-B loop, auto cue, CD text, XLR with adjustable trim and GPI contact closure control of many features.



#### FEATURES

- ◆ Built for installation, the PMD325 can receive AMX or Crestron compatible control signals via its rear panel RS-232C serial port or RC5 port.
- ◆ It also features a GPI port with fader start. The fader start trigger input enables playback and pause control from an external switch or fader from a mixing desk.
- ◆ While many DVD players play MP3 files, they require a TV monitor or touch panel display to navigate the files, and they are not designed to fully control how the music plays. The PMD325, however, provides single track, random, and timer play for both music CDs and MP3 files.
- ◆ Plays CD-RW discs without a hitch, and also display CD-TEXT for identifying CD and song titles at a glance.
- ◆  $\pm 12\%$  pitch control in 0.1% increments. A Calibration button is used to calibrate and return the CD player to normal pitch.
- ◆ Single track and program play. Program up to 30 tracks for playback in any order while a time display calculates the total accumulated program time of the selected programs.
- ◆ Remote control with 10-key pad (0 - 9) and rotary knob for direct track access and selecting tracks in program mode.
- ◆ Auto cue can be set to an adjustable threshold
- ◆ Time button switches the displayed time between elapsed time and time remaining of current track, total length of disc and time remaining on disc.
- ◆ Three repeat modes include 1-track, all-tracks, A-B repeat
- ◆ Equipped with unbalanced RCA and balanced-XLR analog outputs with level control, and XLR, optical and coaxial digital S/PDIF outputs, enabling easy integration into professional A/V systems.
- ◆ One piece 2U rackmount chassis

*With four models to choose from, the Marantz family of single-well professional CD players provides a solution for every need – from the demanding broadcast studio environments where dependability and precise control are key, to corporate installations, theaters, houses of worship, and other applications that require a CD player with professional features and ease of use.*



## PMD-331/340 Industrial CD Players

Marantz audio products have long been recognized for having exceptional sound quality. And the PMD-331 and PMD-340 are no exception. Adhering to Marantz's rigorous audio standards, they are not only built with the highest quality D/A converters, but they employ state-of-the-art digital and analog

*filters and noise sampling technology to maintain pure signal clarity. It's a difference you can hear.*



# MARANTZ

## PMD-331/340

### PMD-331

All the features of the PMD-325 except no MP3 playback, RS-232 serial port or infra-red remote control

- ◆ Up to 25 different functions (presets) can be individually programmed using the intuitive front panel control. Items include end of track warning, tray lock, fade-in/out time, default time display, disc start mode and end monitor time.
- ◆ CD mechanism is designed to handle rackmount installations at up to a 45° angle.
- ◆ 10-second anti-shock buffer
- ◆ Jog wheel enables especially quick pitch change as well as faster searches.
- ◆ In addition to ±12% pitch in 0.1% increments, pitch bend function allows quick ±8% adjustments in pitch.
- ◆ Outstanding cue point handling gives you the ability to search within a track for the exact point for playback to start. Precise manual cue points are set using the FF and REW buttons to advance the track one audio frame at a time.
- ◆ Frame-accurate searching allows you to hear CD frame as an audible signal, and zero in on a recognizable note of music or word syllable.
- ◆ High contrast LCD displays information at a glance, such as time remaining (shown graphically or numerically), end of track monitor, track pitch, scrolling CD-TEXT display, and current play mode.
- ◆ 25-pin D-sub GPI Port

### PMD-340

#### Step-up Features

- ◆ Has the same features and functions as the PMD-331, however, the PMD-340 is specially designed to hold up in the most demanding environments such as broadcast, recording/duplication studios and mastering facilities.
- ◆ One of the most durable and reliable professional CD players available, the PMD-340's extremely durable and reliable CD mechanism includes a die-cast frame, a highly durable, brushless spindle motor, and a high-resolution, heavy-duty precision laser for outstanding tracking.

	PMD-320	PMD-321	PMD-330	PMD-331	PMD-340
High-Performance Drive			Yes	Yes	Yes
Heavy-Duty Mechanism					Yes
CD-RW Playback			Yes	Yes	Yes
Shock Protection (10 sec.)				Yes	Yes
CD-TEXT Display			Yes	Yes	Yes
Instant Start				Yes	Yes
AutoCue		Fixed level	Adjustable	Adjustable	Adjustable
Fade-In/Fade-Out			Yes	Yes	Yes
Index Search			Yes	Yes	Yes
Pitch Control (±12%)	Button	Button	Button	Jog Wheel	Jog Wheel
Pitch Bend (±8%)				Yes	Yes
Cue Point			Yes	Yes	Yes
10-Key Pad	Yes	Yes	Yes	Yes	Yes
Single Track Play			Yes	Yes	Yes
Program Play	Yes	Yes	Yes	Yes	Yes
Repeat 1, ALL	Yes	Yes	Yes	Yes	Yes
A-B Repeat			Yes	Yes	Yes
Random Play			Yes	Yes	Yes
Programmable Presets			Yes	Yes	Yes
Rackmount Height	2U	2U	2U	2U	2U
RCA Line Out	Yes		Yes	Yes	Yes
XLR Line out		Yes		Yes	Yes
Coaxial Digital Out	Yes	Yes	Yes	Yes	Yes
Optical Digital Out				Yes	Yes
XLR Digital Out (SPDIF)		Yes		Yes	Yes
Headphone OUT (1/4")	Yes	Yes	Yes	Yes	Yes

### PMD-371

#### 5-Disc Rotary CD Changer



The PMD371 can receive AMX or Creston compatible control signals, and play up to six hours of uninterrupted music on 5 discs, during which 3 discs can be changed. It also feature easy programming, the ability to edit a play list for fitting tape length, Introdisc scan (play 10 seconds of every song) and a custom rackmount kit for smooth installation integration.

- ◆ Full programming and program editing, random play, single or multiple track repeat
- ◆ Change discs while playing
- ◆ Audible Cue and Review
- ◆ Analog RCA outputs
- ◆ Marantz RC-5 Remote Input/Output AMX and Creston Compatible
- ◆ Removable 3U rackmount handles



# MARANTZ

## PMD-910/PMD-930

RECORDERS

446

### Professional DVD Players

The PMD-910 features 3:2 pulldown progressive scan, Dolby Digital and DTS compatibility, and is both NTSC and PAL compatible. In short, it's ideal for corporate and institutional users who demand high definition picture quality and exceptional sound. One rack space installation is possible only with an 1/8" bottom clearance on mid-section. Otherwise two rack spaces are needed.

The PMD-930 is a global-compatible DVD Player with an RS-232 port offering maximum flexibility. It accepts all DVD discs, including DVD-RW and DVD+RW discs that are rapidly becoming the preferred media for edited video. So DVDs



PMD-930

PMD-910



and Video-CDs created by a corporate office or university in another part of the world will play back problem-free in the PMD-930. It also plays MP3 audio files on CD-R and CD-RW

discs. Moreover, its operating system can be easily flash upgraded via CD-ROM in the DVD drive to accept future DVD formats.

#### PMD-910

- ◆ The PMD-910 will display a range of formats, from DVDs, Super Video CDs, and video burned to DVD-R, to MP3 files. Because timing is critical for presentations, the PMD-910 provides controls for rapid title, track, and time searches and fast file opening.
- ◆ Delivers stunning Dolby Digital and DTS multi-channel compatible sound. It boasts 96kHz/24-bit audio D/A converters and a four special 3D sound mode for playback of music CDs and MP3 files.
- ◆ Can be tailored to an installation's requirements. Audio and video outputs defaults can be changed for bit-stream, downmix, dual mono mode, and 96k sampling rates. Aspect ratios can be set for 4:3 or 16:9. Front key lock prevents unauthorized usage.

#### PMD-930

- ◆ The PMD930's RS-232 serial port provides enhanced functionality, allowing 2-way remote control feedback of all functions. It also provides an easy way to defeat on screen displays and icons, or to fly in bitmap background images such as corporate logos and school crests that can appear upon disc start up or during custom sleep modes.

- ◆ The PMD-930 is built to last, offering three times the Mean Time Between Failure (MTBF) of a standard DVD player—45,000 hours. For presentations, the unit provides fine tune controls for color, saturation, brightness and contrast, eliminating the need to adjust a monitor or projector when alternating between multiple video sources such as DVD, VHS, or teleconferencing equipment.

- ◆ The PMD-930 offers an extensive array of navigation and picture search modes, such as zoom, shuffle, repeat, fast-motion search, and time search capability. It's possible to select A-B points to repeat specific portions of a video.
- ◆ Allows favorite DVD titles and chapters to be stored in memory. Navigation menus that are hidden by other players can be readily accessed and navigated by the PMD-930.

## DV7110P

### Professional DVD Player w/RS-232

For any A/V system under wired remote control the DV7110P boasts an RS-232C port enabling complete



control and feedback. It is packaged with a custom rackmount kit to ensure smooth integration into installations. Not only does this DVD player provide exceptional picture quality and 5.1 Dolby Digital and DTS surround sound, but it also plays DVD-R and DVD-RW discs, which are quickly becoming the preferred media for corporate and educational video.



EQUIPMENT LEASING AVAILABLE

## CDR-795

### Dual Deck CD Player/CD Recorder



Make your own compilation CDs with the CDR795.

This system allows 4x recording

and playback of CDs, CD-Rs, and CD-RWs. CD Text capability enhances the display of your CDs (remote control has CD Text capability for further ease). Want to program in advance? Program up to 99 tracks. A Sample Rate Converter keeps digital audio consistent when recording.

- 4x speed precision recording from built-in CD player
- Simple "COPY CD" button for making a quick copy
- Audio Core drive with Bit Sync technology for true copies
- Plays computer CDs with MP3 music (for over 12 hours of music)
- CD Text display, edit and recording
- 2 disc changer mode for long listening
- Archive old cassettes and LPs on CD
- Digital, optical and analog inputs allow recording from any source
- Enhanced Auto Sync Start recording from external analog sources
- One Touch Timer recording from external sources
- Smart Finalizing reminds you to finalize only when needed
- Headphone output with level control

## CDR-820

### CD Recorder + Integrated 3 CD Changer



Easy to set-up and easy to use, the CDR820 makes recording CDs a breeze. The 4 disc changer mode plays CDs, CD-Rs, CD-RWs, and MP3 discs. Record your discs at 4x speed in less time. Automatic Level Control allows you to record compilations all at the same volume level. Add CD Text to your recorded CDs or from original CDs on the recorder or use the standard PC keyboard input for easy editing.

- Make your own compilation CDs
- Precision 4x recording from internal CD Changer
- Plays computer CDs with MP3 music
- Record compilations at the same volume level with Auto Level Control
- Mix and record your own voice on CD with stereo microphone input
- Add CD Text to your recorded CDs or copy from the original CD
- PC keyboard input for easy editing
- Digital & analog record level control for correct recording volume
- Headphone jack
- Remote control with CD Text input possibility
- Advance and easy programming (99 tracks) for recording compilations
- Sample rate converter for recording from multiple digital audio sources
- Audio buffer for perfect track starts
- Automatic CD Synchro Recording start from all analog & digital sources
- Digital coaxial and optical inputs & line input and outputs
- Direct Line Recording for perfect digital copies (for true bit recording)
- Instruction video tape included

	PMD910	DV7110P	PMD930
45000 MTBF			•
Global Compatible			•
DVD and Video CD	•	•	•
NTSC / PAL Conversion	•		•
Super Video CD	•		•
DVD-R, CD, CD-R, CD-RW	•	•	•
DVD-RW, DVD+RW User Upgradable			•
DVD-R Formats		•	
MP3 Compatible	•		•
Progressive Scan	•	•	
Random / Shuffle Play		•	•
Program Play		•	•
Bar Code Capable			•
Bitmap Upgradable Startup Screen			•
Time Search Direct Play			•
Playback Control for Use with VCD & SVCD			•
Bitrate Indicator			•
Video Shift			•
Fine Tune Color, Saturation, Brightness & Contrast			•
Black Level Shift Adjustment			•
Screen Saver (dim 75% after 15 min.)			•
Hide OSD and Icons via RS232			•
INPUTS / OUTPUTS			
RS232 Control		•	•
Optical Digital Output	•	•	•
Coaxial Digital Output	•	•	•
RC5 Input / Output	•	•	
RCA Analog Outputs	•	(x2)	•
Composite Video Output	•	(x2)	•
Component Video Outputs	•	•	•
RGB Output on 4 BNC			•
S-video Input	•	•	•
Multi Voltage (100v-230v)			•
Shipping Weight	11 lbs.	13 lbs.	13 lbs.

# SONY

## MINIDISC TECHNOLOGY

*The incredibly unique aspect about MiniDisc is that it is your music. No other audio format allows you to make your own custom, digital recordings—with the ease and flexibility — that MiniDisc gives you. And the mixes you record are distinctively your own. The titles you create can be as open as your imagination. Create and re-create mixes as often as you want—you can continually re-record on a single MiniDisc up to 1 million times without any loss of quality. MiniDisc hooks into everything. Record from your favorite digital (CD, DAT) or analog (LP, cassette, radio) music source to make your mixes. Some models even offer high-speed dubbing from CD-to-MD. Record live sound from dictation or, at concerts and lectures using a portable with mic input.*

*MiniDisc also connects to your PC. You can record music files straight from your hard drive or the Internet. Convert and playback any standard audio format, including MP3, Real Audio, Windows media audio, ripped CD tracks, and Liquid Audio to make your mix complete. Indulge in complete mastery over your music. There isn't a sound around that MiniDisc can't add to the mix. No other portable, recordable digital player can do this and still sound so good.*



### The Perfect Format for Creating and Editing Music Mixes

#### Easy Editing:

MiniDisc records in non-linear fashion. You can edit the order of tracks with the touch of a button, a feat that is impossible on recordable cassette and somewhat difficult with recordable CDs. You can even store a single song as several fragments if you want to be able to jump right to your favorite part.

#### Portable:

MiniDisc is tiny (2.5") and is encased in a protective cover, so you can carry lots of discs with you and enjoy hours of music. On the other hand, CDs aren't nearly as easy to carry around. You can fit four or five MiniDisc in your shirt pocket.

#### All Digital:

MiniDisc recordings have great, clean sound with wide dynamic range, incredible frequency response, low distortion, and no hiss. In addition, MiniDisc has great editing features which allows you to customize your music selections.

#### Durable Construction:

MiniDisc machines are practically unshockable. Their special system for storing information allows your player/recorder to pinpoint the exact position of the laser, even when suddenly bumped. It reacts with incredible speeds to readjust the laser so you hear sweet music instead of sweet music.

#### Flexible Playback:

As the MiniDisc line continues to expand, you are not limited to playback on the go. You can record and playback at home, in your car, and even from your PC.

#### Affordable Media:

MiniDisc media is really affordable when compared to the cost of other standard flash media used in most MP3 players. The average price of a 80 minute MD is under \$2, while a 64 MB of flash media (which holds approximately 2 hours of music) is over \$60. You don't have to be so cautious when deciding what to save on MiniDisc; you can build your recorded music library affordably.

Features	MiniDisc	CD-R (Recordable)	CD-RW (Re-writable)
Sound Quality	Digital	Digital	Digital
Recordable	Yes	Yes	Yes
Re-recordable	Yes (up to 1,000,000 times)	No	Yes (up to 1000 times)
Ease of Recording	Easy	Complex	Complex
Rearrange, Add, Delete and Move Tracks	Yes	No	No
Disc Plays in Existing CD Players	No	Yes	No
Protected Disc	Yes	No	No
Portable Recorders	Yes	No	No



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# SONY

## MXD-D40

### CD Player/MiniDisc Recorder

With the amazing MXD-D40 you can dub from CD to MiniDisc—at 4x normal speed. That means you can record a three minute song in just 45 seconds, or a 74-minute CD in less than 20 minutes. The MXD-D40 has two transports, one for the CD you want to copy, and one for a blank MD. And it's easy to use. It features dual front-panel jog dials (one for CD and one for MD),

plus a large two-line display that shows titling information for CD (if it's a CD Text disc) and MD. Digital record level control lets you match volumes from song to song when making a "mix MD" from multiple CDs. Of course, you also get all the classic MiniDisc editing functions: titling, instant erase, move, divide, combine, etc. A sampling rate converter lets you make direct digital recordings to MD from non-44.1 kHz sources (like DBS or DAT) via the optical digital input.

- ◆ MDLP-compatible, the MDS-JE470 can record 74 minutes (Standard Mode), 2.5 hours (LP2 Mode), over 5 hours (LP4 mode) on a single disc
- ◆ PC Link terminal for full computer control with the optional PCLK-MN10
- ◆ Analog and digital recording levels ensure better control over your recordings
- ◆ Two line fluorescent display shows title information for both CD and MD
- ◆ Automatic CD Text and Custom File transfer via Control A-1 II interface
- ◆ Scale Factor Edit enables you to adjust the volume of each track after recording, without disturbing the music itself. Ideal for compiling MDs, discs recorded at different times and from different sources.
- ◆ Optical digital input, headphone output



RECORDERS

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### MXD-D5C

#### CD Changer/MiniDisc Recorder



Load five CDs, a blank MiniDisc, and you're set! The MXD-D5C gives you tremendous functionality and

versatility by integrating multi-CD playback, MD recording, editing and playback, and internal high-speed 4x dubbing from CD to MiniDisc—in one compact deck.

- ◆ Very similar to the MXD-D40, the MXD-D5C has all the same features except it doesn't have a PC Link terminal and cannot record in MDLP mode. It does add a PC keyboard input allowing use of any standard PC keyboard for typing in disc names, artist names and song titles.
- ◆ Dual front-panel jog dials (one each for CD and MD) and a direct-access remote keep you in control, while a large two-line display keeps you informed. Enter disc/track titles for your MDs; you can even plug in your PC's keyboard for easy and fast title entry. Additional features include digital record level control so you can match volumes from song to song when you're mixing from a batch of CDs, and Scale Factor Edit allows you to adjust MD track volumes after they're recorded.

### MZB-100

#### MiniDisc Business Recorder

Lightweight and easy to transport and use almost anywhere, the MZB-100's built-in stereo flat mic provides convenient recording versatility in a variety of situations.



- ◆ Stereo flat mic records separate left and right channels
- ◆ Voice Operated Recording (VOR) activates the recorder only when audible sound is present, saving tape and eliminating soundless passages
- ◆ Record up to 320 minutes using standard 80 minute MiniDiscs—record business meetings or press conferences without worrying about recording capacity.
- ◆ Record 14 hours or playback 45 hours on one AA battery
- ◆ Other features include -20%/+10% playback speed control, multiple track marks for later reference, large 3-line dot matrix LCD, built-in front speaker, easy search function, and an external microphone jack.

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# SONY

## MDS-JE470/MDS-JB940

RECORDERS

450

### MiniDisc Recorders

Digital, portable, recordable and virtually unshockable, MiniDisc records music your way. MiniDisc stores your music as computer files so you can Move, Combine and Divide tracks to your heart's content. No FF or REW to search for tracks. Save disc name, track names and artists names. The MDS-JE470 is a basic recorder, while the JB-940 adds a host of extra features including Scale Factor Edit to create professional sounding fade-ins and fade-outs, coaxial digital inputs and outputs, playback pitch control and PC keyboard input for disc and track names.



### FEATURES

#### Highest Quality

- ◆ MDLP-compatible, the MDS-JE470 can record 74 minutes (Standard mode), 2.5 hours (LP2 mode), over 5 hours (LP4 mode) on a single disc.
- ◆ PC Link terminal for full computer control with the optional PCLK-MN10
- ◆ ATRAC Type 'R'—the heart of MD recording technology, features error evaluation, a second stage of bit re-allocation and superior processing accuracy to yield smooth, more clearly delineated sound.
- ◆ 24-bit A-D converter establishes high precision in the record mode, with a wide dynamic range. Forms the input for Sony's Wide Bit Stream technology, which maintains 20-bit processing throughout the recording process, for clearer reproduction of delicate, low-level music.

#### Recording/Playback

- ◆ Time Machine recording with 6-second frame buffer lets you hit the record button up to six seconds late—and still capture every note. Ideal for recording live events or radio broadcasts.
- ◆ CD Synchro Record simplifies making tapes from compatible Sony CD players by releasing from Record/Pause when the CD player goes into Play.
- ◆ Sampling Rate Converter lets you record from sources with different sampling frequencies, such as DAT. Automatically converts them to MiniDisc's 44.1 rate.
- ◆ Smart Space function provides a uniform three-second spacing between all songs.
- ◆ Play modes include Continuous, Shuffle and Programming of your favorite songs in your own selected sequence.

#### Editing

- ◆ Move, divide and combine tracks—shape your music even after you've recorded it. For example, you can combine Track 1 with Track 5 for seamless, uninterrupted play. Perform editing functions like A-B erase—ideal for deleting interruptions like radio commercials. Undo lets you reverse your last move, erase or combine.

#### Conveniences

- ◆ Jog dial for track selection and text entry. There is storage space for hundreds of characters of text, so you can store disc names, track names and artists names.
- ◆ Record without first searching for the end of a recorded section—the deck automatically finds blank spots on the disc and records on them without interruption.

### PCLK-MN10 PC Link Kit

The optional PCLK-MN10 kit (consists of USB audio device, M-crew CD-ROM, optical and USB cables) allows you to use your PC to remotely operate all transport functions on the MDS-JE470 (and MXD-D40), play audio CDs in your CD-ROM drive and tune into Internet radio stations. You can record music CDs or .WAV files to MiniDisc. You get full editing control of the MiniDisc in the deck. Go through it track by track entering names or other information. Keep track of played or recorded music via a Disc Library, access related websites to the tracks you're playing, while you're playing them, set recording and playback timers and even automatically print out MD labels.



### MDS-JB940 Step-up Features (no PC Link)

- ◆ Scale Factor Edit enables you to adjust the volume of each track after you've recorded it, without disturbing the music itself. Ideal for compiling MDs, discs recorded at different times and discs recorded from different sources.
- ◆ Variable Coefficient Digital Filter allows adjustment of the audio tone to complement your audio system, listening environment, and the type of source being played. Customize the music the way you want, by changing the slope characteristics of the filter. Operates at 24-bit word length for superlative precision.
- ◆ PC Keyboard input enables you to plug in a standard PC keyboard and type in disc names, artist names and song titles.
- ◆ Playback Pitch Control lets you change the playback (pitch) speed. Tone rises at higher pitches, and falls at lower pitches. Pitch Control is ideal for speeding up or slowing down foreign language tapes or lecture notes. Also enables you to "tune" playback sharper or flatter, to match your instrument. (You can lower the pitch by up to 36 steps or 3 octaves. Additionally, you can control the playback speed in 0.1% increments from -87.5% to 0.0%.)



EQUIPMENT LEASING AVAILABLE

## MDS-E10/MDS-E12

### Professional MiniDisc Recorders

Elegantly housed in a 1RU high enclosure, the MDS-E10 and MDS-E12 are affordably priced professional MiniDisc player/recorders with an impressive list of editing and programming features. They offer pitch control, non-destructive editing and "Hot" starts

which allows the beginning of up to 10 songs to be stored in memory for instant start capability. They also include a full function remote control and standard PS/2 keyboard input allowing even easier editing and programming capabilities. With their compact design and remote interface capability they are well-suited for use in variety of mobile A/V, live sound (contractor) and broadcast applications. The MDS-E12 has all of the features and functions of the MDS-E10 plus adds control interface capability (RS-232 and Parallel), rec/play relay control I/O and balanced XLR analog I/O.



#### FEATURES

##### Highest Quality

- ◆ High-quality 24-bit A-D and D-A converters assure accurate sound reproduction
- ◆ Sony's Wide Bit Stream technology handles signals during processing at 20-bit resolution providing a dramatic improvement in the accuracy with which low-level signals are processed. Results in higher recording quality, with a wider dynamic range.
- ◆ Record levels are adjustable on both digital and analog inputs:

##### Conveniences

- ◆ Machine status, audio levels, menus, disc and track info are displayed with a large, easy-to-read fluorescent display.
- ◆ The TOC of a disc, even a protected master disc can be copied to RAM and edited without changing the TOC data on the disc.
- ◆ Time Machine Recording function continuously stores 6 seconds of audio data in its memory buffer ensuring no program material is lost because of missed cues.
- ◆ Engaging the Music Sync button puts the recorder into Record/Pause mode waiting for the source deck to begin playback, at which time recording will start.
- ◆ Auto Space feature inserts 3 seconds of silence in between tracks.
- ◆ Auto Repeat function with four modes: all tracks, current track, shuffle and program.

##### High Performance

- ◆ Full-featured TOC (Table Of Contents) editing includes undo, divide and combine.
- ◆  $\pm 12.5\%$  vari-speed playback in 0.5% steps in standard mode and +0 to -12.5% when playing back an MDLP2/4 recording
- ◆ The first few seconds of up to 10 tracks are memorized to provide an instant, hot start, from any of these tracks. This is useful for radio/DJ and live theater production.
- ◆ MDLP (Long Play) stereo recording mode is useful for recording meeting minutes, logging, etc. Two stereo modes are available: x2-for up to 160 mins & x4-for up to 320 mins. (using 80 min. MD media).
- ◆ When recording a single, long track, the track to be divided into segments of identical duration This makes it easier to locate material during editing and production. Tracks can be marked automatically at timed intervals (from 1-10 minutes) or via a level sync mode which detects the start of music after a long pause.
- ◆ Scale Factor Edit allows relative levels of various tracks to be changed after recording. This prevents wildly different playback levels, which can occur in productions done from various sources. Fade-in and fade-out can also be added to recorded tracks.
- ◆ Up to 1,700 characters can be used to title a disc and individual tracks.

##### Input/Output

- ◆ Headphone output with level control
- ◆ S/PDIF coaxial and optical digital I/O
- ◆ RCA unbalanced analog I/O
- ◆ Automatically converts 32 or 48 kHz audio to MiniDisc's 44.1kHz sample rate.
- ◆ Frequency response of 5Hz to 20kHz with 97dB dynamic range
- ◆ Their front panel is equipped with a standard PC keyboard interface, which allows easier access to remote and track/disc titling functions, plus hot starts. Provides the same functions as the wired/IR remote.
- ◆ Supplied dual-mode RM-DR1E Remote Control operates as a conventional IR remote or wired remote when connected to the Control-S jack via supplied 5m cable.

##### MDS-E12 Step-up Features

- ◆ Connect several MDS-E12s together with a stereo 3.5mm mini plug for uninterrupted sequential playback and recording.
- ◆ RS-232C machine control interface
- ◆ Coaxial S/PDIF digital I/O (no optical)
- ◆ Switchable XLR balanced and RCA unbalanced inputs and outputs Balanced outputs are switchable (+4dBu to -10dBu)
- ◆ 9-pin parallel remote interface allows external control and monitoring of machine functions including fader start.

# SONY

## PCM-R300/500/700

RECORDERS

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### *DAT Recorders*

*The PCM-R300 is a semi-professional rackmount DAT machine well suited for the home studio and desktop video suite. Equipped with standard RCA (phono jacks) and S/PDIF digital I/O (both optical and coaxial), the PCM-R300 easily integrates into most any recording environment. It also incorporates the same Super Bit Mapping 20-bit analog to digital converters as Sony's higher-end decks for superior audio reproduction.*



*The PCM-R500 and PCM-R700 are designed with the professional audio and video studio in mind. They are built around the stability of 4-motor direct drive transports, and a flexible number of analog and digital I/O terminals are available for connecting to almost any audio hardware. Sony's 20-bit Super Bit Mapping technology enables recordings rivaling near 20-bit resolution.*

### FEATURES

- ◆ Analog recording supports 16-bit 44.1 and 48 kHz sample rates (standard mode) and 12-bit/32kHz Long Play Mode (4 hours recording on a 120-minute tape).
- ◆ Digital input recording accepts sample rates of 32, 44.1 and 48 kHz.
- ◆ 20-bit Super Bit Mapping analog to digital converter gives you a S/N spec close to that of an actual 20-bit recording.
- ◆ RCA (Phono) line inputs and outputs
- ◆ Coaxial and Optical S/PDIF digital I/O
- ◆ Headphone output with level control
- ◆ Input monitor lets you audition audio without engaging transports. This saves the tape and heads from wear and tear.
- ◆ AMS (Automatic Music Sensor) lets you easily shuttle to any track on a tape.
- ◆ Program Number and Start, and ID sub-codes can be written manually or automatically for direct track number access via remote control or AMS function.
- ◆ LED display shows level and margin, transport status, sample rate, input source, program number, tape running time, absolute time, playing time of the track, remaining time on the tape, date and time of recording and current date and time.
- ◆ Counter mode display switchable between absolute time, program time, remaining time on tape, error rate and menu
- ◆ Displays total drum operating time up to 9999 hours in 1 hour increments
- ◆ Includes RM-D757 wireless remote and rackmount adapter.

### *Menu Operation*

- ◆ Menu settings are stored internally and memorized after power down
- ◆ Record mute duration can be set between 0.5 to 9.5 seconds in units of 0.5 seconds.
- ◆ Settable Serial Copy Management System (SCMS) allows multiple copies, one copy or no copies of a DAT tape.
- ◆ When recording digitally, start ID and skip ID detection is settable to on or off.
- ◆ Level sync threshold sets the reference input level for recognizing start IDs. Set from -12 to -60 dB in 1dB increments.
- ◆ The ability to recognize CD-Q codes (track numbers) when recording from a CD is settable to on or off.
- ◆ Level sync blank time sets how long the audio signal must stay below the sync threshold before a new start ID is written.

### *PCM-R500 Step-Up Features*

- ◆ 4 Direct Drive motor transport ensures a reliable and extremely stable tape path
- ◆ Independent record level controls for left and right analog inputs
- ◆ Automatically or manually writes Program Numbers, Start Id's, Skip Id's and End Id's subcode information.
- ◆ Jog dial/Shuttle wheel - shuttle wheel allows audible cue and review  $\pm 0.5$  to  $\pm 8$  times normal speed ( $\pm 1$  to  $\pm 8$  times in Long Play mode), while the jog dial is used as a data entry device for menu options and AMS (Automatic Music Search) Program Number access
- ◆ Erase start-ID and skip-ID function
- ◆ Repeat function plays a single track or entire tape continuously
- ◆ Renumbering function searches all start-IDs from the beginning of the tape and writes consecutive program numbers
- ◆ Specific absolute time locations can be temporarily stored and recalled using the Mark and Locate function. Stored locations are lost once a tape is removed or the deck is turned off.

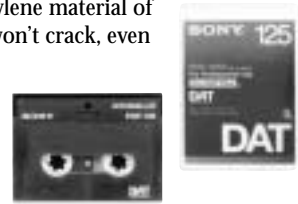


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## PCM-R300/500/700

### 5 Reasons to Choose Sony PDP Series DAT Tapes

- ◆ The PDP Series employs ultrafine "Chrystal Art" magnetic particles, which deliver high retentivity and outstanding output.
- ◆ Sony's HD&R Binder Systems allows for higher densities and better durability, while the special backcoating ensures a tape with low error rates, even after 1000 cycles.
- ◆ The anti-static resin lid shuts out dust and other unwelcome particles. Also, the high-precision heat resistant shell prevents warping due to excessive heat.
- ◆ Polypropylene material of the case won't crack, even when dropped.
- ◆ "Dust-free" lid guards against dust being generated during openings and closings. A stronger lock mechanism and roundish edge construction protect against shocks from falls while also preventing tape slack.



### PCM-R700 Step-Up Features

- ◆ 4 heads allow confidence monitoring (monitoring off of tape while recording)
- ◆ Automatic Fade in & Fade out adjustable between 0.5 to 9.5 seconds
- ◆ Key protect function disables certain front panel controls to prevent accidental erasing or manipulation of a tape.

- ◆ Rehearsal function ensures accurate positioning of subcodes. Once a general location for the desired subcode is found and the rehearsal button is engaged, a 3 second section of tape will repeat 8 times while the FF and REW buttons allow fine adjustment of the locate point in 0.3 sec. steps. Subcodes can then be written normally.
- ◆ Existing start IDs can be accurately repositioned as much as 2 seconds using the rehearsal function.
- ◆ XLR balanced and RCA (Phono) unbalanced analog I/O for compatibility with professional and consumer equipment
- ◆ Switchable between XLR balanced AES/EBU and coaxial S/PDIF Digital I/O
- ◆ 8-pin parallel port is available for custom wired remote control of transports.
- ◆ Serial remote input for optional RM-D750 wired remote
- ◆ Includes wireless remote commander

## PCM-7040 Digital Audio Recorder

Supported by a wide range of essential features for DAT recording and editing, the PCM-7040 is the ideal 2-track digital recording solution for professional post production and broadcast. Features such as an onboard timecode reader/generator, digital I/O, memory start, an RS-232 interface and edit memory are standard. Using the internal timecode reader generator, editing, chase synchronization and conversion between the SMPTE/EBU/FILM and DAT timecode formats is possible. Both drop and non-drop frame rates are supported as well as the ability to reference to composite video, composite sync and blackburst signals or in the case of a digital audio configuration, word clock I/O is also supported. The memory start function stores 3 seconds of stereo audio, overcoming the inherent delay found in a normal rotary head DAT system, thus allowing the instart capabilities required by broadcast facilities.



- ◆ 4-head rotary system provides two recording modes: RAW (Read-After-Write) and RMW (Read-Modify-Write). In RAW mode, real-time off tape monitoring is provided. In the RMW mode, the PCM-7040 allows enhanced punch in and punch out operation with crossfading at the punch in and out points.
- ◆ Precision-controlled transport allows  $\pm 12.5\%$  variable playback speed. Varispeed recording is also possible allowing "pull up" and "pull down"  $\pm 1\%$  recording sample rates (for example, 48.048kHz or 47.952kHz). Pull up or pull down recordings permit automatic  $\pm 0.01\%$  speed change during playback for film/video post production when necessary.
- ◆ Memory Start Function (3 seconds) makes the PCM-7040 suitable for on-air applications and audio post production.
- ◆ Time Code Reader/Generator, Digital I/O, Memory Start and Edit Memory are all standard.
- ◆ Automatic time-stamping of recording
- ◆ Start ID level Sync Function enables the PCM-7040 to write a Start ID automatically each time the audio level rises from period of silence and exceeds a selectable audio threshold.
- ◆ RS-422 (9-pin) serial remote and RS-232C for convenient control from external equipment and computers.



# SONY

## CDP-D11

### Professional CD Player

*An incredibly compact—only 1RU high—professional CD player, the CDP-D11 offers a host of state-of-the-art features including instant start of tracks, variable speed operation, a dual mode IR wireless/wired remote controller and connectors for both RS-232C and programmable parallel remote control. Superb audio performance is guaranteed by high density linear digital to analog converters. The CDP-D11's space saving design includes a slot-in loading mechanism designed for high reliability and with resistance to shock and to high temperatures. A three-second Advanced ESP anti-shock memory is also standard. Outputs include balanced-XLR and unbalanced RCA connectors as well as coaxial and optical digital outputs. Ideal for commercial and professional applications including recording studios, theatres and A/V presentations.*



#### FEATURES

- ◆ Instant start allows immediate playback from start of any track
- ◆ Mark and locate feature allows user defined spot as cue point.
- ◆ Advanced electronic shock protection with 4MB D-RAM buffer (2.972 msec) virtually eliminates unwanted "skipping" due to vibration or dirty CDs.
- ◆ Search modes include AMS (Automatic Music Sensor) dial for fast and convenient access to CD tracks and menus, Direct Play and Music Scan
- ◆ Three search speeds: Low speed search (2x), standard search (20x), and high speed search (80x)
- ◆ Play and repeat modes include Program and Shuffle; A-B repeat is also available
- ◆ Auto cue pauses track at the start of music. Sound level (threshold level) can be selected from five levels (-72dB, -66dB, -60dB, -54dB and -48dB).
- ◆  $\pm 12.5\%$  pitch control in 0.5% steps)
- ◆ Last Memory Mode retains the last settings after the unit is turned off and returns to them when power is turned on.
- ◆ Connect with an external timer to start or stop playback at a specified time.
- ◆ Long-duration sequential playback can be achieved using several CDP-D11 units connected via the Relay Play input and outputs (using a stereo mini plug cable). After a first unit ends, a control signal goes through through the jack and makes a second unit start to playback automatically.
- ◆ Remote control via RS-232C or parallel remote control ports. The parallel remote can be user-assigned to control and monitor several functions of the machine.
- ◆ A special "fader play" mode is provided on the parallel interface to automatically play tracks in order as the fader start switch is opened and closed.
- ◆ Headphone output with level control.
- ◆ Flexible interfacing includes balanced XLR and unbalanced RCA connectors for analog output and coaxial and optical S/PDIF (IEC 958 type II) digital outputs.
- ◆ Supplied dual-mode wired/IR wireless remote controller connects to the 3.5mm Control-S jack with a supplied 5m cable. Wired remote control is ideal for use in installations with multiple players. Or simply operate as a wireless remote if desired.

### CDP-3100

*A professional CD player with superb sound quality, the compact CDP-3100 features 18-bit 8x oversampling D-A converters, fader start function, end-of-track alarm, AES/EBU digital output, balanced analog outputs, and headphone and monitor outputs for previewing of cue point.*

*It also features extensive transport control and location functions such as Jog Search, CD frame-accurate location, "Instant Start", selectable timer modes (Remaining, Actual and Set Time), single play mode and index mode, and  $\pm 12.5\%$  variable speed playback when equipped with the optional CDS-3100 remote control or DABK-3101 Memory Board.*



## CDR-W33/CDR-W66

### CD-R/CD-RW Recorders

Even among professional CD recorders, the CDR-W33 and CDR-W66 stand apart. Three DSP functions fine-tune your sources. There's a limiter with adjustable ratio. A 3-band EQ. And Super Bit Mapping circuitry captures

near 20-bit quality on industry-standard 16-bit CDs. Physically similar and sharing many features, both the innovative CDR-W33 and the CDR-W66 feature 24-bit A/D and D/A converters, easy-to-read fluorescent display, sample rate converters, CD-Text support and are rack mountable (2RU). Remote transport control can also be accessed via Control-S or a PC keyboard. In addition, they include a dual-mode wireless/wired remote control.



Designed for budget-conscious users, the CDR-W33 is equipped with RCA analog as well as coaxial and optical digital (S/PDIF) I/O. The CDR-W66 adds balanced XLR analog and AES/EBU digital I/O, Word Clock interface, RS-232 and parallel (GPI) control ports, and 2x speed duplication link for dubbing audio titles (using 2 CDR-W66 units), making it ideal for mid-to high-end recording studios and TV/radio broadcast production. On the CDR-W66, DSP functions are available on digital inputs as well as analog.

### FEATURES

- ◆ 24-bit A-D converters work together with the Super Bit Mapping (SBM) filter to provide natural sounding 20-bit quality when converting 24-bit data to 16-bit data.
- ◆ Digital limiter lets you maximize recording levels without introducing distortion caused by hard clipping. The limiting ratio is adjustable up to 100%—at which the gain is increased by 6 dB.
- ◆ Built-in digital 3-band (Bass/Mid/Treble) parametric EQ provides up to  $\pm 6$  dB of correction (in 1 dB steps) allowing you to change sound character
- ◆ Record disc and track name in CD-TEXT format. You can record up to 23 characters each for disc name and track name.
- ◆ For convenience, it offers synchro-recording with a similarly equipped Sony CD Player
- ◆ 32-48 kHz sampling rate converter lets you record not only CD and MiniDisc 44.1 kHz signals, but also 32 kHz and 48 kHz signals from digital sources such as DAT, satellite digital broadcasts and DVD.
- ◆ Skip setting function lets you create discs that skip unwanted tracks (when playing back) from among those that have been recorded. (Requires compatible player).
- ◆ Record level adjustments is available on both digital and analog inputs.
- ◆ CD-TEXT function allows disc/track names to be displayed and entered from either the front panel AMS controller, the supplied remote control or an optional PC keyboard.
- ◆ Equipped with useful recording functions such as fader (adjustable between 1 and 8 seconds), mute recording (4 seconds or as long as long as you press the mute button), music sync recording (automatically starts recording, depending on the input signal), and auto track marking.
- ◆ Playback functions include shuffle and program mode, auto-pause, music scan (play the start of tracks one after another), and repeat play (1 track/all tracks/A-B repeat)
- ◆ Equipped with both analog (RCA) and digital (optical and coaxial) inputs and outputs.
- ◆ Supplied dual-mode wired/IR wireless remote controller connects to the Control-S jack with the supplied 16-ft. cable. Wired remote control is ideal for use in installations with multiple players. Or simply operate as a wireless remote. A PC keyboard can also be used to control transport functions.

### CDR-W66 Step-up Features

- ◆ All DSP functions including Super Bit Mapping (SBM), digital limiter and EQ can be applied to both the analog and digital AES/EBU inputs. (CDR-W33 only enables DSP functions on the analog input.)
- ◆ Unique 32-to- 96 kHz sample rate converter allows compatibility with higher resolution music recording formats.
- ◆ RS-232C and 9-pin parallel connectors allow the CDR-W66 to be externally controlled from a PC or remote-control options such as GPI triggers (fader starts).
- ◆ Duplication bus link allows 2x speed CD dubbing from one CDR-W66 to another.
- ◆ Adds XLR-balanced analog inputs/outputs plus AES/EBU digital I/O.
- ◆ Word Clock input assures accurate sample clock synchronization to other digital audio sources.
- ◆ User-selectable SCMS (via menu) allows you to select the level of SCMS copy-prohibit data written to the disc. CDs may be written with the maximum level of protection or none at all.

# FOSTEX

## PD-4M

RECORDERS

456

### *Professional Portable Timecode DAT Recorder*

*A complete, all-in-one portable field recorder, the PD-4M combines a professional four head timecode-enabled DAT recorder with a three-channel mixer in one lightweight but rugged package. Used in award-winning movies and television shows throughout the world, the PD-4M meets all the requirements of the demanding professional on location, in a package that actually rivals a studio production DAT recorder in quality and capability. The PD-4M features three XLR-balanced mic/line inputs, confidence monitoring via the four head transport, variable frame rates and sampling frequencies including 48.048kHz for digital video, full timecode recording including JAM sync, on-board three channel mixer with mic attenuation, phantom power, low-cut filter, limiter on each channel, and a headphone matrix. Powered by on-board NP-1B type batteries (or via an optional AC adapter), weighing less than 7 lbs and equipped with a unique "Anti-Jam" transport mechanism, the PD-4M is designed for the most demanding field work—whether in film, video, live music or ENG applications.*



- ◆ 3 into 2 XLR-balanced mic/line mixer with independent gain control, -20 dB pads, 3-position (left, center, right) pan switches, 48v phantom power and high pass filter variable between 20Hz to 250Hz for each channel and a master output control.
- ◆ Sampling frequencies are selectable between 44.1kHz, 48kHz and 48.048kHz (for digital video).
- ◆ XLR-balanced AES/EBU and S/PDIF digital I/O
- ◆ A switchable stereo limiter prevents transient peaks from overloading tape.
- ◆ Choice of monitoring using 1/4" headphone output or the built-in speaker.
- ◆ Subcode functions include PNOs (Program Numbers) and Start IDs
- ◆ Comprehensive illuminated display with transport direction tallies, timecode, level and subcode status.
- ◆ Panel lock feature prevents unwanted operation of the transport and false triggering of keys out in the field.
- ◆ Operates for two hours on a single NP-1B battery. Can also be powered by a power belt or optional AD-15 AC adapter.



## D-5

### *Affordable Full-Featured DAT Recorder*

*An affordable full featured DAT recorder, the D-5 features balanced XLR analog I/O and AES/EBU digital I/O, three selectable sampling rates, and +4 or -10dBu compatible*

*analog inputs. It also offers a unique jog/shuttle function that makes audible cue and review of a tape a snap.*

- ◆ Supports 16-bit recording at 48, 44.1 kHz sampling rates and 12-bit/32kHz in Long Play mode. Long Play doubles the amount of recording time available on tape for long recording sessions.
- ◆ 3x and 5x speed audible CUE/Review in playback, 300x search speed (under 60 seconds for a 120 minute tape) and Automatic Index search for locating Start ID's.
- ◆ Auto recording of Start-IDs and Program-Numbers (PNOs)
- ◆ Margin display with reset key, numerically references the highest input level in dB, aiding in setting optimum input levels.
- ◆ Recognizes CD-Q codes (track numbers) via the S/PDIF input. This ensures accurate Program Number (PNO) encoding when digitally recording from CD.
- ◆ SCMS free recording allows unlimited duplication of DAT tapes
- ◆ AES/EBU and optical S/PDIF digital I/O as well as XLR-balanced analog I/O. Inputs are switchable between +4dB and -10 dB.
- ◆ GPI input for external transport control, ID search and fader starts.
- ◆ 1/4" headphone jack with level control



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## D15/D15TC/D15TCR

### Professional Timecode DAT Recorders

A very affordable timecode-capable DAT recorders, the D-15 series offers XLR-balanced analog and AES/EBU digital I/O, jog/shuttle wheel and instant start capabilities, essential for professional audio applications. A 4-motor transport ensures rock solid performance as well. Upgradable or available with the ability to read and output timecode (D-15TC) at any frame rate or RS-422 machine control (D-15TCR).



#### FEATURES

- ◆ Supports 16-bit recording and playback at 44.1 and 48kHz sample rates.
- ◆ 18-bit, 64X oversampling A-D and 20-bit, 8X oversampling D-A converters
- ◆ Efficient 4-motor transport (2-DD) for stable performance and reliability. Up to 200x search speeds
- ◆ Jog/Shuttle allows you to audibly cue or review tape at 1/2 to 2x speed in jog mode and 1/2 to 15x in shuttle mode.
- ◆ Input reference levels can be set to -12, -18 or -20dB. Default setting is -12dB.
- ◆ Instant start without pre-loading into RAM or you can use the 10 second RAM buffer for locating specific start points.
- ◆ 100 locate points can be stored in memory for editing complex tapes.
- ◆ Auto Record when used in conjunction with memory locate points 00 and 01 allows punch-in/ out recording with a 5 second pre-roll. Locate points can be rehearsed before executing the punch.
- ◆ Skip ID mode allows three selectable options; stop, play or off.
- ◆ Auto Cue mode enables automatic recording of Start-IDs and PNOs. Auto Cue mode is executed when the initial sound threshold level is exceeded. Cue levels are settable to -55, -40, -30 or -20dB.
- ◆ Analog and digital inputs can be made active without engaging transports.
- ◆ Individual front panel trim pots for reference level calibrating. Allows control of input levels in  $\pm 2$ dB increments.
- ◆ Level trim controls adjust the balanced and unbalanced analog outputs.
- ◆ Front panel lockout function.

#### Comprehensive Displays

- ◆ Displays time, date, program number, level meter, margin level in 0.1dB steps, absolute time, CH-1 and CH-2 level and error rate.
- ◆ Preset display indicates status of ID mode, TOC, emphasis, sample rate, reference level, chase lock (TC, TCR versions only), PCM error and PCM mute.
- ◆ Peak reading digital bargraphs with 5 settings, can be held for closer viewing.

#### Inputs/Outputs

- ◆ XLR balanced and RCA unbalanced I/O
- ◆ XLR balanced AES/EBU and optical S/PDIF digital I/O
- ◆ 37-pin interface for external control of transport functions, RAM scrubbing and ID writing/searching.
- ◆ GPI input and output for control of the transport functions and RAM scrubbing
- ◆ Headphone output with level control

### D-15TC and D-15TCR

*Intended for professionals who need to sync to video sources, the D-15 when outfitted with the optional timecode expansion card is the lowest price professional timecode capable DAT recorder available. The D-15 has two expansion slots in the rear. The 8335 External Sync card can be installed for video reference facilitating striping of the tape with externally generated timecode and output of LTC or Absolute Time (ABS). Absolute Time can also be converted to LTC giving you the option of referencing externally to Video or World clock.*

*The second expansion slot may be used for the addition of the 8336 RS-422 protocol Serial Card (with the exception of vari-speed command). The 8336 board allows you to have your controllers shuttle the machine to desired locations. (Note, the 8336 must be used in conjunction with the 8335 Sync Card)*

- ◆ Reads, writes and chases externally generated timecode. Can input and output LTC through its XLR or RCA I/O.
- ◆ Supports 24, 25, 29.97 and 30 frames per second (drop and non-drop frame)
- ◆ Timecode can be offset against master machine
- ◆ Can reference to external video or word clock (BNC connectors)
- ◆ 9-pin RS-422 control
- ◆ 8335 option card adds TC capability to standard D-15
- ◆ 8336 option card adds 9-pin RS-422 port to D-15TC

# FOSTEX

## PD-6

RECORDERS

458

### Portable DVD-RAM Location Recorder with Timecode

When Fostex started out to design a successor to their PD-4 portable timecode DAT machine, they had set for themselves no easy task. Having invented both timecode and portable timecode DAT, Fostex location recorders had become, and still are, the most widely used and respected DAT machines for film & television sound production around the world, helping their users win many coveted international awards. That's why they knew it was important to follow the design and philosophy

processes that had made their previous machines the first choice of sound mixing professionals. Namely, to prove the technology in a stationary, stand-alone format and obtain comprehensive and wide-ranging user-feedback. The result of this process is the PD-6. A portable location recorder which offers six audio tracks, timecode-locked DVD-RAM recording plus full-function integrated mixing, industry-standard BWF file format, IEEE1394 interface, pre-record memory buffer and extensive time code facilities—all in a rugged, lightweight and proven design.



#### FEATURES

- ◆ BWF recording file format (interleave 1 file mode) in either 2, 4, 5 and 6 track modes along with simultaneous two file recording modes of 1+5 and 2+4 tracks for guide track audio.
- ◆ UDF (Universal Disc Format) on DVD-RAM allows discs to be mounted and read instantly on both PC and Mac platforms
- ◆ On-board timecode generator with  $\pm 1$ ppm accuracy and built-in backup offers all frame rates including 23.967 and 29.97 plus drop and pull-up/down. Generator can be 24H, Rec Run, Free Run or external complete with jam, while output can be repro or generator derived.
- ◆ BWF files recorded on the PD-6 can also be imported directly into Avid Film Composer (depending on software version) along with information about Scene, Take, Reel Number, Event, etc. being transported and read from the files Metadata. (The Metadata area is user-editable for future expansion).
- ◆ Circle Take to mark files/takes for easy identification leading to quick imports and EDL references
- ◆ Alphanumeric keypad for quick file/take and track naming, EDL manipulation, location, etc. Attach full-size keyboard via USB for easy alphanumeric entry and keyboard shortcuts.
- ◆ Up to 100 cue points per file/take
- ◆ Option of SDII and AIFF file recording modes via software update
- ◆ EDL management built-in to create & edit multiple ALE (Avid Log Exchange) compatible edit decision lists per DVD-RAM.
- ◆ IEEE1394 interface for fast back-up and restore. When interfaced to PC, PD-6 DVD-RAM discs can be mounted on desktop.
- ◆ Pre Record enables PD-6 to constantly buffer up to 10 secs of audio (no more missed takes).
- ◆ 128 x 64 back-lit dot matrix display offers various display modes including alternative level meter resolution indication modes and provides for high visibility with low power consumption.
- ◆ Digital I/O selectable between AES/EBU and S/PDIF has auto input sensing, overriding individual analog inputs as required
- ◆ Auxiliary bus input/output provides for remote camera working and monitoring (e.g. HD cam) and is switchable between +4dBu, -10dBu and -60dBu to cater for most camera manufactures requirements. Provided on industry standard 10-pin Hirose connector.

#### DVD-RAM: REVOLUTIONARY REMOVABLE MEDIA

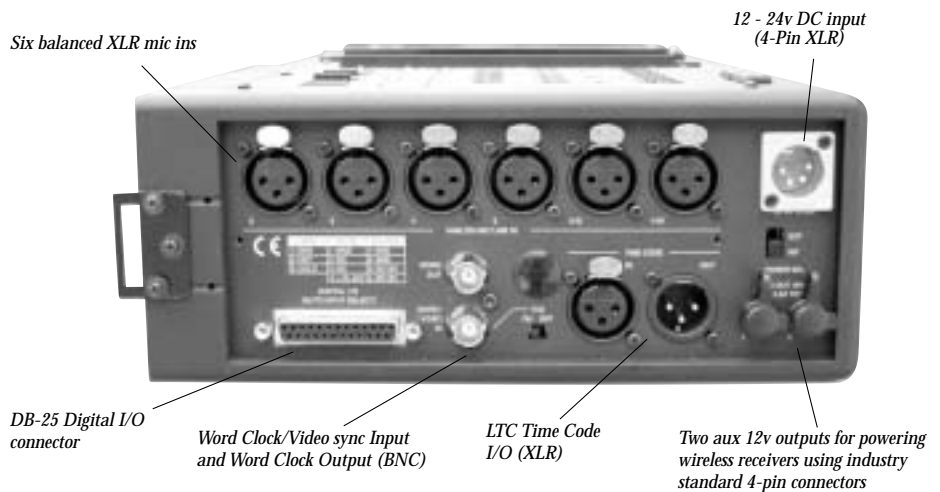
Location recorders need a removable media, it was one of the requests that Fostex heard from the field again and again. Part of the success of the portable timecode DAT format was the fact that at the end of the shoot, the days work was in your hand. Fostex knew that the normal DVD-RAM drives featured in the DV40 were not built for the rigors of location recording and certainly couldn't be hung around the neck! But they've solved it: enter the new 8cm DVD-RAM drive. A drive specially developed for the rigors of portable use. Designed from the ground-up to provide vibration stability, high speed access and most importantly, high reliability. Having performed extensive testing with this drive unit, Fostex based the PD-6 around it. Recording to 8cm DVD-RAM cartridges, each side provides 1.46GB offering, for example, 126 minutes per disc of 4 track recording at 48KHz/16-bit.



- ◆ Slate mic and tone generator on-board
- ◆ Flexible monitoring through headphones and/or built in speaker & amplifier. All track combinations can be monitored post-disc either individually or in summed mono and stereo modes. MS monitoring as standard. Aux return and stereo bus live monitoring is provided plus individual channel PFL. All accessed through just two rotary and one toggle switch.
- ◆ External power supply input works within 12-24v range for greater flexibility (use the optional AD-15B AC power supply).
- ◆ NP-1 type battery provides approximately 2 hours of operation
- ◆ Two auxiliary 12-volt outputs on standard Hirose 4-pin connectors provide power for radio mic receivers, etc. to allow for truly self-contained operation on location
- ◆ External word & video sync inputs (auto selection) and word output plus parallel remote connector
- ◆ Optional AATON connector complies with ASCII & LTC I/O specifications for external loggers, synchronizes, etc.
- ◆ Automated file/take naming routine speeds set-up time between takes complying to US and Euro standards. Individual track naming rolls through to next file/take until changed by user, if required
- ◆ Comprehensive software selectable UBIT output format combinations including Scene, Take, Event no., etc.
- ◆ Propriety expansion connector allows the PD-6 to dock with Fostex rack-mounting full-size DVD-RAM & power supply unit for extended recording time on location.
- ◆ An optional back-up hard drive is available to mirror the PD-6's main DVD-RAM drive.

### Applications

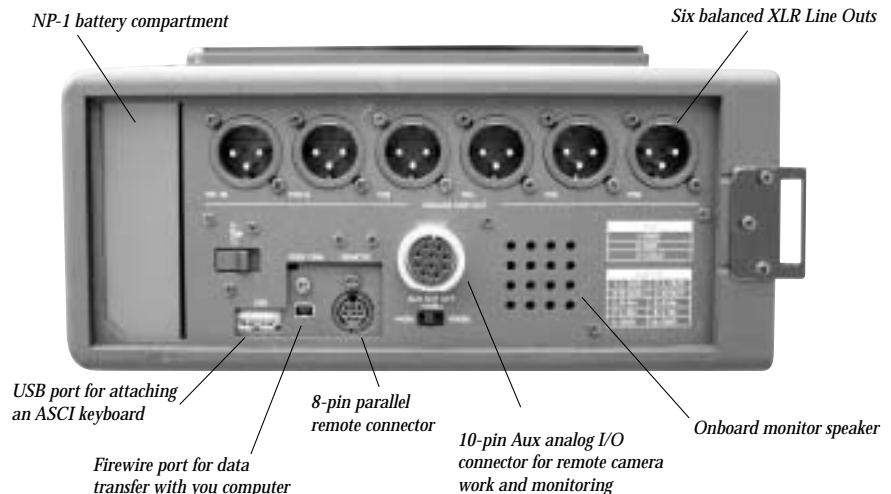
- Post Production, Archiving, Logging
- Stereo mixdown, Final Master sequencing
- Field Dialog and Music recording
- Live concert recording
- Broadcast playback
- Theme Park playback
- ADR (Automatic Dialog Replacement)
- Commercial background music source



### Full-Featured On-Board Mixer

The six channel mixer accepts either microphone level, with both 12v T-Power and 48v phantom power, or line level. Phase reverse is provided on the three even channels while each channel features adjustable input gain; a generous defeatable and variable high pass filter; and a digital limiter with user adjustable characterizes via software.

The most ingenious part of the mixer however is the routing capability: working in conjunction with each channel's level control mounted on the face of the PD-6, the 'Disc Feed' switch allows the recording section of the machine to derive its audio 'feed' PRE the channel level control, meaning levels are set once with the earlier trim pot, leaving the front level controls for bus mixing; POST of the channel level control providing for regular level adjustment on the easily-accessible controls; or from the Stereo Bus, routed by the PAN switch providing not only simple stereo mixing of all six channels, but also by using a combination of the modes, parallel mix (guide) tracks can be made while recording of either five tracks (mono guide track) or four tracks (stereo guide track) Fostex calls these "1+5" and "2+4" recording modes as separate BWF files are created. Additional features such as PFL monitoring and peak led indication on each channel complete this very flexible mixer.



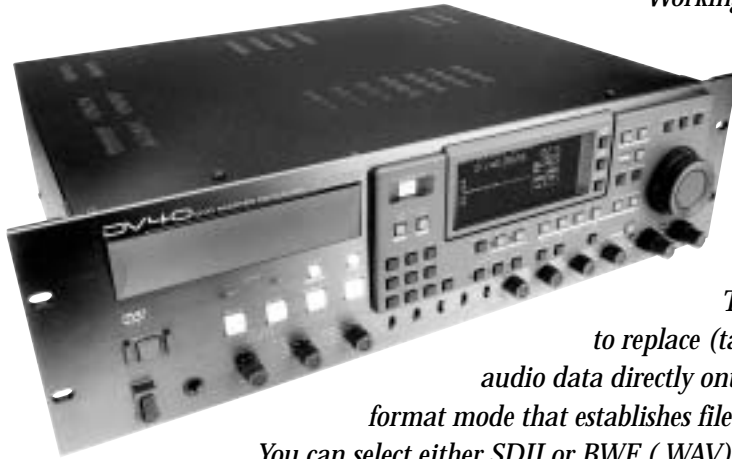
# FOSTEX

## DV40

RECORDERS

460

### DVD-RAM Master Recorder



*Working hand-in-hand with post production facilities, sound mixers, broadcast professionals and recording houses, Fostex have developed a mastering machine ready to handle every application and exception in today's, and tomorrow's, constantly changing and challenging audio environments. In short, you can now move from Timecode DAT to 'Timecode DVD-RAM' with supreme confidence.*

*The future of post production recording, the DV40 is designed to replace (tape) DAT technology in a mastering format by recording audio data directly onto a DVD-RAM disc. The DV40 employs the UDF file format mode that establishes file compatibility between computer-based work stations.*

*You can select either SDII or BWF (.WAV) as the desired audio format and either 24-bit or 16-bit resolution. This means you can take your media out of a DV40 and load it right into a Pro Tool based computer editing system without doing any file format conversion.*

#### FEATURES

##### DVD-RAM Recording Format

- ◆ The successor to DAT tape, DVD-RAM has already established itself as the film industry's preferred media format due to its built-in error correction and longevity. This security is enhanced by the use of 'Verify/Write' technology which constantly examines the recorded data being stored on DVD-RAM, in real-time, for total error-free recording.
- ◆ To ensure the widest range of compatibility throughout the industry and maximizing the DVD-RAM technology, the DV40 can record up to four channels of simultaneous audio in a vast number of permutations.
- ◆ Offers two recording modes: New File and Insert. The Insert mode offers Time Jump UNDO functions supported by time and date. In Tape mode (destructive mode) data security for accidental power loss is secured up to the point where the power loss occurred. For back up and archiving a Disc duplicate mode is available by installing an optional hard drive, while Audio file duplicate modes are possible on board.
- ◆ DVD RAM incorporates Defect Sector Management to prevent data being recorded to defective sectors on a disc. DVD-RAM also offers extensive error code correction with more resolution than DVD-R/RW.

##### Universal Disc Format

- ◆ As the DV40 employs a UDF (Universal Disc Format) file layout, its DVD-RAM media can be removed, (or accessed via the house media network), and instantly read by Mac and PC workstations running a variety of operating systems. This can be a huge time saver as it alleviates the costly process of having to convert audio data through third-party programs beforehand.
- ◆ DV40 discs be read by any operating system (Windows, Mac, Linux, etc.) which makes it easy to transfer audio files to and from the DV40 for external editing.
- ◆ Records in industry standard SDII (Sound Designer II) or BWF (Broadcast .wav File) formats (more in development). Both formats can exist together on the same DVD-RAM disc and have been enhanced by the ability to include Fostex User Bit (UBIT) information in the file format.
- ◆ DV40 files can be set-up as 4-track (Multi), stereo or mono files in 24- or 16-bit resolution with a vast choice of sampling frequencies: 44.1, 48, 88.2, 96, 176.4 and 192kHz. A 0.1% pull up/pull down can also be applied to the selected frequency. (Optional HD installation required for 88.2 & 96kHz/4-track and 176.4 & 196kHz recording.

##### Editing

- ◆ Once files have been recorded or imported, they can be processed with built-in non-destructive editing functions such as Copy, Paste, Insert, Cut and Erase with a virtually unlimited number of Undos.
- ◆ Editing functions are made easy with the combination of a high precision tracking jog/shuttle wheel and a clear and concise FL display. The large high-resolution (200 pulses per rotate) jog/shuttle dial and clever digital tracking technology result in incredible analog audio scrubbing.
- ◆ File backup and duplication functions are also provided, either to the same DVD-RAM disc, or via the fitment of an optional internal hard disc drive.
- ◆ The DV40 offers internal file conversion between four-track or stereo files and multi-track mono files. File editing modes offer non-destructive edit functions such as Copy, Paste, Insert, Cut and Erase.
- ◆ Editing can also be enhanced with the installation of the optional VGA I/F graphics card. The plug-in card enables easy file management and waveform editing via an external VGA monitor. There is also a back panel port to interface to an ASCII 2 keyboard for inputting file names, TC locations, etc.



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### Superb Audio

- ◆ Delivers superbly transparent, natural sounding audio recording and playback. It produces up to 110dB of clear, quality audio with an incredibly wide 20Hz - 80kHz frequency range.
- ◆ The recording reference level can be set in software to -12dB, -18dB or -20dB with fine recording level adjustment on each channel ensuring a good match with the incoming audio feed.

### User-Friendly Ergonomics

- ◆ The DV40 offers the most user-friendly interface ever seen on a professional recorder. The clear and concise front panel features a large multi-function fluorescent display, oversized illuminated transport keys, a large high-resolution (200 pulses per rotate) jog/shuttle dial and the kind of logical button and switch layout which makes any new user feel instantly at home.
- ◆ For example, cue point store and recall functions are based on the BWF format. Direct location of internal memory points and other locate functions such as Last Record Start/End points and Last Play Start point can easily be accessed via simple key presses.
- ◆ A front-panel alphanumeric keypad makes for quick and simple file naming (up to 255 characters) and direct timecode entry, etc. while the added advantage of being able to add a standard PS/2 keyboard and pointing device<sup>4</sup> via front-mounted sockets will be appreciated in busy edit suites.
- ◆ In addition to UDF PD-6/DV40 files, DV40 can also read files created on other manufacturers recorders in FAT16, BWF Interleaved format complete with timecode information.

### Optional Accessories

**5050 2-CH:** With the optional 5050 2-CH (6-channel playback kit), the DV40 can read the 6 track files created by the PD-6, simply by putting the disc in the DV40's tray. (A software update is provided allowing the meters to be switched between all six channels.

**VGA:** VGA video output option

**HD OPTION:** Internal hard drive kit

### Timecode

If the audio quality and editing facilities offered by the DV is spectacular, it's the implementation of the timecode facilities which really sets the DV40 apart. Here is a machine which elegantly addresses the challenges presented by today's 'random access' requirements. And it is here that Fostex's expertise from a lifetime in timecode DAT design for post production facilities to sound mixers through machines such as the D-20, D-10 and portable PD-4, really comes into its own.

- ◆ Includes all the standard clock references of word and video and has the ability to resolve to incoming timecode and finish with a regenerated video sync output. That means the DV40 not only reads timecode and syncs to any external sync reference, but will also generate and regenerate timecode in all the industry standard formats.
- ◆ Built-in timecode generator will generate, regenerate and externally synchronize via 24 hour run, record run, free run and external run modes at all standard frame rates including the 23.97 HD camera mode.
- ◆ Timecode formats and LTC offset can be individually set for each new file and being able to switch between timecode and audio formats (with pull-up and pull down), helps solve tricky standard problems which can occur when using high-definition video.
- ◆ Offsets can be captured and adjusted on the fly while the display can be scrolled to indicate generator timecode, absolute time, disc timecode, external timecode and remaining time all with simple key presses. Plus with 1/3rd to 100x play speed, the reader will always keep up with external equipment.

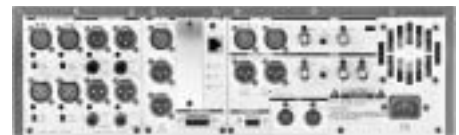
### DVD RAM offers some outstanding features over the other DVD technology families:

- Can store data safely for 30 years.
- DVD-RAM discs can be played without their cartridge if desired. The Cartridge provides an extra layer of protection and also stabilizes the disc in DVD-RAM drives.
- You can have upwards of 100,000 record and erase cycles on a DVD-RAM disc
- Uses redundant addressing and timing information, making the chance of losing data, rare.
- DVD RAM offers the Wobble Land and Groove recording format. This improves clocking and the actual writing (deep burning) of the data.

### Interfacing Capabilities

The DV40 features an incredibly comprehensive set of analog and digital I/O interfaces on the rear panel—as one would expect from a machine of this caliber.

- ◆ Each of the four audio channels feature balanced XLR inputs individually switchable between +4dBu and -10dBV and the highest quality 24-bit/192kHz AD converters.
- ◆ The outputs are provided on both balanced XLR again with 24-bit/192kHz DA converters as well as 1/4" unbalanced phone jacks for easy monitoring hook-up.
- ◆ Digital input and output for all four channels via the AES/EBU format (doubling up for 176.4/192kHz) on XLR connectors.
- ◆ Flexible headphone monitoring is provided on the front panel with switchable source selection for Track 1+2, Track 3+4, Track 1+3/2+4 and each track individually.
- ◆ Interoperability and system integration is taken care of via 9 and 15 pin RS-422 connectors, the latter also providing a 12V 400mA power source for future remote control applications. Both interfaces comply with the 9-pin protocol for VCR emulation and Fostex's own extended instruction set.
- ◆ The standard complement of timecode, video sync and word clock inputs and outputs are via BNC style connectors.
- ◆ 10Base-T/100-BaseTX Ethernet (RJ-45) port and a firmware-selectable GPI for remote control, fader starts and S-ID location rounds off the interface capabilities. The ethernet port allows the DV40 to transfer files via FTP in the media network.





# DENON

## DN-M991R • DN-M991RM

RECORDERS

462

### Continuous Duty MD Cart Player/Recorders

The DN-M991R and DN-M991RM are sleek MiniDisk decks that slide into the same 1/3- rack space as the professional Denon CD and cart decks, even using the same audio and remote connections. Ideal for broadcasting, features include 10-track hot start function, a buffer to prevent skipping and  $\pm 8\%$  pitch control. They also have a pre-UTOC system that prevents loss of data in case of power failure, and they can be set to start a second deck while recording if the first disk becomes full. Identical in every respect, the DN-M991RM adds five on-air and production features; Visual E.O.M. record and mode lock out, five-minute skip search, high-speed title scroll and long title text.



### FEATURES

#### Record Functions

- ◆ Record 74 min stereo, 148 min mono
- ◆ Record up to five cue points per track.
- ◆ Relay recording allows continuous recording to another DNM991R
- ◆ SCMS on/off
- ◆ In Auto Level Record function, they automatically start recording when an audio signal from a connected unit exceeds the preset level (-36 to -66dB, 6 steps).
- ◆ Denon's pre UTOC system is capable of detecting a power failure during recording and can play back the portion that was recorded immediately prior to the failure.

#### Editing Functions

- ◆ Basic editing functions include: Divide, Erase, Combine, Move, Track and Disc Name. Cue signals can also be edited (erased, rewritten, or added to later). There are two levels of undo and redo

#### Playback Functions

- ◆ Rotary track selector knob
- ◆ Next track reserve; allows a seamless transfer to your next selected track
- ◆  $\pm 8\%$  pitch control in 0.1 steps
- ◆ Fader start when connected to a mixer via its 25-pin parallel remote terminal.
- ◆ Play modes include single, continuous and Program (up to 25 tracks). Finish modes include Stop, Next, Rescue and Repeat.
- ◆ Cue search (up to 5 cue points per track)
- ◆ Auto Cue pauses where audio starts, not where the track starts. (Levels can be set between -36 and -72dB or turned off).
- ◆ END MON lets you instantly preview the end of the track, to ensure perfect "outs". Monitoring starts can be set within a range of 5 to 35 seconds in 7 steps).
- ◆ End of Message (EOM) flashes at the end of a track. Warnings can be set within a range of 5 to 35 seconds in 7 steps).

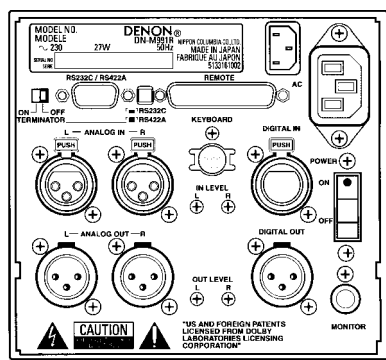
#### Hot Start Functions

- ◆ Up to 10 tracks or cue points can be instantly played on demand. Ideal for sound effects, commercial spots or music.
- ◆ Tracks can be loaded into Hot Start by detecting the Auto Cue Level (selectable -72, -66, -60, -54, -48, -42 and -36 dB)
- ◆ Sound can be loaded into Hot Start from any track location.
- ◆ Loaded tracks can be replaced with new tracks.
- ◆ Seamless Loop can be used during Hot Start playback.
- ◆ Hot Start operation is possible using parallel remote, serial remote or a keyboard

#### Additional Features

- ◆ Sampling rate converter allows digital inputs of 32 and 48 kHz as well as 44.1 kHz.
- ◆ Automatic or manual track increment. In auto, they detect the silent portion of the program material and automatically increase the track number. Silent portion can be set within -36 to -66dB in 6 steps.
- ◆ Playback, recording, program input, editing and Hot Start via an optional keyboard.
- ◆ Slim chassis, 3 units fit in a 19" rack shelf

#### Inputs/Outputs



- ◆ Stereo or mono output
- ◆ Balanced XLR input/outputs (adjustable)
- ◆ AES/EBU digital input/output
- ◆ Switchable RS-232/422 serial port
- ◆ 1/4" headphone output
- ◆ Optional RC-650 wired remote control

#### DN-M991RM Step-Up Features

- Displays a visual end of message (EOM) allowing messages of next track cue, phrase cue, etc.
- Airlock prevents accidental recording even if the lockout tab on the disc is left enabled
- 5 minute Skip Search through long single track field recordings save editing time
- High speed title scroll for quick track and disc name recognition
- Long Name Text/Rescroll lets you leave the important part of the track name on the display for visual reinforcement. Also allows for easy rescrolling of disc and track names.



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### Professional MiniDisc Recorder

The DN-M1050R is a rackmountable MiniDisc recorder designed for all professional applications. Engineered for studio and broadcast environments, it includes a comprehensive list of editing functions and can be controlled by an external keyboard. Cue signals can be recorded (up to five points per track) at desired points on a disc for quick referencing. A cue tally signal is output from the parallel port at cue signals during playback and can be used to control other devices. Also, A-B sections can be erased or inserted at any point within a track. An optional Hot Start card allows up to 20 tracks to be loaded into memory locations for instant playback at the touch of a key on a parallel remote, serial remote or external keyboard. And an optional SMPTE card provides sync capability with VCR controllers—ideal for post-production applications mixing video with audio.



#### FEATURES

##### Record Functions

- ◆ Record 74min stereo, 148 min mono
- ◆ SCMS on/off
- ◆ Record up to five cue points per track.
- ◆ Auto Level Record function automatically starts recording when an audio signal from a connected unit exceeds the preset level (-36 to -72dB, 7 steps).
- ◆ Automatic track increment detects the silent portion of the program material and adds a new track with adjustable level sensitivity.
- ◆ U-TOC (User Table Of Contents) recording is selectable (Auto or Manual).

##### Playback Functions

- ◆ Instant start—playback starts less than 0.01 seconds after play button is pressed
- ◆ Play modes include single, continuous and Program (up to 25 tracks). Finish modes include Stop, Next, Rescue and Repeat.
- ◆ Cue search (up to 5 cue points per track)
- ◆ ±9.9% pitch control in 0.1 steps
- ◆ Auto Cue pauses where audio starts, not where the track starts. (Levels can be set between -36 and -72dB or turned off).
- ◆ END MON lets you instantly preview the end of the track, to ensure perfect “outros”. Monitoring starts can be set within a range of 5 to 35 seconds in 7 steps).
- ◆ End of Message (EOM) flashes at the end of a track. Warnings can be set within a range of 0 to 35 seconds in 7 steps).

The DN-M1050R makes a perfect match when combined with the DN-C680 CD Player. Since its basic design is the same as the DN-C680, the DN-M1050R lends easily to the construction of a uniform operating environment.

##### Additional Features

- ◆ Basic editing functions include: Divide, Erase, Combine, Move, Track and Disc Name. Cue signals can also be edited (erased, rewritten, or added to later). There are two levels of undo and redo.
- ◆ Playback/record, program input, editing and Hot Start via an optional keyboard.
- ◆ Jog/shuttle dial for fast scans and frame accurate searches

##### Inputs/Outputs

- ◆ Unbalanced RCA inputs/outputs
- ◆ Balanced XLR inputs/outputs (adjustable)
- ◆ S/PDIF coaxial digital input/output
- ◆ AES/EBU digital input/output
- ◆ Switchable RS-232/422 serial port
- ◆ 25-pin parallel remote
- ◆ 1/4" headphone output with level control

##### Optional Cards

###### ACD-26HM Hot Start Kit

- ◆ Up to 10 tracks or cue points can be instantly played on demand. Ideal for sound effects, commercial spots or music.
- ◆ Tracks can be loaded into Hot Start by detecting the Auto Cue Level (selectable -72, -66, -60, -54, -48, -42 and -36 dB )
- ◆ Sound can be loaded into Hot Start from any track location
- ◆ Loaded tracks can be replaced with new tracks
- ◆ Seamless Loop can be used during Hot Start playback
- ◆ Hot Start operation is possible using parallel remote, serial remote or a keyboard

###### ACD-25FSM Sampling Rate Converter

- ◆ Digital input and output is possible at 32 and 48 kHz as well as 44.1 kHz

###### ACD-27MS SMPTE Time Code Sync Unit

- ◆ Conforms to LTC time code format
- ◆ Time Code chase search
- ◆ Video Sync or Word Sync is selectable in preset mode
- ◆ Word Sync signal supports 44.1 kHz

# DENON

## DN-780R

### *Twin Output Auto-Reverse Cassette Deck Recorder*

With its dual auto reverse decks, the DN-780R excels at a variety of dubbing and continuous playback applications. Each deck features amorphous heads, non-slip reel drive, Dolby B/C noise reduction and 12% pitch control. Extremely versatile, the DN-780R's twin output design makes a host of configurations possible, while an Auto-Standby mode ensures you never miss a second recording when cassettes reverse direction or when recording moves from deck A to deck B. Housed in a standard 19", 3RU chassis with an aluminum front panel.



#### FEATURES

- ◆ Quick Auto Reverse and non-slip reel drive components and permalloy heads
- ◆ Simultaneous recording on both decks
- ◆ Normal and double speed dubbing modes
- ◆ Independent return-to-zero, precision music search, tape counters,  $\pm 12\%$  pitch control, auto tape selector, and fluorescent peak hold level meters for each deck
- ◆ Dolby B and C noise reduction system, Dolby HX Pro headroom extension
- ◆ An MPX filter eliminates the 19kHz pilot tone present in FM broadcast sources

#### *Inputs and Outputs*

- ◆ Unbalanced RCA I/O for each deck
- ◆ Two unbalanced 1/4" mic inputs on the front panel, with switchable Manual/Auto Gain Control, can be monitored with or without recording to tape
- ◆ Headphone output with selectable Deck A, Deck B, or Mix monitoring

#### *Continuous Record and Playback Functions*

- ◆ Independent dual deck functionality, coupled with twin inputs and outputs, allows for advanced playback and recording capabilities including:
  - > Playback or record of two separate signals at the same time;
  - > Playback on one deck while recording the same or a separate signal to the other deck;
  - > Use the Relay Play/Record feature to cycle through both sides of deck A and then both sides of deck B for four sides of uninterrupted playback or recording
  - > Multiple DN-780R's connected via the Cascade In/Out terminals provide the ability multi deck relay recording and playback
  - > Multiple synchronized recordings can also be made using one or more DN-780R's

#### *Optional ACD-780 I/O board*

- ◆ Provides independent XLR inputs and outputs for each deck
- ◆ Separate Input Select switches per deck facilitate selection between balanced and unbalanced XLR inputs
- ◆ A Mono Output switch gives you the option of +18dBu (CD) and +4dBu (Tape) mono output from the unit's Left channels or -10dBu mono output (CD and Tape) from the unit's Right channels

#### *Remote Features*

- ◆ Built-in Serial D-Sub 9 pin (RS-232C) connection; Parallel D-Sub 25 pin connection; and Mini TRS connection, support remote Play, Fast Forward, Rewind, Stop, Pause, and Record/Record Mute functions
- ◆ Remote control options include the RC-U620 hand held IR remote, the RC-41 wristwatch IR remote, and the RC-770TW wired remote

## DRW-585P

### *Double Cassette Deck*

The DRW-585 is an attractive and affordable dual-well, high-speed dubbing cassette recorder. It offers many convenience features that also enhance the performance. While only one transport is capable of recording, there are separate counters for both decks, and both are equipped with Dolby B and C noise reduction as well as HX-Pro to improve playback. Loaded with playback options, the DRW-585 has a replay button that, when activated, plays through both sides of the A deck, then automatically plays the B deck.

Normal and double-speed recordings benefit from a manual bias adjustment that lets you set the bias according to your own preferences. Both transports are backlit so it is easy to see how much tape is remaining, or when you're passed the leader tape at the beginning of a recording.



## DN-T625/DN-T645

### CD/Cassette Combo Decks

The DN-T625 and DN-T645 are professional combo decks that combine the functionality of a single well of the DN-T820R advanced quick auto reverse cassette deck with a Compact disc player that offers direct track access and 10 second shock memory. The CD player on both units are capable of CD and CD-R(W) playback with the DN-T645 adding the capability of MP3 playback. Both units feature a wide range of flexible I/O including unbalanced (RCA) and balanced XLR I/O as standard along with coaxial SPDIF digital output multiple external control options including RS-232C control that allows the units to be controlled by remote systems such as AMX and Crestron.



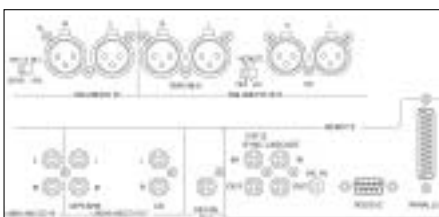
### FEATURES

#### General Features

- ◆ Duplicates CD to cassette internally
- ◆ Cascade In/Out terminal set can be used to link several units together for extended continuous play
- ◆ Relay Playback function for continuous play between the CD and cassette decks

#### Both CD Players Feature

- ◆ Playback support for CD-R/RW discs
- ◆ Instant start / Cue to music; Stop, Next and Recue finish modes; Next Tr Reserve mode
- ◆  $\pm 12\%$  Pitch control in 0.1 steps
- ◆ Single and Continuous playback modes, and Program Play (up to 99 tracks)
- ◆ 3 repeat modes (Single Track, All Tracks, A-B) for continuous playback, as well as Random mode playback
- ◆ An 11 key keypad and a rotary knob are provided for direct track access and programmability as well as Frame Search and Back Cue functions
- ◆ Able to display CD encoded text through the use of a highly visible FL tube display
- ◆ 10 second Shockproof memory
- ◆ Adjustable user presets



#### Both Cassette Decks Feature

- ◆ Auto Reverse Full-Logic mechanism featuring a two motor quick reverse mechanism
- ◆  $\pm 12\%$  Pitch control
- ◆ Music search
- ◆ Dolby B and C noise reduction
- ◆ Single or Selectable playback cycles
- ◆ Memory rewind
- ◆ The REC Input source is switchable between internal CD (with CD deck sync recording) and external line input
- ◆ Cueing enhancements such as Memory Rewind (Return To Zero) and an Auto Reverse Full-Logic mechanism featuring a two motor quick reverse mechanism

#### Inputs/Outputs

- ◆ Stereo balanced XLR and unbalanced RCA inputs with selector switch for tape deck
- ◆ Stereo balanced XLR and unbalanced RCA outputs for the CD player
- ◆ Stereo balanced XLR and unbalanced RCA outputs for the the tape deck (switchable as a CD/tape mix output)
- ◆ Coaxial S/PDIF output
- ◆ Headphone output has a level control and source selector switch determines the output signal (CD, tape or mix)
- ◆ XLR Balanced Mono Output switch, which gives the option of +18dBu (CD) and +4dBu (Tape) mono output from the unit's respective Left channels or -10dBu mono output (CD and Tape) from the unit's respective Right channels

#### External Control

- ◆ AMX & Crestron compatible Serial D-Sub 9 pin RS-232C control port
- ◆ Stereo mini hard wire control compatible with Phillips RC5 control
- ◆ Options include the RC-U620 handheld IR remote, the RC-41 wristwatch IR remote, and the RC-620 wired remote

#### Additional Features

- ◆ A Power On Playback function can be used for automatic playback at a specified time when using an external timer
- ◆ Housed in a standard 3R unit with an attractive aluminum front panel with independent FL tube displays for both CD and cassette decks
- ◆ Optional AMC-22 lens cleaner

#### DN-T645 Adds

##### CD Player

- ✦ MP3 Playback
- ✦ MP3 Folder Search by ID3 Tag; File, Title, Artist & Album

##### Cassette Deck

- ✦ Automatic Gain Control recording
- ✦ HX PRO headroom extension
- ✦ Stereo 1/4" TRS Mic inputs

##### External Control

- ✦ RS-422A
- ✦ DB 25 Parallel

# DENON

## DN-C635

### Industrial CD/MP3 Player

An affordable CD player with an amazing feature set, the DN-C635 is equipped to take on the most demanding tasks in broadcast, DJ, production or installation applications. MP-3 capability, proprietary

Super Linear Converter with 18-bit, 8x oversampling digital filter prevents left/right timing errors and zero cross distortion. Three customizable presets allow you to store over 25 of the DN-C635's functions for instant recall. Balanced-XLR and unbalanced RCA line outs as well as a coaxial digital output get you connected, while the large, easy to read fluorescent display will keep you on top of transport status and the multiple programming functions.



#### FEATURES

- ◆ 18-bit digital filter with 8X oversampling offers clear, crisp sound.
- ◆ Index Search, A-B repeat
- ◆ Instant start (within 0.01 sec from PLAY)
- ◆ Search accurate to one frame (1 frame = 1/75th sec.)
- ◆ MP3 playback (folder, artist, album, title)
- ◆  $\pm 12\%$  playback speed including MP3
- ◆ Auto Cue pauses a track where audio starts not where the track starts. The level at which sound is first detected can be set between -36 and -72 dB in 7 steps or off
- ◆ Three program modes (up to 25 tracks) and two power-on playback modes
- ◆ Play modes include continuous (whole disc) or single (track). Finish modes included Stop (after playing a track or disc), Next (standby at the beginning of the next track) and Recue (standby at the beginning of the same track)
- ◆ Rotary Track Select Knob allows easy track selection by 1x or 10x normal speed
- ◆  $\pm 9.9\%$  long stroke variable speed (pitch) fader is adjustable in 0.1% increments. Speed can also be adjusted  $\pm 3\%$  in increments of 0.2% using a preset function.
- ◆ A bar graph display indicates playback points on the track being played. Elapsed time and remaining time displays are switched using the TIME button.
- ◆ End Monitor lets you instantly preview the end of the track, assuring a perfect "end point". Monitoring can be set from 5 to 35 seconds in 7 steps prior to track end.

- ◆ Sleep function stops the player if there isn't an entry for 30 minutes
- ◆ As a track nears the end, an EOM (End of Message) is displayed. When the warning begins can be set from 0 to 60 seconds in seven steps prior to the end of the track.
- ◆ 'Next Track Reserve' lets you select and reserve the next track to be played back. When the current track finishes, the unit plays back the reserved track.

#### Inputs/Outputs

- ◆ Unbalanced (RCA) and adjustable XLR balanced stereo line output. Also offers level controls for L & R balanced outputs on the back panel.
- ◆ Digital coaxial (RCA) output
- ◆ Stereo headphone jack with volume control
- ◆ 9-pin serial and 25-pin parallel connectors allows fader start operation from a mixer

### DCM-280 5-Disc Carousel CD Changer

The DCM-280 is a very affordable CD changer that allows you to change four discs while one is playing. To ensure high quality, the DCM-280 is equipped with a Digital servo laser mechanism, 8x oversampling digital filter and multi-level DAC ensure high quality. Has a headphone jack and includes an infra-red remote control and rackmount kit (3RU high).



- 20-Selection Music Calendar Display
- 3-mode random playback (Full, Program and Disc Sequential Random)
- Combine up to 32 tracks from the five or fewer CDs which are loaded.
- Disc Skip button can rotate the carousel tray clockwise or counter-clockwise when searching for a disc. (Counter-clockwise rotation is operable only by remote controller.)
- Large, Easy-to-use-read FL Display
- 8x oversampling digital filter makes possible an extraordinary degree of attenuation and reduces frequency irregularities in the audio range to an absolute minimum.
- Advanced Multi-level Noise Shaping DAC removes jitter, and because it is built into the output amp, a clean analog output with suppressed high-frequency interference can be directly obtained.

### Industrial CD Player

The DN-C680 represents the best in CD technology developed by Denon for studio and broadcast production applications. A step up from the DN-C630, the DN-C680 adds Auto Edit and Auto Space functions, jog/shuttle dial and switchable RS-232 or RS-422 control (as well as parallel remote control). A sampling rate converter and SMPTE time code sync unit are also available as options. The DN-C680 also makes a perfect match when combined with the DN-M1050R MiniDisc recorder. Since its basic design is the same as the DN-M1050R, the DN-C680 lends easily to the formation of a uniform operating environment.



#### Same as the DN-C630 PLUS—

- ◆ Large fluorescent display and illuminated rubber buttons
- ◆ Jog/shuttle for frame accurate searches and fast, easy scans
- ◆ When recording CD to tape, the Auto Edit function automatically divides the total recorded time on the disc in half and rearranges the tracks so that they fit neatly onto the A and B sides of the cassette.
- ◆ Switchable 9-pin RS-232/RS-422 serial remote for external control
- ◆ Auto Space function provides 4 seconds of silent space between tracks

#### Optional Accessories

**ACD-25FSC Sampling Rate Converter—**  
converts digital output to 32 kHz or 48 kHz as well as outputting 44.1 kHz.

**ACD-27CS SMPTE Time Code Kit—**  
Conforms to LTC format, Time Code Chase Search, selectable Video Sync or Word Sync



## DN-C615

### Industrial CD/MP3 Player

The DN-C615 is a heavy duty, rackmountable single CD player with MP3 capability,  $\pm 12\%$  pitch control, repeat functions, 4-second auto spacing, Auto Edit, and timer play. Ideal for aerobics and dance lessons, it can also be operated remotely via the optional RC-41 Wristworn Remote Control.

- ◆ 20-bit digital filter with 8x oversampling and noise shaper offer clear, crisp sound.
- ◆ MP3 Folder Search; File, Title, Artist & Album
- ◆ Pitch Control ( $\pm 12\%$ , 0.1% step)
- ◆ Auto space function provides 4 seconds of silent space between tracks
- ◆ Direct track selection via 11 numerical keys on the front panel
- ◆ Program Play (20 tracks), 20-track music calendar display
- ◆ When the DN-C615 powers up, it automatically plays the first track of a disc
- ◆ When recording CD to tape, the Auto Edit function automatically divides the total recorded time on the disc in half and rearranges the tracks so that they fit neatly onto the A and B sides of the cassette.
- ◆ Repeat function includes the entire disc or programmed selections
- ◆ A-B repeat function lets you repeat the designated starting (A) and ending point (B). Once you set the repeat phrase via the front panel, you can control Play/Pause with the optional RC-41 wristwatch.
- ◆ Time Counter - elapsed/remaining/total
- ◆ Unbalanced stereo output (RCA)
- ◆ Digital coaxial output
- ◆ Headphone output - fixed level
- ◆ 19" rack mountable (2RU)

### RC-41

#### Wristwatch Remote Controller

The optional RC-41 "Wristwatch" Remote Control is designed for aerobics instruction, dance lessons and other activities where the instructor needs remote control but can't use a conventional wired remote. Operates seven commonly-used functions: Play, Pause, Pitch  $\pm$ , Cancel Varied Pitch, Next Track and Previous Track.



# DENON

## DN-951FA/DN-961FA

RECORDERS

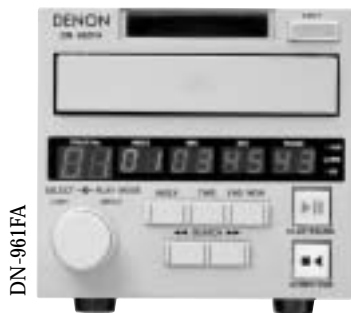
468

### Professional Cart/Tray CD Players

The standard for broadcast CD players, the DN-951FA and DN-961FA combine professional grade construction with a full complement of features. Identical except for their tray loading systems, they serve as workhorse CD players in thousands of radio stations and other professional installations around the world. The DN-951FA is the CD Cart version, offering top reliability when the CD media is subject to rough handling (in the DJ booth, control room, etc.) Housed in the secure cart, CDs are protected from mishandling, especially surface scratches. The DN-961FA is the tray loading version, featuring quick load/unload, just like a conventional CD player, the choice wherever the CD media isn't subject to abusive handling.



- ◆ Startup time is .01 second or less. A delay start of .1, .2, or .3 second is available via user preset. Startup via track flag or program material beginning is possible.
- ◆ End Monitor function allows tracks ending to be monitored. End monitor start position can be user-set within a range of 5 to 35 seconds from the end of the track.
- ◆ Displays EOM (End of Message) indicating the track is about to end. Warnings can be set within a range of 5-35 seconds from the end of the track.
- ◆ Up to 28 presets to customize operation.
- ◆ Can read CD-R discs without final TOC, such as multi-session CD-Rs that have not been finalized
- ◆ Play start input connector and delay start function for use with mixing console fader.
- ◆ 9-pin RS-422A serial port for external control plus a 25-pin parallel port for the optional Denon RC-680 remote control.
- ◆ Auto Track Select (DN-951A Only) reads bar code info off the disc caddy for automatic "pick" track selections.



- ◆ A pulse encoder-type rotary selector is used for the track search operation. The tracks can also be selected in units of 10 by pressing the selector while turning it.
- ◆ Auto Cue and Back Cue functions:
  - Auto Cue: Pickup is cued to the position within the track where the sound starts and then paused. The sound detection level can be set from -36 to -72 dB.
  - Back Cue: When standby (STDBY/CUE) button is pressed during playback, the standby mode is set with the pickup at the position where playback was last started.
- ◆ Single and continuous playback modes
- ◆ Variable Pitch (0 to +3% in 0.2 second increments)

## DN-H800

### 5-CD Changer with Tuner

Ideal for installation in bars, restaurants and clubs, the DN-H800 is a professional 5-CD changer with an AM/FM tuner.



Features include RCA analog and balanced XLR outputs for CD and Tuner, CD pitch control ( $\pm 12\%$ , 0.1 steps), 5-way repeat, selectable timer switch operation, Intelligent Disc Scan and the ability to remove CD without interrupting current playback. In addition, the AM/FM/FM Stereo Tuner adds RDS (Radio Data System) functions including PS-program service name, CT-clock time, PTY-program type and TP-traffic program searches.

- ◆ Three way operation: via front panel, optional RC-H800 remote control, wired control terminal on rear panel.
- ◆ Three random playback modes (all disc random play; disc sequential random play or program random play) and 5-way repeat: single track; entire disc; all loaded discs; stored program sequence; random playback
- ◆ Intelligent Disc Scan allows the carousel tray to rotate clockwise or counter-clockwise when searching for a disc.
- ◆ Up to four discs can be exchanged while the fifth disc is playing



For Any Inquiries Regarding Your Order, Call Our Customer Service:  
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# DENON

## DN-C550R

### Professional Dual Drive CD-R/RW Recorder

Now it is easier than ever to create CDs in one, all-inclusive package. A professional, rack-mountable CD and CD-R/RW deck the DN-C550R offers a wealth of playback and recording options. Using a mixer, you can play



back both of the unit's two drives at once, or program tunes from each drive to be played in whatever sequence you choose. Equipped with professional features such as balanced XLR and coaxial S/PDIF inputs (SCMS defeatable), the DN-C550R is the perfect choice for high-quality CD recording.

#### FEATURES

- ◆ The analog XLR inputs feature full 24-bit A/D conversion for highly accurate recordings from analog sources, while the digital inputs use a digital sampling frequency converter to convert 32kHz and 48kHz rates to the CD standard 44.1kHz.
- ◆ Text input feature allows disc and track names to be entered for display on the easy-to-read front panel for instant recognition and simple documentation of discs.
- ◆ The DN-C550R is packed with features allowing its interface with many of the compact disc formats available today:
  - Drive 1 can be used as a dedicated playback deck, accepting both pro and consumer CDs, CD-Rs, and CD-RWs, as well as supporting playback of HDCD encoded discs via the built-in HDCD decoder.
  - Drive 2 functions as either a CD-R/RW recorder, or as a second playback drive same playback functions as Drive 1).
  - Both drives are also PC/data disc compatible, while both analog and digital inputs of Drive 2 are SCMS defeatable.
- ◆ Dubbing can be done in real-time or at 2X speed for fast and seamless duplication (HDCD dubbing compatible).
- ◆ Several different recording modes are also available:
  - Scan Rec Dubbing Mode allows selection of specific tracks for recording, while Disc Dubbing Mode records all information, including HDCD data and user-input text, from one disc to the other.
  - In Synchronized Recording function, recording begins as soon as a signal is seen.
- ◆ A wide variety of playback modes are also incorporated into the DN-C550R.
  - Repeat Mode lets you select one or all tracks from Drive 1 and/or 2 for repetitious playback.
  - The Relay Play Mode gives automatic, continuous play from Drive 1 to Drive 2.
  - Mix Program Play Mode supports programmed playback of one or both discs, and the Mix Random Play Mode plays random selections from Drive 1 and/or 2.
  - Dual Play mode lets you play discs simultaneously in both drives. Since sound can be output independently from each drive, you can connect a mixer to enjoy mixing the sound.
- ◆ Selectable Copying (Dubbing) Mode
  - All Track dubbing: Entire disc or programmed tracks are recorded (manual finalization)
  - Make CD dubbing: Entire disc or programmed tracks recorded (auto finalization)
  - One Track dubbing: Records selected track (manual finalization)
  - Scan Rec dubbing: Tracks selected in Intro Scan are recorded (manual finalization)
- ◆ Selectable Synchro Recording Mode
  - "Disc Sync": Recording is automatically triggered to copy entire disc when the external source player is started.
  - "Make CD": Recording is automatically triggered to copy entire disc when the external source player is started.
  - "1 Tr Sync": Recording is automatically triggered to copy selected single track when the external source player is started.

#### DENON DP-DJ151 ANALOG TURNTABLE

The DP-DJ151 allows you to record directly to CD-R, MiniDisc or hard disk through its exclusive coaxial digital output. The output maintains a constant 16-bit/44.1 kHz signal, regardless of the rotational speed setting. This provides a quick and easy way to archive your vinyl digitally or to capture "samples" for studio remixing.



With the built-in RIAA Phono Equalizer, the DP-DJ151 allows for direct connection to any device that requires a "line level" RCA stereo input, like a cassette deck, sampler or any other audio device that doesn't have a built-in "phono" input.



# TASCAM

## MD-301MKII

### *MiniDisc Recorder*

*An affordable but durable MiniDisc recorder, the MD-301MKII provides maximum flexibility and reliability. Balanced XLR and unbalanced RCA ports offer easy integration with PAs or studios of any level. Digital S/PDIF optical I/O allows digital transfers, while another optical input on the front panel makes it easy to connect portable units without crawling into the back of the rack. For further convenience, there is a front panel keyboard input for easier track naming, offers TOC editing functions and includes a wireless remote control with 10-key for direct track access.*



- ◆ 20-bit A-D and D-A converters and ATRAC v4.5 compression offer top sound quality
- ◆ Play modes include program (up to 25 tracks) and random; Repeat modes include one track, all tracks and A-B repeat.
- ◆ Monitor the input signal of the component connected to each input—before recording.
- ◆ In sync record, the deck starts recording when the input audio exceeds a certain level and pauses when the audio drops below a certain level for 4 seconds or more.
- ◆ When simple recording of long material is required, the MD-301MKII can be flipped to a 148 minute mono recording mode.
- ◆ Overwrite function lets you record music by erasing a previously recorded track
- ◆ Track information (start address, end address, title, etc. ) is recorded in the U-TOC (User Table of Contents) area. Tracks can be edited by simply rewriting the data.
- ◆ Timer function lets you start/stop recording at a preset time (with optional timer)
- ◆ Equipped with balanced XLR and unbalanced RCA inputs and outputs as well as two S/PDIF optical digital inputs and one output. Has a headphone output with level control, and a front panel keyboard input.
- ◆ The front panel PS/2 port allows you to plug in an inexpensive keyboard for easier track naming, TOC (Table of Contents) editing functions and remote control.
- ◆ Includes wireless remote with numeric 10-key and is rackmountable (2RU high)



## MD-350

### *Live MiniDisc Recorder*

*The MD-350 has all the features of the MD-301MKII plus it incorporates advanced performance functions, making it the best value for live venues, houses of worship, or budget conscious broadcasters. The MD-350 incorporates version 3 ATRAC encoding allowing up to 320 minutes of record time on a standard 80 minute MiniDisc, and it offers pitch control with a clear on/off switch on the front panel. Finally, cueing functions like Auto Cue and Auto Ready, as well as a complete complement of analog and digital I/O including a digital optical port on the front, make the MD-350 a must have for any theater or cue playback intensive situation.*

#### **Same features as the MD-301MKII PLUS—**

- ◆ 12% pitch control function with a clear on/off switch on the front panel
- ◆ In LP4 mode, the MD-350 can record and playback for up to 320 minutes on a standard 80-minute Minidisc
- ◆ Auto Cue positions the machine to the first audio in a MD track, rather than the actual ID location. This eliminates dead space in the beginning of the track, allowing tighter cues for live shows or on-air environments.
- ◆ Auto Ready pauses the machine at each track ID allowing an engineer to cue in one track and forget about the machine - it automatically sets itself at the next cue. Also prevents the machine from accidentally rolling into the next cue on the MD.

### Professional MiniDisc Recorder

The ultimate MiniDisc recorder, the MD-801RMkII is designed to meet the most demanding needs for theater, recording studios, and broadcast applications yet still offer the flexibility to integrate with simple installations. The MD-801RMkII provides all the amenities needed in live environments with advanced cueing functions, and a separate cue output for checking a signal without sending it to the main output. Plus, the optional BU-801 RAM buffer can be added for true instant start functionality. All the I/Os needed to make the connections are built in. The MD-801RMkII can be controlled via keyboard, RS-232 port or 37-pin parallel port. There are two wired remotes optionally available.



#### FEATURES

- ◆ Uses highest-quality 20-bit A-D and D-A converters and ATRAC v4.5 compression to offer top sound quality
- ◆ Offers thorough editing capability via the front panel buttons, or with a PC keyboard connected to the PS/2 port
- ◆ ±9.9% pitch control
- ◆ On the digital side, Word Clock In and Thru allow you to clock to another source on playback. This is key for integration into larger digital set-ups with a central clock source.
- ◆ Soft mute eliminates clicks when pausing and restarting
- ◆ SCMS Copy ID modes (copy prohibit, one generation limit, no copy protection)
- ◆ Built-in clock for time stamped recordings
- ◆ Optional BU-801 RAM buffer for true instant start—turns the MD-801RMkII into a powerful tool for assembly editing or sound cue drops.
- ◆ Balanced XLR main I/O with fine calibration controls; unbalanced RCA I/O; digital AES/EBU and S/PDIF coax digital input/output
- ◆ Analog output offers the additional ability to split the balanced XLR and unbalanced RCA outputs into “cue” and “main” outputs, so you can check your cues easily before sending them to your mix.
- ◆ PS/2 keyboard port for easy editing and remote control
- ◆ Headphone output with level control

#### ◆ Cueing functions on the MD-801RMkII make live productions easier:

- Auto Cue positions the machine to the first audio in an MD track, rather than the actual ID location. This eliminates dead space in the beginning of the track, allowing tighter cues for live shows or on-air environments.
- Call returns the machine to the cue where play began. This is useful for setting cue points in the middle of a track.
- Auto Ready pauses the machine at each track ID. Ideal for live environments, this lets the engineer to cue in one track and forget about the machine - it automatically sets itself at the next cue. Also prevents the machine from accidentally rolling into the next cue on the MD.
- Incremental Play will automatically advance to the next track when play is stopped.

#### ◆ Multiple control ports allow the MD-801RMkII to be controlled by a variety of standards:

- The PS/2 keyboard port allows transport control and editing functions from a standard PC keyboard.
- The RS-232 port allows serial control from any number of automation/control systems.
- The parallel port allows for simple remotes and tallies, including Fader Start for integration with broadcast consoles.
- Optional RC-8 (simple wired) and RC-801 (full-function) remotes

	MD-301MkII	MD-350	MD-801RMkII
<b>Recording Time</b>	74 minutes (Stereo)		74 minutes (Stereo)
<b>Frequency Response</b>	20Hz-20kHz ±0.5dB	20Hz-20kHz ±0.5dB	20Hz-20kHz ±0.5dB
<b>Signal to Noise Ratio 94dB (A filter)</b>	102dB Playback	>96dB Record (1kHz A-filter)	96dB Record (1kHz A-Weighted)
<b>Wow/Flutter (WRMS)</b>	Unmeasurable		Unmeasurable
<b>Pitch Adjustment</b>			±9.9%
<b>Playback Rise Time</b>			0.1 sec from Ready
<b>Analog Inputs</b>	XLR Balanced RCA unbalanced	XLR Balanced RCA unbalanced	CalibXLR Balanced RCA unbalanced
<b>Digital Inputs</b>	SPDIF Coaxial; SPDIF Optical	SPDIF Optical	AES/EBU; SPDIF Coaxial
<b>Analog Outputs</b>	XLR Balanced RCA unbalanced	XLR Balanced; RCA unbalanced	XLR Balanced; RCA unbalanced*
<b>Digital Outputs</b>	SPDIF Optical	SPDIF Optical	AES/EBU; SPDIF Coaxial
<b>Dimensions</b>	19 x 3.5 x 11.5"	19.3 x 3.5 x 11.5"	19 x 5.2 x 13.9"
<b>Weight</b>	12.1 lbs.	12.2 lbs.	17½ lbs.

RCA acts as separate monitor output for engineer cueing purposes

# TASCAM

## DA-20MKII

### Master Quality DAT Recorder

An economical master DAT recorder, the DA-20MKII delivers solid, reliable performance with true CD sound quality. Well suited for home studios, "b" rooms and video suites, the DA-20mkII's S/PDIF digital and unbalanced RCA connectors allow integration with most of today's desktop video editors and digital audio workstations.



- ◆ Supports 16-bit recording at 48, 44.1 kHz sampling rates and 12-bit/32kHz in LP (Long Play) mode. LP doubles the amount of recording time available on tape for long sessions like sermons or conferences.
- ◆ Capable of SCMS free recording
- ◆ Start ID and PNOs (Program Numbers) can be written automatically or manually.
- ◆ Subcode functions include: Absolute and Program Time, Start ID, PNO, Skip Id, End Mark, lead-in area and renumbering.
- ◆ Program Numbers can be renumbered if accidentally inserted out of sequence.
- ◆ Auto ID level switching offers four selectable audio levels (-30/-40/-50/-60dB) for easier, more accurate start ID encoding.
- ◆ Sampling Monitor displays a visual confirmation of analog or digital source signals.
- ◆ Margin display with reset button continuously displays maximum peak level in dB.
- ◆ Titling and other text (take #, version #) of up to 60 characters per track.
- ◆ Self-diagnostic function warns of potential problems like condensation, irregular tape tension, dirty heads or a damaged tape.
- ◆ Last memory function retains auto ID and input selector after powering down
- ◆ Includes a wireless remote control

#### Inputs/Outputs

- ◆ Unbalanced RCA inputs and outputs, coaxial digital I/O, single stereo input level control with left/right balance

## DA-40/DA-45HR Professional DAT Recorders



Found in recording studios around the world, the DA-40 and DA-45HR offer balanced and unbalanced analog and digital inputs/outputs to ensure compatibility with a wide range of audio gear as well as video editing equipment. Well constructed rackmount chassis, large easy to read display, and comprehensive setup menus complement their sonic excellence. And like the DA-20MKII they feature text editing capability, allowing tape and program titles to be

inserted in the subcode of the tapes for cataloging and identification. The DA-45HR has all the features and functions of the DA-40—except it is equipped with 24-bit record capability—making it the ideal mixdown deck for today's high-end digital audio workstations (DAWs) and mixers.

#### All the features of the DA-20MKII PLUS—

- ◆ Shuttle wheel (up to 12x speed) for audible cue and review and refining locate points. Data wheel selects program numbers and changes menu and parameter settings.
- ◆ Margin display is measured in 1dB increments between 40dB and 20dB and 0.1 dB increments between 19dB and 0dB.
- ◆ Counter mode switches between Absolute Time, Program Time and time remaining.
- ◆ Two assignable locate points (with selectable 0 to 5 second pre-roll) memorizes precise locations for quick access to any point on a tape.
- ◆ Displays Program Number, Margin Mode, Digital Audio Frames mode and Block Error Rate mode.
- ◆ Auto ID level detection is selectable from -48, -56, -60, -66 and -72dB.
- ◆ Auto ID time setting has a range of 0.5 to 3 seconds in 0.5 second increments allowing precision Start ID placement.
- ◆ Analog input source selector allows either uncalibrated (allows variable level control) or calibrated (defeats variable level control with a constant +4 or -10 dB setting).
- ◆ SCMS is selectable to allow no copies, one copy or unlimited copies.



# TASCAM

## DAT RECORDERS

### DA-60MKII

#### *Professional Timecode DAT Recorder*

*You won't find a better 4 head synchronizable DAT value than TASCAM's DA-60 MKII. With complete Sony P2 support, the DA-60 MKII behaves*



*like a VTR and can be integrated with edit controllers and hard disk systems, making it the perfect DAT for post-production environments. More importantly, its onboard synchronizer and improved servo system means virtually instant lock-up times. And with advanced A/D and D/A converters, the DA-60 MKII delivers extremely high dynamic range and very high signal to noise ratios.*

### DA-302

#### *Dual DAT Recorder/Duplicator*



*A unique dual mastering DAT deck with high speed dubbing and continuous recording capabilities, the 3RU high DA-302 can make an exact clone of any DAT tape including*

*all subcode information. Flexible and easy to use with exceptional sonic quality and reliability, it is ideal for archiving, mixdown, duplicating and installation. Cascade multiple DA-302's to work in tandem.*

- ◆ Record Mute can be set from 2-7 seconds.
- ◆ End ID markers can be set to be automatically written when recording stops. Auto-rewind can be activated when an End ID marker is recognized.
- ◆ Programmable repeat function lets you loop audio over specific points. Loops can be set to play 10x or indefinitely.

#### *Inputs/Outputs*

- ◆ XLR-balanced and RCA unbalanced analog inputs and outputs.
- ◆ Separate left and right input level controls
- ◆ Balanced outputs have a trim control ensuring compatibility with the widest range of analog audio equipment.
- ◆ XLR-balanced AES/EBU and coaxial S/PDIF digital I/O connectors. XLR-balanced and coaxial digital outputs can be reversed allowing S/PDIF signals to be output via the XLR output or vice versa (AES/EBU via the coaxial output).
- ◆ 15-pin parallel interface for automated control environments, fader starts and edit controllers.
- ◆ Optional RC-D45 wired remote control

#### **DA-45HR** **Step-up Features**

- ◆ Two record modes: High Resolution 24-bit (record up to 60 minutes on a 120 minute tape) and Standard 16-bit mode.
- ◆ 24-bit A to D and 20-bit D to A converters with dither provides accurate reproduction of the original source material.
- ◆ Programmable repeat function settable from 2 to 15 repeats to unlimited looping
- ◆ Digital out word length is selectable to 24-bit or 16-bit.
- ◆ Record mute time is selectable from 1 to 8 seconds in .5 second intervals.
- ◆ Matches I/O reference levels of analog equipment (+4dBu, -10dBV) to digital reference levels; -20 (SMPTE), -18 (European) and the default -16dB
- ◆ Word Sync In and Thru using BNC connectors ensures sample accurate sync between compatible digital devices.

- ◆ Two DAT decks work independently or in tandem. Recording on both decks simultaneously, allows you to create a master and back-up master in one pass.
- ◆ High speed (2x) and real time dubbing lets you clone any DAT including subcode and timecode information
- ◆ Continuous long format recording from Deck 1 to Deck 2 at 32kHz, records up to 8 hours on two 120 minute tapes
- ◆ Append dubbing allows dubbing from any position on the master tape
- ◆ Loop function when enabled starts the master deck after the last slave deck finishes continuous play/record operation

- ◆ Seqtime sets the start time for Deck 2 during continuous record. This feature extends to continuous recording when cascading multiple DA302s. Settable in 1 or 15 minute increments between 0H15M00S and 2H30M00S
- ◆ Independent S/PDIF digital and RCA analog I/O for each deck. An optional balanced analog I/O kit (LA-D302) offers stereo inputs and 2 sets of stereo outputs
- ◆ External control for multiple unit operation with analog and digital cascade outputs
- ◆ Optional WR-7000 synchro cable allows DAT clones from one DA-302 to another

# TASCAM

## 102MKII

RECORDERS

### *Professional Cassette Recorder*

*A precision built, rack mountable cassette deck with excellent sonic performance, the 102MKII offers outstanding value for musicians, system contractors, studio operators, schools and theaters. A three space rackmount design (rack ears included) makes it easy to integrate into any studio setup.*



- ◆ Dolby B/C noise reduction and Dolby HX PRO extend high frequency performance up to 6 dB and minimize distortion
- ◆ HX Pro improves recording quality at high frequencies without increasing noise or distortion. Benefits any tape, regardless of the playback deck
- ◆ CPS search function finds the track you want by scanning up to 20 tracks at high speed until 4 seconds or more of blank tape is detected, then enters play mode
- ◆ Automatically chooses optimal settings for any type of tape — Normal, Metal or Cr02
- ◆ Bias Fine Tuning lets you customize high frequency response
- ◆ Left and Right balance control and master record level control
- ◆ Multi-counter with both 4-digit tape counter and realtime modes
- ◆ Record/mute autospacer automatically inserts 4 seconds of silence between tracks
- ◆ Intro Check gives you a 15 second preview of each selection before advancing to the next track.
- ◆ Multi function display indicates transport mode, tape counter position, Dolby system, tape type and peak level metering.
- ◆ Unbalanced RCA input/output
- ◆ 3.5mm CD/ Synchro-Dub jack
- ◆ Headphone output

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## 202MKIII/302MKII

### *Dual-Well Auto Reverse Cassette Decks*



*The 202MKIII and 302MKII have all the great sound and convenience of the 102MKII plus they add bi-directional dual deck capability making them ideal for multi-purpose recording and dubbing as well as studio applications. Both their decks can record, so you can make two masters of the same source at the same time. You can also use double deck capability for extended recording/playback applications. And two mic inputs*

*make them convenient for recording of groups —great for music teachers or business meetings. The 302MKII steps up with individual audio I/O for each well, pitch control, optical leader sensing, a wired remote control. For long format recording or playback, cascade audio and transport logic is included to automatically trigger multiple machines in succession.*

#### **All the features of the 102MKII in a dual deck design**

- ◆ The decks can be used separately or in tandem during recording and playback.
- Play deck 1 while deck 2 records in either real time (1-7/8 IPS) or high speed (3-3/4 IPS) dubbing.
- Record simultaneously on both decks from an external master in Parallel Mode.
- Continuous mode lets you play/record both sides of Tape 1 and 2 in sequence (repeatable up to 5 times).
- Rev Mode determines when play/record stops: at the end of one side of a tape, after both sides of a tape are played, after both sides of both tapes are played or recorded.
- ◆ Teac compatible CD Synchro Dub jack
- ◆ Auto Reverse function reverses tape direction during playback and record.
- ◆ Synchro Reverse dub reverses the playback and record deck at the same time. Ideal when using different cassette lengths.
- ◆ Blank Scan skips long portions of tape (10 seconds or more) and fast forwards to the next section of audio
- ◆ Infinite looping during playback.
- ◆ Pre-program playback or recording, when used with a standard commercial timer.
- ◆ Independent L/R stereo LED meters
- ◆ Dual high impedance 1/4" mic inputs on front panel allow live stereo recording



For Any Inquiries Regarding Your Order, Call Our Customer Service:  
(800) 221-5743 • (212) 239-7765 • FAX: (800) 947-2215 • (212) 239-7549

### 3-Head Cassette Deck

A 3-head cassette recorder that puts unprecedented value into your studio, the ruggedly constructed 130 virtually guarantees pristine recording and playback results with years of dependable operation and uncompromising sound. Features such as confidence recording,  $\pm 10\%$  pitch control, return to zero (RTZ) function and auto tape select give you the extras you need, so you can work quickly and confidently.



Same features as the 102mkII (no CD Synchro-Dub Jack and CPS Search) PLUS—

- ◆ 3-heads provide confidence monitoring so you know exactly what is being recorded.
- ◆ Auto Monitor function allows signal monitoring to match the play/record status of the deck. During playback, tape is monitored. In Rec/Pause, input source is monitored. Record mode monitors off-tape.
- ◆ MPX filter eliminates pilot tones during FM broadcasts that can interfere with Dolby noise reduction.
- ◆  $\pm 10\%$  pitch control assures accurate playback speed of cassettes recorded on other decks. Makes matching pitch with other instruments a snap.
- ◆ RTZ (Return-To-Zero) fast winds the tape to the tape counters zero reference point.
- ◆ Timer record/playback capability
- ◆ Headphone output with level control



### 322

### Independent Dual-Well Auto Reverse Cassette Deck

In applications where long-capture or playback is essential, nothing doubles your performance better than the 322. Two

fully independent cassette decks housed in a 3U rack-mountable enclosure, the 322 elegantly adds a suite of dubbing and duplicating features to your arsenal. Ideal for musicians and contractors in a wide variety of applications including music studios, boardrooms, house of worship, live venues and more.

Same features as the 202mkIII PLUS—

- ◆ Separate RCA inputs and outputs, transport functions including RTZ function, level controls and metering for each deck.
- ◆ RCA line inputs and outputs for deck 1 can be used as common I/O for both decks
- ◆ Normal (1x) and high (2x) speed dubbing
- ◆ Optical leader sensing for quick auto reverse. When the tape approaches the leader tape from the cassette, it immediately flips the tape. This minimizes the time lost switching sides, making the 322 ideal for logging or long-form recording.
- ◆  $\pm 10\%$  pitch control for each deck
- ◆ RS-232 port allows serial control of the deck from various control systems. This is ideal for board rooms, lecture halls, or advanced home theater systems.
- ◆ Headphone output with level control and source selector (Deck 1, 2 or mix)
- ◆ Supplied RC-322 remote offers complete control of both decks.
- ◆ Optional LA-322 kit adds balanced XLR balanced inputs outputs to a deck.
- ◆ Up to ten 322s can be connected in series via the stereo RCA cascade outputs and 3.5mm external control I/O (with optional WR-7000 synchro cables) allowing:
  - Sequential playback of multiple cassettes
  - High speed simultaneous dubbing to multiple cassettes
  - Recording an external source to multiple cassettes simultaneously
  - Record separate sources to multiple cassettes simultaneously

# TASCAM

## 112MKII/112RMKII/122MKIII

RECORDERS

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### Master Cassette Decks

Production workhorses, Tascam's Master Cassette Decks are known throughout the industry for their outstanding performance, stability, and reliability in a wide range of applications. They each feature a parallel port, Dolby B&C noise reduction with HX Pro, an advanced Servo control system and more.

Ideal for production mastering and mixdown, the 112MKII features a parallel port for external control and with the optional LA112 balanced connector kit can be integrated into any studio. Stepping up with Auto reverse and a 3-head design that allows off tape record monitoring the 112RMKII provides exceptional playback for engineers and contractors.

The industry standard for production and broadcast facilities, the top-of-the-line 122MKIII features balanced and unbalanced input/output, gear and clutched input level controls precision servo direct-drive capstan motors, and a built-in oscillator adjustment signal with front panel bias and level calibration controls.



Top to bottom: 112MKII, 112RMKII, 122MKIII

#### They All Feature

- ◆ Input mode selects the input signal to be monitored at all times.
- ◆ Automatically selects the input signal to be monitored in Rec/Rec Pause modes or tape to be monitored in play mode. The 112RMKII and 122MKIII also allow off tape monitoring in record mode.
- ◆ LOC 1 and LOC 2 buttons each store a locate point giving you one button access to any two points on a tape.
- ◆ Repeat button allows looping between two points with one-touch convenience.
- ◆ Precision VU meters with peak LEDs
- ◆  $\pm 12\%$  pitch control.
- ◆ Front-panel 1/4" phone jack line inputs take priority over the rear-panel inputs.
- ◆ Rec mute with auto spacer function.
- ◆ Dolby B/C noise reduction and Dolby HX Pro headroom extension system
- ◆ MPX filter removes 19kHz and 38kHz tones used in FM broadcasts that can interfere with Dolby B and C operation
- ◆ Return-to-Zero (RTZ) function

- ◆ 25-pin parallel ports provides external control of transport functions when used with the optional RC-134 Remote (122MKIII and 112MKII), or RC-112R (112RMKII)

#### Inputs/Outputs

- ◆ The 112RMKII and 112MKII can be upgraded for balanced operation with the optional LA-112 expansion kit
- ◆ Headphone jack with level control

#### 112RMKII Only

- ◆ Auto Reverse has two modes; one-time mode plays both sides of a tape once, while continuous reverse mode plays both sides of a tape in a continuous loop.
- ◆ Direction button switches tape to other side for playback or recording
- ◆ Tape-end tally signal allows multi-deck operation for continuous recording or playback with two or more decks
- ◆ Compumatic Program Search goes directly to the beginning of a track by sensing 4 seconds of blank space in between 2 tracks.

#### 122RMKIII Only

- ◆ Three-head transport with separate high-performance record and playback head.
- ◆ Equipped with balanced XLR I/O as well as unbalanced RCA I/O ensuring compatibility with all types of recording equipment.
- ◆ Precision FG servo direct-drive capstan motors provide the highest standards of reproduction quality and performance.
- ◆ 400Hz/10kHz calibration oscillator and front-panel record level and bias trimmers. Bias and level are independently adjustable for the left and right channels.
- ◆ Hysteresis Tension Servo Control (HTSC) maintains consistent back tension on the tape all through the reel, eliminating wow and flutter.



ONE HOUR FREE PARKING

AT 349 W. 34th STREET (with purchase of \$100 or more)

### CD Player

The CD-150 is a solid, straightforward, rackmountable CD player that easily integrates into almost any environment. A host of convenient features such as Auto Cue, 6% pitch control, timer play function, keypad and programmable playback, make the CD-150 ideal for audio and radio production, as well as DJ, fitness clubs and PA installations.



- ◆ Program and shuffle play modes. Program up to 32 songs to playback in any order. Visually review the program to ensure its accuracy. Repeat modes include one track, all tracks, A-B repeat.
- ◆ Auto Cue locates track's first audio—bypassing intro or subcode information. This allows a songs to start instantly.
- ◆ ±6% Pitch Control with clear on/off switch
- ◆ Intro Check plays only first 10 seconds of each track on the disc
- ◆ Time counter display is switchable between total disc playing time, elapsed time and time remaining of current track and total remaining time of disc.
- ◆ 10-key numeric keypad for direct access to any track
- ◆ Analog stereo (RCA) outputs—includes stereo RCA cable
- ◆ Headphone output with level control
- ◆ Supplied with wireless remote control
- ◆ Rackmountable (2RU high)



### CD-450 CD Player

With great sound, rugged construction and a broad range of programming features, the CD-450 is designed for use in professional applications, including live theater, radio broadcast, production, DJ and sound contractor environments.

- ◆ ±12% Pitch Control
- ◆ Numeric keypad for direct track access
- ◆ Repeat modes include one track, all tracks, A-B repeat.
- ◆ Single Play mode stops the CD player at the end of the current track
- ◆ Program mode (up to 30 tracks)
- ◆ Auto Cue function cues any track up to the first frame of audio for immediate playback. Auto Cue threshold level is settable to -72, -66 -60 or -54dB
- ◆ Auto ready function, upon completion of the current track, cues the player to the start of the next track and enters pause mode ready for the next cue
- ◆ Call key returns to the last Ready cue position stored in memory
- ◆ Built-in timer allows unattended playback and stop control
- ◆ Incremental play begins playback of the next track every time the play key is pressed or will enter Auto Ready mode if the stop key is pressed
- ◆ Program material can be searched by track number, index number or time.
- ◆ Selectable display shows elapsed time, remaining time or total time remaining
- ◆ Can automatically trigger an external machine to commence playback facilitating smooth playback transitions across multiple machines
- ◆ Fader and Event start for recording applications such as flying in sound effects. The CD-450 will begin playing when it receives an audio trigger from an open fader or other audio event.
- ◆ Fader stop ceases playback from the CD-450 and automatically cues the player to the next track
- ◆ End Of Message indicator lights when nearing the end of a track and is settable from 5 to 35 seconds
- ◆ Back-up memory retains full operating status of the repeat, single and increment play, display mode, auto cue and search functions
- ◆ 2U rackmountable

#### Outputs

- ◆ RCA unbalanced analog outputs
- ◆ S/PDIF digital output
- ◆ Tally jack for connecting LEDs for monitoring the operating status of the deck
- ◆ Remote control output
- ◆ Optional LA-450 Balancing Kit gives you XLR balanced analog outputs with 12dB maximum trim control and balanced AES/EBU digital output.



# TASCAM

## CD-305

### 5-Disc CD Player

Multi-disc capability makes the CD-305 perfect for applications that require continuous playback or quick access to multiple discs. Discs can be played back in sequential, random, or program order with a 32 track

memory. Ideal for use in commercial sound installations or production environments, equipped with balanced XLR and S/PDIF digital outputs for connection to professional, and studio equipment.



- ◆ Rotating carousel accommodates up to five CDs and is solidly built with a robust transport mechanism
- ◆ Bypass any disc in the tray (disk skip), you can also remove any unused disc while another disc is playing
- ◆ Programmable (up to 32 tracks), random and repeat playback modes
- ◆ 3-beam laser tracking system and CIRC error protection circuitry ensures exact reproduction of the original CD
- ◆ XLR-balanced and RCA unbalanced analog outputs as well as a coaxial S/PDIF digital output
- ◆ Includes wireless remote control with 10-key pad for direct track access

### CD-A500/CD-A700 CD/Cassette Combo Decks



The CD-A500 and CD-A700 combine a CD player and cassette deck in one very affordable package. The two decks can act as totally separate units with individual outputs, or take advantage of the combination with direct dubbing, long play (combo) capabilities, and an input-saving cascade output mode. Both include unbalanced RCA inputs and outputs for the CD player and cassette recorder

and each includes a wireless remote control. The CD-A700 adds XLR inputs and outputs, S/PDIF coaxial digital output (from the CD player) and 15-pin paralleled port for external control.

#### Cassette Deck Features

- ◆ 15-program music search
- ◆ Dolby B and C noise reduction
- ◆  $\pm 12\%$  pitch control
- ◆ Auto reverse mode allows continuous looping of both sides of a tape, play the tape once through or play one side only
- ◆ Record mute button inserts 4 seconds of blank space in between program material
- ◆ Two directional play buttons let you pick which side of a tape to play or record
- ◆ Counter reset and return to zero function

#### CD Player Features

- ◆ The CD player offers program (up to 20 tracks) and shuffle play, and continuous play of one track, or all tracks. Repeat playback includes 1-track/all-tracks/A-B

- ◆ Intro check function plays the beginning of each track for 10 seconds.
- ◆ A Side/B Side program dubbing feature allows monitoring the accumulated time of programmed material for even distribution to both sides of a cassette
- ◆ Auto spacing inserts 4 seconds of blank space in between program material.
- ◆ CD Sync recording allows one touch CD to cassette recording. Once the cassette is set to record, the CD player will start counter reset and return to zero function

#### Inputs/Outputs

- ◆ CD outputs can be shared as a common out for CD and cassette.
- ◆ Headphone output with level control
- ◆ RCA unbalanced inputs/outputs for cassette deck and input for the CD player

#### Combo Features

- ◆ Continuous play from CD-to-tape and tape-to-CD for long playback in back-ground music installations
- ◆ Separate CD and tape function displays
- ◆ Includes RC-A500 IR remote control
- ◆ Timer engages a function (play CD/ tape, record tape) when the deck is powered up
- ◆ Rackmountable (3RU high)

#### CD-A700 Step-Up Features

- ◆ Parallel control port
- ◆ S/PDIF coaxial digital output from the CD player
- ◆ Independent pitch adjustment ( $\pm 12\%$ ) for both CD and cassette
- ◆ XLR-balanced (and RCA unbalanced) I/O for cassette and inputs for the CD player

### Triple-CD/Cassette Combo Deck

The CD-A630 builds on the CD-A500's feature set, adding a triple tray CD player with pitch control, parallel port, and optical digital output. This added flexibility makes it perfect for live shows, exercise studios, restaurant installations, and simple PA systems. The CD-A630 can operate continuously



CD-to-tape and tape-to-CD, and discs can be changed individually without interrupting the disc that is playing. Uniquely, a 12% pitch control is provided for both CD and cassette playback to adjust tempo in dance and exercise studios.

#### Same features as the CD-A500 PLUS—

- ◆ Separate trays for each CD makes it very clear where a CD is loaded. This is great for live shows when switching between intermission music and show cues.
- ◆ Separate drawers also allow discs to be changed individually without interrupting the disc that is playing.
- ◆ Multiple tray operation provides more source material for playback—a key for public gathering areas.
- ◆ 12% pitch control on the CD player (as well as on the cassette deck) is key for performers, allowing minor adjustments in pitch and tempo to CD or cassette.
- ◆ Like the CD-A500, it is equipped with unbalanced RCA inputs/outputs for the cassette deck, inputs outputs for the CD player. Also offers S/PDIF coaxial digital output from the CD player
- ◆ Can be controlled from the supplied remote control or via its parallel port

### CC-222 CD Recorder /Cassette Combo Deck



The CC-222 is the world's first CD recorder and cassette recorder combo deck, bringing the two most popular formats in one very affordable package. The two decks can be used independently (each have their own discrete set of unbalanced inputs/outputs) as well as for internal dubbing from cassette- to-CD and CD-to-cassette. The CD recorder adds S/PDIF coaxial

(RCA) and optical digital I/O and as a bonus, a phono input is provided with the proper preamps and RIAA EQ circuits built-in. This allows direct connection of a turntable for creating CD or cassette masters from your favorite vinyl LPs.

#### Cassette Deck Features

- ◆ Dolby B noise reduction
- ◆ ±12% pitch control
- ◆ Auto reverse mode
- ◆ Counter reset and return to zero function.
- ◆ Record mute button (4 seconds)

#### CD Recorder Features

- ◆ Built-in sample rate converter (32-48kHz)
- ◆ Digital direct recording
- ◆ Sync One and Sync All CD record modes
- ◆ Erase and un-finalize CD-RW discs
- ◆ Adjustable Auto ID Sensitivity Level

- ◆ Selectable Copy ID (Free, Prohibit, SCMS)
- ◆ Adjustable auto track/Sync Rec level -72 to -24dB in 6dB steps
- ◆ Auto track increment (S/PDIF or Audio level)
- ◆ Adjustable fade-in/out (1 to 24 seconds in 1 second increments)
- ◆ Play modes include single, continuous, random, program (up to 25 tracks) and 3-way repeat (one, all and A-B) modes
- ◆ Timer play function engages the CD deck into play when the machine is turned on.
- ◆ Intro check function plays the beginning of each track for 10 seconds.

#### Combo Features

- ◆ Cassette to CD-R/RW or CD to cassette dubbing
- ◆ Rackmountable (3RU high)
- ◆ Includes wireless remote control
- ◆ RIAA phono input for recording vinyl LPs to CD or cassette.

#### Inputs/Outputs

- ◆ Headphone output with level control for selectable monitoring of tape, CD or mix
- ◆ Independent unbalanced RCA inputs/outputs for cassette deck and CD recorder
- ◆ S/PDIF coax and optical digital I/O (CD)

# TASCAM

## CD-RW4U

RECORDERS

480

### Compact CD-R/RW Recorder with USB Interface

The CD-RW4U is perfect for those who want to produce fantastic sounding CDs without sacrificing quality and durability. It is also space conscious. This allows it to be installed almost anywhere including personal studios and mobile systems, directly into a podium on stage, or in a restaurant or club.

The CD-RW4U features unbalanced RCA inputs/outputs, S/PDIF coaxial digital interface, wireless remote, digital level adjustment, Auto ID with adjustable sensitivity level, fades, and input monitor capability. It is also uniquely equipped with a USB interface. This allows direct connection to a Mac or PC and used as a CD-RW drive for archiving data to disc.



#### High Quality

- ◆ On-board 20-bit A-D and D-A converters for high quality audio capture
- ◆ Can also record to less expensive computer data CD-R and CD-RW media. Doesn't require "For Audio Only" CDs.
- ◆ Fade-in/fade-out (from silence) provides smooth beginnings and endings to tracks. Fade times can be set from 1 to 24 seconds in one second increments
- ◆ Auto ID function with adjustable threshold control. This allows the deck to identify the breaks between tracks without adding extra IDs in soft passages.
- ◆ To assure durability, the CD-RW4U uses a TEAC CD-RW computer mechanism instead of a modified consumer CD player mechanism. The drives are extremely robust, carrying a mean time between failure rating of 100,000 power-on hours.

#### High Performance

- ◆ USB connector allows direct connection to a Mac or PC for burning audio and data CDs. Bundled with Windows and Mac authoring software.
- ◆ Built-in 2MB RAM buffer for accurate sync starts and auto ID modes—ensures that even the first milliseconds of a track are recorded.
- ◆ Record mute function records four seconds of silence on the disc
- ◆ Sync record function allows recording to begin when a signal is received, and stopped when the signal ends. A signal level can be set between -24dB and -72dB in nine steps.
- ◆ Can override SCMS codes implemented by consumer players. This means you'll be able to make copies of your work.
- ◆ Three modes of copy protection (Free, Copy Once, Copy Prohibited) can be applied on a track by track basis to new discs.

#### Conveniences

- ◆ Playback modes include program (25 tracks), shuffle and repeat
- ◆ A digital gain adjustment is available for boosting low-level digital recordings,
- ◆ Track divisions can be entered manually, or produced automatically as a response to the input signal level.
- ◆ Monitor the input signal without entering record mode (Input Monitor function).
- ◆ In-line sample rate converter seamlessly accepts digital inputs from 32kHz to 48kHz. Connect to DATs, MiniDiscs or DVDs.
- ◆ Includes wireless remote control

#### Inputs/Outputs

- ◆ Unbalanced RCA analog I/O
- ◆ S/PDIF coax digital I/O
- ◆ Headphone output w/ level control

## CD-RW700 Professional CD-R/CD-RW Recorder



A step-up from the CD-RW4U, the rackmountable CD-RW700 features 24-bit A/D and D/A converters for even higher resolution and offers a "Digital Direct" mode which bypasses sample rate conversion to give you an exact copy of the original audio. It also adds a S/PDIF optical I/O and a Timer Record/Play function. Like the CD-RW4U, the CD-RW700 can

record to standard data CDs, override SCMS codes, and uses TEAC's extremely robust CD-RW computer drives.

#### Same as the CD-RW4U (no USB) PLUS—

- ◆ 24-bit digital-to-analog and analog-to-digital converters provide even higher recording and playback quality for the CD recorder.
- ◆ The CD-RW700 can use its internal clock to start and stop playback or recording at pre-determined times. ◆ "Digital Direct" mode



[www.bhphotovideo.com](http://www.bhphotovideo.com)

# TASCAM

## CD-RW2000

### Professional CD-R/CD-RW Recorder

The CD-RW2000 is more than just an advanced CD recorder, it also serves double duty as an advanced CD player, making it ideal for live theater, radio production and broadcast as well as the recording studio.

Like the CD-RW700, the CD-RW2000 uses advanced 24 bit DACs, the same robust TEAC CD-RW drive, and offers the same simplicity of operation. However, the CD-RW2000 also offers a word clock input, has a complete complement of I/O ports, and features several cueing functions to make live productions easier.



#### Same as the CD-RW700 PLUS—

- ◆ Balanced and unbalanced analog I/O, SPDIF coax and optical digital I/O, plus AES/EBU digital I/O covers virtually every 2-track audio format available.
- ◆ Word clock input is provided for integration into large digital environments, allowing the CD-RW2000 to chase external word clock while playing a CD.
- ◆ Offers a parallel control port for transport controls, including a fader start function.
- ◆ Includes RC-RW2000 wired remote control
- ◆ Several cueing functions on the CD-RW2000 make live productions easier:
  - Auto Cue positions the machine to the first audio in a CD track, rather than the actual ID location. This eliminates dead space in the beginning of the track, allowing tighter cues for live shows or on-air environments.
  - Auto Ready pauses the machine at each track ID. This is ideal for live environments, allowing the engineer to cue in one track and forget about the machine - it automatically sets itself at the next cue. Also, for presentation and on-air applications, this is ideal since the machine won't accidentally roll into the next cue on the CD.
  - Call is used to return the machine to the cue where play began. This is useful for setting cue points in the middle of a track. Just press PLAY to check the cue, then press CALL to go reset back to that cue point.

	CD-160	CD-450	CD-305	CD-A500	CD-A700	CD-A630	CC-222	CD-RW4U	CD-RW700	CD-RW2000
Frequency Response	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	10Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz
Signal to Noise Ratio	>85dB	>90dB	100dB*	>90dB	>90dB	>90dB	>88dB	>88dB	>98dB	>98dB
THD	<0.02%	<0.006%	<0.03%	<0.02%	<0.02%	<0.02%	<0.012%	<0.012%	<.004%	<.004%
Pitch Adjustment	±6%	±12%	-	-	±12%	±12%	-	-	-	-
<b>Analog Outputs</b>										
Unbalanced RCA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balanced XLR	-	optional*	✓	-	✓	-	-	-	-	✓
<b>Digital Outputs</b>										
S/PDIF (Coaxial)	✓	✓	✓	-	✓	-	✓	✓	✓	✓
S/PDIF (Optical)	-	-	-	-	-	✓	✓	-	✓	✓
AES/EBU XLR	-	optional*	-	-	-	-	-	-	-	✓
<b>Analog Inputs (CD)</b>										
Unbalanced RCA	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓	✓
Balanced XLR	N/A	-	N/A	N/A	N/A	N/A	-	-	-	✓
RCA Phono Inputs	N/A	N/A	N/A	N/A	N/A	N/A	✓	-	-	-
<b>Digital Inputs (CD)</b>										
S/PDIF (Coaxial)	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓	✓
S/PDIF (Coaxial)	N/A	N/A	N/A	N/A	N/A	N/A	✓	-	✓	✓
AES/EBU (XLR)	N/A	N/A	N/A	N/A	N/A	N/A	-	-	-	✓
Dimensions	19x4x12	18.9x4.1x12.2"	19x15½x5.2"	19x5.2x10.6"	19x5½x10½"	19x5½x10½"	19x5.4x11.6"	8.5x12.2x3.3"	19x12½x3½"	19x12.5x3½"

\* requires optional LA-450

# TASCAM

## CD-RW402

RECORDERS

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### *Professional Dual Tray CD Player/Recorder/Duplicator*

*A professional dual tray CD player/recorder/duplicator, the CD-RW402 combines playback, recording and duplication—in a single compact, rack mountable machine. Record, edit and duplicate CDs without compromising the performance of any of the CD applications. In fact, the CD-RW402 offers reliable functionality and great sound quality for a price that is much less than the cost of three separate machines.*

*The CD-RW402 offers advanced CD player functions like call, auto cue, and auto ready on both trays. A stutter scrub function allows for cue points to be set frame-accurately. The player deck also adds pitch control capability and two locate points. The record side includes traditional functions like record mute, digital gain adjustment, digital fade in/out, digital direct mode, and auto ID.*

*So go ahead. Capture a mix on CD-RW, edit the track, add CD-TEXT titles with a keyboard, dump the finished product to CD-R, and duplicate all in the same box. Nothing else can do this as easily, effectively and affordably as the CD-RW402.*



### FEATURES

#### *High Performance*

- ◆ 24-bit digital-to-analog and analog-to-digital converters provide excellent recording and playback quality for the CD recorder.
- ◆ Incorporating industrial-grade CD-ROM and CD-RW mechanisms, the CD-RW402 is a 1:1 duplicator of audio or data CDs at selectable 1x, 2x and 4x speeds, so you can quickly and easily make multiple copies.
- ◆ Disk At Once CD (4x speed disc duplication) can be used for Red Book glass-mastering and duplication, avoiding expensive pre-mastering work at the CD pressing plant.
- ◆ Combining the player and recorder together allows you to edit their original tracks. The A-B edit function uses the locate points on Deck 1 to define specific areas for copying to the record deck. A-B exclusive edit can be used to delete gaps in the middle of tracks.
- ◆ Powerful software emulates MiniDisc TOC (Table Of Contents) editing—virtual edits can be performed to CD1 and then executed to CD2 at up to 4x speed. Make custom mastering adjustments for your duplicated disks with controls to join, split and remove tracks. You can also adjust the incoming volume level of both analog and digital sources, create custom fade ins/outs (1-24 seconds), and mark indexes the way you want.

#### *Front Panel Operation*

- ◆ Operation is by means of the front panel, featuring an easy-to-use menu system, and the included wired remote control unit.
- ◆ Front panel includes independent displays for each deck offering individual level meters and 12 character text displays.
- ◆ Independent displays keep clear which deck is being monitored - a great feature for live and broadcast applications. Front panel also has 1/4" TRS headphone jack with source selection and level controls.

#### *Inputs/Output*

- ◆ Features a host of independent audio inputs/outputs for each deck. Includes unbalanced RCA and balanced XLR analog inputs/outputs as well as S/PDIF optical and coaxial digital inputs and outputs.
- ◆ A parallel control offers remotes and tallies with custom control applications. Also includes RC-RW402 wired remote control.
- ◆ Entering CD-TEXT information is simple—just plug a standard PS/2 keyboard in the front for track naming and editing
- ◆ If a common output is desired, a dedicated pair of unbalanced RCAs offers a common audio feed.
- ◆ Monitor the input signal without entering record mode (Input Monitor function)

#### *Additional Features*

- ◆  $\pm 9.9\%$  pitch control on CD player. Pitch effects can be made on the transfer as well, committing the effect to the new disc.
- ◆ Sampling frequency convertor allows the recording of CDs from digital audio sources with frequencies other than the CD standard sampling frequency of 44.1 kHz.
- ◆ Disc track divisions can be entered manually, or can be produced automatically as a response to the input signal level.
- ◆ Built-in RAM buffer ensures that even the first milliseconds of a disc track are recorded.
- ◆ Independent jog dials on each deck. Jog function with preview allows precise setting of cue points
- ◆ Cue function allows instant return to the previous start point. Stutter scrub function allows for cue points to be set accurately.
- ◆ A multi-function "multi dial" is used to set and confirm parameter settings.
- ◆ Playback functions include continuous play, shuffle play, program play (25 tracks)
- ◆ Advanced cueing functions including call, auto cue and auto ready (see description on previous page).
- ◆ Three modes of copy protection (Free, Copy Once, Copy Prohibited) can be applied on a track by track basis to new discs.



EQUIPMENT LEASING AVAILABLE

### High-Speed 1x4 CD Duplicator

The CD-D1x4 is an affordable solution for musicians, independent record labels or anyone else that requires multiple copies of their audio CDs or CD-ROMs. It implements sturdy TEAC CD-ROM and CD-RW drives for years of reliable performance.

Using the CD-D1x4 couldn't be more simple. Just pop the disc you want to duplicate into the master drive on top, then insert your blank CD media into the slave drives on bottom. In just a few button pushes, you can set the duplication speed and start burning discs! Plus, the CD-D1x4 is capable of duplicating more than just music CDs. CD-ROMs with software and other computer files can be easily replicated. For applications that require larger duplication runs, two CD-D1x4s can be cascaded to act as a single 1x8 replicator.



- ◆ Creates four exact duplicates of a CD at once
- ◆ Burns CDs at up to 16x regular speed for high-speed duplication runs
- ◆ Disc Analyze and Disc Verification features
- ◆ Duplicates audio CDs and CD-ROMs using CD-R, CD-RW, CD-R-DA, and CD-RW-DA media.
- ◆ Uses reliable, industrial grade TEAC CD-ROM and CD-RW mechanisms
- ◆ Cascade port allows two CD-D1x4's to be chained for duplicating up to eight discs at a time
- ◆ Standard 19" 4U rackmount design

### DV-D6500

#### RS-232 Controllable DVD Player



The DV-D6500 is an affordable RS-232 controllable DVD player, ideal for residential, commercial and institutional installations. Its wide range of readable media and programming capabilities makes this useful in numerous applications.

In Video DVDs, Super Video CDs and regular Video CDs, the DV-D6500 offers crystal clear picture quality. The

true Progressive Scan output option far surpasses imaging of "line doubling" DVD players, with higher resolution and jitter reduction. RS-232 control on the DV-D6500 offers extensive transport control, machine set-ups, counter data, and disc format data. Includes the RC-6500J wireless remote control.

- ◆ RS-232 Bi-directional serial control port
- ◆ Plays DVD Video Discs
- ◆ Plays Super Video CDs and audio CDs
- ◆ Reads CD-R, CD-RW and DVD-R media
- ◆ Composite, component and S-Video outputs
- ◆ Unbalanced RCA analog outputs
- ◆ Coaxial and optical digital outputs
- ◆ Format adjustments for 4:3 and 16:9
- ◆ Progressive scan for improved image quality
- ◆ FVPP Image Processing (Gamma, Sharpness, etc.)
- ◆ 2-U Rack Mountable DVD Player
- ◆ Slow Motion Playback
- ◆ Frame-by-Frame Playback
- ◆ Program & random play (Audio & Video CD Only)
- ◆ Repeat Play Mode (All Formats)
- ◆ RC-6500J Wireless Remote Included

#### RS-232 Control Features:

- ◆ Transport control & current status info
- ◆ Disc format information
- ◆ Counter information (Track, Disc)
- ◆ Direct Track Number Access

# TELEX

## COPYETTE EH SERIES

RECORDERS

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### 1x or 3x Mono and Stereo Duplicators

One of the best values in cassette duplication, the popular Copyette EH series produce high quality, low cost cassettes in large quantities at nearly 16x normal speed. This means you can reproduce both sides of a C-60 tape in less than two minutes. Available in two versions, the Copyettes are capable of duplicating either one cassette (1-2-1) or three (1-2-3) at a time. In addition, each are available in both mono and stereo configurations.

They couldn't be easier to use. You simply insert the cassettes, press the START switch and they do the rest. They rewind all tapes to the beginning, copy, then rewind to the beginning again before stopping. The whole process can be stopped at any time by pressing the CYCLE button. Side Select feature allows you to set them up to copy one side of a tape or both sides at once. Copyette EH duplicators provide the quality and reliability you demand, and the speed you need, all at the affordable price you want. They offer one touch copying (tape rewinds to the beginning, copies, then rewinds again), erase heads (allows cassettes to be reused, saving you money), as well as the ability to copy both sides of up to three cassettes in mono or stereo at 16x normal speed. In addition, all Copyette EH duplicators include a track select feature, optical non-reflective end-of-tape sensing system (for gentle tape handling), a carrying handle for portability, a removable power cord and a protective hard cover for storage.



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#### Stereo Copyette 1•2•1

Weighing only 9 lbs. this unit has a durable, impact resistant housing and includes a removable power cord, handle and protective cover. It also has an optical, non-reflective end-of-tape sensing system that provides gentle tape handling. A mono version is available.

**Mono Copyette 1•2•1.....419.95 Stereo Copyette 1•2•1 .....679.95**

#### Stereo Copyette 1•2•3

This duplicator copies both sides of three cassettes at once, yet is as small as the 1•2•1. It weighs only 14 pounds and includes a hard cover for protection when not in use. It uses all DC Servo motors for the ultimate in reliability. A mono version is also available.

**Mono Copyette 1•2•3.....1049.95 Stereo Copyette 1•2•3 .....1649.95**

## TASCAM 3000

### High Speed Cassette Duplicator

A must have in any studio or house of worship requiring high quality cassette duplication, the T-3000 provides 4x double sided duplication (effectively 8x duplication) of two cassettes within a single unit. For larger duplication setups, up to ten T-3000s can be slaved together.

- ◆ 1-to-3 high speed cassette duplicator
- ◆ 4-track/4-channel, ferrite record/play head and a 1/2 track/2 channel inline, ferrite erase head
- ◆ Auto switchable between Normal Type I and CrO<sub>2</sub> Type II tapes
- ◆ Tape speed accuracy of ± 1 %



- ◆ 7.5 ips or 4x speed duplication of both sides, simultaneously copying a C-60 cassette in 7.5 minutes
- ◆ Up to ten T-3000s can be cascaded for larger duplication setups
- ◆ Well-3 can act as master or slave in larger duplication set-up
- ◆ Rugged design with easy access to mechanisms for cleaning and demagnetizing
- ◆ Uses standard RCA and MIDI plugs to connect units together



**ONE HOUR FREE PARKING**

AT 349 W. 34th STREET (with purchase of \$100 or more)

## XGEN SERIES

### Mono and Stereo Audio Cassette Duplicators

Designed for high performance and high production, the XGEN series also offers easy maintenance and unsurpassed ease of use. Available in two-channel mono or four-channel stereo versions each produces 3 copies from a cassette master at 8x or 16x normal speed and each can expand up to 67 copy positions (with additional copy modules). With extra modules duplicate up to 67 copies of a C-60 original in under two minutes. And they copy both sides at once. The XL Series feature "Extended Life" cassette heads for increased performance and wear characteristic as well as improvements in wow and flutter, frequency response, S/N ratio and bias. Additionally the ACC4000 XL allows for either chrome or ferric cassette duplication.

All models feature microprocessor controls with direct drive motors in all positions, Ferrite erase heads, a C-60 rewind speed of 30 seconds, track select, modular cassette pockets, end of tape sensing, auto or manual operation, cleaning cycle, audible tone end of copy and two-year limited warranty.



#### FEATURES

- ◆ One Touch Copying
- ◆ Individual rotary level controls
- ◆ Peak reading LED indicators for quick and accurate monitoring of audio levels
- ◆ Side A or A/B select button
- ◆ Stop all tapes instantly, at any point during the copy or rewind cycle.
- ◆ Automatic or manual selection of rewind and copy operation:
- ◆ Slanted work surface and unique "heads-up" cassette platform allow less oxide build up on the heads and makes cassette loading and unloading much easier.
- ◆ Short tape indicators alert you if a tape stops or jams before the original ends
- ◆ Each cassette position has a three point tape guidance system to eliminate skew problems. Plus, when a tape is inserted, each cassette position is activated to prevent unnecessary wear and tear on the tape head mechanism.
- ◆ Audio and bias, along with head adjustments, are done from the top of the unit and a switch on the back engages the head and pinch roller for convenient cleaning.
- ◆ Microprocessor-controlled design means fewer moving parts and direct drive motors means quiet operation, more accuracy and no gears to break down.
- ◆ Two year limited warranty

#### Copy Module Features

- ◆ Each module has four copy positions with erase heads and controls for side select
- ◆ LED displays indicate end-of-tape status for each pocket

#### Master Duplicator Features

- ◆ Produce copies from a master at 30 ips (16x normal speed)
- ◆ Up to 67 simultaneous tape copies with optional copy modules
- ◆ Track select, short tape indicators, auto/manual operation
- ◆ Erase heads in the copy positions erase existing audio as new material is being recorded
- ◆ Two master stations can be linked together for added flexibility (i.e. additional 3-pocket copying)

#### PRICING

<b>XGEN Mono Master Duplicator</b> .....	<b>1499.95</b>	<b>XGEN Master Stereo Duplicator</b> .....	<b>2209.00</b>
<b>XGEN Mono Master Copy Module</b> .....	<b>1499.95</b>	<b>XGEN Stereo Slave Module</b> .....	<b>2209.00</b>
<b>XGEN XL Mono Master Duplicator</b>		<b>XGEN XL Stereo Master Duplicator</b>	
With XL (Extended Life) Heads .....	<b>2135.00</b>	With XL (Extended Life) Heads .....	<b>2899.00</b>
<b>XGEN XL (Extended Life)</b>		<b>XGEN XL (Extended Life)</b>	
<b>Mono Master Copy Module</b> .....	<b>2135.00</b>	<b>Stereo Slave Module</b> .....	<b>2899.00</b>

### REPLICA Mono Duplicator

At 7 lbs., the Replica is the smallest, fastest copier you can buy. It copies both sides of a cassette in mono at 16x normal speed, and offers a full set of functions including stop, rewind, copy and interrupt, all operated by a single lever. The Replica features durable, impact-resistant housing and includes a recessed handle and removable power cord. An optional carrying case is available as well.





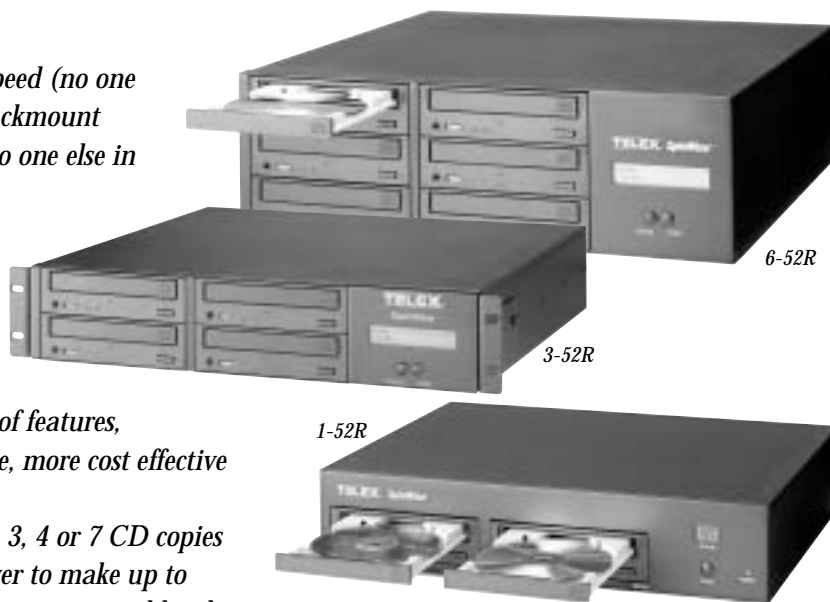
## SPINWISE SERIES RACKMOUNTS

### 52x CD Copiers

Telex's SpinWise Series of certified 52x recording speed (no one is faster) CD Copiers includes high performance rackmount and tower units designed for ease of use at prices no one else in the industry can duplicate.

SpinWise Rackmount models offer the ability to make 1, 3 or 6 CD copies at once, at 52x recording speed. That's enough power to make up to 180+ copies an hour! The 6-52R features an internal hard drive, while the 1-52R and 3-52R do not. The 6-52R offers a full complement of features, while the 3-52R and 1-52R provide an easier to use, more cost effective alternative to copiers with internal drives.

SpinWise Tower models offer the ability to make 2, 3, 4 or 7 CD copies at once, at 52x recording speed. That's enough power to make up to 215+ copies an hour! The 3-52H and 7-52H feature an internal hard drive, while the 2-, 3-, 4- and 7-52NH do not. The 3-52H and 7-52H provide a full complement of features, while the 2-, 3-, 4- and 7-52NH offer an easier to use, more cost effective alternative to copiers with internal drives.



#### All Rackmount and Tower SpinWise CD Copiers Feature

- ◆ 52x recording speed
- ◆ Disc at Once support for Audio
- ◆ Support for multiple CD formats
- ◆ Multiple fans for maximum cooling
- ◆ User-friendly interface for immediate integration into any environment
- ◆ Adjust recording speeds of writers and system to 4x, 8x, 16x, 24x, 40x, 48x and 52x
- ◆ Update the firmware in the system by loading a CD into the master reader drive; the system will automatically update itself
- ◆ Support all business card CD format sizes

#### SpinWise CD Copiers with Internal Hard Drives (Only) Add

- ◆ Support for CD+G (Compact Disc + Graphics) and Karaoke CD formats
- ◆ Audio track extraction for music disc compilation
- ◆ Menu (Status) Commands:  
Copy, Copy and Compare, Verification, Emulation, and Load to Hard Drive
- ◆ Sub Functions:  
Setup, Hard Drive Partition, CD to CD, Start Writers, Write Method, Write Speed, CD ROM Drive, CD DA Load Speed, Eject Disc, Buzzer, Edit, Copycomp Eject, Skip Read Error, CD+ G, Startup Command, Read CDDA Index O
- ◆ Original does not have to be loaded onto the hard drive. If you leave original in the 6-52R's or 7-52H's reader drive, for example, they will act as a one to five or one to six CD copiers, if desired.

- ◆ The 1-52R offers one to one disc duplication at 52x speed. Designed for low volume applications (30+ copies per hour), it supports multiple CD formats, as well as Disc at Once support for audio. Approximate recording time is fewer than two minutes per full disc. Includes rack ears.
- ◆ The 3-52R features one to three disc duplication at 52x speed. 19" rackmountable configuration with space saving 2U height. Supports multiple CD formats, including CD+G Karaoke, as well as Disc at Once support for audio. Approximate recording time is under two minutes per full disc. Includes rack ears.
- ◆ This 6-52R features an internal hard drive, with six copy drives, a 52x recording speed, and the ability to make 185+ copies an hour. 19" rackmountable configuration/3U, Disc at Once support for audio and support for multiple CD formats including CD+G, Karaoke. Audio track extraction for music disc compilation. Copy, Copy and Compare, Verification, Emulation, and Load to Hard drive are supported. User-friendly interface for immediate integration into studio/production environment.

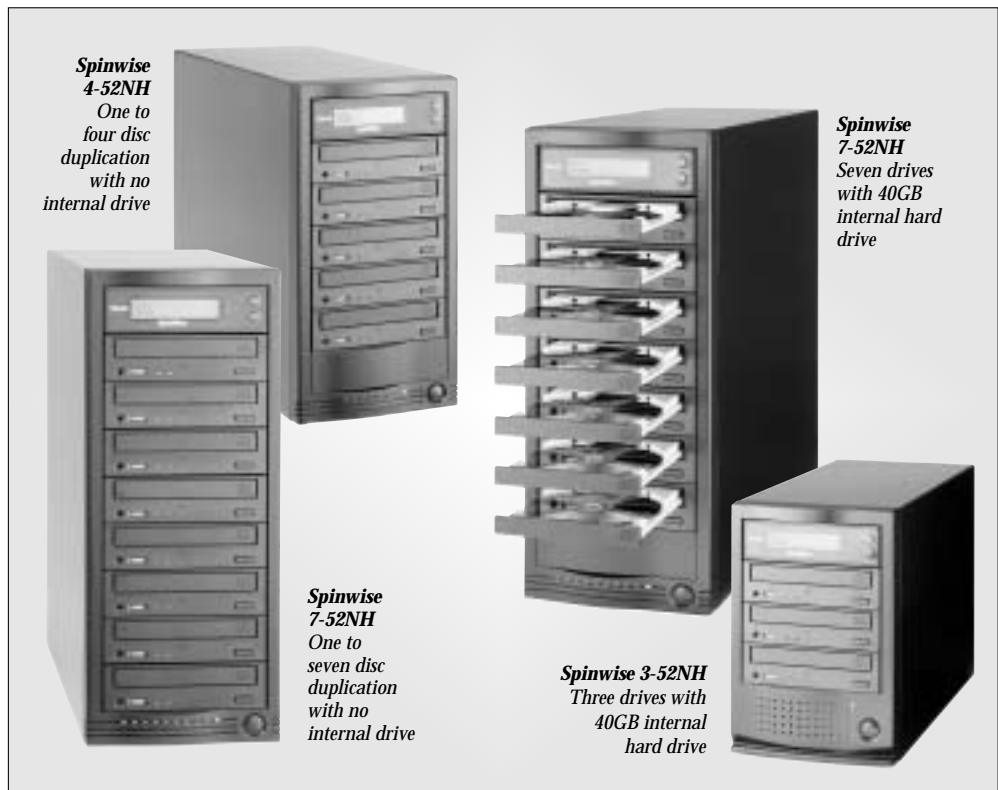
## SPINWISE SERIES TOWERS

### *SpinWise Tower CD Copiers without Hard Drive*

These towers feature 2, 3, 4, 5 or 8 drives, a reader/ master drive and 2, 3, 4 and 7 copy drives, for one to seven disc duplication at 52x speed. Makes up to 215+ copies per hour. They support multiple CD formats, including Disc at Once support for audio.

### *SpinWise Tower CD Copiers with 40GB Hard Drive*

These towers feature an internal hard drive, with three or seven drives, a 40x recording speed, and the ability to make 120 or 215 copies an hour. They support multiple CD formats, including Disc at Once, CD+G, and Karaoke. Audio track extraction for music disc compilation. Copy, Copy and Compare, Verification, Emulation, and Load to Hard drive are supported. The original disc can be left in the reader drive rather than loaded to hard drive, to utilize the unit as a one to two or one to six disc copier if desired.



**Spinwise  
4-52NH**  
One to  
four disc  
duplication  
with no  
internal drive

**Spinwise  
7-52NH**  
Seven drives  
with 40GB  
internal hard  
drive

**Spinwise  
7-52NH**  
One to  
seven disc  
duplication  
with no  
internal drive

**Spinwise 3-52NH**  
Three drives with  
40GB internal  
hard drive

#### **About CD Recording Time:**

As music is sampled at a continuous rate for recording to CD, a typical CD (650 MB) can contain 74 minutes of audio. Even though many recordable CDs are used for data-type purposes, most people measure record speed in multiples of 'real time'. 1x record speed means that it takes 74 minutes to record ("burn") 74 minutes of audio. 12x speed means:  $74 / 12 = 6.166$  minutes.

#### **How do you make MP3 files from CD audio tracks?**

You need to get conversion software or an encoder of some kind. These programs allow you to take the files from the master CD, encode them to the specifications of your choosing, and store them on your hard drive for later use.

#### **What is finalizing and what does it do?**

When you burn a CD-R, you have a choice to either burn the disc as an open session or a closed session. As an open session, you are able to add to the disc at a later time. However, open session discs cannot be played on an audio CD player. For playable audio, you need to close the disc, a process that is called "Finalizing." Once closed or finalized, you cannot add any more information to the disc. When you finalize, you are creating the TOC (table of contents) within the lead in. The lead out is also created, thus closing the disc. You are also finalizing the disc when you use disc-at-once recording.

#### *RackMount Copiers with Internal Hard Drive*

**SpinWise 6-52R:** 52x recording speed, 180+ copies/hour 19" rack-mountable configuration/3U 40GB HD 26 Partitions, 900 MB each

#### *RackMount Copiers without Internal Hard Drive*

**SpinWise 3-52R:** 52x record speed, 90+ copies/hour 19" rackmountable configuration with slimline 2U height. Supports multiple CD formats

#### *Tower Copiers with Internal Hard Drive*

**SpinWise 3-52H:** 52x record speed, 92+ copies/hr tower configuration, supports multiple audio and data formats. 40 GB HD, 44 partitions, 900 MB each.

**SpinWise 7-52H:** 52x record speed, 215+ copies/hr tower configuration, support for multiple audio and data formats. 40 GB HD 26 Partitions, 900 MB each.

#### *Tower Copiers without Internal Hard Drive*

**SpinWise 2-52NH:** One to two CD copier. 52x speed, 61+ copies / hr.

**SpinWise 3-52NH:** One to three CD copier. 52x speed, 92+ copies / hr.

**SpinWise 4-52NH:** One to four CD copier. 52x speed, 123+ copies/hr.

**SpinWise 7-52NH:** One to seven CD copier. 52x speed, 215+ copies/hr.

## SPINWISE CDR100A

### *Automated CD Copier*

*A standalone robotic system, the SpinWise CDR100A features 52x record capability, 100 disc capacity, and the ability to reload media on the fly. Supports multiple CD formats, as well as Disc at Once support for audio. Easy one button operation includes start, pick and sequence commands. Reliable pick and place design prevents blank CDs from dropping. Low cost, high performance, and ease of use makes the SpinWise CDR100A ideal for SOHO (Small Office/Home Office) or production/studio environments.*



- ◆ Best price, throughput and input capacity
- ◆ 52x record speed for maximum throughput
- ◆ Standalone automated robotic system (no computer required)
- ◆ Disc to Disc duplication with one button operation
- ◆ 100 disc capacity, with ability to reload media on the fly
- ◆ High performance fan for maximum cooling
- ◆ Sleek desktop footprint for virtually any environment, including front office
- ◆ Support for multiple CD formats
- ◆ Pick and place design with proprietary arm configuration prevents CD from dropping
- ◆ Unlike gravitational feed designs, pick and place lets you work with multiple disc manufacturers. The only true constant between manufacturers is the circumference of the inner hub of a CD-R disc, which makes the pick and place feature more user-friendly.
- ◆ Bad media/CDs are automatically ejected for unattended operation

## SPINWISE DVD



### *DVD Tower Copiers*

*SpinWise DVD Tower models offer the ability to make from two to seven CD or DVD copies at once. DVD copies are made at 4x speed, CD-R copies are made at 16x speed. All units are standalone towers with a 40 GB hard drive. Why wait up to 2-3 weeks, and pay up to \$40 for a DVD copy, when it's this easy to own your own copier? Ideal for weddings, memorial services, church services, videographers, and corporate training seminars—just some of the applications where DVD can simplify production and distribution.*

- ◆ 4x speed for DVD copies
- ◆ 16x speed for CD-R copies
- ◆ 40 GB internal hard drive
- ◆ Backwards compatible (i.e. can copy DVD-R, CD-R, CD-ROM, CDR-W)
- ◆ Multiple industrial fans provide maximum cooling and protect your data/video
- ◆ User friendly interface for immediate integration into any environment
- ◆ An easy way to back up your current computer's hard drive...a great storage tool
- ◆ Original does not have to be loaded onto the hard drive. If you leave original in the 7-416D's reader drive, for example, it will act as a one to six DVD copier, if desired

## PRINTWISE 1500 & 4500

### 4800 dpi Automated Print/Duplication Systems

Fully self-contained CD or DVD print and record stations. The ability to send multiple jobs, walk away, and come back to a fully printed and recorded set of CD/DVDs, makes these units a must have. You stack them, they do the rest. You can now ask to do 10 copies of Sundays sermon with graphics, then ask for 10 of Thursdays Choir Practice, 50 backups of internal documents, and so on... the PrintWise 1500 and 4500 do it all. Need two or four copies done simultaneously, no problem, they have data streaming to make the drives mutually exclusive of one another. PrintWise 1500 offers configurations up to two CD or DVD recorders, the 4500 up to four CD or DVD recorders. You even can have two CD and two DVD recorders in the same device!



RECORDERS

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#### FEATURES

- ◆ Batch Mode lets you send several jobs to the machine at one time. For example, if you want to do 20 CD/DVDs of one graphic and data, then do 50 of another, 25 of another...you would set up each in the software and the unit would automatically switch to the new job when the time came. Being the input capacities are 100/120 respectively, you could set up jobs to match those inputs.
- ◆ Networking capability allows multiple users from different computers within the company.
- ◆ Network in conjunction with the ability to "Data Stream" —sending individual jobs to a set of drives or single drive. This unique feature allows two users to use the machine at one time. One sending a job and using drives 1 and 2, the other using drives 3 and 4, as long. Most commonly used in the system that houses both DVD and CD drives, where some want to run a DVD job and CD job simultaneously.

### PRINTWISE 4800

#### 4800 dpi CD DVD Ink Jet Printer



Put 24-bit graphics directly onto your CD or DVD in amazing time. Immediate dry times, and immaculate results, the PrintWise 4800 gives you everything you have been waiting for in a CD or DVD printer. The same printer used in the PrintWise 1500/4500 series, the PrintWise 4800 lays down less ink than it's predecessors which means faster throughput, less ink consumption, and more compatibility with various types of printable media which results in faster drying times.

#### PRINTWISE SPECIFICATIONS

	CD Copy Speed	DVD Copy Speed	Input/Output Capacity	CDs Per Hour	DVDs Per Hour
PrintWise 1500	48X	4X	100/150	50+	8+
PrintWise 4500	48X	4X	120/120	100+	16+

# MICROBOARDS

## QD-2/QD-123

RECORDERS



### 16x CD-Recorder, 1:1 and 1:3 Duplicators

The QD-2 (Quick Disc-2) and QD-123 are low cost, high performance, one to one and one to three CD Recordable/Duplication systems. With their user friendly one button operation, sleek desktop footprint, and office environment aesthetics, the QD-2 and QD-123 are perfect for any user requiring easy copying of audio, video, or data CDs. Superior technology allows them to ship without a hard drive; duplication of CDs is done on the fly. CD+G Karaoke support. LED indicators provide you with the status of the duplication process, minimizing the number of faulty discs. Current high speed CD recording is 16x.

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### ECHO STAR ES-18CD-T CD/DVD Shredder

The ES-18CD-T safely and quickly destroys CDs and DVDs. The system reduces a disc to hundreds of thin plastic shreds. Removable hopper holds shredded CDs and is easily emptied. Heavy-duty electric motors assure smooth, trouble-free operation. A single disc can be destroyed in less than five seconds. Measures 12 x 8 x 14" and weighs 12 lbs.



## COPYWRITER Live

Designed for recording live events to CD, the Copywriter Live easily integrates with your sound and video system to record a feed directly from your board. This allows for high quality mixed sounds to be recorded directly to CD as the event is taking place.



- ◆ You can record from practically any audio or video source, including live feed from a microphone, cassette deck, video camera, mixer, and many others.
- ◆ Make a high quality CD on the first try. Make backup copies, or archive your video to CD for playback in most DVD players. Record and pause to create multiple tracks for playback.
- ◆ Equipped with two CD recorders and disc spanning capability, the Copywriter Live allows virtually unlimited and easy recording of live audio or video. As the disc in drive one becomes full, drive two automatically starts recording the second disc.
- ◆ A setting in the intuitive menu interface allows for creation of either an audio disc or VideoCD on the fly. Playback of a VideoCD can be done on the CopyWriter Live itself, or on most DVD players. Each CD-R can hold approximately 60 minutes of video.
- ◆ The Copywriter Live is also a 1 to 1 (12x) CD duplicator with automatic detection and support for most CD formats. Simply drop your master in one drive and a blank in the other, and hit "copy".
- ◆ As a rack mount (rackmount kit included) or set-top device, the system integrates easily with existing audio/video equipment.
- ◆ If you need multiple copies fast for immediate sales, it can be combined with a high speed duplicator for high volume just-in-time production.
- ◆ Combining the flexibility of cassette tapes with the quality and longevity of CDs, in one low-cost, easy to use unit, the CopyWriter Live is ideal for churches, schools, home or office in seminars, conferences, lectures and any other special event.
- ◆ Inputs/Outputs:
  - 3x RCA inputs (2 rear/1 front)
  - 1x XLR inputs (rear)
  - 1x RCA outputs (rear)
  - 1/4-inch mic input (front)



For Any Inquiries Regarding Your Order, Call Our Customer Service:  
(800) 221-5743 • (212) 239-7765 • FAX: (800) 947-2215 • (212) 239-7549

# MICROBOARDS

## ORBIT II/ORBIT DVD



### Standalone 50-Disc Automated CD and DVD Duplicators

The Orbit II is a low cost, high performance CD recordable duplication system with a sleek ergonomic design and 40x record speed that is perfect for any office environment. Orbit II's exclusive kernel autoloading technology, small desktop footprint, and ease of use offers even novices very fast, consistent performance.

A choice of copy, copy/verify or verify only is easily selectable

through the two button/LCD interface. Orbit II is ideal for a wide range of applications including pro audio, software development, government, desktop publishing, and many more. Combining DVD-R and CD-R duplication capabilities, the Orbit DVD gives you all the functionality of the Orbit II with DVD recording at 4x and CD recording at 16x.

- ◆ Low cost /entry level
- ◆ Completely standalone, no PC required
- ◆ 50 disc input capacity
- ◆ "Insert and Duplicate" buttonless operation
- ◆ High performance autoloading mechanism
- ◆ Small desktop footprint
- ◆ Support for almost all CD formats
- ◆ Variable Record speed control (up to 48x)

#### Orbit DVD Only

- ◆ Copy from DVD-R/RW, DVD+R/RW and DVD Authoring Media
- ◆ 16X CD burning and 4X DVD Burning

## ORBIT PRO/ORBIT PRO DVD

### Standalone 150-Disc Automated CD and DVD Duplicators

The Orbit Pro is a sleek, standalone-automated CD duplicator with powerful features. The next generation of the award-winning Orbit II, the Orbit Pro touts two 40x recorders for ultra high-speed CD duplication. And with an Easy Copy Mode for the novice and Expert Mode for the advanced professional, the Orbit Pro fits perfectly in any production or studio environment. A Batch Mode allows unattended duplication of multiple master CDs as the system automatically detects the format of each master CD—a great timesaver.

The Orbit Pro also includes a hard drive for multiple CD image archival and track extraction for custom audio CD compilations. To handle the 150-disc capacity of the system, a removable output hopper has been designed to unload the media onto a spindle, minimizing the handling of the discs. To ensure recording stability, the recording speed can be slowed for media not certified for high-speed duplication. Combining DVD-R and CD-R duplication capabilities, the Orbit Pro DVD gives you all the functionality of the Orbit II with DVD recording at 4x and CD recording at 16x.



- ◆ Sleek, charcoal black, molded enclosure fits any environment - desktop, audio and more!
- ◆ HDD for audio track extraction and image archival
- ◆ Disc to Disc and HDD to Disc copy modes
- ◆ Copy, Copy + Verify, and Verify only modes
- ◆ Batch Mode for multiple-master duplication
- ◆ Selectable recording speeds for up to 40x duplication
- ◆ 4-line lit display with intuitive menu navigation and detailed error reporting
- ◆ 150 disc input
- ◆ Output tray for rejects
- ◆ Removable output bin for easy disc unloading

#### Orbit Pro DVD Only

- ◆ DVD recording at 4X and CD recording at 16X (Orbit Pro DVD only)

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# MICROBOARDS

## DSR & COPYWRITER TOWER SERIES

RECORDERS



### *Standalone, Manual Load 40x and 52x Duplicators*

*The 40x DSR and 52x CopyWriter Tower series are low-cost, easy to use CD recordable duplication systems that utilize superior technology from Microboards. With a compact footprint, and multiple configurations available (up to 8 CD recorders), they can be used disc to disc, or disc to multiple disc for higher volume requirements. No hard drive is required, because caching image files is done on-the-fly, to multiple writers simultaneously. LED indicators detect errors during the record process, preventing bad disc duplication, and monitoring the status of the recording session.*

- ◆ Automatic detection of virtually all CD formats (CD-ROM Mode 1/2, Form 1/2, Red Book Audio, CD1, Mix Mode, Multisession.)
- ◆ Selectable recording speeds up to 40x or 52x for recording stability
- ◆ No hard drive is required, because caching image files is done on-the-fly, to multiple writers simultaneously.
- ◆ Copy directly from the source CD to writer(s) simultaneously
- ◆ One-touch operation for simple CD copying, allows novice users to operate it effectively
- ◆ Test Mode lets you copy from the source CD to the blank disc as a test. No data is burned to the disc.
- ◆ Simulation mode ensures recording stability
- ◆ Easy to read LED display for status and error recording

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## DSR & COPYWRITER PRO SERIES

### *Standalone, Manual Load 40x and 52x Duplicators w/Hard Drive and Control Module*

*All the features of the DSR and CopyWriter series, the 40x DSR PRO and 52x CopyWriter PRO adds the benefits of a hard drive for image storage, including Bit-to-Bit Data Verification and Audio track extraction, as well as a moveable ergonomic interface module for access to advanced features.*

*They provide high-speed duplication at 40x and 52x speed with configurations of 2 to 16 recorders. An intuitive, menu driven display and simple 2-button control interface are integrated into a sleek remote module. The cabled remote module allows flexible positioning in different ergonomic locations. For example, you can keep the tower tucked under a desk while keeping the remote on top of the desk for easy control and status access.*

*The powerful interface provides simple one-touch operation for novices while giving pros access to advanced features. The built-in 20GB hard drive allows for CD image archival and track extraction for audio compilations. Recording speeds can be adjusted (slower) when using media not certified for high-speed duplication.*



- ◆ Remote module interface allows for flexible, ergonomic positioning
- ◆ Built-in 20GB hard drive for CD image archival and track extraction for audio compilation CDs
- ◆ One touch start for CD to CD duplication
- ◆ Read Check ensures all copied discs are readable
- ◆ Selectable recording speeds up to 40x and 52X for recording stability
- ◆ Bit to bit verification of data formats
- ◆ Simulation mode to ensure recording stability
- ◆ Easy-to-read, two line display for status and error reporting



**EQUIPMENT LEASING AVAILABLE**

# MICROBOARDS

## PRINT FACTORY



### Automated CD-R/DVD-R Inkjet Printing Solution

*Print Factory combines Microboards' patented autoloading system with HP's new inkjet printer engine to give users the highest output possible, both in image resolution and print speed. Print Factory has a 50-disc capacity, making the task of printing large numbers of discs fast, easy and hands-free.*

- ◆ Print Factory is an autoloading printer, so no calibration of robotics or manual feeding of discs is required.
- ◆ Print Factory connects by USB or parallel interface to the computer, and comes with label design software.
- ◆ Uses standard HP color and black ink cartridges which have a very high yield at a competitive cost. This allows for printing costs of a few pennies per disc.
- ◆ Print Factory is capable of producing up to 200 discs per hour.
- ◆ With the included design software, users can enjoy its benefits whether making a few discs or a few hundred.
- ◆ Fast and flexible for any application. While Print Factory was designed to fill a need in the high-volume arena, it also has the ability to print at 4800 x 1200 dpi on both DVD and CD media.

#### Print Speed

Depends upon percentage of coverage and print mode selected:

- ◆ About 108 seconds for 100%, full-color coverage, Photo Normal Mode
- ◆ About 20 seconds for 100%, full-color coverage Text & Graphics, Best Mode
- ◆ About 12 seconds for 20% coverage Text & Graphics, Normal Mode

## DSR DVD CD/DVD Duplicators

*The DSR DVD Series is a multi-drive DVD-R/CD-R duplicator employing the use of general purpose DVD-R recorders. It supports both standalone and computer-based operation and allows you to copy from multiple DVD formats. Configurations of 1 to 16 recorders are available to meet individual production requirements. An intuitive, menu-driven display and 2-button control interface provide simple one-touch operation for the novice user while giving access to advanced features for the professional. A hard drive comes standard with the system, allowing you to archive an image or perform CD track extraction for CD audio compilations.*

- ◆ Stand-alone DVD-R / CD-R duplicator
- ◆ One Touch duplication
- ◆ Speed selectable (1/2/4x for DVD-R and 4/8/16x for CD-R)
- ◆ Copy from DVD-R/RW, DVD+R/RW and DVD Authoring Media
- ◆ Direct DVD/CD mastering with optional Firewire (IEEE1394) interface for PC or Mac. (Windows software included with the interface).
- ◆ Copy and Verify
- ◆ Ergonomic placement of remote interface module



- ◆ Built-in hard drive for DVD/CD image archival and CD track extraction for audio compilation CDs
- ◆ Simulation mode to ensure recording stability
- ◆ Easy-to-read, two-line display for status and error reporting
- ◆ Updates easily installed through DVD/CD reader