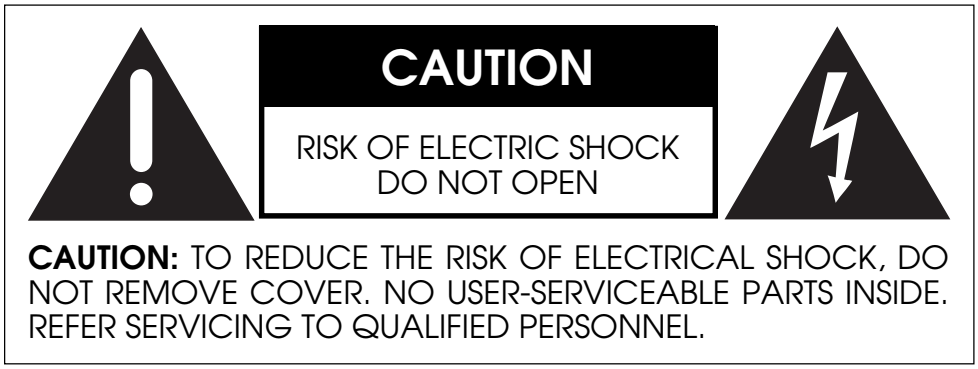
Owner's Manual

PMDT
Modular DVD
Transport

PROCEED®

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



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

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

Marking by the "CE" symbol (shown left) indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community.

NOTICES

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and the receiver;
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This product incorporates copyright-protected technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright-protected technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

The information contained in the manual is subject to change without notice. The most current version of this manual will be posted on our Website at http://www.madrigal.com.

Important Safety Instructions

Please read all instructions and precautions carefully and completely before operating your Proceed® Modular DVD Transport.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.

2. This product is equipped with a three-conductor AC mains power cord which includes an earth ground connection. To prevent shock hazard, all three connections must **ALWAYS** be used. If your electrical outlets will not accept this type of plug, an adapter may be purchased. If an adapter is necessary, be sure it is an approved type and is used properly, supplying an earth ground. If you are not sure of the integrity of your home electrical system, contact a licensed electrician for assistance.

3. AC extension cords are not recommended for use with this product. If an extension cord must be used, be sure it is an approved type and has sufficient current-carrying capacity to power this product.

4. **NEVER** use flammable or combustible chemicals for cleaning audio components.

5. **NEVER** operate this product with any covers removed.

6. **NEVER** wet the inside of this product with any liquid.

7. **NEVER** pour or spill liquids directly onto this unit.

8. **NEVER** block air flow through ventilation slots or heatsinks.

9. **NEVER** bypass any fuse.

10. **NEVER** replace any fuse with a value or type other than those specified.

11. **NEVER** attempt to repair this product. If a problem occurs, contact your Proceed retailer.

12. **NEVER** expose this product to extremely high or low temperatures.

13. **NEVER** operate this product in an explosive atmosphere.

14. **ALWAYS** keep electrical equipment out of the reach of children.

15. **ALWAYS** unplug sensitive electronic equipment during lightning storms.

From all of us at Madrigal Audio Laboratories, thank you for choosing this Proceed product.

A great deal of effort went into the design and construction of this precision device. Used properly, it will give you many years of enjoyment.

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Unpacking and Placement

Unpacking the PMDT

Unpack your PMDT modular DVD transport and remove all accessories from the carton.

The accessories include:

- an AC mains cable
- the PMDT remote control
- 4 AAA alkaline batteries for the remote control
- a 2-meter link cable for use with the Proceed AVP/AVP2 (necessary only for interoperation between the two units)

Important!

Keep all packing materials for future transport of your PMDT. Shipping your new component in anything other than its purpose-designed packing material may result in damage that is not covered by the warranty.

Placement of the PMDT

The PMDT should be placed close to your audio and video processors, thus keeping interconnect cabling reasonably short. It may be placed on a shelf or in a cabinet where it is convenient to operate.

Drawings are included in this manual to facilitate special installations and custom cabinetry (see *Dimensions, page 57*).

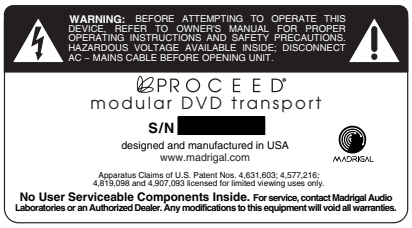
Operating Voltage & Frequency

The PMDT is set at the factory (internally) for 100V, 120V, 200V, 220V or 240V AC mains operation as appropriate for the country in which it is to be sold. (*230V/50Hz only in European Union countries, in compliance with CE regulations.*) Make sure that the label on the rear panel of the PMDT (beside the AC input receptacle) indicates the correct AC operating voltage for your location. Attempting to operate the PMDT at an incorrect voltage can damage the unit.

The PMDT modular DVD transport is also set at the factory for operation on either 50Hz or 60Hz AC line frequencies, as appropriate for the country in which it is to be sold. It will not operate if it senses an incorrect line frequency.

Neither the voltage nor the line frequency setting may be changed by the user.

Voltage label



If the AC mains voltage or frequency indicated on your PMDT is incorrect, please contact your local, authorized Proceed dealer or distributor.

The PMDT can easily be powered by a normal 15-Ampere AC mains line. If other devices are also powered from the same AC line, their additional power consumption should be taken into account.

A Quick Start…

Out of the box, the PMDT is designed to operate much as a fully featured CD transport when playing compact discs, and much like other DVD players when playing DVD discs (with the exception, of course, that the PMDT is a *transport* – it has only digital audio outputs).

check & connect ac power

If you have not already done so, check the voltage label on the rear of your PMDT to ensure that it matches the AC mains supply in your area. (*See previous page.*) If your PMDT matches the power in your AC outlets, attach the detachable power cord to the rear panel receptacle of your PMDT, and then to the AC mains plug in the wall.

Once this is accomplished, depress the **latching power button** mounted in the base (or plinth) of the PMDT, on the right side. The PMDT will run through some self-testing diagnostics, and enter **standby** when satisfied that all is well.

quick video connection

All video outputs on your PMDT are active at all times. Select component (Y/Pb/Pr), S-Video, or composite (on either RCA or BNC), as needed by your display device, and make the appropriate connection(s). For example, if you have an S-Video-equipped Proceed AVP/AVP2, you would probably want to set up an S-Video input on the AVP/AVP2, and rely on the AVP/AVP2 to then get the signal to the television. If your television also has component (Y/Pb/Pr) inputs, you should take advantage of the higher quality that connection standard offers and also run a direct connection from the PMDT to your television. Then, when you want the best possible picture quality from your PMDT, remember to switch your TV to its component input.

quick audio connection

All the digital audio outputs on your PMDT are active at all times. Select the one that matches the available input on your A/V processor, and make the audio connection. If you have a choice, the best options are either the AES/EBU output (the one using an xlr connector), or the bnc output. These digital transmission interfaces have a slight performance edge over S/PDIF on an RCA, and a larger edge over EIAJ (sometimes called "Toslink™").

loading a disc

Pressing **drawer** at this point, on either the front panel or the remote control, will "wake up" the PMDT (bring it out of **standby**) and open the drawer so you can load a disc. Select either a CD or a DVD and press **play** to start enjoying your PMDT.

Warmup/break-in period

Although your Proceed PMDT modular DVD transport delivers outstanding performance straight out of the box, you should expect to hear it continue to improve as it reaches its normal operating temperatures and its various components "break-in." It has been our experience that the greatest changes occur within the first few hours as the PMDT reaches thermal equilibrium. Depending on how cold the PMDT was when you first connected it to AC power, full thermal equilibrium might take as long as a day or so. After this initial break-in period, its performance will remain quite constant, assuming that the unit is toggled between **operate** and **standby** (rather than being turned fully off).

The only exception to this rule is if power is removed from the unit for a few hours, allowing it to cool down. Depending on the degree of cooling involved, you should expect a brief warm-up period before the PMDT's sound quality is at its best. Unless your PMDT was allowed to become quite chilled, subsequent thermal restabilization should not take long.

Special Design Features

Modular hardware

Perhaps the most obvious distinction of the PMDT is its card-cage design. With seven slots on a powerful and flexible backplane, the PMDT represents an investment in avoiding premature obsolescence in state-of-the-art DVD playback. With the exception of the power supplies (there are four of them), all important circuitry resides on these easily replaced cards.

These cards include the MPEG decoder and transport interface (immediately adjacent to the transport loader); a component video output card; a composite and S-Video output card; a digital audio output card; and the communications/control card. This leaves two slots open for future expansion. After all, what good does an "expandable" design such as this do if there is no room to expand?

Updatable software

Less obvious, but every bit as important, is the degree of software modularity built into the PMDT. We chose not to accept the standard DVD navigation software that comes with a laser transport mechanism, with all its limitations and confusion. Instead, we rewrote all of the software from an extremely low level on up. While this was a huge undertaking, the benefits seemed more than worth the effort: we would be able to address many of the failings found in the typical DVD user experience, making the PMDT a pleasure to use; we would also be able to incorporate new technologies more easily as they were developed.

Thus, if standards evolve to the point that a new transport is required to read new data formats on discs, we can swap out the necessary hardware, and make some new "connections" between it and our own software. Rather than having to start all over again, we can continue to use the infrastructure we have developed, and our customers can continue to enjoy the benefits of what we hope you'll agree is a superior user experience. Just as important, movie enthusiasts don't have to throw away everything they own and start over - something that cannot be said for products that do not have equivalent hardware *and software* modularity.

No-compromise audio

For DVD machines, audio is usually an afterthought. The usual assumption is that people are buying DVD for the video quality and that the audio is good enough. The result is that often little effort is put into optimizing DVD systems for exceptional audio performance.

Madrigal's roots and its reputation are inseparable from audio. The PMDT uses techniques developed for Mark Levinson Reference products to ensure the best possible recovery and transmission of digital audio signals. The PMDT is a digital audio transport – it has no analog audio outputs. It is designed to read DVD video discs (including 24-bit/96kHz music recordings on this format) as well as standard compact discs. The transport is compatible with Dolby® Digital and DTS®. With hardware and software changes, the PMDT can be reconfigured to read future DVD Audio discs.

Madrigal's CLJR™ (Closed Loop Jitter Reduction™) system is employed to optimize performance by minimizing jitter in the digital output, regardless of

whether from CD or DVD sources. In other machines, the audio clock is slaved to the video – not to the audio data. This is done to keep audio synchronized with video. In the PMDT, the audio is optimized, independent of the video, while maintaining proper synchronization. The PMDT even lets you delay audio to compensate for recordings where the video is not synchronized with the audio. This same feature can correct for systems where video processors delay the video signal by such a degree that the audio is no longer in sync.

Digital audio outputs are provided on four different connector standards: EIAJ (Toslink), S/PDIF on RCA and BNC, and AES/EBU on XLR.

Unexcelled video techniques

Many people think good video performance is a given when it comes to DVD. While it's true that even the most basic DVD players deliver much higher performance than VHS tape, many fall short of the full potential of the format.

The PMDT is designed to extract video information from the disc with the greatest fidelity, preserving the digital signal, converting to analog and buffering the analog output with the greatest care. The PMDT achieves superior video performance through attention to detail. Careful selection of parts and construction details – such as trimming circuit elements by hand – allow us to achieve better results. This is the same approach that distinguishes our audio designs and contributes to both their cost and their value.

The PMDT uses a 5-part-per-million TCXO (temperature-controlled crystal oscillator – the same type used for our digital audio) to ensure low-jitter recovery of the digital video signal.

The PMDT uses 10-bit, oversampled video DACs (rather than the standard 8-bit variety) for highest resolution. An active I-V (current-to-voltage) converter, phase-accurate analog filters and broadcast-quality analog output buffers combine to form a system where all aspects of the video path are well balanced.

Analog video outputs include composite on RCA and BNC, S-Video, and Component (BNC). The optional PVP cards provide a 480p (y, pb, pr) output and video processing for additional video inputs.

Ease of use

For all of the advantages that DVD can bring to audio and video performance, the frustrating difficulty of the format has been its user interface. DVD players tend to be difficult and awkward to use – and no two seem to work the same way. The operation of most players even varies from disc to disc, complicating the operation of an otherwise familiar player.

The PMDT makes significant progress in this area. It allows the setting of system defaults to help automate basic selections such as language, surround format and aspect ratio. System defaults are easily overridden for individual discs with different, preferred settings. What's more, the PMDT can automatically recall the settings of a DVD from the last time it was used – with no additional programming required.

People around the world are listening to DVDs with Dolby Pro Logic® because they don't know that they need to select Dolby Digital, sometimes for their player, sometimes for each disc they play, sometimes each time they play it.

This simple example points to the problem the PMDT solves. System defaults are used to bypass the usual navigation of DVDs as much as possible. You could simply tell the PMDT that if English, Dolby Digital and a 16:9 aspect ratio are available, those are your preferences. Load your discs and press **play** – the PMDT "navigates" for you.

Since some discs will undoubtedly be played using different options (such as subtitles on the occasional foreign film) than your system defaults, the PMDT is capable of remembering the unique settings you choose for this disc. The next time this disc is loaded, the PMDT overrides the system defaults and plays the disc using the settings you have saved. The PMDT can remember how you want to play each disc. These electronically saved preferences (**ESP**™) eliminate much of the day-to-day annoyance of using DVD players.

Programming is also available to permanently record settings for individual discs. This method allows the PMDT to recognize when you have preferences that you want remembered, regardless of how the disc was last used. Other programming features, such as reordering or skipping titles/chapters/tracks, are included as well.

On-screen menus simplify the navigation of discs and programming of system and disc defaults. A help menu is offered to guide users through more advanced functions.

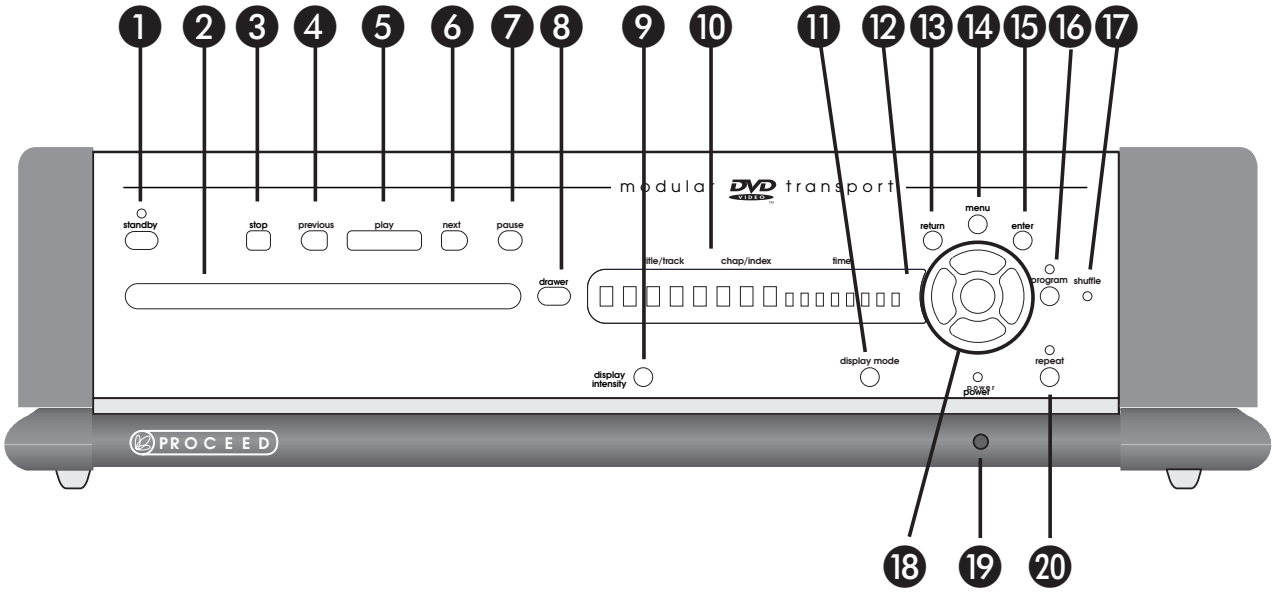
The PMDT is intuitive to use. It works like a CD player (with advanced features) when playing CDs, and like a well-designed DVD player when playing DVDs. Our goal has been to allow the use of multiple formats without requiring the user to fully understand the navigation and confusing options on different discs. Load the disc, press **play** and get what you want – that's the way the PMDT works. That is a high-performance user interface.

Industrial design

The PMDT shares the handsome industrial design of other Proceed components such as the AVP/AVP2 audio/video processor. Dark buttons against a light face simplify the operation of the PMDT, even in a dimly lit room.

The large, easily read display provides information as to the operational status of the PMDT from across the room, making the supplied remote control more genuinely useful than on products lacking such a display.

In keeping with its sophisticated design, the PMDT also incorporates a Madrigal-designed loading mechanism. Contrasting strongly with the bulky, plastic drawers commonly used, the slim drawer is machined from a solid piece of aluminum and rides on highly polished steel and Teflon® bearings. Its variable-speed design opens and closes quickly, but without jarring the disc contained within or risking a jam from dislodging it.



Front Panel, PMDT

1 STANDBY BUTTON AND INDICATOR

Pressing this button places the PMDT in **standby** mode, turning off the display and disengaging all control functions. The internal circuitry remains on in order to maximize performance on demand by virtue of all circuits remaining thermally stable. Lest you think this is wasteful, you should know that the PMDT draws about the same power as a light bulb, whether in **standby** or fully on. The benefits of having it always warmed up and ready to go (and always able to respond to the remote control commands) far outweigh the small amount of power used. We recommend using the front panel power switch **(19)** only when you will be away from home for an extended period of time, such as during vacation.

2 DRAWER

The PMDT employs an elegant, slim drawer that is machined from a solid piece of aluminum. It is opened and closed by pressing the **drawer** button, either on the front panel or on the remote control. If opened, it may also be closed simply by gently pushing the front edge inward (as though you were going to close it manually). The PMDT will interpret this as a request to close the drawer and take over for you, smoothly closing the drawer.

If the PMDT senses an obstruction during opening of the drawer mechanism, it will attempt to reclose. If successful, it will read the disc's table of contents and display the disc's number of titles & chapters (or tracks on a CD) and total time (followed by the playlist's track and time information, if one exists). If for any reason the drawer does not close fully, it will stop where it is and wait for your intervention. After removing the obstruction, press the **drawer** button again to close the drawer normally.

Similarly, if the PMDT senses an obstruction during the closing of its drawer (as might be caused by an inquisitive child's finger), it will stop immediately and attempt to reopen. If the obstruction prevents this also, it will stop where it is and wait for your intervention. After removing the obstruction, press the **drawer** button again to close the drawer.

3 STOP BUTTON

Unfortunately, DVD players and CD players often treat the **stop** button differently. This can be confusing. We allow you to make the PMDT work the way you think it should (see the section on *Disc Behavior* on page 37). However, by default,

- Pressing **stop** once with a CD will actually stop the disc from spinning (introducing a slight delay upon pressing **play**, as the disc spins up).
- Pressing **stop** once with a DVD will actually pause the disc with a blank screen, allowing you to resume where you left off in a movie quickly and easily by pressing **play**.

4 PREVIOUS BUTTON

If you are playing a DVD, pressing this button *momentarily* will return you to the beginning of the current chapter and in the case of a CD, to the beginning of the previous track. To return to the beginning of a track on a CD, simply tap the **play** button. Pressing the **previous** button *repeatedly* will move you backward through the available chapters/tracks, one at a time. Note that some DVD discs may prevent you from using this button (and others) at certain times.

5 PLAY BUTTON

Press this button in order to play a disc. If a programmed sequence of tracks exists for that particular disc, the program will be played from its beginning. Also, as you might expect, you may press the **play** button immediately after placing a disc in the PMDT's drawer; the drawer will close and the PMDT will enter the **play** mode as soon as it has read the disc's table of contents.

6 NEXT BUTTON

Pressing the **next** button *momentarily* will advance the PMDT to the beginning of the next track. Pressing it *repeatedly* will move you forward through the available chapters/tracks, one at a time. Note that some DVD discs may prevent you from using this button (and others) at certain times.

7 PAUSE BUTTON

Pressing this button during play will pause the PMDT at that point within the track; the time display will show a "double quotation mark" (**"**) as a reminder that you are in the **pause** mode.

8 DRAWER BUTTON

The PMDT employs an elegant, slim drawer that is machined from a solid piece of aluminum. It is normally opened and closed by pressing the **drawer** button located to its right. If opened, it may also be closed simply by gently pushing the front edge inward (as though you were going to close it manually). The PMDT will interpret this as a request to close the drawer and take over for you, smoothly closing the drawer.

If the PMDT senses an obstruction during opening of the drawer mechanism, it will stop where it is and wait for your intervention. After removing the obstruction, press either the **play** or the **drawer** button again to close the drawer normally.

Similarly, if the PMDT senses an obstruction during the closing of its drawer (as might be caused by an inquisitive child's finger), it will stop immediately and attempt to reopen. If the obstruction prevents this also, it will stop where it is and wait for your intervention. After removing the obstruction, press the **drawer** button again to close the drawer.

9 DISPLAY INTENSITY BUTTON

Pressing the **display intensity** button will cycle the PMDT's display through the four available levels of brightness: high, medium, low and off. For example, during bright daytime hours you may wish to use high; in the evening, in a dimly lit room, a low setting is probably easier on the eyes.

10 DISPLAY WINDOW

This window contains eight large and eight smaller alphanumeric characters that provide information on the current status of the PMDT. The information it displays depends on the type of disc being played:

- with DVDs, it provides the title, chapter and time information for the disc being played;
- with CDs, it provides track, index and time information.

There is a legend above the display window that describes the information normally displayed.

In addition, this window displays a number of messages designed to keep you informed as to the status of the PMDT, including **SELF-TEST** (during initial connection to the AC mains), **LOADING** (with a spinning slash, during disc spinup), and other cues to help you get along with the on-screen display should you be playing a CD without the television on.

11 DISPLAY MODE BUTTON

The time section of the display can be set to display any of the following four indications of time in minutes and seconds: **time elapsed on title/disc**, **time remaining on title/disc**, **time elapsed on chapter/track**, **time remaining on chapter/track** (depending on whether you have loaded a DVD or a CD). These four options are accessed by pressing the **display mode** button, which cycles through the four modes of time display, using both the onscreen display and the front panel display window to indicate which mode is chosen at any moment.

12 INFRARED TRANSMITTER (WITHIN DISPLAY)

The PMDT has the ability to teach a learning remote control its own commands from an IR transmitter located in this area. (See *Teach IR Commands* on page 45 for more information.)

13 RETURN BUTTON

Used in both DVD and CD navigation, the **return** button will also return you to where you were on the disc after a **stop** command. It may also be used by a DVD disc author for navigating the on-screen menu system.

14 MENU BUTTON

In the DVD standard, there are provisions for both disc menus and player menus, which can get confusing. When you first press the **menu** button, you will be presented with a choice on the on-screen display:

Disc Menu
Player Menu
Help Menu
About...

(In the front panel display window, you will see only the currently selected menu.)

Note: ***If you have the optional PVP cards installed, your menu options will be different. Please refer to your PVP owner's manual.***

Subsequent presses of the **menu** button will cycle through your options. When you have highlighted the one you want to use, press **enter**.

Note that using this system, you can (for example) access the player menu to check on your PMDT's setup at any time, without having to stop the disc.

Once you are working in the player's menu system, the **menu** button acts like a "cancel" button on your computer, allowing you to exit a particular menu item without having made any changes.

Since some DVD discs use the **menu** button as part of their internal navigation, when you are already within a disc menu, the list of choices presented on screen will change to:

Send MENU command to disc
Player Menu
Help Menu
About...

Pressing **enter** while the first item on the above menu is highlighted will issue the **menu** command that some discs require for navigation. Note that the menu shown immediately above only appears when you are *within the DVD's own menu structure* - not while watching a movie, or while stopped, or while listening to a CD. The PMDT is smart enough to be context-sensitive. That is, it will give you access to the things you might need, when you might need them.

15 ENTER BUTTON

As you might expect, the **enter** button allows you to explicitly save any changes you might make in the menu system. It may also be used by DVD discs as part of their own navigation system.

16 PROGRAM BUTTON AND INDICATOR

The **program** button on the front panel duplicates the function of the **prog** button on the remote control. Pressing either generates a popup menu on the on-screen display containing the following:

Add Item
Delete Item
Save Program
Delete Program
Turn Program On
(or Turn Program Off, depending on which mode you are in)

Pressing **program** repeatedly cycles you through the listed options. The currently selected option is highlighted on the screen, and appears in the front panel display. For more information on programming your PMDT, see *Programming the PMDT* on page 47.

The **program indicator** LED is lit when the PMDT's program mode is engaged; *e.g.*, while a programmed playlist is being played. If a program has been saved for the current disc, you may toggle the program on and off by pressing **program** (or **prog** on the remote), moving the highlight to turn **Program On** or turn **Program Off** (the last item on the popup list), and pressing **enter.** For more information on programming your PMDT, see *Programming the PMDT* on page 47.

Pressing and holding the program button will activate the **ESP** menu. It's functions are described on page 47.

17 SHUFFLE INDICATOR

By pressing **shuffle** on the remote control, the PMDT will enter a random play mode in which the order of the current disc's playlist is scrambled, and then played. The **shuffle LED** on the front panel will light to indicate this **random play** mode. Moreover, placing the PMDT into **random play** mode while the **disc repeat** function is engaged will cause it to play the various tracks on the disc randomly indefinitely (until you stop it). This is a great way to provide background music during a dinner party, for example.

18 NAVIGATION CLUSTER (UP/DOWN, LEFT/RIGHT) & IR SENSOR

This cluster of four buttons (**up**, **down**, **left**, **right**) duplicates the same set of buttons on your remote control, allowing you to operate the PMDT fully from the front panel whenever that is more convenient (such as when the remote has gone astray between the cushions on the couch). In addition, during normal play (as opposed to when you are in a menu), **left** and **right** can be used to access **scan reverse** and **scan forward**, respectively.

The space on the inside of this cluster is used for the infrared receiver. Infrared commands transmitted from the remote control are received by a receiver behind this section of the display. Remote control of the PMDT may be unreliable if there is not a clear line of sight between the remote control and the receiver (if the remote is far off-axis, or if the PMDT is within a cabinet, for example). In such a case consider using a third-party IR repeater to route the signal to the IR input jack on the rear panel (see *Rear Panel, PMDT*, page 20).

19 POWER & POWER LED

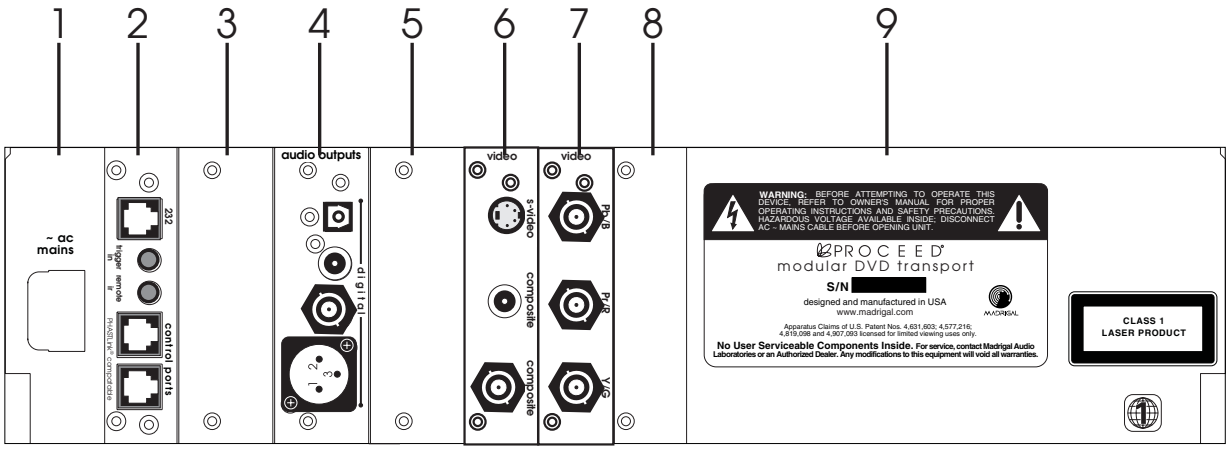
Assuming that the PMDT's power cord is connected to AC power, pressing this latching power button connects the PMDT to the AC mains. After a brief self-test routine to ensure that all is well with the internal hardware, the unit will enter **standby**. Pressing **standby** will "wake up" the unit, making it operational.

Whenever AC power is being applied to the PMDT, the LED above the latching power button is amber. Naturally, when the PMDT is disconnected from AC power (either at the wall, or using the latching power switch), this LED is off.

20 REPEAT BUTTON AND INDICATOR

You may choose to either repeat the entire title/disc (including any programs you might have entered for that particular title/disc) or an individual chapter/track by pressing the **repeat** button. Both the front panel window display and on-screen messages are visible to let you know what you have selected, for example:

Repeat Off
Repeat Chapter
Repeat Title



Rear Panel, PMDT

1 ~ AC MAINS CONNECTOR

The latching AC power switch on the front panel disconnects the PMDT from the wall outlet's AC power. Check to ensure that the power switch is disengaged (protruding from the front panel), then plug the supplied three-prong power cord into the AC mains receptacle before plugging the power cord into the wall. (If a longer AC power cord is required for your application, be sure to use a three-conductor power cord which conforms to IEC standards.) Once the connections are all firmly made, switch on power at the front panel. After a few moments of self-test, the PMDT will enter **standby** mode. Pressing the **standby** button will make it ready for use.

The PMDT is designed to be left in **standby** when not in use, rather than completely "off." Being in **standby** allows it to respond to commands from the remote control and maintains a stable operating temperature at all times for optimal performance and longevity.

The Proceed PMDT has been safety-tested and is designed for operation with a three-conductor power cord. Do not defeat the "third pin" or earth ground of the AC power cord.

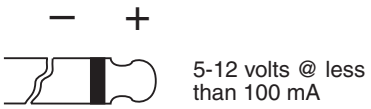
2 COMMUNICATIONS CARD

The PMDT provides for robust communications between components using this card.

Working from the top down, an **RS-232 port** (on an RJ-11 connector) provides both for software downloads and for external control. Software download capability makes it easier to update the unit for many of the possible changes in disc formats that can be expected in this rapidly changing environment. External control provides a critical link for two-way communication with automation systems like those from AMX and Crestron.

The **trigger input** will toggle the PMDT in and out of **standby** when used with less sophisticated control systems than those that use RS-232. The tip polarity for this trigger is as shown below:

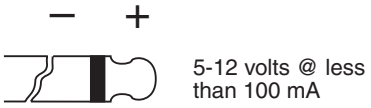
trigger tip polarity



A ⅛" "mini" jack labeled **remote ir** provides direct access to the infrared control circuitry of the PMDT. It may be used instead of the front panel IR receiver in circumstances when use of the front panel receiver is impractical (as when the PMDT is located inside of a cabinet, for example).

The incoming signal for the remote IR input should conform to widely accepted IR repeater standards: that is, the signal present should be between 5 and 12 volts DC at less than 100mA current, with a positive tip polarity, as shown below:

IR input tip polarity



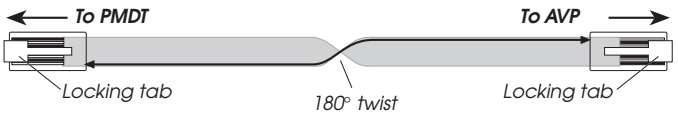
Your Proceed dealer can help you take advantage of these design features to maximize your system's versatility.

The remaining two **PHASTLink™ control ports** at the bottom of the module provide for sophisticated intercomponent communications between the PMDT and other Proceed products, as well as with PHAST home automation systems. (See *link options*, page 41.)

A suitable RJ-45 cable used for the Link connection between the PMDT and the AVP/AVP2 is included with the PMDT. It may also be made to length using two RJ-45 connectors and the appropriate length (up to 100 feet/30 meters) of RJ-45 (flat, eight-conductor) cable. (*Your AVP/AVP2 may require an additional hardware module in order to take advantage of Linking features. Please see your dealer for further information.*)

RJ-45 cables and connectors are used throughout the world for both telecommunications and computers, and are widely available at low cost. The connectors are crimped onto the ends of the cable so that pin 1 at one end is connected to pin 1 at the other end. Such a "straight-through" connection is (counter-intuitively) made by introducing a 180° twist in the cable between the two ends, as shown below.

building a link cable



Warning!

Connecting the communication ports other than as described in this manual can damage the PMDT and the associated Proceed components, and will void those products' warranties.

3 BLANK SLOT (FOR FUTURE USE)

What good would expansion slots be if they were all full? There would be no room to expand. This slot is reserved for possible future audio applications.

4 DIGITAL AUDIO OUTPUT CARD

The PMDT is a "transport" rather than a "player." That is, it provides digital audio outputs, but no analog audio outputs, under the reasonable assumption that people purchasing this product already have sophisticated, good-sounding audio/video preamplifiers such as the Proceed AVP/AVP2 (or similar). After all, how many times do you want to have to pay for high-quality digital-to-analog conversion?

Since we have no way of knowing what type of digital output you may require, we provide you with four choices. You only need to use one, and may pick whatever matches the needs of your system. From the top down (physically):

EIAJ ("Toslink"): This output provides the digital audio signal (DAS) via optical cables equipped with EIAJ-type connectors to the processor.

S/PDIF on RCA: This output provides the digital audio signal (DAS) via cables equipped with RCA-type connectors to the digital processor.

S/PDIF on BNC: This output provides the digital audio signal (DAS) via cables equipped with BNC-type connectors to the digital processor.

The previous two outputs conform to the Sony/Philips Digital Interface Standard (S/PDIF), which calls for a 75Ω transmission of the DAS. We recommend using a digital interconnecting cable specifically designed for the 75Ω S/PDIF standard, such as Madrigal MDC-2 cable, when using these outputs. (In our experience, a BNC-terminated S/PDIF cable has a slight advantage over the same cable terminated with RCAs. This is probably due to the fact that a BNC connector can have a true 75Ω impedance, whereas RCA connectors cannot.)

AES/EBU: This output provides the digital audio signal (DAS) via cables equipped with XLR-type connectors to the digital audio processor.

This output conforms to the Audio Engineering Society/European Broadcast Union (AES/EBU) professional digital audio standard, which calls for a 110Ω transmission of the DAS. Use a digital interconnecting cable specifically designed for the 110Ω AES/EBU standard, such as Madrigal MDC-1 cable, when using this output, with pin assignments as follows:

Pin 1: chassis ground
Pin 2: noninverted digital
Pin 3: inverted digital
Connector ground lug: chassis ground

It our experience, the AES/EBU interconnection standard offers the best quality of all digital transmission interfaces when fully optimized, and we recommend its use wherever possible between Proceed components. If you are using a Madrigal-designed digital processor, we recommend using the AES/EBU connection for the best results; the two S/PDIF electrical connections follow closely behind AES/EBU. EIAJ is (unfortunately) the most widely used digital interconnection standard, yet offers the poorest performance. We include it for compatibility reasons.

However, optimizing any digital interface completely represents a significant engineering challenge. It is entirely possible that a different type of input may actually outperform a less-than-optimized AES/EBU implementation on some brands of digital processors. For this reason, we have gone to great lengths to fully optimize all four of the digital outputs on the PMDT. If you are using your PMDT with a different brand of processor, we recommend experimenting to determine which type of input on that processor results in the best audible performance.

5 BLANK SLOT (FOR PVP)

This slot is reserved for use with the optional PVP card.

6 COMPOSITE & S-VIDEO OUTPUT CARD

This slot provides the video signal (along with any PMDT on-screen menus and messages) to your audio/video preamplifier or display device. Specifically, this card provides two composite outputs (one on the consumer-standard **RCA** connector, the other on a professional-standard **BNC** connector), and one **S-Video** output.

7 COMPONENT OUTPUT CARD

This card provides broadcast-quality video output in the SMPTE Component (Y/Pb/Pr) format. Consistent with the SMPTE standard, there is normally no black setup on this output. If your specific installation requires black setup (sometimes called “pedestal”), you can introduce it on this card via the *TV Type/Component setup* menu.
(see *component setup* on page 32)

If your display device or video processor can accept a 480i component video input, we recommend using these outputs for your critical viewing. The improvement in image dynamic range, clarity and realism can be quite remarkable, since using this connection bypasses a great deal of circuitry, both in the PMDT and in your video processor and/or display device.

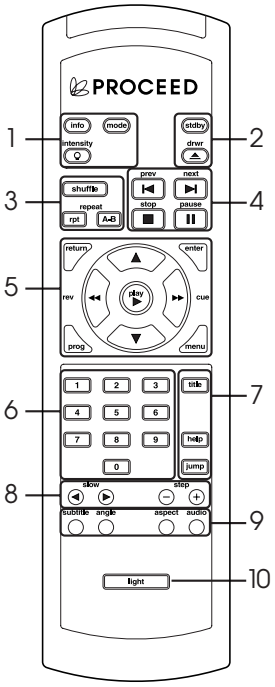
8 MPEG DECODER CARD

Although there are no rear panel connectors on this card, there is a critically important card in this slot. It contains the MPEG decoder that translates the information on the disc into something that resembles (in a digital way) the picture you want to see. It also contains the circuitry that interacts most intimately with the laser mechanism and transport assembly itself.

9 SERIAL NUMBER & INFORMATION LABEL

Please write down your serial number on the warranty card that came with your PMDT and send in the card now, if you have not already done so. That way, we can stay in better contact with you should there be a software update made available for your product, or to let you know about future products that you might want to consider to complement your PMDT.

The PMDT Remote Control



The Proceed PMDT comes with a comprehensive remote control that can handle all player and disc functions. While many of these functions will be familiar to anyone who has used DVD players before, the remote also provides several conveniences that you have probably never seen. This section will provide an overview of the many functions served by your PMDT remote control.

1 THE DISPLAY AREA

info: The **info** button can be used to display information about the current status of the PMDT in two different ways.

When clicked, it displays those info items from the Info Preferences menu that have been designated "on," one after the other. This way, you can choose a few things to which you would like quick access, and have them be readily available.

When pressed and held, the **info** button will display a list of information items (both those designated "on" and "list only" in the Info Preference menu), giving you access to quite a bit of information all at once (though, of course, it uses more of the screen to do so). You can scroll through these items with the **navigation** buttons; pressing **enter** will display that item on the screen until you press **info** again.

mode: The time section of the display can be set to display any of the following four indications of time in minutes and seconds: **time elapsed on title/disc**, **time remaining on title/disc**, **time elapsed on chapter/track**, **time remaining on chapter/track** (depending on whether you have loaded a DVD or a CD). These four options are accessed by pressing the **display mode** button, which cycles through the four modes of time display, using both the on-screen display and the front panel display window to indicate which mode is chosen at any moment.

There are some discs that are authored so that the PMDT will indicate **menu** on the front panel during play. This is the disc author's way of telling you that you can use normal menu navigation commands such as "Prev" and "Next" to choose different buttons or functions available on the screen. Many of these discs are music discs and may be hybrid DVD/DVD-A discs. By camping on (or holding the button depressed) the **mode** button at this time, the display will toggle from **menu** to the normal **Title/Chapter/Time** display. In this mode the navigation cluster now acts as if a movie were playing rather than a menu being used. For instance, pressing the **FFWD** button will no longer act to move the cursor on the screen, but will **FFWD** the disc. You are free to choose the way you would rather view the information presented by the **PMDT.**

intensity: Pressing the **display intensity** button will cycle the PMDT's display through the four available levels of brightness: high, medium, low and off. For example, during bright daytime hours you may wish to use high; in the evening, in a dimly lit room, a low setting is probably easier on the eyes.

2 STANDBY & DRAWER

Stdby: Pressing this button places the PMDT in **standby** mode, turning off the display, disengaging all control functions, and turning off all outputs to the main zone (remote zone functions are still available). The internal circuitry remains on in order to maximize performance on demand by virtue of all circuits remaining thermally stable.

drawer: Pressing this button once while a disc is playing will **stop** the disc and cause the **drawer** to open.

Pressing the **drawer** button will also cause an open drawer to close. If it senses a disc in the drawer, the PMDT will take a moment to read the disc's table of contents so that it may display the total number of titles, chapters/tracks and the total time on the disc for your information.

3 SHUFFLE & REPEAT BUTTONS

shuffle: By pressing **shuffle**, you will cause the PMDT to enter a random play mode in which the order of the current disc's playlist is scrambled, and then played. The **shuffle LED** on the front panel will light to indicate this **random play** mode. Moreover, placing the PMDT into **random play** mode while the **disc repeat** function is engaged will cause it to play the various tracks on the disc randomly indefinitely (until you stop it). This can be a great way to provide background music during a dinner party, for example.

rpt: You may choose to either repeat the entire title/disc (including any programs you might have entered for that particular title/disc) or an individual chapter/track by pressing the **repeat** button. Both the front panel window display and on-screen messages are visible to let you know what you have selected; for example: **Repeat Off, Repeat Chapter, Repeat Title.**

a/b: To repeat (continuously) a specific section of a DVD or CD (when learning how to play a favorite solo, for example), press **a/b** on the remote at the beginning of the passage you would like to repeat. The display will blink while continuing to play to indicate that the PMDT is waiting for you to define the end of your A–B loop. At the end of your chosen passage, press **a/b** on the remote again. The passage you selected will repeat continuously. (Note that B must follow A on the disc, or the A–B loop is not meaningful and will be ignored by the PMDT.)

To return to normal play, press the **a/b** button again.

4 PREVIOUS, NEXT, STOP, PAUSE

prev (⏮): Pressing this button *momentarily* will return you to the beginning of the current DVD chapter (or CD track). Pressing it *repeatedly* will move you backward through the available chapters/tracks, one at a time. Note that some DVD discs may prevent you from using this button (and others) at certain times.

next (⏭): Pressing the **next** button *momentarily* will advance the PMDT to the beginning of the next track on a CD or the next chapter of a DVD. Pressing it *repeatedly* or *camping on*, it will move forward through the available tracks/chapters, one at a time. Note that some DVD discs may prevent you from using this button (and others) at certain times.

stop: Unfortunately, DVD players and CD players often treat the stop button differently. This can be confusing. We allow you to make the PMDT work the way you think it should (see the section on *Disc behavior*, on page 38). However, by default,

- Pressing **stop** once with a CD will actually stop the disc from spinning (introducing a slight delay upon pressing **play**, as the disc spins up).
- Pressing **stop** once with a DVD will actually pause the disc with a blank screen, allowing you to resume where you left off in a movie quickly and easily by pressing **play**.

pause: Pressing this button during play will **pause** the PMDT at that point within the track; the time display will blink slowly as a reminder that you are in the **pause** mode.

5 NAVIGATION CLUSTER

This centrally located cluster of four buttons (**up, down, left, right**) duplicates the same set of buttons on the PMDT's front panel, allowing you to operate the PMDT fully from the remote control.

up/down/left/right: Use the **up**, **down**, **left** and **right** buttons to navigate menus (both the PMDT's own menus and those of the DVD discs you play). In addition, during normal play (as opposed to when you are in a menu), **left** and **right** can be used to access **scan reverse** and **scan forward**, respectively.

return: Use the **return** button while playing either a DVD or CD to return you to where you were on the disc after a **stop** command. (It is possible that the authoring of a DVD will explicitly prohibit doing so, in which case nothing will happen.) The **return** button may also be used by a DVD disc author as part of the on-screen menu system navigation.

menu: In the DVD standard, there are provisions for both disc menus and player menus, which can get confusing. When you first press the **menu** button, you will be presented with a choice on the on-screen display:

Disc Menu
Player Menu
Help Menu
About...

(In the front panel display window, you will see only the currently selected menu.)

Note: ***If you have the optional PVP cards installed, your menu options will be different. Please refer to your PVP owner's manual.***

audio delay

Subsequent presses of the **menu** button will cycle through your options. When you have highlighted the one you want to use, press **enter**.

You can also use the **up** and **down** buttons to navigate through the available options.

Note that using this system, you can (for example) access the player menu to check on your PMDT's setup at any time, without having to stop the disc.

Once you are working in the menu system, the **menu** button acts like a "cancel" button on your computer, allowing you to exit a particular menu item without having made any changes.

Since some DVD discs use the **menu** button as part of their internal navigation, when you are already within a disc menu, the list of choices presented on screen will change to:

Send MENU command to disc
Player Menu
Help Menu
About...

Pressing **enter** while the first item on the above menu is highlighted will issue the **menu** command that some discs require for navigation. Note that the menu shown immediately above only appears when you are *within the DVD's own menu structure*—not while watching a movie, or while stopped, or while listening to a CD. The PMDT is smart enough to be context-sensitive. That is, it will give you access to the things you might need, when you might need them.

enter: As you might expect, the **enter** button allows you to explicitly save any changes you might make in the menu system. It may also be used by DVD discs as part of their own navigation system.

program: The **prog** button on the remote control duplicates the function of the **program** button on the front panel. Pressing either generates a popup menu on the on-screen display containing the following:

Add Item
Delete Item
Save Program
Delete Program
Turn Program On
(or turn Program Off, depending on which mode you are in)

Pressing **program** repeatedly cycles you through the listed options. The currently selected option is highlighted on the screen, and appears in the front panel display. For more information on programming your PMDT, see *Programming the PMDT* on page 46.

6 NUMERIC KEYPAD

Use these numbers in conjunction with disc menus (when the authoring of the disc calls for numeric input), and in conjunction with the **jump** button to directly access the part of the disc you want.

7 TITLE, HELP, JUMP

title: Use the **title** button to access a title menu of a DVD if one exists, at any time.

help: Use the **help** button to access the online help system built into the PMDT. Press **help**, followed by the button that you would like to have help on. Note that this feature places information on your display device, so it will have to be on to see the help text.

jump: Use the **jump** button to "jump" directly to a different spot on the disc. Pressing the button creates a popup window that looks something like the following:

The example above indicates that you pressed the **jump** button at 23 seconds into Title 1, Chapter 5. By default, the current title is selected. If you want to jump to a different title, just enter the number and press **play** or **enter**.

Pressing **jump** again provides access to any *chapter* within the title displayed in the previous field; the third press of **jump** allows you to access a particular *time* within that chapter. Pressing **jump** a fourth time cycles you back to selecting the title you want. When done, press **play** or **enter** to jump to your selected location.

A word of caution; By jumping into certain titles on a DVD, such as an INTRO or a splash screen title, subsequent disc playback behavior may be erratic. This will happen because the PMDT may not have received the required commands from the loaded disc needed for proper navigation.

8 SLOW AND STEP

Use the **slow forward** and **slow backward** buttons to put the PMDT into a slow motion mode (either forward or backward). Note that the steps between one frame and the next are larger when moving backward than when moving forward. This is a result of the way MPEG video is encoded on the disc, and is completely normal.

Use the **step +** and **step –** buttons to move one frame at a time through the DVD being watched, forward and backward respectively. Note that the steps between one frame and the next are larger when moving backward than when moving forward. This is a result of the way MPEG video is encoded on the disc, and is completely normal.

9 SUBTITLE, ANGLE, ASPECT, AUDIO

subtitle: Click the **subtitle** button to toggle subtitles on and off. The language used by default depends on the setting in the Audio Setup menu. However, you can also cycle through the available languages to temporarily change the language you see on-screen, by pressing and holding the **subtitle** button, and then making a selection from among the languages available on that disc. (A popup menu gives you your options.) These will vary from one disc to the next, depending on what the author of the disc decided to include. But the **subtitle** button gives you easy access to all of them, and to turning them off entirely.

angle: Use the **angle** button to explore the various camera angles that may have been included on the DVD you are watching. Again, pressing this button will cycle you through the available camera angles (assuming there are any), returning you to where you started after you reach the end of the list.

aspect: Use the **aspect** ratio button for quick access to the different aspect ratios supported by the disc you are watching. Depending on how the DVD is produced, you may have as many as three different options:

- **4:3 pan & scan**, in which the picture will fill a normal 4:3 display at all times.
- **4:3 letterbox**, in which a wide aspect ratio film is placed within a 4:3 frame, leaving black bars above and below the picture.
- **16:9 Widescreen**, in which an anamorphically squeezed 4:3 picture (with tall, thin people) is passed to your 16:9 television, which should have the capability to "unsqueeze" it to its widescreen format, retaining the highest possible resolution.
- **zoom**, which is accessed by pressing and holding the **aspect** button, and then pressing **enter** once the popup menu appears. This feature allows you to "zoom in" on a section of the screen. The **up/down/left/right** buttons allow you to slide the zoomed-in area appropriately, to whatever caught your interest. To exit the zoom feature, press the **prog** button on the remote control.

Note that you should tell the PMDT what type of display you have during initial setup, so it can provide the most appropriate signal to your television by default. This button is a convenient way of making on-the-fly, temporary changes. After pressing and holding the button until the aspect ratio popup menu appears, it also displays the native format of the signal on the disc as part of the "header" to that menu. (Try it!)

audio: Use the **audio** button to cycle through the available soundtracks on the disc. When you reach the end of the list, it will cycle back to the beginning.

10 LIGHT

Press the **light** button to temporarily illuminate the buttons on the PMDT remote control for better visibility in dimly lit rooms. It will automatically time-out after about 10 seconds.

The PMDT Menus

The PMDT has an unusually extensive, flexible and powerful menu system which allows you to customize the way it operates. The thought here is that you should be able to make the PMDT work in a way that makes sense to you, despite the fact that the DVD standard by its nature tends to be fairly confusing, and often contradicts what we have come to expect from CD.

A simple case in point: When you put a CD in the drawer and press **play**, you pretty much know what to expect. However, the same cannot be said for most DVDs in most DVD players. You might get any combination of soundtracks (Dolby Surround, Dolby Digital, DTS, etc., potentially in any of several languages); any of three different aspect ratios (which can have a significant impact on picture quality); subtitles (or not), in any of several different languages. What's worse, what you get isn't even consistent. It is usually determined by what the author of the disc "expected" you would want to have.

The PMDT gives you the ability to define how you want your system to work by default. You always have the ability to override those defaults, to make an exception for a particular disc.

Moreover such exceptions will be remembered by the PMDT (if you like), so the next time you play the same disc, all your preferences (whether default or *ad hoc* for the particular disc) will be remembered.

In any event, in order to take full advantage of the features offered by the PMDT, you need to review and make some selections in the on-screen menus. These menus are divided into six functional areas:

- Video setup
- Audio setup
- Disc behavior
- User preferences
- Information preferences
- Technical menu

These menus are explained in detail below, with depictions of the menu structure alongside each description.

Note:

If you have the optional PVP cards installed, your menu options will be different. Please refer to your PVP owner's manual.

Using the menus

Navigation within the PMDT's menus is simple. All menus are shown in a three-column layout, with the "top-level" being presented on the left in icon form. Whenever a particular icon is selected, the menu items and current values associated with those items appear in the center column. If you want to

modify a menu item, move to that item, which then displays the possible values in the right column. In short:

- Press **menu** to pop up the list of available menus.
- Press **menu** again to go to the "Player Menu" and press **enter**.
- Use the **up/down** buttons to move between menus and menu items, and use the **left/right arrows** to access specific menu items and their settings.
- Press **enter** or **left arrow** to save changes, or press **menu** to exit a menu without having made any changes.

Video setup

The video setup menu allows the PMDT to deliver the best possible performance, in the context of the system in which it exists.

TV type

TV Type
4:3 letterbox
4:3 pan & scan
16:9

The display setting describes two characteristics: the aspect ratio of your display device (traditional 4:3 or widescreen 16:9), and in the case of a 4:3 display, whether you prefer to watch movies in their original aspect ratio (letterboxed) or in a full-screen "pan & scan" version. Having selected the appropriate setting for your system and preferences, press **enter**.

composite setup

Composite setup
0 IRE
7.5 IRE

In the NTSC world, there are two different definitions for the electrical signal that defines "black." The unit "IRE" represents a scale of 0 - 100 where 0 equals zero voltage in that signal, and 100 equals the brightest white that the signal can contain. In most of the world, "black" is defined to exist at 7.5 IRE units up from zero volts, but in Japan and a few other places, black is defined as being at 0. This setting is normally preset at the factory to suit the market to which the PMDT is being shipped, but you can change this should you need to do so. (*Note: The component outputs are unaffected by this setting.*)

component setup

Component setup
0 IRE
7.5 IRE

There is no setup in the SMPTE component specification. Therefore, according to the SMPTE standard for component video, the component outputs of your PMDT should always be set to have 0 IRE setup.

However, some televisions do not store different black level settings for each input. This limitation may cause you to want to introduce setup in your component source, so as to make it match your other, normal composite and S-Video sources. Otherwise, details in the dark areas of the PMDT's picture may not be reproduced, since they will be occurring below the threshold that you set for black (using other sources).

Clearly, the best possible picture, with the greatest possible video dynamic range, will be obtained by having component black reproduced where it belongs (0 IRE). This requires a display device (or video processor) that can handle different input levels correctly. Use 7.5 IRE only if it is the only way to

maintain consistent and correct black level reproduction on your display device.

black level

Black level

0 to +18 IRE

This adjustment is a PMDT-specific version of the black level (or brightness) control on your television/display device. Leaving it at zero (assuming **black setup** is correct for your location in the world) will ensure that the black level is exactly where it should be, per broadcast standards. However, if you find that you have another source that you watch a lot, which has noticeably different black level settings (and no way to adjust them), you can change the way the PMDT works to match the other component, and then readjust your television to compensate.

Note that you should not use this control to compensate for an atypical disc. If you want to correct for a poor film tranfer to DVD, use the black level adjustments found in the **ESP** menu. That way, any corrections can be remembered for that particular disc, and your correct, default settings will be retained for all other discs.

white level

White Level

75% to 125%

This adjustment is a PMDT-specific version of the white level (or contrast) control on your television/display device. Leaving it at 100 will ensure that the white level is exactly where it should be, per broadcast standards. However, if you find that you have another source that you watch a lot, which has noticeably different white level settings (and no way to adjust them), you can change the way the PMDT works to match the other component, and then readjust your television to compensate.

chroma

Chroma

75% to 125%

This adjustment is a PMDT-specific version of the chroma level (or color) control on your television/display device. Leaving it at 100 will ensure that the chroma level is exactly where it should be, per broadcast standards. However, if you find that you have another source that you watch a lot, which has noticeably different color settings (and no way to adjust them), you can change the way the PMDT works to match the other component, and then readjust your television to compensate.

dvd pause

DVD pause:

on frame

on field

The PMDT has the option of entering **pause** while showing either the full video frame (all 525 lines in the NTSC system, for example) or a single *field* of that frame (every other line). For test patterns and the like, pausing on a full frame is usually more useful. On the other hand, pausing fast action on a frame can leave you with jagged edges, caused by the motion introduced between the taking of the first field and the second. You may choose whichever seems best, given the way you use your PMDT.

Audio setup

The DVD standard provides for many different audio options, including multiple soundtracks on the same disc. The Audio setup menu establishes many of your personal preferences for how you would like audio handled on most of the discs you play. Don't worry about the occasional exceptions to the rule – they are easily handled on a case-by-case basis without having to return to this menu.

spoken

Spoken
English
French
Spanish
Italian
German
Dutch
Portuguese
Chinese
Japanese
Thai
Swedish
Norwegian
Danish
Finnish
Hebrew
Korean
Russian
Other
No Pref

This setting establishes your preference for the language of the soundtrack you want to hear on DVDs that you play. You may temporarily override this setting at any time, using either the **audio** button on the remote or the disc's own menu system. This setting simply establishes the language the PMDT will look for when playing a disc. Selecting **No Pref** indicates that you have no preference and the PMDT will select the language that the DVD author has programmed as the preferred language.

Choose your preferred language setting and press **enter**.

subtitles

Subtitles
English
French
Spanish
Italian
German
Dutch
Portuguese
Chinese
Japanese
Thai
Swedish
Norwegian
Danish
Finnish
Hebrew
Korean
Russian
Other
No Pref
Match

This setting establishes your preference for the language of the subtitles you want to see on DVDs that you play. You may temporarily override this setting at any time, using either the **subtitle** button on the remote or the disc's own menu system. This setting simply establishes the language the PMDT will look for when playing a disc. **No Pref** indicates that you have no preference and the PMDT will select the subtitle language that the DVD author has programmed as the preferred language. If you select the **Match** option, the PMDT will try to match the subtitle language to the audio language chosen for this disc. If this subtitle language is not available on the disc, the PMDT will select the subtitle language that the DVD author has programmed as the preferred language.

Choose your preferred language and press **enter**.

favorite multichannel

Fav multichannel
Dolby D
DTS
MPEG
Any
None
No Pref

Similarly, this setting establishes your preference for the type of multichannel soundtrack the PMDT will give you upon spinning up a disc for the first time. Note that if your preference is not available, the PMDT will give you the first soundtrack it finds that meets other criteria (such as **alternative sound** and **spoken** language).

The first three choices are self-explanatory, as they are all multichannel-capable formats. For example, if more than one AC-3® soundtrack exists, selecting **Dolby D** in this menu will cause the PMDT to choose the one that is both multichannel and in your preferred language.

Selecting **Any** tells the PMDT that you have no particular preference for format, as long as it is multichannel. Selecting **None** indicates that you do not want the multichannel soundtrack (useful if, for example, you have not yet set

up all the extra speakers in your A/V system). If the **No Pref** option (which is set as the default) is chosen, the PMDT will set the multichannel audio track that the DVD author has programmed as its preferred soundtrack.

alternative sound

Alternative sound
Dolby D
DTS
MPEG
PCM

If your favorite multichannel selection is not available (or if you selected **None** to indicate that you do not want a multichannel soundtrack), then the PMDT will look to the **alternative sound** setting for guidance on what type of soundtrack you would like to hear. If the default **No Pref** is selected, the alternative sound will be set to the primary audio track that the DVD author has programmed as its preferred soundtrack.

Note:

The PMDT can only pass along information that it retrieves from the disc; it will not convert from one audio format to another. Thus, selecting PCM does not provide you with a PCM output from a Dolby Digital soundtrack.

audio delay

Audio delay
0 to +85 ms

If your system includes sophisticated video processing (such as line multipliers or scalers), the delay introduced in the video signal's reproduction may introduce a "lip sync" problem in which the sound arrives slightly ahead of the picture. You can correct this as a one-time setup item by having the PMDT delay the audio to match the delay introduced by your video processor.

You should be able to determine from the manufacturer of your video processor how much of a delay (the product's specification sheet may list it as "latency") that product introduces. If so, simply ask the PMDT to delay things by the same number of milliseconds (ms). Otherwise, you can adjust this by trial and error until you no longer notice any lip sync problems. (If you have a video processor, a good place to start would be around 40 - 50 ms.)

Note that this is not where you should try to compensate for an individual disc that was mastered poorly with respect to lip sync. You can program in a disc-specific audio delay in the **audio delay** section of the **ESP menu** *(see page 47).*

96kHz enabled

96kHz Enabled
yes
no

Some DVD-Video discs include a 24-bit, 96kHz PCM soundtrack. While these discs can be played (assuming that their copy protection system, called CSS, allows it) on the PMDT, not all processors can handle a 96kHz digital input. If yours does not, you may want to change this setting to "no" in order for the PMDT to output a digital signal at a lower 48kHz rate compatible with nearly all processors.

Note:

If the author of the disc invokes the CSS copy protection system, we are legally obligated to not let more than 16 bit, 48 kHz digital information out of the transport. This (16/48) is what the digital output will provide in that case, regardless of the setting you choose on "Output 96kHz."

CD record

CD Record
yes
no

A normal digital audio signal (DAS) includes a fair amount of non-audio data, including track numbers, elapsed time information and other "housekeeping" details. In many high-resolution systems, performance can be enhanced by replacing this repeating, non-audio data with other information that is more innocuous. However, doing so will make it impossible to make CD-R recordings using the PMDT as the digital source component, since the disc being recorded needs to have all this information preserved intact. Also, and more uncommonly, certain A/V processors may not recognize the altered DAS, and may fail to properly lock onto the signal.

For these reasons, we have included a software "switch" that allows you to either have your PMDT set for maximum compatibility (CD Record: Yes) or for maximum subjective performance (CD Record: No). Try not to obsess on this detail; on many systems the difference is not all that obvious. However, on an absolutely first-rate system, every little improvement is worthwhile; hence our including this (admittedly obscure) feature.

Disc behavior

Unfortunately, most CD players and most DVD players work differently from one another when doing seemingly simple things like loading discs, pressing **stop**, and so forth. Some people may find this inconsistency quite confusing, particularly in a single product that plays both kinds of discs. Fortunately, the PMDT gives you control over how you would like it to work in a number of potential problem areas.

The default settings from the factory correspond to the way DVD players and CD players normally work. That is, when playing a CD, the PMDT operates like most other CD players; when playing a DVD, it works differently, so as to be like most other DVD players. However, you can make it work the way that you find most attractive (or least confusing) by changing the settings below.

after load...

After load DVD
Play
Stop
After load CD
Play
Stop

Typically, DVD players begin playing a disc immediately after loading; CD players typically load the disc and then stop, waiting until you explicitly press **play**. This disparity in behavior is just one of many little annoyances in the way these players tend to work.

Using these two menus, you can have the PMDT work the way that makes sense to you. Choose either **Play** or **Stop** for each type of disc, whichever you prefer.

Disc status

Disc Status
Query
Auto

The PMDT is capable of reporting certain unique information about a disc each time it is loaded using its available RS232 port. Since this information may not always be desired, the automatic transmission of status can be inhibited by the setting **Query** by which the PMDT will only return this status when asked. This is the default setting. Setting this option to **Auto** will enable this function.

play key

DVD play key
dialog box
resumes
restarts
CD play key
dialog box
resumes
restarts

In a similar vein, DVD players vary in what they do after the **stop** button is pushed.

- Some keep the disc itself spinning, effectively placing the player in pause but with a blue screen showing, so that you can resume where you stopped watching quickly and easily. In this case, if you press **drawer**, you must wait for the disc to spin down before the drawer can be opened.
- Other DVD players actually stop the disc, allowing immediate use of the **drawer** button, but this both loses track of where you were (forcing a restart at the beginning of the disc) and requires a delay for spinning up the disc before you can start playing it.

Using the two menus shown above, you can determine the behavior you would like to see upon pressing **play** after **stop**, not only for DVDs but also (and separately) for your CDs. If you would like to be presented a choice whenever this situation arises, choose **dialog box**, and a popup menu will let you choose on an *ad hoc* basis. Otherwise, simply choose your preference to avoid having to choose each time.

▶▶, ◀◀ keys

DVD ▶▶, ◀◀ key
latching
simple
CD ▶▶, ◀◀ key
latching
simple

DVD players and CD players also typically differ in the way they handle "fast forward scan" and "fast reverse scan." Most DVD players have a **latching** fast scan button that requires only a momentary push of the button, and then another push (typically of **play** or **stop**) to exit the fast scanning mode. Often, even higher search speed can be accessed by repeatedly pressing the fast scan buttons.

By contrast, CD players generally only scan forward or backward as long as you are pressing the button. This simple and intuitive system works great as long as you do not need to search at multiple speeds. It does not provide access to higher scan speeds, since each release of the button prior to a second push takes the player out of a fast scan mode. Thus **simple** fast scanning is limited to the first (slowest) fast scanning speed.

As elsewhere, the factory defaults are consistent with DVD player norms when playing a DVD, and with CD player norms when playing a CD. If, for example, you prefer **latching** fast forward and fast reverse for both types of disc, select that option here.

stop dvd

Stop DVD
single key
double key

As described above, DVD players vary in what they do when you first press the **stop** key during play. Some actually stop the disc, while others keep it spinning in pause, but present you with a blue screen rather than a still frame from the movie. These latter models require you to press **stop** twice if you actually want it to stop spinning the disc.

If you dislike the possibility of walking away with the disc still spinning, choose **single key** from the menu. Selecting this option will require some extra time spinning the disc back up prior to resuming the movie, since it will come to a full stop the first time you press **stop**.

If you like the idea of "pause-without-a-picture," then set this menu item to double-key (meaning that you have to click **stop** *twice* to actually stop the disc from spinning; the disc will also have to spin down to a stop prior to being able to eject the disc.)

power user tip

The **return** button will always return you to where you stopped, as long as the drawer has not been opened since the last time you were playing the disc. Also, **pause** will also avoid losing your place in a movie. Most DVD players resort to these odd definitions of **stop** because they cannot give you access to the player's menu during play. The PMDT does. So pick whichever makes sense for you, based on whether you find the spin-up or the spin-down delay less annoying.

*use **ESP***

Use ESP:
yes
no

Perhaps one of the most valuable features of the PMDT in terms of ease of use is its **Electronically Saved Preferences** (**ESP**) feature. If you have been setting up your PMDT as you read this manual, by now it already knows how to behave in the vast majority of cases, relieving you of a lot of wasted time and effort searching through disc menus, whose organization varies so wildly. However, there are occasions when your chosen preferences just aren't quite right.

For example, you normally have subtitles off, but when watching a particular foreign film, you need to have them on. Whenever you play a disc in a way that is "the exception that proves the rule", the PMDT can make a note of how you appear to prefer to have it played. In that way, the next time you play

that disc, even years later, the PMDT will recognize it and play it the way you played it last time - with the subtitles on (or whatever).

This menu setting determines whether or not the PMDT should make use of this information about how certain discs merit special treatment upon playback. If you prefer to handle everything manually, on a case-by-case basis, turn it off. If you prefer for the PMDT to handle such details for you, leave it on.

Note that this setting must be set to **on** to enable the altering of the **ESP** menu described on page 46. If this feature is enabled and the PMDT has **ESP** information saved, you see the on-screen message "**ESP** Activated" as the disc is loading. This will alert you to the fact that the PMDT will select those options that were previously saved.

User preferences

The PMDT also provides for several general user preferences, reviewed below.

key feedback

Key feedback
Yes
No

With this menu item, you have the option of receiving visible (on-screen) feedback about the buttons you push, confirming that the command has been received by the PMDT. When you press **play**, **stop**, **previous**, **next**, and so on, small messages will appear on the screen to let you know “message received.” If you find these distracting, you can turn them off by choosing **No**.

OSD position

OSD position
upper/left
upper/mid
upper/right
lower/left
lower/mid
lower/right

The on-screen display (messages, prompts, etc.) of the PMDT can be moved to the various listed locations in order to avoid conflicts with OSDs being superimposed on the signal in other products. If you find such a conflict, you can move the PMDT’s OSD to a different position to ensure legibility of both OSDs.

background

Background
blue
black

The background color displayed when the PMDT has a disc in it and is stopped.

Link Options: 5/6 Enabled

Standby: On	**(or Off)**
Play Link: On	**(or Off)**
Intensity: On	**(or Off)**
Display: On	**(or Off)**
Projector: On	**(or Off)**
Slave Only: Off	**(or On)**

These settings allow you to tailor the way the PMDT interacts with other linked Madrigal products, such as the Proceed AVP/AVP2 or Madrigal Imaging projectors. (*Your AVP/AVP2 may require an additional hardware module in order to take advantage of linking features. Please see your dealer for further information.*)

All of these communications capabilities rely upon the PHAST network, so you must connect a "straight through" RJ-45 cable (such as the one provided) between the PMDT and the AVP/AVP2 in order to have these functions available to your system.

- **Standby Link** will cause the PMDT and AVP/AVP2 (and amplifiers linked to the AVP/AVP2) to all exit and enter **standby** together, with one push of a **standby** button (rather than pressing as many as three or four).
- **Play Link** automates the selection of whatever input is named "PMDT" on the AVP/AVP2, whenever **play** is pressed on the PMDT. (*If you have set up mode defaults on the AVP*/AVP2*, this can also select appropriate surround modes automatically - see the AVP*/AVP2 *owner's manual for more details.*)
- **Intensity Link** ensures that the displays of the PMDT and AVP/AVP2 track one another, so they remain at the same intensity (off, low, medium high) at all times.
- **Display Link** reflects the AVP/AVP2's on-screen messages and menu information on the PMDT's component output. With this feature engaged, you can enjoy the picture benefits of a direct component connection to your television, without giving up the useful information that the AVP/AVP2 would normally be superimposing on a composite or S-Video signal it was switching.
- **Projector Link** will automatically toggle the linked Madrigal Imaging projector between **standby** and **operate** as needed, dictated by the needs of the disc you are playing. For example, it will turn the projector on when playing a DVD, but leave it off when playing a CD. It will also automatically switch the projector's aspect ratio between linear (4:3) and anamorphic (16:9), based on what the DVD needs, and assuming the projector has been correctly set up by the dealer. (*Specifically, projector Recall Memories 1 through 3 should be set for 4:3 normal, 4:3 letterbox and 16:9 Anamorphic, respectively.*)
- **Slave Only**, when **on**, forces the PMDT to act only as a "slave" on the PHAST™ network, never as a "master." This setting is provided for superior compatibility in systems that also include a PHAST controller, which must be the "master" of the network. Absent a PHAST controller, either a PMDT or a Proceed AVP/AVP2 may be the "master" for intercomponent communication.

To toggle any of the links between **on** and **off**, move the menu highlight to the link in question (in the third column), and press **enter**. (*This is a bit different from most other menus, where the third column contains only the setting's*

value, rather than the setting and its value. For this reason, these links are displayed in yellow rather than the usual off-white.)

Note that in order for all the links to work properly, you must have the input that is used for the PMDT named "PMDT" on your AVP/AVP2 or PAV/PDSD.

display time

Display time
1 sec
2 sec
3 sec
4 sec
5 sec
6 sec

This menu item determines the length of time on-screen messages/prompts are displayed before "timing out" and disappearing again.

auto standby

Auto standby
disable
10 minutes
20 minutes
30 minutes
40 minutes
50 minutes
60 minutes

Auto standby monitors how long it has been since the PMDT has had to either respond to user commands (buttons pushes, etc.) or play a disc. If the amount of time exceeds that set in this menu item, it will automatically enter **standby**. Thus, if you have a tendency to fall asleep on the couch while watching movies, the movie will finish, the PMDT will wait (for example) 10 minutes, and then go into **standby**.

screen saver

Screen Saver
disable
10 minutes
20 minutes
30 minutes
40 minutes
50 minutes
60 minutes

The **screen saver** keeps track of how long an unchanging image has been sent to your television (either a DVD menu or its own menu, for example). After the amount of time you select here, it will engage a screen saver function in the OSD (center) area of the screen.

Information preferences

The **information preferences** menu allows you to have a wealth of information relevant to the PMDT at your fingertips. In some cases, this may be more information than you really need; in other cases, you may want ready access to a wide variety of information. Using this menu, you can control exactly what information is presented, and when.

The information you have selected to have available is represented to you on-screen in either of two ways.

- A relatively inconspicuous single-line display will pop up when you click the **info** button; subsequent clicks of this button will cycle through the information items you have designated as being **on**, eventually turning the single-line display off (whenever you reach the end).
- A larger list of information items can be presented when you *press and hold* the **info** button; this list contains everything designated as **on** as well as those items designated **list only**. You may either scan this list to get the information you want, or move the highlighted area down to a particular item and press **enter**, which will then place that particular item on the single-line display until you press **info** again.

Thus, for each item in this menu, you have a choice of having it **on**, (meaning available in either single-line or list form) or in the **list only**, or entirely **off**.

disc time

Disc time
on
list only
off

This info item displays your time (location) on the disc, consistent with the display mode you have selected (**time elapsed in title, time elapsed in chapter**, etc.)

sound type

Sound type
on
list only
off

This info item displays what form of audio/soundtrack you are currently listening to, both in terms of format (AC-3, DTS, MPEG, PCM) and language.

camera angle

Camera angle
on
list only
off

This item tells you what camera angle is currently being displayed. (Note that most discs only have one camera angle encoded into them.)

a/v processor

A/V processor
on
list only
off

This information item provides the status of the linked Proceed processor (assuming you have one, and it is linked).

play status

Play status
on
list only
off

This item can display (continuously) the status of the transport with respect to **play**, **stop**, **scan forward**, etc.

time of day

Time of day
on
list only
off

This menu item determines whether the time of day (as determined by the PMDT's internal clock) is displayed.

set clock

Set clock
(set time)

This is where you set the clock on your PMDT. Set the hours first (using the **up/down** buttons) move to the right with the **right** button, and then set the minutes with the **up/down** buttons. Press **enter** to save changes.

Technical menu

The **technical menu** contains a few items with which most people never need concern themselves, but that occasionally are invaluable for solving particular problems. We recommend that you leave everything in this menu alone unless you have an extremely specific problem you need to address, and you fully understand how the item you are changing will address it.

Important!

Some items in the PMDT's Technical Menu can cause you to lose all programs and other valuable information contained in its memory. Other settings (depending on the nature of your television system) can prevent the PMDT from creating a legible on-screen display in your system. If you have the slightest doubt as to what you might be tempted to do in this menu, consult with your authorized Proceed dealer prior to doing anything.

teach IR commands

If you have a macro-capable learning remote control such as Madrigal's IRIQ, or a home automation system that uses IR control (such as Audioaccess™) to coordinate the operations of several pieces of equipment, the **teach IR** menu item provides a lengthy list of everything that the PMDT can do in response to an infrared command. This list includes positive control items for commands that are normally toggles, such as the **standby** button. In addition to the normal standby toggle command, we also provide a positive control for "enter standby" and "exit standby." The availability of such commands makes the writing and operation of IR macros vastly more reliable.

When you select the **teach IR** commands menu item, a long, scrolling list appears on the right side of the menu system. Select the item you need to "learn" into a remote (or control system), and press **enter** on the front panel.

restore defaults

Use this menu item to restore the PMDT to its factory default settings. Note that doing so will cause all customization to be deleted permanently from the PMDT's memory; you will have to reenter all this information. This function cannot be undone. *Do not* select this item unless told to do so by an authorized representative of Madrigal Audio Laboratories.

delete programs

Similar to (although somewhat less drastic than) **restore defaults**, the **delete programs** menu item allows you to clear out all the individual disc programs that may have been saved into memory. (Video setup, audio setup, etc., settings will remain, but all disc programs will be wiped out.) This function cannot be undone.

Programming the PMDT

The PMDT offers an unusually wide range of programming options for advanced users. These options operate on two levels:

- Electronically Saved Preferences (**ESP**™) that keep track of the playback options (soundtrack, subtitles, etc.) you want used for this particular disc;
- *ad hoc*, on-the-fly changes to the sequence in which you want a disc played;

We will cover **ESP** first.

Electronically Saved Preferences (ESP)

As detailed elsewhere in this manual, the PMDT allows you to set up general preferences for how you want discs played: spoken language, audio format, subtitles, audio delay and so forth. However, there are likely to be some exceptions to these general rules. For example, you may have a foreign film in your collection for which you need subtitles turned on.

In order to take advantage of this "intelligence", **ESP** must be turned on in the disc behavior menu (**Use ESP: on**). The factory default setting is **off**. With **ESP** turned on you can view the current settings by pressing and holding the **program** button on the remote for a few seconds. The list of **ESP** options are displayed, complete with the context-sensitive help along the bottom edge of the screen. In the example above, the subtitles currently on will be displayed under the Subtitles option. To have the discs always play with the **subtitles,** you would highlight the **Save Settings** item and press **enter**.

Audio, language
Subtitles
Subtitle On/Off
Black Level
Audio Delay
Save Settings

If you would like to force **ESP** to remember certain settings regardless of how the disc was playing when it was last played, edit the **ESP** settings here, and then lock the settings using the last menu item. The **help** bar at the bottom of the screen will guide you, but the navigation is much like the main menu.

Use the four navigation buttons (**up**, **down**, **left**, **right**) to move around the menu system and make selections. Moving to the right from an item displays a list of the possibilities for that item. Clicking either the **program** button or the **return** button exits the **ESP menu**, as will clicking the **left arrow** when the cursor is already on the left-most column of the menu.

audio, language

This field summarizes the information regarding the soundtrack currently playing, including the audio format (Dolby Digital, DTS, MPEG, etc.), how many channels are available, and the language. (This information is all taken from the disc itself; its accuracy is limited to what is on the disc. For example, many old classic movies have two identical channels of audio, which is effectively mono. Yet because there are two channels, this is what would be reported by the PMDT.)

This feature can also be accessed without using the **ESP menu**, using the **audio** button on the remote control. Clicking that button cycles through the available settings; *pressing and holding* the button displays a list of the available settings, from which you may choose your selection using the **up** and **down** buttons.

subtitles

This line will tell you what language the subtitles are in.

This feature can also be accessed without using the **ESP menu**, using the **subtitle** button on the remote control. Clicking that button cycles through the available settings; *pressing and holding* the button displays a list of the available settings, from which you may choose your selection using the **up** and **down** buttons.

subtitle on/off

This item merely toggles the subtitle on or off.

This feature can also be accessed without using the **ESP menu**, using the **subtitle** button on the remote control. Clicking that button cycles through the available settings; *pressing and holding* the button displays a list of the available settings, from which you may choose your selection using the **up** and **down** buttons.

black level

The black level, or "brightness," of discs varies somewhat, depending on the quality of the transfer from film to video. When your PMDT is set to 0, it adheres extremely accurately to broadcast standards. However, if you find a particular disc seems so dark as to obscure details in the picture, it may be the result of one of these poor transfers. Rather than changing the accurate calibration of the PMDT in the video setup menu, change the **black level** setting for that particular disc here, in **ESP**. Your change will be remembered and implemented automatically the next time you play the same disc, without affecting the quality of other discs you play.

audio delay

A surprising number of discs are mastered poorly with respect to keeping the audio and the video properly synchronized. Since this varies from one disc to the next, there is no way to correct for it in a general setting. Instead, if you find yourself sensitive to this sort of thing, you can use the **Audio Delay** adjustment in **ESP** to remember the best setting for any particular disc in your collection.

Note that the delay offset value you choose is in relation to the **Audio Delay** that is set in the Preference Menu. For example, if you have chosen a delay of 50ms in the Preference Menu, you will initially see 50ms for this entry. You are then able to increase or decrease this value using this offset value. The total audio offset that will be applied to the digital signal, if and when **ESP** is enabled, is shown in the **Audio Delay** setting.

save settings

When you have all items in this menu set to the way you want this disc played back in the future, pressing the **enter** button with **Save Settings** highlighted will store these settings away for future use.

Ad hoc programming

The most common custom program for most people involves deleting a particular chapter (or track on CDs) that they would prefer not to see/hear again. This could be the annoying FBI warning at the beginning of a movie, or a song that was overplayed on the radio. This can be done on an ad hoc basis. Clicking on the **program** (**prog**) button brings up a short menu:

ad hoc program menu

Program
Add Item
Delete Item
Save Program
Delete Program
Turn Program On

Clicking on the **program** button while this menu is displayed cycles you through the various options; press **enter** to issue the selected command. A popup display will either confirm that the command has been issued, or provide you with a space to add more information. For example, you may want to create programs for frequently watched discs that contain only the movie itself, skipping all the introductory material, so you can simply press **play** and have the movie begin.

A note about programs:

Depending on how a particular disc is "authored," it may not be possible to execute the programs exactly as you would like. Although this problem seems to affect relatively few discs, it is, unfortunately, beyond our control - the producers of the discs themselves can do "programming" of their own that we must honor. Fortunately, these problems are uncommon. If you create a program that results in unexpected behavior, simply delete the program as indicated below, and use as normal.

Add Item allows you to add an item to the current disc's playlist. With DVD discs, the "item" in question can be either an entire title or a specific chapter within a title. (On CDs, the "item" will be a track.) Having selected **Add Item**, an editable popup display appears that displays the current Title and Chapter (or Track on CD). For example, while in Title 2, Chapter 3, the popup display would look something like this:

If you press **enter** while the first field (**title**) is highlighted, the entire *title* will be added to a playlist for that disc. If instead the second field (**chapter**) is highlighted when you press **enter**, the PMDT will assume you want to create a more specific playlist, one *chapter* at a time. Unless you issue a **save program** command, this is considered a temporary program - it exists only until the drawer is opened, and is then forgotten.

Delete Item, as you might expect, allows you to delete the current chapter or track from the disc's playlist. With DVD discs, the "item" in question can be either an entire title or a specific chapter within a title. (On CDs, the "item" will be a track.) Having selected **Delete Item**, an editable popup display appears that displays the current Title and Chapter (or Track on CD). For example, while in Title 2, Chapter 3, the popup display would look something like this:

If you press **enter** while the first field (**title**) is highlighted, the entire *title* will be deleted from the playlist for that disc. If instead the second field (**chapter**) is highlighted when you press **enter**, the PMDT will assume you want to create a playlist that omits only that *chapter*. Unless you issue a **Save Program** command, this is considered a temporary program - it exists only until the drawer is opened, and is then forgotten.

Save Program saves what would otherwise be a temporarily assembled playlist into nonvolatile memory, so that it will be executed every time that disc is played, until you decide to delete the program yourself. Having this as a separate command, rather than assuming it as soon as a playlist is created, gives you the freedom to experiment at will with various playlists until you get it "just right"; you can save the program at that time, or decide to forget the whole thing by simply removing the disc.

Delete Program will delete a saved program from memory, should you later decide that you'd rather play the disc as its producers intended. (*On a few discs, you may need to delete the program if your program conflicts with the one contained on the disc, put there by the author of the disc. See A Note About Programs, earlier in this section.*)

Turn Program On/Off gives you the option of temporarily turning off your customized program, without having to actually delete it entirely. For example, you might have created a program that skips the disc's navigation system, FBI warning, extra/bonus materials, etc., and plays only the movie itself. If you wanted to show some friends all of the extra features that DVDs often have, you could simply turn off your program and play the disc as its authors intended, giving yourself access to everything on the disc. When finished, simply turn the program back on to return to your preferred playlist.

Note: ***If you try to access material outside of your created program the program will be turned off. You can turn it back on via the front panel program button or remote "prog" key (and choose turn program on) or by reloading the disc.***

Troubleshooting

In general, refer any service problems to your local authorized Proceed dealer. Before contacting your dealer, however, check to see whether the problem is listed here. If it is, try the suggested solutions. If none of these solves the problem, contact your Proceed dealer.

1. THE PMDT WON'T FUNCTION, AND THE DISPLAY IS DARK.

- ✓ The PMDT isn't plugged into the AC mains.
- ✓ The **power** button has not been engaged.
- ✓ The wall socket (or extension cord, if used) is faulty, or the wall socket has a tripped circuit breaker or blown fuse.
- ✓ A fuse is blown in your PMDT (contact your Proceed dealer).

2. THE DISPLAY IS LIT AND THE ELAPSED TIME NUMBERS APPEAR TO BE ADVANCING NORMALLY, BUT THERE IS NO AUDIO OUTPUT.

- ✓ The proper source isn't selected on your A/V processor.
- ✓ The volume is set too low or muted on your A/V processor.
- ✓ The connecting cables are connected incorrectly or are faulty.
- ✓ The power amplifier(s) is/are not on.

3. THE PMDT WON'T PLAY A DISC INSERTED IN THE PLAYER.

- ✓ The disc is inserted upside down.
- ✓ The disc may be severely scratched and unreadable. Check the disc.
- ✓ You may be trying to play a CD-RW disc. The transport used in the PMDT is not specified to play these discs, and we cannot guarantee that they will play (although sometimes a particular disc may play without problems due to its reflectivity, the way it was burned, etc.).
- ✓ There may be condensation (moisture) on the laser pickup. This can happen if the PMDT is moved from a cold environment (such as a warehouse or a shipper's truck) to a warm one. Plug in the PMDT, leave it on for one hour to warm up, then try playing a disc again.

4. WHEN A DISC IS PLAYING, THE SOUND AND/OR PICTURE "SKIPS."

- ✓ The disc is severely scratched or dirty.
- ✓ The PMDT is on an unstable surface or is too close to your speakers.

5. THE REMOTE CONTROL DOESN'T OPERATE THE PMDT.

- ✓ The remote control is at the wrong angle relative to the PMDT, and it can't receive the signal.
- ✓ The sensor window on the front panel of the PMDT is dirty or blocked.
- ✓ The remote control's projection lens is dirty.
- ✓ Fluorescent lighting or sunlight is interfering with the operation of the remote control.
- ✓ The remote control's batteries need to be replaced.
- ✓ The remote control's batteries are installed incorrectly.

6. THE UNIT IS OPERATING ERRATICALLY

✓ The microprocessor's program may have been temporarily corrupted by adverse power conditions or severe static shock. Cycling power off and on should reset it.

✓ The program itself may have been damaged. Enter the Player Menu and check the "About…" menu for the current software version numbers and their checksums; then call your dealer/distributor with this information.

7. I SEE ERROR MESSAGES WHEN I PRESS BUTTONS AT CERTAIN TIMES

✓ There are several possible error messages that might be displayed on the PMDT's on-screen display, depending on the nature of the problem. They are:

- **Operation prohibited** indicates that the authoring of the disc will not allow this action to be taken at this time. This is indicative of one of several flags referred collectively as "UOP" for "User Operation Prohibited," and is controlled by the disc rather than by the PMDT.
- **Access restricted** indicates that the authoring of the disc will not allow access to that portion of the disc at this time. This is indicative of one of several flags referred collectively as "UOP" for "User Operation Prohibited," and is controlled by the disc rather than by the PMDT.
- **Invalid command** indicates that you are asking to do something that the MPEG decoder cannot do at the moment. This could be because the command itself does not make sense, or because the decoder is "preoccupied" with another process at the moment.
- **Not implemented** indicates that this action is not supported at this time. It may, however, be included in a software update in the future. Stay in touch with your local dealer for information on new software releases.
- **Button inactive** indicates that the command (at that point in time) does not make sense and has been ruled out. Examples include trying to go into **cue forward** from **stop**, where the PMDT cannot even begin your command for lack of a defined starting point from which to begin scanning forward.

8. I HAVE LINKED THE PMDT TO MY AVP/AVP2 BUT THE LINKS DON'T SEEM TO BE WORKING.

✓ Check to make sure your link cable is seated properly, connecting the Control ports (PHASTLink compatible) of the two products, and that the PMDT's input name on the AVP/AVP2 is **PMDT**.

✓ Check to make sure you have version 3.0 software or greater installed in your AVP/AVP2. (The date code in the About box will be 10/22/99 or later.) Please consult with your dealer for more information on your AVP/AVP2 software version.

✓ Your AVP/AVP2 may need the PHAST daughtercard installed. Please contact your dealer for details.

9. I CREATED A PROGRAM, BUT NOW THE DISC DOES NOT PLAY PROPERLY.

✓ It may be that the disc was authored in such a way that it will not allow us to control its playback. Sorry – delete the program and use the disc as the author/producer intended.

Care & Maintenance

To remove dust from the cabinet of your PMDT, use a feather duster or a lint-free soft cloth. To remove dirt and fingerprints, we recommend isopropyl alcohol and a soft cloth. Dampen the cloth with alcohol first and then lightly clean the surface of the PMDT with the cloth. Do not use excessive amounts of alcohol that might drip off the cloth and into the unit.

Caution!

At no time should liquid cleaners be applied directly to the PMDT, as direct application of liquids may result in damage to electronic components within the unit.

U.S. and Canadian Warranty

90-Day Limited Warranty

This Proceed® product is warranted to be free from defects in material and workmanship under normal use for a period of ninety (90) days from the date of purchase. ***To extend the warranty of this Proceed product***, return the warranty registration card along with a copy of the original receipt of purchase to Madrigal Audio Laboratories, Inc., P. O. Box 781, Middletown, CT 06457.

Five-Year Extended Warranty

The ***extended warranty*** for this Proceed product is ***five (5) years*** from the date of purchase. During the warranty period, any Proceed component exhibiting defects in materials and/or workmanship will be repaired or replaced, at our option, without charge for either parts or labor, at our factory. The warranty will not apply to any Proceed component that has been misused, abused or altered.

Any Proceed component not performing satisfactorily may be returned to the factory for evaluation. Return authorization must first be obtained by either calling or writing the factory prior to shipping the component. The factory will pay for return shipping charges only in the event that the component is found to be defective as mentioned above. There are other stipulations that may apply to shipping charges.

There is no other express warranty on this component. Neither this warranty nor any other warranty, express or implied, including any implied warranties of merchantability or fitness, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and other states do not allow the exclusion or limitation of incidental or consequential damages, so that the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. **This warranty is applicable in the United States and Canada only.** Outside of the U.S. and Canada, please contact your local, authorized Proceed distributor for warranty and service information.

Obtaining Service

We take great pride in our dealers. Experience, dedication and integrity make these professionals ideally suited to assist with our customers' service needs.

If your Proceed component must be serviced, please contact your dealer. Your dealer will then decide whether the problem can be remedied locally, or whether to contact Madrigal for further service information or parts, or to obtain a Return Authorization. The Madrigal Technical Services Department works closely with your dealer to solve your service needs expediently.

Important!

Return authorization must be obtained from Madrigal's Technical Services Department BEFORE a unit is shipped for service.

It is extremely important that information about a problem be explicit and complete. A specific, comprehensive description of the problem helps your dealer and the Madrigal Technical Services Department locate and repair the difficulty as quickly as possible.

A copy of the original bill of sale will serve to verify warranty status. Please include it with the unit when it is brought in for warranty service.

Warning!

All returned units must be properly packaged (preferably in their original packing material), and the proper return authorization numbers must be marked on the outer carton for identification. If the packaging to protect the unit is, in our opinion or that of our dealer, inadequate to protect the unit, we reserve the right to repackage it for return shipment at the owner's expense. Neither Madrigal nor your dealer can be responsible for shipping damage due to improper (that is, nonoriginal) packaging.

Your dealer can order a new set of shipping materials for you if you need to ship your component and no longer have the original materials. There will be a charge for this service. We *strongly* recommend saving all packing materials in case you need to ship your unit some day.

Specifications

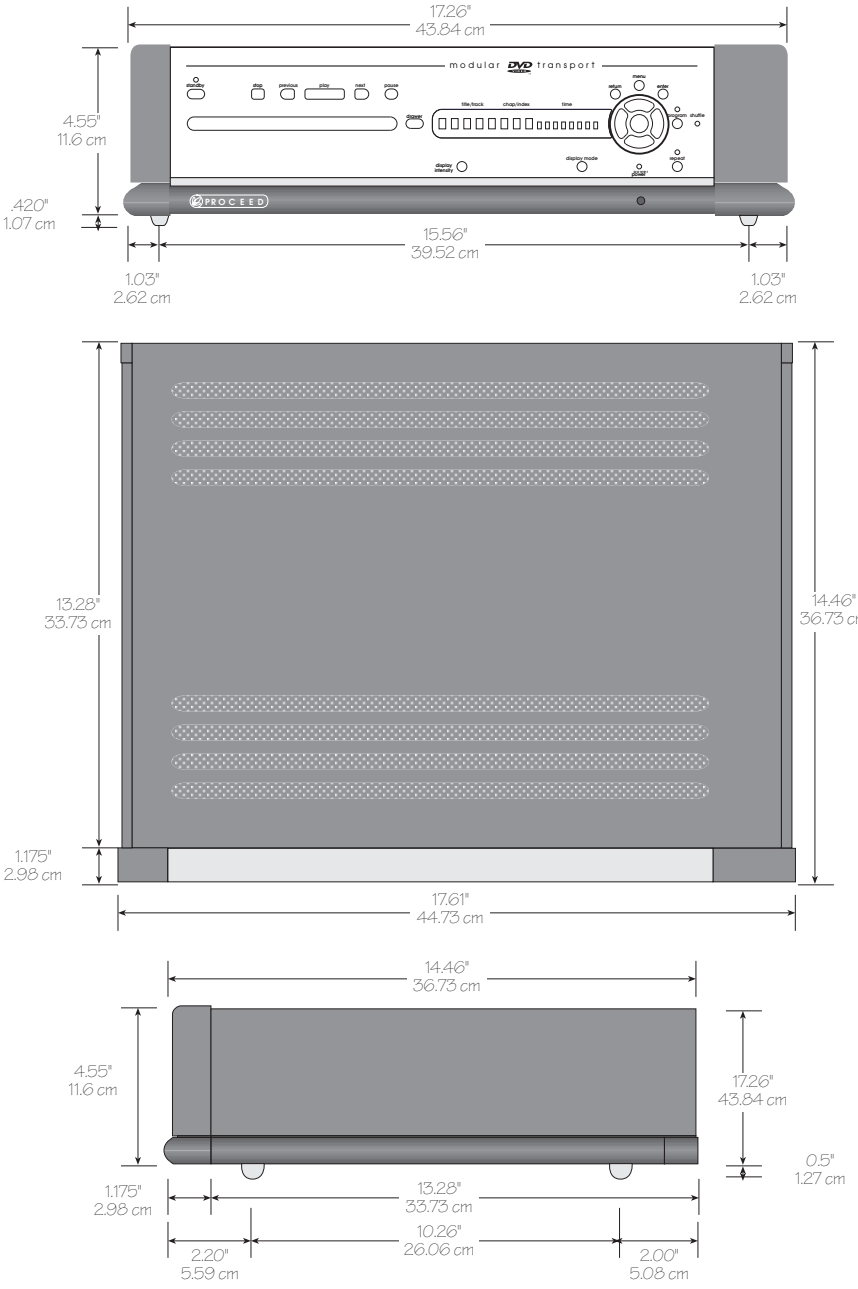
Video processing:	10-bit
Video frequency response:	±0.5dB up to 5.5MHz
Video signal-to-noise ratio:	better than –60dB
Video differential phase:	better than 0.5°
Video differential gain:	better than 0.1dB
Video output impedance:	75Ω
Video output complement:	component on 75Ω BNC S-Video on standard mini-DIN component (Y/Pb/Pr) on 75Ω BNC
Video formats supported:	NTSC, PAL, PAL-60
Video aspect ratios:	anamorphic, 16:9 letterboxed, 4:3 pan & scan, 4:3 zoomed video, 4:3
Digital audio output, XLR:	AES/EBU 110Ω, 3.5V
Digital audio output, BNC:	S/PDIF 75Ω, 0.5V
Digital audio output, RCA:	S/PDIF 75Ω, 0.5V
Mains voltage:	100V, 120V, 220V, 230V, 240V, factory-set for destination country only
Mains frequency:	50Hz or 60Hz, factory-set for destination country only
Power consumption:	60 watts maximum
Overall dimensions:	See "Dimensions"
Shipping weight:	45 lbs (20.5kg)

For more information, see your Proceed dealer, or contact:

Madrigal Audio Laboratories, Inc.
P.O. Box 781
2081 South Main Street (Route 17)
Middletown, Connecticut 06457 USA
Telephone: (860) 346-0896
Fax: (860) 346-1540
Internet: http://www.madrigal.com

Madrigal provides an owner-transferable, five-year extended warranty on all Proceed products within the U. S. and Canada ONLY. Warranty and service policies outside the U. S. and Canada are set by the local, authorized distributor and are applicable in the country of purchase ONLY. Madrigal products are designed to operate at set voltages appropriate for the country of sale and may be damaged if operated at the wrong voltage. Contact your local dealer or distributor.

Dimensions: PMDT

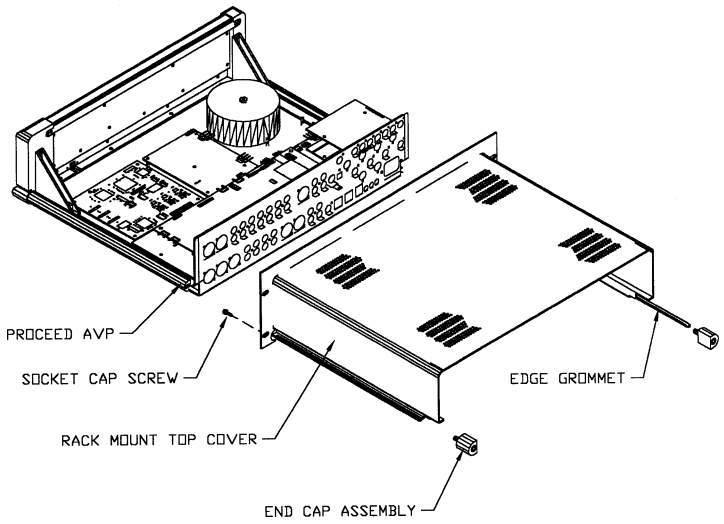


(note that additional space must be allowed for connections *behind* the unit)

Rack Mount Kit

If you need or prefer to rack mount your PMDT, contact your Proceed dealer about the optional rack mount kit. This purpose-designed assembly replaces the standard top cover of the unit with one designed to support this relatively heavy component solely from the “ears” that bolt into the rack.

To use the rack mount kit, simply replace the standard top cover with the rack mount top cover. (Full instructions are included with the top cover when purchased separately.) Once the rack mount top cover is in place, you may bolt the entire unit securely to any EIA-standard rack. Alternatively, you may find it easier to mount the top cover in the rack, and to then slide the “topless” PMDT into place.



(The illustration above depicts the Proceed AVP/AVP2, but the kit and mounting system for both is the same.)

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