INTRODUCTION

Thank you for your purchase of the Marantz Professional PMD680 PC Card Recorder. The PMD680 is the next generation of portable digital recorders that bridge the gap between real-time audio recording and computers — while keeping the size and functionality of our renowned portable cassette and MiniDisc recorders.

The PMD680 has been designed as a field acquisition tool. This means that the unit itself is designed to record audio in a computer compatible file format. The audio files are then meant to be transferred to a computer for editing or transmission.

The recording medium of the PMD680, PCMCIA compatible PC Cards, allows plug-and-play compatibility with desktop and laptop computers. Flash PC Cards are based on flash memory technology that features no moving parts and is not affected by movement and temperature. Flash memory cards are available through most computer and digital photography products resellers. For a complete list of approved cards for the PMD680, please refer to the Marantz Professional website at www.marantz.com.

The MP2 (MPEG1 layer2) file format that is supported by the PMD680 is a worldwide standard for compressed digital audio storage and transmission. Many playback and editing systems are available commercially and through the Internet. For more information on MP2 based playback and editing systems, please consult your dealer.

Also supported by the PMD680, PCM (Pulse Code Modulation) is the most widely used format for coding uncompressed digital audio. The PCM system is used on CD players, DAT recorders, and on computer editing programs that support Wave (.wav) files. Recording in the PCM format will provide the most universally accepted storage format but comes with the limitation that it uses a lot of memory very quickly.

USING THIS MANUAL

Please read these operating instructions carefully. We recommend that you read the entire user guide before you connect or operate the unit.
After you have reviewed the contents this manual, we suggest that you make all system connections before you attempt to operate the unit.

FOREWORD

This section must be read before any connection is made to the mains supply.

WARNINGS

Do not expose the equipment to rain or moisture.

Do not remove the cover from the equipment.

Do not push anything inside the equipment through the ventilation holes.

PRECAUTIONS

The following precautions should be considered when operating the equipment.

When setting the equipment ensure that :
– air is allowed to circulate freely around the equipment
– the equipment is on a vibration free surface
– the equipment will not be exposed to interference from an external source
– the equipment will not be exposed to excessive heat, cold, moisture or dust
– the equipment will not be exposed to direct sunlight
– the equipment will not be exposed to electrostatic discharges
• In addition, never place heavy objects on the equipment.
• If a foreign object or water does enter the equipment, contact your nearest dealer or service center.

Features

• Monaural (1 track) audio recording and playback
• Recording onto various types of approved PC Cards
  - Please refer to the Marantz Professional website at www.marantz.com for the complete list of approved cards
• Two different recording formats:
  - Compressed recording using MPEG1 Layer2 (MP2)
  - Uncompressed recording using 16-bit/48kHz Pulse Code Modulation (PCM)
• MS-DOS and Windows compatible file system
• Selectable file types:
  - Wave (.wav)
  - Broadcast Wave (.bwf)
  - Raw MP2 (.mp2)
• Manual, manual with limiter, and automatic (ALC) record level control
• An ANC (Ambient Noise Cancel) switch for eliminating unwanted background noises
• Pre-Recording memory buffer that records 2 seconds prior to when recording is started
• Portions of multiple recordings can be played back in sequence using the EDL (Edit Decision List) system
• Three different ways to power the unit:
  - Included AC adaptor
  - 8 Alkaline AA batteries
  - Optional rechargeable Ni-Cad battery pack
• Built-in Time and Date generator marks each recording
• Telephone jack for recording and playback using standard analog telephone lines
• Remote input for pausing and un-pausing during recording or playback

How to Use this Manual

This manual is divided into the 7 sections described below. To find out how to use a specific control, refer to the section "Index of Parts, Controls, and Display" on page 26.

SETTING UP

This section describes how to set up the unit in preparation for recording and playback.

PRESET MENU

This section provides information about the various preset menu options.

GENERAL FUNCTIONS

This section provides information about the functions and operations that are common for recording and playback.

RECORDING

This section describes the various input controls, record settings, and the basic recording procedure.

PLAYBACK AND EDITING

This section describes the basic playback procedure and options, and details the editing options availble to recorded tracks.

THE EDL

This section describes the EDL (Edit Decision List) system and how to configure and manipulate EDL marks in a recording to create a custom playback sequence.

ADDITIONAL INFORMATION

This section includes detailed information about error handling, the PC Card recording system, troubleshooting, specifications, and the "Index of Parts, Controls, and Display", which allows you to look up operations of specific controls.

Contents

AC Adaptor and Batteries

AC Adaptor

When recording for extended periods, or using this unit in a fixed environment, it is recommended to supply power to the unit via the included AC adaptor.
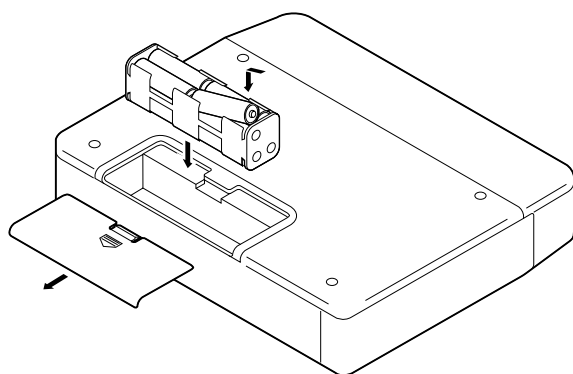
to AC outlet
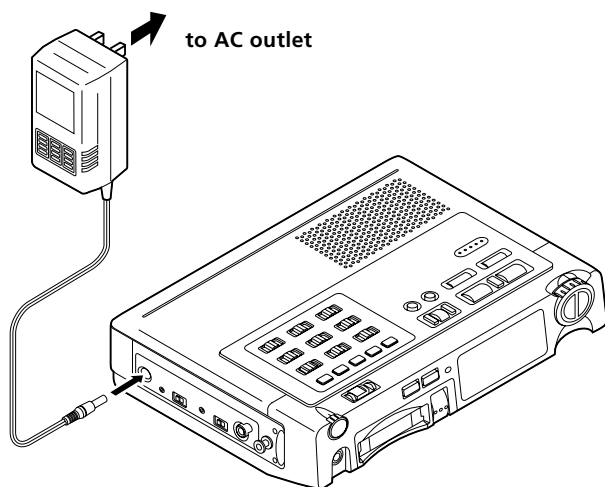
Note
- It is recommended to only use the Marantz Professional brand AC adaptor (model DA600) for use with the PMD680.

Alkaline Batteries

The PMD680 can operate using 8 standard AA size alkaline batteries.
First load the batteries into the battery holder and then load the holder as shown in the following illustration.

Battery Replacement

When the battery alert indicator (⊏⊐) appears steadily in the display, replace all batteries with new ones. For the complete description of the battery alert indiactor, please refer to page 10.
Fresh alkaline batteries will provide at least 2 hours of continuous recording or playback (speaker and display backlight off).

Notes
- When recording, to avoid problems caused by loss of battery power, it is recommended to always use new alkaline batteries.
- Use only AA size batteries for replacement.
- Be sure to insert the batteries with correct polarity (as illustrated on the battery holder).
- Remove the batteries if the unit will not be used for an extended period of time.
- Battery life may vary depending on the conditions under which the unit is operated (environmental temperature, humidity, speaker usage, etc.).

- If batteries leak, dispose of them immediately. Avoid touching the leaking material or letting it come into contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- For optimum life and accurate battery display, make sure the battery ("bat") preset is set to "al". See page 9 for more information on the preset menu.

Ni-Cad Rechargeable Battery (optional)

An optional Ni-Cad battery (model RB1100) is available for use with the PMD680.
Refer to the following illustration to load the battery.
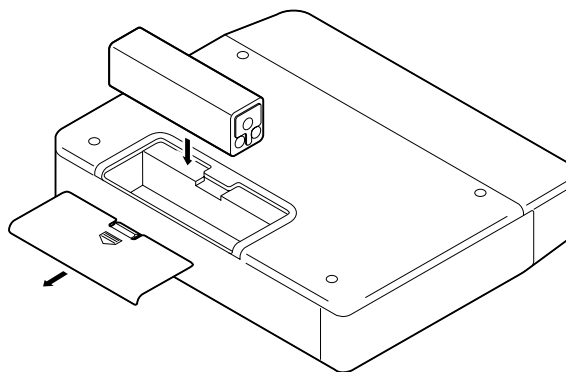
Battery Replacement

When the battery alert indicator (⊏⊐) appears steadily in the display, charge the battery or replace the rechargeable battery with a fully charged one.
A fully charged battery will provide at least 1 hour and 45 minutes of recording or playback time.

Charging Battery

The optional Ni-Cad battery is charged only when:
- The AC adaptor is connected
- The Ni-Cad battery is loaded correctly in the battery compartment
- The CHARGE slide switch is set to ON
- The power to the unit is off

While charging, the CHARGE LED will blink.

When the charge cycle is complete, the CHARGE LED will stay steadily on.

Notes
- The battery will not charge when the power to the unit is on.

**Charging Time**

Approximately 3 hours.

Notes
- Make sure to fully charge the battery before first use.
- Battery life may vary depending on the conditions under which the unit is operated (environmental temperature, humidity, speaker usage, etc.).
- It is recommended to only use the Marantz Professional brand AC adaptor (model DA600) for use with the PMD680.
- For optimum life and accurate battery display, make sure the battery ("bat") preset is set to "nc". See page 9 for more information on the preset menu.
- When recording, to avoid problems caused by loss of battery power, it is recommended to always use a fully charged battery.
- Remove the battery if the unit will not be used for an extended period of time.
- If the charge switch does not light when charging should be taking place, remove and then restore power.
- The battery power should be completely used before it is re-charged because Ni-Cad type batteries have a memory effect which will reduce the total power for the battery if it is only partially used and re-charged.

Power On/Off

Power On

Sliding the power switch to the right turns the power on. If a correctly formatted card is in the slot, the message below will be displayed.

```
      ▲  ▲  ▲  ▲
   ▷            ◁
      t o C
   ▷            ◁
      ▽  ▽  ▽  ▽
```
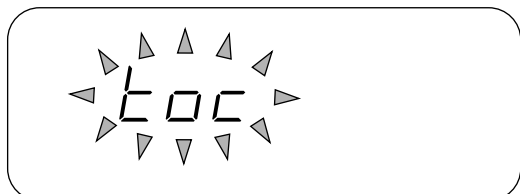
Note
• TOC stands for Table of Contents and it is a reference to the beggining of the card that contains the information on all the audio tracks on the card.

If the card in the slot has not been formatted to the specifications of the PMD680, the Un-Format display will appear as indiacted below:

```
   Un  For
```
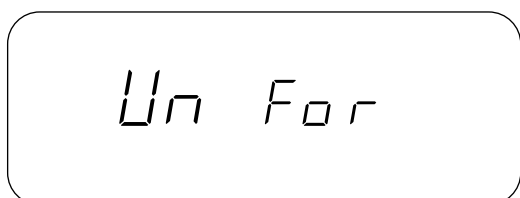
If there is no card in the slot, then the following message will be displayed:

```
   no  Card
```
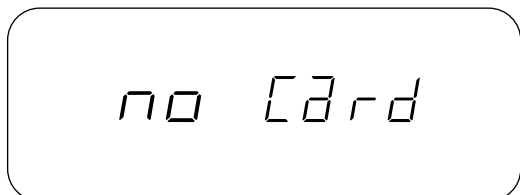
Power Off

Sliding the power switch to the right while the power in on will turn the power off.

Note
• While the unit is recording or in the record-pause mode, the power switch is disabled.

Setting the Date and Time

Before operating your PMD680, perform the following operations to set the current date and time.
The current date and time are recorded automatically at the beginning of each recording.

1   With the power off, slide POWER to the right while holding down the DISPLAY (TIME/DATE) button.
    The unit turns on and enters the date/time setup mode.
2   Press ◄◄/I◄◄ or ►►I/►► to set the month, then press PLAY/PAUSE (►/II) to enter.
3   Press ◄◄/I◄◄ or ►►I/►► to set the day, then press PLAY/PAUSE (►/II) to enter.
4   Press ◄◄/I◄◄ or ►►I/►► to set the year, then press PLAY/PAUSE (►/II) to enter.
5   Press ◄◄/I◄◄ or ►►I/►► to set the hour, then press PLAY/PAUSE (►/II) to enter.
6   Press ◄◄/I◄◄ or ►►I/►► to set the minute, then press PLAY/PAUSE (►/II) to enter.
7   To save the input time/date information, press the DISPLAY (TIME/DATE) button. The seconds will start counting from 00 and the unit will enter the stop mode.
8   To return to the date setting display (step #2), press the PLAY/PAUSE (►/II) instead of the DISPLAY (TIME/DATE) button.

Notes
• Pressing the STOP (■) button at any time during the time/date setting mode will cancel any changes and return the unit to the stop mode.
• The time is always displayed in 24-hour time. So for example, 23:59:59 is equivalent to 11:59:59 PM.

4

Understanding PC Cards

The PMD680 records digital audio directly to PCMCIA and ATA compatable PC Cards. The PC Card storage system allows direct plug-and-play compatibility with conputers equipped with a PC Card slot.

PC Cards come in a variety of shapes and sizes. The PMD680 is compatible with all types as long as they are PCMCIA compatable.

Even though any PCMCIA compatible PC Card can be read by the PMD680, only certain types of cards can sustain the record speeds required. Therefore, only cards tested and approved by Marantz Professional should be used with the PMD680.

The recommended card list for the PMD680 can be found on the Marantz Professional website at www.marantz.com.

Inserting a Card
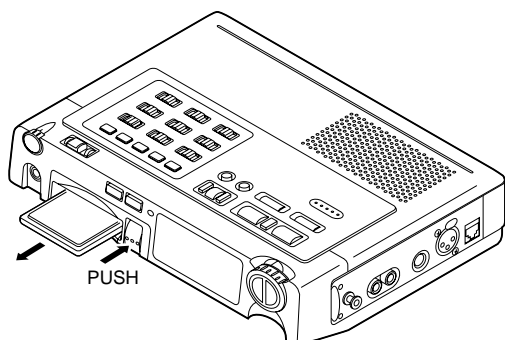
Push the PC Card into the PMD680 as follows.
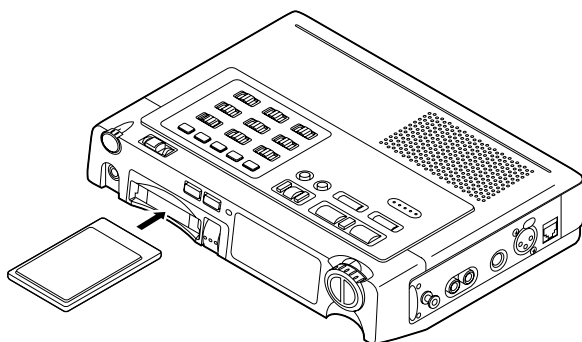
Note
• Make sure the card is inserted with the correct side facing up.

Ejecting a Card

Push the EJECT button as indicated to eject the PC Card from the PMD680.

PUSH

Notes
• The EJECT button is mechanical and ejects the PC Card regardless of the unit's power or operating status.
  Do not press EJECT while recording (when the REC indicator is lit). This may result in the loss of all data on the PC Card.
• Also do not eject the card when the unit is checking the card ("CHE card" display) or when the TOC is being read ("toc" display).

Formatting a PC Card

Before using a PC Card for the first time, perform the following operations to format the PC Card so that it can be used to record audio. This operation completely erases any information stored on the card. Be sure to backup any important information before formatting.

Note
You can also use this operation to completely erase a previously used PC Card containing audio data you no longer need.

Operation

1   Make sure the power is off.

2   Insert the PC Card to be formatted.

3   Slide the POWER switch to the right while holding down the ERASE (FORMAT) button.

4   The format message below will be displayed.

$$For$$

5   After formatting the card and generating the EDL file, the "done" message below is displayed for 3 seconds.

$$For \quad done$$

6   The unit then enters the stop mode

Notes
• Even if a PC Card was formatted in a Windows compatible PC, formatting by the PMD680 is neccessary.
• After recording and erasing a card many times, it is recommended to format the card so that new recording can be stored in the optimum way.
• Do not eject the PC Card or turn this unit's power off while formatting is in progress.

Care of PC Cards

Please refer to the documentation included with your PC card for proper care.

Capacity of Files and Card

Due to limitations in the MS-DOS compatable file structure system, the maximum size of all the recorded tracks on a card is 1,200MB (MegaBytes) or 1.2GB (GigaBytes).
The maximum card size that can be read by the PMD680 is 2,150MB (MegaBytes) or 2.15GB (GigaBytes). Cards larger than 2.15GB may not work correctly in the PMD680.

5

Connecting Microphones

A dynamic or an externally powered condensor microphone can be connected to the PMD680 via a 1/4" or XLR connection.

Connect microphones as shown below.
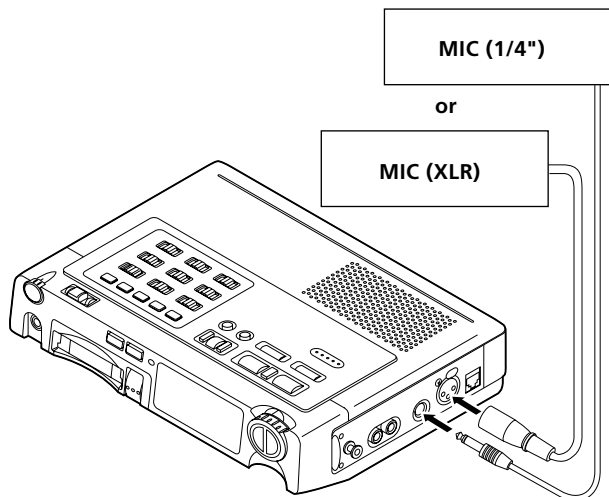
Notes
- Take care not to connect or disconnect microphones while recording. This may result in unwanted sounds in the recording.

Connecting Analog Components

The following illustrations show you how to connect analog audio components for recording or playback.

To record from analog audio components

Connect the source component's analog line output jacks to the PMD680's LINE IN (RCA) jack.
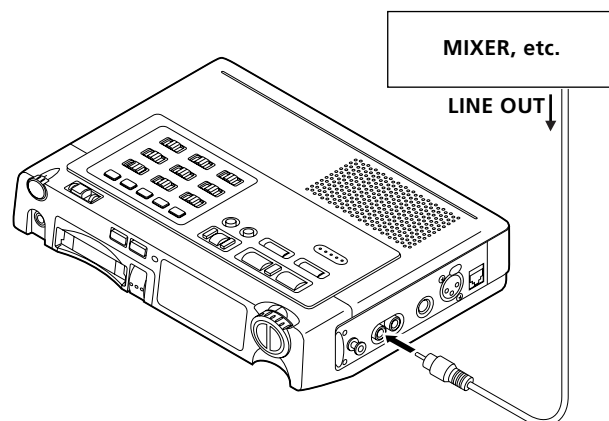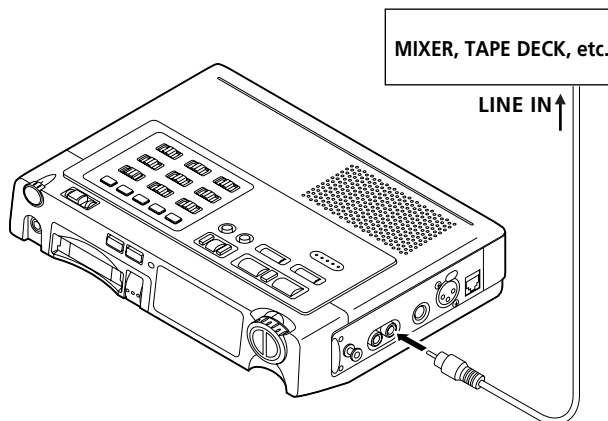

Note
- To connect a stereo source to the mono PMD680 LINE IN, a Y-adaptor cable can be used.

To output analog audio signals to another audio component

Connect the LINE OUT (RCA) jack on the PMD680 to the analog input on the destination component.
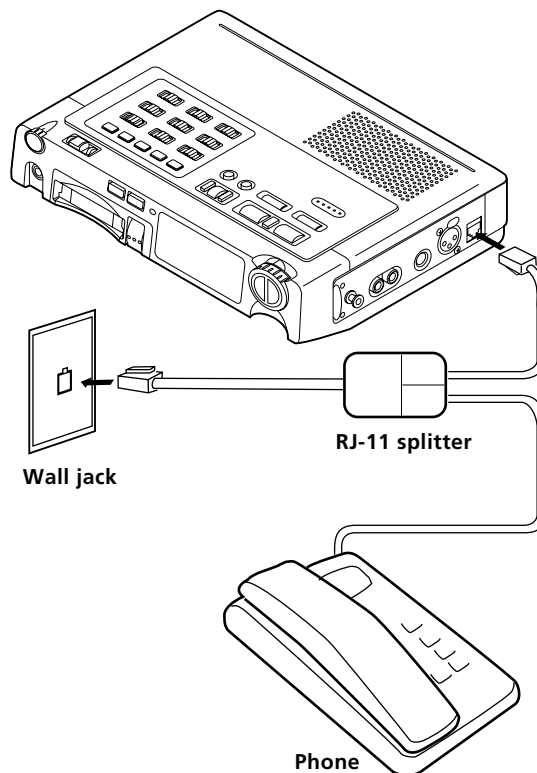

Note
- To connect the mono PMD680 LINE OUT to a stereo input, a Y-adaptor cable can be used.

To record from or output through a telephone line

Connect the phone line to the TELEPHONE IN/OUT jack as follows.
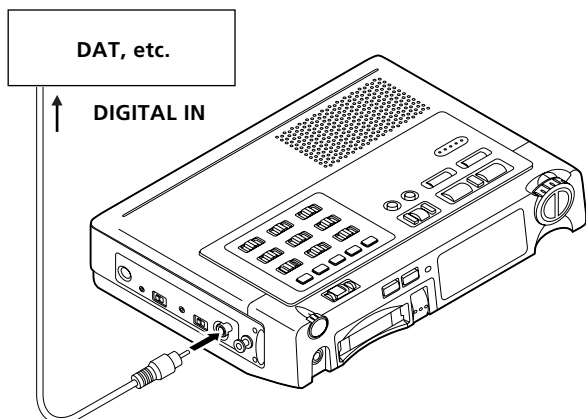

Notes
- Please be advised that connecting the PMD680 to a telephone line is illegal in some countries.
- Telephone calls must be placed and received with the connected phone.

Connecting Digital Components

The following illustrations show you how to connect digital audio components.

To output digital audio signals to another audio component
Connect the DIGITAL OUT (RCA) jack on the PMD680 to the digital input jack on the destination component. Turn the output on by placing the switch (next to the output jack) in the ON position.
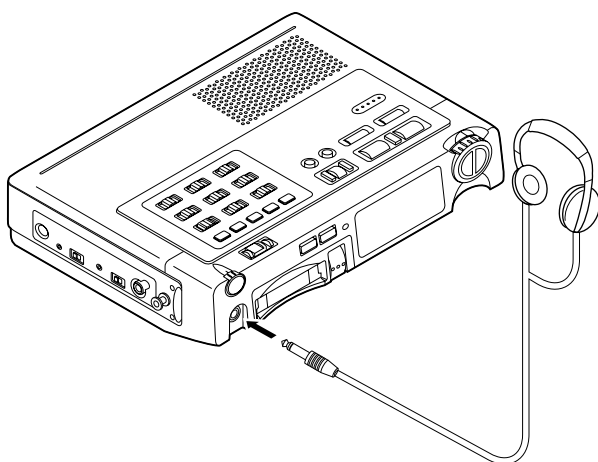

Notes
- Digital audio is only output during normal playback and EDL playback. Digital audio is not output during recording even if the output is turned on.
- When the digital output is not used, make sure to keep the DIGITAL OUT switch OFF to save battery life.
- Make sure the destination component accepts the SPDIF (or IEC-958-II) type digital audio format.
- Make sure the destination componet accepts a sampling frequency of 48kHz or contains a digital sample rate converter.

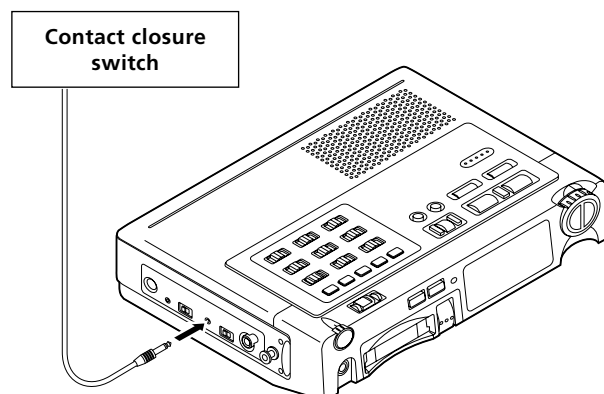# Other Connections

Headphones

Connect headphones to the HEADPHONE output as indicated below. Both recording and playback can be monitored through connected headphones.

Notes
- Use the HP/SPK VOLUME knob to control the volume of the headphone.
- The sound from the internal speaker is muted automatically when headphones are connected.
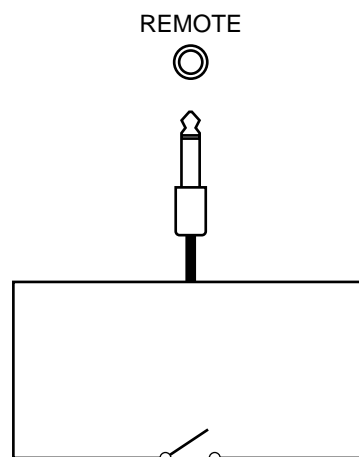
Remote Control

Available Functions
The remote Pauses or Un-Pauses the unit during playback and recording.

Polarity of the REMOTE jack

	Open	Close
Recording	Pause recording	Resume recording
Playback	Pause playback	Resume playback

REMOTE

7

PRESET MENU

Preset Items

The preset menu of the PMD680 allows many features and functions of the unit to be customized for individual requirements.

The following items can be accessed in the preset menu:

• Bitrates assigned to the SP/MP/LP switch
• Sound detection level of the silent skip function
• Detection time of the silent skip function
• Battery type used
• File format of the recorded tracks
• ID1
• ID2
• ID3

Preset	Display	Available Options	Default Setting
Bit rate of SP [1]	br	768, 192, 128, 64 kbps [2]	128 kbps
Bit rate of MP [1]	br	192, 128, 64, 48 kbps [2]	64 kbps
Bit rate of LP [1]	br	128, 64, 48,32 kbps [2]	48 kbps
Sound level for silent skip	SL	-50dB to -10dB, 5dB step	-40 dB
Silent time for silent skip	St	1 to 5 second	3 seconds
Battery type	bat	Alkaline, Ni-Cad	Alkaline
File format	For	Wave (.wav), MP2 (.mp2), Broadcast Wave (.bwf)	MP2
ID1,2,3	Id1 Id2 Id3	000000 to 999999	000000

Notes 1)
• No two bitrates can have the same value.
• The SP setting must be greater than the MP.
• The MP setting must be greater than the LP setting.
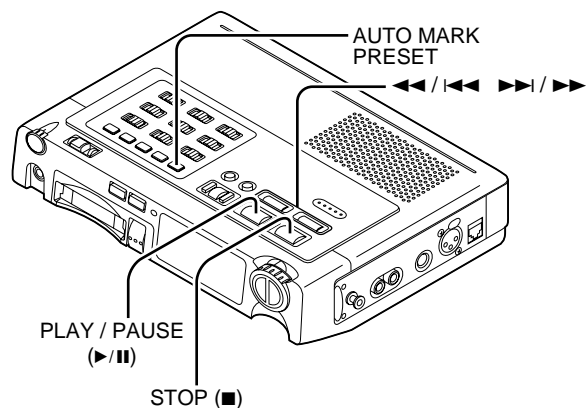
Note 2)
Please refer to the following section.

Recording Time

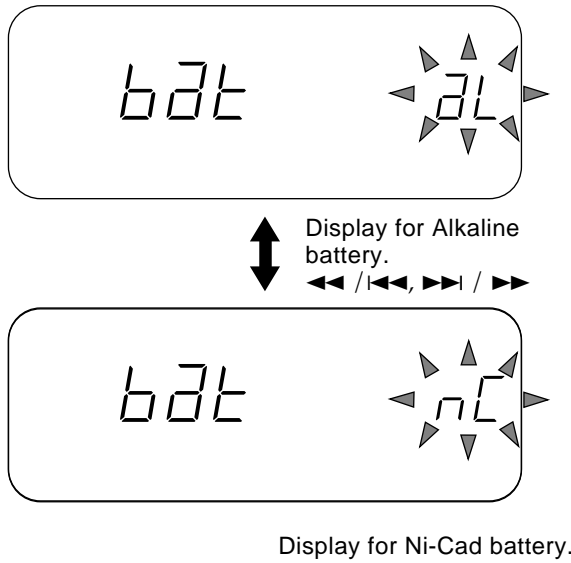The amount of memory required per hour of recording is as follows.

Bit Rate (kbps)	MB/Hour
32	16 MB
48	25 MB
64	33 MB
128	67 MB
192	100 MB
768 (PCM)	400 MB

Preset Operation

AUTO MARK PRESET
◄◄ / I◄◄   ►►I / ►►
PLAY / PAUSE (►/II)
STOP (■)

1. While power is off, press and hold the AUTO MARK (PRESET) button and then slide the power switch to the right.

2. The unit should enter the preset setting mode and "Preset" should be indicated in the display.

3. The unit will then automatically display (flashing) the first preset -- bitrate for the SP record mode.

4. Use ◄◄/I◄◄ and ►►I/►► buttons select which preset item you would like to change. The order of the preset menu items is the same as indicated on a preset chart on this page.

5. Use the PLAY/PAUSE button to alternate between changing the preset item and the available options for the currently displayed preset (the preset item options will flash).

6. Use ◄◄/I◄◄ and ►►I/►► buttons to then select which option you would like for the current preset item.

7. When finished making a change to a preset item, press the PLAY/PAUSE button to select another preset item to change (preset item will flash).

8. When finished setting all the presets, press the AUTO MARK (PRESET) button to save all the changes and exit the preset menu mode.

9. If you do not want to save the changes made to the preset menu, press the STOP button to exit without saving the changes.

10. After exiting the preset menu mode, the unit will return to normal operation in the stop mode.

Example: Changing the battery type preset

```
bat        aL
```

Display for Alkaline battery.
◀◀ /|◀◀, ▶▶| / ▶▶

```
bat        nC
```

Display for Ni-Cad battery.

Example: Changing the file format preset

```
For       WaU
```

Display for Wave (.wav) file format.
◀◀ /|◀◀, ▶▶| / ▶▶

```
For       M7P2
```

Display for MP2 (.mp2) file format.
◀◀ /|◀◀, ▶▶| / ▶▶

```
For       bUJF
```

Display for Brodcast Wave (.bwf) file format.

ID Number Presets

The ID numbers are saved in the 'Extension Chunk' of the Broadcast WAVE (BWF) file format. The IDs are defined as follows:
ID1 : Description
ID2 : Originator
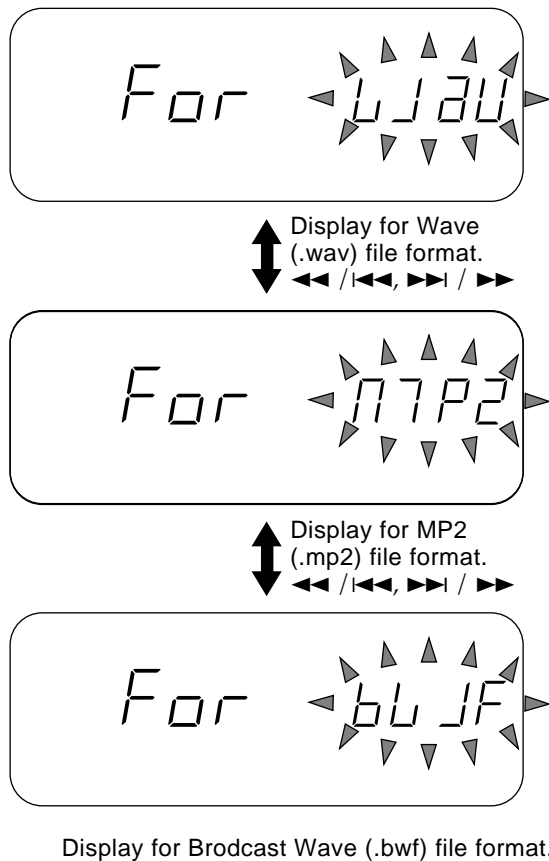ID3 : Originator Reference

Example:

If the IDs are used in a broadcast station situation:
• ID1 could be used for the ID of the broadcasting station
• ID2 could be used for the department code
• ID3 could be used for the badge number of the reporter

ID Number Setting Operation

• The PLAY/PAUSE button will cycle through each digit of the selected ID#.
• The ◀◀ /|◀◀ and ▶▶| / ▶▶ buttons will increase or decrease the digit that is flashing.

9

Low Battery Warning and Auto Power Off

The PMD680 has built-in power management and emergency shut-down system when Alkaline batteries or the optional Ni-Cad battery is used.

To make sure this system operates correctly, make sure the battery preset ("bat") in the preset menu is set correctly. Please refer to page 9 for more information on how to set the presets.

1st Warning

When the remaining battery time starts running low, a 1st warning will appear. The 1st warning is when the low battery indicator appears in the display as follows.
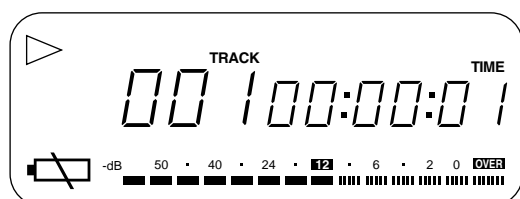
2nd Warning

When the remaining battery time becomes extremely low, the 2nd warning will appear. The 2nd warning is when the battery indicator begins to flash together with the REC LED (when in the recording mode) as follows.
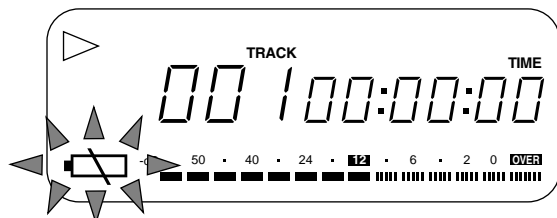
Shut-Down

If the unit continues to operate after the 2nd warning appears, the unit will enter an automatic shut-down procedure before all power is lost. Recording or playback will stop and the unit will automatically power itself off.
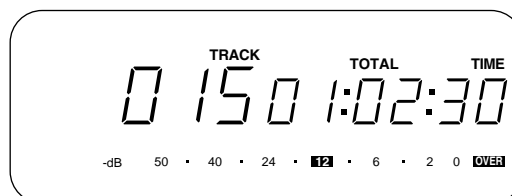
Display Selections

Changing the Displayed Information

Pressing the DISPLAY (TIME/DATE) button will change the displayed information as follows.

During Stop Mode

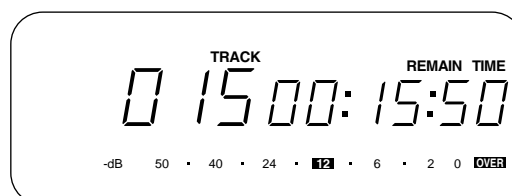① Total Track #   Total Track Time

② Total Track #   Total Remain Time
                          (time available for recording
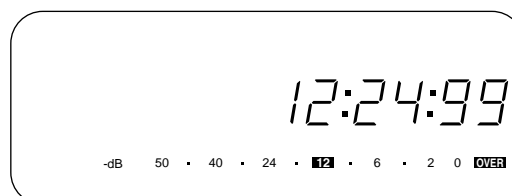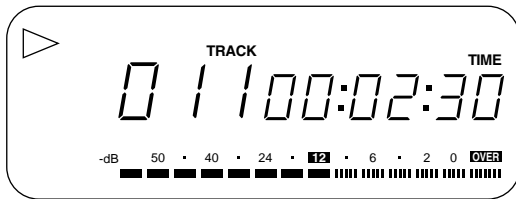   at the selected bit rate)

③ Current Time

Note
• The time is always displayed in 24-hour time. So for example, 23:59:59 is equivalent to 11:59:59 PM.

④ Current Date

During Playback and Play-Pause

① Current Track # Time elapsed on current playing track

```
 ▷
        TRACK              TIME
   01 1 00:02:30
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```

② Current Track # Remaining time of current playing track

```
 ▷
        TRACK         REMAIN TIME
   01 1 00:0 1:45
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
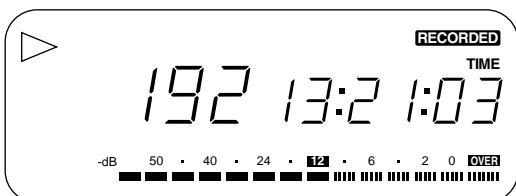
③ Current Track # Accumulated time elapsed (Total time of tracks previous to the current track + time elapsed on current playing track)

```
 ▷
        TRACK      TOTAL    TIME
   01 1 00:43:25
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
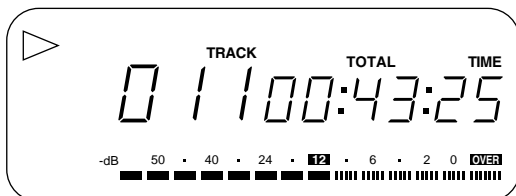
④ Current Track # Total playback remain time (Total time of tracks after the current track + remain time of current playing track)

```
 ▷
        TRACK    TOTAL REMAIN TIME
   01 1 00: 19:05
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
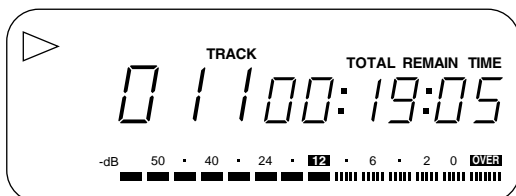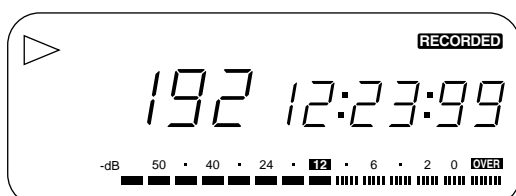
⑤ Recorded Bit Rate of the Current Track Time when the current track was recorded

```
 ▷
                     RECORDED
                         TIME
      192 13:2 1:03
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
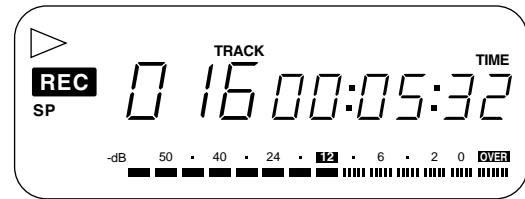
Note
• The time is always displayed in 24-hour time. So for example, 13:21:03 is equivalent to 1:21:13 PM.

⑥ Recorded Bit Rate of the Current Track Date when the current track was recorded

```
 ▷
                     RECORDED
      192 12:23:99
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```

During Recording and Record-Pause

① Current Track # Recording elapsed time on current track

```
 ▷
        TRACK              TIME
 REC 01 6 00:05:32
  SP
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```

② Current Track # Remaining recording time (Time available for recording)

```
 ▷
        TRACK         REMAIN TIME
 REC 0 1 6 00: 1 1:58
  SP
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
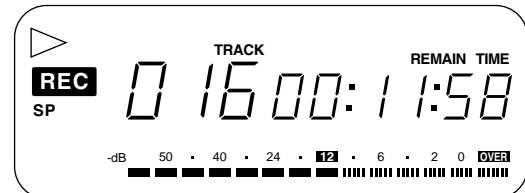
③ Current Track # Accumulated recording time elapsed (Total time of tracks previous to the current track + recording time elapsed on the current track)

```
 ▷
        TRACK      TOTAL    TIME
 REC 01 6 0 1:08:02
  SP
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
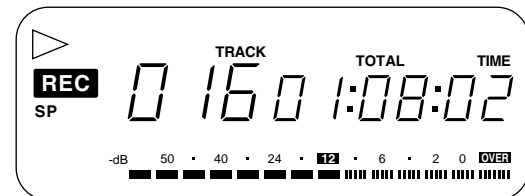
Display Backlight

To Illuminate the Display:
• Press the LIGHT button:
  The display backlight will turn on for 3 seconds and then turn off.
• Press and hold the LIGHT button for more than 1 second:
  The display backlight will stay on until it is turned off by pressing the LIGHT button or if the power is turned off.

Key (Button) Lock

The KEY LOCK switch sets the unit in the mode at the time the switch was set. This locking function can prevent accidental changes in a set mode or lock the unit in recording or playback.

While the Key Lock is on, the only switches and functions available are as follows:
• LIGHT
• POWER (except during recording)
• All the top panel slide switches except: PRE REC and REC MODE

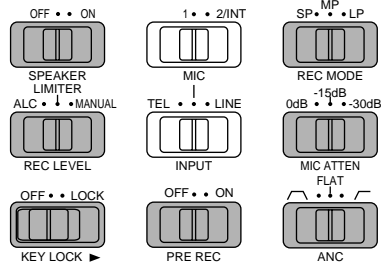If a locked button is pressed, the following message will be displayed.

```
 ▷
        TRACK
   00 1    HoLd
  -dB  50 · 40 · 24 · 12 · 6 · 2 0 OVER
```
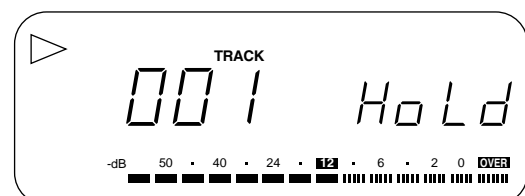
Input Controls

INPUT Selection

The PMD680 can record from a variety of inputs:
• XLR micorphone connection
• 1/4" microphone connection
• Internal microphone
• Line level source
• Telephone line

The INPUT switch offers selection of a telephone (TEL), microphone (MIC), or line level (LINE) input.

Note
• The MIC switch above the INPUT switch is only active when the INPUT switch is set to the middle (MIC) position.

The chart below indiactes which input is effective for each of the MIC switch positions.

| 1/4" connector	MIC switch position	1	2 / INT MIC
Inserted		XLR microphone connector input	1/4" microphone connector input
Not inserted			Internal Microphone Input

MIC ATTEN (Attenuation)

The MIC ATTEN switch adjusts the base input level for all the external microphone inputs only, i.e. the XLR and 1/4" microphone inputs.
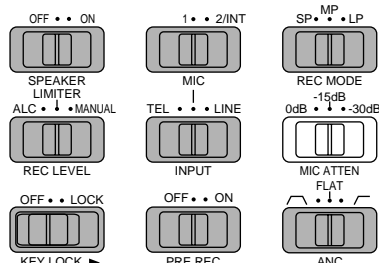
Adjusting the microphone attenuation allows microphones with higher sensitivity to be recorded and controlled the same way as microphones with lower sensitivity.

ANC (Ambient Noise Cancel)

The ANC (Ambient Noise Cancel) switch microphone inputs but does not affect the line input and telephone input.
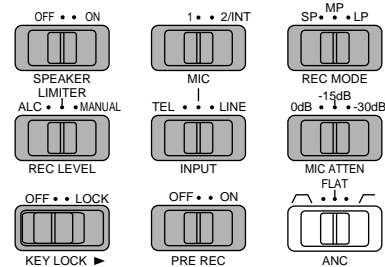
This ANC feature allows the recorder to filter out unwanted backgraund noise. The available settings are as follows.
• Band-pass (⌐⌐) : Cuts low frequency (150Hz and lower, ex : wind noise, proximity effect) and high frequency (3KHz and higher)
• Flat : No filtering
• Low-cut (⌐) : Cuts low frequency (150Hz and lower, ex : wind noise, proximity effect)

REC LEVEL Control

The PMD680 offers three ways in which to control the recording level: manual (MANUAL), manual with a limiter (LIMITER), and automatic (ALC).
• MANUAL: The recording level is controlled by the REC LEVEL knob.
• LIMITER: The recording level is controlled by the REC LEVEL knob but a limiting circuit in the PMD680 will not allow the input signal to overload (go past the -12dB mark on the level meter). The recover time is short so that the set record level is maintained as much as possible.
  The REC LED will dim when the Limiter is heavily limiting the input signal.
• ALC (Automatic record Level Control): The recording level in this mode is controlled exclusively by the PMD680 and the REC LEVEL knob is disabled. The recover time of the system is long so that the recording level does not constantly fluctuate.

Setting the Record Level

• The optimum recording level is where the peak of the input sound just barely flickers past the -12dB point (highlighted in black in the display).
• The recording level should never reach the overload point in the level meter (OVER symbol highlighted in black). Reaching that point will result in digital noise which is very uncomfortable for the ear.

Input Controls Summary

Input	Switch	MIC ATTEN	ANC	REC LEVEL
Telephone Input		Not effective	Not effective	Effective
MIC	XLR microphone connector input	Effective	Effective	Effective
	1/4" microphone connector input	Effective	Effective	Effective
	Internal microphone Input	Not effective	Effective	Effective
Line Input		Not effective	Not effective	Effective

Record Settings

REC MODE

Three programmable record modes are available for each track that is recorded. See the Preset Menu section for information on how to change the value of each of the record modes.
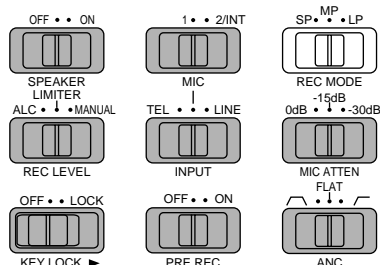
The three available modes are as follows.
- LP (Long Play mode): The setting with the longest recording time. The "LP" icon will be displayed when in the record-pause or record modes.
- MP (Medium Play Mode): This setting offers higher sound quality than the LP mode but takes up more memory space. There will no icon displayed during the record-pause and record modes.
- SP (Short Play mode): The setting with the highest sound quality but the shortest record time. The "SP" icon will be displayed during the record-pause and record modes.

PRE REC

The 2-second pre-record feature is active when the PRE REC switch is set to the ON position.
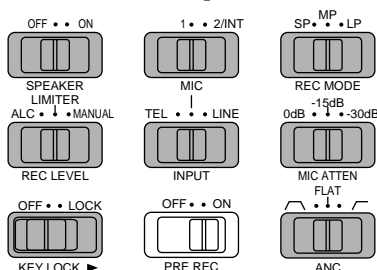
When pre-record is active, the unit will record 2 seconds of audio before the record button is pressed to start recording. The benefit of the pre-record function is that it can prevent missed or delayed starts of a recording.

Notes
- For the pre-record function to operate correctly, the PMD680 must be in the record-pause mode for at least 2 seconds. If the unit is in record-pause for less than 2 seconds, then the pre-record time will be shorter than 2 seconds.
- When recording is started with the pre-record function active, the elapsed recording time in the display will start at the 2 seconds mark.
- Pre-record is automatically activated when the Silent Skip feature is on.

SILENT SKIP

The SILENT SKIP button activates the silent skip mode and the "S.SKIP" icon will be displayed.

The silent skip system operates during the record mode only and is based on the parameters set in the preset menu. Please refer to the Preset Menu section on page 8 for information on setting the operational parameters of the silent skip system.

When active during recording, the silent skip system will continually look for the preset sound level, for the preset amount of time. If the preset sound level is sensed for the preset time, the unit will enter the record-pause mode.

The silent skip system will then stay in the record-pause mode until a signal of approximately -30dB is input. The unit will then re-enter the record mode and will continue to record until the preset parameters of the silent skip system are meet again.

Notes
- When first going into the record-pause mode from stop, recording must be started manually with the REC/MARK button. After recording is started, the silent skip system will control the recording.
- If the silent skip system pauses a recording, recording can be re-started manually by pressing the REC/MARK or PLAY/PAUSE buttons.
- The pre-record function is always active while the silent skip function is turned on. This is done to prevent audio from being cut-off when the system starts and stops.

AUTO MARK

The AUTO MARK button activates the auto marking system and the "A.MARK" icon will be displayed.

When the auto mark feature is active, every time a recording is paused, manually or by the Silent Skip system, an EDL mark is placed at that point in the track. Please refer to the section titled "The EDL" on page 18 for information on the meaning and uses of the EDL marks.

Notes
- Auto mark can be switched on or off in any mode.
- An EDL mark is automatically placed at the beginning of each track, regardless if the auto mark function is on or off.
- Marks are automatically placed in the normal record mode and also in the silent skip record mode.
- The maximum numbers of EDL marks on a card is 255. If the card reaches 255 marks, the auto mark function will automatically turn off and the AUTO MARK button will not allow the function to be re-activated.
- If the maximum number of EDL marks (255) is reached, "FULL -P 255" will be indicated on the display for 3 seconds.
- If the maximum number of EDL marks (255) is reached, individual EDL marks or all the EDL marks can be erased. Please refer to the Editing EDL Marks section on page 20 for information about erasing EDL marks.

Recording Operation


REC LED
REC/MARK
STOP
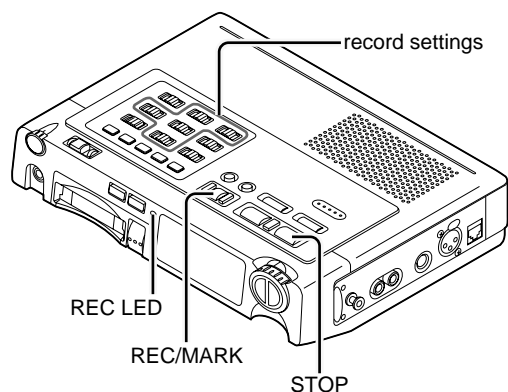
Basic Procedure

1. Make sure all input selection and record settings are made correctly.

2. Press the RECORD/MARK button to enter the Record-Pause mode. The input signal will now appear in the level meter of the display and the REC LED and REC indicator in the display will flash.

rec-pause
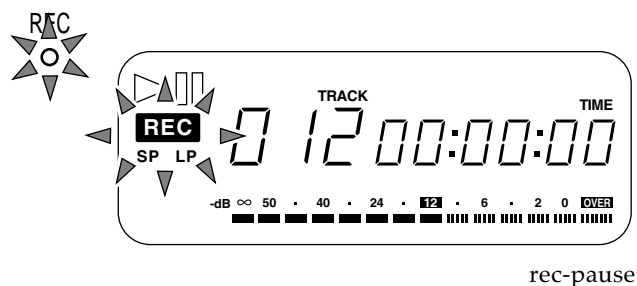
3. If the REC LEVEL switch is set to MANUAL or LIMITER, the REC LEVEL knob will be active and allow you make adjustments to the recording level based on the input source. Refer to page 12 for information on setting the recording level.

4. When ready to record, press the RECORD/MARK button to start recording. The REC LED and REC indicator in the display will stay steadily on and the current track number will quickly alternate with the next EDL mark number, showing that an EDL mark was placed at the beginning of the track.
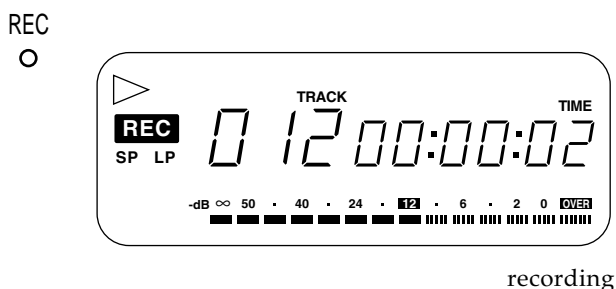
recording

Note
• Pressing the REC/MARK button during recording will add an EDL mark at the point that the button was pressed.

5. To stop recording but then continue to record to the current track, recording must be paused and not stopped. Press the PLAY/PAUSE button to enter the record-pause mode and then press REC/MARK to resume recording.

6. When ready to stop recording and complete the current track, press the STOP button. The TOC will be updated and the unit will enter the stop mode.

Notes
• All record settings can be changed during recording except the REC MODE. If the REC MODE is changed during recording, the new setting takes effect for the next track.
• If the Auto Mark feature is active during recording, every time a track is paused an EDL mark is added.
• The REC LED will dim when the Limiter is heavily limiting the input signal.
• The minimum length of a track is 0.5 seconds. A track of less than 0.5 seconds will not be recorded on the card.

Full Cards

The following message will appear if the PC Card is filled during recording or if attempting to start recording with a full card.
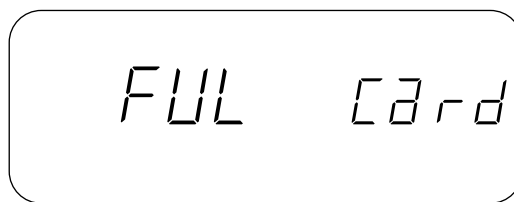
In order to re-use a full card, tracks need to be erased or the card needs to be re-formatted (erases all tracks).

Maximum Number of Tracks

Each PC Card can hold a maximum of 255 tracks. When attempting to start recording when the maximum number of tracks is reached, the following message will be displayed.

In order to continue to use a full card, tracks need to be erased or the card needs to be re-formatted (erases all tracks).

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Playback

The standard playback mode will play all the tracks on a card in order. Alternative playback options are the EDL playback mode, where the EDL marks in the tracks control playback, and the Repeat playback mode where either a single track is continually repeated or all the tracks on a card are continually repeated.

The played back audio signal is simultaneously output to the HEADPHONE jack, LINE OUT, TELEPHONE IN/OUT, DIGITAL OUT (if turned on), and speaker (if turned on and no headphones are connected). The HP/SPK VOLUME knob above the HEADPHONE jack controls the output volume through the headphones and speaker. All other outputs are a fixed level.

Note
• Even when the SPEAKER switch is ON, the speaker will not output sound if headphones are connected.
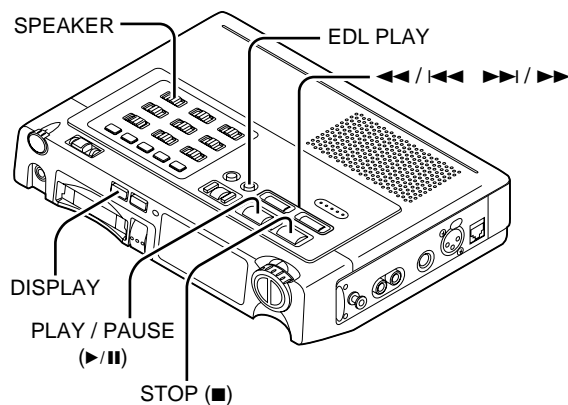
Basic Procedure

1. From the stop mode, press the PLAY/PAUSE button to start playback from the first track on the card.

2. Playback can be paused at any point by pressing the PLAY/PAUSE button. Playback is resumed by pressing the PLAY/PAUSE button.

3. Press the DISPLAY (TIME/DATE) button to alternate between the various track information display options. Refer to the Display Selections section on page for more information.

4. Playback will continue until the all the tracks on the card have been played or the STOP button is pressed to stop playback.

Starting Playback from a Selected Track

1. From the stop mode, press the ◄◄/I◄◄ or ►►I/►► button until the desired playback track is indicated in the display.

2. Press the PLAY/PAUSE button to start playback.

3. Playback can be paused at any point by pressing the PLAY/PAUSE button. Playback is resumed by pressing the PLAY/PAUSE button.

4. Press the DISPLAY (TIME/DATE) button to alternate between the various track information display options. Refer to the Display Selections section on page 10 for more information.

5. Playback will continue until the all the remaining tracks on the card have been played or the STOP button is pressed to stop playback.

Reverse and Forward Search

During playback, press and hold the ◄◄/I◄◄ or ►►I/►► button to perform an audible search (4 times normal speed) in the reverse or forward direction. Release the ◄◄/I◄◄ or ►►I/►► button to return to the normal playback speed.

Notes
• Reverse and forward searching will continue to the next or previous track if held down past the beginning or the end of a track.
• If Repeat or Repeat 1 is on, the searching will follow the track order of the Repeat mode.
• These functions are not available during EDL playback and EDL repeat playback modes.

Fast Reverse and Forward Search

For very large tracks, the normal reverse and forward search speeds are too slow if certain points later in the track need to be reached. Therefore, a 30 and 250 times normal speed search is possible.
During playback, press the PLAY/PAUSE button to enter the play-pause mode in the desired track you want to search. Then press and hold the ◄◄/I◄◄ or ►►I/►► button to start fast search in the reverse or forward direction. The search speed will be 30 times normal for 3 seconds and then become 250 times normal for the rest of the time the button is held. Release the ◄◄/I◄◄ or ►►I/►► button to return to the play-pause mode.

Notes
• There is no sound output in either of the fast search speeds.
• Reverse and forward searching will continue to the next or previous track if held down past the begging or the end of a track.
• If Repeat or Repeat 1 is on, the searching will follow the track order of the Repeat mode.
• These functions are not available during EDL playback and EDL repeat playback modes.

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Selecting Tracks

In the stop, play, or play-pause modes, tracks previous or next are selected by pressing the ◄◄/I◄◄ and ►►I/►► buttons, corresponding the desired direction.

If the ◄◄/I◄◄ button is pressed while playing back a track or when paused at some point in a track, the beginning of the current track is selected. Quick subsequent presses of the ◄◄/I◄◄ button will then select previous tracks.

Note
- Erased tracks numbers are skipped when selecting tracks unless the Renumber function is performed. Please refer to page 17 for more information on the Renumber function.
- These functions are not available during EDL playback and EDL repeat playback modes.
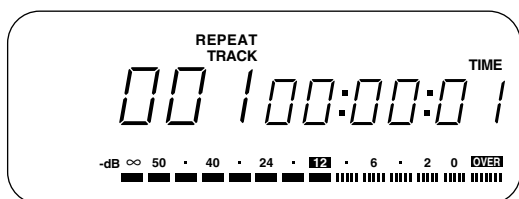
Repeat Play

The PMD680 can be set to repeatedly playback a single track or all the tracks on a card.

REPEAT

PLAY / PAUSE
(►/II)
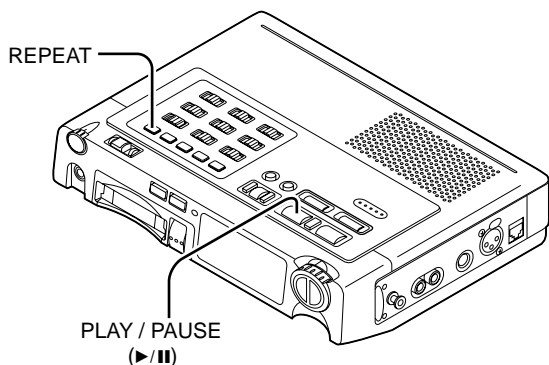
To enter the single track repeat mode, press the REPAT button o that the "REPEAT 1" is indicated in the display as shown below.
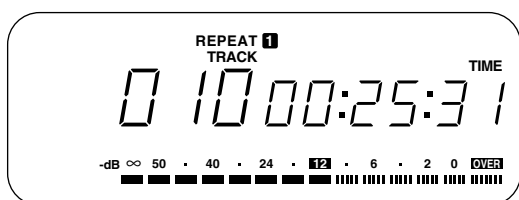
To enter the all track repeat mode, press the REPEAT button so that "REPEAT" is indicated in the display as shown below.

Track Editing

The PMD680 allows only two ways to directly manipulate the recorded tracks on a card, Erase and Renumber.

Erasing a track will permanently delete a recorded track from a card. The track number of the deleted file is eliminated but a higher number track does not take its place. The deleted track number remains gone until the Renumber function is performed.

Note
- The next recorded track is always the last track on the card. Therefore, if a deleted track is the last track on a card or a deleted track is the last track on the card and other tracks directly previous have been deleted, then the next recorded track number will be a number of a track that has been deleted.

The Renumber function will re-order all the tracks on a card in a sequential order starting from number 1. For example, if a card has three tracks numbered 2, 4, and 6, the Renumber function will change the track numbers to 1, 2, and 3. So the old track 2 became track 1, the old track 4 became track 2, and the old track 6 became track 3.

Track Erase

REPEAT   RENUMBER   ERASE   SILENT SKIP   AUTO MARK

FORMAT   PRESET

1. From the stop mode, use the ◄◄/I◄◄ and
   ►►I/►► buttons to select the track that is to be
   deleted.

2. Press the ERASE (FORMAT) button. The
   "Erase" message will flash in the display as
   follows.
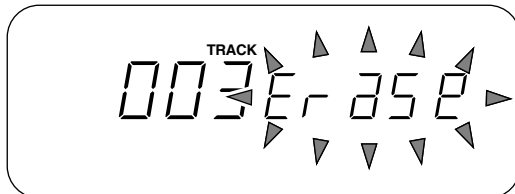
3. Press the ERASE button again to confirm the
   track erase. The "Erase" message will stay
   steadily on in the display as follows to indicate
   that the Erase function is executing.
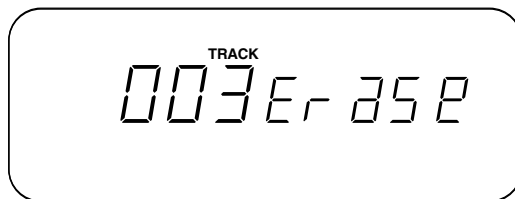
4. When the Erase function is finished, the "done"
   message is indicated in the display for 3
   seconds as follows.
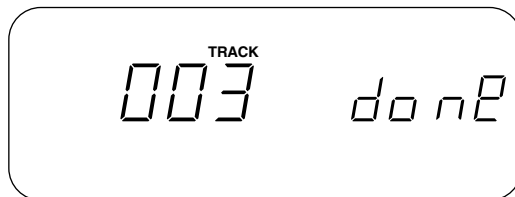
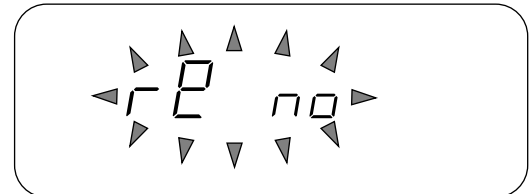5. The unit will then return to the stop mode.

Notes
• The STOP button can be used to cancel the Erase function
  before it is confirmed.
• Use the Format function to erase all the tracks on a card.

Renumber

REPEAT   RENUMBER   ERASE   SILENT SKIP   AUTO MARK
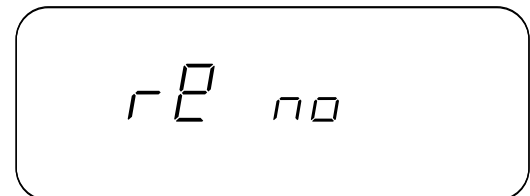
FORMAT   PRESET

1. From the stop mode, press the RENUMBER
   button. The "re no" message will flash in the
   display as follows:

2. Press the RENUMBER button again to confirm
   the track renumbering. The "re no" message
   will stay steadily on in the display as follows to
   indicate that the Renumber function is
   executing.

3. When the Renumber function is finished, the
   "re done" message is indicated in the display
   for 3 seconds as follows.
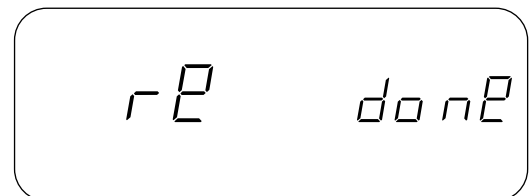

4. The unit will then return to the stop mode.

Note
• The STOP button can be used to cancel the Renumber
  function before it is confirmed.

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EDL Marking

The EDL marking and playback system of the PMD680 allows either a custom playback sequence to be programmed or the audio between two specific points in the card to be repeatedly played back.

For the custom playback sequence, the process is completely linear, which means that the order of the programmed sequence must correspond to the order of the audio tracks on the card. So basically the EDL system allows portions of the audio data stored on the card to be skipped.

EDL marks are placed on the card in various ways.
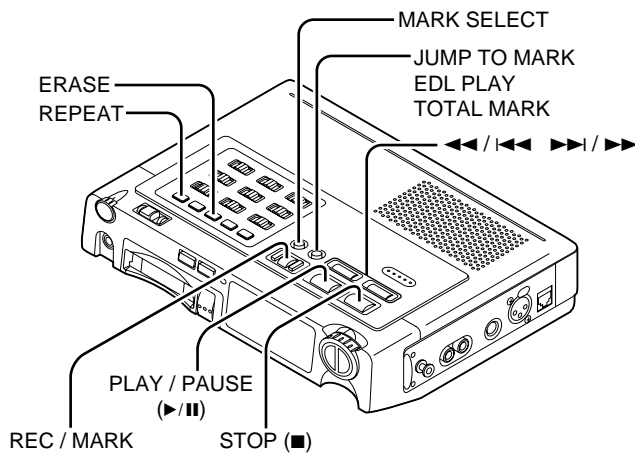
During recording, marks are placed:
• At the beginning of each new track
• When the REC/MARK button is pressed
• When the AUTO MARK function is active and the PMD680 is placed in the record-pause mode manually or via the SILENT SKIP function

During playback or play-pause, marks are placed:
• When the REC/MARK button is pressed

Each mark has the possibility to be defined as one of four types:

Play Mark ("P") – The basic indication for an EDL mark and, during EDL playback, a marker to indicate that the audio after the mark is to be played until the next EDL mark.

Skip Mark ("S") – During EDL playback, a marker to indicate that the audio after the mark is to be skipped until the next EDL mark.

A Point Mark ("a") – The start point for a repeating loop.

B Point Mark ("b") – The end point for a repeating loop.

All new EDL marks are initially placed as Play marks. After recording or playback is complete, the definition of all the EDL marks on the card can be changed. Refer to page 20 in this section for more information on how to change a mark type.

Every time an EDL mark is placed on a card, the total quantity of the EDL marks on the card is displayed for one second in the track number display area (see example below). This is meant to provide a reference of what number EDL mark is at that specific location and an indication of the remaining EDL marks on the card. The maximum number of EDL marks per card is 255.
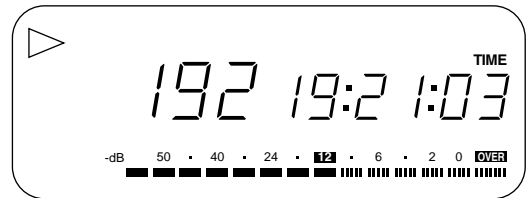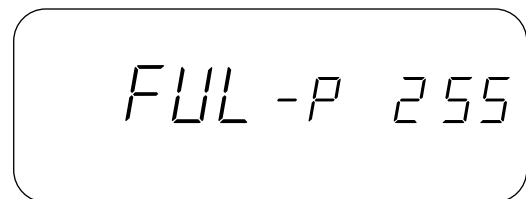

When a mark is placed, the total quantity of mark is displayed (total mark quantity = 192)
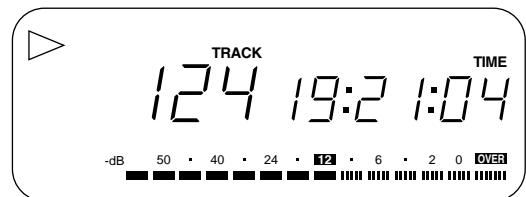
After one second, the display returns to the track number display (track number = 124)

When the maximum number of EDL marks has been placed, the following message will appear in the display.

In order to place EDL marks after the above message is displayed, either individual or all the EDL marks on the card need to be erased. Refer to page 20 in this section for more information on performing the EDL mark erase functions.

Notes
• The EDL marks are stored as a separate EDL file on the card that is only readable by the PMD680. Do not attempt to edit or delete this file on a PC.
• If all available EDL marks have been placed, the Auto Mark function will automatically be turned off and will not be available again until there are available EDL marks on the card.
• There can be only one A and one B point on each card. If an A or B point exists on a card and a new A or B point is marked, the new A or B point replaces the old A or B point and the old A or B point becomes a P point.

Auto Mark

The Auto Mark function automatically places an EDL mark on the card when the PMD680 enters the record-pause mode from the record mode. The record-pause mode is entered either manually via the PLAY/PAUSE button or in an automated way via the Silent Skip system.

The Auto Mark function can be turned on and off at any time. When Auto Mark is on, the "A.MARK" icon in the display will light as follows.
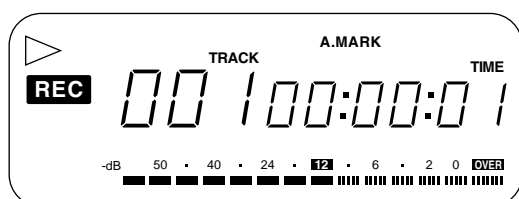
Please refer to the Record Settings section on page 13 for more information on the Auto Mark function.

Searching for EDL Marks

From the stop mode, the EDL marks on the card can be searched for in either the forward or reverse direction.

Forward EDL Mark Search

EDL marks can be searched for in the forward direction by holding down the JUMP TO MARK button and pressing the ▶▶I/▶▶ button. Every time the ▶▶I/▶▶ button is pressed, the PMD680 will search for the next mark on the card. If forward search is performed while at the last EDL mark on the card, the PMD680 will start searching from the beginning of the card (EDL mark 1).

Reverse EDL Mark Search

EDL marks can searched for in the reverse direction by holding down the JUMP TO MARK button and pressing the ◀◀/I◀◀ button. Every time the ◀◀/I◀◀ button is pressed, the PMD680 will search for the previous mark on the card. If previous search is performed while at the first EDL mark on the card, the PMD680 will start searching from the end of the card (last EDL mark).

Display of Located EDL Marks

When an EDL mark is located, the number of that particular EDL mark is displayed for one second in the track mark display area. Then the track number where the mark is located is displayed as the example below indicates.
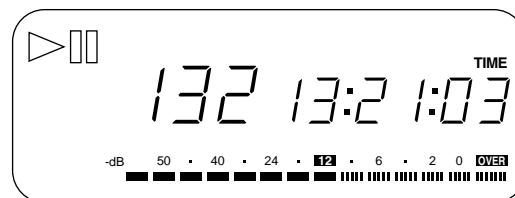
When a mark is located, the mark number accessed is displayed (mark number = 132)
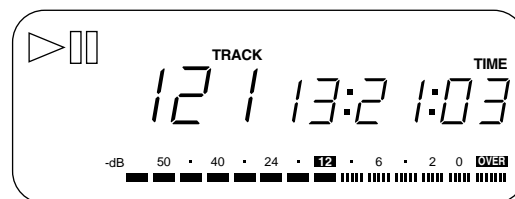
After one second, the track number of where the mark was placed is displayed (track number = 121)

Displaying the Total Number Of EDL Marks

While in the stop mode, the total number of EDL marks on the card can be displayed by holding down the TOTAL MARK button and then pressing the REC/MARK button. The total number of EDL marks on the card will then be displayed for 3 seconds as indicated below.
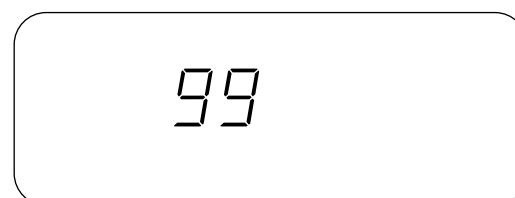
Editing EDL Marks

After all the EDL marks are placed in the audio tracks of a card, they can be edited by changing the mark types, erasing specific marks, or erasing all the marks.

Changing a Mark Type
Locate the EDL mark to be changed by using the mark search functions. When the desired EDL mark is located, press the MARK SELECT button to display the current mark type. Each subsequent press of the MARK SELECT button will then change the mark type in the following order.

001-P
P : Play

001-S
S : Skip

001-a
-a : Repeat Point A

001-b
-b : Repeat Point B
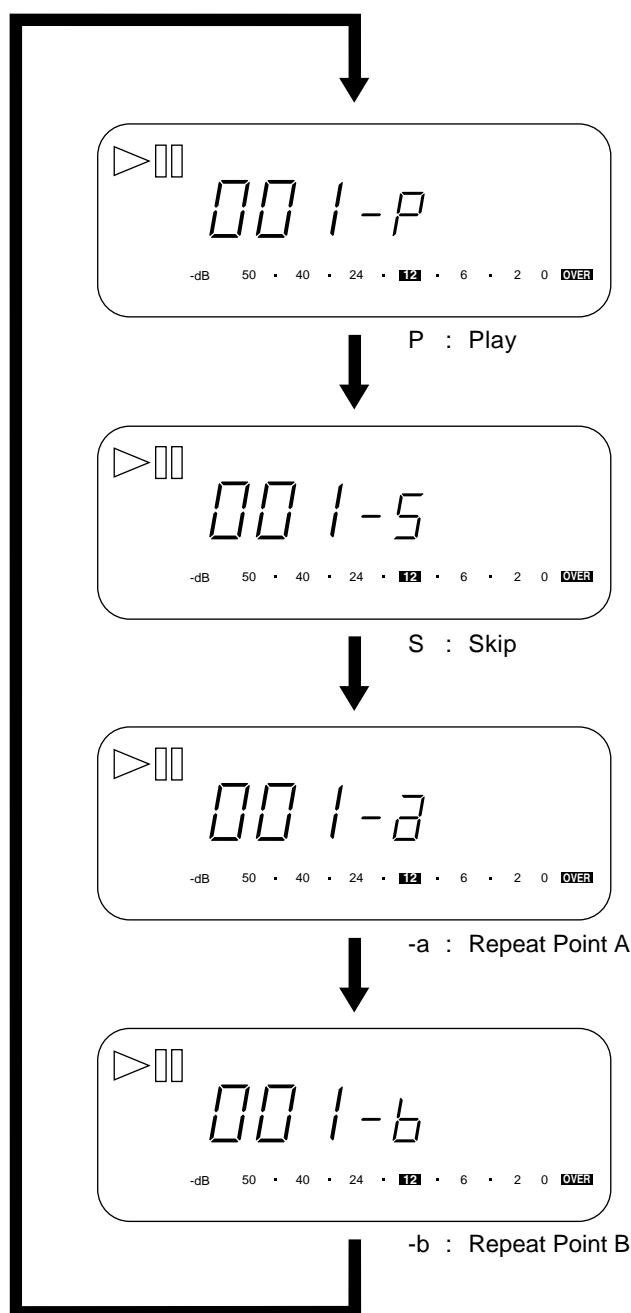
When the desired mark type is displayed, press the PLAY/PAUSE button to save the mark type. If you decide not to change the mark, press the STOP button to cancel the mark changing operation.
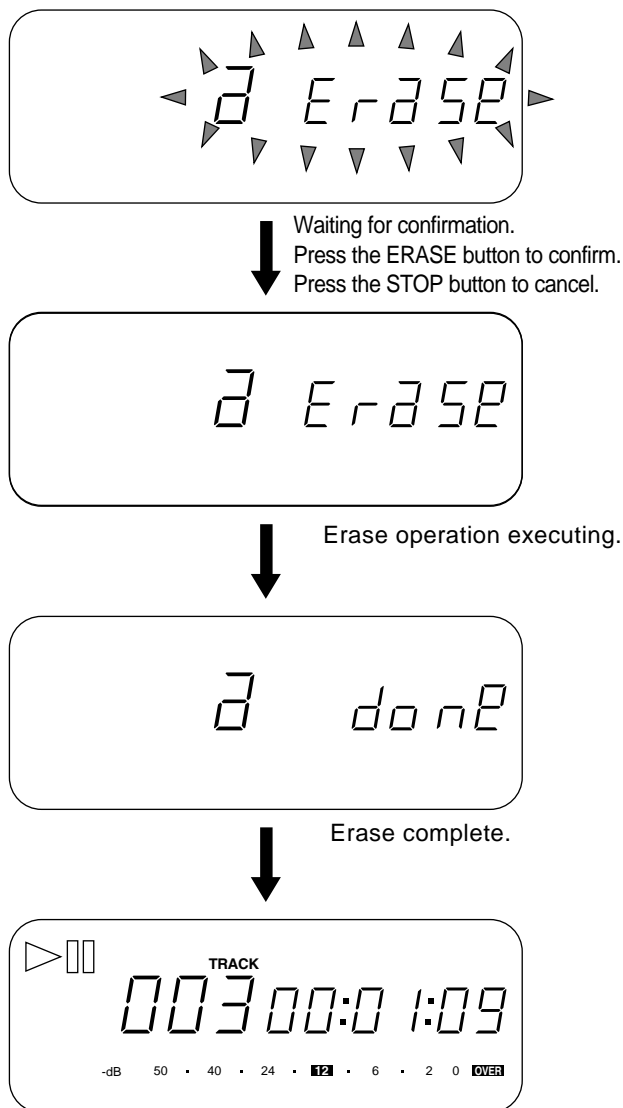
Notes
- The mark type can also be automatically saved by searching for the next or previous mark on the card.
- There can be only one A and one B point on each card. If an A or B point exists on a card and a new A or B point is marked, the new A or B point replaces the old A or B point and the old A or B point becomes a P point.

Erasing an EDL Mark

REPEAT RENUMBER ERASE SILENT SKIP AUTO MARK
FORMAT PRESET

Locate the EDL mark to be erased by using the mark search functions. When the desired EDL mark is located, press the ERASE button so that the display flashes the mark type of the selected mark followed by the "Erase" message. Press the ERASE button again to confirm the Erase function (or press the STOP button to cancel). When the erase operation is complete, the "done" message will be displayed and then the unit will return to the point where the mark was in the pause mode.

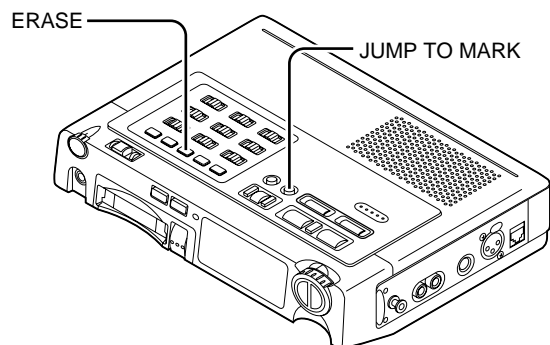The complete procedure is displayed as follows.

d Erase

Waiting for confirmation.
Press the ERASE button to confirm.
Press the STOP button to cancel.

d Erase

Erase operation executing.

d done

Erase complete.

003 00:01:09 TRACK

The PMD680 returns to the location of the erased mark.
Note
- Erasing an EDL mark will automatically renumber all the EDL marks on the card. The result is similar to the track Renumber function that is described on page 16 in the Track Editing section.

Erasing all the EDL Marks


ERASE — JUMP TO MARK

From the STOP mode, hold the JUMP TO MARK button and press the ERASE button so that the display flashes the "EdL Erase" message. Continue to hold the JUMP TO MARK button and press the ERASE button again to confirm the EDL Erase function (or press the STOP button to cancel). When the erase operation is complete, the "done" message will be displayed.
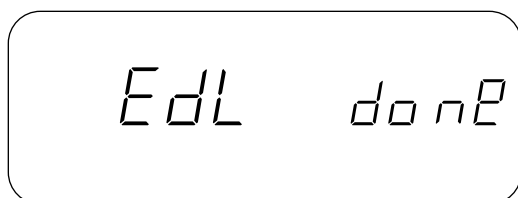
The complete procedure is displayed as follows.
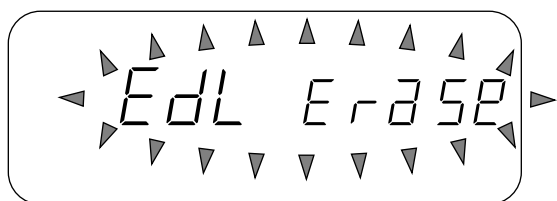
EdL ErasE

Waiting for confirmation. Press the ERASE button while holding down the JUMP TO MARK button to confirm. Press the STOP button to cancel.
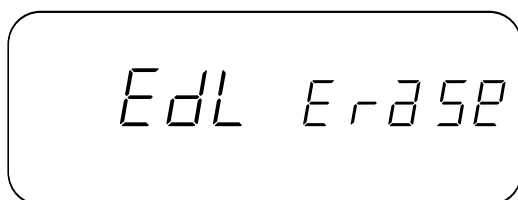
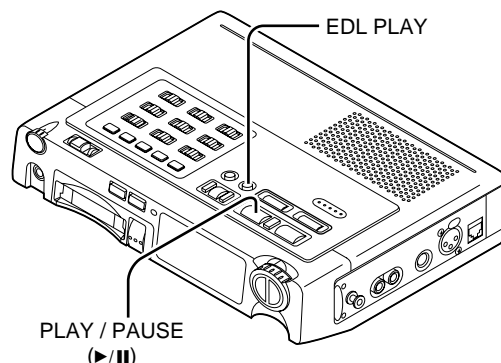*EdL ErasE*
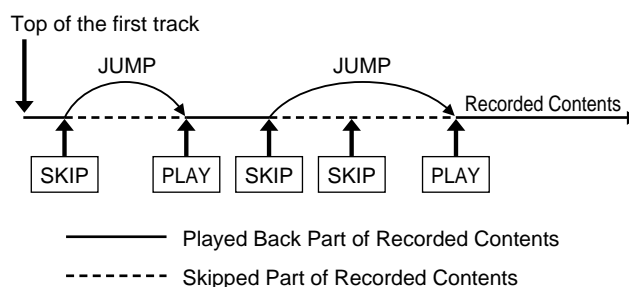
EDL Erase operation executing.

EdL donE

EDL Erase complete.

EDL Playback

The EDL playback mode will start playing back from the beginning of the first audio track but will observe the direction of the programmed EDL marks.

EDL PLAY

PLAY / PAUSE (►/II)

To start EDL playback, hold the EDL PLAY button and press the PLAY/PAUSE button. EDL playback will then start playing the audio on the card starting from the first track (unless it is skipped). An example of a programmed EDL playback is as follows.

Top of the first track

JUMP   JUMP

Recorded Contents

| SKIP | PLAY | SKIP | SKIP | PLAY |

——— Played Back Part of Recorded Contents
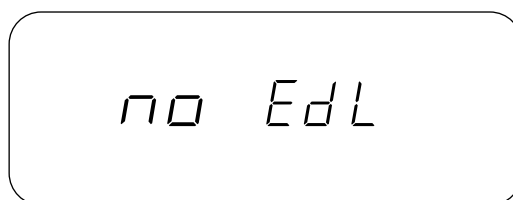
- - - - - Skipped Part of Recorded Contents

EDL playback can be paused at any time by pressing the PLAY/PAUSE button. Playback is resumed by again pressing the PLAY/PAUSE button.

EDL playback can be stopped at any time by pressing the STOP button. The PMD680 will return to the normal stop mode after EDL playback is stopped.

Notes
- If a Skip ("S") mark is the last mark on a card, then the audio after the mark until the end of the card is skipped.
- Searching and track selection via the ◄◄/|◄◄ and ►►|/►► buttons is not available during EDL playback.
- If EDL playback is started but there are no EDL marks on the card, the following message will be displayed:


no EdL

EDL Repeat Playback

EDL repeat playback works the same way as normal EDL playback except that playback will start at the programmed A ("a") mark and continue until the programmed B ("b") mark; and then return to A mark to repeat the loop.

To start EDL repeat playback, hold the EDL PLAY button and press the PLAY/PAUSE button. Once playback starts, press the REPEAT button. EDL repeat playback will then start playing the audio on the card starting from the A ("a") mark and continuing until the B ("b") mark. An example of EDL repeat playback is as follows.

—————— Played Back Part of Recorded Contents

- - - - - - - - Skipped Part of Recorded Contents
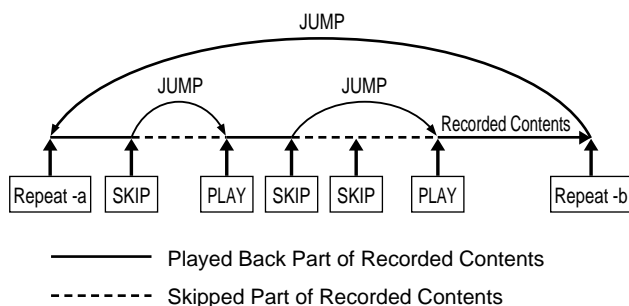
EDL repeat playback can be paused at any time by pressing the PLAY/PAUSE button. Playback is resumed by again pressing the PLAY/PAUSE button.

EDL repeat playback can be stopped at any time by pressing the STOP button. The PMD680 will return to the normal stop mode after EDL repeat playback is stopped.

Notes
- If a Skip ("S") mark is the last mark in the loop, then the audio after the mark until the end of the loop is skipped.
- There can be only one A and one B point on each card. If an A or B point exists on a card and a new A or B point is marked, the new A or B point replaces the old A or B point and the old A or B point becomes a P point.
- Searching and track selection via the ◄◄/I◄◄ and ►►I/►► buttons is not available during EDL repeat playback.
- If EDL repeat playback is started but there is only one A or B mark on the card, the following message will be displayed:
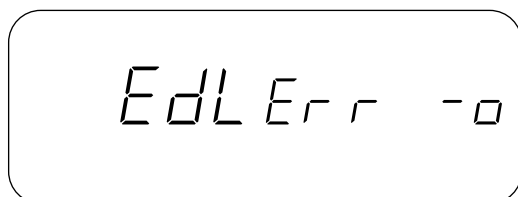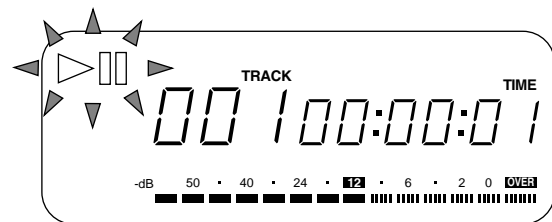

EDL Playback and EDL Repeat Playback Display

During EDL playback and EDL repeat playback, the Play icon (►) in the display will flash as follows:
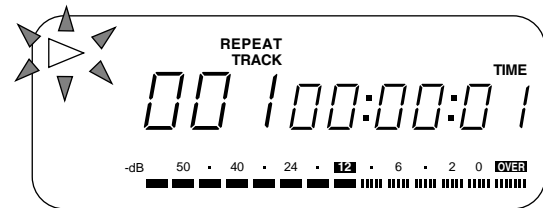
If EDL playback or EDL repeat playback is paused, both the Play (►) and Pause (II) icons will flash in the display as follows:

Error Messages

The error message below will be displayed if the card is ejected during playback, recording, or editing. It will also be displayed upon power-up if power was suddenly lost during the previous recording, playback, or editing operation.
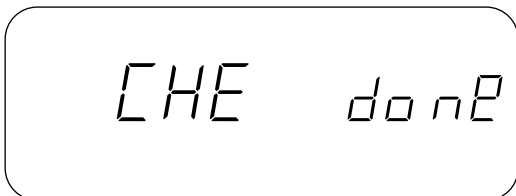
```
 Err   Card
```
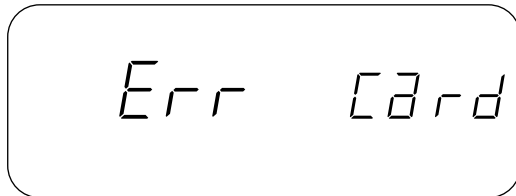
(**Err**or **Card**)

After the card error message is displayed, the PMD680 will display the following message to indicate that the PMD680 is attempting to recover the data on the card.
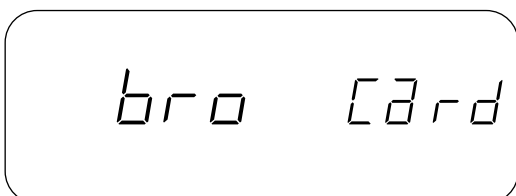
```
 CHE   Card
```
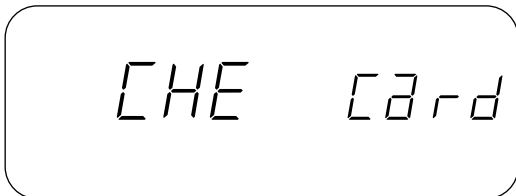
(**CHE**cking **Card**)

If the recovery is successful, the following message will be displayed and then the unit will enter the stop mode.

```
 CHE   done
```

(**CHE**ck **done**)

If the recovery is unsuccessful, the following message will be displayed to indicate that the data on the card is un-recoverable and that the card needs to be formatted to be used again.

```
 bro   Card
```

(**bro**ken **Card**)

File Structure

File Format
The PMD680 records files onto PC Cards in an MS-DOS and Windows compatible file format. Each track recorded on the card is stored in its own folder, which carries the same name as the track file. Below is an example of the file structure on a card.

	FOLDER		TRACK FILE	PMD680 TRACK NUMBER
\	MZ000001	\	MZ000001.xxx	1
	MZ000002	\	MZ000002.xxx	2
	MZ000003	\	MZ000003.xxx	3
	MZ000nnn	\	MZ000nnn.xxx	nnn

nnn: Last track number
xxx: BWF (Brodcast Wave format*)
      WAV (Wave format*)
      MP2 (MPEG1 layer 2 format*)

* File format is selected in the preset menu before recording. Refer to page 9 for more information on the different formats.

Notes
- Files on a card recorded by the PMD680 that are modified by a PC will no longer be able to read by the PMD680.
- Each PC Card formatted in the PMD680 will contain, in addition to the audio tracks, an EDL file that can only be read by the PMD680. Do not attempt to edit or delete this file on a PC.

Troubleshooting

If your unit fails to operate normally, check the symptoms and solutions described below. If the problem persists and cannot be corrected, please contact the Marantz Professional dealer from whom the product was purchased.

The unit does not respond to operations.
- Make sure that fresh batteries are installed, or that the AC power adaptor is connected properly.
- Make sure the PC Card is fully inserted.
- Turn power OFF, then ON.

The unit does not work normally.
- Check all settings.

Playback is not possible.
- Check to make sure the PMD680 acknowledges track information on the PC Card.

Audio is not output through the headphones or speaker.
- Check the HP/SPK VOLUME level.
- Check a different track or card to see if the problem is consistent with other tracks or cards.

Audio is not output through the Digital Out.
- Check that the DIGITAL OUT ON/OFF switch is set to the ON position.
- Note that the Digital output is automatically disabled during recording.

Recording is not possible.
- Check that less than 255 tracks are recorded on the card (255 tracks are the maximum number of recorded tracks).
- Check to make sure that the PMD680 acknowledges the PC Card.

No signal is recorded from a microphone input.
- Check that the INPUT switch is set to the middle position (MIC) and that the MIC switch is set to the correct microphone selection (1 = XLR input, 2 = 1/4" input or internal microphone if nothing is plugged into the 1/4" input).
- Check that the REC LEVEL switch is set to the correct position. In MANUAL and LIMITER modes, the REC LEVEL knob controls the recording level. During ALC, the recording level is controlled automatically by the PMD680.

Telephone recording results in the called phone having a much lower level than the phone connected to the PMD680.
- Adjust the recording level in the MANUAL mode (using the REC LEVEL knob) to the called phone. Then switch to the LIMITER mode. This will result in the called phone level being recorded at a normal level and the phone connected to the PMD680 limited so that a normal level is also recorded.
- Check that the telephone line is working properly.
- Check that the hookup to the telephone line is as indicated on page 6.

Excessive noise.
- Check all connected cables for proper connection.

File playback on a PC results in poor sound.
- Different PC sound cards and playback programs will result in different sound quality.
- The PMD680 records all the audio files with a sampling frequency of 48kHz. Some PC programs convert the files into 44.1kHz (using a sample rate converter) in order to play or edit the files, which may cause a degradation in the sound quality. Only high quality sample rate converters should be used.

The rechargeable battery is not charging.
- Check that the CHARGE switch is set to the ON position.
- Make sure the CHARGE LED is flashing during charging and then stays steadily on when charging is complete.
- Make sure the AC Adaptor is correctly plugged in and the power on the unit is turned off.

Rechargeable battery life is very low.
- Make sure to fully charge and discharge the battery with each use. NiCad batteries have a memory effect, which means that the life of the battery will become much lower if the battery is only partially discharged (used) and then re-charged.
- If the battery has been heavily used or is old, it may need to be replaced with a new one. Contact your dealer directly to purchase a new battery.

Care and Maintenance

To clean the cabinet
Use a soft cloth slightly moistened with mild detergent solution.

Specifications

Digital audio system

System
Digital audio recorder
Usable Media
Approved PCMCIA PC Cards
Recording and reading method
MPEG1 Layer II compression
16 bit linear PCM
Recording Bit rate (Selectable by preset)
LP (Long Play mode)
128, 64, 48, 32 kbps (MPEG)
MP (Medium Play mode)
192, 128, 64, 48 kbps (MPEG)
SP (Standard Play mode)
768 kbps (PCM), 192, 128, 64 kbps (MPEG)

The amount of memory required per hour of recording:

Bit Rate (kbps)	MB/Hour
32	16 MB
48	25 MB
64	33 MB
128	67 MB
192	100 MB
768 (PCM)	400 MB

Sampling frequency
48 kHz
Number of channels
1 (mono)
Frequency Response
22,000 Hz ±0.5 dB (at digital)
Signal-to-Noise Ratio (IEC-A weighted)
80 dB
Total Harmonic Distortion (at 0 VU)
0.03 %
Dynamic Range
85dB

Inputs

MIC IN 1 (1:GND, 2:HOT, 3:COLD)
Type: XLR
Input Sensitivity: -68 dBu/9 kilohms
MIC IN 2
Type: 1/4" jack
Sensitivity: -68 dBu/9 kilohms
LINE IN
Type: RCA jack
Sensitivity: -20 dBu/47 kilohms
TELEPHONE IN/OUT
Type: RJ-11/14 jack
Standard input level: 0.5 Vp-p
Standard output level: 0.24 Vp-p
Input impedance: 1.6 kilohms
Output impedance: 720 ohms

Outputs

LINE OUT
Type: RCA jack
Standard level: 2 Vrms max./2 kilohms
DIGITAL OUT
Type: RCA jack
Output impedance: 75 ohms
Standard output level: 0.5 Vp-p
Sampling frequency: 48 kHz
Format: SPDIF (IEC-958 Type II)

GENERAL

Headphone Output power
15 mW/32 ohms
Speaker Output Power
200 mW
Power Requirement
13 V, 1.0 A
Power Consumption
Recording: 5.2 W
Charging: 12 W
Power off: 10 mW
Dimensions (W x H x D)
264 x 52 x 185 mm
(10.4" x 2.0" x 7.3")
Weight
1.3 kg (2 lbs. 14 oz.)
Included Accessories
AC adaptor: 1
Battery holder: 1
Carrying Strap: 1
User Guide: 1
Optional Accessories
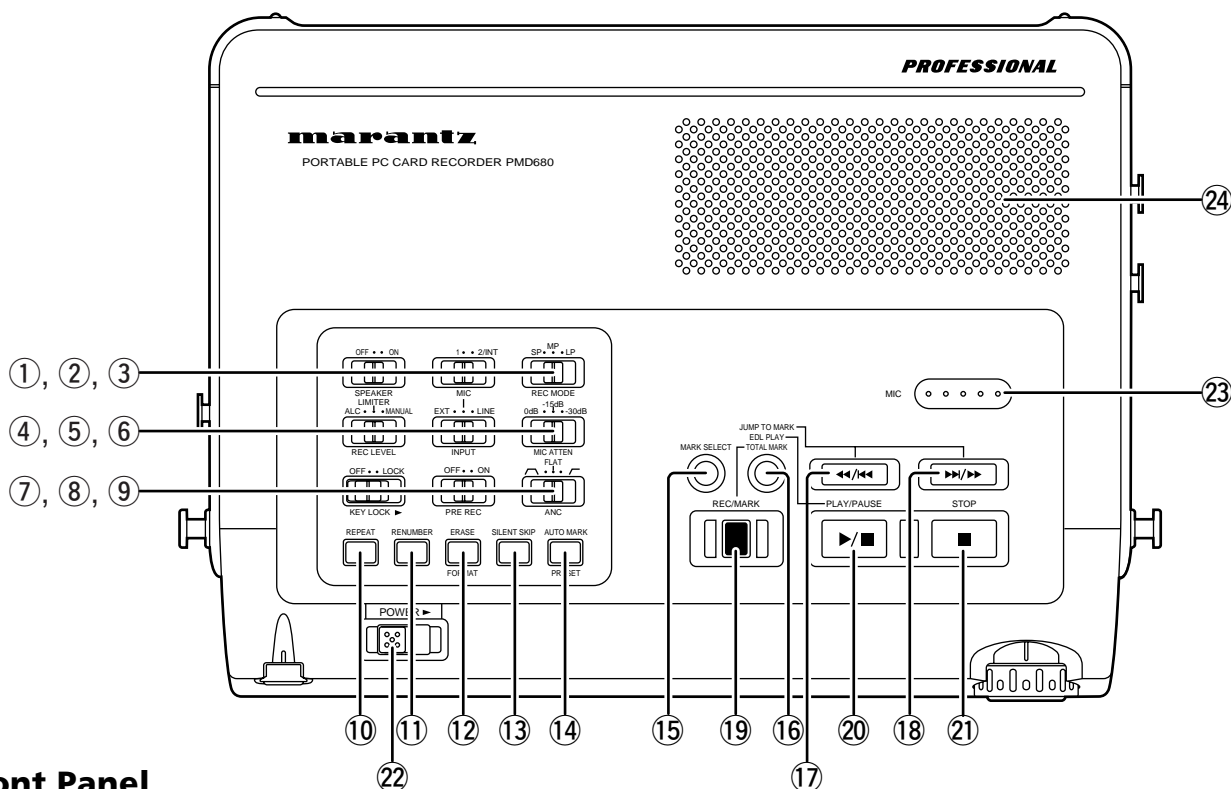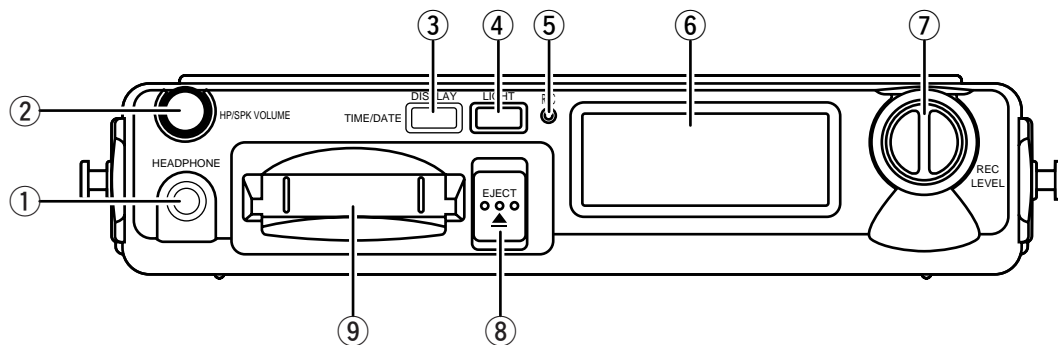Ni-Cad Battery pack (RB1100PMD)
Carrying Case (CLC680PMD)

Specifications subject to change without notice.

# Index of Parts, Controls, and Display

Top Panel

Front Panel

Top Pannel

① SPEAKER switch (page 15)

② MIC switch (page 12)

③ REC MODE switch (page 13)

④ REC LEVEL switch (page 12)

⑤ INPUT switch (page 12)

⑥ MIC ATTENUATION switch (page 12)

⑦ KEY LOCK switch (page 11)

⑧ PRE REC switch (page 13)

⑨ Ambient Noise Cancel switch (page 12)

⑩ REPEAT button (page 16)

⑪ RENUMBER button (page 17)

⑫ ERASE, FORMAT button (page 5, 17)

⑬ SILENT SKIP button (page 13)

⑭ AUTO MARK, PRESET button (page 3, 13)

⑮ MARK SELECT button (page 20)

⑯ JUMP TO MARK, EDL PLAY, TOTAL MARK button (page 19, 21)

⑰ ◄◄ /I◄◄ button (page 15, 16, 19)

⑱ ►►I /►► button (page 15, 16, 19)

⑲ REC/MARK button (page 14, 18)

⑳ START/PAUSE button (page 14, 15, 16, 21)

㉑ STOP button (page 14, 15)

㉒ POWER key (page 4)

㉓ INT microphone (page 12)

㉔ SPEAKER (page 15)

Front Pannel

① HEADPHONE jack (page 7, 15)

② HP/SPK VOLUME knob (page 7, 15)

③ DISPLAY, TIME/DATE key (page 10)

④ LIGHT key (page 11)

⑤ REC LED (page 14)

⑥ Display (page 10, 11)

⑦ REC LEVEL knob (page 14)

⑧ EJECT button (page 5)

⑨ PC Card slot (page 5)

Left Panel
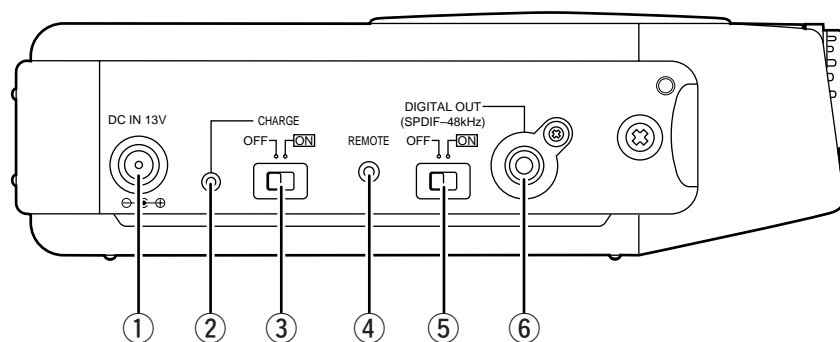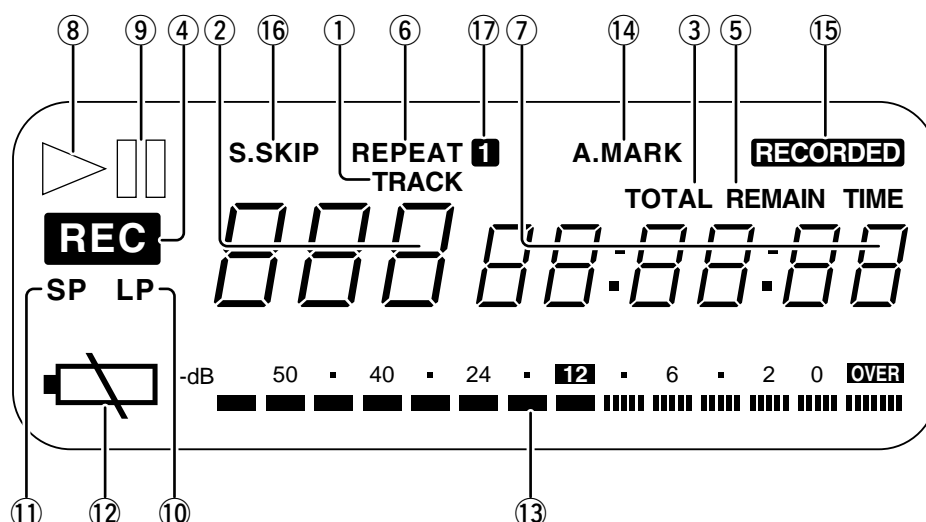

① DC IN 13V (page 3)

② CHARGE LED (page 3)

③ CHARGE switch (page 3)

④ REMOTE IN jack (page 7)

⑤ DIGITAL OUT switch (page 7)

⑥ DIGITAL OUT jack (page 7)

Right Panel
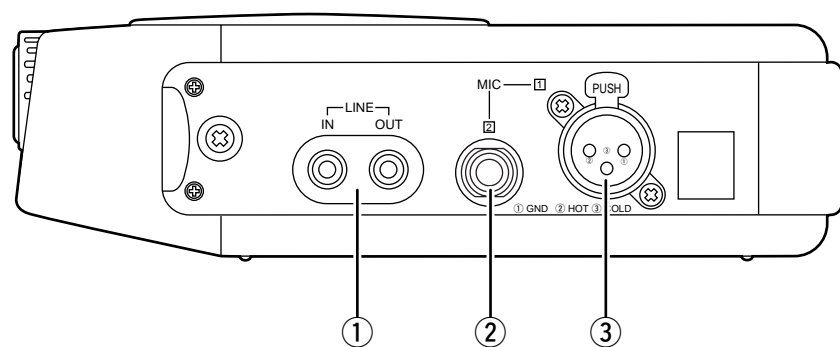
① LINE IN/OUT jacks (page 6)

② MIC 2 IN jack (page 6)

③ MIC 1 IN jack (page 6)

Display

No	Item	Type	Explanation.
①	TRACK		Turns on while track number is displayed.
②	Track Number	7 Seg x 3 digits	Displays track number, mark number, mark quantity (001~255), error messages, mode messages.
③	TOTAL		Turns on while Total Time is displayed.
④	REC		Blinks while in Record-Pause, Steadily on while Recording.
⑤	REMAIN		Turns on while Remain Time is displayed.
⑥	REPEAT		Turns on while in the REPEAT, REPEAT 1, and EDL repeat playback modes.
⑦	Time	7Seg x 6 digits	Diplays time, date and messages.
⑧	PLAY		Blinks during the EDL playback, and record-pause modes. Steadily on while playing back and recording.
⑨	PAUSE		Turns on while in play-pause and record-pause modes.
⑩	LP		Turns on while in the Long Play mode recording mode.
⑪	SP		Turns on while in the Short Play mode recording mode.
⑫	Battery Indicator		Turns on when Battery is half consumed, blinks when battery is near end.
⑬	Level Meter	14dots	0dB=2V output.
⑭	A.MARK		Turns on while the Auto Mark function is active.
⑮	RECORDED		Turns on while recorded time or date is displayed.
⑯	S.SKIP		Turns on while the Silent Skip recording mode is active.
⑰	1		Turns on while in the REPEAT 1 playback mode.