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**Model No. DMAT-AB**

**SPORTS CONTROLLER**

**For**

**Abekas Mira**

**Digital Video Production Server**

**User Manual**

Version 1.3



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## **REVISION HISTORY**

060909	1.0	Original document
081709	1.1	Updated for SSM mode, various enhancements
071510	1.2	Updated for multiple enhancements
053111	1.3	Updated for multiple enhancements

# *Getting Started*

## **1. SYSTEM DESCRIPTION**

Designed for the chaotic and fast-paced environment of sports broadcasting, the DMAT family of Sports Controllers lets you stay in control of slow-motion instant replays, and highlights playout to create exciting visuals. Coupled with the simultaneous record and playback capabilities of Abekas Mira, DMAT gives you the power to quickly access just-recorded or archived events while continuing to record and respond to on-field action. Don't Miss A Thing!

Quickly and easily mark an IN and OUT point for instant replay. With minimal key strokes, recall it, play it, then add it to a game highlight list. Seamlessly play out highlights, one after another to tell the story - game action, player profiles, live crowd scenes, graphics, and advertisements. Personalize your control options for smooth, precise replays. A T-Bar provides precise slow motion speed control.

The DMAT-AB consists of DNF's robust controller, the ST400, with Sports Control software.

### **Definitions**

Words surrounded by brackets, for example, **[ENTER]**, refer to keys on the DMAT-AB.

**[XXX] + [XXX]** refers to a combination of more than one key. Press and hold the first key, then press the second key. Keys may be released in any order.

The 6 keys located directly below the Graphic LCD display are referred to as "Softkeys." The function assigned to each key will change during operation of the device. The bottom line of the display shows the current function assigned to each softkey.

Words surrounded by "curly" brackets in bold/italic type, ***{UPDATES}***, are softkeys on the DMAT-AB.

## 2. SYSTEM INSTALLATION

Refer to the Connection Diagram.

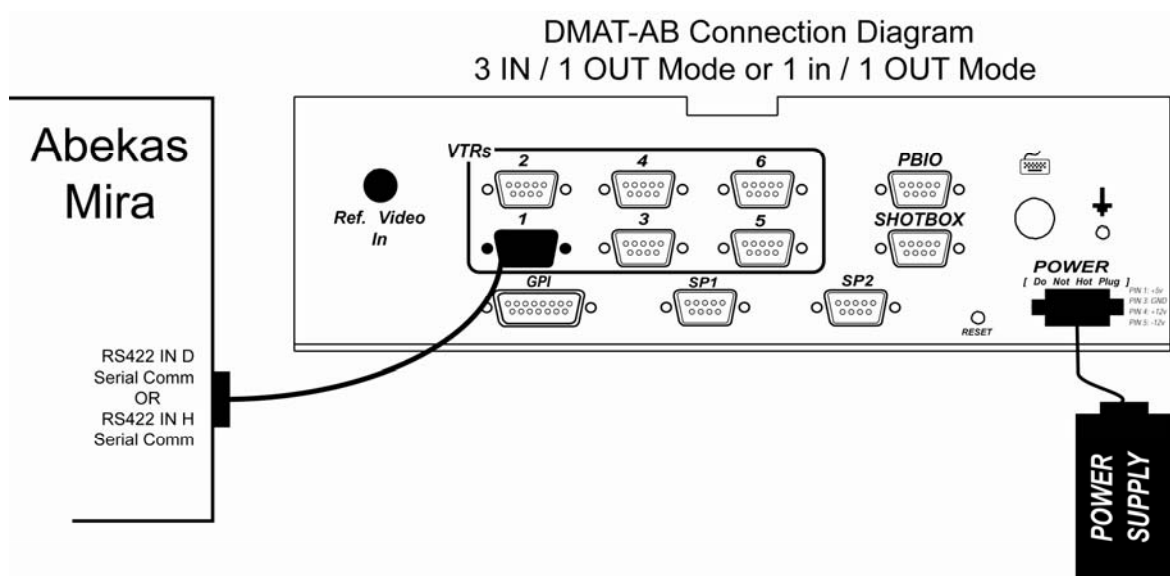
### A. DMAT-AB Sports Controller

1. Plug one end of a standard 9-conductor, RS422 serial cable into the VTR connector on the rear of DMAT-AB. Plug the other end of the cable into the 9-pin RS422 connector "RS422 IN" on the rear of Mira. See the connection diagrams for specific configurations.
2. Connect the DNF supplied power supply, into the POWER connector on the rear of DMAT-AB. Plug the Power Supply into an outlet, 90 VAC - 240 VAC.

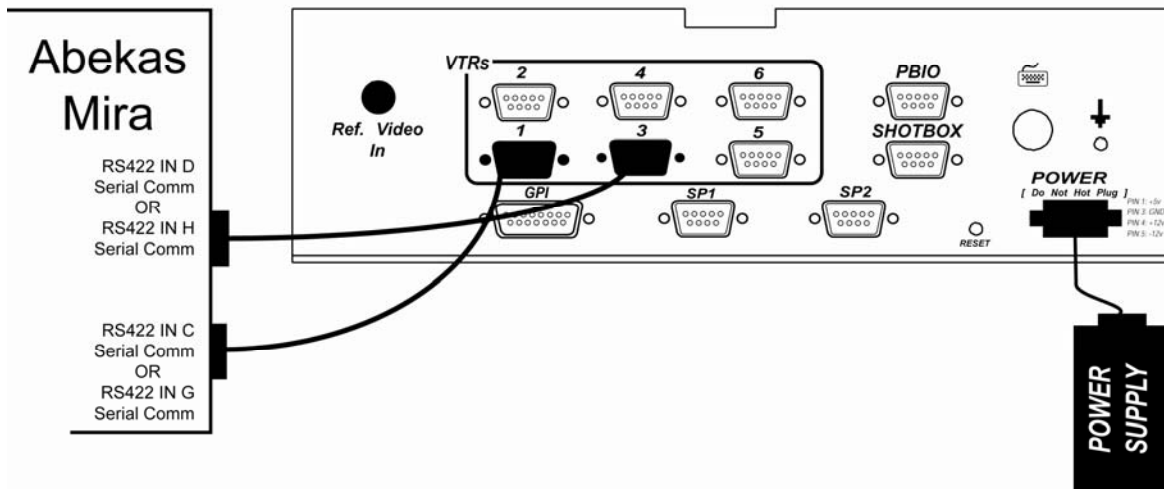
### B. Mira Setup

Please refer to the Abekas Mira user manual for information on configuring the Mira server.

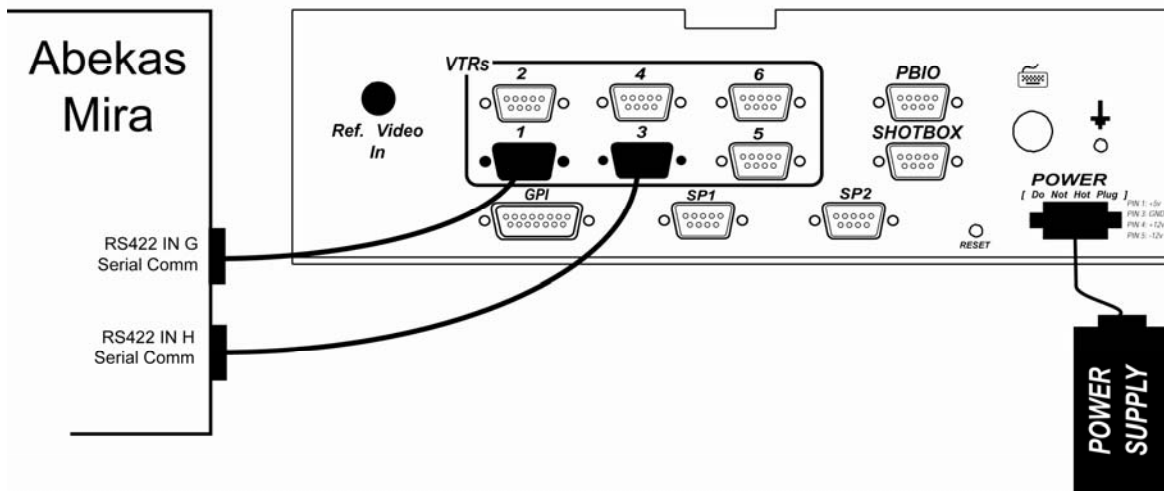
### C. Connection Diagram



DMAT-AB Connection Diagram  
2 IN / 2 OUT Mode



DMAT-AB Connection Diagram  
6 IN / 2 OUT Mode



### 3. SELECT OPERATIONAL MODE

The DMAT-AB supports multiple modes of operation with the Mira. The mode of operation is selected in the Setup Menu.

- 3 IN / 1 OUT: Supports 3 live record channels and 1 softkey for accessing pre-recorded clips. Only supports 1 playback channel.
- 1 IN / 1 OUT: Supports 1 live record channels and 3 softkeys for accessing pre-recorded clips. Only supports 1 playback channel.
- 2 IN / 2 OUT: Supports 2 live record channels and 2 softkeys for accessing pre-recorded clips. Supports 2 playback channels with the ability to perform cut / mix / wipe transitions between playback channels.
- 6 IN / 2 OUT: Supports up to 6 live record channels. Does not support softkeys for pre-recorded clip access. Supports 2 playback channels with the ability to perform cut / mix / wipe transitions between playback channels.

### 4. START RECORDINGS

All recordings must be started from the GUI of the Mira. To begin a new recording:

- A. On the Mira, open the Mira Explorer application.
- B. Within Mira Explorer, select the channel you wish to record on.
- C. Click on the Record button.
- D. Enter a Clip Name for the new recording.
- E. Click on "OK." The record button will now be flashing red.
- F. Click on the record button to begin recording.

### 5. 'CAM' KEY ASSIGNMENT

Assign Mira record channels to CAM keys. Press the corresponding **{CAM-X}** softkey (ranging from **{CAM-1}** to **{CAM-6}**) to instantly access the associated live or recorded video on the playback channel.

Press **[SHIFT] + {CAM-X}**

The current assignments are shown in the upper left portion of the display. A list of available multiple angle clips in Mira are displayed on the right side of the display.

- A. Using the wheel, scroll through and find the CLIP ID for the multi-angle clip current in record on Mira.



- B. Press the **{ASSIGN}** softkey assign the highlighted multiple angle clip to the CAM keys.

The same multi-angle clip gets assigned to all the CAM keys available in the selected mode. The first angle of the clip gets assigned to CAM-1 key, the second angle is assigned to CAM-2 key etc.

- C. Press **[ESC]** to exit.

NOTE: In 1 IN / 1 OUT mode, only **{CAM-1}** is available. In 3 IN / 1 OUT mode, **{CAM-1}**, **{CAM-2}**, and **{CAM-3}** are available. In 2 IN / 2 OUT mode, **{CAM-1}** and **{CAM-2}** are available. In 6 IN / 2 OUT mode, **{CAM-1}**, **{CAM-2}**, **{CAM-3}**, **{CAM-4}**, **{CAM-5}** and **{CAM-6}** are available.

## 6. 'CLIP' KEY ASSIGNMENT

Assign a pre-recorded clip to the **{CLIP-X}** softkey (ranging from **{CLIP-1}** to **{CLIP-3}**). Press **{CLIP-X}** to instantly access the recorded video on the playback channel.

- A. Press **[SHIFT] + {CLIP-X}**

The current assignments are shown in the upper left portion of the display. A list of clips available in Mira is displayed on the right side of the display.

- B. Using the wheel, scroll through and find desired CLIP ID.
- C. Press softkey **{CLIP-X}** to assign the highlighted clip to the **{CLIP-X}** softkey..
- D. Press **[ESC]** to exit.

NOTE: In 1 IN / 1 OUT mode, **{CLIP-1}**, **{CLIP-2}** and **{CLIP-3}** are available. In 3 IN / 1 OUT mode, only **{CLIP-1}** is available. In 2 IN / 2 OUT mode, only **{CLIP-1}** and **{CLIP-2}** are available. This function is not available in 6 IN / 2 OUT mode.

## 7. LIVE/ RECORDED SOURCE SELECTION

Select the desired live source to view in EE mode, or recorded video to view in PB mode as follows:

Press **{CAM-X}** to view the live source or recorded video on the assigned Mira channel.

OR

Press **{CLIP-X}** to view the assigned pre-recorded clip.

## 8. SAVE CLIP

- A. Press **[IN]** to mark an IN point and overwrite an existing IN point using the current timecode. Or enter a timecode using the numeric keypad and press **[IN]**.
- B. Press **[OUT]** to mark an OUT point and overwrite an existing OUT point. Or enter a timecode using the numeric keypad and press **[OUT]**.
- C. Press **[SAVE CLIP]** to save the IN and OUT points in the next available clip number.

**NOTE-** If a CAM-X is currently selected, one clip for each CAM will be saved automatically. If CLIP-X is currently selected, only one clip for CLIP-X will be saved.

**NOTE-** If no IN / OUT Points are assigned, they will be automatically generated using the AUTO-MARK HEAD and AUTO-MARK TAIL settings in the Setup Menu. The IN Point will be set to the current time minus the time set in AUTO-MARK HEAD. The OUT Point will be set to the current time minus the time set in AUTO-MARK TAIL. If only the IN or OUT Point is missing, it will be automatically generated using the same settings.

For determining which cue points apply to which channels, use the table below.

MODE	SOFTKEY	CUE POINT NUMBERS
1 IN / 1 OUT	{CAM-1}	1000 – 1399
	{CLIP-1}	2000 – 2399
	{CLIP-2}	3000 – 3399
	{CLIP-3}	4000 - 4399
3 IN / 1 OUT	{CAM-1}	1000 – 1399
	{CAM-2}	2000 – 2399
	{CAM-3}	3000 – 3399
	{CLIP-1}	4000 - 4399
2 IN / 2 OUT	{CAM-1}	1000 – 1399
	{CAM-2}	2000 – 2399
	{CLIP-1}	3000 – 3399
	{CLIP-2}	4000 - 4399
6 IN / 2 OUT	{CAM-1}	1000 – 1399
	{CAM-2}	2000 – 2399
	{CAM-3}	3000 – 3399
	{CAM-4}	4000 - 4399
	{CAM-5}	5000 – 5399
	{CAM-6}	6000 - 6399

**OR**

Manually enter a clip number (3 digit number) using the numeric keypad, and then press **[SAVE CLIP]** to save the IN and OUT points into the entered clip number

The IN point HH:MM:SS is assigned as the default Clip Label.

- D. Press **[DEL]** + **[IN]** to clear the IN point.
- E. Press **[DEL]** + **[OUT]** to clear the OUT point.

## 9. RECALL CLIP

- A. Press **[UP ARROW]** to highlight the next clip in the clip list portion of the display.
- B. Press **[DOWN ARROW]** to highlight the previous clip in the clip list portion of the display.
- C. In CP mode, Clips are automatically loaded as they are highlighted. In all other modes, RECALL CLIP must be pressed to load the clip.

**OR**

Manually enter a clip number using the numeric keypad, and then press **[RECALL CLIP]** to recall the selected clip.

**NOTE-** If a 1, 2, or 3-digit number is entered, the clip number in the range corresponding to the playback channel's currently selected source (CAM-A, CAM-B, CAM-C, or CLIP) will be recalled.

## 10. TRIM EXISTING CLIP

Mark a new IN point, new OUT point, or new IN & OUT point.

- A. Recall an existing clip.
- B. Use transport keys to locate a new IN point.
- C. Press **[IN]** to mark the new IN point.
- D. Use transport keys to locate desired OUT point.
- E. Press **[OUT]** to mark the new OUT point.
- F. Press **[SAVE CLIP]** to replace the original clip with the trimmed clip.

**OR**

Manually enter clip number using the numeric keypad, and then press **[SAVE CLIP]** to save trimmed clip in the entered clip number.

**OR**

Or press **[SHIFT/ESC] + [SAVE CLIP]** to trim all camera angles saved to this clip.

## 11. LABEL OR RE-NAME AN EXISTING CLIP

Label the highlighted clip using a PC keyboard connected to the DMAT.

Manually enter an alpha-numeric label on the PC keyboard.

Press ENTER on the PC keyboard to save the label.

## 12. DELETE SAVED CLIP

A. Highlight the desired clip in the DMAT-AB.

B. Press **[DEL] + [SAVE CLIP]** to delete the clip. This will delete all 4 or 6 angles saved within that clip.

OR

Press **[DEL] + {CAM} OR {CLIP}** softkey to delete only the selected angle from that cue point.

## 13. CREATE PLAYLIST

A. To select Playlist, enter 2-digit number, from '00' to '19', on the numeric keypad, then press **[LIST]**.

B. Press **[ADD/INS]** to append the current clip to the end of the current Playlist.

OR

Press **[ALT] + [ADD/INS]** or **[SHIFT] + [ADD/INS]** to insert the current clip above the highlight bar.

OR

Enter clip number using the numeric keypad, then press **[ADD/INS]** to append the entered clip number to the end of the current Playlist.

OR

Enter clip number using the numeric keypad, then press **[ALT] + [ADD/INS]** or **[SHIFT] + [ADD/INS]** to insert the entered clip above the highlight bar.

OR

Press **[DEL ELEM]** to delete the currently highlighted element.

## 14. ASSIGN SPEED TO PLAYLIST ELEMENT

- A. Press **[UP ARROW]** or **[DOWN ARROW]** to highlight the desired element in the current playlist.
- B. Press the **{SPEED}** softkey.
- C. Move the T-bar to set the desired speed.
- D. Press **[ENTER]**, **[UP ARROW]**, or **[DOWN ARROW]** to assign the T-bar speed to the current element.

**OR**

Press **[ESC]** to exit without assigning speed to element.

## 15. APPEND PLAYLIST

An existing playlist can be appended to the end of another playlist as an element. Upon reaching this element in the list, the appended playlist will be automatically loaded and seamlessly transitioned to.

- A. In PL mode, using the numeric keypad, select a playlist to be appended.
- B. Press **[LIST]** to pre-load the selected playlist. The display will show the cued playlist number next to the current playlist number.
- C. Upon completing playout of the current playlist, the pre-loaded playlist will begin playing.
- D. Press **[ALT] + [LIST]** to cancel the pre-loaded playlist.

NOTE: The pre-loaded list will be cancelled if the operator exits PL mode or if another playlist is appended. Only one playlist may be pre-loaded at a given time. Playlists may not be inserted into the middle of an existing playlist.

## 16. CUT / MIX TRANSITIONS

2 IN / 2 OUT and 6 IN / 2 OUT modes of operation support the capability to perform cut or mix transitions between the two playback channels. Transition Type and Transition Time are configured in the Setup Menu.

To perform a transition, press the **[TAKE]** key. The currently loaded clip on P2 will automatically be put into play with the configured transition. If in PL mode, the list will automatically be put into play using the assigned speed for that element if applicable.

## 17. GANG PLAYBACK

In 2 IN / 2 OUT and 6 IN / 2 OUT modes, the playback channels can be ganged together for simultaneous playback. Press the **[GANG]** key to gang P1 and P2 together. Press **[GANG]** again to disable the gang.

NOTE: In gang, pressing a **{CAM}** key will affect the currently selected channel. If P1 is selected, all **{CAM}** keys will load on P1. If P2 is selected, all **{CAM}** keys will load on P2.

NOTE: For frame accurate ganged playback, video reference must be connected to the DMAT-AB, and Video Reference must be turned on in the setup menu. (Default setting for Video Reference is On.)

## 18. UPLOAD MELT

The content of the playlists can be uploaded to the Mira server for archiving and future use. In PL mode, press the **{MELT}** softkey to upload the content to the server. The uploaded information includes:

- Clip Name
- IN / OUT Points
- Camera Angle
- Clip Label
- Play Speed

See the Mira User Manual for more information.

## 19. GPI FUNCTIONS

GPI Inputs on the rear of the DMAT-AB may be used to execute Play, Stop, or Recue commands. The functionality depends upon the current mode of the unit. See specifications for GPI wiring diagram.

Current Mode	Function	Description
E-E / PB	PLAY	Begin playing the currently recording content
	STOP	Stop the current playback
	RECUE	Do Nothing
CP	PLAY	Begin playing the currently loaded pre-recorded clip
	STOP	Stop the current playback
	RECUE	Recue to the beginning of the clip
PL	PLAY	Begin playing the currently loaded playlist
	STOP	Stop playing the current playlist
	RECUE	Recue to the beginning of the playlist

## DMAT-AB FUNCTIONALITY OVERVIEW

<b>EE MODE:</b>	Press <b>{CAM-X}</b> to instantly switch between input sources on Mira channels A, B, C, D, E or F.
	Press <b>{CLIP-X}</b> to instantly exit EE mode and load assigned, pre-recorded clip for playback. Clip will load and pause at first frame of video.
	Press <b>[RECALL CLIP]</b> to exit EE mode and load selected clip for playback.
	Press <b>[LIST]</b> to exit EE mode and load selected highlight list for playback.
	Move T-bar or press any transport key to exit EE mode and go to PB mode.
<b>PB MODE:</b>	Press <b>{CAM-X}</b> to instantly switch between playback sources from Mira channels A, B, and C. (The current playback time does not change when switching between CAMs.)  If <b>{CLIP-X}</b> was previously selected, CAM-A, CAM-B, or CAM-C will load and pause at first frame of video.
	Press <b>{CLIP}</b> to load the assigned, pre-recorded clip for playback. Clip will load and pause at first frame of video.
	Press <b>[RECALL CLIP]</b> to exit PB mode and load selected clip for playback.
	Press <b>[LIST]</b> to exit PB mode and load selected highlight list for playback.
	Press <b>[REC]</b> to exit PB mode and view live source of selected CAM
<b>CP MODE:</b>	Press <b>{CAM-X }</b> to load the associated angle for the current clip number. The clip will load and pause at its IN point.
	Press <b>{CLIP-X}</b> to exit CP mode and load the assigned, pre-recorded clip for playback. Pre-recorded clip will load and pause at first frame of video.
	Press <b>[RECALL CLIP]</b> to load selected clip for playback.
	Press <b>[LIST]</b> to exit CP mode and load selected highlight list for playback.
	Press <b>[REC]</b> to exit CP mode and view live source of selected CAM
<b>PL MODE:</b>	Press <b>[RECALL CLIP]</b> to exit PL mode and load selected clip for playback.
	Press <b>[REC]</b> to exit PL mode and view live source of selected CAM



## 20. DMAT-AB FUNCTION TABLE

Current Mode	Operation	Function	Next Mode	Description
EE	T-BAR	Slow Motion	PB	Slow Motion Playback.
	[SLOMO]	Slow Motion	PB	Slow Motion Playback.
	[SHIFT] + T-BAR	Set Slow Motion Speed	EE	Set Slow Motion speed without affecting current transport mode.
	[PLAY]	Play	PB	Playback from current time of day time.
	[JOG]	Jog	PB	Jog from current time of day time.
	[FFWD]	FFWD	PB	FFWD from current time of day time (press & hold key).
	[RWD]	RWD	PB	RWD from current time of day time (press & hold key).
	[SHUT]	SHUTTLE	PB	Shuttle from current position.
	[UP ARROW]	Highlight Next Clip	EE	Highlight Next Clip in CLIP LIST.
	[DOWN ARROW]	Highlight Previous Clip	EE	Highlight Previous Clip in CLIP LIST.
	[GOTO] + Entered Timecode + [GOTO]	Goto TC	PB	Search to entered time code.
	[GOTO], then [IN]	Goto IN Point	PB	Search to IN Point
	[GOTO], then [OUT]	Goto OUT Point	PB	Search to OUT Point
	[IN]	Mark IN Point	EE	Mark IN POINT based upon RECORD time.
	[OUT]	Mark OUT Point	EE	Mark OUT POINT based upon RECORD time.
	[SAVE CLIP]	Save CLIP	EE	Save a CLIP with IN and OUT point at next available clip number.
	Enter Number + [SAVE CLIP]	Save CLIP	EE	Save a CLIP with IN and OUT point at entered clip number.
	[RECALL CLIP]	Recall CLIP	CP	Recall current clip number.
	Enter Number + [RECALL CLIP]	Recall CLIP	CP	Recall entered clip number.
	[INS/ADD]	Add Element	EE	Add current CLIP to end of current Playlist.
	Enter Number + [INS/ADD]	Add Element	EE	Add entered CLIP number to end of current Playlist.
	[ALT] + [INS/ADD] or [SHIFT] + [INS/ADD]	Insert Element	EE	Insert current CLIP into current Playlist above highlight bar.
	Enter Number + [ALT] + [INS/ADD] or [SHIFT] + [INS/ADD]	Insert Element	EE	Insert selected CLIP into current Playlist above highlight bar.
	[DELETE ITEM]	Delete Element	EE	Delete currently highlighted element in Playlist.
	[ALT] + [DELETE ITEM]	Delete Playlist	EE	Delete current Playlist.
	[LIST]	Load Playlist	PL	Load current Playlist and cue the currently highlighted element.
	Enter Number + [LIST]	Load Playlist	PL	Load entered Playlist number and cue first element.
	[SHIFT] + [UP ARROW]	Display next clip page	EE	Display the next page of clips.
	[SHIFT] + [DOWN ARROW]	Display previous clip page	EE	Display the previous page of clips.
	[ALT] + [UP ARROW]	Step to next element	EE	Step to next element in current Playlist. Do not cue.

Current Mode	Operation	Function	Next Mode	Description
	[ALT] + [DOWN ARROW]	Step to previous element	EE	Step to next element in current Playlist. Do not cue.
	[PREROLL]	Preroll to current time	PB	Searches to current time minus preroll value.
	[TAKE]	Transition from P1 to P2	PB	Transitions from the current element on P1 to the current element on P2 and executes the previously set up transition
	{CAM}	Load live recording	EE	Loads the live recording that is currently assigned to that softkey.
	[SHIFT] + {CAM}	Assign live recording to softkey	EE	Allows operator to assign a live recording to the softkey for easy recall.
	{CLIP}	Load pre-recorded clip	PB	Loads the pre-recorded clip that is currently assigned to that softkey.
	[SHIFT] + {CLIP}	Assign pre-recorded clip to softkey	EE	Allows operator to assign a pre-recorded clip to the softkey for easy recall.
	[DEL] + [SAVE CLIP]	Delete currently selected clip	EE	Deletes the contents saved within that clip number across all channels on the DMAT-AB
	[DEL] + {CAM} OR {CLIP}	Delete currently selected clip	EE	Deletes the content saved within that clip number on the currently selected channel
	[GANG]	GANG P1 + P2	EE	Gangs P1 and P2 channels for simultaneous playback

Current Mode	Operation	Function	Next Mode	Description
PB	[REC]	E to E	EE	Go to EE mode.
	[PLAY]	Play	PB	Playout video from its current location.
	T-BAR or [SLOMO]	Slomo	PB	Slomo video from its current location.
	[SHIFT] + T-BAR	Set Slomo Speed	PB	Set slomo speed without affecting current transport mode.
	[REV]	Slomo Reverse	PB	Slomo video from its current location in Reverse direction.
	[JOG]	Jog	PB	Jog video from its current location
	[FFWD]	FFWD	PB	FFWD video from its current location (press and hold key).
	[RWD]	RWD	PB	RWD video from its current location (press and hold key).
	[SHUT]	Shuttle	PB	Shuttle from current position.
	[UP ARROW]	Highlight Next Clip	PB	Highlight Next Clip in CLIP LIST.
	[DOWN ARROW]	Highlight Previous Clip	PB	Highlight Previous Clip in CLIP LIST.
	[GOTO] + Entered Timecode + [GOTO]	Goto TC	PB	Search to entered Time Code.
	[GOTO], then [IN]	Goto IN Point	PB	Search to IN Point
	[GOTO], then [OUT]	Goto OUT Point	PB	Search to OUT Point
	[IN]	Mark IN Point	PB	Mark IN point based upon playback Timecode.
	[OUT]	Mark OUT Point	PB	Mark OUT point based upon playback Timecode.
	[SAVE CLIP]	Save CLIP	PB	Save CLIP with IN and OUT point at next available clip number.
	Entered Number + [SAVE CLIP]	Save CLIP	PB	Save CLIP with IN and OUT point at entered clip number.
	[RECALL CLIP]	Recall CLIP	CP	Recall current clip number.
Entered Number + [RECALL CLIP]	Recall CLIP	CP	Recall entered clip number.	
[INS/ADD]	Add Element	PB	Add current CLIP to end of current Playlist.	

Enter Number + <b>[INS/ADD]</b>	Add Element	PB	Add entered CLIP number to end of current Playlist.
<b>[ALT] + [INS/ADD]</b> or <b>[SHIFT] + [INS/ADD]</b>	Insert Element	PB	Insert current CLIP into current Playlist above highlight bar.
Enter Number + <b>[ALT] + [INS/ADD]</b> or <b>[SHIFT] + [INS/ADD]</b>	Insert Element	PB	Insert selected CLIP into current Playlist above highlight bar.
<b>[DELETE ITEM]</b>	Delete Element	PB	Delete currently highlighted element in Playlist.
<b>[ALT] + [DELETE ITEM]</b>	Delete Playlist	PB	Delete current Playlist.
<b>[LIST]</b>	Load Playlist	PL	Load current Playlist and <b>cue the currently highlighted</b> element.
Enter Number + <b>[LIST]</b>	Load Playlist	PL	Load entered Playlist number and cue first element.
<b>[SHIFT] + [UP ARROW]</b>	Display next clip page	PB	Display the next page of clips.
<b>[SHIFT] + [DOWN ARROW]</b>	Display previous clip page	PB	Display the previous page of clips.
<b>[ALT] + [UP ARROW]</b>	Step to next element	PB	Step to next element in current Playlist. Do not cue.
<b>[ALT] + [DOWN ARROW]</b>	Step to previous element	PB	Step to next element in current Playlist. Do not cue.
<b>[PREROLL]</b>	Preroll to current time	PB	Search to current time minus preroll value.
<b>[TAKE]</b>	Transition from P1 to P2	PB	Transitions from the current element on P1 to the current element on P2 and executes the previously set up transition
<b>{CAM}</b>	Load live recording	EE	Loads the live recording that is currently assigned to that softkey.
<b>[SHIFT] + {CAM}</b>	Assign live recording to softkey	PB	Allows operator to assign a live recording to the softkey for easy recall.
<b>{CLIP}</b>	Load pre-recorded clip	PB	Loads the pre-recorded clip that is currently assigned to that softkey.
<b>[SHIFT] + {CLIP}</b>	Assign pre-recorded clip to softkey	PB	Allows operator to assign a pre-recorded clip to the softkey for easy recall.
<b>[DEL] + [SAVE CLIP]</b>	Delete currently selected clip	PB	Deletes the contents saved within that clip number across all channels on the DMAT-AB
<b>[DEL] + {CAM} OR {CLIP}</b>	Delete currently selected clip	PB	Deletes the content saved within that clip number on the currently selected channel
<b>[GANG]</b>	Gangs P1 + P2	PB	Gangs P1 and P2 channels for simultaneous playback

Current Mode	Operation	Function	Next Mode	Description
CP	<b>[REC]</b>	E to E	EE	Go to EE mode.
	<b>[PLAY]</b>	Play	CP	Playout clip from its current location.
	T-BAR or <b>[SLOMO]</b>	Slomo	CP	Slomo clip from its current location
	<b>[SHIFT] + T-BAR</b>	Set Slomo Speed	CP	Set slomo speed without affecting current transport mode.
	<b>[REV]</b>	Slomo Reverse	CP	Slomo clip from its current location in Reverse direction.

<b>[JOG]</b>	Jog	CP	Jog video from its current location.
<b>[FFWD]</b>	FFWD	CP	FFWD clip from its current location (press and hold key).
<b>[RWD]</b>	RWD	CP	RWD clip from its current location (press and hold key).
<b>[SHUT]</b>	Shuttle	CP	Shuttle from current time.
<b>[UP ARROW]</b>	Highlight Next Clip	CP	Highlight Next Clip in CLIP LIST.
<b>[DOWN ARROW]</b>	Highlight Previous Clip	CP	Highlight Previous Clip in CLIP LIST.
<b>[GOTO]</b> + Entered Timecode + <b>[GOTO]</b>	Goto TC	PB	Search to entered Time Code.
<b>[GOTO]</b> , then <b>[IN]</b>	Goto IN Point	PB	Search to IN Point
<b>[GOTO]</b> , then <b>[OUT]</b>	Goto OUT Point	PB	Search to OUT Point
<b>[IN]</b>	Mark IN Point	CP	Mark IN point based upon playback Timecode.
<b>[OUT]</b>	Mark OUT Point	CP	Mark OUT point based upon playback Timecode.
<b>[SAVE CLIP]</b>	Save CLIP	CP	Save trimmed clip at current clip number.
Entered Number + <b>[SAVE CLIP]</b>	Save CLIP	CP	Save trimmed clip at entered clip number.
<b>[SHIFT/ESC]</b> + <b>[SAVE CLIP]</b>	Save CLIP	CP	Save trimmed clip at current clip number and apply to all camera angles within that clip.
<b>[RECALL CLIP]</b>	Recall CLIP	CP	Recall current clip number.
Entered Number + <b>[RECALL CLIP]</b>	Recall CLIP	CP	Recall entered clip number.
<b>[INS/ADD]</b>	Add Element	CP	Add current CLIP to end of current Playlist.
Enter Number + <b>[INS/ADD]</b>	Add Element	CP	Add entered CLIP number to end of current Playlist.
<b>[ALT]</b> + <b>[INS/ADD]</b> or <b>[SHIFT]</b> + <b>[INS/ADD]</b>	Insert Element	CP	Insert selected CLIP into current Playlist above highlight bar.
Enter Number + <b>[ALT]</b> + <b>[INS/ADD]</b> or <b>[SHIFT]</b> + <b>[INS/ADD]</b>	Insert Element	CP	Insert current CLIP into current Playlist above highlight bar.
<b>[DELETE ITEM]</b>	Delete Element	CP	Delete currently highlighted element in Playlist
<b>[ALT]</b> + <b>[DELETE ITEM]</b>	Delete Playlist	CP	Delete current Playlist.
<b>[LIST]</b>	Load Playlist	PL	Load current Playlist and cue the currently highlighted element.
Enter Number + <b>[LIST]</b>	Load Playlist	PL	Load entered Playlist number and cue first element
<b>[SHIFT]</b> + <b>[UP ARROW]</b>	Display next clip page	CP	Display the next page of clips.
<b>[SHIFT]</b> + <b>[DOWN ARROW]</b>	Display previous clip page	CP	Display the previous page of clips.
<b>[ALT]</b> + <b>[UP ARROW]</b>	Step to next element	CP	Step to next element in current Playlist. Do not cue.
<b>[ALT]</b> + <b>[DOWN ARROW]</b>	Step to previous element	CP	Step to next element in current Playlist. Do not cue.
<b>{CAM-A}</b> , <b>{CAM-B}</b> , <b>{CAM-C}</b>	Change the current angle	CP	Change the currently selected camera angle in the clip being played back. Recues to IN point and begins playing.
<b>[PREROLL]</b>	Preroll to IN point	CP	Search to IN point minus preroll value.

<b>[TAKE]</b>	Transition from P1 to P2	CP	Transitions from the current element on P1 to the current element on P2 and executes the previously set up transition
<b>[SHIFT] + {CAM}</b>	Assign live recording to softkey	CP	Allows operator to assign a live recording to the softkey for easy recall.
<b>{CLIP}</b>	Load pre-recorded clip	PB	Loads the pre-recorded clip that is currently selected with stored IN/OUT points.
<b>[SHIFT] + {CLIP}</b>	Assign pre-recorded clip to softkey	CP	Allows operator to assign a pre-recorded clip to the softkey for easy recall.
<b>[DEL] + [SAVE CLIP]</b>	Delete currently selected clip	CP	Deletes the contents saved within that clip number across all channels on the DMAT-AB
<b>[DEL] + {CAM} OR {CLIP}</b>	Delete currently selected clip	CP	Deletes the content saved within that clip number on the currently selected channel
<b>[GANG]</b>	Gangs P1 + P2	CP	Gangs P1 and P2 channels for simultaneous playback

Current Mode	Operation	Function	Next Mode	Description
PL	<b>[REC]</b>	E to E	EE	Go to EE mode. (NOTE: IN 2 IN / 2 OUT or 6 IN / 2 OUT mode, control is passed to P1.)
	<b>[PLAY]</b>	Play	PL	Play current Playlist from highlighted element.
	T-BAR	Slomo	PL	Slomo Playlist from its current location.
	<b>[JOG]</b>	Jog	PL	Jog playlist from its current location.
	<b>[DOWN ARROW]</b> (Playlist not playing)	Cue to Previous Element	PL	Cue to previous element in Playlist.
	<b>[UP ARROW]</b> (Playlist not playing)	Cue to Next Element	PL	Cue to next element in Playlist.
	<b>[UP ARROW]</b> (Playlist playing)	Go to next element	PL	Immediately go to the next element in the Playlist during Playlist payout.
	<b>{SKIP}</b>	Skip next element	PL	Skip next element during Playlist payout.
	<b>[IN]</b>	Mark IN Point	PL	Modify IN point of current Playlist element.
	<b>[OUT]</b>	Mark OUT Point	PL	Modify OUT point of current Playlist element.
	<b>[RECALL CLIP]</b>	Recall CLIP	CP	Recall current clip number.
	Entered Number + <b>[RECALL CLIP]</b>	Recall CLIP	CP	Recall entered clip number.
	<b>[INS/ADD]</b>	Add Element	PL	Add current CLIP to end of current Playlist.
	Enter Number + <b>[INS/ADD]</b>	Add Element	PL	Add entered CLIP number to end of current Playlist.
	<b>[ALT] + [INS/ADD]</b> or <b>[SHIFT] + [INS/ADD]</b>	Insert Element	PL	Insert current CLIP into current Playlist at highlight bar.
	Enter Number + <b>[ALT] + [INS/ADD]</b> or <b>[SHIFT] + [INS/ADD]</b>	Insert Element	PL	Insert current CLIP into current Playlist at highlight bar.
	<b>[DEL ELEM]</b>	Delete Element	PL	Delete currently highlighted element in Playlist.
	<b>[ALT] + [DEL ELEM]</b>	Delete Playlist	PL	Delete current Playlist.
<b>[LIST]</b>	Load Playlist	PL	Load current Playlist and cue first element.	

	Enter Number + <b>[LIST]</b>	Load Playlist	PL	Load entered Playlist number and cue first element.
	<b>[SHIFT]</b> + <b>[UP ARROW]</b>	Cue to next IN/OUT	PL	Cue to next IN POINT or OUT POINT in current Playlist.
	<b>[SHIFT]</b> + <b>[DOWN ARROW]</b>	Cue to previous IN/OUT	PL	Cue to last IN POINT or OUT POINT in current Playlist.
	<b>{SPEED}</b>	Assign speed to element	PL	Assign speed to highlighted Playlist element.
	<b>[TAKE]</b>	Transition from P1 to P2	PL	Transitions from the current element on P1 to the current element on P2 and executes the previously set up transition
	<b>[GANG]</b>	Gangs P1 + P2	PL	Gangs P1 and P2 channels for simultaneous playback

# Reference

## 21. SETUP MENU

Press **[MENU]**. The MENU indicator will turn on.

Turn wheel to select menu item.

Press the **{CHANGE}** softkey to open the choices for that item.

Press **{BACK}** softkey to save change and return to menu.

Press the **{EXIT}** softkey to exit the Setup Menu.

FUNCTION	DESCRIPTION
<b>{CLEAR}</b>	Select Item to Clear  <b>{CLR CLIPS}</b> Delete all clips from 1000 to 1399, 2000 to 2399, 3000 to 3399, and 4000 to 4399.  <b>{CLR LISTS}</b> Delete all Playlists, (00 - 19),  <b>{CLR MEMORY}</b> Clear all non-volatile memory including clips and Playlists.
<b>{DEFAULTS}</b>	<b>{SET DEFAULTS}</b> Set Setup Menu parameters to factory programmed defaults.
<b>DMAT MODEL</b>	Select 1 IN / 1 OUT, 2 IN / 2 OUT, 3 IN / 1 OUT, or 6 IN / 2 OUT mode to match the configuration of the Mira. See the Mira documentation for details on the modes of operation. Default - 2 IN / 2 OUT
<b>VIDEO STANDARD</b>	Select <b>{PAL}</b> or <b>{NTSC}</b> . Default – NTSC.
<b>PREROLL VALUE</b>	Enter Preroll Value between 0 – 59 seconds. Default – 5 seconds.
<b>AUTO JOG</b>	Select <b>{ENABLE}</b> to enable jog by turning wheel. Select <b>{DISABLE}</b> to disable function.
<b>SHUTTLE SPEED MAXIMUM</b>	<b>{20x}</b> Limit shuttle speed to 20x play speed. <b>{49x}</b> (Default) Limit shuttle speed to 49x play speed.
<b>JOG SPEED MAXIMUM</b>	Select <b>{1X}</b> , <b>{4X}</b> , <b>{8X}</b> , <b>{16X}</b> or <b>{32X}</b> Default – 16X

<b>AUTO-MARK HEAD</b>	Enter a timecode number between 00:00:00:00 and 23:59:59:29 Default – 00:00:05:00 Set value to 00:00:00:00 for both AUTO-MARK HEAD and AUTO-MARK TAIL to disable Auto Save.
<b>AUTO-MARK TAIL</b>	Enter a timecode number between 00:00:00:00 and 23:59:59:29 Default – 00:00:05:00 Set value to 00:00:00:00 for both AUTO-MARK HEAD and AUTO-MARK TAIL to disable Auto Save.
<b>CAM KEY IN CP</b>	Select <b>{SWITCH ANGLE ONLY}</b> OR <b>{CUE TO IN AND PLAY}</b> Default – SWITCH ANGLE ONLY - defines the description of the controller when the clip is in CP mode and is playing at regular or variplay speed.
<b>TRANSITION</b>	Select <b>{CUT}</b> , <b>{MIX}</b> , <b>{H-WIPE}</b> , or <b>{V-WIPE}</b> . Default – CUT for 1 IN / 1 OUT and 3 IN / 1 OUT. MIX for 2 IN / 2 OUT and 6 IN / 2 OUT.
<b>TRANSITION DURATION</b>	Enter a Transition Duration between 0 – 98 frames Default – 5 frames
<b>VIDEO REFERENCE</b>	Select <b>{ON}</b> or <b>{OFF}</b> Default – ON
<b>MARK AUTO ADVANCE</b>	Select <b>{ON}</b> or <b>{OFF}</b> ON: Upon pressing <b>[SAVE CLIP]</b> the clip number will automatically advance. OFF: Upon pressing <b>[SAVE CLIP]</b> the clip number does not advance. The operator must manually select a different clip number.
<b>SAVE CLIP</b>	Select <b>{ON}</b> or <b>{OFF}</b> ON: The IN and OUT point for the selected clip number are saved only when the operator presses <b>[SAVE CLIP]</b> . OFF: In EE and PB modes, when the IN key is pressed, the OUT point is automatically calculated using the Auto-Mark Tail setting. When the OUT key is pressed, the IN point is automatically calculated using the Auto-Mark Head setting. In CP mode, press IN to save the current position as the IN point, or press OUT to save the current position as the OUT point for the selected angle.
<b>STOP AT OUT</b>	Select <b>{ON}</b> or <b>{OFF}</b> ON: In CP mode, the clip will stop playing when the OUT point is reached. OFF: In CP mode, the clip will continue playing when the OUT point is reached, and the time display will display a negative number when the OUT point is passed.
<b>AUTO-GANG WITH REC</b>	Select <b>{ON}</b> or <b>{OFF}</b> When enabled during any 2-OUT operating mode, playback channels are automatically put into gang when the <b>[REC]</b> button is pressed. Default - OFF



## 22. SPECIFICATIONS

Power:	90 VAC to 265 VAC adapter supplied with IEC connector APX Model #AP4108 +5v @ 4A, +12v @ 1.0A, -12V @ 0.6A	
Size:	[L" x W" x H"] 12 3/4" x 8" x 1 3/4" (front) 3 5/8" (rear) [8 5/8" high to top of display]	
Weight:	10 lbs.	
Rear Panel Connectors:		
VTR1, 2, 3, 4, 5, 6	(All DB9F)	VTR 1 and VTR 2 only function
GPI	(DB26HDF)	
Power	(DB9M)	
SHOTBOX	(DB9F)	Not functional
PBIO	(DB9F)	Not functional
Keyboard	(6-pin mini DIN)	For PS/2 style keyboard
Ref. Video In	(BNC)	
LTC Input	(BNC)	Not used
Ground	Threaded stud	
Display:	Easy to read, back-lit LCD display	
Jog/Shuttle Wheel:	With mechanical detents	
T-Bar:	With mechanical detent at x1 speed.	

### RS422 SERIAL CONNECTOR 9-Pin D-Type, Female (DB9F)

Pin #	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

### POWER CONNECTOR 9-Pin D-Type, Female (DB9M)

Pin #	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	-12 VDC		

## GPI IN/OUT CONNECTOR

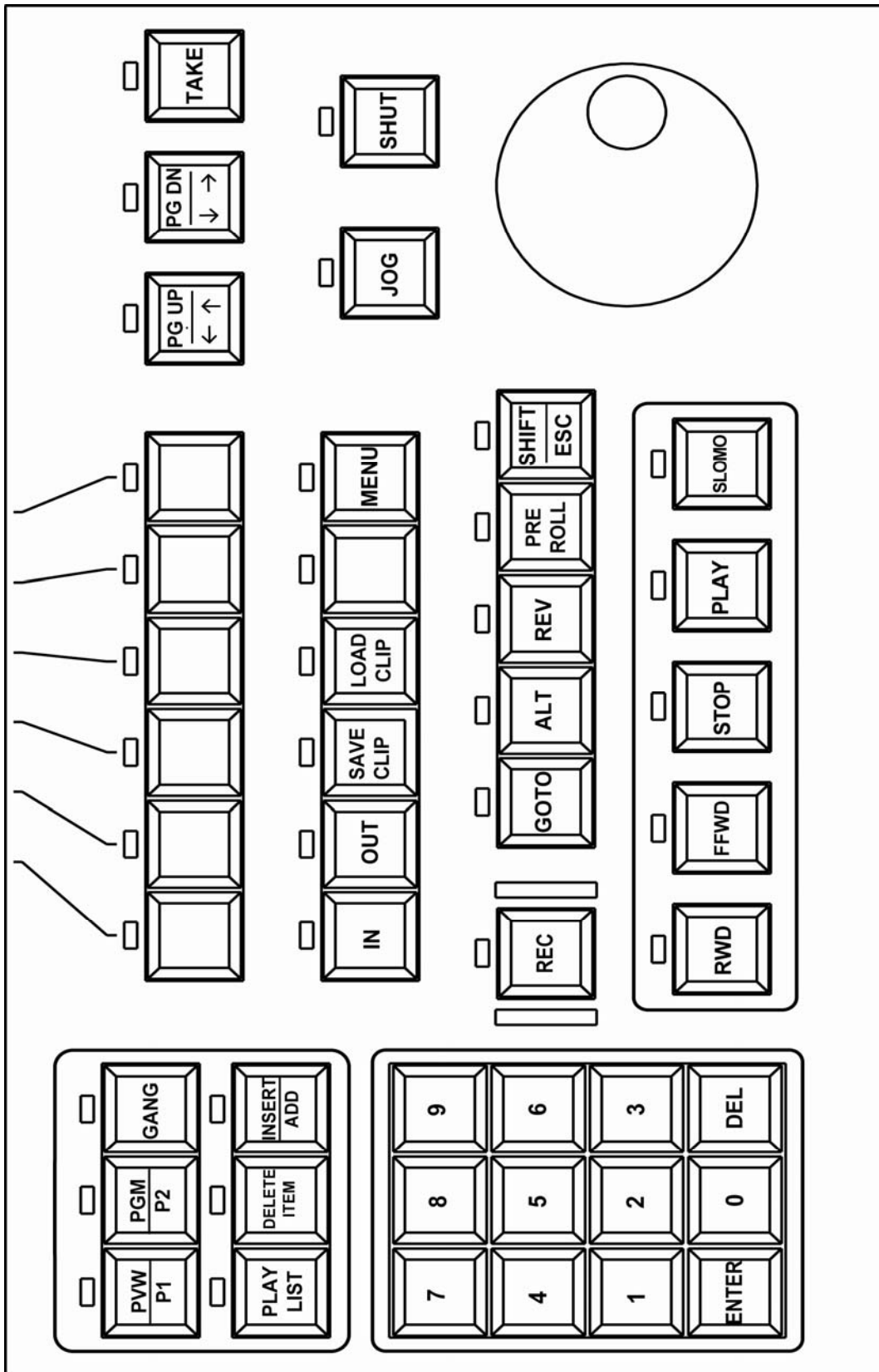
### 26-Pin D-Type, Female (DB26F)

Pin #	Function	Pin #	Function
1	Not Used	14	GPI #5
2	Not Used	15	GPI #6
3	Not Used	16	GPI #7
4	Not Used	17	Not Used
5	Not Used	18	Ground
6	Not Used	19	+5V
7	Not Used	20	+5V
8	Not Used	21	Not Used
9	Ground	22	Not Used
10	GPI #1	23	Not Used
11	GPI #2	24	Not Used
12	GPI #3	25	Not Used
13	GPI #4	26	Ground

No Function  
No Function  
No Function

PLAY  
STOP  
RECUE  
No Function

## 23. KEY LAYOUT



## **24. DNF CONTROLS LIMITED WARRANTY**

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls  
12843 Foothill Blvd., Suite C  
Sylmar, CA 91342  
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services at prices listed in the DNF Controls Price List. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

# # #