V1

User's Manual

Version 2.0

(07/98)

Doremi Labs, Inc.
3631 Cahuenga Blvd. West, Los Angeles, California 90068, U.S.A.

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WARRANTY

Doremi's warranty obligations are limited to the terms set forth below:

Doremi Labs, Inc. ("Doremi") warrants this hardware product against defects in materials and workmanship for a period of ONE (1) YEAR from the date of original retail purchase.

If you discover a defect, Doremi will, at its option, repair, replace, or refund the purchase price of this product at no charge to you, provided you return it during the warranty period, with transportation charges prepaid, to the authorized Doremi distributor from whom you purchased it or to any other authorized Doremi distributor within the country of original retail purchase. (You can obtain additional information by contacting Doremi at the address printed on this certificate). To each product returned for warranty service, please attach your name, address, telephone number, and a copy of the bill of sale bearing the appropriate Doremi serial numbers as proof of date of the original retail purchase.

If your product fails during the warranty period while you are out of the country of original retail purchase, you may have it repaired (no refunds or replacements are provided) at your expense by an authorized Doremi distributor in the country in which the product failed. You may obtain a refund for the repair costs by submitting a claim to Doremi (instructions are obtained by contacting Doremi at the address printed on this certificate).

This warranty applies only to hardware products manufactured by or for Doremi that can be identified by the "V1" trademark, trade name, or logo affixed on them. Doremi software is warranted pursuant to a separate written statement packed with the software. Doremi does not warrant any products that are not Doremi products. Note that most third-party products have a manufacturers' warranty. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without the written permission of Doremi; or if any Doremi serial number has been removed or defaced.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. DOREMI SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No Doremi distributor, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

DOREMI IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPLACEMENT OF EQUIPMENT AND PROPERTY, AND ANY COSTS OF RECOVERING, REPROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED IN OR USED WITH DOREMI PRODUCTS.

Doremi Labs, Inc.
3631 Cahuenga Blvd. West
Los Angeles, CA 90068

WARNING

THIS APPARATUS MUST BE EARTHED

IMPORTANT

WARNING

Power requirements for electrical equipment vary from area to area. Please ensure that your V1 meets the power requirements in your area. If in doubt, consult a qualified electrician or Doremi Labs, Inc. dealer.

120VAC	@60Hz for USA and CANADA rating 1A
220-230/240VAC	@50Hz for Europe rating 0.5A
240VAC	@50Hz for Australia rating 0.5A

AVIS

Le voltage peut differer d'un pays a l'autre. Il faut que le V1 soit ajuste au voltage du pays.

LA SOURCE DE PUISSANCE DOIT AVOIR UN CONDUCTEUR CONNECTE A LA TERRE.

Toutes reparations doient etre effectuees par une personne qualifiee.

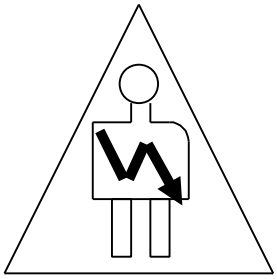
AFIN D'EVITER UN CHOC ELECTRIQUE, VEUILLEZ NE PAS ENLEVER LE CAPOT.

PROTECTING YOURSELF AND THE V1

Never touch the AC plug with wet hands
Always disconnect the V1 from the power supply by pulling on the plug, not the cord.
Allow only a Doremi Labs, Inc. dealer or qualified professional engineer to repair or reassemble the V1. Apart from voiding the warranty, unauthorized engineers might touch live internal parts and receive a serious electric shock
Do not put, or allow anyone to put any object, especially metal objects into the V1
Use only an AC power supply. Never use a DC power supply.
If water or any other liquid is spilled into or onto the V1, disconnect the power, and call your dealer.
Make sure the unit is well ventilated, and away from direct sunlight.
To avoid damage to internal circuitry, as well as the external finish, keep the V1 away from sources of direct heat (stoves, radiators, etc.).
Avoid using aerosol insecticides, etc. near the V1. They may damage the surface, and may ignite.
Do not use denatured alcohol, thinner or similar chemicals to clean the DR8. They will damage the finish.
Modification of this equipment is dangerous, and can result in the functions of the V1 being impaired. Never attempt to modify the equipment in any way.
In order to ensure optimum performance of your V1, select the setup location carefully, and make sure the equipment is used properly. Avoid setting up the V1 in the following locations:
1. In a humid or dusty environment
2. In a room with poor ventilation
3. On a surface which is not horizontal
4. Inside a vehicle such as a car, where it will be subject to vibration
5. In an extremely hot or cold environment

WARNING!!

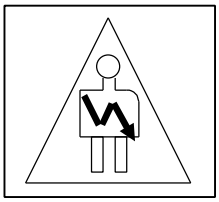
To prevent fire or shock hazard, do not expose this appliance to rain or moisture



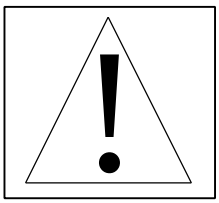
CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

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



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



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

CE NOTICE

Marking by the symbol CE indicates compliance of the device to the EMC (Electromagnetic Compatibility) directive and to the Low Voltage directive of the European Community. Such marking is indicative that this device meets or exceeds the following technical standard:

- EN 55022 "Limits and Methods of Measurement of Radio Interface Characteristics of Information Technology Equipment."

A "Declaration of Conformity" in accordance with the above standard has been made and is on file at Doremi Labs, Europe, Valbonne, France.

INTRODUCTION

If you are a Digital Audio Workstation (DAW) user and are tired of waiting for your analog tape VTR to locate and follow up with your DAW, you would need to replace your video tape machine with a random access digital video recorder/player that would respond instantly to your locate commands and communicate efficiently with your DAW to allow you to finish your work faster.

If you have an application that requires instant locate and playback from any time code position you would need a random access digital video recorder/player.

The V1 is the first generation of our random access digital video equipment that uses magnetic (hard drives) or magneto optical (MOD) drives as a recording medium.

To be able to record video on a hard disk it should be digitized which means that the analog video information must be converted to a digital data stream. Every frame of NTSC (or PAL) video contains 525 (or 625) lines that has 858 (or 864)pixels each. In a typical A/D conversion every pixel is coded on 16 bits (2 Bytes), which yields a data stream of:
NTSC: 525*858*2=900900 bytes/frame or 29.97*900900=27 MB/s.
PAL: 625*864*2= 1080000 bytes/frame or 25*1080000=27 MB /s.

You see that in both cases the drive should be capable of handling a transfer rate of at least 27MB/s. This figure does not include any audio tracks. Since the transfer rate of various media range between 1MB/s and 16MB/s, to record the video you would need to use RAID systems (multiple drives chained together to achieve faster transfers) or compress the video data stream by sacrificing picture quality.

Two compression techniques are becoming popular: Motion JPEG and MPEG.
Motion JPEG consists on compressing every field of video and save the data on the drive
MPEG consists on compressing only few fields/sec called reference fields and then recording the difference between each new field and the reference fields. MPEG compression requires very sophisticated techniques but yields a better transfer rate than JPEG for the same video quality.

The V1 uses a constant block size (CBS) Motion JPEG algorithm. With traditional JPEG algorithms, depending on video complexity, the size of each JPEG field can vary thus requiring maintaining a list to indicate the start of each field on the drive. In the CBS all fields have the same maximum size. This is an overkill for non-complex pictures but it does not require maintaining a list indicating the start of each field because they are all the same size.

Since not all lines and pixels are useful, the V1 only compresses the valid 480 lines and 720 pixels/line for NTSC (576 lines and 720 pixels/line for PAL) thus making the non-compressed data stream 20.71 MB/s in NTSC (20.73 MB/s in PAL).

In addition to the video, and regardless of the compression ratio used, the V1 records 2 tracks of uncompressed audio (sampled at 48Khz), one time code track and allocate space on each drive for saving the setup information. Each audio sample is coded on 2 bytes (2*2*48000= 192 KB/s) and every field of time code is sampled on 80 bytes (29.97*2*80= 4.795 KB/s for NTSC and 25*2*6= 4 KB/s for PAL).

Hopefully, this introduction to digital video, has explained to the reader the principles of digital video recording.

1 MENU SELECTIONS

If your front panel EPROM on the V1 has version V1.20 or higher, you have access to two different sets of menus. Pressing the **MENU** key will allow access to the **Standard** menu and pressing **OPTION MENU** (hold the OPTION key while pressing MENU) will allow access to the **Optional** menu. If your front panel EPROM only shows the standard menu, and you need to use the optional menu, you can either use the VTPro202 Utility or request a front panel EPROM programmed with version V1.20 or higher. Do not confuse the front panel EPROM (socketed 40 pin DIP IC on the RCV1 front panel board) version V1.20 with the V1 Flash EPROM (socketed 32 pin PLCC IC on the DVP100 main PC board) version V1.20.

1.1 Standard Menu

The **MENU** key will call up the menus allowing the user to define the set-up of the V1 unit. The up arrow key ⇧ (or down arrow key ⇩) will allow the user to get to the next (or previous) menu selection. The Toggle/Select key (⇔) generally sets the parameters for the selected menu . Once menus are set-up, pressing the **ESC** or **MENU** keys will save the settings and quit the menu mode. All the settings related to the recording i.e. Remote/Local, Time Mode, Sync Source, Input Source, etc. are automatically **saved** on the current disk when you exit the menu mode (on version 1.9 and lower, the V1 will wait for a **STOP** command before saving the set-up on the current drive)

(00) Control Selects the mode of control for the V1. The Toggle/Select key (⇔) will switch between :

- **Local** For front panel control of the V1
- **Remote** For control of the V1 by an external edit controller or workstation via the rear panel RS-422 connector 1. RS-422 connector 2 is to be used only for the desktop remote control **RCV1** from Doremi Labs, Inc.

(01) Time Mode Selects the Time Code source of the V1 during playback. Regardless of the setting for this option, the V1 will record the time code present on the video input on the VITC track, and the time code present on the LTC input on the time code track. This menu option will allow you to choose the time code during playback. The Toggle/Select key (⇔) will switch between :

- **A Time** Absolute Time, the time code displayed on the V1 front panel and present on the **TIME CODE OUT** connector during playback or record is generated internally by the V1. A Time represents the time elapsed since the start of the recording unless a time code offset has been set. *See Section 3.1.4, "Time Code Offset"*.
- **Time Code** During record the time code present on the **TIME CODE IN** connector will be recorded on the time code track (guide track) of the V1 active drive, a valid LTC signal should first be fed to the V1 LTC IN connector. The time code displayed on the V1 front panel and present on the **TIME CODE OUT** connector during playback or record is the same time code recorded on the time code track, unless a time code offset has been set. *See Section 3.1.4, "Time Code Offset"*.

A Time as LTC If you are using A Time (with or without an offset) as your time code and if your controller requires time code, you should choose this option which will make the A Time look like Time Code on the RS422 connection.

VITC Time During record, the time code embedded in the video input signal (VITC) will be recorded on the VITC track of the V1 active drive. The time code displayed on the V1 front panel and present on the **VITC OUT** connector during playback or record is the same time code recorded on the VITC track, unless a time code offset has been set. *See Section 3.1.4, "Time Code Offset".*

(02) Sync from Specifies the sync reference during playback. The V1 is always locked to the **Input** when recording. The Toggle/Select key (⇔) will switch between :

Auto The V1 syncs to the **SYNC IN** input.

Sync In The V1 syncs to the **SYNC IN** input. **Auto** and **Sync In** are the same.

Input The V1 syncs to the **VIDEO IN** input.

Internal The V1 syncs to its own internal clock.

(03) Chase Specifies how the V1 will **chase** to time code. The Toggle/Select key (⇔) will switch between :

Off **Normal mode of operation** when the unit is controlled by a workstation via the 9 pin connection.

LTC In this mode the V1 will chase the time code fed through the **TIME CODE INPUT** jack. This mode is recommended when no RS422 9 pin control is present *(See Sections 3.2.1 and 3.2.2, Chase Play.)*

MTC In this mode the V1 will chase the time code fed through the **MIDI IN** connector. This mode is recommended when no RS422 9 pin control is present.

Serial TC (RS422) In this mode the V1 will chase the time code fed through the RS422 connection. This mode requires a special cable and it is recommended only if no RS422 9 pin control is present. *Please refer to Section 10.2, "Connecting the V1 to the AKAI DD1500" for more information on this mode.*

Biphase In this mode the V1 will chase the Biphase input clock signal. Option Menu (18) "Clks/Frame" should be setup properly in order to select the clock frequency. *Please refer to option menu (18) at the end of Section 1.2.* To use the Biphase mode, the internal cable of the second RS422 port should be connected to J3 on the main motherboard. *Please refer to Section 4.0 for information.* The Biphase mode is only available on units with serial number 201 and higher using firmware version 1.99E or higher.

Note**: The Chase to LTC Mode** above is different than the **OPTION PLAY Command** also referred to as Chase Command (note the

difference between **Mode** and **Command,** *See Sections 3.2.1 and 3.2.2 for an explanation of the difference).*

(04) Mount (STRIPE)

Mounts all drives that are not mounted. To mount a disk, press the Toggle/Select key (⇔). A message will appear on the LCD screen: "Are you sure?" :

- If you want to mount, hold the **OPTION** (.) key and press the Toggle/Select key (⇔) again, all drives will be mounted.
- If you change your mind and don't want to mount, press **ESC**.

Note: If you have not changed your front panel EPROM to version V1.20, this menu command is called **STRIPE**, and to mount drives you need to Toggle it ON then OFF once.

(05) Input From

Specifies which video input of the V1 is active. The Toggle/Select key (⇔) will switch between **COMPOSITE** and **S-VIDEO**. The **SDI** selection is available only on the V1D.

(06) Compress

Specifies the Compression Ratio. An initialize command should be executed in order for the new compression ratio to be valid for the new recording. Available ratios are: 2:1(*), 2.5:1(*), 3:1(*), 3.5:1(*), 4:1, 5:1; 6:1, 7:1, 8:1, 9:1, 10:1, 12:1, 14:1, 16:1, 20:1, 24:1, 34:1. Pressing the Toggle/Select key (⇔) will increase the ratio until it reaches 34:1, then it will start over from 4:1. Holding down the **OPTION** key (.) while pressing the Toggle/Select key (⇔) will decrease the ratio. *For more information refer to Section 7, "DISK RECORD TIMES FOR VARIOUS COMPRESSION RATIOS".*

(*) Available only on units with over 2MB of internal SRAM like the V1D/2M.

(07) Initialize

This command wipes (deletes) all previous recordings, and writes all the new set-up parameters selected in the menus on the active drive. A disk that was never initialized on the V1 will display the message "No V1 disk" until it gets initialized. Use this command to change the compression ratio or after changing any of the rear panel DIP switches. To initialize a disk, press the Toggle/Select key (⇔).
A message will appear on the LCD screen: "Are you sure?" :

- If you want to initialize, hold the **OPTION** (.) key and press the Toggle/Select key (⇔) again, the LCD will display "Initialize.." and initialize the disk. Once done, the message "Initialize.." will disappear and the drive is now ready for recording.
- If you change your mind and don't want to initialize, press **ESC**.

(08) Format

This command wipes all previous recording and prepares the active drive for optimal V1 performance. You should use this command at least once on every new drive you install on the V1. The Format command should always be followed by an **Initialize** command. To format a disk, press the Toggle/Select key (⇔). You will be prompted with the following message: "Are you sure?" :

- If you want to continue, hold the **OPTION** (.) key and press the Toggle/Select key (⇔) again, the LCD will display "Formatting..." and will format the disk. Once done, "Formatting..." is cleared and the drive is now ready for the **Initialize** operation.

  CAUTION NOTE !!

  Formatting a drive is a long procedure, please do not attempt to use the V1 until the format operation is complete and DO NOT SHUT OFF THE V1 DURING THE FORMAT OPERATION

(If the V1 is switched off during the format operation, the drive may require a low level format operation on a computer before it can be used again on a V1).
The format operation is a long procedure that takes approximately around 20 mn for a JAZ-1GB, 1 h 20 for a 4 GB drive and around 2 h 30 for a 9 GB drive.

- If you change your mind and don't want to format, press **ESC**.

NOTE: THE FORMAT COMMAND ONLY WORKS ON V1 DRIVES, IF THE LCD DISPLAYS THE MESSAGE: "NO V1 DISK", THE DISK NEEDS TO BE INITIALIZED BEFORE IT CAN BE FORMATTED.

Once Format and Initialize have been executed on a drive, it is not necessary to Format again. Initialize is enough for erasing the drive.

(09) Drop Frame This option is only valid when a time code offset is specified in NTSC mode *(See Section 3.2, "Special Playback Functions").* The Toggle/Select key (⇔) will switch between **Drop** and **Non Drop**. To set your Time Code Offset locate to any position on the drive, manually enter the new time code desired at that location and hold the OPTION key while hitting the IN key. The Time Code offset will be saved on the drive.

(10) Time Left This menu selection will display how much time (HH:MM:SS:FF) is still available on the disk from the end of the existing recording. The total duration is calculated using the disk capacity detected, the compression rate, the 8 pixel jumper setting and the one or two fields jumper setting. After an **Initialize command**, **Time Left** displays the full capacity of the drive in "HH:MM:SS:FF" format. If you call this menu during recording, it will show the time left at the moment it was activated. When the drive is fully recorded, "Time Left" will display 00:00:00:00 and you are only allowed to record over existing material. When this menu selection is active pressing the Toggle/Select key (⇔) will update the time left.

Menus (00), (01), (02), (04), (05) and (06) are saved on the active drive. So if this drive is mounted on another V1 unit, all these settings will be recovered.

1.2 Optional Menu

V1 Info. If you are in Option Menu (00) and hit the down arrow key ⇩, the V1 will display information about the unit. The Toggle (⇔) key will switch between: Version Number, IP address, Ethernet Port Address and finally the amount of RAM used on that unit.

(00) Auto Play If you enter a segment number that is already defined *(See Section 3.2.6, "Segment Definition & Playback").* The V1 will play that segment every time it mounts that drive. This function can also be used to automatically locate to a start point every time the disk is mounted. All you need to do is set the **IN** and **OUT** time at the same location for the auto-play segment.

(01) Disk Copy This feature will allow you to make duplicates of one recording (source) on one or more drive(s) (target(s) or destination(s)) without the need to re-record the video thus allowing video, audio time code , segments definition and menu set-up to be transferred digitally from one drive to the other. First make sure your source disk is the active drive (when you hit play, only the source disk should be playing) then power up (insert cartridge in)

your destination drive(s). Engage the Disk Copy menu, the Toggle/Select key (⇔) will switch between each of the following sub-menus:

1. Source is : type the SCSI ID number of the source drive (Valid range from 0 to 7), then use "++" to go to the next sub-menu...

2. # Targets: type the number of drives that will act as your destination drives (Valid range from 1 to 6), if you enter a value higher than the maximum allowed, the V1 will default to its maximum, then use "++" to go to the next sub-menu...

3. Target #1: type the SCSI ID number of the destination drive number 1 *(See Caution below).* If you specify more than one target, you will be prompted for Target #2, etc..., then use "++" to go to the next sub-menu...

4. Segment #: if you wish to copy only a segment (already defined on the source drive), enter the segment number, from 1 to 511, and if previous menus 1,2,3 have the values you need, press ENTER to start the copy process If you need to perform a full copy, then use "++" to go to the next sub-menu...

5. Full Disk: if you wish to copy the full disk, and if previous menus 1,2,3 have now the values you need, press **ENTER** to start the copy process. If you do not want to perform the copy operation at this time hit **ESC** , use "++" or "--" to go to other sub-menus...

Important notes :

- Hitting **ENTER** after each of these sub-menus will save your choice and launch the copy operation, so do not press **ENTER** until you have entered all the correct values in the sub-menus.
- The destination drive must be previously initialized on a V1. The copy will be aborted if the destination drive is not a V1 drive.
- During the copy process, the LCD will display a counter showing how much is left to be copied (in Gbytes, Mbytes), when finished, it will display "Completed".
- The copy process will only copy valid recordings from the source drive. If the source drive has invalid recordings or bad sectors in the recording to be copied, the LCD will display "Copy aborted" and will abort the copy process. In this case check your recording on the source drive, and record it again if it is damaged or contains bad sectors.
- **Caution! : Your destination drive will be fully erased by the copy.**

(02) Edit Preset This feature will allow you to select which audio track(s) to edit/overdub while the other non selected track(s) are monitored at the same time. The overdub feature is only supported on the **Seagate Ultra SCSI** hard drives with compression ratios of 8:1 (2 fields) or higher (See *Section 3.1.3 for other drives).*
The Toggle/Select key (⇔) will switch between the following selections:

1. A1: To insert/overdub on audio track 1, select **On** by pushing the "++" key. To select **Off**, press the "--" key.

2. A2: To insert/overdub on audio track 2, select **On** by pushing the "++" key. To select **Off**, press the "--" key.

3. TC: To insert/overdub time code on the guide track, select **On** by pushing the "**++**" key. To select **Off**, press the "**--**" key. Note that you can use the "Time Code Offset" function and keep this option **Off**.

4. Video: To insert/overdub video, select **On** by pushing the "**++**" key. To select **Off**, press the "**--**" key.

5. Assemble: If this submenu is set to **On** by pressing the "**++**" key, <u>all</u> previous submenus 1., 2.,3. & 4 will default to the **On** position and the drive is set for normal recording (video, audio and time code). You can select **Off** by pressing the "**--**" key. The reason for the **On/Off** toggle for video is to allow the V1 to record while in PLAY mode (Usually required by Editors using RS422 control), in this case, the sub-menu Assemble must be **On**.

3. Insert: In the **Off** position, the V1 will ignore all previous settings. When set to **ON**, the V1 will be in insert mode.

The overdub procedure is explained further in Section 3.1.3.

(03) Set Video This menu option will allow you to move the picture horizontally or vertically. The Toggle/Select key (⇔) will switch between:

Delay: This parameter sets the delay until the video output goes black (screen saver). The "--" will move the delay down by 10 seconds, "++" will move it up by 10 seconds. "000" will disable this feature, "010" will cause the unit to output black video when the unit is idle for 10 seconds.

Pattern: Use "++" or "--" to toggle the video pattern ON and OFF.

Out: V1D only. Use the "++" or "--" to select the output as RGB, YUV or S Video

CH PH: Chroma Phase. Use the "++" or "--" to increase or decrease the chroma phase from 0 to 360. You can also enter a number from the keypad followed by the **ENTER** key

HTRIG: Use "++" or "--" to set the HTRIG adjustment ON or OFF. **THIS OPTION SHOULD BE SET TO "OFF" FOR ALL UNITS WITH SERIAL NUMBER 300 OR LOWER.**

HTRIG: The "--" will move the picture to the left, "++" will move it to the right. You can also enter a number from the keyboard followed by the **ENTER** key.

Black: Sets the black level to 0V for the Japanese standards and 0.75V for the American standards. Used in NTSC only.

PAL Switch: 0 or 1. Use the "++" or "--" to set the value according to the PAL standard used in your area (A or B)

Luma-Brit: Use the "++" or "--" to set the Luma Brightness. 00 is the default value.

Luma-Cont: Use the "++" or "--" to set the Luma Contrast. 00 is the default value.

Chroma-Sat: Use the "++" or "--" to set the Chroma Saturation. 00 is the default value.

Chroma-Hue: Use the "++" or "--" to set the Chroma Hue. 00 is the default value.

This option is not saved on the drive, it is saved on the V1 flash EPROM only if you execute a **Save** from optional menu (04).

(04) Save This menu option will save all the Flash EPROM settings of the V1. To write the changes on the Flash EPROM (see Note below), press the Toggle/Select key (⇔).
A message will appear on the LCD screen: "Are you sure?" :

- If you want to save, hold the **OPTION** (.) key and press the Toggle/Select key (⇔) again, The V1 will write the changes on the Flash EPROM.
- If you change your mind and don't want to save, press **ESC**.

NOTE: THIS FUNCTION SHOULD NOT BE ABUSED BECAUSE THE FLASH EPROM CAN ONLY BE WRITTEN 2000 TIMES. IF YOU SAVE YOUR SETTINGS ON THE FLASH EPROM MORE THAN 2000 TIMES YOU MIGHT DAMAGE IT AND NEED TO REPLACE IT BY ORDERING A NEW FLASH FROM DOREMI LABS, INC.

(05) Disk Access This menu option will allow you to write protect your drive. The "++" or "--" keys will switch between **Play Only** and **Play & Record** (Default). When **Play Only** is selected, you will not be able to record on the disk or initialize it. This option is saved on the disk.

(06) Frame Mode The "++" or "--" will toggle between Frame Mode ON, OFF and Play Only. When ON the V1 will stop on a frame and in slow motion it will play frame by frame. When OFF the V1 will stop on a field and in slow motion it will play field by field. In Play Only, the V1 will stop on a field and in slow motion it will play frame by frame. This setting also affects the Step Recording option.

(07) Step Rec Step Recording. The "++" or "--" will toggle between Step Recording enabled or disabled. When enabled, every time the V1 goes into record, it will only record one frame (or field depending on the Frame mode setup). This option is useful for animation. When Step Recording is disabled, the V1 is in normal mode of operation.

(08) Clip Menu The "++" or "--" will go to the beginning of the next or previous clip (segment). This menu only shows previously defined segments. For more information on defining segments *see Section 3.2.6, "Segment Definition and Playback").* You can also type the clip number using the keypad followed by the **ENTER** key, if you enter an undefined clip number the V1 will locate to the previous clip. When a clip other than 0 is selected here, the V1 operations will be restricted between the boundaries of that clip (segment).

(09) TC burn-in Time Code Burn-In window. This option is only available on units with serial number 201 and higher. It will allow the user to define how and where the burn-in time code window will be displayed on the VITC output. The Toggle/Select key (⇔) will switch between two submenus:

Position: The "++" or "--" will allow the user to choose one of 6 different positions: Top-Left, Top-Center, Top-Right, Bottom-Left, Bottom-Center & Bottom-Right.

Color: The "++" or "--" will allow the user to choose one of 5 different selections: Off, White on Black, White on Background, Black on White & Black on Background.

This selection is saved on the machine after executing **(04) Save**.

(10) **Audio In** This option is only available on units with serial number 201 or higher that were purchased with the digital audio option. To ensure loosless audio on the digital input, it must be sampled at 48.000Khz and phase locked to the video input. If you feed digital audio at a different frequency, or at a non phase locked frequency, the V1 will re-sample the audio at 48Khz which might produce undesirable clicks.
The "++" or "--" will toggle between analog or digital input.

(11) **SCSI Speed** This option is only available on units with serial number 201 or higher. The "++" or "--" will toggle between 10 MB/sec or 20 MB/sec. This is the speed of the SCSI synchronous negotiations. A **Save** command should be executed after changing this parameter and the unit should be restarted to use the new speed. If the internal jumper of the unit is set to ASYNC, this option should be 10MB/sec. If the Internal jumper is set to SYNC, this option can be set to 10MB/s or 20MB/sec. The combination SYNC and 20MB/sec should only be used with software version 1.99z or higher. SYNC mode should only be set by an authorized technician.
IF YOU ARE NOT SURE WHETHER YOUR JUMPER IS SET TO SYNC OR ASYNC, SET THE SCSI SPEED TO 10MB/SEC.
The Toggle Key will allow you to switch between 8bit and 16bit. You should leave this option set to 8bit unless instructed by a Doremi technician to do otherwise.

(12) **V1 Type** The "++" or "--" will toggle between Player Only or Rec/Player. This option is used when more than one V1 unit are connected to the same drive or RAID. You can only have one unit set in Rec/Player and all the rest should be Player. The Rec/Player is the only unit allowed to record on the network.
Important Note: When the unit is in **Player Only** mode, all operations that write to the active drive are denied, including record, initialize, format, etc..

(13) **Video Type** The "++" or "--" will toggle between NTSC and PAL. This option menu replaces jumper number 6 on the back panel DIP switch. If you want the new setting to be the default startup setting, a **Save** command should be executed after changing this parameter. If the unit does not allow you to switch to PAL, turn the unit OFF, set DIP switch number 6 UP and restart the unit.

(14) **Nb Pixels** The "++" or "--" will toggle between Full and Limited (-8 pixels). This option menu replaces jumper number 7 on the back panel DIP switch. If you want the new setting to be the default startup setting, a **Save** command should be executed after changing this parameter.

(15) **Decimation** The "++" or "--" will toggle between ON (360) and OFF (720). This option menu replaces jumper number 8 on the back panel DIP switch. If you want the new setting to be the default startup setting, a **Save** command should be executed after changing this parameter. OFF is a better quality picture.

(16) **Nb Field** The "++" or "--" will toggle between Two and One. This option menu replaces jumper number 9 on the back panel DIP switch. If you want the new setting to be the default startup setting, a **Save** command should be executed after changing this parameter.

(17) **SCSI ID** The "++" or "--" will toggle between 0, 1, 2, 3, 4, 5, 6, and 7. The selection represents the SCSI ID number of the V1 after restart. **Do not use a SCSI ID number for the V1 that conflicts with any installed**

drive. A **Save** command should be executed after changing this parameter.

(18) **Clks/Frame** The "++" or "--" will toggle between 01, 02, 04, 10. The selection represents the number of clicks on the incoming Biphase signal per video frame (01= 1 click per frame). In PAL 25 frames/sec, 01=25Hz, 02=50Hz, 04=100Hz, 10=250Hz. If you want the new setting to be the default startup setting, a **Save** command should be executed after changing this parameter.

(19) **Emulation** The "++" or "--" will toggle between V1 (default) and BVW-75. If you want the new setting to be the default startup setting, a **Save** command should be executed after changing this parameter.

(20) **# Audio Ch** The "++" or "--" will toggle between 0, 2 and 4 which designate the number of audio channels that will be recorded after initialization of the drive. 0= No audio recorded, 2= Audio on channels 1&2 will be recorded, 4= Audio on channels 1, 2, 3 & 4 will be recorded (V1D/2MD only).

(21) **Jog On** The "++" or "--" will toggle between “1&2” and “3&4”. When “1&2” is selected and when the V1 is playing at any speed below 100%, the output on tracks 3 and 4 will come from the audio recorded on channels 1&2. When “3&4” is selected and when the V1 is playing at any speed below 100%, the output on tracks 1 and 2 will come from the audio recorded on channels 3&4. When the speed is 100% and above, every track will play its own recorded audio.

(22) **Loop Mode** The "++" or "--" will toggle between OFF and ON. When this option is set ON, the V1 will record (play) in a loop specified by the clip selected in option menu (8) “Clip Menu”.

(23) **Edit Time** The Toggle (⇔) key will switch between IN and OUT. When using the EDIT ON OFF commands from a P2 editor, the “++” or --“ keys in the IN submenu will set the time that the V1 will start recording after receiving the EDIT ON command to 4, 5, 6, 7, 8, 9 or 10 fields. In the OUT submenu, the number of fields will set the time that the V1 will stop recording after receiving the EDIT OFF command.

(24) **Stripe TC** This command will stripe Time Code with black video and no audio. The striping will start at the time line position starting with the time line displayed on the LCD. Example: If you want to stripe time code beginning at 01:00:00:00, you would: Initialize your drive. Create a one hour offset using the **OPTION IN** command. Then use this Option Menu command by pressing the Toggle (⇔) key. The LCD will reply: "Are you sure". If you are, hold the **OPTION** Key and press the Toggle (⇔) key, if not just hit the **ESC** key.

(25) **Odd Fields** The speed shown in percentage after the word “Under” will define the speed under which the V1 will only play odd fields. If you want to play odd and even fields at all speed, use the “--“ key to select 0%.

(26) **Stop Chase** The number of frames defined in this option menu will set the free-wheel of the chase mode between 1 and 10 frames or “0”. When set to “0”, the V1 will play the same field for the whole duration of the time code drop-out. When set to a value between 1 and 10, the V1 will play the same field for the specified amount of frame(s) before it stops and wait for the new time code to chase. This function is useful to reduce the audio noise during the chase command. If you know that your source does not have drop-outs in the time code, set this value to 1.

Optional menus (05) (06) (07) are saved on the active drive. So if the drive is mounted on another V1 unit, these settings will be recovered.

If your unit has software version 1.99 or higher, Positions 1, 2, 3, 6, 7, 8, 9 and 10 on the DIP switch are no longer valid AND MUST ALL BE SET IN THE UP POSITION WHILE THE UNIT IS POWERED OFF. Positions 4 and 5 on the DIP switch should be set to the low position to allow proper termination of the SCSI bus.

2 FRONT PANEL DESCRIPTION

The V1 front panel contains a space for two (3 1/2" or 5 1/4") half-height SCSI drives or one full-height (5 1/4") SCSI drive, volume potentiometers for setting the audio input record level, transport control keys, function keys, a jog/shuttle wheel, a numeric keypad, and the main power switch.

2.1 SCSI Drives

The V1 is shipped with a choice of standard SCSI storage devices : 3 1/2" half-height or low-profile (LP) hard drives mounted internally inside the V1 or in a removable tray (Data-Express), IOMEGA® JAZ™ drive with 1 or 2 GB magnetic removable cartridge and 2.6 GB magneto-optical drive and cartridge.

When mounted in a removable tray, hard drives can be removed (or installed) while the V1 is on-line (without the need to shut the unit off). To remove (or install) a drive, insert the supplied drive key into the key slot on the removable tray below the lit SCSI ID number and turn it clockwise (or counter-clockwise). When removing a drive, turning the key clockwise will unlock the drive and cut power off from it causing it to spin down. **Before removing a drive, wait until it has completely finished spinning down.** This will usually take about 10 to 20 seconds depending on the drive. It is not necessary to set a SCSI ID for the V1 internal removable drives. The ID is set by the removable tray inside the V1 hardware. All V1 internal drives should be non-terminated, the external SCSI termination supplied with the V1 should be mounted before powering up.

Additional SCSI drives can be added to the V1 rear panel SCSI connector. All drives on the external chain should be non-terminated except for the last drive in the chain which should be terminated. When no drives are connected externally, connect the supplied SCSI terminator to the SCSI connector on the back of the V1.

DO NOT USE SCSI ID7 FOR DRIVES, this ID can only be used by the V1 itself.

2.2 Volume

The two volume potentiometers located on the left of the V1 time-code display are used to set the audio input level during the recording process only. They have no effect at playback. Volume levels are displayed along the bottom of the LCD display during recording and playback. 0dB on the V1 scale represents 0dB digital or **+20dB analog**. +4dB (0VU) is at -20dB on the V1 scale. Audio recordings should be made at around **-12dB** on the scale with peaks between -12dB and 0dB. The 0dB level is the absolute maximum, going over it will produce digital clipping.

2.3 LCD Time Code Display

The first line of the Time Code display shows the time location of the video material using the following format : "**HH:MM:SS:FF F1/F2"** where "HH" represent the hours from 00 to 23, "MM" represent the minutes from 00 to 59, "SS" represents the seconds from 00 to 59, "FF" represents the frames from 00 to 24 in PAL and 00 to 29 in NTSC, "F1/F2" represent the field: "F1" for odd fields and "F2" for even fields. This display will show either **Absolute Time** or **Time Code** depending upon what the user has selected in the "Time Mode" (01) Menu.

In addition to the audio input levels the second line displays the following:

- At the V1 start-up, the bottom left displays the version of the V1 software installed on the flash EPROM (example, V2.0 when version 1.20 is installed), then **No Disk** is displayed on the left side and **Stop** is displayed on the right side until a valid drive is recognized on the SCSI bus of the V1, in such case **No Disk** will disappear and only **Stop** will be displayed indicating that the V1 is now ready to

access the drive. If **No Disk** is still displayed even though a disk was mounted, the V1 did not recognize the disk. Check for SCSI ID conflict.

- During transport controls, the current operation is shown on the right side of the display: **PLAY, STOP, REWIND, FORWARD, RECORD, JOG, SHUTTLE, VAR..**
  ("VAR" is indicated during play in chase on LTC/MTC or in variable speed from RS422)

- During shuttle movement, the shuttle speed is shown as :
  If forward shuttle : **">> xx %"** with xx % = 10%, 20%, 50%, 100%, 200%, 500%, 1000%
  If reverse shuttle : **"<< xx %"** with xx % = 10%, 20%, 50%, 100%, 200%, 500%, 1000%

- During segment playback, the remaining time up to the OUT point is shown as **"sss : MM.SS",** where "sss" is the number of the segment played from 001 to 511, "MM.SS" is the remaining time up to the OUT point of the segment played in mn:sec

- During formatting, the message **Formatting**... is shown. During initialize, the message **Initialize** is shown. During drive copy, the message **Copying**... is shown, once done, **Copy Complete** is shown and if source drive has invalid recording, **Bad Segment** or **Copy aborted** is shown.

- During the drives mounting (insert) and un-mounting (eject), the message **No disk** is displayed.

2.4 Numeric Keypad

This keypad is used to enter numeric data such as time code addresses, in and out points, locate points, etc. To enter data, simply begin typing the numbers and the display will automatically overwrite. To abort an operation, press the **ESC** (escape) key. The display will revert to its previous setting. The **BKSP** (Backspace) key can be used to correct typing errors.

2.5 Transport Controls

The V1 standard tape-style transport controls are:

REW Rewind control button with a speed of 40 times normal. When the rewind is close to the beginning of the recording, the speed is slowed down to normal until it reaches the start.

FF Fast forward control button with a speed of 40 times normal. When the fast forward is close to the end of the recording, the speed is slowed down to normal until it reaches the end.

PLAY Play control button. If the active drive has recorded material, pressing the **PLAY** key will start playback from the current location at normal speed and the green LED will go ON.

STOP Stop control button. The **STOP** key will cause the V1 to stop any transport control (Play, record, rewind, fast forward).

REC Record control button. This key is used in several ways described later in this menu.

2.6 Function Keys

MENU Pressing this key will engage the menu mode. Pressing the MENU key again will return the V1 to the time code display mode. (You may also press ESC.) all settings are saved.

ARROW UP Use this key (⇧) to scroll to the next menu.

ARROW DOWN Use this key (⇩) to scroll to the previous menu.

TOGGLE/SELECT Use this key (Double arrow, ⇔) to change selections within most menus.

WHEEL This key activates the Jog/Shuttle wheel. When active, the amber LED above the button will go ON. Pressing the key while active will toggle between jog and shuttle :

- In Jog mode, the rotation of the wheel will generate "Jog" steps in forward or reverse.
- In Shuttle mode, the angle of the wheel from its initial position will control the shuttle speed with 7 different values in each direction : **10%, 20%, 50%, 100%, 200%, 500%, 1000% in >> or <<.** The value used and the direction (">>", "<<") is displayed on the bottom line of the LCD during the shuttle operation.

NUDGE BACK (--) Locates one field back from the current position. Also used for selection in the "Edit Preset" and "Set Video" Optional Menu selections.

NUDGE FORWARD (++) Locates one field ahead of the current position. Also used for selection in the "Edit Preset" and "Set Video" Optional Menu selections.

IN Sets the IN point for segment play. *(See Section 3.2.6, "Segment Definition and Playback").*

OUT Sets the OUT point for segment play. *(See Section 3.2.6, "Segment Definition and Playback").*

GOTO To locate to a specific frame (field) from the V1 front panel, enter the time code location numbers from the numeric keypad and press **GOTO** when finished.

ESC This is the escape key. Press it when you want to exit the menu modes or abort an operation.

RCL Used to recall a segment number. *(See Section 3.2.6, "Segment Definition and Playback").*

SAVE Used to save a segment into a memory location number *(See Section 3.2.6 "Segment Definition and Playback").*

CLEAR Clears the display to enter new data.

ENTER Press after selecting a segment number to play. *(See Section 3.2.6, "Segment Definition and Playback").* Also used in the copy command.

OPTION Used to access additional functions.

BKSP Moves the cursor back one character.

3 RECORDING & PLAYBACK

3.1 Recording

3.1.1 STANDARD RECORDING PROCEDURE

Pressing the **REC** button on the front panel will automatically put the V1 into "RECORD READY" mode or "INPUT MONITOR" mode, the red LED will go ON. This is useful for monitoring the input audio and video before you record. To turn "INPUT MONITOR" OFF press **STOP**. A drive must be formatted then initialized before it is ready for recording *(See Section 1.1, Menu (08), "**FORMAT** ").*

To begin recording from "STOP" or "RECORD READY" modes, hold down **REC** and press **PLAY**, both green and red LEDs will go ON simultaneously.

To begin recording from "PLAY" mode with the Edit Preset Video "**ON"**, hold down **PLAY** and press **REC**, both green and red LED will go ON simultaneously.*(See Section 1.2, Optional Menu (02), "Edit Preset").* To stop recording but keep playing, press "PLAY" or press "STOP" to stop everything.

3.1.2 OVERDUBBING VIDEO & AUDIO TRACKS

To overdub both video and audio on a section of your disk, you need to execute the **Chase Command** by holding the **OPTION** key while pressing **PLAY** *(See Section 3.2.1, "CHASE command").*

- Use Optional Menu (02) **Edit Preset** and select **Insert ON** then select **A1 ON, A2 ON** and **Video ON**.
- Both, the source machine and the V1, **should be synchronized** to the same reference (House Sync) and time code should be fed from the source machine into the **TIME CODE IN** of the V1.
- Execute the Chase command by holding down the **OPTION** key and pressing **PLAY**
- Place the V1 into "INPUT MONITOR" by pressing the **REC** button
- Begin playback of the source machine before the section that you want to overdub. The V1 will begin playing as soon as it sees time code that matches what is on the current disk. Wait until the V1 LCD shows **PLAY** with a black dot, this indicates that the V1 is playing in sync and chasing the time code from the source machine.
- When you reach the point where you want to punch in, hold down **PLAY** and press **REC** to start recording. Press **PLAY** or **STOP** to stop overdubbing.

3.1.3 OVERDUBBING/INSERT OF AUDIO TRACK(S)

This feature allows the insert/overdub of selected audio track(s) on existing recordings while the other track(s) will be monitored at the same time. The insert/overdub feature is only supported on the **Seagate Ultra SCSI** hard drives at a compression ratio of 8:1 2 fields or higher ratios, this feature can also be used with other drives but in higher compression ratios. Users who want to use this feature with other drives should test how low in compression they can go before committing to a compression ratio. PAL users have reported that they can use this feature at 12:1 2 fields on a Jaz 1GB drive (The transfer to disk in PAL mode is faster then NTSC). To use this feature:

- Use Optional Menu (02) **Edit Preset** to select which audio track(s) you want to insert.

Provide the same House Sync to the source machine and the V1.

- Connect the time code out from the source machine into the TIME CODE IN of the V1.
- Begin playback of the source machine before the section that you want to insert on the V1.
- Hold down **OPTION** and press **PLAY** (Chase Command) to engage synchronized playback with the source, wait until the V1 LCD shows "PLAY" with a black dot (This indicates that the V1 is now in sync with the source), then hold down **PLAY** and press **REC**. The V1 will record the insert. Then press **STOP** or **PLAY** to end the insert segment procedure.

3.1.4 TIME CODE OFFSET

This function will allow you to offset your time code track starting at any location (frame) on the disk. NTSC users should first select their time code frame rate from the **Drop Frame** menu option (Drop or Non Drop). To enter your **Time Code Offset** locate to any position on the drive, manually enter the new time code desired at that location and then hold down the **OPTION** key while hitting the **IN** key. The Time Code offset will be permanently saved on the drive.
This Time Code Offset function is useful to transform an Absolute Time track into a Time Code track; once the right offset is set for a recording done in A-Time, it will behave as if time code was recorded on the drive.

3.1.5 RECORDING ON TWO OR MORE DRIVES

- Make sure the two drives are on **consecutive** SCSI ID numbers i.e., 3 and 4.
- Power up the first drive (Turn on the key of the Kingston or insert the cartridge for a removable media) and wait until it mounts.
- Set the compression ratio to the desired value.
- Initialize the drive.
- Power down the first drive (Turn off the drawer key or eject the cartridge for a removable media).
- Power up the second drive (Turn on the drawer key or insert the cartridge) and wait until it mounts.
- Set the compression ratio to the **same** value you have set for the first drive.
- Initialize the drive.
- Power down the second drive (Turn off the drawer key or eject the cartridge for a removable media).
- **All the preceding steps are required to make sure that both drives are initialized with the same compression ratio & recording parameters.**
- Power up both drives at the same time (Turn the drawer keys or insert the cartridges for removable media) and wait until they mount.
- Set the recording parameters (compression (same as above), time code etc...).
- Initialize. Both drives should flash, if not use the **Mount** menu command to mount all drives; after mounting both drives should flash during Initialization.
- Record. The V1 will start recording on the drive with the higher SCSI ID number and will continue on the lower ID number. The jump from drive to drive is not noticeable.

This procedure can also be used to record **on more than two drives with consecutive SCSI ID numbers**. As described above, each drive must first be initialized alone using the same compression ratio for all drives, then all drives should be powered-up and initialized together. Use the **Mount** menu command to mount all drives, if needed, before initializing them.

3.2 SPECIAL PLAYBACK FUNCTIONS

3.2.1 OPTION PLAY Command or Chase Command

To execute a Chase command, you should hold down the **OPTION** key (.) and press **PLAY**. Both the source machine and the V1 **should be synchronized** to the same source of House Sync and the time code should be fed from the source machine into the LTC IN of the V1. Begin playing the source machine. The V1 will begin playing as soon as it sees time code that is within the range defined for the active drive and will continue playing **in stand alone mode**, so a stop on the incoming LTC will not stop the V1. This Chase command is different from the Chase to LTC mode *(See Section 3.2.2, "Chase to LTC", in that **mode**, the V1 will stay locked to the incoming LTC).* Note that during **OPTION PLAY**, the V1 LCD displays **PLAY** with a black dot to indicate that the play is in sync with the source.

3.2.2 CHASE to LTC Time Code mode

To put the V1 into the "Chase to LTC" mode, change the menu (03) to "Chase to LTC". Both the source machine and the V1 **should be synchronized** to the same source of House Sync and the time code should

be fed from the source machine into the LTC IN of the V1. Begin playing the source machine. The V1 will begin playing as soon as it sees time code that is within the range defined for the active drive and will continue to play LOCKED to the incoming LTC, so a stop on the incoming LTC will also stop the V1. Note that during this chase play, the V1 LCD displays "VAR" to indicate that it can chase at different speeds.

3.2.3 CHASE to MTC MIDI Time Code mode

Similar to the Chase to LTC mode described above but using the MIDI time code input instead of the LTC input.

3.2.4 CHASE to RS422 or Serial Time Code mode

This mode requires a special cable described in the *"Connecting the V1 to the DD1500" section, Section 10.2*.
To put the V1 into the Chase to RS422 or Serial Time Code mode, change the menu (03) to Chase to **Serial TC**. Both the source machine and the V1 **should be synchronized** to the same source of House Sync and the time code should be fed from the source machine into the RS422 port of the V1. Begin playing the source machine (DAW). The V1 will begin playing as soon as it sees a time code within the range defined for the active drive and will continue to play LOCKED to the incoming RS422 timecode. Note that during this chase play, the V1 LCD displays "VAR" to indicate that it can chase at different speeds.

NOTE 1 : This Chase mode is only recommended for connecting the V1 to the Akai DD1500. *Refer to Section 10.2, "Connection to the Akai DD1500" for the details of this operation*. The V1 can also play in Chase "to LTC" with the DD1500 but with some limitations in the variable speed range due to current limitations of the LTC output of the Akai DD1500.

NOTE 2 : **Don't put the menu (03) Chase on "RS422" to have a standard RS422 control operation on the V1. The standard RS422 control is done with menu (03) Chase in the OFF position.**

3.2.5 CHASE to BI-PHASE mode

To put the V1 into the Chase to Biphase mode, 3 steps are required :

- First, change the internal cable connector of the second RS422 port to the Biphase position (*Refer to Section 4*).
- Second, select the frequency input using Optional Menu (18) "Clks/Frame" (*Refer to Section 1.2*)..
- Third, change the menu (03) to "Chase to Biphase" and menu (01) to "A-Time" (*Refer to Section 1.1*).

Both the source machine and the V1 **should be synchronized** to the same source of House Sync and the Biphase signal should be fed from the source machine into the second RS422 port of the V1. Locate the source machine at a reference position, locate also the V1 to the same reference position (frame) and then enter the required Time code Offset on the V1 (*Refer to Section 3.1.4*). Begin playing the source machine. The V1 will begin playing in chase and will continue to play LOCKED to the incoming Biphase signal, so a stop on the incoming Biphase will also stop the V1. Note that during this chase play, the V1 LCD displays "VAR" to indicate that it can chase at different speeds.

3.2.6 SEGMENT DEFINITION & PLAYBACK

A segment (also called clip) is a valid recording on the active drive defined by a time in and a time out. Up to 511 segments can be defined on the V1. To define a segment, press **IN** where you want the in point to be and press **OUT** where you want the out point to be. You may enter these values on-the-fly while you are playing or you can locate to each point individually (Enter timecode and push **GOTO** or locate command on RS422) and enter the in and out points separately. Press **SAVE** and enter a number from **001 to 511** to identify the segment and then press **ENTER**. If you want to define the segment that will play directly after the one you have just entered, before you hit **ENTER** press the up arrow key and enter the next segment (you can also define the previous segment) then press **ENTER**. To recall any defined segment for playback, press RCL, enter the number of the segment from 001 to 511, and then press **ENTER**. The segment will play automatically and the LCD will display the segment information as indicated in the following section.

CAUTION NOTE : The V1 will not save any segment number above 511 and will also not save segment number 000.

Using version 1.99P and above, when you start to enter the clip number the V1 will immediately locate to that clip. It will go to play only if you hit ENTER. Example: Recall Clip No. 123 :
1- Push the RCL button, you see recall clip: 000
2- Push 1, the V1 will locate to clip 1.
3- Push 2, the V1 will locate to clip 12.
4- Push 3, the V1 will locate to clip 123.
5- if you hit escape the V1 will remain located at the start of clip 123, if you hit enter the V1 will replay clip 123.
6- if a clip dose not exist, the V1 will locate to the start of the disk.

3.2.7 DELAYED PROGRAMMING

You can use the V1 loop feature to create a 2 channel delayed programming system. To build this system you need to have a two channel V1 system, where two V1 units are connected to the same server with enough storage to equal or exceed the delay desired. Both units should have option menu (22) Loop Mode ON and option menu (8) Clip Menu to 0 (or the desired playback clip). Both units should be in A-Time mode.

To prepare the server you need to make sure that menu (10) Time left is equal to 00:00:00:00, You can achieve that by recording on the whole server at least once or using the Option Menu **Stripe TC** command.

- Set Option Menu 12, V1 Type, to Rec/Player on the V1 recorder, then use Option Menu (4) to save the settings.
- Set Option Menu 12, V1 Type, to Player Only on the V1 player, then use Option Menu (4) to save the settings.

- Restart the whole system, and after both units mount the server, make sure that Time Left is equal to 0.

- Feed the time code output of the V1 reorder to the time code input of the V1 player. Use a balanced ¼ in. cable (very important).

- On the V1 recorder locate to the A-Time that equals the delay desired (if your delay is 1 hour locate to A-Time 01:00:00:00) and start recording.

- On the V1 player locate to the A-Time that equals the delay desired, then add the delay to that A-Time (2xDELAY), type the value 2xDELAY using the numeric keypad and hit **OPTION IN**. Example: If your delay is 1 hour, locate to 01:00:00:00, type 02:00:00:00 and hit **OPTION IN**. If you want to avoid repeating this step every time you turn the V1 player ON, you can use the **Save** command to keep the delay saved on the Flash EPROM of the V1 Player.

- Hit **OPTION PLAY** on the V1 player to initiate a chase command, the V1 player will start playing the material recorded a DELAY earlier. If the V1 player does not start playing hit **OPTION PLAY** one more time.\

This system will stay in a loop until you press stop on both units.

3.2.8 PLAY LIST & LOOPING

Once the segments are fully defined as described above, a play list can be defined to automatically chain or loop segments during playback. In order to implement this list, each segment requires the definition of a "next segment" parameter and, optionally, a "previous segment" parameter.

To define the next segment :

- Press **RCL**, enter the number of the segment to **MODIFY**, press ⇧, the LCD will display "**Next Seg : sss**", enter the segment number of the clip you want to play next and press **ENTER.** Note that your are only allowed to enter valid segment numbers. If the current segment is equal to the next segment then you have defined an infinite **LOOP** (until you hit STOP).
- Do that for each segment you want to chain.

Define a previous segment only when you want to insert a segment into an existing play list.

- Press **RCL** and enter the number of the segment to be inserted, press ⇩, the LCD will display "**Prev Seg : sss**", enter the segment number that will precede it in the play list and press **ENTER.** Note that your are only allowed to enter valid segment numbers.
- Press **RCL** and enter the number of the segment to be inserted, press ⇧, the LCD will display "**Next Seg : yyy**", enter the segment number that will follow in the play list and press **ENTER.** Note that your are only allowed to enter valid segment numbers.

Examples:

To play the following list of segments: (4, 3, 8, 1, 4) the 4 at the end will cause the V1 to loop.
Once all these segments have been defined with the **IN**, **OUT** and **SAVE**:

Press RCL 004 ⇧	Next Seg	=	003	ENTER
Press RCL 003 ⇧	Next Seg	=	008	ENTER
Press RCL 008 ⇧	Next Seg	=	001	ENTER
Press RCL 001 ⇧	Next Seg	=	004	ENTER

To insert segment 5 in the play list: (4, 3, 8, **5**, 1, 4)

Press RCL 005 ⇩	Prev Seg	=	008	ENTER
Press RCL 005 ⇧	Next Seg	=	001	ENTER

The "Previous Segment" is only used to insert a segment in a previously defined play list. The V1 will automatically display the previous segments for each play list item when you recall the segment and move to "Prev Seg".

Note 1: The segment definition and playback feature allows the user to define more than one play list, as long as the segment numbers do not conflict. i.e. the user can define: Play list 1: (5, 4, 3, 2, 1, 5)and Play list 2: (10, 9, 8, 7, 10). To play list 1, the user can recall any segment from list 1 (1, 2, 3, 4 or 5) or play list 2 by recalling any segment from list 2 (7, 8, 9 or 10).

Note 2: A list can be modified during playback. This is useful to allow jumps from one list to the other. If we use the 2 play list defined in **Note 1**, if during playback of list one, the user Recalls segment 2 and enter 10 as the next segment (instead of 1), the V1 will jump from list 1 to list 2 as soon as it finishes playing back segment number 2.

Note 3: A segment can also be used as a marker. Locate to the point you want to put a marker on, hit the **IN** key followed by the **OUT** key and save the segment number as "**sss**" (do not define an **OUT** point). Any time you recall segment "**sss**" the V1 will locate to that point and stops.

Note 4: The Segment definition uses the A-Time as a reference, this means that even if you set a Time Code Offset, your segments will not change, they will only display the new time code when played.

3.2.9 REMAINING TIME OF A SEGMENT DURING PLAYBACK

When you RECALL a segment or a play list, the LCD will display the segment number playing back along with the remaining time up to the OUT point of that segment in the following format:

sss : MM.SS

Where **sss** is the segment number played from 001 to 511 and **MM.SS** is the remaining time up to the OUT point in mn:sec.

3.2.10 REVERSE PLAY

To play video and audio in reverse at normal speed, hold the **OPTION** key (.) and press **REW**. You may also press the WHEEL button and go into SHUTTLE at the same reverse play speed.
During reverse play, the LCD will display : **" << 100% JOG** ".

3.3 USING DISCONTINUOUS TIME CODE ON A DRIVE.

3.3.1 INCREASING TIME CODE

If your drive is divided for example into 3 different projects, where the first project on the recorded on the drive goes from 01 00 00.00 to 01 10 00.00, the next from 02 00 00.00 to 02 15 00.00 and the third from 03 00 00.00 to 03 12 00.00, you can switch between projects just by locating to any time code location within the destination project.

3.3.2 NON INCREASING TIME CODE

If your drive is divided for example into 3 different projects, where the first project on the recorded on the drive goes from 02 00 00.00 to 02 15 00.00, the next from 01 00 00.00 to 01 10 00.00 and the third from 03 00 00.00 to 03 12 00.00, you can switch between projects using two different methods:

- Use the REW or FF until you get to the destination project.
- Define a segment for each project and select the desired project from the **Clip Menu**.

3.3.3 REPEATING TIME CODE

If your drive is divided for example into 3 different projects recorded using the same time code, you can switch between projects using two different methods:

- Use the REW or FF until you get to the destination project. The only way you would recognize the project is by looking at the video because the LCD display will give you the same time code for all three project. Not recommended.
- Define a segment for each project and select the desired project from the **Clip Menu**.

4 REAR PANEL CONNECTIONS

Analog Audio These XLR connectors are the balanced analog audio inputs and outputs. Pin 2 is hot (+), pin 3 is cold (-), and pin 1 is ground.

Digital Audio Optional on the V1 and V1b and standard on the V1D. Transformer balanced AES/EBU input and output. Pin 2 is hot (+), pin 3 is cold (-), and pin 1 is ground.

RS-422 (1) The serial interface connector to the V1. Connector 1 should be connected to your edit controller or workstation, while connector 2 is used to connect the optional **RCV1** external remote control from Doremi Labs, Inc.

RS-422 (2) or Biphase If the internal cable of RS-422 connector-2 is installed on J10 of the main motherboard, this port can be used as a second RS-422 connector. It can then be used to connect the optional **RCV1** external remote control from Doremi Labs, Inc. If the internal cable of RS-422 connector-2 is installed on J3 of the main motherboard, this port can be used as the **Biphase** input connector. *Refer to Section 4.1, "Hardware setup of the Biphase Input".*

J1 DIP switches for selecting the SCSI ID of the V1. *See Section 6, "DIP Switch Settings".*

Time Code Balanced TRS 1/4" input and output connectors for LTC time code. The V1 time code input accepts balanced signals (tip hot, ring cold & sleeve is ground). If you are feeding an unbalanced signal to it, **both** ring and sleeve **should** be connected to GND. You **can** use an **unbalanced** jack (tip and sleeve) on the **time code input** of the V1. The V1 time code output is a balanced signal (tip hot, ring cold & sleeve is ground). If you are feeding it to an unbalanced input, **ring should not be connected to anything**. You **can not** use an **unbalanced** jack (tip and sleeve) on the **time code output** of the V1. If you connect time code from one V1 to the other the cable should be balanced on both ends.

Sync In House Sync input BNC connector for the V1 synchronization reference. Use only Black Burst Sync here. Your Sync input should **not exceed 1V P-P**.

Video Analog Composite video input and output BNC connectors. Video IN is where you connect your video signal for recording to the V1 and Video OUT is for connection to a video monitor or another video recorder.

S-Video Mini DIN-4 connectors for S-Video (Y/C) input and output.

SDI V1D only. Serial Digital Interface input and output BNC connectors for a direct connection with digital betacams.

RGB/YUV V1D only. Three RGB or YUV selectable BNC output connectors

SCSI Standard 50-pin female Centronics connector for connection to external SCSI drives. When no external SCSI devices are used, make sure the supplied terminator is connected here. When connecting external drives,

the last drive in the chain should be terminated. All V1 internal drives supplied by Doremi Labs, Inc. are non-terminated.

VITC Out Available only on units with serial number 201 or higher.

MIDI DIN 5 connectors for MIDI chase.

Ethernet *Not implemented.*

115V/230V Confirm that the proper voltage is selected for your area on the power supply. The switch is located between the power connectors.

Note : On the V1D, please **do not use YUV/RGB output and Y/C (S-Video) outputs at the same time** because these signals are coming from the same buffered outputs and so this will produce a mismatch on impedance loads.

4.1 HARDWARE SETUP OF THE BI-PHASE INPUT

The Biphase input connector (**9 pin D-Sub)** is wired as follows :

Pin	Signal
1	Not connected
2	**Ground**
3	**RZ input (0 to +5V)**
4	Not connected
5	**output +5V**
6	**ground**
7	**SZ input (0 to +5V)**
8	not connected
9	**ground**

In order to enable the Biphase input port : switch off the V1, disconnect the AC power cable, remove the V1 top cover and locate the IDC10 ribbon cable connected to the second RS-422 connector. Unplug the IDC connector from J10 on the motherboard and plug it on J3 (the red mark or pin1 should be to your left if you are looking straight at the front panel of the V1).

Note : The RZ and SZ signals are locked in phase with a +/-90° phase difference.

5 VTPro202 Utility Software

VTPro202 is a software utility that displays a V1 front panel on a Mac or a PC running Windows 95 or Windows NT 4.0 and performs the same operations of the V1 front panel. In addition, **VTPro202** gives you the ability to update your V1 internal software (firmware) by programming the flash EPROM. **VTPro202** had originally been developed for the V1b video recorder/player (V1 without front panel controls & display), but can also be used with the V1 as a remote utility.

5.1 VTPro202 Installation

- Unzip the file called VTPro202.zip (expand VTPro202.sit for a Mac) in one directory.
- For a PC, connect the bottom RS422 port of the V1 to a free serial port on your PC (Com 1 to 4) by using the V1 RS422-PC cable (description available at the end of this chapter). This cable allows a direct connection from the PC RS232 port up to the RS422 port of the V1.
- For a Mac, connect the bottom RS422 port of the V1 to a free serial port on your Mac (Modem or Printer) by using the V1 RS422-MAC cable (description available at the end of this chapter).
- Run the **VTPro202** utility.
- A window will appear showing the V1 front panel; if the V1 has a valid drive with video recorded, the time-code display in the **VTPro202** window will show the V1 time-code.

IN ORDER FOR VTPRO202 TO RUN PROPERLY, YOU NEED TO HAVE THE FILE "v1s.cfg" IN THE SAME DIRECTORY AS THE APPLICATION VTPRO202.

WINDOWS 95 USERS: If you get a message that the file WS2-32.dll is missing, you need to copy the two files enclosed in the "WS2.zip" in the "windows\system" directory. You will find "WS2.zip" on our ftp site at ftp://www.doremilabs.com.

5.2 VTPro202 Modes of operation

Control: Use this mode to control the V1
Clips: Use this mode to manipulate clips
Copy: Use this mode to make a SCSI copy of a clip list
View: Use this mode to capture a field from the V1 on your computer screen

5.3 VTPro202 Menus

File
New: New Clip File
Open: Open an existing Clip File
Save: Save current clip file
Save As: Save current clip file with a different name
Import Clips: Import clips from the V1
Quit: Quit the program

Edit
Undo: Undo the last change
Cut Clip: Cut the selected clip to the clipboard
Copy Clip: Put the selected clip in the clipboard
Paste Clip: Paste clip from the clipboard
Find: Find the clip in the list

Clip
In: Set the IN point of the clip to be created
Out: Set the OUT point of the clip to be created
Create Clip: Create a new clip using the IN and OUT points

Rename Clip: Rename the selected clip
Goto In: Go to the IN point of the selected clip
Goto Out: Go to the OUT point of the selected clip
Open Source: Open the Source clip file to be copied
Copy to Time Line: Copy the source file to the destination disk at the time line location
Copy to End: Copy the source file to the destination disk at the end of the disk.
Rename Disk…: Rename the V1 disk

Command **Goto…**: To locate to a specific time code, enter the value in the format hhmmssFF.f. To locate to 23 minutes 12 seconds 15 frames field 2 enter: 00231215.2 (the 00 at the start is not necessary).
Set TC…: To create an offset, enter the desired time code at the current time line and hit OK.
SCSI Copy…: Select your source and destination drives for a full disk copy
SCSI Continue Copy…: Continue the SCSI copy from where you have stopped it.
Get Field From…: Capture a field and display it in the **View** Mode.
SCSI: Capture the field through SCSI
Ethernet: Capture a field through Ethernet
File: Capture a field from a JPEG File
Save Field: Save the current field to a JPEG file
Get Movie: Select a Quick Time movie to be converted to V1 format
Convert Movie: Convert the selected quick Time movie to V1 format
Escape: TBD

Control **Control V1 on**: Choose the port connected to your V1
Upload will start the firmware upgrade program on the V1

Help **About VTPro202** Information about the version number of the software.

5.4 VTPro202 Controls

RR Rewind button with a speed of 40 times normal. When the rewind is close to the beginning of the recording, the speed is slowed down to normal until it reaches the start.

FF Fast forward control button with a speed of 40 times normal. When the fast forward is close to the end of the recording, the speed is slowed down to normal until it reaches the end.

PLAY Play control button: If the active drive has recorded material, pressing the **PLAY** key will start playback from the current location at normal speed and the green LED will go ON.

STOP Stop control button: The **STOP** key will cause the V1 to stop any transport control (play, record, rewind, and fast forward).

REC Record control button: This key is used in several ways, all described earlier in this manual.

LOCK This button locks **PLAY** and **REC** together. If **LOCK** is highlighted, pressing PLAY will be like pressing **PLAY** and **REC** at the same time.

(Option) MENU Pressing **MENU** will engage the menu mode. Pressing the **MENU** key again will return the V1 to the time code display mode. (You may also press ESC). All settings are saved. Holding down the **Option** (**ALT** for PC) key of the keyboard and pressing **MENU** will engage the Optional Menu mode.

UP Use this key (⇧) to scroll to the next menu.

DOWN Use this key (⇩) to scroll to the previous menu.

TGL Use this key to change selections within most menus.

NUDGE BACK (--) Locates one field back from the current position. Also used for selection in the "Edit Preset" and "Set Video" Optional Menu selections.

NUDGE FORWARD (++) Locates one field ahead of the current position. Also used for selection in the "Edit Preset" and "Set Video" Optional Menu selections.

SHUTTLE Click on the button and move the mouse to shuttle in forward or reverse. The angle, up to +/-90°, controls the shuttle speed, which is displayed on the second line of the LCD. When the mouse button is released, the shuttle button will return to its original position (0°)

IN Sets the IN point for segment play. *(See Section 3.2.6, "Segment Definition and Playback").*

OUT Sets the OUT point for segment play. *(See Section 3.2.6, "Segment Definition and Playback").*

GOTO To locate to a specific frame (field) from the V1 front panel, enter the time code location numbers from the numeric keypad and press **GOTO.**

ESC This is the escape key. Press it when you want to exit the menu mode or abort an operation.

RCL Used to recall segment numbers *(See Section 3.2.6, "Segment Definition and Playback").*

SAVE Used to save a segment to a memory location number. *(See Section 3.2.6, "Segment Definition and Playback").*

AT/TC Toggles between Absolute Time and Time Code.

REMOTE/LOCAL Toggles between Remote and Local.

Option _RR Holding down the **Option** (**Shift** for PC) key of the keyboard and pressing the **RR** button allows the V1 to play in reverse at normal speed.

5.5 Editing the configuration file v1s.cfg

Before running VTPro202, you need to configure the file v1s.cfg to match your hardware. The file is already pre-configured to use COM1 and COM2 on a PC and both Modem and Printer ports on a Mac.

The first block of information specifies the communication ports used by VTPro202. Each communication port has its own definition information formatted as follows:

CMMx communication port identification field.
CMM0 is the first serial port.
CMM1 is the second serial port.
CMM2 is the Ethernet port.
NNNN number of V1s connected to this port.

The field structure for each V1 connected to this port is:

ssssss	serial number in decimal of the V1. This serial number should be six characters long with leading zeros.
IIIIIIII	Internet protocol address of the V1 in Hex.
PPPP	UDP port of the V1 (default 8080).

NEXT V1 or NEXT communication port identification
.
.
.
.

A last line that reads ‘endf’ should indicate the end of the useful information.

5.6 Upload from the V1upload utility

Your new software will always be packaged with a software utility called V1upload that you should use to upgrade the firmware on your V1. YOU SHOULD USE ONLY THE V1UPLOAD VERSION INCLUDED WITH THE MAINxxxx SOFTWARE YOU ARE INSTALLING. BY USING ANY OTHER VERSION YOU ARE RISKING AN UNSUCCESSFULL UPLOAD THAT MIGHT RESULT IN PHYSICALLY CHANGING THE FLASH EPROM ON YOUR UNIT. THE V1upload UTILITY MIGHT ALSO BE A SPECIFIFC VERSION OF VTPRO202.

PLEASE READ AND FOLLOW CAREFULLY IN ORDER TO UPGRADE CORRECTLY

1. Unstuff (unzip) all the files contained in the MAINxxxx.sit (MAINxxxx.zip) into one folder and call it V1upload.
2. Connect the bottom RS422 port of the V1 to your computer
3. Turn ON the V1, wait until the drive mounts, and check that a correct video signal is displayed on the V1 monitor.
4. Open the V1upload folder and start V1upload by double clicking on the icon: The V1upload window should display the same time code shown on the V1 front panel, click on PLAY then STOP, and confirm that the V1 responded properly to your commands.
5. Go to the **Upload** menu.
6. From the **Upload** menu choose **Upload**. The unit will ask for your serial number, which is located on the back of the V1 unit. Then it will start asking about some Ethernet configurations. If you do not have the Ethernet option, you should use the default values for the IP address, the Network Mask and the Port. If you do have the Ethernet option please refer to the dedicated Ethernet paragraph in this chapter. Finally a window will ask you to specify the file to upload, you should choose the file "**mainxxxx.bin"** from the same folder. The upload procedure will begin. You should see "**Uploading**...", then "**Flashing**...", then "**Success**..." (Note that while "Flashing...", the video frame might be erased).
7. Once "**Success**..." is displayed, you can quit V1upload and turn off the V1.
8. Restart the V1, and check the version number, which, in this case, should be "**Vx.xx**". This will confirm that the upgrade was successful.

5.7 The Ethernet Option

To take full advantage of the Ethernet board you need to follow these steps:

If you received the Ethernet Option with your unit, you can read the factory assigned IP address by going to the Version Optional Menu and hitting the Toggle Key. If that IP address is OK with your network administrator, you can proceed to step B. below, otherwise start from 1.

1. Connect the serial cable between your V1 and the PC or MAC. Make sure the Ethernet is not connected at this time
2. Run V1upload, which should locate your V1 by showing a checkmark next to the serial port used.

3. Go to the upload submenu and choose mainxxxx.bin. The Ethernet only works with V1 software version 1.99u or higher
4. When prompted enter the serial number of the V1 unit and hit OK
5. When prompted enter an IP address in hex for that V1 using the following convention:
Enter 0A010150 for the first V1 unit with an Ethernet board (Decimal 10010180)
Enter 0A010151 for the second unit with an Ethernet board (Decimal 10010181)
.
.
Etc.
6.For network mask, leave the default value "FFFFFF00" if you are not sure what else to put.
7.For port address, leave the default value "8080" if you are not sure what else to put.

The V1 will start the upload procedure, after the message "Success" is displayed, turn off the V1, and wait until the drives have settled and restart the V1. The version number might not appear at startup, but you can see it from the option menu by going to option menu 00 and hitting the down arrow key.

Now you need to prepare your v1s.cfg file to use Ethernet equipped V1s.

A. Quit V1upload
B. Make sure VTPro202 and v1s.cfg are in the same folder
C. Open the file v1s.cfg with a text editor
D. If the lines starting with "CMM2" down to "endf" are commented using "#", you need to remove the "#" from the beginning of all the lines starting with CMM2.
E. Under CMM2 you need to enter the number of V1s with Ethernet, the serial number and the IP address of every V1 according to the following :
   CMM2
   NNNN: indicates the number of V1s with Ethernet
   SSSSSS: indicates the serial number of the first V1. Enter your own here
   0A010150: indicates the IP address of the first V1
   PPPP: indicates the port used
   TTTTTT: indicates the serial number of the second V1. Enter your own here
   0A010151: indicates the IP address of the second V1
   PPPP: indicates the port used
   .
   .
   .
   endf ends the Ethernet port
F. Save the file v1s.cfg as text and keep the same name and extension "v1s.cfg"
G. Disconnect the serial cable connecting the V1 to your computer
H. Connect all V1s with Ethernet to the same 10BT hub or switch your computer is connected to.
I. Run VTPro202
J. Go to the menu "Control" and choose "Connect V1 on" a pop up menu will show you
   Com1
   Com2
   Ethernet-SSSSSS (The first serial number in v1s.cfg will appear here)
   Ethernet-TTTTTT (The second serial number in v1s.cfg will appear here)
   If you select any of the Ethernet lines, the unit with the same serial number will become the controlled unit.

A properly configured "v1s.cfg" file for use with 2 V1s with Ethernet Option would look like:

```
CMM0
0001
000000
00000000
0000
CMM1
0001
0000
00000000
```

```
0000
CMM2
0002
000999
0A010150
8080
0002
001000
0A010151
8080
endf
```

The Ethernet board can be installed on all V1 units with serial number 200 or higher, the Ethernet board sits in place of the MIDI board. By installing the Ethernet board both MIDI and Biphase will be disabled.

Note: On you computer you need to enable TCP/IP via Ethernet and configure your server with an IP address and a Subnet Mask (consult your network administrator to get a unique IP address for your computer). A common Subnet Mask is 255.255.255.0.

Contact your local dealer to order the Ethernet board upgrade.

5.8 Converting Media Composer Files to V1 format

The Mac version of VTPro202 can convert files from Media Composer to V1. To be able to achieve the conversion you need to have the following configuration:

1.A Macintosh computer running OS8
2.The Avid Codec extension should be installed
3.VTPro202 software and V1s.cfg file in the same folder
4.A V1 disk (initialized on a V1 at any compression). If you are using a Jaz drive, make sure that the Iomega extension is DISABELED

RESTART THE MACINTOSH, the V1 disk will not be mounted on your desktop.

1. ON THE AVID SIDE: Convert the avid file to a Quick Time movie using the default converter (which is usually the fastest) and save it on a drive that is mounted on the Mac.

2. Run the VTPro202 application, go to the "Command" menu and choose "Convert MC to V1...", a pop up menu will ask you to specify the source and destination, you would only need to select the SCSI ID number of the V1 disk under destination. Another menu will ask you to select the file to convert; you would choose the file that you have already converted on the avid station. VTPro202 will start the conversion, after that, you can remove the V1 disk and play it on any V1 running software version V1.99P or higher.

5.9 SCSI Copy using VTPro202

The SCSI copy menu command, available only on for the Mac version of VTPro202, will allow the user to make video copies of V1 drives or cartridges **without the presence of a V1**.

1. If you are using Jaz drives, make sure that the Iomega driver is **disabled** (Remove the Iomega driver icon from the Extensions folder and **restart** your Macintosh),

2. Run the VTPro202 application software,

3. Make sure all V1 source and destination drives are connected to the MAC SCSI port (only the Mac internal drive and the end of the SCSI chain should be terminated) and are powered up & running (cartridges inserted and not asleep). **Drives will not be mounted** on the Macintosh desktop (They are not supposed to if you have disabled the Iomega Extension),

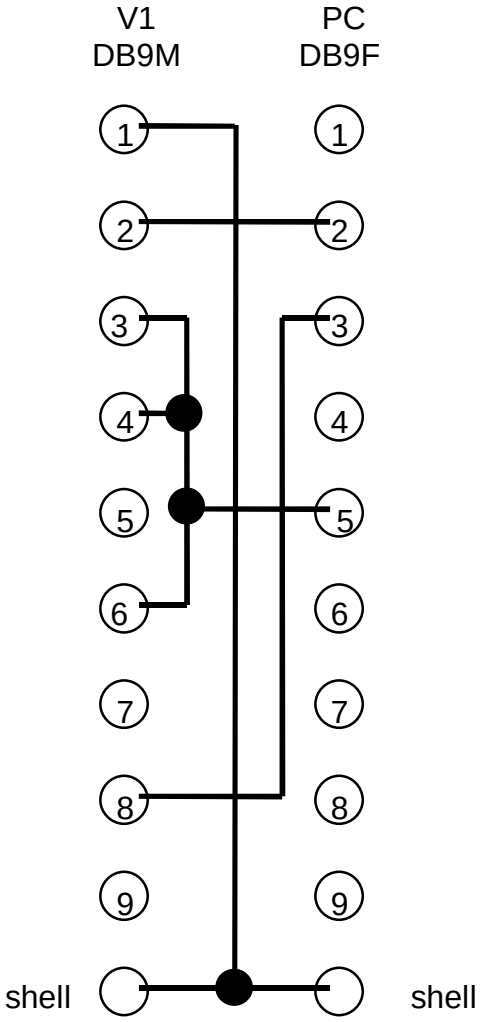
4. Select SCSI Copy from the Command menu. VTPro202 will detect all drives with a valid V1 header (drives need to be formatted and initialized on a V1 in order for them to be recognized) and will display them under "Source" and "Destination". Any drive configured as **Play Only** will not be displayed under the destination column (always configure your source drive as **Play Only**),

5. Select your Source drive (you can only select one source).

6. Select your destination drive(s),

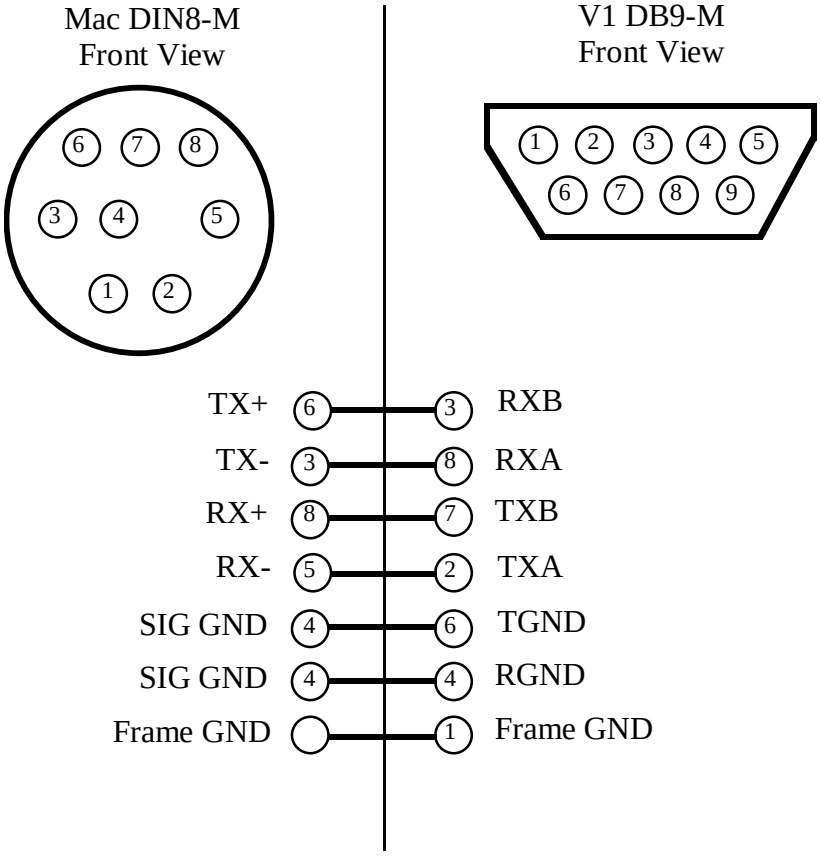
7. Hit OK. The copy command will now start with a status bar indicating the progress of the copy command. Hitting the **ESC** key will stop the copy command.

5.10 Wiring of the V1 RS422-PC Cable



Wiring List: V1 (1) to V1 Shell to PC Shell
V1 (2) to PC (2)
V1 (8) to PC (3)
V1 (3 + 4 + 6) to PC (5)

5.11 Wiring of the V1 RS422-Mac Cable



Wiring List:
Mac (6) to V1 (3)
Mac (3) to V1 (8)
Mac (8) to V1 (7)
Mac (5) to V1 (2)
Mac (4) to V1 (4 + 6)
Mac Shell to V1 (1)

6 DIP SWITCH SETTINGS

Viewing the V1 from the rear panel, the switches are counted from left to right with 0 (off) being toward the top of the unit and 1 (on) being toward the bottom. The switches are as follows:

THE DIP SWITCH SETTING SHOULD NOT BE CHANGED WHILE THE UNIT IS ON. THIS MIGHT CAUSE SEVERE INTERNAL DAMAGE TO THE UNIT AND VOID THE WARRANTY.

		1	2	3	4	5	6	7	8	9	10
(Up) OFF	**(0)**	**(6) ID0**	**ID1**	**ID2**			**PAL/ NTSC**	**Full**	**720**	**2 Field**	**Off**
ON (Down)	**(1)**		**(6)**	**(6)**	**ON**	**ON**	NTSC ONLY	-8 pixels	360	1 Field	

AFTER YOU UPDATE TO VERSION 2.0, TURN THE UNIT OFF, SET THE DIP SWITCH TO THE DEFAULT SETTING ABOVE (BOLD) AND RESTART THE UNIT.

- ***Switches 1, 2, & 3*** set the SCSI ID. These are as follows:

ID0 (***Switch 1***)	ID1 (***Switch 2***)	ID2 (***Switch 3***)	SCSI ID Number
Up	Up	Up	0
Down	Up	Up	1
Up	Down	Up	2
Down	Down	Up	3
Up	Up	Down	4
Down	Up	Down	5
Up	**Down**	**Down**	**6 (default)**
Down	Down	Down	7 Test Mode do not use

- ***Switch 4*** is termination for the SCSI bus and the default setting is **ON**.
- ***Switch 5*** is for providing termination power, the default setting is **ON** (provide termination power).
- ***Switch 6*** if this switch is in the UP position (recommended setting), the unit can be set to PAL or NTSC using OPTION MENU (13). If this switch is in the DOWN position, the unit will stay in NTSC mode and it will not be possible to change it using OPTION MENU (13)

IF YOUR UNIT HAS VERSION 1.99 OR HIGHER, POSITIONS: 1, 2, 3, 6, 7, 8, 9 AND 10 ON THE DIP SWITCH ARE NO LONGER VALID AND MUST ALL BE SET IN THE UP POSITION WHILE THE UNIT IS POWERED DOWN. POSITIONS 4 AND 5 SHOULD BE SET IN THE LOW POSTION TO INSURE PROPER TERMINATION TO THE SCSI BUS

- ***Switch 7*** reduces the image size by 8 pixels on all sides. Since standard video monitors do not display an entire video image**, this 10% screen reduction improves the displayed image quality** as there is more disk space available for storing the actual displayed image with less compression. The default setting is Full (**OFF)**.
- ***Switch 8*** selects recording at 360 pixels (horizontal) or 720 pixels (horizontal.) Recording at 360 pixels (horizontal) **improves the image quality at high compression ratios (20:1 - 34:1)** The default setting is for recording 720 pixels.
- ***Switch 9*** selects recording of 2 fields per frame (CCIR-601) or 1 field per frame. Recording at 1 field per frame allows you to record approximately twice as much video material on a disk for any given amount of storage space. The default setting is 2 fields per frame.

SINCE ALL DIP SWITCH SETTINGS ARE NOW MOVED TO THE OPTION MENU, NEWER UNITS DO NOT HAVE THE DIP SWITCH ON THE REAR PANEL.

7 DISK RECORD TIMES FOR VARIOUS COMPRESSION RATIOS

As a typical guide for ratios versus visual quality : 7:1 is comparable to analog Betacam, 12:1 to 16:1 is comparable to S-VHS, 24:1 to 34:1 is comparable to VHS. **For typical audio post-production work, a 20:1 / 1 field** is a good enough visual quality (34:1 / 1 field can also be used for maximum recording time).

7.1 NTSC Compression Chart according to CCIR-601

RECORDING TIME FOR NTSC 2 FIELDS/FRAME							RECORDING TIME FOR NTSC 1 FIELD/FRAME					
Compressio Ratio ↘	1 GB	2 GB	2.6 GB	4 GB	9 GB	18GB	1 GB	2GB	2.6 GB	4 GB	9 GB	18GB
2:1	1:37	3:02	3:26	6:54	13:49	27:38	3:09	5:56	6:48	13:30	27:02	54:04
2.5:1	2:00	3:45	4:18	8:33	17:08	34:16	3:54	7:20	8:23	16:40	33:21	1:06:42
3:1	2:19	4:22	5:00	9:56	19:54	39:48	4:30	8:28	9:42	19:16	38:33	1:17:06
3.5:1	2:46	5:13	5:58	11:51	23:44	47:28	5:21	10:02	11:30	22:50	45:42	1:31:24
4:1	3:17	6:09	7:59	13:13	28:03	56:06	6:17	11:47	15:16	25:18	53:39	1:47:18
5:1	3:48	7:08	9:15	15:18	32:28	1:04:56	7:13	13:33	17:34	29:05	1:01:42	2:03:24
6:1	4:31	8:28	10:59	18:11	38:34	1:17:08	8:30	15:56	20:40	34:13	1:12:36	2:25:12
7:1	5:09	9:41	12:33	20:46	44:05	1:28:10	9:38	18:04	23:25	38:47	1:22:17	2:44:34
8:1	6:01	11:17	14:38	24:14	51:25	1:42:50	11:07	20:52	27:01	44:45	1:34:57	3:09:54
9:1	6:34	12:19	15:58	26:27	56:06	1:52:12	12:03	22:35	29:15	48:29	1:42:51	3:25:42
10:1	7:13	13:33	17:34	29:05	1:01:42	2:03:24	13:08	24:39	31:55	52:53	1:52:12	1:44:24
12:1	8:02	15:03	19:31	32:19	1:08:34	2:17:08	14:27	27:07	35:07	58:11	2:03:25	4:06:50
14:1	9:02	16:56	21:57	36:22	1:17:08	2:34:16	16:04	30:08	39:01	1:04:39	2:17:08	4:34:16
16:1	10:19	19:22	25:06	41:34	1:28:10	2:56:20	18:04	33:54	42:55	1:12:44	2:34:17	5:08:34
20:1	12:03	22:35	29:16	48:29	1:42:51	3:25:42	20:39	38:45	50:11	1:23:07	2:56:20	5:52:40
24:1	14:27	27:07	35:08	58:11	2:03:25	4:06:50	24:06	45:12	58:31	1:36:58	3:25:43	6:51:26
34:1	18:04	33:54	43:55	1:12:44	2:34:17	5:08:34	28:55	54:15	1:10:15	1:56:22	4:06:51	8:13:42

7.2 PAL Compression Chart according to CCIR-601

RECORDING TIME FOR PAL 2 FIELDS/FRAME							RECORDING TIME FOR PAL 1 FIELD/FRAME					
Compression Ratio ↘	1 GB	2 GB	2.6 GB	4 GB	9 GB	18GB	1 GB	2GB	2.6 GB	4 GB	9 GB	18GB
2:1	1:37	3:02	3:28	6:54	13:50	27:40	3:11	5:58	6:49	13:34	27:10	54:20
2.5:1	2:15	3:41	5:30	8:20	16:50	33:40	4:20	7:13	10:35	16:30	33:30	1:07:00
3:1	2:37	4:24	6:21	10:32	22:22	44:44	5:00	8:33	12:14	20:18	43:05	1:26:10
3.5:1	2:57	5:04	7:11	11:58	25:25	50:50	5:42	9:52	13:54	23:05	48:55	1:37:50
4:1	3:20	6:15	8:06	13:25	28:28	56:56	6:25	12:03	15:34	25:51	54:50	1:48:40
5:1	3:56	7:23	9:35	15:52	33:39	1:07:18	7:32	14:08	18:19	30:21	1:04:24	2:08:48
6:1	4:33	8:33	11:05	18:22	38:58	1:17:56	8:40	16:16	21:05	34:54	1:14:03	2:28:06
7:1	5:04	9:29	12:13	20:23	43:14	1:26:28	9:34	17:57	23:05	38:31	1:21:43	2:43:26
8:1	5:47	10:50	14:03	23:16	49:22	1:38:44	10:50	20:19	26:21	43:38	1:32:34	3:05:08
9:1	6:40	12:31	16:13	26:51	56:58	1:53:56	12:23	23:15	30:07	49:52	1:45:48	3:31:36
10:1	7:13	13:32	17:33	29:05	1:01:43	2:03:26	13:20	25:02	32:25	53:43	1:53:56	3:47:52
12:1	8:40	16:16	21:05	34:54	1:14:03	2:28:06	15:46	29:35	38:19	1:03:28	2:14:39	4:29:18
14:1	9:38	18:04	23:25	38:47	1:22:17	2:44:34	17:21	32:33	42:09	1:09:49	2:28:07	4:56:14
16:1	10:50	20:19	26:21	43:38	1:32:34	3:05:08	19:17	36:09	46:49	1:17:35	2:44:34	5:29:08
20:1	12:37	23:15	30:07	49:52	1:45:48	3:31:36	21:41	40:40	52:41	1:27:17	3:05:09	6:10:18
24:1	14:27	27:06	35:07	58:11	2:03:26	4:06:52	24:47	46:30	1:00:13	1:39:45	3:31:36	7:03:12
34:1	17:21	32:33	42:09	1:09:49	2:28:07	4:56:14	28:55	54:15	1:10:13	1:56:22	4:06:52	8:13:44

Note: The 2.6 GB columns represent the total time for both sides of a Magneto Optical Cartridge.

7.3 Restrictions

Due to drive speed variations, the following drives should not have a total record time lower than the value specified in this table:

Drive Type	Jaz 1GB	Jaz 2GB	Beluga 2.6GB	Barracuda4	Micropolis 3243av
Minimum Total Recording Time	8:02	9:41	21:26/side	18:11	23:16

Due to drive speed variations, the following drives can only be used at the compressions specified in this table:

Drive type	ST34371N/W	ST34501N/W	ST34573N/W/LW	ST34502LW

	ST34572N/W ST19171N/W	ST19101N/W	ST39173N/W/LW ST118273N/W/LW	ST39102LW ST118202LW
Minimum Compression Ratio (2 Fields)	4:1 or higher	3:1 or higher	2.5:1 or higher	2:1 or higher

8 USING THE RCV1 REMOTE CONTROL

If you want to control the V1 with the Doremi RCV1 remote control, connect it to the upper RS422 port on the back of the V1:

For a 1.19 front panel firmware:

- Engage the menu mode and go to **Control.**
- Press the **OPTION** key.
- The LCD will display "00-PORT 2 FRONT".
- Press **OPTION** *Toggle/Select* "⇔", the LCD will display "00-PORT 2 REAR".
- Quit by pressing "ESC".

For a 1.20 front panel firmware and V1 S/N < 0201 :
Hold the **OPTION** key while pressing "⇔", the display will show the message "disabled" to indicate that the front panel of the V1 is disabled. This message will stay displayed until **OPTION,** "⇔", are pressed again, then it will display "enabled" for a short period and the front panel will be enabled again.
Once the front panel is disabled, the RCV1(2) will become active.

For a V1 S/N >= 0201 :
Just connect the RCV1(2) to the upper port (The front panel access will stay active also).
The front panel access on the V1 can still be disabled if necessary : Hold the **OPTION** key while pressing "⇔", the display will show the message "disabled" to indicate that the front panel of the V1 is disabled. This message will stay displayed until **OPTION,** "⇔", are pressed again, then it will display "enabled" for a short period and the front panel will be enabled again

9 APPLICATION and TROUBLESHOOTING INFORMATION

9.1. When the V1 is setup with one internal drive, it is recommended (for cooling purposes) that the drive occupies the bottom tray of the V1. If both a JAZ and a hard drive are mounted, it is better to have the hard drive in the bottom tray and the JAZ drive in the top tray.

9.2. If you have a problem listening to your audio outputs, you might need to reset the audio circuitry. This is done by hitting the **RECORD** key twice to enter in and out of input monitor which usually resets the audio circuitry. In older versions the reset was done using the Jog mode.

9.3. If you are recording on a Jaz drive, you should not attempt to set the compression ratio to a value less than 12. The V1 will not give an indication that the drive is not capable, but the picture will not play correctly.

9.4. **If you are recording on the Fast SCSI Seagate Barracuda4** drives (ST15150N),you should not attempt to set the compression ratio to less than 5. Note that on compression by 5 only the first 14 minutes of recording are reliable, when the drive starts recording in inner sectors, the picture will start degrading. Again you would not notice anything when recording, but playback will show a degradation in the picture quality after the 14th minute. For other drives, the operator should test their limitations and make a note of them or contact Doremi Labs if the results are unsatisfactory.

9.5. **If you are recording on the Seagate Ultra SCSI** drives, you can choose any compression ratio down to 4:1.

9.6. **If you are recording on the 2.6 GB MOD Nikon Beluga DD53,** you must use a **1024 Bytes/sectors** cartridge and you should not attempt to set the compression ratio to a value less than 20:1 - 1 field/frame. The V1 will not give an indication that the drive is overloaded, but the picture may not play correctly (In shuttle, reverse...).

9.7. **If you have a normal RS422 9 pin control connection** and you can not control the V1, check the CHASE menu command. It should be set to **CHASE OFF** and **not** to CHASE RS422.

9.9. **Bad sectors on JAZ cartridges**. Since software version 1.18, the V1 efficiently handles "bad sectors" on the JAZ cartridges. When such bad sectors are found, the V1 would repeat the last good frame read until a new good sector is found again. Please note that this process may produce a video jump if the bad sectors area is too large. In case of too many bad sectors, the best solution is to request a cartridge exchange under warranty from Iomega.

9.10. **Muting the audio outputs during a stop in LTC chase mode**. Since software version 1.19, the V1 automatically mutes the audio outputs after detecting a stop on the incoming LTC timecode while in LTC chase (The muting is executed 200 ms after the time code stops).

9.11. **Quick toggle between SHUTTLE & JOG modes** . While in SHUTTLE mode, you can still use the nudge keys "--" and "++" to JOG field by field.

9.12. **Recording in case of tape drop-outs**. When recording with external timecode, two kinds of drop-out might occur:

- If the time code drops out but the video signal is still valid, the V1 will keep recording the timecode (it will free-wheel for 4 frames and then records any right or wrong time code fed on the TIME CODE IN jack) and the valid video signal.
- If the video signal is not valid, the V1 will 'pause' (stop recording but in record mode) until the video signal becomes valid, then the V1 will continue recording.

9.13. **V1 identification for DAW on the RS422 port**. The V1 can reply with two different Machine Ids when connected to a digital audio workstation (DAW):

If OPTION MENU (17): EMULATION is set to BVW75, it will reply with a "BVW75" identification.

If OPTION MENU (17): EMULATION is set to V1 (default), the V1 will reply with a "V1" identification.

- **Caution note**: Some DAWs or Editors will not initialize the RS422 port correctly if the Id returned on the RS422 port is unknown by them. In this case, set the EMULATION to BVW75 .

9.14. **The unit is not playing smoothly in reverse play**. This can be due to two factors:

- Low compression ratio: The drive caching is not effective in reverse play, that is why you would need to set the compression ratio to a higher value if your project requires smooth playback in reverse.
- Playing at the end of the drive: When the drive reads from its inner sectors, the transfer rate becomes lower, thus causing slower performance and not so smooth reverse playback. The remedy is again recording with a higher compression.

9.15. **Switching between the JAZ and hard drive**. To switch the active drive, follow these steps:

- From HD to JAZ : Stop the playback on the HD (**STOP**), switch off the HD key (the LCD will display "No disk"), insert the JAZ cartridge and wait for few seconds (The "No disk" will disappear when the Jaz cartridge is mounted).
- From JAZ to HD : Stop the playback on the JAZ (**STOP**), eject the cartridge (the LCD will display "No disk"), switch on the HD key then wait for few seconds (The "No disk" will disappear when the HD is mounted).
  The same switch can be done between two or more hard drives using their ON/OFF key (Replace 'eject' by 'key off' and 'insert' by 'key on').

9.16. **Modes of operation with multiples drives :** Unless the drives were recorder in the serial (chained) mode *(See Section 3.1.5, "Recording on Two or More Drives)*, only one drive can be active on the V1.

9.17. **The video has no colors.** If the video is not stable and is not displaying colors properly, you have set the **Sync From** to **Auto** or **Sync In** but you do not have a black burst signal (a composite signal is not accepted) fed to the **SYNC IN** connector. If the video stabilizes when you switch to **Internal**, the problem is definitely your **Sync From** setting.

9.18. If you have a RCV1 remote control unit connected to port 2 of the V1, and the **unit is not responding to remote commands**, you need to disable the front panel of the V1. Please refer to Section 8 for more detail on using the RCV1 remote control.

9.19. **If the Time Left on a drive seems to be wrong, or the recording on a drive never stops**, yet the V1 is still playing normally. It could be an indication of a SCSI ID conflict between the V1 and the drive in question.

9.20. If you can not hear the audio when you go in input monitor, check the option menu setting for Audio Input.

9.21. **If you are not able to write to your active drive, i.e. can not record, initialize or format, check option menu (12): V1 type, and make sure you set it to Rec/Player.**

10 CONNECTING THE V1 TO A WORKSTATION

10.1 Connection to the DAWN workstation (v 4.3c or later)

1. Feed house sync to the V1 and the DAWN,
2. Connect the time code out of the DAWN to the time code in of the V1,
3. Connect the RS422 port 1 of the V1 to one of the serial ports on the Macintosh,
4. Make sure the V1 is in Chase Off mode,
5. Make sure the V1 Sync source is "Auto",
6. Run the DAWN software,
7. You should see a V1 track at the bottom of the mix view,
8. Make sure House Sync is checked,
9. Toggle Master/Slave and then make sure you end up in master mode,
10. Hit play, both units should play in sync,
11. Hit Stop, both unit should stop.

The DAWN should always be in master mode.

10.2 Connection to the Akai DD-1500 with RS422 control (recommended)

1. Use the standard RS422 direct cable male-male 9 pins (Master to Slave).,
2. Feed House Sync to the V1 and to the DD1500,
3. Connect the serial cable between the V1 RS422 port 1 and the DD1500,
4. Set the DD1500 Word Sync to Video A (29.97 for NTSC, 25fps for PAL),
5. Set the Ext M/C of the DD1500 to Master,
6. Make sure the V1 is in Chase Off mode.

The DD1500 will control the V1. If your DD/1500/DL1500 has the version >= 2.3, you can have access to all the V1 menus directly on your DD1500. In order to get the best performance in variable speed mode when controlled by the DD1500, the V1 must have firmware version >= 1.97c.

Please contact Akai to get the best connection with the DD-1500 and the DD-8.

10.3 Connection to the Akai DD-1500 in CHASE RS422 Mode

1. If you did not receive a special serial cable that is DB9 Male to Male specific to the DD1500, you need to make one with the following pin-out (This is a twisted Slave to Slave cable) :
   pin 1 -> pin 1
   pin 2 -> pin 8
   pin 3 -> pin 7
   pin 4 -> pin 6
   pin 5 -> pin 5
   pin 6 -> pin 4
   pin 7 -> pin 3
   pin 8 -> pin 2
   pin 9 -> pin 9
2. Feed house sync to the V1 and to the DD1500
3. Connect the serial cable between the V1 RS422 port 1 and the DD1500
4. Set the DD1500 Word Sync to Video A (29.97 for NTSC, 25 fps for PAL),
5. Set the Ext M/C of the DD1500 to Full Slave,
6. Set the Chase mode of the V1 to RS422.

Use the DD1500 as if it is standalone, the V1 will chase to it at any speed.

10.4 Connection to the Fairlight

1. Feed House Sync to the V1 and the Fairlight,
2. Connect the serial cable between the Fairlight and the V1 RS422 port 1,
3. Run the Fairlight software, Hit the Machine 1 button to put the V1 on-line
4. Push buttons for setup of M1
5. Set Lace parameters to UNLACE=ON
6. And the LACE time parameter to 0 SEC

The Fairlight software will control the V1 properly.

10.5 Connection to the Microlynx, the Lynx 1 and Lynx 2 synchronizers

1. Feed house sync to the V1 and the lynx,
2. If you are using a Lynx 1, connect the time code out of the V1 to the in of the Lynx
3. Connect the transport serial cable between the Lynx and the V1
4. In the Transport menu, select the machine as DVR10.
5. If you are using a Microlynx or a Lynx 2, select Serial TC.

The Lynx will control the V1 and lock it to the system

10.6 Connection to the Sonic Solutions

1. Feed house sync to the V1 and the Sonic Station,
2. Connect the time code out of the V1 to the time code in of the Sonic,
3. Connect the serial cable between the V1 RS422 port 1 and the Sonic,
4. Select D-2 as the type of machine in the Sonic Machine list

The Sonic software will control the V1.

10.7 Connection to the Pro-Tools 4.0

V1 must have firmware version >= 1.20H
1. Connect the 9 pin RS422 cable between the V1 and the Mac (Modem or Printer port)
2. Connect the V1 LTC output to the PT 4.0 LTC input (SMPTE to Midi interface)
3. Install PostView or Machine Control Option on the Mac
4. Start the PT 4.0 software and the V1
5. Select the Session Setup Window and activate the 9 pin Port
6. Select the Machine Setup, set PreRoll to 25 frames and activate the Machine Follows Insertion/Selection
7. Select Mac Control Panel and then enter in the OMS (OPCODE MIDI SYSTEM) setup. Please be sure to deselect the serial port used by PT 4.0 for V1 control to avoid conflict with OMS operation

The Pro-Tools 4.0 will control the V1.

10.8 Connection to the Orban AUDICY VX

1. Feed house sync to the V1 and to the reference video inputs on Audicy's timecode and digital input modules.
2. Connect the time code out of the V1 to Audicy's time code input, You don't need to connect Audicy's time code output.
3. Connect the RS422 port 1 of the V1 to the Audicy's RS-422 output, through the Orban adapter cable supplied.
4. Make sure the V1 is in Chase Off mode.
5. Make sure Audicy's I/O Setup has Sync Source set to Video and your local sync rate (NTSC or PAL). You may set this as a default.
6. Make sure Audicy's VTR Setup is set for +2 frame Timecode Delay, and normal Chase Dynamics and Lock Criterion. You may set this as a default.

If you press Audicy's Machine Control button, the V1 will follow every move you make on the Audicy. If you press Audicy's Chase button, it will follow every move you make on the V1. You may switch freely between these functions during a session.

10.9 Most Common Connection

This connection scheme is used to connect the V1 to StudioFrame, Audiofile, Audiovision, Post-Pro, Dyaxis II, Protools 4.0 etc.

1. Feed house sync to the V1 and the DAW,
2. Connect the time code out of the V1 to the time code in of the DAW,
3. Connect the serial cable between the V1 RS422 port 1 and the DAW,

Run the DAW software which will control the V1.

10.10 List of DAWs & Editors currently supported with the V1 (1)

Adams-Smith SuperController, Akai DD1500, AMS Neve Audiofile, Augan OMX, DAR, Digidesign Protools 4.0, Digigram X-Track, Doremi Labs Dawn II v. 4.3+, Fairlight MFX3, Fast Video Machine (2), Sadie, Sonic Solutions, Sony BVE, Spectral, Studer Dyaxis, SSL/Screensound, Synclavier, TimeLine Vista Waveframe/StudioFrame, TimeLine Lynx & Micro Lynx Synchronizers .

Special note for the SSL/Screensound :
On the Screensound, go into the page 'Setup Serial' and select 'Motion Off'. The V1 will be controlled by the Screensound. The offset on the Screensound must then be set to 0; if not the Screensound will operate as if a real offset is present between the V1 and the audio tracks on the Screensound.

The V1 can be used with virtually all systems that has the ability to control video machines through serial Sony 9 Pin protocol like SSL Consoles, Euphonix consoles, Slow-Motion Controllers, Desktop Remote Controllers....
See note 9.13 about the V1 RS422 protocol identification.

(1) This list is not limited, consult Doremi Labs if your product is not listed above
(2) Under preparation at the time of this printing

11 CHANGES AND ADDITIONS / VTPro202

Version 2.0 adds some menu items and functionality to the V1. To use version 2.0 efficiently, you need to replace the front panel EPROM on your V1 or use the VTPro202 software.

11.1 Upgrading to version 2.0

To upgrade your V1 to version 2.0 you need to get the V1upload software and a 1.2 EPROM chip for the front panel controller; *See section 5.6, "Upload using V1upload".* You can get a copy of the V1upload software and of the EPROM chip by contacting Doremi Labs or by connecting to our web server at http://www.doremilabs.com/.

12 INSTRUCTIONS FOR INITIAL SETUP & TRANSPORT
IMPORTANT !!

- Before powering-up the V1 unit, **please connect the SCSI termination** supplied on the rear external SCSI connector (If not there, the V1 will not operate properly).

- After powering-up, if your V1 has been ordered with a drive from Doremi Labs, you will be able to play the initial "video test" recording (In NTSC for USA, PAL for Europe) without the need of an external sync reference (Internal Sync. selected). If you need to play locked to House Sync, connect a Black Burst signal to the SYNC IN connector and go to menu (02) "Sync from", select the option **Sync In** and validate by pressing **ESC**.

- Before turning the V1 OFF, **please eject all JAZ cartridges**.

- **Before any transport :**
  - **Please eject all JAZ or MOD cartridges and remove them.**
  - **Lock the Data-Express (Key ON as for normal use).**
  - **Switch the V1 OFF.**
  - **Remove the SCSI termination on rear** (Leaving it may break the SCSI connector during transport).

13 MOUNTING SCSI DRIVES

The V1 is factory set to SCSI ID6 by setting DIP switches 1, 2 & 3 on the back of the V1 to high, low & low. To avoid conflicts, **Don't use this ID 6 for any drive to be installed.**

CAUTION NOTE: FOR VENTILATION PURPOSES, THE OPENEING OF THE TOP COVER SHOULD ALWAYS BE TOWARDS THE HARD DISK TRAYS AND NOT TOWARDS THE POWER SUPPLY. ALL INTERNAL CABLES SHOULD BE PLACED AT LEAST ONE INCH ABOVE THE CIRCUIT BOARD, USE CABLE TIES IF NECESSARY.

13.1 Mounting one Jaz drive only

- Disconnect all cables including power from the back of the V1.
- Set the SCSI ID of the Jaz to 4, usually this is the Iomega factory default for the Jaz drive. Refer to the Jaz manual to make sure the SCSI ID is set correctly.
- Jaz SCSI ID setting:

A2	A1	A0	ID #
OFF	OFF	OFF	0
OFF	OFF	ON	1
OFF	ON	OFF	2
OFF	ON	ON	3
ON	OFF	OFF	4
ON	OFF	ON	5
ON	ON	OFF	6
ON	ON	ON	7

The following procedure should be repeated for each Jaz drive mounted on the V1:

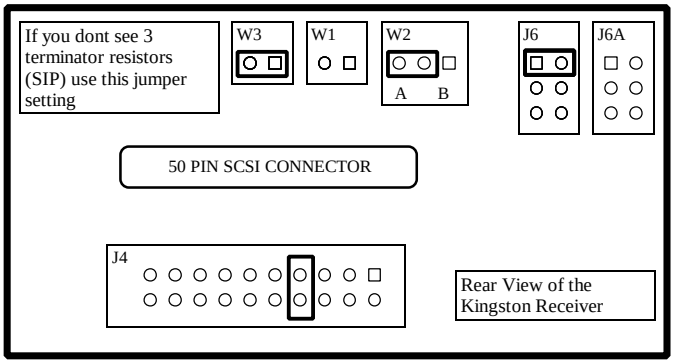
- Install the Jaz drive in the 3 1/2 to 5 1/4 bracket adapter supplied with the Jaz drive according to the instruction supplied with the Jaz drive.
- Install the Jaz drive on the top V1 tray.
- Connect one of the internal free 50pin IDC connector to the Jaz Drive.
- Connect the power connector to the Jaz.
- **Disconnect the SCSI ribbon cable from the main board** (near the power supply) and connect the end of this cable to the SCSI terminator supplied with the Jaz drive. This means that the 50pin IDC connector is now connected to the terminator and not to the V1 main board.
- Connect a SCSI cable from your computer to the Centronics 50 connector located on the back of the V1.
- Connect the power cable, turn ON the V1 then turn ON your computer.
- Install the Jaz Tools software supplied with the Jaz on your computer
- Run Jaz tools, select Drive Options, set the drive to "**No" Write verification** and set the sleep time to 30 minutes, then hit the button labeled "**SET**".
- Quit the Jaz tools, turn OFF the computer and the V1.
- Remove the SCSI terminator from the end of the 50pin ribbon IDC cable and connect it back to the V1 main board pin 1 (red mark on the cable) should be to your right if you are looking at the front of the V1 (pin closer to the power supply).
- Connect the termination supplied with the V1 on the rear external SCSI port, switch ON the V1 and execute a **Format** command followed by an **Initialize** command.

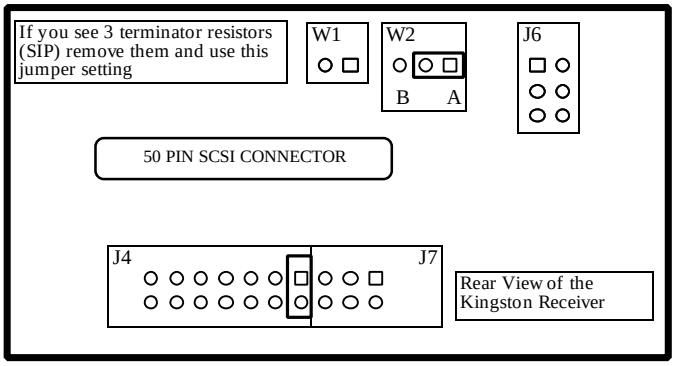
13.2 Mounting two Jaz drives

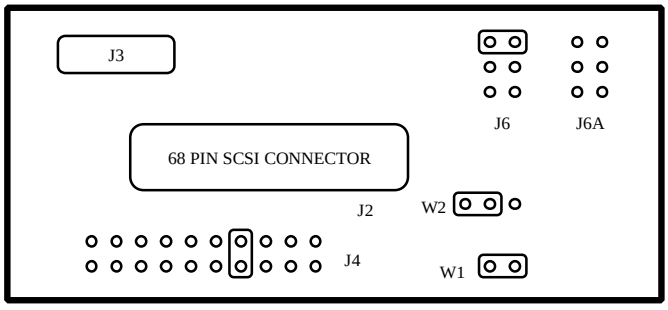
- Disconnect all cables including power from the back of the V1.
- Repeat the procedure A. for each of the drives separately, and use SCSI ID4 for one and SCSI ID3 for the other.
- Mount Jaz ID3 on the bottom V1 tray.
- Mount Jaz ID4 on the top V1 tray.
- Connect SCSI and power to both drives.
- Make sure you connect the end of the 50pin IDC to the V1 main board.

13.3 Mounting one Kingston Data-Express removable drive system

- Disconnect all cables including power from the back of the V1
- Prepare your Kingston receiver according to one of the following diagrams:







- Install the hard drive in the carrier *(See Sections 13.6, 13.7, 13.8 for setup)*, connect the SCSI Id cable supplied (black/brown/red) to the correct jumpers on the hard drive (Check also the direction).
- Install the receiver on the bottom V1 tray.
- Connect SCSI and power to the Data-Express.
- Power ON the V1 and set the SCSI ID of the Data-Express to ID3 (screw on the right hand side of the receiver) using the screwdriver provided with the Data-Express. For more detail refer to the Data-Express manual.
- Execute a **Format** command followed by an **Initialize** command.

13.4 Mounting two Kingston Data-Express removable drive systems

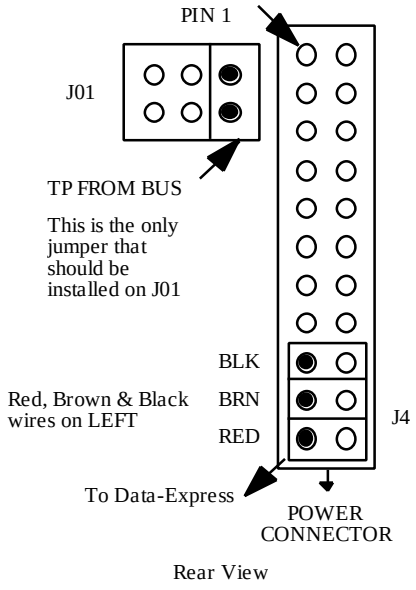
- Repeat the procedure C. for both frames. Set the bottom tray to ID3 and the top one to ID 4.

13.5 Mounting one Jaz and one Kingston Data-Express removable system

- Repeat procedure A. for the Jaz, set it to ID4 and install it on the top V1 tray.
- Repeat procedure C. for the Data-Express, set it to ID3 and install it on the bottom V1 tray.

13.6 Setup of the Fast SCSI Seagate Barracuda4 hard drive ST15150N (Obsolete drive)

These are the two connectors that should be configured on the ST15150N:



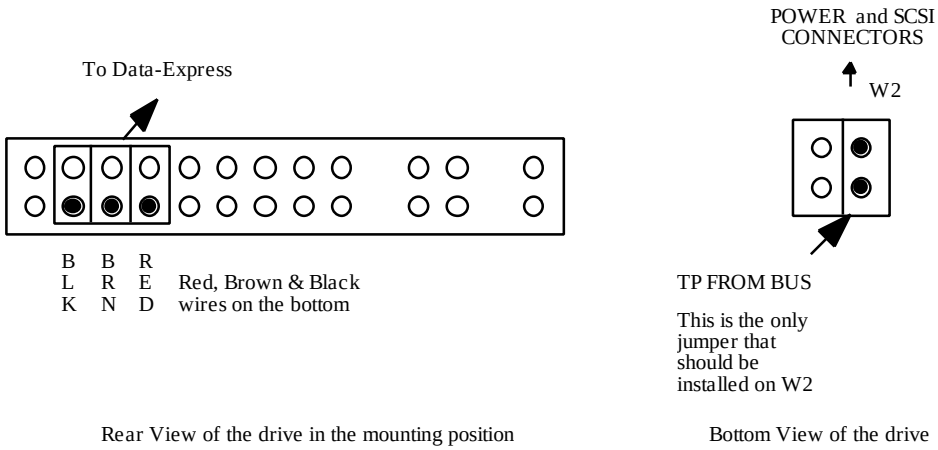
J01 should only have one jumper to set the termination power from SCSI bus. That position is marked in the drawing above.

The Data-Express carrier should be connected to the drive with 3 cables:
1. Power Cable
2. SCSI Cable
3. SCSI ID number cable: this cable is supplied by Kingston with the Data-Express and has one 3 pin connector that connects to the Data-Express carrier, and three 2 pin connectors that should be connected to the drive. Note that each of those 3 wires are connected to only one side of the 2 pin connector, that side with the wire should be connected to the left row of J4 if you are looking straight to the back of the drive.

Extra care should be given as to not have cable number 3 described above be caught between the drive and the Data-Express carrier chassis.

13.7 Setup of the Micropolis 3243av 4 GB hard drive.

These are the two connectors that should be configured on the 3243av:



W2 should only have one jumper to set the termination power from SCSI bus. That position is marked in the drawing above.
Remove the two terminator resistors RN1 and RN2 (10 pin SIP resistor)

The Data-Express carrier should be connected to the drive with 3 cables:
1. Power Cable
2. SCSI Cable
3. SCSI ID number cable: this cable is supplied by Kingston with the Data-Express and has one 3 pin connector that connects to the Data-Express carrier, and three 2 pin connectors that should be connected to the drive. Note that each of those 3 wires are connected to only one side of the 2 pin connector, that side with the wire should be connected to the bottom row of the DIP connector if you are looking straight to the front of the drive.

Extra care should be given as to not have cable number 3 described above be caught between the drive and the Data-Express carrier chassis.

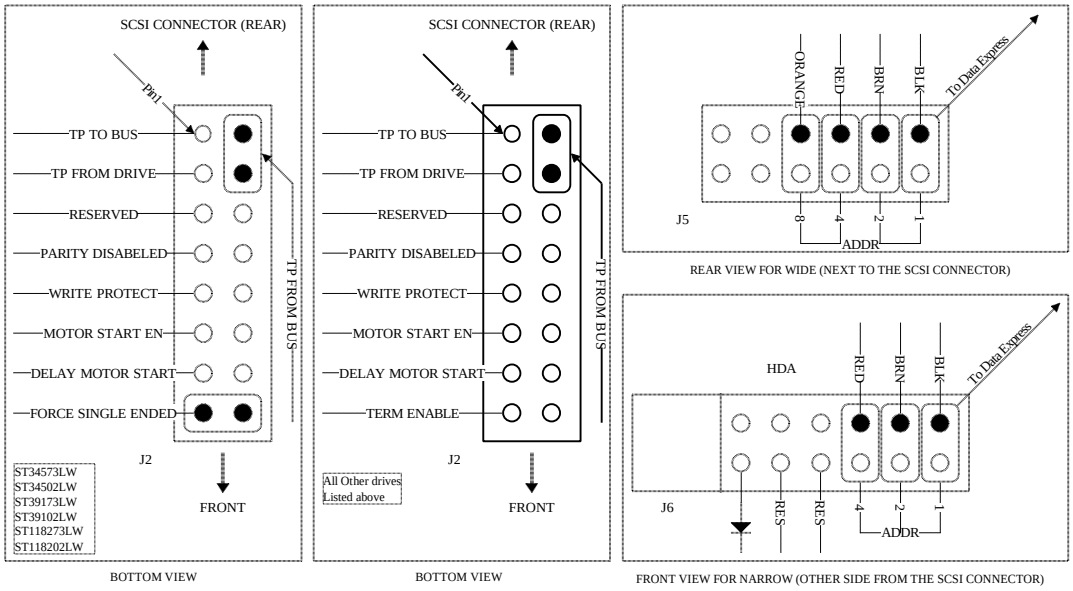
13.8 Setup of the Seagate Ultra SCSI hard drives 4 GB, 9 GB & 18 GB

Seagate has 2 series of Ultra SCSI drives: Barracuda and Cheetah.

Seagate part Numbers	Barracuda4LP	Barracuda9	Barracuda9LP	Barracuda18
Narrow SCSI	ST34371N ST34572N ST34573N	ST19171N	ST39173N	ST118273N
Wide SCSI	ST34371W ST34572W ST34573W/LW	ST19171W	ST39173W ST39173LW	ST118273W ST118273LW

Seagate part Numbers	Cheetah4LP	Cheetah9	Cheetah9LP	Cheetah18
Narrow SCSI	ST34501N	ST19101N		
Wide SCSI	ST34501W ST34502LW	ST19101W	ST39102LW	ST118202LW

These are the two connectors that should be configured for all these drives:



J2 should have a jumper to set the termination power from SCSI bus (see above drawing). For LW drives, the Force Single Ended Jumper, must also be installed.

The Data-Express carrier should be connected to the drive with 3 cables:

1. Power Cable
2. SCSI Cable
3. SCSI ID number cable: this cable is supplied by Kingston with the Data-Express and has one 3 pin connector (5 for wide) that connects to the Data-Express carrier, and three (five for wide) 2 pin connectors that should be connected to the drive. Note that each of those 3 wires is connected to only one side of the 2 pin connector. That side with the wire should be connected to the top row of J6 (J5 for wide) if you are looking straight at the front of the drive (back of the drive for wide). On the wide drives the yellow cable should not be connected to anything.

Extra care should be given as to not have cable number 3 described above be caught between the drive and the Data-Express carrier chassis.

13.9 Setup of the Magneto-Optical Drive (MOD) NIKON BELUGA DD53

- The top DIP switch must be configured according to the table below :

Switch -1	ON	(Default)
Switch -2	**ON**	**Disable SCSI Termination**
Switch -3	**OFF**	**Disable Read after Write**
Switch -4	ON	(Default)
Switch -5	ON	(Default)
Switch -6	ON	(Default)
Switch -7	**ON**	**Direct Access Device (<u>Very important</u>)**
Switch -8	OFF	(Default)

- The 2.6 GB cartridge must be **<u>1024 Bytes/sectors</u>**

13.10 Setup of hard drives other than Seagate Ultra SCSI models

- Generally speaking, the basic setup must be as following :
  - Drive Termination Disable
  - Termination Power from the SCSI bus
  - Parity Enabled
  - Write Protect (if any) Disabled
  - Others jumpers or switches : default position should be OK

In order to get the best performance in video/audio recording **DOREMI Labs** has selected the **Seagate Ultra SCSI** family because these drives offer the best performance currently available on the SCSI-2 bus and are validated to support 4:1 compression with a single drive and the audio only insert capabilities. Operation and performance with drives from other sources (Micropolis, IBM, Fujitsu...) must be checked on the V1 by the user; **DOREMI LABS** in this case cannot guarantee the full operation or performance. In case of technical problems, please inform **DOREMI Labs** with a full description of what has been noticed.

13.11 Notes on JAZ cartridges

Some precautions need to be followed with the JAZ cartridges :

- **Eject them before any transportation or before switching off the V1**
- **Don't use them in case of condensing** (Humidity going into water drops), this may produce error while record or play !

In case of bad sectors on cartridges, you can test them with Win95 Surface Scan or any low level utility software like FWB Hammer for Mac.

14 Notes for the V1m

The V1m is the same as the V1 with the exception of the following differences:

1. The V1m has only ½ MB of SRAM, thus it is only capable of 12:1 compressions or higher.
2. The V1m does not have a front panel controller, instead, it has a front panel connector for an external RS422 remote control. You should not use a cable longer than 6 feet on this front panel connector.
3. The V1m does not have SVHS IN/OUT
4. The V1m does not have MIDI IN/OUT
5. The V1m is a 2U rack mount unit.

Notes: Earlier versions of the V1m were shipped in a 3U rack mount chassis with the following exceptions:

1. No front panel RS422 connector
2. With SVHS IN/OUT
3. With MIDI IN/OUT

SOFTWARE VERSIONS BELOW 2.0 WILL ALLOW 8:1 COMPRESSIONS OR HIGHER, HOWEVER, THE V1m SHOULD NOT BE USED AT ANY COMPRESSION BELOW 12:1. LATER SOFTWARE VERSIONS WILL NOT ALLOW SELECTION OF COMPRESSIONS BELOW 12:1.