

CHAPTER 16: THE VIRGO VIDEO DEVICE CONTROLLER



INTRODUCTION

The *Virgo Video Device Controller (VDC)* is one of the *Intelligent Controllers* that comprise the *Universal Theater Control System (UTCS)*. Each *Virgo VDC* provides four independent control channels to send serial command strings to compatible devices. The *Virgo VDC* control channels can be internally configured for compatibility with any of the following hardware specifications.

1. **RS-232**
2. **RS-422**
3. MIDI (Requires optional MIDI upgrade.)
4. DMX

The *Virgo VDC* also contains several device specific drivers, software, that can be easily assigned to any control channel. It can be thought of as a language ‘translator’ that converts **UTCS** commands from *Hercules* into commands that can be understood by the target device. The *Virgo VDC* also provides two TTL compatible digital parallel ports to provide additional control capabilities.

The *Virgo VDC* is designed to control video sources (DVD, Laser Disc, and S-VHS players), video projectors (LCD and CRT), audio devices (Fostex VF160 and D-108), and other serially controlled devices (Kodak EktaPro slide projector). It is important to note that the *Virgo VDC*, when used as part of a video system does not manipulate the video signal in any way. Another **UTCS** *Intelligent Controller*, the *Virgo Video Fader/Switcher (VFS)* is designed to control the various aspects of the video signal such as brightness and contrast. **UTCS** installations that need complete control of the theater’s video display system will have both the *Virgo VDC* and the *Virgo VFS* installed.

The *Universal Theater Control System (UTCS)* can have up to 64 *Intelligent Controllers* attached to the communication network. This allows direct access to up to 256 devices. All functions can be automated using the *Hercules Central Processor*, or manually operated with the *Cygnus Manual Control System*.

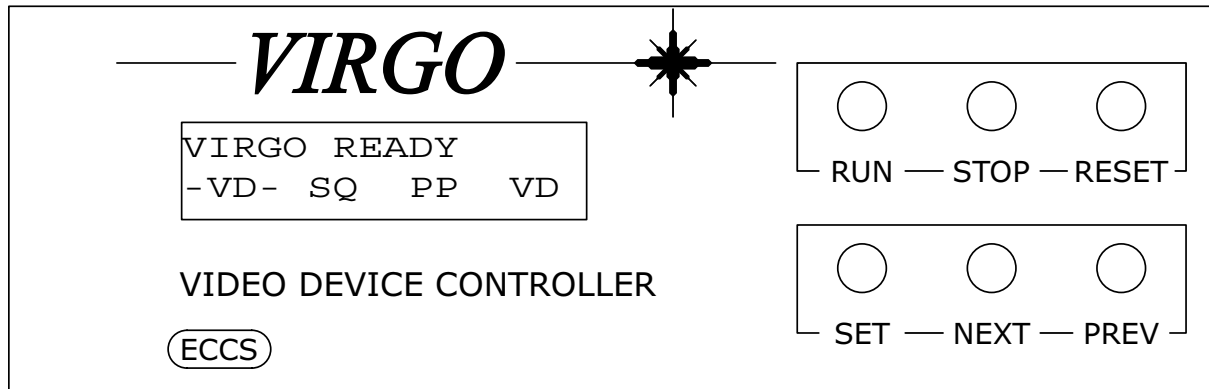
The *Virgo VDC* and the other *Intelligent Controllers* in the **UTCS** are ‘smart boxes’ that can be periodically updated with newer internal software to enhance and/ or increase their capabilities. These upgrades are done over the **UTCS** network and can be performed by theater personnel. This means the theater can continue to expand without the need for downtime and expensive service calls.

The *Virgo VDC* also accepts **ASCII** text commands transmitted via serial communication cable from any computer.

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THE VIRGO VDC FRONT PANEL LCD DISPLAY AND CONTROLS

The *Virgo VDC* front panel LCD display shows any error messages that are generated during operation. Status and display messages will appear on the top line of the display. Successful execution of commands will generate the message 'VIRGO READY' on the display. During normal operation, the LCD display will appear as illustrated below:



LCD Display:

The bottom line of the LCD display provides information about the types of devices connected to the *Virgo VDC* control ports. The four pairs of characters indicate the type of device connected, if no device is connected to the port two dashed lines, '--', will indicate a 'NO DEVICE' assignment. The following list shows the device assignments for the example above.

Device Control Port #1	VD	Pioneer Laser Disc / DVD
Device Control Port #2	SQ	Sony D50 Video Projector
Device Control Port #3	PP	Panasonic LCD Video Projector
Device Control Port #4	MM	Midi Machine Control

The letter pair abbreviation is the **Device Type**, and it corresponds to the different devices that the *Virgo VDC* can control. A complete listing of the different **Device Types** is presented later in the chapter.

The bottom line of the LCD display supplies one more piece of useful information. The two dashes that surround the 'vd' entry in the example above means that the last command issued by the *Virgo VDC* was directed towards the DVD player. If an error occurs during execution, not only will the error be displayed on the top line, but the dashes will indicate the device that most likely caused the error.

The LCD display is used in conjunction with the six front panel buttons to set the **Unit Number** and operational mode of the *Virgo VDC*.

LCD Display Backlight:

The LCD display is equipped with a backlight to make it easier to read. When the *Virgo VDC* is in the **Normal Mode** of operation, not the **Settings Mode**, the backlight can be turned on by pressing the <NEXT> button. Pressing the <PREV> button turns the backlight off.

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USING THE FRONT PANEL BUTTONS FOR LOCAL CONTROL OF THE VIRGO VDC

The front panel buttons are divided into two functional groups. The top trio of buttons provide a minor amount of ‘local’ control over the devices attached to the *Virgo VDC*. The <RUN> and <STOP> buttons have not yet been assigned a purpose. Pressing the <RESET> button twice in succession will activate the appropriate reset sequence for each device connect to the control ports.

USING THE FRONT PANEL BUTTONS TO CONFIGURE THE VIRGO VDC

The lower trio of buttons, in conjunction with the LCD display, provide a convenient menu-driven method for setting the operating characteristics of the *Virgo VDC* for use with the UTCS. Menu settings may be viewed or altered at any time.

To view or change menu selections, enter **Settings Mode** by pressing the <SET> button. The top line of the LCD display shows the current setting selected, while the bottom line shows the current option selected for the setting. The <NEXT> and <PREV> buttons navigate through the options for the current setting. To select a particular option, press the <SET> button. This keeps the current option displayed for the setting and moves to the next menu setting. Pressing <RESET> once, will exit the **Settings Mode** without stepping through all the settings.

After stepping through all the settings, the *Virgo VDC* will return to operating in **Normal Mode**. Any changes made will be maintained until they are changed again, even if the *Virgo VDC* is powered down between uses.

If while attempting to change a setting, the ‘LOCKED!’ message appears, the setting must be ‘unlocked’ before any changes may be made. Press the <SET> button until the last setting, ‘SET LOCK:’, is reached. Press either the <NEXT> or <PREV> button to ‘unlock’ all settings. The bottom line in the ‘SET LOCK:’ setting should say ‘EDIT SETTINGS OK’ when ‘unlocked’, and ‘SETTINGS LOCKED’ when ‘locked’.

The table on the next page provides a list of the settings, options for each setting, and a description for each option available through the *Virgo VDC* front panel menu.

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VIRGO VDC SETTINGS AND OPTIONS

<u>Setting</u>	<u>Option</u>	<u>Description</u>
SET UNIT NUMBER:	01 - 64	Set <i>Intelligent Controller</i> Unit Number for UTCS identification.
SET TYPE DVC 1:	NO DEVICE VD - PIONEER LD LV - LIESEGANG BR - BARCO RS - RS-422 SD - SONY LD PD - PANASONIC LD HC - HEDCO SWITR SV - SONY VP 422 PT - PANA VT 322 TV - TV ONE SCAL T2 - TV1 SC-1250 EC - EXTRON XPT JV - JVC SR-S365 AS - ASHLY PROTE EX - EXTRON AVS RN - RANE (DSC) RN - RANE (SLV) SN - SANYO VP PV - PANA DVD AX - ASTRO FX DM - DMX CONTROL YM - YAMAHA 01V MM - MIDI MC EK - KDK EKTAPRO PP - PAN VID PRJ ZP - POLAROID VP PU - PROXIMA VP CM - COMO DVR SQ - SONY D50 P5 - PIONEER DVD DP - PROX 6850 IF - IN-FOCUS C2 - CM MPEG-200 AB - ALCORN/MCIBR	No device connected to control port. Default setting. Pioneer Laser Disc / V7400 DVD player. Liesegang DV550 LCD Video Projector. Barco Video Projector. RS - 422 standard protocol. Sony Laser Disc Players. Panasonic Laser Disc Players. Hedco/ Leitch Video Switcher. Sony VPH-12xx series Video Projector. Panasonic AG-5700 and AG-5710 S-VHS Tape Player/ Recorders. TV One Video Scaler. TV One Video Scaler model 1250. Extron Crosspoint Matrix Switcher. JVC SR-365U S-VHS Tape Player/ Recorder. Ashly Protea Programmable Audio Equalizer. Extron Audio/ Video Switcher. Rane SRM66 Matrix Mixer (DSC Mode). Rane SRM66 Matrix Mixer (SLV Mode). Sanyo LCD Video Projector. Panasonic T2000 DVD/ CD Player. AstroFX Digital MPEG Player. DMX Lighting Control. Yamaha 01V Digital Mixer. MIDI Machine Control (MMC). Kodak EktaPro Slide Projectors. Panasonic LCD Video Projectors. Polaroid 360 LCD Video Projector. Proxima Ultralight LX2 LCD Video Projector. Como DVR. Sony VPH-Dxx series Video Projector. Pioneer DVD-V5000 Proxima DP6850 LCD Projector InFocus LP540/ 640 LCD Projector TV One MPG-200 DVR Alcorn-McBride DVM2 MPEG-2 Video Player
SET TYPE DVC 2:	-- Same as DVC 1	See above descriptions.
SET TYPE DVC 3:	-- Same as DVC 1	See above descriptions.
SET TYPE DVC 4:	-- Same as DVC 1	See above descriptions.

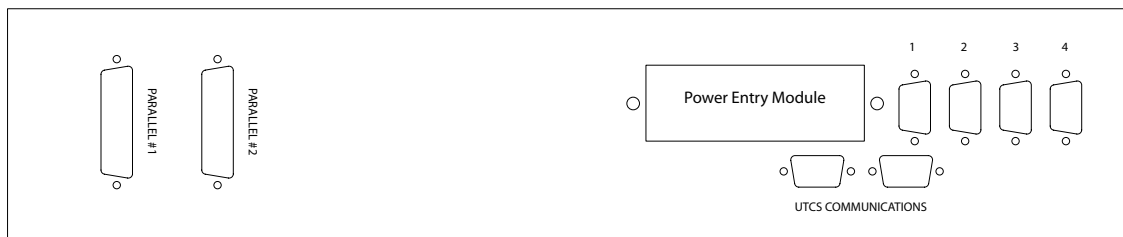
VIRGO VIDEO DEVICE CONTROLLER

VIRGO VDC SETTINGS AND OPTIONS CONTINUED

<u>Setting</u>	<u>Option</u>	<u>Description</u>
SET DEBUG VIEW:	DEBUG VIEW OFF	Display Error Messages. Default setting.
	DEBUG VIEW ON	Display Virgo VDC programming debug info. (ECCS use only.)
SET LOCK:	EDIT SETTINGS OK	Allows settings to be changed.
	SETTINGS LOCKED	Prevents settings from being changed.

REAR PANEL CONNECTIONS

The *Virgo VDC* has eight wedge-shaped, nine pin (**DB9**) connectors on the rear panel. All input and output connections are made here. The four male **DB9** connectors to the right of the power entry module are the device control ports, with port one closest to the power module. The two **DB9** connectors, one male and one female, below the power entry module are the **UTCS** communication network connectors. The two female 25 pin (**DB25**) connectors at the far left are the Parallel Ports.



DEVICE CONTROL PORTS

A serially controlled device, such as a DVD player or VCR, may be connected to any of the four *Virgo VDC* control ports vertically mounted on the rear panel. The control ports are the blue male **DB9** receptacles to the right of the power entry module. They are numbered 1 through 4, with number 1 closest to the power entry module.

Before connecting any device to any of the Virgo VDC control ports, the port hardware and software compatibility should be checked and adjusted if necessary. Hardware compatibility refers to the selection of either **RS-232** or **RS-422** serial communication protocols. Software compatibility is achieved through the correct selection of Virgo VDC software device drivers via the front panel menu and controls.

SELECTING RS-232 OR RS-422 HARDWARE INTERFACE

Each device control port can be configured for compatibility with either **RS-232** or **RS-422** hardware standard. The appropriate configuration is dependent on the device to be controlled. Please consult the device user manual to determine the correct hardware interface type.

The selection of **RS-232** or **RS-422** hardware interface for each control port is dependent on a single jumper setting and ribbon cable position on an internal *Virgo VDC* circuit board. The procedure for making this selection is explained on the next page.

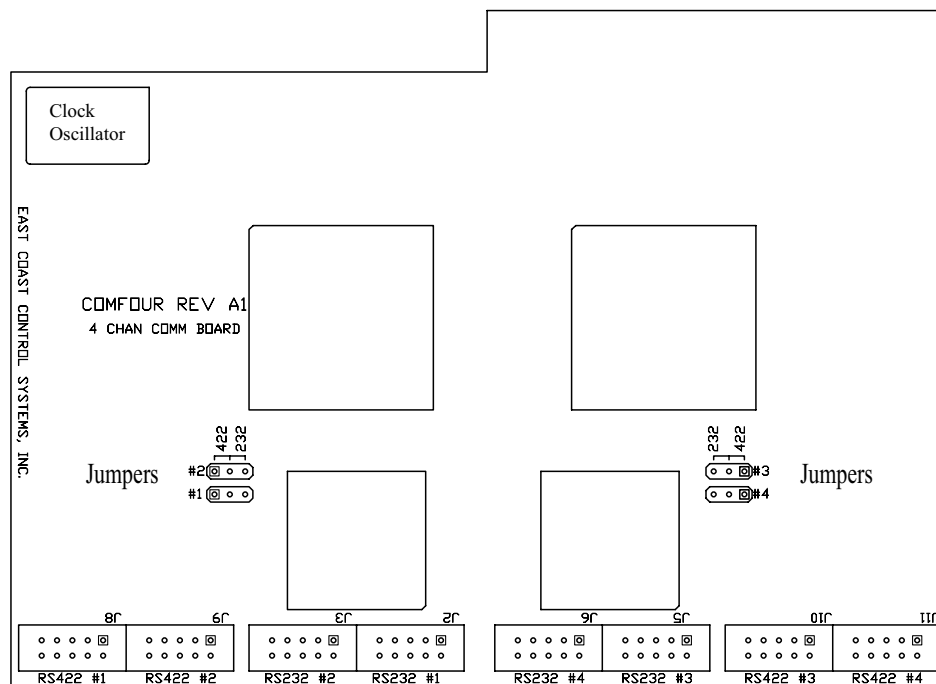
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PROCEDURE FOR SELECTING RS-232 OR RS-422 HARDWARE INTERFACE

1. Locate and remove the two small screws that secure the *Virgo VDC* cover. The screws are located near the top of the rear panel.
2. Remove the cover by sliding it back until it is free.
3. Locate the circuit board that handles all device communications. It will be labeled '**COMFOUR REV X**' or '**4 CHAN COMM BOARD**', and attaches directly to the motherboard.
4. Four small ribbon cables plug into the **COMFOUR** board along the rear edge. Each ribbon cable can be plugged into one of two socket connectors, selecting either the **RS-232** or **RS-422** hardware interface. Control ports for devices that will be controlled via **RS-232** will have ribbon cables attached to the socket labeled '**RS232 #X**'.

When pushing the ribbon cable connector onto the circuit board socket connector, take care to match the pins with the sockets in the connector. It is easy to misalign the connector by a row or column and still press the connector onto the pins. Repeat the procedure for the next three ports.

5. Each device control port also has an associated jumper block that must be configured for the control port to operate correctly. Each jumper block is composed of three pins. Two of the three pins must be connected with a small shorting jumper. Which two pins depends on the selection of either **RS-232** or **RS-422**. The selection choices are labeled on the circuit board.



Ribbon Cable Connectors

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RS-232 HARDWARE INTERFACE CONNECTOR PINOUT

A control port that has been set for **RS-232** operation has the identical connector pinout to that of an IBM compatible PC/ AT serial port connector. The pin diagram is shown below.

Pin	Signal	Description	Pin	Signal	Description
1	DCD	Data Carrier Detect	6	DSR	Data Set Ready
2	RX	Receive Data	7	RTS	Request to Send
3	TX	Transmit Data	8	CTS	Clear to Send
4	DTR	Data Terminal Ready	9	RI	Ring Indicator
5	GND	Signal Ground			

RS-422 HARDWARE INTERFACE CONNECTOR PINOUT

A control port that has been set for **RS-422** operation is compatible with the Sony 9-pin Protocol, as a controlling device. The pin diagram is shown below.

Pin	Signal	Description	Pin	Signal	Description
1	GND	Frame Ground	6	COM	Receive Common
2	/RXD	Receive Data (-)	7	RxD	Receive Data (+)
3	TxD	Transmit Data (+)	8	/TxD	Transmit Data (-)
4	COM	Transmit Common	9	GND	Frame Ground
5	SPARE	Spare			

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COMMUNICATION NETWORK CONNECTORS

The *Virgo VDC* receives commands sent from the *Hercules Central Processor* or the *Cygnus Manual Control System* over the **UTCS** communication network. The communication network can support up to 64 *Intelligent Controllers*, but each *Intelligent Controller* must have a unique **Unit Number**. The *Virgo VDC Unit Number* is set using the front panel menu and button controls.

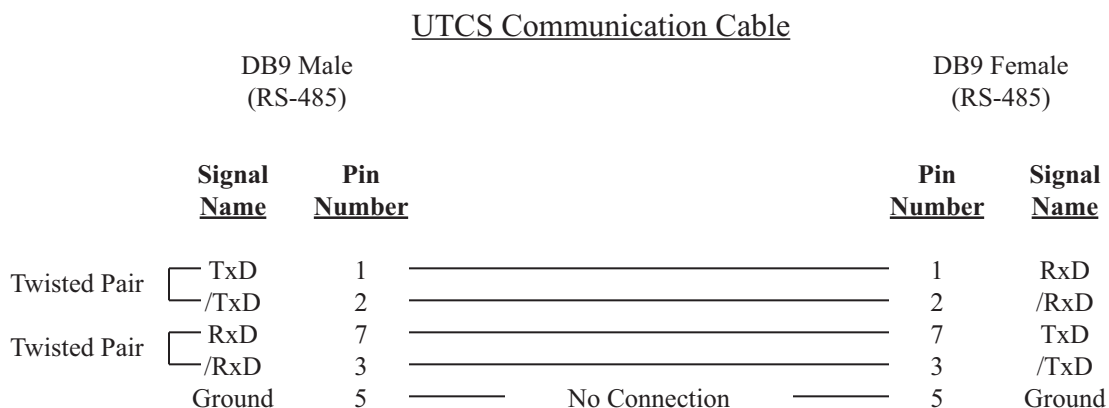
The communication network connectors are located on the *Virgo VDC* rear panel. There are two **DB9** connectors, a male and a female, labeled '**UTCS Communication**'. In a typical installation, the male connector will connect towards the *Hercules Central Processor*, and the female will connect towards the next *Intelligent Controller*.

The *Virgo VDC* can be 'inserted' anywhere in the existing communication network **Daisy Chain**, or as the last *Intelligent Controller* in the **UTCS** network. Placement of the unit is dependent only convenience and ease of operation.

COMMUNICATION CABLE WIRING

All communications are four conductor cables with a male **DB9** connector at one end and a female **DB9** connector at the other.

Communication cables are wired straight through, with pin 1 on the male end tied to pin 1 on the female end, pin 2 to pin 2, pin 3 to pin 3, and pin 7 to pin 7. For optimal performance, the wires should be twisted pairs with one pair on pins 1 and 2 and the other on pins 3 and 7. The pin diagram is illustrated below.



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PARALLEL PORTS

The two male **DB25** connectors on the *Virgo VDC* rear panel are the Parallel Ports and are provided for user defined applications. The pinout is identical to that of an IBM compatible PC/ AT parallel port connector. The pin diagram is shown below.

<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
1	/Strobe	14	/Auto Feed
2	Data Bit 0	15	/Error
3	Data Bit 1	16	/Printer Init
4	Data Bit 2	17	/Select
5	Data Bit 3	18	Ground
6	Data Bit 4	19	Ground
7	Data Bit 5	20	Ground
8	Data Bit 6	21	Ground
9	Data Bit 7	22	Ground
10	/Acknowledge	23	Ground
11	Busy	24	Ground
12	Paper End	25	Ground
13	Select		

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UNIT SETUP CHECKLIST

Use the following checklist to insure that the *Virgo VDC* is installed into the theater UTCS and ready to be added to the system *Configuration File*.

1. The hardware interface requirements have been determined for the devices to be connected to the *Virgo VDC* control ports, and the appropriate changes have been made internally to the unit. This means the jumpers and ribbon cable assignments are correct for either **RS-232** or **RS-422** operation as dictated by the device to be connected.
2. The *Virgo VDC* has been securely placed in convenient location in the theater, and the UTCS communication network connections have been made.
3. A unique **Unit Number** has been selected for the *Virgo VDC* using the front panel menu system.
4. All devices have been connected to control ports with the proper control cables. Each device has specific cabling requirements, so the appropriate serial cable must connect the *Virgo VDC* and the target device. The cable diagrams for each target device are listed later in this chapter.
5. The correct software drivers have been selected for each target device using the front panel menu system. The *Virgo VDC* uses the software drivers to interpret the commands from the *Hercules Central Processor* and/ or *Cygnus Manual Control System* and then send the appropriate command strings to the devices connected to the control ports.
6. The following information has been noted for entry into the *Configuration File*.
 - a) The **Virgo VDC Unit Number**.
 - b) The **Device Type** for each of the target devices.
 - c) The **Slot Number**, control port number, each target device is connected to.

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CONFIGURATION FILE EXAMPLE

The following example shows the *Configuration File* entries needed to add a *Virgo VDC* and the example target devices connected to it.

The example target devices and the control port number to which they are connected.

Device Control Port #1	Pioneer V7400 DVD Player
Device Control Port #2	Sony D50 Video Projector
Device Control Port #3	Panasonic LCD Video Projector
Device Control Port #4	Fostex VF160 (MIDI Upgrade)

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor			
File: HERCMS.CFG											
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max	
97	DVD	PIONEER V7400 DVD	VD	33	1	0	-	-	0	100	
98	SONYVP	SONY D50 VID PROJ		33	2	0	-	-	0	100	
99	LCD	PANASONIC VID PROJ		33	3	0	-	-	0	100	
100	VF160	FOSTEX VF160		33	4	0	-	-	0	100	
101				0	0	0	-	-	0	100	
102				0	0	0	-	-	0	100	
103				0	0	0	-	-	0	100	
104				0	0	0	-	-	0	100	
105				0	0	0	-	-	0	100	
106				0	0	0	-	-	0	100	
107				0	0	0	-	-	0	100	
108				0	0	0	-	-	0	100	
109				0	0	0	-	-	0	100	
110				0	0	0	-	-	0	100	
111				0	0	0	-	-	0	100	
112				0	0	0	-	-	0	100	

EDIT DEVICE CODE - Enter (1-8) alphanumeric characters (spaces are illegal).
The first character must be alphabetic.

The **Unit Number** is user defined. ECCS recommends using a number greater than 32, since some *Intelligent Controllers*, with internally set **Unit Numbers**, are limited to a range from 1 to 32.

The **Device Code** and **Device Name** are also user defined. The **Device Code** is limited to eight alphanumeric characters, but spaces are not allowed. The **Device Name** can be up to eighteen alphanumeric characters, and spaces are allowed. Both entries should be as descriptive as possible to make them easy to remember.

The **Device Type** will determine how the *Hercules Central Processor* to correctly display and update the device status. See Chapter 4 for more information about valid **Device Types**.

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DEVICE CONTROL

All device commands are issued from the *Hercules Central Processor* and/ or the *Cygnus Manual Control System*. Some commands are fairly general in nature. For example, many **Device Types** will respond to the 'PLAY' command, or the 'LN' (LAMP ON) command. Other commands are device specific, such as the 'REWIND' command which works with S-VHS players but not DVD players.

The *Virgo VDC* performs tests on the commands as they are received. Incorrect commands are not executed and an error message is generated. If the commands are valid, the *Virgo VDC* reissues them in the appropriate command string for the target device. In most cases, the *Virgo VDC* will wait for a response from the target device to determine whether the command was successfully executed at the device level. Errors that are encountered at the device level will be displayed on the front panel LCD, but may not be returned to the *Hercules Central Processor* and displayed on the computer monitor.

Any unused *Virgo VDC* control ports should have the software driver set to 'NO DEVICE'.

The following pages contain specific information about serial control cable wiring, setup, commands available for each target device the *Virgo VDC* can control. The target devices are listed in the same order as they appear in the front panel menu options. Be aware that *Virgo VDC* software has been continuously updated since its creation, and may outpace user manual revisions as new devices and features are added frequently.

Contact **ECCS** for the most current *Virgo VDC* software and user manual in digital form.

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VIRGO VDC ERROR MESSAGES

Just like all **ECCS Intelligent Controllers**, the *Virgo VDC* checks all commands received from the *Hercules Central Processor* before attempting to execute them. If any problems are detected, command execution is terminated and an error is returned to *Hercules Central Processor* to be displayed on the *Hercules* screen. The table on the following page lists the possible errors along with how they appear both on the *Virgo VDC* LCD display and on the *Hercules* screen. The table also provides explanations for the errors and/ or suggestions to fix the problem.

In addition to the primary error checking that occurs at the *Hercules* level described above, there is an additional level of error checking that happens during communications between the *Virgo VDC* and the controlled devices. This secondary level of error checking is totally device dependent.

Many devices do not support error checking, and some *Virgo VDC* drivers do not implement error checking. For these devices, *Virgo VDC* processing ends after the translated command is issued to the controlled device. The *Virgo VDC* display will simply present a 'VIRGO READY' message after the command has been sent.

Many devices do support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to the *Hercules Central Processor*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

Since these error messages are device dependent, the error documentation can be found in the individual device descriptions that follow later in this manual.

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POSSIBLE ERROR MESSAGES GENERATED BY HERCULES / VIRGO VDC COMMUNICATIONS

Errors and Messages	Meaning	Problem or Solution
Virgo LCD: VIRGO READY Hercules: <i>no message</i>	The last Hercules command was good and is being executed.	No problem.
Virgo LCD: ILLEGAL SLOT # Hercules: ILLEGAL SLOT	The Virgo VDC Slot Number of the device in the last command does not exist.	This is a Hercules Configuration File problem. Edit the device entry in the Configuration File and enter the correct slot #.
Virgo LCD: CMD/UNT MISMATCH Hercules: COMMAND/UNIT MISMATCH	The last Hercules command was not valid for the Virgo VDC or any device controlled by the Virgo VDC .	This is a Show File problem. The programmer is using the wrong Hercules command.
Virgo LCD: CMD/PRJ MISMATCH Hercules: COMMAND/DEVICE MISMATCH	The last Hercules command was not valid for the Device, according to the Virgo VDC .	This is a Show File problem. The programmer is using the wrong Hercules command.
Virgo LCD: ARG OUT OF RANGE Hercules: ARGUMENT OUT OF RANGE	The last Hercules command included a numerical argument that is not valid for the Device, according to Virgo VDC .	This is a Show File problem. The programmer is using the wrong Hercules command.
Virgo LCD: COMM BUFFER FULL Hercules: COMM BUFFER FULL	One of the communication buffers in the Virgo VDC has been filled. Commands may be lost.	This happens when Hercules commands are received by the Virgo VDC faster than the controlled devices can accept the translated commands from the Virgo VDC .
Virgo LCD: SYNTAX ERROR Hercules: <i>not applicable</i>	The last ASCII text command was not worded correctly, according to Hercules .	This problem can only occur when using the Virgo VDC and its ASCII text interface with a non- Hercules system.
Virgo LCD: <i>no message</i> Hercules: COMMUNICATION FAILURE, UNIT #	Hercules could not establish contact with the Virgo VDC .	This is a Hercules/ Virgo VDC Communication problem. The Virgo VDC may be powered off. Also could be a bad cable, a bad connection, or a bad communications chip.
Virgo LCD: CHECKSUM ERROR Hercules: CHECKSUM ERROR	The last Hercules command was garbled.	This is a Hercules/ Virgo VDC Communication problem. Could be a bad cable, a bad connection, or a bad communications chip.

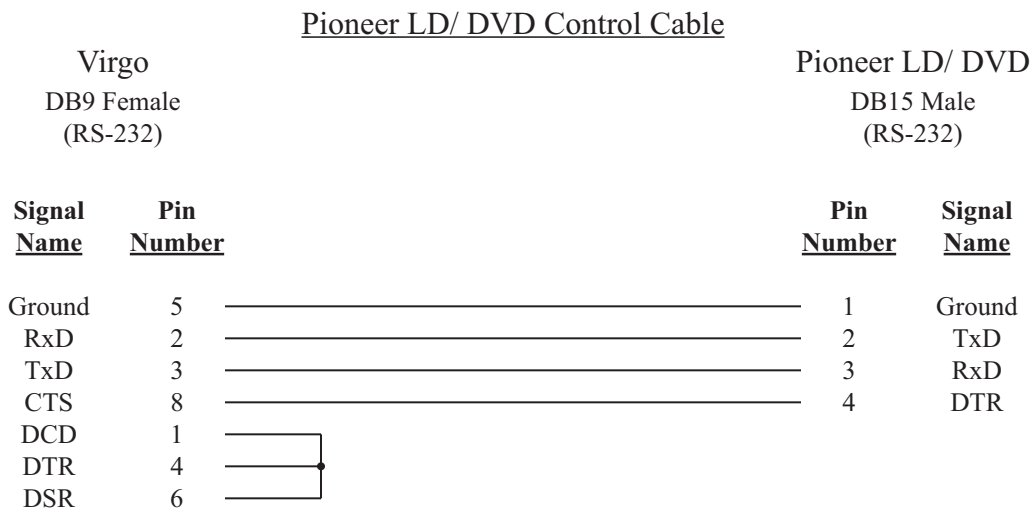
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PIONEER VIDEO DISC PLAYERS

Setup:

Several Pioneer Laser Disc models and the V7400 DVD player use the same *Virgo VDC* software device driver. Using the front panel menu system, select the device number, or control port, to which the Pioneer unit will be connected, and then select the 'VD - PIONEER LD' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:



Configuration File:

The Pioneer unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** with a Laser Disc player in **Slot Number 1** as well as a DVD player in **Slot Number 2**. The **Device Type** is set to **VD**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LD	PIONEER LASER DISC	VD	33	1	0	-	-	0	100
98	DVD	PIONEER V7400 DVD	VD	33	2	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Pioneer Video Disc Settings:

The **RS-232** settings for the Pioneer unit should be set as follows:

4800 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

The Pioneer unit should also be set to present a black image, not blue, in the absence of a video signal. The procedure for changing the **RS-232** setting and default background vary from model to model. Check the user manual for details.

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PIONEER VIDEO DISC COMMANDS (DEVICE DRIVER VD)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for both Pioneer Laser Disc and DVD players unless otherwise noted. Some commands are dependent on the format, or authoring, of the video disc.

Hercules Command	Command Name	Command Description
INIT	Initialize	Initializes video disc by spinning the disc up to speed.
PLAY	Play	Starts disc transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Playback speeds vary with media and device.
PAUSE	Pause	Pauses the disc transport. Loss of video signal. CAV Laser Disc and properly authored DVDs only.
STILL	Still	Pauses the disc transport. Video still image. CAV Laser Disc and properly authored DVDs only.
STEPFWD	Step Forward	Advances one frame. CAV Laser Disc and properly authored DVDs only.
STEPREV	Step Reverse	Reverses one frame. CAV Laser Disc and properly authored DVDs only.
STOP	Stop	Stops disc transport.
REJECT	Reject	Opens or closes tray. Command must be issued twice if disc transport is spinning.
FTIT#	Find Title (1 ≤ # ≤ 99)	Find title #, if available. DVD only.
FC#	Find Chapter (1 ≤ # ≤ 99)	Find chapter #, if available. (1 ≤ # ≤ 79) for Laser Disc.
FF#	Find Frame (1 ≤ # ≤ 199,999)	Find frame #, if available.
FTR#	Find Track (1 ≤ # ≤ 99)	Find track #. Compact Disc only.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss). CLV Laser Discs only. DVD if available.
PTC#	Play to Chapter (0 ≤ # ≤ 99)	Play to chapter #, if available.
PT#	Play to Frame (0 ≤ # ≤ 199,999)	Play to frame #, if available.
PTT#	Play to Track (0 ≤ # ≤ 99)	Play to track #. Compact Disc only.
PTIME	Play to Time (h:mm:ss)	Play to time (h:mm:ss). CLV Laser Discs and properly authored DVDs only.
LN	Lamp On	Turns on, or activates, video display.
LF	Lamp Off	Turns off, or deactivates video display.
DISPON	Display On	Activates chapter and frame display.
DISPOFF	Display Off	Deactivates frame and chapter display.
AUD#	Audio = (0 ≤ # ≤ 7)	Sets audio parameter. Options differ with model check user's manual for details.
PH	Projector Home	Pauses disc transport. Loss of video signal.

VIRGO VIDEO DEVICE CONTROLLER

PIONEER LD/ DVD ERROR MESSAGES

The Pioneer LD/ DVD devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Pioneer LD/ DVD communications are listed in the table on the following page.

VIRGO VIDEO DEVICE CONTROLLER

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC / PIONEER LD/ DVD COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
PIONEER READY	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	This message may appear occasionally under normal circumstances, since the Pioneer will not return an acknowledgement until after the command has been successfully completed. This may take longer than the one second expected by the <i>Virgo VDC</i> . If this error occurs consistently, check the following: <ol style="list-style-type: none"> 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
BAD RESPONSE	The returned information from the Pioneer has been garbled.	This unusual error is indicative of a loose Pioneer/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
DEVICE COMM ERROR	The last Virgo command to the device arrived garbled.	This unusual error is indicative of a loose Pioneer/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
NO DISC	There is no media in the player.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not applicable.	Not all Pioneer commands are applicable for all media types. This error most commonly occurs when using the wrong command for a certain media.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find chapter 59 on a disk that has fewer chapters than that.
PICTURE STOP	This message indicates that the player has stopped because it hit a "picture stop" command programmed into the disc.	This is simply a message, not an error.
OTHER DVC INPUT	The Pioneer received command input from another source such as a bar code reader.	This is simply a message, not an error.
MISSING ARGUMENT	The last command received by the Pioneer lacked some vital information.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.
FOCUS ERROR	The Pioneer laser pick up cannot focus.	This is a Pioneer hardware problem. Try cold starting the Pioneer. If the problem persists, have the player serviced.
CANNOT CONTINUE	The Pioneer cannot continue.	This is a Pioneer hardware problem. Try reinserting the disc. Try cold starting the Pioneer. Check for a jammed mechanism. If the problem persists, have the player serviced.
UNKNOWN DVC ERR	The Pioneer has returned an error code that has not been defined in the <i>Virgo VDC</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

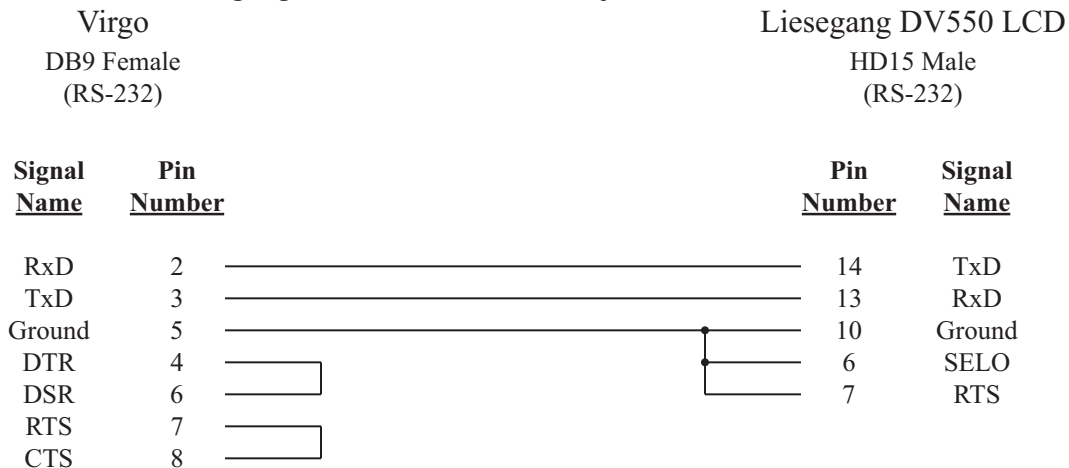
LIESEGANG DV550 LCD VIDEO PROJECTOR

Setup:

Using the front panel menu system, select the device number, or control port, to which the Liesegang LCD projector will be connected, and then select the 'LV - LIESEGANG' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Liesegang DV550 LCD Video Projector Control Cable



Configuration File:

The Liesegang LCD projector must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has a Liesegang LCD projector in **Slot Number 1**. The **Device Type** is purposely left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	LIESEGANG LCD VP		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Liesegang LCD Projector Settings:

The **RS-232** settings for the Liesegang LCD projector should remain at the factory settings as follows:

19200 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

LIESEGANG LCD PROJECTOR COMMANDS (DEVICE DRIVER LV)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Liesegang LCD Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
ISa,v	Input Select a , ($1 \leq v \leq 6$)	ISa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. ($1 \leq v \leq 6$) with the following meanings. v = 1: Composite Video v = 2: S - Video v = 3: RGB 1 v = 4: RGB 2 v = 5: Component Video v = 6: Digital Video

VIRGO VIDEO DEVICE CONTROLLER

BARCO VIDEO PROJECTORS

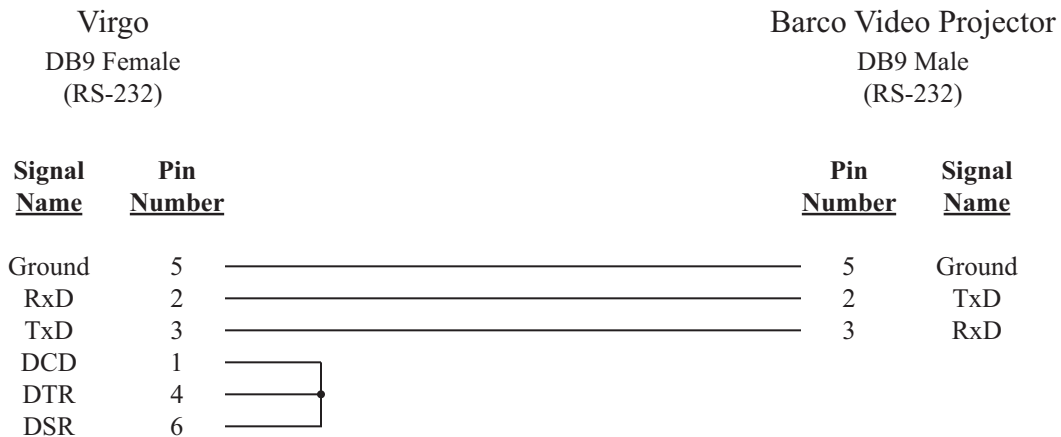
Setup:

Using the front panel menu system, select the device number, or control port, to which the Barco video projector will be connected, and then select the 'BR - BARCO' driver from the available device options. Each Barco video projector has an address, and for use with the *Virgo VDC*, this address must be set to either 1, 2, 3 or 4. This address must also match the *Virgo VDC* control port it is to be connected to. See the Barco user manual for details on changing the projector address. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Barco Video Projector Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The Barco video projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has a Barco video projector in **Slot Number** 1. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	BARCO	BARCO VID PROJCTR		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Barco Video Projector Settings:

The **RS-232** settings for the Barco video projector should be set as follows:

```
9600   Baud
No Parity
8      Data Bits
1      Stop Bit
```

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

BARCO VIDEO PROJECTOR COMMANDS (DEVICE DRIVER BR)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Barco video projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Barco exits ' STANDBY MODE ' and powers up video guns. (Warm up time needed before picture restart.)
PWROFF	Power Off	Barco enters ' STANDBY MODE ' and powers down video guns. (Warm up time needed before picture restart.)
INIT	Initialize	Toggles Barco ' STANDBY MODE '. (Video guns are powered down in ' STANDBY MODE ', so warm up time is needed before picture restart.)
PAUSE	Pause	Toggles Barco ' PARK MODE '. (Video is muted without powering down video guns. Absolute black with instant picture restart.)
LN	Lamp On	Barco exits ' PARK MODE '. Enable picture.
LF	Lamp Off	Barco enters ' PARK MODE '. Disable picture.
DISPON	Display On	Enables information display.
DISPOFF	Display Off	Disables information display.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
CON+	Increment Contrast	Increments picture contrast.
CON-	Decrement Contrast	Decrements picture contrast.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
BRI+	Increment Brightness	Increments picture brightness.
BRI-	Decrement Brightness	Decrements picture brightness.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color intensity to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
ISa,v	Input Select a , (1 ≤ v ≤ 6)	ISa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 6) with the following meanings. v = 1: Composite Video v = 2: S - Video v = 3: RGBS or RGSB Input v = 4: RGB3S or RG3sB Input v = 5: (R-Y)Y(B-Y)S or (R-Y)Ys(B-Y) Input v = 6: (R-Y)Y(B-Y)3S or (R-Y)Y3s(B-Y) Input

VIRGO VIDEO DEVICE CONTROLLER

BARCO VIDEO PROJECTOR ERROR MESSAGES

The Barco devices support limited error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Barco communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC / BARCO COMMUNICATIONS

Virgo VDC LCD Message	Meaning	Problem or Solution
GOOD BARCO COMM	The last command was good and has been executed.	No problem.
BARCO NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Barco power. 2. Barco/ <i>Virgo VDC</i> connection. 3. Barco baud rate.
BAD RESPONSE	The Barco did not like the last command.	Barco/ <i>Virgo VDC</i> communications may have gotten scrambled. If this error crops up and does not clear itself, the <i>Virgo VDC</i> and/ or the Barco may need to be cold booted.
BAD CHKSM RETURN	The returned information from the Barco was garbled.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

RS - 422 (SONY 9 PIN PROTOCOL) COMPATIBLE DEVICES

Setup:

Using the front panel menu system, select the device number, or control port, to which the **RS - 422** device will be connected, and then select the 'rs - rs-422' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-422** operation.

Control Cable:

RS - 422 Compatible Device Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used for runs under 25 feet.)

		Virgo		RS - 422 Compatible Device	
		DB9 Female (RS-422)		DB9 Male (RS-422)	
		<u>Signal Name</u>	<u>Pin Number</u>	<u>Pin Number</u>	<u>Signal Name</u>
Twisted Pair	<input type="checkbox"/>	TxD	3	3	RxD
		/TxD	8	8	/RxD
Twisted Pair	<input type="checkbox"/>	RxD	7	7	TxD
		/RxD	2	2	/TxD
		Ground	1	1	Ground
			Shield Drain		

Configuration File:

The **RS-422** device must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has an **RS-422** compatible ADAT in **Slot Number 1**. The **Device Type** is set to **VT**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	ADAT	RS-422 ADAT	VT	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

RS-422 Device Settings:

The **RS-422** settings for the device should be set as follows:

38400 Baud
 Odd Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-422** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

RS - 422 (SONY 9 PIN PROTOCOL) COMPATIBLE DEVICES COMMANDS (DEVICE DRIVER RS)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for an **RS - 422** compatible device. This is a generic **RS-422** software driver, so most compatible devices with tape transport mechanisms should function adequately. Some commands may not function with all devices.

Hercules Command	Command Name	Command Description
INIT	Initialize	Initializes video tape by loading tape heads.
PLAY	Play	Starts tape transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Playback speeds vary with media and device.
PAUSE	Pause	Pauses the tape transport. Loss of video signal, tape heads stay loaded.
STILL	Still	Pauses the tape transport. Video still image.
FASTFWD	Fast Forward	Fast forwards the tape.
REWIND	Rewind	Rewinds the tape.
RECORD	Record	Sets ' RECORD MODE ' on devices that have record capability.
STOP	Stop	Stops tape transport and unloads tape heads.
REJECT	Reject	Ejects tape.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss).

VIRGO VIDEO DEVICE CONTROLLER

RS - 422 (SONY 9 PIN PROTOCOL) COMPATIBLE DEVICES ERROR MESSAGES

The **RS - 422** devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC/ RS - 422* communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ RS - 422 COMMUNICATIONS

Virgo VDC LCD Message	Meaning	Problem or Solution
422 COMMAND OK	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Device power. 2. Device/ <i>Virgo VDC</i> connection. 3. Device baud rate.
BAD RESPONSE	The returned information from the device has been garbled.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
BAD CHKSM RETURN	The returned information from the device was garbled.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
BAD DEVICE CMD	The last command sent to player was not applicable.	Not all RS-422 commands are applicable for all devices.
ARG OUT OF RANGE	The last command sent to the player included a numerical argument that was out of range for the device or media.	Check the value of the numerical argument.
COMM TIMEOUT ERR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
FRAMING ERROR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
OVERUN ERROR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
PARITY ERROR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
DVC CHKSUM ERROR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
UNKNOWN DVC ERR	The device has returned an error code that has not been defined in the <i>Virgo VDC</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

SONY LASER DISC PLAYERS

Setup:

Using the front panel menu system, select the device number, or control port, to which the Sony unit will be connected, and then select the 'SD - SONY LD' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Sony LD Control Cable

Virgo DB9 Female (RS-232)			Sony Laser Disc DB25 Male (RS-232)	
<u>Signal Name</u>	<u>Pin Number</u>		<u>Pin Number</u>	<u>Signal Name</u>
Ground	5	=====	1	Ground
RxD	2	=====	2	TxD
TxD	3	=====	3	RxD
CTS	8	=====	4	RTS
RTS	7	=====	5	CTS
DTR	4	=====	6	DSR
DSR	6	=====	20	DTR

Configuration File:

The Sony unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Laser Disc player in **Slot Number 1**. The **Device Type** is set to **VD**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LD	SONY LASER DISC	VD	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Sony Laser Disc Settings:

The **RS-232** settings for the Sony unit should be set as follows:

9600 Baud
No Parity
8 Data Bits
1 Stop Bit

The procedure for changing the **RS-232** setting vary from model to model. Check the user manual for details.

VIRGO VIDEO DEVICE CONTROLLER

SONY LASER DISC COMMANDS (DEVICE DRIVER SD)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for Sony Laser Disc players. Some commands are dependent on the format of the Laser Disc.

Hercules Command	Command Name	Command Description
INIT	Initialize	Initializes video disc by spinning the disc up to speed.
PLAY	Play	Starts disc transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Playback speeds vary with media and device.
PAUSE	Pause	Pauses the disc transport. Loss of video signal.
STILL	Still	Pauses the disc transport. Video still image. CAV Laser Disc only.
STEPFWD	Step Forward	Advances one frame. CAV Laser Disc only.
STEPREV	Step Reverse	Reverses one frame. CAV Laser Disc only.
STOP	Stop	Stops disc transport.
REJECT	Reject	Opens or closes tray. Command must be issued twice if disc transport is spinning.
FC#	Find Chapter (1 ≤ # ≤ 79)	Find chapter #, if available.
FF#	Find Frame (1 ≤ # ≤ 199,999)	Find frame #, if available.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss). CLV Laser Discs only.
LN	Lamp On	Turns on, or activates, video display.
LF	Lamp Off	Turns off, or deactivates video display.
DISPON	Display On	Activates chapter and frame display.
DISPOFF	Display Off	Deactivates frame and chapter display.
AUD#	Audio = (0 ≤ # ≤ 7)	Sets audio parameter. Options differ with model check user's manual for details.
MANDVC	Manual Device	Sets unit for manual control.
AUTODVC	Auto Device	Sets unit for automatic control.
PH	Projector Home	Pauses disc transport. Loss of video signal.

VIRGO VIDEO DEVICE CONTROLLER

SONY LASER DISC ERROR MESSAGES

The Sony Laser Disc devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Sony Laser Disc communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ SONY LASER DISC COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
NO MEDIA	There is no media in the player.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not understood.	This error most commonly occurs when using the wrong command for a certain media.
DVC COMMAND ERR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find chapter 59 on a disk that has fewer chapters than that.
ILLEGAL TARGET	The last command received by the Sony was in the wrong format for the media type.	An example of this is sending a FIND FRAME command to a CLV format disk that doesn't use frames to identify location.
UNKNOWN DVC ERR	The Sony has returned an error code that has not been defined in the <i>Virgo</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

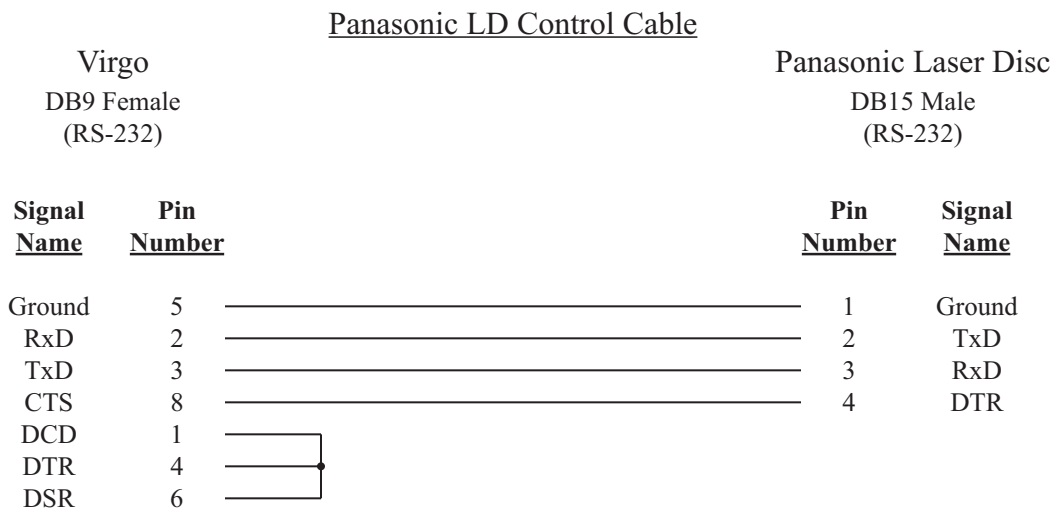
VIRGO VIDEO DEVICE CONTROLLER

PANASONIC LASER DISC PLAYERS

Setup:

Using the front panel menu system, select the device number, or control port, to which the Panasonic unit will be connected, and then select the 'PD - PANASONC LD' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:



Configuration File:

The Panasonic unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Laser Disc player in **Slot Number 1**. The **Device Type** is set to **VD**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LD	PANASNC LASER DISC	VD	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Panasonic Laser Disc Settings:

The **RS-232** settings for the Panasonic unit should be set as follows:

```

9600   Baud
No Parity
8      Data Bits
1      Stop Bit
    
```

The Panasonic unit should also be set to present a black image, not blue, in the absence of a video signal. The procedure for changing the **RS-232** setting and default background vary from model to model. Check the user manual for details.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC LASER DISC COMMANDS (DEVICE DRIVER PD)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for both Panasonic Laser Disc players unless otherwise noted. Some commands are dependent on the format of the Laser Disc.

Hercules Command	Command Name	Command Description
INIT	Initialize	Initializes video disc by spinning the disc up to speed.
PLAY	Play	Starts disc transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Playback speeds vary with media and device.
PAUSE	Pause	Pauses the disc transport. Loss of video signal.
STILL	Still	Pauses the disc transport. Video still image. CAV Laser Disc only.
STEPFWD	Step Forward	Advances one frame. CAV Laser Disc only.
STEPREV	Step Reverse	Reverses one frame. CAV Laser Disc only.
STOP	Stop	Stops disc transport.
REJECT	Reject	Opens or closes tray. Command must be issued twice if disc transport is spinning.
FC#	Find Chapter (1 ≤ # ≤ 79)	Find chapter #, if available.
FF#	Find Frame (1 ≤ # ≤ 999,999)	Find frame #, if available.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss). CLV Laser Discs only.
PTC#	Play to Chapter (1 ≤ # ≤ 79)	Play to chapter #.
PT#	Play to Frame (1 ≤ # ≤ 199,999)	Play to frame # at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Playback speeds vary with media and device.
PTIME	Play to Time (h:mm:ss)	Play to time (h:mm:ss). CLV Laser Discs only.
LN	Lamp On	Turns on, or activates, video display.
LF	Lamp Off	Turns off, or deactivates video display.
DISPON	Display On	Activates chapter and frame display.
DISPOFF	Display Off	Deactivates frame and chapter display.
AUD#	Audio = (0 ≤ # ≤ 7)	Sets audio parameter. Options differ with model check user's manual for details.
MANDVC	Manual Device	Sets unit for manual control.
AUTODVC	Auto Device	Sets unit for automatic control.
PH	Projector Home	Sets unit for automatic control.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC LASER DISC ERROR MESSAGES

The Panasonic LD devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Panasonic LD communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ PANASONIC LD COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
GOOD PAN COMMAND	The last command was good and there will be an attempt made to execute it.	No problem.
PANASONIC READY	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
BAD RESPONSE	The returned information from the Panasonic has been garbled.	This unusual error is indicative of a loose Panasonic/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
PANA COMM ERROR	The last <i>Virgo VDC</i> command to the device arrived garbled.	This unusual error is indicative of a loose Panasonic/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
NO DISC	There is no media in the player.	This is Operator Error.
NO MEDIA	The disk tray is open.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not applicable.	This error most commonly occurs when using the wrong command for a certain media.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find chapter 59 on a disk that has fewer chapters than that.
ARG OUT OF RANGE	The last command received by the device was in the wrong format for the media type.	An example of this is sending a FIND FRAME command to a CLV format disk that doesn't use frames to identify location.
PICTURE STOP	This message indicates that the player has stopped because it hit a "picture stop" command programmed into the disc.	This is simply a message, not an error.
FOCUS ERROR	The Panasonic laser pick up cannot focus.	This is a Panasonic hardware problem. Try cold starting the Panasonic. If the problem persists, have the player serviced.
DISC ROTATION ER	There is a problem with the disc rotation.	This is a Panasonic hardware problem. Try reinserting the disc. Try cold starting the Panasonic. Check for a jammed mechanism. If the problem persists, have the player serviced.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

HEDCO/ LEITCH VIDEO SWITCHER

Setup:

Using the front panel menu system, select the device number, or control port, to which the Hedco/ Leitch Video Switcher will be connected, and then select the 'HC - HEDCO SWITR' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Hedco/ Leitch Video Switcher Control Cable

Virgo		Hedco/ Leitch Video Switcher	
DB9 Female (RS-232)		DB9 Female (RS-232)	
<u>Signal Name</u>	<u>Pin Number</u>	<u>Pin Number</u>	<u>Signal Name</u>
Ground	5	5	Ground
RxD	2	3	TxD
TxD	3	2	RxD

Configuration File:

The Hedco/ Leitch Video Switcher must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Hedco/ Leitch Video Switcher in **Slot Number 1**. The **Device Type** is set to **VS**.

File:	HERCMS.CFG									
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	VSWITCH	HEDCO VID SWITCHER	VS	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Hedco/ Leitch Video Switcher Settings:

The **RS-232** settings for the Hedco/ Leitch Video Switcher should be set as follows:

9600 Baud
No Parity
8 Data Bits
1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

HEDCO/ LEITCH VIDEO SWITCHER (DEVICE DRIVER HC)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Hedco/ Leitch video switcher.

Hercules Command	Command Name	Command Description
INIT	Initialize	Initialize unit using Hedco 'ZERO' command.
isa,v	Input Select ($0 \leq a \leq 8$), ($1 \leq v \leq 8$)	isa,v where a = source number or input, v = destination number or output. ($0 \leq a \leq 8$) is the source number with the following meanings. a = 0: Disconnect destination from all sources. ($1 \leq a \leq 8$) = 2: Connect destination to this source. ($1 \leq v \leq 8$) is the destination. Note: Individual crosspoint connections can be made with this command, but Hedco/ Leitch does not provide a way to disconnect individual destinations from sources. To remove one destination, all destinations must be removed from a source.
SB#	Set Bank ($1 \leq \# \leq 8$)	Set unit for subsequent Input Select, or crosspoint connect, operations.

VIRGO VIDEO DEVICE CONTROLLER

HEDCO/ LEITCH VIDEO SWITCHER ERROR MESSAGES

The Hedco/ Leitch devices support limited error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Hedco/ Leitch communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ HEDCO/ LEITCH COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
HEDCO READY	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Device power. 2. Device/ <i>Virgo VDC</i> connection. 3. Device baud rate.
BAD RESPONSE	The returned information from the device has been garbled or is unexpected.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
HEDCO ERROR ###	The device has returned a device error. The number displayed is the actual error number returned from the device.	Consult the Hedco/ Leitch documentation for a description of the error and a possible remedy.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

SONY VPH-12XX SERIES VIDEO PROJECTORS

Setup:

Using the front panel menu system, select the device number, or control port, to which the Sony VPH-12xx video projector will be connected, and then select the 'sv - SONY VP 422' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-422** operation.

Control Cable:

Sony VPH-12xx Series Video Projector Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used for runs under 25 feet.)

		Virgo		Sony VPH-12xx Video Projector	
		DB9 Female (RS-422)		DB9 Male (RS-422)	
	<u>Signal Name</u>	<u>Pin Number</u>		<u>Pin Number</u>	<u>Signal Name</u>
Twisted Pair	<input type="checkbox"/> TxD	3	_____	3	RxD
	<input type="checkbox"/> /TxD	8	_____	8	/RxD
Twisted Pair	<input type="checkbox"/> RxD	7	_____	7	TxD
	<input type="checkbox"/> /RxD	2	_____	2	/TxD
	Ground	1	_____ Shield Drain	1	Ground

Configuration File:

The Sony VPH-12xx video projector must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has a Sony VPH-12xx video projector in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	SONYVP	SONY VID PROJCTR		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Sony VPH-12xx Video Projector Settings:

The **RS-422** settings for the Sony VPH-12xx video projector should be set as follows:

38400 Baud
 Odd Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-422** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

SONY VPH-12XX SERIES VIDEO PROJECTOR COMMANDS (DEVICE DRIVER SV)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Sony VPH-12xx series video projector.

Hercules Command	Command Name	Command Description
LN	Lamp On	Enable picture. Activates video signal at projector.
LF	Lamp Off	Mute picture. Deactivates video signal at projector.
DISPON	Display On	Enables information display.
DISPOFF	Display Off	Disables information display.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
CON+	Increment Contrast	Increments picture contrast.
CON-	Decrement Contrast	Decrements picture contrast.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
BRI+	Increment Brightness	Increments picture brightness.
BRI-	Decrement Brightness	Decrements picture brightness.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color intensity to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
isa,v	Input Select a , (1 ≤ v ≤ 2)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 2) with the following meanings. v = 1: Composite Video v = 2: RGB Video

VIRGO VIDEO DEVICE CONTROLLER

SONY VPH-12XX SERIES VIDEO PROJECTOR ERROR MESSAGES

The Sony VPH-12xx video projector devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Sony VPH-12xx communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC / SONY VPH-12XX COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
422 COMMAND OK	The last command was good and has been executed.	No problem.
SONY VP READY	The Sony is ready to accept data.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: <ol style="list-style-type: none"> 1. Device power. 2. Device/ <i>Virgo VDC</i> connection. 3. Device baud rate.
BAD RESPONSE	The returned information from the device has been garbled.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
BAD DEVICE CMD	The last command sent to player was not applicable.	Not all RS-422 commands are applicable for all devices.
SONY POWER OFF	The projector power is off and it cannot execute this command.	Send PWRON command then send desired command again.
PROTECT IS ON	The projector is in a protected mode and this command is locked out.	Projector mode must be unprotected before this command will work.
FRAMING ERROR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
DVC CHKSUM ERROR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
UNKNOWN DVC ERR	The device has returned an error code that has not been defined in the Virgo firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC AG-5700/ 5710 S-VHS VIDEO TAPE RECORDER/ PLAYERS

Setup:

Using the front panel menu system, select the device number, or control port, to which the Panasonic unit will be connected, and then select the 'PT - PANA VT 322' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Panasonic AG-5700/ 5710 S-VHS Control Cable

Virgo		Panasonic AG-5700/ 5710 S-VHS	
DB9 Female		DB25 Male	
(RS-232)		(RS-232)	
<u>Signal</u>	<u>Pin</u>	<u>Pin</u>	<u>Signal</u>
<u>Name</u>	<u>Number</u>	<u>Number</u>	<u>Name</u>
Ground	5	1	Ground
RxD	2	2	TxD
TxD	3	3	RxD
RTS	7	4	CTS
CTS	8	5	RTS
DSR	6	6	DTR

Configuration File:

The Panasonic unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the video tape recorder/ player in **Slot Number 1**. The **Device Type** is set to **VT**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	VTAPE	PANASONIC AG-5700	VT	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Panasonic AG-5700/ 5710 S-VHS Settings:

The **RS-232** settings for the Panasonic unit should be set as follows:

9600 Baud
 No Parity
 7 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC AG-5700/ 5710 S-VHS COMMANDS (DEVICE DRIVER PT)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Panasonic AG-5700/ 5710 S-VHS Recorder/ Player.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns player on.
PWROFF	Power Off	Turns player off.
INIT	Initialize	Rewinds video tape and calibrates counter.
PLAY	Play	Starts tape transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value.
PAUSE	Pause	Pauses the tape transport. Loss of video signal.
STILL	Still	Pauses the tape transport. Video still image.
STEPFWD	Step Forward	Advances one frame.
STEPREV	Step Reverse	Reverses one frame.
FASTFWD	Fast Forward	Fast forwards the tape.
REWIND	Rewind	Rewinds the tape.
RECORD	Record	Sets unit to ' RECORD MODE '.
STOP	Stop	Stops tape transport.
REJECT	Reject	Ejects tape.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss).
PTIME	Play to Time (h:mm:ss)	Play to time (h:mm:ss)
BN	Fine Search Mode	Enable ' FINE SEARCH MODE ' for slower, more accurate searches.
BF	Course Search Mode	Enable ' COURSE SEARCH MODE ' for faster, less accurate searches.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC AG-5700/ 5710 S-VHS ERROR MESSAGES

The Panasonic AG-5700/ 5710 devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Panasonic AG-5700/ 5710 communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC / PANASONIC S-VHS COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
GOOD PAN COMMAND	The last command was good and there will be an attempt made to execute it.	No problem.
PANASONIC READY	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
BAD RESPONSE	The returned information from the Panasonic has been garbled.	This unusual error is indicative of a loose Panasonic/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
PANA COMM ERROR	The last <i>Virgo VDC</i> command to the device arrived garbled.	This unusual error is indicative of a loose Panasonic/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
NO MEDIA	There is no tape in the player.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not applicable.	This error most commonly occurs when using the wrong command for a certain media.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find chapter 59 on a disk that has fewer chapters than that.
CONDENSATION	The interior of the player is damp with condensation.	Let the player dry out before attempting to insert a tape.
CANNOT PROCESS	The VCR cannot process the command due to an undefined error.	

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

TV ONE VIDEO SCALER

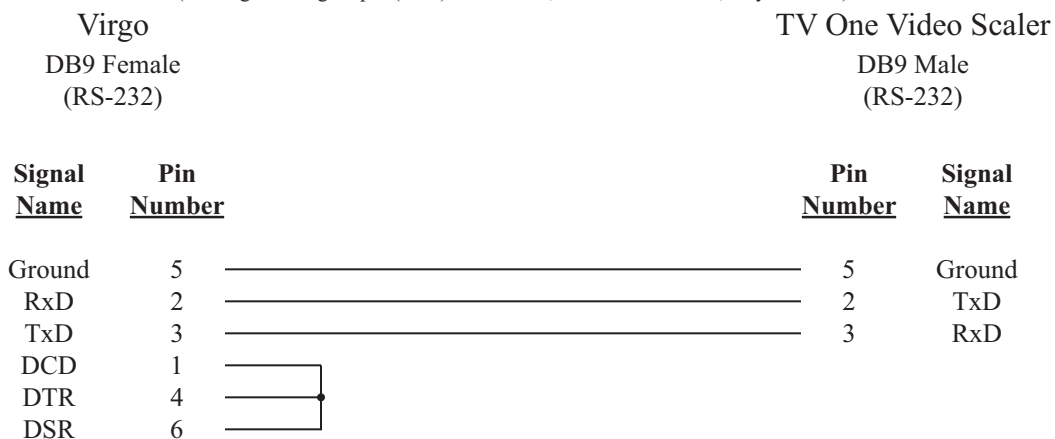
Setup:

Using the front panel menu system, select the device number, or control port, to which the TV One Video Scaler will be connected, and then select the 'TV - TV ONE SCAL' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

TV One Video Scaler Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The TV One Video Scaler projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has a TV One Video Scaler in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	TVONE	TV ONE VIDEO SCALR		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

TV One Video Scaler Settings:

The **RS-232** settings for the TV One Video Scaler should be set as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

TV ONE VIDEO SCALER (DEVICE DRIVER TV)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the TV One Video Scaler.

Hercules Command	Command Name	Command Description
isa,v	Input Select a , ($1 \leq v \leq 3$)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. ($1 \leq v \leq 3$) with the following meanings. v = 1: Composite Video v = 2: S - Video v = 3: RGB Video (PC In)
sa,b	Set a , ($1 \leq b \leq 4$)	sa,b where a = argument 1, b = output resolution. The argument 1 number is a dummy value and will be ignored. ($1 \leq b \leq 4$) with the following meanings. b = 1: VGA (640 x 480) b = 2: SVGA (800 x 600) b = 3: XGA (1024 x 768) b = 4: 480p

VIRGO VIDEO DEVICE CONTROLLER

TV ONE VIDEO SCALER MODEL 1250

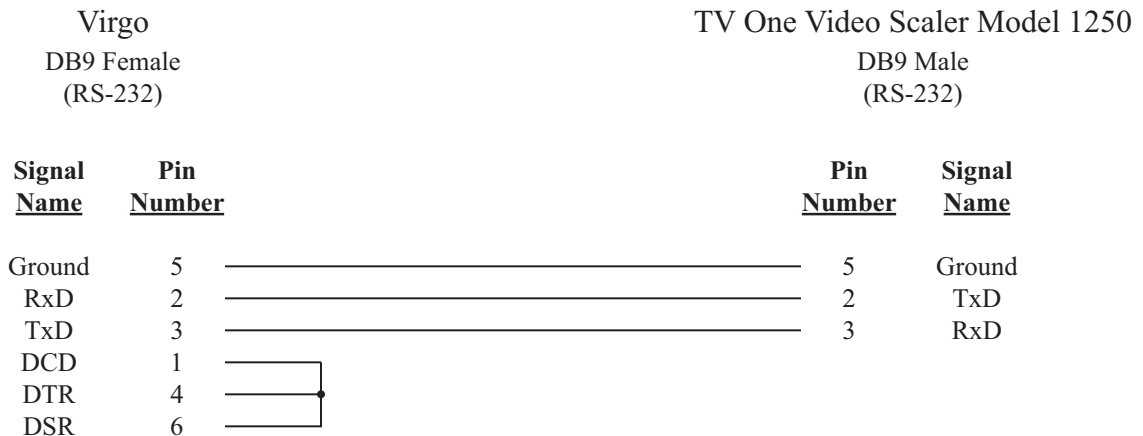
Setup:

Using the front panel menu system, select the device number, or control port, to which the TV One Video Scaler model 1250 will be connected, and then select the 'T2 - tv1 sc-1250' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

TV One Video Scaler Model 1250 Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The TV One Video Scaler projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has a TV One Video Scaler model 1250 in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	TVONE	TV ONE VIDEO SCALR		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

TV One Video Scaler Model 1250 Settings:

The **RS-232** settings for the TV One Video Scaler should be set as follows:

```

9600   Baud
No Parity
8      Data Bits
1      Stop Bit
    
```

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

TV ONE VIDEO SCALER MODEL 1250 (DEVICE DRIVER T2)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the TV One Video Scaler model 1250.

Hercules Command	Command Name	Command Description
isa,v	Input Select a , ($1 \leq v \leq 4$)	<p>isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored.</p> <p>($1 \leq v \leq 4$) with the following meanings.</p> <ul style="list-style-type: none"> v = 1: Composite Video v = 2: S - Video v = 3: Component Video (Y, Cb, Cr) v = 3: RGB Video (PC In)
sa,b	Set a , ($1 \leq b \leq 8$)	<p>sa,b where a = argument 1, b = output resolution. The argument 1 number is a dummy value and will be ignored.</p> <p>($1 \leq b \leq 8$) with the following meanings.</p> <ul style="list-style-type: none"> b = 1: VGA (640 x 480) b = 2: SVGA (800 x 600) b = 3: XGA (1024 x 768) b = 4: 480p b = 5: SXGA (1280 x 1024) b = 6: 576p b = 7: 720p b = 8: 1080i

VIRGO VIDEO DEVICE CONTROLLER

EXTRON CROSSPOINT MATRIX SWITCHER

Setup:

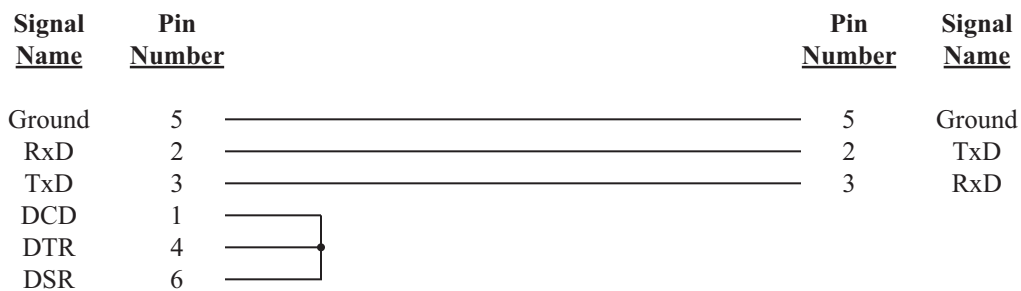
Using the front panel menu system, select the device number, or control port, to which the Extron unit will be connected, and then select the 'EC - EXTRON XPT' driver from the available device options. The *Virgo VDC* control port can be configured for either **RS-232** or **RS-422** operation. If the cable length between the Extron unit and the *Virgo VDC* is greater than 30 feet, **RS-422** operation is recommended.

Control Cable:

Extron Crosspoint Matrix Switcher Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)

Virgo	Extron
DB9 female	DB9 Male
(RS-232)	(RS-232)



Configuration File:

An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has a four channel Extron unit in **Slot Number 1**. Each of the four, eight or sixteen Extron output channels must be assigned a space in the *Configuration File* in order to be accessed. Use the **Branch Number** to differentiate the output channels. The **Device Type** is set to **VS**.

The four, eight or sixteen audio input channels of the Extron unit must also be defined in the *Configuration File* in order to access them. Use the **Branch Number** to differentiate the input audio channels. Start with **Branch Number 21** assigned to input audio channel 1, then increment to **Branch Number 22** for channel 2, and so on. The **Device Type** should be left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	EVO1	EXTRON VIDEO OUT 1	VS	33	1	1	-	-	0	100
98	EVO1	EXTRON VIDEO OUT 2	VS	33	1	2	-	-	0	100
99	EVO1	EXTRON VIDEO OUT 3	VS	33	1	3	-	-	0	100
100	EVO1	EXTRON VIDEO OUT 4	VS	33	1	4	-	-	0	100
101	EAI1	EXTRON AUDIO IN 1		33	1	21	-	-	0	100
102	EAI2	EXTRON AUDIO IN 2		33	1	22	-	-	0	100
103	EAI3	EXTRON AUDIO IN 3		33	1	23	-	-	0	100
104	EAI4	EXTRON AUDIO IN 4		33	1	24	-	-	0	100

VIRGO VIDEO DEVICE CONTROLLER

Extron Crosspoint Matrix Switcher Settings:

The **RS-232** settings for the Extron unit should be set as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

EXTRON CROSSPOINT MATRIX SWITCHER COMMANDS (DEVICE DRIVER EC)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Extron Crosspoint Matrix Switcher.

Hercules Command	Command Name	Command Description
isa,v	Input Select ($0 \leq a \leq 16$), ($0 \leq v \leq 16$)	isa,v where a = audio channel number, v = video channel number. Entering a value from 1 to 16 for either a or v creates a 'tie' between the input and the addressed output. Entering a value of 0 for either a or v causes the addressed output to be disconnected from any input.
sa,b	Set a, b	sa,b where a = argument 1, b = switcher preset. The argument 1 number is a dummy value and will be ignored. Switcher presets must be set up manually before they can be recalled with this command, and can be addressed to any defined switcher channels.
vol=#	Set Volume ($0 \leq \# \leq 127$)	Sets audio level for each audio input channel from minimum (0) to maximum (127). Example settings are as follows. vol = 0: Sets Extron input level to -15dB, or minimum. vol = 100: Sets Extron input level to 0dB, or normal. vol = 127: Sets Extron input level to +9dB, or maximum. Intermediate values are interpolated to produce proportional Extron dB settings.
PH	Projector Home	Resets switcher. Clears all ties and presets, and resets all audio gains to 0dB.

VIRGO VIDEO DEVICE CONTROLLER

EXTRON CROSSPOINT MATRIX SWITCHER ERROR MESSAGES

The Extron Crosspoint Matrix Switcher devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Extron Crosspoint Matrix Switcher communications are listed in the following table.

Possible Error Messages Generated By Virgo VDC/ Extron Crosspoint Communications

Virgo LCD Message	Meaning	Problem or Solution
GOOD EXTRON COMM	The last command was good and has been executed.	No problem
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Device power. 2. Device/ <i>Virgo VDC</i> connection. 3. Device baud rate.
EXTRON NOT READY	This is generated from an Extron 'timeout' error. The exact cause is unclear.	
BAD RESPONSE	The returned information from the device was garbled.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
BAD DEVICE CMD	Illegal command for this configuration.	This device can exist in multiple configurations. Not all commands are valid for all configurations.
ARG OUT OF RANGE	This message indicates one of the following errors with the last command: 1. Invalid input channel number. 2. Invalid function number. 3. Invalid preset number. 4. Invalid output number. 5. Invalid value.	Check the numerical argument used with the last command.
CANNOT CHANGE	The last command sent to the player requested an invalid channel change.	Check the numerical argument used with the last command.
UNKNOWN DVC ERR	The Extron has returned an error code that has not been defined in the <i>Virgo VDC</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

JVC SR-S365U S-VHS VIDEO TAPE RECORDER/ PLAYERS

Setup:

Using the front panel menu system, select the device number, or control port, to which the JVC unit will be connected, and then select the 'JV - JVC SR-s365' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

JVC SR-S365U S-VHS Control Cable

Virgo			JVC SR-S365U S-VHS	
DB9 Female			DB9 Female	
(RS-232)			(RS-232)	
<u>Signal</u>	<u>Pin</u>		<u>Pin</u>	<u>Signal</u>
<u>Name</u>	<u>Number</u>		<u>Number</u>	<u>Name</u>
Ground	5	=====	5	Ground
RxD	2	=====	3	TxD
TxD	3	=====	2	RxD

Configuration File:

The JVC unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has the video tape recorder/ player in **Slot Number** 1. The **Device Type** is set to **VT**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	VTAPE	JVC SR-S365U	VT	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

JVC SR-S365U S-VHS Settings:

The **RS-232** settings for the JVC unit should be set as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

JVC SR-S365U S-VHS COMMANDS (DEVICE DRIVER JV)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the JVC SR-S365U S-VHS Recorder/ Player.

Hercules Command	Command Name	Command Description
PLAY	Play	Starts tape transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value.
PAUSE	Pause	Pauses the tape transport. Video still image.
STILL	Still	Pauses the tape transport. Video still image.
STEPFWD	Step Forward	Advances one frame.
STEPREV	Step Reverse	Reverses one frame.
FASTFWD	Fast Forward	Fast forwards the tape.
REWIND	Rewind	Rewinds the tape.
RECORD	Record	Sets unit to 'RECORD MODE'.
STOP	Stop	Stops tape transport.
REJECT	Reject	Ejects tape.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss).

VIRGO VIDEO DEVICE CONTROLLER

JVC SR-S365U S-VHS ERROR MESSAGES

The JVC SR-S365U VCR supports error checking. For this device, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ JVC SR-S365U VCR communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ JVC SR-S365U COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate
NO MEDIA	There is no media in the player.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not understood.	An inappropriate command was sent to the player.
DVC COMMAND ERR	This error indicates that there has been a problem with the reception of the last command.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find a time that doesn't exist on the tape.
UNKNOWN DVC ERR	The JVC has returned an error code that has not been defined in the Virgo firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

ASHLY PROTEA PROGRAMMABLE AUDIO EQUALIZER

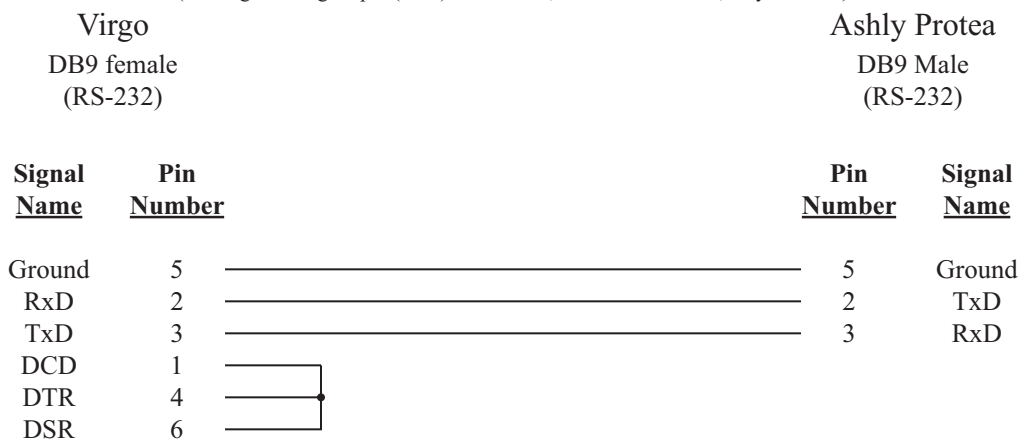
Setup:

Using the front panel menu system, select the device number, or control port, to which the Ashly unit will be connected, and then select the 'AS - ASHLY PROTE' driver from the available device options. The control port should be configured for **RS-232** operation.

Control Cable:

Ashly Protea Programmable Audio Equalizer Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The Ashly unit must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Ashly unit in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	ASHLY	ASHLY PROTEA EQ		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Ashly Protea Programmable Audio Equalizer Settings:

The **RS-232** settings for the Ashly unit should remain at the factory settings as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings.

VIRGO VIDEO DEVICE CONTROLLER

ASHLY PROTEA PROGRAMMABLE AUDIO EQUALIZER COMMANDS (DEVICE DRIVER AS)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Ashly Protea Programmable Audio Equalizer.

Hercules Command	Command Name	Command Description
sa,b	Set a , b	sa,b where a = channel number, b = preset number. This command calls up the appropriate equalizer preset for the requested channel.

VIRGO VIDEO DEVICE CONTROLLER

EXTRON AUDIO VIDEO SWITCHERS

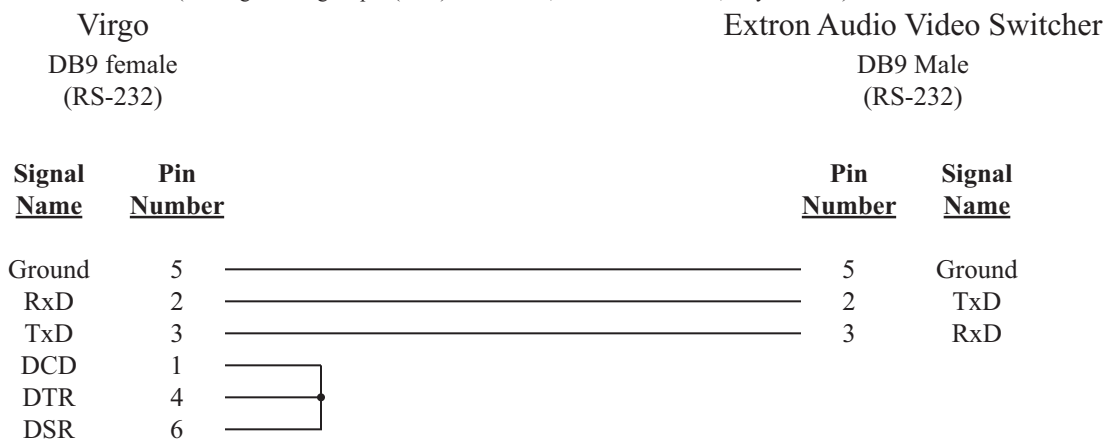
Setup:

Using the front panel menu system, select the device number, or control port, to which the Extron unit will be connected, and then select the 'EX - EXTRON AVS' driver from the available device options. The control port should be configured for **RS-232** operation.

Control Cable:

Extron Audio Video Switcher Control Cable

(A straight through 9 pin (**DB9**) serial cable, **not a null modem**, may be used.)



Configuration File:

The Extron unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has the audio video switcher in **Slot Number** 1. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	EXTRON	EXTRON AV SWITCHER	VD	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Extron Audio Video Switcher Settings:

The **RS-232** settings for the Extron unit should remain at the factory settings as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings.

VIRGO VIDEO DEVICE CONTROLLER

EXTRON AUDIO VIDEO SWITCHER COMMANDS (DEVICE DRIVER EX)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Extron Audio Video Switcher.

Hercules Command	Command Name	Command Description
isa,v	Input Select a , v	isa,v where a = audio channel number, v = video channel number. The audio and video sources can be selected independently.
sa,b	Set a , ($0 \leq b \leq 31$)	sa,b where a = the audio channel, b = audio level. Example settings are as follows. b = 0: Sets minimum gain. b = 16: Sets level to 0dB, or nominal. b = 31: Sets maximum gain.
sb#	Set Bank	Sets both audio and video sources to the same channel.
NXTBANK	Next Bank	Selects next bank up from current bank. Audio and video sources set to same channel.
PH	Projector Home	Selects Input 1 for both audio and video.

VIRGO VIDEO DEVICE CONTROLLER

EXTRON AUDIO VIDEO SWITCHER ERROR MESSAGES

The Extron Audio Video Switcher devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Extron Audio Video Switcher communications are listed in the following table.

Possible Error Messages Generated By Virgo VDC/ Extron A/ V Switcher Communications

Virgo LCD Message	Meaning	Problem or Solution
GOOD EXTRON COMM	The last command was good and has been executed.	No problem.
EXTRON NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Device power. 2. Device/ <i>Virgo VDC</i> connection. 3. Device baud rate.
BAD DEVICE CMD	Illegal command for this configuration.	This device can exist in multiple configurations. Not all commands are valid for all configurations.
ARG OUT OF RANGE	This message indicates one of the following errors with the last command: 1. Invalid input channel number. 2. Invalid function number. 3. Invalid preset number. 4. Invalid output number. 5. Invalid value.	Check the numerical argument used with the last command.
UNKNOWN DVC ERR	The Extron has returned an error code that has not been defined in the <i>Virgo VDC</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

RANE SRM 66 MATRIX MIXER

Setup:

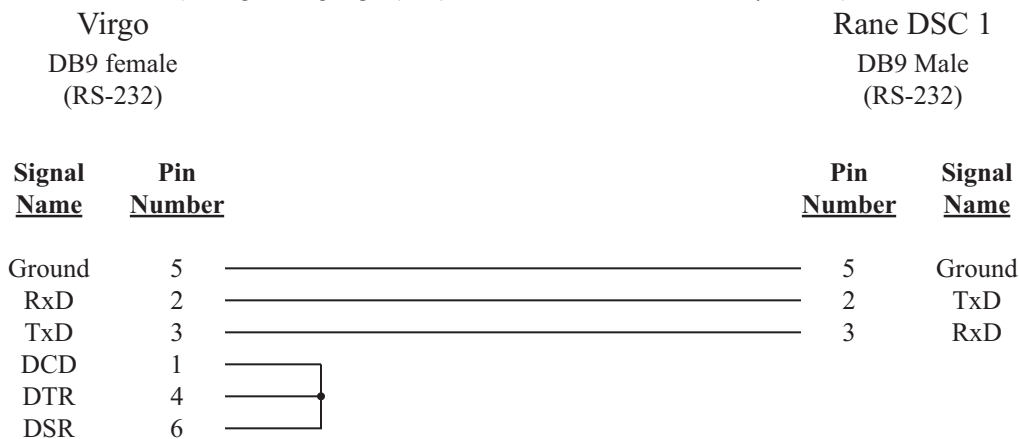
In order for the **UTCS** to control a Rane SRM 66 Matrix Mixer, a Rane DSC 1 must be connected to the Remote Interface Port (RIP) of the SRM 66. The SRM 66 RIP setting must also be changed to either DSC or SLAVE operating mode. The DSC mode provides more functionality, but the SLV mode has proven to be more reliable with the *Virgo VDC*.

Using the front panel menu system, select the device number, or control port, to which the Rane unit will be connected, and then select the 'RN - RANE (DSC)' driver, for DSC Mode, or 'RN - RANE (SLV)' driver, for SLAVE Mode, from the available device options. The control port should be configured for **RS - 232** operation.

Control Cable:

Rane SRM 66 Matrix Mixer Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The Rane unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has the Rane SRM 66 Matrix Mixer in **Slot Number** 1. The **Device Type** is left blank. Each of six Rane output channels must be assigned a space in the *Configuration File*. Use the **Branch Number** to differentiate between the output channels. Start with **Branch Number** 1 assigned to output channel 1, then increment to **Branch Number** 2 for channel 2, and so on.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	RO1	RANE OUTPUT 1		33	1	1	-	-	0	100
98	RO2	RANE OUTPUT 1		33	1	2	-	-	0	100
99	RO3	RANE OUTPUT 1		33	1	3	-	-	0	100
100	RO4	RANE OUTPUT 1		33	1	4	-	-	0	100
101	RO5	RANE OUTPUT 1		33	1	5	-	-	0	100
102	RO6	RANE OUTPUT 1		33	1	6	-	-	0	100

VIRGO VIDEO DEVICE CONTROLLER

RANE SRM 66 MATRIX MIXER

Rane SRM 66 Matrix Mixer Settings:

The **RS-232** settings for the Panasonic unit should remain at the factory settings as follows:

9600 Baud
No Parity
8 Data Bits
1 Stop Bit

Check the user manual for details on changing the **RS-232** settings.

The Rane unit will need to be set up according to the needs of the theater. Rane Memories 1 through 24, if necessary, should be set up to contain the desired patch and level settings for the situation. Rane Group Assignments may need to be altered as well. The Rane default settings assign Output 1 to Group 1, Output 2 to Group 2 and so on. These settings are correct in most settings. Because of the complexity of the Rane, it is important for the installer to be familiar with both the **UTCS** and the Rane SRM 66 Matrix Mixer in order for them to work together correctly.

RANE SRM 66 MATRIX MIXER SLV MODE COMMANDS (DEVICE DRIVER RN)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Rane SRM 66 Matrix Mixer.

Hercules Command	Command Name	Command Description
sa,b	Set a , ($1 \leq b \leq 24$)	sa,b where a = argument 1, b = Rane memory setting. The argument 1 number is a dummy value and will be ignored. This command can be directed at any channel.
VOL=#	Set Volume ($0 \leq \# \leq 100$)	Sets remote audio level for each channel master. vol = 0: Sets minimum gain. vol = 99: Sets maximum gain. Since channel masters are usually set in the Rane to correspond to output channels, this is the most direct way to control output levels. The output channels are determined by the Branch Number in the Configuration File .

VIRGO VIDEO DEVICE CONTROLLER

RANE SRM 66 MATRIX MIXER DSC MODE COMMANDS (DEVICE DRIVER RN)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Rane SRM 66 Matrix Mixer.

Hercules Command	Command Name	Command Description
isa,v	Input Select ($0 \leq a \leq 6$), ($0 \leq v \leq 99$)	isa,v where a = audio channel number, v = audio channel level. This command allows any output channel to have only one input.
sa,b	Set ($0 \leq a \leq 6$), ($0 \leq b \leq 99$)	sa,b where a = the audio channel, b = audio level. This command allows any output channel to have a combination of inputs.
vol=#	Set Volume ($0 \leq \# \leq 99$)	Sets audio level for each channel master. vol = 0: Sets minimum gain. vol = 99: Sets maximum gain. Since channel masters are usually set in the Rane to correspond to output channels, this is the most direct way to control output levels. The output channels are determined by the Branch Number in the Configuration File . In addition, six Groups can also be defined and the Group volume can be set with this command. Groups are determined by the Branch Number in the Configuration File . Assigning Groups is handled during the initial setup of the Rane unit.
MAX=#	Maximum Level ($0 \leq \# \leq 99$)	Sets maximum audio level for each channel master. max = 0: Most limiting. max = 99: No Limits. Since channel masters are usually set in the Rane to correspond to output channels, this is the most direct way to control output levels. The output channels are determined by the Branch Number in the Configuration File .

VIRGO VIDEO DEVICE CONTROLLER

RANE SRM 66 MATRIX MIXER ERROR MESSAGES

The Rane devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Rane communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ RANE SRM 66 COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
RANE READY	The Rane is ready for another command.	No problem.
GOOD RANE COMM	The last command was good and has been executed.	No problem.
RANE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Device power. 2. Device/ <i>Virgo VDC</i> connection. 3. Device baud rate.

VIRGO VIDEO DEVICE CONTROLLER

SANYO LCD VIDEO PROJECTORS

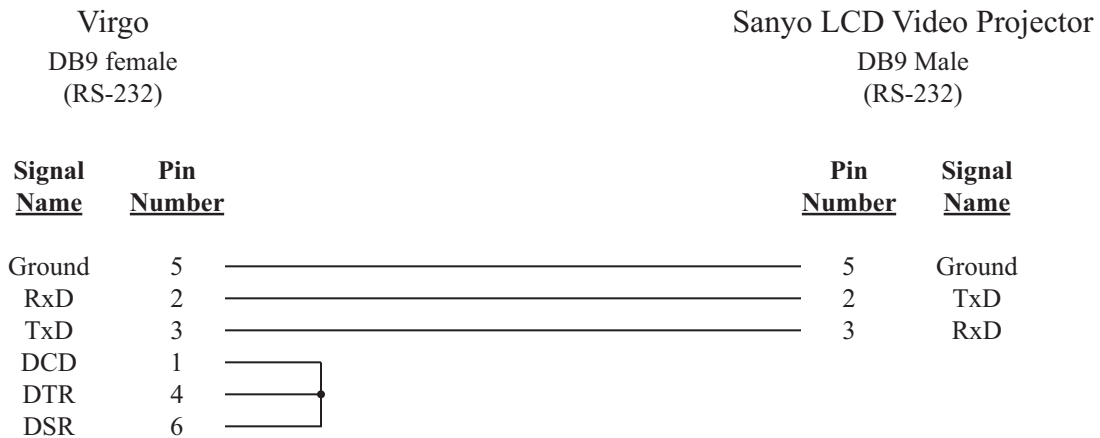
Setup:

Using the front panel menu system, select the device number, or control port, to which the Sanyo LCD video projector will be connected, and then select the 'SN - SANYO VP' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Sanyo LCD Video Projector Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The Sanyo LCD video projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Sanyo LCD video projector in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	SANYO LCD PROJECTR		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Sanyo LCD video projector Settings:

The **RS-232** settings for the Sanyo LCD video projector should be set as follows:

```
19200 Baud
No Parity
8 Data Bits
1 Stop Bit
```

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

SANYO LCD VIDEO PROJECTOR (DEVICE DRIVER SN)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Sanyo LCD Video Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
isa,v	Input Select a , ($1 \leq v \leq 4$)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. ($1 \leq v \leq 4$) with the following meanings. v = 1: CG1 Input v = 2: CG2 Input v = 3: AV1 Input v = 4: AV2 Input

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC T2000 DVD PLAYERS

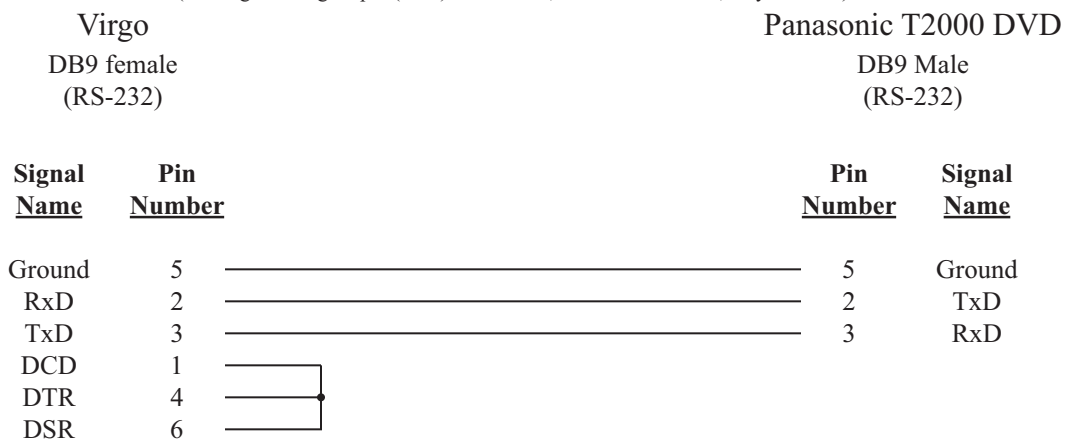
Setup:

Using the front panel menu system, select the device number, or control port, to which the Panasonic unit will be connected, and then select the 'PV - PANA DVD' driver from the available device options. The control port should be configured for **RS-232** operation.

Control Cable:

Panasonic T2000 DVD Control Cable

(A straight through 9 pin (**DB9**) serial cable, **not a null modem**, may be used.)



Configuration File:

The Panasonic unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the DVD player in **Slot Number 1**. The **Device Type** is set to **VD**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LD	PANASONIC DVD	VD	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Panasonic Laser Disc Settings:

The **RS-232** settings for the Panasonic unit should remain at the factory settings as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC T2000 DVD PLAYER COMMANDS (DEVICE DRIVER PV)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for Panasonic DVD players. Some commands are appropriate for DVDs only, some are for music CDs, but most are valid for both types of media.

Note: After the unit is powered on, it will ignore all commands until an 'INIT' command is issued from the *Hercules Central Processor* to enable control via the **RS-232** connection.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns player power on. Will work prior to 'INIT' command.
PWROFF	Power Off	Turns player power off. Will work prior to 'INIT' command.
INIT	Initialize	Sets player to automatic control, activates RS-232 .
PLAY	Play	Starts disc transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Play at one slow forward speed and slow reverse speed, DVD only.
PAUSE	Pause	Pauses the disc transport. Loss of video signal.
STILL	Still	Pauses the disc transport. Video still image. Properly authored DVDs only.
STEPFWD	Step Forward	Advances one frame. Properly authored DVDs only.
STEPREV	Step Reverse	Reverses one frame. Properly authored DVDs only.
FASTFWD	Fast Forward	Scans forward. DVDs only.
REWIND	Scan Reverse	Scans in reverse. DVDs only.
STOP	Stop	Stops disc transport.
REJECT	Reject	Opens or closes tray. Command must be issued twice if disc transport is spinning.
FTIT#	Find Title (1 ≤ # ≤ 99)	Find title #, if available. DVDs only.
FC#	Find Chapter (1 ≤ # ≤ 99)	Find chapter #, if available. DVDs only.
FTR#	Find Track (1 ≤ # ≤ 99)	Cue track #. CDs only.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss). DVDs only.
PTC#	Play to Chapter (1 ≤ # ≤ 99)	Play to chapter #. DVDs only.
PTT#	Play to Track (1 ≤ # ≤ 99)	Play up to track #. CDs only.
PTIME	Play to Time (h:mm:ss)	Play to time (h:mm:ss). CLV Laser Discs only.
DISPON	Display On	Activates chapter and frame display.
DISPOFF	Display Off	Deactivates frame and chapter display.
AUD#	Audio = (0 ≤ # ≤ 7)	Sets audio parameter. Options differ with model check user's manual for details.
MANDVC	Manual Device	Sets player to manual control. Deactivates RS-232 control.
AUTODVC	Auto Device	Sets player to automatic control. Activates RS-232 control.
PH	Projector Home	Sets player to automatic control. Activates RS-232 control.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC T2000 DVD PLAYER ERROR MESSAGES

The Panasonic T2000 DVD players support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Panasonic T2000 DVD communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC/ PANASONIC DVD COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
GOOD PAN COMMAND	The last command was good and there will be an attempt made to execute it.	No problem.
PANASONIC READY	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
BAD RESPONSE	The returned information from the Panasonic has been garbled.	This unusual error is indicative of a loose Panasonic/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
PANA COMM ERROR	The last <i>Virgo VDC</i> command to the device arrived garbled.	This unusual error is indicative of a loose Panasonic/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
NO DISC	There is no media in the player.	This is Operator Error.
NO MEDIA	The disk tray is open.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not applicable.	This error most commonly occurs when using the wrong command for a certain media.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find chapter 59 on a disk that has fewer chapters than that.
ARG OUT OF RANGE	The last command received by the device was in the wrong format for the media type.	An example of this is sending a FIND FRAME command to a CLV format disk that doesn't use frames to identify location.
PICTURE STOP	This message indicates that the player has stopped because it hit a "picture stop" command programmed into the disc.	This is simply a message, not an error.
FOCUS ERROR	The Panasonic laser pick up cannot focus.	This is a Panasonic hardware problem. Try cold starting the Panasonic. If the problem persists, have the player serviced.
DISC ROTATION ER	There is a problem with the disc rotation.	This is a Panasonic hardware problem. Try reinserting the disc. Try cold starting the Panasonic. Check for a jammed mechanism. If the problem persists, have the player serviced.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

ASTROFX DIGITAL PLAYER

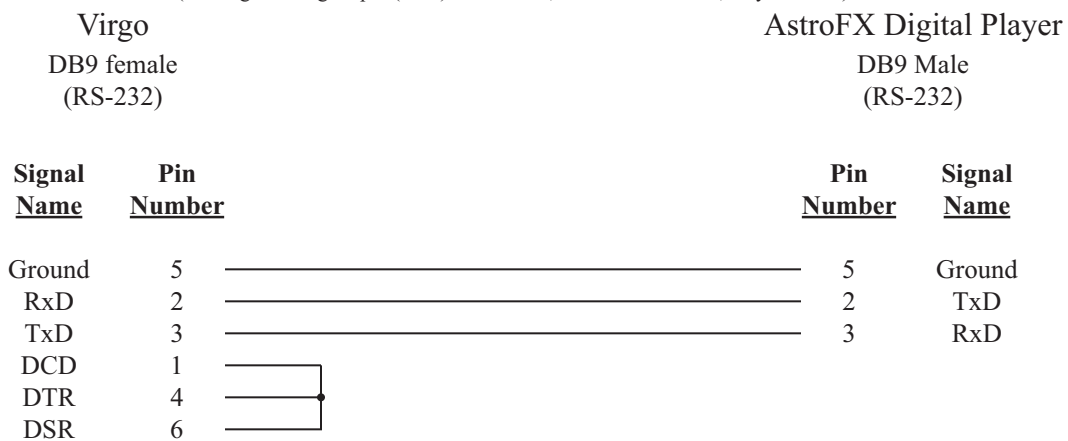
Setup:

Using the front panel menu system, select the device number, or control port, to which the Bowen Productions' AstroFX Digital Player will be connected, and then select the 'AX - ASTRO FX' driver from the available device options. The control port should be configured for **RS-232** operation.

Control Cable:

AstroFX Digital Player Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Configuration File:

The AstroFX Digital Player must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the AstroFX in **Slot Number 1**. The **Device Type** is set to **VT**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	ASTROFX	ASTRO FX DIG PLAYR	VT	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

AstroFX Digital Player Settings:

The **RS-232** settings for the AstroFX Digital Player should remain at the factory settings as follows:

38400 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings.

VIRGO VIDEO DEVICE CONTROLLER

ASTROFX DIGITAL PLAYER COMMANDS (DEVICE DRIVER AX)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for AstroFX Digital Player.

Hercules Command	Command Name	Command Description
INIT	Initialize	Sets video black as default when no video playback.
PLAY	Play	Starts video playback from current location at normal speed, Limit value at +100.
PAUSE	Pause	Pauses video playback. Video still image.
STILL	Still	Pauses video playback. Video still image.
STEPFWD	Step Forward	Advances one cue spot.
STEPREV	Step Reverse	Reverses one cue spot.
REWIND	Rewind	Rewinds video segment.
STOP	Stop	Stops video playback.
FC#	Find Clip (1 ≤ # ≤ 99)	Find clip #.
FTIME	Find Time Index (h:mm:ss)	Find time index (h:mm:ss).

Note: The image clips on the AstroFX unit must in a specific format in order for the **UTCS** to access them. This format is explained below.

1. Clip names are limited to seven alphanumeric characters in length.
2. The first four characters must be 'CHAP'.
3. The last three characters must be a number between **000** and **999**.
4. Valid clip names are 'CHAP009', 'CHAP042', and 'CHAP976'.

VIRGO VIDEO DEVICE CONTROLLER

ASTROFX DIGITAL PLAYER ERROR MESSAGES

The AstroFX devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ AstroFX communications are listed in the following table.

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC / ASTROFX COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
ASTROFX READY	The AstroFX is ready to accept the next command	No problem.
GOOD ASTROFX CMD	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	Check the following: 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
BAD RESPONSE	The returned information from the Pioneer has been garbled.	This unusual error is indicative of a loose device/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
ARG OUT OF RANGE	The last command sent to the player included a numerical argument that was out of range for the device or media.	Check the value of the numerical argument.
ASTROFX EMPTY	There are no video clips in the player.	Put video clips in the player.
NO ASTROFX SPOT	The particular video clip requested does not exist.	Check the name of the video clips in the player.
TRANSPORT IN USE	The transport is busy.	
NO CUING ALLOWED	There is a Playlist in the player. Individual clip cuing is not permitted.	Delete or empty the Playlist.
FX LOAD FAILED	An attempt to load a video clip from the AstroFX has failed.	This error should not occur during normal ECCS operation.
FX SAVE FAILED	An attempt to save a video clip into the AstroFX has failed.	This error should not occur during normal ECCS operation.
FX ERASE FAILED	An attempt to erase a video clip from the AstroFX has failed.	This error should not occur during normal ECCS operation.
FX CLOCK FAILED	The internal AstroFX clock has failed.	This is an AstroFX hardware problem. Try cold starting the unit. If the problem persists, have the unit serviced.
FX ADD FAILED	An attempt to add an event to the Playlist of the AstroFX has failed.	This error should not occur during normal ECCS operation.
UNKNOWN DVC ERR	The Pioneer has returned an error code that has not been defined in the <i>Virgo VDC</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VIDEO DEVICE CONTROLLER

DMX LIGHTING CONTROL

Setup:

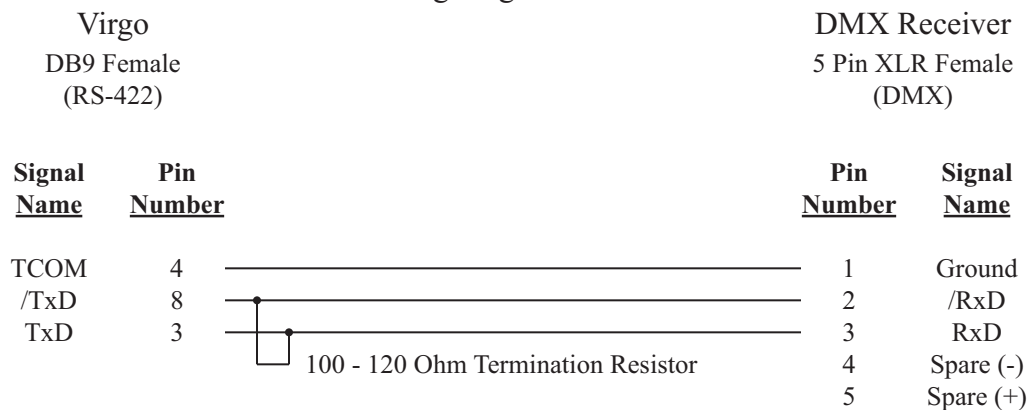
Using the front panel menu system, select the device number, or control port, to which the DMX Lighting Control device will be connected, and then select the 'DM - DMX CONTROL' driver from the available device options. The control port should be configured for **RS-422** operation.

Note: Any *Virgo VDC* control port can assigned as DMX, but only one control port per *Virgo VDC* can actually function as DMX. Each *Virgo VDC* can handle 96 Channels of DMX with 50 updates per second.

The *Virgo VDC* must be equipped with an 8.0000 MHz clock oscillator on the **COMMFOUR** circuit board. If the top line of the *Virgo VDC* ID message on the front panel LCD display ends with the word 'FAST', the correct clock oscillator is installed, and the *Virgo VDC* should be capable of generating the correct form of DMX. If not, the correct clock oscillator will need to be installed before the *Virgo VDC* is ready for DMX operation.

Control Cable:

DMX Lighting Control Cable



Configuration File:

Each active DMX Channel must be assigned in the *Configuration File* in order for the **UTCS** to access it. The **Slot Number** should be equal to the DMX Channel plus ten. For example, the device assigned to DMX Channel 1 should be assigned to **Slot Number** 11, and so on. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has four DMX Channels starting in **Slot Number** 11. The **Device Type** is set to **LO**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	DMX1	DMX CHANNEL 1	LO	33	11	0	-	-	0	100
98	DMX2	DMX CHANNEL 2	LO	33	12	0	-	-	0	100
99	DMX3	DMX CHANNEL 3	LO	33	13	0	-	-	0	100
100	DMX4	DMX CHANNEL 4	LO	33	14	0	-	-	0	100

VIRGO VIDEO DEVICE CONTROLLER

DMX LIGHTING CONTROL

DMX Communication Settings:

The DMX communication parameters will automatically be set as follows:

250000 Baud
No Parity
8 Data Bits
2 Stop Bit

DMX LIGHTING CONTROL COMMANDS (DEVICE DRIVER DM)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. Since DMX is primarily a lighting control protocol, all standard UTCS lamp commands are supported. The following commands are valid for DMX Lighting Control.

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp in ramp of # seconds duration.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.

VIRGO VIDEO DEVICE CONTROLLER

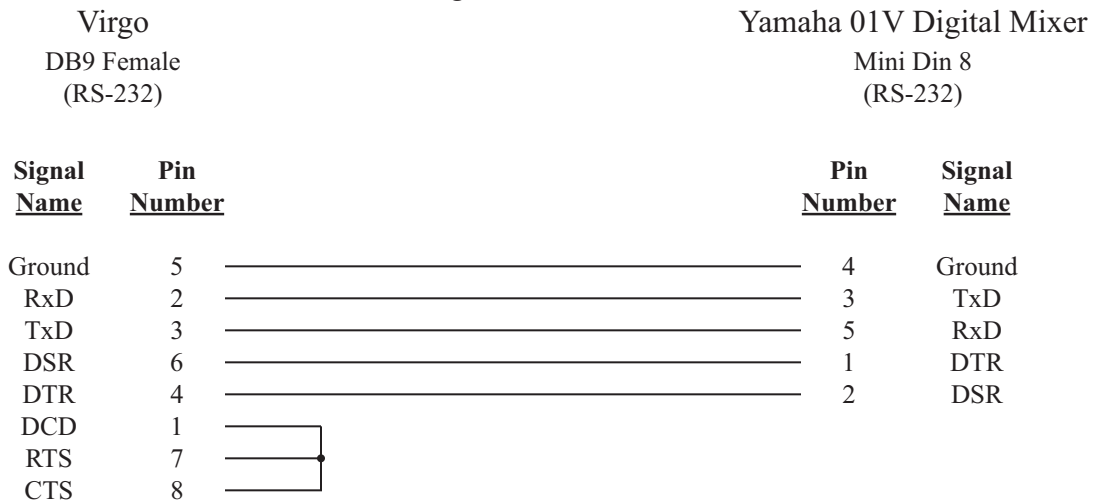
YAMAHA 01V DIGITAL MIXER

Setup:

Using the front panel menu system, select the device number, or control port, to which the Yamaha 01V Digital Mixer will be connected, and then select the 'YM - YAMAHA 01V' driver from the available device options. The control port should be configured for **RS-232** operation.

Control Cable:

Yamaha 01V Digital Mixer Control Cable



Configuration File:

The Yamaha 01V Digital Mixer must be assigned in the *Configuration File* in order for the UTCS to access it. The Yamaha 01V Digital Mixer faders must also be defined in order to control them through the UTCS. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Yamaha 01V Digital Mixer in **Slot Number 1**. The **Device Type** is left blank.

The Yamaha 01V Digital Mixer fader control numbers can be found in the Yamaha user manual in the table entitled 'Control Change Parameter'. The fader's *Configuration File* entry should include the **Unit Number** and **Slot Number** to which the Yamaha 01V Digital Mixer is connected. The entry should also include a **Branch Number** that corresponds to the fader control number. The example below defines fader numbers one, two and three.

Note: It is possible to redefine the fader control numbers at the Yamaha 01V Digital Mixer itself. Changing the Yamaha factory settings can cause *Hercules Show File* playback errors.

File:	HERCMS.CFG									
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	YAMAHA	YAMAHA 01V MIXER		33	1	0	-	-	0	100
98	FADER1	YAMAHA 01V MIXER		33	1	1	-	-	0	100
99	FADER2	YAMAHA 01V MIXER		33	1	2	-	-	0	100
100	FADER3	YAMAHA 01V MIXER		33	1	3	-	-	0	100

VIRGO VIDEO DEVICE CONTROLLER

YAMAHA 01V DIGITAL MIXER

Yamaha 01V Digital Mixer Settings:

The Yamaha 01V Digital Mixer needs to be set to receive remote commands via the 'Host' port. Once the 'Host' is selected, the **RS-232** settings will be automatically set as follows:

38400 Baud
No Parity
8 Data Bits
1 Stop Bit

Check the user manual for details on setting the 'Host' port.

YAMAHA 01V DIGITAL MIXER (DEVICE DRIVER YM)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Yamaha 01 Digital Mixer.

Note: Yamaha Scene Memories are stored in the Program Change Table. Table entries can be easily moved around by the user. If a user moves the entries after a *Show File* has been created, the wrong Scene Memory may be called. The *Show File* will need to be adjusted for the new Yamaha Program Change Table entries.

Hercules Command	Command Name	Command Description
sa,b	Set a, b	sa,b where a = argument 1, b = mixer preset. The argument 1 number is a dummy value and will be ignored. This command calls up the appropriate mixer preset, or Scene Memory.
VOL=#	Set Volume ($0 \leq \# \leq 127$)	This command is addressed to an individual fader and sets the fader to that level in percent. Example settings are as follows. vol = 0: Sets level to minimum gain. vol = 100: Sets level to 0dB, or nominal. vol = 127: Sets level to maximum gain. Intermediate values are interpolated to produce proportional dB settings.

VIRGO VIDEO DEVICE CONTROLLER

MIDI MACHINE CONTROL (MMC)

Setup:

The *Virgo VDC* is capable of generating MIDI Machine Control (MMC) commands that can be used to control many kinds of audio equipment. For the *Virgo VDC* to be MMC capable, it must have the following attributes.

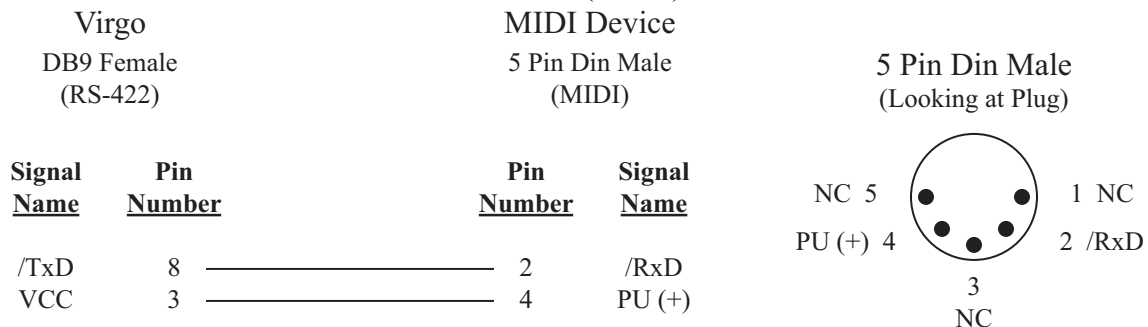
1. A MIDI converter board must be installed. The optional upgrade converts one of the control ports, usually control port four, to MIDI hardware specifications. The control port that is converted must be set for **RS-422** operation.
2. The *Virgo VDC* must be equipped with an 8.0000 MHz clock oscillator on the **COMMFOUR** circuit board. If the top line of the *Virgo VDC* ID message on the front panel LCD display ends with the word 'FAST', the correct clock oscillator is installed, and the *Virgo VDC* should be capable of generating the correct form of MMC. If not, the correct clock oscillator will need to be installed before the *Virgo VDC* is ready for MMC operation.

Using the front panel menu system, select the device number, or control port, to which the MIDI device will be connected, and then select the 'MM - MIDI MC' driver from the available device options. The control port should be configured for **RS-422** operation.

The MIDI device address must be set to 1, or 'RECEIVE ALL'.

Control Cable:

MIDI Machine Control (MMC) Control Cable



Configuration File:

The MIDI device must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has a Fostex VF160 in **Slot Number** 4. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	VF160	FOSTEX VF 160		33	4	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

VIRGO VIDEO DEVICE CONTROLLER

MIDI MACHINE CONTROL (MMC)

MIDI Machine Control (MMC) Settings:

The MMC communication parameters will automatically be set as follows:

31250 Baud
No Parity
8 Data Bits
1 Stop Bit

MIDI MACHINE CONTROL (MMC) COMMANDS (DEVICE DRIVER MM)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following list contains all the supported MMC commands available.

Hercules Command	Command Name	Command Description
PLAY	Play	Starts media transport at normal speed only, Limit value at +100.
PAUSE	Pause	Pauses media transport.
STILL	Still	Pauses media transport.
STEPFWD	Step Forward	Advances one step.
STEPREV	Step Reverse	Reverses one step.
FASTFWD	Fast Forward	Scans forward.
REWIND	Rewind	Scans in reverse.
RECORD	Record	Sets unit to 'RECORD MODE'.
STOP	Stop	Stops media transport.
REJECT	Reject	Ejects media
FC#	Find Soundtrack (0 ≤ # ≤ 99)	Loads soundtrack # for playback. Fostex D108 and D2424 only.
FTIME	Find Time Index (h:mm:ss)	Find time index (h:mm:ss).

VIRGO VIDEO DEVICE CONTROLLER

KODAK EKTA PRO SLIDE PROJECTOR

Setup:

Using the front panel menu system, select the device number, or control port, to which the Kodak EktaPro will be connected, and then select the 'EK - KDK EKTAPRO' driver from the available device options. The control port should be configured for **RS-232** operation.

The control cable should connect the *Virgo VDC* control port to the EktaPro connector labeled 'P-BUSS IN'. Each EktaPro projector must be connected to a separate control port. Daisy chaining EktaPro projectors is not supported.

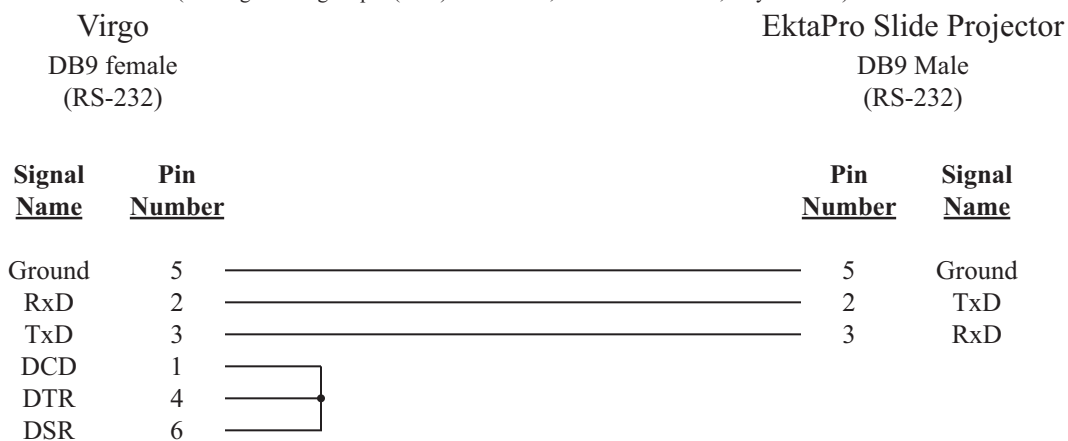
Some EktaPro models have a small 16 position rotary selector switch on the rear panel labeled 'ADDRESS'. The switch must be set to the '0', zero, position in order for the *Virgo VDC* to control it. Some EktaPro models do not have this switch, and are permanently assigned to address '0'. These models should work properly with the *Virgo VDC*. The *Virgo VDC* software driver is designed to work with the earliest EktaPro models to ensure compatibility with all later models, regardless of manufacture date.

Note: When turning on the theater equipment at the start of the day, power should be applied to the EktaPro first, or simultaneously with the *Virgo VDC* controlling it. If the *Virgo VDC* is powered on before the EktaPro, it is possible for the first few projector commands to act in an unpredictable manner.

Control Cable:

EktaPro Slide Projector Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



VIRGO VIDEO DEVICE CONTROLLER

KODAK EKTA PRO SLIDE PROJECTOR

Configuration File:

The EktaPro slide projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has an EktaPro slide projector in **Slot Number 1**. The **Device Type** is set to **SP**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	EKTA1	EKTAPRO SLD PRJ 1	SP	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

EktaPro Slide Projector Settings:

The **RS-232** settings for the EktaPro slide projector will automatically be set as follows:

9600 Baud
No Parity
8 Data Bits
1 Stop Bit

VIRGO VIDEO DEVICE CONTROLLER

KODAK EKTA^{PRO} SLIDE PROJECTOR CONTROL

The *Virgo VDC* can control the following aspects of an EktaPro slide projector:

1. Projector Fan Cycling (Standby)
2. Slide Tray Positioning
3. Projector Lamp Brilliance

Projector Fan Cycling (Standby):

The *Virgo VDC* can instruct the EktaPro to go in and out of 'STANDBY MODE'. Entering 'STANDBY MODE', or **Standby On**, is equivalent to turning the projector fan and lamp off. Exiting 'STANDBY MODE', or **Standby Off** is equivalent to activating the fan, enabling the lamp, and tray motions. In normal operation, the *Virgo VDC* will automatically handle 'STANDBY MODE' operation on an 'as needed' basis, depending on what commands are received from the *Hercules Central Processor* or the *Cygnus Manual Control System*. Alternatively, the user can command the *Virgo VDC* to keep 'STANDBY MODE' off, which will keep the fan running with the lamp and tray motions enabled.

When automatic 'STANDBY MODE' is active, the *Virgo VDC* will automatically issue a **Standby Off** command to a quiescent projector as soon as it receives a command for the slide projector. The slide projector will then remain enabled until 60 seconds have elapsed from the time of the last projector access. After 60 seconds of no access, the *Virgo VDC* will automatically issue a **Standby On** command to the slide projector.

Slide Tray Positioning:

The *Virgo VDC* can instruct the EktaPro to move the slide tray forward or reverse, find the tray home position, or even find a particular slide in random access fashion by means of commands from the *Hercules Central Processor* or the *Cygnus Manual Control System*. The EktaPro can also be commanded to forward the slide tray after the lamp has been faded down.

Projector Lamp Brilliance:

Lamp control for the EktaPro slide projector is very much like lamp control for other devices. The *UTCS* has a very robust set of lamp commands. The functioning of some are obvious, while others may invoke certain automatic features when used with slide projectors.

Some lamp commands, such as **LN (LAMP ON)**, use the '**Limit**' field to set the level that the lamp will ultimately attain. This allows the fade rate and the final lamp level to be set in the same command line.

Other lamp commands, such as **#F (DISSOLVE OFF)**, invoke an automatic slide tray forwarding feature. These commands cause the slide tray to be automatically forwarded after the projector lamp has gone off.

The **F#,# (FLASH LAMP)** command is a special lamp command available for all lamps. Use this command to flash the slide projector lamp at regular intervals. Both on time and off time are programmable, allowing for flash fades and other unique effects. The effect is not visible unless the lamp is turned on with another lamp command.

VIRGO VIDEO DEVICE CONTROLLER

KODAK EKTAPro SLIDE PROJECTOR COMMANDS (DEVICE DRIVER EK)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp in ramp of # seconds duration. Slides are advanced by one tray position at the end of the down ramp.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration. Slides are advanced by one tray position at the end of the down ramp.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration. Slides are advanced by one tray position at the end of the down ramp.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly. Slide trays are not advance when lamp turns off.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly. Slide trays are not advance when lamp turns off.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off. Slide trays do not advance.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. F0,0 disables flashing. This command is a layered command. The lamp must be ramped on with another cue command to see the effect. After the lamp is faded down, a F0,0 cue must be entered to disable the flash.
FS#	Find Slide # (0 ≤ # ≤ 80)	Access slide in tray position #.
PF	Projector Forward	Advances tray position by one slide.
PR	Projector Reverse	Reverses tray position by one slide.
PH	Projector Home	Turns lamp off. Reverses tray until home sensor is reached, or until tray has been reversed 81 times.
PWRON	Power On	Turns EktaPro ' STANDBY MODE ' off. Deactivates automatic ' STANDBY MODE '.
PWROFF	Power Off	Turns EktaPro ' STANDBY MODE ' on if projector is inactive. Activates automatic ' STANDBY MODE '.

VIRGO VIDEO DEVICE CONTROLLER

PANASONIC PT-LxxxU LCD VIDEO PROJECTORS

Setup:

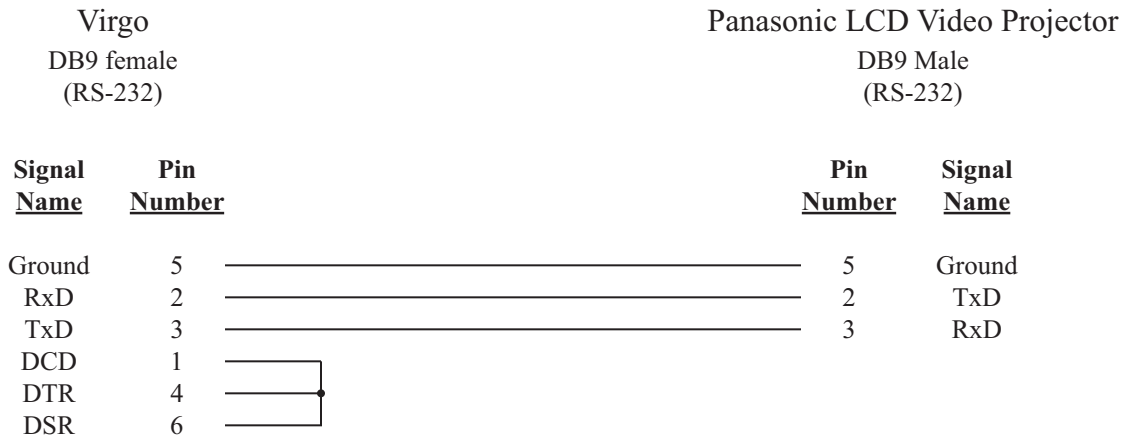
Using the front panel menu system, select the device number, or control port, to which the Panasonic PT-LxxxU LCD video projector will be connected, and then select the 'PP - PAN VID PRJ' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

The Panasonic LCD video projector will use one of the following control cables. Check the serial control connector on the projector to determine which cable should be used.

Control Cable 1:

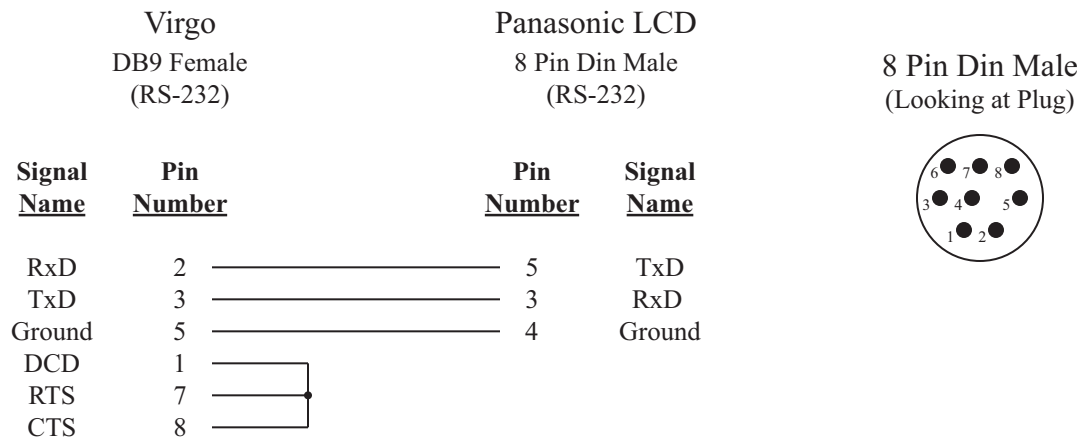
Panasonic PT-LxxxU LCD Video Projector Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used.)



Control Cable 2:

Panasonic LCD Control Cable



VIRGO VIDEO DEVICE CONTROLLER

PANASONIC PT-LxxxU LCD VIDEO PROJECTORS

Configuration File:

The Panasonic PT-LxxxU LCD video projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Panasonic LCD video projector in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	PANASONIC LCD PROJ		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Panasonic PT-LxxxU LCD video projector Settings:

The **RS-232** settings for the Panasonic LCD video projector should be set as follows:

```

9600   Baud
No Parity
8      Data Bits
1      Stop Bit
    
```

Check the user manual for details on changing the **RS-232** settings if necessary.

PANASONIC PT-LxxxU LCD VIDEO PROJECTOR (DEVICE DRIVER PP)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Panasonic LCD Video Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
isa,v	Input Select a , (1 ≤ v ≤ 4)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 4) with the following meanings. v = 1: Composite Video Input v = 2: S - Video Input v = 3: RGB1 Input v = 4: RGB2 Input

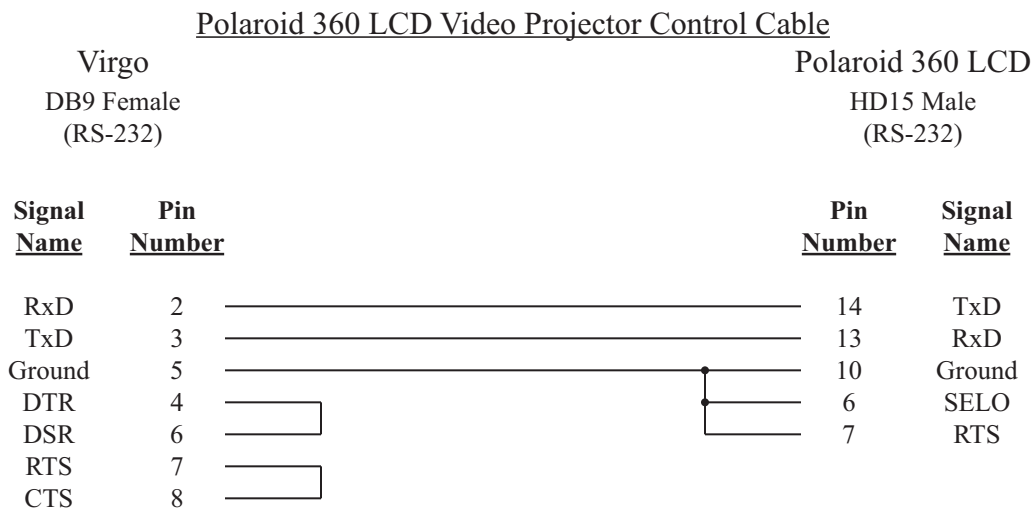
VIRGO VIDEO DEVICE CONTROLLER

POLAROID 360 LCD VIDEO PROJECTORS

Setup:

Using the front panel menu system, select the device number, or control port, to which the Polaroid 360 LCD video projector will be connected, and then select the 'ZP - POLAROID VP' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:



Configuration File:

The Polaroid 360 LCD video projector must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Polaroid 360 LCD video projector in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	POLAROID 360 LCD		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Polaroid 360 LCD video projector Settings:

The **RS-232** settings for the Polaroid 360 LCD video projector should be set as follows:

```
19200 Baud
No Parity
8 Data Bits
1 Stop Bit
```

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

POLAROID 360 LCD VIDEO PROJECTOR (DEVICE DRIVER ZP)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Polaroid 360 LCD Video Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
LN	Lamp On	Turns LCD lamp on.
LF	Lamp Off	Turns LCD lamp off.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
ISA,v	Input Select a , (1 ≤ v ≤ 3)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 3) with the following meanings. v = 1: Composite Video Input v = 2: RGB1 Input v = 3: RGB2 Input

VIRGO VIDEO DEVICE CONTROLLER

PROXIMA LX2 LCD VIDEO PROJECTORS

Setup:

Using the front panel menu system, select the device number, or control port, to which the Proxima LX2 LCD video projector will be connected, and then select the 'PU - PROXIMA' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Use the **RS-232** to Mini Din 8 cable supplied with the LCD projector.

Configuration File:

The Proxima LX2 LCD video projector must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has the Proxima LX2 LCD video projector in **Slot Number** 1. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	PROXIMA LX2 LCD		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Proxima LX2 LCD video projector Settings:

The **RS-232** settings for the Proxima LX2 LCD video projector should be set as follows:

19200 Baud
No Parity
8 Data Bits
1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

PROXIMA LX2 LCD VIDEO PROJECTOR (DEVICE DRIVER PU)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Proxima LCD Video Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
LN	Lamp On	Turns LCD lamp on.
LF	Lamp Off	Turns LCD lamp off.
isa,v	Input Select a , (v = 1 or v = 3)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (v = 1 or v = 3) with the following meanings. v = 1: Composite Video or S - Video Input v = 3: RGB Input

VIRGO VIDEO DEVICE CONTROLLER

Como DVR

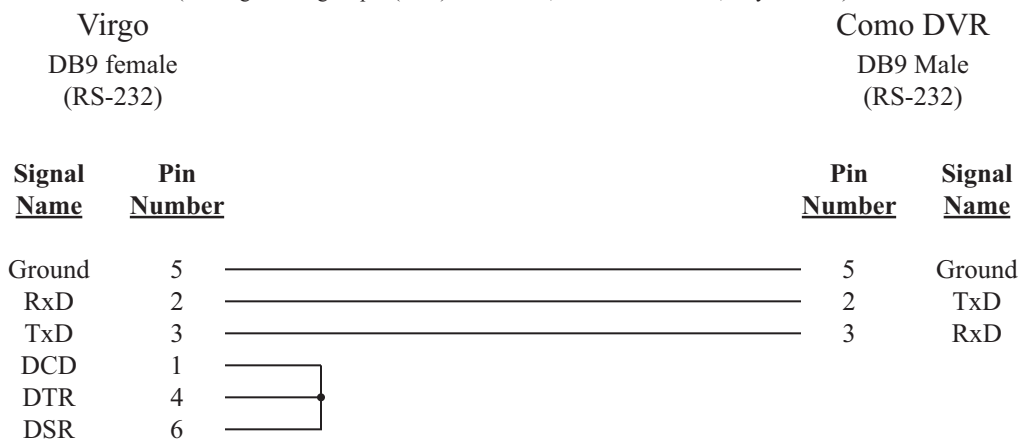
Setup:

Using the front panel menu system, select the device number, or control port, to which the Como DVR will be connected, and then select the 'CM - COMO DVR' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Como DVR Control Cable

(A straight through 9 pin (**DB9**) serial cable, **not a null modem**, may be used.)



Configuration File:

The Como DVR must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 with the Como DVR player in **Slot Number** 1. The **Device Type** is set to **VT**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	COMODVR	COMO DVR	VT	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Como DVR Settings:

The **RS-232** settings for the Como DVR should be set as follows:

19200 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

COMO DVR COMMANDS (DEVICE DRIVER CM)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Como DVR.

Hercules Command	Command Name	Command Description
PLAY	Play	Starts video playback at normal speed only, Limit value at +100.
PAUSE	Pause	Pauses video playback. Loss of video signal.
STILL	Still	Pauses video playback. Video still image.
STEPFWD	Step Forward	Advances one frame.
FASTFWD	Fast Forward	Scans forward.
REWIND	Rewind	Scans in reverse.
RECORD	Record	Sets unit to 'RECORD MODE'.
STOP	Stop	Stops video playback.
FTR#	Find Track (1 ≤ # ≤ 99)	Find Track #.
FTIME	Find Time Index (h:mm:ss)	Find time index (h:mm:ss).

VIRGO VIDEO DEVICE CONTROLLER

SONY VPH-DXX SERIES VIDEO PROJECTOR

Setup:

Using the front panel menu system, select the device number, or control port, to which the Sony VPH-Dxx Series video projector will be connected, and then select the 'sq - sony d50' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-422** operation.

Control Cable:

Sony VPH-Dxx Series Video Projector Control Cable

(A straight through 9 pin (DB9) serial cable, **not a null modem**, may be used for runs under 25 feet.)

Virgo	Sony VPH-Dxx Video Projector
DB9 Female	DB9 Male
(RS-422)	(RS-422)

	<u>Signal</u>	<u>Pin</u>		<u>Pin</u>	<u>Signal</u>
	<u>Name</u>	<u>Number</u>		<u>Number</u>	<u>Name</u>
Twisted Pair	⌊ TxD	3	_____	3	RxD
	⌊ /TxD	8	_____	8	/RxD
Twisted Pair	⌊ RxD	7	_____	7	TxD
	⌊ /RxD	2	_____	2	/TxD
	Ground	1	_____ Shield Drain	1	Ground

Configuration File:

The Sony VPH-Dxx Series video projector must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 with the Sony video projector in **Slot Number** 1. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	SONYCRT	SONY D50 VID PROJ		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Sony VPH-Dxx Series Video Projector Settings:

The **RS-422** settings for the Sony VPH-Dxx Series video projector should be set as follows:

```
38400 Baud
Even Parity
8 Data Bits
1 Stop Bit
```

Check the user manual for details on changing the **RS-422** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

SONY VPH-DXX SERIES VIDEO PROJECTOR COMMANDS (DEVICE DRIVER SQ)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Sony VPH-Dxx Series video projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Sony exits 'STANDBY MODE' and powers up video guns. Warm up time needed before picture restart.
PWROFF	Power Off	Sony enters 'STANDBY MODE' and powers down video guns. Warm up time needed before picture restart.
LN	Lamp On	Enable picture.
LF	Lamp Off	Mute picture. Video is muted without powering down video guns. Absolute black with instant picture restart.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
isa,v	Input Select a , (1 ≤ v ≤ 3)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 3) with the following meanings. v = 1: Composite Video Input v = 2: RGB1 Input v = 3: RGB2 Input

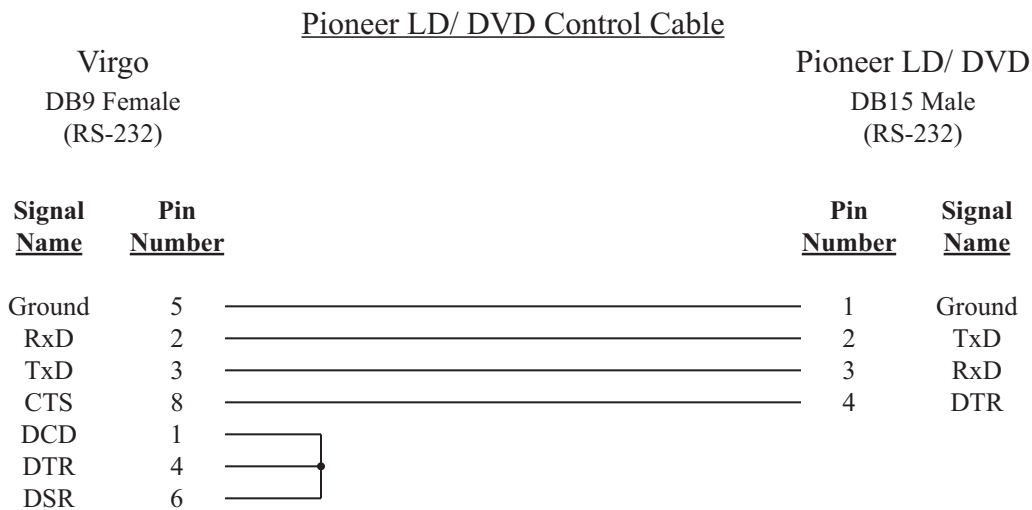
VIRGO VIDEO DEVICE CONTROLLER

PIONEER DVD V5000

Setup:

Using the front panel menu system, select the device number, or control port, to which the Pioneer V5000 unit will be connected, and then select the 'P5 - PIONEER DVD' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:



Configuration File:

The Pioneer V5000 unit must be assigned in the *Configuration File* in order for the UTCS to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** with a DVD player in **Slot Number 1**. The **Device Type** is set to **VD**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	DVD	PIONEER V5000 DVD	VD	33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Pioneer DVD V5000 Settings:

The **RS-232** settings for the Pioneer unit should be set as follows:

9600 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

The Pioneer unit should also be set to present a black image, not blue, in the absence of a video signal. The procedure for changing the **RS-232** setting and default background vary from model to model. Check the user manual for details.

VIRGO VIDEO DEVICE CONTROLLER

PIONEER DVD V5000 COMMANDS (DEVICE DRIVER P5)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Pioneer DVD V5000 player. Some commands are dependent on the format, or authoring, of the DVD.

Hercules Command	Command Name	Command Description
INIT	Initialize	Initializes video disc by spinning the disc up to speed.
PLAY	Play	Starts disc transport at normal speed if Limit value at +100. Play at non standard speeds by specifying new Limit value. Playback speeds vary with DVD authoring.
PAUSE	Pause	Pauses the disc transport. Loss of video signal.
STILL	Still	Pauses the disc transport. Video still image.
STEPFWD	Step Forward	Advances one frame.
STEPREV	Step Reverse	Reverses one frame.
STOP	Stop	Stops disc transport.
REJECT	Reject	Opens or closes tray. Command must be issued twice if disc transport is spinning.
FTIT#	Find Title (1 ≤ # ≤ 99)	Find title #, if available.
FC#	Find Chapter (1 ≤ # ≤ 99)	Find chapter #, if available.
FF#	Find Frame (1 ≤ # ≤ 199,999)	Find frame #, if available.
FTR#	Find Track (1 ≤ # ≤ 99)	Find track #. Compact Disc only.
FTIME	Find Time (h:mm:ss)	Find time (h:mm:ss), if available.
PTC#	Play to Chapter (1 ≤ # ≤ 99)	Play to chapter #, if available.
PT#	Play to Frame (1 ≤ # ≤ 199,999)	Play to frame #, if available.
PTT#	Play to Track (1 ≤ # ≤ 99)	Play to track #. Compact Disc only.
PTIME	Play to Time (h:mm:ss)	Play to time (h:mm:ss), if available.
LN	Lamp On	Turns on, or activates, video display.
LF	Lamp Off	Turns off, or deactivates video display.
DISPON	Display On	Activates chapter and frame display.
DISPOFF	Display Off	Deactivates frame and chapter display.
AUD#	Audio = (0 ≤ # ≤ 7)	Sets audio parameter. Check user's manual for details.
PH	Projector Home	Pauses disc transport. Loss of video signal.

VIRGO VIDEO DEVICE CONTROLLER

PIONEER LD/ DVD ERROR MESSAGES

The Pioneer LD/ DVD devices support error checking. For these devices, the *Virgo VDC* will wait for a reply after it sends a command. This reply may simply be an acknowledgement that the command was successfully received and is being executed, or it may be an error. In any case, the *Virgo VDC* will display a message on the LCD display that relates to the returned message. This message is not relayed back to *Hercules*, so the *Virgo VDC* LCD display is the only source of information on the success or failure of the command. These messages can be a valuable aid when troubleshooting problems.

The errors and messages that can be generated and displayed during *Virgo VDC*/ Pioneer LD/ DVD communications are listed in the table on the following page.

VIRGO VIDEO DEVICE CONTROLLER

POSSIBLE ERROR MESSAGES GENERATED BY VIRGO VDC / PIONEER LD/ DVD COMMUNICATIONS

Virgo LCD Message	Meaning	Problem or Solution
PIONEER READY	The last command was good and has been executed.	No problem.
DEVICE NOT READY	A command has been sent to the device. However, there has been no response from the device within the expected time period of one second.	This message may appear occasionally under normal circumstances, since the Pioneer will not return an acknowledgement until after the command has been successfully completed. This may take longer than the one second expected by the <i>Virgo VDC</i> . If this error occurs consistently, check the following: <ol style="list-style-type: none"> 1. Player power. 2. Player/ <i>Virgo VDC</i> connection. 3. Player baud rate.
BAD RESPONSE	The returned information from the Pioneer has been garbled.	This unusual error is indicative of a loose Pioneer/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
DEVICE COMM ERROR	The last Virgo command to the device arrived garbled.	This unusual error is indicative of a loose Pioneer/ <i>Virgo VDC</i> connection or a failure of some communication hardware.
NO DISC	There is no media in the player.	This is Operator Error.
BAD DEVICE CMD	The last command sent to player was not applicable.	Not all Pioneer commands are applicable for all media types. This error most commonly occurs when using the wrong command for a certain media.
TARGET NOT FOUND	The last command sent to the player included a numerical argument that was out of range for the particular disc.	An example of this is sending a command to find chapter 59 on a disk that has fewer chapters than that.
PICTURE STOP	This message indicates that the player has stopped because it hit a "picture stop" command programmed into the disc.	This is simply a message, not an error.
OTHER DVC INPUT	The Pioneer received command input from another source such as a bar code reader.	This is simply a message, not an error.
MISSING ARGUMENT	The last command received by the Pioneer lacked some vital information.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.
FOCUS ERROR	The Pioneer laser pick up cannot focus.	This is a Pioneer hardware problem. Try cold starting the Pioneer. If the problem persists, have the player serviced.
CANNOT CONTINUE	The Pioneer cannot continue.	This is a Pioneer hardware problem. Try reinserting the disc. Try cold starting the Pioneer. Check for a jammed mechanism. If the problem persists, have the player serviced.
UNKNOWN DVC ERR	The Pioneer has returned an error code that has not been defined in the <i>Virgo VDC</i> firmware driver.	This error indicates a problem with the firmware device driver. Contact ECCS with details on what actions caused this message to appear.

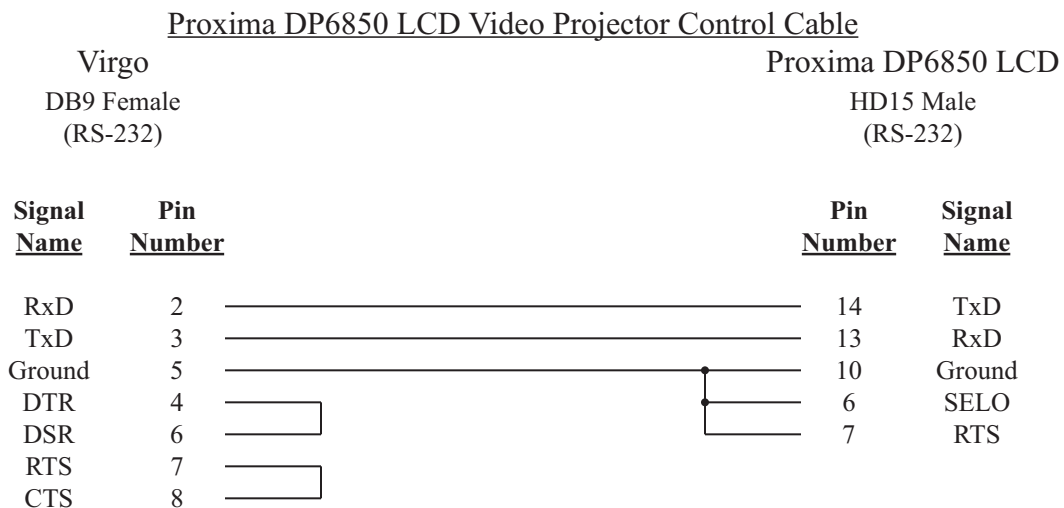
VIRGO VIDEO DEVICE CONTROLLER

PROXIMA DP6850 LCD VIDEO PROJECTOR

Setup:

Using the front panel menu system, select the device number, or control port, to which the Proxima DP6850 LCD video projector will be connected, and then select the 'DP - PROX 6850' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:



Configuration File:

The Proxima DP6850 LCD video projector must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** and has the Proxima DP6850 LCD video projector in **Slot Number 1**. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	PROXIMA DP6850 LCD		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

Proxima DP6850 LCD video projector Settings:

The **RS-232** settings for the Proxima DP6850 LCD video projector should be set as follows:

```

9600   Baud
No Parity
8      Data Bits
1      Stop Bit
    
```

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

PROXIMA DP6850 LCD VIDEO PROJECTOR (DEVICE DRIVER DP)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Proxima DP6850 LCD Video Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
isa,v	Input Select a , (1 ≤ v ≤ 3)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 3) with the following meanings. v = 1: Composite Video Input v = 2: RGB1 Input v = 3: RGB2 Input

VIRGO VIDEO DEVICE CONTROLLER

ASK PROXIMA C160/ C180 LCD VIDEO PROJECTOR (ALSO INFOCUS LP540/ 640 LCD VP)

Setup:

Using the front panel menu system, select the device number, or control port, to which the ASK Proxima C160/ C180 LCD video projector will be connected, and then select the 'IF - IN-FOCUS' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

ASK Proxima C160/ C180 LCD Video Projector Control Cable

Virgo		ASK Proxima C160/ C180 LCD	
DB9 Female		DB9 Female	
(RS-232)		(RS-232)	
Signal	Pin		Pin
<u>Name</u>	<u>Number</u>		<u>Number</u>
			<u>Signal</u>
			<u>Name</u>
Ground	5	=====	5
RxD	2	=====	3
TxD	3	=====	2
			Ground
			TxD
			RxD

Configuration File:

The ASK Proxima C160/ C180 LCD video projector must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number** 33 and has the ASK Proxima C160/ C180 LCD video projector in **Slot Number** 1. The **Device Type** is left blank.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LCD	ASK PROXIMA LCD		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

ASK Proxima C160/ C180 LCD video projector Settings:

The **RS-232** settings for the ASK Proxima C160/ C180 LCD video projector should be set as follows:

19200 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

ASK PROXIMA C160/ C180 LCD VIDEO PROJECTOR (DEVICE DRIVER IF)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the ASK Proxima C160/ C180 LCD Video Projector.

Hercules Command	Command Name	Command Description
PWRON	Power On	Turns projector power on.
PWROFF	Power Off	Turns projector power off.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
isa,v	Input Select a , (1 ≤ v ≤ 4)	isa,v where a = audio channel number, v = video channel number. The audio input number is a dummy value and will be ignored. (1 ≤ v ≤ 3) with the following meanings. v = 1: Composite Video Input v = 2: RGB1 Input v = 3: RGB2 Input

VIRGO VIDEO DEVICE CONTROLLER

TV ONE MPG-200 DVR

Setup:

Using the front panel menu system, select the device number, or control port, to which the TV One MPG-200 DVR will be connected, and then select the 'c2 - CM MPEG-200' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

TV One MPG-200 DVR Control Cable

Virgo		TV One MPG-200 DVR	
DB9 Female (RS-232)		DB9 Female (RS-232)	
<u>Signal Name</u>	<u>Pin Number</u>	<u>Pin Number</u>	<u>Signal Name</u>
Ground	5	5	Ground
RxD	2	3	TxD
TxD	3	2	RxD

Configuration File:

The TV One MPG-200 DVR must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** with the TV One MPG-200 DVR player in **Slot Number 1**. The **Device Type** is left blank.

File:	HERCMS.CFG									
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	DVR	TV ONE MPG-200 DVR		33	1	0	-	-	0	100
98				0	0	0	-	-	0	100
99				0	0	0	-	-	0	100
100				0	0	0	-	-	0	100

TV One MPG-200 DVR Settings:

The **RS-232** settings for the TV One MPG-200 DVR should be set as follows:

19200 Baud
No Parity
8 Data Bits
1 Stop Bit

Check the user manual for details on changing the **RS-232** settings if necessary.

VIRGO VIDEO DEVICE CONTROLLER

TV ONE MPG-200 DVR COMMANDS (DEVICE DRIVER C2)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the TV One MPG-200 DVR.

Hercules Command	Command Name	Command Description
PLAY	Play	Starts video playback at normal speed only, Limit value at +100. If a second PLAY command is issued during playback, the unit will toggle to PAUSE . Issuing another PLAY command will resume playback.
PAUSE	Pause	Pauses video playback. Video still image.
STILL	Still	Pauses video playback. Video still image.
STEPFWD	Step Forward	Advances one frame.
FASTFWD	Fast Forward	Scans forward.
REWIND	Rewind	Scans in reverse.
RECORD	Record	Sets unit to ' RECORD MODE '. Begins recording at next available track #.
STOP	Stop	Stops video playback. Video still image. DVR returns to beginning of first recorded track. Second STOP command clears still image.
FC#	Find Chapter (1 ≤ # ≤ 99)	Find track #, and still image on first frame.
FTR#	Find Track (1 ≤ # ≤ 9999)	Find track #, and still image on first frame.
FTIME	Find Time (hh:mm:ss)	Find time (hh:mm:ss) within last track searched.
DISPON	Display On	Activates onscreen display (OSD).
DISPOFF	Display Off	Deactivates onscreen display (OSD).
PH	Projector Home	Stops video playback. Clears video still image. Turns off onscreen display (OSD), if on.

VIRGO VIDEO DEVICE CONTROLLER

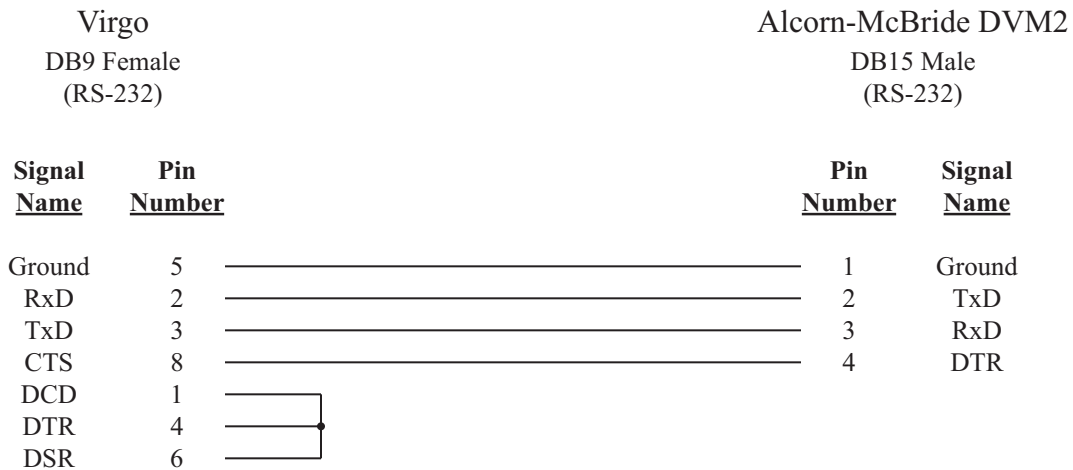
ALCORN/ McBRIDE DVM2

Setup:

Using the front panel menu system, select the device number, or control port, to which the DVM2 unit will be connected, and then select the 'AB - ALCORN/MCBBR' driver from the available device options. The *Virgo VDC* control port should be configured for **RS-232** operation.

Control Cable:

Alcorn-McBride DVM2 Control Cable



Configuration File:

The DVM2 unit must be assigned in the *Configuration File* in order for the **UTCS** to access it. An example *Configuration File* entry is shown below. The example uses a *Virgo VDC* assigned to **Unit Number 33** with a Laser Disc player in **Slot Number 1**, a DVD player in **Slot Number 2**, and the DVM2 in **Slot Number 3**. The **Device Type** is set to **VD**.

File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
97	LD	PIONEER LASER DISC	VD	33	1	0	-	-	0	100
98	DVD	PIONEER V7400 DVD	VD	33	2	0	-	-	0	100
99	DVM2	DVM2 MPEG-2 PLAYER	VD	33	3	0	-	-	0	100
100				0	0	0	-	-	0	100

Alcorn-McBride DVM2 MPEG-2 Player Settings:

The **RS-232** settings for the DVM2 unit should be set as follows:

```

9600   Baud
No Parity
8      Data Bits
1      Stop Bit
    
```

The DVM2 can be configured for different baud rates and protocols via dip switches located on the rear panel. The *Virgo VDC* driver is expecting the factory default settings.

VIRGO VIDEO DEVICE CONTROLLER

ALCORN-McBRIDE DVM2 MPEG-2 PLAYER COMMANDS (DEVICE DRIVER AB)

All commands are issued from the *Hercules Central Processor* and directed towards a specific device. The following commands are valid for the Alcorn-McBride DVM2 MPEG-2 Player.

Hercules Command	Command Name	Command Description
INIT	Initialize	Places DVM2 into Audio Sample Auto-detect mode. Allows playback of MPEG-2 files with either 44.1 kHz or 48 kHz audio sample rates.
PLAY	Play	Starts MPEG-2 playback at normal speed if Limit value at +100. Limit values other than +100 not valid. Valid Track Number must be selected before PLAY command can be issued.
PAUSE	Pause	Pauses MPEG-2 playback. Video signal muted. PLAY command resumes playback from current frame.
STILL	Still	Pauses MPEG-2 playback. Video still image. PLAY command resumes playback from current frame.
STOP	Stop	Pauses MPEG-2 playback. Video signal muted. PLAY command resumes playback from current frame.
REJECT	Reject	Stops MPEG-2 playback. Video still image on current frame. Valid Track Number must be selected before PLAY command can be issued.
FTR#	Find Track (1 ≤ # ≤ 99999)	Find track #. Valid Track Number must be selected before PLAY command can be issued.
LN	Lamp On	Turns on, or activates, video display. Video signal not muted.
LF	Lamp Off	Turns off, or deactivates video display. Video signal muted.
AUD#	Audio = (0 or 1)	Sets audio mute option. # = 0: Audio mute on # = 1: Audio mute off
PH	Projector Home	Forces DVM2 to perform soft reboot.

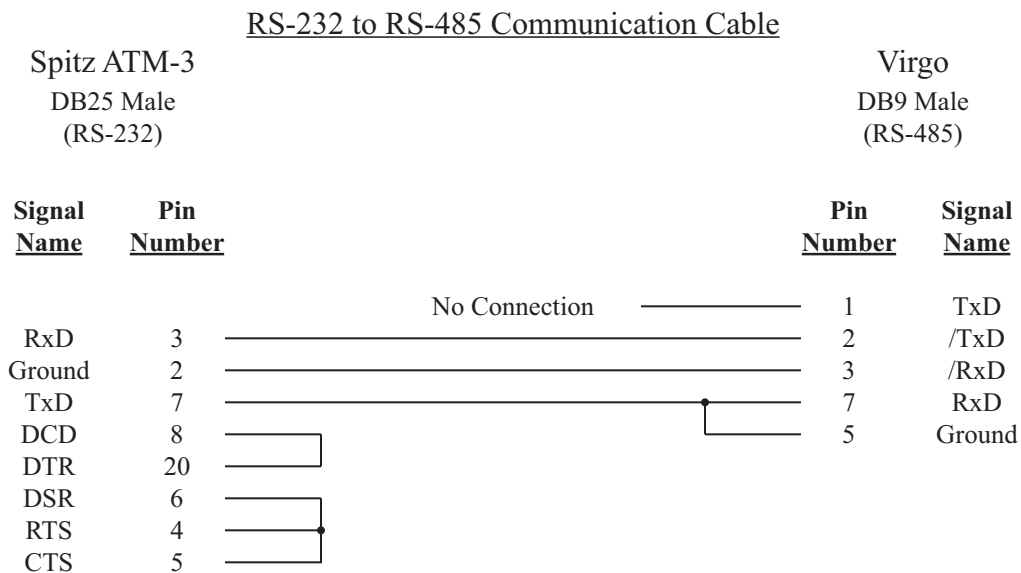
VIRGO VIDEO DEVICE CONTROLLER

USING ASCII TEXT COMMANDS TO CONTROL THE VIRGO VDC

In addition to using the *Hercules Central Processor* to provide automatic control capabilities for this unit, it is also possible to send **ASCII** text commands from any computer **RS - 232** serial port to the *Virgo VDC*. This allows any Windows, DOS, Macintosh, etc. computer to utilize *Virgo VDC* capabilities in order to control a variety of devices. Any terminal program can be configured to communicate with the *Virgo VDC* for 'live' manual operation. Programmed automatic operation can be accomplished by any application that supports the output of **ASCII** text strings from the host computer serial port.

As an example, the *Virgo VDC* can be used with the Spitz ATM-3 Automation. The *Virgo VDC* can be used as a 'port expander' and provide 4 additional serial control ports for every one ATM-3 serial port. It can also be used as a serial 'protocol translator' to convert simple text strings issued from the ATM-3 to the specialized serial command protocol required by certain devices.

Control Cable:



RS-232 Communication Settings:

The **RS-232** settings for the host computer should be set as follows:

19200 Baud
 No Parity
 8 Data Bits
 1 Stop Bit

The **ASCII** command string transmitted by the host computer must terminate with a <CR> 'CARRIAGE RETURN' character.

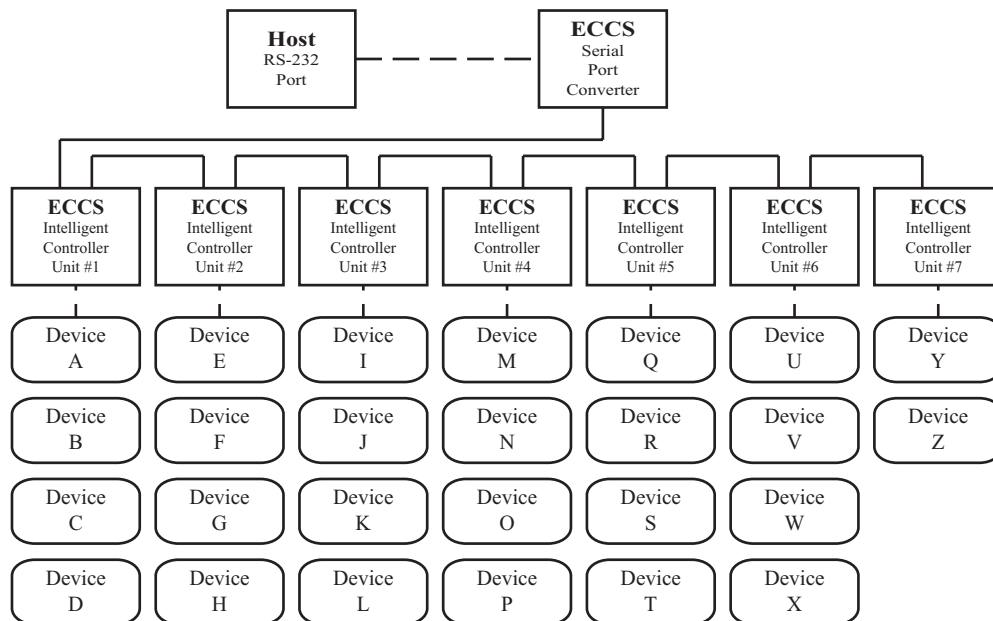
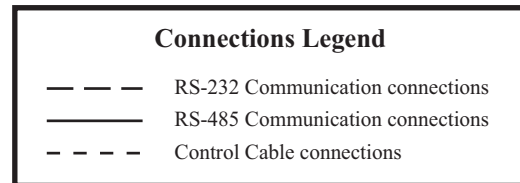
Connecting To A Single Virgo VDC And Its Devices:

Connecting VCRs, DVD and LD players, video projectors, etc. to the *Virgo VDC* is covered in previous sections of this manual. Follow the instructions contained therein to make the correct cable connections and to insure that the *Virgo VDC* options have been set correctly for each device.

VIRGO VIDEO DEVICE CONTROLLER

Connecting To Multiple Intelligent Controllers With RS-232:

In addition, a host computer with an **RS-232** port can connect to connect to multiple *ECCS Intelligent Controllers* with a simple addition of an *ECCS Serial Converter* box. This box converts the ATM **RS-232** port into a *UTCS* communication network compatible **RS-485** port. This is illustrated below:



Note: Each *UTCS Intelligent Controller* connected to a single **RS-232** port must have a unique **Unit Number**. This **Unit Number** must range from one to seven. The number will help determine the letter designator that identifies each device attached to the **RS-232** port in this way.

VIRGO VIDEO DEVICE CONTROLLER

IDENTIFYING DEVICES

Each of the devices (slide projectors, laser disk players, etc.) attached to the **RS-232** port by means of **ECCS Intelligent Controllers** are identified by single letters in the range of A to Z. This means that a maximum of 26 devices may be attached to a single **RS-232** port.

Since most **ECCS Intelligent Controllers** have four control slots, this means that up to seven *Intelligent Controllers* can be added to one **RS-232** port. The relationship between **Device Identifier**, **ECCS Unit Number**, and **ECCS Slot Number** is presented in the following table:

RS-232/ ECCS Device Identification Table

Device Identifier	Unit Number	Slot Number
A	1	1
B	1	2
C	1	3
D	1	4
E	2	1
F	2	2
G	2	3
H	2	4
I	3	1
J	3	2
K	3	3
L	3	4
M	4	1
N	4	2
O	4	3
P	4	4
Q	5	1
R	5	2
S	5	3
T	5	4
U	6	1
V	6	2
W	6	3
X	6	4
Y	7	1
Z	7	2

VIRGO VIDEO DEVICE CONTROLLER

ASCII COMMANDS

The available **ASCII** commands for controlling devices with *Virgo VDC* are listed in the following table. Any command can be sent to any device, however, the command will only be successfully executed if the command is valid for that device. For example, sending the slide projector command 'FIND SLIDE' (FS#) to a laser disk player will obviously fail. However, since the **RS-232** communication is a one way street, any command failures will not be reported back to the host computer for display.

Most **ASCII** text commands are composed of two parts. The first part is the device command telling the **ECCS Intelligent Controller** what to do. The second part is the device identifier that tells the *Intelligent Controller(s)* to which device(s) to apply the command. A single command can address one, several, or all the devices. The first part of the command is separated from the second part by a colon (:). A typical **ASCII** command string will have the following form:

DEVICE COMMAND : DEVICE IDENTIFIER

As an example, the following command will start up a Laser Disc player and make it ready to run. Assume that the *Virgo VDC Unit Number* is 3, and the Laser Disc player is attached to **Slot Number 2**:

INIT:J

In another example, the following command will 'FIND SLIDE' (FS#) 6 on 4 Kodak EktaPro slide projectors controlled by a *Virgo VDC* with **Unit Number 1**:

FS6:ABCD

A few commands are global. That is, they address all the projectors at once. These commands do not use any letters as projector identifiers, and they do not include the colon. The command in the following example sets all devices to manual control:

MAN

Every **ASCII** text command string must be terminated in the **ASCII** character that represents the 'end of the line'. This character is known as the <CR> 'CARRIAGE RETURN', and is represented by the decimal number 13. When typing the commands from a keyboard using a terminal program, this character is sent by pressing <ENTER> (or <CONTROL> + <M>) on the keyboard. If a custom, or special, program is written to send commands, then the character must be added to the end of the **ASCII** command string.

VIRGO VIDEO DEVICE CONTROLLER

VIRGO VDC ASCII TEXT COMMANDS

Hercules Command	Command Name	Command Description
PWRN	Power On	Activates device power.
PWRF	Power Off	Deactivates device power.
INIT	Initialize	Function depends on target device.
PLAY	Play	Plays currently loaded tape or disc.
PAUS	Pause	Pauses the tape or disc transport. Loss of video signal.
STIL	Still	Pauses the tape or disc transport. Video still image.
STPF	Step Forward	Advances one frame.
STPR	Step Reverse	Reverses one frame.
FFWD	Fast Forward	Fast forwards media.
REWD	Rewind	Rewinds media.
RECD	Record	Sets device to 'RECORD MODE'.
STOP	Stop	Stops tape or disc transport.
REJ	Reject	Ejects media.
FCHP	Find Chapter (0 ≤ # ≤ 999)	Find chapter #, if available.
FFRM	Find Frame (0 ≤ # ≤ 999,999)	Find frame #, if available.
FTRK	Find Track (0 ≤ # ≤ 99)	Find track #, if available.
FTIM	Find Time (h:mm:ss)	Find time (h:mm:ss).
PTCH	Play to Chapter (0 ≤ # ≤ 999)	Play to chapter #.
PTFR	Play to Frame (0 ≤ # ≤ 999,999)	Play to frame #.
PTTR	Play to Track (0 ≤ # ≤ 99)	Play to track #.
PTIM	Play to Time (h:mm:ss)	Play to time (h:mm:ss).
LN	Lamp On	Activates lamp or video display.
LF	Lamp Off	Deactivates lamp or video display.
MUTN	Mute On	Turn video mute on. Video display to black.
MUTF	Mute Off	Turn video mute off. Video display on.
AUD#	Audio = #	Sets audio playback parameter. Number depends on target device.
CON=#	Contrast = (0 ≤ # ≤ 100)	Sets picture contrast to #%.
BRI=#	Brightness = (0 ≤ # ≤ 100)	Sets picture brightness to #%.
SHA=#	Sharpness = (0 ≤ # ≤ 100)	Sets picture sharpness to #%.
COL=#	Color = (0 ≤ # ≤ 100)	Sets picture color to #%.
HUE=#	Hue = (0 ≤ # ≤ 100)	Sets picture hue to #%.
INPU#	Input Select #.	Input select video signals. Number depends on target device.