Section 5 – Configurator

Following hardware installation, all connections to the Jupiter system including those for control, video, audio, data, and tally must be identified and described in a "Configuration Set" consisting of a collection of user–defined tables. The configuration editor ("Configurator"), a new version of the editing program used to create and edit these tables, is designed to eliminate manual entry of repetitive information and operate in a familiar, "Windows–like" environment. Editing features include search, error detection and on–screen help, column/row copy/paste, and column/row auto–fill with incremental numbers.

> Note: For a comparison of the Configurator and the previous configuration editor, see Field Engineering Bulletin 04-047604-107.

Installation of the Configurator is described in the Field Engineering Bulletin provided with the software.

> **Quick Start tip**: If your Jupiter equipment was purchased from Thomson as a "turnkey" system, you may wish to refer to the *Jupiter Getting Started Guide*, part no. 04–045707–003. This booklet provides an abbreviated version of the information in this section.

Starting the Configurator

> *Caution: You must be logged in as the administrator (or have administrator privileges) in order to load Jupiter software, launch Jupiter applications, and configure the system. This same login must be used for all tasks performed on the Jupiter file server, including uninstalling software.*

1. Start Windows.

2. Go to "Start > Programs > Jupiter Network Suite."

3. Use the JNS Console to start the Jupiter Network Suite (JNS) tool "Configuration Editor" (as described in Section 4).

4. The "File > Open" command is used to select an existing configuration set (or "File > New" used to create a new set); the full path and name of the set will appear in the window's title bar. Thereafter when Configurator is started the last used set will be opened automatically.

> **Quick Start tip**: If you are an experienced Jupiter user, and wish to check the routing switcher as quickly as possible, see *Using the Numeric Set* on page 5–11.

5. To access Jupiter tables, use the “Jupiter” pull–down menu. For example, if you select the Network Description table the display will be similar to the following (Figure 5–1).

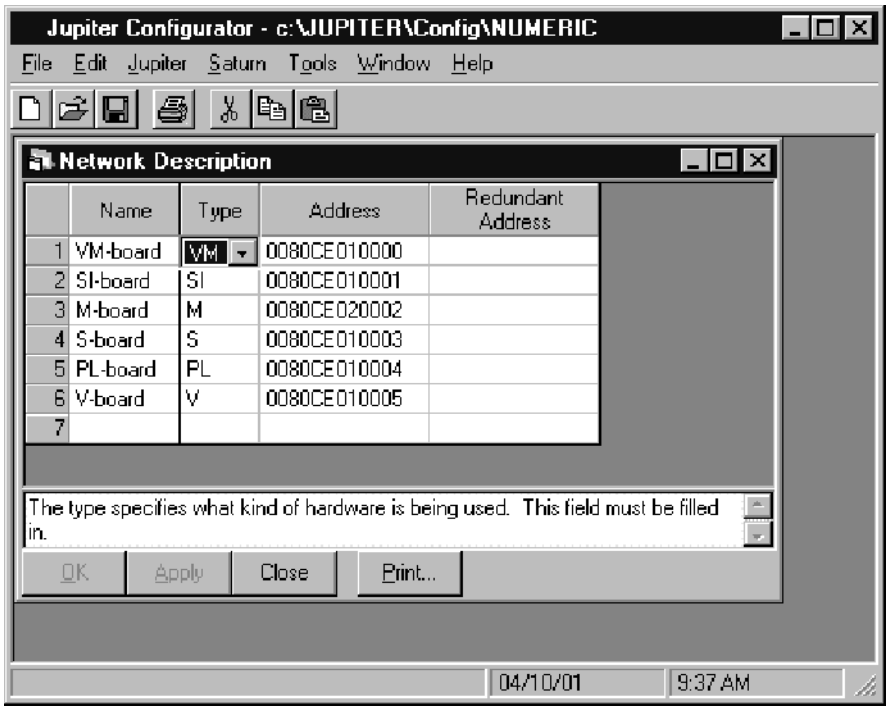


Figure 5–1.

Jupiter Configurator menu with Network Description table open.

If a password entry menu appears, it means that a Jupiter password (other than the factory default of “999999”) has been set. Enter the authorized password and click on “OK.”

The password system is discussed in detail starting on page 5–17.

6. The configuration set should now be edited as appropriate and made active (downloaded) as described beginning on page 5–8. The pages immediately following provide general information about the Configurator.

Closing the Configurator

To close (quit) the Configurator, select “File > Exit” or click on the Close Box (X) in the upper right–hand corner of the window.

Other than for convenience, there is no need to leave the Configurator loaded after compiling. However, the JNS application should be left running and the download connection to the controller board[§] should be left in place, in case the a controller board requests a fresh download of data from the file server.

[§] In this manual, “controller board” refers to a VM/SI 3000 Control Processor, CM 4000 Control Module, or similar device.

Configurator Editing Guidelines

AUTOMATIC TABLE ENTRY

This function is designed to expedite the data entry process and eliminate errors due to differences in spelling and entry of inappropriate data.

In cases where a controller board or device must be entered on more than one table, Configurator will automatically copy (or offer as a selectable item) the data entered on the "initial entry" table to all "secondary" tables (including Saturn tables). Entering information in the same order as the tables appear in the pull–down menu will therefore eliminate most repeat entries. For example, when a VM 3000 is entered on the Network Description table, the name will be added automatically to the Serial Protocol table.

> Note 1: You cannot enter data on secondary tables first. For example, you must enter a new VM on the Network Description table. Again, data should be entered *in the same order as the tables appear in the pull–down menu.*

When certain items are deleted, the editor will automatically delete, when appropriate, the corresponding entries on other tables. For example, when the name of an input is deleted from the Switcher Input table, the input will be deleted automatically from the other corresponding tables. The same is true for an output deleted from the Switcher Output table. For instance, if the VTR12 row on the Switcher Input table is deleted, the corresponding row on the CP Input Set table, i.e., the row defining the category/number keys and mnemonic, will be deleted as well.

ENTRY/EDIT WITHIN A JUPITER TABLE

- Use the mouse, cursor keys, or TAB to move to the desired field. To accept the change and advance to the next field, press TAB.

- When a field requires a selection to be made from a fixed list, clicking anywhere in the field will cause a drop–down arrow to appear. Click on the arrow to show the available choices (or press ALT+DOWN). Click on the desired choice. (You can also enter the first letter in the list item name; enter the letter again to move to the next item that starts with that letter, then press RETURN.)

  > Note 2: In some cases you will need to press "Apply" to update the selections in a drop down list.

- To advance to the next row, press ENTER.

  > Note 3: New entries should be made at the bottom of tables whenever possible to avoid disrupting system operation. If entries are made to the middle of tables you must be prepared to clear battery–protected memory (Pmem) in the VM 3000 and re–establish switcher status and machine links. Clearing Pmem is described in Appendix B.

- Press "Apply" to save the changes in memory (they are not saved to disk until you select File > Save). If you attempt to edit another table before Applying your changes, a pop up message will appear asking you to confirm or abandon the changes before editing a new table. After Applying all changes, the set can be Saved using the "File > Save" command. The message "Exporting..." will appear.

- **In some cases spaces are not allowed.** If so the editor will not allow them to be entered.

When creating a name for a Jupiter set, table, control panel, or other device, it's a good practice to use letters and numbers only. If you want to use punctuation or special characters, check the list on page 5–7 before creating a name.

- To **jump to the bottom** of a table, press CTRL+DOWN; to jump to the top, press CTRL+UP.
- To **scroll to the bottom** of a long table, press and hold PAGE DOWN. You can also "drag" the scroll box, or click and hold on the scroll arrows.
- To **copy rows** and add them to the bottom of the table, drag–select the row number boxes of the source rows (the rows selected must form a single rectangle). Use "Edit" and "Copy." Go to the bottom of the page. Press the INSERT key. Then use "Edit" and "Paste."
- To **copy rows** and insert them in the middle of a table, see "Reordering" below.
- You can **exit *without* writing** even after changes have been Applied and the table closed by selecting "File > Exit." and answering "No" to the "Save?" question.
- Error detection and explanation – fields that contain insufficient or inappropriate information are marked in red. Moving the cursor over the field will cause a Help window to appear.
- Auto Complete – the editor will suggest the remaining letters of a word that has been used before. To accept the auto completed entry, press TAB; otherwise, continue typing the new entry.

REORDERING JUPITER TABLES

Important: It is possible to reorder Jupiter tables, but this can be very disruptive if not done carefully. The order of entries in certain tables is significant because row numbers are used as cross–references to other tables. If data is moved from one row to another, these relationships may be broken and system operation will be unpredictable. When adding new items to tables, add them at the end if possible. If you wish to reorder table data then you must be prepared to clear battery–protected memory (Pmem) in the VM/SI controller and re–establish switcher status and machine links. Clearing Pmem is described in Appendix B.

- To **insert a new row** in the middle of the table, click on the row number box **above** the row where the new row is to appear. Notice that row selection is a toggle function. Then go to the "Edit" pull–down menu and select "Insert Row." (Or, just press the INSERT key.)
- To **delete an entire row**, click on the row number box and use "Edit" and "Delete." (Or press ALT+DEL.)
- To **re–order a table manually**, drag–select the row number boxes of the source rows (the rows selected must form a single rectangle). Make a note of how many rows you have selected. Use "Edit" and "Cut." Select the row number box **above** where you want to paste. Make room for the source block by pressing the INSERT key once for each source row. Then use "Edit" and "Paste."
- To **copy rows** from one Jupiter table to another, drag–select the row number boxes of the source rows (the rows selected must form a single rectangle). Make a note of how many rows you have selected. Use "Edit" and "Copy." Go to the destination table. Select the row number box **above** where you want to paste. Press the INSERT key once for each row to be pasted. Then use "Edit" and "Paste." (If you use this procedure without inserting blank rows, the existing rows will be overwritten.)

FIND / FILL / INCREMENT

"Edit > Find" – searches for a text string in all open tables.

"Edit > Fill" – this is a copy/paste function for use with tables containing repetitive material. Select the row or column with the desired text and then "Edit > Fill Right" or "Edit > Fill Down" to paste the information.

"Edit > Increment" function – similar to "Edit > Fill" except that incrementing numbers are automatically created in columns to the right or rows below as desired. For example, on the Switcher Input table you could enter "IN 1" in the top left field, then select the desired fields (the whole column in this example) and "Edit > Increment Down." This will fill the rest of the column with "IN 2," "IN 3," etc. to the bottom of the table. It is also possible to mix categories (prefixes) within a column and still automate the process. For example, "VTR 1" could be entered in the top left field, the following 10 rows selected and "Edit > Increment Down" applied; this would produce 10 rows labelled VTR 1 through "VTR 10." "CAM 1" could then be entered in the Name field on row 11, additional rows selected, "Edit > Increment Down" applied, etc.

COPYING AND PASTING A BLOCK

Before changing an existing Jupiter table, be sure to read "Important" on page 5–4.

- To **copy a block**, drag–select the block of the source fields (the fields selected must form a single rectangle). Use "Edit" and "Copy." See Figure 5–2.

Figure 5–2.

Input Set — KXYZ–INP

	Category	Entry	Mnemonic	Logical Input
1	CAM	1	C1	CAM1
2	CAM	2	C2	CAM2
3	CAM	3	C3	CAM3

Next, select the top left field of the destination area. In this case, the paste will overwrite the existing text.

Figure 5–3.

Input Set — KXYZ–INP

	Category	Entry	Mnemonic	Logical Input
1	CAM	1	C1	CAM1
2	CAM	2	C2	CAM2
3	CAM	3	C3	CAM3

Then use "Edit" and "Paste." the result is shown in Figure 5–4.

Figure 5–4.

Input Set — KXYZ–INP

	Category	Entry	Mnemonic	Logical Input
1	CAM	1	CAM1	CAM1
2	CAM	2	CAM2	CAM2
3	CAM	3	CAM3	CAM3

Keyboard Shortcuts

To select an entire column, click the name of the column. Click anywhere outside the column to un–select.

To select an entire row, click the number of the row. Click anywhere outside the row to un–select.

COPY AND PASTE ROWS BETWEEN THE WINDOWS CLIPBOARD AND JUPITER

Before copying from a Windows program to Jupiter, be sure to read “Important” on page 5–4.

You can use Cut, Copy, and Paste to exchange information between Jupiter and other Windows programs such as Microsoft Word and Microsoft Excel. For example, suppose you want to create a Jupiter CP Input Set using Microsoft Word or another Windows text editor. The document might look like this:

```
VTR  →  1  →  VT01  →  VT01¶
VTR  →  2  →  VT02  →  VT02¶
VTR  →  3  →  VT03  →  VT03¶
VTR  →  4  →  VT04  →  VT04¶
VTR  →  5  →  VT05  →  VT05¶
VTR  →  6  →  VT06  →  VT06¶
VTR  →  7  →  VT07  →  VT07¶
VTR  →  8  →  VT08  →  VT08¶
VTR  →  9  →  VT09  →  VT09¶
```

Figure 5–5. *Text as entered using word processor.*

The text must be “tab–delimited” (as indicated by the arrows). Spaces must not be used between columns. In the case of a Microsoft Excel or other Windows spreadsheet document, each field would be entered in a separate cell.

You can drag–select this text, make a note of how many rows you have selected, and use “Edit” and “Copy” in the Word window. Then select the Jupiter CP Input Set window and select the row number box **above** where you want to paste. If you want to insert new rows, press the INSERT key once for each row to be pasted. Then use “Edit” and “Paste.” The result is shown in Figure 5–6.

Input Set — KXYZ–INP

	Category	Entry	Mnemonic	Logical Input
1	VTR	1	VT01	VT01
2	VTR	2	VT02	VT02
3	VTR	3	VT03	VT03
4	VTR	4	VT04	VT04
5	VTR	5	VT05	VT05
6	VTR	6	VT06	VT06
7	VTR	7	VT07	VT07
8	VTR	8	VT08	VT08
9	VTR	9	VT09	VT09

Figure 5–6. *Resulting Jupiter table.*

The same technique can be used to copy from Jupiter and paste into another Windows program.

Jupiter Naming Rules

When creating a name for a Jupiter set, table, control panel, or other device, the following rules should be observed:

- Eight character maximum.
- The following characters are **OK**:

Letters	A through Z
Numbers	0 through 9
Underscore	_
Number sign	#
Hyphen	–
Caret	^
Dollar sign	$
Exclamation point	!
Percent sign	%
Ampersand	&
Braces	{ }
At sign	@
Single quote mark	‘
Apostrophe	’
Right parenthesis	)

- Do **not** use:

Space	
Comma	,
Colon	:
Semicolon	;
Forward or back slash	/ \
Asterisk	*
Period	.
Left parenthesis	(
Plus	+
Equal	=
Less or Greater than	< >
Brackets	[ ]
Question mark	?
Double quotes	”
Vertical bar (pipe)	|

- Do not create a filename that is identical to another file (or subdirectory) in the same directory.

Configuration Set Management

The top of the Configurator menu (page 5–9) shows the name of the selected set. This is the system configuration directory that is currently selected for editing.

After a set is edited, it should be saved and then compiled. If compiling is successful, the set name will appear on the Jupiter Network Suite **Control Center** "Application" menu; the set can then be selected for downloading, during which a copy is sent to the system hardware. Another copy always remains in the server, ready for automatic, on–demand download to the hardware.

The Jupiter can have any number of configuration sets, each of which contains the file and subset types shown on page 5–12. (The files in quotation marks are example names.)

Any one of the configuration sets can be selected for use by the system. This allows the entire system to be reconfigured from the file server with only a brief interruption to normal operations.

Modifying and Downloading a System Configuration Set

> **Quick Start tip:** Program the system in small steps and compile often!

As described earlier, a compiled and/or active configuration set cannot be edited directly. And, since creating a new configuration set from scratch is a very time–consuming process, you will probably want to make changes by making a copy of the uncompiled (source) version of the set, editing it, and then switching the new set on–line. While any number of file management schemes can be used to accomplish this, the following procedure is suggested:

- Make a copy of the most recent, known–good source set. Name the copy "CONFIG01."
- Edit "CONFIG01." Save the set.
- Compile and Download "CONFIG01."
- When the next change is needed, select and copy source set CONFIG01. Name the copy "CONFIG02."
- Edit "CONFIG02." Save. Compile and download.
- Repeat above steps as needed.
- Eventually you will want to start deleting the older sets.

By numbering the sets, there will never be any doubt about which is the latest version. Also, it will be easy to return to "known good" sets. This suggestion is detailed in the steps below.

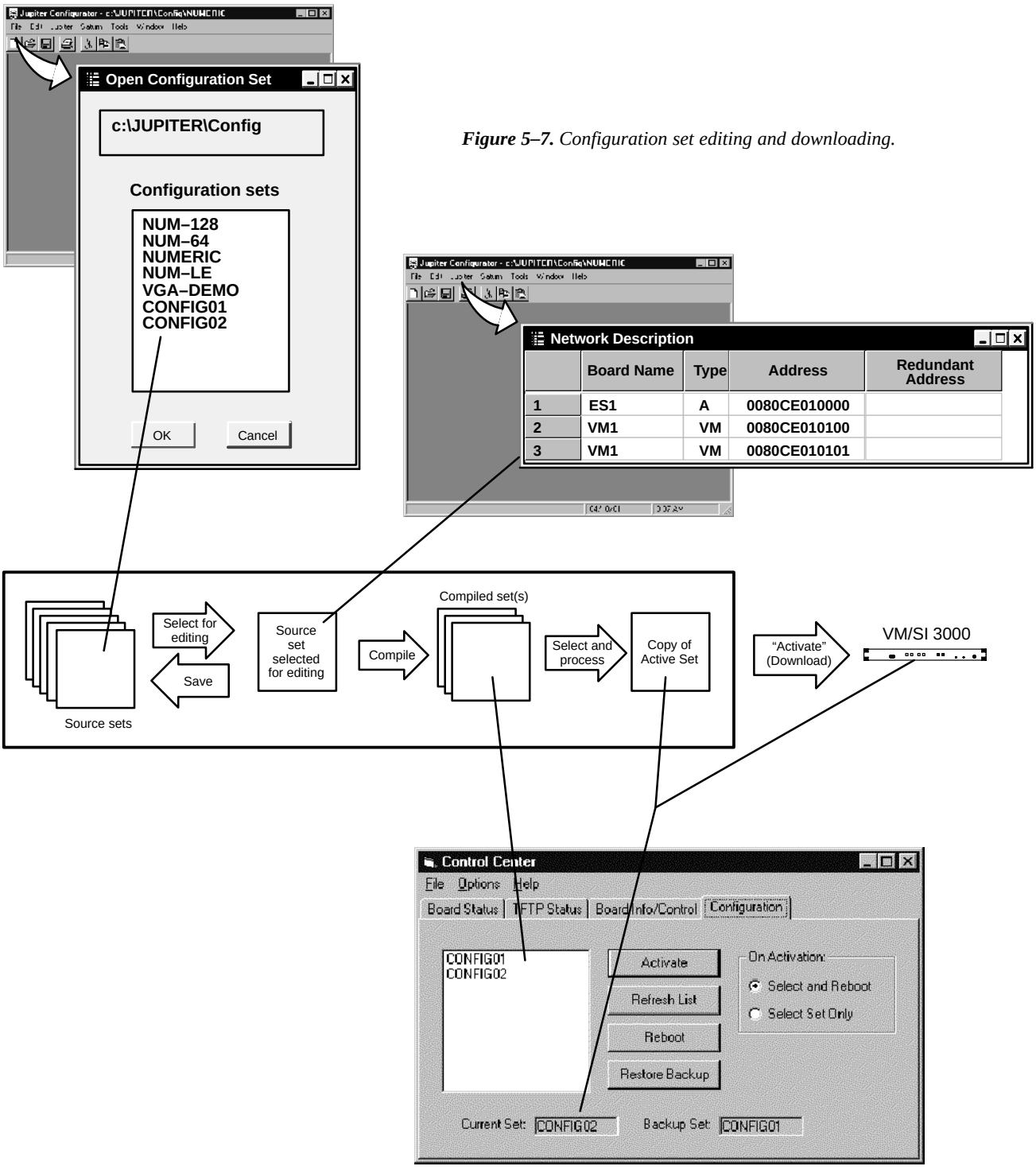


Figure 5–7. *Configuration set editing and downloading.*

COPYING A CONFIGURATION SET FOR EDITING

Make a copy of the latest known–good set as follows:

1. On the "File" portion of the Jupiter Configuration menu (page 5–2), click on "Open." This will bring up a menu similar to that shown in Figure 5–8.

   This menu will list all existing system configuration sets.

   The NUMERIC sets are factory–supplied sets provided for quick start and diagnostic purposes. For more information, see page 5–11. The list may also contain a test set used at the factory.

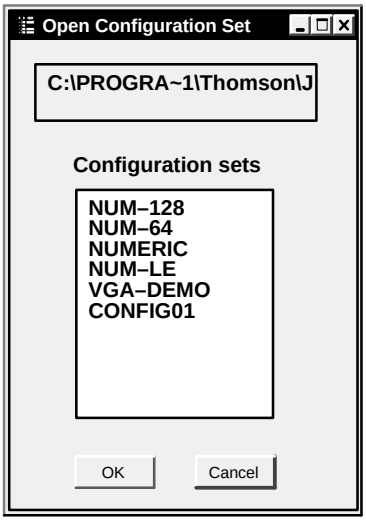


Figure 5–8. *Select Edit Set menu.*

2. Click on the desired set name and "OK." Wait for the set to load. Close the loading progress window.

3. Select "File > Save As."

4. Enter a new name for the set (up to eight characters).

   When creating a name for a Jupiter set, table, control panel, or other device, it's a good practice to use letters and numbers only. If you want to use punctuation or special characters, check the list on page 5–7 before creating a name.

   In keeping with the suggestion described earlier, you may wish to name the copy "CONFIG01."

5. Click on the "OK" button. When the copy is finished, the copy will be the active set.

MAKING THE DESIRED MODIFICATIONS TO THE SET

Editing procedures for specific modifications are described later in this manual, starting with the Network Description table on page 5–22. From the Network Description table, you should move on to the Serial Protocol table, then the Switcher Description table, and so on through the remaining Jupiter tables. See page 5–12.

> Note: As previously explained, you cannot enter data on "secondary" tables first. For example, you must enter a new VM on the Network Description table. In general, data should be entered *in the same order as the tables appear in the pull–down menu.* For more information, see "Automatic Table Entry" on page 5–3.

Not all tables will apply to every system. For example, some are for machine control, others are for backward compatibility with Thomson Party Line equipment, etc. Please refer to the description of each table for more information.

If a **Thomson Broadcast Automation** system is connected to the Jupiter system, special procedures apply to the compile/download process. See Appendix R, "Changing Jupiter configuration sets with Thomson Automation ES–LAN (QNX version) present."

Quick Start Tip

USING THE "NUMERIC" SETS FOR QUICK SWITCHER CHECKOUT

The factory–supplied numeric configuration sets can be used to set up and operate the routing switcher in the minimum possible time. The "NUMERIC" set provides for a switcher with up to 256 inputs, 256 outputs, and four levels; the "NUM–64" set provides for 64 inputs and outputs; and the "NUM–128" set provides for 128 inputs/outputs.

The numeric sets are complete and ready to download, except for entry of at least one VM 3000 Control Chassis address, entry of the actual switcher Physical Levels and Driver types, and one switcher control panel address.

Use the "File > Open" menu to select one of the Numeric sets and make a copy (as described on page 5–10.)

Select "Jupiter > Network Description" table and change the VM 3000 and SI 3000 addresses to match those in your system (see page 5–22). The actual switcher Physical Levels and Driver types are entered on the Switcher Description table (page 5–31). The control panel address must be entered on the MPK Devices Description table (page 5–108).

The set can then be compiled and activated as described on page 5–13.

Inputs and outputs are selected numerically, using the TEST key on a CP 3000 control panel to enter a leading zero for selections zero through 99. The VTR key is used to enter a "1," and so on. For complete CP 3000 operating instructions, see page 6–7.

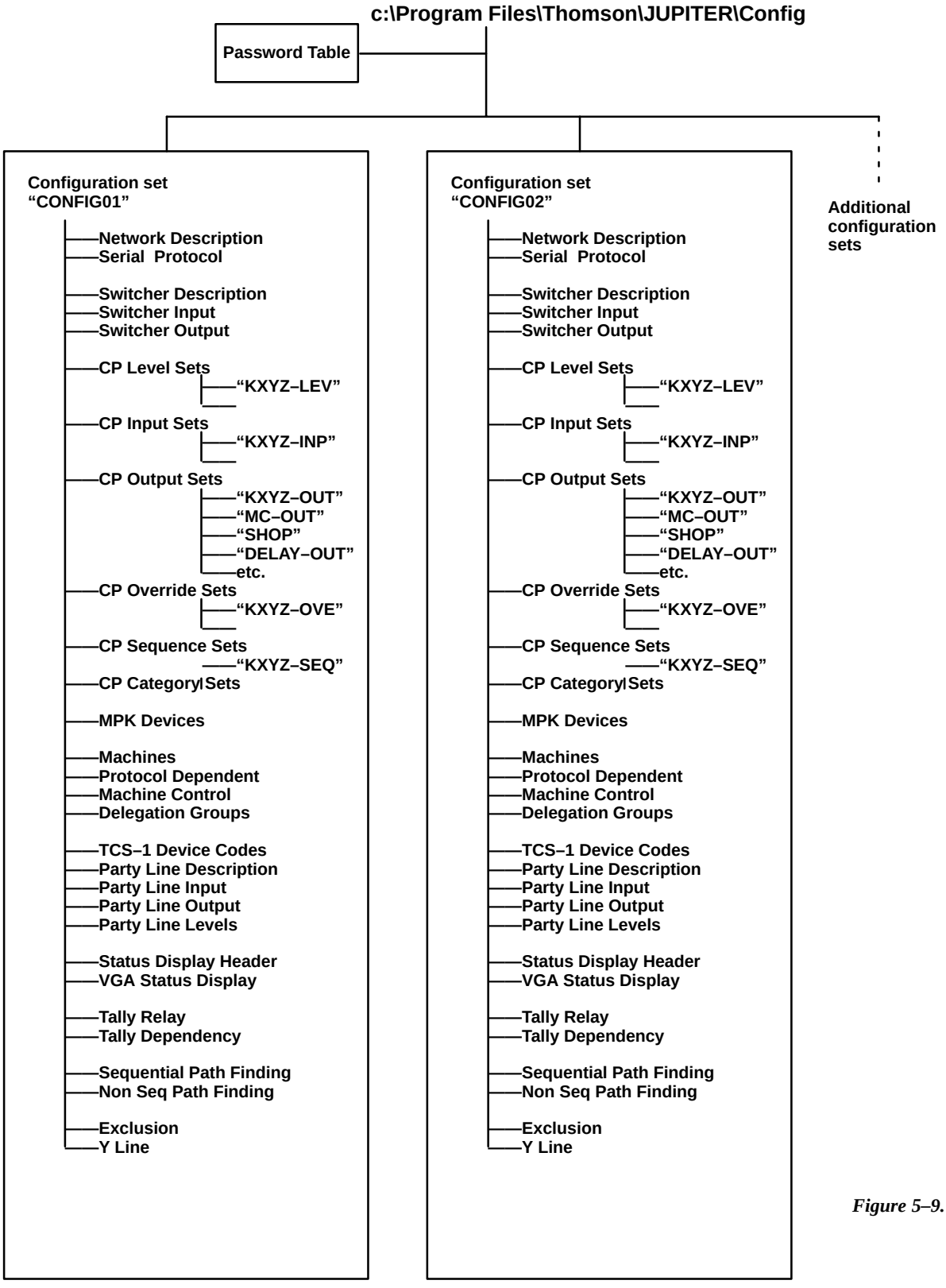

c:\Program Files\Thomson\JUPITER\Config
Password Table
Configuration set "CONFIG01"
Network Description
Serial Protocol
Switcher Description
Switcher Input
Switcher Output
CP Level Sets
"KXYZ–LEV"
CP Input Sets
"KXYZ–INP"
CP Output Sets
"KXYZ–OUT"
"MC–OUT"
"SHOP"
"DELAY–OUT"
etc.
CP Override Sets
"KXYZ–OVE"
CP Sequence Sets
"KXYZ–SEQ"
CP Category Sets
MPK Devices
Machines
Protocol Dependent
Machine Control
Delegation Groups
TCS–1 Device Codes
Party Line Description
Party Line Input
Party Line Output
Party Line Levels
Status Display Header
VGA Status Display
Tally Relay
Tally Dependency
Sequential Path Finding
Non Seq Path Finding
Exclusion
Y Line
Configuration set "CONFIG02"
Network Description
Serial Protocol
Switcher Description
Switcher Input
Switcher Output
CP Level Sets
"KXYZ–LEV"
CP Input Sets
"KXYZ–INP"
CP Output Sets
"KXYZ–OUT"
"MC–OUT"
"SHOP"
"DELAY–OUT"
etc.
CP Override Sets
"KXYZ–OVE"
CP Sequence Sets
"KXYZ–SEQ"
CP Category Sets
MPK Devices
Machines
Protocol Dependent
Machine Control
Delegation Groups
TCS–1 Device Codes
Party Line Description
Party Line Input
Party Line Output
Party Line Levels
Status Display Header
VGA Status Display
Tally Relay
Tally Dependency
Sequential Path Finding
Non Seq Path Finding
Exclusion
Y Line
Additional configuration sets

Figure 5–9.

VALIDATING, COMPILING, AND ACTIVATING (DOWNLOADING) A CONFIGURATION SET

1. After you have finished editing, select the “Tools > Validate All Tables” pull–down menu on the main menu menu (page 5–2).

   If a validation error is reported, move the cursor to the red–colored area of the table to view the reason for the error. Correct the error and run the validator again.

2. Select the “Tools > Compile” pull–down menu on the main menu menu (page 5–2). When the compiler is finished, the number of compiler errors (if any) will be reported.

   If a compiler error is reported, the error must be corrected and the set re–compiled. To print the error messages, click on the “Print” command box.

   Don’t worry about an error corrupting the active set—even if the active set has the same name as the one you’re working on. A new set must compile without errors *and* be explicitly selected for downloading by the Control Center software before it can go online.

3. Click on “Close.”

4. Use the JNS Console to start the Jupiter Network Suite (JNS) application “Control Center” (as described in Section 4.) This will open a window similar to that shown in Figure 5–10.

   A background program called “Bootp Server” will also be started automatically.

5. Click on the new set for the Active set. Check that the “Select and Reboot” radio button is selected.

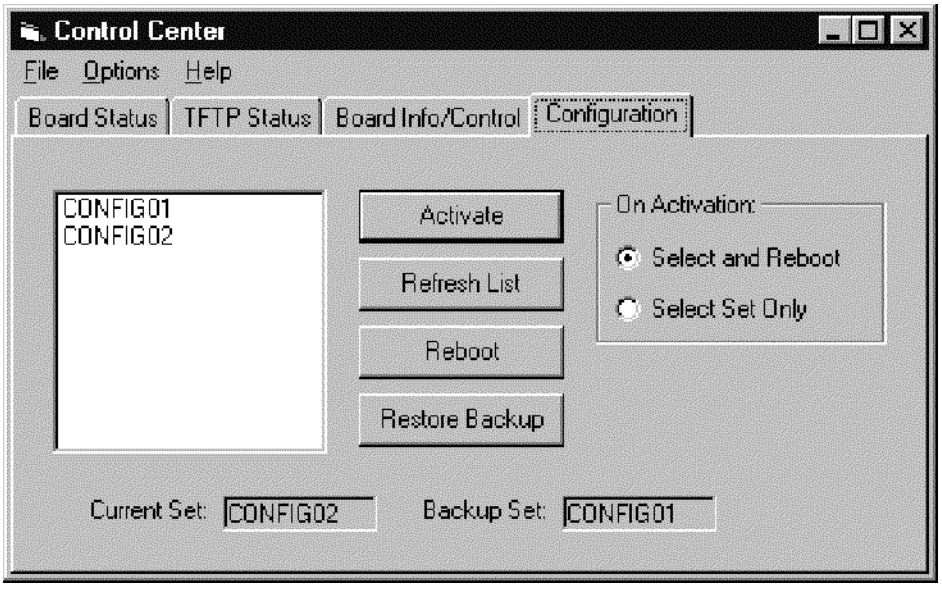


Figure 5–10.

6. To initiate the download, click on “Activate.”

Caution: Once the activate/reboot command has been issued, do not interrupt the process until the reboot is complete. Interruptions such as sending a new command, turning off power, or disconnecting cables will have unpredictable consequences. With a CM 4000, such consequences can include corruption of data stored in flash memory and on the CM hard drive.

After a few seconds, the LEDs on the controller boards will turn red momentarily and the message “Device not connected” or “Startup” will appear on the system control panels. When the download is complete, the LEDs should be green and the panels returned to their previous status display. Depending on several factors such as the number of boards, configuration size, need to update the *.sys file, LAN transmission rate, LAN traffic, etc., a complete set change can take several seconds or multiple minutes.

Download status can also be determined using the Control Center “Board Status” tab.

For more information about Control Center functions, including the “Reboot” and “Restore Backup” buttons, see page 9–1.

7. All control panels should now be operational. For operating instructions, see Section 6. (For Software Control Panel operation, see Section 7.)

Troubleshooting

ERROR CONDITIONS

— Red Alarm light on controller board remains On. The meaning of the various possible LED on/off combinations is shown in Appendix S.

— The “Device not connected” message fails to appear or clear. There may be a download fault in the VM/SI 3000 serial control section. It may be possible to correct this by resetting the board manually. See Appendix B.

— A switcher control panel fails to indicate switcher status. There may be a download fault in the controller board. It may be possible to correct this by resetting the board manually. See Appendix B.

— Party Line control panels (including the MCS 2000) display the message “No party line.” There may be a download fault in the VM 3000 party line interface section. It may be possible to correct this by resetting the board manually. See Appendix B.

— Other errors/conditions. The “TFTP Status” and “Board Info/Control” tabs in the Control Center window can be used to check the system. For more information, see page 9–1.

— A Log Viewer is also available as a diagnostic tool. For more information, see Section 12.

PROGRAM CRASH RECOVERY

If a control panel locks up, normal operation can usually be restored by cycling the power to the panel or to the controller board. For additional information concerning hardware reset, please refer to Appendix B.

DELETING JUPITER SOFTWARE

To uninstall the Jupiter software, follow the procedure given in the Field Engineering Bulletin supplied with the software.

Caution: The same login must be used for all tasks performed on the Jupiter file server, including uninstalling software.

RE–INSTALLING JUPITER SOFTWARE

Refer to the Field Engineering Bulletin supplied with the software.

ZIPPING A CONFIGURATION SET

As part of a troubleshooting procedure, you may want to send a particular configuration set to Thomson Technical Support for analysis. The Zip tool can be used to assemble all directories and files within a set so that it can be sent as a single compressed file.

To zip a set, click on the “Tools > Zip Configuration Edit Set” menu selection. You will be asked to select a configuration set, then you will be asked for the location to store the file. The default location is “C:\Jupiter\Logdata\”. You may wish to change this location (i.e., to a floppy). Once you select OK, the selected set will be zipped up.

To unzip a set, click on “Tools > Unzip Configuration Edit Set”. You will be asked which file to unzip. Make sure that the selected file is a valid zip file *that was created by the method outlined above*. Once you select a zip file and click OK, the set will be unzipped. If the set already exists, you will be asked if you want to overwrite the set. If you select OK, the set will be overwritten.

ZIPPING A CONFIGURATION SET WITH DIAGNOSTIC INFORMATION (“SUPPORT PACKAGE”)

To combine the active configuration set with the editor’s diagnostic information in a single zip file, go to “Tools > Create Support Package.” This file can then be sent to the Technical Services department to help them troubleshoot any difficulties you are having. The support package will include the version of the configuration set that is currently stored on your hard disk (i.e., unsaved changes will not be included). If your configuration set is new and has never been saved, it cannot be included.

Printing

Printer installation was discussed on page 2–39. If you want to print a single table, bring the table’s window to the top of the desktop. Then select the “Print” command button on the bottom of the window.

> Note: Printing of an entire set is not supported.

On–line Help

Two levels of Help are available for the Configurator: “What’s This” Help, whereby the name of a tool will appear when the cursor remains stationary over the icon for that tool, and “Implicit” Help, where a brief explanation of a field’s purpose or requirements will appear along the bottom of the window when the field is selected.

In addition, an Adobe Acrobat version of the manual you are now reading can be accessed by selecting the “Help” pull–down menu. The Acrobat Reader must be installed to view the manual on–line.

Inadvertent Loss of Power

Following a power interruption, the Jupiter controller board(s) will reset itself and should be back in operation in a few seconds. The controller board uses a combination of flash ROM and battery–protected RAM to maintain programs and user tables indefinitely.

Disconnecting File Server from LAN

The file server can be disconnected from the LAN without affecting control panel operation. However, if for some reason a controller board requires re–downloading, it will be unable to complete this operation until the LAN is reconnected and the JNS program is running properly.

> **Important:** If for test purposes you wish to disconnect the LAN and reset a controller board, you must wait **60 seconds** before pressing the reset switch. If you press reset before 60 seconds, the controller board will hang and require re–downloading from the server.

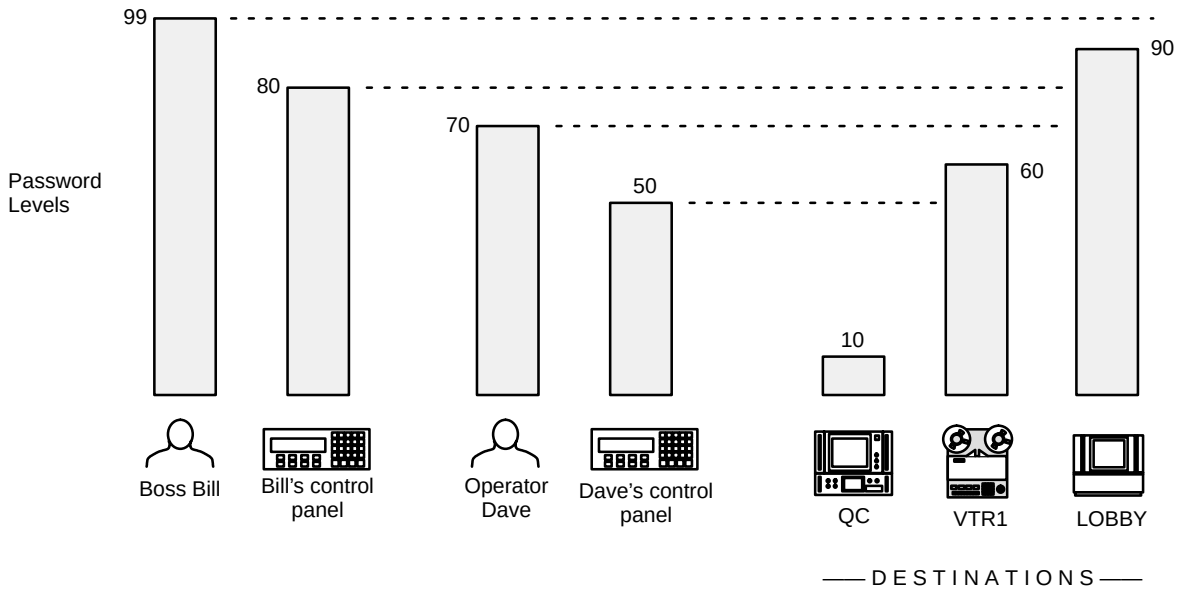
Passwords

> **Quick Start tip**: You may wish to skip the Password table when you first configure the system. If password levels are needed they can be added later.

The Jupiter passwords are arranged in a hierarchy, with the “99” level password being the equivalent of a supervisor password. Entry of a 99–level password on the main menu (page 5–2) will allow any system operation, including starting the Jupiter software and creating or changing passwords. There must be at least one 99–level password in the system at all times. In Figure 5–11, Boss Bill might have a password of “007007” with a level of “99.”

In addition, a *password level* can be established for each control panel and each switcher output. Bill’s control panel has an inherent password level of 80 and the switcher output leading to VTR1 has a level of 60. This means that anyone using Bill’s control panel would be able to select a source for VTR1. Notice that the panel could also be used to select a source for QC but not for the Lobby monitor.

Figure 5–11. *Jupiter password system.*



However, Bill can enter his own personal password into his panel (or anyone else's) and temporarily raise the panel's level to "99." A new source could then be switched to the Lobby:

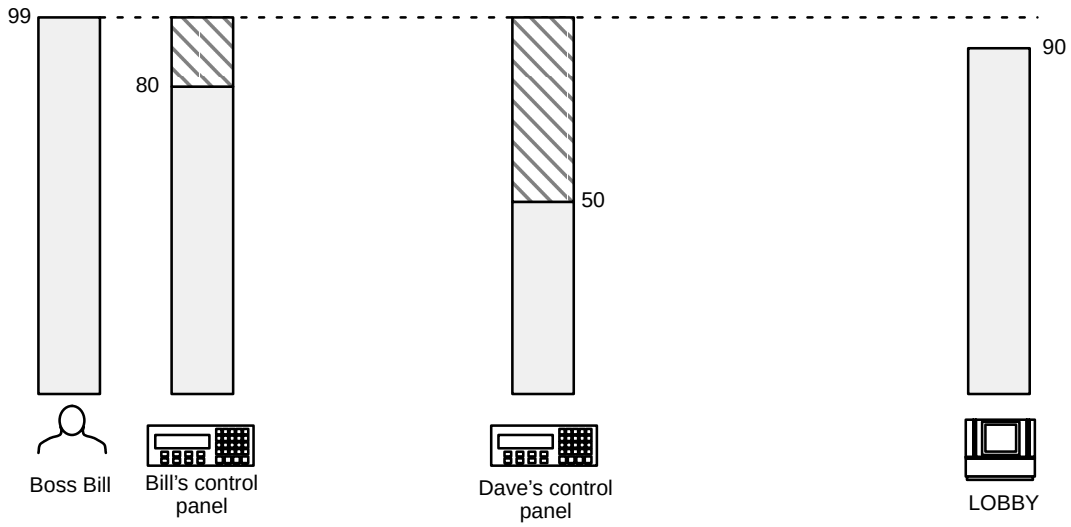


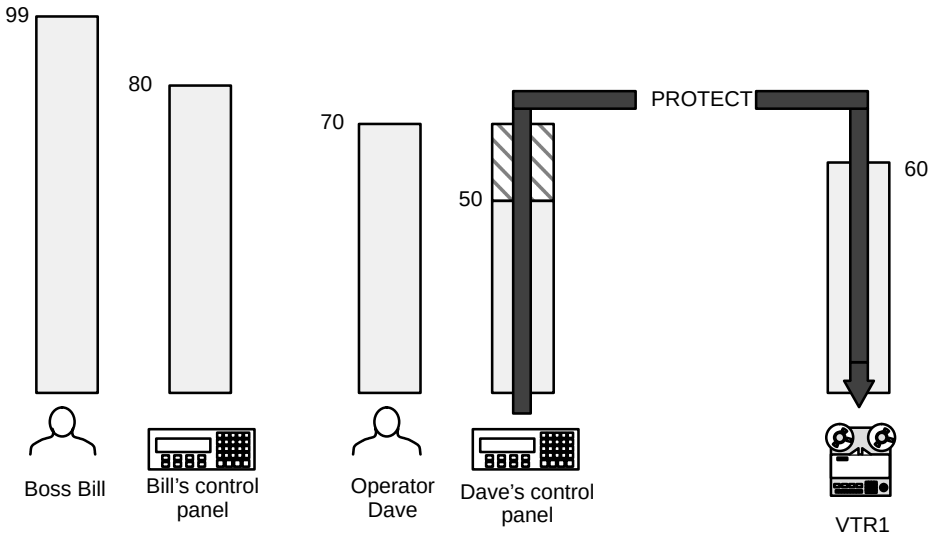
Figure 5–12. *Raising the level of a panel.*

Furthermore, the level of a panel can be raised just long enough to make one switch (or until someone logs out of the panel).

When the level of a panel is raised only temporarily, then re–entry of a password will be required for special commands such as protect* and lock,* and for front–panel definition of overrides.* It may also be required for executing an Input Sequence.*

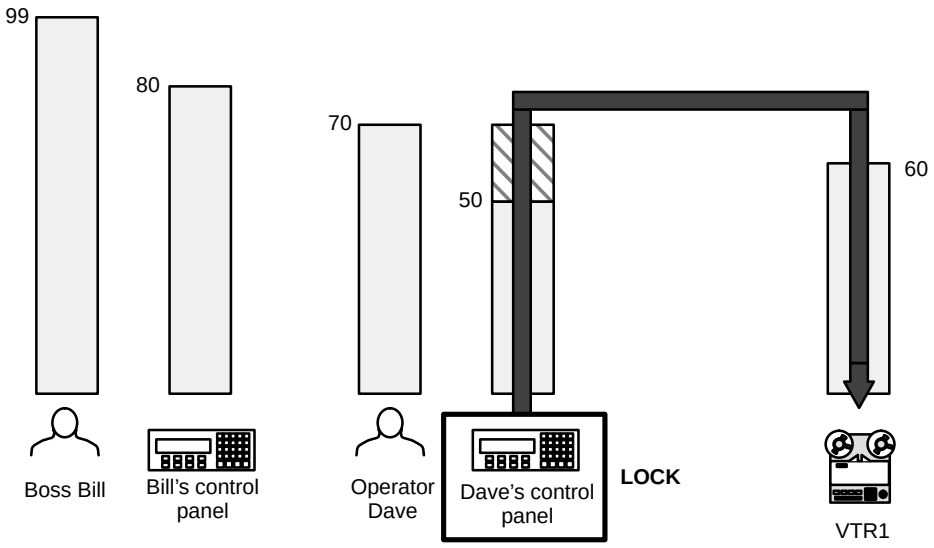
For example, Operator Dave can *protect* the feed to VTR1 (Figure 5–13). No other panel, regardless of password level, could then be used to change the source: †

Figure 5–13. *Protecting an output.*



A more rigorous form of protection is *lock*, where the output must be deliberately *unlocked* before changing the source for a particular destination (Figure 5–14). Only the panel used to lock the output could unlock the output.†

Figure 5–14. *Locking an output.*



* Terms marked with an asterisk are found in the Glossary.

† Except by using supervisory "force unprotect/unlock." See page 5–21.

Systems are shipped with a password level of 00 for all panels and outputs; therefore any password can initially be used to access all control panel functions.

As shown in Figure 5–9, there is only one table of passwords, and this table is used no matter what configuration set is active or selected for editing. However, the password *levels* for individual control panels and outputs are stored with individual configuration sets.

CHANGING PASSWORDS

1. On the main menu (page 5–2), select “Jupiter” (or ALT+j) to bring up the configuration set table list (Figure 5–15).

   As explained above, it doesn’t matter which configuration set is selected for editing, since the password table applies to all sets.

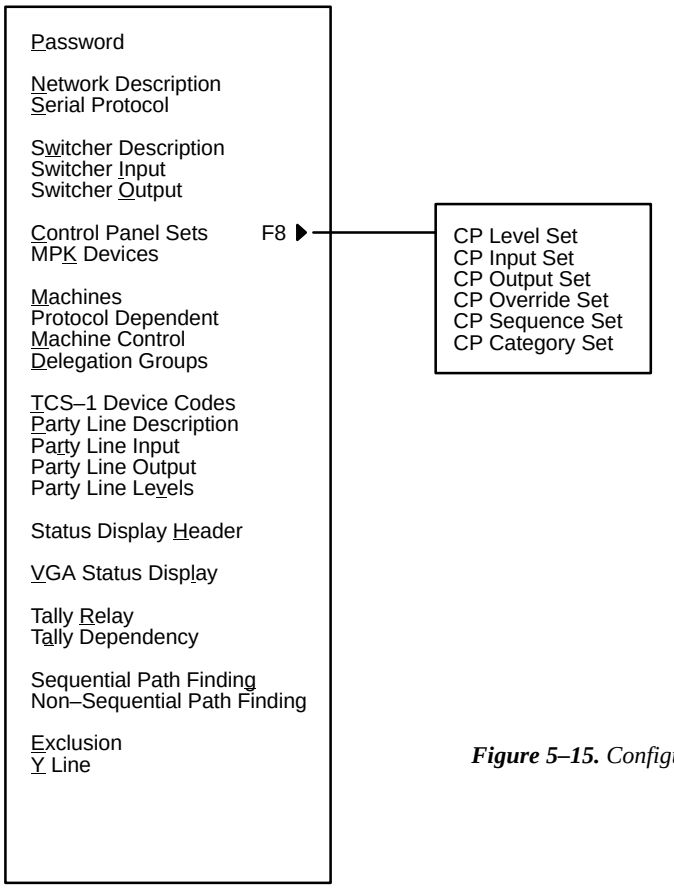


Figure 5–15. *Configuration set table list.*

2. Select “Password” (or press “p”). This will display the password table:

Password Table		
	Password	**Level**
1	**999999**	**99**

Figure 5–16.

3. Select the password you want to change.

   Guidelines for using the editor are found on page 5–3.

4. Type in the revised password. The password must consist of six numbers.

5. Use TAB (or click) to select the Level field. Type in the revised password level (if any). This must be a number from 00 to 99.

   In this example, pressing Enter at this point will create a row for another password. (If left blank, the new row will be deleted automatically when the table is saved.)

6. When editing is complete, select “OK.” To save the changes, select “File > Save.”

SETTING PASSWORD LEVELS FOR CONTROL PANELS

Please see page 5–114.

SETTING PASSWORD LEVELS FOR SWITCHER OUTPUTS

Please see page 5–53.

FORCE UNPROTECT/UNLOCK

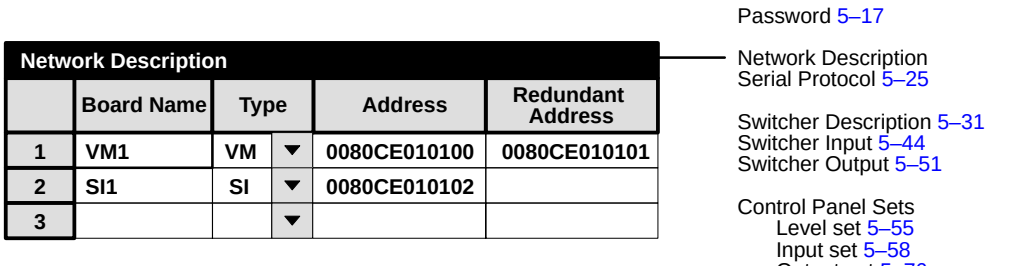
Force unprotect/unlock is available as a file server utility (page 11–1) and with the VGA Status Display (page 6–143).

Force unprotect/unlock is not available from party line–type control panels.

Network Description

This table must be used when any of the following are first installed on the LAN:

- VM/SI 3000 System Controllers
- Saturn Master Control Switcher†
- Thomson Broadcast Automation system
- Software Control Panel Suite‡
- CM 4000 System Controllers§



Network Description					
	Board Name	Type		Address	Redundant Address
1	VM1	VM	▼	0080CE010100	0080CE010101
2	SI1	SI	▼	0080CE010102	
3			▼		

Figure 5–17. *Network description (example).*

Each board is given a user–specified name up to eight characters in length. The system is told which type it is, and the Ethernet address, in hexadecimal, as shown on the back of the controller chassis. The Ethernet address was furnished by Xerox Corp. and is unique world–wide. If the board is redundant, the address of the second unit is entered.

> **Important:** Row numbers on Jupiter tables are used as the “logical” numbers for devices. Changing the row number of an existing device (by inserting/deleting a new controller board in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see “Clearing Battery–Protected Memory” in Appendix B). One way to avoid this interruption is to add new devices at the end of tables.

† Saturn configuration instructions are described in the *Saturn Installation and Operating manual.*
‡ Applies only when Software Control Panel is used for machine control. For more information, see Section 7.
§ For details about CM 4000 applications, see the *CM 4000 Installation and Operating Manual.*

Important: Adding a redundant controller board to an existing table will also affect the system as described immediately above.

AUTOMATIC TABLE ENTRY

Because entries on this table are needed on other tables, the Configurator will automatically copy (or offer as a selectable item) the data entered on this "initial entry" table to all "secondary" tables (including Saturn tables). For example, when a VM 3000 is entered, the name chosen will be added automatically to the Serial Protocol table. For more information about automatic table entry, see page 5–3.

ENTERING DESCRIPTIONS OF CONTROLLER BOARDS

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter > Network Description." This will open a table similar to that shown on page 5–22.

3. Double–click on the first Board Name box.

   Guidelines for using the editor are found on page 5–3.

4. Enter the desired name for the board, up to eight characters.

5. Press TAB to advance to the board Type box. A pop–up menu will list the possible board types. Select a type based on hardware and application:

Board	Application	"Type" Entry	Notes
VM 3000	Control processor	VM	
CM 4000	AccuSwitch processor	AS	
	Jupiter XPress ("Snowbird") processor	SB	
SI 3000	Control processor	SI	
Saturn AAP	Analog audio processor	AA	
Saturn AVP	Analog video processor	AV	
Saturn CP	Control Panel	CP	
Saturn DAP	Digital audio processor	DA	
Saturn DVP	Digital video processor	DV	
Saturn HDVP	High definition video	HD	
PC	Software control panel suite	PC	

6. Select the Address box and enter the Ethernet hardware address for the board.

   For the VM/SI 3000 and other rack mount boards, the address is shown on the back panel.

   Use the Backspace key to erase.

7. If the board is **redundant**, enter the address of the second unit.

   Even though they have the same name, the two boards will have different addresses on this table.

   A redundant VM 3000 installation is shown on page 2–4; a redundant SI 3000 installation is shown on page 2–86.

8. To delete a board, click on the row number box and press DELETE.

9. To close the table, click OK.

10. Click on "File > Save" to save the table.

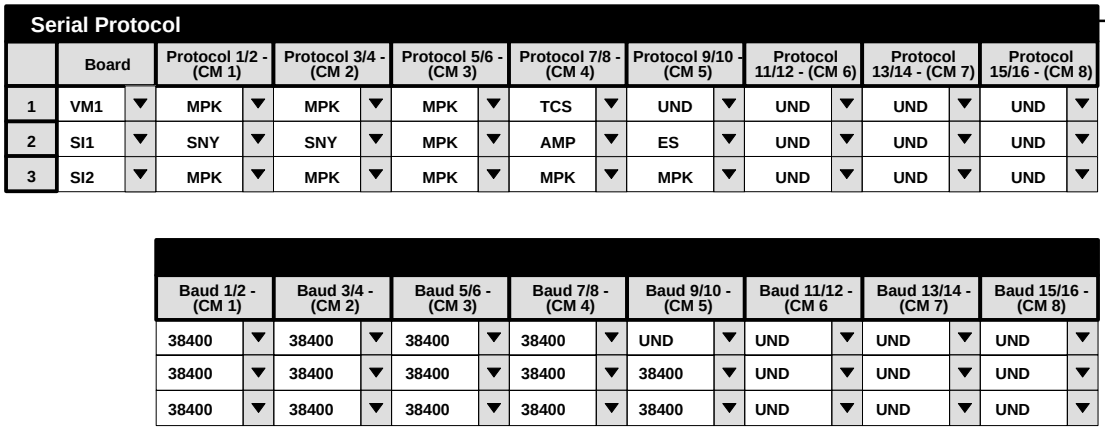
11. Select the next table for editing. When finished, validate, compile, and activate the configuration set. (See *Validating, Compiling and Activating the Configuration Set* on page 5–13 if you need more information.)

Serial Protocol

The Serial Protocol table must be used when a VM/SI controller board is first connected to VTRs, control panels, and other serial control devices. This includes “remote” (third party) switchers.†

This table is also used when a Saturn video processor serves as a connection point for an MPK bus, when a PC acts as a Software Control Panel.‡

It is also used to configure the serial ports of the CM 4000 Control Module.§



Serial Protocol

	Board	Protocol 1/2 - (CM 1)	Protocol 3/4 - (CM 2)	Protocol 5/6 - (CM 3)	Protocol 7/8 - (CM 4)	Protocol 9/10 - (CM 5)	Protocol 11/12 - (CM 6)	Protocol 13/14 - (CM 7)	Protocol 15/16 - (CM 8)
1	VM1	MPK	MPK	MPK	TCS	UND	UND	UND	UND
2	SI1	SNY	SNY	MPK	AMP	ES	UND	UND	UND
3	SI2	MPK	MPK	MPK	MPK	MPK	UND	UND	UND

Baud 1/2 - (CM 1)	Baud 3/4 - (CM 2)	Baud 5/6 - (CM 3)	Baud 7/8 - (CM 4)	Baud 9/10 - (CM 5)	Baud 11/12 - (CM 6	Baud 13/14 - (CM 7)	Baud 15/16 - (CM 8)
38400	38400	38400	38400	UND	UND	UND	UND
38400	38400	38400	38400	38400	UND	UND	UND
38400	38400	38400	38400	38400	UND	UND	UND

Figure 5–18. *Serial protocol table (example).*

The VM 3000 has eight serial ports, and the SI 3000 has 16; but the protocol for these ports must be set in pairs. The protocol setting on the menu shown above corresponds to the system shown on page 1–2. On SI 3000 SI1, ports 1 through 4 are configured for Sony serial machines, ports 5 and 6 for MPK control panels, ports 7 and 8 for Ampex serial VTRs, and 9 and 10 for ESbus machines (such as Philips D–1 VTRs).

The columns on the right side of the table show the baud rate setting for each port (or port pair).

† Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.
‡ Applies only when Software Control Panel is used for machine control. For more information, see Section 7.
§ For details about CM 4000 applications, see *CM 4000 Installation and Operating Manual*.

ENTERING PROTOCOL FOR CONTROLLER BOARD PORTS

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter > Serial Protocol." This will open a table similar to that shown on page 5–25. The Board names should already be present (they were established using the Network Description table—see page 5–22).

3. Double–click on the appropriate protocol box. A pull–down menu will list the possible protocol types. Click on the desired type. To accept the entry, double–click again.

   Guidelines for using the editor are found on page 5–3.

4. Continue the process for the baud rate fields.

   Baud rates will be selected automatically for some protocols. The possible selections are as follows (NA = not available, Opt = optional, Std = default):

Figure 5–19. *Serial protocol selections.*

Device type	Protocol	1200	2400	4800	9600	19200	38400	115000
Abekas	200	NA	NA	Opt	Opt	Opt	**Std**	NA
ASCII	ASC	Opt	Opt	Opt	**Std**	Opt	Opt	Note 1
Alpha Image	ALP	NA	NA	NA	NA	NA	**Std**	NA
Ampex	AMP	NA	NA	NA	NA	NA	**Std**	NA
Automation	Note 2							
CM ES Tributary	CET	Opt	Opt	Opt	Opt	Opt	**Std**	Opt
Datatek	DTK	NA	NA	NA	NA	NA	**Std**	NA
DD (Diamond)	DIM	NA	NA	Opt	Opt	Opt	**Std**	NA
DEC	DEC	Opt	Opt	Opt	Opt	Opt	**Std**	NA
Dune	DUN	NA	NA	NA	NA	NA	**Std**	NA
ESbus	ES	NA	NA	NA	NA	NA	**Std**	NA

Device type	Protocol	1200	2400	4800	9600	19200	38400	115000
ES Control	ESC	NA	NA	NA	NA	NA	**Std**	NA
ES Switch	ESW	Opt	Opt	Opt	Opt	Opt	**Std**	Note 1
ESW–Physical	ESP	Opt	Opt	Opt	Opt	Opt	**Std**	NA
GVG 102	TEN	NA	NA	NA	NA	NA	**Std**	NA
GVG200	200	NA	NA	Opt	Opt	Opt	**Std**	NA
GVG Horizon	HRZ	NA	NA	NA	NA	NA	**Std**	NA
GVG Native Protocol	GNP	Opt	Opt	Opt	**Std**	Opt	Opt	Opt
MPK	MPK	Note 3	Note 3	NA	NA	NA	**Std**	NA
Microvideo	MVD	Opt	Opt	Opt	Opt	**Std**	NA	NA
NVISION	Nv	NA	NA	NA	NA	NA	**Std**	NA
Novotronic	NVT	NA	NA	NA	NA	**Std**	NA	NA
Nexus	NXS	NA	NA	NA	NA	NA	**Std**	NA
Party Line	PL	NA	NA	NA	**Std**	NA	NA	NA
Pro–bel	ALP	NA	NA	NA	NA	NA	**Std**	NA
RKX	RKX	NA	NA	NA	NA	NA	**Std**	NA
Sony	SNY	NA	NA	NA	NA	NA	**Std**	NA
Sony Control (PURS)	SCT	NA	NA	NA	NA	**Std**	NA	NA
TCS 1	TCS	NA	NA	NA	NA	NA	**Std**	NA
TCS 2	TC2	NA	NA	NA	NA	NA	**Std**	NA
Triton	TRI	NA	NA	NA	NA	**Std**	NA	NA
Utah AVS–1B	U12	**Std**	NA	NA	NA	NA	NA	NA
Utah UDI–1B	U96	NA	NA	NA	**Std**	NA	NA	NA
Vistek	VTK	NA	NA	NA	**Std**	Opt	NA	NA
VT_	VT_	Opt	Opt	Opt	Opt	**Std**	Opt	NA

Note 1: 115K available only with CM 4000.

Note 2: Protocol for automation systems varies. Refer to additional protocol notes below and documentation supplied with automation system.

Note 3: Requires special PROMs or control panel settings. See “MPK” notes on page 5–29.

Additional Protocol Notes

200 is for Model 200 series production switchers and compatibles (e.g., Abekas) (see page 2–81).

Notice that the standard setting for a Model 200 switcher is 38.4 kbaud; this is the recommended data rate. The communication standard is RS–422; parity is automatically set to “even.” For the production switcher, protocol setting is described in the *Model 200 Peripheral Interface II* manual as follows:

> "Communication can follow the RS–232 or RS–422 standard at 9.6K, 19.2K or 38.4K baud with even, odd, or no parity. Switcher Setup Function #5 PERIPH COMM permits selection of these communication parameters. This function can be accessed by connecting the Diagnostic Pod to the State Processor connector on the 521 Control Module and entering Setup mode #5."†

The protocol must be exactly the same for all devices on the Peripheral Bus. Refer to the production switcher installation manual for additional installation and operating instructions.

ASC (ASCII) refers to switcher control using an external computer. Hardware connections are described on page 2–79. For **Diamond–ASCII**, the baud rate must match the hardware setting on the DD production switcher XBAR port (normally 38400) (see page 2–76). A technical description of the Thomson ASCII computer interface protocol is presented in Appendix N.

ALP (Alpha Image), **DTK** (Datatek D–2000/2166), **TEN** (GVG 102), **HRZ** (GVG Horizon), **MVD** (Microvideo), **NVT** (Novotronic), **NXS** (Nexus), U12, U96, and **VTK** (Vistek) all refer to VM 3000 boards controlling one or more of these "remote" (third party) switchers. **U12** is for 1200 baud connection to a Utah AVS–1B with PL–320; **U96** is for 9600 baud connection to a Utah UDI–1B. *When selected, this entry will apply to VM/SI odd–numbered ports only.* (Hardware installation of these switchers is discussed on page 2–12.)

Note: Pro–bel switchers use the "AlphImag" protocol.

CET SMPTE ES Tributary protocol. For CM 4000 applications only. This is the full tributary ESBus automation protocol, compliant with SMPTE EG 29–1993, and all associated normative references.

DEC is a custom protocol.

DIM (Diamond) is the protocol used to return mnemonic information to a DD Series production switcher serial port. The baud rate must match the Diamond hardware setting (normally 38400) (See page 2–76).

DUN is for Dune digital audio switchers. *When selected, this entry will apply to VM/SI odd–numbered ports only.*

ES (ESbus) is for VM/SI 3000 boards controlling a EBU/SMPTE ESbus–compatible VTR (such as the Philips DCR–500) or similar machine, or, for a customer–supplied computer program controlling such VTRs.

ESC (ESbus control) is for VM 3000 boards controlling a "remote" (third–party) routing switcher using the proposed ESbus routing switcher dialect. *When selected, this entry will apply to VM/SI odd–numbered ports only.* (For a description of this protocol, please contact Thomson.)

ESW (ESswitch) This is a simplified version of the ESbus Tributary protocol. *When selected, this entry will apply to VM/SI odd–numbered ports only.* This protocol allows a Thomson Crosspoint Bus router‡ to be controlled by a Thomson Broadcast Automation or third–party computer. Hardware connections are described on page 2–77 (Automation) and 2–79 (other systems). For a description of this protocol, please contact Thomson.

ESP (ESbus Physical) is a protocol used for "physical" switching where the control system selects physical inputs and physical outputs on logical levels. (Note: This is not the same as File Server controlled physical switching, as described on page 14–1.) For a description of this protocol, please contact Thomson.

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† *Model 200 Peripheral Interface II Protocol and Dialect* (Grass Valley Group Manual Number TP0424–00, June 1988), p. 3–2.
‡ "Crosspoint Bus routers" are listed on page 2–3.

GNP (Grass Valley Native Protocol) is used for Jupiter control of a Grass Valley SMS 7000 or Encore control system (which is in turn connected to a routing switcher).

MPK is the "Message per Keystroke" protocol used for all MPK devices, such as CP–3000 series control panels. (For a complete list of MPK devices, see *Dev Type* on page 5–109.)

Operating a control panel at any baud rate other than 38400 will limit the number of panels per port to one.

For use with a modem, the CP 3000 panel can be equipped with either a 1200 baud PROM or a 2400 baud PROM; other panels allow the baud rate to be set at the front panel. For more information, refer to page 2–101.

Nv (NVISION)protocol is the same as ESControl except it is not refreshed; it is intended for use with Nvision data routers. *When selected, this entry will apply to VM/SI odd–numbered ports only.*

RKX is a routing switcher protocol.

SNY (Sony) is for the Sony machine control protocol.

SCT (Sony Control) is a custom Sony routing switcher protocol (PURS). *When selected, this entry will apply to VM/SI odd–numbered ports only. This protocol requires a 3rd party interface not supplied by Thomson.*

PL (Party Line) is for VM 3000 boards on which the Party Line port is active; "Party Line" would be selected for serial ports 7 and 8. Note that selecting "Party Line" does not actually cause the serial ports to operate according to Party Line protocol; in fact, it causes the ports to be switched *off* and the Party Line port to be switched *on.* (This arrangement is used because there is only one hardware controller available for serial ports 7–8 and the Party Line port.) The Party Line port must be configured using the Party Line description table (page 5–169).

TCS/TC2 (Tcs 1 and **Tcs 2)** — Systems requiring these protocols are shown on page 2–89. If "TCS" is selected, the CP (Control Panel) version of the protocol will automatically be assigned to the odd side of the port pair and the MI (Machine Interface) version of the protocol will automatically be assigned to the even side of the port pair.

"TC2" only applies to MCS–2000 applications. When selected, it will automatically be assigned to the odd side of the port pair (which is connected to the MCS); the even side of the pair would not be available for use.

TRI (Triton) routing switcher protocol *applies to VM/SI odd–numbered ports only.*

VT_ is a custom protocol.

5. After saving your changes, compile and activate the configuration set. (See *Compiling and Activating the Configuration Set* on page 5–13 if you need more information.)

SATURN VIDEO PROCESSOR – ENTRY FOR MPK PORT

The Saturn Master Control Switcher video processor (either digital or analog) can be used as an alternate connection point for an MPK bus. (In Saturn stand–alone systems, it would be the only MPK port available.) Typical uses for the MPK bus include:

- Connection to an MI–3040 General Purpose / Tally Interface (see page 2–105 for a system illustration).
- Connection to a SD–3x Status Display (not presently supported by Saturn MPK port).
- Connection to the Saturn console's Select button group. In multi–channel Saturn systems, this would allow selection of the channel to be be controlled. Please refer to the Saturn Installation Manual for more information.

An example entry is shown in Figure 5–20. The name of the video processor comes from the Network Description table. To define the processor's port, select "MPK" and "38400" for the first port pair. All other ports can be left undefined.

Serial Protocol

	Board	Protocol 1/2 - (CM 1)	Protocol 3/4 - (CM 2)	Protocol 5/6 - (CM 3)	Protocol 7/8 - (CM 4)	Protocol 9/10 - (CM 5)	Protocol 11/12 - (CM 6)	Protocol 13/14 - (CM 7)	Protocol 15/16 - (CM 8)
1	AVP	MPK	UND	UND	UND	UND	UND	UND	UND
2									

Baud 1/2 - (CM 1)	Baud 3/4 - (CM 2)	Baud 5/6 - (CM 3)	Baud 7/8 - (CM 4)	Baud 9/10 - (CM 5)	Baud 11/12 - (CM 6	Baud 13/14 - (CM 7)	Baud 15/16 - (CM 8)
38400							

Figure 5–20.

Switcher Description

Switcher Description

	Switcher	Level	VI	RV	MC	Board	#In	#Out	PLvL	Follow Level	Driver	3 LI	3 LO	Option	Audio	DM 400 Off Time
1	MAINROUT	VIDEO	☑	☐	☑	VM1	64	64	1		Binary				None	
2	MAINROUT	LEFT	☐	☐	☐	VM1	64	64	2		Binary				Left	
3	MAINROUT	RIGHT	☐	☐	☐	VM1	64	64	6		Binary				Right	
4	MAINROUT	TC	☐	☐	☐	VM1	64	64	3		Binary				None	
5	MAINROUT	DATA	☐	☐	☐	VM1	65	65	16		DM400B			Enforce		
6			☐	☐	☐											

Logical level number

Logical level name

Physical level number

Password 5–17

Network Description 5–22
Serial Protocol 5–25

Switcher Description
Switcher Input 5–44
Switcher Output 5–51

Control Panel Sets
- Level set 5–55
- Input set 5–58
- Output set 5–76
- Override set 5–98
- Sequence set 5–101
- Category set 5–103

MPK Devices 5–108

Machines 5–141
Protocol Dependent 5–144
Machine Control 5–148
Delegation Groups 5–161

TCS–1 Device Codes 5–168
Party Line 5–169

Status Display Header 5–172
VGA Status Display 5–173

Tally 5–174

Path Finding 5–196

Exclusion 5–210
Y Line 5–211

Figure 5–21. *Switcher Description table (example).*

This table must be used when the VM 3000 or CM 4000† is first connected to a distribution switcher.§

Each logical level number of the switcher is given a user–specified name up to eight characters in length, and the system is provided with detailed information about each level.

† CM 4000 installation is described in the *CM 4000 Installation and Operating Manual.*
§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

ENTERING SWITCHER LEVELS DESCRIPTIONS

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter > Switcher Description." This will open a table similar to that shown on page 5–21.

3. **Switcher** **Level** Enter a switcher and level name.

   Guidelines for using the editor are found on page 5–3.

   Important: Row numbers on Jupiter tables are used as the "logical" numbers for levels. Changing the row number of a level (by inserting/deleting a new level in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see "Clearing Battery–Protected Memory" in Appendix B). One way to avoid this interruption is to add new levels at the end of tables. Adding new levels in the middle of the table will also **clear all entries in the Switcher Input and Output tables.**

   Normally one switcher is named, using up to eight characters.

   The level name (also called "logical level name") can also be up to eight characters. All of the following information entered on this menu will apply to this level. Conventional names are "VIDEO," "LEFT," "RED," "GREEN,"etc.

   For a Venus "ES 401"[§] digital audio switcher with two–level stereo mode hardware settings, there must be an entry for the Left level and another for the Right level; this will allow special stereo mode switching such as Mix and Reverse. If the ES 401 switcher's hardware is set for one–level stereo mode, or for one–level mono mode, or if a Venus "ES 400" digital audio switcher is being configured, only one entry is needed. For information about setting the Venus hardware, refer to the Venus Installation manual.

   If there is more than one Thomson Crosspoint Bus router[‡] type in the system (such as a Venus plus a Trinix), there are two possible approaches to configuration. The additional switcher can be entered as a named level (or levels) within the main router; however, this will require a unique hardware setting on each level to avoid conflicts (see diagram on page 2–33). Another solution would be to drive the Venus with one VM 3000 and the Trinix with another; this would allow level settings to remain independent (see diagram on page 2–34).

4. **VI** Select vertical interval switching Yes or No for this level. Normally checked for the video level and unchecked for all others.

   If the VM 3000 is supplied with house reference sync, checking VI will cause switches on this level to start in the house vertical interval. In other words, the level selected on this menu will start switching first; other levels will follow as soon as possible. Priority is normally given to video since audio switches outside of vertical interval are not as noticeable.

[§] In this manual, "ES 401 switcher" refers to the AES11 synchronous/asynchronous version of the digital audio switcher matrix board and its associated components; "ES 400 switcher" refers to the original asynchronous (non–reclocking) version of the digital audio switcher matrix board and associated components.

[‡] "Crosspoint Bus routers" are listed on page 2–3.

This method of enforcing vertical interval switching applies only to Thomson switchers operating on the Crosspoint Bus port of the VM. For "remote serial control" applications, including **Triton, Horizon, TEN–20 / 20–TEN,** and **3rd party routers**, VI should be unchecked on all levels.

5. **RV** Reverse switching. This item applies only to certain **data switchers**. For video, audio, and time code switchers, leave unchecked.

   This box is checked for older model RS–232/422/423 data switchers equipped with DM 400/400A§ Data Matrix boards. Configuration of DM 400/400A Data Matrix boards is described in Appendix L.

   Newer model data switchers equipped with DM 400B§ Data Matrix boards use only one level, and the "RV" box is left unchecked (even though "reverse" switching is still taking place).

6. **MC** Select machine control assignment follow Yes or No for this level. Normally checked for video level and unchecked for all others. **One (only) level can be checked.**

   As explained in detail elsewhere in this manual, the usual procedure is for the machine assignment system to follow the distribution switcher; that is, if a certain VTR is selected for a certain destination, then the associated machine control panel will automatically assume control of that VTR. (See *Assigning Machines to Control Panels* on page 5–151 for more information.) This menu item determines which level will be used as the reference in making the machine assignment.

7. **Board** Select the name of the VM/CM controlling this level.

   The source of these names is the Network Description table (page 5–22).

   Each logical level can be controlled by a separate VM.

   Redundant VM boards, if any, are ignored on this table. Recall that redundant VM boards have the same logical name.

   Using a single VM, one or more Thomson Crosspoint Bus routers can be connected to the Crosspoint Bus port.

   Triton routers, or certain non–Crosspoint Bus routers, can be connected to a VM 3000 serial port (odd–numbered only). SI 3000 serial ports cannot be used for this purpose.

   Special entries are required in this column for Saturn Master Control Switchers equipped with an internal switching matrix.†

§ Type and model of switcher card is shown on front edge of printed circuit board.

† Saturn configuration instructions are described in the *Saturn Master Control Switcher Manual.*

8. **#In** **#Out** Enter the number of inputs and outputs for this logical level.

For Venus **video** switchers, the maximum for one logical level is 1024 in and out.

For Venus **audio** switchers, where the left and right channels are assigned to different levels, the maximum number of inputs is 512 per level; the maximum number of outputs is 1024 per level. For example, these values would apply to a Venus **analog audio** switcher configured for stereo operation (the usual case) and to a Venus ES 401 **digital audio** switcher configured for two–level stereo operation.

For Venus analog audio switchers configured for mono operation, ES 400 digital audio switchers, or ES 401 digital audio switchers operated in 1–level stereo mode or mono mode, the maximum number of inputs and outputs is 1024.

For three–stage switchers*, this must be the fully–expanded ("target") size of the switcher. For additional information concerning three–stage switchers, see Appendix H.

Special entries are required if Output Monitoring is being used (see Appendix O).

For Venus **DM 400B** Data Matrix switchers, the entry for "#In" and "#Out" should be set to the actual number of inputs **plus** 1 to allow an extra number for the "SAFE" input. For example, if the switcher is 64 x 64, both entries should be "65." (A DM 400B matrix is always square.) The maximum is 192 in and out.

Mars switchers, which use octal architecture, will require special entries. When the *binary* driver is used (as described in Step 11 below), then the "#In/#Out" entries are as follows:

Switcher size	No. of inputs (as entered on table)	No. of outputs (as entered on table)
24 x 8	64	16

For the maximum number of inputs/outputs for remote (third party) switchers, refer to the manual supplied with the switcher.

9. **PLvL** Enter the physical (hardware) level number.

This is the level address determined by hardware switches on the switcher itself. These are normally set at the factory and rarely changed in the field. Refer to the following list and the hardware manual supplied with the switcher for more information.

A physical level number can range from 1 to 999; however, the maximum number of logical levels is still 96. This number may be reduced according to the number of outputs being controlled. For more information, see page 1–16.

* See Glossary.

a. For **Venus** switchers, the backplane level select jumpers are usually factory set as follows:

Name of level	**Physical level no.**	**Notes**
Analog video	1	
Serial digital video (standard definition)	7	
Serial digital video (high definition)	9	
Analog audio left (A1)	2	
Analog audio right (A2)	6	
Analog audio A3	8	
Analog audio A4	12	
AES digital audio	32	Applies to all versions and modes of digital audio switchers.
AES digital audio (right)	36	Applies only to right channel of ES 401 digital audio switchers operated in two–level stereo mode.
Time code (mono)	3	
Data transmit	16	
Data receive	16	
Data (reserved)	20	

These level numbers should be confirmed by checking the documentation package supplied with the switcher.

Analog audio stereo level numbers: Selection of mono/stereo mode is determined by a backplane jumper. With this jumper in the Stereo position, the physical level number set by the Level jumper is automatically applied to the Left stereo channel (in this example, Left audio would be physical level "2."); and, the Right stereo channel is automatically given the same number **plus 4** (in this example Right audio would be physical level "6"). Furthermore, stereo operation places restrictions on the physical level numbers that can be used; specifically, the "L4" level jumper cannot be installed. For more information, please refer to the "Backplane Jumpers" section of the *Venus Installation Manual*.

ES 401 digital audio switcher level numbers: Selection of one– or two–level mode is determined by hardware jumpers and switches: (1) If the "Mono" backplane jumper is On, the ES 401 will operate as a one–level mono 64 x 64. (2) With this jumper off, dip switch settings on the Matrix and Output boards will determine whether the switcher is operated as one–level stereo or two–level stereo.

The default setting is Mono jumper OFF, two–level stereo, which permits special stereo mode switching such as mix and reverse. This setting requires configuration of two levels, such as Level 32 and Level 36 as shown above. Again, the right channel always has the number of the left channel plus 4. For more information about these hardware settings, refer to the Venus manual.

Note: If non–factory default numbers are used, the following rules should be kept in mind: 1) For analog audio left levels, and for digital audio levels, the binary form of the physical level number cannot have the 4s bit set to 1; e.g., decimal "2" (binary 00000010) can be used for analog audio left but decimal "4" (binary 00000100) cannot. This means that the following decimal numbers cannot be used: 4 through 7, 12 through 15, 20 through 23, 28 through 31, 36 through 39, 44 through 47, 52 through 55, 60 through 63, etc. 2) The analog audio right level number must be the left number + 4.

b. **Concerto** switchers are configured much the same as Venus. For more information, refer to Thomson Field Engineering Bulletin 075–0722–00, "Jupiter Crosspoint Bus Control of Concerto Flexframe Routing Matrix."

c. For **Horizon**† switchers. The physical level number can range from 0 to 3.

d. For **TEN–20 / 20–TEN**† switchers, the physical level number can range from 0 to 3.

e. **Triton** switchers, when controlled by Jupiter, use a level scheme different than that described in the Triton manual. In Jupiter applications, split switching requires each level to be assigned a *different* number.

Entries in the PLvL column consist of three digits. The first digit serves only to differentiate the table entry from all other physical levels connected to the VM; the second two digits are derived from the "Router Address" DIP switch [setting on the rear panel. In a typical video/audio/time code application, the first digit could be "1," while the last two digits would be the Router Address for the chassis. For example:

Triton chassis	DIP switch setting	PLvL entry
Video	0010 (decimal 02)	102
Left and right audio	0000 (decimal 00)	100
Time code	1111 (decimal 15)	115

Note that split switching is possible, but only between chassis; e.g., it is possible to split Audio Left/Right from Video, but not possible to split Audio Left away from Audio Right.

As a convention, it is suggested that all Triton chassis connected on the same MIDI bus use the same first digit. Thus if there were a second "group" of Triton switchers connected on another MIDI bus (and per Jupiter requirements connected to a second VM), they might have "2" as the first digit in the PLvL entry. For example:

Triton chassis	Connected to	DIP switch setting	PLvL entry
News Video	VM2	0010 (decimal 02)	102
News Left and right audio	VM2	0000 (decimal 00)	100
News Time code	VM2	1111 (decimal 15)	115
Aux Video	VM5	0010 (decimal 02)	202
Aux Left and right audio	VM5	0011 (decimal 03)	203

In RGB or YUV applications where all three signals must always switch together, the Router Address switches should be set to the **same** value on each chassis. However, the Switcher Description table has only one row covering all three chassis. For example:

Triton chassis	DIP switch setting	PLvL entry

† When a switcher of this type and a Thomson Crosspoint Bus switcher are entered on this table, an offset of 100 can be used to avoid having the same level numbers for both switchers. Thus a hardware level setting of "0" on the Alpha Image switcher could be entered on this table as "100"; or, a hardware Level setting of "1" on the Datatek switcher could be entered on this table as "101." This eliminates the need to re–set existing level settings on the hardware.

Red	0000 (decimal 00)	100

In this example, the Green and Blue chassis would also have their Router Address switches set to "0000."

f. **Conventional TVS/TAS square matrix switchers**. For these switchers the hardware switches are usually set as follows:

Name of level	**Physical level no.**
Video	1
Left audio	2
Right audio	8
Time code	4

TVS/TAS data matrix forward/reverse level numbers: two levels must be described on the table—a *forward* level and a *reverse* level; for TVS/TAS data matrix switchers the levels have *different* physical level numbers.

g. **RKX switchers**††. The physical level number can range from 0 to 99.

h. **Multiple switchers.**

An example of a multiple switcher installation is shown on page 2–33.

As discussed in Step 3 above, more than one switcher can be operated by a single VM board; however, this will require a unique hardware setting on each level to avoid conflicts. For example, you could enter a switcher "MAIN-ROUT" with levels 1, 2, and 6; and switcher "NEWSROUT" with levels 3, 4, and 5.

Alternatively, by dedicating a separate VM board to each switcher, the same physical level numbers can be used on different switchers if desired. (See diagram on page 2–34.)

i. **Logical level mapping** (two logical levels on one physical level).

An example of logical level mapping is shown on page 2–31.

In these systems, the same physical level number can be used on more than one logical level (i.e., on more than one row of the Switcher Levels table). For example, you could enter a switcher "MainRout" with Left Audio on level 2, and with Right Audio **also** on level 2. This technique can sometimes help reduce overall switcher size, but it requires special entries to this table and to the Switcher Outputs table as follows:

— the Switcher Levels table must always show the total number of outputs for the entire physical level. For the example system shown on page 2–31, the matrix entry would be "60 x 60" for the Left logical level, *even though the level is being used as a 60 x 30.* The same applies to the Right logical level; the table entry would be "60 x 60."

— the Switcher Outputs table (page 5–51) must indicate the differing physical output numbers used on each level. For example, output "VT01" might use physical output "20" for video and left audio and physical output "21" for right audio.

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††When an RKX and a Thomson Crosspoint Bus switcher are entered on this table, an offset of 100 can be used to avoid having the same level numbers for both switchers. See also footnote marked with "†" on next page.

j. **Alpha Image A264S**†. The physical level number is zero.

k. **Datatek D–2000/2166**†. The physical level number can range from 0 to 6.

l. **ESbus switchers**§. The physical level number can range from 0 to 254 (but is limited to 126 by the VM 3000).

m. **NVISION**§ data switchers. The physical level number can range from 0 to 254 (but is limited to 126 by the VM 3000).

n. **Microvideo**†. The physical level number is 0.

o. **Nexus**†. The physical level number is 0.

p. **Novotronic**†. The physical level number can range from 1 to 10 (never 0).

q. **Three–stage** switchers. See Appendix H.

r. **Utah Scientific**† switchers, the physical level number can range from 0 to 3.

s. **Vistek Array**† switchers, the physical level number can range from 0 to 25.

Notice that protocol can be assigned on a level–by–level basis.

On the VM crosspoint bus, this would allow a combination of TVS protocol on some levels and Binary protocol on others. This would be the case in a system which combines a Venus with a TVS/TAS–2000, for example.

10. **Follow Level** Enter name of switcher and logical level that this level is to follow permanently. For video/audio switchers these boxes are usually left blank, thus allowing for split (breakaway) switching.

For switchers where split switching is not desirable (such as RGB switchers), this entry can be used to force one level to follow another; for example, “Red” could be entered in the Follow Name box on the menus for the Green and Blue levels. (This entry is not needed for **Triton** RGB/YUV applications.)

† When a switcher of this type and a Thomson Crosspoint Bus switcher are entered on this table, an offset of 100 can be used to avoid having the same level numbers for both switchers. Thus a hardware level setting of “0” on the Alpha Image switcher could be entered on this table as “100”; or, a hardware Level setting of “1” on the Datatek switcher could be entered on this table as “101.” This eliminates the need to re–set existing level settings on the hardware.

§ When a switcher of this type and a Thomson Crosspoint Bus switcher are entered on this table, an offset of 400 can be used to avoid having the same level numbers for both switchers. See also preceding footnote.

11. **Driver** Select distribution switcher protocol (“Driver”).

Figure 5–22. *Switcher protocol selections.*

Switcher	Protocol
Concerto	Binary
Grass Valley Series 7000 (controlled via SMS 7000)	GVG Native Protocol
Grass Valley Encore–controlled router	GVG Native Protocol
Dune	Binary
HORIZON	Horizon
Mars	Binary
RKX	RKX
SDR 400	Binary
TEN–20	20–Ten
20–TEN	20–Ten
Trinix	Binary
Triton	Triton
TVS/TAS 1000	TVS Prot
TVS/TAS 2000/2001	TVS Prot
TVS/TAS 3000	TVS Prot
Binary Confirm All (test)	Binary Confirm all
TVS/TAS Confirm All (test)	TVS Confirm all
Venus	Binary
Venus Data DM 400/400A	Binary
Venus Data DM 400B	DM400B
Alpha Image A264S	Alpha
Datatek D–2166/2000	Datatek
ESbus switcher	Es Bus
Microvideo	MVD
Nexus	NXS
Novotronic	NVT
NVISION data router	NVision
Pro–bel Eclipse (SW.P.02)	Alpha
Sony	Sony
Vistek Array	Vistek
Utah Scientific Party Line (UDI–1B)	Utah_96
Utah Scientific AVS–1B (PL–320)	Utah_12

12. **3 LI** **3 LO** Enter inputs per input stage sub switcher (“3LI”) and outputs per output stage sub switcher (“3LO”). These entries apply only to three–stage switchers (see Appendix H). For conventional square matrix switchers, leave blank.

13. **Option** This item applies only to data switchers (see page 5–41). For video, audio, and time code switchers, leave blank.

14. **Audio** In the “Audio” column, for **Venus** switchers, select “Left” for the left audio level, “Right” for the right, and “Normal” for all others. This will allow special CP 3000 and CP 3800 audio switching modes such as mixing stereo signals into a mono output, duplicating a mono signal on both channels of a stereo output, and reversing channels.

    For **Triton** switchers, select an “A” for each audio chassis. Triton data switchers with rear–panel DIP switch 7 DOWN (“controlled as audio”) also require an “A” entry. For Triton video switchers, or for Triton data routers with switch 7 UP (“controlled as video”), leave the column blank.

15. **DM 400 Off Time** This item applies only to data switchers (see page 5–43). For video, audio, and time code switchers, leave blank.

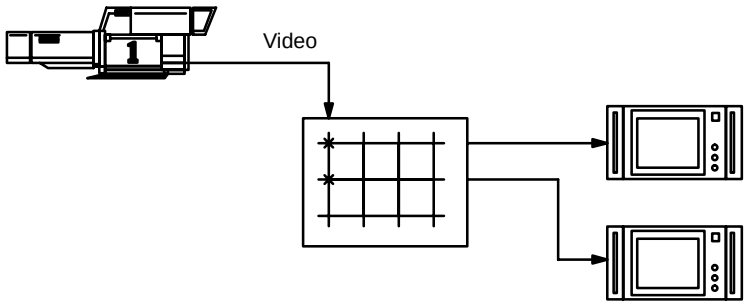
16. After saving your changes, validate, compile, and activate the configuration set. (See page 5–13 if you need more information.)

Option **POINT–TO–POINT DATA SWITCHING OPTIONS**

(“Normal/Advise/Enforce”)

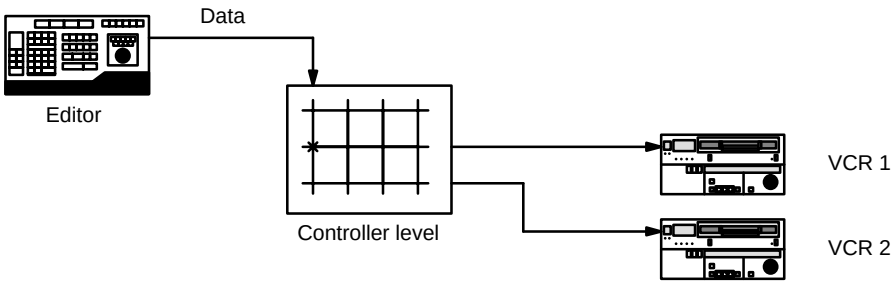
Normally, a distribution switcher allows an input to be sent to more than one output. For example, the video in Figure 5–23 could be switched to two destinations at the same time.

Figure 5–23.



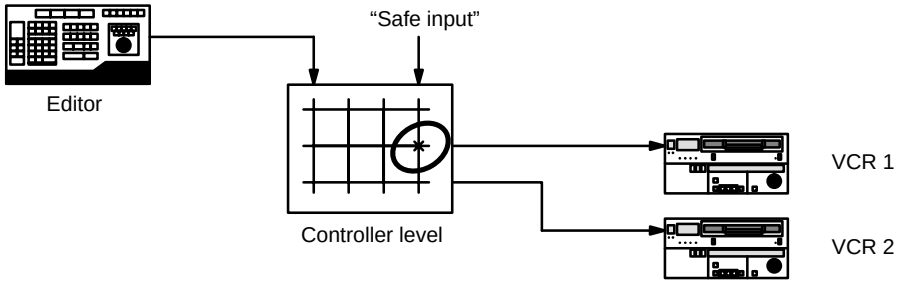
In a data switcher, it may be desirable to restrict operation to “point–to–point” switching. For example, this would insure that the transmit data from an editor could be switched to only one VCR at a time, as shown in Figure 5–24.

Figure 5–24.



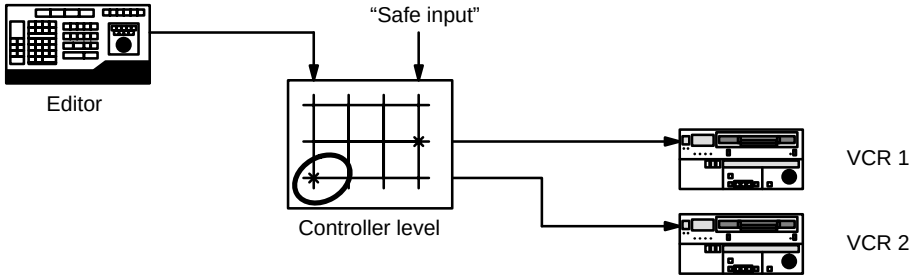
When **“Enforce”** is turned on, and an attempt is made to switch control to a new device, then the device presently being controlled will be switched automatically to a **“safe” (non–existent) input** (Figure 5–25).

Figure 5–25.



The control device would then be switched to the new destination (Figure 5–26).

Figure 5–26.



— For Venus DM 400/400A data routers, the Safe Input is defined as the first input listed on the Switcher Input table (page 5–48), which is the same as “logical input 1.” The physical input number of the Safe Input should always be “192;” this insures that the router will tri–state (i.e., the destination will be connected to a high–impedance source).

— For DM 400B data routers, the Safe Input is defined as whatever input is named “SAFE” on the Switcher Input table (page 5–48); the physical input number should always be one (1) beyond the last input number (e.g., if the inputs are numbered 000–063, then the Safe Input would be 064). In these systems selecting the Safe Input will cause the destination to be switched “off.”

When **“Advise”** is turned on and an attempt is made to switch control to a new device, the switch will not occur. The system will display the following message on the control panel:

```
Input currently in use by <output number>
```

The operator can then switch the “safe input” to the device presently being controlled. This will avoid having the control device connected to two machines at the same time.

When **“Normal”** is turned on and an attempt is made to switch control to a new device, the switch will occur immediately. There will be no notification of conflict or extra switch to a safe input.

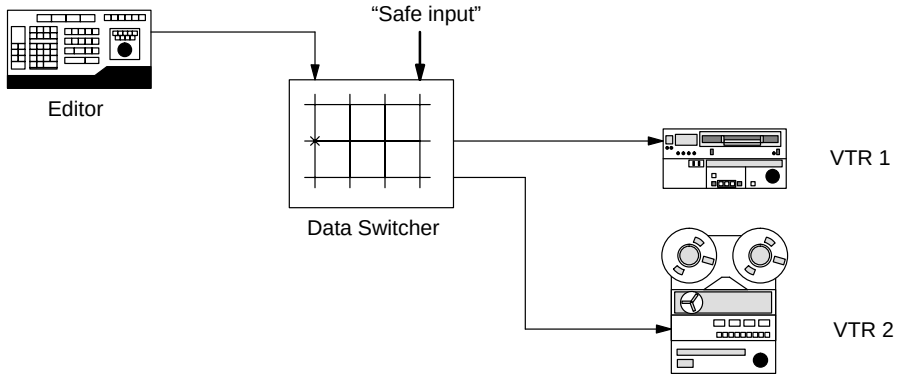
DM 400 Off Time

DATA SWITCHING – OFF TIME BETWEEN SWITCHES

Number of frames switcher will dwell on Safe input when switching between controlled devices

When a switch occurs from one VTR control cable to another where the VTRs are of different types, the switch can occur so rapidly that the editing system may not know that a new type of VTR has been connected. This can result in editing inaccuracies since the editing system may be using ballistics for the wrong type of VTR. See Figure 5–27.

Figure 5–27.



To avoid this problem, the data switcher can be set to switch to a Safe input, wait for a specified minimum number of frames, and then switch to the new device. This will cause the editing system to send a request to the new VTR to identify itself and get the correct ballistics.

The wait period is set in the "DM 400 Off Time" column of the Switcher Description table. A setting of approximately 3/4 second is recommended (20 frames). The maximum value is 99 frames.

The delay will only occur when a data switcher is switching real devices, and only when Enforce (see page 5–42) is turned on.

The DM 400A data switcher requires a two–row entry on the Switcher Description table; in this case the DM 400 Off Time entry is made on the Reverse switcher row (the row with the letter "R" in the RV column).

For an overview of data switching, see page 2–32.

Switcher Input

The switcher input table must be used to assign a logical name to each physical input.

If there is more than one switcher in the system, a table must be defined for each. Figure 5–28 shows a table for switcher "MAINROUT."

Switcher Input – MAINROUT

	Logical Input Name	VIDEO	LEFT	RIGHT	TC
1	BARS	000	000I	000I	000I
2	TONE	064I	000P	000P	000I
3	TC				000P
4	VT01	001	001	001	001
5	VT02	002	002	002	002
6	VT03	003	003	003	003
7	VT04	004	004	004	004
8	VT05	005	005	005	005
	• • •				
	BLK	064P	060I	060I	000I

Figure 5–28. *Switcher input table (example).*

"BARS," "TONE," and "VT01" are logical names for various inputs. Each name, which can be up to eight characters long, corresponds to a **switcher physical input number** for each level of the switcher. This number is normally attached at the factory to each connector on the back of the switcher; however, it should be understood that the real source of this number is the hardware device address, which is usually set with an internal DIP switch or jumper. (For more information, refer to the manual supplied with the particular switcher.)

Note: an input name is not entered directly at switcher control panels; rather, it is linked to a category and entry number through the CP Input Sets table. The category and entry number are then entered at the control panel to make the switch. The status mnemonic that appears on control panels is also determined by the CP Input Sets table. For more information, see page 5–58.

Important: Mars physical input numbers, when controlled by a Jupiter system, are not continuous. For example, physical **input numbers 8 through 15 are skipped**. For more information, refer to the Mars manual in the Cross-point/Jupiter control section.

Note: Some switchers (such as **Concerto** and **Triton**) use "1" as the first input connector number. In this case, the physical input number for this connector, as entered on the table, is "0." Connector "2" is physical input number "1," etc.

In Figure 5–28, there are four levels: video, left audio, right audio, and time code. The table shows that the input named "VT01" is wired to connector 001 on all four levels. Similarly, the input name BARS is associated with connector 000 on all four levels.

If there is no entry for a particular level, no switch will occur on that level. On this table, when input "TC" is requested from a control panel, only the time code level will switch.

An automatic split (breakaway) can also be arranged. In this example, a request for the input named "TONE" will obtain input 064 on the video level but input 000 on the other levels. Split switching is described in more detail below.

In Venus DM 400B **data switching** applications, the switcher input table is used to assign a logical name to each physical port connected to a "tributary" device. For more information, see page 5–48.

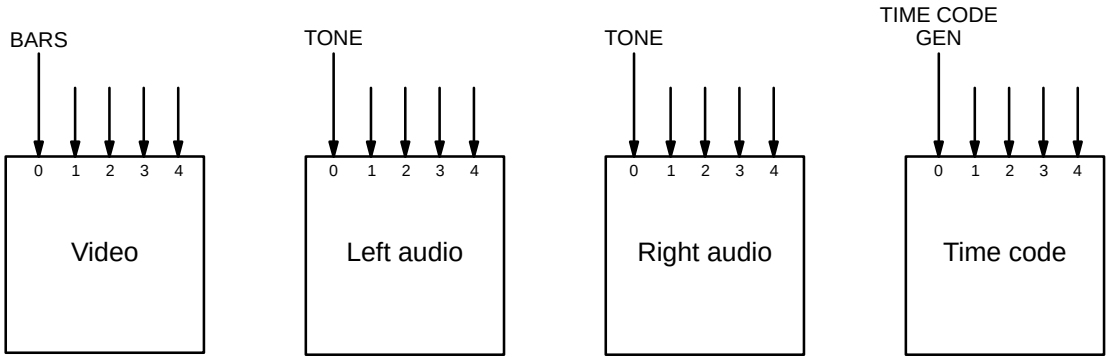
SPLIT SWITCHING

Split (or breakaway) switching is the selection of one input on one level and another input on another level. An example would be the selection of color bars on the video level and test tone on the audio levels. Split switches can be manual, where the operator addresses individual levels and makes each switch separately; or, automatic, where a single category / entry number will cause the split to occur.

An *automatic* split can be arranged in either of two ways:

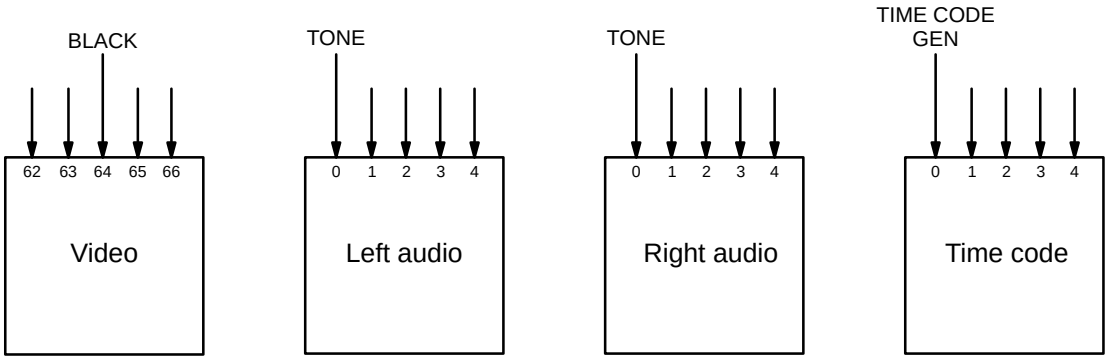
— The switcher can be wired so that the split sources arrive on parallel inputs, as shown in Figure 5–29. On the video level, color bars are wired in as input 0. However, on the audio levels, test tone is wired in as input 0 and a time code generator is wired in as input 0 on the time code level. The Switcher Inputs table (Figure 5–28) is then arranged so that the input named “BARS” will switch to input 0 on all levels. This technique might be referred to as a “hard–wired split.”

Figure 5–29. *Inputs to four–level switcher, showing a “hard–wired split.”*



— A more flexible approach is to modify the Switcher Input table so that a single input name will address different physical inputs from one level to another. For example, the switcher could be wired as shown in Figure 5–30, where black burst is input 64 on the video level, test tone is input 0 on the audio levels, and a time code generator is input 0 on the time code level. The Switcher Input table is arranged so that the input named “TONE” will switch to those inputs.

Figure 5–30. *Software–controlled split.*



Statusing for split switches is determined by the “I” and “P” suffixes on the Switcher Inputs table, as described in *Primary and Indirect Status Instructions* on page 5–60.

ENTERING OR EDITING INPUT NAMES AND NUMBERS

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter" and "Switcher Input." This will open a list of all existing Switcher Input tables (or open the table if there is only one).

3. Click on the desired switcher input table name and "OK." This will bring up a table similar to that shown on page 5–44.

   If the table is based on the factory–supplied "Numeric" set, the table illustrates the reason for the name "numeric"—the "Name" column shows all the inputs with numbers instead of names.

4. Enter/edit the desired logical name and physical input numbers for the inputs.

   Guidelines for using the editor are found on page 5–3.

   Important: Row numbers on Jupiter tables are used as the "logical" numbers for sources. Changing the row number of an existing source (by inserting/deleting a new input in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see "Clearing Battery–Protected Memory" in Appendix B). One way to avoid this interruption is to add new inputs at the end of tables.

5. After saving your changes, validate, compile, and activate the configuration set. (See page 5–13.)

DATA SWITCHING APPLICATIONS

In Venus DM 400B data switching applications, the switcher input table is used to assign a logical name to each physical port connected to a "tributary" device. See Figures 5–31 and 5–32.

Note: Configuration of DM 400/400A Data Matrix boards is described in Appendix L.

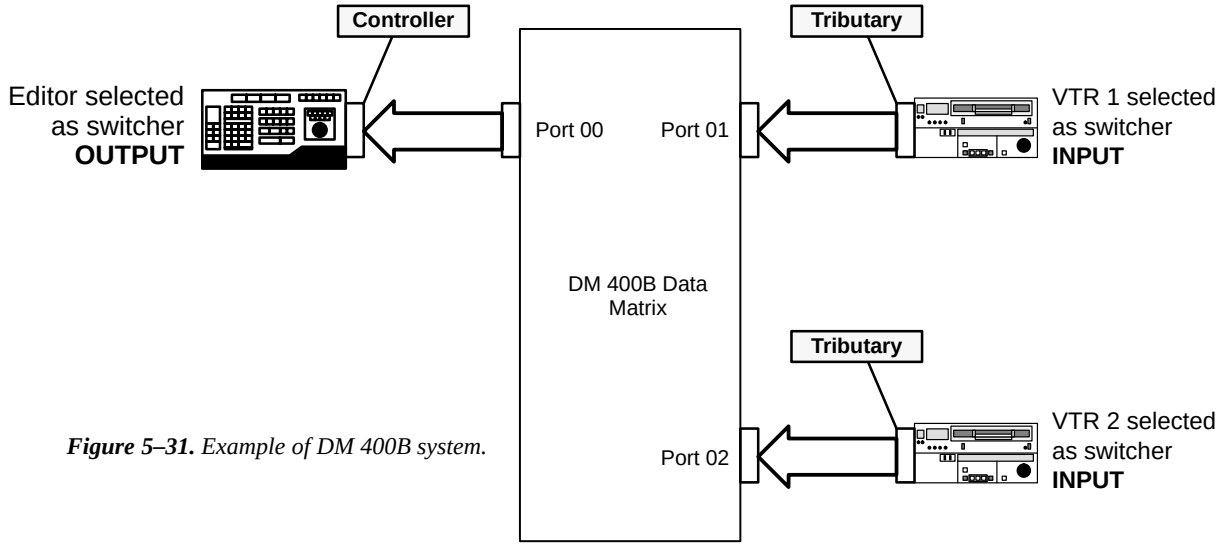


Figure 5–31. *Example of DM 400B system.*

For a discussion of the "Safe" input, see page 5–42.

See Note 1.

Switcher Input – MAINROUT

	Logical Input Name	VIDEO	LEFT	RIGHT	TC	DATA
1	SAFE					064
2	EDIT1	000	000	000	000	000
3	VT01	001	001	001	001	001
4	VT02	002	002	002	002	002

Figure 5–32. *Switcher Input table for system shown in Figure 5–31.*

Similarly, the switcher output table is used to assign a logical name to each physical port connected to a "controller" device. See Figure 5–33.

Note 1: All port numbers that reside in the Switcher Output table must also have an entry in the Switcher Input table (This is done to avoid possible Status display problems and is checked by the PC compiler).

Switcher Output – MAINROUT

	Logical Output Name	Security	S–T	Password	VIDEO	LEFT	RIGHT	TC	DATA
1	EDIT1		– ▼		000	000	000	000	000
2			– ▼						

Figure 5–33. *Switcher Output table for system shown in Figure 5–31.*

Controller / Tributary Reassignment

Some VTRs can themselves act as controllers *or* tributaries. With the DM 400B the associated ports can be configured as both inputs **and** outputs; this allows their pinouts to adjust automatically depending on which VTR is selected as the output (controller) and which is selected as the input (tributary). In Figure 5–34, VTR 1 is the controlling device; accordingly it is selected as a switcher **output** in order to configure the switcher port correctly. The tributary VTR 2 is selected as a switcher **input.**

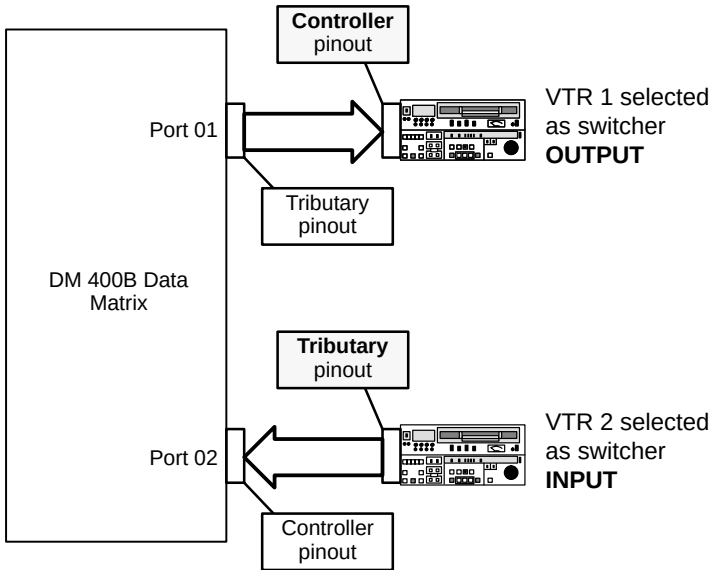


Figure 5–34.

In Figure 5–35, the roles are reversed. VTR 2 is the master and VTR 1 is the slave. The switcher ports are configured properly by selecting VTR 2 as an **output** and VTR 1 as an **input.**

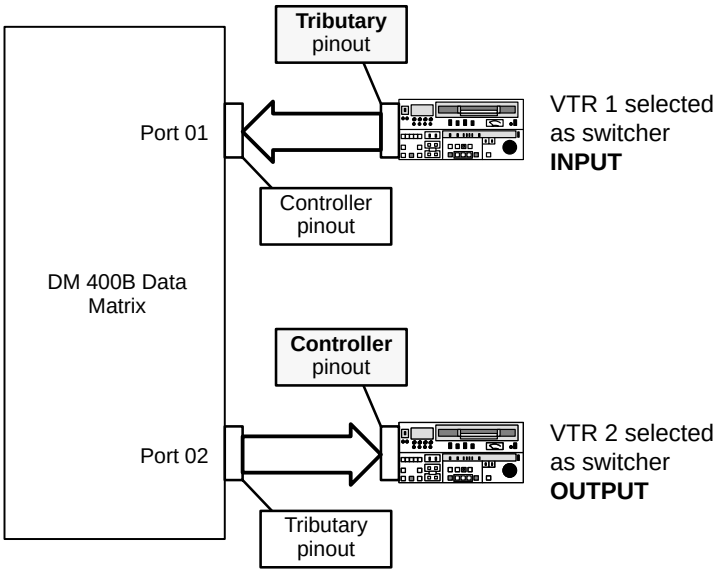


Figure 5–35.

Examples of Switcher Input and Switcher Output tables for this reassignment application are shown in Figure 5–36.

Switcher Input – MAINROUT						
	Logical Input Name	VIDEO	LEFT	RIGHT	TC	DATA
1	SAFE					064
2	VT01	001	001	001	001	001
3	VT02	002	002	002	002	002

Switcher Output – MAINROUT										
	Logical Output Name	Security	S–T		Pass Word	VIDEO	LEFT	RIGHT	TC	DATA
1	VT01		–	▼		001	001	001	001	001
2	VT02		–	▼		002	002	002	002	002

Figure 5–36. *Switcher Input and Output tables for application shown on page 5–49.*

CP Input and Output Sets and Control Panel Operation

The input and output names in the previous tables must be assigned to Category/Entry selections using a CP Input Set (page 5–58) and CP Output Set (page 5–76). For example, if a CP–3000–type panel is to be used, the “C” (for “controller”) category button could be used to select the controller (output) and the VCR category button could be used to select the VCRs .

Switcher Output

The Switcher Output table performs much the same function as the switcher input table (described on page 5–44) except that it applies to outputs.

Switcher Output – MAINROUT

	Logical Output Name	Security	S–T		Password	VIDEO	LEFT	RIGHT	TC
1	MAT MON		–	▼		000	000	000	000
2	MC QC		–	▼		001	001	001	001
3	PATCH 1		–	▼		002	002	002	002
4	PATCH 2		–	▼		003	003	003	003
5	SHOP		–	▼		004	004	004	004
6	VC 2P 1		–	▼		005	005	005	005
7	VC 2P 2		–	▼		006	006	006	006
8	VC 2P 3		–	▼		007	007	007	007
9	VC 2P 4		–	▼		008	008	008	008
6	VC 2S		–	▼		009	009	009	009
7	VT 01		–	▼		010	010	010	010
8	VT 02		–	▼		011	011	011	011

Figure 5–37. *Switcher output table (example).*

Logical Output Name The table is used to give each physical output a logical name up to eight characters in length. If more than one switcher is in the system, a table must be defined for each. Figure 5–37 shows a table for switcher “MAINROUT.”

Unlike the Switcher Inputs table, the outputs table has several provisions for security:

Security A Security Board can be identified for an output by entering the name of a controller board (such as “VM1”); only controls connected to that board could be used to switch the output. The name must be one of those already entered on the Network Description table (page 5–22).

S–T A Security Board Type can be entered. Only controls connected to a control board of that type could then be used to switch the output. A dash ("–") entry means "none." The following boards can be selected:

VM 3000 Control Electronics Unit
SI 3000 Serial Interface Unit

Pass word A password level can be entered for the output. This is described in detail below.

In Venus DM 400B data switching applications, the switcher output table is used to assign a logical name to each physical port connected to a "controller" device. For more information, see page 5–48.

ENTERING OR EDITING OUTPUT NAMES AND NUMBERS

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter" and "Switcher Input." This will open a list of all existing Switcher Output tables (or open the table if there is only one).

3. Click on the desired switcher input table name and "Edit." Selecting the switcher name will bring up a table similar to that shown on page 5–51.

4. Enter/edit the desired logical name and physical output numbers for this output. Guidelines for using the editor are found on page 5–3. For information about password levels, please see page 5–53.

   Important: Mars physical output numbers, when controlled by a Jupiter system, are not continuous. For example, **physical output numbers 8 through 15 are skipped**. For more information, refer to the Crosspoint/Jupiter control section in the Mars manual.

   Important: When adding new items to tables, add them at the end if possible. Changing row numbers on the Switcher Output table will cause panels to control different outputs than those to which they had been assigned.

   Important: Row numbers on Jupiter tables are used as the "logical" numbers for destinations. Changing the row number of a destination (by inserting/deleting a new output in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see "Clearing Battery–Protected Memory" in Appendix B). One way to avoid this interruption is to add new outputs at the end of tables.

   Note: Some switchers (such as **Concerto** and **Triton**) use "1" as the first output connector number. In this case, the physical output number for this connector, as entered on the table, is "0." Connector "2" is physical output number "1," etc.

5. To close the table, click OK.

6. Click on “File > Save” to save the table.

7. Select the next table for editing. When finished, validate, compile and activate the configuration set. (See page 5–13.)

SETTING PASSWORD LEVELS FOR SWITCHER OUTPUTS

In addition to individual Jupiter passwords assigned to each user, individual switcher outputs can be given a password *level*. This can be used to provide varying levels of protection from one switcher output to another.

Note 1: Party line panels always have a password level of zero. Do not assign a password level (other than zero) to outputs that are to be controlled by an MCS 2000 Master Control switcher or any other party line control panel. **Doing so will cause the MCS 2000 or party line panel to lose control of the output.** There is no need to set a password level for the five outputs feeding the MCS since those outputs are automatically protected by the MCS itself. No other control panel has access to those outputs.

Note 2: Output passwords are not honored by automation protocol handling.

To change the password level for a switcher output:

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on “Jupiter > Switcher output.” This will open a list of all existing Switcher Output tables (or open the table if only one table exists).

3. Click on the desired Switcher Output table name and “OK.” This will open a table similar to that shown on page 5–51.

   In this example, the password level column is blank, meaning that all outputs have a password level of zero. Therefore all passwords presently assigned will allow changing the signal being sent to any output.

4. Double–click on the password box you want to change.

5. Enter the desired password level for this output.

   Entering a level of “50” would mean that only passwords having levels of 50 or more could be used to enable selection of an input for this output.

   Guidelines for using the editor are found on page 5–3.

6. To close the table, click OK.

7. Click on “File > Save” to save the table.

8. After saving your changes, validate, compile, and activate the configuration set.

CP Level Set

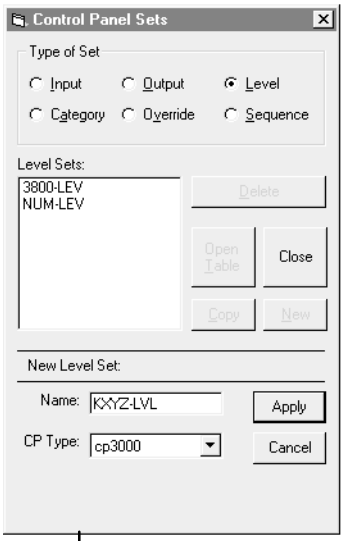


Figure 5–38.

CP Level Set — KXYZ–LVL

	Mnemonic	Level	Break	Switch
1	VID	VIDEO (MAINROUT)	☑	☑
2	LEFT	LEFT (MAINROUT)	☑	☑
3	RGHT	RIGHT (MAINROUT)	☑	☑
4	TC	TC (MAINROUT)	☑	☑

Figure 5–39.

The CP Level Set table is used to assign levels to control panels. In most cases, control panels are allowed to control all levels, but creating multiple CP Level Sets allows restricting control to certain levels. Level Sets are assigned to individual control panels on the MPK Devices table (page 5–108).

Selecting “Control Panel Sets” on the configuration set table list (Figure 5–15 on page 5–20) will open a dialog similar to that shown in Figure 5–38. This dialog can be used to create, open, copy, and delete Control Panel sets. A example of a completed CP Level Set table is shown in Figure 5–39.

When creating a name for a Jupiter set, it’s a good practice to use letters and numbers only. If you want to use punctuation or special characters, check the list on page 5–7 before creating a name.

When creating a new set, you will asked for the set type: “CP 3000” (for four–character display panels), or “CP–3800” series (for most eight–character display panels).

Note 1: For SD 3x and RP 1/2/3 UMD series status displays, DD production switchers, or external computer control, use set type “CP 3000.”

Note 2: For CP 328 panels, use set type “CP 3000” (even though the CP 328 can display eight characters).

Mnemonic The Mnemonic column of this table is the source for the ID of each level that will appear on control panels during input selection.

Level The Level column determines the order in which the switcher levels will appear in the control panel status display. Video is normally listed first. In the example shown in Figure 5–38, the order from left to right will be video, left audio, right audio, and time code. The first level entered will also be the level statused where display space is limited; e.g., video will be the level statused on the CP 3000 expansion panel.

Note: For DD switcher applications, the video level feeding the DD *must* be entered in the first row; other entries are not used.

The source for the switcher Level names is the Switcher Description table (page 5–31).

Break Using the Break column, breakaway switching can be disabled on a level by level basis. Since the CP Level Set can be assigned to individual control panels on the MPK Devices table (page 5–108), this can be used to restrict breakaway switching to specific panels.

Switch Using the Switch column, all switching can be disabled on a level by level basis; and, by CP Level Set assignment, on an individual control panel basis. Status will continue to be shown for the level.

A Note Concerning Level Numbering and External Control Computers Using ASCII Protocol

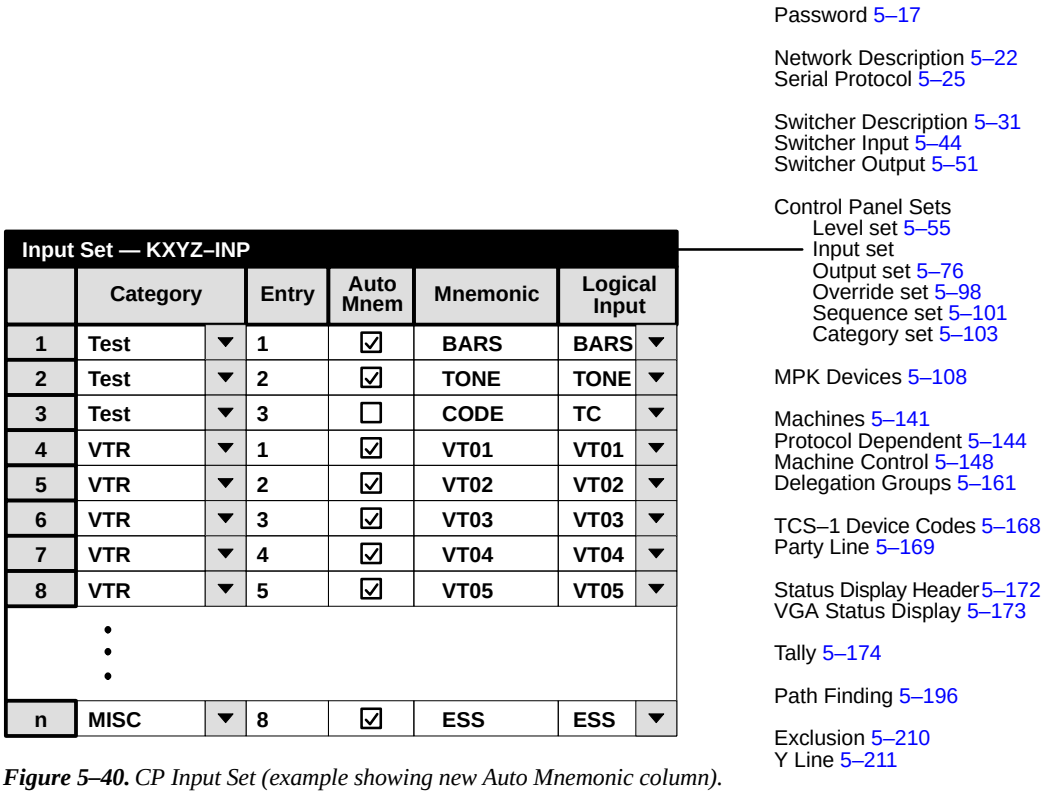
ASCII protocol switching instructions include specification of output, input, and level; with level indicated by a number from 1 to 7. These level numbers correspond to the order in which levels are listed on the CP Level Set table. In the example table shown in Figure 5–39, the ASCII level numbers would apply to the switcher levels as follows:

Level number used with ASCII protocol	**Example level shown on CP Level Set table (Fig.5–38)**
1	VIDEO
2	LEFT
3	RIGHT
4	T/C

Do not confuse these ASCII level numbers with the logical and physical level numbers of the switcher, which may be different. (The level *names* on this table are translated to logical and physical level numbers on the Switcher Description table, as shown on page 5–31.)

For more information about external computer control, see page 2–77.

CP Input Set



Input Set — KXYZ–INP

	Category	Entry	Auto Mnem	Mnemonic	Logical Input
1	Test	1	☑	BARS	BARS
2	Test	2	☑	TONE	TONE
3	Test	3	☐	CODE	TC
4	VTR	1	☑	VT01	VT01
5	VTR	2	☑	VT02	VT02
6	VTR	3	☑	VT03	VT03
7	VTR	4	☑	VT04	VT04
8	VTR	5	☑	VT05	VT05
• • •					
n	MISC	8	☑	ESS	ESS

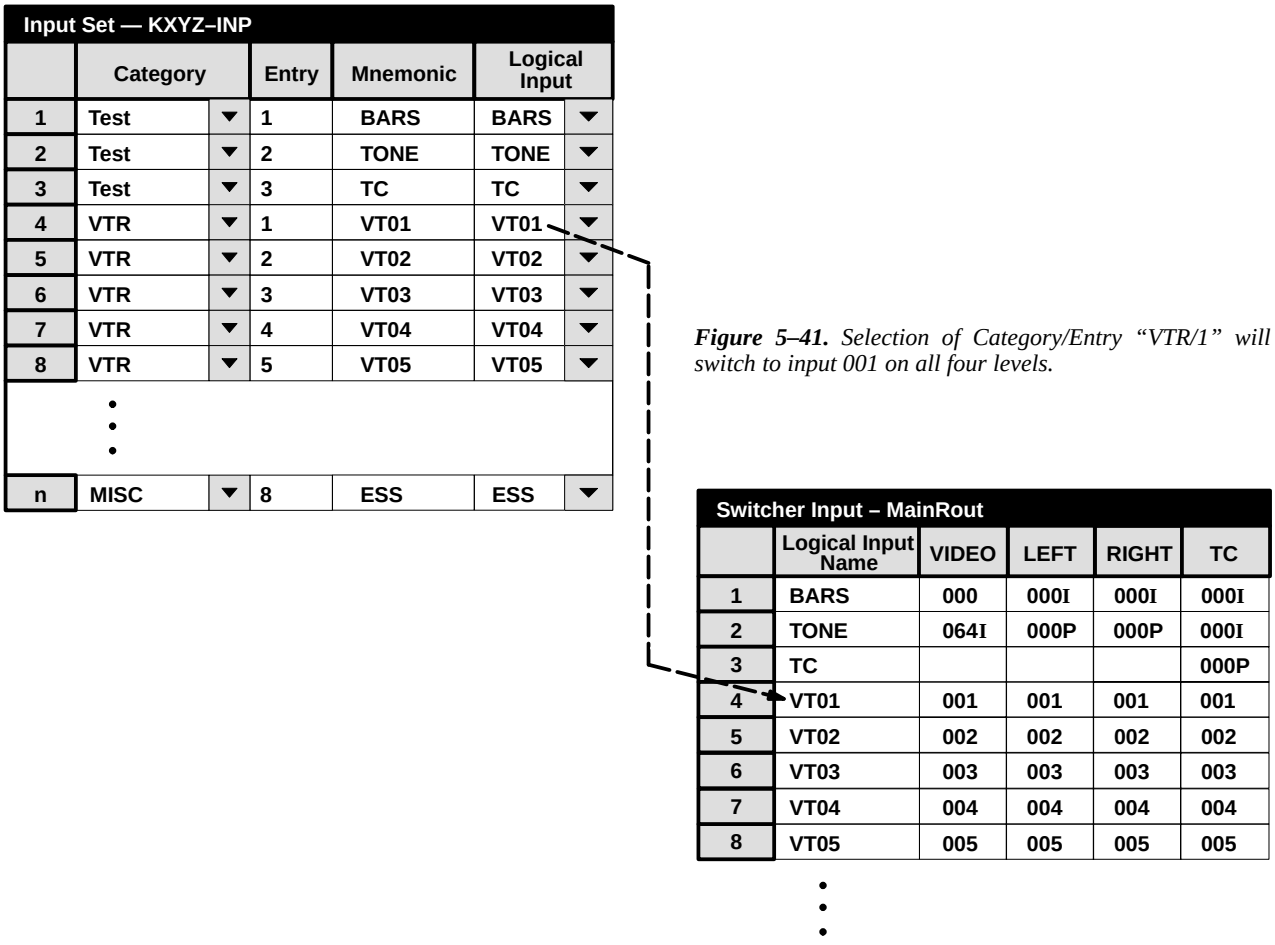
Figure 5–40. *CP Input Set (example showing new Auto Mnemonic column).*

The CP Input Sets are used to link particular category / entry numbers, and mnemonics, to switcher input names. **CP Input Sets are also used to assign an input to each source button on CP 3832 and CP 3864 Control Panels.**

- *Categories* are classes of inputs/outputs. The factory default category sets (as shown on pages 5–65 and 5–66) can be used; or, custom category sets can be created.† Example: “TEST” as the category for all test signals. The category is always followed by:
- An *entry number*. This defines the unit within the category. To continue the above example, after pressing “TEST,” the operator presses the “1” key to switch to the color bar input. Note that the entry number is not the same as the switcher input/output number.
- A *mnemonic* is an abbreviation, usually with a length of four characters, for a particular switcher input or output. This is the abbreviation that appears in the status windows of the control panels. Example: “VT01” as a display mnemonic for switcher input 001.

† If you want to create a custom category set, skip to *CP Category Set* (page 5–103) and then return to this subsection.

In the example shown in Figure 5–41, selecting VTR/1 on a control panel will call for the input named “VT01.” The system will look on the Switcher Inputs table for this input name and switch to the indicated inputs; in this case, input 001 for all four levels. The mnemonic “VT01” will be used in the control panel status windows to report the switch.



Input Set — KXYZ–INP

	Category	Entry	Mnemonic	Logical Input
1	Test	1	BARS	BARS
2	Test	2	TONE	TONE
3	Test	3	TC	TC
4	VTR	1	VT01	VT01
5	VTR	2	VT02	VT02
6	VTR	3	VT03	VT03
7	VTR	4	VT04	VT04
8	VTR	5	VT05	VT05
n	MISC	8	ESS	ESS

Switcher Input – MainRout

	Logical Input Name	VIDEO	LEFT	RIGHT	TC
1	BARS	000	000I	000I	000I
2	TONE	064I	000P	000P	000I
3	TC				000P
4	VT01	001	001	001	001
5	VT02	002	002	002	002
6	VT03	003	003	003	003
7	VT04	004	004	004	004
8	VT05	005	005	005	005

Figure 5–41. *Selection of Category/Entry “VTR/1” will switch to input 001 on all four levels.*

The Input Sets are assigned to specific control panels on the MPK devices table (page 5–108).

Although each control panel can be assigned a different CP Input Set if desired, the same set is usually assigned to all panels. Different *Output Sets*, on the other hand, are often used to control access to outputs on a panel–by–panel basis as described on page 5–76.

In Venus DM 400B data switching applications, a CP Input Set is used to assign a category/number and mnemonic to each “tributary” (such as a VTR). For more information, see page 5–48.

PRIMARY (P) AND INDIRECT (I) STATUS INSTRUCTIONS (“SPLIT MNEMONICS”)

While the Switcher Inputs table has provision for only one mnemonic per input name (page 5–40), split switching requires a different mnemonic for each device selected.

For example, the top portion of Figure 5–42 shows a four–level switcher with a black burst generator connected to input 64 of the video level, a test tone generator connected to input 0 of the audio levels, and a time code generator connected to input 0 of the time code level.

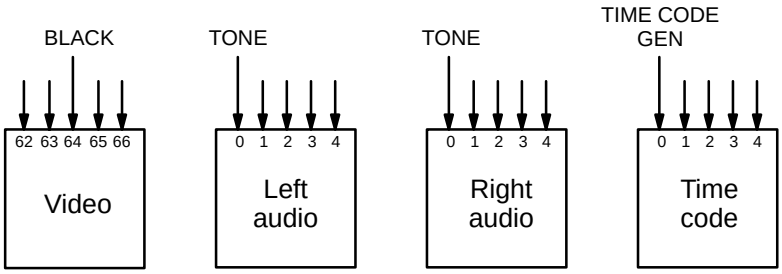
All of these devices are assigned to the single input name “TONE” on the Switcher Inputs table (as shown at 1).

The input named TONE is in turn assigned to the command “TEST 2” (this link is shown by the dotted line 2). Without further instructions, the mnemonic for all levels would be “TONE” (3). However, you might prefer to have “BLK” as a mnemonic for video and “TC” as a mnemonic for the time code level.

To get the mnemonic “TC” on the time code level, an “I” (Indirect) suffix is entered back on the Switcher Inputs table at (4). This tells the system to search that level for the “P” (Primary) suffix for that input. This is found at (5). This Primary entry is associated with the input named “TC” (6), which in turn is linked to the mnemonic “TC” (7).

A similar technique is used to get the mnemonic “BLK” on the video level.

> Note: There can be only one Primary entry per input number within one level of the Switcher Inputs table. However, within that level, any number of Indirect entries can point to the Primary entry.



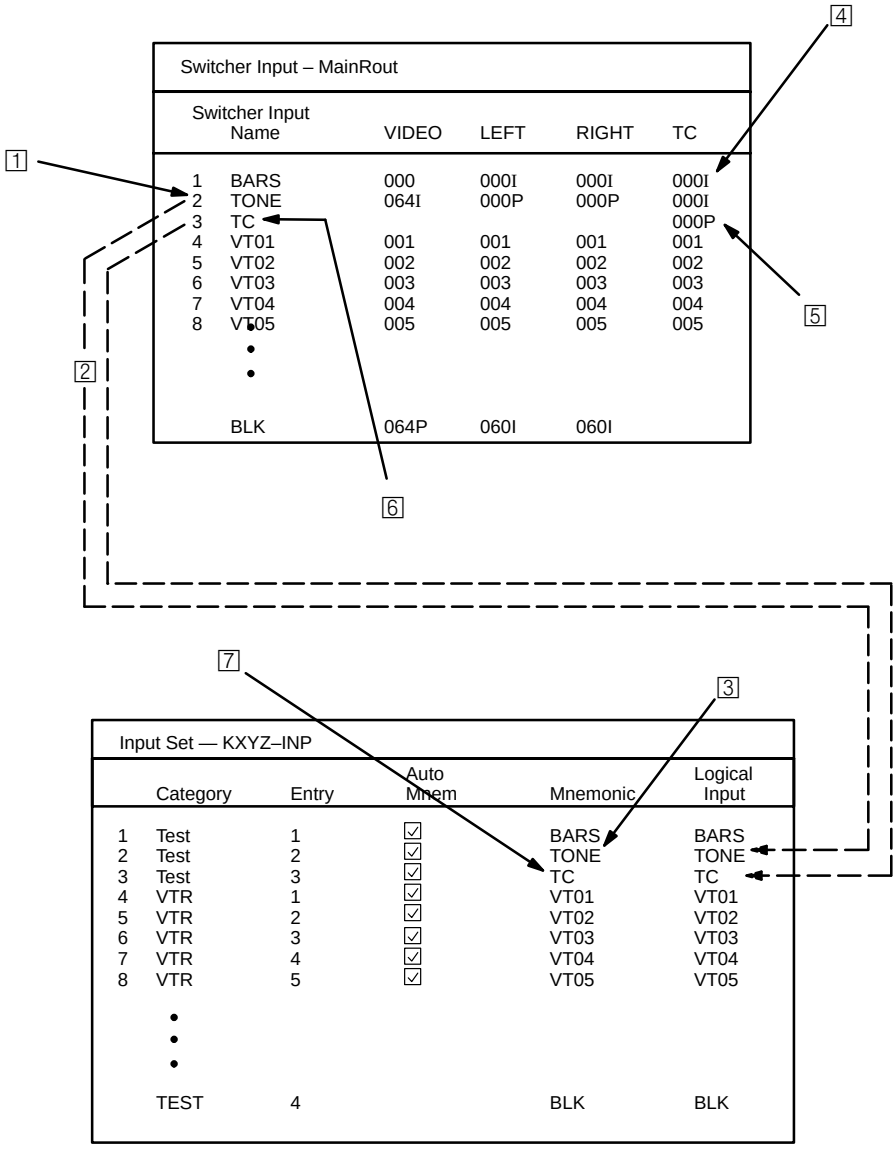


Figure 5–42. *Primary and indirect status instructions (see notes on page 5–60).*

ENTERING OR EDITING A CP INPUT SET

(Includes procedure for assigning category/numbers or mnemonics)

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   For more information, please see *Modifying and Downloading a System Configuration Set* on page 5–8.

2. Click on “Jupiter,” “Control Panel Sets,” and “CP Input Set.” This will open a list of all existing CP Input Sets.

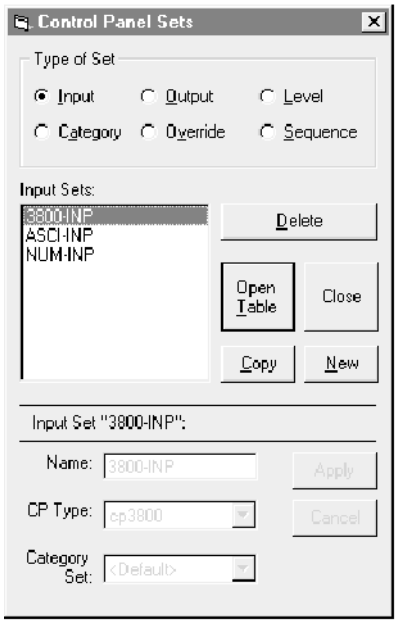


Figure 5–43. *Select CP Input Set menu.*

3. If you want to create a new set, click on “New,” and go to Step 4. Or, if you want to edit an existing set, click on the name of the Input Set; then click “Open Table” and skip to Step 7.

   You can also double–click on the name of an existing set to open the table.

   If you want to copy an existing CP Input Set for use with a different panel type, you can probably save a lot of time by following the procedure described on page 5–74.

4. If you are creating a new set, you will be asked to name the set.

   Guidelines for using the editor are found on page 5–3.

   Important: *Do not use the same name for different CP sets. Also, do not name a CP set with a name used by the system for a Device Type. Device Type names are entered on the MPK Devices table (page 5–108). Device Type names are shown on page 5–109.*

5. If you want to assign this CP Input Set to a custom CP Category set (for a panel with re–legendable keycaps), enter the custom CP Category set name. (If you wish to create a custom category set, skip to page 5–103 and then return to this subsection.)

If you want to use a factory default category set (as shown on pages 5–65 and 5–66) leave the Category Set as "Default."

If you wish to associate an existing Input Set with a *different* category set than the one originally assigned, see page 5–107.

6. Click on one of the CP types:

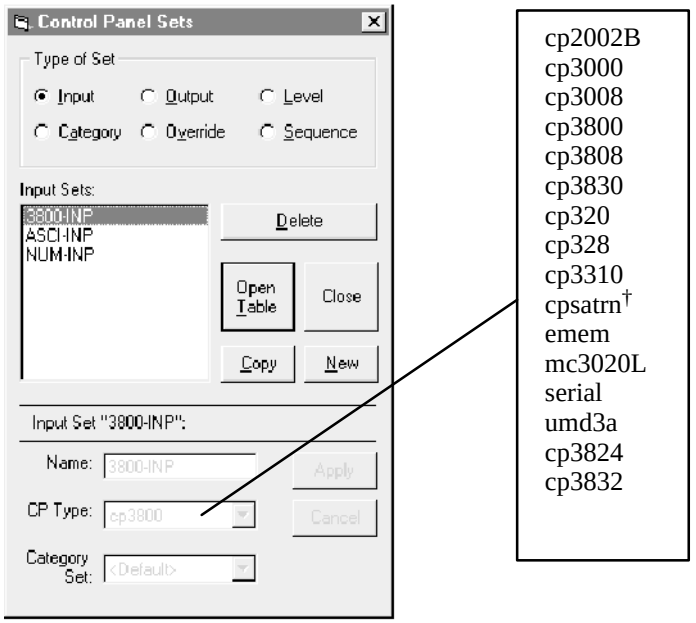


Figure 5–44.

- If **CP 2002, CP 3000, CP 3008,** or **CP 3800** is selected, clicking on "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–45. These are 20–category panels. Go to Step 9.
- If **CP 320, CP 328,** or **CP 3808** is selected, clicking "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–45. These are 16–category panels. Go to Step 10.
- For **CP 3030** panels, select type "CP 3000." Clicking on "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–45. These are 20–category panels. Go to Step 9.
- If **CP 3824** is selected, clicking on "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–45. This is a 15–category panel. Go to Step 10.
- For **CP 3830** or **CP 3830P** panels, select type "CP 3830." Clicking on "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–45. This is a 12–category panel. Go to Step 10.
- If **MC 3020L** is selected, click on "Apply" and "Open Table" and skip to Step 11.
- For **SD–3x** series status displays, select type CP 3000.
- For **RP 1/2/3 UMD 3A** status display, select type UMD3A.

† Not used. Saturn configuration instructions are described in the *Saturn Master Control Switcher Installation and Operating Manual.*

- For **Diamond DD** applications, both “E–MEM” and “serial” tables will probably be required. Clicking on “Apply” and “Open Table” will open a blank version of the table shown in Figure 5–45. For the E–MEM table, skip to Step 12. For the serial table, skip to Step 13.

- For **Grass Valley GVG–200** applications, select E–MEM. clicking on “Apply” and “Open Table” will open a blank version of the table shown in Figure 5–45. Go to Step 14.

- For **Thomson Broadcast Automation** or other **external computer** applications, a type “serial” table will be required. Click on “Apply” and “Open Table” to open a blank version of the CP table without a “Mnemonic” column. Skip to Step 15.

- For **CP 3832 or CP 3864** control panels (including type “L”), a type “cp3832” table will be required. Click on “Apply” and “Open Table” to open a blank version of the CP table. Then skip to Step 16.

7. If you click on an existing Input Set, this will call up a table similar to that shown in Figure 5–45.

Input Set — KXYZ–INP

	Category	Entry	Auto Mnem	Mnemonic	Logical Input
1	Test	1	☑	BARS	BARS
2	Test	2	☑	TONE	TONE
3	Test	3	☐	CODE	TC
4	VTR	1	☑	VT01	VT01
5	VTR	2	☑	VT02	VT02
6	VTR	3	☑	VT03	VT03
7	VTR	4	☑	VT04	VT04
8	VTR	5	☑	VT05	VT05
	• • •				
n	MISC	8	☑	ESS	ESS

Figure 5–45. *Input Set menu (example).*

8. If you are:

— Adding a new entry, click on the row number *above* where you want the new entry to appear. Click the “Edit” pull–down menu. Click on “Insert” and make the addition. Then go to Step 9 through 15 below as appropriate.

Important: Row numbers on Jupiter tables are used as the “logical” numbers for destinations. Changing the row number of a destination (by inserting/deleting a new output in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see “Clearing Battery–Protected Memory” in Appendix B). One way to avoid this interruption is to add new outputs at the end of tables.

— Editing an existing entry, click on the item you want to change. Then go to Step 9 through 15 below as appropriate.

9. **CP 2002, CP 3000, CP 3008, CP 3030, CP 3800**

a. Select the desired **Category** from the pull–down menu. Then press TAB.

The 20–category factory default set used for CP 2002, CP 3000, CP 3008, CP 3030, and CP 3800 panels is as follows:

VTR	CG	NET	SAT	A
VCR	CAM	REM	EJ**	B
FILM	PTCH	STU	FS	C
AUX	TEST	MISC	SS	D

**EMER on CP 3800

b. Specify the desired **Entry** (unit) number. This can be done by clicking on the desired "Entry" field and typing in the number. Press ENTER.

Guidelines for using the editor are found on page 5–3.

> Note: For an input that is heavily used, an entry number of zero can be specified to help speed up control panel operation. For example, by assigning color bars as "Test 0," the mnemonic for color bars will appear immediately on the control panels whenever "Test" is selected; the operator can then complete the switch by pressing Take. However, for this to work properly the zero entry must appear in this table before all other entries for that category; for example, "Test 0" must appear before "Test 1," "Test 2," etc.

c. Select the **Input** name.

The source for the input names is the Switcher Input table (page 5–44).

d. Check the **Auto Mnemonic** box or enter the desired Mnemonic.

The Auto Mnemonic function can be used to enter a control panel mnemonic automatically based on the Name given to the input. In cases where the input Name is more than four characters long, the mnemonic will be truncated to the first four characters.

If an input Name is changed on the Switcher Input table and Auto Mnemonic is enabled, the mnemonic will change to the new name automatically.

> Note: if you use the Auto Mnemonic feature, it will not work if you go back to a version of the Jupiter editor prior to 6.2.1.

Remember that a CP 3000 and CP 3030 panel can display four–character mnemonics, while the CP 3008 and CP 3800 can display eight–character mnemonics.

When finished, skip to Step 17.

10. **CP 320, CP 328, CP 3808, CP 3824, CP 3830, CP 3830P**

a. Enter the desired **Category**. This can be done by double–clicking on the appropriate field in the Category column; this will open a pull–down menu of categories. Click on a category and press ENTER.

The 16–category factory default set used for the CP 3808 panel is as follows:

VTR	CAM	SAT	EJ
VCR	NET	REM	FILM
Studio	MISC	AUX	FS
CGEN	TEST	PTCH	STILL

Default sets may vary — confirm by creating a new set!

The 16–category factory default set used for CP 320 and CP 328 panels is as follows:

VTR	CG	NET	VCR
CAM	AUX	EJ	SS
REM	FILM	PTCH	STU
TEST	SAT	FS	MISC

The 15–category factory default set used for CP 3824 panel is as follows:

VTR	CG	NET	VCR	CAM
AUX	SS	REM	FILM	PTCH
STU	TEST	SAT	FS	MISC

The 12–category factory default set used for the CP 3830 and CP 3830P panels:

VTR	GFX	Studio
ENG	REM	NET
EC	POST	Xmsn
AUX	TEST	NUM

Guidelines for using the editor are found on page 5–3.

b. Specify the desired **Entry** (unit) number. This can be done by double–clicking on the desired “Entry” field and typing in the number. Press ENTER.

Note: For an input that is heavily used, an entry number of zero can be used to help speed up control panel operation. For more information, see the note in Step 9 (b) above.

c. Enter the desired **Mnemonic**.

A CP 320 panel can display four–character mnemonics; the CP 328, CP 3808, CP 3824, and CP 3830 can display eight–characters.

d. Enter the **Input** name.

The input name will be a name already entered on the Switcher Input table (page 5–44).

When finished, go to Step 17.

11. **MC 3020L Linkage Panel**

If you are entering a set for an *MC 3020L Linkage Panel*, a menu similar to that shown in Figure 5–46 will appear.

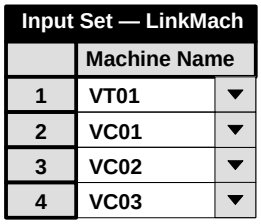


Figure 5–46. *CP Input Set used to establish machine names for MC 3020L (example). The corresponding system is shown on page 2–68.*

This list is used to assign a machine to each key of the main MC 3020L panel (the panel with the extra pair of buttons). The order of these entries will be the order of the buttons on the panel.

The name of the list is entered on the MPK devices table (page 5–118).

If you are:

— Creating a new table, select the name of the first machine from the pull–down menu. The source of these names is the Machines table (page 5–141).

— Adding a new entry, click on the row number *above* where you want the new entry to appear. Click the "Edit" pull–down menu. Click on "Insert."

— Editing an existing entry, click on the item you want to change.

Additional guidelines for using the editor are found on page 5–3.

A similar procedure is used to enter control panel names for the MC 3020L expansion panel (page 5–87).

When finished, skip to Step 17.

12. **DD (“Diamond”) – E–MEM**

For DD applications, both E–MEM and Serial tables will probably be required. The dual entries are necessary because of the two hardware connections, as previously described (page 2–76).

For the *E–MEM* table, you will need entries similar to that shown in Figure 5–47.

Input Set — DIA–INP

	Category	Entry	Mnemonic	Logical Input
1	dflt	1 †	BARS	BARS
2	dflt	2 †	TONE	TONE
3	dflt	3 †	TC	TC
4	dflt	4 †	VT01	VT01
5	dflt	5 †	VT02	VT02
6	dflt	6 †	VT03	VT03
7	dflt	7 †	VT04	VT04
8	dflt	8 †	VT05	VT05
• • •				
n	dflt	n †	ESS	ESS

† Data in this field is not used, but an entry must be made to satisfy the Jupiter compiler. Each number in this column must be unique.

Figure 5–47. *Input Set menu (example).*

a. For **Category**, the word “dflt” is used for all entries.

There are no category choices since the DD identifies inputs and outputs by number only.

b. Enter an **Entry** number. This can be done by double–clicking on the desired “Entry” field and typing the number. Press ENTER.

Note: Data in this field is not used, but an entry must be made to satisfy the Jupiter compiler. Each number in this column must be unique.

c. Enter the desired **Mnemonic** for the first router input that will be available to the DD.

This is the source of the mnemonics that will appear on the DD. The DD can display four–character mnemonics.

d. Select the **Input** name of the first router input that will be available to the DD. The source of these names is the Switcher Input table (page 5–44).

When a switch is made, Jupiter will search this table for the name of the new input. The corresponding mnemonic will then be sent to the DD.

e. Enter the next Entry number, Mnemonic, and Input name, until you have entered all the inputs that you want available to the Diamond.

When finished, skip to Steps 17 and 18. Then return to Step 2 and following and build the DD serial table.

13. **DD (“Diamond”) – serial**

For the *Serial* table, you will need entries similar to those shown in Figure 5–48.

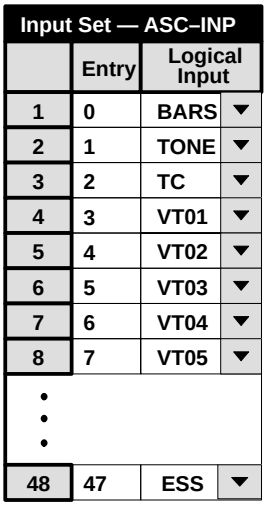


Figure 5–48. *Diamond Serial Input Set menu.*

There are no category choices, since the DD identifies inputs and outputs by number only.

a. Specify the desired **Entry** (unit) number. This can be done by double–clicking on the desired “Entry” field and typing the number. Press ENTER.

   Each Entry number corresponds to a button on the DD Aux Bus. The buttons are numbered 0–47.

b. Select the name of the router **Input** that you want assigned to the first button on the DD Aux bus. The source of these names is the Switcher Input table (page 5–44).

c. Enter the next Entry number and Input name, up to the maximum of 48 rows.

When finished, skip to Step 17.

14. **GVG 200 – E–MEM**

If you are entering a set for *GVG 200 E–MEM*, you will need a table similar to that shown in Figure 5–49.

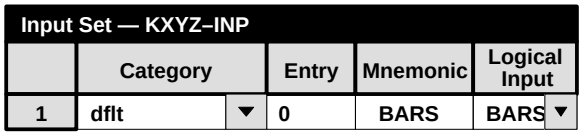


Figure 5–49. *Input Set menu (example).*

The entries on this table are not actually used, but the table must exist for the sake of having a set name on the MPK devices table (page 5–131) in order to satisfy the compiler. Therefore, the table can consist of a single row with Category "dflt," Entry "0," and the name of a valid input.

When finished, skip to Step 17.

15. **Thomson Broadcast Automation / External Computer**

If you are entering a set for *serial* control device, a menu similar to that shown in Figure 5–50 will appear.

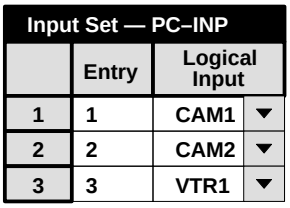


Figure 5–50. *Serial Input Set menu.*

The purpose of the table is to establish a *unique* "Entry" number for each switcher "Input" name. In Figure 5–50, Entry number "1" is associated with Input name "CAM1." The Entry number is the number that the serial control device must send to Jupiter. When the Entry number arrives, the software checks this table to find the associated Input name; then the Switcher Inputs table (page 5–44) is checked to find the corresponding physical input number.

> Note: For **Thomson Broadcast Automation** systems, it is suggested that you print out this Input Set; you will need this information when setting up the Automation Switcher Initialization menu. The input names entered on the Jupiter Input Set table must be in the ***same order*** as they are on the Automation table. Any changes made to one table must also be made to the other.

When finished, skip to Step 17.

16. **CP 3832 / CP 3864**

If you are entering a set for **CP 3832 or CP 3864** (including type "L", a menu similar to that shown in Figure 5–51 will appear. The purpose of the table is to assign a button position (row number) to each switcher "Input" name. In Figure 5–51, button position "1" will be used to select input "CAM1." Note that destination buttons are defined on a CP Output Set (page 5–76). Exact table entries will depend on the panel and the application, as shown in the following examples.

For Category, the word "default" is used for all entries.

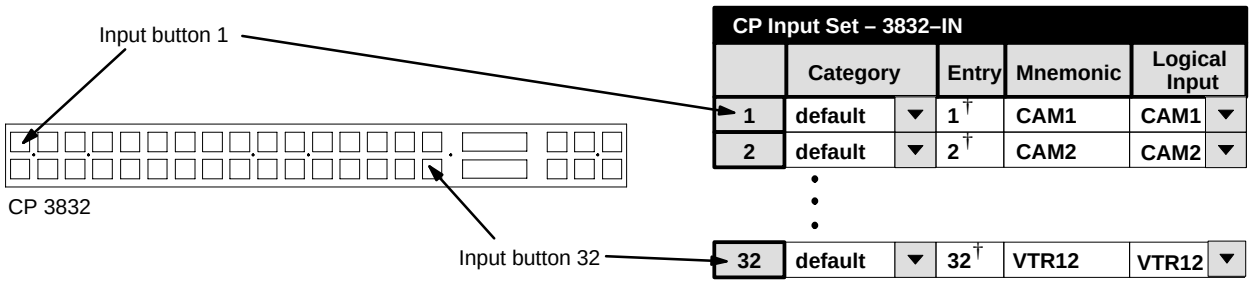


Figure 5–51. *Entries for CP 3832 configured as single–bus panel.*

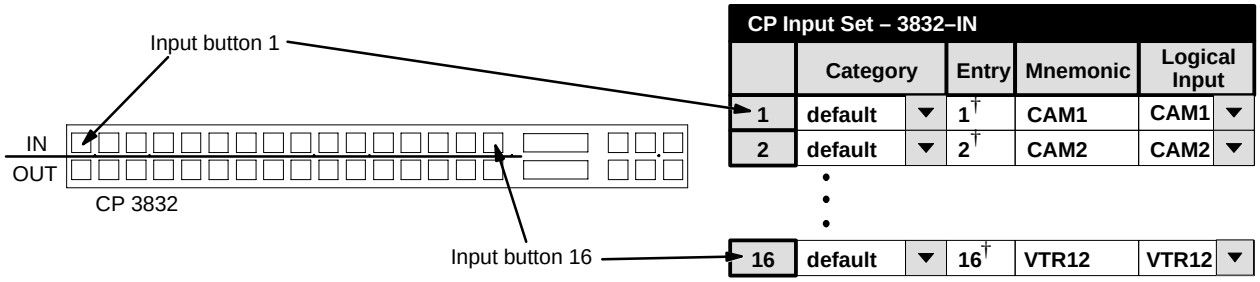


Figure 5–52. *Entries for CP 3832 configured as "balanced split" panel. Balanced number of input/output buttons is determined by output assignments made on the CP Output Set. For details, see page 5–92.*

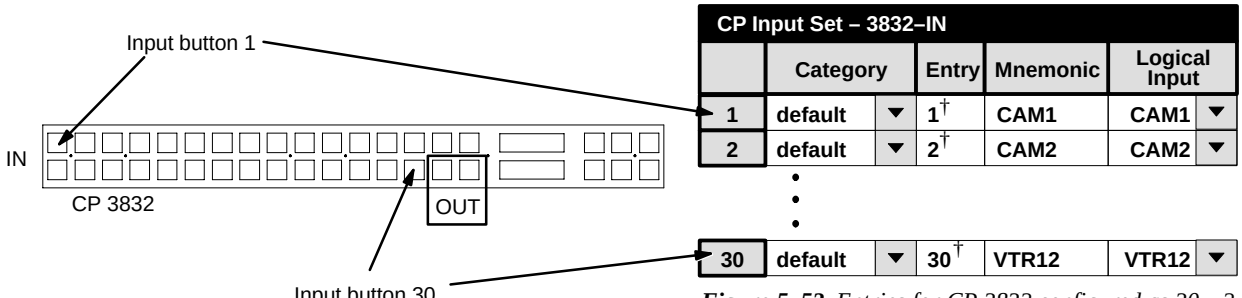
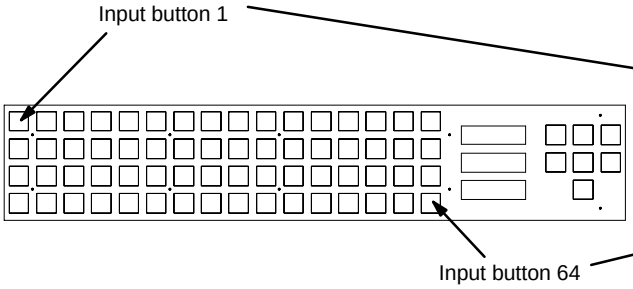


Figure 5–53. *Entries for CP 3832 configured as 30 x 2 "unbalanced split" panel. Total number of input buttons vs. total number of output buttons is determined by number of output assignments made on the CP Output Set. For details, see page 5–92.*

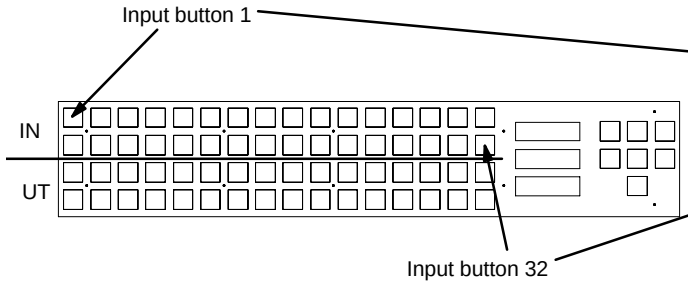
† Data not used, but entry must be present to satisfy compiler. Each number in this column must be unique.



CP Input Set – 3832–IN

	Category	Entry	Mnemonic	Logical Input
1	default	1†	CAM1	CAM1
2	default	2†	CAM2	CAM2
•				
•				
•				
64	default	64†	VTR12	VTR12

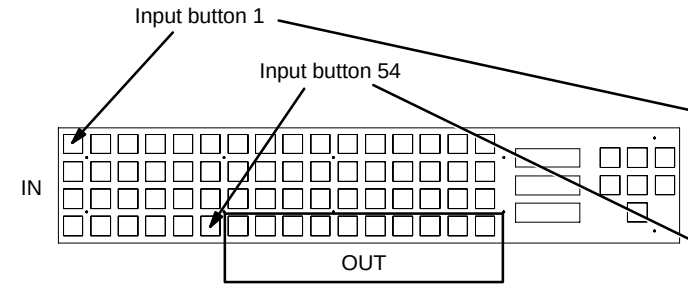
Figure 5–54. *Entries for CP 3864 operated as single–bus panel.*



CP Input Set – 3832–IN

	Category	Entry	Mnemonic	Logical Input
1	default	1†	CAM1	CAM1
2	default	2†	CAM2	CAM2
•				
•				
•				
32	default	32†	VTR12	VTR12

Figure 5–55. *Entries for CP 3864 configured as 32 x 32 “balanced split” panel. Balanced number of input/output buttons is determined by output assignments made on the CP Output Set. For details, see page 5–92.*

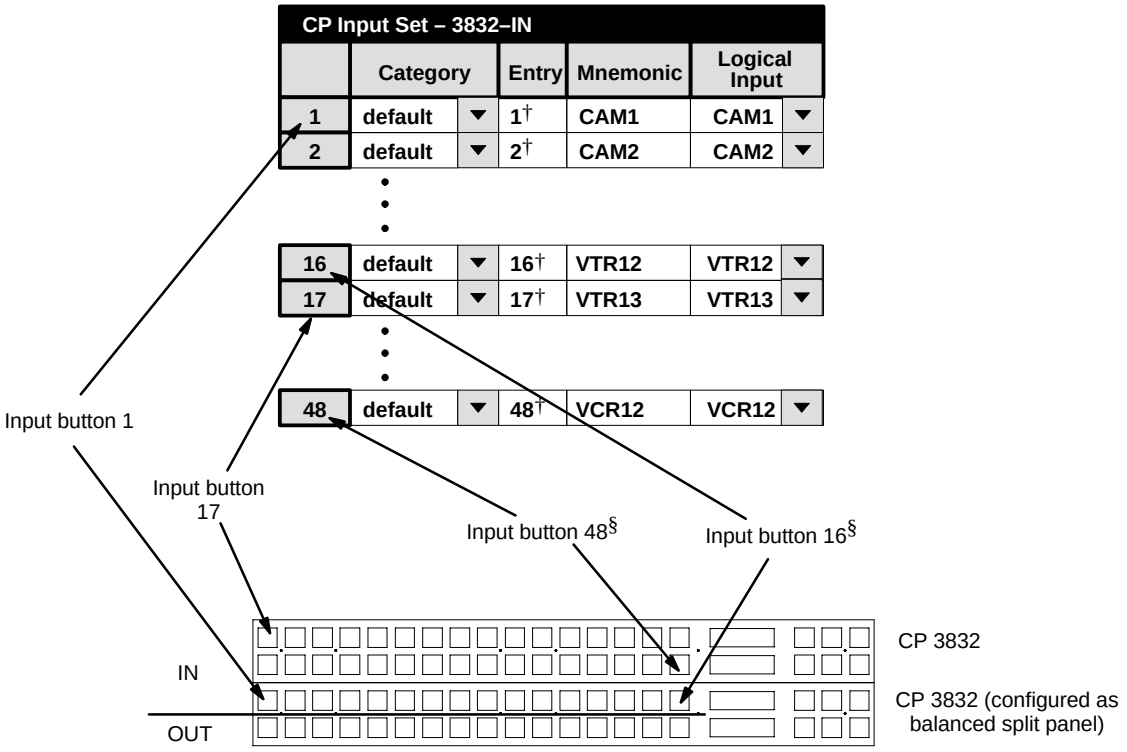


CP Input Set – 3832–IN

	Category	Entry	Mnemonic	Logical Input
1	default	1†	CAM1	CAM1
2	default	2†	CAM2	CAM2
•				
•				
•				
54	default	54†	VTR12	VTR12

Figure 5–56. *Entries for CP 3864 configured as 54 x 10 “unbalanced split” panel. Total number of input buttons vs. total number of output buttons is determined by number of output assignments made on the CP Output Set. For details, see page 5–92.*

Figure 5–57. *Entries for CP 3832 (configured as balanced split panel) with 2nd CP 3832 used as source expansion panel.*



17. To close the table, click OK.

18. Click on “File > Save” to save the table.

    The change will apply to all control panels that use the same Input Set. For the system shown on page 5–108, it would affect all panels in the system since all of them use “KXYZ–INP” as the Input Set.

19. Select the next table for editing. When finished, validate, compile, and activate the configuration set. (See page 5–13 if you need more information.)

§ When two or more CP 3832 panels are used, button assignments are also determined by order of MPK table entries. See page 5–134.

† Data not used, but entry must be present to satisfy compiler. Each number in this column must be unique.

Copying a CP Input or Output Set for Use with a Different Panel Type

After you have created a CP Input or Output Set for one panel type, you may want to copy it for use with a different panel. For example, you may have a set for CP 3000 panels, and want to use it with a CP 320. You will need to re–enter some of the category/number selections (because of the difference in the number of possible categories), but you can save time by copying the set in order to use the same mnemonics and input names.

1. On the main menu, click on “Jupiter” and “Control Panel Sets.” Then select “Input” (or “Output”). A menu similar to Figure 5–58 will appear.

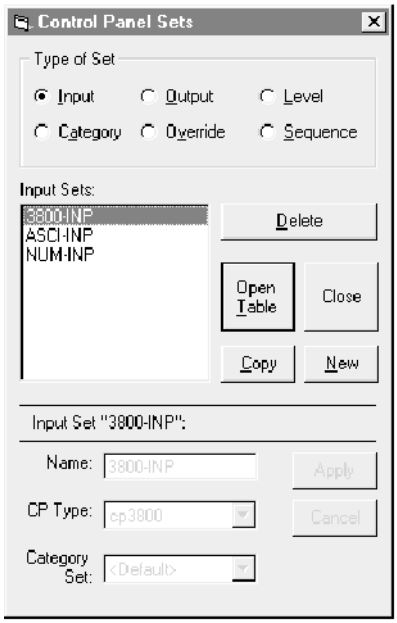


Figure 5–58.

2. Click on the name of the set you want to copy. Click on “Copy.”

3. Enter a name for the copy.

4. Select the desired CP Type.

5. If you want to use a factory default category set (as shown on pages 5–65 and 5–66), leave the Category Set Name box as “Default.” If you want to use a custom category set, click on the Category Set Name box and enter the name of the new Category Set. For more information about custom category sets, see page 5–103.

6. Click on “Apply.”

7. Open the new CP Input Set table and make the necessary changes, if any. (In this example, you would need to enter different category/number selections because only 16 categories are available on the CP 320).

   Note: If you convert a CP Input Set for use with a serial control device (such as an external computer), make sure there is a unique number for every row in the “Entry”column. See Step 12 on page 5–68.

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CP Output Set

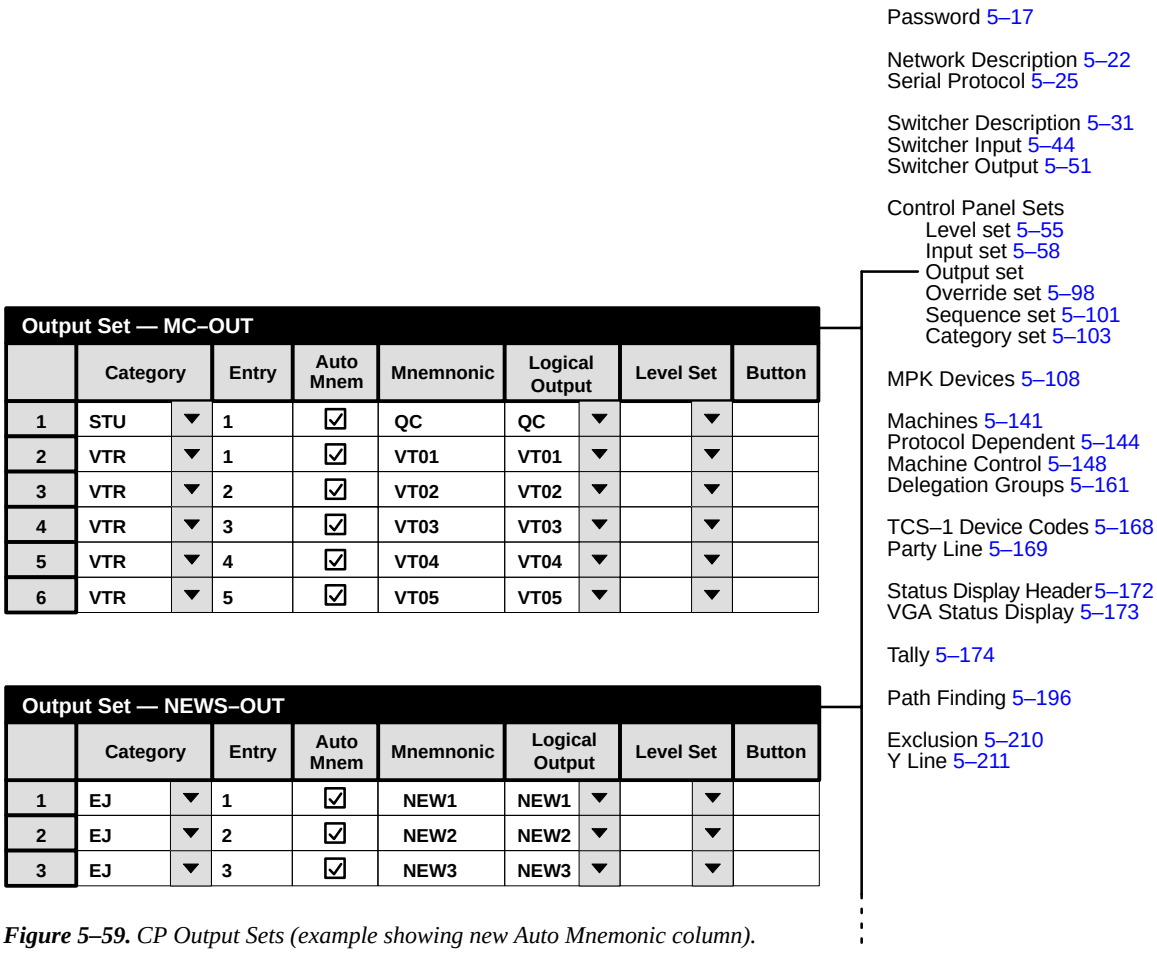


Figure 5–59. *CP Output Sets (example showing new Auto Mnemonic column).*

OVERVIEW

Category	Entry	Mnemnonic	Output

Links category/entry numbers and mnemonics to switcher outputs.

The Output Sets are assigned to specific control panels on the MPK devices table (page 5–108).

> **Important:** Do not give an Output Set the same name as an **output**. Use of an extension such as “OUT” is recommended to help avoid potential conflicts.

Since each control panel can be assigned a different CP Output Set if desired, these sets are usually used to control access to outputs on a panel–by–panel basis:

— You may want a control panel in the master control room to have access to all possible outputs. This panel might be assigned to Output Set "MC–OUT," which includes a category/number entry for all destinations.

— However, you may want a control panel in a particular department to have access to only a selected number of outputs. This panel would be assigned to an Output Set (such as "NEWS–OUT") which has only those outputs listed.

> Note: If you want the panel to be restricted to a *single* output, you could instead use the technique already described, whereby the name of the *output*, rather than the name of an Output Set, is entered on the MPK Devices table. For more information, please see page 5–113.

In Venus DM 400B data switching applications, a CP Output Set is used to assign a category/number and mnemonic to each "controller" (such as an editor). For more information, see page 5–48.

Level Set For assigning a CP Level Set to individual outputs (multiple switcher installations)

The Level Set column is used when there are multiple switchers in the system and you want the control panels to control and status more than one switcher. See page 5–96.

Button For assigning expansion panel buttons to individual outputs

CP 3000/3010 – Outputs are normally assigned to the CP 3010 TAKE button dynamically by the operator (see page 6–24). However, by entering an expansion button number from 1 to 160 (8 buttons x 20 pages) in the Button column and appropriate row of the CP Output table (which is in turn assigned to the CP–3000 panel on the MPK devices table—page 5–108), the output will be assigned permanently to the desired button. Such assignments cannot be changed using the panel itself.

> Note: If an output is permanently assigned to a CP 3010 button, but that output is later removed from the CP Output table, and the new set downloaded, the CP 3010 will continue to display the name of the output until the output is manually deleted. This is done by selecting an output that is not defined and pressing the appropriate TAKE key on the expansion panel.

CP 3800 – When in Multiple Destination mode, CP 3800 outputs can be assigned to the soft keys dynamically by the operator (see page 6–34). However, by entering a soft key button number from 1 to 80 (8 buttons x 10 pages) in the "Button" column and appropriate row of the CP Output table (which is in turn assigned to this panel on the MPK devices table—page 5–108), the output will be assigned permanently to the desired button. Such assignments cannot be changed using the panel itself.

CP 3809 – By entering a CP 3809 expansion panel button number from 1 to 40 (8 buttons x 5 panels max) in the Button column and appropriate row of the CP Output table, the output will be assigned permanently to the desired button. Note that this CP Output table must be assigned to the *main panel* (CP 3808 or CP 3830) on the MPK devices table—page 5–108. (Dynamic assignment of outputs, using the front panel, is described on page 6–124.)

CP 3810 – By entering a CP 3810 expansion panel button number from 1 to 80 (8 buttons x 10 display "pages" max.) in the Button column and appropriate row of the CP Output table, the output will be assigned permanently to the desired button. Note that this CP Output table must be assigned to the *main panel* (such as a CP 3832 or CP 3864) on the MPK devices table. See page 5–111.

CP 3832/3864 – although the CP 3832/3864 can be used to expand sources and destinations for another CP 3832/3864, these panels do not use the "Button" column. Buttons are assigned to outputs by row number. See page 5–92.

Copying a CP Output Set for Use with a Different Panel Type

After you have created a CP Output Set for one panel type, you may want to copy it for use with a different panel. For example, you may have a set for CP 3000 panels, and want to use it with a CP 310. You will need to re–enter the category/number selections (because of the difference in the number of possible categories), but you can save time by copying the set in order to use the same mnemonics and output names.

As another example, you may have a set for CP 320 panels (which can display four–character mnemonics) and want to use it with a CP 328 (which can display eight–character mnemonics). You will need to re–enter the mnemonics, but you can save time by copying the set in order to use the same category/numbers and output names.

The procedure is similar to that already described for a CP Input Set (see page 5–74).

ENTERING OR EDITING A CP OUTPUT SET

(Includes procedure for assigning category/numbers or mnemonics)

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   For more information, please see *Modifying and Downloading a System Configuration Set* on page 5–8.

2. Click on “Jupiter > Control Panel Sets,” then “Output.” This will open a list of all existing CP Output Sets.

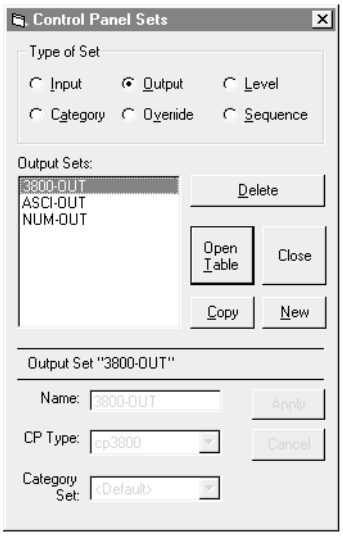


Figure 5–60. *Select CP Input Set menu.*

3. If you want to create a new set, click on “New” and go to Step 4. Or, if you want to edit an existing set, click on the name of the Output Set, then click “Open Table” and skip to Step 7.

   You can also double–click on the name of an existing set to open the table.

   If you want to copy an existing CP Output Set for use with a different panel type, you can probably save a lot of time by following the procedure described on page 5–74.

4. If you are creating a new set, you will be asked to name the set.

   Note: When creating a name for a Jupiter set, table, control panel, or other device, it’s a good practice to use letters and numbers only. If you want to use punctuation or special characters, check the list on page 5–7 before creating a name.

   Important: *Do not use the same name for different CP sets. Also, do not name a CP set with a name used by the system for a Device Type. Device Type names are entered on the MPK Devices table (page 5–108). Device Type names are shown on page 5–109.*

5. If you want to assign this CP Output Set to a custom CP Category set (for a panel with re–legendable keycaps), enter the custom CP Category set name. (If you wish to create a custom category set, skip to page 5–103 and then return to this subsection.)

If you want to use a factory default category set (as shown on pages 5–82 and 5–83), leave the Category Set as "Default."

If you wish to associate an existing Output Set with a *different* category set than the one originally assigned, see page 5–107.

6. Click on one of the CP types:

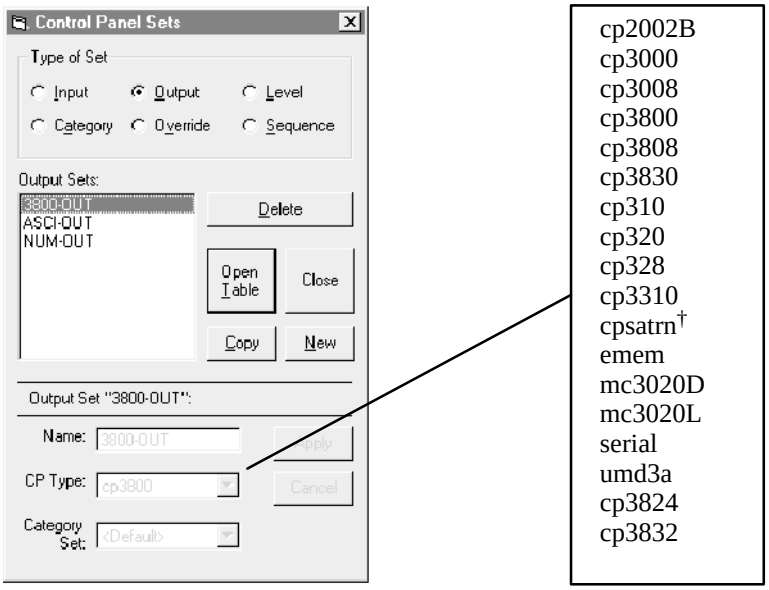


Figure 5–61. .

- If **CP 2002B, CP 3000, CP 3008,** or **CP 3800** is selected, clicking on "Apply" and "Open Table" will open up a blank version of the table shown in Figure 5–62. These are 20–category panels. Press the INSERT button to start building the table. Then skip to Step 9.

- For **CP 3030** panels, select type "CP 3000." Clicking on "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–62. These are 20–category panels. Press the INSERT button to start building the table. Then skip to Step 9.

- **CP 3809 and CP 3810** expansion panels do not have a separate CP Output Set. They use the Output Set assigned to the main panel associated with them.

- If **CP 320, CP 328, or CP 3808** is selected, clicking "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–62 . These are 16–category panels. Press the INSERT button to start building the table. Then skip to Step 10.

- If **CP 3824** is selected, clicking "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–62 . This is a 15–category panel. Press the INSERT button to start building the table. Then skip to Step 10.

- For **CP 3830** or **CP 3830P** panels, select type "CP 3830." Clicking on "Apply" and "Open Table" will open a blank version of the table shown in Figure 5–62. These are 12–category panels. Press the INSERT button to start building the table. Then skip to Step 10.

† Not used. Saturn configuration instructions are described in the *Saturn Master Control Switcher Installation and Operating Manual.*

- If **CP 310** is selected, clicking on “Apply” and “Open Table” will open a blank version of the table shown in Figure 5–62. This panel does not use categories or mnemonics, but the table is used to assign the panel’s eight outputs. Press the INSERT button to start building the table. Then skip to Step 11.

- For **CP 330** panels operated in dual bus mode, select type “CP 3000.” This panel does not use categories or mnemonics, but the table is used to assign the panel’s two outputs. Press the INSERT button to start building the table. Then skip to Step 12.

- If **MC 3020D** is selected, click on “Edit” to bring up a blank version of the table shown in Figure 5–62. Then skip to Step 13.

- If **MC 3020L** is selected, click on “Edit” to bring up a blank version of the table shown in Figure 5–62. Then skip to Step 14.

- For **SD 3x** series status displays (when used with master control and/or production switchers) select type CP 3000.

- For **RP 1/2/3 UMD 3A** status displays (when used with master control and/or production switchers) select type UMD3A.

- For **DD** switcher applications, both **E–MEM** and **serial** tables will probably be required. Clicking on “Apply” and “Open Table” will open a blank version of the table shown in Figure 5–62. For the E–MEM table, skip to Step 15. For the serial table, skip to Step 16.

- For **Grass Valley GVG–200** applications, select **E–MEM**. Clicking on “Apply” and “Open Table” will open a blank version of the table shown in Figure 5–62. Press the INSERT button to start building the table. Then skip to Step 17.

- For **Thomson Broadcast Automation** or other **external computer** applications, a type “**serial**” table will be required. Click on “Edit” to bring up a blank version of the CP table without a “Mnemonic” column. Press the INSERT button to start building the table. Then skip to Step 18.

- For **CP 3832/3864** panels controlling more than one output, or **CP 3810L** control panels, a type “**cp3832**” table will be required. Click on “Edit” to bring up a blank version of the CP table. Press the INSERT button to start building the table. Then skip to Step 19.

7. Clicking on an existing Output Set will open a table similar to that shown in Figure 5–62.

Output Set — MC–OUT

	Category	Entry	Auto Mnem	Mnemnonic	Logical Output	Level Set	Button
1	STU	1	☑	QC	QC		
2	VTR	1	☑	VT01	VT01		
3	VTR	2	☑	VT02	VT02		
4	VTR	3	☑	VT03	VT03		
5	VTR	4	☑	VT04	VT04		
6	VTR	5	☑	VT05	VT05		

Figure 5–62. *Output Set table (example).*

8. If you are:

— adding a new entry, click on the row number *above* where you want the new entry to appear. Click the "Edit" pull–down menu. Click on "Insert" and make the addition. Then go to Steps 9 through 18 below as appropriate.

Important: Row numbers on Jupiter tables are used as the "logical" numbers for destinations. Changing the row number of a destination (by inserting/deleting a new output in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see "Clearing Battery–Protected Memory" in Appendix B). One way to avoid this interruption is to add new outputs at the end of tables.

— editing an existing entry, double–click on the item you want to change. Then go to Steps 9 through 18 below as appropriate.

9. **CP 2002, CP 3000, CP 3008, CP3030, CP 3800**

a. Select the desired **Category** from the pull–down menu.

The 20–category factory default set used for CP 2002, CP 3000, CP 3008, CP3030, and CP 3800 panels is as follows:

VTR	CG	NET	SAT	A
VCR	CAM	REM	EJ**	B
FILM	PTCH	STU	FS	C
AUX	TEST	MISC	SS	D

**EMER on CP 3800

b. Specify the desired **Entry** (unit) number. This can be done by double–clicking on the desired "Entry" field and typing in the number. Press TAB.

Guidelines for using the editor are found on page 5–3.

c. Select an **Output** name from the pull–down menu.

The source for these names is the Switcher Output table (page 5–51).

d. Check the **Auto Mnemonic** box or enter the desired Mnemonic.

The Auto Mnemonic function can be used to enter a control panel mnemonic automatically based on the Name given to the output. In cases where the output Name is more than four characters long, the mnemonic will be truncated to the first four characters.

If an Output Name is changed on the Switcher Output table and Auto Mnemonic is enabled, the mnemonic will change to the new name automatically.

Note: if you use the Auto Mnemonic feature, it will not work if you go back to a version of the Jupiter editor prior to 6.2.1.

Remember that a CP 3000 and CP 3030 panel can display four–character mnemonics, while the CP 3008, and CP 3800 can display eight–character mnemonics.

e. Optionally, select a **Level Set** name.

The Level Set column should be used when multiple switchers are in the system and you want the control panels to control and status more than one switcher. See page 5–97.

The source of these names is the CP Level Set tables (page 5–55).

f. Optionally, enter a **Button** number. This is used to assign Expansion Panel buttons to individual outputs:

CP 3010 Expansion Panel – Outputs are normally assigned to the CP 3010 TAKE button dynamically, by the operator (see page 6–24). However, by entering an expansion button number from 1 to 160 (8 buttons x 20 pages) in the Button column, the output will be assigned permanently to the desired button. Such assignments cannot be changed using the panel itself.

> Note: If an output is permanently assigned to a CP 3010 button, but that output is later removed from the CP Output table and the new set downloaded, the CP 3010 will continue to display the name of the output until the output is manually deleted. This is done by selecting an output that is not defined and pressing the appropriate TAKE key on the expansion panel.

CP 3800 – When in Multiple Destination mode, CP 3800 outputs can be assigned to the soft keys dynamically, by the operator (see page 6–34). However, by entering a soft key button number from 1 to 80 (8 buttons x 10 pages) in the "Button" column the output will be assigned permanently to the desired button. Such assignments cannot be changed using the panel itself.

CP 3810 Expansion Panel – By entering an expansion button number from 1 to 80 (8 buttons x 10 pages) in the Button column, the output will be assigned permanently to the desired button.

When finished, skip to Step 20.

10. **CP 320, CP 328, CP 3808, CP 3830, CP 3830P**

a. Enter the desired **Category**. This can be done by double–clicking on the appropriate field in the Category column; this will open a pull–down menu of categories. Click on a category and press ENTER.

The 16–category factory default set used for the CP 3808 panel is as follows:

VTR	CAM	SAT	EJ
VCR	NET	REM	FILM
Studio	MISC	AUX	FS
CGEN	TEST	PTCH	STILL

Default sets may vary — confirm by creating a new set!

The 16–category factory default set used for CP 320 and CP 328 panels is as follows:

VTR	CG	NET	VCR
CAM	AUX	EJ	SS
REM	FILM	PTCH	STU
TEST	SAT	FS	MISC

The 15–category factory default set used for CP 3824 panel is as follows:

VTR	CG	NET	VCR	CAM
AUX	SS	REM	FILM	PTCH
STU	TEST	SAT	FS	MISC

The 12–category factory default set used for the CP 3830 and CP 3830P panels is as follows:

VTR	GFX	Studio
ENG	REM	NET
EC	POST	Xmsn
AUX	TEST	NUM

Guidelines for using the editor are found on page 5–3.

b. Specify the desired **Entry** (unit) number. This can be done by double–clicking on the desired “Entry” field and typing the number. Press ENTER.

c. Select the **Output** name.

The source of these names is the Switcher Output table (page 5–51).

> Note 1 The CP 3830P controls two outputs, a “Current” output and a “Preview” output; both of these outputs can be selected at the front panel at any time (as described on page 6–89). Once selected, these outputs will remain in effect until changed by the operator or PMEM is cleared.
>
> Note 2: At startup, the two outputs controlled by a CP 3830P will be the first two entries in the compiled CP Output Set. During compile, the system will refer to the CP Category set that applies to the CP 3830P; typically this will be the 12–category default set shown on page 5–83. Since the first category is “VTR,” the system will check for the first CP Output Set entry in that category; this will be the first entry in the compiled table and therefore the default Current output. The second entry in the VTR category will be the default Preview output, etc.

d. Check the **Auto Mnemonic** box or enter the desired Mnemonic.

The Auto Mnemonic function can be used to enter a control panel mnemonic automatically based on the Name given to the output. In cases where the output Name is more than four characters long, the mnemonic will be truncated to the first four characters.

If an Output Name is changed on the Switcher Output table and Auto Mnemonic is enabled, the mnemonic will change to the new name automatically.

> Note: if you use the Auto Mnemonic feature, it will not work if you go back to a version of the Jupiter editor prior to 6.2.1.

A CP 320 panel can display four–character mnemonics; the CP 328, CP 3808, and CP 3830 can display eight–characters.

e. Optionally, enter the **Level Set** name.

The Level Set column should be used when multiple switchers are in the system and you want the control panels to control and status more than one switcher. See page 5–97.

f. Optionally, enter a **Button** number.

By entering a **CP 3809 Expansion Panel** button number from 1 to 40 (8 buttons x 5 panels max) in the Button column and appropriate row of the CP Output table, the output will be assigned permanently to the desired button. Note that this CP Output table must be assigned to the *main panel* (CP 3808 or CP 3830) on the MPK Devices table—page 5–108. (Dynamic assignment of outputs, using the front panel, is described on page 6–124.)

When finished, go to Step 20.

11. **CP 310 24 x 8 Eight–Bus Control Panel**

For the eight–bus CP 310 control panel, a special CP Output Set is used to identify the eight outputs that will be controlled by the panel. This set is assigned to the specific CP 310 with the MPK devices table. In this case, there must still be an entry in each field of the CP Output Set table, even though the only data that will be used is in the Output column. The category name “dflt” is used throughout, but selection numbers and at least one character for a mnemonic will have to be entered on each of the eight rows in order to satisfy the system compiler.

When finished, skip to Step 20.

12. **CP 330** operating in dual bus mode

For the dual–bus CP 330 control panel, a special CP Output Set is used to identify the two outputs that will be controlled by the panel. This set is assigned to the specific CP 330 with the MPK Devices table. The only data that will be used is in the Output column; however, category names, selection numbers, and at least one character for a mnemonic will have to be entered on both rows in order to satisfy the system compiler.

When finished, skip to Step 20.

13. **MC 3020D Delegate Panel**

The content of these tables will depend on whether an MC 3020D is assigned to each machine; or, whether a single MC 3020 equipped with expansion panel(s), located in a central control panel cluster, is used to delegate up to 80 machines.

Panel–per–machine. When a separate MC 3020D is located next to each machine, a separate Output Set is created for each panel. Each Output Set lists the name of the associated machine (Figure 5–63). The name of each MC 3020D Output Set is then entered on the MPK Devices table (Figure 5–144 on page 5–164).

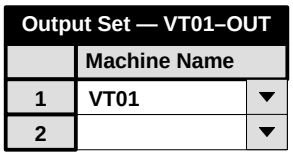


Figure 5–63. *CP Output Set used to establish a machine name for panel–per–machine MC 3020D (example). The corresponding system is shown on page 5–163.*

Central control arrangement. In this application, the MC 3020D Output Set is actually a list of machines and is used to assign each machine to a particular button of the CP 3021D Expansion Panel (Figure 5–64). The name of the MC 3020D Output Set is then entered on the MPK Devices table (Figure 5–144 on page 5–164). The order of entry on the Output Set table will correspond to the order of buttons on the CP 3021. For example, the machine listed in row 1 of the table will be assigned to the first button of the first expansion panel (the first expansion panel on the ribbon wire).

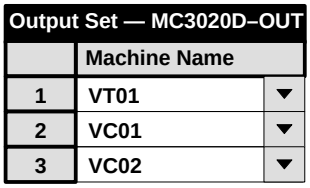


Figure 5–64. *CP Output Set used to establish machine names for centrally–located MC 3021D (example). The corresponding system is shown on page 5–163. See also page 2–71.*

The source of these names is the Machines table (page 5–141).

14. **MC 3020L Linkage Panel**

This applies to an MC 3020L, where the main panel is used to select one of 20 machines and the CP 3021 Expansion Panel is used to link the machine to a button group of a control panel.

The Output Set is used to assign each MC 3020L expansion panel button to the corresponding button of the indicated machine control panel. The name of the MC 3020L Output Set is then entered on the MPK Devices table (page 5–118). The source of these names is the MPK Devices table (page 5–108).

Output Set — LinkPanl

	Control Panel Name
1	TAPEMC
2	TAPEMC
3	TAPEMC
4	TAPEMC
5	TMC3010
6	TMC3010
7	TMC3010
8	TMC3010

Figure 5–65. *CP Output Set used to establish button assignments for MC 3020L and MC 3000/3010 panels (example). Corresponding system is shown on page 2–68.*

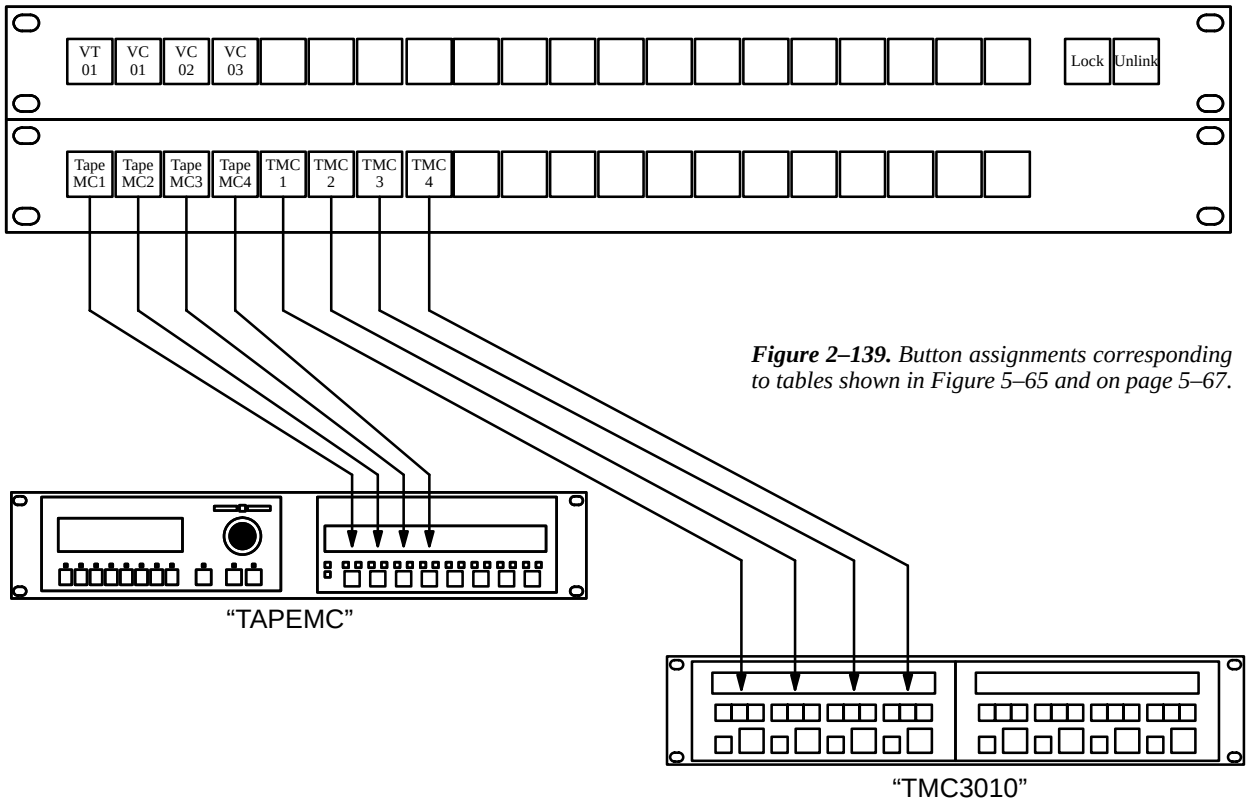


Figure 2–139. *Button assignments corresponding to tables shown in Figure 5–65 and on page 5–67.*

When finished, skip to Step 20.

15. **DD (“Diamond”) – E–MEM**

For DD applications, both E–MEM and Serial tables will probably be required. The dual entries are necessary because of the two hardware connections, as previously described (page 2–76).

For the *E–MEM* table, you will need entries similar to that shown in Figure 5–66.

Output Set — DIA–OUT

	Category	Entry	Mnemnonic	Logical Output	Level Set	Button
1	dflt	1		DD01		
2	dflt	2		DD02		
3	dflt	3		DD03		
4	dflt	4		DD04		
5	dflt	5		DD05		
6	dflt	6		DD06		
• • •						
128	dflt	128		DD128		

Figure 5–66. *Output Set table (example).*

a. For Category, the word “dflt” is used for all entries.

b. Specify the desired **Entry** number. This can be done by double–clicking on the desired “Entry” field and typing the number. Press ENTER.

> Note: These Entry numbers must match the numbers assigned to the buttons on the DD M/E Bus, using the DD “Install > Ident Input > Ident Xbar” menu. Each DD button that is fed from the router should be assigned an Entry number from 1 to 128. Refer to the DD installation manual for information about the DD serial ports and operating instructions.

c. Enter the name of the first router **Output** wired to the DD. The source of these names is the Switcher Output table (page 5–51).

d. Enter the next Entry number and Output name, up to the maximum of 128 rows.

When finished, skip to Steps 20 and 21. Then return to Step 2 and build the DD serial table.

16. **DD (“Diamond”) – serial**

For the *Serial* table, you will need entries similar to those shown in Figure 5–67.

Output Set – ASC–OUT			
	Entry	Logical Output	
1	1	DD01	▼
2	2	DD02	▼
3	3	DD03	▼
4	4	DD04	▼
5	5	DD05	▼
6	6	DD06	▼

Figure 5–67. *Serial Input Set menu.*

a. Specify the desired **Entry** (unit) number.

> Note: These Entry numbers must match the numbers assigned to the six buttons of the DD Delegation Bus, using the DD “Install > Extern Aux > Config” menu. As a convention, these buttons are assigned Entry numbers from 1 to 6. This will allow the DD operator to control up to six router outputs (these router outputs are wired into the DD as inputs). Refer to the DD installation manual for information about the DD serial ports and operating instructions.

b. Enter the name of the first router **Output** that is wired to the DD. The source of these names is the Switcher Output table (page 5–51).

c. Enter the next Entry number and Output name, up to the maximum of 128 rows.

When finished, skip to Step 20.

17. **GVG 200 – E–MEM**

For **Grass Valley E–MEM** applications, a special CP Output Set is used to list the outputs of the routing switcher that are used as inputs to the production switcher. The Jupiter system can be told to take a snapshot of these outputs and restore them at a later time (see page 2–81).

If you are entering a set for *GVG 200 E–MEM*, you will need a table similar to that shown in Figure 5–68.

Output Set – GVG–OUT

	Category	Entry	Logical Output
1	dflt	1	GV01
2	dflt	2	GV02
3	dflt	3	GV03
4	dflt	4	GV04
5	dflt	5	GV05
6	dflt	6	GV06
7	dflt	7	GV07
8	dflt	8	GV08
• • •			
n	dflt	n	GVNN

Figure 5–68. *Output Set table (example).*

For Category, the word “dflt” is used for all entries.

The Entry number is used by the Grass Valley switcher to refer to a routing switcher output shown in the Output column. In this example, Entry No. 1 has been assigned to the routing switcher output named “GV01.” The source of the Output names is the Switcher Output table (page 5–51).

When finished, skip to Step 20.

18. **Thomson Broadcast Automation / External Computer**

If you are entering a set for a *serial* control device, you will need a table similar to that shown in Figure 5–69.

Output Set – ALAM–OUT		
	Entry	Logical Output
1	1	QC
2	2	VT01
3	3	VT02
4	4	VT03
5	5	VT04
6	6	VTO5
7	7	VT06
8	8	VTO7
• • •		
n	n	VTnn

Figure 5–69. *Serial Output Set table.*

The purpose of the table is to establish a *unique* "Entry" number for each switcher "Output" name. In Figure 5–69, Entry number "1" is associated with Output name "QC." The Entry number is the number that the serial control device must send to Jupiter. When the Entry number arrives, the software checks this table to find the associated Output name; then the Switcher Outputs table (page 5–51) is checked to find the corresponding physical Output number.

Note: For **Thomson Broadcast Automation** systems, it is suggested that you print out this Output Set; you will need this information when setting up the Automation Switcher Initialization menu. The Output names entered on the Jupiter Output Set table must be in the ***same order*** as they are on the Automation table. Any changes made to one table must also be made to the other.

When finished, skip to Step 20.

19. **CP 3832 / CP 3864 / CP 3810**

Note: For CP 3832/64 panels, this table is only needed when more than one output is to be controlled.

If you are entering a set for CP 3832 or CP 3864, a menu similar to that shown in Figure 5–70 will appear. The purpose of the table is to assign a button position (row number) to each switcher "Output" name. Exact table entries will depend on the panel and the application, as shown in the following examples. Note that source buttons are defined on a CP Input Set (page 5–71).

For Category, the word "default" is used for all entries.

- Split mode. Split mode operation is determined by the checkmark in the Expansion box in the MPK table (page 5–110). In this application, some buttons are used for inputs and some for outputs. If the number of inputs and outputs is the same, the split is "balanced" and the panel can be used with expansion panels. See Figures 5–70 and 5–71.

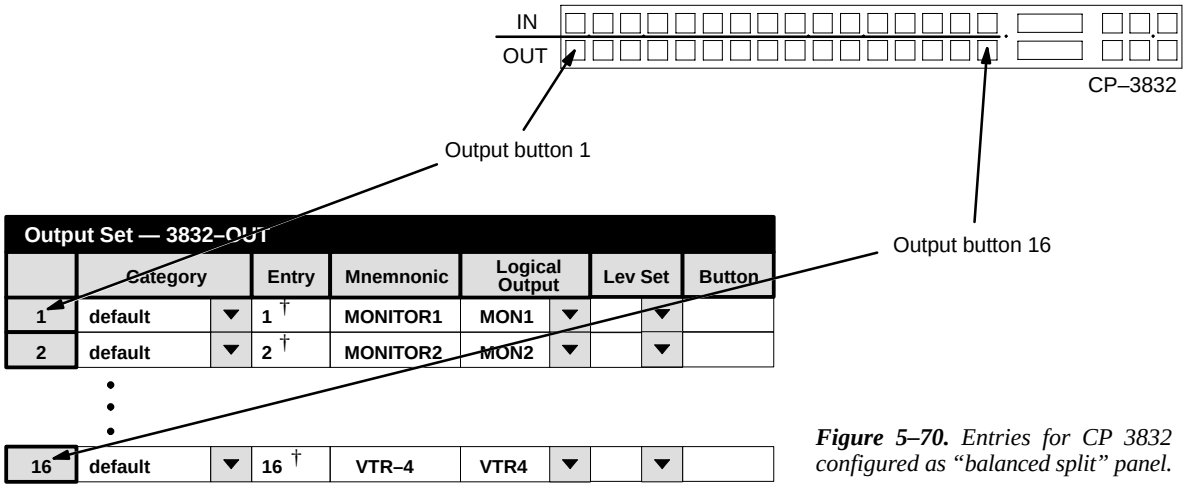


Figure 5–70. *Entries for CP 3832 configured as "balanced split" panel.*

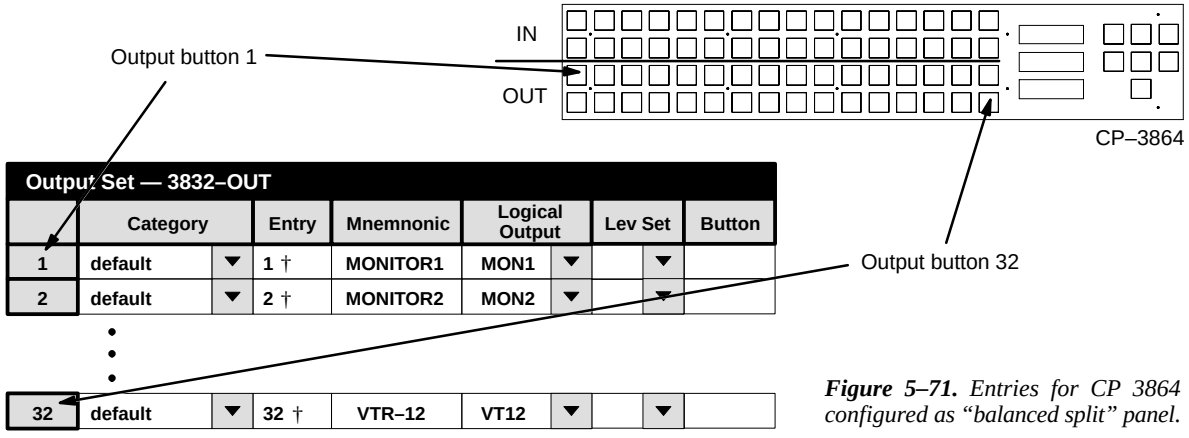


Figure 5–71. *Entries for CP 3864 configured as "balanced split" panel.*

† Data not used, but entry must be present to satisfy compiler. Each number in this column must be unique.

A split panel can also be configured with a different number of inputs and outputs (“unbalanced split”), but such panels cannot be expanded. In this application, the number of outputs can be from 1 to 15 (CP 3832) or 1 to 31 (CP 3864). Buttons not assigned to outputs are available for inputs. For example, if two buttons are used for outputs, then 30 buttons will be available for inputs on a CP 3832 panel. See Figures 5–72 and 5–73.

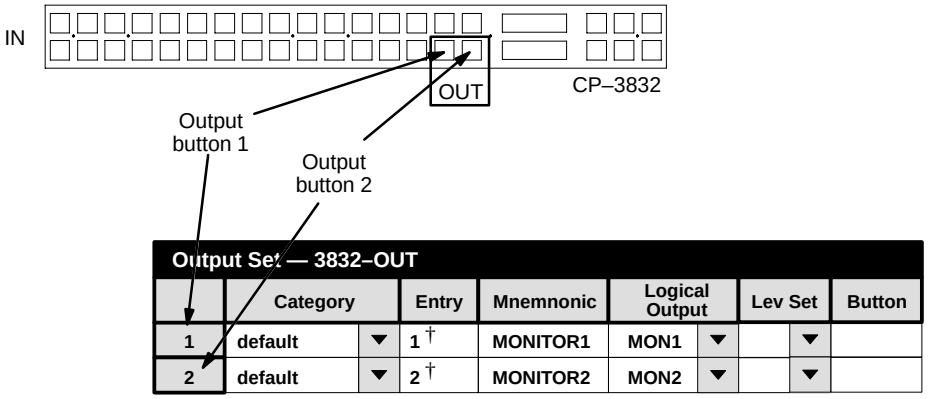


Figure 5–72. *Entries for CP 3832 configured as 30 x 2 “unbalanced split” panel.*

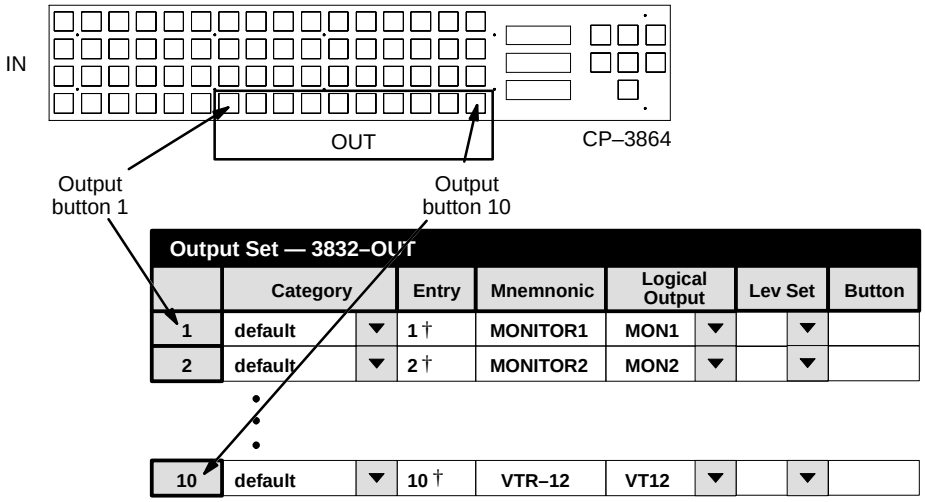


Figure 5–73. *Entries for CP 3864 configured as 54 x 10 “unbalanced split” panel.*

- Expansion mode. Unless the panel is operated in “unbalanced split” mode, control of additional outputs is possible using adjacent CP 3832 or CP 3864 panels. See Figure 5–74.

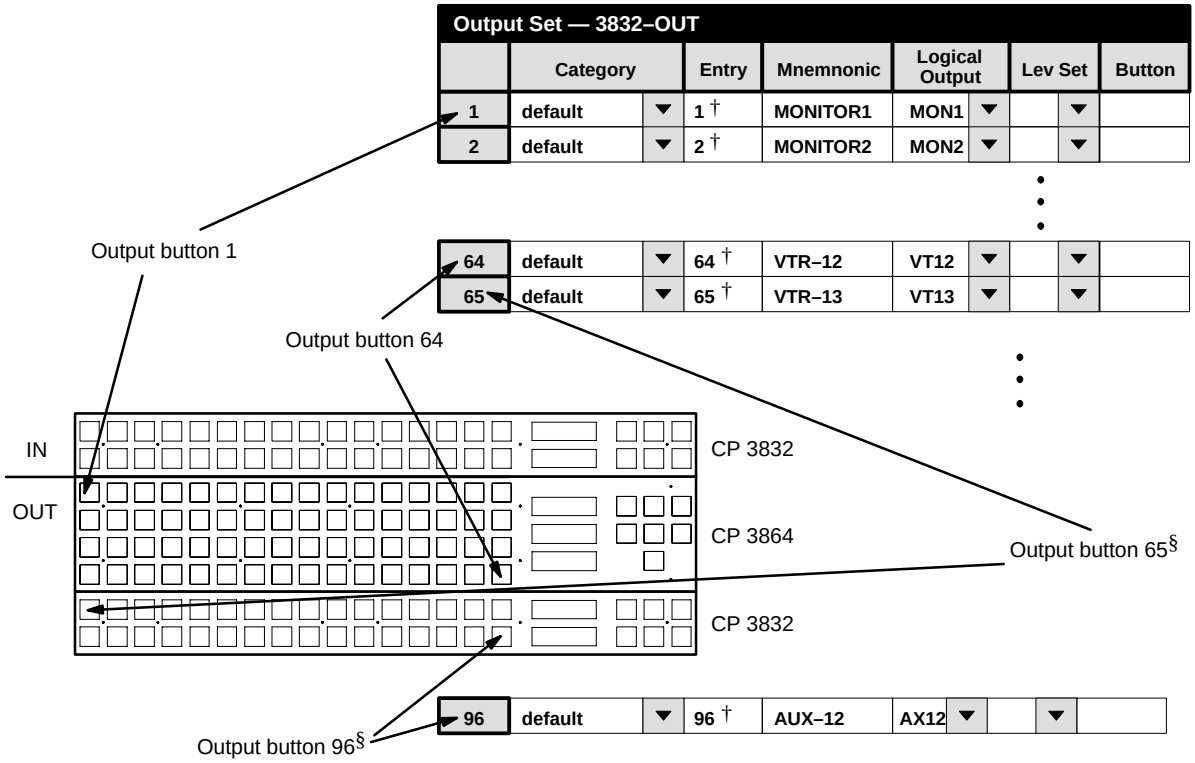


Figure 5–74. *Entries for CP 3864 used for destinations and CP 3832 used as destination expansion panel.*

§ When two or more CP 3832/3864 panels are used, button assignments are also determined by order of MPK table entries. See page 5–134.

† Data not used, but entry must be present to satisfy compiler. Each number in this column must be unique.

The CP 3832/64 can be also be operated in connection with an adjacent CP 3810 Expansion Panel. See Figure 5–75.

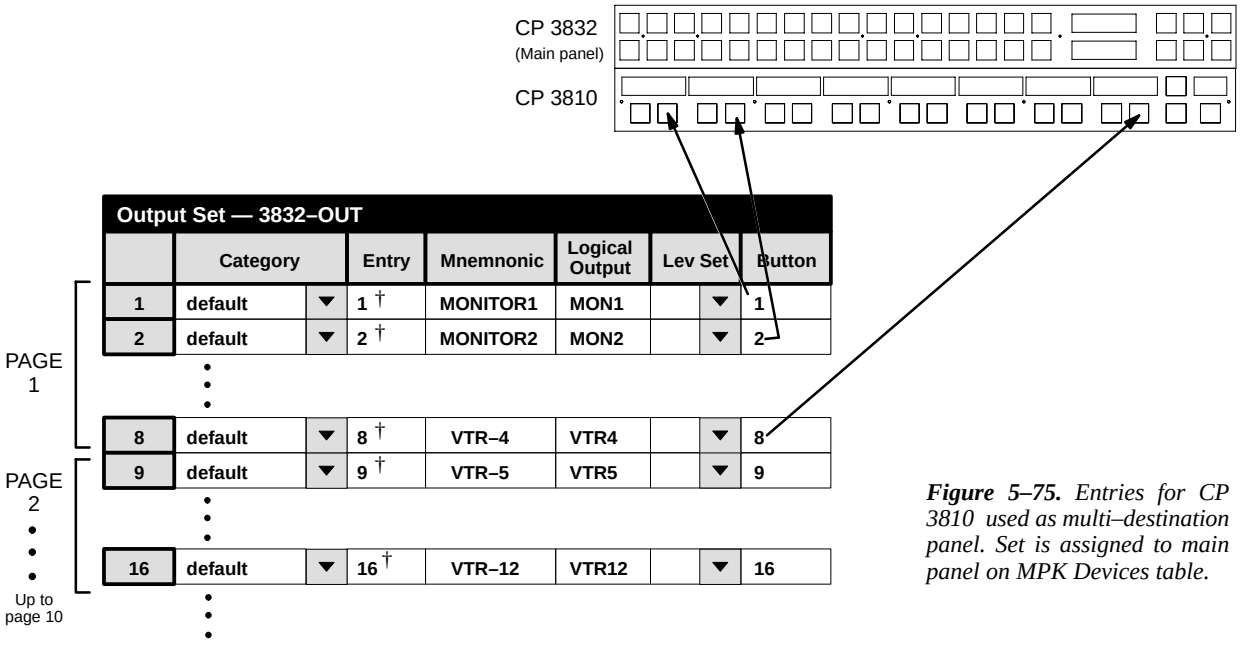


Figure 5–75. *Entries for CP 3810 used as multi–destination panel. Set is assigned to main panel on MPK Devices table.*

20. To close the table, click on “OK.”

21. Click on “File > Save” to save the set.

    The change will apply to all control panels that use the same Output Set. For the system shown on page 5–108, it would affect all panels in the system since all of them use “KXYZ–OUT” as the Output Set.

22. Validate, compile, and activate the new configuration set. For more information, refer to page 5–13.

† Data not used, but entry must be present to satisfy compiler. Each number in this column must be unique.

Multiple Switcher Installations

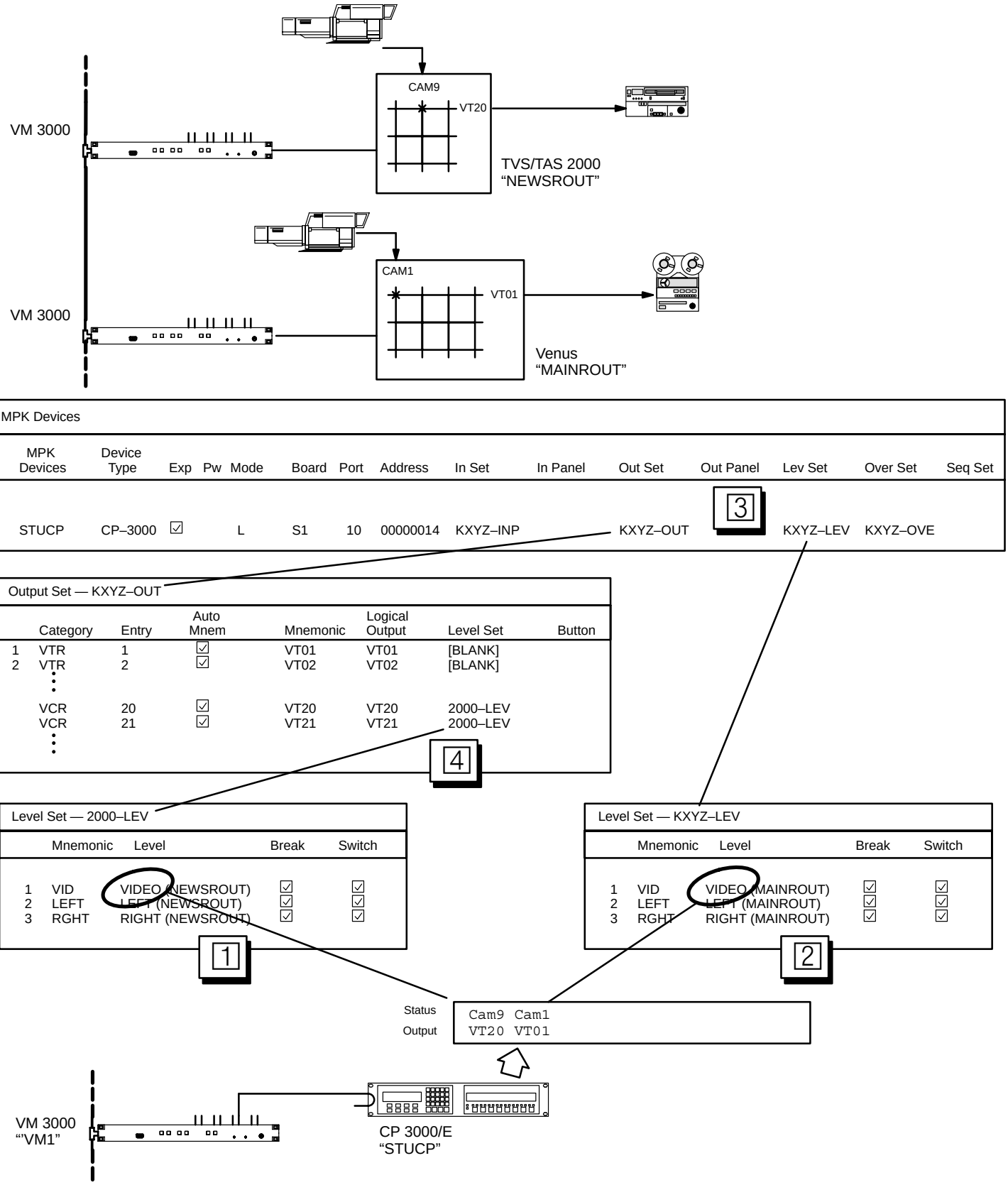
Please refer to Figure 5–76 for the following discussion.

When more than one switcher is in the system, and you want to operate the switchers from one control panel, there must be a separate CP Level Set for each switcher (1 and 2). This is because the CP Level Set is used to determine how status will be shown on the panel; specifically, the first entry on the CP Level Set will be the level that is statused. In this example, video will be statused.

The CP Output Set is used to assign an individual output to a CP Level Set for the appropriate switcher (4). In this example, all outputs of the "NewsRout"switcher would be assigned to the CP Level Set named "2000–LEV."

Similarly, all outputs of the "MainRout" switcher could be assigned to a CP Level Set on an output–by–output basis, but in this example the Lev Set entry is *blank*. With no entry, the system will refer back to the MPK Devices table to locate the default CP Level Set—in this case, "KXYZ–LEV" (3). Thus the "KXYZ–LEV" table will be used to establish "MainRout" status (2).

Figure 5–76. *CP Output Set and CP Level Set requirements for multiple switcher installations. See page 5–96 for discussion.*



CP Override Set

The override function, which allows single–keystroke selection of a source, is used for a quick or emergency switch to an often–used input. For example, the black burst generator could be defined as the first “override” source for the system, corresponding to the first soft key position on a CP 3000 or CP 3800 panel. When in a hurry to find black burst, the operator can then press BLK, TAKE (instead of, for instance, TEST, 1, TAKE).

Override sets are also used to assign an input to each button on CP 300, CP 310, CP 330, and CP 3020 Push Button Control Panels, and to the button–per–source keys on CP 3824 and FCS 3360§ panels.

The overrides can be permanently assigned with the file server (as described immediately below), and, if desired, temporarily edited at CP 3000 control panels (as described on page 6–21). Overrides can also be temporarily edited at CP 3800 panels (as described on page 6–54) and CP 3824 panels (page 6–85).

The order in which the overrides are listed on this table will be the order in which they appear on the panels.

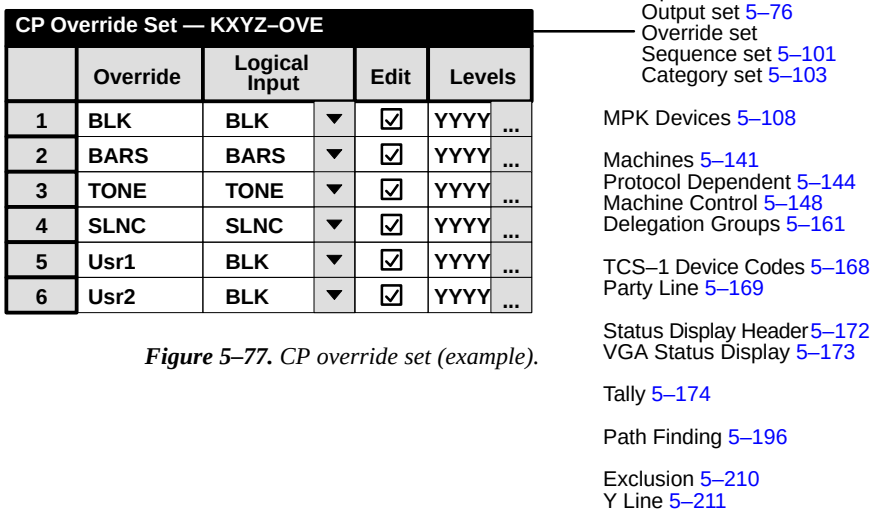


Figure 5–77. *CP override set (example).*

§ The FCS 3360 is described in a separate manual, part no. 04–883360–002.

DEFINING OVERRIDES

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   For more information, please see *Modifying and Downloading a System Configuration Set* on page 5–8.

2. Click on “Jupiter > Control Panel Sets,” then “CP Override set.” This will display a list of all existing CP Override sets.

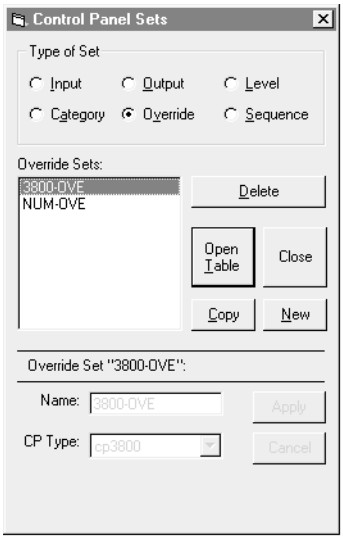


Figure 5–78. *Override edit set menu (example).*

   The menu lists all override sets in the configuration set presently selected for editing.

3. If you want to create a new set, click on “New,” and go to Step 4. Or, if you want to edit an existing set, click on the name of the Output Set; then click “Apply” and “Open Table” and skip to Step 6.

4. If you are creating a new set, you will be asked for a set name.

   Note: Do not use the same name for different CP sets. Also, do not name a CP set with a name used by the system for a Device Type. Device Type names are shown on page 5–109.

5. Click on one of the CP types. Select “cp3000” for all panels except the CP 3008, CP 3800, and CP 3824. Clicking on “Apply” and “Open Table” will bring up a blank version of the table shown in Figure 5–77. Skip to Step 7.

   Because they can display eight–character mnemonics, the CP 3008, CP 3800, and CP 3824 all use type “cp3800” override sets.

6. If you click on an existing Input Set, this will open a table similar to that shown in Figure 5–77.

7. If the panel being configured is a CP 3000, CP 3008, CP 3800, or CP 3824, click on the “Override” field and create a name for the first override button. This is the name that will appear in the panel’s display window during override mode. For all other panels, no entry in the “Override” column is required.

Guidelines for using the editor are found on page 5–3.

8. In the “Input” column, select the name of the switcher input for the first override button.

   The source of these names is the Switcher Input table (page 5–44).

   Although the CP 3824 has only 24 button–per–input keys, up to 360 inputs can be assigned on this table, i.e., 15 groups (“pages”) of 24 inputs each. Each page of 24 sources would then be accessed with the Page key.

   For CP 330 panels configured for dual bus control (24 x 2), the first 24 rows on this table will apply to the top row of 24 buttons and the next 24 rows to the bottom row of buttons.

9. If you want to allow the override to be changed from the CP 3000, CP 3800, or CP 3824 front panel, check the box in the “Edit” column.

   Note: Front–panel editing does not change the name of the override as established by the Override Set table. This could result in a situation where the operator selects CAM1 but gets VTR5. For overrides that will be allowed to be edited from the front panel, it’s a good practice to enter generic names such as “Usr1” or “Ovr1.”

10. Select the Levels that you want to switch by double–clicking in the appropriate Levels field; this will open a secondary dialog box showing the names of existing switcher levels (as shown in the Switcher Description table [page 5–31]). Toggle the desired levels on or off and click OK.

11. To close the Override Set table, click OK.

12. Click on “File > Save” to save the table.

    The change will apply to all control panels that use the same override set. For the system shown on page 5–89, it would affect all CP 3000 panels in the system since all of them use “KXYZ–OVR” as the override set.

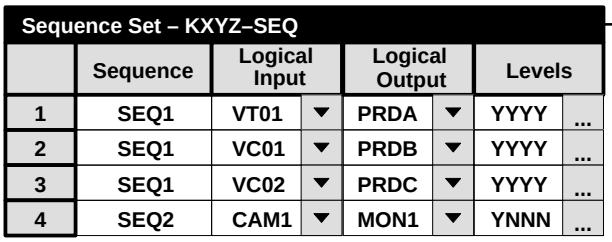
13. After saving your changes, compile and activate the configuration set. (See page 5–13 if you need more information.)

CP Sequence Set

A *sequence* is a switch of one or more sources to one or more destinations.

The CP 3000 panel can accommodate a maximum of 25 events (switches) in one sequence.

There is no specific limit to the number of sequences, but due to memory restrictions a limit of 16 is recommended.



Sequence Set – KXYZ–SEQ

	Sequence	Logical Input		Logical Output		Levels	
1	SEQ1	VT01	▼	PRDA	▼	YYYY	...
2	SEQ1	VC01	▼	PRDB	▼	YYYY	...
3	SEQ1	VC02	▼	PRDC	▼	YYYY	...
4	SEQ2	CAM1	▼	MON1	▼	YNNN	...

Figure 5–79. *CP sequence set (example).*

In Figure 5–79, the first three rows show the switching events in “Seq1.” In this example, selecting “SEQ1” will cause three VTRs to be switched into inputs A, B, and C of a production switcher. All four levels (video, audio left, audio right, and time code) will be switched. The switches will take place in the vertical interval at maximum system speed.

Sequences are stored as sequence *sets*; these sets can be made available to some or all control panels. For the system shown on page 5–89 (on the MPK Devices menu), the set in this example would be available to all CP 3000 Switcher Control Panels in the system since all of them use “KXYZ–SEQ” as the sequence set. Sequences *can* include outputs not otherwise available to a panel (i.e., when the outputs are not entered on the CP Output Set assigned to the panel).

When operating the CP 3000, sequences are accessed through the Menu and F keys, as described on page 6–17.

> Note 1: Data matrixes can be part of sequences when used in conjunction with the “DM 400 Off Time” feature (DM 400 Off Time is described on page 5–43). There should not be more than 25 DM 400 safe off time switches per sequence. Safe off time in sequences must be used with care as specifying too short of a safe off time may result in the switch occurring too soon; this could result in switches occurring out of sequence.

Note 2: Great care needs to be used to ensure that the switches defined in CP Sequence Sets involving Data Routers do not conflict. Verify that each sequence uses all defined data router inputs and outputs just once, including the implied reverse switches. Failure to do this will result in unintended switches, and possibly switching a single input to multiple outputs at the same time.

DEFINING SEQUENCES

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   For more information, please see *Modifying and Downloading a System Configuration Set* on page 5–8.

2. Click on “Jupiter > Control Panel Sets” then “CP Sequence Set.” This will open a list of all existing CP Sequence sets.

3. Click on “New.”

4. Enter the desired name for the set, up to eight characters, and select a CP type. Then click on “Apply” and “Open Table.” An example of the resulting menu is shown in Figure 5–79.

   Important: Do not use the same name for different CP sets. Also, do not name a CP set with a name used by the system for a Device Type. Device Type names are shown on page 5–109.

5. Add (or edit) sequences as desired.

   Enter a name for the first sequence.

   Select the first input name (source for these names is the Switcher Input table, page 5–44). Select the first output name. The source for these names is the Switcher Output table (page 5–51).

   Guidelines for using the editor are found on page 5–3.

   The Levels column is edited by double–clicking in the field and toggling the desired levels on or off in a secondary dialog box.

6. After saving your changes, validate, compile, and activate the configuration set.

CP Category Set

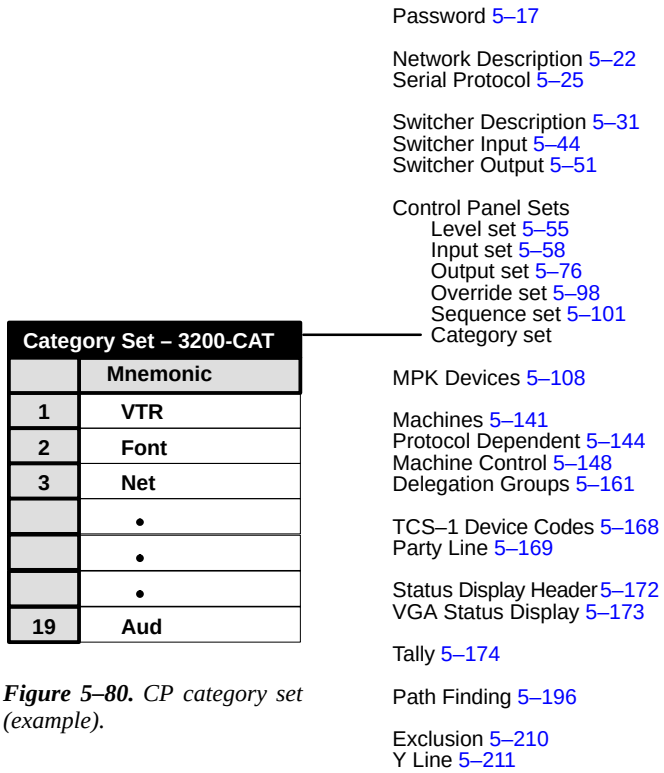


Figure 5–80. *CP category set (example).*

The CP Category Set table allows the category names to be customized. (*Categories* are classes of inputs/outputs, such as “VTR” and “CAM.”) This table is the source of the name that appears in the display window when a category key is pressed.

A custom category set can be used with the CP 320, CP 3000, CP 3800, CP 3808, CP 3824, and CP 3830 panels, all of which have re–legendable keycaps.

> Note: The original CP 3000 switcher control panels have factory default categories engraved on the keys; however, these panels can be retrofitted in the field using the CP 3000RBK Relegendable Button Kit, part no. 44–046025–001.

A CP Category Set is normally assigned to a CP Input Set and to a CP Output Set when those sets are first created. However, this assignment can be changed later if desired (see page 5–107).

The CP Input and Output Sets are in turn assigned to specific control panels on the MPK Devices table (page 5–89).

When creating a new CP Category set, the menu shown in Figure 5–81 will appear.

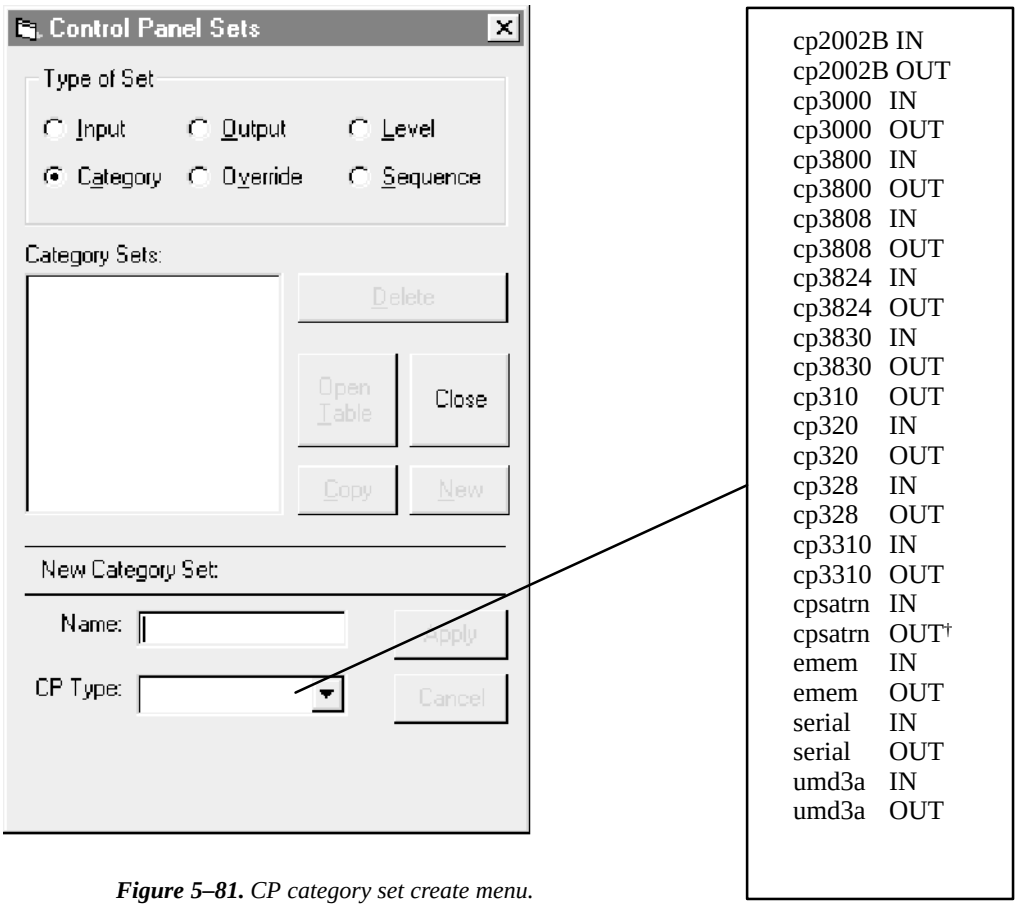


Figure 5–81. *CP category set create menu.*

This menu is used to enter the name of the set and select the set type.

When finished, a blank version of the table shown in Figure 5–80 will appear.

Guidelines for using the editor are found on page 5–3.

Each **CP 3000**, **CP 3800**, or **Saturn In** Category Set can contain up to 20 category mnemonics; if less than 20 categories are entered, the remaining category keys will be inoperative.

† "cpsatrn OUT" not used. Detailed Saturn configuration instructions are described in the *Saturn Master Control Switcher Installation and Operating Manual.*

The table entries correspond to the CP 3000 and CP 3800 category keys as follows:

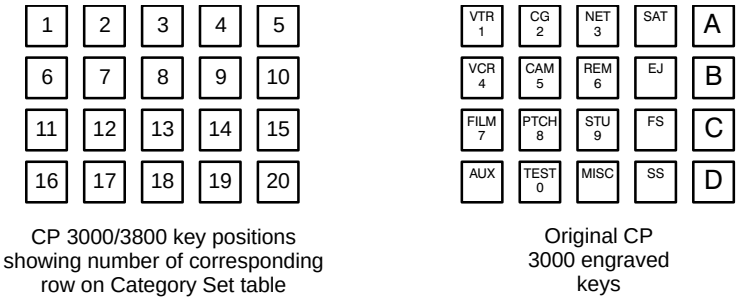


Figure 5–82. *CP 3000/3800 key positions.*

The table entries correspond to the Saturn category keys as follows:

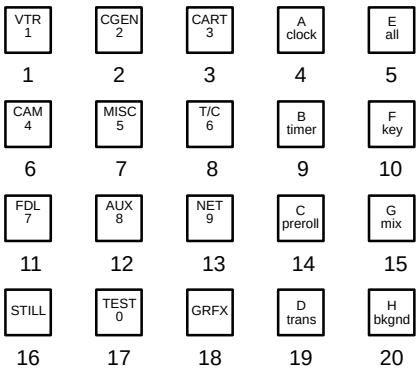


Figure 5–83. *Saturn key positions.*

Each **CP 320 and CP 3808** Category Set can contain up to 16 category mnemonics; if less than 16 categories are entered, the remaining category keys will be inoperative.

The table entries correspond to the CP 320 category keys as follows:

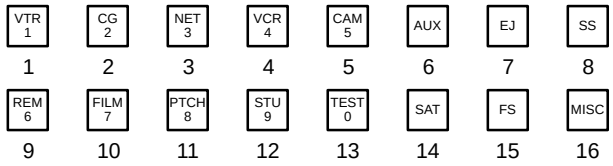


Figure 5–84. *CP 320 key positions.*

The table entries correspond to the **CP 3808** category keys as follows:

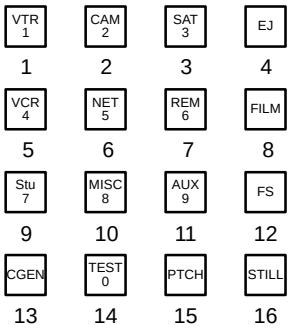


Figure 5–85. *CP 3808 key positions.*

Each **CP 3824** Category Set can contain up to 15 category mnemonics; if less than 15 categories are entered, the remaining category keys will be inoperative. The table entries correspond to the CP 3824 category keys as follows:

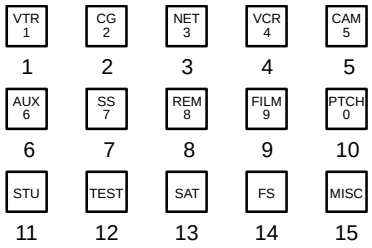


Figure 5–86. *CP 3824 key positions.*

Each **CP 3830** Category Set can contain up to 12 category mnemonics; if less than 12 categories are entered, the remaining category keys will be inoperative. The table entries correspond to the CP 3830 category keys as follows:

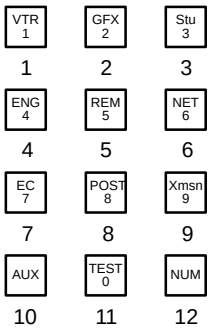


Figure 5–87. *CP 3830 key positions.*

Changing the Category Set Associated with an Input or Output Set

A custom Category Set can be created at any time. The following procedure is used to assign a new Category Set to an existing CP Input Set or CP Output Set.

1. On the main menu, click on “Jupiter” and “Control Panel Sets.” Then select “Input” or “Output,” as desired. A menu similar to Figure 5–88 will appear.

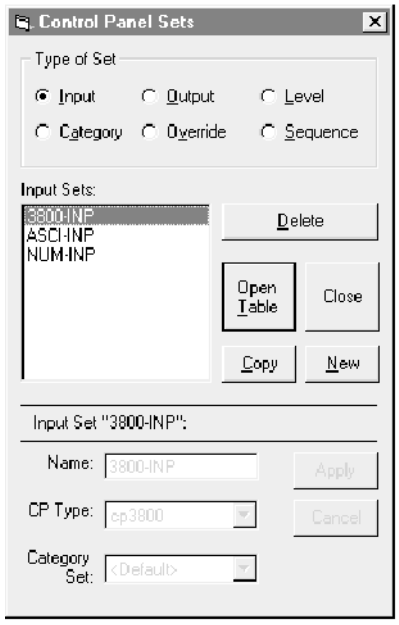


Figure 5–88. *CP set dialog (example).*

2. Select the name of the *existing* set of interest.

3. Click on the Category Set name box, and enter the name of the new Category Set.

   If you want to return to the factory default category set, leave the Category Set name as “Default.”

4. Click on “OK.”

MPK Devices

MPK Devices

	MPK Devices	Device Type	Expansion	Password	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	STUMC	MC–3000	☑		VM1	6	00000016							
2	STUCP	CP–3000	☑		VM1	6	00000014	KXYZ–INP		KXYZ–OUT		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
3	ENGCP	CP–3000	☐		VM1	6	00000013	KXYZ–INP		KXYZ–OUT		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
4	MC	CP–3000	☑		VM1	2	00000000	KXYZ–INP		MC–OUT		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
5	SHOP	CP–3000	☐		VM1	2	00000002	KXYZ–INP		SHOP		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
6	DELAY	CP–3000	☑		VM1	2	00000003	KXYZ–INP		DELAY–OUT		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
7	TAPECP	CP–3000	☑		SI1	6	00000008	KXYZ–INP		TAPE–OUT		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
8	TAPEMC	MC–3000	☑		SI1	6	00000016							
9	CONF	CP–3000	☐		VM1	3	00000006	KXYZ–INP		CON1		KXYZ–LEV	KXYZ–OVE	KXYZ–SEQ
10	PROD	CP–3020	☑		VM1	6	00000012			VT01		KXYZ–LEV	3020–OVE	
11	TMC03010	MC–3010	☐		SI1	6	00000029							
12	EDIT	CP–320	☐		VM1	5	00000037	KXYZ–INP		EDIT–OUT		KXYZ–LEV		

Hexadecimal

Password 5–17

Network Description 5–22
Serial Protocol 5–25

Switcher Description 5–31
Switcher Input 5–44
Switcher Output 5–51

Control Panel Sets
- Level set 5–55
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- Output set 5–76
- Override set 5–98
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- Category set 5–103

MPK Devices

Machines 5–141
Protocol Dependent 5–144
Machine Control 5–148
Delegation Groups 5–161

TCS–1 Device Codes 5–168
Party Line 5–169

Status Display Header 5–172
VGA Status Display 5–173

Tally 5–174

Path Finding 5–196

Exclusion 5–210
Y Line 5–211

Figure 5–89. *MPK Devices table (example).*

This table must be used to define all MPK devices in the system. These include control panels, status displays, and the MI 3040 General Purpose / Tally Interface. It is also used when a PC is used as a Software Control Panel.§

§ Applies only when the Software Control Panel is used for machine control. For more information, see Section 7.

Important: Row numbers on Jupiter tables are used as the “logical” numbers for devices. Changing the row number of an existing device (by inserting/deleting a new control panel in the middle of the table, for example) will **disrupt control of the system**, requiring controller boards to be memory–cleared and reset (see “Clearing Battery–Protected Memory in Appendix B). One way to avoid this interruption is to add new devices at the end of tables.

MPK Devices This column is used to create a name, up to eight characters in length, for each MPK device in the system. Machine control panels (such as MC 3000, MC 3010, CP 3000 with “Exp” (expansion), CP 3800, and CP 3810) listed here will automatically appear as a selection on the Machine Control table (page 5–148).

Type Device types (shown on a pull down menu) are limited to the following:

CP 300	CP 3810L (p. 5–137)	MC 3010
CP 300/S	CP 3810S	MC 3020D (p. 5–162)
CP 310	CP 3824	MC 3020L (p. 5–118)
CP 310/S	CP 3830	MC 3040/2 (p. 5–117)
CP 320	CP 3830P	MC 3040/4 (p. 5–117)
CP 320/S	CP 3832	MC 3040/8 (p. 5–117)
CP 328	CP 3832L	MCS TALY (p. 5–116)
CP 328/S	CP 3832P	MESS UMD
CP 330	CP 3832S	3040 LOCK
CP 330/S	CP 3864	3040 SLCT
CP 2002B	CP 3864L	MI 3040/T (p. 5–116)
CP 2002D	CP 3864P	MI 3040/2 (p. 5–116)
CP 3000	Diamond (p. 5–129)	MI 3040/4 (p. 5–116)
CP 3008	ES–LAN	MI 3040/8 (p. 5–116)
CP 3020	ES–TRIB	MI 3040IO
CP 3030	FCS 3276	SD 3x (p. 5–118)
CP 3310/5	FCS 3277	Serial (p. 5–130)
CP 3310/8	FCS 3296	WPE*
CP 3320	FCS 3360	UMD3A (p. 5–118)
CP 3300/X	FCS 3363	VC 3020 (p. 5–115)
CP 3800	GVG 200 (p. 5–131)	VCP 3000 (p. 5–115)
CP 3808	JNS–UMD	VMC 3000 (p. 5–115)
CP 3809	MANAGER§	
CP 3810 (p. 5–137)	MC 3000	

Selecting a control panel with an “/S” suffix will cause the panel to operate with “sticky levels.”*

Selecting a **CP 3810L** device type will cause the panel to operate in single bus mode. For more information, see page 5–137 and following.

Selecting a **CP 3810S** device type will cause the panel to operate in “sticky output” mode.

Selecting a **CP 3830P** device type will cause the CP 3830 panel to operate in dual output control (automatic preview) mode. In this mode, the CHOP button is redefined as the PRESET TAKE button.

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* Defined in Glossary section.

§ Custom.

Selecting a **CP 3832P** or **CP 3864P** device type will cause the panel to operate in Preset mode at all times. This mode can be used to verify input selections before switching.

Selecting a **CP 3832L or CP 3864L** device type will cause the right–hand group of six buttons to function as level selection buttons.

Device types "**3040SLCT**" and "**3040LOCK**" are used for Input Source Assignment applications, where an MI 3040 is used to automatically select and lock router outputs controlled by a Jupiter panel feeding assignable inputs to a production switcher. For more information, see Appendix U.

Expansion As a general rule, the Expansion box is checked when the panel is used with an expansion panel; for example, when a CP 3000 is used with a CP 3010. For special uses of this column, see the notes below.

For each **MC 3010**, there is only one entry whether it is a 4 machine panel (MC 3010/1) or a dual 4 machine panel (MC 3010/2). The right–hand panel of an MC 3010/2 is not treated as an expansion panel; therefore, the Expansion box is not checked.

The **CP 3800** panel can be defined for Multiple Destination Mode operation (front–panel selectable to Single Destination mode); or, defined for Single Destination Mode only operation. For front–panel selectable, Multiple or Single Destination Mode operation, the Expansion box is checked. For Single Destination Mode only operation, the box is not checked.

When **CP 3808** or **CP 3830** control panels are associated with a **CP 3809** Expansion Panel(s), the CP 3808/3830 Expansion box is checked. The CP 3809 entry is unchecked. Note: The CP 3830**P** cannot be operated with an expansion panel.

When a **CP 3832** or **CP 3864** control panel (including type **L**) is to be operated as a "split" panel, with some of the buttons used for inputs and some for outputs, the Expansion box is checked. For all other applications, the box is not checked (even when the panel *is* used in association with another panel to expand the number of inputs or outputs, the box entry is still unchecked). The split mode cannot be combined with the continuous Preset mode described above.

For **CP 3810** Expansion Panel(s), the Expansion box is always unchecked.

When a **CP 330** is defined with the Expansion box checked and an Output Set with two or more outputs defined, the CP 330 will operate as a 24 X 2 panel with the top row of buttons assigned to one output and the bottom row to another. The first two outputs defined in the Output Set will be the two output buses it will control.

Pass word This table has provisions for entry of password levels (described in detail on page 5–114).

Board Name of controller board connected to this device. The source of these names is the Network Description table (page 5–22).

Port Number of controller board port connected to this device. The port must support the necessary protocol for this device (as configured on the Serial Protocol table, page 5–25).

Address Address (hex). Unique serial data bus ID used to select and service this device. Must be entered in hexadecimal. (Not to be confused with LAN address entered on Network Description table shown on page 5–22).

With the exception of the CP 3800 Series panels and RP 1/2/3 Under Monitor Displays, device addresses such as “00000018” are determined at time of manufacture and cannot be changed by the user. To display the address of a control panel, please see *Display Control Panel ID* on page 6–21.

Input Sets Name of CP Input Set to be assigned to this device. The usual practice is to have one CP Input Set, containing the names of all inputs, apply to all panels. However, special CP Input Sets could be created which list only selected inputs; such a set could be used to prevent certain panels from selecting specific inputs. Creation of CP Input Sets was described on page 5–58.

If panel “A” does not have access to a certain input, but that input has been selected by panel “B” for the output presently being statused by panel A, then panel A has no way of reporting the mnemonic of the input. Under these conditions, panel A will show asterisks (****) for status.

For each **CP 3832** or **CP 3864** operated as a:

— **Single–bus** control panel, select the name of the CP Input Set that will be used to assign sources to the control panel’s input buttons.

— “**Split**” panel, with some of the buttons used as inputs and some as outputs, select the name of the CP Input Set that will be used to assign sources to the control panel’s input buttons.

— **Main source** panel (controlling the inputs at a multi–panel control station) select the name of the CP Input Set that will be used to assign inputs to the buttons at this control station. See page 5–133 for more information about CP 3832/64 multi–panel control stations.

In Panel This column is used only for expansion panel configuration when that panel will be used for additional inputs.

For each **CP 3832** or **CP 3864** operated as an **expansion input** panel (used in association with a main source panel), select the MPK Devices name of the associated main panel in this column. See page 5–133 for more information about CP 3832/64 multi–panel control stations.

Note: In some cases you will need to press “Apply” to update the selections in drop down lists.

Out Set CP Output Set name. Creation of CP Output Sets was described on page 5–76.

If the entry is an actual CP Output Set, then the control panel will be able to control all the outputs listed in that Set. Depending on the contents of the set, this would allow for full–matrix or multi–bus control.

For many single–output panels, this field can be used to enter the name of a single switcher output to be controlled (see Note 1 below for exceptions). The source of the output names is the Switcher Output table (page 5–51).

Note 1: For a **CP 300**, **CP 310**, **CP 320**,or **single–bus CP 330** (inclulding "/S" type) control panels, for a **CP 3020** panel, and for a **single–bus CP 3830**, enter the name of the output set that contains the name of the output to be controlled.

For each **dual–bus CP 330**, enter the name of the output set that will be used to assign the two destinations.

For each **CP 328** (including "/S" type), enter the name of the output set that will be used to assign the destinations.

For each **CP 3809 Expansion Panel**, the "Out Set" column must be blank.

For **CP 3810 / 3810S / 3810L Expansion Panel** entries, see page 5–137 and following.

If the **CP 3830** is to be used to control one output, you *cannot* enter the name of the output in this column; instead, you must enter the name of an output set that contains the name of the output.

For each **CP 3832** or **CP 3864** operated as a:

— **Single–bus** control panel, enter the name of the *output* that the panel is to control.

— "**Split**" panel, with some of the buttons used as inputs and some buttons used as outputs, enter the name of the CP Output Set that will be used to assign destinations to the control panel's output buttons.

— Main panel with a **CP 3810 Expansion** Panel, see page 5–137 and following for details.

Out Panel This column is used only for expansion panel configuration, when that panel will be used for additional *outputs*.

For each **CP 3832** or **CP 3864** operated as an **expansion output** panel (in association with a source panel), select the MPK Device name of the associated main source panel in this column. See page 5–133.

For each **CP 3809 Expansion Panel**, select the name of the associated CP 3808 or CP 3830 main source panel.

For each **CP 3810 Expansion Panel** associated with a main source panel (CP 3832, CP 3864, CP 3808, or CP 3830), select the name of the main panel. See page 5–137 for an example.

For each **CP 3830 Dedicated Output** Panel, select the name of the associated CP 3830 main source panel (see page 5–132).

Note: In some cases you will need to press "Apply" to update the selections in drop down lists.

Level Set Select the CP Level Set name. Creation of CP Level Sets was described on page 5–55.

For each **CP 3809 Expansion Panel**, the Level Set column must be blank.

Override Set Select the CP Override set name. In addition to defining CP 3000 overrides, CP Override Sets are also used to assign input buttons on CP 300/310/330 and CP 3020 Push Button Control Panels. Creation of CP Override sets was described on page 5–98.

Sequence set Select the CP Sequence set name. Creation of CP Sequence Sets was described on page 5–101.

SETTING UP A SWITCHER CONTROL PANEL FOR FULL–MATRIX, MULTI–BUS, OR SINGLE–BUS CONTROL

The output(s) that can be controlled by a control panel will depend on the CP Output Set entry for that panel on the MPK Devices menu:

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter > MPK devices." This will open a table similar to that shown on page 5–108, which is a list of all control panels in the system. The column of interest is labelled "Out Set."

3. Click on the Output Set field you want to change.

4. In most cases, you'll want to enter the name of the desired CP Output Set (for full/multi–bus operation), or select the name of a single switcher output (for single bus operation).

   Creation of Output Sets was described on page 5–76. The source of the output names is the Switcher Output table (page 5–51).

   You may wish to review the "Out Set" discussion on page 5–111 for special entries required for some control panel applications.

5. After saving your changes, validate, compile and activate the configuration set. (See page 5–13 if you need more information.)

SETTING PASSWORD LEVELS FOR CONTROL PANELS

In addition to individual Jupiter passwords assigned to each user, individual control panels can be given a password *level*. This can be used to provide varying levels of protection from one control panel to another.

To change the password level for a control panel:

1. On the top of the Jupiter Configurator window (page 5–2), check to see whether the configuration set you want to change is selected for editing.

   In most cases, you will want to modify the set that is currently active; if so, you may want to copy the active set and select the copy for editing. For more information, please see *Copying a Configuration Set for Editing* on page 5–10.

2. Click on "Jupiter > MPK Devices." This will open a menu similar to that shown on page 5–108, which is a list of all control panels in the system.

   In this example, the Password level column is blank, meaning that all control panels have a password level of zero. Therefore all passwords presently assigned will enable any panel.

3. Click on the Password field for the control panel you want to change.

4. Enter the desired password level for this panel.

   Entering "50" would allow the panel to switch outputs having a security level of 50 or less.

   Guidelines for using the editor are found on page 5–3.

5. After saving your changes, validate, compile and activate the configuration set.

VGA STATUS DISPLAY CONTROL PANEL ENTRIES

Use of control panels with the VGA Status Display requires entries to the MPK Devices table. The following example applies to the VGA system shown on page A–1.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	VC	VC–3020	☐		V	1	00000020							
2	VCP	VCP–3000	☐		V	1	00000021	KXYZ–INP		KXYZ–OUT		KXYZ–LEV	KXYZ–OVE	
3	VMC	VMC–3000	☐		V	1	00000022							
4														

Figure 5–90. *MPK device table entries for system shown on page A–1.*

Force Unprotect / Force Unlock Password

The VGA control panels can be configured to force unlock and force unprotect switcher outputs. This will normally require use of a password with a level of 90 or above. If you wish to enable force unlock/unprotect on a permanent basis, you should enter a password level of 90 or above for the VGA panels on the MPK Devices table.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	VC	VC–3020	☐		V	1	00000020							
2	VCP	VCP–3000	☐	90	V	1	00000021	KXYZ–INP		KXYZ–OUT		KXYZ–LEV	KXYZ–OVE	
3	VMC	VMC–3000	☐		V	1	00000022							
4														

Figure 5–91. *Force unprotect/unlock password entries.*

Displaying Time Code on an MC 3000 Associated with a VGA Status Display

The entries shown above will allow the MC 3000 to control any machine pointed to by the VGA cursor. However, while the MC 3000 is under VGA cursor control no time code will be displayed in the MC 3000 display window. This function will require entries to the Machine Control table, as shown on page 5–158.

MI 3040 GENERAL PURPOSE / TALLY INTERFACE ENTRIES

Machine Interface Applications

The following example applies to two “MI 3040/2s,” that is, MI 3040s configured to control two functions (Play and Stop) on each of 20 machines. For system drawings, see pages 2–93 and 2–96.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	MI1	MI–3040/2	☐		SI1	5	00000026							
2	MI2	MI–3040/2	☐		VM1	5	00000041							

Figure 5–92. *Entries for MI 3040s used for machine control.*

Entries will also be required on the Machine Control table (page 5–159.)

Tally Interface Applications

When an MI 3040 is configured as an “MI 3040/T,” that is, configured to control tally lights (as shown on page 2–107 and following), an entry similar to that shown as row 1 in Figure 5–93 will be required. If there is more than one MI 3040, an entry with a unique Device Name will be required for each. This entry is the source of the Device Name for the MI 3040 and this same name must be selected on the Tally Dependency table (page 5–180).

If the tally system is being used in connection with a Saturn Master Control Switcher or a MCS 2000 Master Control Switcher, an additional entry will be required to allow the Jupiter system to gather tally information from the MCS. This entry will be similar to row 2 in Figure 5–93. The Device Name (“MCS_TLY” in this example) must also be selected on the Tally Dependency table (page 5–180). If more than one master control switcher is in the system, there must be an entry for each—for example, with Device Names such as “MCS_TLY1,” “MCS_TLY2,” etc. For **Saturn,** the “Board” is always the name of the video processor; the MPK “Port” is always “1” (this is true even if the MPK port is not physically connected to the MI–3040). For an **MCS 2000**, the “Board” is the name of the device that is the source of the TCS 2 bus, i.e., the device that is connected to the Machine Control port of the EC 2000 Control Electronics.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	TALLY1	MI–3040/T	☐		SI1	5	00000026							
2	MCS_TLY	MCS_TALY	☐		DVP–1	1								

Figure 5–93. *Entry for MI 3040 used for tally.*

External Control of Saturn Master Control Switcher (“MI 3040IO” application)

Using the MI 3040 General Purpose / Tally Interface, an external device can transmit commands to, and receive status from, a Saturn Master Control Switcher. In this application, the MI 3040 is configured in software as an “MI 3040IO.” For more information, refer to “MI 3040IO” in the Saturn Installation and Operating manual.

MC 3040 (MI 3040) ENTRIES

Non–Thomson Machine Control Panel or Computer Applications

With the MI 3040 General Purpose / Tally Interface, a non–Thomson machine control panel or computer can use the Jupiter system to transmit commands to and receive status from a VTR or similar machine. In this application, the MI 3040 is configured in software as an “MC 3040.”

Note: The MC 3040 and MI 3040 hardware is identical.

The following example applies to an “MC 3040/4,” that is, an MI 3040 configured to control four functions (Play, Stop, Ready, and Cue) for up to 10 control panels. For system drawings, see pages 2–97 and 2–100.

MPK Devices

	MPK Devices	Device Type	Expansion	Password	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	MC3040	MC3040/4	☐		SI1	5	00000040							

Figure 5–94. *Entry for MC 3040.*

Entries will also be required on the Machine Control table (page 5–148).

MC 3020D DELEGATE PANEL ENTRY

Table entries for this panel are discussed on page 5–162.

MC 3020L LINKAGE PANEL ENTRY

MPK Devices

	MPK Devices	Davice Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	TAPEMCL	MC–3020L	☐		SI1	6	00000031	LINKMACH		LINKPANL				

Figure 5–95. *Entry for MC 3020L. The corresponding system is shown on page 2–68.*

Hardware installation of the MC 3020L has already been described (page 2–67).

The MPK Devices table must be used to identify each MC 3020L in the system. A name for the MC 3020L is entered along with the name of a *CP Input Set* that is actually a list of the machines assigned to the MC 3020L's main panel. Also entered is the name of a *CP Output Set* that is actually a list of the control panels assigned to the expansion panel.

For information concerning creation of the CP Input Set (machine list), see page 5–62.

For information concerning creation of the CP Output Set (control panel list), see page 5–76.

> **Important:** The system automatically defaults to "No expansion panel." **"No" (unchecked) is the correct entry**, even though the MC 3020L is being operated with an expansion panel (a CP 3021).

SD 3X AND RP 1/2/3 UNDER MONITOR DISPLAY ENTRIES

Hardware installation was discussed on page 2–121. Software configuration varies according to the switching equipment used.

SYSTEMS WITH JUPITER–CONTROLLED DISTRIBUTION SWITCHER ONLY

SD 3x Applications

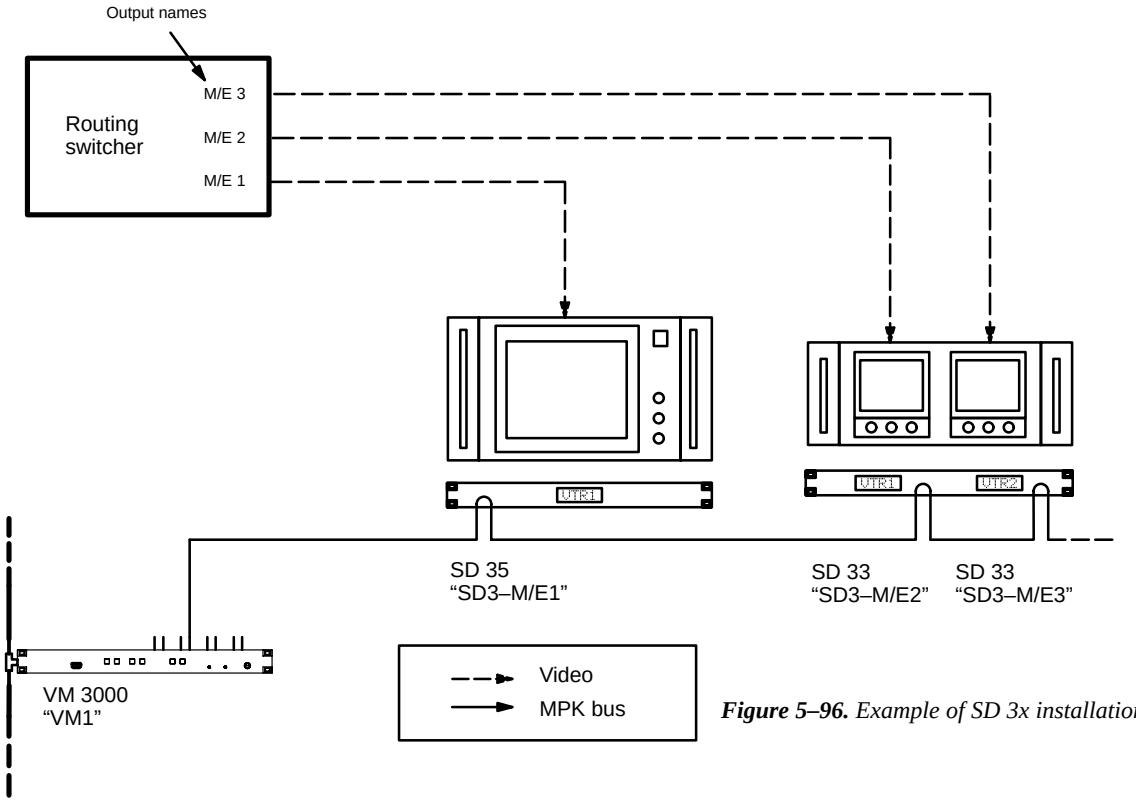


Figure 5–96. *Example of SD 3x installation.*

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Override Set	Sequence Set
1	SD3–M/E1	SD–3x	☐		VM1	4	00000032	UMD–INP		M/E 1		KXYZ–LEV		
2	SD3–M/E2	SD–3x	☐		VM1	4	00000033	UMD–INP		M/E 2		KXYZ–LEV		
3	SD3–M/E3	SD–3x	☐		VM1	4	00000034	UMD–INP		M/E 3		KXYZ–LEV		
4			☐											
5			☐											

Figure 5–97. *Entries for system shown in Figure 5–96.*

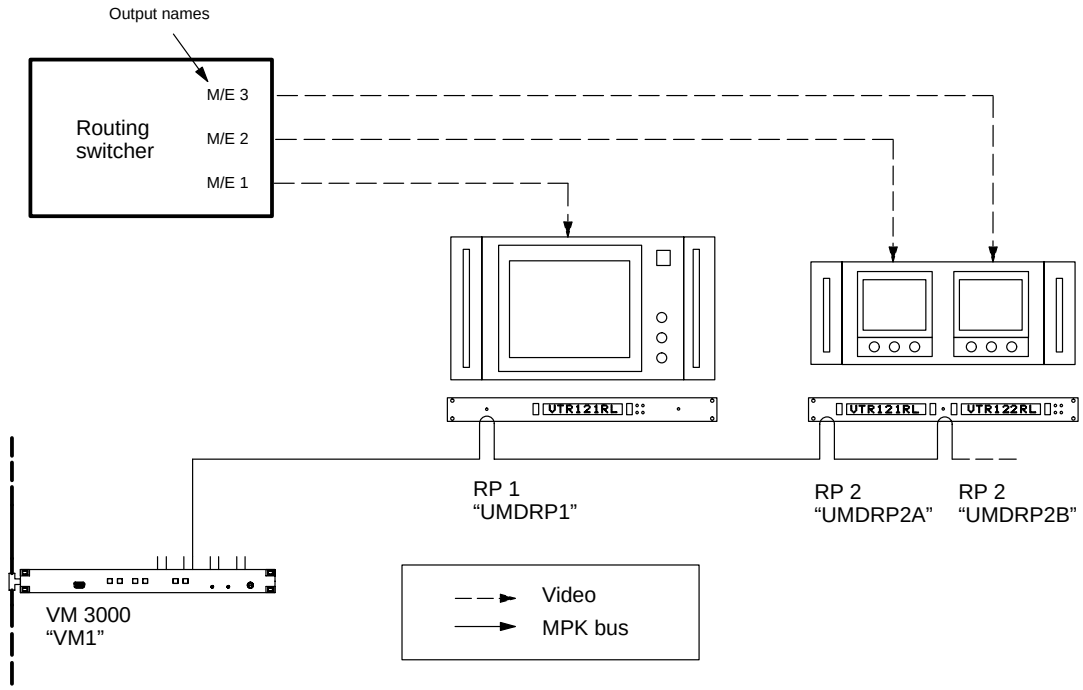
The Address of each SD 3x display is shown on the rear panel.

The “Input Set” specified should be of type CP 3000 and include all inputs and mnemonics that will be used on the status display. Each “Output Set” is not an actual Output Set, but is rather the name of the router output feeding the monitor next to the particular status display. The status display will follow the first level listed in the Level Set, e.g., if Video is the first level listed, then the mnemonic of the video input feeding the monitor will be shown.

RP 1/2/3 Applications

Configuration of the RP 1/2/3 displays is similar to the SD 3x except that Device Type “UMD3A” is selected on the MPK table. In addition, the address of RP displays can be changed using rear–panel switches. See Figures 5–98 and 5–99.

Figure 5–98. *Example of RP 1/2 installation.*



MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Override Set	Sequence Set
1	UMDRP1	UMD3A	☐		VM1	4	00000031	UMD–INP		M/E 1		KXYZ–LEV		
2	UMDRP2A	UMD3A	☐		VM1	4	00000032	UMD–INP		M/E 2		KXYZ–LEV		
3	UMDRP2B	UMD3A	☐		VM1	4	00000132	UMD–INP		M/E 3		KXYZ–LEV		
4	MI3040T	MI3040/T	☐		VM1	1	11111111							
5			☐											

Figure 5–99. *Entries for system shown in Figure 5–98.*

For RP 1 Under Monitor Displays, the Address is set with a pair of rotary switches on the rear panel. For RP 2 dual displays, the address of the first (left–hand) display is set with the rotary switches; the address of the second display is the same number plus 100 hex. For RP 3 triple displays, the address of the first display is set with the rotary switches; the address of the second display is the same number plus 100 hex; and the address of the third display is the same number plus 200 hex. For example, if the first display is set to “AA,” then the address of the second display is “1AA” and the address of the third display is “2AA.”

The “Input Set” specified should be of type “UMD3A” and include all inputs and mnemonics that will be used on the status display. Each “Output Set” is not an actual Output Set, but is rather the name of the router output feeding the monitor next to the particular status display. The status display will follow the first level listed in the Level Set, e.g., if Video is the first level listed, then the mnemonic of the video input feeding the monitor will be shown.

Tally light operation. For tally light operation, the MPK table must include an “MI 3040/T” entry (even if no actual MI 3040 hardware is in the system):

— If there is no MI 3040/T connected to the VM/SI controlling the RPs, you must define an imaginary MI 3040T and assign it to the VM/SI controlling the RPs. Entries for “Port” and “Address” are not used but must be present to satisfy the compiler. See row 4 of Figure 5–99. The purpose of this entry is to launch a tally process within the VM/SI.

— If an MI 3040/T does exist, and is connected to the VM/SI controlling the RPs, use the actual VM Board name, Port, and Address.

Tally light operation will also require entries to the Tally Relay and Tally Dependency tables (see pages 5–174 and 5–180).

SYSTEMS WITH SATURN / MCS 2000 MASTER CONTROL SWITCHER

SD 3x Applications

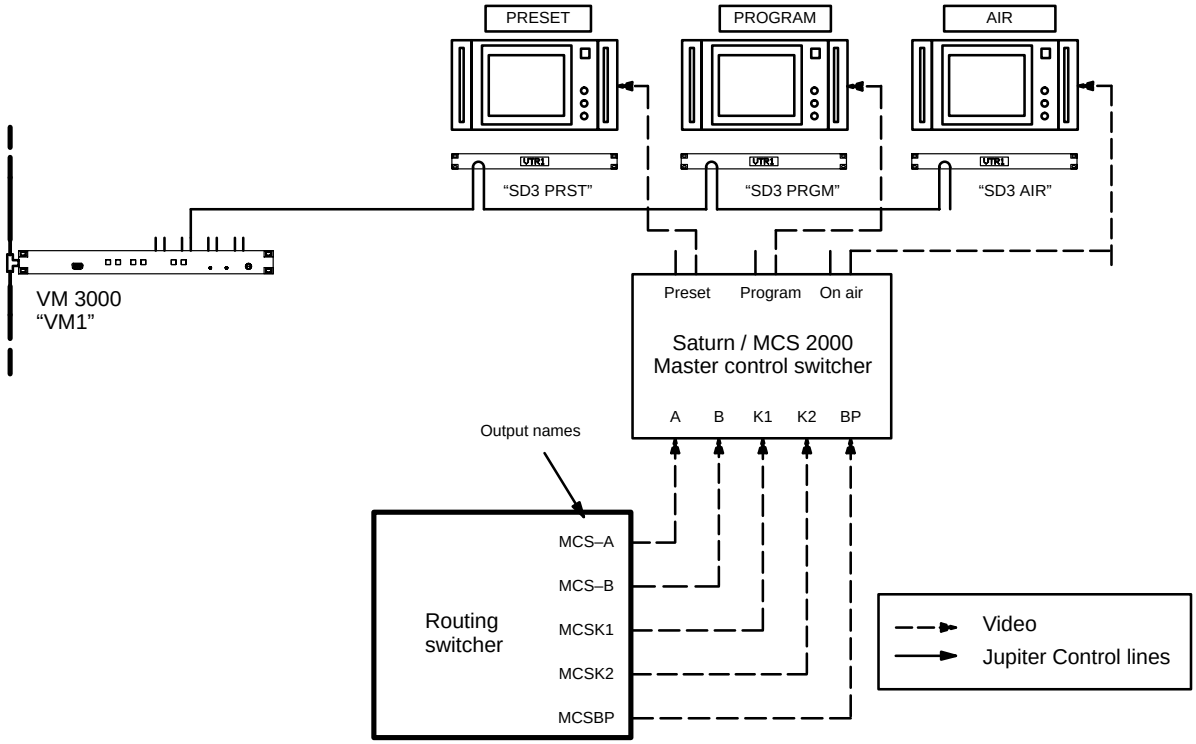


Figure 5–100. *Example of status display system with Saturn/MCS master control switcher. Equipment shown here corresponds to tables on page 5–123.*

If the system includes a Saturn or MCS 2000 Master Control Switcher, the software must be able to follow through the switcher to determine what input has been selected. Therefore, an additional MPK Devices table entry will be required to allow the Jupiter system to gather "tally" information from the switcher. This entry will be similar to row 4 of the MPK Devices table in Figure 5–101; in this example it is based on the system shown in Figure 5–100.

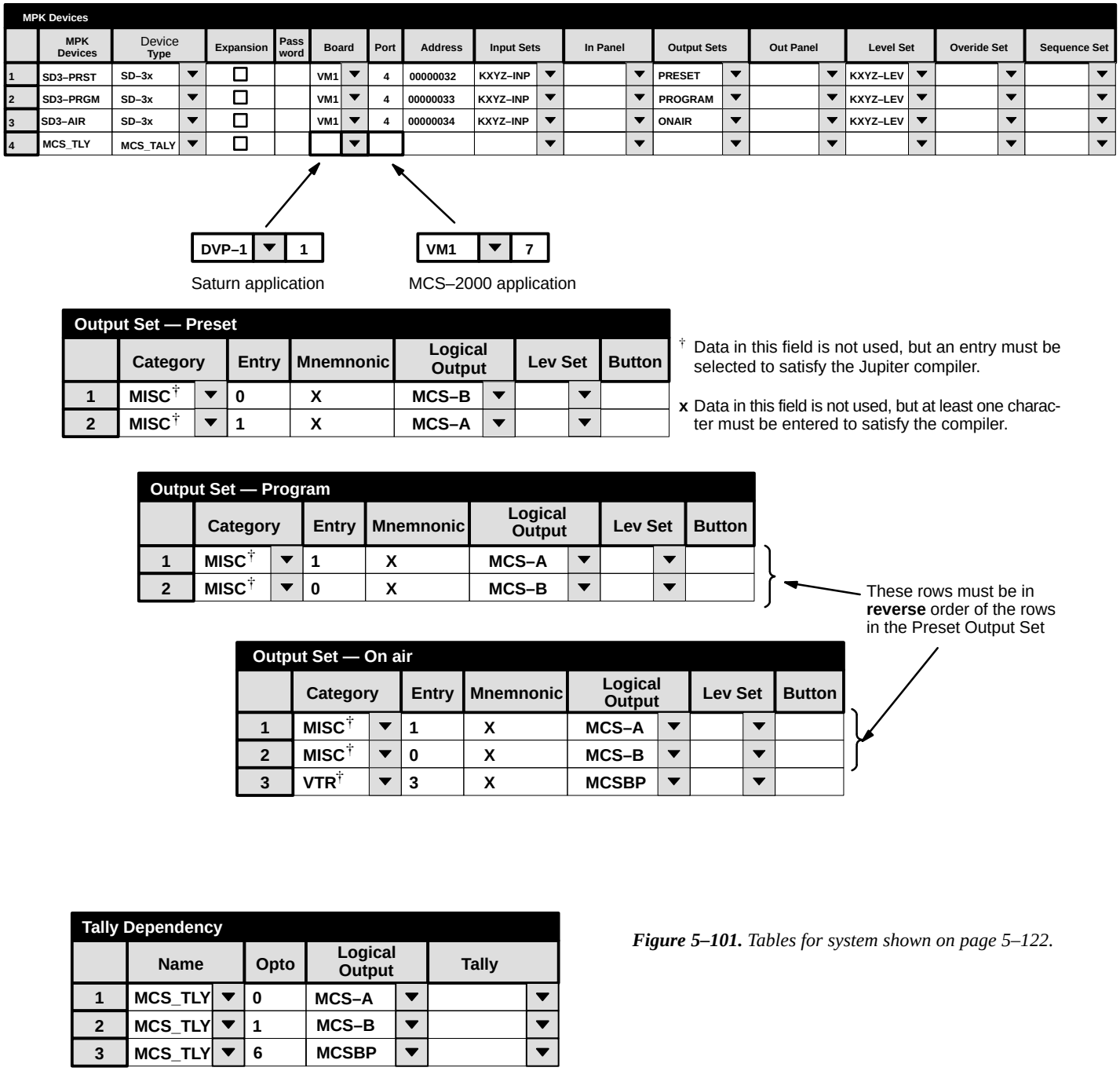
Note 1: If the Saturn is equipped with the internal matrix option, the UMDs should be configured to operate under "Saturn Control" (as opposed to Jupiter Control). This must be done in order for the displays to show the correct status of the internal matrix. For information about Saturn Control of UMDs, refer to the Saturn installation manual.

Note 2: The device called "MCS_TLY" exists only in software tables. Saturn systems require a "Board" entry that points to the Video Processing Unit; the "Port" number is always "1." For MCS 2000 systems, the "Board" entry points to the controller connected to the MCS–2000; the "Port" number is always "7."

Special Output Set tables of type SD 3x must also be created to name all router outputs that can be selected for the Preset, Program, and Air status displays (Figure 5–101). These router outputs must also be entered on a Tally Dependency table as shown.

If there is more than one master control switcher in the system, there must be an entry for each—for example, with the Device Names "MCS_TLY1," "MCS_TLY2," etc.

Note 3: The software used to control the status displays is based on that used to control tally lights. For a more complete understanding of the system logic, you may wish to review the tally description beginning on page 5–174.



MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	SD3–PRST	SD–3x	☐		VM1	4	00000032	KXYZ–INP		PRESET		KXYZ–LEV		
2	SD3–PRGM	SD–3x	☐		VM1	4	00000033	KXYZ–INP		PROGRAM		KXYZ–LEV		
3	SD3–AIR	SD–3x	☐		VM1	4	00000034	KXYZ–INP		ONAIR		KXYZ–LEV		
4	MCS_TLY	MCS_TALY	☐											

Output Set — Preset

	Category	Entry	Mnemnonic	Logical Output	Lev Set	Button
1	MISC†	0	X	MCS–B		
2	MISC†	1	X	MCS–A		

† Data in this field is not used, but an entry must be selected to satisfy the Jupiter compiler.

x Data in this field is not used, but at least one character must be entered to satisfy the compiler.

Output Set — Program

	Category	Entry	Mnemnonic	Logical Output	Lev Set	Button
1	MISC†	1	X	MCS–A		
2	MISC†	0	X	MCS–B		

These rows must be in **reverse** order of the rows in the Preset Output Set

Output Set — On air

	Category	Entry	Mnemnonic	Logical Output	Lev Set	Button
1	MISC†	1	X	MCS–A		
2	MISC†	0	X	MCS–B		
3	VTR†	3	X	MCSBP		

Tally Dependency

	Name	Opto	Logical Output	Tally
1	MCS_TLY	0	MCS–A	
2	MCS_TLY	1	MCS–B	
3	MCS_TLY	6	MCSBP	

Figure 5–101. *Tables for system shown on page 5–122.*

RP 1/2/3 Applications

Configuration of the RP 1/2/3 displays for use with Saturn/MCS master control switchers is similar to the SD 3x, except for the following:

- Device Type “UMD3A” is selected on the MPK table.
- The address of RP displays can be changed using rear–panel switches. For more information, see page 5–120.
- Output Sets are of type UMD3a.
- For information about activating RP 1/2/3 tally lights, see “Tally Light Operation” on page 5–121.

SYSTEMS WITH NON–SATURN / NON–MCS 2000 MASTER CONTROL OR ANY MODEL PRODUCTION SWITCHER

SD 3x Applications

(Please refer to the illustrations on pages 5–126 and 5–103.)

These entries will be similar to those already described (page 5–122), with the following additions:

With a production switcher (or non–Saturn / non–MCS 2000 master control switcher) in the system, an MI 3040 configured as an “MI 3040/T” will be needed to follow signals through the switcher. The entry will be similar to row 4 of the MPK Devices table on page 5–127.

If there is more than one MI 3040, an entry with a unique Device Name will be required for each.

This table is the source of the Device Name for the MI 3040 and this same name must be entered on the Tally Relay and Tally Dependency tables.

RP 1/2/3 Applications

Please refer to the illustrations on pages 5–126 and 5–103. Also see “RP 1/2/3 Applications” on page 5–124.

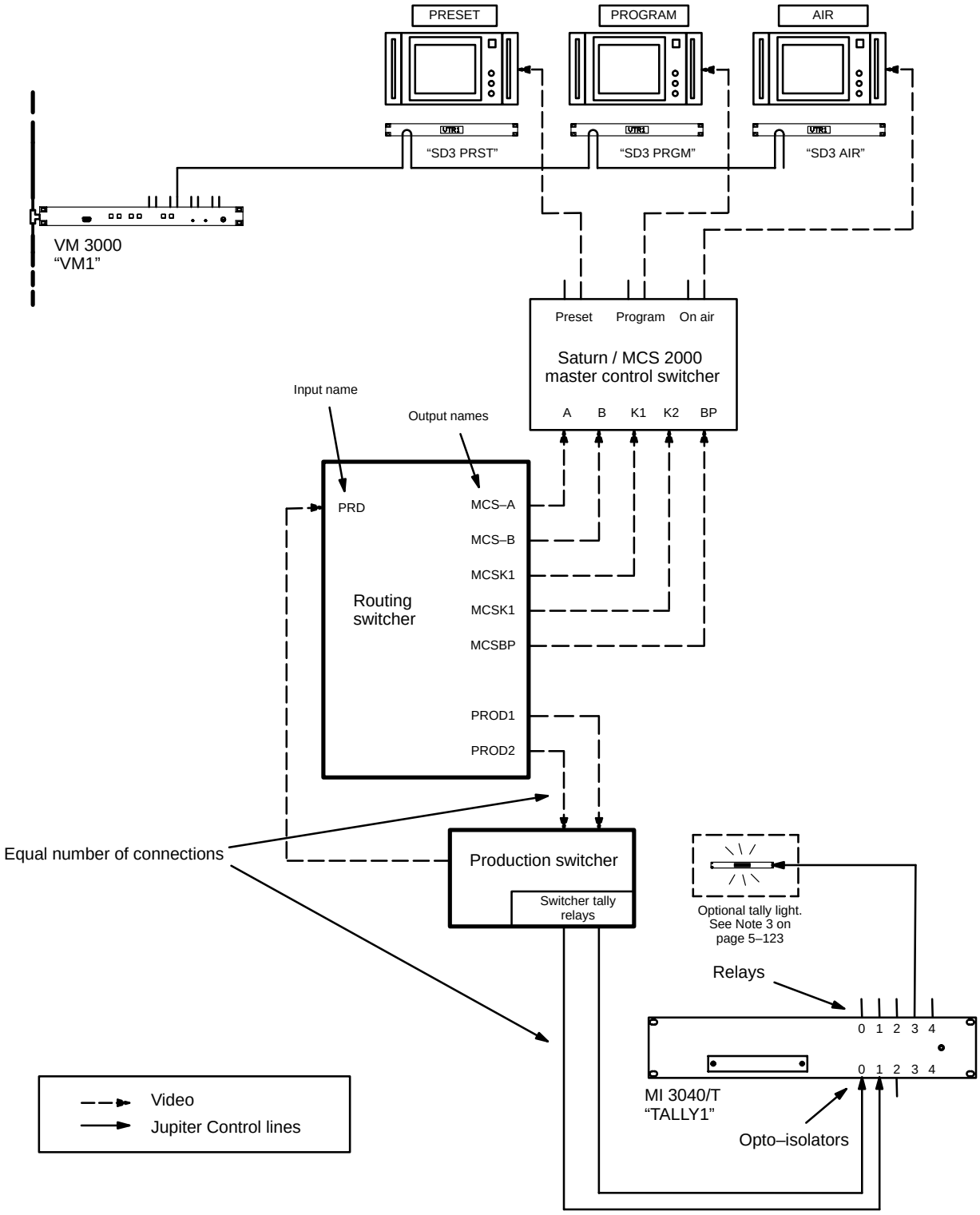


Figure 5–102. *Example of status display system with Saturn / MCS 2000 master control switcher and production switcher. Equipment shown here corresponds to tables on page 5–127.*

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	SD3–PRST	SD–3x	☐		VM1	4	00000032	KXYZ–INP		PRESET		KXYZ–LEV		
2	SD3–PRGM	SD–3x	☐		VM1	4	00000033	KXYZ–INP		PROGRAM		KXYZ–LEV		
3	SD3–AIR	SD–3x	☐		VM1	4	00000034	KXYZ–INP		ONAIR		KXYZ–LEV		
4	TALLY1	MI–3040/T	☐		SI1	5	00000028							
5	MCS_TLY	MCS_TALY	☐											

DVP–1 | 1 — Saturn application

VM1 | 7 — MCS–2000 application

Output Set — Preset

	Category	Entry	Mnemnonic	Logical Output	Lev Set	Button
1	MISC†	0	X	MCS–B		
2	MISC†	1	X	MCS–A		

† Data in this field is not used, but an entry must be selected to satisfy the Jupiter compiler.

x Data in this field is not used, but at least one character must be entered to satisfy the compiler.

Output Set — Program

	Category	Entry	Mnemnonic	Logical Output	Lev Set	Button
1	MISC†	1	X	MCS–A		
2	MISC†	0	X	MCS–B		

These rows must be in **reverse** order of the rows in the Preset Output Set

Output Set — On air

	Category	Entry	Mnemnonic	Logical Output	Lev Set	Button
1	MISC†	1	X	MCS–A		
2	MISC†	0	X	MCS–B		
3	VTR†	3	X	MCSBP		

Tally Relay

	Tally Device	Relay	Logical Input
1	TALLY1	3	PRD

Figure 5–103. *Tables for system shown on page 5–126.*

Tally Dependency

	Tally Device	Opto	Logical Output	Tally
1	MCS_TLY	0	MCS–A	
2	MCS_TLY	1	MCS–B	
3	MCS_TLY	6	MCSBP	
4	TALLY1	0	PROD1	TALLY1 /3
5	TALLY1	1	PROD2	TALLY1 /3

PERMANENT DISPLAY OF MNEMONIC

To display a mnemonic on a permanent basis, use the MPK Devices table to assign an Input Set to the status display containing only one input name and mnemonic. See Figure 5–104.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	SD3–NET	SD–3x	☐		VM1	4	00000032	NET–INP		NETMON		KXYZ–LEV		

Input Set — NET–INP

	Category	Entry	Auto Mnem	Mnemonic	Logical Input
1	Net	1	☐	NET	NETIN
2			☐		

Figure 5–104.

The Output Set entry is not used in this application; however, the name of an actual Output Set (or Output) must be entered to satisfy the compiler.

On the Input Set table, the Input field must be the name of an actual input.

EXTERNAL CONTROL DEVICE ENTRIES

Note: Even though they are not shown on the Serial Protocol table as MPK devices, “ESswitch,” ASCII, DD, and GVG200 control devices require entries to the MPK Devices table.

DD SERIES SWITCHERS

Hardware installation was discussed on page 2–76; serial port configuration was discussed on page 5–25. Figure 5–105 shows an example table for the system on page 2–76.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	DIA–MNEM	DIAMOND	☐		SI3	4		DIA–INP		DIA–OUT		KXYZ–LEV		
2	DIA–ASCI	SERIAL	☐		SI3	6		ASC–INP		ASC–OUT		KXYZ–LEV		

Figure 5–105. *Entry for system shown on page 2–76.*

The dual entries are necessary because of the two hardware connections.

No “Address” entry is required.

The Input, Output, and Level Sets named on this table should include all inputs, outputs, and levels that will be controlled by the Diamond switcher. As a precaution, you may wish to restrict control to selected outputs.

For device **Type “Diamond**,” the Input and Output Sets must be created specifically for use by E–MEM devices. The Input Set is the source of the **mnemonics** that will appear on the Diamond console. The Output Set contains a cross–reference between each router output wired to the DD switcher and a number that the DD will use to refer to that output.

Notice that device **Type “Serial**” is used for the “ASCII” protocol connection. For device Type “Serial,” the Input and Output Sets must be created specifically for use by “serial” devices: the Input Set describes which router inputs can be selected by the DD (and a number that the DD will use to refer to that input); the Output Set describes which router outputs are wired to the DD (and a number that the DD will use to refer to that output).

For details concerning CP Input Sets, see page 5–58.

For details concerning CP Output Sets, see page 5–76.

For details concerning CP Level Sets, see page 5–55.

THOMSON BROADCAST AUTOMATION SYSTEMS – SERIAL CONTROL

Hardware installation was discussed on page 2–77; serial port configuration was discussed on page 5–28. Figure 5–106 shows an example table for the system on page 2–77. Note that no MPK address is required.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	MSL4000	Serial	☐		SI3	13		ALAM–INP		ALAM–OUT		KXYZ–LEV		
2			☐											

Figure 5–106. *Entry for automation system shown on page 2–77.*

The MSL 4000 can use the same CP Level Set that all the control panels use as long as the levels the automation system needs to control are defined. CP Level Sets are discussed in detail starting on page 5–55.

The MSL 4000 uses a “Serial” type CP Input Set (page 5–58) and a “Serial” type CP Output Set (page 5–76).

COMPUTERS USING “ESSWITCH” ROUTING SWITCHER DIALECT OR THOMSON ASCII PROTOCOL

Hardware installation was discussed on page 2–79; serial port configuration was discussed on page 5–25. Figure 5–107 shows an example table for the system in Figure 2–92 on page 2–79. Note that no MPK address is required.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	SWITCHPC	SERIAL	☐		SI3	9		PC–INP		PC–OUT		KXYZ–LEV		

Figure 5–107. *Entry for system shown in Figure 2–92 on page 2–79.*

The Input, Output, and Level Sets named on this table should include all inputs, outputs, and levels that will be controlled by the external control computer. As a precaution, you may wish to restrict computer control to selected outputs.

The Input (page 5–58) and Output (page 5–76) sets must be created specifically for use by “serial” devices.

The Level Set must be created as a type “CP–3000” (see page 5–55.) For an important note about level numbering and external computer control, see page 5–57.

MODEL 200 PRODUCTION SWITCHERS

Hardware installation was discussed on page 2–81; serial port configuration was discussed on page 5–29. Figure 5–108 shows an example table for the system on page 2–81.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	GVG	GVG200	☐		SI3	2	00000023	GVG–INP		GVG–OUT		KXYZ–LEV		

Figure 5–108. *Entry for system shown on page 2–81.*

The “Address” shown on this table may appear to be the address of the production switcher, but is in fact the address of the VM/SI 3000 on the Peripheral bus. This address must be a number between 000000000 and 00000023.

The CP Input (page 5–58) and Output (page 5–76) sets must be created specifically for use by “E–MEM” devices.

Configuration – Production Switcher

The Peripheral bus and the VM/SI 3000 must be enabled from the production switcher:

> “From the [production] switcher operator’s viewpoint, the PERIPH ENABLE pushbutton on the Model 200 panel must be ON to enable communication over the Peripheral Bus. Specific peripherals are enabled or disabled for participation in the E–MEM Learn [or Recall] via the MISC menu in the STREAMLINE control panel. This menu contains the selections for turning any or all of the 24 possible peripherals ON or OFF. After the operator has made these selections, the [production] switcher’s internal software generates the correct peripheral Learn [or Recall] command data and transmits it over the Peripheral Bus whenever the operator sets up an E–MEM Learn [or Recall] of the USER PGM level and presses an E–MEM register pushbutton.”†

For the example shown in Figure 5–108, peripheral number 23 would have to be enabled.

Refer to the Model 200 production switcher manual for additional installation and operating instructions.

† *Model 200 Peripheral Interface II Protocol and Dialect* (Grass Valley Group Manual Number TP0424–00, June 1988) , p. 3–3.

CP 3830 DUAL CONFIGURATION

Dedicated Output Panel

Dual CP 3830 panels can be configured so that the second panel is always used for output selection. The output panel's buttons will glow amber.

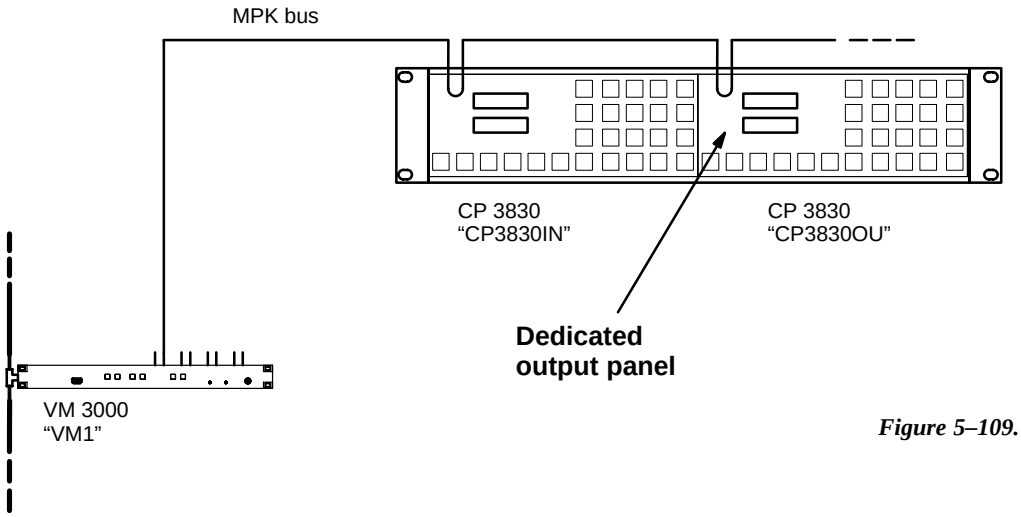


Figure 5–109.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3830IN	CP–3830	☐		VM1	2	00000042	KXYZ–INP		KXYZ–OUT		KXYZ–LEV		
2	CP3830OU	CP–3830	☐		VM1	2	00000043			KXYZ–OUT	CP3830IN	KXYZ–LEV		

Figure 5–110. *Entry for system shown in Figure 5–109.*

Do the following to connect two CP 3830 panels together with one being an input panel and the other being an output panel:

1. The Expansion box must be unchecked for both the input and output CP 3830.

2. The Output Set should be the same for both panels. The compiler requires the LEV SET field to be defined.

   The CP 3830 input panel can be independent of the output CP 3830. The output CP 3830 can still change the output for the input CP 3830 by selecting the new output name and doing a TAKE.

3. The CP 3830 that is defined as the output panel must have the name of the associated CP 3830 selected in the "Out Panel" field (e.g., CP–3830IN).

CP 3832 / 3864 MULTI–PANEL APPLICATIONS

Except for unbalanced split§ configurations, CP 3832 and CP 3864 panels can be combined to increase the number of sources and destinations to a maximum of 128 x 128.

SINGLE–BUS APPLICATION

128 X 1 control station

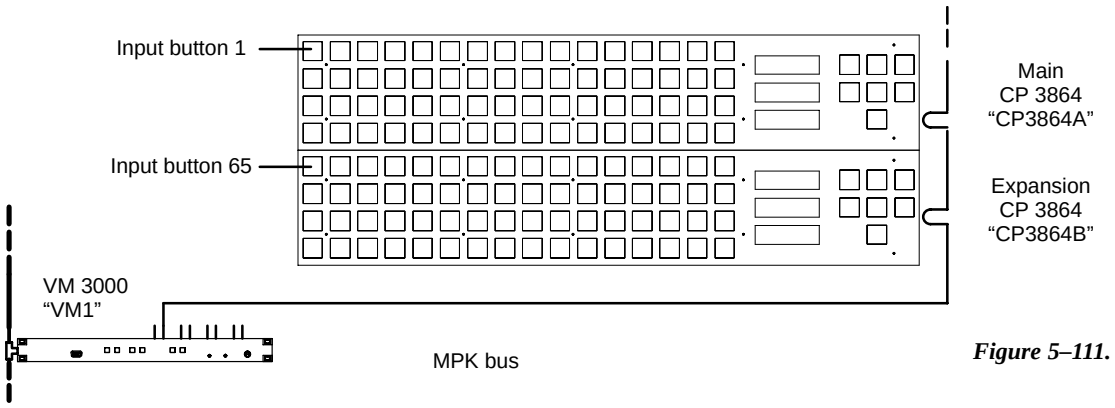


Figure 5–111.

Note: Assignment of specific CP sets to a panel identifies it as the “main” panel, i.e., the panel with input button number 1.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3864A	CP–3864	☐		VM1	2	00000043	3832–IN		MON–1		KXYZ–LEV		
2	CP3864B	CP–3864	☐		VM1	2	00000044		CP3864A					

Figure 5–112. *Entry for system shown in Figure 5–111.*

In this example, two CP 3864s are being operated as a 128 x 1 control station.

The top CP 3864 has been selected as the “main” panel; therefore it will be assigned to specific CP sets. Enter the name of the CP Input Set that will be used to assign inputs to all the buttons at this control station (for more information about CP Input Sets, see page 5–58). In the “Output Sets” column, enter the name of the output to be controlled. The main panel will always have the lowest–numbered input buttons.

Any panel used to expand the number of inputs (the bottom CP 3864 in this example) will use the “In Panel” column to select the MPK Device name of the main panel. It would use the CP sets assigned to the main panel. The first expansion panel listed in this table will have the button numbers immediately following those of the main panel; in this example panel “CP3864B” will have button numbers 65–128.

MPK Device table entries for other CP 3832/64 applications was discussed on page 5–110 and following.

§ For a discussion of balanced and unbalanced split configurations, see page 2–58.

X–Y APPLICATION (WITH BALANCED SPLIT PANEL)

48 X 16 control station

Hardware installation was discussed on page 2–58. Figure 5–114 shows an example MPK Devices table for the system in Figure 5–113.

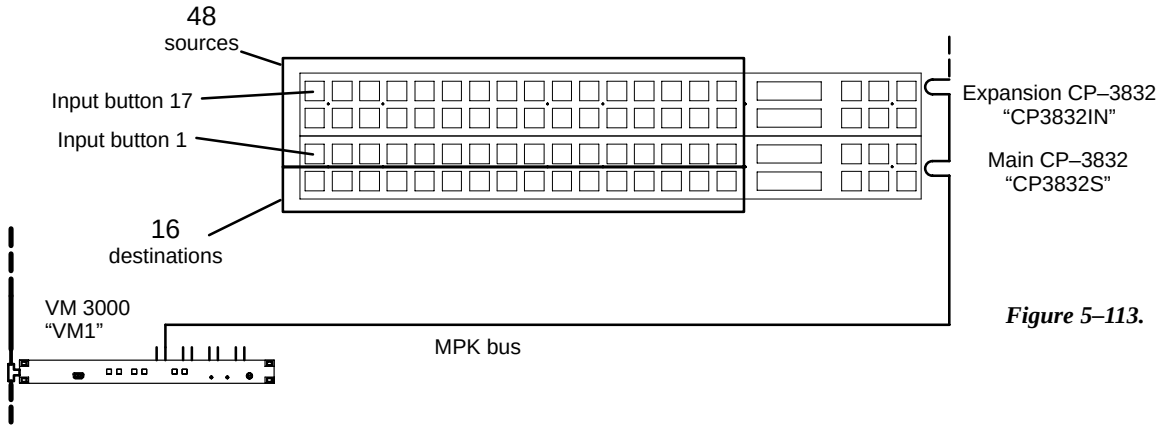


Figure 5–113.

Note: Assignment of specific CP sets to a panel identifies it as the “main” panel; i.e., the panel with input button number 1.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3832IN	CP–3832	☐		VM1	2	00000043		CP3832S					
2	CP3832S	CP–3832	☑		VM1	2	00000044	3832–IN		3832–OUT		KXYZ–LEV		

Figure 5–114. *Entry for system shown in Figure 5–113.*

In this example, the top CP 3832 is being operated as a source expansion panel. In the MPK table, use the “In Panel” column to select the MPK Device name of the main panel (the bottom CP 3832 in this example). Any additional source panels would also refer to the “CP–3832S” in their **In Panel** column; they would use the CP sets assigned to the main panel.

The bottom CP 3832 is being operated in split mode, so the “Expansion” box is checked. The CP 3832 is considered to be the main panel because it is being used in split mode; therefore it will be assigned to specific CP sets. Enter the name of the CP Input and CP Output Sets that will be used to assign inputs and outputs to all the buttons at this control station. The main panel will always have the lowest–numbered input buttons.

If additional panels are added to provide more destinations, they would refer to the “CP–3832S” in their **Out Panel** column. They would use the CP sets assigned to the main panel. The first expansion panel listed in this table will have the button numbers immediately following those of the main panel; the next expansion panel listed will have the next higher set of button numbers, etc.

The button numbers shown in Figure 5–113 correspond to the row numbers of the CP Input and Output Sets. See page 5–58 (CP Input Sets) and page 5–76 (CP Output Sets). MPK Device table entries for other CP 3832/64 applications was discussed on page 5–110 and following.

X–Y APPLICATION (NO SPLIT PANEL)

64 X 32 control station

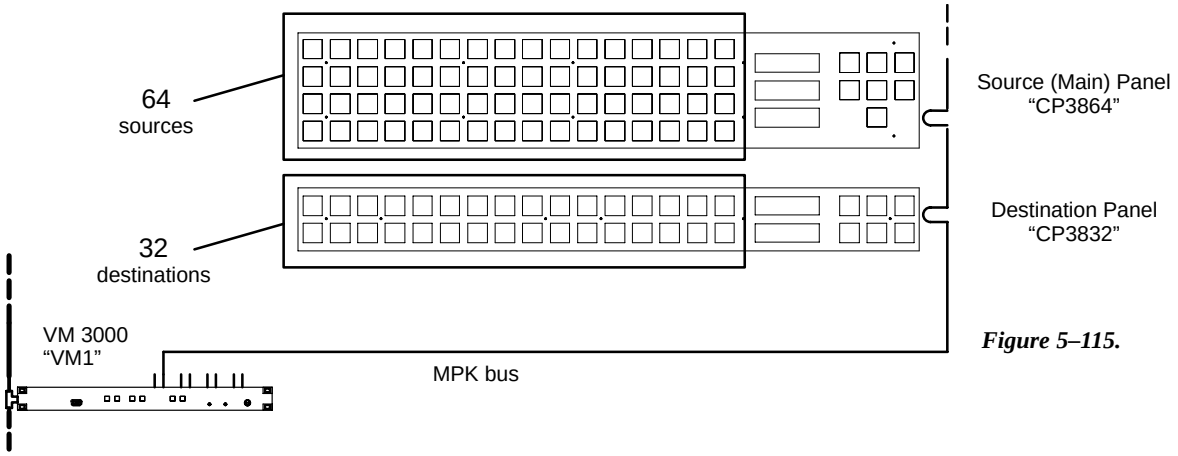


Figure 5–115.

Note: Assignment of specific CP sets to a panel identifies it as the “main” panel.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3864	CP–3864	☐		VM1	2	00000043	3832–IN		3832–OUT		KXYZ–LEV		
2	CP3832	CP–3832	☐		VM1	2	00000044				CP3864			

Figure 5–116. *Entry for system shown in Figure 5–115.*

In this example, the CP 3864 is being operated as a source and “main” panel and the CP 3832 is being operated as a destination panel.

The top CP 3864 is considered to be the “main” panel because it controls the inputs; therefore it will be assigned to specific CP sets. Enter the name of the CP Input and CP Output Sets that will be used to assign inputs and outputs to all the buttons at this control station. See page 5–58 (CP Input Sets) and page 5–76 (CP Output Sets).

Any additional source panels would refer to the main panel (the CP 3864 in this example) in their **In Panel** column. They would use the CP sets assigned to the main panel. The first input expansion panel listed in this table will have the button numbers immediately following those of the main panel; the next input expansion panel listed will have the next higher set of button numbers, etc.

For the CP 3832 in this example, use the **Out Panel** column to select the MPK Device name of the main panel. If additional panels are added to provide more destinations, they would also refer to the main panel (the CP 3864) in their Out Panel column; they would use the CP sets assigned to the main panel. The first output panel listed in this table will have the lowest–numbered set of buttons; the next output panel listed will have the next higher set of button numbers, etc.

MPK Device table entries for other CP 3832/64 applications was discussed on page 5–110 and following.

X–Y APPLICATION (NO SPLIT PANEL)

128 X 128 control station

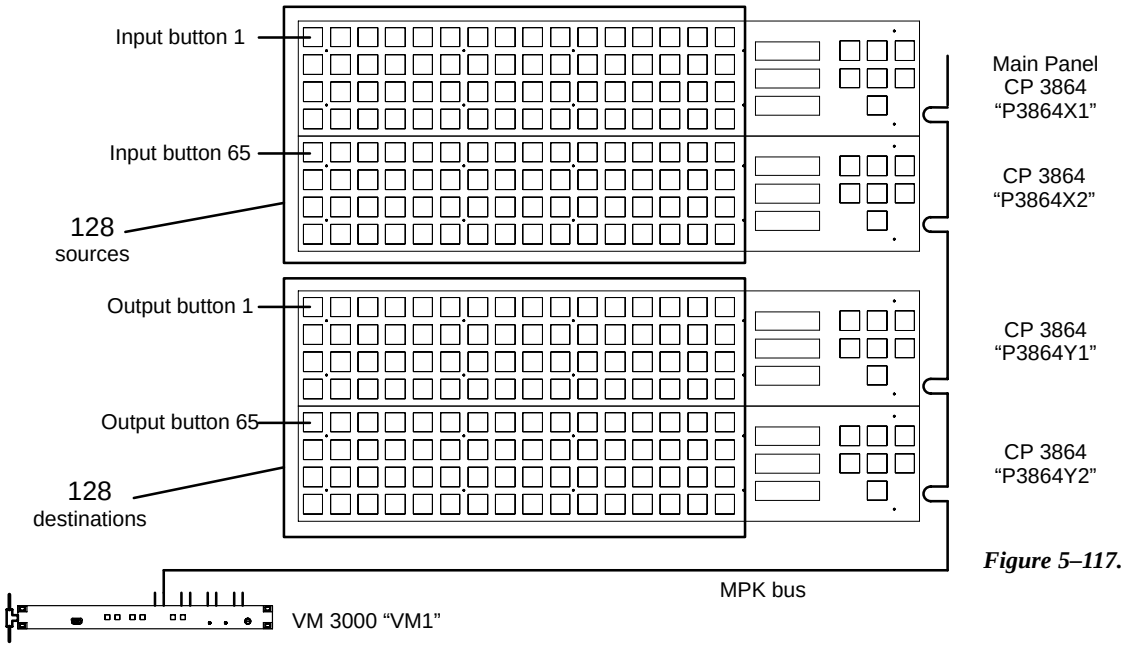


Figure 5–117.

Figure 5–118. *Entry for system shown in Figure 5–117.*

Note: Assignment of specific CP sets to a panel identifies it as the “main” panel, i.e., the panel with input button number 1. Beyond the main panel, button numbering depends on the order in which panels are entered on this table.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	P3864X1	CP–3864	☐		VM1	2	00000043	3832–IN		3832–OUT		KXYZ–LEV		
2	P3864X2	CP–3864	☐		VM1	2	00000044		P3864X1					
3	P3864Y1	CP–3864	☐		VM1	2	00000045				P3864X1			
4	P3864Y2	CP–3864	☐		VM1	2	00000046				P3864X1			

In this example, the top two CP 3864s are being operated as source panels and the bottom two as destination panels.

The “main” panel is always an input panel. In this example, the top CP 3864 has been selected as the main panel and will therefore be assigned to specific CP sets. Enter the name of the CP Input and CP Output Sets that will be used to assign inputs and outputs to all the buttons at this control station. See page 5–58 (CP Input Sets) and page 5–76 (CP Output Sets).

Any additional source panels (CP 3864 “P3864X2” in this example) would refer to the main panel (the top CP 3864) in their **In Panel** column. They would use the CP sets assigned to the main panel. The first input expansion panel listed in this table will have the button numbers immediately following those of the main panel; the next input expansion panel listed will have the next higher set of button numbers, etc.

All destination panels use the **Out Panel** column to select the MPK Device name of the main panel; they would use the CP sets assigned to the main panel. The first output panel listed in this table will have the lowest–numbered set of buttons; the next output panel listed will have the next higher set of button numbers, etc. MPK Device table entries for other CP 3832/64 applications was discussed on page 5–110 and following.

CP 3810 APPLICATIONS

The optional CP 3810 panel can be associated with a CP 3832, CP 3864, CP 3808, or CP 3830, providing control of up to 80 output buses. The CP 3810 can also be assigned to one output, providing breakaway (split) switching and/or multi–level status.

Multi–Bus Control

In the example shown in Figure 5–119, a CP 3832 is being used to select 32 inputs while the CP 3810 is used to select 80 outputs.

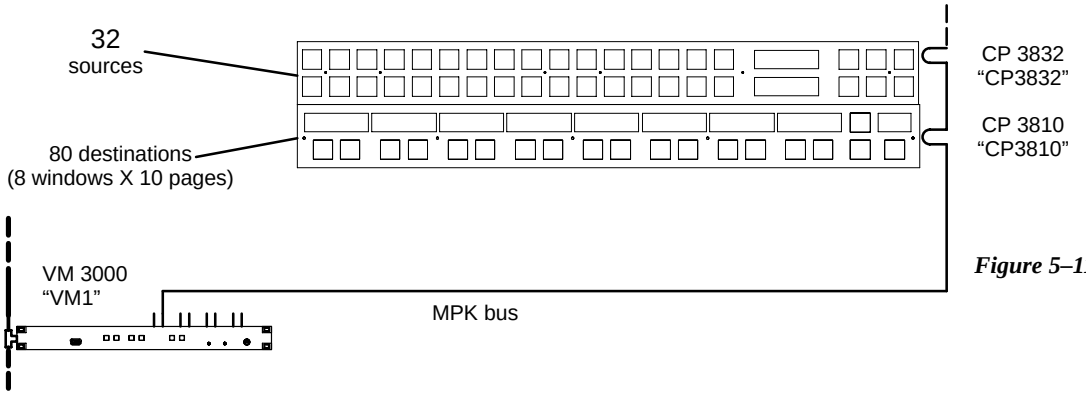


Figure 5–119.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3832	CP–3832	☐		VM1	2	00000043	3832–IN		3832–OUT		KXYZ–LEV		
2	CP3810	CP–3810	☐		VM1	2	00000044		CP3832					

Figure 5–120. *Entry for system shown in Figure 5–117.*

Notice that the Expansion boxes for both panels are **unchecked**.

Main panel entries — In this example, a CP 3832 is the “main” panel and is therefore assigned specific CP sets. In the “Input Set” column, enter the name of the CP Input Set that will be used to assign inputs to the main panel (for more information about CP Input Sets, see page 5–58). In the “Output Set” column, enter the name of the CP Output Set that will be used to assign outputs to the CP 3810 (for more information about CP Output Sets, see page 5–76).

> Note: Even when associated with a CP 3810, the main panel is still configured independently and can be operated independently. In this example, the CP 3832 will operate as a single–bus control panel (because Expansion = No). The CP 3832 will be assigned to the first output listed in CP Output Set “3832–OUT.”

CP 3810 entries — In the “In Panel” column, enter the name of the main panel. **CP 3810S** (“sticky outputs”) entries are similar to the CP 3810, except the Device Type is “CP–3810S.”

For operating instructions, see page 6–126.

Single Bus Control (“CP 3810L”)

In the example shown in Figure 5–121, a CP 3832 is used to select inputs and a CP 3810 is used to control the individual levels of one output. The CP 3810 can thus be used for breakaway switching.

The corresponding MPK table entries are shown in Figure 5–122.

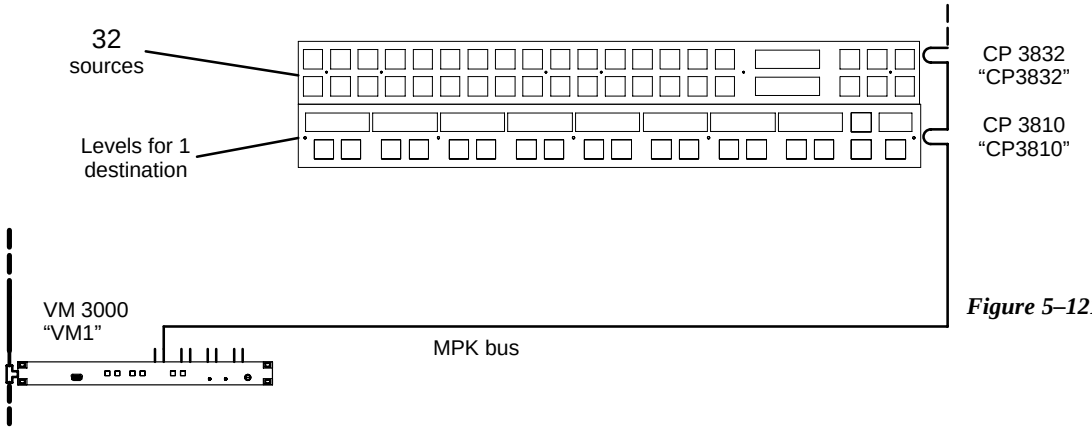


Figure 5–121.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3832	CP–3832	☐		VM1	2	00000043	3832–IN		VT01		KXYZ–LEV		
2	CP3810	CP–3810L	☐		VM1	2	00000044	CP3832				KXYZ–LEV†		

Figure 5–122. *Entry for system shown in Figure 5–121.*

Notice that the Expansion boxes for both panels are **unchecked**.

Main panel entries — In this example, a CP 3832 is the “main” panel and is therefore assigned specific CP sets. In the “Input Set” column, enter the name of the CP Input Set that will be used to assign inputs to the main panel (for more information about CP Input Sets, see page 5–58). In the “Output Set” column, enter the name of the output that will be controlled.

> Note: Even when associated with a CP 3810, the Main panel is still configured independently and can be operated independently. In this example, the CP 3832 will operate as a single–bus control panel (because Expansion = No).

For the CP 3810, select Device Type “CP–3810L.” Enter the name of the Main panel in the Input Set column.

For operating instructions, see page 6–126.

† Data not used, but entry must be present to satisfy compiler.

X–Y Application

In the example shown in Figure 5–123, a CP 3864 is used to select inputs, a CP 3832 is used to select outputs, and a CP 3810 is used to control/status the individual levels of the output selected by the CP 3832. The CP 3810 can thus be used for break-away switching.

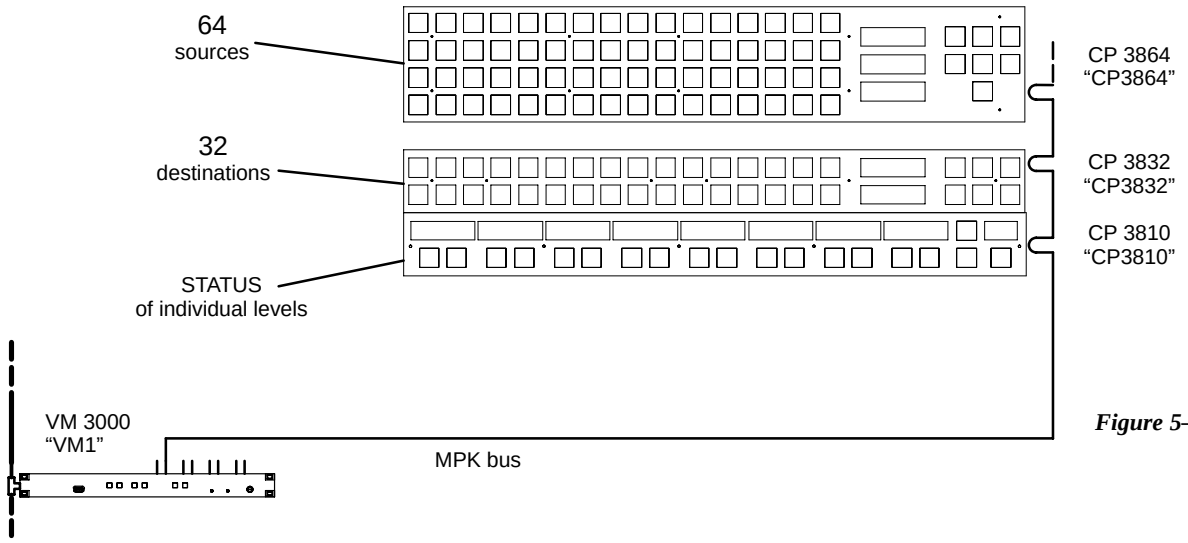


Figure 5–123.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3864	CP–3864	☐		VM1	2	00000043	3832–IN		3832–OUT		KXYZ–LEV		
2	CP3832	CP–3832	☐		VM1	2	00000044				CP3864			
3	CP3810	CP–3810L	☐		VM1	2	00000045		CP3864			KXYZ–LEV†		

Figure 5–124. *Entry for system shown in Figure 5–117.*

Notice that the Expansion boxes for all panels are **unchecked**.

Main panel entries — In this example, a CP 3864 is used to select inputs and is therefore the “main” panel. As such, it is assigned specific CP sets, as follows: In the “Input Set” column, enter the name of the CP Input Set that will be used to assign inputs to the main panel (for more information about CP Input Sets, see page 5–58). In the “Output Set” column, enter the name of the CP Output Set that will be used to assign Outputs to the destination panel CP 3832 (for more information about CP Output Sets, see page 5–76).

Destination panel entries — In the Out Panel column, select the name of the main panel.

CP 3810 entries — Select “CP 3810L” as the device type. In the In Panel column, select the name of the main panel.

For operating instructions, see page 6–126.

† Data not used, but entry must be present to satisfy compiler.

Single Bus Status Only (Stand–alone) (“CP–3810L”)

In this mode, the panel is configured to status a single output. No other panel is associated with the panel. and there is no switcher control. An example entry is shown in Figure 5–126.

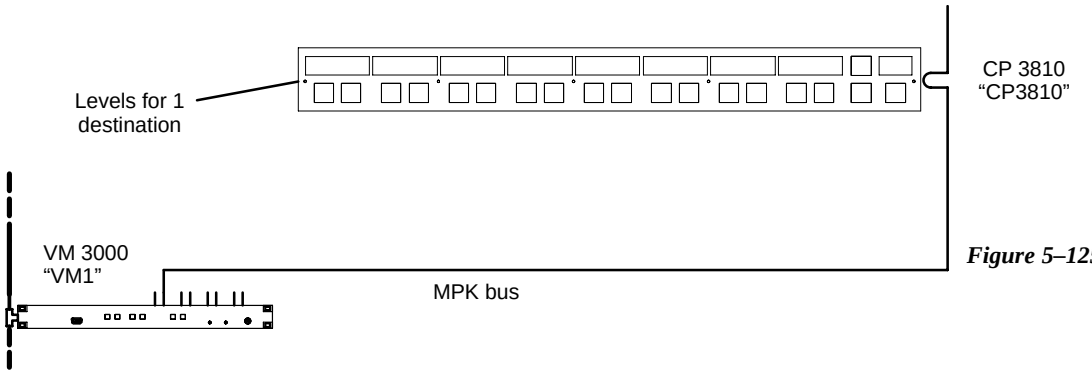


Figure 5–125.

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	CP3810	CP–3810L	☐		VM1	2	00000044	3832–IN		VT01		KXYZ–LEV		

Figure 5–126.

Select “CP–3810L” as the device Type. In the Output Set column, enter the name of the output to be statused.

For operating instructions, see page 6–126.

Machines

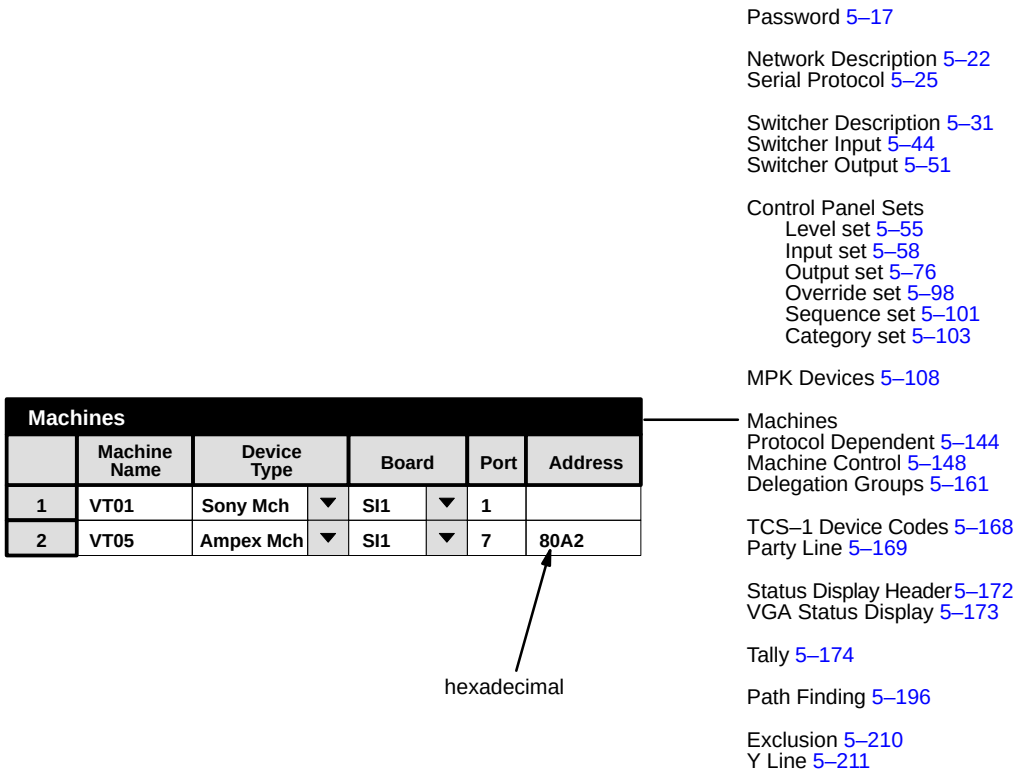


Figure 5–127. *Machines table for system shown on page 5–143.*

This table is the source for information about machines using Sony or Ampex serial protocol. Data entered here is automatically made available on the Machine Control table.§

Important: Row numbers on Jupiter tables are used as the "logical" numbers for devices. Changing the row number of an existing device (by inserting/deleting a device in the middle of the table, for example) will **disrupt control of the machine,** requiring linkages to be reestablished. One way to avoid this interruption is to add new devices at the end of tables.

Name This column lists the device names of all serial control machines in the system.

This is the source for machine names that appear on the control panels. Although this field will accept eight characters, you may wish to limit machine names to four since that is the maximum that can be displayed on the MC 3000's expansion panel.

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

Type Device types (shown on a pull–down menu) are limited to the following:

- Sony machine serial protocol
- Ampex machine serial protocol

Note 1: Machines controlled with parallel connections to an MI 3040 are not entered on this table; they are entered instead on the Machine Control table (pages 5–148 and 5–159).

Note 2: Machines that use TCS or ESbus protocol are entered on the Protocol Dependent Devices table (page 5–144).

Board Select the name of controller board connected to this machine. The source of these names is the Network Description table (page 5–22).

Port Number of controller board port connected to this machine. The port must support the necessary protocol for this machine (as configured on the Serial Protocol table, page 5–25).

Address (hex) Unique serial data bus ID used to select and service this machine, entered in hexadecimal. (Not to be confused with LAN address entered on Network Description table shown on page 5–22.)

VTR addresses

— *not required* for Sony “serial” VTRs (as listed on page 2–83).

— *required* for Ampex “serial” VTRs. The address “80A2” is the usual factory setting. “Daisy–chaining” Ampex VTRs (not presently recommended) would require changing these addresses in the VTR itself.

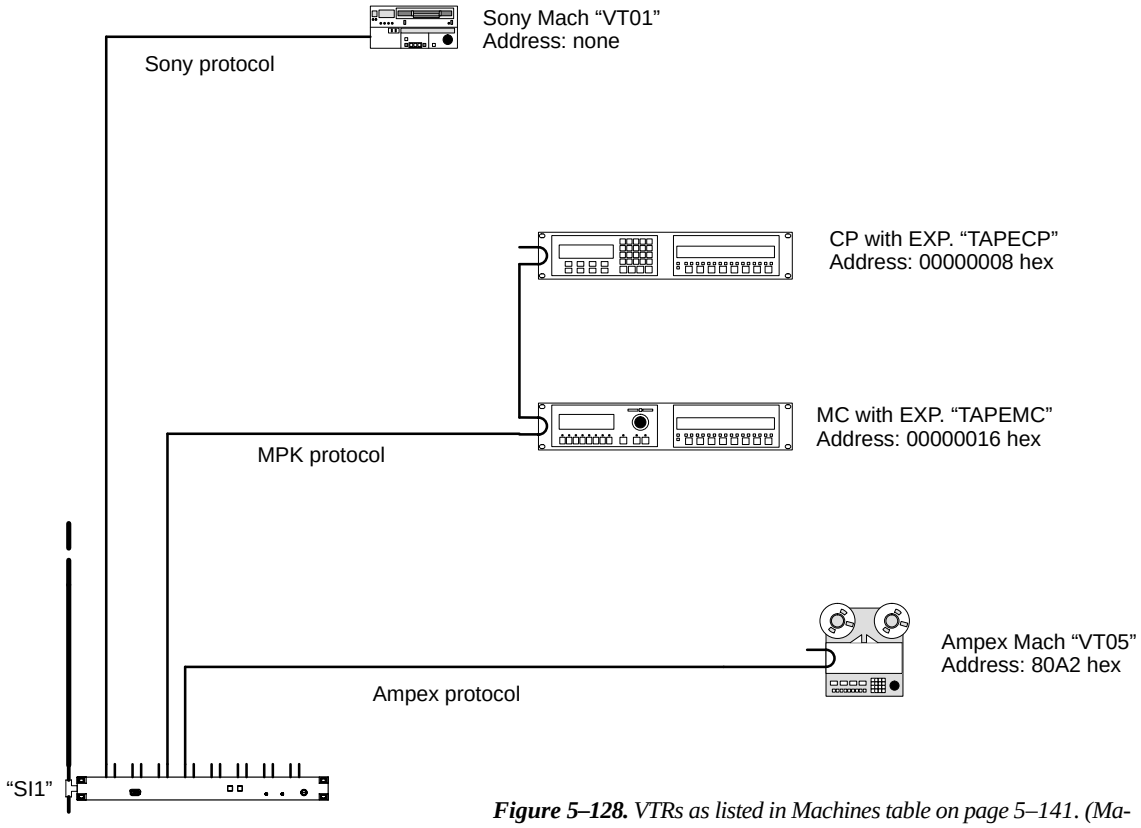


Figure 5–128. *VTRs as listed in Machines table on page 5–141. (Machine control panels are listed in MPK table on page 5–108.)*

Protocol Dependent Devices

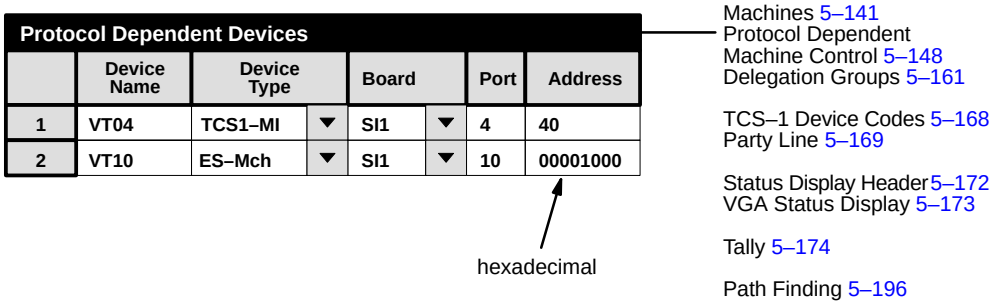


Figure 5–129. *Protocol Dependent Devices table for system shown on page 5–146.*

This table is used for initial entry of special protocol control devices and machines using “Alamar” (Thomson Broadcast Automation), “ESbus,” and “TCS” protocols. Data entered here is automatically made available on the Machine Control table.

> **Important:** Row numbers on Jupiter tables are used as the “logical” numbers for devices. Changing the row number of an existing device (by inserting/deleting a device in the middle of the table, for example) will **disrupt control of the machine,** requiring linkages to be re–established. One way to avoid this interruption is to add new devices at the end of tables.

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

Device Name This column lists the device names of all Thomson Broadcast Automation, ESbus, and TCS devices in the system.

This is the source for machine names that appear on the control panels. Although this field will accept eight characters, you may wish to limit machine names to four since that is the maximum that can be displayed on the MC 3000's expansion panel.

Device Type Device types (shown on a pull–down menu) are limited to the following:

Alamar	ESbus panel	TCS–2 control panel
ESbus machine	TCS–1 control panel	TCS–1 machine interface

For more information concerning **Alamar (Thomson Broadcast Automation)**, refer to the documentation supplied with the automation system.

A **TCS1–CP** entry means that the device uses TCS 1 Machine Control System control panel protocol. For MCS 2000 master control switchers, the newer **TCS2–CP** control panel protocol should be used if possible. Machines must use the **TCS1–MI** machine interface protocol.

Board **Port** Name of controller board and number of port connected to this device. The source of these names is the Network Description table (page 5–22). The port must support the necessary protocol for this device (as configured on the Serial Protocol table, page 5–25).

Address (hex) Unique serial data bus ID used to select and service this device. Must be entered in hexadecimal. (Not to be confused with LAN address entered on Network Description table shown on page 5–22).

Control panel addresses such as "00000018" are determined at time of panel manufacture but can sometimes be changed by the operator (depending on the panel type). A control panel address is not required for TCS 1 and MCS 2000 panels.

VTR addresses

—*required* for Betacart using TCS 1 MI–8B or BBC 2300 interface (page 2–90). *Required* for other VTRs using TCS 1 interfaces (as shown on page 2–89). Device addresses entered on this table are always hexadecimal; and since the highest device number that can be set in an TCS interface is decimal 99, the highest possible entry on the table in this case would be 63 hexadecimal. (A decimal–hexadecimal–binary table is shown in Appendix D.) The source of this address is a DIP switch within the interface.

—*required* for ESbus VTRs.

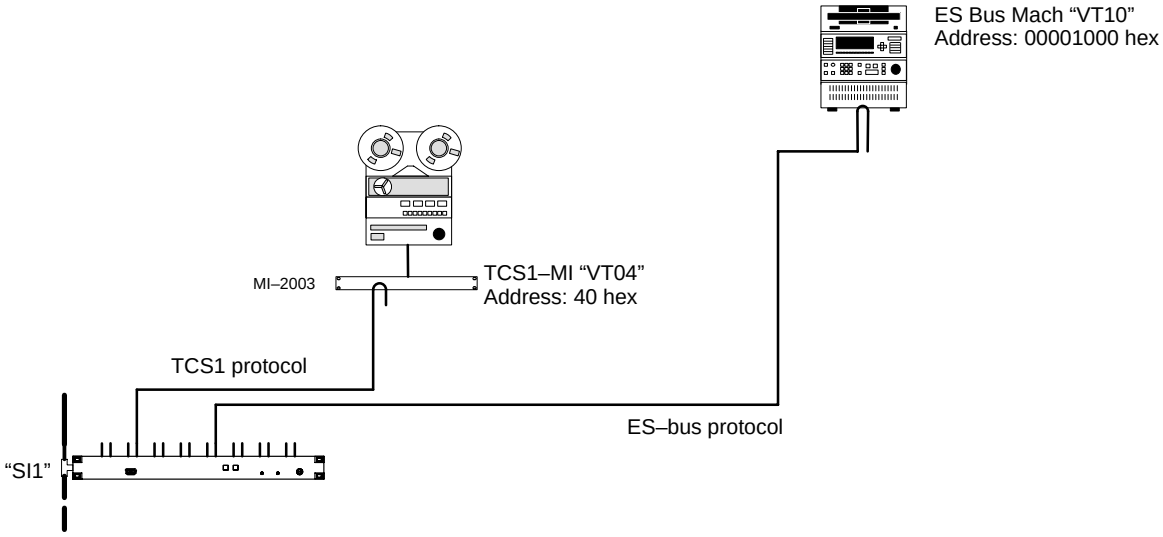


Figure 5–130. *Machine control devices listed in table on page 5–129.*

SATURN MASTER CONTROL SWITCHER

Saturn machine control configuration instructions are described in the *Saturn Installation and Operating manual.*

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Machine Control

Machine Control

	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name	Preroll
1	VT01	VT01	Sony Mch		In	VT01	2
2	VC01	VC01	Sony Mch		In	VC01	2
3	VC02	VC02	Sony Mch		In	VC02	2
4	TAPEMC	TAPEMC	MC–3000E		Out	PRDA	
5	TAPEMC	TAPEMC	MC–3000E		Out	PRDB	
6	TAPEMC	TAPEMC	MC–3000E		Out	PRDC	
7	TMC3010	TMC3010	MC–3010		Out	PRDX	

Figure 5–131.

This table is used to associate machines, machine controls, and router inputs/outputs in order to provide control panel group delegation and automatic machine assignment functionality ("control follows video").§ It is also used when a PC is used as a Software Control Panel.†

> **Important:** Row numbers on Jupiter tables are used as the "logical" numbers for devices. Changing the row number of an existing device (by inserting/deleting a device in the middle of the table, for example) will **disrupt control of the machine,** requiring linkages to be reestablished. One way to avoid this interruption is to add new devices at the end of tables.

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.
† Applies only when the Software Control Panel is used for machine control. For more information, see Section 7.

Device Name **Device Type** These columns repeat the descriptions of all machines (as entered on the Machines table, page 5–141) and machine control panels (as entered on the MPK Devices table, page 5–108). Also repeated here are special protocol devices from the Protocol Dependent table (page 5–144), and MI/MC 3040 devices from the MPK table.

Mnemonic Use of this column varies according to the device type.

For machines, this entry will appear on the panel controlling the machine:

- For a serial control machine, the Mnemonic is always the same as the Device Name.
- For a parallel control machine connected to an MI 3040, the Mnemonic column is used to create a mnemonic for the machine.

For control panels and MC 3040 external machine control panel applications, the Mnemonic column is used only as a comment field.

Delegation Group This column is used to select a delegation group for assignment to a control panel. This allows a machine operator to use the optional MC 3020 Delegation Panel to permit control of a particular machine by a particular control panel. This function is explained in detail starting with *Group Delegation* on page 5–161.

The source of the Group names is the Delegation Group table (page 5–161).

In/Out **Associated Name** These entries are required for the machine assignment system to function, whereby machine control “follows” the routing switcher.

For **machines**, the entry in the In/Out column is always “In.” The Associated Name will be selected from a list of all router inputs (source = Switcher Input table, page 5–44). For a discussion of Associated Name entries, please see *Assigning Machines to Control Panels* starting on page 5–151.

For a **CP 3000E**, **CP 3800**, or **CP 3810,** the entry in the In/Out column is “Out.” The Associated Name column is left blank.

For a complete description of **MC 3000** and **MC 3010** entries, please see *Assigning Machines to Control Panels* starting on page 5–151.

Preroll Number of seconds needed by this machine to come up to speed following a Play command. Most machines will lock up in one second or less; two seconds is often used as a preroll value to provide a safety margin. This value is used by the MC 3000 Machine Control Panel, Saturn Master Control Switcher, and MCS 2000 Master Control Switcher. Only machines, MI–3040/2, MI–3040/4, and MI–3040/8 can have preroll.

The Saturn, MC 3000, and MCS 2000 use this setting during Mark/Search operations. When SET MARK is pressed, the present time code is stored; when SEARCH MARK is pressed, the machine will move the tape to that point minus the preroll value. If there is no entry to the Machine Control Devices table, a two–second preroll will be used automatically. Note: The Saturn and MCS 2000 both allow temporary override of the Preroll vale; in this case, the value entered on the Machine Control Devices table is ignored during the next transition.

For more information, see page 6–132 and Appendix E.

SATURN MASTER CONTROL SWITCHER

Saturn machine control configuration instructions are described in the *Saturn Installation and Operating manual.*

ASSIGNING (LINKING) MACHINES TO CONTROL PANELS

The Jupiter system has an automatic machine assignment function, whereby control of a VTR is linked to a remote panel based on the VTR being switched to a destination associated with that panel. In other words, machine control follows the routing switcher.

Note 1: The MCS 2000 Master Control switcher, if installed in the system, bypasses the machine linkage process described below. The normal MCS 2000 machine control functions, as described in the MCS manual, still apply.

Note 2: The GUI machine control panel, if installed in the system, also bypasses the machine linkage process described below.

Note 3: If the system includes MC 3020 Delegate Panels, machines must be both **linked and delegated** to control panels. Please refer to *Delegation Groups* on page 5–161 for more information.

Note 4: As described on page 5–157, it is possible to link machines to control panels even if those machines do not pass through the routing switcher. However, this will still require an understanding of the "follow–the–switcher" technique described below.

Note 5: As a further variation, the "follow switcher" scheme can be bypassed entirely:

— Machines can be assigned by default to specific control panels on a semi–permanent basis. See page 5–156.

— Machines can be assigned to specific control panels with an MC 3020L Linkage Panel. See page 2–67.

Summary of linkage system setup:

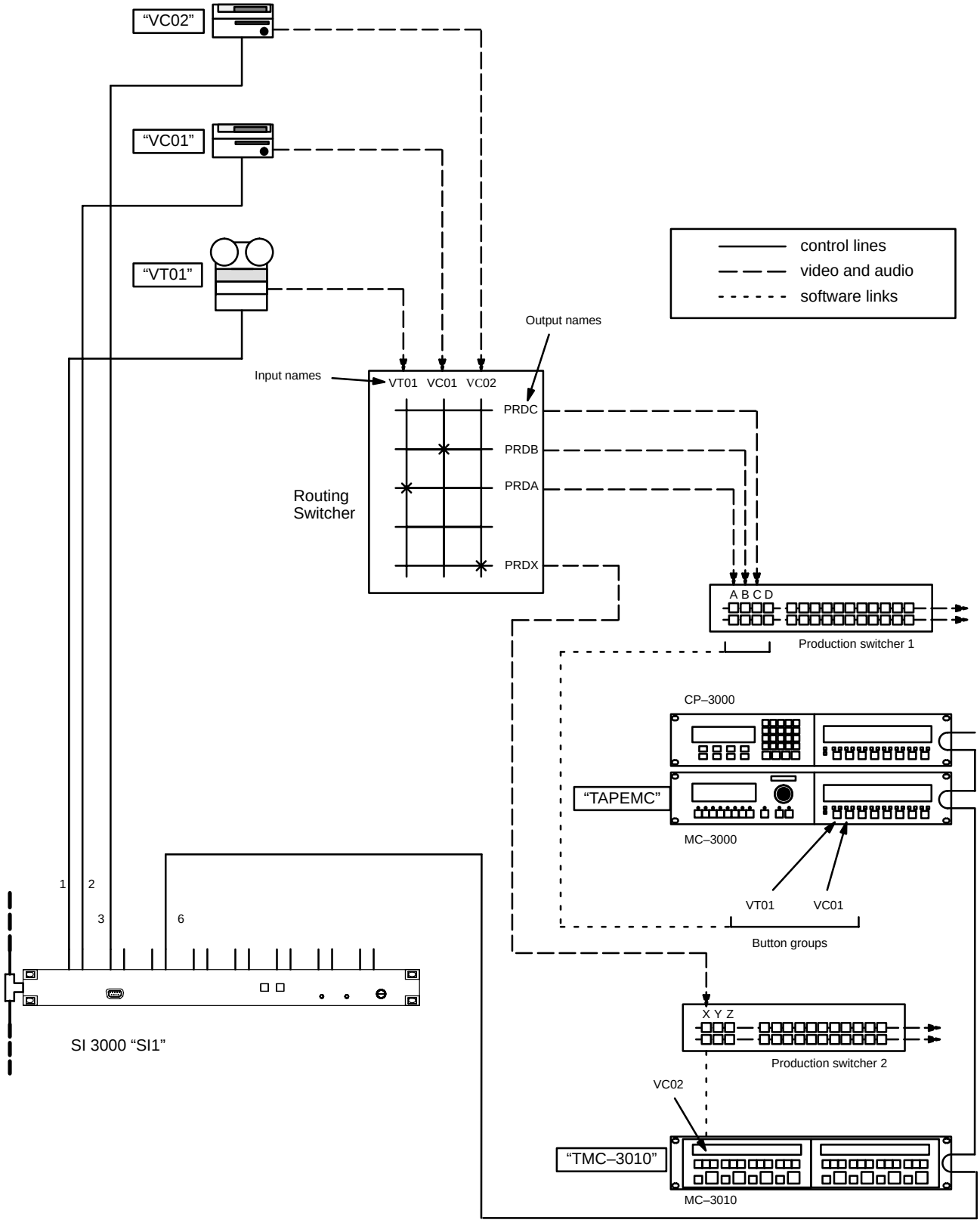
- The switcher inputs, outputs, category names/numbers, etc. must already be established.
- Each machine must be connected to a VM/SI 3000 Control Processor and the protocol for the bus leading to the machine established. See page 5–152 for an example system.
- All machine control panels are described. In most cases, this is done using the MPK Devices table.
- The device names of all VTRs must be established on the Machine table (page 5–141).
- The Machine Control table is then used to associate machines and control panels to the router:

  — The table must show the names of the **routing switcher outputs** which are wired to the destination (a production switcher, in this example) that is associated with a particular machine control panel.

  — The table must include the **routing switcher input** names associated with each VTR.

The linkage setup procedure is described in detail on the following pages.

Figure 5–132. *Example of machine control linkage. Equipment shown here corresponds to table shown in Figure 5–133.*



EXAMPLE OF MACHINE CONTROL TABLES SETUP

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	TAPEMC	MC–3000E	☑		SI1	6	00000016							
2	TMC3010	MC–3010	☐		SI1	6	00000029							

Machines

	Machine Name	Device Type	Board	Port	Address	Preroll
1	VT01	Sony Mch	SI1	1		2
2	VC01	Sony Mch	SI1	2		2
3	VC02	Sony Mch	SI1	3		2

Machine Control

	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name
1	VT01	VT01	Sony Mch		In	VT01
2	VC01	VC01	Sony Mch		In	VC01
3	VC02	VC02	Sony Mch		In	VC02
4	TAPEMC	TAPEMC	MC–3000E		Out	PRDA
5	TAPEMC	TAPEMC	MC–3000E		Out	PRDB
6	TAPEMC	TAPEMC	MC–3000E		Out	PRDC
7	TMC3010	TMC3010	MC–3010		Out	PRDX

Figure 5–133.

The Machine Control table shown in Figure 5–133 corresponds to the system shown in Figure 5–132. The applicable entries in the MPK Devices and Machines tables are shown for reference.

The “Associated Name” is the name of the routing switcher input or output to be associated with this particular device.

The first three rows show the names of the machines in the system and the associated routing switcher input names.

The next three rows (4, 5, and 6) relate to the SELECT buttons on the MC 3000 expansion panel; the order of entry on this table will be the same as the order of buttons on the panel. In this example, we want the first SELECT button to be assigned to whatever VTR is feeding routing switcher output “PRDA;” this is the output that feeds input A of the production switcher. Associated names are also entered for the following two SELECT buttons: “PRDB” and “PRDC.”

The next row (7) is similar to the entries just described, but pertains to the MC 3010 Dual 4 Machine Control panel. Again, the order of entry on this table will be the same as the order of button groups on the panel.

Given this table, Figure 5–132 shows what will happen when the indicated routing switcher crosspoints are closed. For example, the VTR “VT01” is shown switched to input A of the production switcher; that is, routing switcher input VT01 has been switched to output PRDA. The system will locate these two input/output names in the Machine Control table and find that control of VT01 must be assigned to the first SELECT button on the MC 3000 expansion panel. The device name and status for VT01 will be sent to the status displays indicating that control of the machine is now linked to this panel. (A detailed view of the MC 3000 expansion panel displays is shown in Figure 5–134.)

OPERATIONAL SEQUENCE FOR LINKAGE

Figure 5–134 shows a detailed view of the CP 3000 and MC 3000 control panels previously shown in Figure 5–132 and listed in Figure 5–133.

The objective in this example is to use the CP 3000 switcher control panel to assign VTR "VT01" as the "A" input to the control room's production switcher, and thereby *link* the machine to the MC 3000 Machine Control Panel.

For this discussion, it is assumed that switcher output PrdA has already been assigned to the first TAKE key of the CP 3000 expansion panel (the output assignment procedure is described on page 6–24).

1 SELECT source. The operator presses "VTR," then "1" on the CP 3000.

2 TAKE to destination. Operator selects production switcher input "A" as the destination by pressing the first TAKE key on the expansion panel.

This will cause two things to happen:

— The VTR will be switched into the production switcher as "input A", and the CP 3000 expansion panel will show the display mnemonic for the VTR ("VT01") in the status window.

— The system will check the Machine Control table (Figure 5–133) to see what control panel is associated with the production switcher. At this point the link is established: the device name of the VTR, which is "VT01," appears over the first SELECT button on the expansion panel next to the MC 3000 machine control panel, and the status of the machine appears as well.

3 The START and STOP buttons (immediately below the device name) can now be used to operate VT01. Or:

4 Press SELECT key to assign control of the VT01 to MC 3000 panel to the left.

The full status of VTR VT01, including time code, will appear in the MC 3000 display window.

5 CONTROL all functions of VT01 using MC 3000.

If a different VTR is switched to production switcher input A, control of the new VTR will be brought to the MC 3000 machine control panel at the same time. In other words, no matter what VTR is selected as input "A," a control command entered on the first button group of the expansion panel will be sent to the correct VTR.

It should be noted that this is the *only* way to gain control of a machine: it must be done by first selecting the machine with the switcher. This is true even if the machine does not actually pass through the switcher, as described on page 5–157.

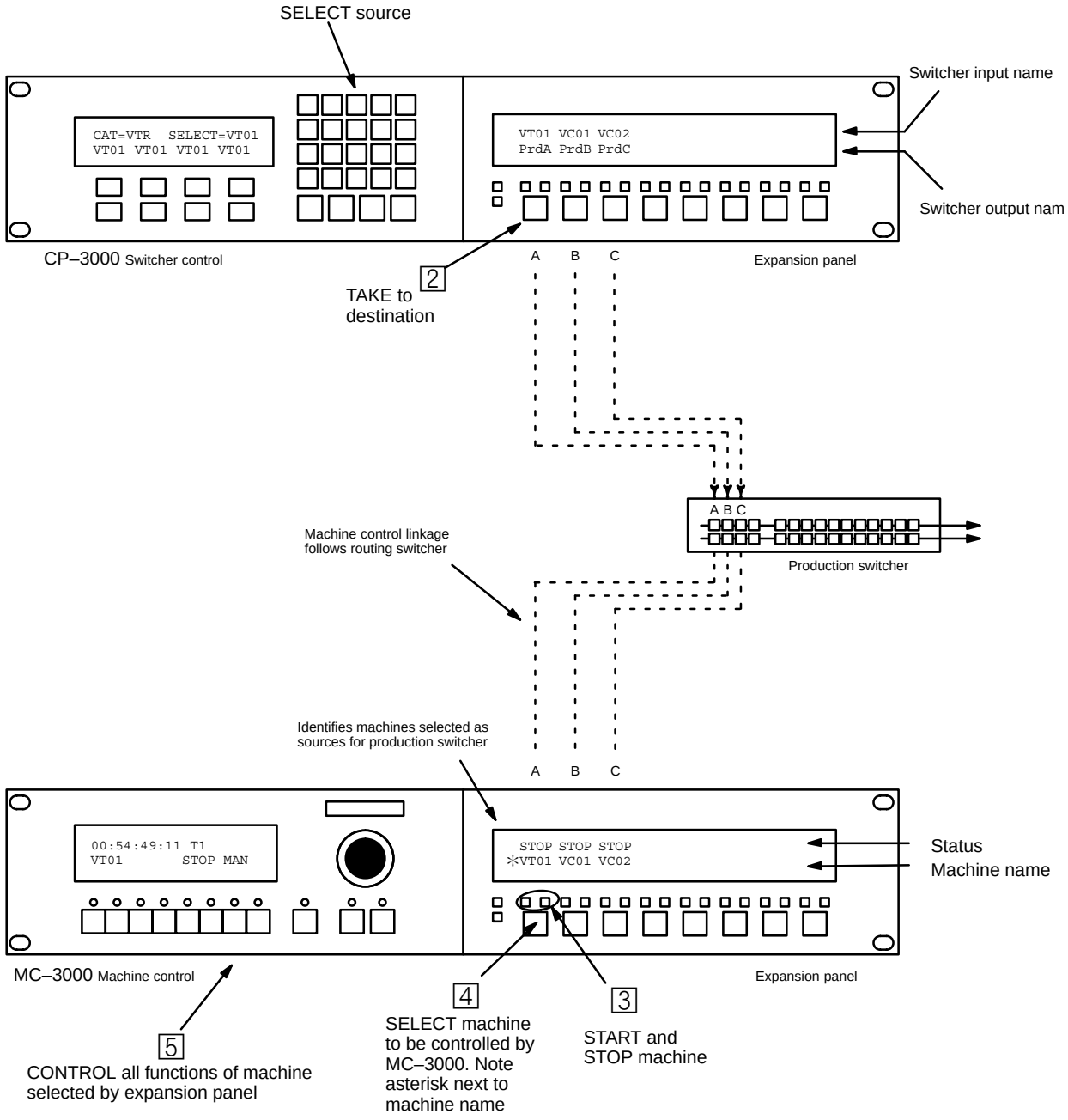


Figure 5–134. *Example of automatic machine linkage sequence. Please see page 5–154 for discussion.*

DEFAULT (SEMI–PERMANENT) LINKAGE

Using the file server, machines can be linked directly to a specific control panel on a semi–permanent basis. An example system is shown in Figure 5–135. In this arrangement, only the file server can re–assign control of a machine to another panel. In other words, the normal linkage function (where machine control follows the routing switcher) is bypassed. The entries needed on the Machine Control table are shown in Figure 5–136.

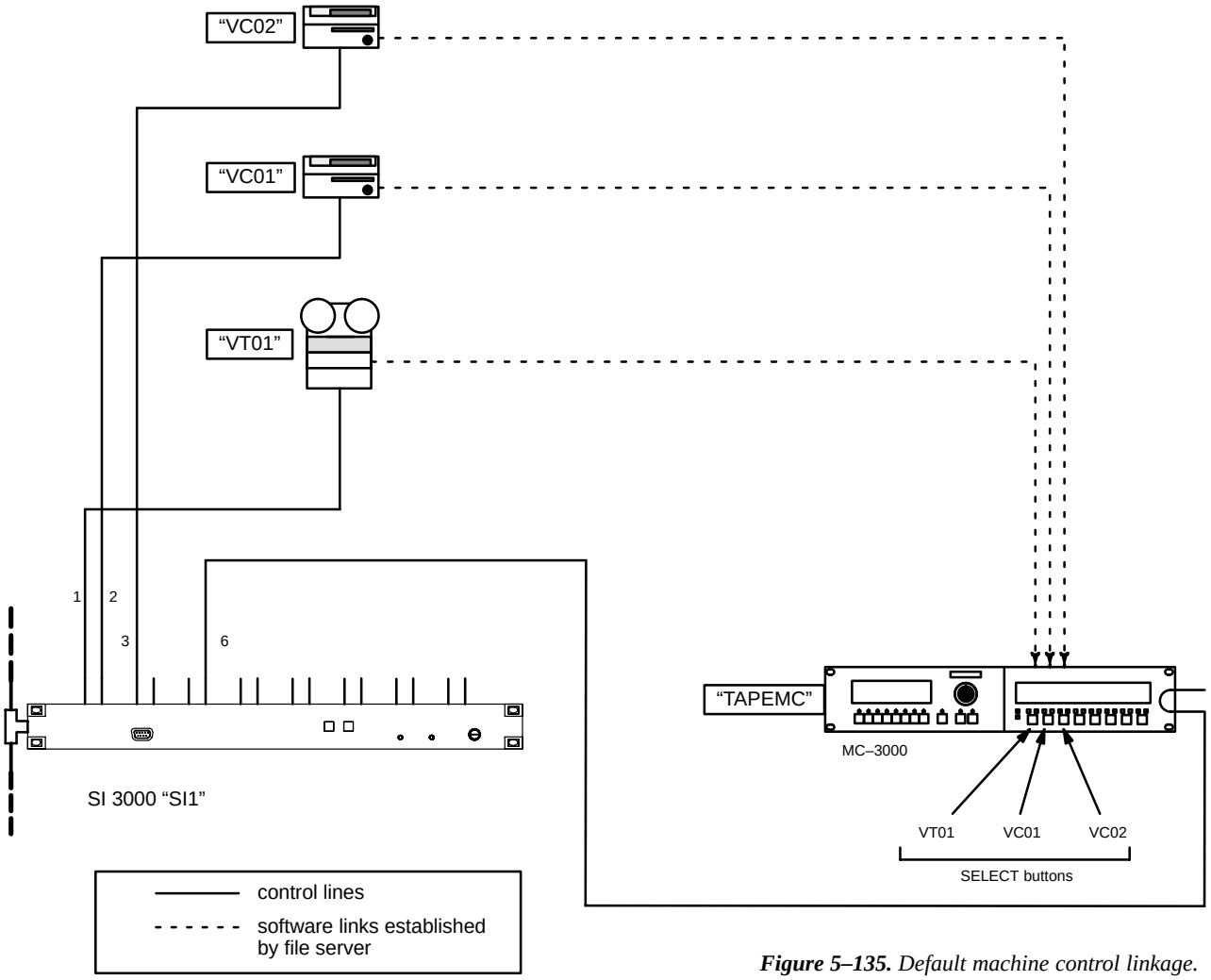


Figure 5–135. *Default machine control linkage.*

Machine Control

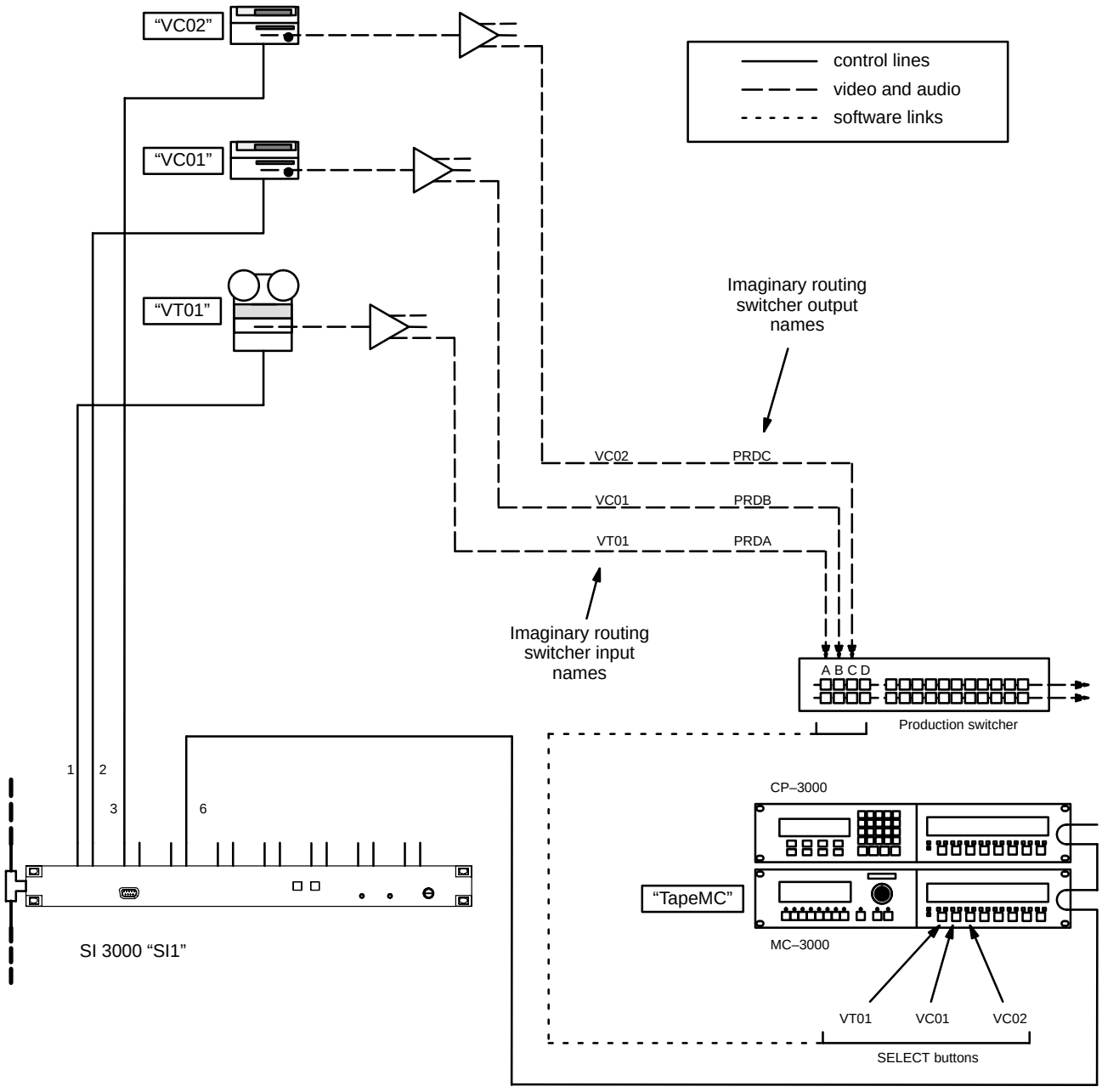
	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name
1	VT01	VT01	Sony Mch		In	
2	VC01	VC01	Sony Mch		In	
3	VC02	VC02	Sony Mch		In	
4	TAPEMC	TAPEMC	MC–3000E		Def	VT01
5	TAPEMC	TAPEMC	MC–3000E		Def	VC01
6	TAPEMC	TAPEMC	MC–3000E		Def	VC02

Figure 5–136. *Default linkage entries for system shown in Figure 5–135.*

LINKAGE FOR MACHINES THAT DO NOT ENTER THE ROUTING SWITCHER

In some cases, machines may be wired directly to one destination, or to several destinations through distribution amplifiers only (see Figure 5–137). Although these machines do not pass through the routing switcher, it is still possible to use switcher control panels to establish linkages. In order to do this, imaginary switcher input and output names must be used as pointers on the Machine Control menu. These names, along with imaginary physical I/O numbers, must be entered on the Switcher Input and Output tables (pages 5–44 and 5–51). Also, the physical I/O numbers must be within the size range set on the Switcher Description menu (page 5–31).

Figure 5–137. *Machine control linkage in system without routing switcher.*



START/STOP MACHINE CONTROL USING EXPANSION PANELS

The CP 3010 expansion panel and the CP 3810 expansion panel can be used as a limited–function machine control panels, providing Start and Stop commands for VTRs.

When the CP 3010 is used as an expansion panel for a *CP 3000* control panel, Start/Stop machine control is provided by the ⧈ and ⧐ buttons. When the CP 3810 is used as an expansion panel, Start/Stop machine control is provided by the PLAY/STOP buttons. In both cases, machine control will require the following:

— The switcher level that is checked as the “MC” level on the Switcher Description table (page 5–31) must be the same as the first level shown in the CP Level set (page 5–55) that is assigned to the CP 3000 (or to the main panel paired with the CP 3810) on the MPK Devices table (page 5–108). For example, the Video level would be checked as the “MC” level, “Video” would appear as the first level in the CP Level set, and this CP Level Set would be assigned to the main panel on the MPK Devices table;

and:

— The machine control buttons on the expansion panel must be assigned to the desired VTR by a process similar to that described beginning on page 5–151.

VGA / MC 3000 STATUS DISPLAY TABLE ENTRIES

Use of control panels with the VGA Status Display requires entries to the MPK Devices table, as described on page 5–115.

For an MC 3000 to display time code it would have to be *linked* to the machine exactly as any other MC 3000. This would require the following:

- Use of an “optional entry”on the Machine Control table, such as that shown in Figure 5–138. The Associated Name could be the name of the switcher output connected to a nearby monitor.

- The switcher control panel would be used to switch video from the machine to the Associated output (the nearby monitor, in this example). This would establish the link. Full status from the machine, including time code, would then appear in the MC 3000 display window.

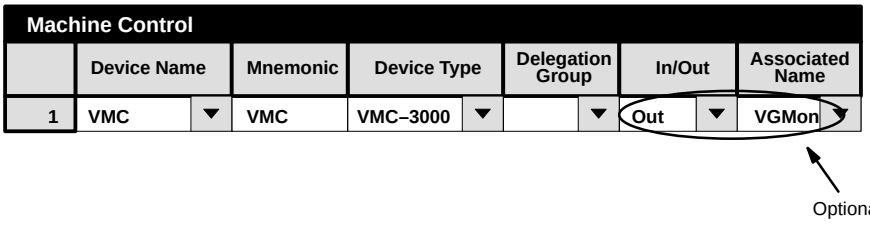


Figure 5–138.

SATURN MASTER CONTROL SWITCHER

Saturn machine control configuration instructions are described in the *Saturn Installation and Operating manual.*

MI 3040 GENERAL PURPOSE INTERFACE ENTRIES

Use of an MI 3040 for parallel control of machines requires entries to the MPK Devices table (as described on page 5–116) and to the Machine Control table (Figure 5–139).

Machine Control

	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name
1	MI2	VT07	MI–3040/2		In	VT07
2	MI2	VT08	MI–3040/2		In	VT08
3	MI1	CRT1	MI–3040/2		In	CRT1
4	Mi1	CRT2	MI–3040/2		In	CRT2

Figure 5–139. *Example of entries for machines controlled by MI 3040s.*

There are two MI 3040/2s shown in this example: one controls a pair of VTRs and the other a pair of audio cart machines.

The Device Names for the MI 3040s were already entered on the MPK Devices table; they are selected here from the drop–down menu.

The Mnemonic column is used to create a mnemonic for each machine connected to the MI 3040. This is the source for the machine name that appears on control panels.

> Note: The Jupiter system identifies each machine according to the order of entry on this table. Therefore this order must be the same as the hardware connections to the MI 3040. In this example, VT07 would be connected to ports 0 and 1 of the MI–3040 assigned to SI1; VT08 would be connected to ports 2 and 3 of the MI 3040 assigned to SI1 (for system drawings, see pages 2–93 and 2–96). Audio cart CRT1 would be connected to ports 0 and 1 of the MI 3040 connected to VM1; CRT2 would be connected to ports 2 and 3 of the MI 3040 connected to VM1 (see page 2–96).

MC 3040 (MI 3040) ENTRIES

The following example applies to non–Thomson control panels or computers connected to an “MC–3040/4,” that is, an MI 3040 configured for four functions (Play, Stop, Ready, and Cue) on each of 10 control panels or devices.

If there is only one control panel (or computer), only a one–row entry would be required for this table.

> Note: The Jupiter system identifies each control panel according to the order of entry on this table. Therefore this order must be the same as the hardware connections to the MC 3040.

For system drawings, see pages 2–97 and 2–100. An entry must also be made to the MPK Devices table (page 5–117).

Machine Control

	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name
1	MC3040	VT01	MC–3040/4		Out	PRDA
2	MC3040	VT02	MC–3040/4		Out	PRDB
3	MC3040	VT03	MC–3040/4		Out	PRDC
4	MC3040	VT10	MC–3040/4		Out	PRDD
5	MC3040	CART	MC–3040/4		Out	PRDE
6	MC3040	MC3040	MC–3040/4		Out	PRDF
7	MC3040	MC3040	MC–3040/4		Out	PRDG
8	MC3040	MC3040	MC–3040/4		Out	PRDH
7	MC3040	MC3040	MC–3040/4		Out	PRDI
8	MC3040	MC3040	MC–3040/4		Out	PRDJ

Figure 5–140. *Example entries for MC 3040.*

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Delegation Groups

Configuring the MC 3020D Group Delegation Panel

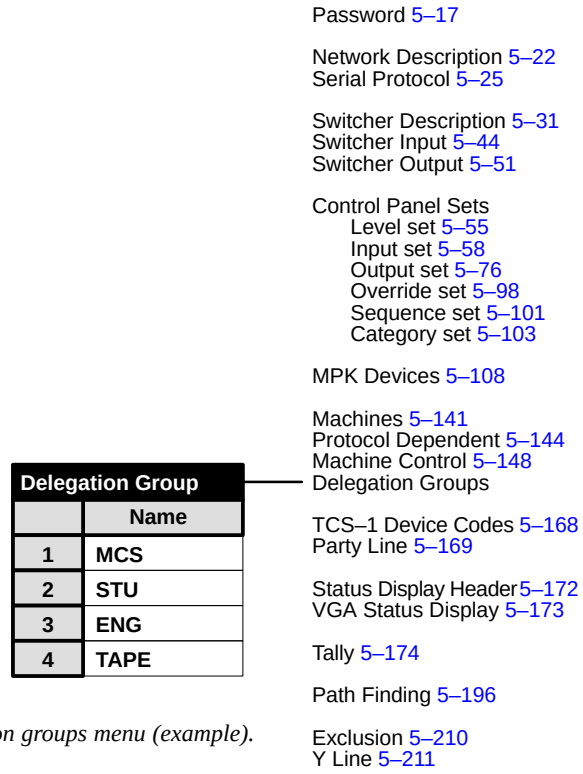


Figure 5–141. *Delegation groups menu (example).*

The MC 3020D Group Delegation Panel can be used to restrict control of a specific VTR to a particular control panel or panels. Note that the MC 3020D does not actually connect a control panel to a machine; rather, it ***allows*** the connection to be made using the normal machine linkage procedures already described on page 5–151.

The Delegation Groups menu (Figure 5–141) is used to establish the names of the desired machine control panels or groups of panels. The four groups shown in this example correspond to the control panels outlined in Figure 5–142. The order of these entries will be the order of the buttons on all MC 3020D Machine Delegate Panels in the system (Figure 5–143).

MPK Devices Table Entries

The MPK Devices table (Figure 5–144 on page 5–164) must be used to identify each MC 3020D in the system:

— In the panel–per–machine arrangement, the table is used to assign each MC 3020D to a specific machine. This is done by assigning a unique “CP Output Set” to each panel, where each “Output Set” shows only the name of a single machine. Each Output Set is of the type “MC 3020D.”

— In the central control location arrangement, only the name of the single MC 3020D would be entered along with the name of a “CP Output Set” that is actually a list of the machines assigned to the CP 3020 Expansion Panel(s). (Installation of the central control scheme was described on page 2–71.)

It is not necessary to indicate on the MPK Devices table whether or not the MC 3020D is being operated with an expansion panel (a CP 3021, as used in the central control scheme).

Machine Control Devices Table Entries

The Machine Control menu (Figure 5–145 on page 5–164) must be used to assign each switcher or machine control panel to one of the groups. The source of these names is the Delegation Group menu.

Important: The delegation system requires all control panels to be assigned to a group. Any control panel not assigned to a group will continue to have access to all machines, even if those machines have been assigned to a group.

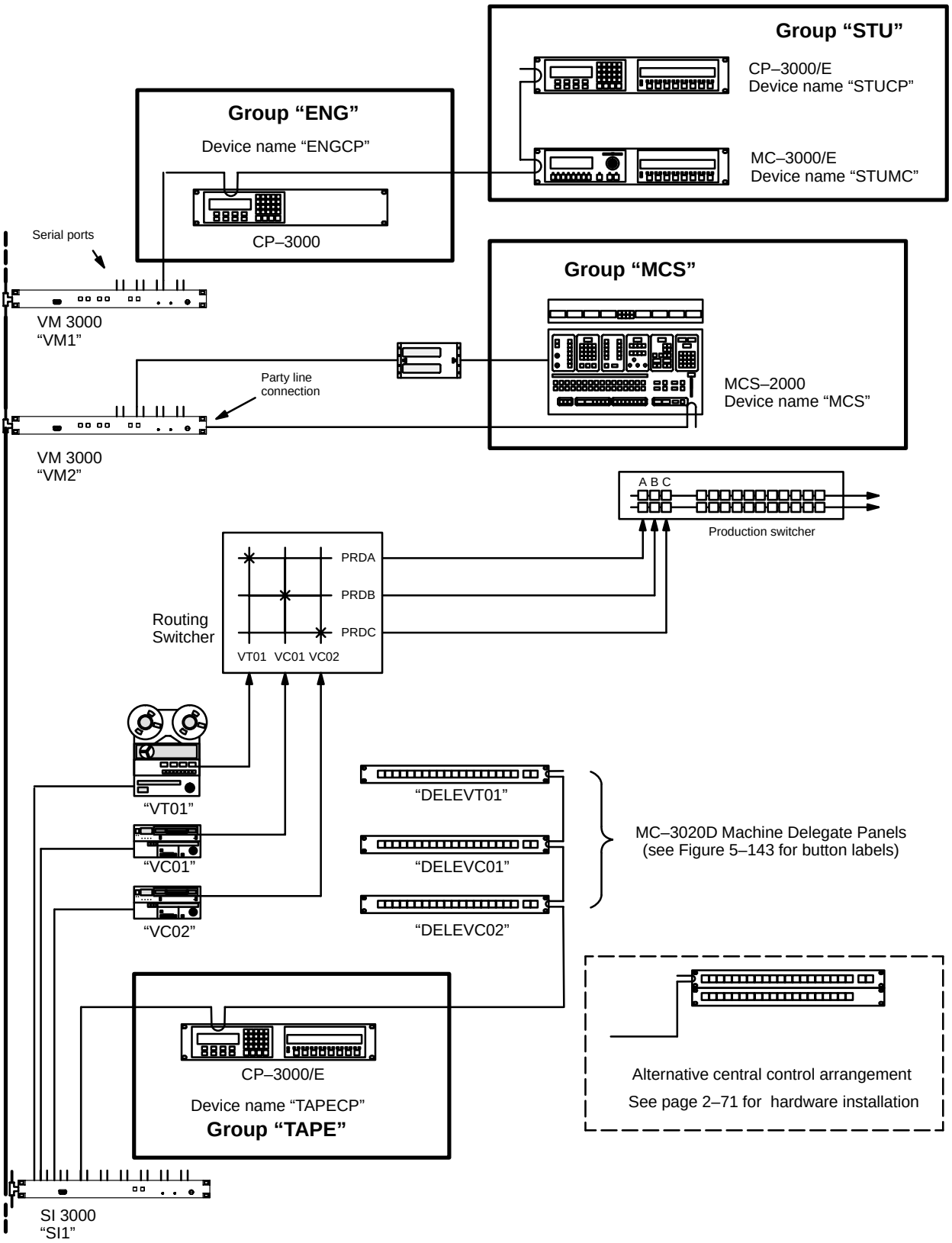
Example of Operation

In Figure 5–142, if the VTR operator pressed the “MCS” button on the MC 3020D Machine Delegate panel next to VTR “VT01,” then the MCS 2000 Master Control panel would be allowed to control VT01. The VTR would still have to be selected as a source for the MCS 2000 in the usual manner, but no other panel would be allowed to take control.

Saturn Master Control Switcher delegation

Saturn configuration instructions are described in the *Saturn Master Control Switcher Installation and Operating Manual.*

Figure 5–142. *Delegation system (example).*



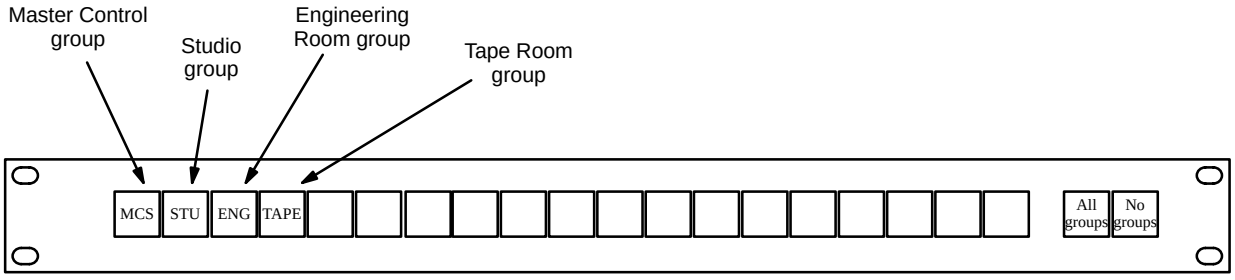


Figure 5–143. *MC 3020D Group Delegation Panel for system shown in Figure 5–142.*

MPK Devices

	MPK Devices	Device Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Overide Set	Sequence Set
1	STUCP	CP–3000	☑		VM1	6	00000014	KXYZ–INP		STU–OUT		KXYZ–LEV	KXYZ–OVE	
2	STUMC	MC–3000	☑		VM1	6	00000016							
3	ENGCP	CP–3000	☐		VM1	6	00000013	KXYZ–INP		KXYZ–OUT		KXYZ–LEV	KXYZ–OVE	
4	DELEVT01	MC–3020D	☐		SI1	6	00000017			VT01–OUT				
5	DELEVC01	MC–3020D	☐		SI1	6	00000018			VC01–OUT				
6	DELEVC02	MC–3020D	☐		SI1	6	00000019			VC02–OUT				
7	TAPECP	CP–3000	☑		SI1	6	00000012	KXYZ–INP		VTR–OUT		KXYZ–LEV	KXYZ–OVE	

Figure 5–144. *MPK Device menu for system shown in Figure 5–142. In the alternative "central control" arrangement, there would be only one MC 3020D entry, and the indicated "Out Set" would be a list of machines assigned to the expansion panel (see page 5–85).*

Machine Control

	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name
1	MCS	MCS	TCS1–CP	MCS	In	
2	STUCP	STUCP	CP–3000E	STU	Out	
3	STUMC	STUMC	MC–3000E	STU	Out	PRDA
4	STUMC	STUMC	MC–3000E	STU	Out	PRDB
5	STUMC	STUMC	MC–3000E	STU	Out	PRDC
6	ENGCP	ENGCP	CP–3000E	ENG		
7	TAPECP	TAPECP	CP–3000E	TAPE		
8	VT01	VT01	Sony Mch		In	VT01
9	VC01	VC01	Sony Mch		In	VC01
10	VC02	VC02	Sony Mch		In	VC02

Figure 5–145. *Machine Control table for system shown in Figure 5–142.*

EXAMPLE OF DELEGATION AND LINKAGE SEQUENCE

Please refer to Figure 5–146.

1. The VTR operator uses the MC 3020D panels to delegate control of all three machines to the studio control panels. The “STU” buttons on the MC 3020Ds are lit.

2. In the Studio, the CP 3000/E Switcher Control Panel is used to switch VT01 to PRDA. PRDA is the switcher output connected to the “A” input of the production switcher. Also, the VC01 is switched to PRDB. Camera 1 remains switched to PRDC.

3. Because of the Associated Name entries in the Machine Control Devices menu (Figure 5–145), the MC 3000/E Machine Control panel in the studio will indicate that links are established to VT01 and VC01 (upper right corner of Figure 5–146). Both machines are stopped.

   The VC02 does not appear. Even though the operator delegated it to the studio, it was not selected as the “C” input of the production switcher. Thus no link has been established.

4. The small START and STOP buttons on the MC expansion panel can now be used for either the VT01 or the VC01, or both.

5. On the MC expansion panel, the SELECT button under the mnemonic VT01 is used to send control of the VT01 to the main section of the CP 3000 (left half of panel). This provides full function control of the machine.

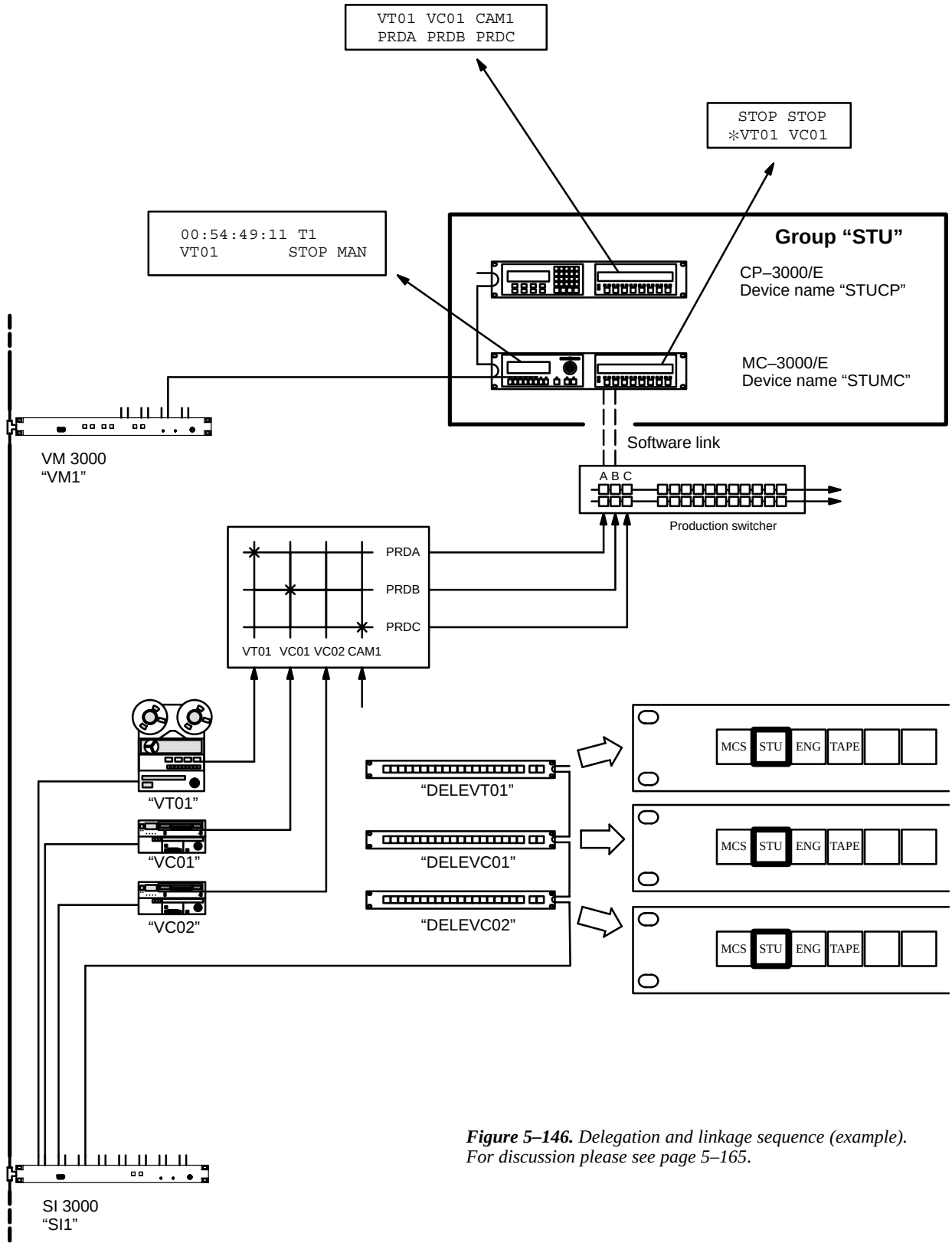


Figure 5–146. *Delegation and linkage sequence (example).*
For discussion please see page 5–165.

PERMANENT DELEGATION

To assign a machine to a particular control panel on a permanent basis, use the Machine Control menu to enter the group name of the panel in the “Delegation Group” column for the machine.

Machine Control

	Device Name	Mnemonic	Device Type	Delegation Group	In/Out	Associated Name
1	MCS	MCS	TCS1–CP	MCS	In	
2	VT01	VT01	Sony Mch	MCS	In	VT01
3	VC01	VC01	Sony Mch	MCS	In	VC01
4	VC02	VC02	Sony Mch	MCS	In	VC02

Figure 5–147.

In this example (Figure 5–147), all three Sony machines have been permanently assigned to the master control switcher (MCS).

> **Important:** The delegation system requires all control panels to be assigned to a group. Any control panel not assigned to a group will continue to have access to all machines, even if those machines have been assigned to a group.

This delegation method does not require use of an MC 3020 Group Delegation Panel.

TCS 1 Device Codes

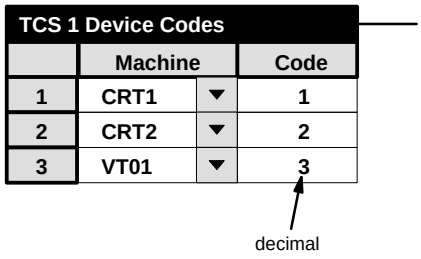


Figure 5–148. *TCS 1 device codes table (example).*

This menu must be used if a MCS 2000 Master Control Switcher or a TCS 1–type control panel is part of the system. These controls use a decimal code number from 1 to 99 to refer to machines, and this code must be cross–referenced to the machine's device name used by the Jupiter system.

The ***decimal*** Code numbers shown in Figure 5–148 are identical to the decimal code numbers entered on the MCS 2000 Setup Menu, as described in the MCS 2000 manual. On TCS 1 panels, such as the MC–12/3, these numbers are entered with a front–panel keypad switch; on the MC–24A they are entered with thumbwheel switches.

The source of the Machine names used on this table is the Machines table (page 5–141).

Machines Controlled by TCS 1 Interfaces

If the machine must be connected to the system with a TCS 1 type interface (as shown on page 2–89), then the address of the TCS 1 interface must be entered in ***hexadecimal*** on the Protocol Dependent Devices table (page 5–144). The address of the interface is set with internal DIP switches.

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

Party Line Tables

Configuring the VM 3000 party line port

PARTY LINE DESCRIPTION

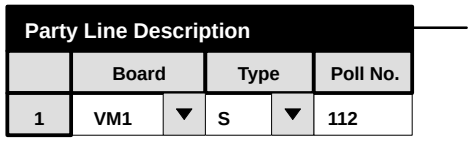


Figure 5–149. *Party Line Description table (example).*

This table must be used when the Party Line port of a VM 3000 is connected.§ The source of the **Board** names is the Network Description menu (page 5–22).

The entry for **Type** determines the protocol that will be generated by the VM 3000. *Extended* allows party line type panels to control 250 inputs and 150 outputs; *super* allows such panels to control 250 inputs and 250 outputs. Most current party line control panels will adjust automatically to either type. The usual setting is *super.*

The **Polling Number** is the lowest polling number for the party line control panels in the system. For example, if there are three party line panels and their polling numbers are 120, 122, and 124, then the entry would be 120. The polling number for each party line panel is set at the panel itself, either with internal DIP switches or, as is the case with the MCS–2000, by front–panel programming. For more information, please refer to the manual supplied with the panel.

A detailed description of the party line, sample points, and polling numbers can be found in the CE 2200 Polling and Control board section of the TVS/TAS 2000 Technical Manual.

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

PARTY LINE INPUT AND OUTPUT

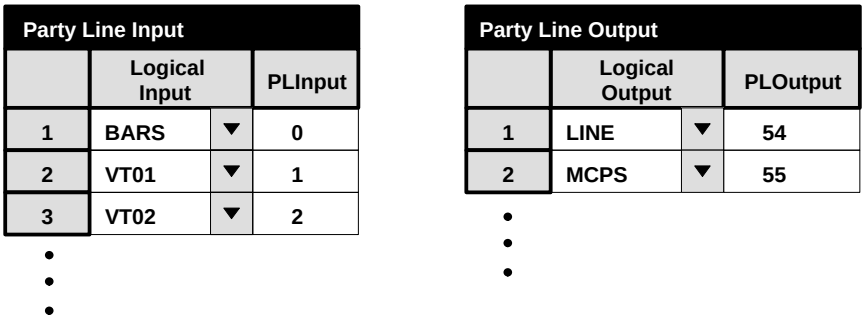


Figure 5–150. *Party Line Input And Output tables (example).*

These menus must be used when party line–type control panels are installed in the system. This includes the MCS 2000 Master Control switcher.

These panels are capable of controlling up to 250 inputs and 250 outputs (using super party line) whereas the Jupiter system itself can control several thousand inputs and outputs. Thus a maximum of up to 250 of the switcher inputs and outputs can be selected for control by party line panels.

Accordingly, these conversion tables list up to 250 “PL input” and “PL output” numbers, and for each of these, the *name* of the input (from the Switcher Input menu, page 5–44); or the *name* of the output (from the Switcher Output menu, page 5–51).

As a convention, you may wish to keep the physical input numbers and the “PL input” numbers exactly the same, but this is not necessary. For example, you may wish to have:

PL input 0 = BARS = physical input 000.

PARTY LINE LEVELS

Party Line Levels		
	Level	PLevel
1	VIDEO (MAINROUT) ▼	1
2	LEFT (MAINROUT) ▼	2
3	RIGHT (MAINROUT) ▼	4

Figure 5–151. *Party line levels menu (example).*

This menu must be used when party line–type control panels are installed in the system. This includes the MCS 2000 Master Control switcher.

These panels are capable of controlling up to seven levels, whereas the Jupiter system itself can control 126 levels. Thus a maximum of up to seven of the switcher levels can be selected for control by party line panels. Accordingly, this conversion table lists up to seven party line level numbers, and for each of these, the *name* for the physical level (from the Switcher Description menu, page 5–31).

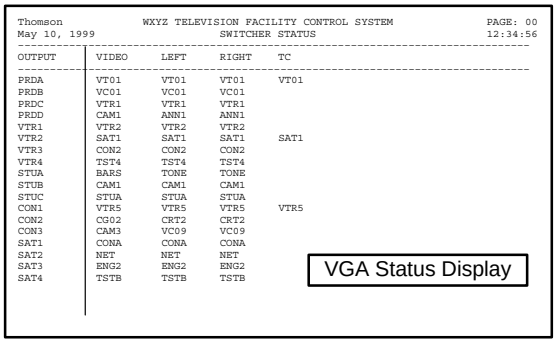
If you are adding the Jupiter to an existing TVS/TAS 2000 system, you may wish to maintain the traditional party line level numbers (as on Figure 5–151), but this is not necessary. For example, you may wish to have

Party line level 1	=	KXYZ VIDEO	=	Physical Level 1
Party line level 2	=	KXYZ LEFT	=	Physical Level 2
Party line level 4	=	KXYZ RIGHT	=	Physical Level 8

For the MCS 2000 Master Control switcher, party line level identification is established with the Setup mode, as described in the MCS 2000 manual.

Remember that the Physical Level entry (page 5–31) must agree with the DIP switch settings on the switcher’s crosspoint boards.

Status Display Headers



Header	
1	WXYZ TELEVISION FACILITY CONTROL SYSTEM

Figure 5–152. *Status display headers table (example).*

This table is the source of the header that appears centered at the top of the VGA Status Display pages. Up to 60 characters can be entered. Only the entry on Row 1 is used.

For more information about the VGA Status Display, see Appendix A.

> Note: This table was originally designed for use during configuration of the VG 3000 Video Display / Status Generator, which is no longer available (the functionality of the VG 3000 has been replaced by the VGA output of the VM 3000). For more information about the VG 3000 Video Display / Status Generator, please contact Thomson.

VGA Status Display Table

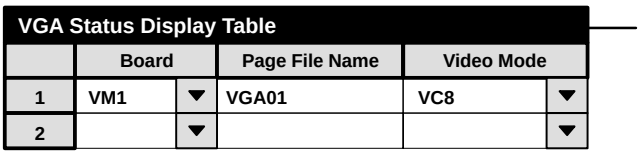


Figure 5–153. *VGA Status Display table (example).*

This table is used when a VGA status display is installed.

Board is the name of the VM 3000 providing the VGA output. This must be the same as the name already entered on the Network Devices table.

Page File Name is the source of the name of the file that will be created when the “Tools > Generate VGA Files” command is run.

> Note: The “Generate VGA Files” command is designed for use during initial installation only—it *always* uses the *original* factory default settings when building the Page Description file. If you decide to modify your VGA display with custom formatting, *do not* re–run the Generate VGA Files command. If you do, your modifications will be overwritten.

Video Mode allows selection of color or black and white. When “Color 80” is selected the table will display “VC8;” when “B/W 80” is selected the display will be “VB8.”

For details concerning VGA hardware installation and software configuration, please refer to Appendix A.

Tally

RELAY DESCRIPTION

Tally Relay

	Tally Device	Relay	Logical Input
1	TALLY1	0	VT01
2	TALLY1	1	VC02
3	TALLY1	2	VC01
4			

Figure 5–154. *Tally Relay description table.*

An overview of Jupiter tally and a discussion of hardware installation can be found on page 2–107.

> Note: The Jupiter Tally software package described here cannot tally sources that are wired directly to a Saturn internal matrix. If the Saturn is equipped with an internal matrix, the Saturn Tally system is available (but cannot be connected to the Jupiter Tally system). Please refer to the Saturn installation/operating manual for additional information.

The Relay Description table must be used when an MI 3040 has been configured to operate as a "MI 3040/T," i.e., for operation with tally lamps. The Tally Dependency table must also be used (page 5–180).

The table has a one–row entry for each of the tally lights in the system. The entry shows the name and relay number of the MI 3040 connected to each light; the source of this name is the MPK Devices table (page 5–116). Each relay is associated with the name of a routing switcher input, so that whenever that input is switched to air the relay will close. The source of the switcher input names is the Switcher Input table (page 5–44).

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

Figure 5–155 shows a tally system with a Jupiter–controlled routing switcher, a Saturn (or non–Saturn) master control switcher, and a direct feed to the transmitter. The corresponding Tally Relay Descriptions table is also shown. Notice that the table remains the same whether or not a Saturn master control switcher is used.

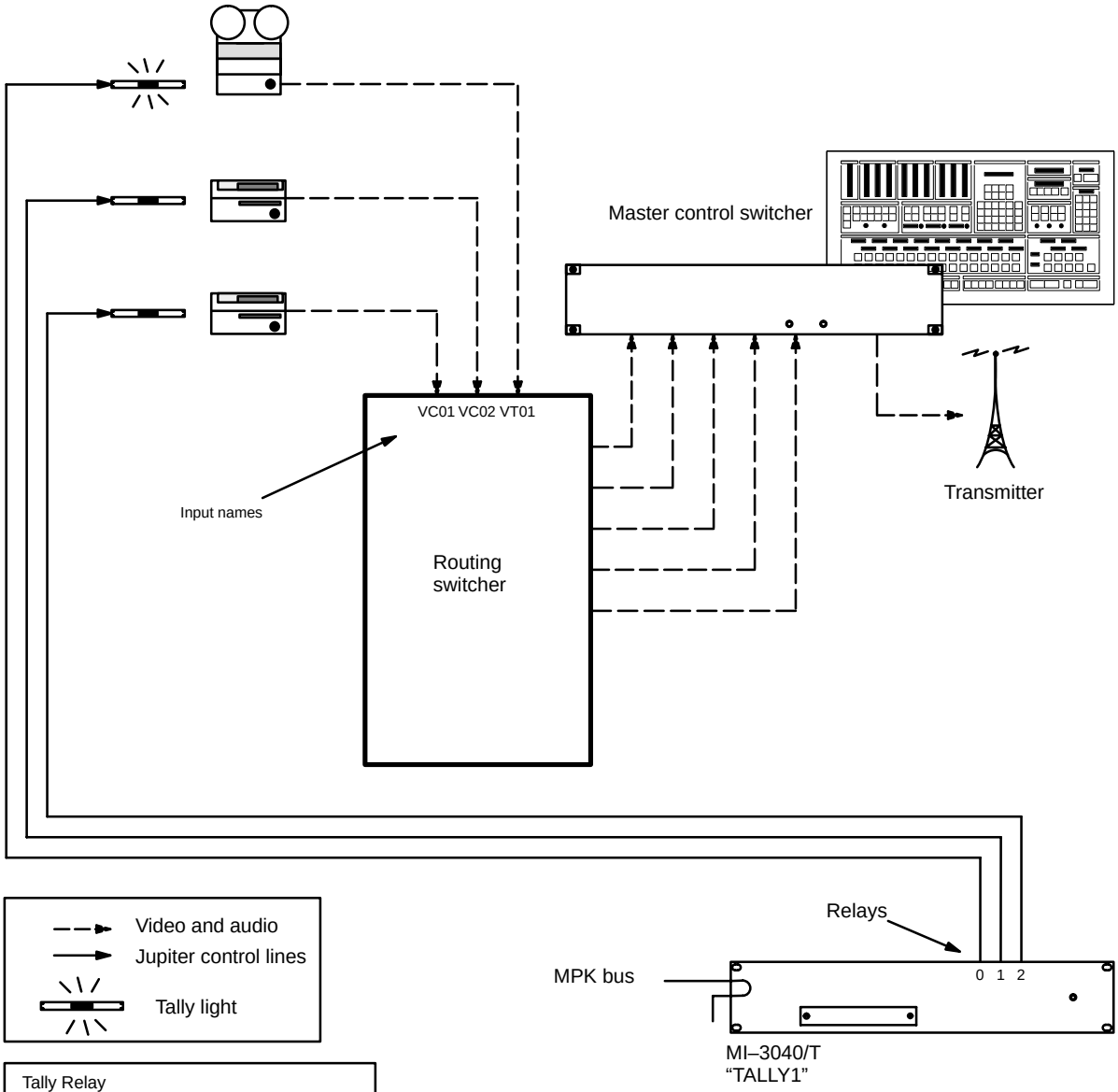
Figure 5–156 shows a system with a Jupiter–controlled routing switcher, Saturn (or non–Saturn) master control, and a production switcher. The master control switcher is connected directly to the transmitter. The corresponding Tally Relay Descriptions table is also shown. Notice that the table remains the same whether or not a Saturn master control switcher is used.

Figure 5–157 shows a system in which the master control switcher is connected to the transmitter indirectly, i.e., by re–entry through the routing switcher. Again, the figure includes the corresponding Tally Relay Descriptions table. In this case, a tally light for the master control switcher must be identified in the table (but not necessarily installed, as described previously).

The table is also used for systems with **UMD SD 3x and RP 1/2/3** Status Displays, when an MI 3040 is being used to trace inputs back through a production switcher. See page 5–127.

Figure 5–158 shows a system with **RP 1/2/3** Status Displays when the front panel **tally lights** are used. The Tally Relay Description table must include a one–row entry for each RP tally light pair. The source for the “Name” is the MPK Devices table (Figure 5–99 on page 5–120); the “Relay” entry is always “1” and the “Switcher Input” number is an existing switcher input name as defined on the Switcher Input table (page 5–44). The “Switcher Input” entry is not actually used, but to satisfy the compiler a name must be entered which is unique within this table.

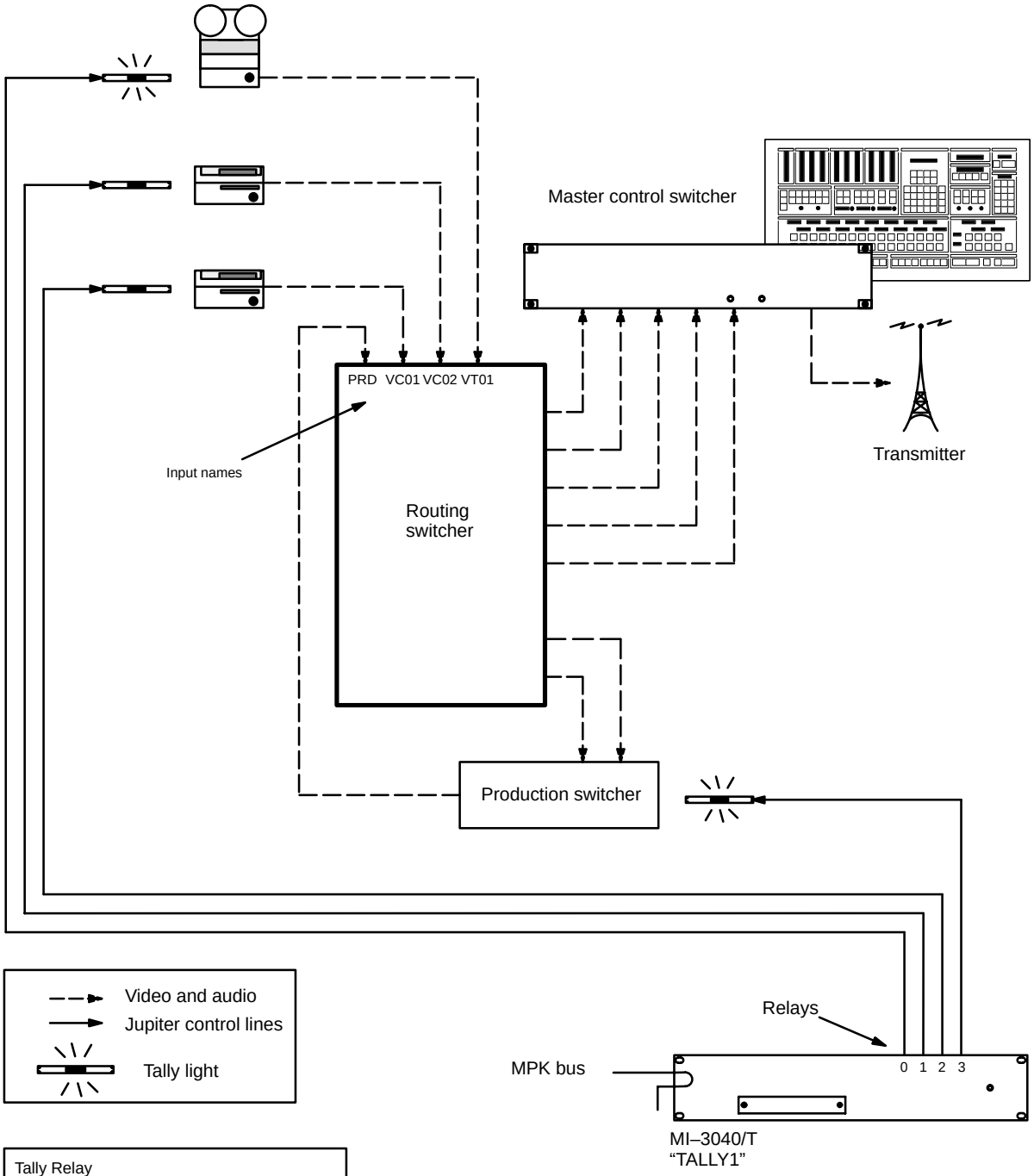
In all cases, the Tally Dependency table must also be completed, as described on page 5–180.



Tally Relay

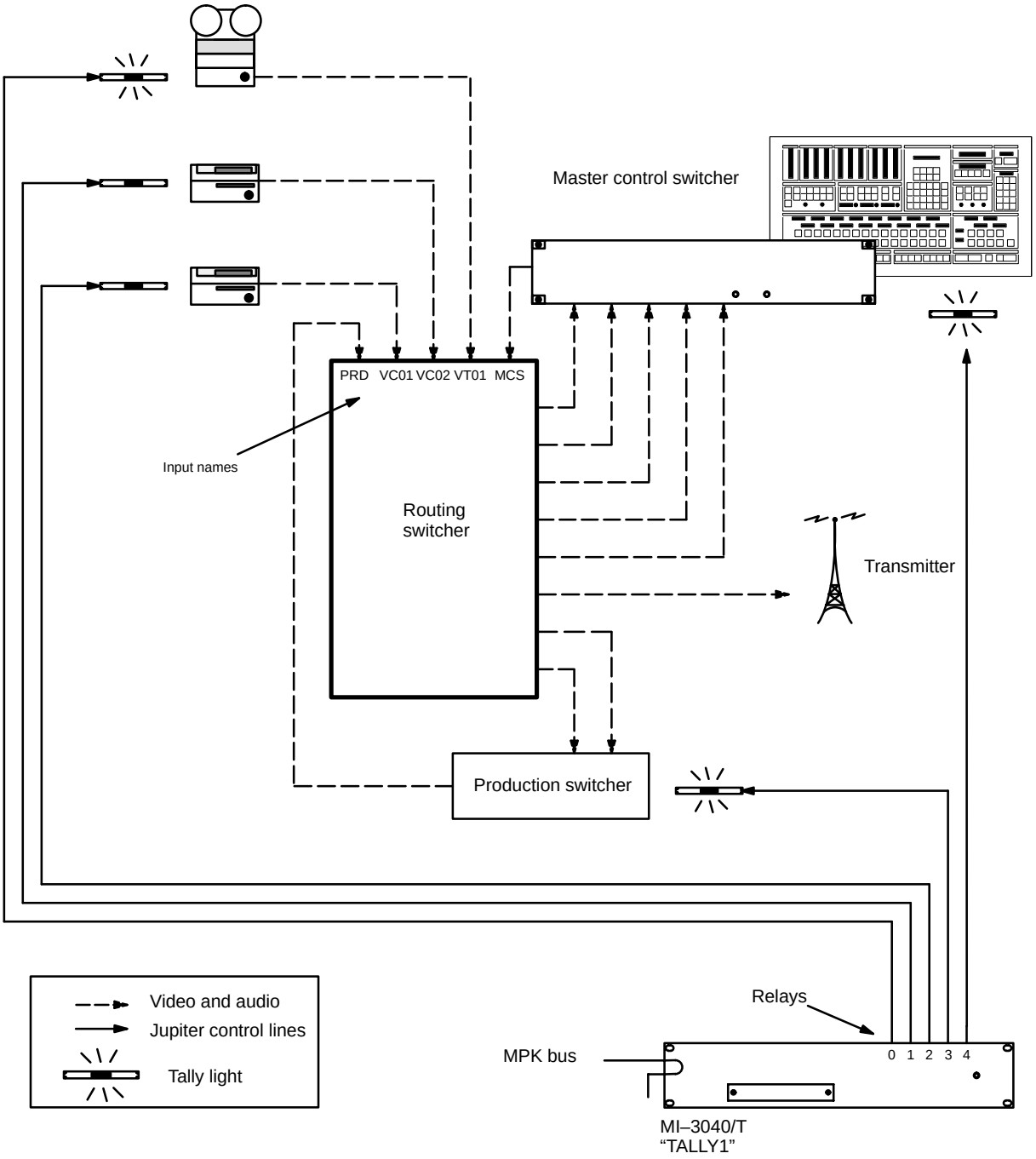
	Tally Device	Relay	Logical Input
1	TALLY1	0	VT01
2	TALLY1	1	VC02
3	TALLY1	2	VC01

Figure 5–155. *Tally system with Jupiter–controlled router, Saturn (on non–Saturn) master control, and direct feed to transmitter. Equipment shown corresponds to table at left.*



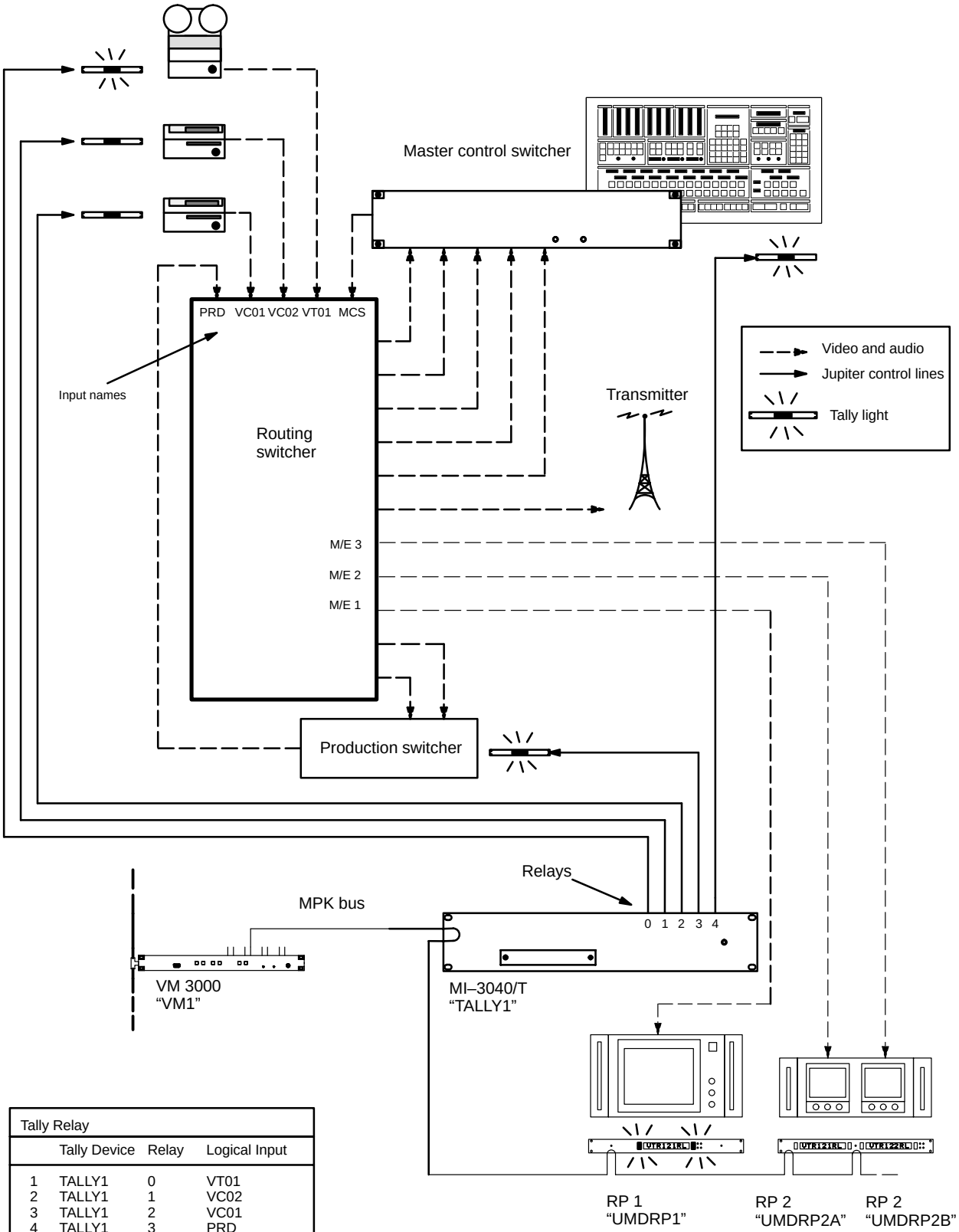
Tally Relay			
	Tally Device	Relay	Logical Input
1	TALLY1	0	VT01
2	TALLY1	1	VC02
3	TALLY1	2	VC01
4	TALLY1	3	PRD

Figure 5–156. *Tally system with Jupiter–controlled router, Saturn (or non–Saturn) master control, production switcher, and direct feed to transmitter. Equipment shown corresponds to table at left.*



Tally Relay			
	Tally Device	Relay	Logical Input
1	TALLY1	0	VT01
2	TALLY1	1	VC02
3	TALLY1	2	VC01
4	TALLY1	3	PRD
5	TALLY1	4	MCS

Figure 5–157. *Tally system with Jupiter–controlled router, Saturn (or non–Saturn) master control, production switcher, and indirect feed to transmitter. Equipment shown corresponds to table at left.*



Tally Relay

	Tally Device	Relay	Logical Input
1	TALLY1	0	VT01
2	TALLY1	1	VC02
3	TALLY1	2	VC01
4	TALLY1	3	PRD
5	TALLY1	4	MCS
6	UMDRP1	1	111
7	UMDRP2A	1	222
8	UMDRP2B	1	333

Figure 5–158. *RP 1/2/3 tally system with Jupiter–controlled router, Saturn (or non–Saturn) master control, production switcher, and indirect feed to transmitter. Equipment shown corresponds to table at left.*

TALLY DEPENDENCY

Figure 5–159. *Tally Dependency table (example).*

Tally Dependency

	Tally Device	Opto	Logical Output	Tally
1	MCS_TLY	0	MAIN–A	
2	MCS_TLY	1	MAIN–B	
3	MCS_TLY	2	KEYINS1	
4	MCS_TLY	3	KEYINS2	
5	MCS_TLY	4	MIXINS1	
6	MCS_TLY	5	MIXINS2	
7	MCS_TLY	6	BYPASS	

OVERVIEW

This table must be used when an MI 3040 has been configured to operate as a “MI 3040/T,” i.e., for operation with tally lamps. The Tally Relay table must also be used (page 5–174).

> Note 1: The Jupiter Tally system described in this manual cannot tally sources that are wired directly to a Saturn internal matrix. If the Saturn is equipped with an internal matrix, the Saturn Tally system is available (but cannot be connected to the Jupiter tally system). Please refer to the Saturn Installation and Operating manual for additional information.

> Note 2: The Tally Dependency table is also used for systems with under monitor status displays, when input mnemonics must be tracked back through a master control or production switcher. See page 5–123.

The table has two basic purposes: first, to establish the identity of the main output of the system (the output being fed by the tallied source); and second, to allow the Jupiter system to track sources through switchers other than the routing switcher.

Whatever source is feeding the main output (usually a transmitter) is tallied. When the main output is fed directly from the routing switcher, it is referred to as an unqualified output; a sample entry is shown in Figure 5–160.

Tally Dependency						
	Tally Device		Opto	Logical Output		Tally	
1		▼		XMIT	▼		▼
2		▼			▼		▼

Figure 5–160. *Entry used when main output is fed by router.*

If the main output is fed from a switcher other than the router (such as a master control switcher), then the main output is not identified as such. Instead, the names of all possible routing switcher outputs that could be selected for the main output are listed ("Output" column in Figure 5–161). In this case, the master control switcher must tell the Jupiter system which routing switcher output has been selected; this is done by energizing the appropriate opto–isolator ("Name/Opto" columns).

Tally Dependency						
	Tally Device		Opto	Logical Output		Tally	
1	MCS_TLY	▼	0	MAIN–A	▼		▼
2	MCS_TLY	▼	1	MAIN–B	▼		▼
3	MCS_TLY	▼	2	KEYINS1	▼		▼
4	MCS_TLY	▼	3	KEYINS2	▼		▼
5	MCS_TLY	▼	4	MIXINS1	▼		▼
6	MCS_TLY	▼	5	MIXINS2	▼		▼
7	MCS_TLY	▼	6	BYPASS	▼		▼

Figure 5–161. *Entry used when main output is fed by switcher other than router.*

There may be additional switching layers other than the router (such as a production switcher). In this case, the system must be able to determine (a) whether the switcher is on the air, and if it is, (b) which routing switcher output has been selected. An entry to the "Tally" column (Figure 5–162) will identify the tally light associated with the switcher; if the light is on, then the switcher is on the air. If it is on the air, the opto–isolators will be checked to find out which router output has been selected.

Tally Dependency						
	Tally Device		Opto	Logical Output		Tally	
1	TALLY1	▼	0	PROD1	▼	TALLY1 /3	▼
2	TALLY1	▼	1	PROD2	▼	TALLY1 /3	▼

Figure 5–162. *Additional switcher entries.*

The source of the Tally column data (name of MI 3040 / relay number connected to each tally light) is the Tally Relay table (page 5–174).

Entries for specific systems are shown below; this is followed by a detailed example of system operation.

BASIC TALLY SYSTEM WITH SATURN MASTER CONTROL SWITCHER

Direct Connection to Transmitter

Please see Figure 5–164.

This table has only one type of entry: MCS_TLY.

Saturn ("MCS_TLY") entries

These entries are used in systems equipped with a Saturn Master Control Switcher (or BTS MCS 2000). They allow the Jupiter system to find out which of the sources feeding the master control switcher have been switched to the MCS "On–air" output. There are always five entries for the MCS 2000, one for each of the five inputs from the routing switcher. For the Saturn, there are seven entries.

The source of the **Name** used here is the MPK Devices table (for discussion, see page 5–116). As a convention, the name "MCS_TLY" is used.

The **Opto–isolator** number entries must be assigned as follows:

Figure 5–163. *Additional switcher entries.*

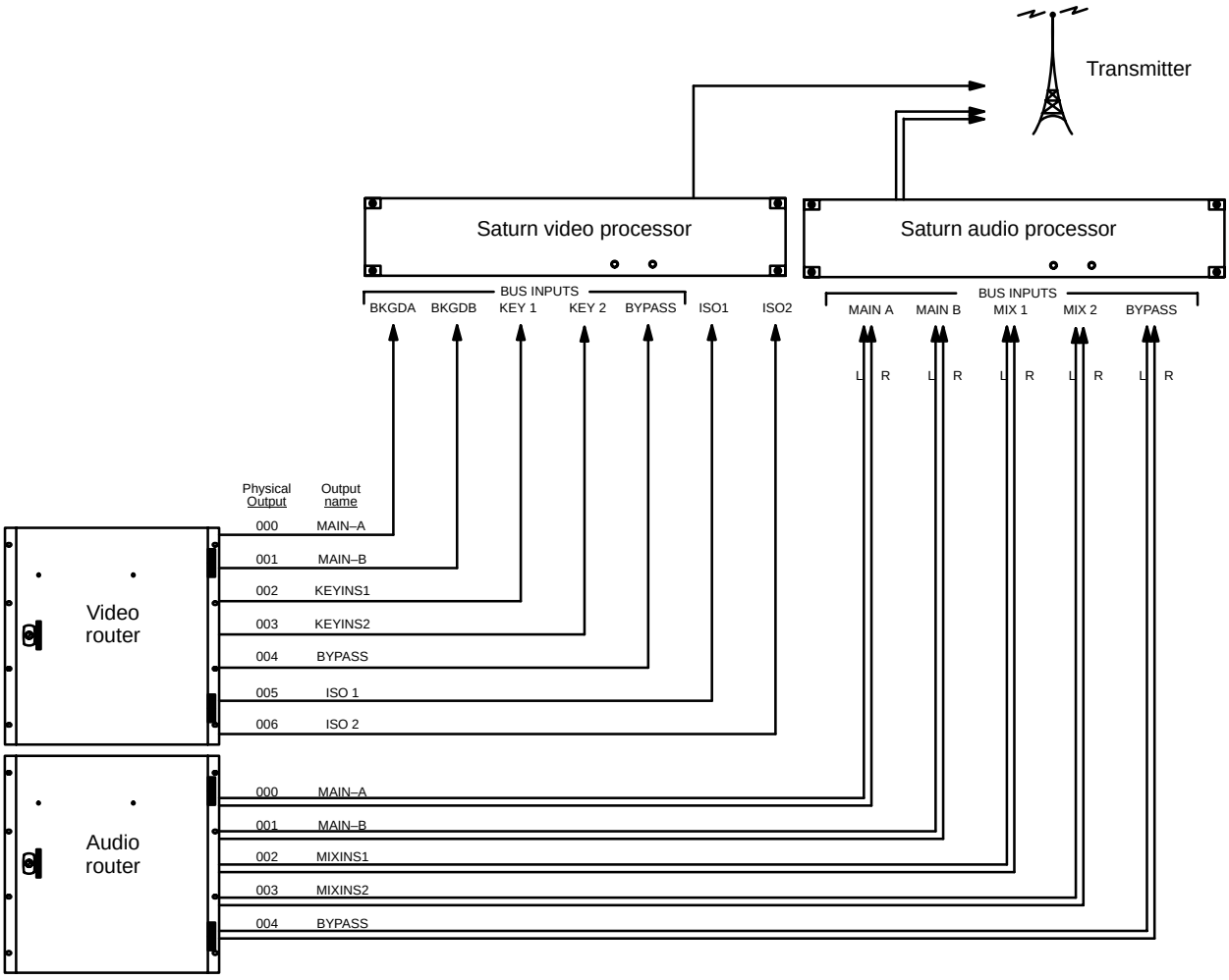
MCS_TLY Opto–isolator no.	Assigned to **MCS 2000** input	Assigned to **Saturn** input
0	Input 1	BKGDA
1	Input 2	BKGDB
2	Key 1	KEY 1
3	Key 2	KEY 2
4	—	MIX 1
5	—	MIX 2
6	Bypass	BYPASS

Note 1: The device called "MCS_TLY" and the "opto–isolators" associated with it exist only in software tables.

Note 2: There are no entries for MCS 2000 Mix 1 and Mix 2 (these are audio inputs). If the MCS 2000 is mixing *or* keying, then both the mix source *and* the key source will be tallied by the Jupiter system.

The **Switcher Outputs** are the names of the five router outputs leading to the master control switcher. The source of the switcher output names is the Switcher Output table (page 5–51).

The MCS_TLY entries do not include a dependency on a **relay**, since no tally light is associated with the master control switcher. (There is no tally light because in this system the master control switcher is always on–air.) The last two columns are therefore left blank.



Tally Dependency			
	Tally Device	Opto	Logical Output Tally
1	MCS_TLY	0	MAIN–A
2	MCS_TLY	1	MAIN–B
3	MCS_TLY	2	KEYINS1
4	MCS_TLY	3	KEYINS2
5	MCS_TLY	4	MIXINS1
6	MCS_TLY	5	MIXINS2
7	MCS_TLY	6	BYPASS

Figure 5–164. *Example tally system with Jupiter–controlled router (Venus), Saturn master control, and direct feed to transmitter. Equipment shown corresponds to table at left.*

Indirect Connection to Transmitter

Please see Figure 5–165.

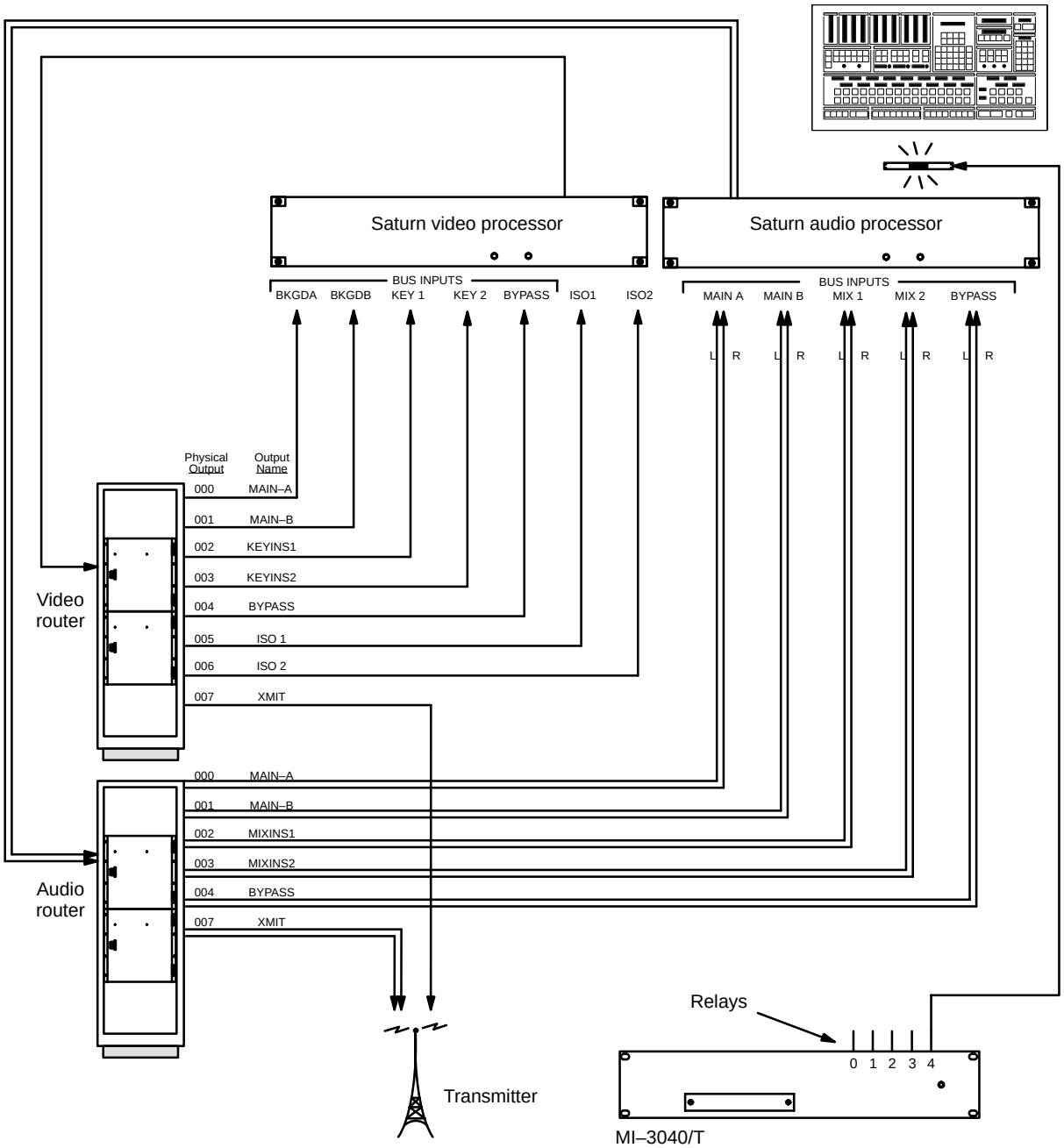
There are two types of entries on this table: an unqualified output entry and MCS_TLY entries.

Unqualified output

This is the name (“XMIT”) of the routing switcher output leading to the transmitter (or the name of the output leading to the primary program line). All sources switched to this output will be tallied. The rest of the row remains blank. There can be more than one unqualified output if desired.

Saturn (“MCS_TLY”) entries

Entries are similar to those already described (page 5–186) except for the last two columns. Since the master control switcher is connected indirectly to the transmitter (by re–entry through the routing switcher), each entry must include the **Name** of the MI 3040/T and the relay **Number** associated with the master control switcher’s tally light.



Tally Dependency				
	Tally Device	Opto	Logical Output	Tally
1			XMIT	
2	MCS_TLY	0	MAIN–A	TALLY1 /4
3	MCS_TLY	1	MAIN–B	TALLY1 /4
4	MCS_TLY	2	KEYINS1	TALLY1 /4
5	MCS_TLY	3	KEYINS2	TALLY1 /4
6	MCS_TLY	4	MIXINS1	TALLY1 /4
7	MCS_TLY	5	MIXINS2	TALLY1 /4
8	MCS_TLY	6	BYPASS	TALLY1 /4

Figure 5–165. *Example tally system with Jupiter–controlled router (Venus), Saturn master control, and indirect feed to transmitter. Equipment shown corresponds to table at left.*

CONFIGURATION FOR SYSTEMS WITH SATURN MASTER CONTROL SWITCHER AND PRODUCTION SWITCHER

Direct Connection to Transmitter

Please see Figure 5–167.

There are two types of entries on this table: MCS_TLY entries; and production switcher entries. There is no unqualified output entry.

Saturn ("MCS_TLY") entries

These entries are used in systems equipped with a Saturn Master Control Switcher (BTS MCS 2000). They allow the Jupiter system to find out which of the sources feeding the master control switcher have been switched to the "On–air" output. There are always five entries for the MCS 2000, one for each of the five inputs from the routing switcher. For the Saturn, there are seven entries.

The source of the **Name** used here is the MPK Devices table (for discussion, see page 5–116). As a convention, the name "MCS_TLY" is used.

The **Opto–isolator** number entries must be assigned as follows:

Figure 5–166.

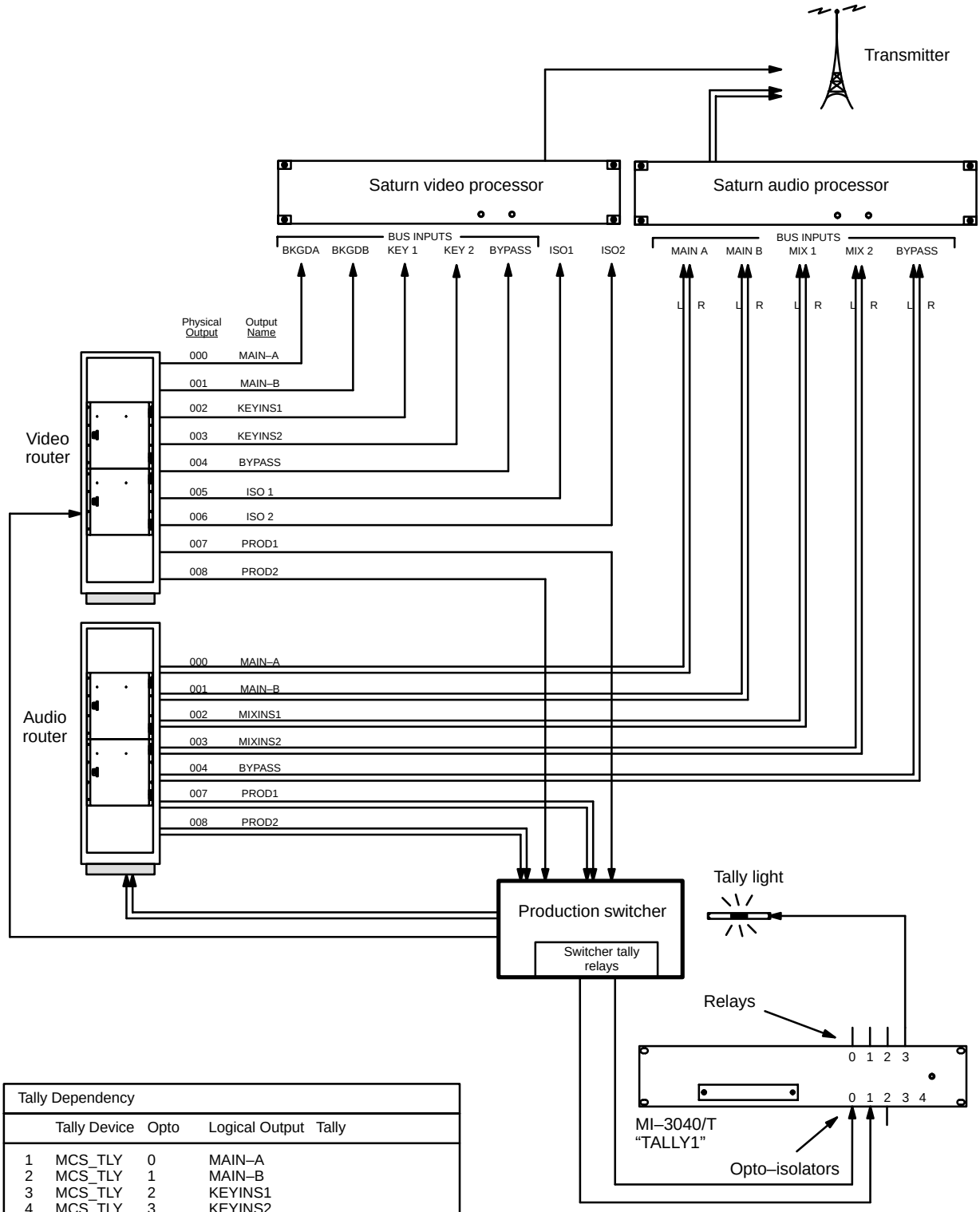
MCS_TLY Opto–isolator no.	Assigned to **MCS 2000** input	Assigned to **Saturn** input
0	Input 1	BKGDA
1	Input 2	BKGDB
2	Key 1	KEY 1
3	Key 2	KEY 2
4	——	MIX 1
5	——	MIX 2
6	Bypass	BYPASS

Note 1: The device called "MCS_TLY" and the "opto–isolators" associated with it exist only in software tables.

Note 2: There are no entries for MCS 2000 Mix 1 and Mix 2 (these are audio inputs). If the MCS 2000 is mixing *or* keying, then both the mix source *and* the key source will be tallied by the Jupiter system.

The **Switcher Outputs** are the names of the five router outputs leading the master control switcher. The source of the switcher output names is the Switcher Output table (page 5–51).

The MCS_TLY entries do not include a dependency on a **relay**, since no tally light is associated with the MCS. (There is no tally light because in this system the MCS is always on–air.) The last two columns are therefore left blank.



Tally Dependency				
	Tally Device	Opto	Logical Output	Tally
1	MCS_TLY	0	MAIN–A	
2	MCS_TLY	1	MAIN–B	
3	MCS_TLY	2	KEYINS1	
4	MCS_TLY	3	KEYINS2	
5	MCS_TLY	4	MIXINS1	
6	MCS_TLY	5	MIXINS2	
7	MCS_TLY	6	BYPASS	
8	TALLY1	0	PROD1	TALLY1 /3
9	TALLY1	1	PROD2	TALLY1 /3

Figure 5–167. *Example tally system with Jupiter–controlled router (Venus), Saturn master control, production switcher, and direct feed to transmitter. Equipment shown corresponds to table at left.*

Production Switcher Entries

These entries will allow the Jupiter system to find out which of the sources feeding the production switcher have been switched to the switcher's Program output. The number of entries will be the same as the number of inputs from the routing switcher.

The **Name** is that of the MI 3040/T connected to the production switcher's tally outputs. The source of this name is the MPK Devices table (page 5–116). As a convention, a name such as "TALLY1" is used.

The **Opto–isolator** number entries are based on the corresponding router output names. In this example, when the production switcher has switched "PROD1" to its program output, it will report this by energizing opto–isolator number 0 on "TALLY1."

> Note: Entry of the correct opto–isolator numbers will require an understanding of the production switcher's tally connections. Please refer to the installation manual supplied with the production switcher for more information.

The **Switcher Outputs** are the names of the router outputs leading the production switcher. The source of these output names is the Switcher Output table (page 5–51).

In the **Tally** column, select the name of the MI 3040/T / relay number associated with the production switcher's tally light. The source of the Tally column data is the Tally Relay table (page 5–174).

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Indirect Connection to Transmitter

Please see Figure 5–168.

There are three types of entries on this table: an unqualified output entry; MCS_TLY entries; and production switcher entries.

Unqualified Output

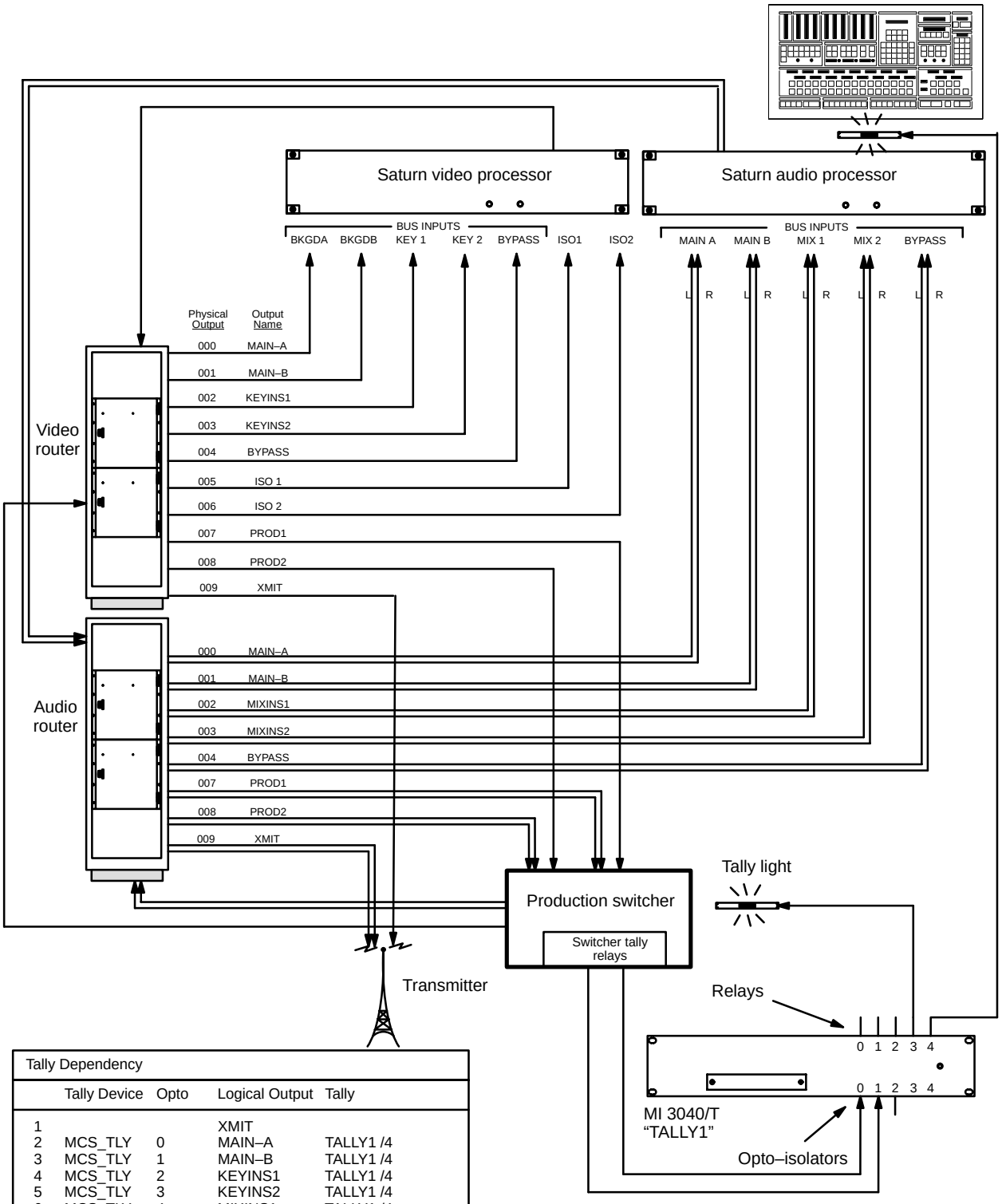
This is the name (“XMIT”) of the routing switcher output leading to the transmitter (or the name of the output leading to the primary program line). All sources switched to this output will be tallied. The rest of the row remains blank. There can be more than one unqualified output if desired.

Saturn (“MCS_TLY”) Entries

Similar to those already described (page 5–186), except for the last column. Since the master control switcher is connected indirectly to the transmitter (by re–entry through the routing switcher), each entry must include the name of the MI 3040/T and the relay number associated with the master control switcher’s tally light.

Production Switcher Entries

Similar to those already described (page 5–188).



Tally Dependency

	Tally Device	Opto	Logical Output	Tally
1			XMIT	
2	MCS_TLY	0	MAIN–A	TALLY1 /4
3	MCS_TLY	1	MAIN–B	TALLY1 /4
4	MCS_TLY	2	KEYINS1	TALLY1 /4
5	MCS_TLY	3	KEYINS2	TALLY1 /4
6	MCS_TLY	4	MIXINS1	TALLY1 /4
7	MCS_TLY	5	MIXINS2	TALLY1 /4
8	MCS_TLY	6	BYPASS	TALLY1 /4
9	TALLY1	0	PROD1	TALLY1 /3
10	TALLY1	1	PROD2	TALLY1 /3

Figure 5–168. *Example tally system with Jupiter–controlled router (Venus), Saturn master control, production switcher, and indirect feed to transmitter. Equipment shown corresponds to table at left.*

CONFIGURATION FOR SYSTEMS WITH NON–SATURN MASTER CONTROL SWITCHER

Tally Dependency						
	Tally Device		Opto	Logical Output		Tally	
1		▼		XMIT	▼		▼
2	TALLY1	▼	2	MCS1	▼	TALLY1 /4	▼
3	TALLY1	▼	3	MCS2	▼	TALLY1 /4	▼
4	TALLY1	▼	4	MCS3	▼	TALLY1 /4	▼
5	TALLY1	▼	5	MCS4	▼	TALLY1 /4	▼
6	TALLY1	▼	6	MCS5	▼	TALLY1 /4	▼
7	TALLY1	▼	0	PROD1	▼	TALLY1 /3	▼
8	TALLY1	▼	1	PROD2	▼	TALLY1 /3	▼

Figure 5–169. *Tally dependencies table for systems with non–Saturn master control switcher (Figure 5–170).*

The Tally Dependency table shown above (Figure 5–169) corresponds to the system shown in Figure 5–170.

This table is similar to that already described, except that it shows the required connections from the non–Saturn master control switcher to the MI 3040/T opto–isolators.

Note: in this discussion, “non–Saturn” also means “non–MCS 2000.”

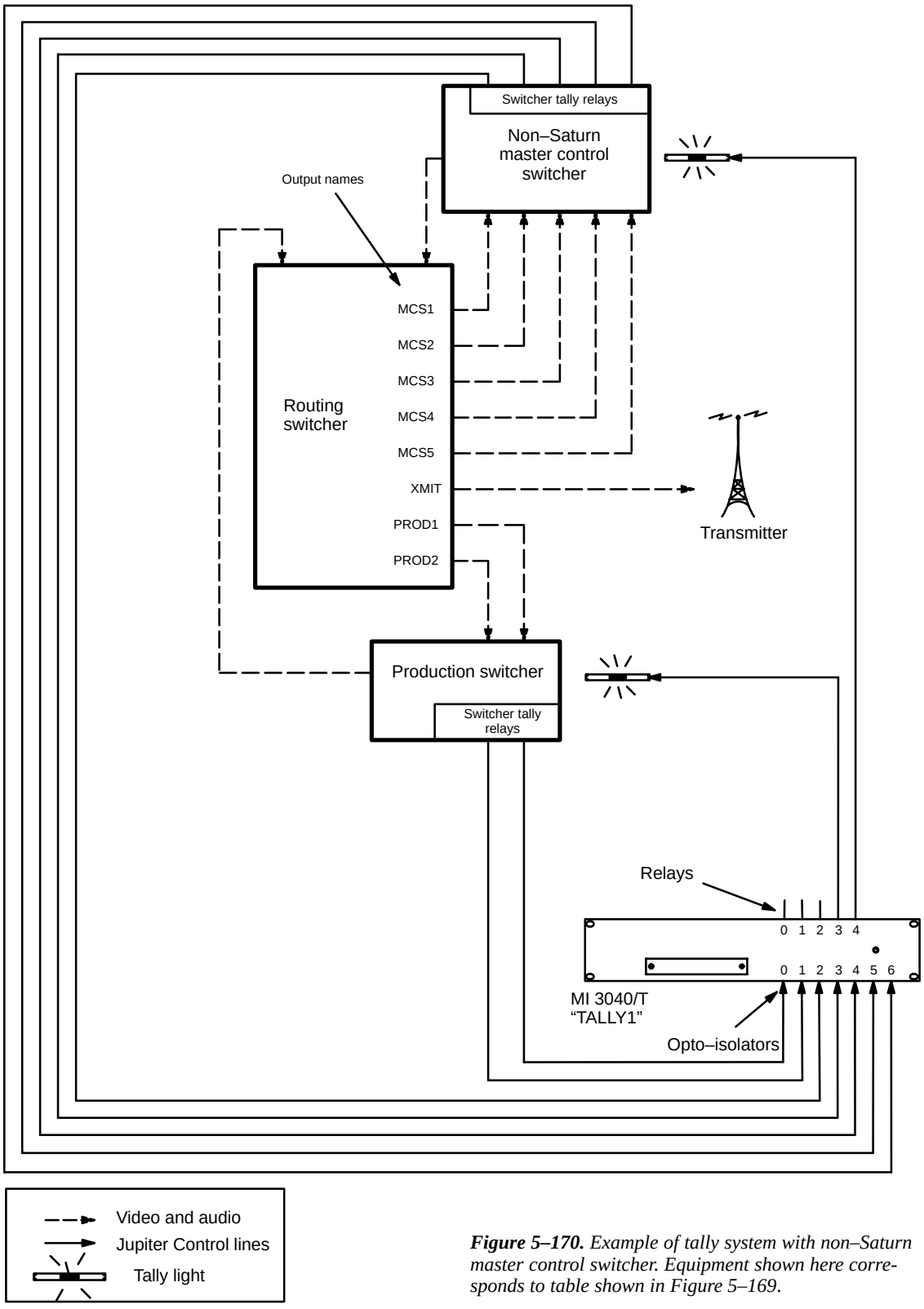


Figure 5–170. *Example of tally system with non–Saturn master control switcher. Equipment shown here corresponds to table shown in Figure 5–169.*

EXAMPLE OF TALLY SYSTEM OPERATION

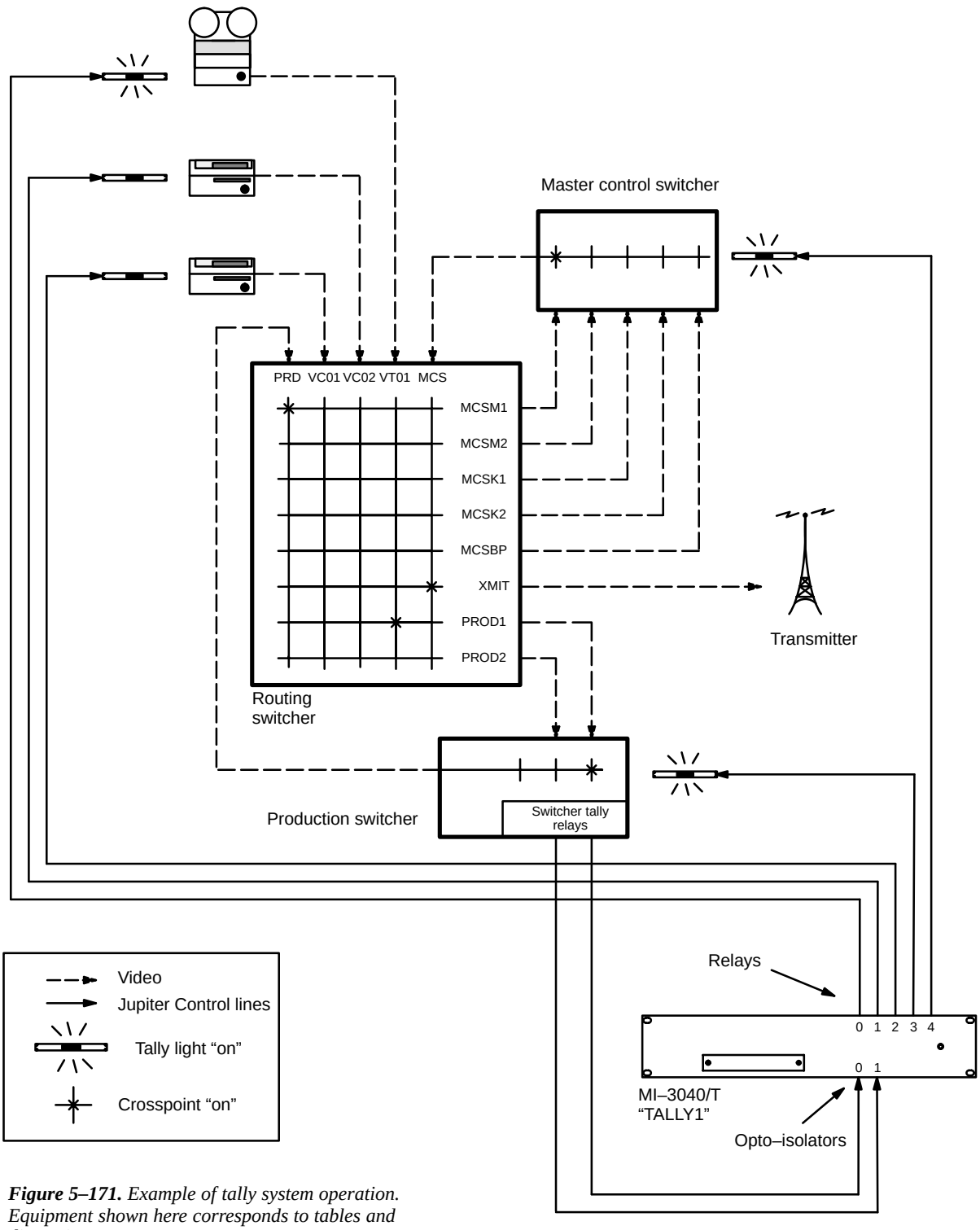
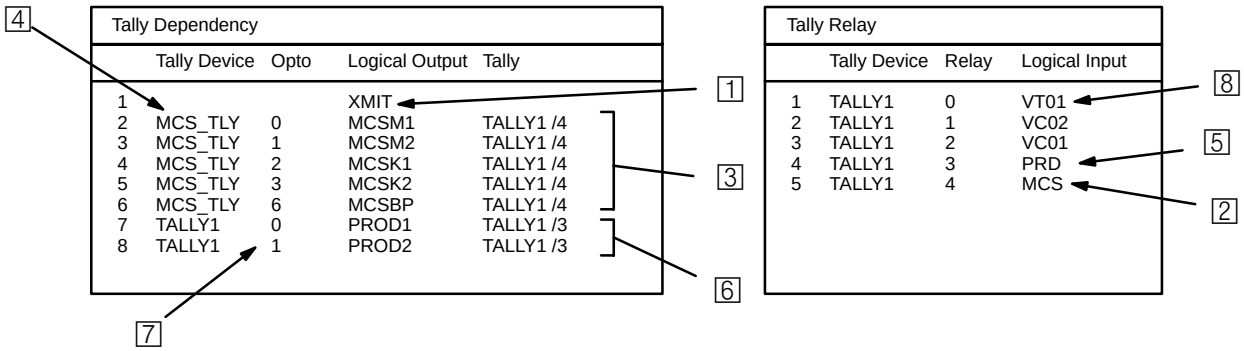


Figure 5–171. *Example of tally system operation. Equipment shown here corresponds to tables and discussion on next page.*

Figure 5–172. *Tables for system shown in Figure 5–171.*



The following discussion refers to Figures 5–171 and 5–172 above. All references to “inputs” and “outputs” are from the routing switcher point of view. Only video is shown in this example.

1 System finds unqualified output “XMIT” on Tally Dependency table. All sources switched to this output will be tallied. System checks routing switcher status tables and finds that input “MCS” (the master control switcher) is switched to output “XMIT.”

2 System locates “MCS” on Tally Relay Descriptions table, according to which relay no. 4 of MI 3040 “TALLY1” should be turned on. This turns on the tally light next to the MCS.

3 Tally 1, relay 4 is located on the Tally Dependency table. There are five entries, one for each possible source for the MCS. Each **depends** (is conditional) on relay 4 to be closed in order to point back to a tally light.

4 The system checks the MCS (“MCS_TLY”) to determine which source has been selected; in this case it is output “MCSM1.” The system looks at the routing switcher status table and finds that input “PRD” (the production switcher) is switched to output “MCSM1.”

5 The system locates “PRD” on the Tally Relay Descriptions table, according to which, relay 3 of Tally 1 should be turned on. This relay turns on the tally light next to the production switcher.

6 Tally 1, relay 3 is located on the Tally Dependency table. There are two entries, one for each possible router output to the production switcher.

7 The system now checks opto–isolators 0 and 1 of Tally 1 to determine which source has been selected by the production switcher. Opto–isolator 0 is energized, meaning that output “PROD1” is selected. (In other words, relay 3 is ANDed with opto 0.) The system looks at the routing switcher status table and finds that input “VT01” is switched to output “PROD1.”

8 The system locates “VT01” on the Tally Relay Descriptions table, according to which relay 0 should be turned on. This turns on the tally light next to the VTR.

Sequential Path Finding

Figure 5–173. *Path finding data table (example).*

Sequential Path Finding

	Path Finding Group Name	Source Switcher/Level	Physical Output	Destination Switcher/Level	Physical Input	Count
1	VNEWMAIN	VIDEO (NEWSROUT)	10	VIDEO (MAINROUT)	43	5
2	LNEWMAIN	LEFT (NEWSROUT)	10	LEFT (MAINROUT)	43	5
3	RNEWMAIN	RIGHT (NEWSROUT	10	RIGHT (MAINROUT)	43	5
4	TNEWMAIN	TC (NEWSROUT)	10	TC (MAINROUT)	43	5
5	VMAINNEW	VIDEO (MAINROUT)	61	VIDEO (NEWSROUT)	20	3
6	LMAINNEW	LEFT (MAINROUT)	61	LEFT (NEWSROUT)	20	3
7	RMAINNEW	RIGHT (MAINROUT)	61	RIGHT (NEWSROUT	20	3
8	TMAINNEW	TC (MAINROUT)	61	TC (NEWSROUT)	20	3

The path finding§ software option allows two or more TVS/TAS 2000, Venus, or later routing switchers to operate as a system, where one switcher can access the other's inputs through a number of *tie lines*. For example, Figure 5–174 shows a facility with a large, central distribution switcher and a smaller switcher normally used only within the news department. By placing both switchers under control of the Jupiter system, and by adding tie lines, the main router can access the news department's inputs. In this example, VT21 can be switched to output 55 of switcher "MAINROUT" with one command: the system will first switch VT21 to one of the tie lines leading from "NEWSROUT" to "MAINROUT," then it will switch that tie line signal to output 55 of "MAINROUT."

§ Some of the functions described in this section may be extra–cost options. For more information, see page 1–27.

Path finding is not the same as three–stage switching. Path finding involves discrete switchers connected by a small number of tie lines, the number of which strictly limits the inputs available at the downstream switcher. When these tie lines are all busy, the path between the switchers is *blocked* and will remain so until one of the lines is released. A three–stage switcher, on the other hand, operates as one unit and is carefully designed so that it cannot be blocked. (For more information about three–stage switching, see Appendix H.)

> Note 1: It is possible to combine path finding with three–stage switching. For example, either one or both of the switchers shown in Figure 5–174 could be three–stage switchers. This would not affect entries to the path finding tables as described below.

If all tie lines are busy and an attempt is made to switch to an additional upstream source, the control panel will indicate "Blocked." In order to release a tie line, a downstream output using a tie line must be switched to a local input. In this example, "MainRout" output 55 could be switched to VT16, or some other source known to be a local input (such as black burst). In some cases, it might be necessary to switch more than one downstream output to a local source, since the tie line could be feeding more than one destination. Since it may be difficult to determine the overall usage of a given tie line, **the operator should switch away from the upstream switcher source when it is no longer needed.**†

Following hardware installation (discussed on page 2–35), path finding requires entries to the Path Finding Data table and selection of Group Names numbers on the Switcher Input tables (Figure 5–173).

> Note 2: If the tie lines are wired non–sequentially, please refer also to *Non–sequential Path Finding* on page 5–207.

PATH FINDING DATA TABLE

This table, shown in Figure 5–173, describes the tie lines between the two switchers. The first four rows show the lines from "NEWSROUT" to "MAINROUT," and the next four rows show the lines leading back to "NEWSROUT." In this case, there are tie lines for all four levels of both switchers. The columns are arranged in "from—to" order.

Row 1 describes lines *from* Input Switcher "NEWSROUT," Video level, starting with Physical Output 10. The lines go *to* Output Switcher "MAINROUT," Video level, starting with Physical Input 43. Since there are five lines, and connections must be consecutive, outputs 10 through 14 of "NEWSROUT" are connected to inputs 43 through 47 of "MAINROUT."

> Note 3: When a switcher input or output is used with a tie line (such as Physical Output 10 in the above example) and entered in the Path Finding Data table, that input or output must *not* appear in the Switcher Input or Output tables.

† With Jupiter version 4.0, the VM 3000 VGA Status Display can be made to display tie line status. See Appendix A.

SWITCHER INPUT TABLES

Referring to Figure 5–175 and the Switcher Input table for “NEWSROUT,” the entries for VT21 and VT22 follow the normal pattern. However, there are also entries for VT15 and VT16—machines that are normally sources for “MAINROUT.” In the following columns, there are Group Name selections such as “VNEWMAIN,” “LNEWMAIN,” etc. If there is a request for VT15 to be switched to a “NEWSROUT” output, then the system is referred to Groups VMAINNEW through TMAINNEW on the Path Finding Data table. The VMAINNEW entry, for example, shows that for video there are three tie lines available to make this switch. Assuming that one of these lines is available, the switch will be completed.

Note: All sources identified as available through path finding must also appear on the Switcher Input table for the “home switcher.” In the example just given, VT15 appears on both tables.

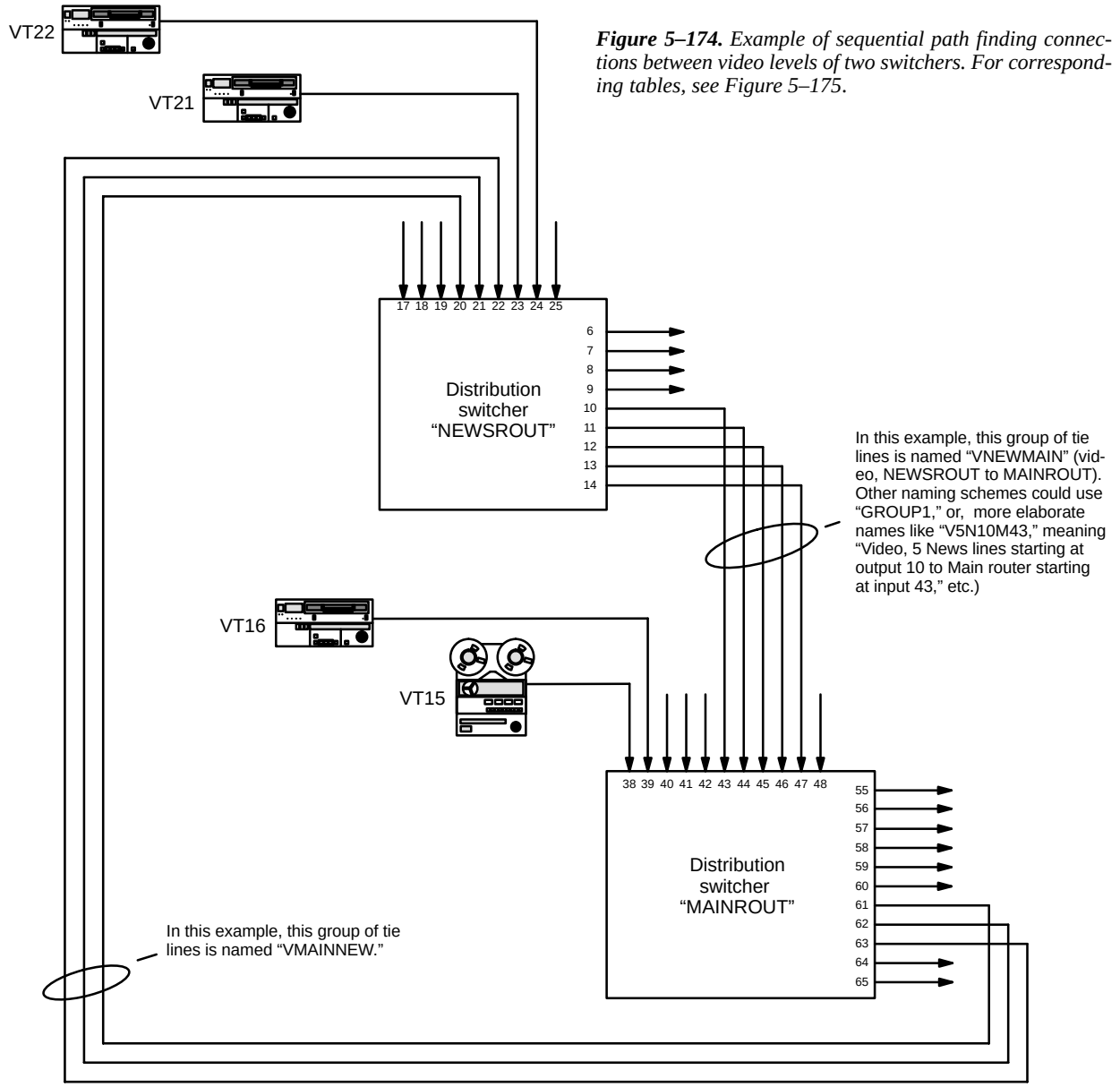
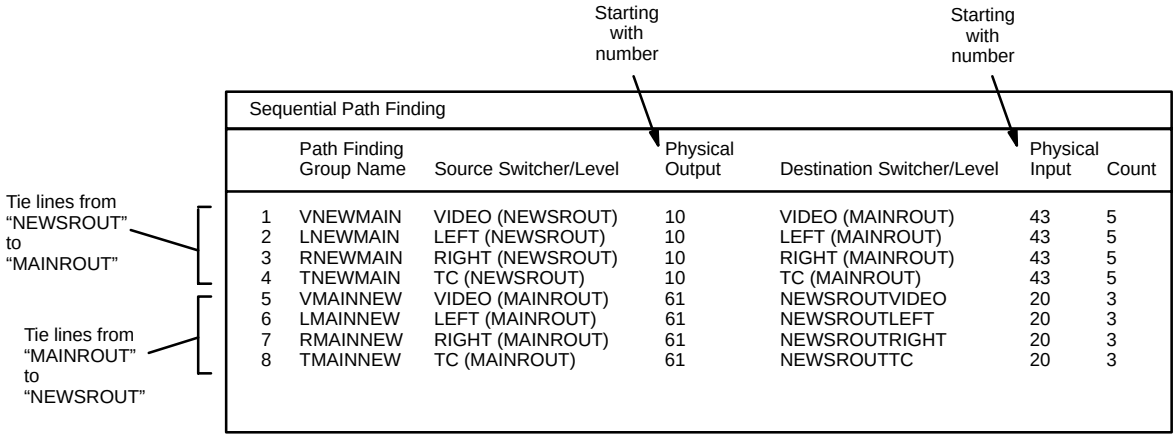
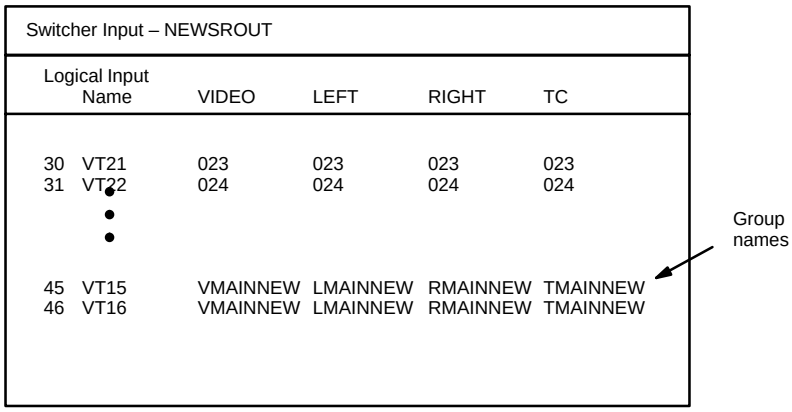


Figure 5–174. *Example of sequential path finding connections between video levels of two switchers. For corresponding tables, see Figure 5–175.*





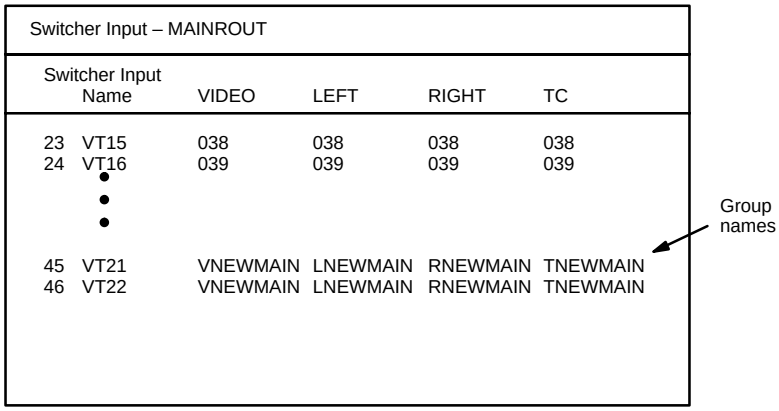


Figure 5–175. *Sequential Path finding and Switcher inputs tables for system shown in Figure 5–174.*

PATH FINDING FOR THREE OR MORE SWITCHERS

Connecting three switchers for path finding purposes possible, with five as the recommended maximum. This is illustrated in Figure 5–176. Notice that no tie lines directly connect switcher “A” and switcher “C.”

In the corresponding Path Finding Data table, there would be descriptions of the tie lines from “A” to “B,” from “B” to “A,” from “B” to “C,” and from “C” to “B.”

> Note: There may be situations where wiring would allow manual selection of alternate routes. In Figure 5–176, this would be the case if video lines also existed between switcher “A” and switcher “C. ” However, the Jupiter path finding software cannot take advantage of such alternate routes; in other words, it does not “switch around busy areas.” Only *one* possible route between each pair of switchers can be described on the Path Finding Data table when the system is configured.

There would also be Group entries in the Switcher Input tables of all three switchers:

— For the switcher “A” table, the names of sources available through path finding would all be referenced to the tie lines from switcher “B” to “A.” This would include the sources wired directly to switcher “C.”

— For the switcher “B” table, the names of sources available through path finding would be referenced to the tie lines from switcher “A” to “B,” or, from “C” to “B,” as appropriate.

— For the switcher “C” table, the names of sources available through path finding would all be referenced to the tie lines from switcher “B” to “C.” This would include the sources wired directly to switcher “A.”

In general, path finding entries are needed only for switchers that are immediately adjacent. The system will use this information to find paths involving one or more intermediate switchers.

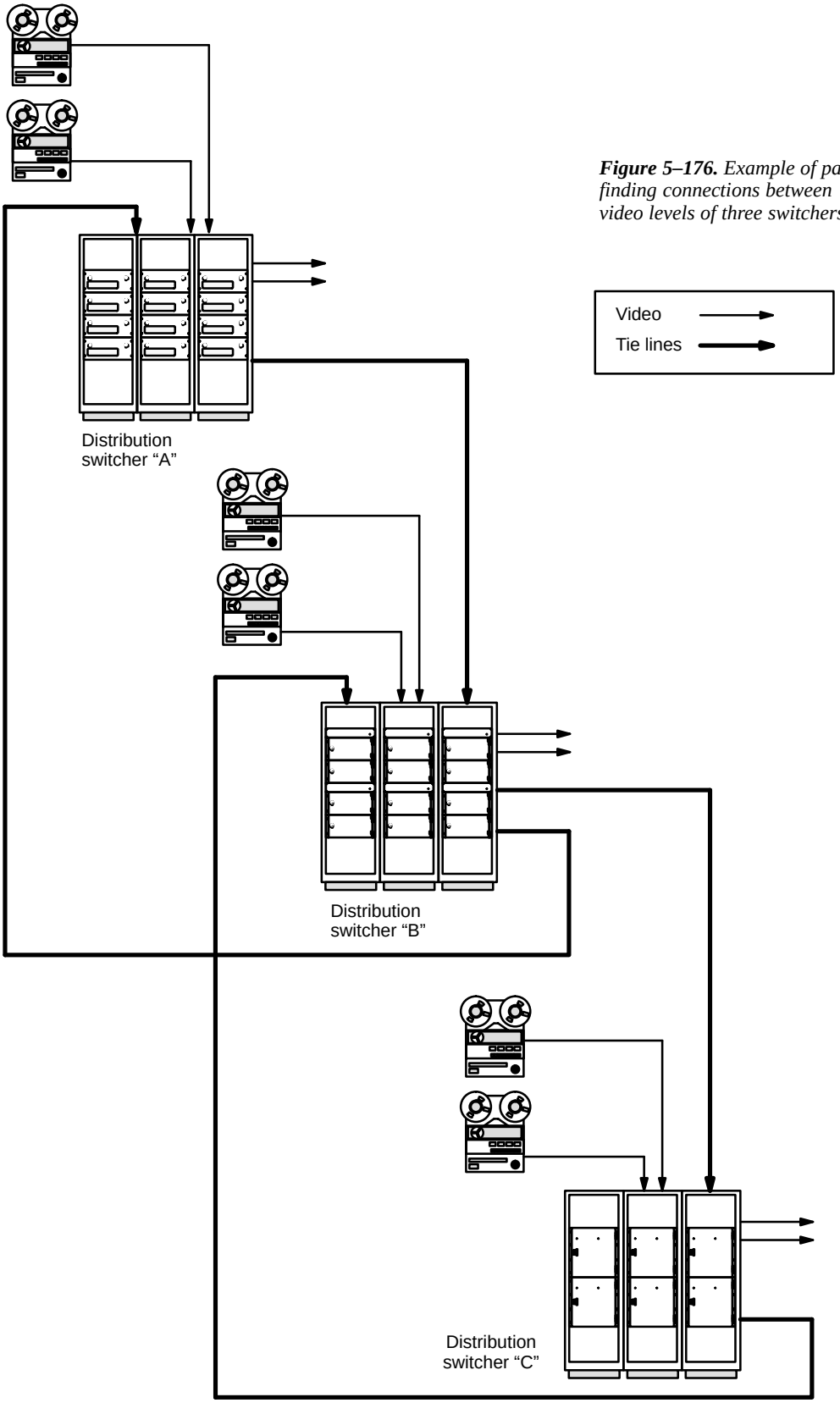


Figure 5–176. *Example of path finding connections between video levels of three switchers.*

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PATH FINDING BETWEEN ANALOG AND DIGITAL EQUIPMENT

Automatic Conversion of Separate Analog Signals to Combined Digital Signals

The pathfinding table can be used with customer–supplied ADCs and DACs to provide automatic conversion between analog equipment and digital equipment (such as VTRs). See Figure 5–177.

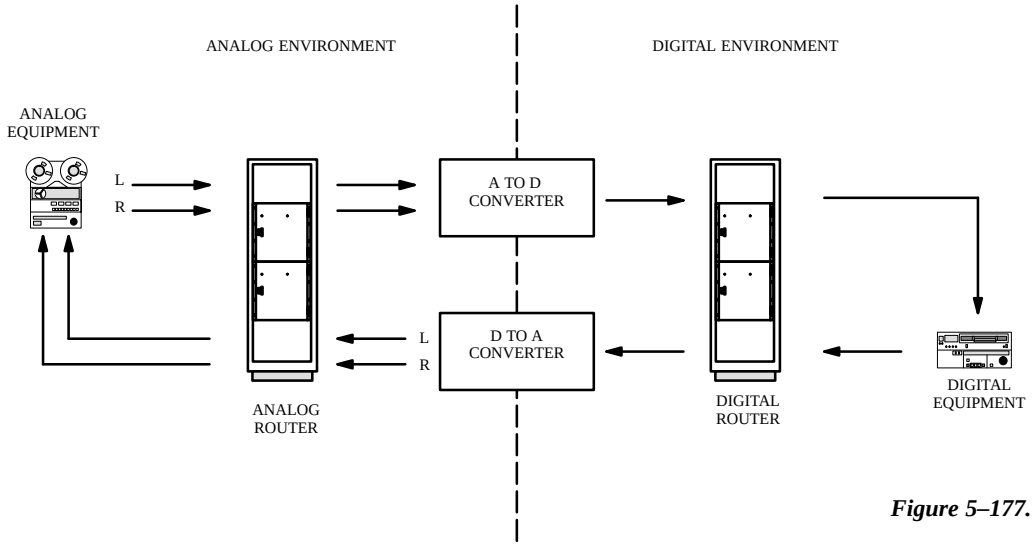

Figure 5–177.

For example, this technique can be used for conversion of analog audio signals, which are carried on two levels of an analog routing switcher, to a single digital audio (AES) signal. The same concept can be applied in an embedded audio environment, where a single digital video stream can be split into an analog video signal and up to four analog audio signals.

It is possible to arrange a system so that the conversion will take place whenever the operator selects a particular source and switches it to a particular destination. For example, in the system shown in Figure 5–178, whenever the operator selects VTR1 as the source for VTR2, the analog audio signals will always pass through an A to D converter; when VTR2 is the source for VTR1, the digital signal will pass through a D to A converter.

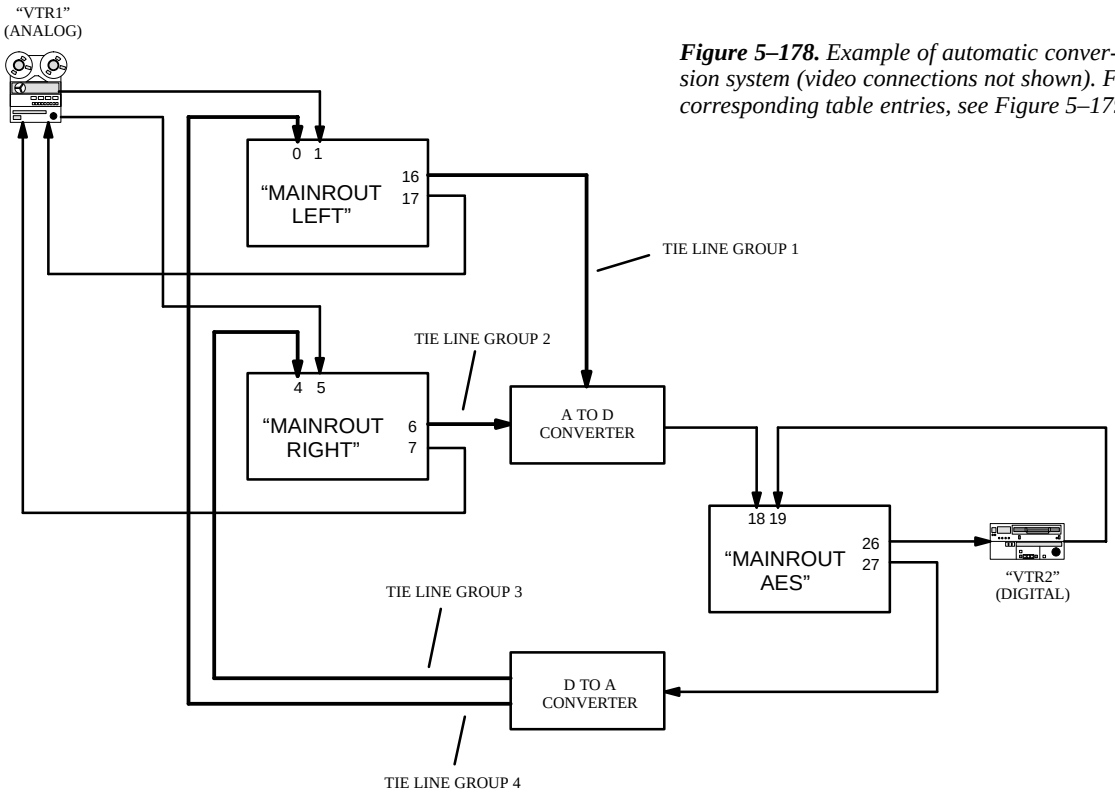

Figure 5–178. *Example of automatic conversion system (video connections not shown). For corresponding table entries, see Figure 5–179.*

This system will require four tie lines, with a dedicated A to D converter connected to the first pair and a dedicated D to A converter connected to the second pair. Each pair is "locked" together, meaning that selection of one result in selection of both.

The corresponding table entries are shown in Figure 5–179.

There are three rules governing this technique:

1. The pathfinding groups to be locked together MUST have identical digital Switcher Names, digital Level Names, and digital Physical Input/Output entries. These groups must be on consecutive rows of the table. Please refer to Groups 1 and 2, as well as Groups 3 and 4, in the Pathfinding Data table.

2. In the Switcher Description table, the "MAINROUT LEFT" level and "MAINROUT RIGHT" level must be controlled by the same VM 3000. The "MAINROUT AES" level may be controlled by another VM 3000.

3. Any levels "sourced" by, in this case, the MAINROUT LEFT and RIGHT levels may not break away. This must be established by unchecking the "Breakaway" box in the CP Level Set.

Switcher Description

	Switcher	Level	VI	RV	MC	Board	#In	#Out	PLvl	Follow Level	Driver	3 LI	3 LO	Option	Audio	DM 400 Off Time
1	MAINROUT	LEFT	☐	☐	☐	VM1	64	64	2		Binary				Left	
2	MAINROUT	RIGHT	☐	☐	☐	VM1	64	64	6		Binary				Right	
3	MAINROUT	AES	☐	☐	☐	VM1	64	64	32		Binary				None	

Sequential Path Finding

	Path Finding Group Name	Source Switcher/Level	Physical Output	Destination Switcher/Level	Physical Input	Count
1	GROUP1	LEFT (MAINROUT)	16	AES (MAINROUT)	18	1
2	GROUP2	RIGHT (MAINROUT)	6	AES (MAINROUT)	18	1
3	GROUP3	AES (MAINROUT)	27	LEFT (MAINROUT)	0	1
4	GROUP4	AES (MAINROUT)	27	RIGHT (MAINROUT)	4	1

"Locked" tie lines through A to D converter

"Locked" tie lines through D to A converter

Switcher Input – MAINROUT

	Logical Input Name	LEFT	RIGHT	AES
30	VTR1	001	005	GROUP1
31	VTR2	GROUP4	GROUP3	019

Group name

Group names

Switcher Output – MAINROUT

	Logical Output Name	Security	S–T	Pass Word	LEFT	RIGHT	AES
1	VTR1				017	007	
2	VTR2						026

Figure 5–179. *Table entries for system shown in Figure 5–178 (video entries not shown).*

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Non–Sequential Path Finding

Figure 5–180. *Non–Sequential Path Finding data table (example).*

Non–Sequential Path Finding

	Path Finding Group Name		Line Number	Physical Output	Physical Input
1	GROUP1	▼	3	83	87
2	GROUP1	▼	4	84	88
3	GROUP2	▼	3	83	87
4	GROUP2	▼	4	84	88
5	GROUP3	▼	3	83	87
6	GROUP3	▼	4	84	88
7	GROUP4	▼	3	83	87
8	GROUP4	▼	4	84	88
9	GROUP5	▼	2	82	20
10	GROUP6	▼	2	82	20
11	GROUP7	▼	2	82	20
12	GROUP8	▼	2	82	20

The path finding software option has already been described in detail, starting on page 5–196.

The Non–Sequential Path Finding table must be used if the tie lines joining the switchers are not wired sequentially, i.e., not wired as blocks. Basically, the table is designed to enter “exceptions” to the Sequential table. For example, a new tie line that falls outside the original sequence can be defined on the Non–sequential table; the only change then needed on the Sequential table would be to increment the “Count” number for the group by 1. (Alternatively, you may prefer to use the Non–sequential table to define *all* tie lines individually.)

An example system is shown on page 5–208, with corresponding tables shown on page 5–209. Notice that the Path Finding Data table, and the Switcher Input tables, must still be used as described in the previous section.

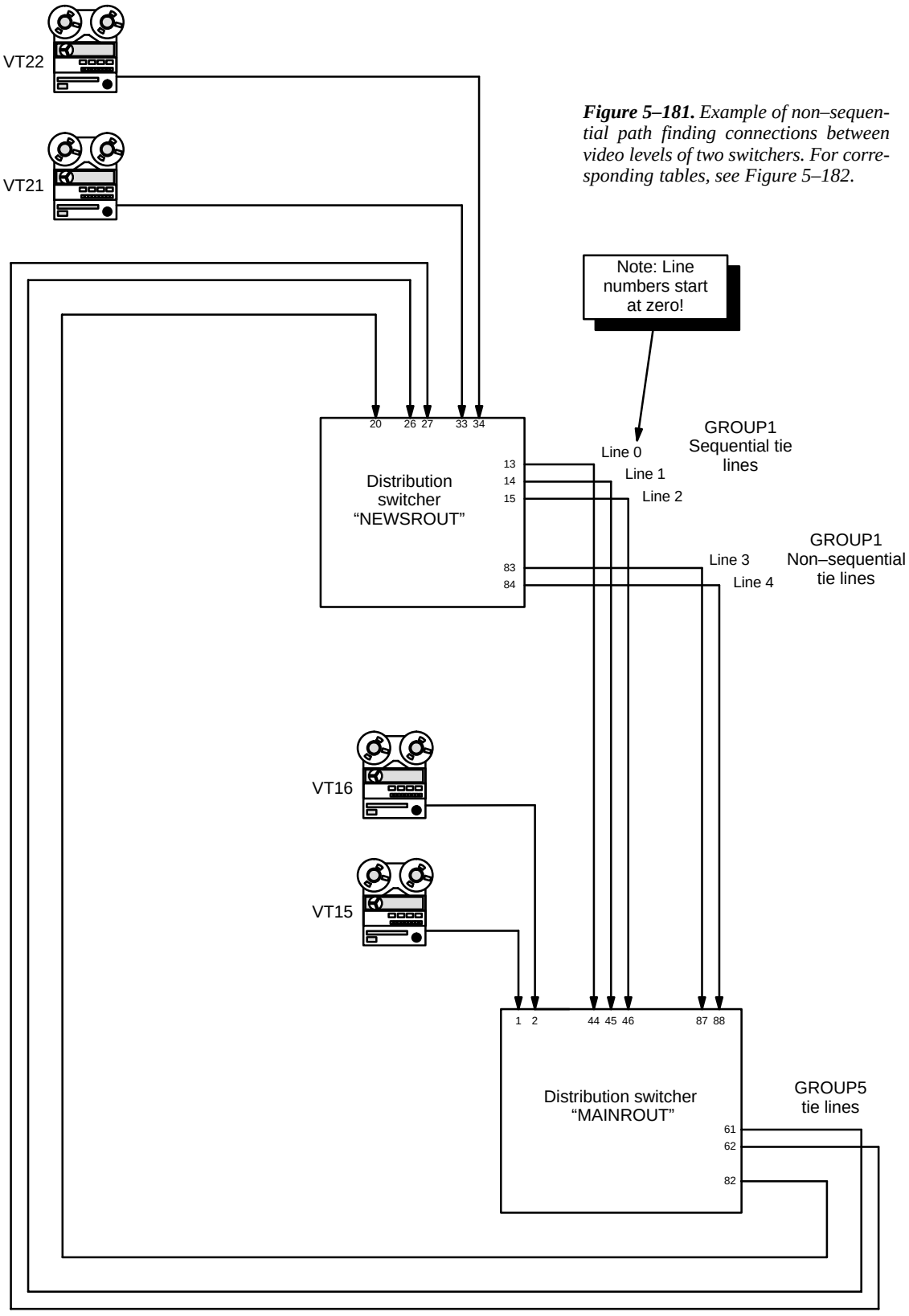

Figure 5–181. *Example of non–sequential path finding connections between video levels of two switchers. For corresponding tables, see Figure 5–182.*

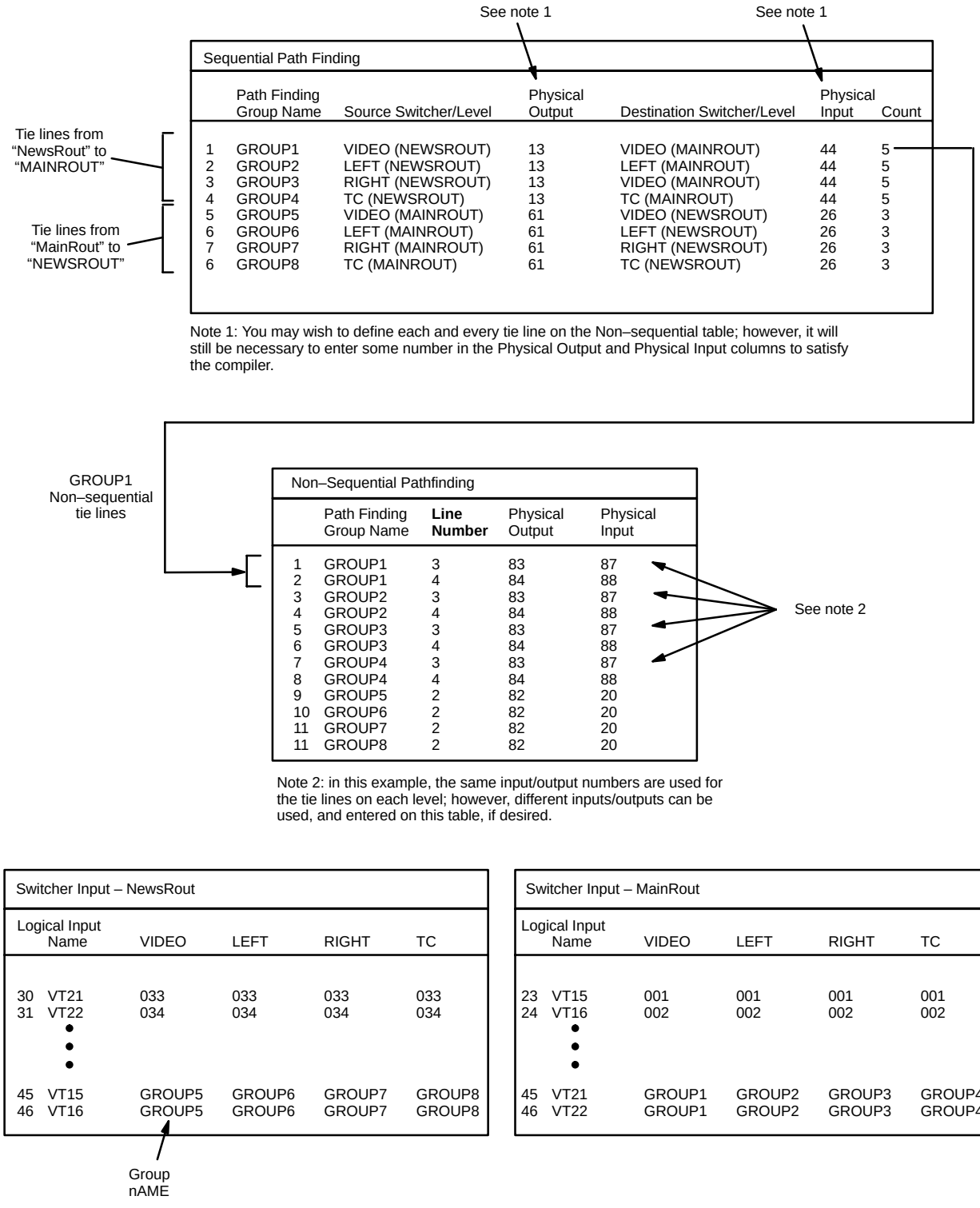

Figure 5–182. *Path Finding and Switcher Inputs tables for system shown in Figure 5–181.*

Exclusion

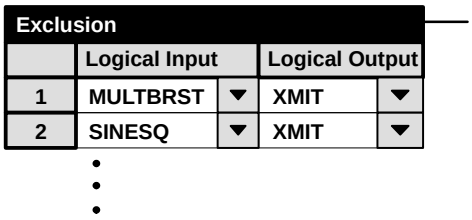

Figure 5–183. *Exclusion data table (example).*

This table can be used to prevent a particular input from being switched to a given output.

Note: No exclusions are allowed on data levels.

Y Line Table (DM 400/400A)

Figure 5–184. *Y Line table (example).*

Y Line Table

	Level	Logical Input	Logical Output
1	FOR (DATA)	VR1–M	VR1–S
2	REV (DATA)	VR1–S	VR1–M
3	FOR (DATA)	VR2–M	VR2–S
4	REV (DATA)	VR2–S	VR2–M

The Y Line table is used only with Venus data routers equipped with DM 400 or DM 400A Data Matrix boards in applications where a VTR can be used as a controller (master) on some occasions and as a tributary (slave) on others.

> Note: This table is **not** used with newer model Venus systems equipped with the DM 400B Data Matrix boards; these boards have software–configurable rear–panel pinout functions and do not require Y–line cables.

Configuration of this table is described at the conclusion of Appendix L, “Special configuration requirements: Venus DM 400/400A data matrix switching.”

Time Standard table

Video Reference Table

These tables are used only for configuration of the CM 4000 System Controller operating with the AccuSwitch application. For more information, see the *CM 4000 Installation and Operating Manual*.