grass valley

Jupiter™
control system

Getting Started Guide

Jupiter Facility Control System Version 6.2
Getting Started Guide
Manual part no. 04-045707-003 Rev E

March 16, 2004

Introduction

Power, flexibility, and reliability—
These words describe the Jupiter
Control System best. Unfortunately,
such features make for a somewhat
intimidating and lengthy manual.
This document is designed to
simplify the set up process—adding
ease-of-use to the long list of Jupiter's
state-of-the-art features.

To the customer:

Someone once said that a picture is worth a thousand words. Concerning the Jupiter set up, this statement is certainly true. The diagrams below should make the hardware set up quite simple.

Figure 1. Connection to Philips/Thomson routing switchers

For jumper and switch setting information, refer to the hardware manual supplied with the switcher.

{ SDR 400
Mars
Venus
Trinix

15-pin CC 2010 Matrix (crosspoint bus) data cable

Binary protocol

Crosspoint bus port

VM 3000 Control Processor

House T/C (Optional)

House sync required for vertical interval switching.

LAN

3
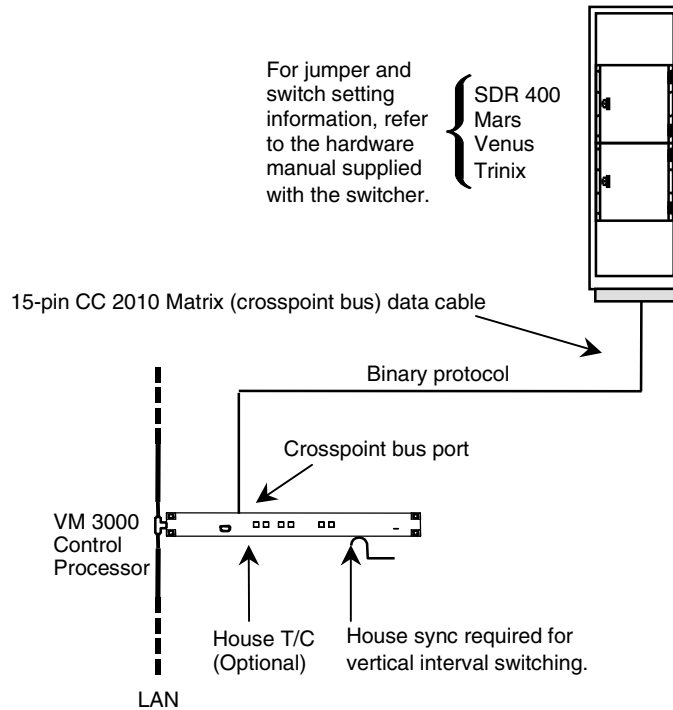
Figure 2. Control panel installation

Each port on a VM/SI 3000 has a recommended maximum quantity of control panels. Refer to section 2 of the Installation and Operating Manual.

CP 3830 Control Panel

CP 3808 with CP 3809 expansion panel

CP 3800 Control Panel

CP 300 Series Control Panel

PS-20

MC 3010/2 Dual 4-Machine Control Panel

◄── **Serial (MPK) Cables**

VM/SI 3000 (VM 3000 shown)

Sync Reference

CP 3020 Pushbutton Control Panel

◄── 12 in. ribbon cable supplied with CP 3021

"Input" connector

CP 3021 Pushbutton Expansion Panel

"Output" connector

"Input" connector

CP 3021 Pushbutton Expansion Panel

Maximum of 4 CP 3021s

CP 3000 Switcher Control with expansion panel

MC 3000 Machine Control with expansion panel

CP 3824 Control Panel

CP 3810 Control Panel

CP 3832 Control Panel

CP 3864 Control Panel

Port connections are defined in the MPK Devices table. Refer to step 10.

──── **9-pin Serial data cable**

──── **LAN cable**

4

Figure 3. PC-to-VM connections

JNS File Server
with network card

10baseT LAN Cable ⟶

Jupiter Network Hub with BNC
and RJ45 connections

10base2 LAN Cable ⟶

VM/SI 3000
Control Processor

JNS Remote PC
with network card

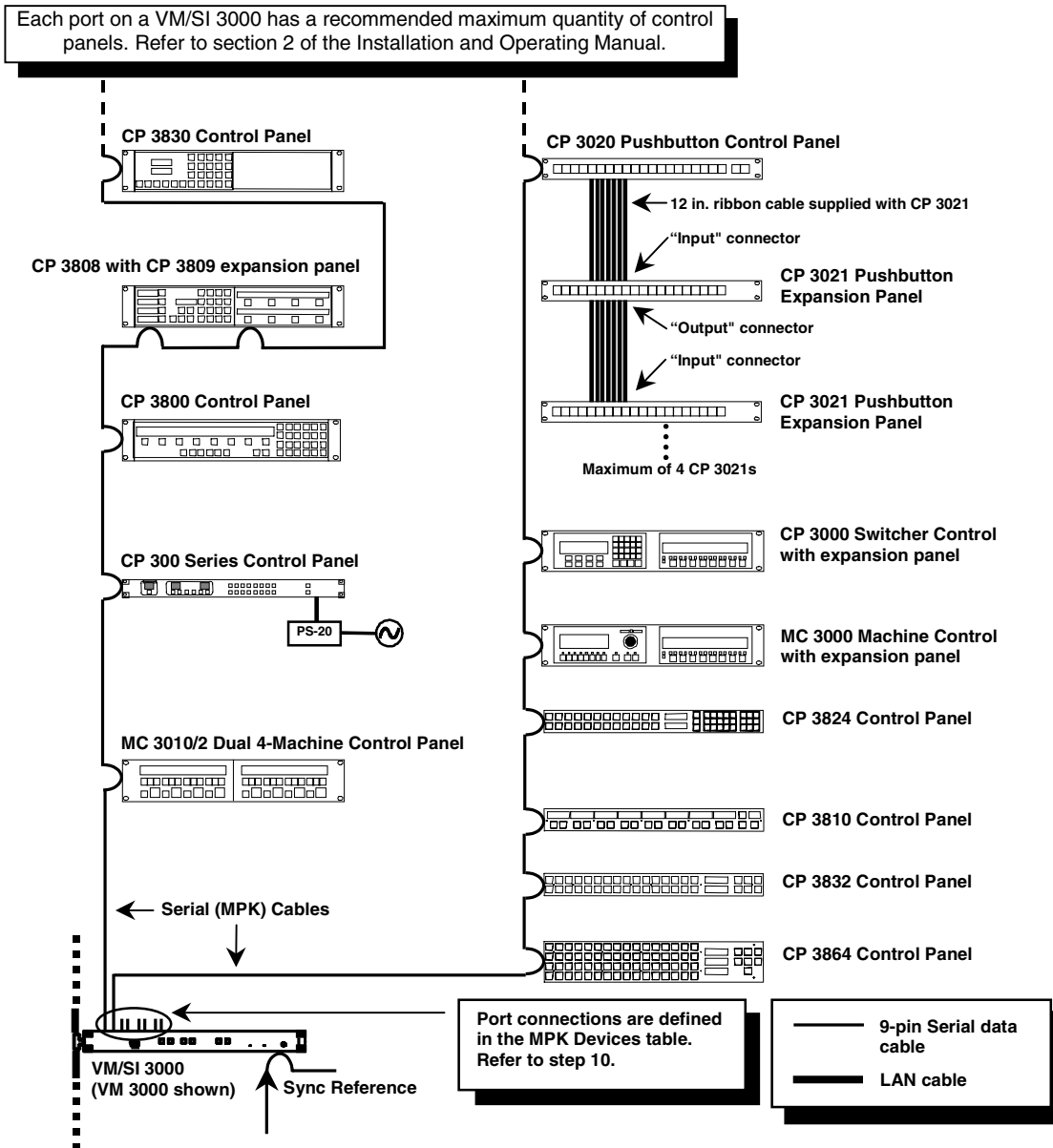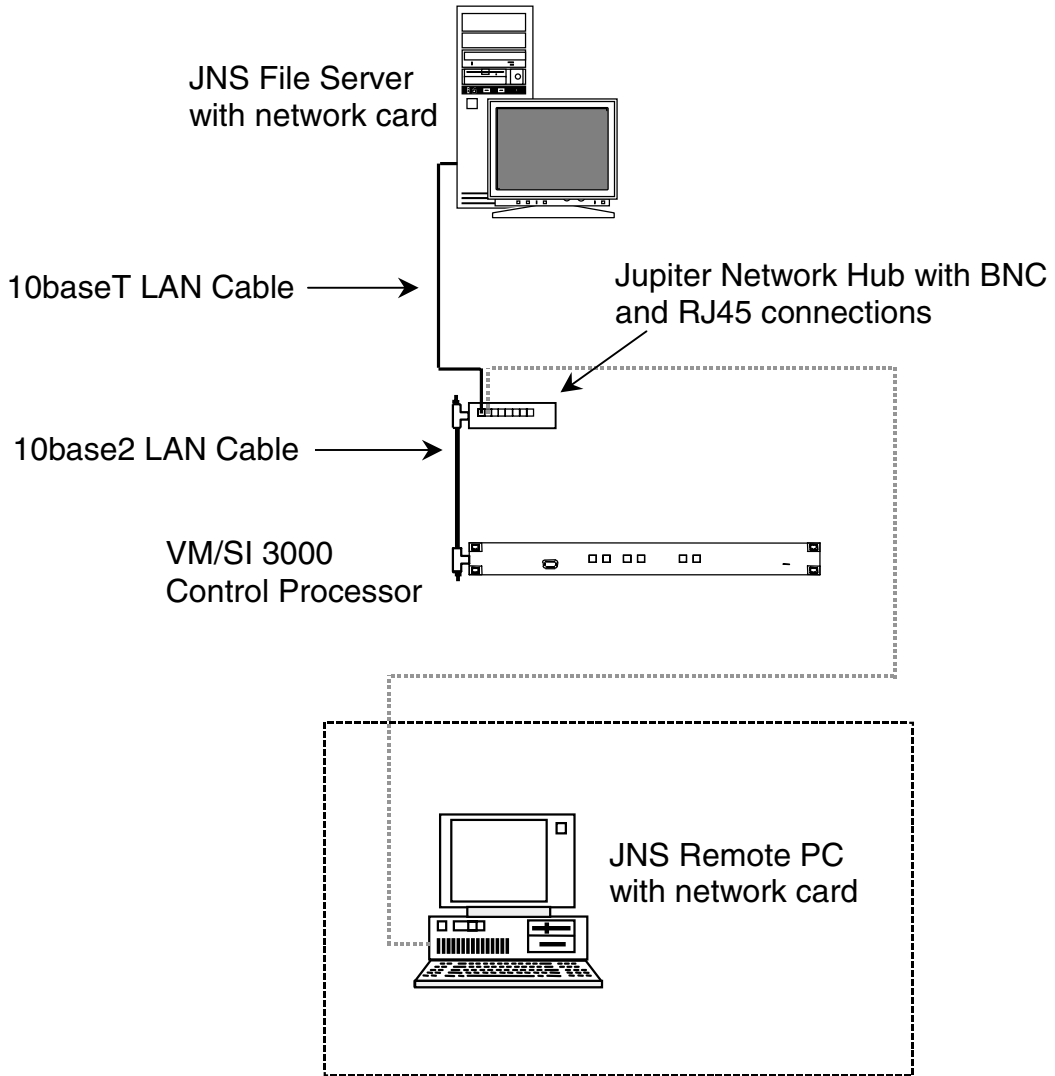### To the customer:

Due to the complexity and power of the Jupiter software, Thomson recommends proceeding in the steps described below. Before proceeding, look through and familiarize yourself with the Jupiter Control System Installation and Operating Manual, part number 04-045707-002. An electronic copy is provided with the Jupiter software.

Remember to program the system in small steps, validate tables, compile often, and regularly backup working configuration sets.

Step 1

If the Jupiter Control System was purchased with a Venus, Triton, or Trinix router, a factory-configured set will be provided. In such a case, the control system has already been programmed with the factory set and will give its user numeric control of the switcher by simply connecting the control panels and routing switcher according to the drawings in the Documentation package. The programming is in flash memory and no Jupiter programming is needed to obtain simple numeric switching. See the Hardware Installation section of the Jupiter manual for details.

Note

Serial data cables for interconnecting control panels can be purchased from Thomson under the following part numbers:

01-048591-001 (1 meter length)
01-048591-004 (4 meter length)
01-048591-008 (8 meter length)
01-048591-016 (16 meter length)
01-048591-032 (32 meter length)

The consumer can also build serial cables. See the Serial Data Cables subheading in Section 2 of the Jupiter manual.

Step 2

If the computer was purchased with a router from Thomson Multimedia Broadcast Solutions, the Jupiter software and factory-configured set will already be installed. If loading Jupiter for the first time, refer to the Field Engineering Bulletin for installation instructions (the computer must be equipped as described under the Equipment Required section of the FEB).

Step 3

Go to the Windows desktop, click "Start > Programs > Jupiter Network Suite." After JNS opens, click the "Connect" button under JNS servers and wait for the computer to complete its connections. Click "JNS Tools" in the toolbar, then click "Configuration Editor." This will open the Jupiter Configurator.

Note

The control system should be operational by making the connections detailed in the factory Documentation package. If for some reason the flash memory has been corrupted, Thomson recommends downloading the factory-configured set at this time to verify basic numeric operation of the control system and router; the system can then be functional for wiring checkout while more detailed sets are constructed. See the following steps to correctly download this set.

At this point, one of four scenarios may have occurred:
1. Jupiter, the file server, and router were purchased through Thomson.
2. Jupiter and the router were purchased through Thomson, but the file server was not.
3. The Jupiter Configurator is being upgraded.
4. Jupiter was purchased without a routing switcher.

Go to the appropriate subheading of this step for the corresponding scenario.

Scenario 1

A custom set should be immediately available on the computer's hard drive. Click "File > Open" to open the factory-configured set. Copy the set to a new file name as described at the end of this step.

Scenario 2

The set will be on a 3.5" floppy disk. To retrieve the set from the floppy, click "Tools > Unzip Configuration Set." This will open a standard Windows Explorer dialog box. In the Toolbar of the dialog box, click the button that has a picture of a folder with an up arrow on it. Continue to click this button until the floppy drive appears in the file selection box. Double click the floppy drive in the main window, then double-click the file that resembles the name of the station. Click "File > Open" to open the factory-configured set. Copy the set to a new file name as described at the end of this step.

Scenario 3

If upgrading, the set used under the old configurator should be immediately available through "File > Open" without unzipping the set.

Scenario 4

An entirely new set will need to be built. In this scenario, continue to work through this Getting Started Guide since it is designed to familiarize the user with the basics of the Jupiter software. However, working through section 5 of the Jupiter Installation and Operating Manual will be necessary to successfully build a set.

Copying a set to a new name

Upon opening the set, copy the set to a new name. To do this, click "File > Save As." Give the set a new name. Thomson recomments naming the set 1 digit higher than the original as in the example below. In this manner, the previous set is still available in case errors are made on the new set.

Example:
Original factory-configured set: **KXYZ-TV**
**New configuration set:**   **KXYZ-TV1**

Repeat this process for each modification session so that the old reliable set will remain available.

Note
Although not recommended, if downloading the factory-configured set is not wanted, skip the next step and proceed to step 5.

Check for errors in the set by clicking "Tools > Validate All Tables." After finishing validation and correcting the errors, open the compiler by clicking "Tools > Compile." Following the compile, return to JNS, click "JNS Applications" in the toolbar, then click "Control Center." When the Control Center opens, the configuration tab should already be selected.
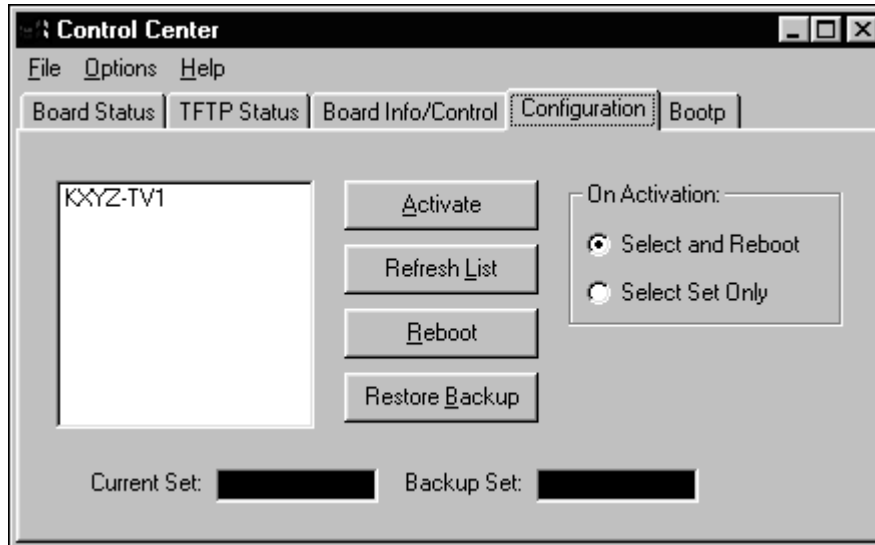
Check to see that the On Activation option is set to "Select and Reboot." Select the new set and click Activate. If the Control Center was open prior to the compile, clicking Refresh List may be necessary if the newly compiled set does not appear. Downloading will begin and a red LED alarm will illuminate on all devices connected to the LAN. Make certain that the control panels are connected to the factory-programmed ports and have the appropriate protocols. See Documentation package included with this document or look in the Serial Protocol table (step 6) and the MPK Devices table (step 10) to see where the control panels are programmed to connect.

The VM 3000 should respond with the alarm LED illuminating and occasionally blinking, indicating the reception of data. After a period of time (approximately up to 1 minute), the control panels should change from the "device not connected" message to valid switcher status.

Once the set has been downloaded, attempt to make a few switches. For control panel operating instructions, refer Section 6 in the Installation and Operating Manual for the particular control panel. If the system does not perform the switches, work through the checklist below.

Troubleshooting Checklist

If the system does not go on-line or switch properly, go through the following checklist and verify the correct settings or connections.

☐ 1. Control panels are connected to the proper ports with the correct protocols as defined in the MPK Devices and Serial Protocol tables.

☐ 2. The control panel cables are pinned correctly (if self-made). Each twisted pair in this cable **must** be individually shielded.

☐ 3. Black burst or sync has been connected to the VM 3000s.

☐ 4. The VM 3000 rotary switches on the top of the board are set to "00."

☐ 5. CC 2010 (crosspoint bus) cables are connected from the VM 3000 to the routing switchers.

☐ 6. The LAN cables are properly connected.
  - All BNC LAN connections are made and terminated with 50-ohm terminators at each end. LAN cable is 50-ohm type cable. Avoid 5 meter lengths. Minimum length should be 20 inches.
  - All twisted pair 10baseT using RJ45 connectors for the CM 4000 are connected to the Jupiter network hub.

☐ 7. CM, VM, and SI addresses match the entries in the Network Description table (see step 5).

☐ 8. Control panel addresses match the entries in the MPK Devices table.

☐ 9. Check the Switcher Description table and verify that the physical level assignment coincides with the levels to which the switchers are set. The switchers will have a sheet attached describing their levels. Also, the Documentation package will describe the levels of the switcher.
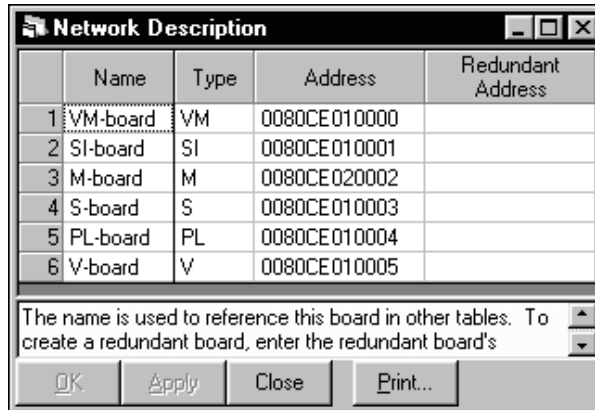
After the set has been downloaded and the system is operational, the Jupiter system is now ready to be customized.

Note

If a Saturn Master Control switcher is present, Thomson recommends programming it after the Venus and Jupiter are programmed and operational. The Saturn requires the switcher to be set up correctly for it to function properly.

Be certain that the copy of the factory-configured set is the selected set. With the mouse pointer, click "Jupiter > Network Description." Skip the Password table for now (if password levels are needed, they can be entered later).

	Name	Type	Address	Redundant Address
1	VM-board	VM	0080CE010000	
2	SI-board	SI	0080CE010001	
3	M-board	M	0080CE020002	
4	S-board	S	0080CE010003	
5	PL-board	PL	0080CE010004	
6	V-board	V	0080CE010005	
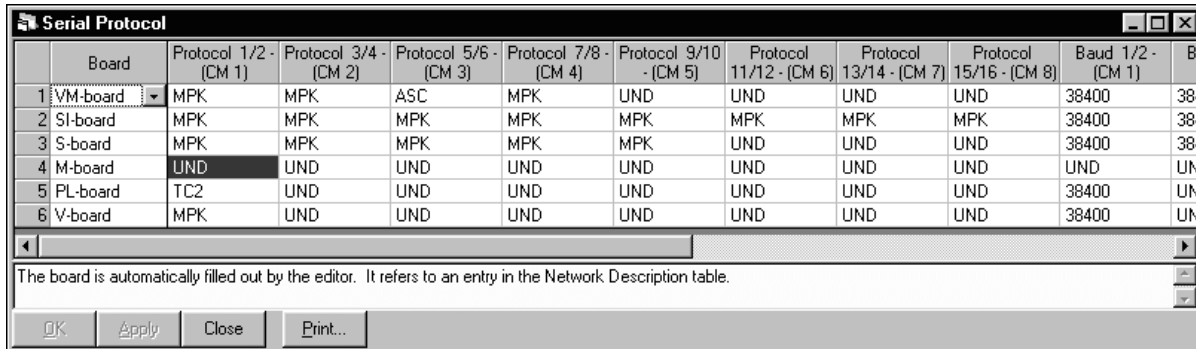
The name is used to reference this board in other tables. To create a redundant board, enter the redundant board's

[OK] [Apply] [Close] [Print...]

At this time, the names of the VM 3000, SI 3000, and CM 4000s can be changed. If changes are made to these names, changes will automatically be made in other tables, such as Serial Protocol, Switcher Description, and MPK Devices. These tables are described later in this document.

Having been entered at the factory, the board addresses should be correct. These device addresses are labeled on the back of the VM 3000s, SI 3000s, and other control boards and should be double-checked for accuracy. **The system will not download without these being correct.** After changes are made and the data is satisfactory, close this window by clicking OK.

Step 6

Next open the **Serial Protocol table**:

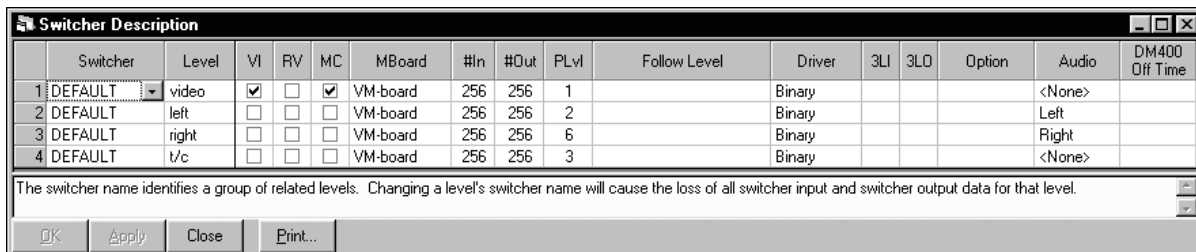| Board	Protocol 1/2 - (CM 1)	Protocol 3/4 - (CM 2)	Protocol 5/6 - (CM 3)	Protocol 7/8 - (CM 4)	Protocol 9/10 - (CM 5)	Protocol 11/12 - (CM 6)	Protocol 13/14 - (CM 7)	Protocol 15/16 - (CM 8)	Baud 1/2 - (CM 1)	B
1 VM-board	MPK	MPK	ASC	MPK	UND	UND	UND	UND	38400	38
2 SI-board	MPK	MPK	MPK	MPK	MPK	MPK	MPK	MPK	38400	38
3 S-board	MPK	MPK	MPK	MPK	MPK	UND	UND	UND	38400	38
4 M-board	UND	UND	UND	UND	UND	UND	UND	UND	UND	UN
5 PL-board	TC2	UND	UND	UND	UND	UND	UND	UND	38400	UN
6 V-board	MPK	UND	UND	UND	UND	UND	UND	UND	38400	UN

The board is automatically filled out by the editor. It refers to an entry in the Network Description table.

[OK] [Apply] [Close] [Print...]

The devices described in the Network Description table appear here also. This table sets up the type of devices that will be connected to the VM 3000, SI 3000, and CM 4000 ports. The factory configuration will probably contain all MPK entries. (MPK = message per keystroke; this protocol is for all Thomson control panels.) Changes can be made at this time, but keeping the system simple at this stage is the best advice. Return later to add more complicated devices. Close this window by clicking OK. See the Serial Protocol subheading under section 5 of the Jupiter manual for more details about this table.

Step 7

Next open the **Switcher Description table**:

	Switcher	Level	VI	RV	MC	MBoard	#In	#Out	PLvl	Follow Level	Driver	3LI	3LO	Option	Audio	DM400 Off Time
1	DEFAULT	video	☑	☐	☑	VM-board	256	256	1		Binary				<None>	
2	DEFAULT	left	☐	☐	☐	VM-board	256	256	2		Binary				Left	
3	DEFAULT	right	☐	☐	☐	VM-board	256	256	6		Binary				Right	
4	DEFAULT	t/c	☐	☐	☐	VM-board	256	256	3		Binary				<None>	

The switcher name identifies a group of related levels. Changing a level's switcher name will cause the loss of all switcher input and switcher output data for that level.

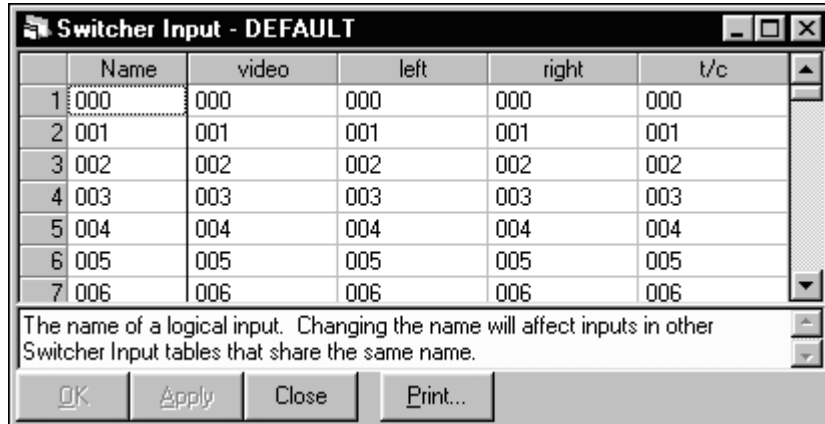[OK] [Apply] [Close] [Print...]

Note

Changing switcher names or level names may cause data in the **Switcher Input and Output tables** to be lost.

The factory-configured set will usually contain all switcher levels with the name of the switcher (i.e., VENUS, TRINIX, TRITON, MARS, etc.), otherwise it will have a switcher name of **DEFAULT**. Once again, making minimal changes to this table at this time is advised. Possible changes may be to switcher names or level names. More involved customizing of this table can be done in later steps. **(Thomson does not recommend changing the switcher names if the Switcher Input and Output tables have already been customized.)** When finished, click OK. See the Switcher Description subheading under section 5 of the Jupiter manual for more details about this table.

Step 8

Open the **Switcher Input table**:

Switcher Input - DEFAULT				
Name	video	left	right	t/c
1 000	000	000	000	000
2 001	001	001	001	001
3 002	002	002	002	002
4 003	003	003	003	003
5 004	004	004	004	004
6 005	005	005	005	005
7 006	006	006	006	006

The name of a logical input. Changing the name will affect inputs in other Switcher Input tables that share the same name.

[OK] [Apply] [Close] [Print...]

The factory-configured set will contain numeric representations for all source designations. Enter the mnemonic names for the sources. Note that a switcher will have several levels associated with it and columns of numbers for each level (the column headings are taken directly from the Switcher Description table). These are "crosspoints-to-switch" numbers and can be modified at this time if necessary.

Example:

Name	video	left	right	sdv	aes	t/c
1 BARS	000	000	000	000	000	000

In this example, "BARS" will switch crosspoints 000 for all the levels.

	Name	video	left	right	sdv	aes	t/c	
1	BARS	000	000	000				

In this example, "BARS" will only switch crosspoints 000 video and left and right audio since no entries were made to SDV, AES, and time code.
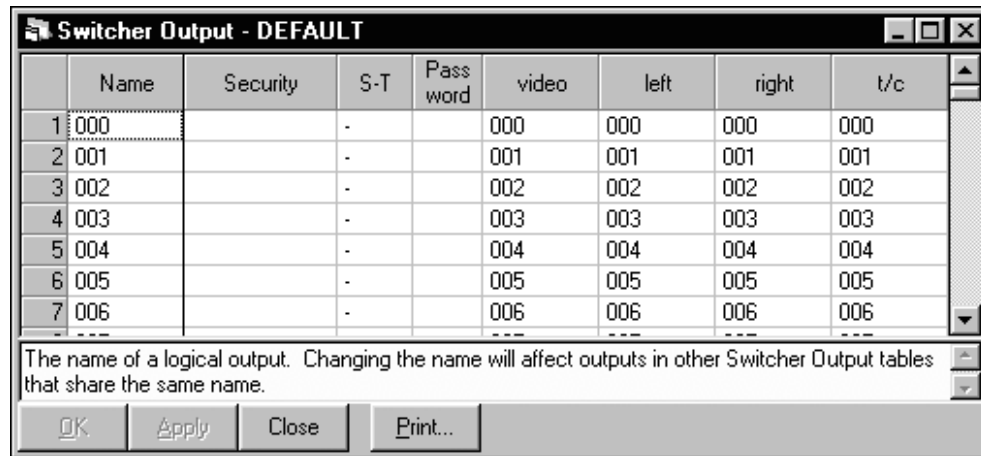
Example:

	Name	video	left	right	sdv	aes	t/c	
1	BARS	000	000	000	000	000	030	

In this example, "BARS" will switch crosspoints 000 for all levels except time code, which will switch input 030 crosspoint.

Step 9

Open the **Switcher Output table**:

	Name	Security	S-T	Pass word	video	left	right	t/c	
1	000		-		000	000	000	000	
2	001		-		001	001	001	001	
3	002		-		002	002	002	002	
4	003		-		003	003	003	003	
5	004		-		004	004	004	004	
6	005		-		005	005	005	005	
7	006		-		006	006	006	006	

The name of a logical output. Changing the name will affect outputs in other Switcher Output tables that share the same name.

[OK] [Apply] [Close] [Print...]

Note that the column headings here (except for Name, Security, S-T, and Password) were also taken directly from the Switcher Description table. As in the previous table, assign mnemonic name associations to the destinations. At this time, leave the security board S-T and password entries blank in order to minimize the complexity at this stage. If an output password protection is needed, it can be added later. Refer to section 5 of the Jupiter manual for more details. Click OK to exit this screen.

	Name	Security	S-T	Pass word	video	left	right	sdv	aes	t/c	
1	VTR1		-		000	000	000			000	

In this example, "VTR1" will only receive video, left audio, right audio, and time code.

Example:

	Name	Security	S-T	Pass word	video	left	right	sdv	aes	t/c	
1	MON1		-		000						

In this example, "MON1" will only receive video since no entries were made to left, right, SDV, AES, and time code.

Step 10

If control panels other than CP 3000s or CP 3800s are being used, refer to the subheading in section 5 of the Jupiter manual pertaining to Control Panel Sets. Upon completing the input, output, and level Control Panel Sets, return to step 10 and continue.

Open the **MPK Devices** table:

MPK Devices

	MPK Devices	Type	Expansion	Pass word	Board	Port	Address	Input Sets	In Panel	Output Sets	Out Panel	Level Set	Override Set	Sequence Set
1	CP-3000	CP-3000	☑		VM-board	1	00000001	NUM-INP		NUM-OUT		NUM-LEV	NUM-OVE	NUM-SEQ
2	VC-3020	VC-3020	☐		V-board	1	00000002							
3	CP-3800	CP-3800	☐		VM-board	2	00000003	3800-INP		3800-OUT		3800-LEV	3800-OVE	3800-SEQ
4	ASCII	Serial	☐		VM-board	5		ASCI-INP		ASCI-OUT		NUM-LEV		

The name is used to reference this device in other places (including this table). The name should be unique among all devices in this table.

OK   Apply   Close   Print...

The factory-configured set will contain all control panels with numeric input, output, and level sets, which directly refer to the numeric entries in the Switcher Input and Output sets as well as the levels defined in the Switcher Description table. At this stage, setting up only a few control panels is recommended, preferably at least one of these being a control panel that can control the entire matrix, such as a CP 3000, or a CP 320. Print the contents of the MPK Devices table (see "Printing" in section 5 of the manual), then delete the control panels that will not be programmed—such as those for machine control and tally. Clicking the row number in front of the control panel will select the entire row. Press Delete.

Two reasons for approaching the programming process this way are: First, setting up a minimal amount of data for the first encounter with Jupiter will minimize troubleshooting and also make it easier for Thomson technical support to help, should problems arise. Second, control panels using numeric inputs and outputs will not compile if the Switcher Input and Output tables have been changed to mnemonic designations in the Switcher Input and Output tables.

After deciding on which control panels to set up for this stage, rename them by double-clicking the device name to be changed if desired. Enter the new name, naming them for the particular location where they will be in service. For example, if a panel was designated to be used in Studio A, naming it "STUDIO" may prove to be useful. For device type, move to the device type box, click the drop-down menu, and make the appropriate selection from the list.

The next box ("Expansion") is for control panels with an expansion panel; check the box if this particular type is present, or leave it unchecked for all other panels.

Assign a VM 3000, SI 3000, or CM 4000 and a port to which this panel will connect; the control panel must be physically connected to the port being assigned. Also, note that this may be different than the port to which the panel is connected for the factory-configured set. If so, proper reconnection of the control panels must be made prior to downloading this set. The port also must be set up to be an MPK port in the Serial Protocol table.

Assign the appropriate input, output, and level sets. Each control panel can use a different set or use a common set depending on the desired customization of the access to the routing switcher. Do not program Sequence Sets or Overrides at this time—this can be done later if necessary.

Note

The control panels might now be assigned to different ports than they were with the factory configured set. The correct connections need to be made if this applies.

Note

Different types of control panels cannot use the same Input and Output sets. CP 3000 and CP 320 panels must have different set types created for them. However, copying a set and modifying it to match the panel can save much time. Refer to section 5 of the Jupiter manual under "CP Input Sets—Copying a CP Input Set for Use with a Different Panel Type" for more information.

Note

The above description applies to CP 3000-type panels. Refer to Section 4 of the Installation and Operating Manual for specific control panels.

Step 11

At this point, enough data is available for the set to provide functional switcher control even though many of the other tables have not been completed. Check for errors by selecting "**Tools > Validate All Tables**," and correct any errors that appear. Now compile the set by clicking "**Tools > Compile**." The compiler will give messages about any problems that it might find while trying to compile. If the *compiler* identifies errors, fixing the problem is imperative for a successful download even if validating the tables identified no errors. With a little patience, the errors can be corrected and a successful compile can be made; this step is one of the main reasons for keeping the programmed data simple to this point.

Step 12

Now that the set has been compiled, download the set and check that proper crosspoint switches are made for what has been programmed. Return to the Jupiter Network Suite and click "JNS Applications in the toolbar, then "Control Center." The screen will look like that in step 4.

Refer to step 4, which describes proper downloading, including the checklist to go through if the download is not successful (see CP 3000 operation in the Jupiter manual for additional help on control panel operation). The correct status should be returned and everything should be functional to this point if programmed correctly.

Note
>
> If obtaining a successful download was not possible and the factory-configured set downloaded and was functional, then the recently built set has a problem. It may be a problem that was not detected by the validation process or the compiler. Troubleshooting the data entered is necessary and the set must be validated by a successful download indicating that everything is working before programming any more data. At this stage, troubleshooting will be much easier. If the factory set has not been downloaded, Thomson recommends performing a download with the factory set and verifying that all the hardware is functional. Refer to steps 1 through 4.

Note
>
> In some cases, it may be necessary to connect a probe terminal to the VM 3000 to aid customer service in troubleshooting. See Appendix C of the Jupiter manual ("probe connections and protocol").

Step 13

Congratulations! The set is working and ready to have additional programming. If additional programming is desired, copy the newly compiled and downloaded set and name it one digit higher.

Example:

New set:	**KXYZ-TV1**
Copy of the new set:	**KXYZ-TV2**

Note

Using a modular means of programming is extremely important. Although set "KXYZ-TV1" works, leave this as is and add an additional block of data to "KXYZ-TV2," which is an exact copy. In this manner, set KXYZ-TV1 is readily available, and only the changes between KXYZ-TV1 and KXYZ-TV2 need to be adjusted for troubleshooting. For each programming session, validate, compile, download, and verify that the set works, then copy the set to the next highest number. In this manner, the highest number is always the most current set, and the next to highest number contains programmed data that functions properly. Therefore, any problems are narrowed down to the block of data entered in the last revision. With this concept in mind, keeping each block of data small makes troubleshooting easier. After many revisions have been made (up to "KXYZ-20"), deleting the first 15 versions and starting set naming back at "KXYZ-TV" is fine as long as this data has been validated, compiled, and downloaded. Then, proceed in this manner copying to a higher digit every time changes or additional data is entered.

Step 14

Now that the modular style of programming is a familiar method, Thomson suggests the following steps:

Select set "KXYZ-TV2" and add all the CP 3000 type panels, validate all tables, compile, and download. Next, add CP 300 series panels and associated sets. Each time, remember to copy to a higher set. After all control panels are programmed and functioning, the next step might be to program the Machine Control functions. This orderly method of programming will be the most efficient in terms of troubleshooting and making the system operational. As the programming gets more complicated, refer to the Jupiter manual often.

As noted earlier, organize the programming so that the switcher and machine control systems are operational and thoroughly examined before programming the Saturn. See the Saturn manual for details about Saturn tables.

For Additional Help

North America Parts and Service

Please call toll-free **1-800-547-8949**
You will be forwarded automatically to the parts
and service representative nearest you.

International Parts and Service

Contact your local THOMSON representative.