

Field Engineering Bulletin  
071827508 August 20, 2008  
Reference ECO: 669Q

# Jupiter / Saturn / AccuSwitch Release v7.6.1

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## Applicability

This release applies to Jupiter/Saturn systems with VM/SI-3000 Control Processors. It also applies to systems running JupiterXPress or AccuSwitch deterministic router control software on the CM-4000 Control Module.

**NOTE** This release supports English versions of Windows XP Professional operating systems only.

ESLAN machine control interface to Thomson Broadcast Automation and CP-3200 control panels are not supported on Windows 2000 systems and thus not supported in release 7.1.0 and later releases.

# Purpose

## 7.6.1 Release

### AccuSwitch (CM-4000 systems)

- Added support in AccuSwitch for the new Jupiter panels (L32, L64, LD4, LD16, S25, S50, S100, SXY). These panels are sometimes referred to as the “JEP series” panels.

### Bug Fixes

See page [6](#).

### Known Issues

See page [6](#).

## 7.5 Release

### AccuSwitch (CM-4000 systems)

- Path finding is now supported, including path finding for Venus and Concerto data routers. See page [7](#).
- Serial bus protocol is now supported. See page [9](#).

### JupiterXPress (CM-4000 systems)

- Lawo protocol is now supported. See page [10](#).

### Bug Fixes

See page [32](#).

### Known Issues

See page [33](#).

## 7.4.1 and 7.4 Releases

For information about the 7.4.1 and 7.4 Releases, please refer to FEB 071827505.

## 7.3.2 Release and Prior

For information about Release 7.3.2 and prior, please refer to FEB 071827503.

## Corrections

Error corrections are provided by this release, as described in the Release Notes section beginning on page 6. These notes should be reviewed before installing the software.

As with any software package, some limitations remain. Many of these are known and are detailed in this document and other documents referenced. Please note that the description of known limitations is not an agreement to correct them.

## Upgrade Caveats

During this upgrade:

- All switcher status will be lost. To restore status, make note of the status of all outputs before starting the upgrade and re-Take all switches. Or, you can use Router Save/Restore to restore status on TGV routers.
- All memory on all Jupiter control system boards will be cleared due to a mandatory “pmemclear” subsequent to installation and download.
- All configuration sets will need to be recompiled.

## Equipment required

Grass Valley-supplied PC 3000 (F7-029500-121) file server; or, PC with minimums as follows:

- Intel Pentium 700 processor with 256 K L2 cache
- 512 Mbytes RAM memory
- 150 Mb free disk space
- 32x CD-ROM drive

- Intel or 3Com Ethernet LAN card
- Media converter or hub if needed to connect Ethernet LAN card to CM-4000 or to Jupiter VM/SI-3000. (The CM-4000 has a 10/100baseT rear panel connector; the VM/SI-3000 has a 10base2 rear panel connector.)
- Keyboard / mouse
- 15-inch monitor capable of 1024 x 768 x 256 operation
- 1 or 2 serial ports

## Software required

Installation of this release is only supported on the English version of:

- Windows XP Professional SP2 or later with Windows firewall disabled.

## Materials supplied

Jupiter Software Upgrade:

JUP-SW 2500 (Jupiter LE for VM/SI-3000), or  
JUP-SW 3100 (JupiterPlus for VM-SI-3000), or  
JUP-SW 3500 (Jupiter XPress for CM-4000):

<u>Qty</u>	<u>Description</u>	<u>Part number</u>
1	Software, CD , Jupiter v7.6.1	063809310
1	Kit, Documentation CD	721007000
1	Field Engineering Bulletin	071827508

-OR-

Jupiter Software Upgrade:

JUP-SW 4000 (Jupiter AccuSwitch for CM-4000):

<u>Qty</u>	<u>Description</u>	<u>Part number</u>
1	Software, CD , Jupiter v7.6.1	063809310
1	Software, CD, NetConfig 2.0.9 and L-S Panels 1.0.1 Code	063829600
1	Kit, Documentation CD	721007000
1	Field Engineering Bulletin	071827508

## Optional materials

- Application specific software licenses (refer to Section 1 of the Jupiter Installation and Operating manuals for more information)
- Jupiter VM/SI-3000 Installation and Operating Manual (VM-3000), part no. 0718305xx.
- Jupiter CM-4000 Installation and Operating Manual, part no. 0718261xx.
- L-S-GUI (JEP) Series Jupiter Control Panels Manual, part no. 0718536xx. (Manual available online-contact Technical Support for more information.)

# Release notes

## 7.6.1 Release

### Enhancements

1. Added support in AccuSwitch for the new Jupiter panels (L32, L64, LD4, LD16, S25, S50, S100, SXY).

### Known Problems

1. AccuSwitch only supports 4096 entries per input/output category.
2. CR 79026: New Jupiter panels and ESLAN GUI panels do not indicate that a switch could not be done when paths are full.
3. CR 92045: AccuSwitch does not provide lock/protect status on destinations that have not been switched resulting in the possibility of not being able to unlock/unprotect a destination that has not been switched.

### Problems corrected in release 7.6.1

1. CR 91533: Corrected an issue where restoring crosspoints through Router Save Restore would not switch and status correctly on Jupiter Xpress systems controlling 3rd party routers over serial.
2. CR 90334: Corrected a problem in AccuSwitch where some switches from an ESLAN GUI panel would not receive status updates properly.
3. CR 90655: Corrected a problem with the zip and unzip utilities used in the Jupiter Configurator to handle large files.
4. CR 90013: Corrected a problem on AccuSwitch where the Native Protocol over IP would not startup properly and allow connections.
5. CR 89813: Corrected a problem on Jupiter and Jupiter Xpress where some pathfinding takes would status asterisk on the control panels.
6. CR 94673 Corrected an issue where the redundant CM-4000 does not mark tie-lines as released.

# 7.5 Release

## Enhancements

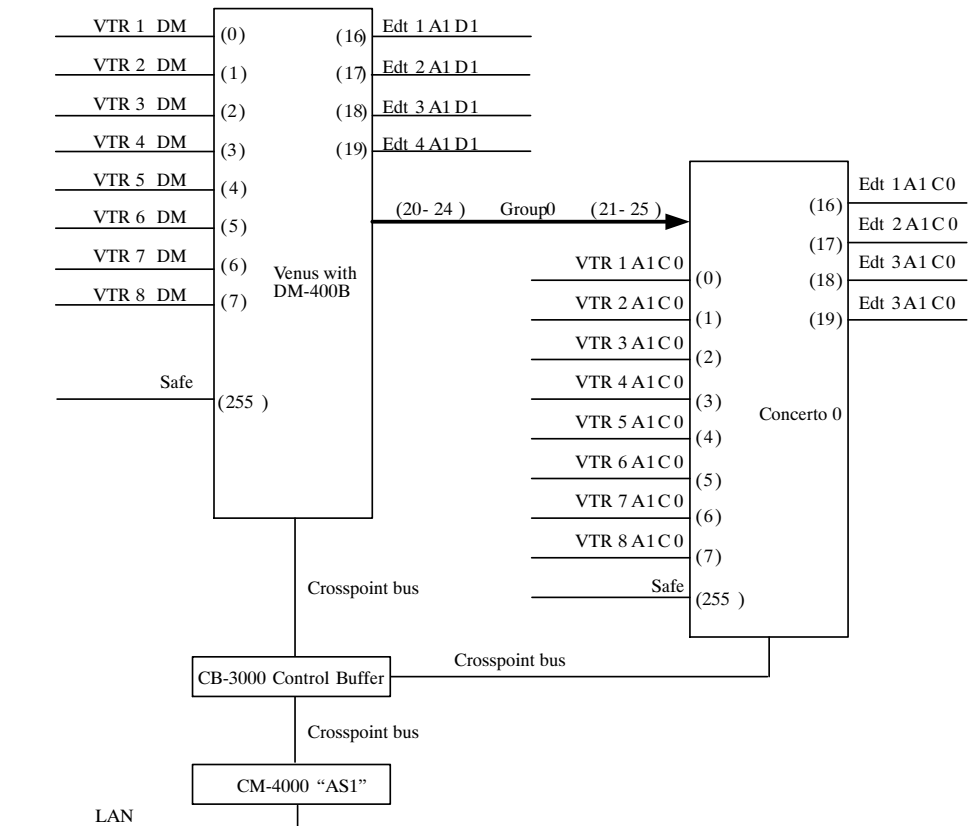
1. CM-4000 controllers running the Accuswitch application now support two data router models:

- Venus data routers with DM-400B Data Matrix boards, and
- Concerto data routers.

In addition, Accuswitch will now support path finding (tie line operation) between any combination of Venus DM-400B and Concerto data routers, up to a maximum of three routers.

For example, Figure 115 shows a single CM-4000/ Accuswitch controlling a Venus and Concerto connected with five tie lines. All cables are 1-1 (pin-to-pin) including the tie line cables.

Figure 115.



In this example, a Venus source data router has several data sources (VTR1DM – VTR8DM) connected to ports 0-7. There are several destinations (Edt1A1D1 – Edt4A1D1). The source data router is also connected to a destination data router (Concerto 0) via five tie lines (Group 0). This gives the system the ability for the destination router to “pull” or get data sources that are connected to the Venus through to the destination data sources Edt1A1C0 – Edt3A1C0 on the Concerto. The return data path is automatically switched in the reverse direction.

There are several constraints necessary when dealing with data routers and path finding:

- a. The software on Accuswitch will support only the Venus DM-400B and the Concerto Data Routers.
- b. Data routers that are part of a path must be connected to CM-4000 controllers defined on the Network Description table as Type “AS” (Accuswitch) boards.
- c. Because data routers require a switch to be made in both directions (for the forward and return data), the physical I/O numbers must be defined in both the input and output tables.
- d. The user must define a “SAFE” input for the data router level. This is used with the “Enforce” or “Advise” features.
- e. The maximum number of “hops” in a data router path finding path is 2. For example, one Venus could be connected to a Concerto, which in turn could be connected to a second Concerto.

Accuswitch also has the ability to lock or protect a data router output. This feature will also lock the reverse output which protects or locks the data path in both directions.

For additional information concerning Jupiter control of data routers and pathfinding, please refer to the Jupiter CM-4000 Installation and Operating Manual, part no. 071826104.



2. AccuSwitch now supports serial bus control of the following routers:

- Alpha Image
- Datatek
- Horizon
- Nexus
- Nexus Star
- NVISION (using ESbus protocol)
- Triton (Network Systems)
- Utah Scientific (1200 baud)
- Utah Scientific (9600 baud)

In addition, AccuSwitch now supports the following serial protocols:

- ESbus (EScontrol)
- Grass Valley Native

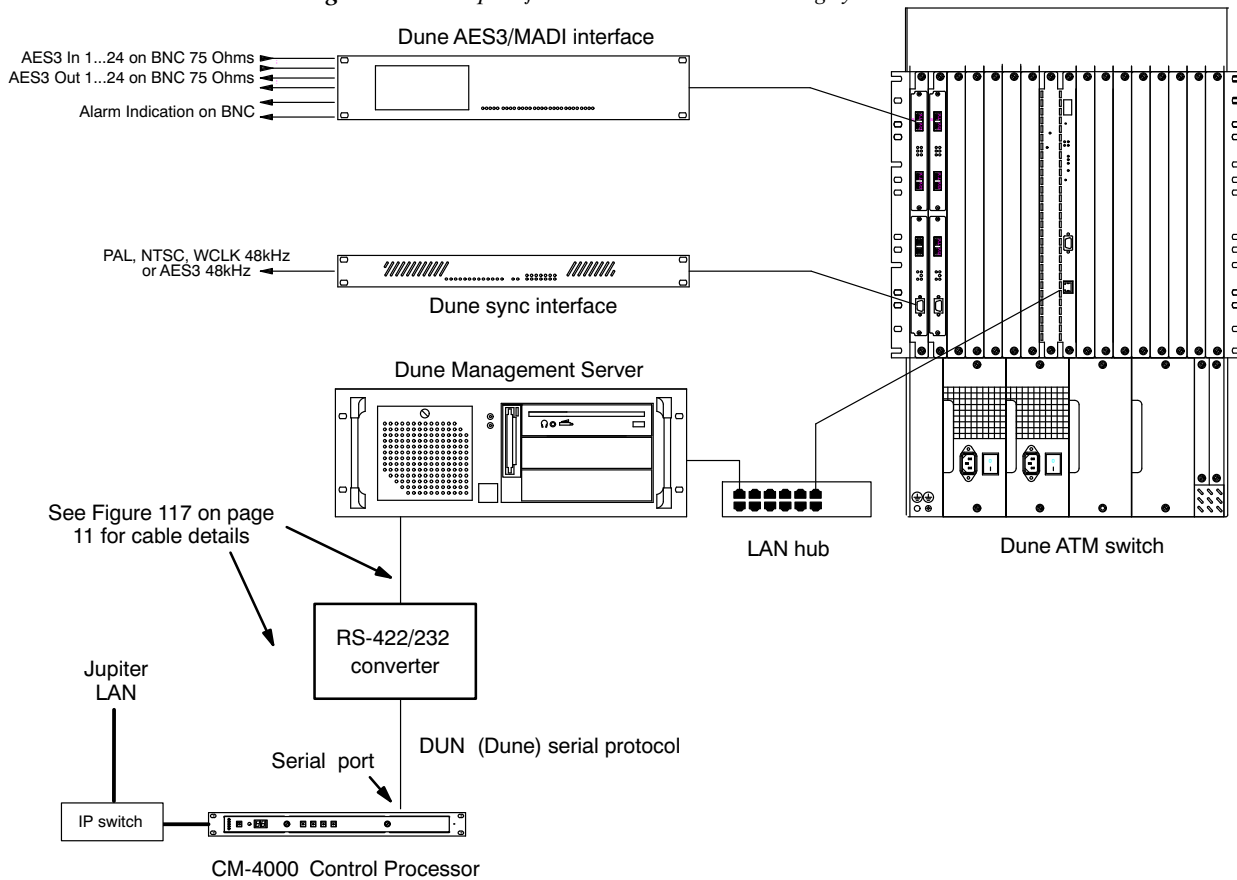
3. Lawo/Dune digital audio routers can now be controlled by a CM-4000 running JupiterXPress. CM-4000s running AccuSwitch and VM/SI-3000s cannot be used. Only one Dune router can be connected per CM.

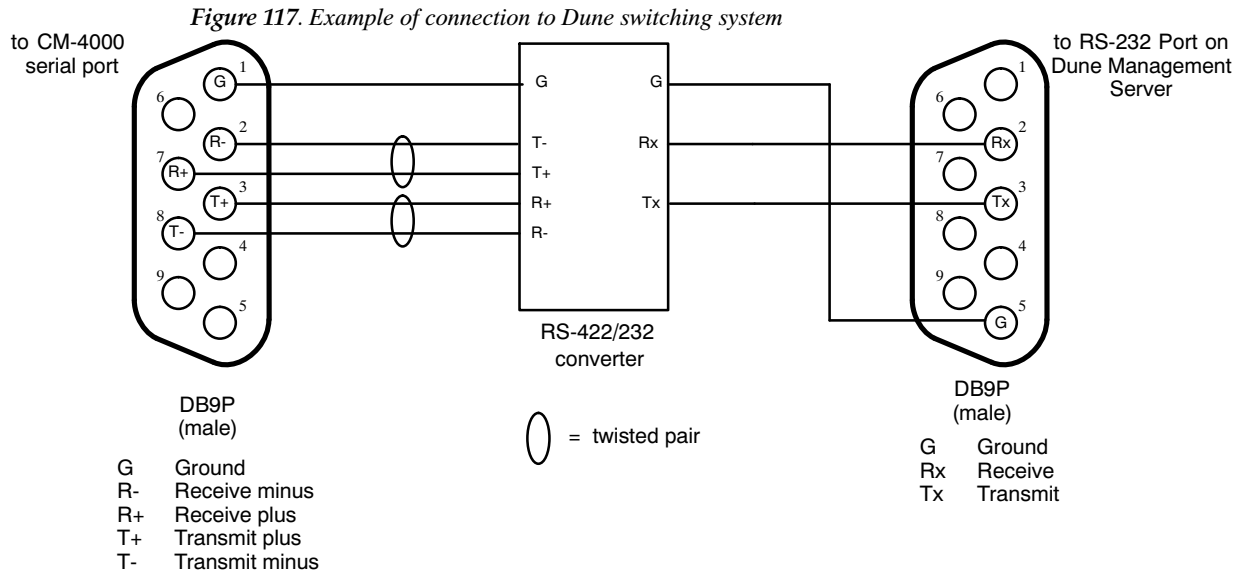
### Hardware installation

Hardware connections are shown in Figure 116.

Information about installation and configuration of the Dune switcher itself is contained in the Dune Installation manual.

Figure 116. Example of connection to Dune switching system





### Jupiter/Dune Software Configuration

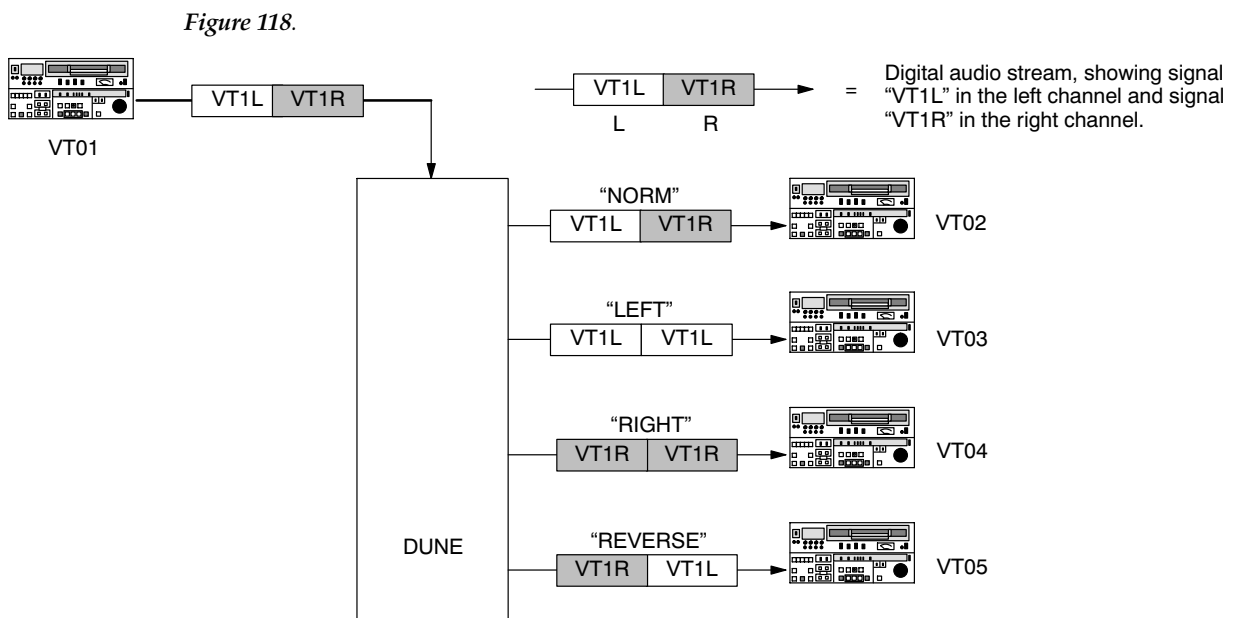
The CM-4000 connected to the Dune router must be configured using the Serial Protocol table, with "DUN" protocol selected for the appropriate serial port.

Additional configuration steps will depend on whether or not incoming stereo pairs will always be switched together. This is an important difference because it will greatly affect entries to the Switcher Description table and other tables.

### Switcher Description Table

Dune switchers controlled by Jupiter have three possible configuration methods: 1) Mono, 2) Always Stereo Pair, or 3) Stereo with Left/Right/Reverse Switching. The following discussion compares the three methods, beginning with an example system and a switching scenario.

The system shown in Figure 118 has four VTRs with digital audio connections through a Dune router. The objective in this example is to perform a "Normal," a "Left," a "Right," and a "Reverse" switch into the three destination VTRs.



Using this scenario as the desired result, the three configuration methods can be compared as follows:

**Method 1: Mono configuration.** This method requires only 1 Level column to be filled in on the Switcher Input table. The number of control panel "Takes" to achieve the result shown in Figure 118 is: 2 for the "Norm" switch, 2 for the "Left" switch, 2 for the "Right" switch, and 2 for the "Reverse" switch. This method is easy to configure but generally requires more control panel keystrokes for the same results.

**Method 2: Always Stereo Pair configuration.** "Normal" switching only. This method requires 2 Level columns to be filled in on the Switcher Input table. The "Norm" switch requires only one control panel "Take." However, by definition "Left," "Right," and "Reverse" switches *cannot* be performed using Method 2.

**Method 3: Stereo with Left/Right/Reverse Switching using special table entries.** This method reduces the number of Takes needed, but requires 2 Level columns to be filled in on the Switcher Input table and three times the number of rows. In the example above, the “Norm” switch requires only one control panel “Take,” and the “Left” and “Right” switches require only one Take. The “Reverse” switch requires two. This is the most powerful method, but it is more difficult to configure and operate.

Notice that the “Mix” function, where audio from two channels is mixed on one channel, is not available on Dune routers.

Each of the above configuration methods is described in detail in the following pages.

### Mono Configuration

The Switcher Description table for a Mono configuration is shown in Figure 119. There is one level for the Dune switcher; the Physical Level number is (by convention) “32.”

Figure 119.

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	DUNE	AES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VM1	64	64	32		L (Dune)				None	

Corresponding Switcher Input and Output tables are shown in Figure 120.

Figure 120.

Switcher Input - DUNE		
	Logical Input Name	AES
1	VT01-L	000
2	VT01-R	001
3	VT02-L	002
4	VT02-R	003

•  
•

Switcher Output - DUNE					
	Logical Output Name	Security	S-T	Pass word	AES
1	VT01-L		-	▼	000
2	VT01-R		-	▼	001
3	VT02-L		-	▼	002
4	VT02-R		-	▼	003
5	VT03-L		-	▼	004
6	VT03-R		-	▼	005
7	VT04-L		-	▼	006
8	VT04-R		-	▼	007

•  
•

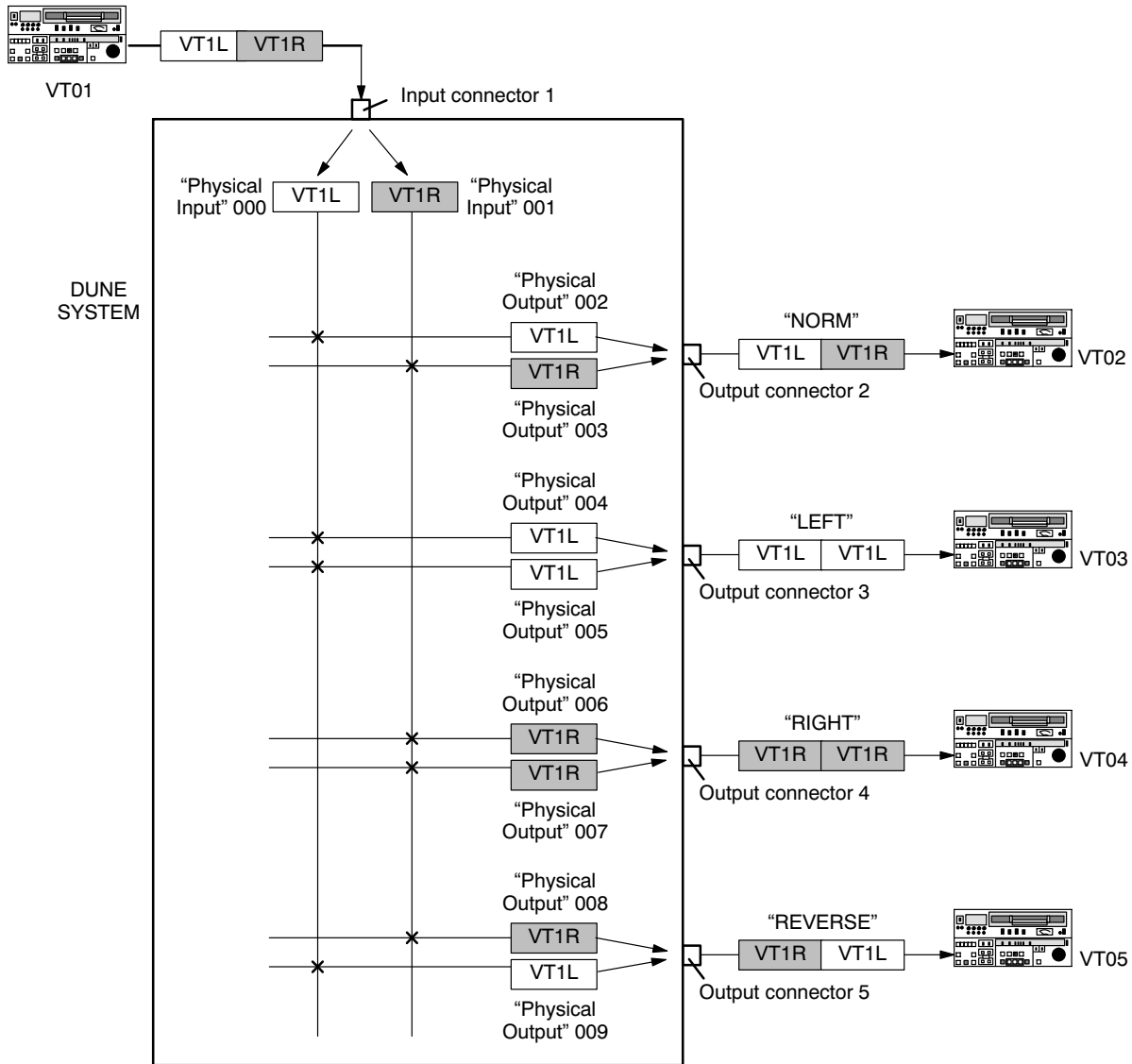
The “In Names” and “Out Names” are user-defined; the suffixes “-L” and “-R” are suggested. The “Physical” numbers in these tables must start at zero.

Figure 122 shows additional detail within the Dune routing system, whereby an incoming digital audio signal is separated into the left and right channels. These signals are brought to a switch matrix, which in the Dune router is actually a software or “virtual” matrix. The left and right channels are then re-combined and exit the system through a single connector. In this example, “Normal,” “Left,” “Right,” and “Reverse” switches described earlier have been executed. Control panel operations would be as follows:

**Figure 121.**

For switch type	Select input	Select output	
Norm	VT01-L	VT02-L	Take
	VT01-R	VT02-R	Take
Left	VT01-L	VT03-L	Take
	VT01-L	VT03-R	Take
Right	VT01-R	VT04-L	Take
	VT01-R	VT04-R	Take
Reverse	VT01-L	VT05-R	Take
	VT01-R	VT05-L	Take

Figure 122. Mono configuration operation (example).



The relationship between the "Physical" numbers on the Switcher Input/Output tables and the numbers on the rear panel BNC connectors is shown on Page 16. At row number 48, all 24 of the MADI (Multiplexed Audio Digital Interface) connectors have been assigned and Connector numbering must start over at "1" with the second MADI interface.

Page 18 is a continuation sheet that can be copied and completed by the installer if desired. The "Row" Numbers and "Physical" numbers will be continuous; the "Connector" numbers will restart after each set of 48 entries and the number of the MADI interface will be incremented by 1.

**Figure 123.** Mono configuration connector numbering.

Table row	Name	“Physical” #	Connector #	MADI inter- face #
0101	-L	0100	1	1
0102	-R	0101	1	1
0103	-L	0102	2	1
0104	-R	0103	2	1
0105	-L	0104	3	1
0106	-R	0105	3	1
0107	-L	0106	4	1
0108	-R	0107	4	1
0109	-L	0108	5	1
110	-R	0109	5	1
111	-L	110	6	1
112	-R	111	6	1
113	-L	112	7	1
114	-R	113	7	1
115	-L	114	8	1
116	-R	115	8	1
117	-L	116	9	1
118	-R	117	9	1
119	-L	118	10	1
120	-R	119	10	1
121	-L	120	11	1
122	-R	121	11	1
123	-L	122	12	1
124	-R	123	12	1
125	-L	124	13	1
126	-R	125	13	1
127	-L	126	14	1
128	-R	127	14	1
129	-L	128	15	1
130	-R	129	15	1
131	-L	130	16	1
132	-R	131	16	1
133	-L	132	17	1
134	-R	133	17	1
135	-L	134	18	1
136	-R	135	18	1
137	-L	136	19	1
138	-R	137	19	1
139	-L	138	20	1
140	-R	139	20	1
141	-L	140	21	1
142	-R	141	21	1
143	-L	142	22	1
144	-R	143	22	1
145	-L	144	23	1
146	-R	145	23	1
147	-L	146	24	1
148	-R	147	24	1
149	-L	148	1	2
150	-R	149	1	2



Table row	Name	"Physical" #	Connector #	MADI interface #
151	-L	150	2	2
152	-R	151	2	2
153	-L	152	3	2
154	-R	153	3	2
155	-L	154	4	2
156	-R	155	4	2
157	-L	156	5	2
158	-R	157	5	2
159	-L	158	6	2
160	-R	159	6	2
161	-L	160	7	2
162	-R	161	7	2
163	-L	162	8	2
164	-R	163	8	2
165	-L	164	9	2
166	-R	165	9	2
167	-L	166	10	2
168	-R	167	10	2
169	-L	168	11	2
170	-R	169	11	2
171	-L	170	12	2
172	-R	171	12	2
173	-L	172	13	2
174	-R	173	13	2
175	-L	174	14	2
176	-R	175	14	2
177	-L	176	15	2
178	-R	177	15	2
179	-L	178	16	2
180	-R	179	16	2
181	-L	180	17	2
182	-R	181	17	2
183	-L	182	18	2
184	-R	183	18	2
185	-L	184	19	2
186	-R	185	19	2
187	-L	186	20	2
188	-R	187	20	2
189	-L	188	21	2
190	-R	189	21	2
191	-L	190	22	2
192	-R	191	22	2
193	-L	192	23	2
194	-R	193	23	2
195	-L	194	24	2
196	-R	195	24	2
197	-L	196	1	3
198	-R	197	1	3
199	-L	198	2	3
200	-R	199	2	3

**Figure 124.** Mono configuration - work sheet for additional inputs/outputs

Table row	Name	“Physical” #	Connector #	MADI interface #
01	-L	00		
02	-R	01		
03	-L	02		
04	-R	03		
05	-L	04		
06	-R	05		
07	-L	06		
08	-R	07		
09	-L	08		
10	-R	09		
11	-L	10		
12	-R	11		
13	-L	12		
14	-R	13		
15	-L	14		
16	-R	15		
17	-L	16		
18	-R	17		
19	-L	18		
20	-R	19		
21	-L	20		
22	-R	21		
23	-L	22		
24	-R	23		
25	-L	24		
26	-R	25		
27	-L	26		
28	-R	27		
29	-L	28		
30	-R	29		
31	-L	30		
32	-R	31		
33	-L	32		
34	-R	33		
35	-L	34		
36	-R	35		
37	-L	36		
38	-R	37		
39	-L	38		
40	-R	39		
41	-L	40		
42	-R	41		
43	-L	42		
44	-R	43		
45	-L	44		
46	-R	45		
47	-L	46		
48	-R	47		
49	-L	48		
50	-R	49		

Table row	Name	"Physical" #	Connector #	MADI interface #
51	-L	50		
52	-R	51		
53	-L	52		
54	-R	53		
55	-L	54		
56	-R	55		
57	-L	56		
58	-R	57		
59	-L	58		
60	-R	59		
61	-L	60		
62	-R	61		
63	-L	62		
64	-R	63		
65	-L	64		
66	-R	65		
67	-L	66		
68	-R	67		
69	-L	68		
70	-R	69		
71	-L	70		
72	-R	71		
73	-L	72		
74	-R	73		
75	-L	74		
76	-R	75		
77	-L	76		
78	-R	77		
79	-L	78		
80	-R	79		
81	-L	80		
82	-R	81		
83	-L	82		
84	-R	83		
85	-L	84		
86	-R	85		
87	-L	86		
88	-R	87		
89	-L	88		
90	-R	89		
91	-L	90		
92	-R	91		
93	-L	92		
94	-R	93		
95	-L	94		
96	-R	95		
97	-L	96		
98	-R	97		
99	-L	98		
00	-R	99		

### Always Stereo Pair Configuration

The Switcher Description table for an Always Stereo Pair configuration is shown in Figure 125. There are two Physical Levels: by convention, 32 and 33 (the right level is always the left level number + 1).

Figure 125.

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	DUNE	AES-L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VM1	64	64	32		L (Dune)				L	
2	DUNE	AES-R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VM1	64	64	33		L (Dune)				R	

Corresponding Switcher Input and Output tables are shown in Figure 126.

Figure 126.

Switcher Input - DUNE				Switcher Output - DUNE						
	Logical Input Name	AES-L	AES-R		Logical Output Name	Security	S-T	Pass word	AES-L	AES-R
1	VT01	000	001	1	VT01		-		000	001
2	VT02	002	003	2	VT02		-		002	003
3	VT03	004	005	3	VT03		-		004	005
4	VT04	006	007	4	VT04		-		006	007
				5	VT05		-		008	009
				6	VT06		-		010	011
				7	VT07		-		012	013
				8	VT08		-		014	015

The “Physical” numbers in these tables must start at zero.

Figure 128 shows additional detail within the Dune routing system, whereby an incoming digital audio signal is separated into the left and right channels. These signals are brought to a switch matrix, which in the Dune router is actually a software or “virtual” matrix. The left and right channels, which are always switched together, are then re-combined and exit the system through a single connector.

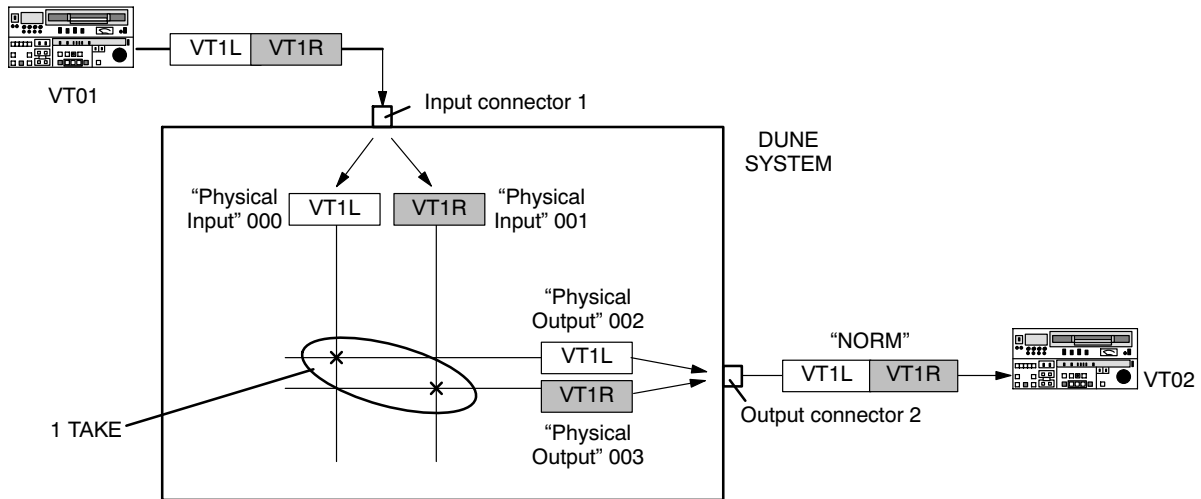
In this drawing, the “Normal” switch described earlier has been executed. Control panel operations would be as follows:

Figure 127.

For switch type	Select input	Select output	
Norm	VT01	VT02	Take

“Left,” “Right,” and “Reverse” type switches are not possible.

Figure 128. Always Stereo Pair configuration operation (example).



The relationship between the "Physical" numbers on the Switcher Input/Output tables and the numbers on the rear panel BNC connectors is shown on page 22. At row number 24, all 24 of the MADI interface connectors have been assigned and Connector numbering must start over at "1" with the second MADI interface.

Page 24 is a continuation sheet that can be copied and completed by the installer if desired. The "Row" Numbers and "Physical" numbers will be continuous; the "Connector" numbers will restart after each set of 24 entries and the number of the MADI interface will be incremented by 1.

Figure 129. Always Stereo Pair configuration connector numbering.

Table row	Name	“Physical” # Left	“Physical” # Right	Connector #	MADI interface #
01		00	01	1	1
02		02	03	2	1
03		04	05	3	1
04		06	07	4	1
05		08	09	5	1
06		10	11	6	1
07		12	13	7	1
08		14	15	8	1
09		16	17	9	1
10		18	19	10	1
11		20	21	11	1
12		22	23	12	1
13		24	25	13	1
14		26	27	14	1
15		28	29	15	1
16		30	31	16	1
17		32	33	17	1
18		34	35	18	1
19		36	37	19	1
20		38	39	20	1
21		40	41	21	1
22		42	43	22	1
23		44	45	23	1
24		46	47	24	1
25		48	49	1	2
26		50	51	2	2
27		52	53	3	2
28		54	55	4	2
29		56	57	5	2
30		58	59	6	2
31		60	61	7	2
32		62	63	8	2
33		64	65	9	2
34		66	67	10	2
35		68	69	11	2
36		70	71	12	2
37		72	73	13	2
38		74	75	14	2
39		76	77	15	2
40		78	79	16	2
41		80	81	17	2
42		82	83	18	2
43		84	85	19	2
44		86	87	20	2
45		88	89	21	2
46		90	91	22	2
47		92	93	23	2
48		94	95	24	2
49		96	97	1	3
50		98	99	2	3

Table row	Name	"Physical" # Left	"Physical" # Right	Connector #	MADI interface #
51		100	101	3	3
52		102	103	4	3
53		104	105	5	3
54		106	107	6	3
55		108	109	7	3
56		110	111	8	3
57		112	113	9	3
58		114	115	10	3
59		116	117	11	3
60		118	119	12	3
61		120	121	13	3
62		122	123	14	3
63		124	125	15	3
64		126	127	16	3
65		128	129	17	3
66		130	131	18	3
67		132	133	19	3
68		134	135	20	3
69		136	137	21	3
70		138	139	22	3
71		140	141	23	3
72		142	143	24	3
73		144	145	1	4
74		146	147	2	4
75		148	149	3	4
76		150	151	4	4
77		152	153	5	4
78		154	155	6	4
79		156	157	7	4
80		158	159	8	4
81		160	161	9	4
82		162	163	10	4
83		164	165	11	4
84		166	167	12	4
85		168	169	13	4
86		170	171	14	4
87		172	173	15	4
88		174	175	16	4
89		176	177	17	4
90		178	179	18	4
91		180	181	19	4
92		182	183	20	4
93		184	185	21	4
94		186	187	22	4
95		188	189	23	4
96		190	191	24	4
97		192	193	1	5
98		194	195	2	5
99		196	197	3	5
100		198	199	4	5

**Figure 130.** Always Stereo Pair configuration - work sheet for additional inputs/outputs.

Table row	Name	"Physical" # Left	"Physical" # Right	Connector #	MADI interface #
01		00	01		
02		02	03		
03		04	05		
04		06	07		
05		08	09		
06		10	11		
07		12	13		
08		14	15		
09		16	17		
10		18	19		
11		20	21		
12		22	23		
13		24	25		
14		26	27		
15		28	29		
16		30	31		
17		32	33		
18		34	35		
19		36	37		
20		38	39		
21		40	41		
22		42	43		
23		44	45		
24		46	47		
25		48	49		
26		50	51		
27		52	53		
28		54	55		
29		56	57		
30		58	59		
31		60	61		
32		62	63		
33		64	65		
34		66	67		
35		68	69		
36		70	71		
37		72	73		
38		74	75		
39		76	77		
40		78	79		
41		80	81		
42		82	83		
43		84	85		
44		86	87		
45		88	89		
46		90	91		
47		92	93		
48		94	95		
49		96	97		
50		98	99		



Table row	Name	"Physical" # Left	"Physical" # Right	Connector #	MADI interface #
51		00	01		
52		02	03		
53		04	05		
54		06	07		
55		08	09		
56		10	11		
57		12	13		
58		14	15		
59		16	17		
60		18	19		
61		20	21		
62		22	23		
63		24	25		
64		26	27		
65		28	29		
66		30	31		
67		32	33		
68		34	35		
69		36	37		
70		38	39		
71		40	41		
72		42	43		
73		44	45		
74		46	47		
75		48	49		
76		50	51		
77		52	53		
78		54	55		
79		56	57		
80		58	59		
81		60	61		
82		62	63		
83		64	65		
84		66	67		
85		68	69		
86		70	71		
87		72	73		
88		74	75		
89		76	77		
90		78	79		
91		80	81		
92		82	83		
93		84	85		
94		86	87		
95		88	89		
96		90	91		
97		92	93		
98		94	95		
99		96	97		
100		98	99		

Stereo with Left/Right/Reverse Switching Using Special Table Entries

A Switcher Description table for this configuration is shown in Figure 131. There are two Physical Levels: by convention, 32 and 33 (the right level is always the left level number + 1).

Figure 131.

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	DUNE	AES-L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VM1	64	64	32		L (Dune)				L		
2	DUNE	AES-R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VM1	64	64	33		L (Dune)				R		

Corresponding Switcher Input and output tables are shown in Figure 132.

Figure 132.

Switcher Input - DUNE				Switcher Output - DUNE						
	Logical Input Name	AES-L	AES-R		Logical Output Name	Security	S-T	Pass word	AES-L	AES-R
1	VT01	000I	001I	1	VT01		-		000	001
2	VT01-L	000P	000P	2	VT02		-		002	003
3	VT01-R	001P	001P	3	VT03		-		004	005
4	VT02	002I	003I	4	VT04		-		006	007
5	VT02-L	002P	002P	5	VT05		-		008	009
6	VT02-R	003P	003P	6	VT06		-		010	011
7	VT03	004I	005I	7	VT07		-		012	013
5	VT03-L	004P	004P	8	VT08		-		014	015
6	VT03-R	005P	005P							

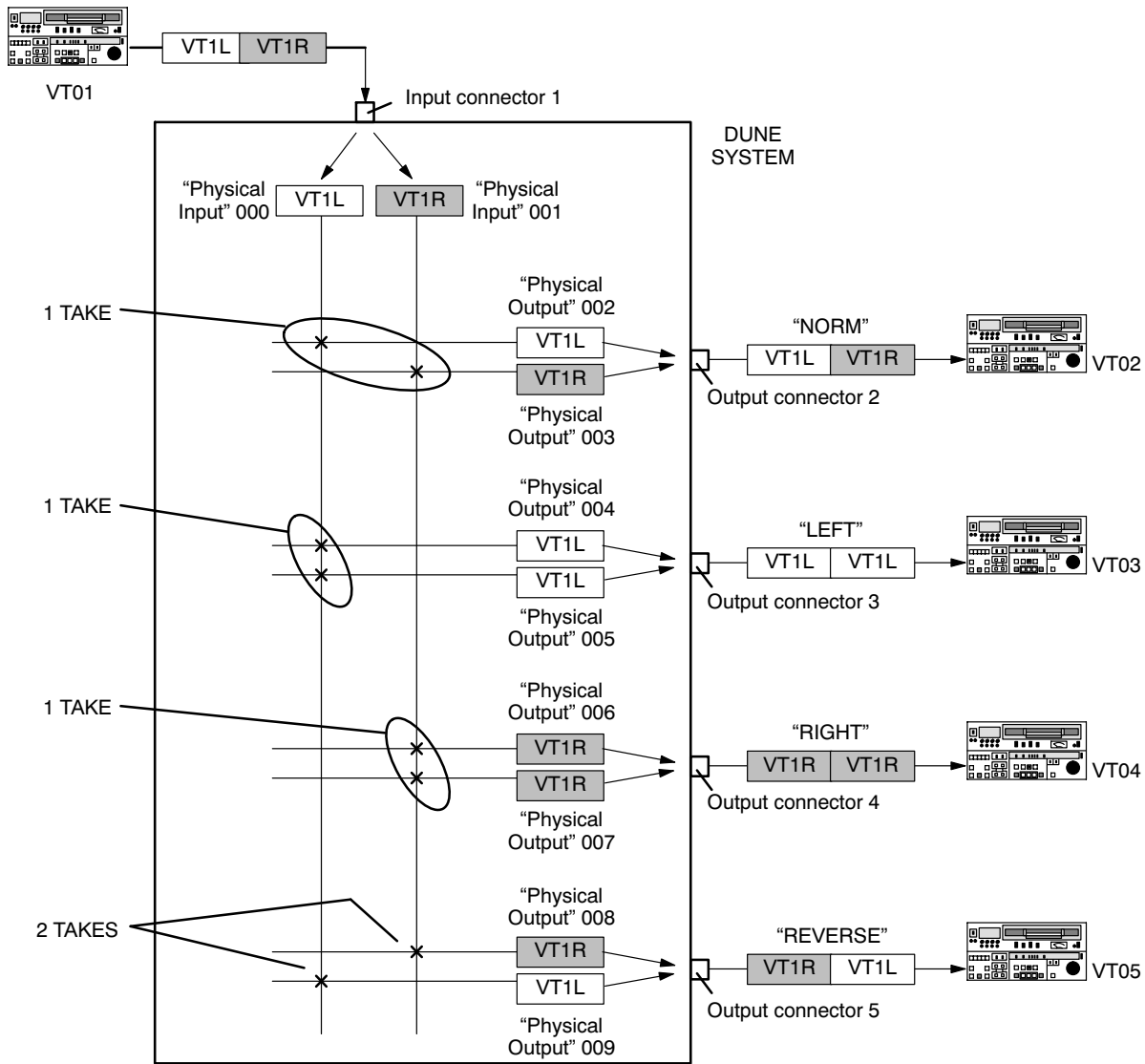
The "Physical" numbers in these tables must start at zero.

Figure 134 shows additional detail within the Dune routing system, whereby an incoming digital audio signal is separated into the left and right channels. These signals are brought to a switch matrix, which in the Dune router is actually a software or "virtual" matrix. The left and right channels are then re-combined and exit the system through a single connector. In this drawing, the "Normal" switch described earlier has been executed. Control panel operations would be as follows:

Figure 133.

For switch type	Select input	Select output	
Norm	VT01	VT02	Take
Left	VT01-L	VT03	Take
Right	VT01-R	VT04	Take
Reverse	VT01-R, left level	VT05	Take
	VT01-L, right level	VT05	Take

Figure 134. Left/Right/Reverse configuration operation (example).



The relationship between the "Physical" numbers on the Switcher Input/Output tables and the numbers on the rear panel BNC connectors is shown on Page 28. At row number 72, all 24 of the MADI interface connectors have been assigned and Connector numbering must start over at "1" with the second MADI interface.

Page 30 is a continuation sheet that can be copied and completed by the installer if desired. The "Row" Numbers and "Physical" numbers will be continuous; the "Connector" numbers will restart after each set of 72 entries and the number of the MADI interface will be incremented by 1.

Figure 135. Left/Right/Reverse configuration connector numbering.

Table row	Name	“Physical” # Left	“Physical” # Right	Connector #	MADI interface #
01		000I	001I	1	1
02	-L	000P	000P	1	1
03	-R	001P	001P	1	1
04		002I	003I	2	1
05	-L	002P	002P	2	1
06	-R	003P	003P	2	1
07		004I	005I	3	1
08	-L	004P	004P	3	1
09	-R	005P	005P	3	1
10		006I	007I	4	1
11	-L	006P	006P	4	1
12	-R	007P	007P	4	1
13		008I	009I	5	1
14	-L	008P	008P	5	1
15	-R	009P	009P	5	1
16		010I	011I	6	1
17	-L	010P	010P	6	1
18	-R	011P	011P	6	1
19		012I	013I	7	1
20	-L	012P	012P	7	1
21	-R	013P	013P	7	1
22		014I	015I	8	1
23	-L	014P	014P	8	1
24	-R	015P	015P	8	1
25		016I	017I	9	1
26	-L	016P	016P	9	1
27	-R	017P	017P	9	1
28		018I	019I	10	1
29	-L	018P	018P	10	1
30	-R	019P	019P	10	1
31		020I	021I	11	1
32	-L	020P	020P	11	1
33	-R	021P	021P	11	1
34		022I	023I	12	1
35	-L	022P	022P	12	1
36	-R	023P	023P	12	1
37		024I	025I	13	1
38	-L	024P	024P	13	1
39	-R	025P	025P	13	1
40		026I	027I	14	1
41	-L	026P	026P	14	1
42	-R	027P	027P	14	1
43		028I	029I	15	1
44	-L	028P	028P	15	1
45	-R	029P	029P	15	1
46		030I	031I	16	1
47	-L	030P	030P	16	1
48	-R	031P	031P	16	1
49		032I	033I	17	1
50	-L	032P	032P	17	1

Table row	Name	“Physical” # Left	“Physical” # Right	Connector #	MADI interface #
51	-R	033P	033P	17	1
52		034I	035I	18	1
53	-L	034P	034P	18	1
54	-R	035P	035P	18	1
55		036I	037I	19	1
56	-L	036P	036P	19	1
57	-R	037P	037P	19	1
58		038I	039I	20	1
59	-L	038P	038P	20	1
60	-R	039P	039P	20	1
61		040I	041I	21	1
62	-L	040P	040P	21	1
63	-R	041P	041P	21	1
64		042I	043I	22	1
65	-L	042P	042P	22	1
66	-R	043P	043P	22	1
67		044I	045I	23	1
68	-L	044P	044P	23	1
69	-R	045P	045P	23	1
70		046I	047I	24	1
71	-L	046P	046P	24	1
72	-R	047P	047P	24	1
73		048I	049I	1	2
74	-L	048P	048P	1	2
75	-R	049P	049P	1	2
76		050I	051I	2	2
77	-L	050P	050P	2	2
78	-R	051P	051P	2	2
79		052I	053I	3	2
80	-L	052P	052P	3	2
81	-R	053P	053P	3	2
82		054I	055I	4	2
83	-L	054P	054P	4	2
84	-R	055P	055P	4	2
85		056I	057I	5	2
86	-L	056P	056P	5	2
87	-R	057P	057P	5	2
88		058I	059I	6	2
89	-L	058P	058P	6	2
90	-R	059P	059P	6	2
91		060I	061I	7	2
92	-L	060P	060P	7	2
93	-R	061P	061P	7	2
94		062I	063I	8	2
95	-L	062P	062P	8	2
96	-R	063P	063P	8	2
97		064I	065I	9	2
98	-L	064P	064P	9	2
99	-R	065P	065P	9	2
100		066I	067I	10	2

**Figure 136.** Left/Right/Reverse configuration - work sheet for additional inputs/outputs.

Table row	Name	"Physical" # Left	"Physical" # Right	Connector #	MADI interface #
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					

Table row	Name	"Physical" # Left	"Physical" # Right	Connector #	MADI interface #
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
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98					
99					
100					

## Problems corrected in release 7.5

1. Added the ability to issue Clear Flash from the Control center resulting in all files being removed from the CM-4000 hard drive.
2. AccuSwitch now supports a device called CP-ESLAN that utilizes CP-3800 Input, Output, Level, Sequence, and overrides sets to allow for Category entry through ESLAN. This CP-ESLAN device also supports output level sets through ES-LAN.
3. CR 56598: Horizon and Grass Ten 10/20 protocols have been added to Jupiter LE.
4. CR 67332: Corrected problem with the CM-4000 using ESCP where if a port is defined to run ESCP there must be at least one ESCP device configured for that port or the CM-4000 could continuously reboot.
5. CR 70145 Corrected a problem where ESLAN updates may not be sent when multiple ESLAN devices are configured.
6. CR 70439: Corrected an issue with AccuSwitch ES autoupdates where status was not being returned for multiple commands sent within a short time frame.
7. CR 72594: Added an information field for the protect status PSTD 0x7D to work like the lock status does.
8. CR 76627: Corrected a problem with the Triton serial port driver not working with physical levels above 9 when the maximum physical level is 16.
9. CR 80419: Added support in Jupiter Xpress for transferring labels (Andromeda) between the CM-4000 and the XtenDD.
10. CR 80561: Corrected a problem with the JEP-100 where multiple rapid button pushes could result in "NO COMM" being displayed on the panel.
11. CR 80989: Corrected a problem where a redundant CM-4000 could page fault when running the Datatek protocol.
12. CR 81038: Corrected a problem with AccuSwitch where ESTributary would not load the Input, Output, and Level sets properly.
13. CR 83182: CM-4000 ASCII protocol now allows an XOFF followed by any byte to turn the UART back on. Before only an XON would turn on the UART after receiving an XOFF.
14. CR 83927: CM-4000 ASCII protocol now supports commands terminated with a CRLF.





Another aspect of this implementation is that the GVG-200 interface currently will only work on a peripheral bus where the selected device does not change; in other words, when the Jupiter system is the only device connected.

2. CR 49966: The CP-3824 control panel does not provide multi-source, multi-level breakaway switching as described in certain Jupiter manuals.

The Jupiter CM-4000 manual (part no. 071826104 and prior) and VM-3000 manual (part no. 071830502 and prior) include a CP-3824 "Breakaway Switching - Multi-Level Take" procedure whereby the operator selects a source, selects a level or levels, and then selects another source and chooses between remaining unused levels in order to perform a multi-source, multi-level switch with a single Take. This function is not available for this panel.

3. CR 66947: Only physical inputs 000-999 can be used as Primary and Indirect sources.
4. CR 70998: Maestro sources are not being protected on VM-3000 systems (they are protected on CM-4000 systems).

5. CR 71041: The system may indicate incorrect router status when a) output monitoring is configured, and b) when the router is power cycled or Jupiter is rebooted:
  - a. Following output monitoring configuration, the Switcher Input table will contain double entries. For example:

Figure 139.

Switcher Input - MainRout				
	Logical Input Name	VIDEO	LEFT	RIGHT
1	BARS	000	000	000
2	CAM1	001	001	001
	•			
	•			
	•			
65	OUT0	000	000	000

In this example, the input “OUT0” actually refers to the router’s physical *output* zero. Using a control panel, the operator selects this output as an “input” in order to monitor output zero. The control panel will show the mnemonic for OUT0 as status for the monitor output. This is the correct status.

However, notice the double entries, i.e., that two input names (BARS and OUT0) refer to the same physical input (000).

- b. If the router power is now cycled or Jupiter is rebooted, status must be refreshed. In the above example, the system finds that input “000” has been switched to the monitor output—but there are two “000” entries on the Switcher Input table. Because the letter “B” in BARS comes before the letter “O” in OUT, the control panel will now assume that BARS is feeding the monitor output and thus report the mnemonic for BARS as status. This report may or may not be correct. To insure correct status, the work-around is to re-take the switch.

There are other examples of the same physical output number being assigned to more than one logical input name, as for example when multiple “alias” names are assigned to the same physical input number. This might be done in order to use the status function to display the title of a program. Again, if the router is power cycled or Jupiter is rebooted the panel may or may not display the correct status. As before, re-taking the switch will insure that status is correct.

For a more complete description of output monitoring, please refer to the Jupiter Installation and Operating manual.

6. CR 75029: DD-35 switchers need to run, or upgrade to, software version 4.8.5 in order to communicate with the Jupiter control system. The DD-35 software changes the parity bit for the Diamond protocol from previous versions, and needs to be changed from “no parity” back to “even parity” to communicate properly.
7. CR 84235: When ESwitch protocol is used to lock/protect an output on a single level, and an attempt is made to switch the output using a control panel, the panel may appear to execute and status the switch even though no switch has occurred. After approximately 6-10 switch attempts the panel shows the correct status and displays a “Locked/-Protected” message.

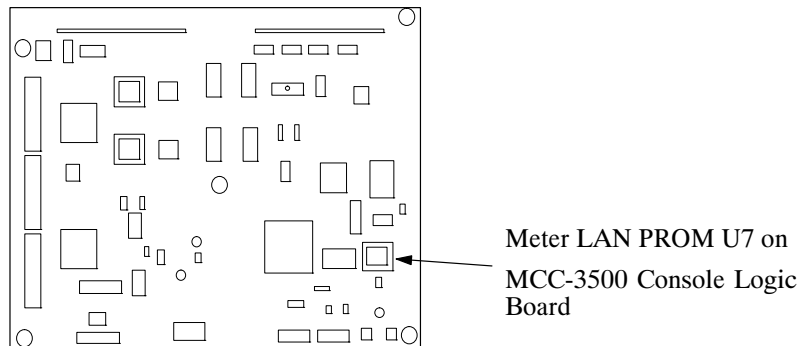
# Installation/Upgrade

Like all software programs, Jupiter requires specific files to be in specific directories. Do not attempt to modify or add to the contents of the Jupiter directory (usually C:\Program Files\Thomson\Jupiter) by using tools such as Windows Explorer unless you are qualified to do so.

The file server computer must be equipped as described on [page 3](#).

**NOTE** (Saturn users only.) During the install process, the installer will ask for a version letter on the Meter LAN PROM U7 in your Saturn MCC 3500 control panel (see Figure 1). The version letter is found at the end of the part number, e.g., “45•046878•01B.” You may want to make a note of this number before you begin.

Figure 140.



**CAUTION** You must have administrator privileges in order to load Jupiter software, launch Jupiter applications, and configure the system. And, the same login should be used for all tasks performed on the Jupiter file server, including uninstalling software.

**NOTE** (Windows XP systems.) When logging on as the Administrator, you may notice that the welcome screen does not always show an Administrator icon. Press **Ctrl•Alt•Del** twice, and then type “Administrator” as the username in the dialog box to log on as the Administrator.

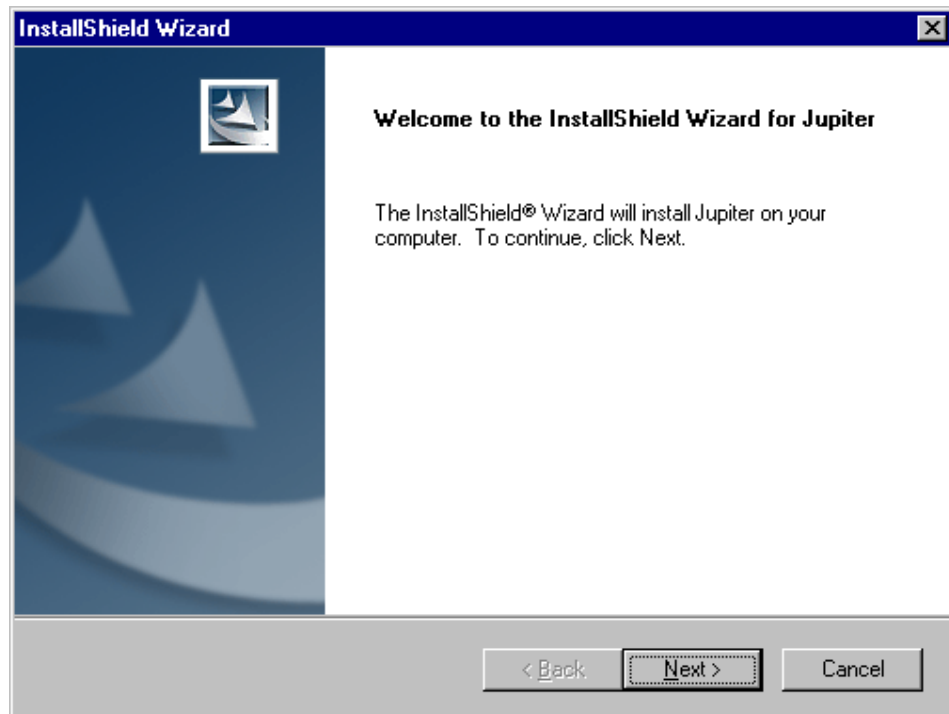
1. (New system only.) Set the IP address for the NIC (Network Interface Card) connected to the Jupiter network:
  - a. Go to “Start > Settings > Network and Dial-up Connections > Local Area Connection > Internet Protocol (TCP/IP) > Properties.”
  - b. Enter the IP address. The recommended address for the Jupiter File Server NIC is 192.168.253.1. Make a note of the address for use later during this installation.

**CAUTION** Do *not* use “Obtain an IP Address Automatically.” This selection invokes DHCP (Dynamic Host Configuration Protocol) and may result in system corruption.

2. If configuration sets exist on this server you may wish to back up your current configuration directory (C:\Program Files\Thomson\Jupiter\ config) and save it on another disk drive.
3. If previous versions of Jupiter software were installed on this server, they must be uninstalled at this time. See page 48.
4. With Windows running, and logged in as the administrator, insert the Jupiter installation CD-ROM. Allow a few seconds for the CD-ROM to auto start and the InstallShield Wizard welcome screen to appear:

**NOTE** If during the course of the following procedure you see the message “Error 1605:•This action is only valid for products that are currently installed” or the message “Error 1628 Failed to complete script based install” it may indicate that more than one login has been used for Jupiter. Contact Grass Valley Technical Support for assistance.

Figure 141.



If your PC requires configuration of the Windows Installer, this will be done automatically. Some systems may require a restart following this configuration. If the following dialog box appears, click “Restart”.

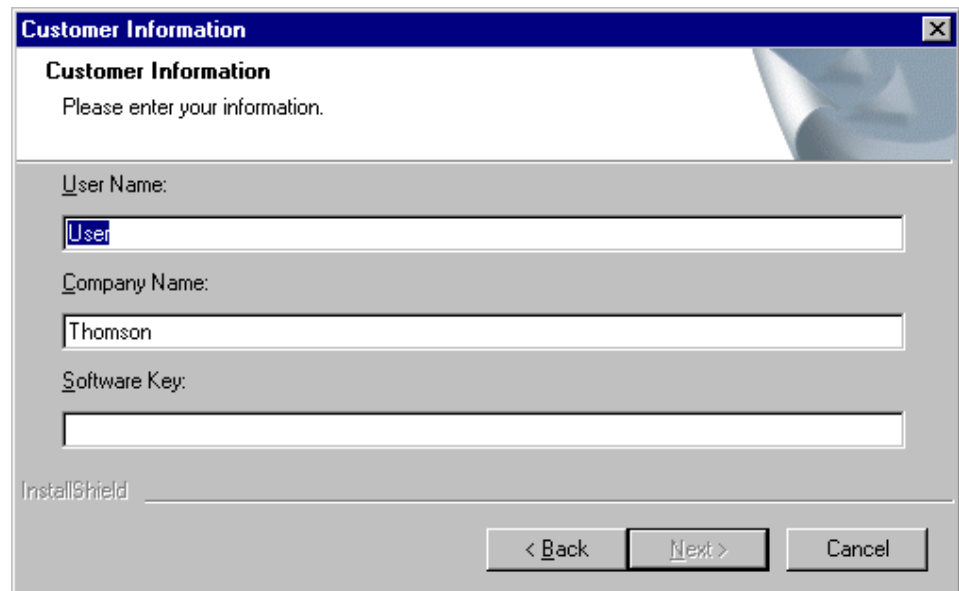
Figure 142.



You can also start the installation by browsing to the CD-ROM and running "setup.exe."

5. Click on "Next."

Figure 143.

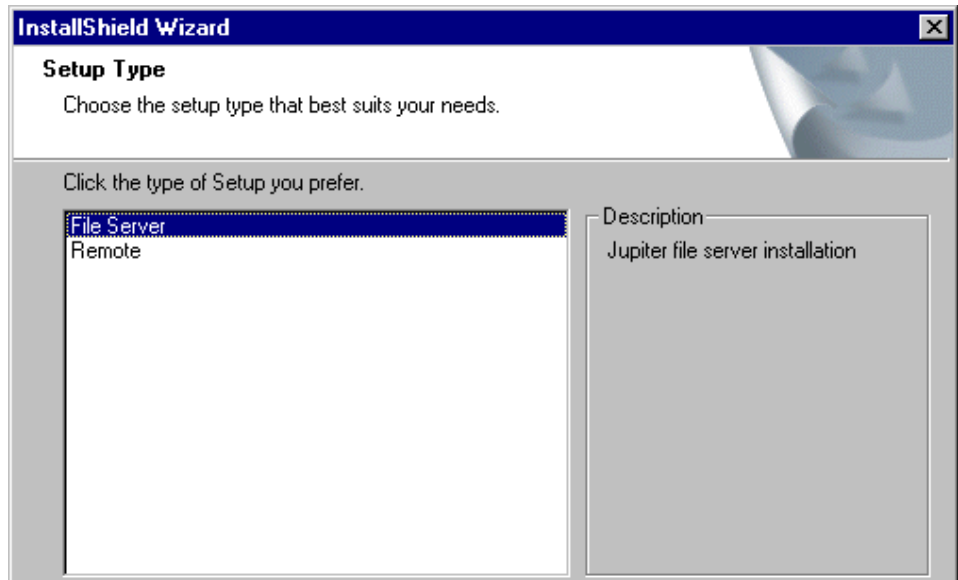


6. Enter a User Name and a Company Name.
7. Enter the Software Key Number printed on the CD-ROM case. This will be three groups of non-case-sensitive characters separated by dashes.

This password will indicate which if any options should be installed (such as GUI control panels or third-party router control software). For a list of available options, refer to Section 1 of the Jupiter Installation and Operating manual.

8. Verify that you accept the software license agreement.
9. Choose the Setup Type, either "File Server" or "Remote:"

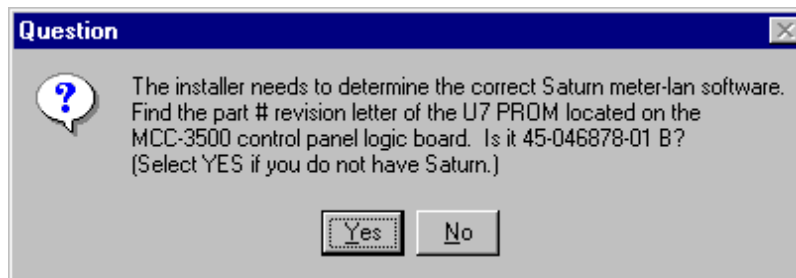
Figure 144.



For more information about Remote Jupiter PCs, see page [49](#).

10. If you selected File Server as the installation type, the installer will ask for a version letter on the Meter LAN PROM U7 in your Saturn console (for details see Note on page [37](#)).

Figure 145.

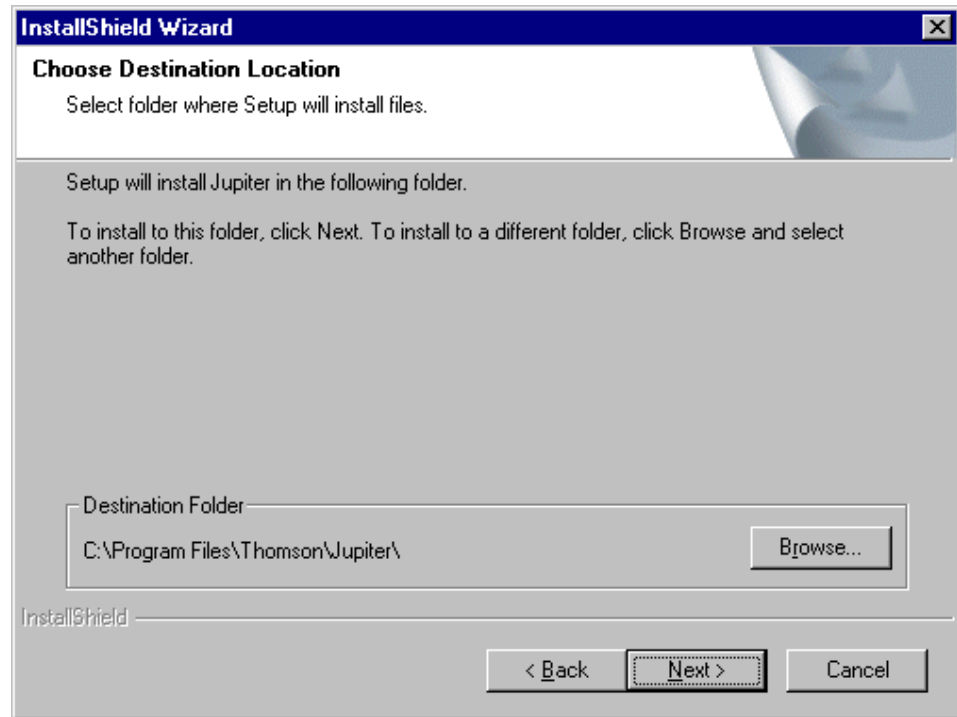


If you do not have a Saturn in the system select "Yes."

11. Select the directory where the Jupiter application will be installed.



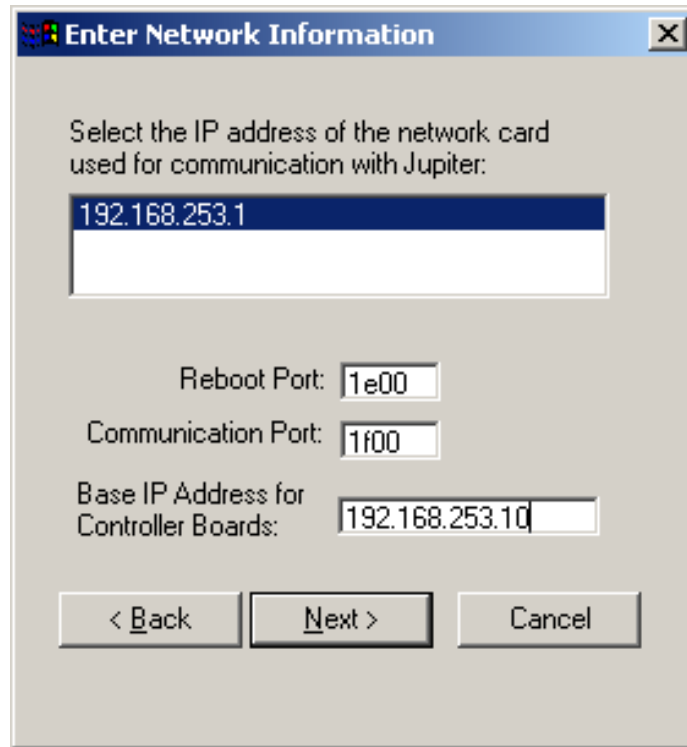
Figure 146.



The default is C:\Program Files\Thomson\Jupiter.

12. Verify the file server's IP address.

Figure 147.



13. Verify the Network settings.

The recommended (factory default) settings are as follows:

Reboot Port: 1E00  
Communication Port: 1F00  
Base IP Address: 192.168.253.10

In most cases, these recommended settings work well. The “base” IP address will be assigned automatically to the first controller board listed in the Jupiter Network Description table (described in the Jupiter manual). The base address, plus one, will be assigned automatically to the next board in the table; the base address, plus two, will be assigned automatically to the next board in the table, etc.

- If you want to keep the present IP address of the first controller board (CM-4000, VM-3000, etc.), the present communication port setting, and present reboot port setting, click “Next.”
- Or, enter new settings.

**NOTE** Do not confuse the Base IP Address with the File Server IP Address. The Base IP Address goes to the first controller board (CM/VM, etc.). The File Server IP Address is for the PC only and is set using the Windows Network Setup application; the recommended (factory default) File Server IP Address is 192.168.253.1.

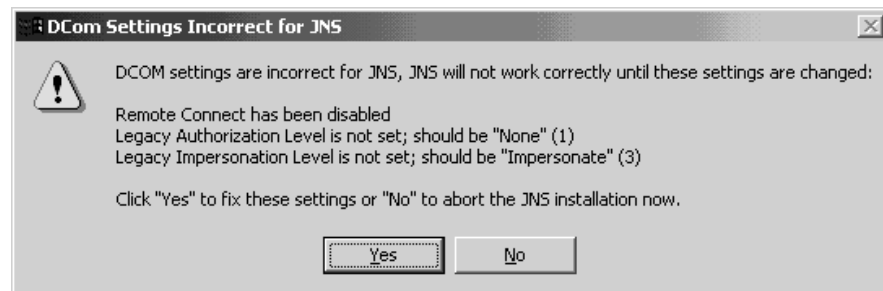
**NOTE** The Base IP and File Server IP must be within the same subnet. E.g., if the subnet is 192.168.253 (and the subnet mask is 255.255.255.0) then both IP addresses would need to have 192.168.253.x addresses. Otherwise an IP gateway must be used to connect the two networks.

**NOTE** If a second (“remote”) PC is attached to the LAN (e.g., to provide a Software Control Panel station), it must not conflict with any other address on the LAN, including those generated automatically as described above. If you don't know a PC's address, see [Getting the Jupiter LAN IP address of a PC on page 22](#).

**NOTE** The Reboot and Communication Port settings should be left at “1E00” and “1F00” respectively except in very unusual circumstances.

**14.** You may see the following message:

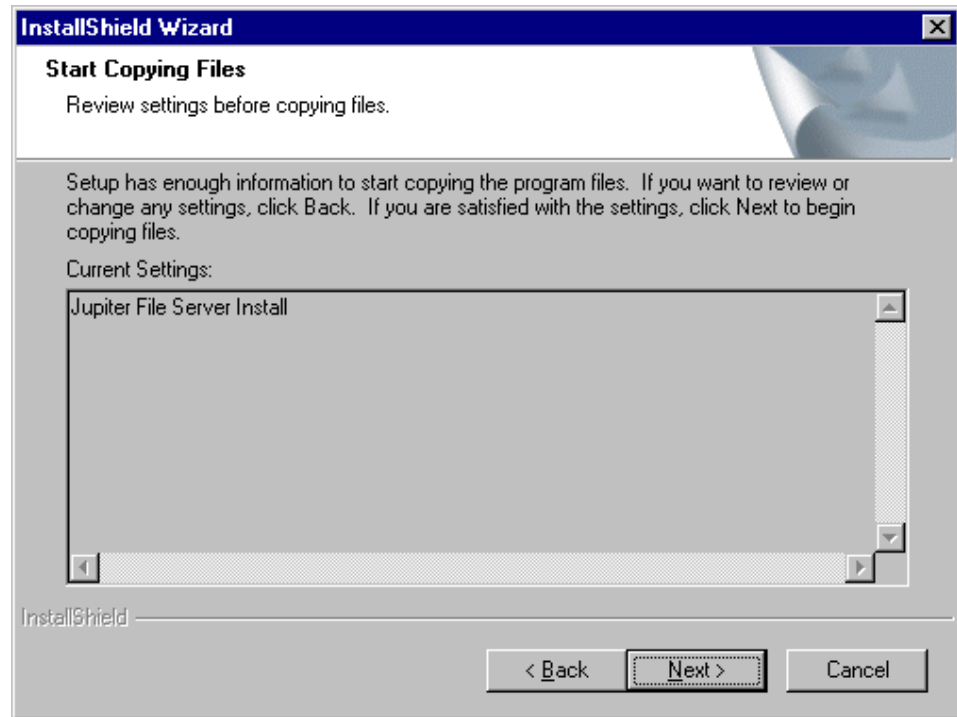
Figure 148.



If so, click on “Yes.”

**15.** A list of Current Settings will be shown.

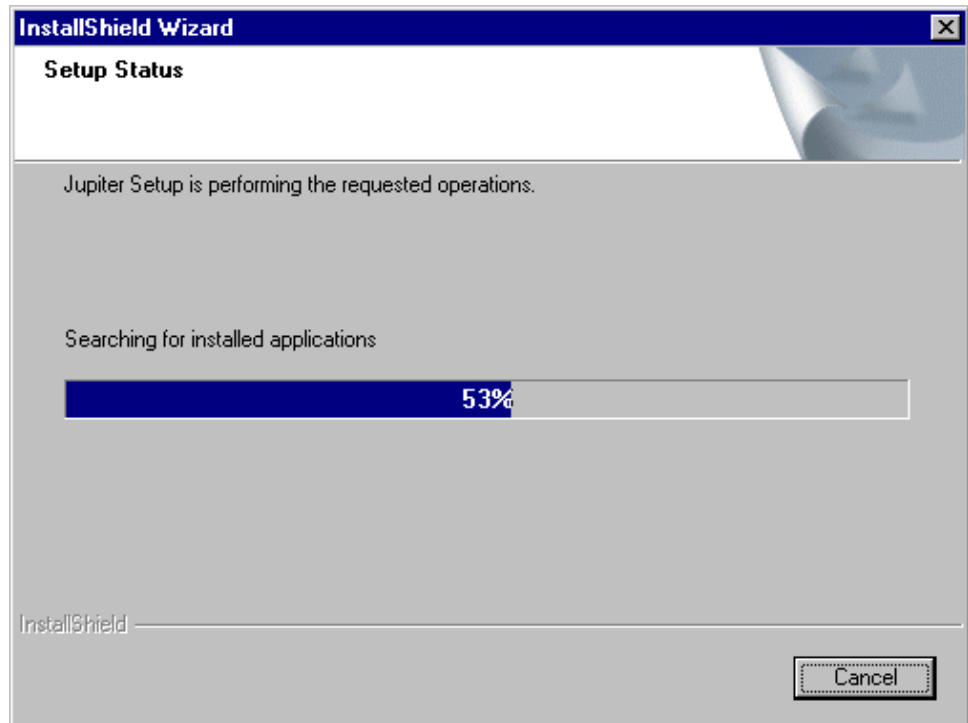
Figure 149.



The list will normally show “Jupiter File Server Install” when “File Server” was selected during [Step 9](#) above.

16. Verify by selecting “Next.” This will initiate the file copy process.

Figure 150.

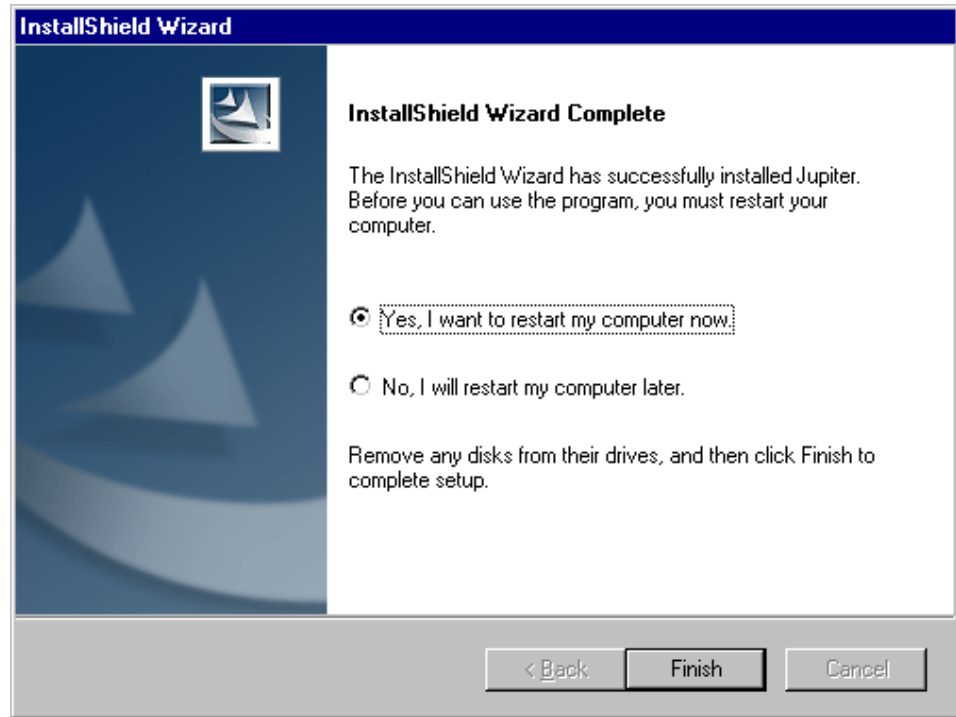


When finished, the installer will report "InstallShield Wizard Complete."

**17.** Click "Finish."

**18.** In some cases, when the installation is complete, a message will indicate that a reboot is required:

Figure 151.



19. "Jupiter Network Suite" (JNS) should now appear in the "Start > Programs" menu.
20. (Optional - Saturn only) Install the patch that allows the "On Air Mono" and "Program Mono" digital outputs of the DAP 4000 Digital Audio Processor to be turned into stereo outputs:
  - a. Go to the Jupiter installation directory where the DSP files are located (C:\ProgramFiles\Thomson\Jupiter\download\list\common).
  - b. Back up the file "DSPA\_XX.BIN" by renaming it (e.g., to "DSPA\_XX.BAK").
  - c. Copy the file "DSPA\_STR.BIN" and rename the copy "DSPA\_XX.BIN."
  - d. Recompile the configuration set.
  - e. Activate and download the configuration set.
  - f. The On Air Mono and Program Mono outputs will now be stereo for all DAPs in the system.
21. Set the gateway and subnet mask values for the Jupiter network boards (VM/SI/CM/Saturn):

- g.** Launch Jupiter Network Suite.
- h.** Go to “Tools > Jupiter Settings.”
- i.** Select (check) the field with the IP address used for the Jupiter network. This is the address described in [Step12](#) above. The “base” address was described in [Step 13](#) above.
- j.** For the Gateway address, enter the Jupiter network number (e.g., 192.168.253) and a “1” for the gateway itself. For example: “192.168.253.1.”
- k.** For the Subnet Mask, indicate a Class C network by entering “255.255.255.0.”

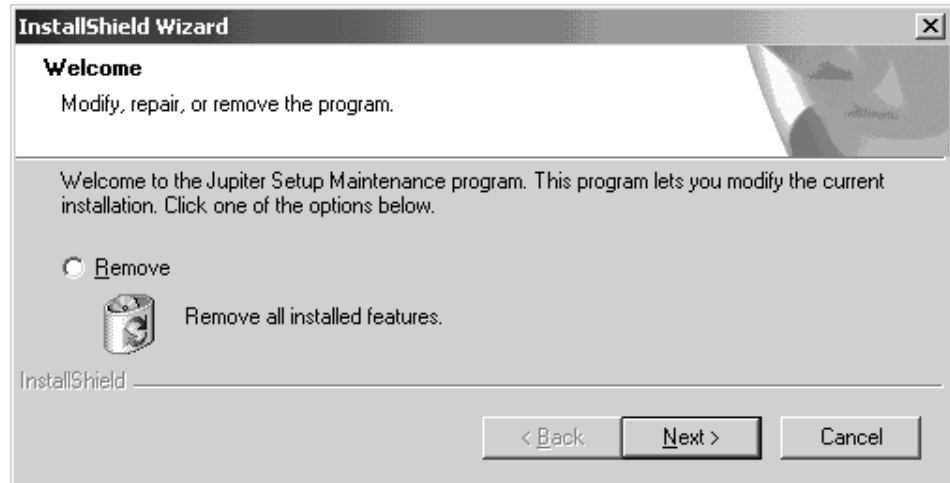
# Removing Jupiter Software

**NOTE** This process will not remove existing user-created configuration sets.

**CAUTION** You must be logged in as the administrator in order to load Jupiter software, launch Jupiter applications, and configure the system. This same login should be used for all tasks performed on the Jupiter file server, including uninstalling software. Failure to observe this rule may result in system corruption.

1. Go to “Start > Settings > Control Panel > Add/Remove Programs.” The InstallShield Wizard welcome screen will appear:

Figure 152.



2. Click “Remove.”
3. To initiate the uninstall procedure, click “Next.”

When finished the system will report “Maintenance Complete.”

**NOTE** For those with Jupiter 7.2 Beta 1 installed: If you are unable to remove it, *re•install* Jupiter 7.2 Beta 1 and go to the Control Panel again to try to remove it. You can then proceed to install Jupiter v7.6.1.



## Getting the Jupiter LAN address of a PC

1. Go to "Start > Settings > Control Panel > Network and Dial-up Connections > Local Area Connection > Properties."
2. Select the Jupiter network adapter. The IP address will be indicated.

## Software configuration

If this is an initial installation, the system software must be configured using the Jupiter configuration editor. For overall software configuration instructions, please refer to the Jupiter Installation and Operating manual starting with Section 4 - "Jupiter Network Suite Control Console."

## Running applications on a Remote PC

The following programs can be "connected to" (accessed) on a remote PC equipped with JNS:

- Board Status
- Control Center
- Force Unlock
- Logger
- Log Viewer
- Physical Control
- Party Line Download (JupiterPlus only)
- Router Control Utility
- Router Save/Restore
- Saturn Monitor Follow (JupiterPlus only)
- Software Control Panels Suite

To install these programs remotely, follow the instructions beginning on page [37](#) and select "Remote" during [Step 9](#).

For more information about Remote PC installation and operation, refer to the Jupiter manual.

## Connecting a Remote PC to a Windows XP Server

If the file server is running Windows XP and you would like to run remote clients that connect to the file server, a Local Security Policy setting may need to be changed on the file server. By default, Windows XP will prevent remote clients from connecting.

Open the Control Panel, select Performance and Maintenance, select

Administrative Tools, select Local Security Policy, double-click on Local Policies in the tree-view, and double-click on Security Options in the tree-view. Scroll down the list of settings to find "Network access: Sharing and security model for local accounts." Change the setting from "Guest only - local users authenticate as Guest" to "Classic - local users authenticate as themselves." You may need to reboot the file server.

If you still get DCOM errors while connecting, the Administrative Tools /Event Viewer may provide helpful information.

Keep in mind that the username AND password on both the file server and the remote clients must be identical. To prevent unauthorized access, Grass Valley recommends that you use a secure password.

# Appendix

## Grass Valley Native Protocol Implementation on CM-4000 Systems

A subset of the GV Native Protocol is now supported by CM-4000 controllers. This implementation is for Ethernet applications only.

A complete description of Native Protocol is found in the Grass Valley NP manual, part number 071020102.

### NP Commands Not Supported

The commands **not** implemented in the Jupiter 7.4.0 release are:

AS	Machine Assign
BK\tA	Background Activities Clear Query Assignment flags
BK\tP	Background Activities Port Configuration Parameters.
CH	Chop
CT	Clear Tie-lines
DA	Machine De-Assign
QA	Query Assignment
QL & QI	Query Status with Tie-lines
QN\tV	Query Salvo Names
QN\tR	Query Room Names
QN\tT	Query Tie-line Names
QN\tM	Query Names
QN\tY	Query Names
QT	Query Date and Time
QV	Query Salvo status
ST	Set Date and Time
TJ	Take Index Level Bitmap
TM	Take Monitor
TS	Take Salvo

### Other Jupiter exceptions

Jupiter does not require refreshing protects. Protects will not time out on the refresh interval.