



**Voter Remote Interface (VRI)  
for the  
Raytheon<sup>®</sup>  
JPS Communications<sup>™</sup>  
SNV-12 Signal-and-Noise Voter**

**Instruction Manual**

Issue 1 – Rev 9, April 2015

Part Number FI-20080219

Fial Incorporated  
710 Center Street  
Oregon City, OR 97045 U.S.A.

<http://www.fial.com/>

Copyright © 2015 by Fial Incorporated. All rights reserved.  
Passing on and copying of this product, use and communication of its contents  
not permitted without written authorization from Fial Incorporated.  
All brand and product names are trademarks of their respective holders.

Page Body Intentionally Left Blank

# TABLE OF CONTENTS

LICENSING INFORMATION .....	V
1 VOTER REMOTE INTERFACE .....	1
1.1 VRI Server Installation and Setup.....	4
1.1.1 VRI Server - Run As A Service.....	4
1.2 Obtaining a Registration Key File .....	5
1.3 Initial Server Configuration .....	5
1.3.1 Voting History Log .....	7
1.3.2 VRI Server Configuration of SNV-12 Shelves .....	9
1.3.3 Signal Quality Log .....	11
1.4 VRI Client Installation and Setup .....	12
1.4.1 Site Voter Module Cards .....	13
1.4.1.1 Manual Control of Site Voter Modules.....	15
1.4.1.1 Expanded Shelf View .....	17
1.4.1.2 Reports .....	18
1.4.1.3 Manual Control Log .....	21
1.4.1.4 Module Fault Log.....	21

Page Body Intentionally Left Blank

## List of Figures

Figure 1-1. VRI System Overview.....	1
Figure 1-2. VRI Server Window (14 Shelf version).....	2
Figure 1-3. VRI Server Window (28 Shelf version).....	2
Figure 1-4. VRI Client Window (14 Shelf version, with only 6 shelves populated).....	3
Figure 1-5. VRI Client Window (28 Shelf version, partial display with thumb-bar enabled).....	3
Figure 1-6. Windows Services Applet.....	4
Figure 7. Unregistered Version Dialog.....	5
Figure 1-8. VRI Server Setup Dialog Window.....	6
Figure 1-9. VRI Server Window (14 Shelves) & VRI Server Window (28 Shelves).....	7
Figure 1-10. Enable Voting History Log.....	8
Figure 1-11. Shelf Settings Window.....	10
Figure 1-12. Sample Signal Quality Log for a Specific SNV-12 Rack.....	11
Figure 1-13. VRI Client Settings Dialog Window.....	12
Figure 1-14. VRI Client Window with 1 non-responding SNV-12 Shelf.....	13
Figure 1-15. SVM Cards in SNV-12 Shelf Graphic.....	13
Figure 1-16. Site Voter Module Signal Quality Level Bar Graph Display.....	14
Figure 1-17. Selected SVM Card Status Window.....	14
Figure 1-18. Selected SVM Card Option Menu.....	15
Figure 1-19. Authentication Dialog Window.....	16
Figure 1-20. Command Execution Status Message.....	17
Figure 1-21. Expanded View Label Hot Spot.....	17
Figure 1-22. Expanded Shelf View.....	17
Figure 1-23. Expanded Shelf View showing Numeric Signal Quality Reading.....	18
Figure 1-24. Sample Last Voted Screen Report.....	19
Figure 1-25. Time Statistics Report.....	19
Figure 1-26. Count Statistic Report.....	20
Figure 1-27. DIP Switch Values Report.....	21

Page Body Intentionally Left Blank

## Licensing Information

### Voter Remote Interface Licensing:

The Voter Remote Interface (VRI) from Fial Incorporated is a Client/Server application. Fial Incorporated grants the individual or company purchasing this software the right to install and use the VRI *Server* program on a *single* computer. The VRI Client software may be installed on multiple computers, but a maximum of only ten (VRI-14), or twenty (VRI-28-XC), VRI Client log-ins are allowed concurrent access to the VRI Server program.

### Copyright and Trademarks:

Copyright © 2015 by Fial Incorporated. All rights reserved.

Passing on and copying of this product, use and communication of its contents not permitted without written authorization from Fial Incorporated.

All brand and product names are trademarks of their respective holders.

Page Body Intentionally Left Blank

## 1 VOTER REMOTE INTERFACE

The SNV-12 Signal-and-Noise Voter from Raytheon® JPS Communications™ selects the best audio input signal from up to 12 sites. The SNV-12 voter is a rack-mount shelf unit containing a Power Supply Module (PSM), a Console Interface Module (CIM), a Control Processor Module (CPM-1 or CPM-3), and up to 12 individual Site Voter Modules (SVM) used to determine the best Signal Quality input.

The Voter Remote Interface (VRI) from Fial Incorporated provides a means of remotely monitoring and controlling the individual Site Voter Modules in multiple SNV-12 Voter shelves. The Voter Remote Interface consists of a single Server program and up to 10 (VRI-14), or up to 20 (VRI-28-XC), instances of the Client program running on separate computers and connecting to the Server. There are two versions of the VRI Server program, depending on the maximum number of SNV-12 shelf connections required. For smaller systems, the VRI-14 (w/10 client logins) can connect to a maximum of 14 individual SNV-12 shelves, while larger systems may require the VRI-28 (w/10 client logins), or the VRI-28-XC (w/20 client logins), which can connect to a maximum of 28 individual SNV-12 shelves.

The VRI Server program to SNV-12 Shelf connection depends on the CPM module being used. SNV-12 shelves with CPM-1 modules only have an RS-232 serial port for control and monitoring functions. Remote access to this port is typically over a TCP/IP network, using a co-located TCP/IP to RS-232 serial converter (such as the Black Box® Advanced Console Server 8). The VRI Server program communicates with SNV-12 shelves with the CPM-1 module using this type of TCP/IP to RS-232 converter. SNV-12 shelves with CPM-3 modules can communicate via either an RS-232 port or an Ethernet port. The RS-232 port on this module would typically be used only for local control, while the Ethernet port would be used for remote control and monitoring purposes. The VRI Server program communicates with SNV-12 shelves with the CPM-3 module directly, via the Ethernet port. It is recommended that you only make one type of connection to the CPM-3 module at a time (either Ethernet or RS-232 serial).

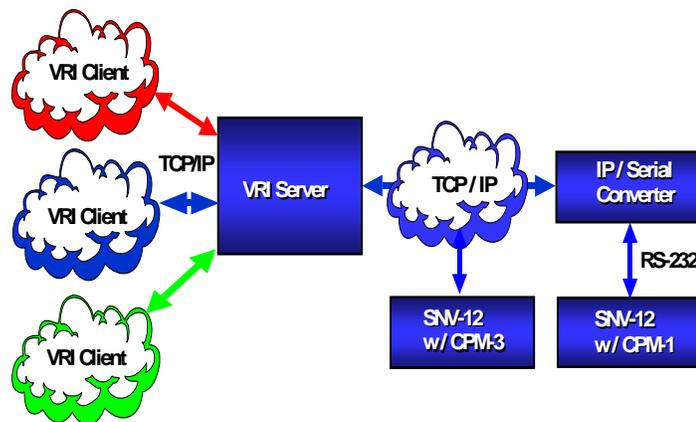


Figure 1-1. VRI System Overview

The VRI Server program reads the state of the individual Site Voter Modules in each of the monitored SNV-12 voter shelves two times per second. The VRI Server program then passes only change of state information over the TCP/IP network to all connected VRI Client programs. All Server/Client communications are encrypted for security. It also forwards any control commands received from VRI Client programs to the target SNV-12 and SVM card.



Figure 1-2. VRI Server Window (14 Shelf version)



Figure 1-3. VRI Server Window (28 Shelf version)

The VRI Client program graphically displays each of the connected SNV-12 Voter shelves and the individual Site Voter Module cards populating each shelf. The individual Site Voter Modules in each shelf can also be remotely controlled from the VRI Client program. The SNV-12 must be properly configured to allow serial port or Ethernet TCP/IP remote control for this function to operate.



Figure 1-4. VRI Client Window (14 Shelf version, with only 6 shelves populated)



Figure 1-5. VRI Client Window (28 Shelf version, partial display with thumb-bar enabled)

## 1.1 VRI Server Installation and Setup

Load the VRI Server program (VRIserver\_XX.exe) on any computer that has access to the JPS SNV-12 Voter rear panel Ethernet port (via a TCP/IP connection), or serial port (via a co-located IP-to-Serial converter box). If the CD install program does not start automatically, run "setup.exe" in the "Disk1" folder. Your license agreement allows you to install the VRI Server program on a single computer. The VRI Client program (VRIClient.exe) may be installed on multiple computers. When installing the **VRI Server** program, make sure to check **BOTH Server** and **Client** program files options in the **Select Features** installation dialog. Accept all other installation defaults. By default, the installation program installs the VRI programs and support documents in *C:\VRI* directory. You can change the path if desired.

### 1.1.1 VRI Server - Run As A Service

Starting with version 1.1.11, you can choose to install the VRI Server program to **Run As A Service**. Running the VRI Server as a service is an optional feature. If you select the Run As A Service option, you also have the choice of configuring the VRI Server Service to be started and stopped **manually** (the default setting), by using the Services applet or Command Prompt interface, or to be started **automatically** whenever the host computer is restarted/rebooted. Configuring the VRI Server program as a **Service** and using the automatic start option allows for unattended VRI Server Service start-up whenever the host computer is restarted/rebooted (no server computer login required).

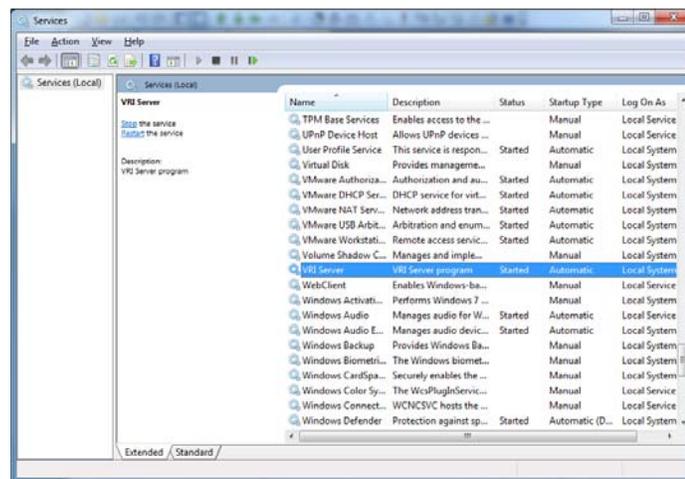


Figure 1-6. Windows Services Applet

**IMPORTANT NOTE:** Before you start the VRI Server as a **Service** for the first time, you must start the VRI Server and Client programs from the host computer Desktop icons, in order to initially configure the VRI Server program settings. Use the local VRI Client program to verify those settings.

*After* the VRI Server program is fully configured and successfully monitoring your SNV-12 rack(s), you can close the Desktop GUI and start the VRI Server Service. If the VRI service was configured for **Manual** start, you will have to start/restart the service whenever the host computer is restarted/rebooted. If the VRI service was configured for **Automatic** start, simply restarting/rebooting the host computer will start the service. You should only need to stop the VRI Server Service and use the Desktop Server GUI interface when changes to the VRI Server program settings are required. **NOTE:** You can **NOT** run the VRI Server as a Service and Desktop GUI application at the same time. You will get an error message notification.

## 1.2 Obtaining a Registration Key File

The VRI Server program requires a valid **Key.txt** file to run in fully registered mode. The Server program runs in **Demo** mode without a valid key file, or when a key file with an extended trial period has expired. Demo mode is fully functional, allowing monitoring, control commands and all logging, but will automatically shut-down after 3 hours of operation. Restarting the VRI Server program initiates another 3 hour demo period.

Starting an unregistered VRI Server program will open the **Unregistered Version** dialog window. This window displays a unique **Site Code** for your VRI Server installation. Call or email your application vendor to obtain a valid registration key file. Copy the provided **Key.txt** file into the same folder where the VRI Server program was installed and then restart the VRI Server program.



Figure 7. Unregistered Version Dialog

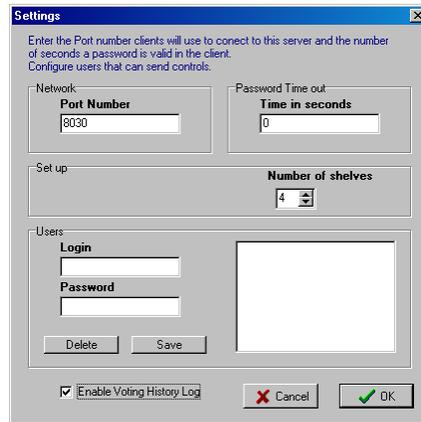
## 1.3 Initial Server Configuration

When you run the VRI Server program for the first time, an initial *Settings* dialog window opens (see Figure 1-8). This dialog allows you to specify the port number the VRI Client programs will use to connect to this server. Enter a **unique** and **unused** port number in the Network **Port Number** entry field. This same port number is used when setting up the VRI Client program. Both Server and Client must match.

Define the number of shelves to display in the VRI Client in the **Set Up** section. The number of shelves displayed can be set from the minimum of 4, up to the maximum of 14 for VRI-14, or up to 28 for VRI-28 (in multiples of 2, since there are always 2 columns of SNV-12 shelves). Use the up-arrow and down-arrow to select the desired number of shelf positions to display.

The VRI Server program restricts which VRI Client users are allowed to send control commands to the Site Voter Modules by specifying individual users login names and passwords. If desired, enter a unique login name in the **Login** field and a password in the **Password** field. Push the **Save** button to accept this user login and password. All users can use the same login name and password, or - you can specify a login name and password for each individual user.

Current Users are listed to the right of the entry fields. Existing users passwords can be edited by selecting the name from the list, editing the password, then saving.



**Figure 1-8. VRI Server Setup Dialog Window**

The Server program also controls how long a Client password remains valid before it must be re-entered. This insures that if a VRI Client connection is left open, it does not allow unauthorized users control access. Enter the desired value in the **Time in Seconds** input field. Enter a **Time Out** value of **0** if you do not require password entry for any control operations. This effectively disables the VRI Client to Server login/password feature.

Push the **OK** button to accept the setup choices and create the VRIServer.ini file. This then opens the main VRI Server window (see Figure 1-9). If you need to edit the Server setup parameters **after** the initial start-up, left-click on the small Fial Incorporated logo (upper-right corner of the rack graphic in the VRI Server window - see Figure 1-9). This opens the VRI Server setup dialog window again for editing.

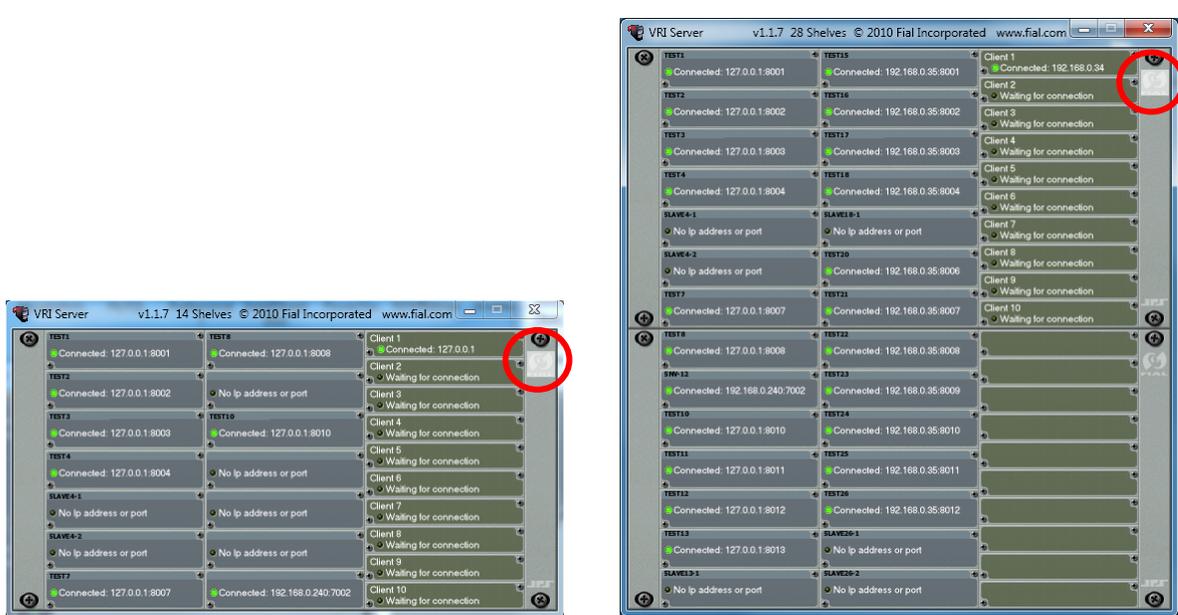
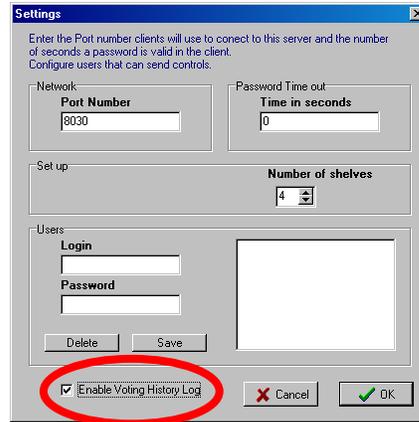


Figure 1-9. VRI Server Window (14 Shelves) & VRI Server Window (28 Shelves)

The VRI Server window also displays the connection status of up to ten (VRI-14 & VRI-28), or twenty (VRI-28-XC), individual VRI Client programs in a simulated rack graphic. The VRI Client connection information is displayed on *shelf-like* graphic placeholders on the right side of the display. Each Client connection has an individual placeholder that either displays a message of “Waiting for connection”, or “Connected: NNN.NNN.NNN.NNN”. The connected message includes the Client computer’s IP address. Clients are listed top to bottom in the order they connect. This section of the display is for VRI Client connection information purposes only, no settings are performed from this section.

### 1.3.1 Voting History Log

A log of all voting events is available in the file named *Voting log.txt*. To enable this log, open the VRI **Server** Settings window and check the Enable Voting History Log box. This log file is located in the same folder as the VRI Server program (C:\VRI).



**Figure 1-10. Enable Voting History Log**

The first line of a voting event entry is time-stamped and includes the SNV-12 shelf number & name, the SVM card number & name, and "Voted".

Additional indented log entry lines for this voting event include the SVM card number, card name, Unsqlched state, and Signal Level for **EACH** of the populated SVM cards in that shelf at the time of the voted event. This log file can be useful as a trouble-shooting aid.

Sample Voting Log entries:

3/26/2015 15:11	Shelf 2 Fial Radio Room	Card 5 SVM5-2	Voted	
	Card 1	SVM1-2	Unsqlched = False	Signal Level = 27
	Card 2	SVM2-2	Unsqlched = True	Signal Level = 14
	Card 3	SVM3-2	Unsqlched = True	Signal Level = 3
	Card 4	SVM4-2	Unsqlched = False	Signal Level = 29
	Card 5	SVM5-2	Unsqlched = False	Signal Level = 0
	Card 6	SVM6-2	Unsqlched = True	Signal Level = 8
	Card 7	SVM7-2	Unsqlched = False	Signal Level = 21
	Card 8	SVM8-2	Unsqlched = True	Signal Level = 12
	Card 9	SVM9-2	Unsqlched = False	Signal Level = 22
3/26/2015 15:11	Shelf 8 Radio Rm Nrth Master	Card 1 SVM1-8	Voted	
	Card 1	SVM1-8	Unsqlched = True	Signal Level = 6
	Card 2	SVM2-8	Unsqlched = True	Signal Level = 27
	Card 3	SVM3-8	Unsqlched = True	Signal Level = 18
	Card 4	SVM4-8	Unsqlched = False	Signal Level = 21
	Card 5	SVM5-8	Unsqlched = False	Signal Level = 6
	Card 6	SVM6-8	Unsqlched = False	Signal Level = 12
	Card 7	SVM7-8	Unsqlched = False	Signal Level = 8
	Card 8		Unsqlched = True	Signal Level = 31
	Card 9	SVM9-8	Unsqlched = False	Signal Level = 6
	Card 10	SVM10-8	Unsqlched = False	Signal Level = 17
	Card 11	SVM11-8	Unsqlched = False	Signal Level = 24
	Card 12	SVM12-8	Unsqlched = False	Signal Level = 17

The Voting History Log will record up to 2000 individual voting events. After 2000 voting events have been logged, it renames the current "Voting log.txt" file to "Voting log.txt.old" and creates a new "Voting log.txt" file. If a previous "Voting log.txt.old" log file exists, it is deleted, then the current log file is renamed.

### 1.3.2 VRI Server Configuration of SNV-12 Shelves

The VRI Server program can connect to a maximum of 14 (or 28) different SNV-12 shelves. Individual SNV-12 shelves are represented as *shelf-like* graphic placeholders on the Server window. These shelf placeholders are arranged in an array of 2 columns by 7 (or 14) rows, to display the number of SNV-12 shelves configured in the VRI Server set-up. For the 14 shelf VRI Server, the placeholders are numbered from the top-left corner (Shelf #1) down to the bottom-left corner (Shelf #7), then from top-middle (Shelf #8) down to the bottom-middle (Shelf #14). For the 28 shelf VRI Server, the placeholders are numbered from the top-left corner (Shelf #1) down to the bottom-left corner (Shelf #14), then from top-middle (Shelf #15) down to the bottom-middle (Shelf #28). These placeholders are in the same location and order as found on the VRI Client program window (see Figure 1-14). For VRI systems with fewer than the maximum number of supported shelves, you can configure the Server to display anywhere from a minimum of 4, up to the number of shelves actually being monitored (in multiples of 2).

To configure the VRI Server for a particular SNV-12 shelf, find the desired shelf placeholder location, move the mouse pointer over it and left-click. This opens the *Shelf X Settings* dialog window (see Figure 1-11). Use this window to enter *Network* parameters for the SNV-12 shelf and card names for the individual Site Voter Modules populating the shelf.

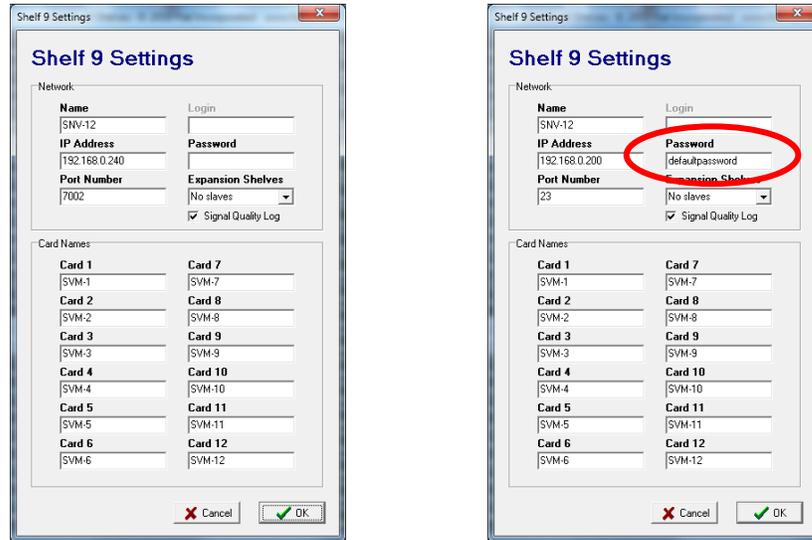
Enter a unique name for the SNV-12 shelf in the **Name** field. The shelf name should be limited to 12 characters. This is so that the entire name can be displayed on the placeholder in the VRI Server window and also on the left side of the corresponding shelf display in the VRI Client program window.

**CPM-1 Controllers:** For co-located TCP/IP to RS-232 serial converters, enter the IP address of the converter box used to connect to the target SNV-12 shelf (CPM-1 module) in the **IP Address** field. Note that each RS-232 connection port on the converter box is assigned a unique port number, so enter the number assigned to this connection in the **Port Number** field. Refer to the operations manual supplied with your IP to RS-232 converter box for complete configuration instructions. Note that a Password entry is not used or required for RS-232 connections to the CPM-1 module.

**CPM-3 Controllers:** For direct Ethernet connections (CPM-3 module), enter the IP address of the SNV-12 shelf in the **IP Address** field. Enter the SNV-12 port number in the **Port Number** field. The standard VRI port used is Telnet **Port 23**. Verify that the specified port is open.

**NOTE:** If the VRI Server is unable to connect to an SNV-12 at the specified IP address and Port, then a red “X” is placed over the graphic for that shelf on the Client window (see Figure 1-14). This connection problem may be due to entering the wrong IP address or Port number, or the IP address is unreachable, or the specified Port is blocked, or the Port is already in use by another program. Verify the IP address and Port number if this occurs.

The **Login** setting is for future JPS enhancement and is not enabled at this time. A **Password** may be required for Ethernet connection security for the CPM-3 module. Enter the CPM-3 default **Password** for the selected SNV-12 shelf. The default password is found in your SNV-12 documentation.



CPM-1 RS-232 connection

CPM-3 Ethernet connection

**Figure 1-11. Shelf Settings Window**

Use the **Expansion Shelves** drop-down list (see Figure 1-11) to set the number of additional expansion shelves physically connected to the selected “master” shelf. A maximum of two additional shelves can be daisy-chained to a “master” shelf. One expansion shelf extends a voting system to 24 possible sites. Two expansion shelves extend a system to 36 possible sites. If there are no expansion shelves connected, keep the **No Slaves** default setting.

**IMPORTANT NOTE:** Expansion shelves are always displayed directly **following** their parent “master” shelf on the VRI SNV-12 shelf display (regardless of their physical location in your rack). For example, if you defined the 6<sup>th</sup> shelf placeholder (bottom-left, Shelf #6) as a “master” with 2 expansion shelves, then the following two placeholders (Shelf #7 bottom-left and Shelf #8 top-middle) would be dedicated to that “master”. With this configuration, Shelf #13 placeholder would only allow 1 expansion shelf, and Shelf #14 placeholder would not allow any expansion shelves.

**IMPORTANT NOTE:** Make sure that you do not attempt to define a “master” shelf with one or two expansion shelves that will overlap previously defined shelves on the VRI Server display (placeholders immediately following the “master” shelf placeholder). If an expansion shelf

would overlap a configured shelf, the program will warn you and not allow the change. Assign the “master” shelf to a different placeholder location, or un-configure the defined shelf(s) by deleting their IP Address setting.

Enter a name for each of the Site Voter Module cards populating this shelf in the appropriate **Card Names** entry fields (see Figure 1-11). These card names are displayed on the individual Site Voter Module graphics of the appropriate SNV-12 shelf in the VRI Client window and in log/report files. Card name entry is optional, but recommended. The name should be limited to 6 characters in order to fit in the limited space available at the top of the individual card graphic.

### 1.3.3 Signal Quality Log

Check the **Signal Quality Log** box to create a log file of the Signal Quality levels for each Site Voter Module populated in the **currently selected** shelf. These values drive the bar graph display on each SVM card graphic on the VRI Client shelf graphic. The log file is saved as a comma delimited file (CSV) for simple import into any spreadsheet program. Signal quality data is retrieved from all populated SVM cards in the shelf once per minute and logged to the file.

Timestamp	SVM1	SVM2	SVM3	SVM4	SVM5	SVM6	Card 7	Card 8	Card 9	Card 10	Card 11	SVM12
4/1/2015 12:05	1	6	13	11	18	17	30	22	9	27	14	7
4/1/2015 12:06	3	27	8	6	20	12	25	23	5	3	10	8
4/1/2015 12:07	7	24	27	4	2	9	7	14	21	30	26	4
4/1/2015 12:08	25	9	15	14	20	26	0	31	5	4	17	9
4/1/2015 12:09	29	10	3	15	8	27	13	0	25	12	30	17

**Figure 1-12. Sample Signal Quality Log for a Specific SNV-12 Rack**

New data is appended to the file, if the file already exists. You should disable this function when not needed, in order to keep the log file from growing too large. The log files are saved in the VRI Server program’s home directory. The files are named "**Signal Quality Log** - ", appended with the selected shelf name (i.e. **Signal Quality Log - Test Shelf 1.csv**).

There are columns for the twelve possible module positions in the shelf. Each new row of data is time-stamped.

## 1.4 VRI Client Installation and Setup

The VRI Client and Server programs communicate over an IP network connection. Load the VRI Client program (VRIClient.exe) on any computer that has network connectivity to the computer hosting the VRI Server program. Run "setup.exe" in the "Disk1" folder to install the VRI Client program. Your license agreement allows you to install the VRI Server program on only one computer, but you may install the VRI Client program on as many computers as required.

To install just the VRI Client program, **check** the "Client program files" option and leave the "Server program files" option **unchecked** in the **Select Features** installation dialog. Accept all other installation defaults. The installation program installs the VRI program and support documents in the **C:\VRI** directory.

When you run the Client program for the first time, an initial setup dialog window opens (see Figure 1-13). This dialog allows you to specify the IP address of the VRI Server program computer.

Because of the amount of detail that needs to be displayed by the VRI Client program, the computer running the Client program requires a minimum monitor resolution setting of 1280 by 960. A monitor display resolution of 1280 by 1024 or better is highly recommended.

Enter the appropriate address in the **IP Address** entry field. You must also enter the port number used to connect to the VRI Server program. Enter the **same** port number in the Client's **Port Number** entry field that you entered for the port number in the initial VRI Server setup. These port numbers must match.

Only check the **Invert SQ Level** box if you want to change the way the SQ Level bar graph normally displays its data. The default setting is unchecked. This is a customer preference setting, since this information is not available on the actual SVM cards. Signal Quality display is explained in detail in section 1.4.1 - Site Voter Module Cards.



Figure 1-13. VRI Client Settings Dialog Window

Push the **OK** button to accept the initial Client settings and open the VRI Client window displaying a graphical view of the SNV-12 shelf (see Figure 1-14). If you need to edit the Client setup parameters **after** the initial start-up, left-click over the small Fial Incorporated logo on the top-right SNV-12 shelf graphic (the top-right corner of shelf - see Figure 1-14). This opens the Client Settings window for editing.

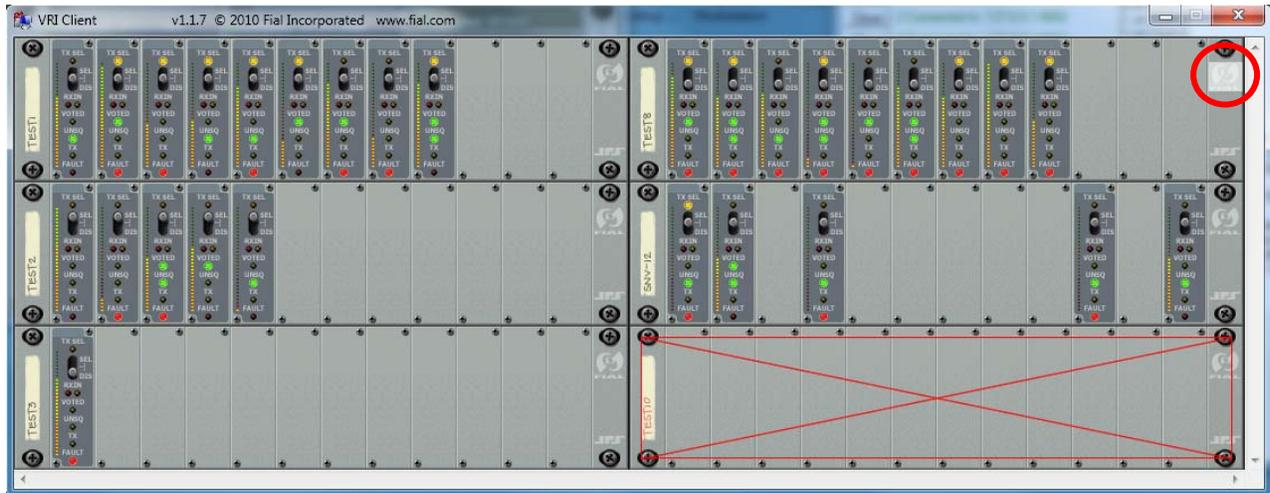


Figure 1-14. VRI Client Window with 1 non-responding SNV-12 Shelf

The VRI Client window displays the SNV-12 shelves as configured in the VRI Server window and displays the individual Site Voter Module cards populating each shelf. The order of the SVM cards displayed in the shelf graphic is based on the left-to-right order of the cards populating the physical shelf, to the right of the CPM-1 or CPM-3 module. For space reasons, the PSM, CIM and CPM modules are *not* displayed on the shelf graphic. Any SNV-12 shelves configured in the Server, but not responding, are represented by a red “X” over the shelf graphic on the Client window (see bottom-right of Figure 1-14).

If the Client window only displays red “X”s over all shelf graphics after configuring the Client Settings, then you should re-check the VRI Server configuration settings.

### 1.4.1 Site Voter Module Cards

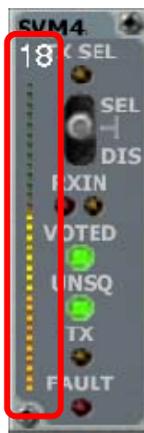
The Site Voter Modules are graphically represented in the shelf display using the SVM-2 faceplate as the template for both SVM-1 and SVM-2 cards (see Figure 1-15). Real-time selection switch position and LED indicator states (ON/OFF) for each SVM are accurately reproduced on the graphic.



Figure 1-15. SVM Cards in SNV-12 Shelf Graphic

Representation of the Signal Quality level (not displayed on the actual SVM cards) is displayed as a color-coded vertical LED bar graph on the left edge of each SVM card graphic, along with the numeric value above the graph (only in the expanded shelf view), see Figure 1-16. The default setting for the display is the better the Signal Quality level, the higher the SQ level numeric value and higher the bar graph. If the *Invert SQ Level* box is checked, then the worse the SQ level, the higher the SQ level numeric value and the higher the bar graph display.

**NOTE:** The Signal Quality log records the actual (non-inverted) numeric values as reported by the SNV-12 shelf. The inverted SQ information is only a customer display preference setting.



**Figure 1-16. Site Voter Module Signal Quality Level Bar Graph Display**

Moving the mouse cursor over the SVM cards automatically opens a status window for the selected (highlighted in gray) SVM card (see Figure 1-17). This is a textual display of the current switch position and LED states of the selected SVM card, with additional information of the current Signal Quality Level (SQ Level) and the date and time this SVM card was last voted (to the right of the current Voted TRUE/FALSE status).



**Figure 1-17. Selected SVM Card Status Window**

### 1.4.1.1 Manual Control of Site Voter Modules

To manually control individual SVM cards, select the desired card by positioning the mouse cursor over the SVM card graphic (highlight it) and then left-click. This opens the currently selected SVM card's Option Menu (see Figure 1-18).

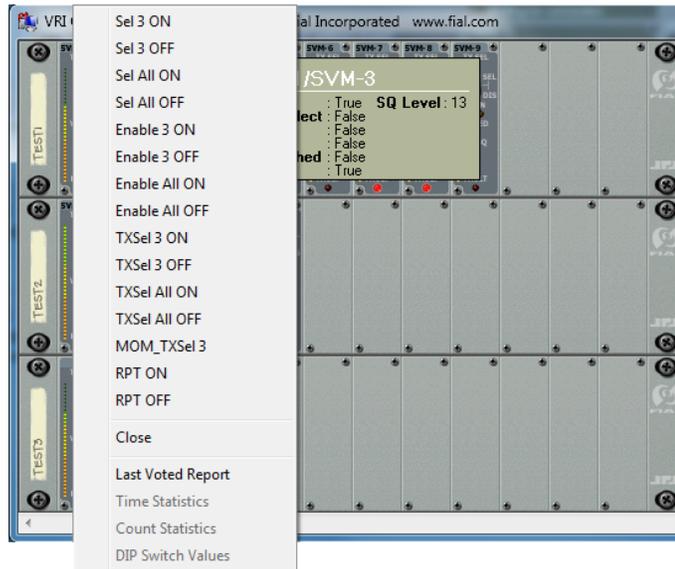


Figure 1-18. Selected SVM Card Option Menu

**IMPORTANT NOTE:** The SVM module must be in *NORMAL* mode (middle position) to be remotely controlled. The VRI is unable to over-ride a module physically switched to either *Select* (forced vote), or *Disabled* modes.

Select any one of the listed commands as required. Refer to the *SNV-12 Operations Manual* supplied with your system for complete explanations of the various commands listed in the VRI options menu.

The **Sel X ON/OFF** commands select (forced-vote) or de-select the current site (SVM). The **Sel All ON/OFF** commands act on all modules in the shelf.

The **Enable X ON/OFF** commands enable or disable voting for the current site (SVM). The **Enable All ON/OFF** commands act on all modules in the shelf.

The **TXSel X ON/OFF** commands selects the current site (SVM) to send or not send console audio out its transmitter. The **TXSel All ON/OFF** commands act on all modules in the shelf.

The **MOM\_TXSel X ON/OFF** command selects the current site (SVM) to send or not send console audio out its transmitter. This is a momentary action, valid only until another site is selected, or the Holdover Timer expires.

The **RPT ON/OFF** commands enables or disables repeat mode.

To close the Option Menu, click anywhere outside of the Option Menu list, or select the **Close** options.

If the Server *Password Time Out* value is set to **0**, no login or password is required for control operations.

If a control operation login/password is required, selecting and left-clicking on any of the commands (upper section) will open an authentication dialog window asking for a **Login** name and **Password** (see Figure 1-19). Enter the required information.

Valid login name and password entries are remembered for the **Password Time-out** period (as configured earlier in the VRI Server set-up), so you will not have to re-enter these parameters within this time period if issuing additional control commands.



**Figure 1-19. Authentication Dialog Window**

Once the Password Time-out period has expired, the entry fields are cleared and you will have to re-enter the **Login** name and **Password**. Push the **OK** button to send the selected command to the target SNV-12 module. Push the **Cancel** button to cancel this command.

After the command has been sent, a status message is displayed across the front of the shelf indicating the success or failure of the attempted command from the VRI Client (via the VRI Server) to the target SVM card (see Figure 1-20).



Figure 1-20. Command Execution Status Message

### 1.4.1.1 Expanded Shelf View

Left-clicking on an individual shelf label (the vertical tag on the left-side of each shelf), opens an expanded view of the selected SNV-12 shelf graphic (see Figure 1-21).



Figure 1-21. Expanded View Label Hot Spot

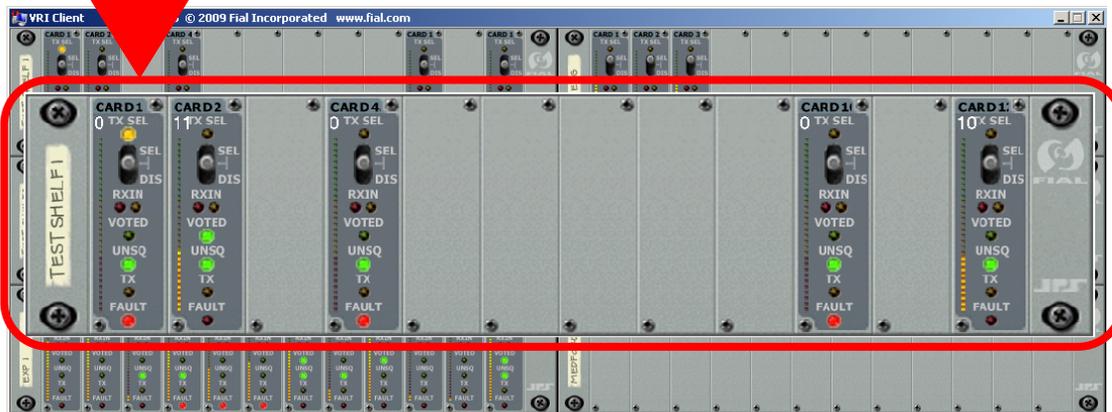


Figure 1-22. Expanded Shelf View

This expanded shelf view is centered in the VRI Client window and displays the same graphical information as the standard shelf view, with the addition of the *numeric* Signal Quality level value at the top of the bar graph for each module (see Figure 1-23). All standard control operations can be initiated from the expanded view as well. Left-clicking on the label of the expanded view again closes the expanded view window (acts as a toggle).



Figure 1-23. Expanded Shelf View showing Numeric Signal Quality Reading

### 1.4.1.2 Reports

Depending on the type of CPM module in your SNV-12 shelf, the VRI system provides several reports. Both the CPM-1 and CPM-3 modules provide the **Last Voted Report**. Only the newer CPM-3 controllers provides the additional **Time Statistics**, **Count Statistics** and **DIP Switch Values** reports.

Select the **Last Voted Report** option to generate a report showing the last date and time that every populated module in each shelf was voted. Modules that have never been voted have blank entries (see Figure 1-24).

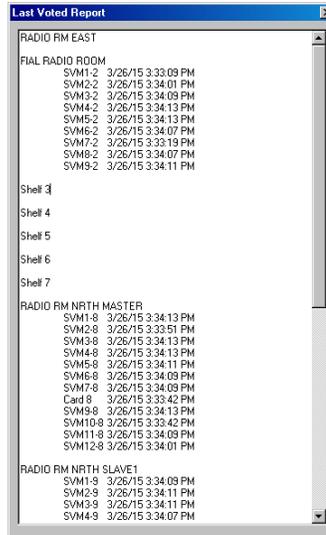


Figure 1-24. Sample Last Voted Screen Report

Select the *Time Statistics* option to generate a report showing the time that every module spent in the Unsquelled, Voted and Faulted conditions, for the current partial hour, day and week, as well as the last full hour, day and week. The report can be directed to a printer by pushing the *Print* button in the upper-right corner of the report window.

The screenshot shows a window titled "Time Statistics for ROSEBERG" containing a table with columns for "Part Hour", "Prev Hour", and "Part Day". Each of these columns is further divided into "UNSQ", "VOTE", and "FAULT" sub-columns. The table lists 36 rows of data, each representing a module (SVM1 through SVM36). The data values are in HH:MM:SS format, showing the time spent in each condition. A "Print" button is visible in the top right corner of the window.

SVM	Part Hour			Prev Hour			Part Day		
	UNSQ	VOTE	FAULT	UNSQ	VOTE	FAULT	UNSQ	VOTE	FA
1	00d 00:02:32	00d 00:00:00	00d 00:02:32	00d 00:58:50	00d 00:00:00	00d 00:58:50	00d 18:38:44	00d 00:00:26	00d 18
2	00d 00:02:32	00d 00:00:00	00d 00:02:32	00d 00:58:50	00d 00:00:00	00d 00:58:50	00d 18:38:44	00d 00:00:00	00d 18
3	00d 00:02:32	00d 00:00:00	00d 00:02:32	00d 00:58:50	00d 00:00:00	00d 00:58:50	00d 18:38:44	00d 00:00:00	00d 18
4	00d 00:02:32	00d 00:00:00	00d 00:02:32	00d 00:58:50	00d 00:00:00	00d 00:58:50	00d 18:38:44	00d 00:00:00	00d 18
5	00d 00:00:00	00d 00							
6	00d 00:00:00	00d 00							
7	00d 00:02:32	00d 00:00:00	00d 00:02:32	00d 00:58:50	00d 00:00:00	00d 00:58:50	00d 18:38:44	00d 00:00:00	00d 18
8	00d 00:00:00	00d 00							
9	00d 00:00:00	00d 00							
10	00d 00:00:00	00d 00							
11	00d 00:00:00	00d 00							
12	00d 00:00:00	00d 00							
13	00d 00:00:00	00d 00							
14	00d 00:00:00	00d 00							
15	00d 00:00:00	00d 00							
16	00d 00:00:00	00d 00							
17	00d 00:00:00	00d 00							
18	00d 00:00:00	00d 00							
19	00d 00:00:00	00d 00							
20	00d 00:00:00	00d 00							
21	00d 00:00:00	00d 00							
22	00d 00:00:00	00d 00							
23	00d 00:00:00	00d 00							
24	00d 00:00:00	00d 00							
25	00d 00:00:00	00d 00							
26	00d 00:00:00	00d 00							
27	00d 00:00:00	00d 00							
28	00d 00:00:00	00d 00							
29	00d 00:00:00	00d 00							
30	00d 00:00:00	00d 00							
31	00d 00:00:00	00d 00							
32	00d 00:00:00	00d 00							
33	00d 00:00:00	00d 00							
34	00d 00:00:00	00d 00							
35	00d 00:00:00	00d 00							
36	00d 00:00:00	00d 00							

Figure 1-25. Time Statistics Report

Select the **Count Statistics** option to generate a report showing the number of times that every module was Unsquelled, Voted and Faulted, for the current partial hour, day and week, as well as the last full hour, day and week. The report can be directed to a printer by pushing the **Print** button in the upper-right corner of the report window.

SVM	Part Hour			Prev Hour			Part Day			Prev Day			Part Week			Prev Week		
	U	V	F	U	V	F	U	V	F	U	V	F	U	V	F	U	V	F
1	0	0	0	0	0	0	1	1	6	0	0	0	1	1	6	0	0	0
2	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0
3	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0
4	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 1-26. Count Statistic Report

Select the **DIP Switch Values** option to generate a report showing the current DIP switch settings of the CPM-3, CIM and SVM modules populating the SNV-12 shelf. The report can be directed to a printer by pushing the **Print** button in the upper-right corner of the report window.

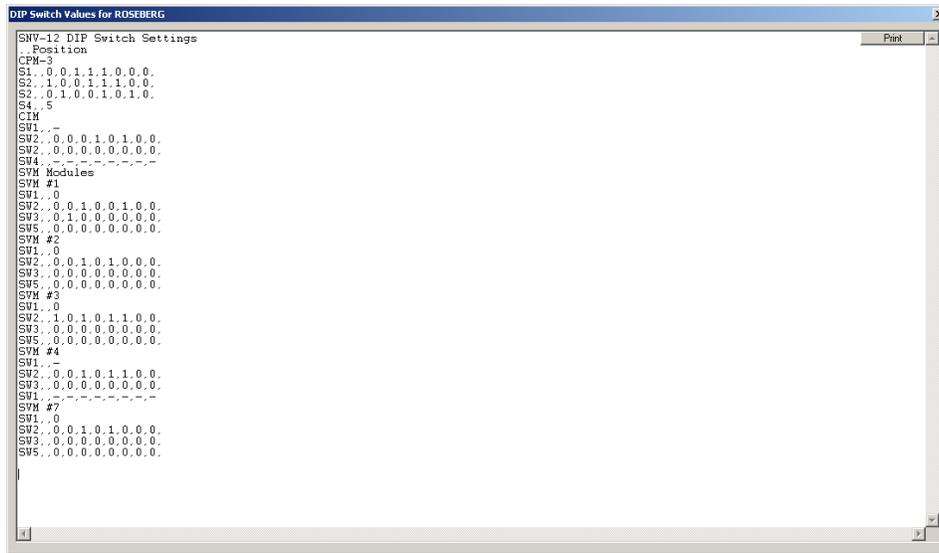


Figure 1-27. DIP Switch Values Report

### 1.4.1.3 Manual Control Log

A log of all manual controls is available in the file named **Control log.txt**. This file is located in the same folder as the VRI Server program (C:\VRI). Entries are time-stamped and indicate the shelf name (shelf number if name is blank), command executed, SVM card number, ON/OFF/All request and which user and their IP address sent the command.

Sample Control Log entries:

```

2/19/2008 9:36:22 AM Shelf 8 "ENABLE 3 ON" sent by user admin from 192.168.0.34
2/19/2008 9:38:33 AM Shelf 8 "TXSEL 3 ON" sent by user ntl from 192.168.0.34
    
```

### 1.4.1.4 Module Fault Log

A log of all module fault state changes is available in the file named **Fault log.txt**. This file is located in the same folder as the VRI Server program (C:\VRI). Entries are time-stamped and indicate the shelf number and name (shelf number duplicated if name blank), card number and name (card number duplicated if name blank), and Fault state change. This log can be useful as a trouble-shooting aid.

## Sample Fault Log entries:

3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 1	SVM1-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 2	SVM2-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 3	SVM3-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 4	SVM4-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 5	SVM5-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 7	SVM7-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 2	Fial	Radio Room	Card 8	SVM8-2	Fault	True
3/26/2015	3:18:09	PM	Shelf 8	Radio Rm	Nrth Master	Card 4	SVM4-8	Fault	False
3/26/2015	3:18:09	PM	Shelf 8	Radio Rm	Nrth Master	Card 7	SVM7-8	Fault	False
3/26/2015	3:18:09	PM	Shelf 8	Radio Rm	Nrth Master	Card 8		Fault	True
3/26/2015	3:18:09	PM	Shelf 8	Radio Rm	Nrth Master	Card 11	SVM11-8	Fault	True
3/26/2015	3:18:09	PM	Shelf 8	Radio Rm	Nrth Master	Card 12	SVM12-8	Fault	False