



Static Controls Corporation
30460 Wixom Rd.
Wixom, MI. 48393

990 LCD Product

Andon Board Solution User Manual

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1.0 Purpose

This manual is intended as a guide for the setup and use of 990 LCD Series signs, manufactured by Static Controls Corporation.

2.0 Revision History

Document	Date	Notes
990-USER-MANUAL	01/15/2015	Preliminary release.



3.0 Getting Started

This page covers important setup issues and provides general notes about this manual and the 990 LCD Series product.

IMPORTANT: Voltage Switch Setting of PC and Power Supplies

Before connecting a power source to the sign, ensure that input voltage switches are set correctly on the power supplies and the PC inside the sign (either 115 V ac or 230 V ac). Figure 1 below indicates the location of these switches. The number of power supplies varies by model number. Each has its own input voltage switch. All must be set to the appropriate position.



**Power Switch for PC
Power Supply**

Figure 1 – Power Supply and PC Input Voltage Switch

IMPORTANT: Before connecting a monitor, keyboard or mouse directly to the PC in a running sign, it is necessary to perform a proper shutdown of the sign first (see Proper Shutdown Sequence section of this manual).

NOTE: The recommended Windows desktop setting is 1024 pixels wide by 768 pixels high (factory-default setting). Changing this setting may have an undesirable effect, such as panning of the LED display image in response to cursor movement on the desktop.



4.0 Setting An IP Address

4.1 Factory Setting

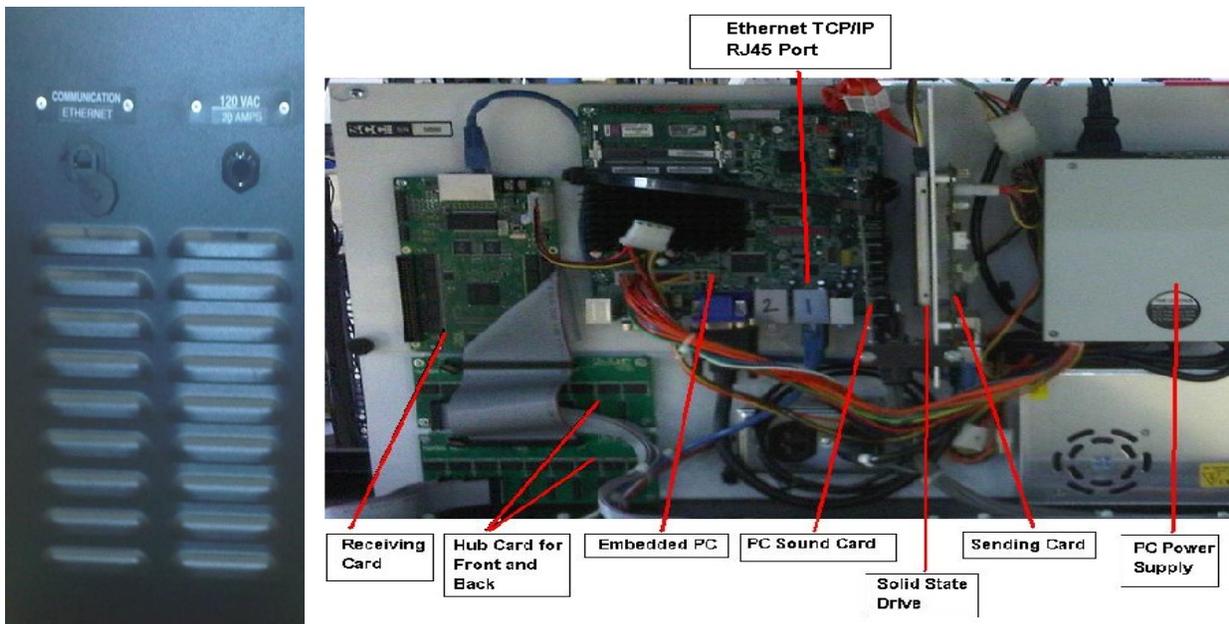
In order to change the IP address of a sign, the sign must have an IP address, and you must know what it is. All 982 DVI Series signs leave the SCC manufacturing facility set to the temporary IP address of 192.0.1.230, with a subnet mask of 255.255.255.0. In order to connect to this IP remotely to set its permanent IP address, it is necessary to connect from a PC with an IP address of 192.0.1.xxx, where 'xxx' is a number from 001 to 255, other than 230 (i.e. other than 230 because that is the value of the last byte of the sign address). For specific information regarding your network configuration, contact your network administrator.

Note: If the Enhanced Write Filter and Firewall is enabled please see Appendix C for procedure.

4.2 Physical Connection

The physical Ethernet connection is made using a CAT5 cable with a RJ-45 connector to a external connector on the side of the enclosure. If there is not a remote connector on the side of the enclosure you will need to connect to port 1 of the PC shown in Figure 2.

Figure 2 – Physical Connection, Side of Enclosure and Back of PC, CAT5 Cable, RJ-45 Connector



4.3 Install VNC Viewer Software On Your Computer

VNC Viewer is a software application that allows you to view and control the computer running in the 990 Series sign. VNC Viewer runs on your Windows PC, and connects to the VNC Server pre-installed in the sign. You may obtain a free copy of VNC Viewer at <http://www.realvnc.com>.

After installing and running VNC Viewer, you are prompted for the target IP address as illustrated in Figure 3.



Figure 3 – VNC Viewer Software Application, Prompt For Sign IP Address

After entering the sign IP address, you will be prompted for a password as illustrated in Figure 4 below. The default password is vnc .

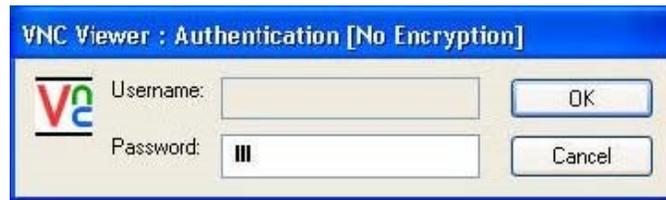


Figure 4 – VNC Viewer Software Application, Prompt For Password

4.4 Using VNC Remote Connection to Set the IP Address

4.4.1 Once connected to the sign using VNC Viewer, you have remote control access of the Windows desktop running on the computer in the sign. You operate it just as you would any PC. The first time you establish this connection, you will see the program DVISimOPC or DVIShow running, as illustrated in Figure 5 below.

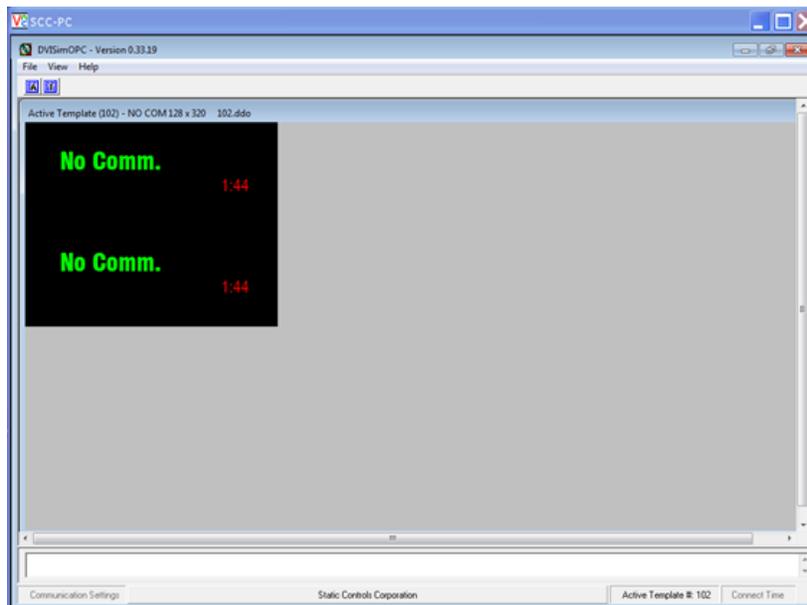


Figure 5 – VNC Viewer Software App, DVISimOPC Running on Sign Windows Desktop



4.4.2 Leaving VNC Viewer running, minimize DVISimOPC. Then in the VNC Viewer window, open Control Panels and double-click the Network Connections icon. Right-click the Local Area Connection icon and choose Properties. You will see the Local Area Connection Status window as illustrated in Figure 6 below.

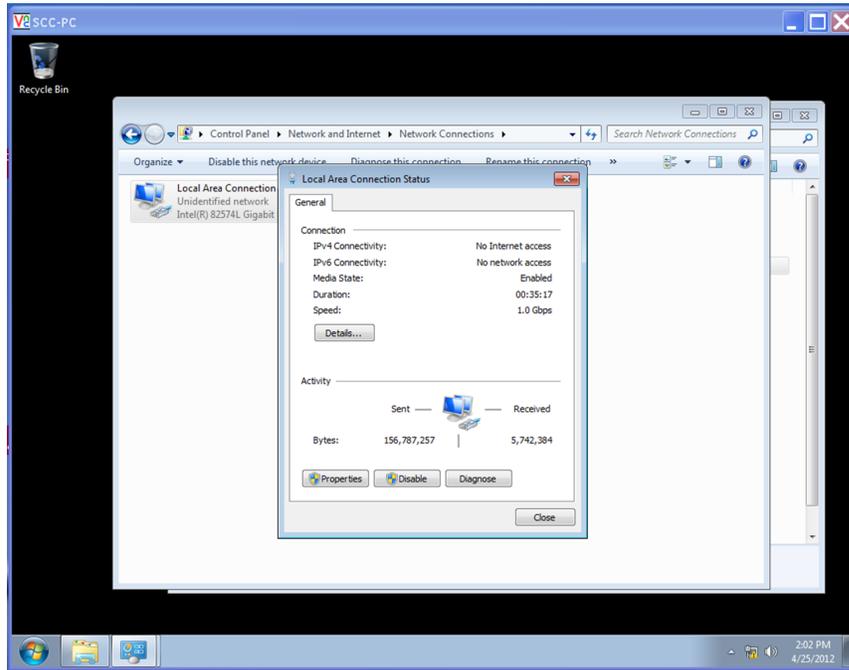


Figure 6 – VNC Viewer Software App, Local Area Connection Status Window

4.4.3 Click the Properties button as illustrated above and you will be prompted to enter a user account password for User:SCC Password: scc, illustrated in Figure 7 below.

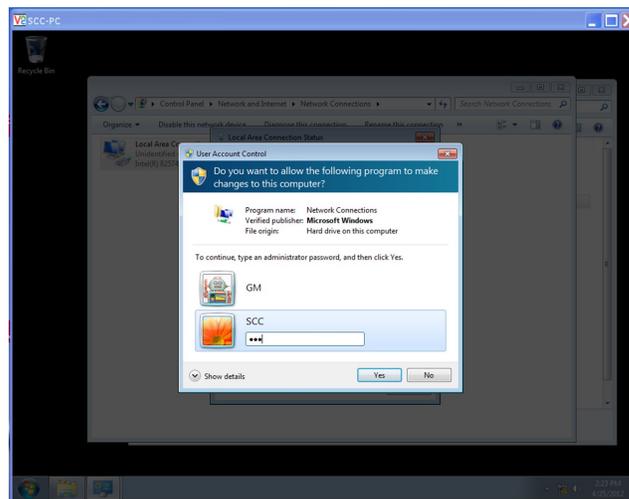


Figure 7 – VNC Viewer Software App, User Account Password

4.4.4 Select the Internet Protocol icon then click the Properties button, as illustrated above. This will open the Internet Protocol (TCP/IP) Properties window, as illustrated in Figure 8 below.

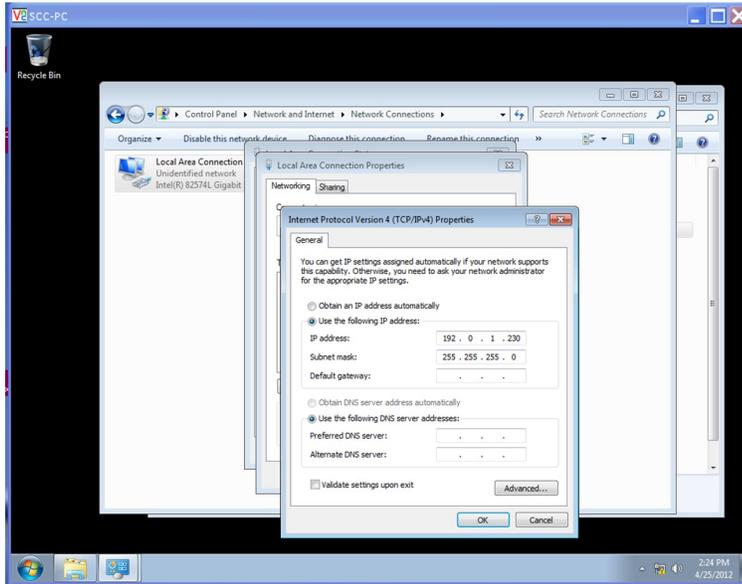


Figure 8 – VNC Viewer Software App, Internet Protocol (TCP/IP) Properties

4.4.5 Enter the desired IP address, Subnet mask and Default gateway. Then click OK.

NOTE: Changing the IP address during a VNC session will end the VNC connection. You will need to re-connect to the NEW IP address.

4.5 Setting the IP Address - Alternative Method # 1

An alternative to using VNC Viewer is to use Internet Explorer. The PC running Internet Explorer must support the JVM (Java Virtual Machine). Enter <http://192.0.1.230:5800> in the address field.

4.6 Setting the IP Address - Alternative Method # 2

Another way of setting an IP address is to connect directly to the PC in the sign, using a monitor, keyboard and mouse (refer to the Connecting an External Monitor, Keyboard and Mouse section of this manual). After connecting directly to the PC in the sign using this method, follow the steps described in sections 4.4.2 thru 4.4.5 to change the IP address.



5.0 Copying Files To The Sign

Using Microsoft Internet Explorer connect to the signs IP address as shown in Figure 9. This allows you to make a remote connection the share folder “SCC” of the computer in the sign for transferring files to it and from it. As with the VNC connection previously described, the sign must have an IP address and you must know what it is. All 982 DVI Series signs leave the SCC manufacturing facility set to the temporary IP address of 192.0.1.230, with a subnet mask of 255.255.255.0. In order to connect to this IP remotely, it is necessary to connect from a PC with an IP address of 192.0.1.xxx, where ‘xxx’ is a number from 001 to 255, other than 230 (i.e. other than 230 because that is the value of the last byte of the sign address). For specific information regarding your network configuration, contact your network administrator.

When you connect to the signs IP you will be prompted to enter a User Name:, and password. Both are lower case “scc”.

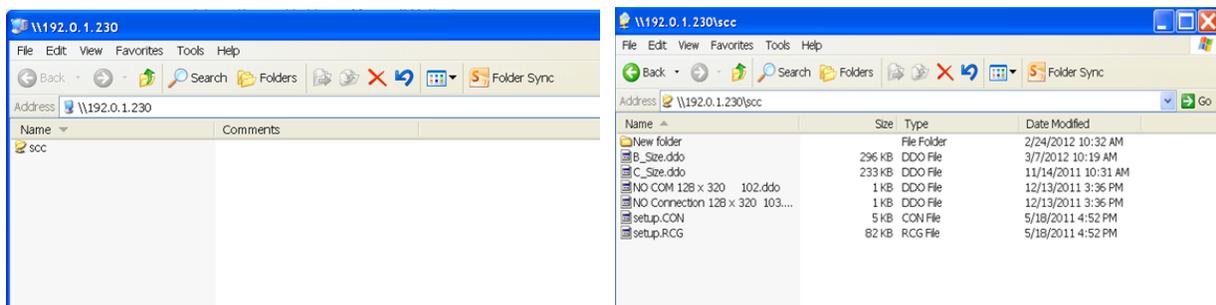


Figure 9 – Connection to the Sign Using Internet Explorer

The FTP server is configured to provide access the file share directory at C:\scc on the sign. This is useful for copying sign template files and .wav audio files for use with DVISimOPC, or for copying any files required by other applications. For example, the files in the illustration above – B_Size.ddo, C_Size.ddo, etc. – are located in C:\scc. They may be copied from this location and pasted to your PC. They are also available for copying to other directories on the sign by controlling the sign computer using the VNC connection, as previously described in this manual.

6.0 Controlling DVISimOPC Remotely From A Network Connection

6.1 Displaying Various Windows Applications

DVISimOPC is the primary software application that runs on 990 LCD Series signs. The sign is configured to run DVISimOPC at boot up and display the currently loaded sign template on the LED display. The factory-installed template displays the message Blank Template. The Windows desktop upon initial boot up (as viewed using a VNC connection) is shown in Figure 10 below. The corresponding LED display is shown in Figure 11.

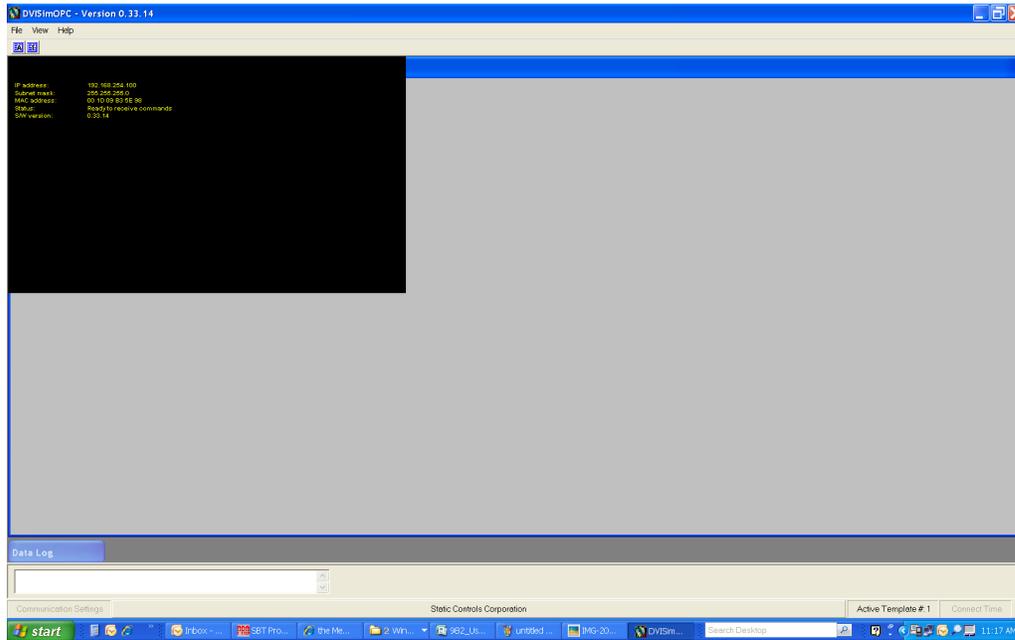


Figure 10 – The Sign’s Windows Desktop Upon First Boot Up



6.2 Basic Operation of DVISimOPC and DVIDrawOPC

DVISimOPC uses template files created in DVIDrawOPC. You may use DVISimOPC to assign template numbers 1 thru 999 to these files. You may then command DVISimOPC to display any defined template (refer to SDM command examples in Appendix A), effectively changing the entire appearance of the sign with a single command.

A template file is an image of a sign that is created using the available display objects (i.e. a numeric display, a clock, a message marquee, a cell array, a backlit cell array, a line-matrix array, a music system and a label). You start with a blank template in DVIDrawOPC then arrange objects as required to create the image you want. DVIDrawOPC is also used to set the GROUP and UNIT address of each of the objects, so that they may be controlled independently once running in DVISimOPC. After completing the sign image, you may then save it to a file for use with DVISimOPC or other select SCC display products.

In order to use a DVIDrawOPC template file in DVISimOPC, you may copy the template file to the sign using the FTP server (refer to the Copying Files To the Sign section in this manual for additional information). Alternatively, you may install DVIDrawOPC on the sign and create the template files there using a remote control VNC connection.

Once a template file is located on the computer running DVISimOPC, it is available for you to define for use in DVISimOPC, as illustrated in Figure 12 below.

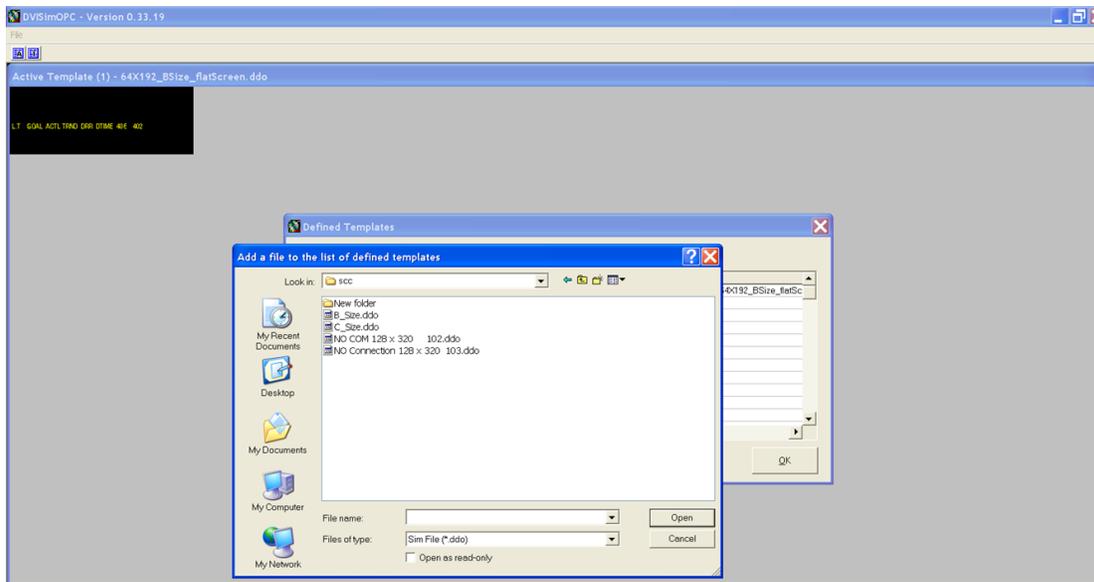


Figure 12 – DVISimOPC, Add a Template File To the List of Defined Templates

7.0 Connecting An External Monitor, Keyboard and Mouse

The computer in the sign may be controlled directly instead of remotely. In order to do so, a monitor, keyboard and mouse must be directly connected. Figure 13 below indicates where to connect them.

WARNING: Before connecting a monitor, keyboard or mouse directly to the PC in a running sign, it is necessary to perform a proper shutdown of the sign first (see Proper Shutdown Sequence section of this manual).

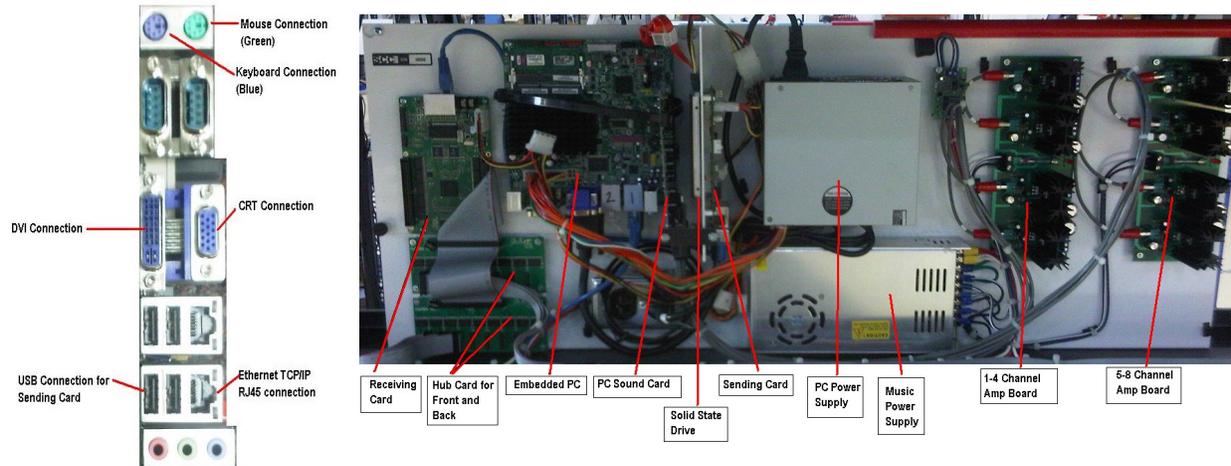


Figure 13 – Monitor, Keyboard and Mouse Direct Connection

Before restarting the sign, ensure that the CRT is connected, NOT the DVI (Digital Video Interface, which drives the LED display). Only one is supported at a time. After the monitor, keyboard and mouse are no longer needed, perform a proper shutdown again, disconnect the monitor, keyboard and mouse, reconnect the DVI cable, and restart the sign.

8.0 Proper Shutdown Sequence

It is necessary to shutdown Windows before turning off power to the sign. If the proper shutdown sequence is not followed, it is possible that the sign will lose power while Windows is writing data to a drive, which can result in corrupting the drive and making it unusable. To properly shutdown Windows:

1. First establish a remote connection to the sign using VNC (as described in a previous section of this manual).
2. Select the Start button at the bottom left corner of the sign's Windows desktop.
3. Choose Shut Down and follow the on-screen instructions to turn off the computer.
4. When the Windows shutdown begins, the VNC session will be interrupted. Allow about 30 seconds for Windows to finish shutting down.
5. Turn off power to the sign.



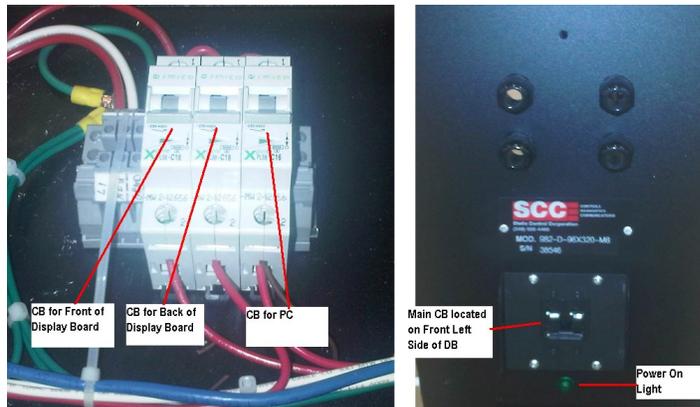
9.0 Trouble Shooting Guide

The following trouble shooting guide can be used to diagnose issues with the 982 full matrix boards.

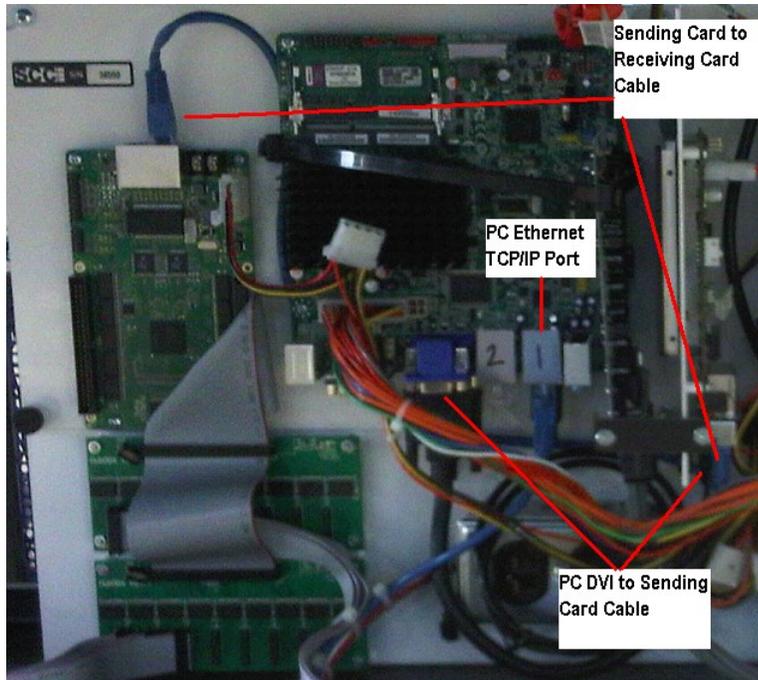
A. Symptom: Blank Screen with all LED's off.

Recommended Solution:

1. Check that circuit breaker on side of enclosure is turned ON (up position).



2. Check that PC to Sending board, and Sending to Receiving board cables are seated properly.



3. Check ribbon cable connection from receiving card to hub cards (front and back).

B. Symptom: One side of sign is displaying fine and the other side is blank.

Recommended Solution:

1. Check that the power ON light is illuminated for side that is dark.
2. Power cycle circuit breaker on control box and watch display in question to see if there is any activity.
3. Contact SCC for support.



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C. Symptom:



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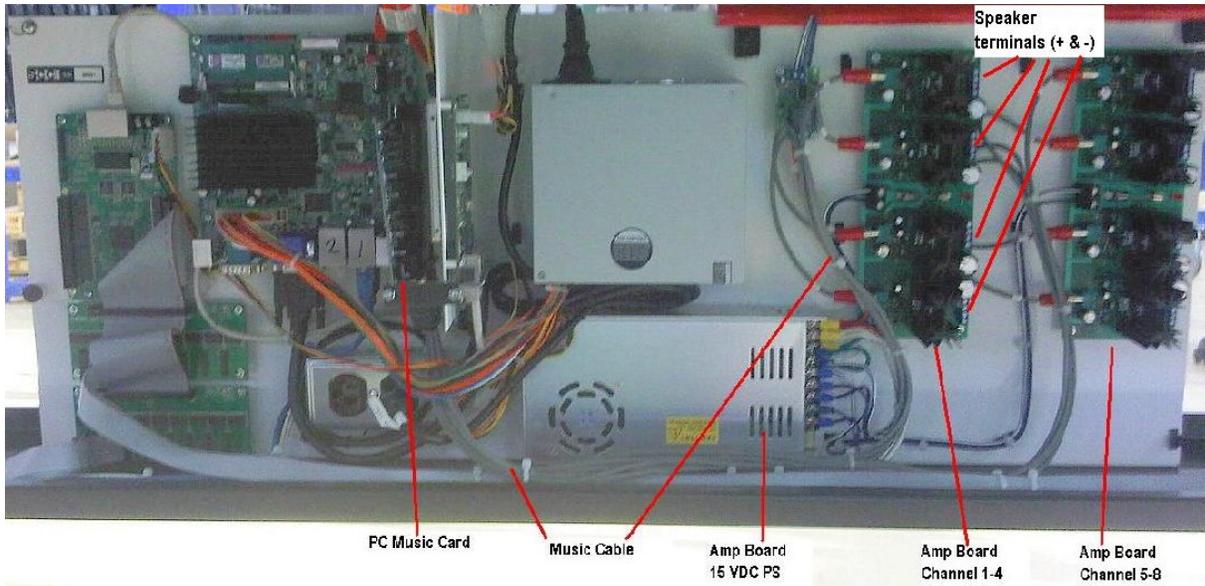
D. Symptom:

E. Symptom: No Comm. failover screen will appear when the display boards PC does receive data from the host for 60 seconds. The 60 seconds is the default setting and is configurable in OPCDVI.

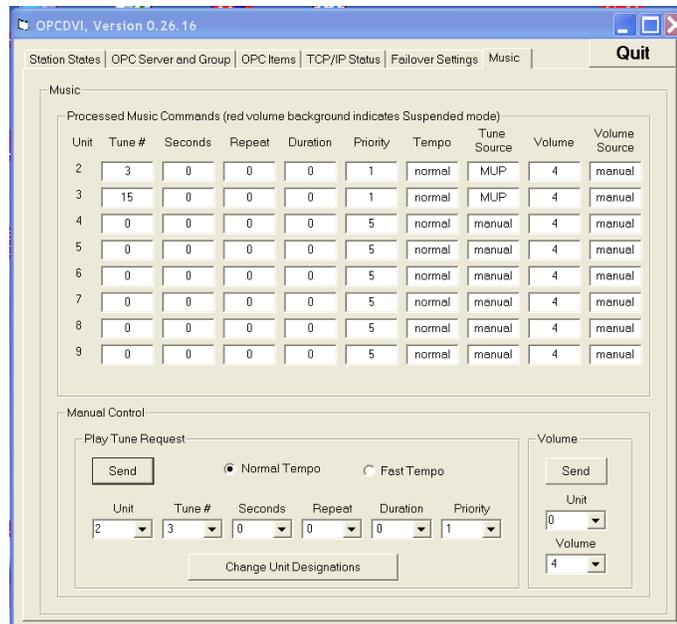
F. Symptom: Music sound issue

Recommended Solution:

1. Check speaker.
2. Check connections from PC Music card to amp board.
3. Check amp board 15 VDC power supply.
4. Check 2 wire speaker cable termination (two + & - per chan.).



5. VNC into boards PC to check OPCDVI program for volume settings, and that tune is active for suspect music channel (Unit 2 = Chan 1).

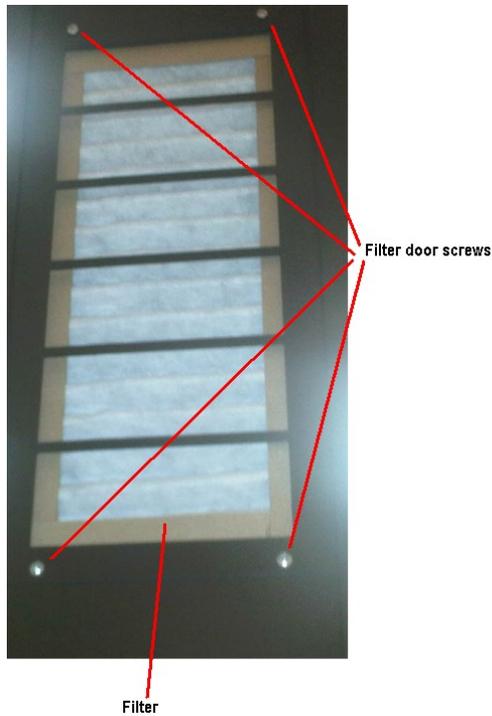




H. Symptom: Maintenance dirty air filter.

Recommended Solution:

1. Remove filter door by removing 4 screws.
2. Replace filter.
3. Reattach filter door.





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If your problem cannot be solved using this troubleshooting guide please call SCC tech support at (248) 926-4400 ext 225 for additional assistance. Please have the information listed on the tag, on the bottom of your display board to assist our tech support team.

PN =

SN=



Appendix C – Enhanced Write Filter, and Firewall Enabled. All display board PC's are shipped with EWF and Firewall disabled. User can enable these features after the display boards IP is set, the template labels are modified and the configuration file is downloaded. This will ensure your files are saved and the display board recovers from a power cycle as expected.

Enhanced Write Filter

If the enhanced write filter is enabled you will not be able to make permanent changes to the Embedded Windows 7 system without following the procedure below:

1. Sign on as Administrator with PW: scc
2. Disable enhanced write filter.
3. Make changes needed to files in designated folder.
4. Enable enhanced write filter.

Firewall

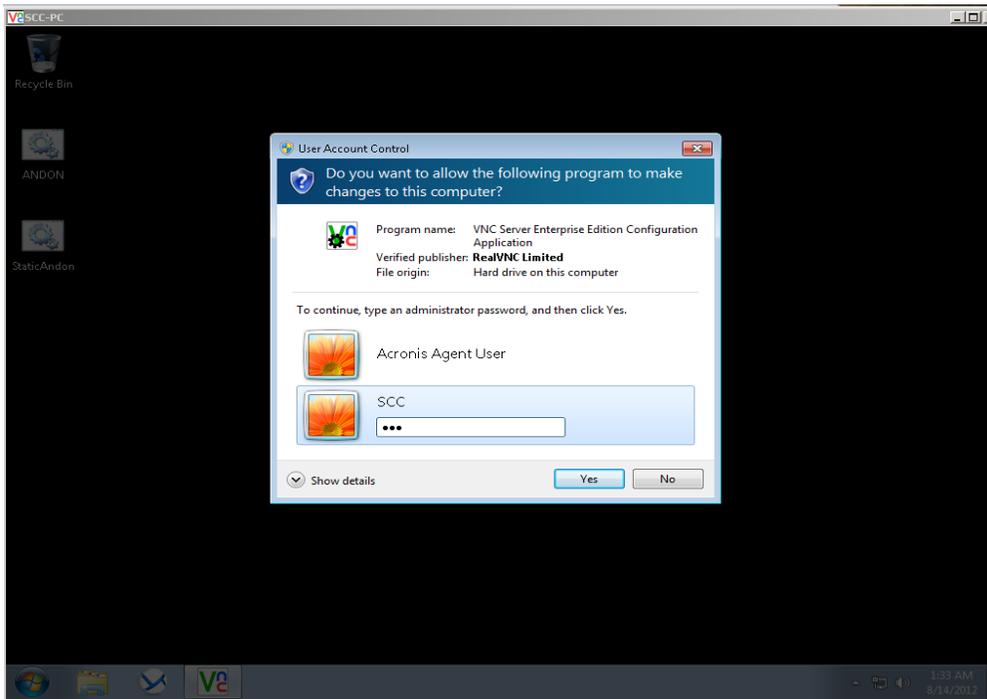
If the firewall is enabled and you would like to change the PC's IP address you will need to:

1. Sign in as Administrator with PW: scc
2. Turn firewall off.
3. Change PC IP settings to your desired values.
4. Turn firewall on.

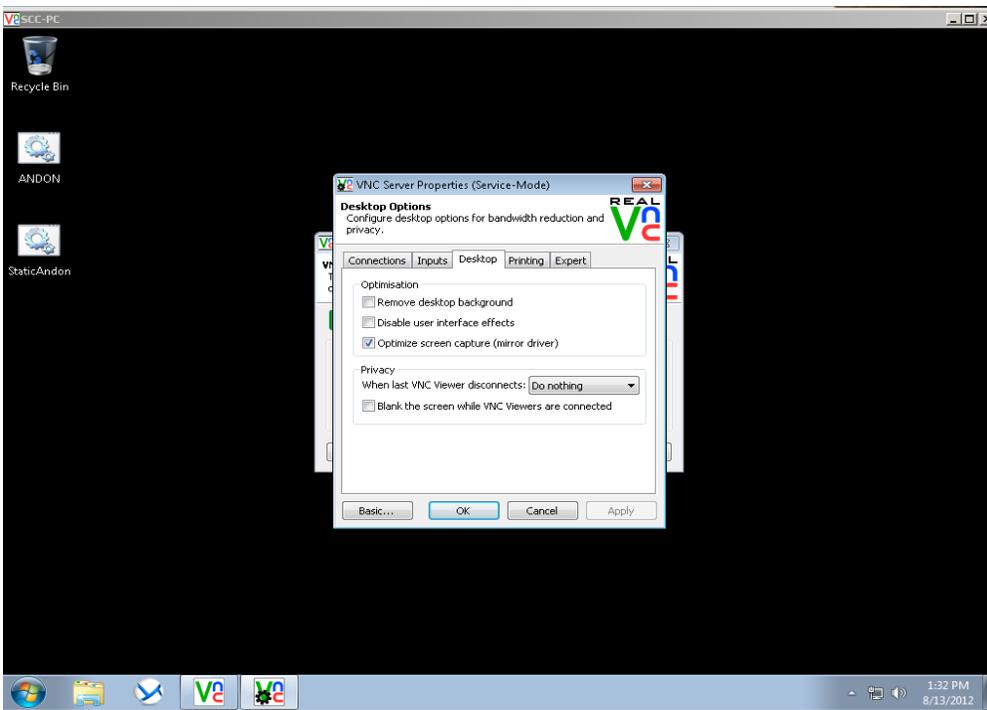


Appendix E (continue)

Select the SCC user and enter “scc” as password.



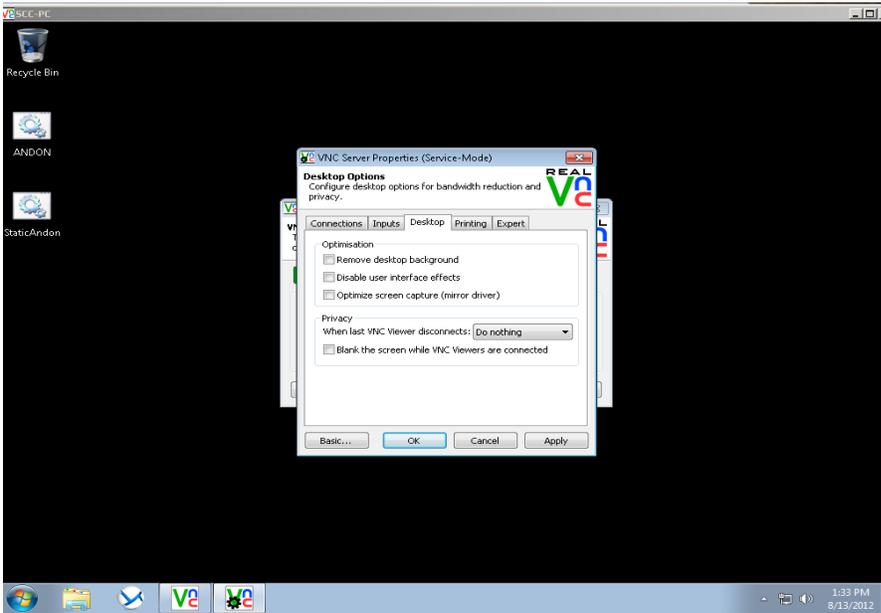
Select the Desktop tab and deselect the option: Optimize screen capture (mirror driver).



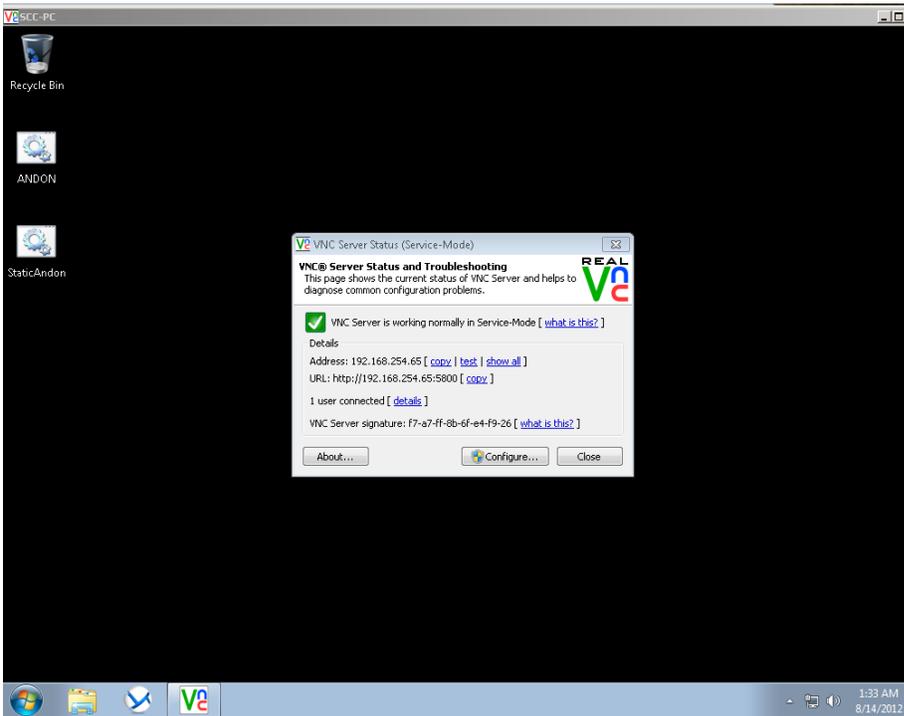


Appendix E (continue)

Select Apply and then select OK.



Select Close.

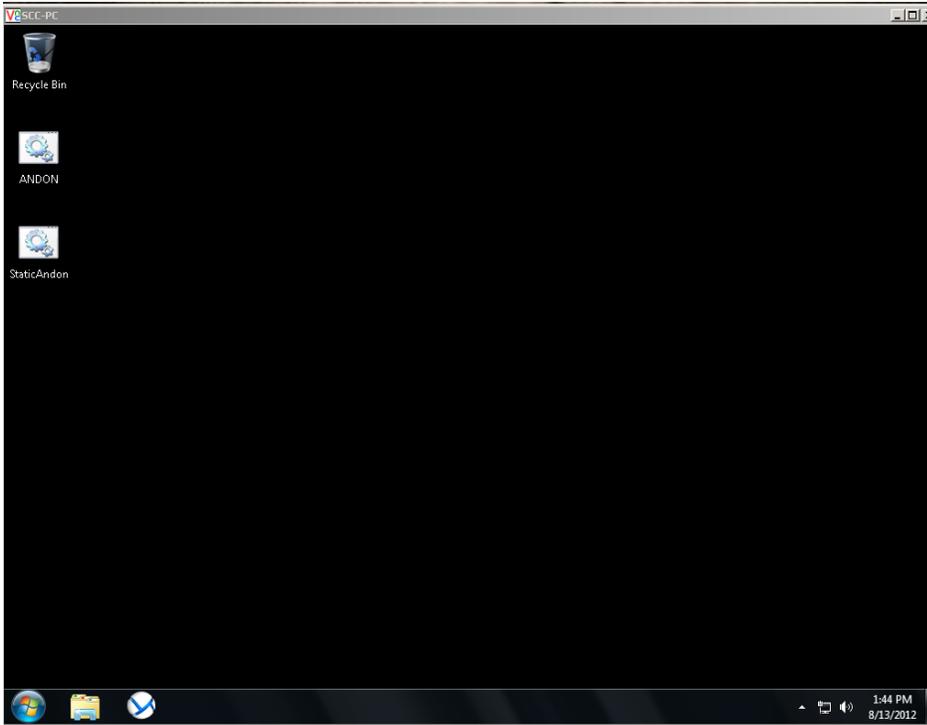




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Appendix E (continue)

Screen should now look like this after you log in using VNC.





Appendix F

OPCDVI Music - Configuring Unit Numbers for Music Outputs 1 through 8.

To configure the SCC music outputs to their unit numbers you will need to VNC into the display boards PC and navigate to the OPCDVI program. This program should be running and auto starts when the display board powers on. Select the Music tab and verify the unit numbers do not duplicate the units used in your signs ddo template (example shown for 8 outputs).

A-Size: Top Andon area (group 01, unit 01), Bottom two row marquee (group 01, unit 02), Music (group 01, unit 03 through 10)

B-Size: Top Andon area (group 01, unit 01), Music (group 01, unit 02 through 09)

C-Size: Two row marquee (group 01, unit 01), Music (group 01, unit 02 through 09)

D-Size: Two row marquee (group 01, unit 01), Music (group 01, unit 02 through 09)

F-Size: Top Andon area (group 01, unit 01), Music (group 01, unit 02 through 09)

If you need to modify the unit numbers select the “Change Unit Designations” box and modify the desired unit numbers. Please do not duplicate music unit numbers with the unit numbers used in your .ddo template.

Example Shown:

- Group 01 Unit 03 = Music Output 1
- Group 01 Unit 04 = Music Output 2
- Group 01 Unit 05 = Music Output 3
- Group 01 Unit 06 = Music Output 4
- Group 01 Unit 07 = Music Output 5
- Group 01 Unit 08 = Music Output 6
- Group 01 Unit 09 = Music Output 7
- Group 01 Unit 10 = Music Output 8

