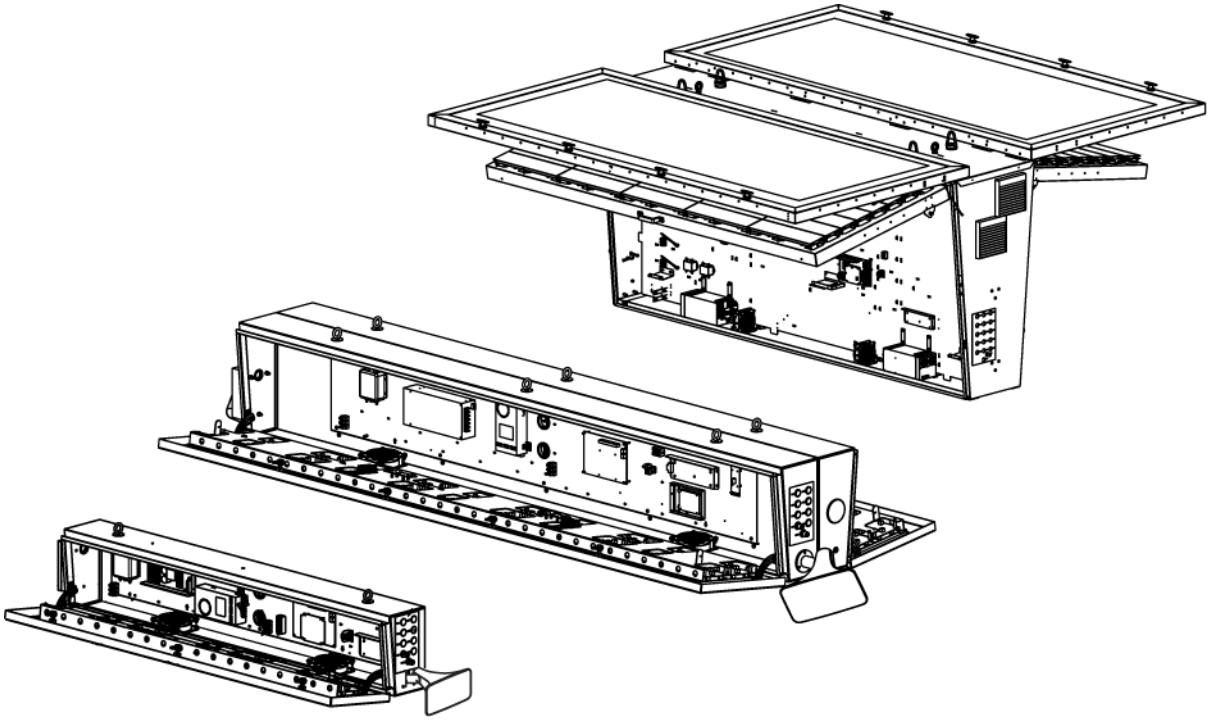
AlphaVision™ PC Series III



Sign model 320 series	Sign display size (pixels)	Sign model 256 series	Sign display size (pixels)	Sign model 192 series	Sign display size (pixels)
AVPC320128T3	320 x 128	AVPC256112T3	256 x 112	AVPC192096T3	192 x 92
AVPC320112T3	320 x 112	AVPC256096T3	256 x 96	AVPC192080T3	192 x 80
AVPC320096T3	320 x 96	AVPC256064T3	256 x 64	AVPC192064T3	192 x 64
AVPC320080T3	320 x 80	AVPC256048T3	256 x 48	AVPC192048T3	192 x 48
AVPC320064T3	320 x 64	AVPC256032T3	256 x 32	AVPC192016T3	192 x 16
AVPC320032T3	320 x 32				

Adaptive Micro Systems • 7840 North 86th Street • Milwaukee, WI 53224 USA • 414-357-2020 • 414-357-2029 (fax) • http://www.adaptivedisplays.com

Contents

Safety Information

Adhere to and comply with all safety WARNING! and **Notice:** statements throughout these instructions.

WARNING! Hazardous voltage. Contact with high voltage may cause death or serious injury. Always disconnect power to unit prior to servicing.

High leakage current. Earth connection essential before connecting supply.

Possible fall or crush hazard. Remain clear of panel when opening or closing.

Notice: This equipment contains components that may be damaged by “static electricity”, or electrostatic discharge. To prevent this from happening, be sure to follow the guidelines in Adaptive Tech Memo 00-0005, **“Preventing Electrostatic Discharge (ESD) Damage,”** available on our Web site at http://www.adaptivedisplays.com.

Introduction

Purpose

This manual is intended as a guide for installation and setup of the sign, as well as for routine maintenance.

Revision history

Part number	Date	Notes
1234600401	July 26, 2006	First release.
1234600401B	April 30, 2007	Updated all charts with new model information.
1234600401 rev. C	April 4, 2008	Updated “Table 6: Technical specifications” with the dimensions and changed the Weight column heading to Approx. Weight.

Related documentation

Table 1: Related documentation

Sign size	Part number	Title	Description
320 x 128 and 320 x 112	1234601101	AlphaVision PC Series III 320x128 and 320x112 Sign Electrical Installation Guide	Describes the electro-mechanical installation of the 320x128 and 320x112 signs.
	1234601501	AlphaVision PC Series III 320x128 and 320x112 Sign Mechanical Installation Guide	
320 x 96 and 320 x 80	1234600301	AlphaVision PC Series III 320x96 and 320x80 Sign Electrical Installation Guide	Describes the electro-mechanical installation of the 320x96 and 320x80 signs.
	1234601601	AlphaVision PC Series III 320x96 and 320x80 Sign Mechanical Installation Guide	
320 x 64	1234601401	AlphaVision PC Series III 320x64 Sign Electrical Installation Guide	Describes the electro-mechanical installation of the 320x64 sign.
	1234601901	AlphaVision PC Series III 320x64 Sign Mechanical Installation Guide	

Table 1: Related documentation

Sign size	Part number	Title	Description
320 x 32	1234601201	AlphaVision PC Series III 320x32 Sign Electrical Installation Guide	Describes the electro-mechanical installation of the 320x32 sign.
	1234601701	AlphaVision PC Series III 320x32 Sign Mechanical Installation Guide	
256 x 112 and 256 x 96	1234610506	AlphaVision PC Series III 256x112 & 256x96 Signs Electrical Installation Guide	Describes the electro-mechanical installation of the 256x112 and 256x96 sign.
	1234610406	AlphaVision PC Series III 256x112 & 256x96 Signs Mechanical Installation Guide	
256 x 64 and 256 x 48	1234610504	AlphaVision PC Series III 256x64 & 256x48 Signs Electrical Installation Guide	Describes the electro-mechanical installation of the 256x64 and 256x48 sign.
	1234610404	AlphaVision PC Series III 256x64 & 256x48 Signs Mechanical Installation Guide	
256 x 32	1234610501	AlphaVision PC Series III 256x32 Sign Electrical Installation Guide	Describes the electro-mechanical installation of the 256x32 sign.
	1234610401	AlphaVision PC Series III 256x32 Sign Mechanical Installation Guide	
192 x 96 and 192 x 80	1234610502	AlphaVision PC Series III 192x96 & 192x80 Signs Electrical Installation Guide	Describes the electro-mechanical installation of the 192x96 & 192x80 sign.
	1234610402	AlphaVision PC Series III 192x96 & 192x80 Signs Mechanical Installation Guide	
192 x 64 and 192 x 48	1234610508	AlphaVision PC Series III 192x64 & 192x48 Signs Electrical Installation Guide	Describes the electro-mechanical installation of the 192x64 & 192x48 sign.
	1234610408	AlphaVision PC Series III 192x64 & 192x48 Signs Mechanical Installation Guide	
192 x 16	1234601301	AlphaVision PC Series III 192x16 Sign Electrical Installation Guide	Describes the electro-mechanical installation of the 192x16sign.
	1234601801	AlphaVision PC Series III 192x16 Sign Mechanical Installation Guide	
All types	TechMemo 00-0005	Preventing Electrostatic Discharge (ESD) Damage	Provides grounding procedures, lists work area guidelines, and explains ESD.
	1132600801	Service Bulletin 06-0004 AlphaVision PC support latch upgrade kit instructions	These instructions are for the AlphaVision PC Support Latch Upgrade Kit (pn 1132201101). The support latch and handle provide extra support for the LED display panels to help prevent them from closing and to make them safer to open and close during servicing. These instructions explain how to install the support latch and handle and where to place the labels.
	1132600601	TechMemo 05-009 AlphaVision PC manual support latch upgrade kit instructions	These instructions are for the AlphaVision PC Manual Support Latch Upgrade Kit (pn 1132600501). The support latch provides additional support for the LED display panels while they are open. These instructions explain how to install the support latch.
	1234610511	AlphaVision PC Series III sign controller board kit replacement instructions	These instructions are for the AlphaVision PC Series III Sign Controller Board Kit (pn 1234202726SP). The controller board translates messages via Ethernet and displays them on the sign. These instructions explain how to replace the controller board.

Sign identification

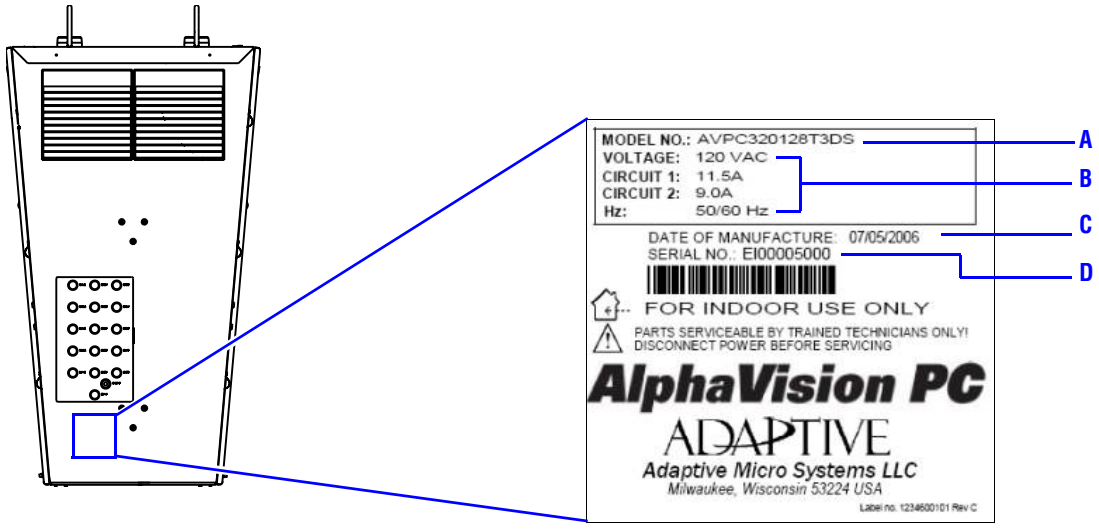


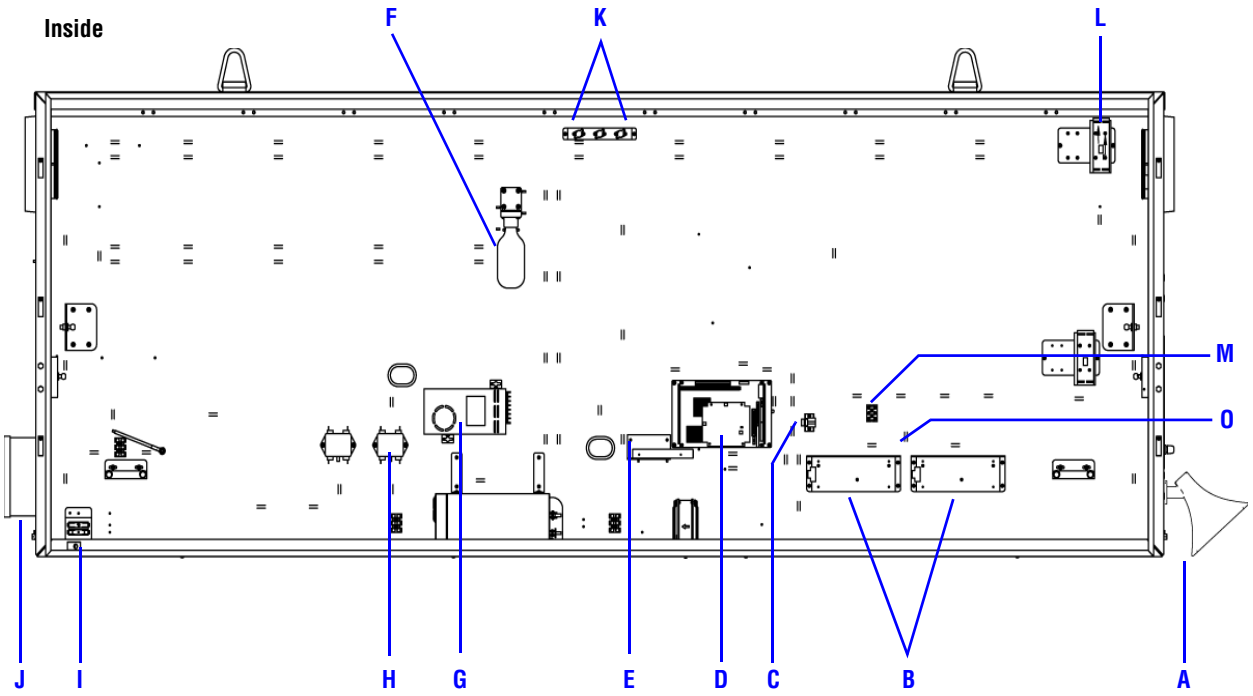
Table 2: Sign identification

Item	Name	Model number description
A	Model number	AVPC320096T3-DS-W2K-A4 Audio channels: A1 = 1 music channel (up to 2 speakers) A4 = 4 music channels (up to 8 speakers) A8 = 8 music channels (up to 16 speakers) Sign operating system: W2K = Windows 2000 WCE = Windows CE Sign type: DS = double-sided SS = single-sided T3 = Series III sign Sign display width and height (in pixels) First three digits are width, last three are height. Sign model: AVPC = AlphaVision PC
B	Electrical information	Input voltage, frequency, and amperage.
C	Date of manufacture	Month, day, and year the sign was made.
D	Serial number	Consecutive, unique identification number.

Major sign components

Shown below is a 320 x 96 Controller side of sign. Other sign sizes are similar.

Inside



LED door underside

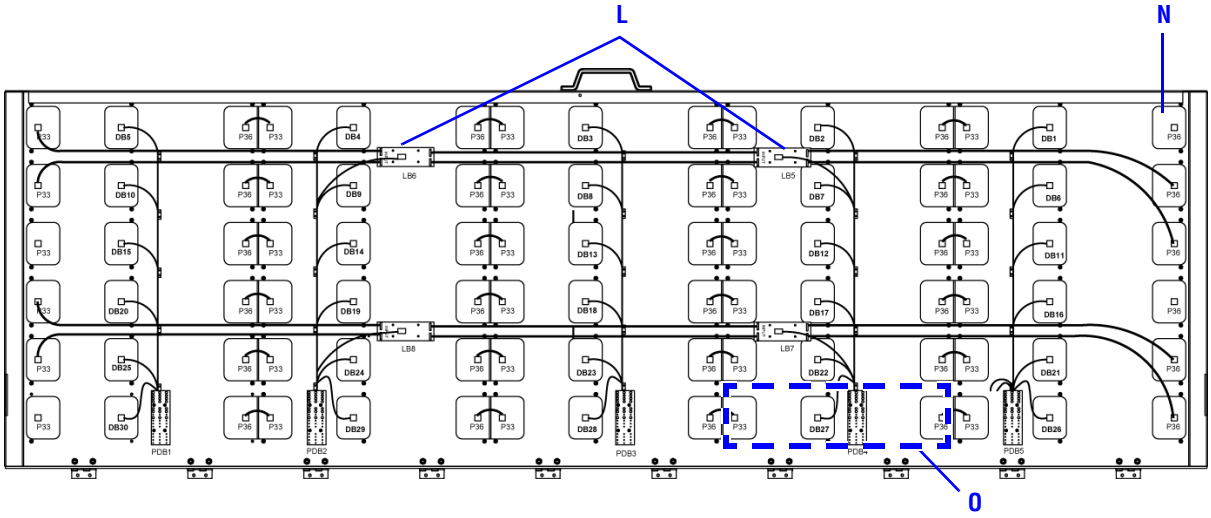
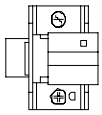
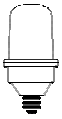
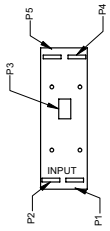
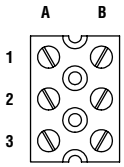


Table 3: Major sign components

Item	Name		Description
A	Speaker (option)		Plays sounds from TuneBlaster sound board.
B	TuneBlaster sound board		Used to play sounds through up to 4 speakers per board. The TuneBlaster sound board is an option.
C	Modular network adapter		Connects Ethernet adapter on the sign controller board to an external Ethernet network. A 110 punch-down tool is required to wire an external Ethernet connection to this adapter.
D	Controller board with turbo adapter board (on top)		The turbo adapter board is an interface between the controller board and the LED driver boards. The turbo adapter board is an Advantech PCM-9579 embedded PC board with Celeron 650MHz processor.
E	Hard disk drive (not installed on Windows CE units)		Used to store operating system and programs.
F	Light		Philips 371237 18W compact fluorescent bulb. Powered through fuses (item I).
G	Power supply		Supplies either 5V (Meanwell PSP-1000) or 12V (Meanwell SP-200-12) power to sign components.
H	EMI filter		Removes electromagnetic interference from incoming and outgoing AC power.
I	Fuses		Two, 1/4 x 1 1/4-inch, fast acting, 10A, 250V fuses.
J	Disconnect box		AC power switch box.
K	Thermostats		Control the following sign functions: • TS1 — At 120F, turns fans on. • TS2 — At 130F, dims the sign's LEDs. • TS3 — At 160F, turns sign off.
L	Loop back board		Boosts signal strength.
M	TB5 DC terminal block		5V and 12V wiring terminal.
N	LED driver board		
O	Power distribution board		Supplies 5V to LED driver boards.

Addressing your sign

Setting an IP address on a Windows 2000 sign

VNC Viewer is a software application that allows you to see and control the desktop of another computer that is running VNC Server software. Windows 2000 AlphaVision PC signs are shipped with VNC Server installed. Once you have VNC Viewer installed on your computer, you can control the Windows 2000 computer inside an AlphaVision PC sign. This will allow you to set the sign's IP address, run programs from the sign, and so on.

AlphaVision PC signs are shipped with DHCP enabled. This means that a sign will **automatically** get an IP address once the sign is connected to a TCP/IP network. Later, this DHCP IP address can be changed to a **static** IP address.

NOTE: Another way to set a sign's IP address is described in "Attaching a monitor, keyboard, and mouse directly to a Windows 2000 sign" on page 17.

Before you begin, obtain a static IP address for the sign from your network administrator.

Step 1: Install VNC Viewer software on your computer

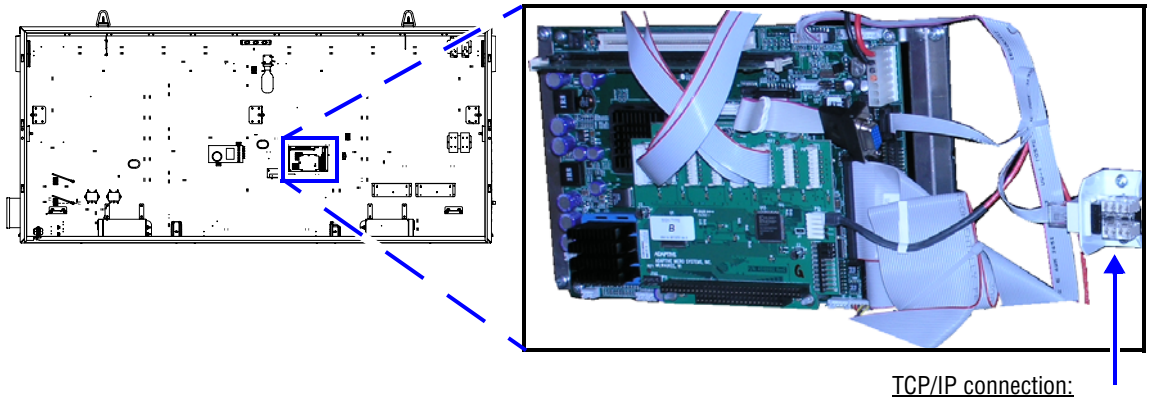
Download the software from http://www.realvnc.com and follow their installation instructions.

NOTE: In order to use the VNC Viewer to control a sign, the sign must have an IP address **and you must know what it is.**

Step 2: Get a temporary IP address for the sign

A. Turn off the sign.

B. Connect the sign to a TCP/IP network. Your computer must be connected to the same TCP/IP network.



TCP/IP connection:
Use this punchdown block to wire a permanent TCP/IP connection to the sign.

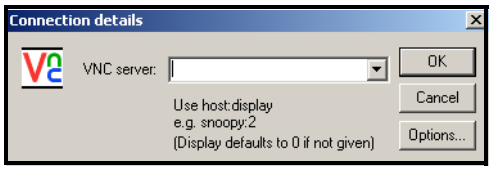
C. Apply power to the sign. Write down the IP address that appears on the sign.

```
IP Address: 207.12.27.1
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0
MAC Address: 00-80-66-05-1e-86
```

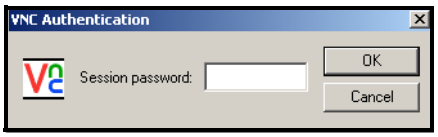
Example IP address message that appears when first starting the sign (shown for a 320x96 sign).

Step 3: Assign a static IP address to the sign using VNC Viewer

A. Select **Start | Programs | RealVNC | VNC Viewer**. After **VNC Server**, type the IP address that was displayed on the sign and click **OK**:



B. After **Session password**, type “dbadmin”. Then click **OK**.

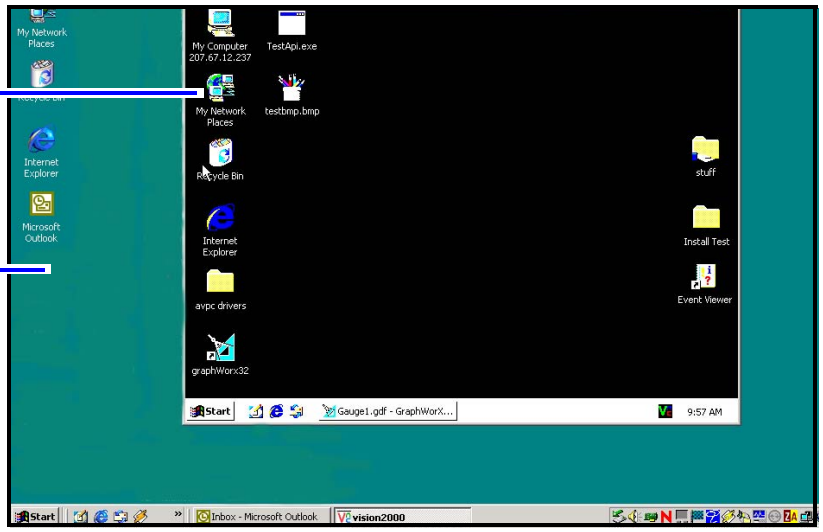


C. You are now connected to the sign’s desktop. At this point, you can perform any Windows 2000 activity, such as setting the window area, changing the sign’s IP address, and so on.

This is the **sign’s** desktop. When you work in this window, you are working on the sign’s hard drive.

This is **your** desktop. When you work in this window, you are working on your computer’s hard drive.

You can go switch between desktops — just keep track of which desktop window you are currently working.

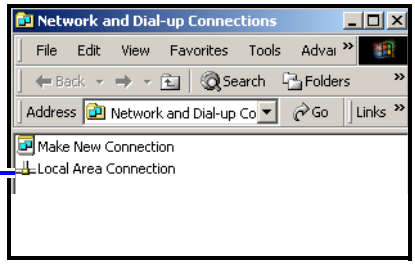


D. Right-click **My Network Places** on the **sign’s** desktop and select **Properties.**

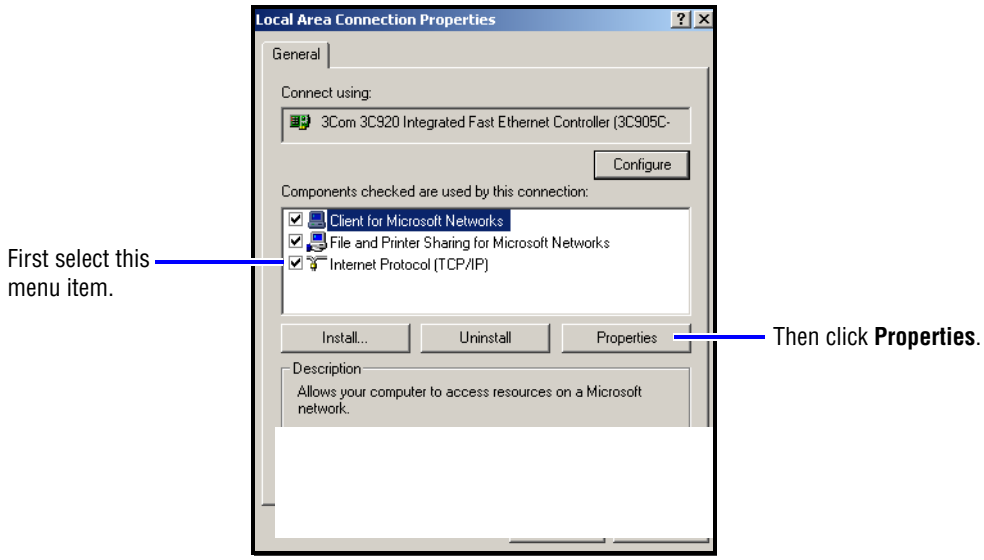
Right-click this icon on the sign’s desktop and select **Properties**.

E. Right-click **Local Area Connection** and select **Properties**.

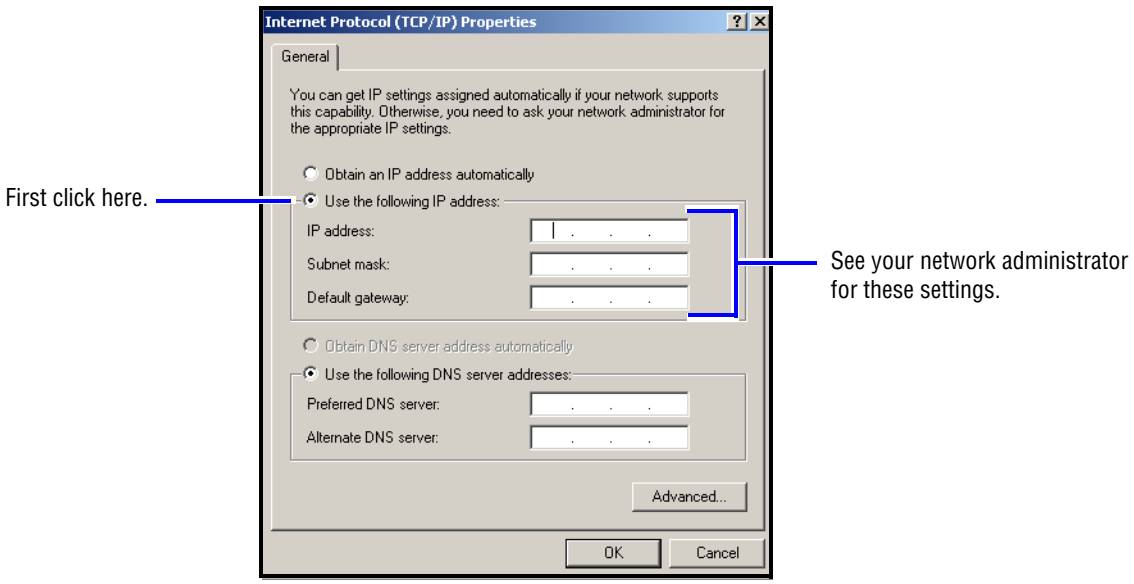
Right-click this menu item and select **Properties**.



F. Select **Internet Protocol (TCP/IP)** and then click the **Properties** button.



G. Click **Use the following IP address** and then complete the appropriate settings.



H. When finished, click **OK**.

Setting an IP address on a Windows CE sign

The Network Setup software allows you to change the IP address of a sign and is available from Adaptive Micro Systems.

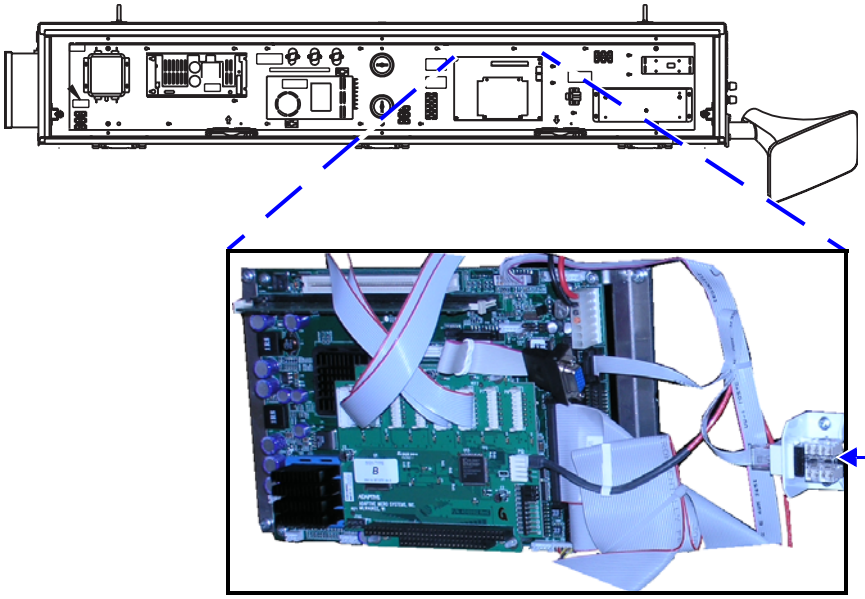
AlphaVision PC signs are shipped with DHCP enabled. This means that a sign will **automatically** get an IP address once it is connected to a TCP/IP network. Later, you can change this DHCP IP address to a **static** IP address.

NOTE: Another way to set a sign's IP address is described in "Attaching a monitor, keyboard, and mouse directly to a Windows 2000 sign" on page 17.

Step 1: Get a temporary IP address for the sign

A. Turn off the sign.

B. Connect the sign to a TCP/IP network. Your computer must be connected to the same TCP/IP network.



TCP/IP connection: Use this punchdown block to wire a permanent TCP/IP connection to the sign.

C. Apply power to the sign. Write down the IP address that appears on the sign. An example from a 320x32 sign is shown below:

```
IP Address: 169.254.107.136
Gateway: 0.0.0.0
Subnet Mask: 255.255.0.0
MAC Address: 00-80-66-05-22-84
```

Example IP address message that appears when first starting the sign (shown for a 320x32 sign).

Step 2: Assign a static IP address to the sign using Network Setup

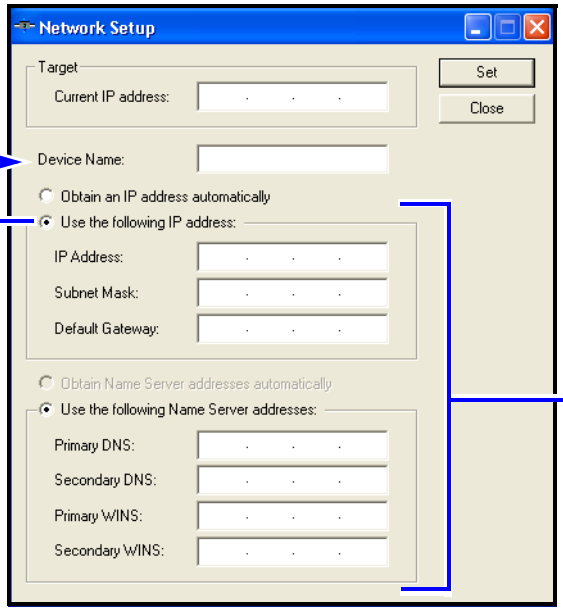
A. Download and save the setup file from **http://www.ams-i.com/avpc/setip.exe.**

B. Run the **setip.exe** file.

C. After **Current IP address**, type the IP address that was displayed on the sign. Then enter the new IP address:

Device Name is the name the sign will be seen as on the network. To leave the name the same, leave this box empty.

Click **Use the following IP address**



See your network administrator for these settings.

D. After you have entered the appropriate information, click **Set**.

Software

Installing software on a Windows 2000 sign's hard drive

Step 1: Share the CD-ROM drive

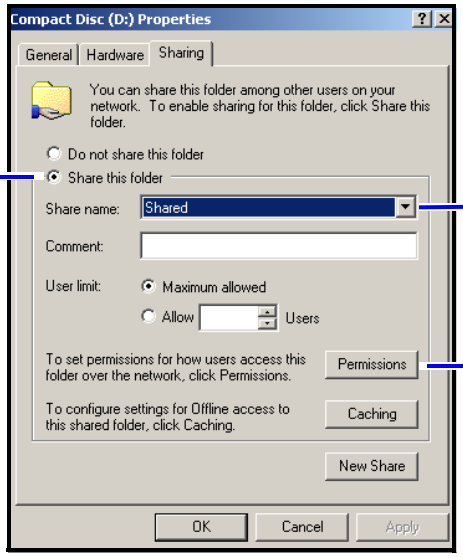
A. If you have not already done so, install and start VNC Viewer software on your computer. See "Step 3: Assign a static IP address to the sign using VNC Viewer" on page 9.

B. Open **My Computer** on your desktop.

Double-click **My Computer** to open it.

C. Right-click on the CD-ROM drive to be shared and select **Sharing**.

D. Click **Share this folder**. Then type a **Share name**. Click the **Permissions** button.

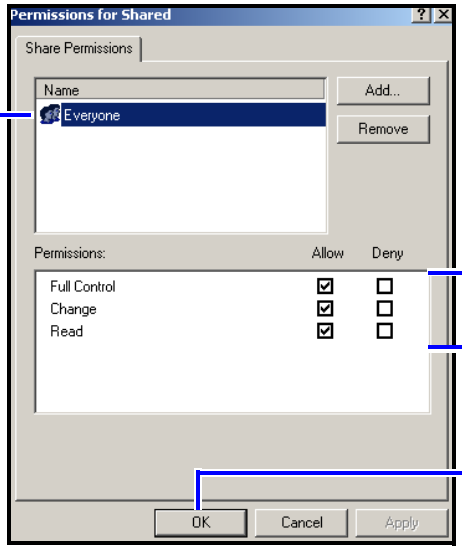


First click here.

Then type in a name for the shared folder.

Finally, click **Permissions**.

E. Select **Everyone**. Then complete the **Permissions** as appropriate. When finished, click **OK**.

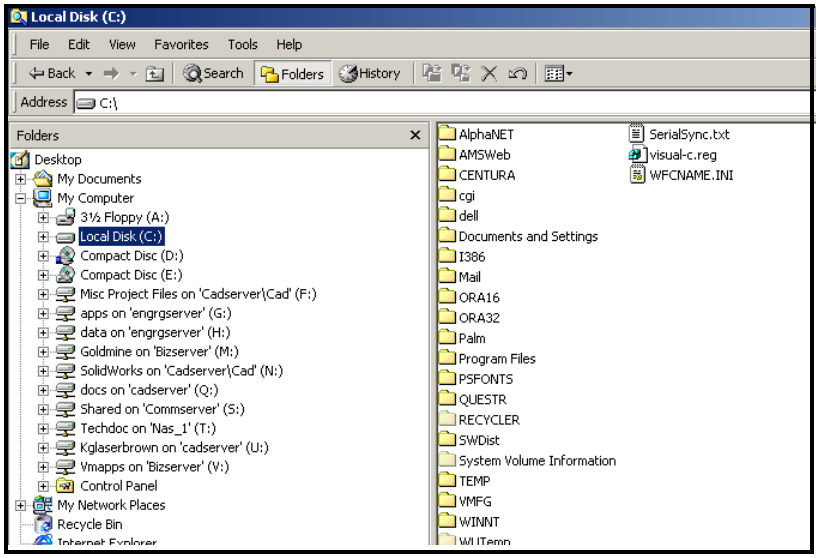


Select **Everyone**.

Then select **Allow** or **Deny** for each **Permission**.

Click **OK**.

F. On the sign's desktop, right-click the **Start** button and select **Explore**. The sign's hard drive directory appears:



G. Select **My Network Places** in the left panel and then double-click **Entire Network** in the right panel.

H. Double-click the following in the right panel, in the order given:

- Microsoft Windows Network
- the network on which your computer resides
- your computer (look for your name)
- your computer's CD-ROM drive (look for the name you gave the shared file in step D)

Step 2: Install software

A. Insert the CD into the CD-ROM drive.

B. Follow the installation prompts.

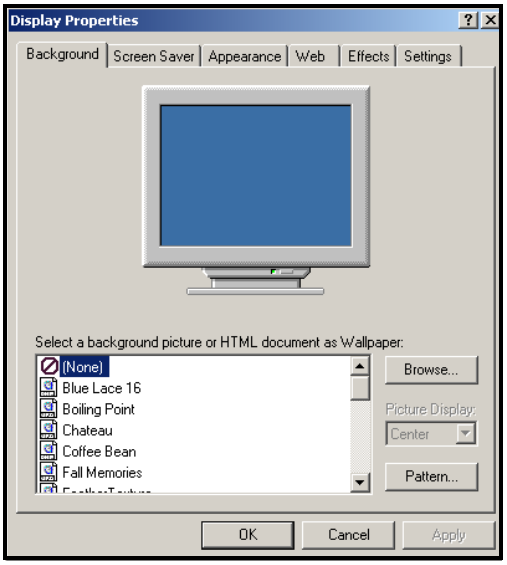
Configuring a Windows 2000 sign

You can view and modify your sign's current settings, as well as see some of the changes before they are actually performed.

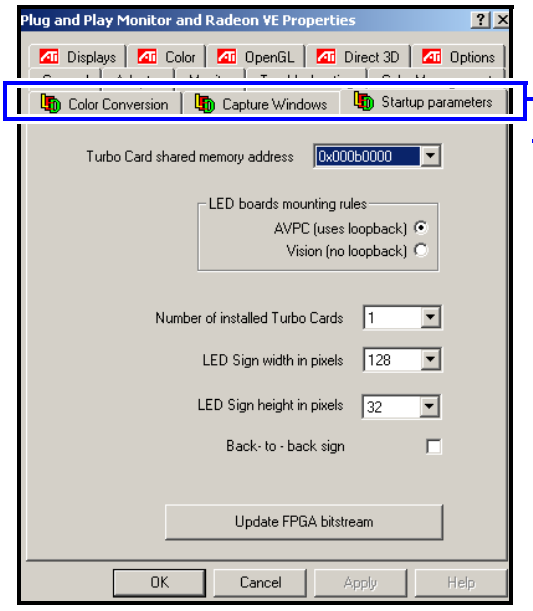
NOTE: You will need to restart your computer after making any changes.

A. If you have not already done so, install and start VNC Viewer software on your computer. See "Step 1: Install VNC Viewer software on your computer" on page 8 and "Step 2: Get a temporary IP address for the sign" on page 8.

B. Right-click the sign's desktop and select **Properties**. The **Display Properties** window appears:



C. Click the **Settings** tab and then click the **Advanced** button. When the advanced properties window appears, click the **Startup parameters** tab and make the appropriate changes:



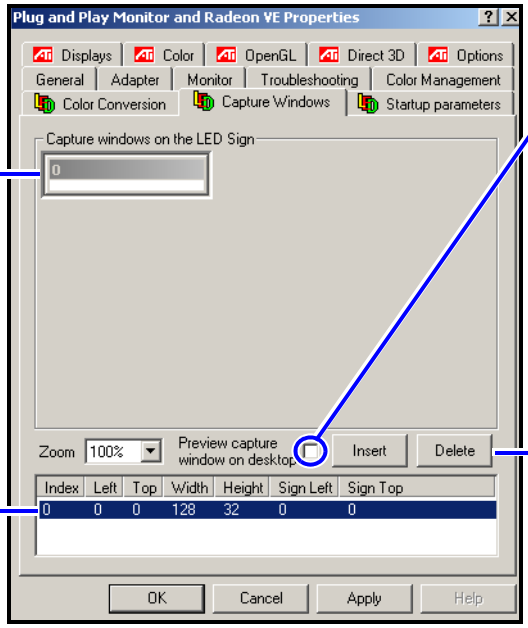
These are the properties of your sign with which you will be working.

You can specify turbo card information, set the type and size of your sign, and indicate whether back-to-back mounting is used.

NOTE: These items are factory-set and changing them may adversely affect sign operation.

D. Click the **Capture Windows** tab and make the appropriate changes:

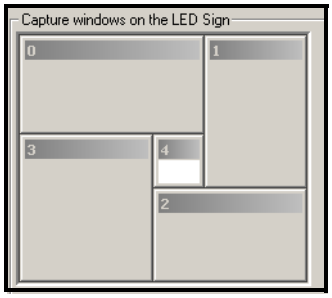
To resize the window, position the mouse over a corner and, when it turns into a double arrow, click and drag the window inward or outward. Note that the dimension information below changes accordingly.



Click here to see a preview of your capture window. You can also click and drag this preview window inward and outward to change its width and height.

Capture window preview. You can click the gray tab and drag the window to a different area of your screen.

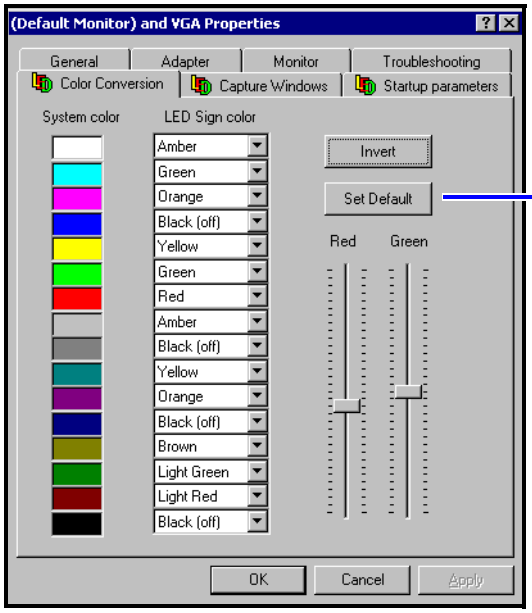
Capture window dimension information



The **Insert** and **Delete** buttons allow you to add and delete capture windows. You can have up to 99 capture windows.

E. Click the **Color Conversions** tab and make the appropriate changes:

This setting defines how the colors of the 16-color Windows standard palette (**System color**) are converted into the eight LED colors (**LED Sign color**). For each of the 16 colors, you can specify the color to appear on the sign in its place.



Returns the settings to their original values.

F. When changes are complete, click **OK**, then follow any prompts for restarting your system.

Using peripherals and options

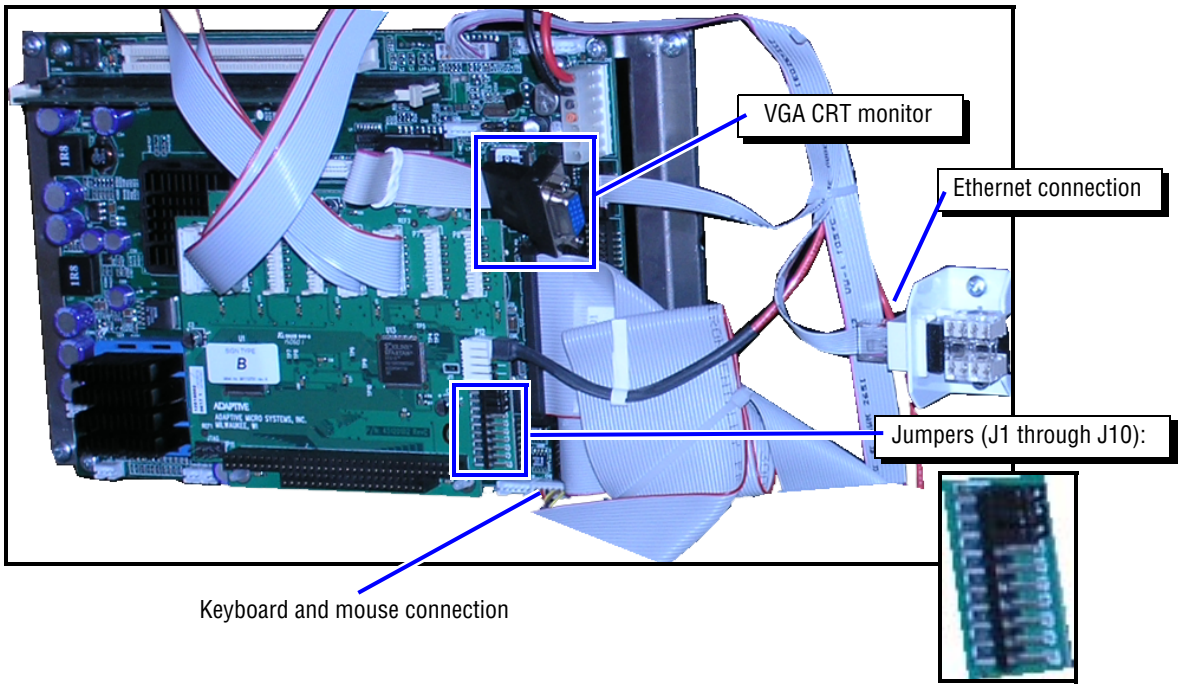
Attaching a monitor, keyboard, and mouse directly to a Windows 2000 sign

A. Remove power from the sign.

B. Open the sign.

NOTE: For a double-sided sign, just open the Controller side.

C. Connect a VGA CRT monitor, computer keyboard and mouse to a sign's controller board as shown:



D. Apply power to the sign.

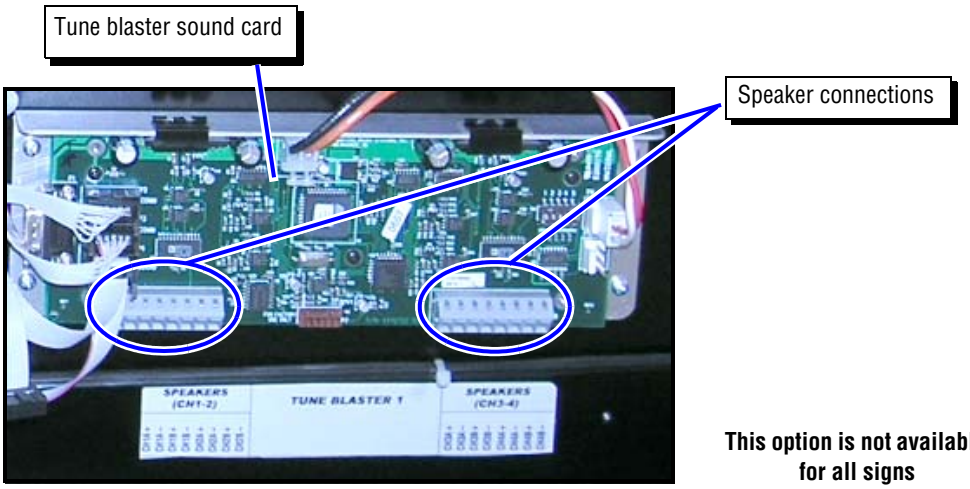
Dimming a Windows 2000 sign

To dim the sign by 50%, turn off the sign and attach a jumper to J8 on the sign's controller board (see above).

Installing a second TuneBlaster sound card

WARNING! Hazardous voltage. Contact with high voltage may cause death or serious injury. Always disconnect power to unit prior to servicing.

Possible fall or crush hazard. Remain clear of panel when opening or closing.

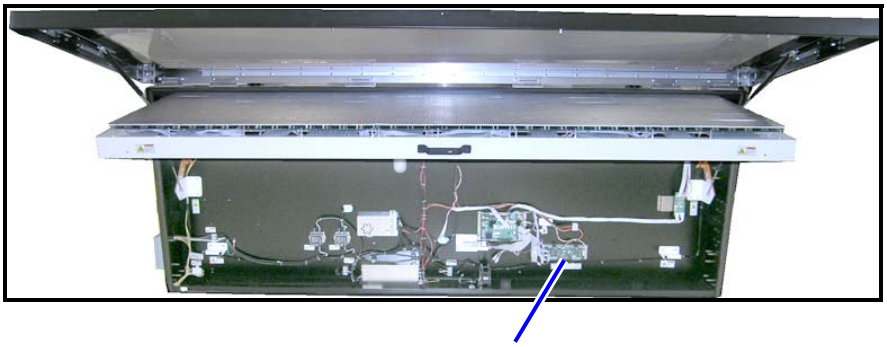


This option is not available for all signs

A. Remove power from the sign.

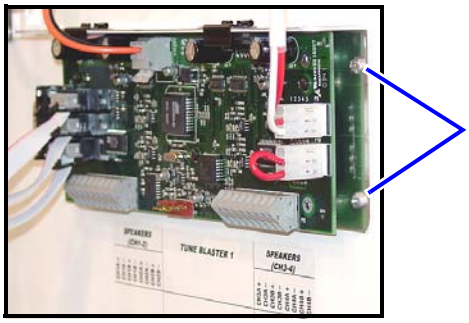
B. Open **both** sides of the sign.

C. Locate the factory-installed TuneBlaster card and the four (4) mounting holes to the right or above the factory-installed TuneBlaster sound card:



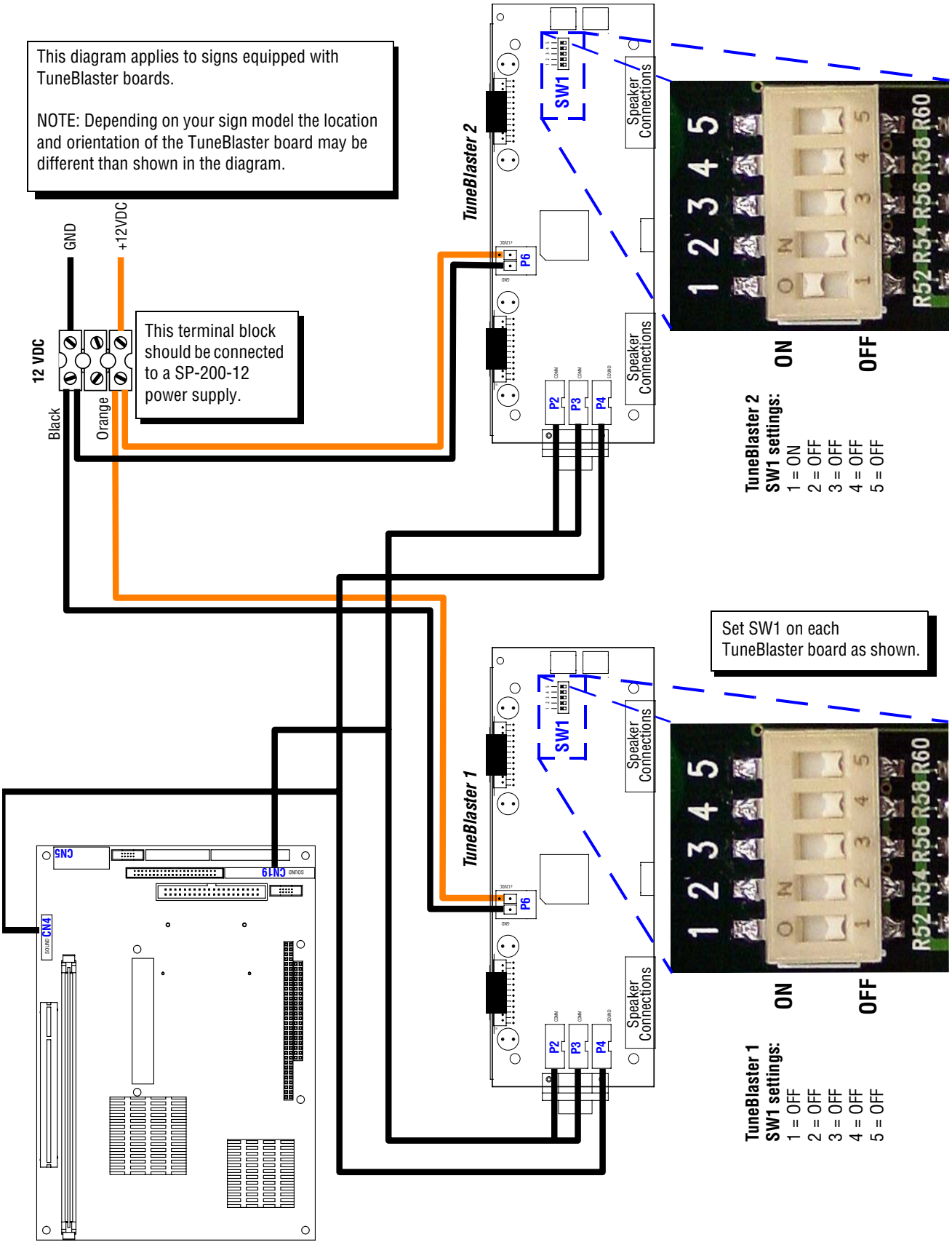
The mounting holes for the second TuneBlaster sound card are located to the right or above the installed TuneBlaster card.

D. Fasten the second TuneBlaster sound card to the sign using the four (4) mounting holes:



Four screws (two on each side) are used to attach a TuneBlaster board to the sign.

E. Connect the second TuneBlaster sound card as shown:



Stacklight option

The 50 mm stacklight mount (item A below) can be attached to either the left or the right side of the sign:

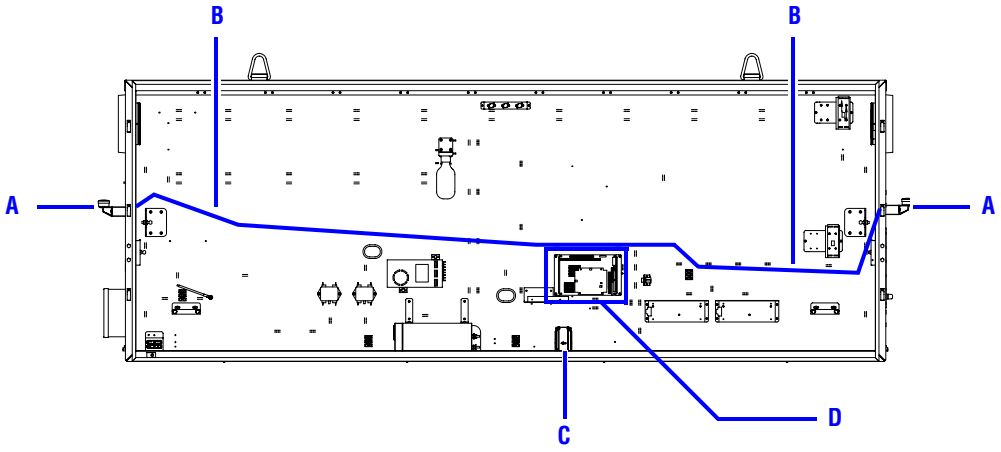
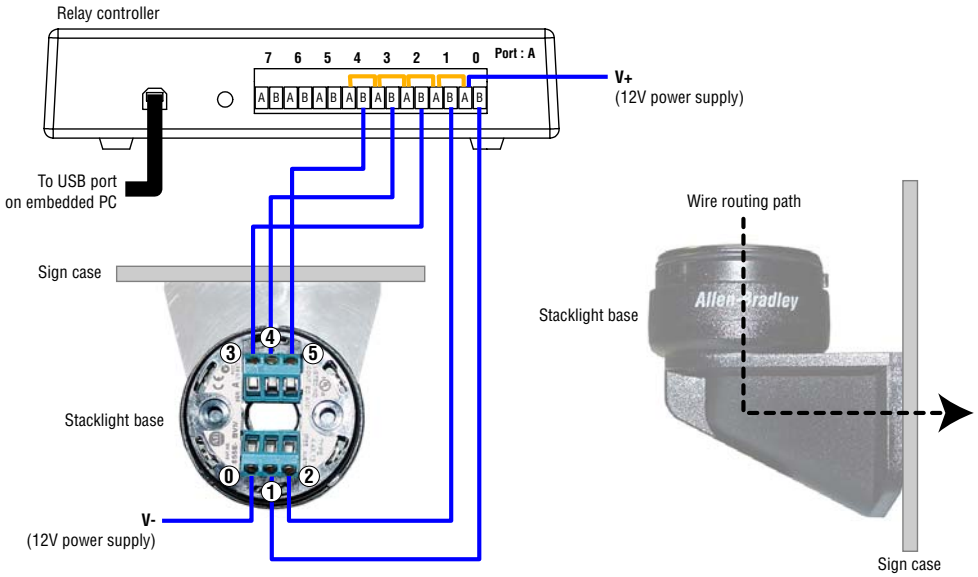


Table 4: Stacklight options

Item	Name	Description
A	Stacklight mount (only on one side)	Up to 5 lights can be stacked on a 50 mm stacklight mount. 
B	Stacklight wiring path (only on one side)	
C	Relay control	
D	Embedded PC	

Troubleshooting

Table 5: Problem/Solution chart

#	Problem	Recommended solution
1	On one side of the sign, half of the display (3 rows of LED driver boards) is a solid color, displaying garbage, or blank	1. Swap the cables on the Turbo board. • If the problem is on the sign's Controller side, swap P1 and P2. • If the problem is on the sign's Non-controller side, swap P5 and P6. If the problem goes to the other half of the display, then the Turbo board is bad. 2. Swap the cables P1 and P2 on the lower Loop back board located on the bad side of the display. If the problem goes to the other half of the display, then the cable between the Turbo board and the Loop back board is bad. 3. Swap the cables P4 and P5 on the lower Loop back board located on the bad side of the display. If the problem goes to the other half of the display, then the Loop back board is bad. 4. Swap the cables P1 and P2 on the upper Loop back board located on the bad side of the display. If the problem goes to the other half of the display, then the cable between the Loop back boards is bad. 5. Swap the cables P4 and P5 on the upper Loop back board located on the bad side of the display. If the problem goes to the other half of the display, then the upper Loop back board is bad. 6. Swap the cables going from the Loop back board to the LED driver board at the LED driver board located on the bad side of the display. If the problem goes to the other half of the display, then the cable between the Loopback board and the LED driver board is bad.
2	On one side of the sign, half of the display (3 rows of LED driver boards) is blank.	1. Check the cable connections on the Turbo board. • The Controller side must be plugged into P1 and P2. • The Non-controller side must be plugged into P5 and P6. 2. Check the power going to the first LED driver board in the chain to make sure it is getting 5v. 3. Run through the steps for problem #1 above.
3	On one side of the sign, part of the display is displaying garbage.	1. Run through the steps from problem #1 above. 2. If the problem does not move, then check the turbo cables for loose connections.
4	One side of the sign is blank.	1. Check the cable connections on the Turbo board. • The Controller side must be plugged into P1 and P2. • The Non-controller side must be plugged into P5 and P6. 2. On the Turbo Card, swap P1 and P2 with P5 and P6. If the problem moves to the other side of the display, then the Turbo board is bad. 3. Check the 12v power supply and all of the 5v power supplies to make sure they are outputting the correct voltage. 4. Check the power going to the first LED driver board in the chain to make sure it is getting 5v.

Table 5: Problem/Solution chart (Continued)

#	Problem	Recommended solution
5	The entire sign is blank.	1. Is it powered on? 2. Check the cable connections on the Turbo board. • The Controller side must be plugged into P1 and P2. • The Non-controller side must be plugged into P5 and P6. 3. On the Turbo board, check the status LEDs: • D1 – Power • D3 – FPGA is loaded If D1 is on, but D3 is not, then there could be a fault with the controller board, Turbo board, or the hard drive. 4. Is the Controller's PWR LED on? 5. Do they still have communication to the display? Call Adaptive Tech Support
6	On one side of the sign, the top half of the display is showing the data for the bottom half of the display, and the bottom half of the display is showing the data for the top half of the display.	The cables on the Turbo board are swapped. Swap the cables on the Turbo board: • P1 and P2 if the problem is on the Controller side. • P5 and P6 if the problem is on the Non-controller side.
7	A diagonal test pattern in a red, green, and amber sequence is running.	Hard drive is not functioning properly: 1. Check to make sure the hard drive IDE cable is connected to the controller board. 2. Check to make sure the voltage at the hard drive is 5 volts.
8	Display is cycling between diagonal lines, solid vertical columns, and the Ethernet information.	The Test Mode DIP Switch on the TuneBlaster board is set to ON. Switch DIP Switch #5 on the TuneBlaster board to OFF
9	A single LED, a row of LEDs, or a column of LEDs on one LED driver board is out.	Replace the entire LED driver board.
10	There is a **ghosting column** of LEDs (a column of LEDs that is dimly on when it is supposed to be off).	Replace the entire LED driver board.
11	There is a **shorted column** of LEDs (a column of LEDs that is on in addition to the column that is supposed to be on).	Replace the entire LED driver board.
12	There is a **shorted row** of LEDs (a row of LEDs that is on in addition to the row that is supposed to be on).	Replace the entire LED driver board.
13	An entire LED driver board is blank, but there is data on the drivers on both sides of the blank board.	Check the power going to the LED driver board. It may not be getting the 5 volts it needs. However, if the power is good, then replace the LED driver board.

Table 5: Problem/Solution chart (Continued)

#	Problem	Recommended solution
14	An entire LED driver board is blank and there is no data on the rest of the LED driver boards after it in the chain.	1. Verify the LED driver board is receiving 5v and the input cable is securely attached. 2. Use a long data cable to bypass the first blank LED driver board. If the data comes back on, then the bypassed LED driver board has a bad input. Replace the bypassed LED driver board. 3. If #1 doesn't fix the problem, then use a long data cable to bypass the LED driver board to the right of the first blank LED driver board. If the data comes back on, then the bypassed LED driver board has a bad output. Replace the bypassed LED driver board.
15	No sound from sound card (TuneBlaster sound boards).	1. Check cable connections between the controller board and the TuneBlaster board(s). 2. Check the speaker wiring to the TuneBlaster board(s). 3. Are the TuneBlaster board(s) getting the required 12 volts? 4. Cycle power on the display. Does the sound card play its power-up tune? 5. If there is still no sound, replace the sound card.

Appendix

Table 6: Technical specifications

Model number [1]		Full Load Amps [2,3]	Fuse	Approx. Weight	Dimensions [4] (L x H x D)
AVPC320128T3	Singled-sided	12 amps	20 amps	710 lbs (322 kg)	114-1/4" x 52-1/2" x 26" (2965 x 1334 x 660 mm)
	Double-sided	21 amps	30 amps	1000 lbs (454 kg)	
AVPC320112T3	Singled-sided	11 amps	15 amps	700 lbs (318 kg)	
	Double-sided	19 amps	30 amps	940 lbs (426 kg)	
AVPC320096T3	Singled-sided	10 amps	15 amps	650 lbs (295 kg)	114-1/4" x 44" x 26" (2965 x 1118 x 660 mm)
	Double-sided	17 amps	25 amps	870 lbs (395 kg)	
AVPC320080T3	Singled-sided	9 amps	15 amps	610 lbs (277 kg)	
	Double-sided	15 amps	25 amps	750 lbs (340 kg)	
AVPC320064T3	Singled-sided	8 amps	15 amps	550 lbs (249 kg)	114-1/4" x 33-1/2" x 26" (2965 x 851 x 660 mm)
	Double-sided	13 amps	20 amps	650 lbs (295 kg)	
AVPC320032T3	Singled-sided	5.5 amps	10 amps	161 lbs (73 kg)	111-3/4" x 16-1/2" x 8-1/2" (2737 x 419 x 216 mm)
	Double-sided	8 amps	15 amps	322 lbs (146 kg)	111-3/4" x 16-1/2" x 16-7/8" (2737 x 419 x 429 mm)
AVPC256112T3	Singled-sided	10 amps	15 amps	560 lbs (254 kg)	95" x 46-3/8" x 24-1/4" (2505 x 1178 x 616 mm)
	Double-sided	16 amps	25 amps	723 lbs (328 kg)	
AVPC256096T3	Singled-sided	9 amps	15 amps	525 lbs (238 kg)	
	Double-sided	14.5 amps	20 amps	714 lbs (324 kg)	
AVPC256064T3	Singled-sided	7 amps	10 amps	440 lbs (200 kg)	95" x 33-3/4" x 24-1/4" (2505 x 857 x 616 mm)
	Double-sided	11 amps	15 amps	580 lbs (263 kg)	
AVPC256048T3	Singled-sided	6.5 amps	10 amps	335 lbs (152 kg)	
	Double-sided	9 amps	15 amps	572 lbs (259 kg)	
AVPC256032T3	Singled-sided	5 amps	10 amps	138 lbs (63 kg)	86-3/4" x 16-1/2" x 8-1/2" (2248 x 419 x 216 mm)
	Double-sided	7 amps	10 amps	276 lbs (125 kg)	86-3/4" x 16-1/2" x 16-7/8" (2248 x 419 x 429 mm)
AVPC192096T3	Singled-sided	7.5 amps	10 amps	395 lbs (179 kg)	76-3/4" x 41-1/2" x 23-3/8" (2064 x 1054 x 594 mm)
	Double-sided	12 amps	20 amps	572 lbs (259 kg)	
AVPC192080T3	Singled-sided	7 amps	10 amps	365 lbs (166 kg)	
	Double-sided	11 amps	15 amps	567 lbs (257 kg)	
AVPC192064T3	Singled-sided	6 amps	10 amps	335 lbs (152 kg)	76-3/4" x 33-3/4" x 22" (2064 x 857 x 559 mm)
	Double-sided	9.5 amps	15 amps	497 lbs (225 kg)	
AVPC192048T3	Singled-sided	5.5 amps	10 amps	250 lbs (113 kg)	
	Double-sided	8.0 amps	15 amps	492 lbs (223 kg)	
AVPC192016T3	Singled-sided	4 amps	10 amps	85 lbs (39 kg)	66-1/2" x 11-5/8" x 8-1/2" (1746 x 295 x 216 mm)
	Double-sided	5 amps	10 amps	170 lbs (77 kg)	66-1/2" x 11-5/8" x 17" (1746 x 295 x 414 mm)

[1] Operating systems and optional sound cards do not affect the technical specifications in this chart.
[2] Measurement conditions: amber match mode, lights on (if applicable), all speakers on, all fans on.
[3] If an electrical outlet option is included, the total current needs to be increased by 10 amps.
[4] Add 12 inches to the length of your sign if optional speakers are included. Some signs ship with speakers attached. Speakers are optional on all other signs.