icebox flipscreen

FS04 Service Manual
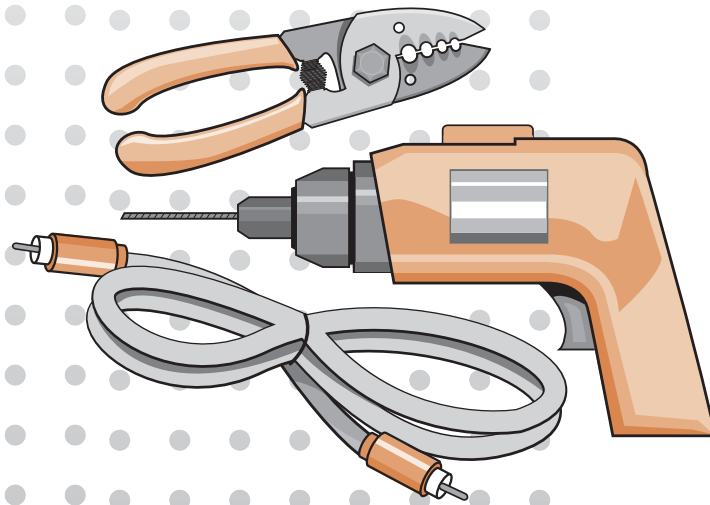
beyond™

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Introduction

The innovative iCEBOX FlipScreen is an elegant all-in-one entertainment center for the kitchen, featuring:

- Television

- Internet

- DVD/CD

- FM Radio

- Home Video Monitoring

- Touch Screen

- Remote & Keyboard

Its sleek tasteful profile and choice of colors complements any contemporary kitchen. With a wipe-clean touch screen, washable/wireless keyboard and remote, and quick-change mode buttons, nothing compares with the iCEBOX for kitchen usability.

The iCEBOX is the first™ product available in the Beyond line of innovative networked devices that make life simple, efficient and fun.

Customer First

The iCEBOX customers are people who demand excellent service. They have purchased an expensive and sophisticated product, and it is very important that they are kept satisfied. Having sold them this fine product, we owe it to them to be responsive and accomodating.

Do not do anything to create undue hardship or inconvenience for the customer who has come to you for service.

Safety Precautions

When performing maintenance or repair on the FS04 FlipScreen, please observe these basic precautions to reduce the risk of personal injury or equipment damage.

Before servicing the FS04

• **Read and understand all FS04 instructions.**

• **Follow all warnings and cautions on the product and in these operating instructions.**

• **Disconnect the FS04 from AC power.**

Warnings and Cautions

The following examples demonstrate warning and caution statements found within this document. Read and follow all warnings and cautions.

Warning: Warning statements warn of hazards or unsafe practices that could result in serious personal injury or death.

Caution: Caution statements warn of hazards or unsafe practices that could result in minor personal injury or damage to the product.

Fire and Shock Hazard

Before returning an FS04 to the owner, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks and mechanical insulators.

3. Perform a leakage current test (see Figure 1).

Warning: Risk of shock. Do not use an isolation transformer during this test.

4. Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).
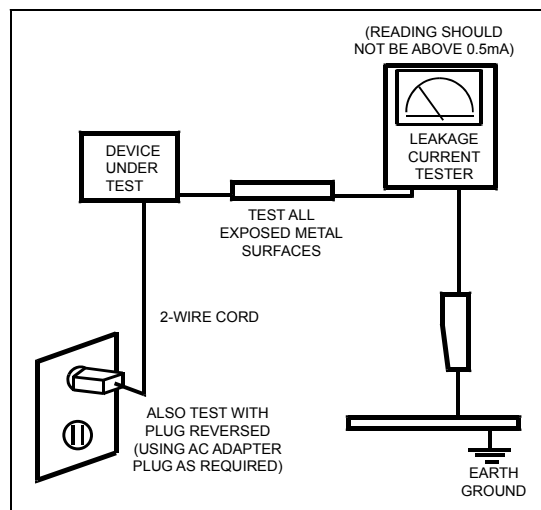
FIGURE 1. Leakage current test circuit

5. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp.

Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

Product Damage Precautions (for Touch Screen)

1. Do not place heavy objects on the touch screen.
2. The transparency of the touch screen sensor is critical. Handle the product with gloves to avoid fingerprints or smudges.
3. Blow contaminants from the surface with a filtered de-ionized air source before cleaning with a soft, lint-free cloth dampened with isopropyl alcohol. Ensure there are no contaminants in the cloth.
4. The touch screen should be handled with care as any dropping or dumping may break the glass.

Servicing Precautions

Servicing precautions are printed on the cabinet, and should be followed closely.

Warning: Risk of personal injury. Read the "Safety Precautions" section of this manual before performing any service on the FS04. If unforeseen circumstances create conflict between the servicing precautions and safety precautions, always follow the safety precautions.

Warning: Risk of explosion. An electrolytic capacitor installed with the wrong polarity might explode.

1. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect all test components in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug.

    The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Never defeat any of the +B voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

7. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

ESD Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESDs). Examples of typical ESD devices are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the unit.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

> **Warning:** Risk of shock. Be sure no power is applied to the chassis or circuit and observe all other safety precautions.

8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

9. ⚠ Indicates ESDs in the schematic diagrams in the section "Schematics" later in this manual.

Specifications

Size (Unit W x D x H)	(Including speakers) 23-5/8 in x 10 1/4 in x 3-7/8 in (600 mm x 300 mm x 97 mm)
Weight	32 pounds (14.50 kg)
Environment	Operating Temperature 0°C to 40°C (32°F to 113°F) Storage Temperature −20°C to 45°C (−4°F to 113°F)
Enclosure	Steel with plastic front panel
Power source	110Vac, 60Hz or 230Vac, 50Hz
Display	800 x 600 12.1-inch TFT-LCD with back light, touch screen
Speakers	Audio system designed by Redrock Acoustics® Two detachable speakers Speaker channel; L/R bass, mid-range, and treble Power; 10 watts per channel; Resistance 4 ohms
Switch controls	On/Off, Channel +/-, Volume +/-, Play/Pause, Eject, Options Mute
Video inputs/outputs	Coaxial CATV Antenna In (F-type jack), Stereo Audio In/Out (RCA type), Composite Video In (CVBS), DVD, Video CD 2.0 and iCEBOX Turbo 2.0, S-video
Other connections	Dual USB port, security unlock, intercom audio out, COM port, dual PCMCIA slots
DVD player	DVD, audio, VCD, CD
TV channels	125 channels, cable ready
FM radio frequency	87.50Mhz to 108.00Mhz

FCC Statement

The United States Federal Communications Commission (in 47 CFR 15.105) has specified that the following notice be brought to the attention of users of this product:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or TV reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- **Reorient or relocate the receiving antenna.**

- **Increase the separation between the equipment and the receiver.**

- **Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.**

- **Consult the dealer or an experienced radio/TV technician for help.**

Manufacturer's Limited Warranty

If for any reason you are not able to resolve difficulties with your iCEBOX™ using the Troubleshooting section of the Owners Manual please contact Customer Care for assistance as listed below:

iCEBOX CUSTOMER CARE
83 South King Street; Suite 520
Seattle, Washington 98104
1-877-463-7637
www.icebox.tv

Customer Care will make every effort to assist you in resolving any difficulties you may be having. If the problem is deemed to be hardware related, you may be transferred to the Technical Support Center. The hardware warranty is listed below for your reference. This limited warranty is the only warranty provided with respect to the hardware, and Icebox, LLC offers no other warranty terms.

ICEBOX™ HARDWARE

This iCEBOX™ model product, as configured and supplied by Icebox, LLC and delivered new, in the original carton to the original consumer purchaser, is warranted by Icebox, LLC against manufacturing defects in materials and workmanship for a limited warranty period of:

One (1) Year Parts and Labor

This limited warranty begins on the original date of purchase. To receive warranty service, the purchaser must contact Icebox, LLC or their warranty partners, for problem determination and service procedures. Warranty service can only be performed by an authorized service center. The original dated bill of sale must be presented upon request as proof of purchase to authorized service center. FlipScreen icebox models will be repaired on-site or taken to a repair facility of choice. An authorized servicer will provide removal and re-installation of the product if the repair cannot be completed in the purchaser's home.

Icebox, LLC and servicer will repair or replace this product, at our option and at no charge as stipulated herein, with new or reconditioned parts or products if found to be defective during the limited warranty period specified above. In the event that a problem with the unit cannot be resolved via telephone support, a service technician will be dispatched to affect a repair. Replacement parts and products will be covered by the remaining original warranty, or ninety (90) days, whichever is longer.

Icebox, LLC's obligations with respect to software products distributed by Icebox, LLC under the icebox™ brand name are set forth in the applicable end user license agreement. Non-Icebox, LLC hardware and software products are not covered by any Icebox, LLC warranty.

General Troubleshooting

The following sections cover the troubleshooting procedures for the major functions of the FS04 FlipScreen product.

Troubleshooting Setup

The troubleshooting suggestions in the following sections are meant to be used by service personnel in a test laboratory or electronic servicing facility.

The service engineer will need the following tools, equipment, and materials to complete these troubleshooting procedures for the FS04 FlipScreen product:

1. FlipScreen power cable
2. 10/100 baseT Ethernet port or hub and wireless LAN router
3. iCEBOX Certified Ethernet PCMCIA Card
4. Standard ethernet cable
5. TV antenna or cable TV service
6. Analog telephone line
7. DVD disc
8. USB cable
9. External Audio/Video input source with S-video and composite (i.e. Video Camera, VCR, TV or DVD player)
10. FS04 Flipscreen compatible USB printer with PCL Driver

The service engineer must ensure that all test equipment, cables and other components are in good working order before commencing with the trouble-shooting procedures.

Note: The service engineer must perform a Power-On reset before beginning each of the troubleshooting procedures that follow.

Power On Troubleshooting

Follow the procedure detailed in Table 1 to aid in troubleshooting Power On faults.

TABLE 1. Power On Troubleshooting

Check	Yes?	No?
1 Turn on power switch on rear panel. Does LED light on front panel come on?	Continue.	Check that: • The power cord is plugged in firmly at the rear of the unit and in the outlet. • The power outlet is functional. Try plugging into a different outlet. • The circuit is active. Try resetting the GFCI switch. • The power cable is good. Try substituting a different power cable (most PC cables will work). If problem is not resolved, continue to #3.
2 Does LED light turn solid red after 90 to 120 seconds?	Continue.	Check power supply. See Power Supply Troubleshooting on page 27.
3 Press the On/Off button on the front panel. Does the LED light turn a solid green?	Continue.	Check power supply. See Power Supply Troubleshooting on page 27.
4 Does the touch screen display work?	End.	Perform touch screen troubleshooting. See Touch Screen Troubleshooting on page 21.

TV Mode Troubleshooting

Follow the procedure detailed in Table 2 to aid in troubleshooting TV Mode faults.

TABLE 2. Television Troubleshooting

Check	Yes?	No?
1 Does the display show a strong television broadcast signal?	Continue with step 4.	Continue with step 2.
2 Is the TV antenna or cable securely seated in the TV In receptacle?	Continue.	Firmly reseat the antenna or cable. If problem is not resolved, try replacing the antenna or cable. If problem is still not resolved, continue.
3 Change to Internet mode. Does the display properly show the Internet browser?	**1** Change back to Television mode. **2** Press Options. **3** Choose Signal Souce. **4** Select Cable or Antenna, as appropriate. **5** Autoscan for channels. **6** If problem is not resolved, check the display and tuner components of the controller assembly.	Perform touch screen trouble-shooting. See Touch Screen Troubleshooting on page 21. If problem is not resolved, check the display and tuner components of the controller assembly.
4 Is the TV broadcast audible through the speakers?	End.	Firmly reseat the antenna and speaker cables. Using the keyboard or remote, turn the volume to high. If problem is not resolved, check the audio components of the controller assembly. See Audio on page 40.

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FM Radio Mode Troubleshooting

Follow the procedure detailed in Table 3 to aid in troubleshooting Radio faults.

TABLE 3. FM Radio Troubleshooting

Check	Yes?	No?
1 In Radio mode, scan for stations. Are you able to scan frequencies?	Continue.	Firmly reseat the radio antenna in the FM In receptacle on the rear panel. **Note:** You may not receive any radio stations if no broadcast signals are strong enough.
2 Is the radio broadcast audible through the speakers?	End.	Firmly reseat the FM antenna and speaker cables. Using the keyboard or remote, turn the volume to high. If problem is not resolved, check the audio components of the controller assembly. See Audio on page 40.

DVD/CD Mode Troubleshooting

Follow the procedure in Table 4 to aid in troubleshooting DVD/CD Mode faults.

TABLE 4. DVD/CD Troubleshooting

Check	Yes?	No?
1 Change to DVD/CD mode. Does the DVD splash screen display?	Continue.	Perform touch screen troubleshooting. See Touch Screen Troubleshooting on page 21. If problem is not resolved, check DVD components of controller assembly. See DVD on page 36.

TABLE 4. DVD/CD Troubleshooting

Check	Yes?	No?
2 Press the Eject button on the front panel. Did the DVD/CD tray open?	Continue.	The tray may be jammed. Unplug the unit. Press and hold the Play/Pause Button together with the Mute button. Plug the unit back in. Wait 20 seconds. Did the tray eject? If yes, problem solved.
3 If the tray ejected.	Continue	The tray may be jammed. Turn off all power to the Flip-Screen unit and unplug from power outlet. Open the display panel Behind the touch screen, there is a small rectangular opening in the chassis. Insert a thin flathead screwdriver into the right side of the rectangle and push the tab to the left. This should release the DVD/CD tray. Gently pull the tray out by hand. Plug in the power cord and turn on the rear panel power switch. The DVD/CD tray should be automatically pulled in. (If you do not get a solid red light after 10 to 15 seconds, simply turn the rear panel power switch off and on again.)
4 With no disc in the tray, press Eject again. Does the DVD/CD tray close?	Continue.	Gently push the tray in manually. Continue.
5 Does NO DISC appear on screen?	Press Eject, insert a DVD or CD disc, and press Eject again. Continue.	Check DVD components of the controller assembly. See DVD on page 36.
6 Does the DVD or CD begin playing automatically (or after pressing the Play button on keyboard, remote or front panel)?	Continue.	Try a different DVD or CD disc to ensure the problem is not with the disc. If problem is not resolved, check DVD components of the controller assembly. See DVD on page 36.
7 Does the DVD video or CD control panel appear on the display?	Continue.	Check DVD components of the controller assembly. See DVD on page 36.

TABLE 4. DVD/CD Troubleshooting

Check	Yes?	No?
8 Is the DVD or CD sound audible through the speakers?	End.	Check that the speaker cables are firmly seated in the rear panel and turn volume up to high. If problem is not resolved, check DVD components of the controller assembly. See DVD on page 36.

More DVD/CD Troubleshooting Suggestions

If you have inserted a CD or DVD disc, but the screen displays 'No Disc' or 'Data Disc' in the upper right corner (you may have to put the FS04 in DVD/CD mode to see this), then the system is having problems reading the disc. Try the following troubleshooting ideas.

• **Press Eject twice to open and re-close the disc tray.**

• **After inserting the disc, press the Play/Pause button.**

• **Eject the tray, remove and clean the disc, and re-insert.**

• **If the disc is an Update CD that you are fairly confident is a good disc, press Eject to open the disc tray, then close the tray by pressing firmly but gently with your hand.**

• **With the disk inserted, turn the power off and flip the power switch in the rear of the device. Wait 3 seconds and toggle the power again. Wait for the solid red LED light to come on, then power on the device. Switch to DVD mode to attempt to read the disk again.**

Internet/Ethernet Troubleshooting

Follow the procedure detailed in Table 5 to aid in troubleshooting Internet Mode faults when connected via Ethernet.

TABLE 5. Internet via Ethernet/Broadband Troubleshooting

Check	Yes?	No?
1 Press Internet on the keyboard or remote. Does an Internet browser window appear on the display?	Continue.	Check the ethernet components of the controller assembly.

TABLE 5. Internet via Ethernet/Broadband Troubleshooting

Check	Yes?	No?
2 Does an error page appear in the browser?	Perform basic network troubleshooting: • Make sure the network cable is firmly seated in the FS04 unit. • Reseat the network card and/or try the other PCMCIA slot. • Make sure you are getting connectivity lights on the network card, cable and/or hub, as appropriate. • If no lights, try changing cables to check for and eliminate the possibility of a faulty cable. • Optionally continue basic troubleshooting using standard Windows commands. See Windows-Style Troubleshooting following these steps. If the problem is not resolved, continue.	End.
3 Is the green Link light on the network card on? (You might use the shiny side of a CD or small mirror to check.)	Continue.	Check the ethernet components of the controller assembly.
4 Press Options on keyboard, remote or front panel. Press Internet Options. Choose Connection Settings. Does the IP Address begin with 169.254?	There is either no connection or no DHCP server. Try the troubleshooting suggestions in step 2 above and then check the ethernet components of the controller assembly.	Continue.
6 Is the problem resolved?	End.	Check the ethernet card

Windows-Style Troubleshooting

When troubleshooting network problems, you can use typical Windows commands, such as ping and ipconfig. First, however, you must open the Command Shell window.

To open the Command Shell window

1. Turn power off using the switch on the back panel of the FS04 unit. Turn power back on.
2. When the LED light on the front panel blinks a quick red or green, hold down both the Eject and Options buttons until the Command Shell window appears. This may take a number of seconds.
3. You can now enter standard Windows commands for network troubleshooting. If you need help, you can type /? after a command to get a list of options. For example, you can type ping /?.

   Note: If you prefer working in the Windows CE desktop, optionally type start explorer and press Enter.

Internet/Modem Troubleshooting

Follow the procedure detailed in Table 6 to aid in troubleshooting Internet Mode faults when connected via telephone line modem.

TABLE 6. Internet via Modem Troubleshooting

Check	Yes?	No?
1 Press Internet on the keyboard or remote. Does an Internet browser window appear on the display?	Continue.	Check the ethernet components of the controller assembly.
2 Dial the access number from a phone. Is it a working number and do you hear modem tones?	Continue.	Contact the ISP for a valid access number.
3 Does an error page appear in the browser?	Perform these basic troubleshooting steps. Check that the modem card is a supported card. **1** Make sure the phone cable is firmly seated. **2** Disconnect any caller ID or digital cable boxes from the phone line. **3** Select Internet Options, then choose Connection Settings, then choose Modem Settings. **4** Re-enter the user name and password, making sure to use proper case (eg., Caps Lock is not on). Some ISPs require a prefix before or suffix after the user name. Check with your ISP for any required prefixes or suffixes. **5** Check that the proper access number is entered. As needed, add a 9, 1, area code, or pause commas (3 seconds per comma). If the line has call waiting, you may also need to add a disable code (check with your phone provider). If the problem is not resolved, continue.	End.

TABLE 6. Internet via Modem Troubleshooting

Check	Yes?	No?
4 Set volume to high. Choose OK twice, then choose Connect. Are the dial tone and connect tones audible?	Continue.	Check the card.
Note: The dialing sound will be choppy. The Stop button on the keyboard or remote stops the modem dial-up.		
5 Can the FlipScreen unit now access the Internet?	End.	Check the card.

Wireless Internet Troubleshooting

To troubleshoot wireless LAN internet connection problems outside of the customer's home can be difficult if not impossible to correct.

Remember that if you encounter difficulty using and/or installing your wireless LAN, the error may be related to various causes:

- **Out-of range situation, which prevents the PC Card from establishing a wireless connection with the network.**

- **Configuration mismatch, which prevents the PC Card from establishing a wireless connection with the (correct) network.**

- **A problem or conflict with the PC Card slot which prevents the PC Card from powering on.**

- **A conflict of the hardware with another device.**

In addition, anonymous network settings, WEP security settings, and access point configuration withn the customers home will play a role.

Touch Screen Troubleshooting

Follow the procedure detailed in Table 7 to aid in troubleshooting problems associated with the touch screen.

TABLE 7. Touch Screen Troubleshooting

Check	Yes?	No?
1 Does the touch screen need to be recalibrated? (If unsure, see instructions for testing calibration following this table).	• Press the Internet button on the keyboard or remote, and then press Options. • Select Internet Options, Browser Settings and press the Go button. • Select Calibrate Touch Screen and press the Go button. • Following the instructions on screen, touch and hold the stylus where indicated for 5 seconds, then press enter or OK to save. When calibration is complete, press Options to dismiss the dialog.	End.
2 Change through the various modes on the FlipScreen (such as TV, Radio and Internet). Does the touch screen display content as expected?	Continue.	Ensure that all touch screen cables are properly seated to the main controller board in the chassis, as well as to the LVDS and Backlight boards inside the touch screen assembly. If the problem is not resolved, check the display components of the controller assembly.
3 Does the touch screen respond to finger or stylus touch?	Continue.	Check the display components of the controller assembly.

To test touch screen calibration

1. Plug a USB mouse into one of the USB connectors at the bottom right corner of the FS04 chassis. You should see a mouse pointer on the screen.
2. Touch the screen with the stylus. The mouse pointer should move within 2 millimeters of where you touched. If the mouse pointer is further away than 2 millimeters, you need to recalibrate the touch screen.

Video Mode Troubleshooting

Follow the procedure detailed in Table 8 to aid in troubleshooting Video Mode faults.

TABLE 8. Monitor Mode Troubleshooting

Check	Yes?	No?
1 Press Video on the keyboard or remote. Does the word "Composite or S-Video" appear briefly on screen?	Continue.	Check the audio and video components of the controller assembly.
2 Is the video or audio source noisy or not being displayed or heard? Note: If the source (such as a video camera or VCR) is not connected, the screen will appear black and the word "Composite or S-Video" appears.	Check that the video and audio cables are firmly and correctly seated in both the rear panel of the unit as well as the source unit. If the problem is not resolved, check the audio and video components of the controller assembly.	End.

Keyboard/Remote Control Troubleshooting

Follow the procedure detailed in Table 10 to aid in troubleshooting IR faults when using Keyboard or Remote Control to control the device.

TABLE 9. Keyboard/Remote Control Troubleshooting

Check	Yes?	No?
1 Does the FS04 unit respond to either the keyboard or remote, but not the other?	Put fresh batteries in the device to which the unit does not respond. Ensure that the battery contacts are in good shape and contact the batteries properly.	Continue.

TABLE 9. Keyboard/Remote Control Troubleshooting

Check	Yes?	No?
2 Does the FS04 unit not respond to either the keyboard or remote?	The unit may be in demonstration mode. Press the Channel – (down), Volume – (down) and Eject buttons simulataneously. **Note:** Pressing these same three buttons again will toggle the unit in and out of demonstration mode. If the problem is not resolved, check the IR components of the controller assembly. See Infrared on page 40.	End.

Print Troubleshooting

Follow the procedure detailed in Table 11 to aid in troubleshooting USB connectivity when connected to compatible printers.

TABLE 10. Print Troubleshooting

Check	Yes?	No?
1 Change to Internet mode, press Options, then Internet Options, choose Print. Does the printer respond?	If the print quality is poor, check with the printer manufacturer or printer manual. End.	Verify that the printer is compatible with the FS04. Ensure that the printer is plugged in and the printer cable is firmly seated in both the printer and one of the USB ports on the bottom back right corner of the unit. If the problem is not resolved, try the other USB port.

Boot Up Troubleshooting

If the FS04 FlipScreen does not boot up properly (the LED light blinks red continuously or is solid orange), you can conduct troubleshooting by connecting a Windows laptop to the FS04 and using the iCEBOX's Boot Loader Menu within a terminal services program.

To access the Boot Loader Menu

1. Using a null modem cable with two female ends, connect the FS04 FlipScreen to a laptop (or PC) running Windows 98 or higher, by plugging in to each unit's serial port.
2. On the laptop, run a terminal emulation program, such as Windows' HyperTerminal. (In Windows XP, go to Start – All Programs – Accessories – Communications – HyperTerminal.)
3. For the connection to the FS04, set the COM port settings on the laptop to 38400 baud, 8-N-1 (8 bits, no parity, 1 stop), and "Hardware" flow control.
4. While holding down the Channel – (down) button, turn on power to the FS04 unit, using the switch on the back of the unit. The Boot Loader Menu appears in the terminal emulation program on the laptop.

Note: The submenus of the Boot Loader menu have default options which will be selected automatically if no other activity occurs within approximately 15 seconds. The default commands are noted directly on the submenus with the words 'Default Option' in parenthesis.

Boot Loader Button Combinations

The special button combinations recognized by the Icebox Boot Loader are:

Table 11: Boot Loader Buttons

Special Boot Loader Button	CPLD Code	Name
Menu Button	0Ah	Channel -
Skip POST Button	0Bh	Channel +
No Button	00h	
Boot from cdrom disk	07h	Play and Mute together

LED Behavior

The following table describes the behavior of the Icebox LED at power-on:

Table 12: LED Power-On Behavior

Event	LED State

Table 12: LED Power-On Behavior

Power on	Solid amber
External super I/O initialization	Blink amber at 2 Hz
BLDT power on self tests start	Blink green at 2 Hz
If BLDT power on self tests fail	Blink red at 0.5 Hz
If OROM power on self tests fail	Blink red at 2 Hz
Start Windows CE image download	Blink red/green/amber at 4 Hz. Color selection is based on the current color state of the LED.
End Windows CE image download	Return pre download LED state.
Application software LED driver loaded	Solid green
Application software sleep mode	Solid Red

Resetting Production Information

Problems may occur during boot up if the unit production information has not been properly set up.

To check production information settings

1. Access the Boot Loader menu (follow previous instructions).
2. Choose 'A' (Production Menu) from the Utilities menu. The Production menu becomes available.
3. Choose 'A' (Display Unit Production Info) from the Production menu. Various information settings appear.
4. Check that:
   • the Serial Number matches the number on the unit's sticker
   • the DVD Region code is correct ('01' for North America or '02' for Europe)
   • Device type is FSUSA02

Note: The Unit Data value should always be 'IceBox 02'. The Region Set Count value is system controlled.

5. If any of the information settings are incorrect, reset them by completing the following steps.

To correct information settings

1. With the Production menu available (follow steps 1 and 2 above), choose option 'B' (Manual Production Commands).
2. Type one of the following commands, as appropriate, followed by the correct setting information. The commands are case-sensitive.
   • setSerialNumber (example: setSerialNumber(FA20_E0ABN_ 00030))
   • setDvdRegion (example: setDvdRegion(01))

3. Check the production information settings again (option 'A' on the Production menu) to ensure that the information was properly reset.

Note: Option 'C' on the Production menu (Scan Production Commands) is not typically used in the field.

Correcting User Settings

If all the production information settings appear correct but the FS04 Flip-Screen still does not boot properly, the cause may be corrupt user settings.

To reset user settings

Note: Completing the following steps will erase all user settings, such as TV channel and radio station lists.

1. Turn on power to the FS04 and wait till the LED light on the front panel is quickly flashing either red or green.
2. Press and hold both the Eject and Options buttons until a Command Shell window appears on the screen (this may take a number of seconds). If a Command Shell window does not appear, the operating system needs to be updated. Go to the steps for Updating the Operating System.
3. In the Command Shell window, type cd diskonchip and press Enter.
4. Next, type dir persist.xml and press Enter.
5. Then, type del persist.xml and press Enter.
6. Reboot the FS04 unit.

Checking the Version

Assuming the unit powers on without problems, you should double check that the unit has the most recent operating system version.

To check the operating system version
1. Press Internet on either the keyboard or remote.
2. Press Options on the keyboard, remote, or front panel, and then select Internet Options, then Updates. The version number appears in the Internet Options dialog box.
3. If you are unsure if the version displayed is the most recent version, select Check for Updates.

Updating the Operating System

If the Command Shell window does not appear when attempting to reset the user settings, the FS04's operating system needs to be updated.

To update the operating system
1. Locate an update CD by verifying that it has the files nk.bin and iceupdate.xml in the root directory.
2. Power off the iCEBOX.
3. Press and hold the buttons Play/Pause and Mute.
4. Power on the iCEBOX and wait for 20 seconds.
5. The Disk Tray will eject.
6. Place the disk in the tray and close the tray.

7. The system will automatically start to boot. You will see the LED light on the front panel change from slow blinking, to quick blinking, then back to slow blinking.

8. When the LED light reaches a solid red, press the Power button on the front panel.

9. With the remote control or keyboard, press the DVD & CD button. Then on the touch screen, press Update Now, Done, OK and Eject. The system automatically reboots.

Note: If an interrupt occurs, such as a power failure, during execution of the previous steps, repeat all the steps for updating the operating system.

Problems with Slow Performance

If the FS04 seems to be working fine except for extremely slow performance, this may be caused by a bad system date.

To correct the system date:

1. With the FS04 unit turned on, press the Internet button on the keyboard or remote, and then press Options, and Internet Options.

2. Choose Browser Settings.

3. Make sure the date is set to the current Month, Day and Year, and correct as needed.

4. Press OK three times to close the dialog box and menu.

Updating the Operating System

The FS04 FlipScreen operating system can be updated using an iCEBOX-supplied CD.

Updating the Operating System from CD

To update the unit's operating system with the iCEBOX-supplied CD, the unit must be functioning normally.

During the update proceure:

- **Do not attempt to use any FS04 features. Do not turn the unit on or off.**

- **When the procedure is complete, be sure to remove the Update CD from the CD/DVD drive.**

To update the operating system from CD

1. Plug the unit in and turn it on, both with the back switch and then, when the LED light is solid, with the power button on the front panel.
2. Press Eject on the front panel to open the disc tray and place the Update CD in the tray (printed side up). Do not push the tray closed. Press Eject on the front panel again to close the disc tray.
3. After a few seconds, the system displays information about this update. To proceed with the installation, choose Update Now. The system begins the update, then restarts itself.
4. When the CD/DVD tray ejects, remove the Update CD.
5. When you see the Update Complete message, choose OK.
6. Verify that the update was successful by pressing the Internet button on the remote, then pressing Options, and Internet Options. On the touch screen, choose Updates. Check that the System Version matches the version printed on the Update CD.

   Note: If the update process was interrupted at any point before completion, you may have to start over from step 1.

Disassembly / Reassembly

This section of the service manual describes the disassembly and reassembly for the FS04 FlipScreen and its subassemblies.

> **Warning:** Risk of electrical shock. High voltages may be present. Disconnect the unit from the main power before beginning any disassembly procedure.

Before beginning:

- **Disconnect the FS04 from main power.**

- **Begin with the screen closed flat.**

- **Verify how many connections are routed to the back panel, which may include TV coaxial cable, telephone/modem, ethernet, audio and video, security, and 2 USB connections on bottom panel.**

Required tools:

- **Small phillips screwdriver (or power screwdriver with phillips bit and torque set to 1)**

- **Flat screwdriver**

- **5mm socket wrench or nut driver**

- **6mm socket wrench or nut driver**

- **13mm socket wrench or nut driver**

- **Long-nosed pliers**

Removing/Replacing the FS04 in the Customer's Home

If a repair is required, the FS04 is removed from the customer's home by an authorized appliance repair person. A temporary replacement unit is provided immediately by the repair person. The customer is not to be left with an empty spot in their kitchen.

The replacement unit is fully functioning and must be maintained by the repair organization in top condition. The replacement unit is complete, as new in box, and it has all required cables and mounting hardware

Note: When the replacement unit is installed in the customer's home, the customer's power cable and mounting bracket may be used. The replacement unit mounting hardware and power cord should be packaged with the Unit.

6 Mounting screws
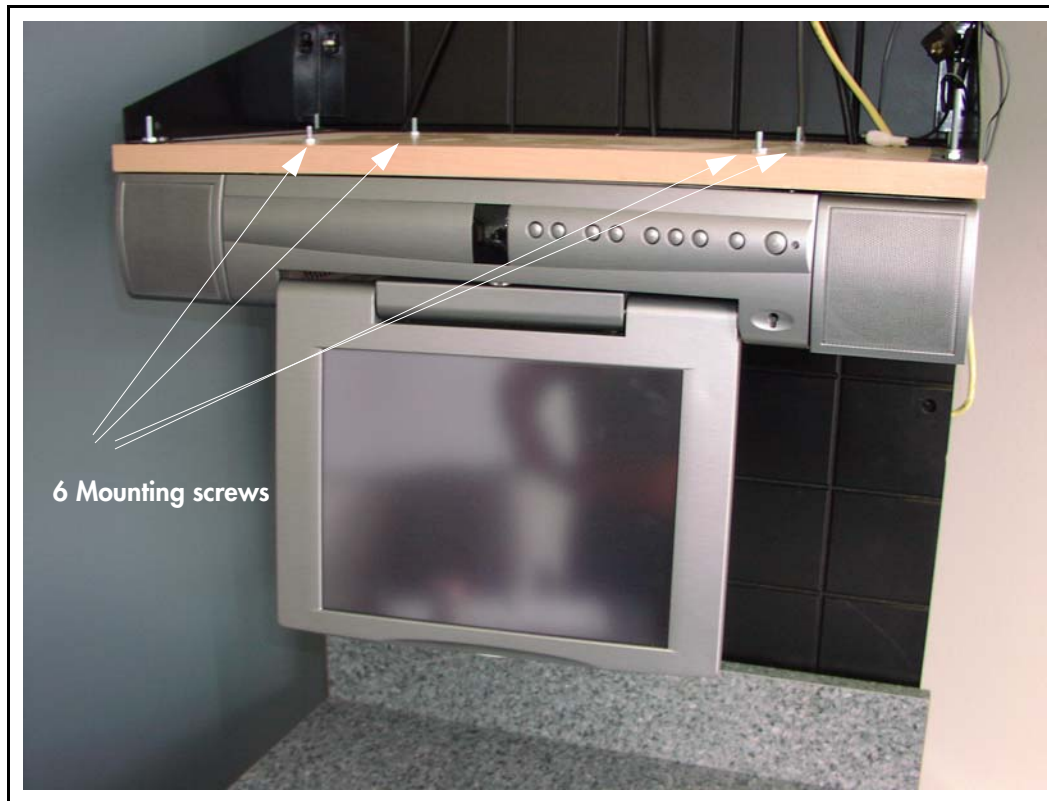
FIGURE 1. FS04 mounted in the customer's home

To remove the FS04 from the customer's home:

1. Turn off the power switch on the rear panel.

Note: In most installations, these screws will only be visible from underneath.
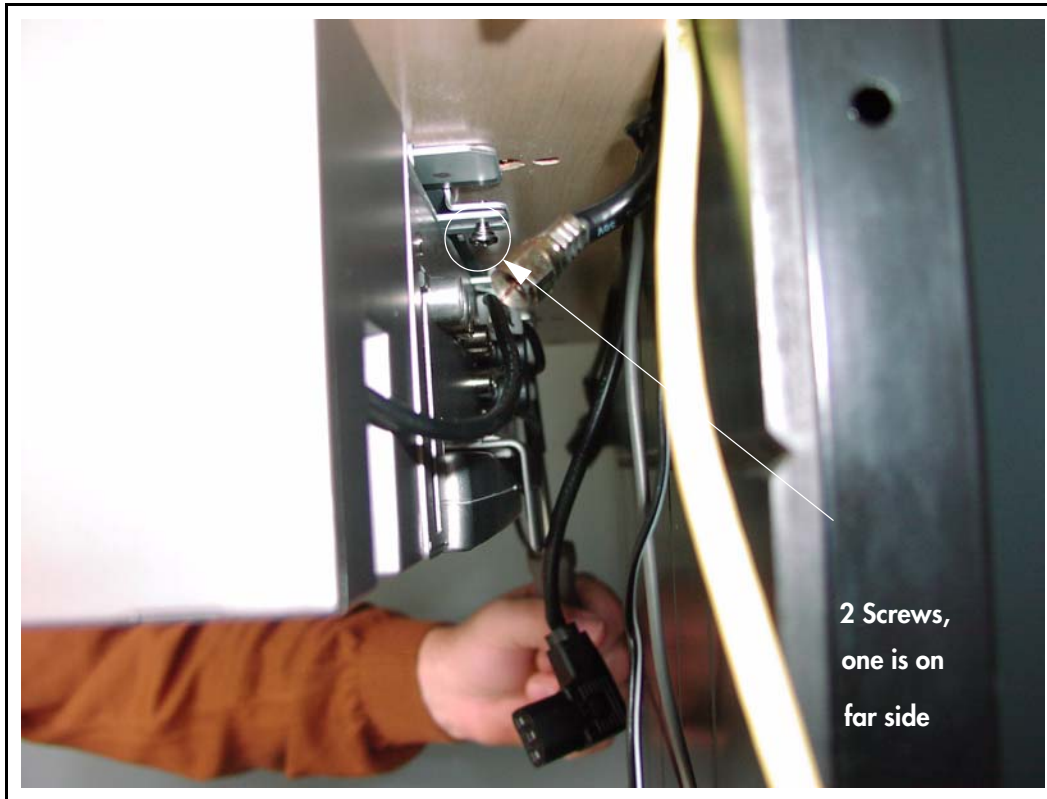
FIGURE 2. Removing cables and screws from back panel.

2. Loosen the srews holding the unit to the mounting plate.

3. Unplug the connections on the rear panel of the unit.
These will include the Power Cord, TV Cable, FM Radio Antenna Cable, and Internet Cable (phone line or broad band).

4. Remove the PCMCIA Card(s) if present, and install them in the replacement unit.

Note: If the cards don't work, install replacement cards.

5. Pack the customer's unit, along with the power cord and mounting hardware from the replacement unit and return it to the repair depot.

• **End Procedure**

To Replace the Unit in the customer's home:

1. Slide the unit into the existing mounting bracket.

2. Secure the two screws on the rear of the mounting bracket. (Figure 2)

3. Connect the cables for TV, Radio, and Ethernet, Printer, Power, and external video source.

4. Perform Power on test.

FIGURE 3. Removing the speakers (bottom view)

Removing/Replacing the Speakers

Other than removing the video panel, to perform any other type of repairs you must separate the speakers from the main unit.

To remove the speakers from the main unit:

1. Remove the four screws on the bottom (screen side) of the unit.
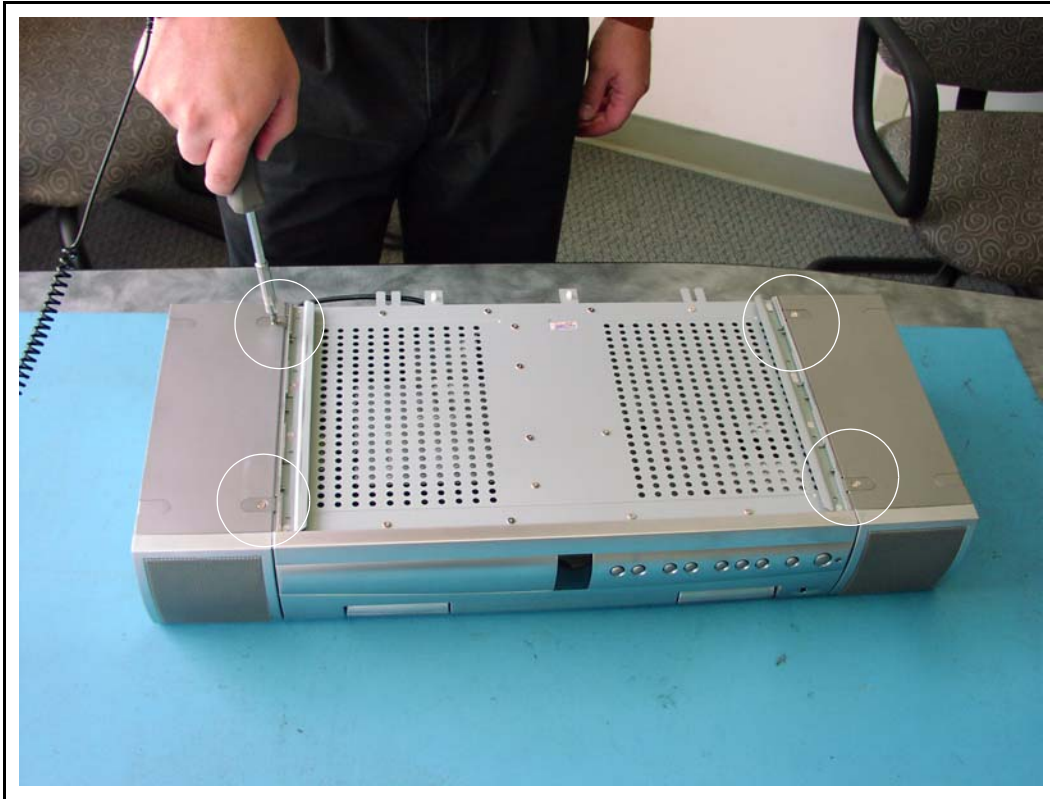
FIGURE 4. Removing the speakers (top view)

2. Remove the four screws on the top of the unit.
3. Detach the speakers and the speaker cables from the rear panel.
4. Set the speakers aside, carefully so as not to scratch the finish.

• **End Procedure.**

To Replace a speaker:
1. Remove the speaker as described in the following procedure.
2. Replace the speaker, then replace the phillips-head, flat head sheet metal screws depicted in (Figure 3 on page 55 and Figure 4 on page 56).

14 screws on top cover
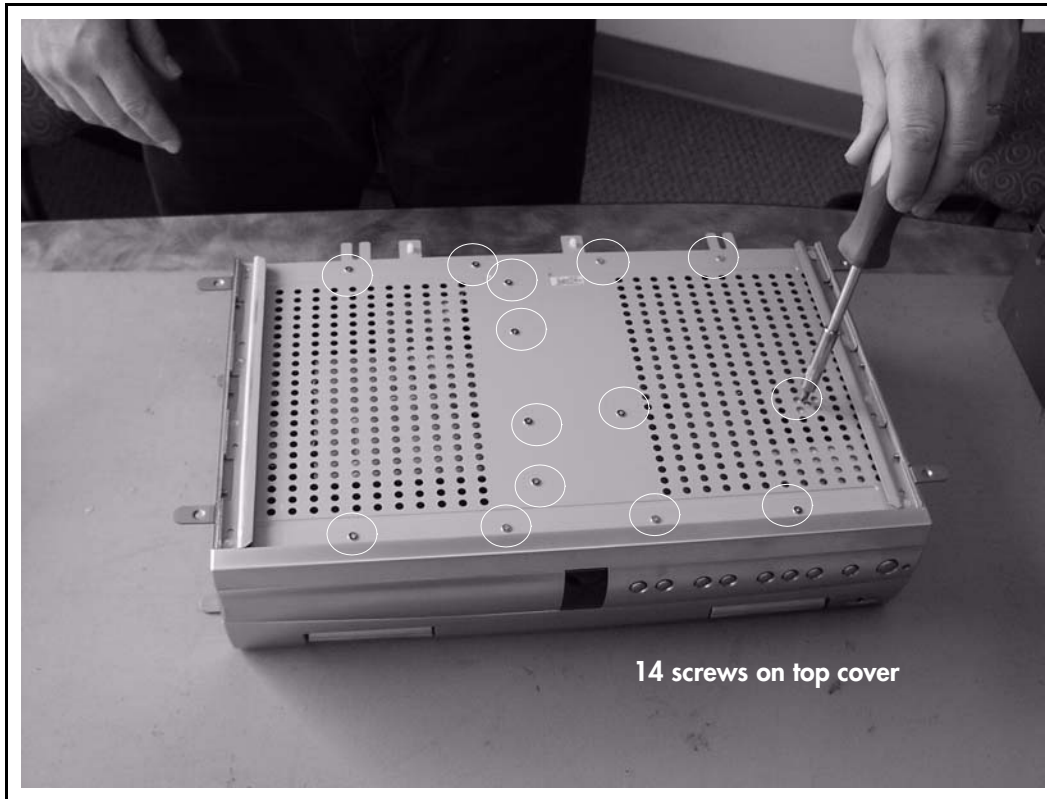
FIGURE 5. Removing the Chassis Top Cover (Step 1)

Removing/Replacing the Chassis Top Cover

The chassis top cover must be removed to access the controller, the DVD Drive, the Power Supply, and all other internal sub assemblies.

Before removing the Chassis Top Cover, you must first remove the speakers.

To remove the top cover:
1. Remove the 14 pan head phillips-head screws on the chassis top cover.
2. Turn the unit on its side

Three Side-Panel Screws on Each Side
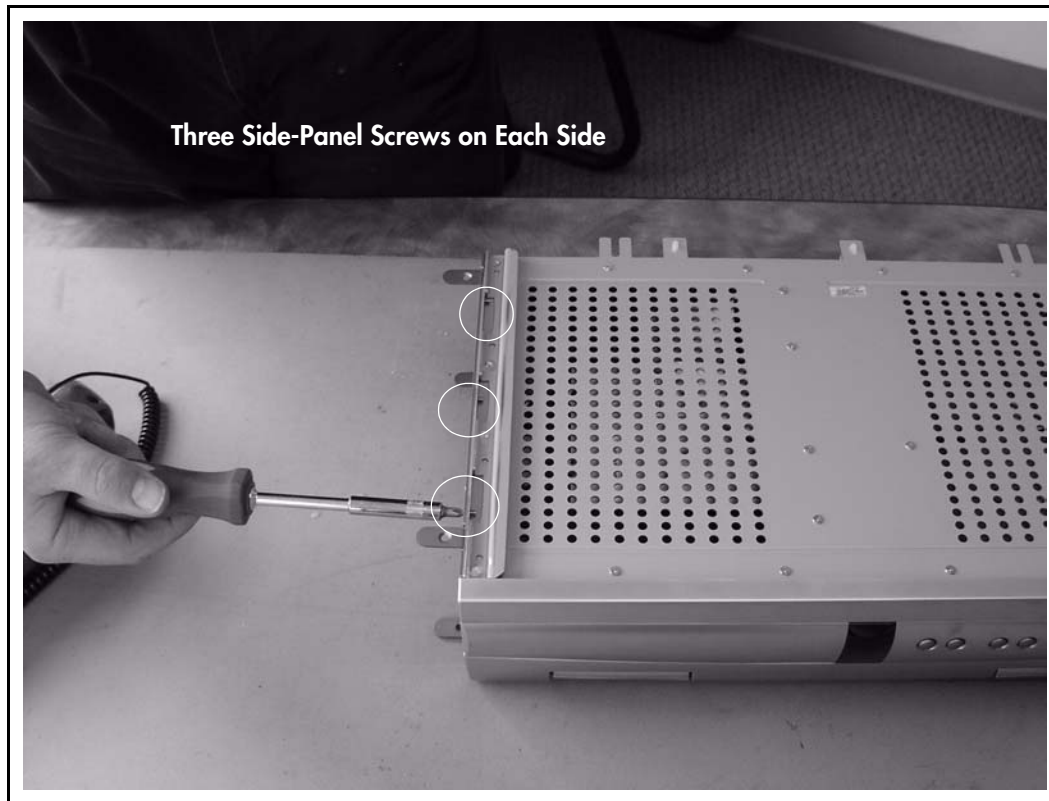
FIGURE 6. Removing the chassis top cover (Step 3)

3. Remove the 6 flat head phillips-head screws on the top sides of the side panels.

Power Supply   **DVD Drive**   **Ribbon Cable**
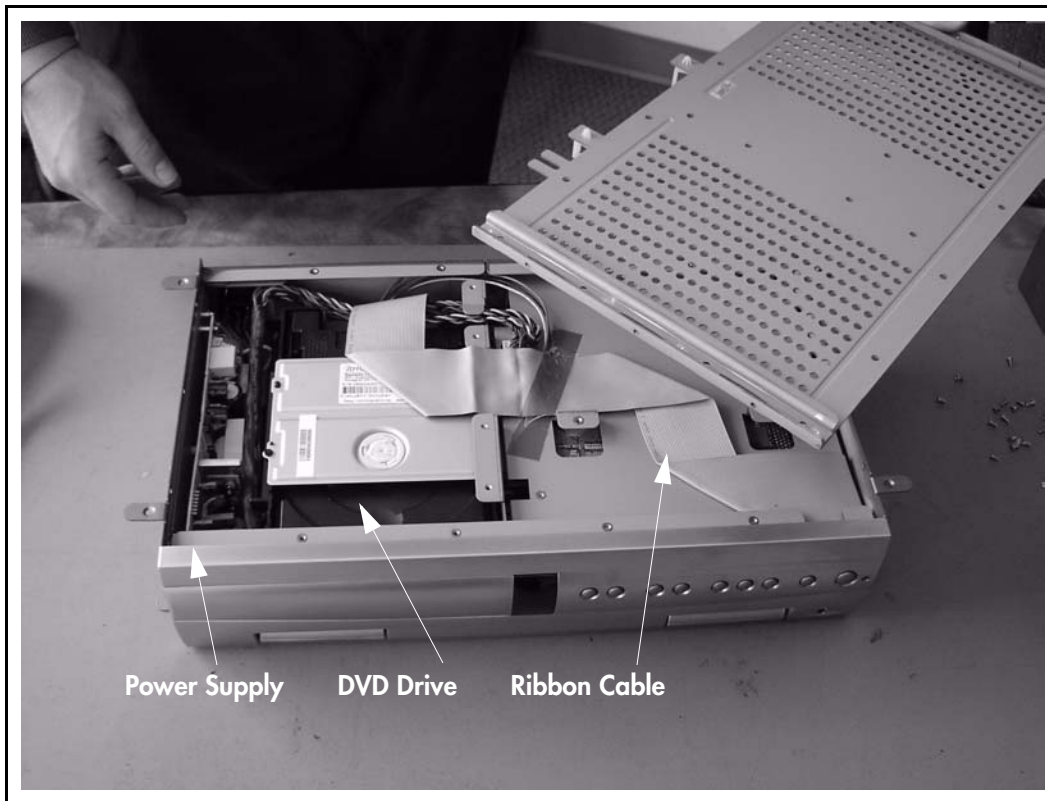
FIGURE 7. Removing the chassis top cover (step 4)

4. Lift the top cover free of the unit, exposing the DVD drive, the DVD Ribbon Cable, and the Power supply.

- **End Procedure**

To Replace the Chassis Top Cover
1. Follow the above steps in reverse order.

FIGURE 8. Removing the main controller (step 1)

Removing/Replacing the Main Controller Board

The main controller board is an assembly that contains the motherboard, the PCMCIA Card Reader, the Fan, the Clock Battery, the Back Panel, and the Motherboard Tray. To get to any of these components, the main controller board assembly must be removed from the unit.

Before removing the main controller board, remove the speakers and the chassis top cover.

To remove the main controller board:

1. Remove the tape holding the DVD ribbon cable in place.
   Note the routing of the DVD ribbon cable and the placement of the tape.
2. Disconnect the DVD Power wires and the Main Controller Board power wires.

9 phillips-head screws
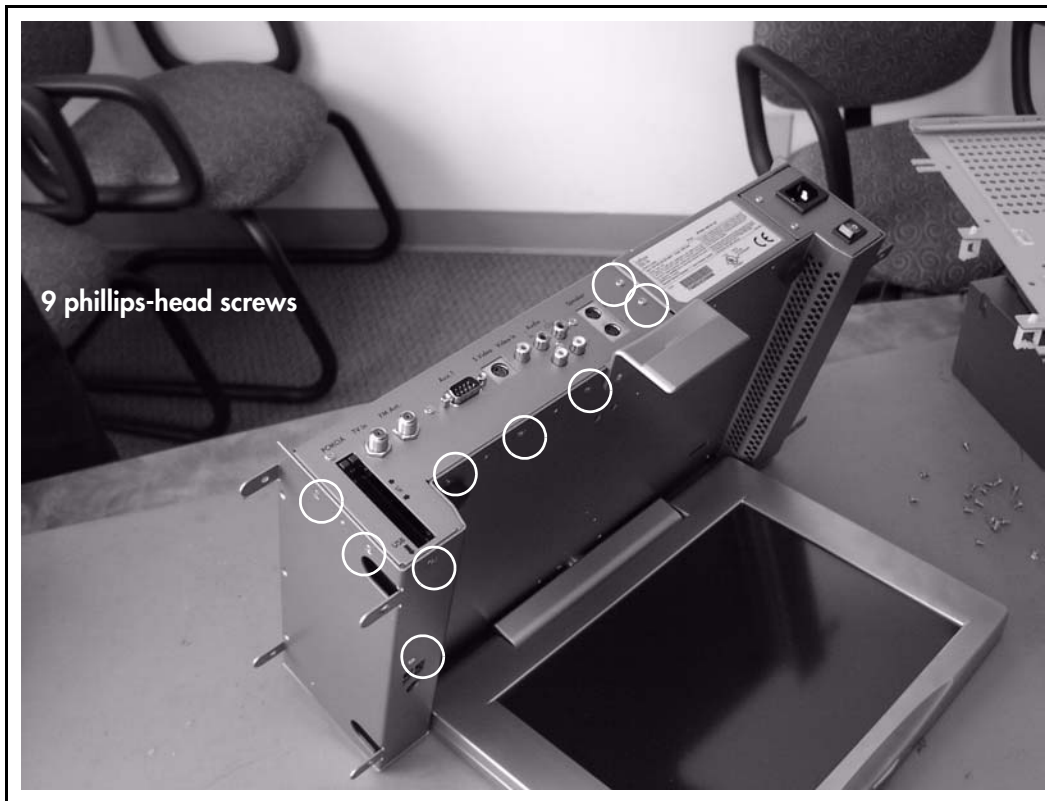
FIGURE 9. Removing the Main Controller Board Screws

3. Remove the twelve phillips-head screws from the bottom, side, and back panels.

Tilt the controller board up but be careful of the wires
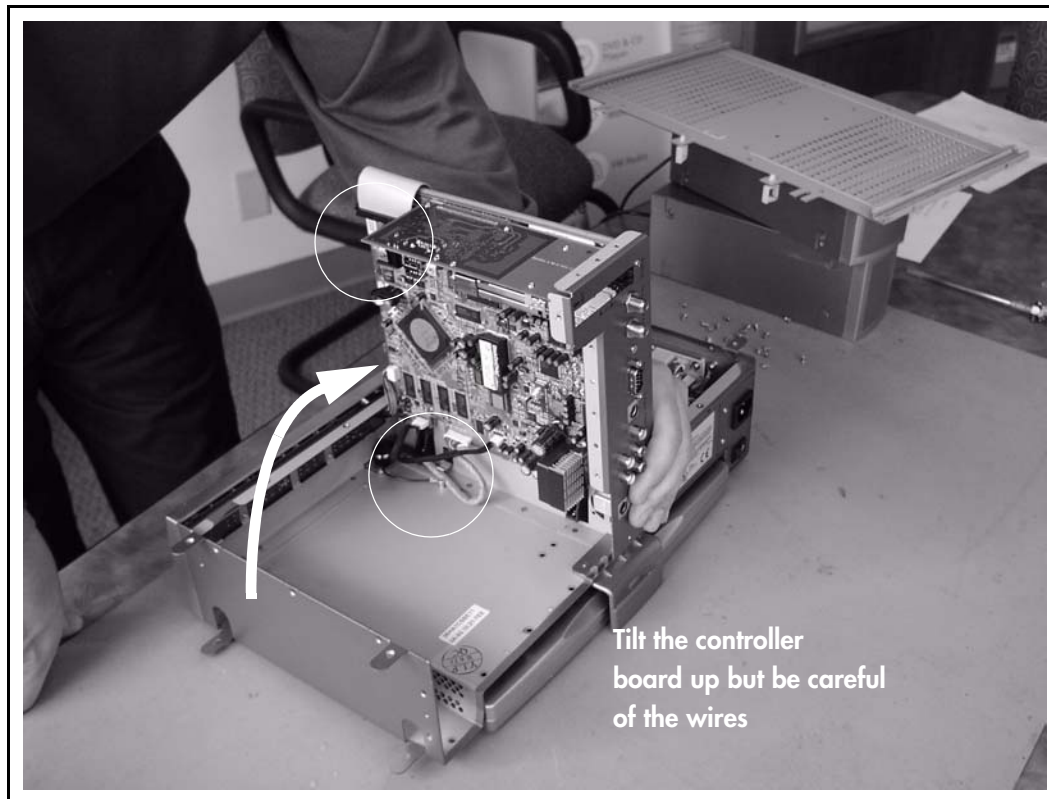
FIGURE 10. Removing the Main Controller Board

4. Lift the main controller board up, carefully disengaging it from the sheet metal chassis.

Note the wires still attached to the main controller board.

Controller Board Wires
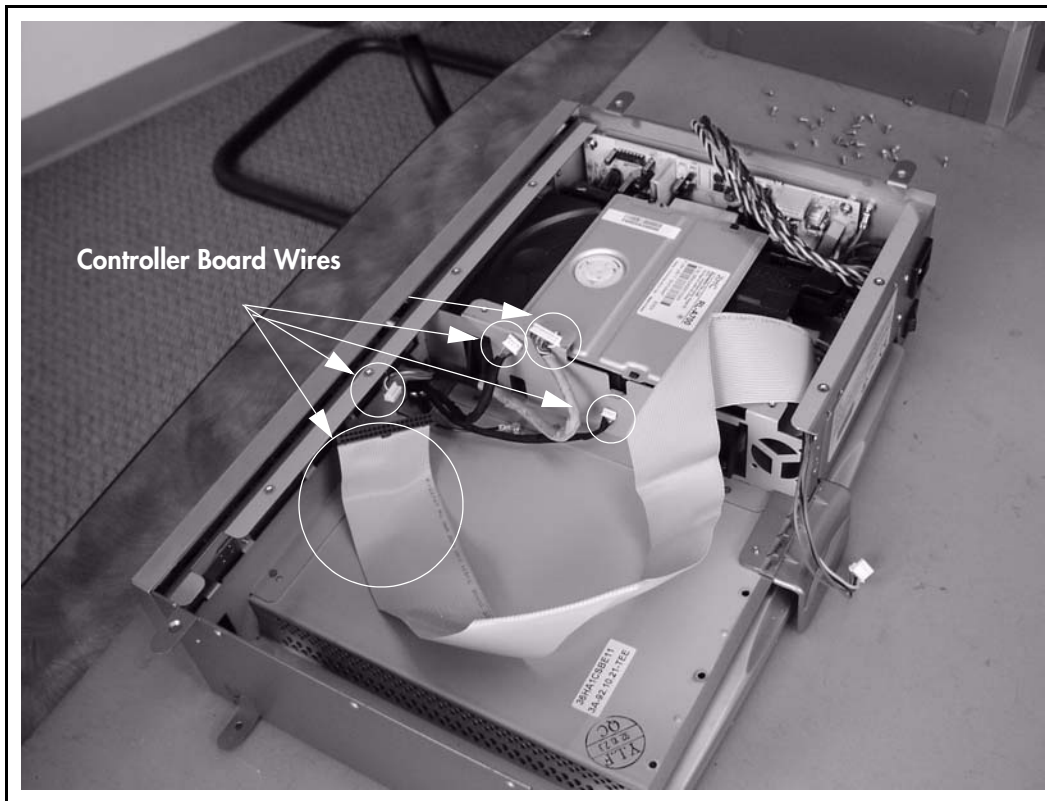
FIGURE 11. Disconnected Wires on the Controller Board

5. Disconnect the following wires attached to the main controller board.

DVD Ribbon Cable

Video Backlight

Touchscreen Control Cable

Video Display Cable

Front Panel Button Controls

• **End Procedure**

To Replace the Main Controller Board:
1. Follow the above procedure in reverse order.

• **End Procedure**
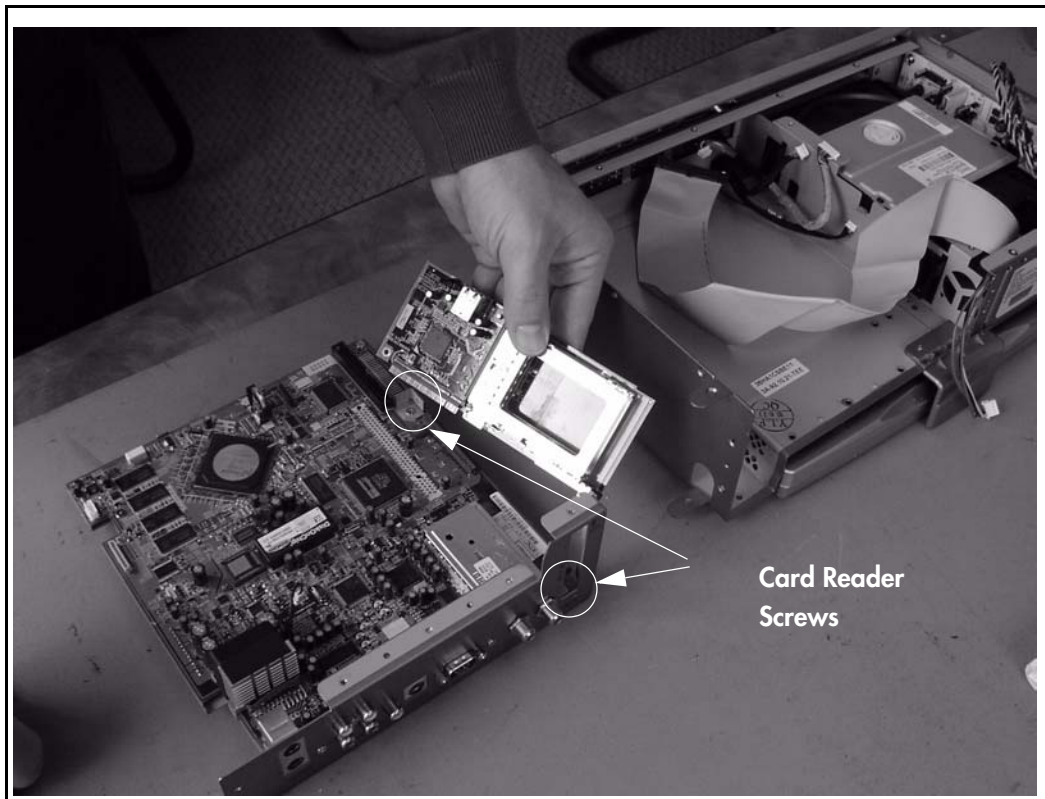
FIGURE 12. Removing the PCMCIA Card Reader

Removing/Replacing the PCMCIA Card Reader

The PCMCIA card reader can be removed from the mother board assembly and replaced if necessary. Field installation personnel are instructed to remove cards and leave them at the customer site.

If cards remain in the unit, they are the property of the customer and must be returned to the customer.

Before removing the PCMCIA Card Reader, the main controller board assembly must be free from the unit.

To remove the PCMICA Card Reader:
1. Remove the screw from the rear panel.
2. Remove the screw on the angle bracket connecting the card reader to the motherboard.
3. Gently lever the card reader free from the housing.

• **End Procedure**

To Replace the PCMCIA Card Reader:
1. Follow the above procedure in reverse order.

• **End Procedure**
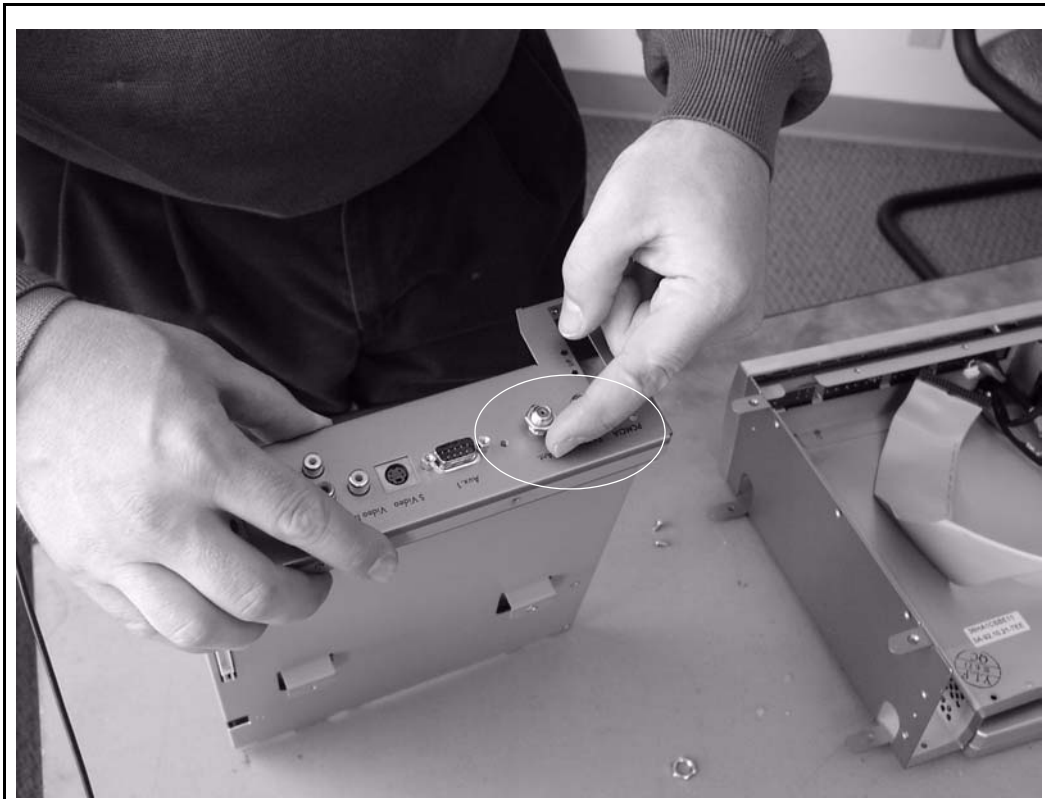
FIGURE 13. Removing the Back Panel

Removing/Replacing the Back Panel

The back panel can be removed from the motherboard, if it is damaged, or if the replacement motherboard does not come with the back panel. To remove the back panel, the main controller must be out of the unit. The PCMCIA Card Reader must be removed from the main controller.

To Remove the Back Panel:

1. Unscrew the 13 mm (1/2 inch) nuts on the TV cable and FM Antenna inputs. If these are too tight to remove with your fingers, use a socket or a crescent wrench.
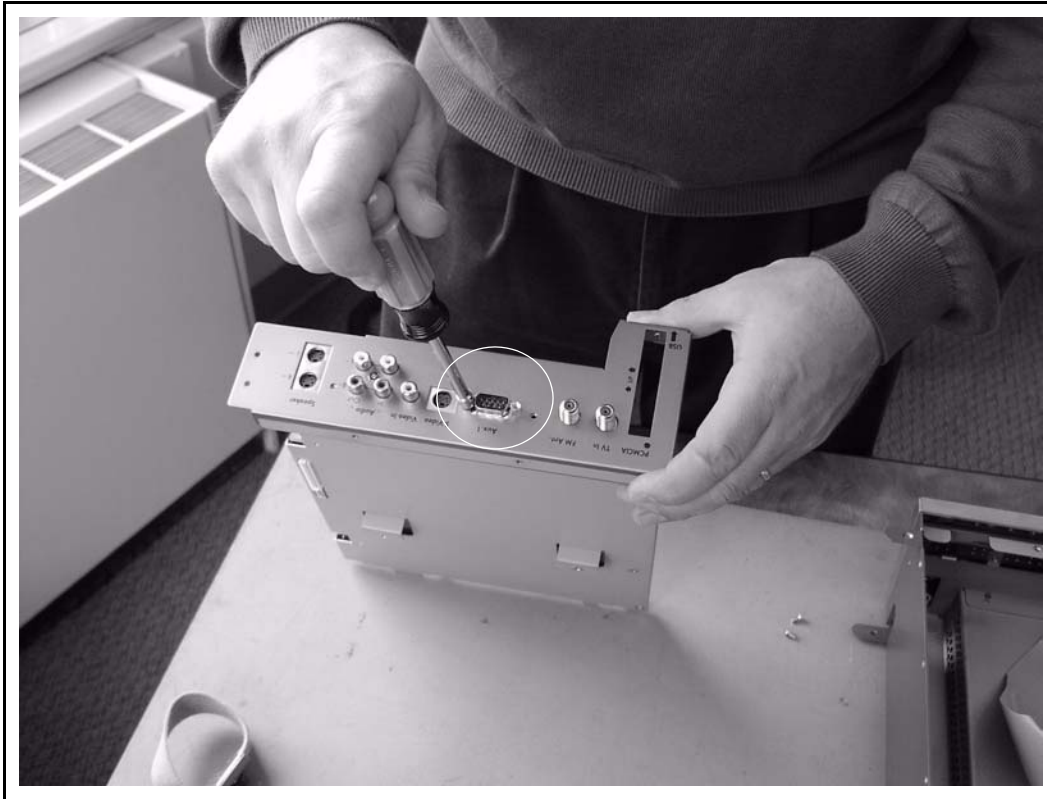
FIGURE 14. Removing the Back Panel (Step 2)

2. Remove both 5 mm nuts on the sides of the auxilliary serial port.
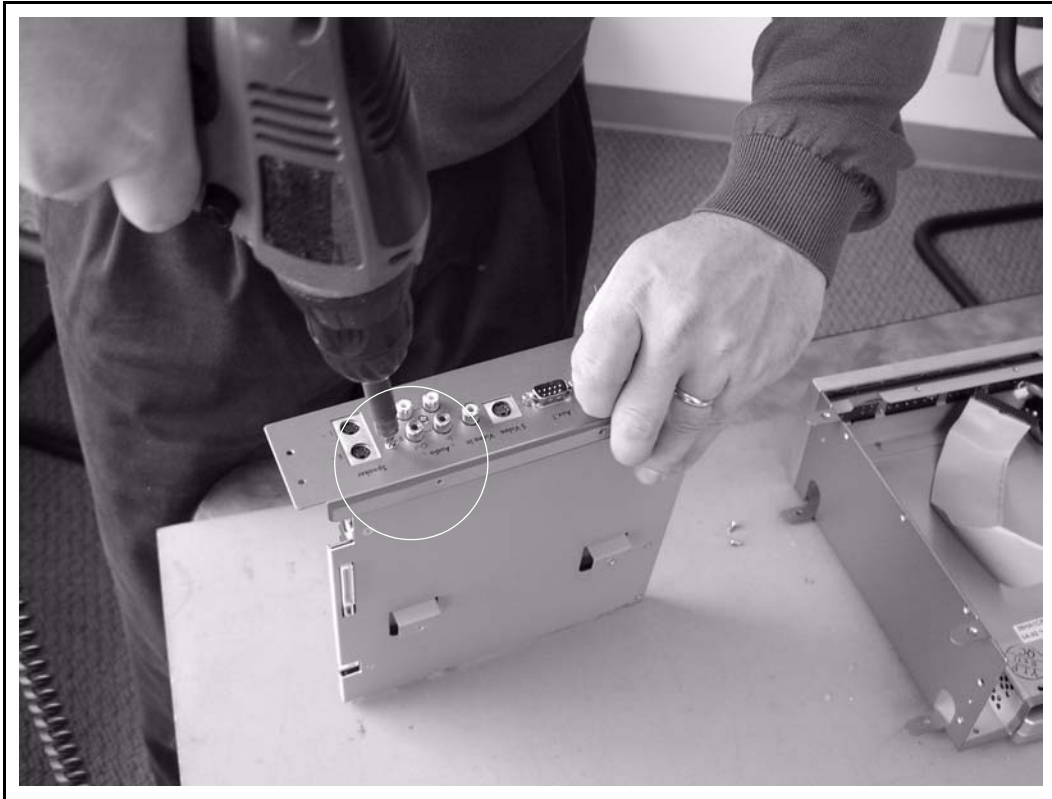
FIGURE 15. Remove the Back Panel (Step 3)

3. Remove the two phillips-head screws next to the audio inputs.
4. Separate the back panel from the main controller.

• **End Procedure**

To Replace the Back Panel:
1. Follow the above procedure in reverse order.

• **End Procedure**

Four screws, one under fan
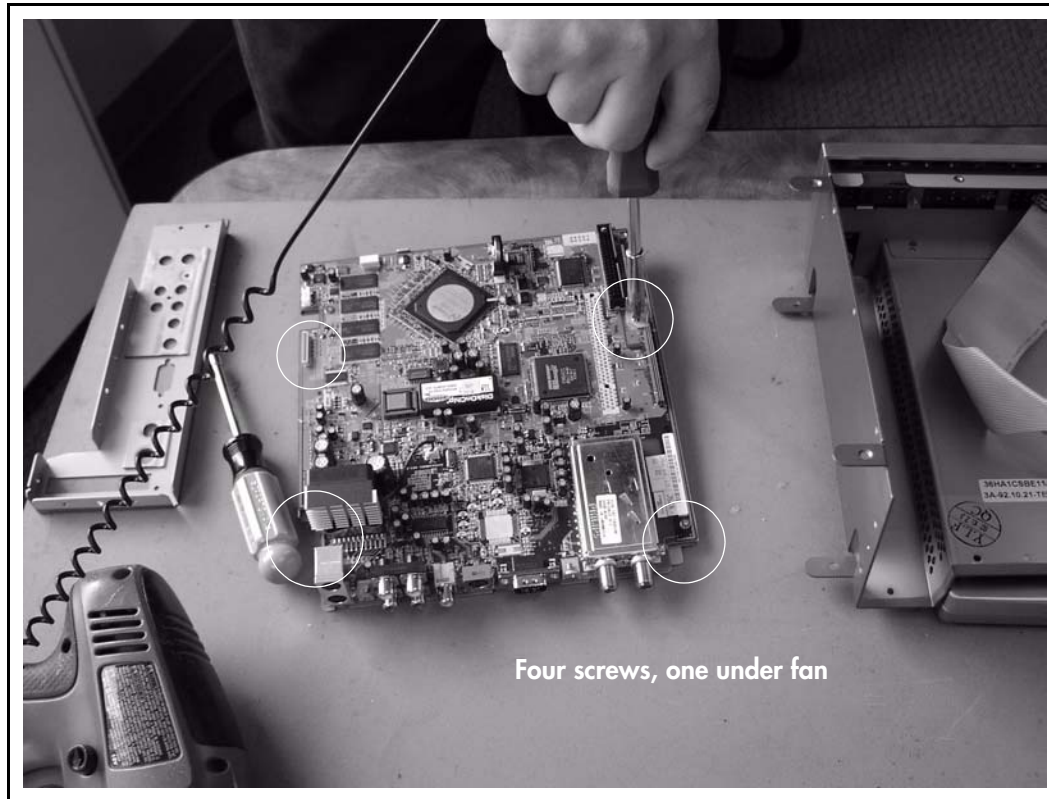
FIGURE 16. Removing the motherboard from the motherboard tray

Removing/Replacing the Motherboard Tray

The motherboard is attached to the motherboard tray. The motherboard tray is not necessarilly part of the replacement motherboard. If necessary, the tray can be removed and installed on the replacement motherboard.

To remove the Motherboard Tray:

1. Remove the four phillips-head screws from the motherboard.
2. One of the screws is located under the fan. To get at this screw, the fan must be removed.

• **End Procedure**

To Replace the Motherboard Tray:

1. Follow the above procedure in reverse order.

• **End Procedure**
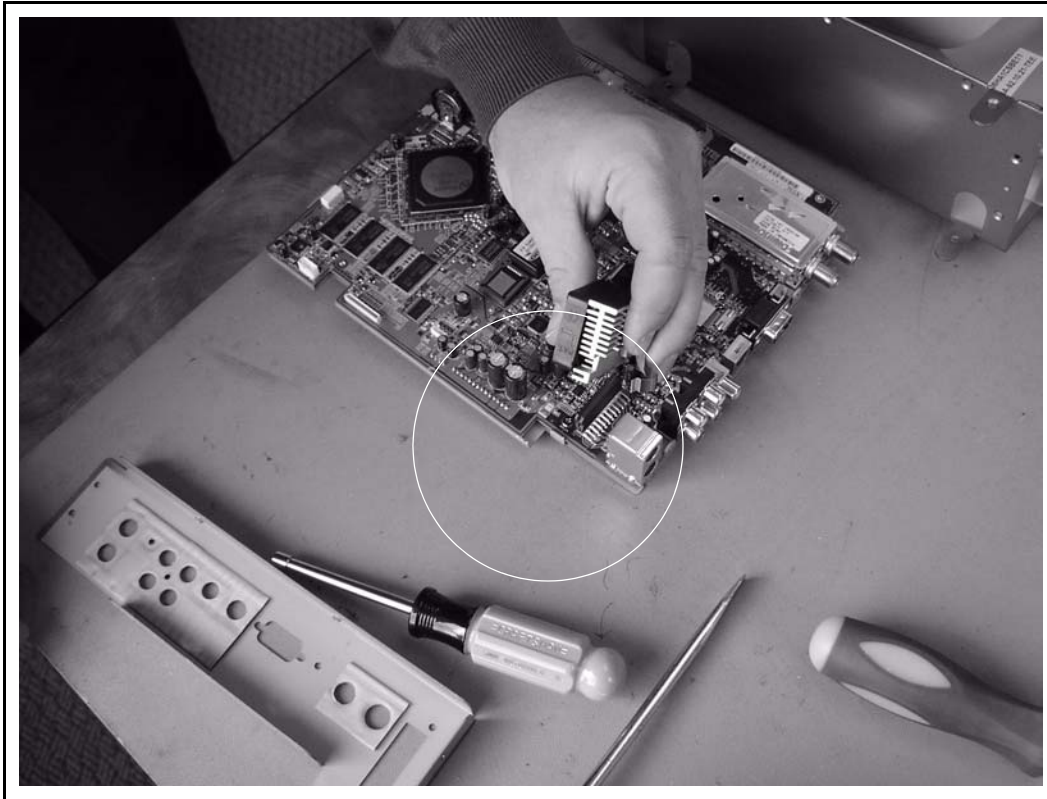
FIGURE 17. Removing the Fan

Removing/Replacing the Fan

The fan can be removed if needed, if the motherboard replacement does not have a fan, or if the motherboard tray needs to be removed.

To remove the Fan:
1. Pluck off the clip attaching the fan heat sink to the to the audio amp.

• **End Procedure**

To Replace the Fan:
1. Follow the above procedure in reverse order.

• **End Procedure**
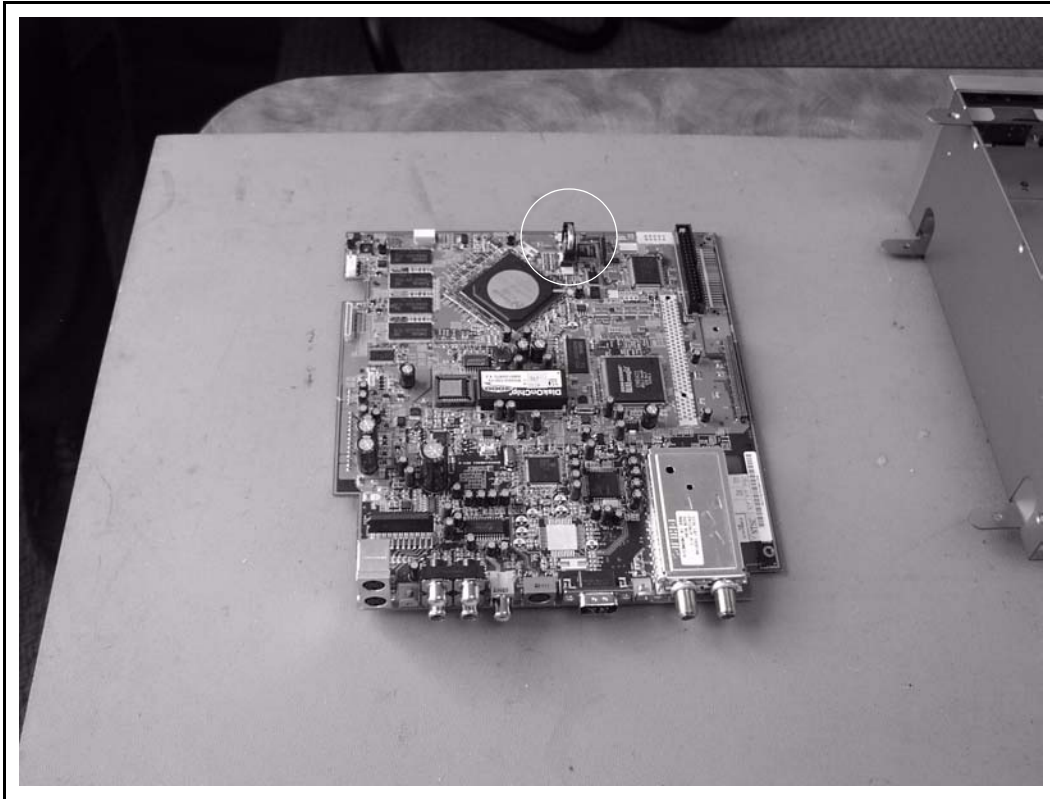
FIGURE 18. Removing the Clock Battery

Removing/Replacing the Clock Battery

The clock battery can be removed from the motherboard and replaced. The battery is a Maxell 3V battery, model CR2032.

To remove the clock battery:

1. Pluck the battery out with your fingers.

• **End Procedure**

To Replace the Clock Battery:

1. Follow the above procedure in reverse order.

• **End Procedure**
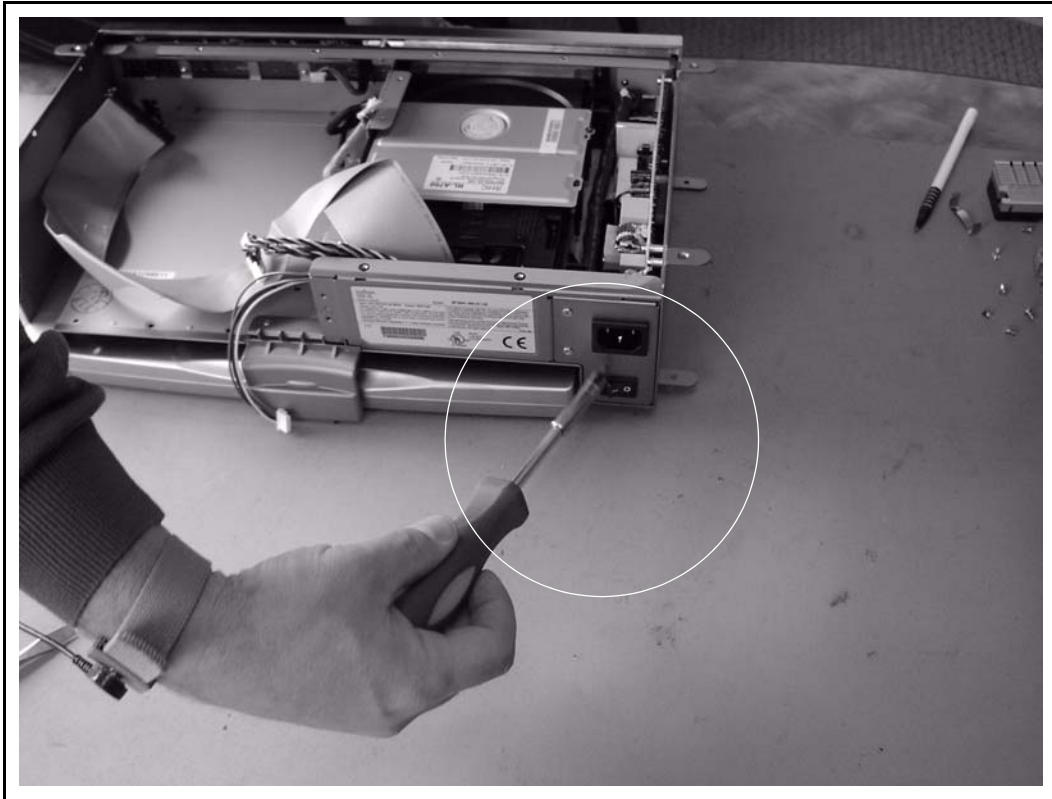
FIGURE 19. Remove the Power Supply

Removing/Replacing the Power Supply

The power supply can be removed from the unit without removing the main controller board. The pictures above show the unit with the main controller board removed. You must remove the power supply to remove the DVD Drive.

To remove the power supply.

1. Remove the two phillips-head screws on the back of the unit next to the AC Power connector.
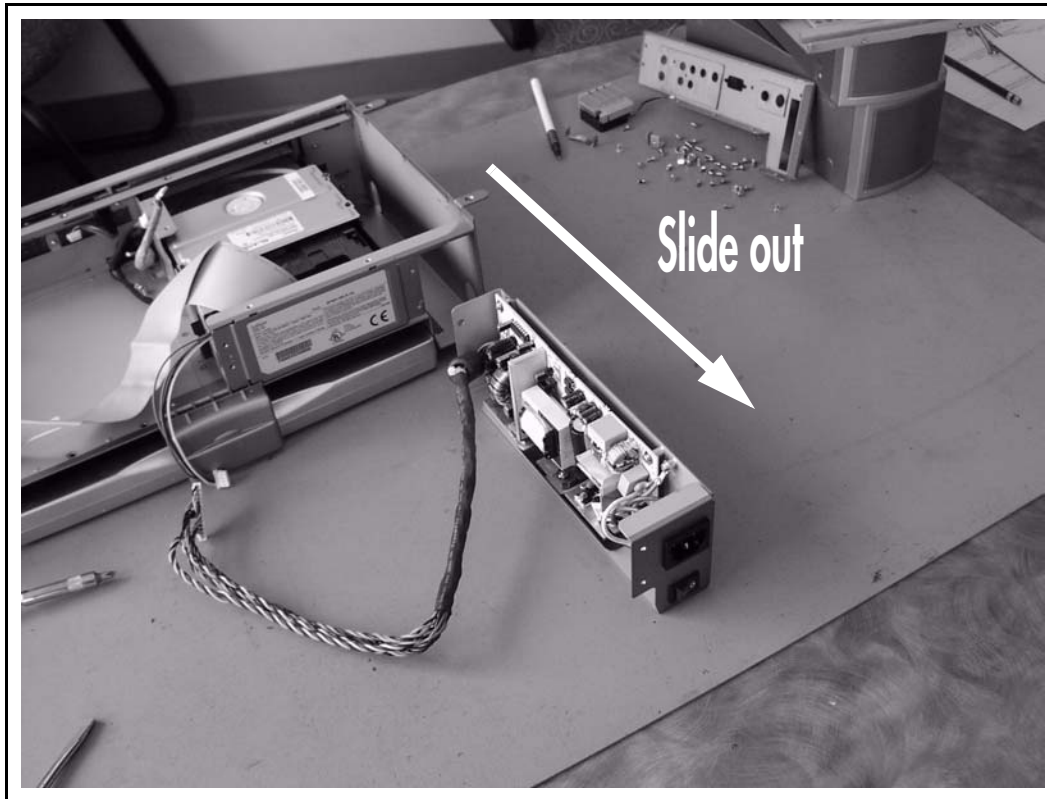
FIGURE 20. Removing the Power Supply (Step 2)

2. Slide the power supply out the rear of the unit. thread the power wires out the hole along with the board.

• **End Procedure**

To Replace the Power Supply:
1. Follow the above procedure in reverse order.

• **End Procedure**

FIGURE 21. Trigger the DVD Tray Release

Removing/Replacing the DVD Player and the Front Panel

The DVD player and the front panel are two separate assemblies, but in order to remove one you must remove the other.

For that reason, the removal pocedures are combined.

To remove the DVD Tray and the Front Panel:

1. Trigger the DVD release mechanism with a small flathead screw driver.

   The DVD release mechanism is a white piece of plastic, visible through the slot on the bottom side of the main unit. To release the tray, the mechanism must be shifted firmly in the direction of the power supply.
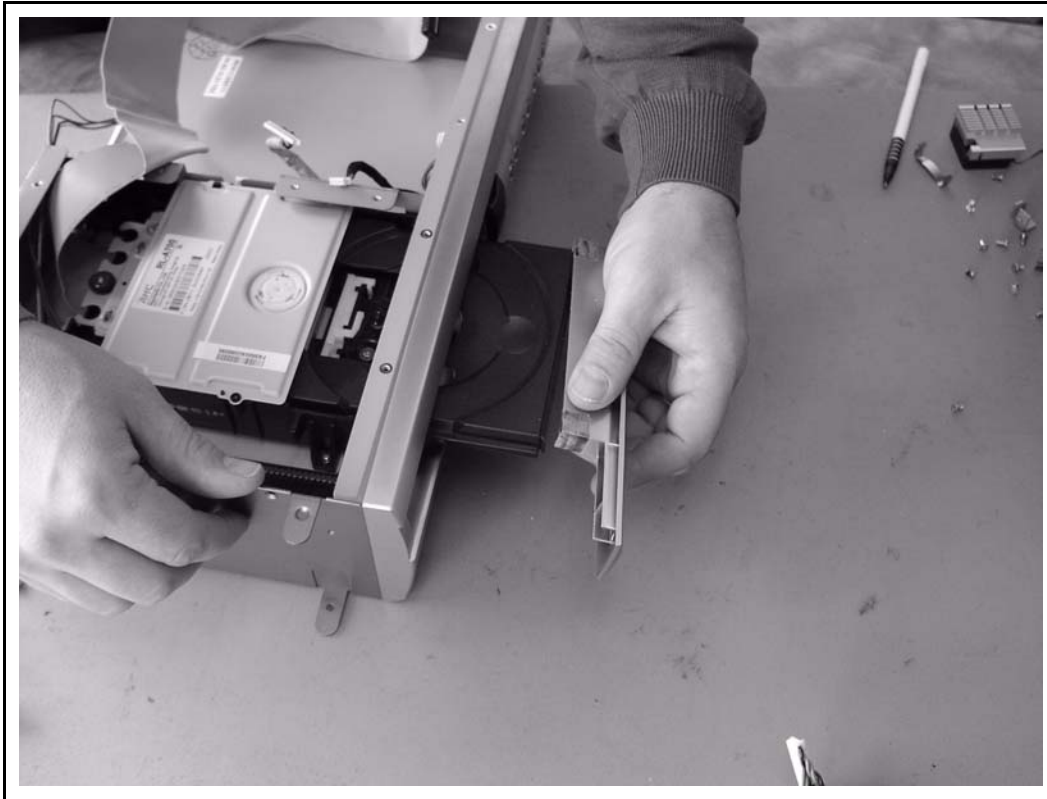
FIGURE 22. Remove the DVD Tray Face Plate

2. Turn the unit over and slide the DVD Tray out.
3. Remove the snap-on DVD Face Plate.
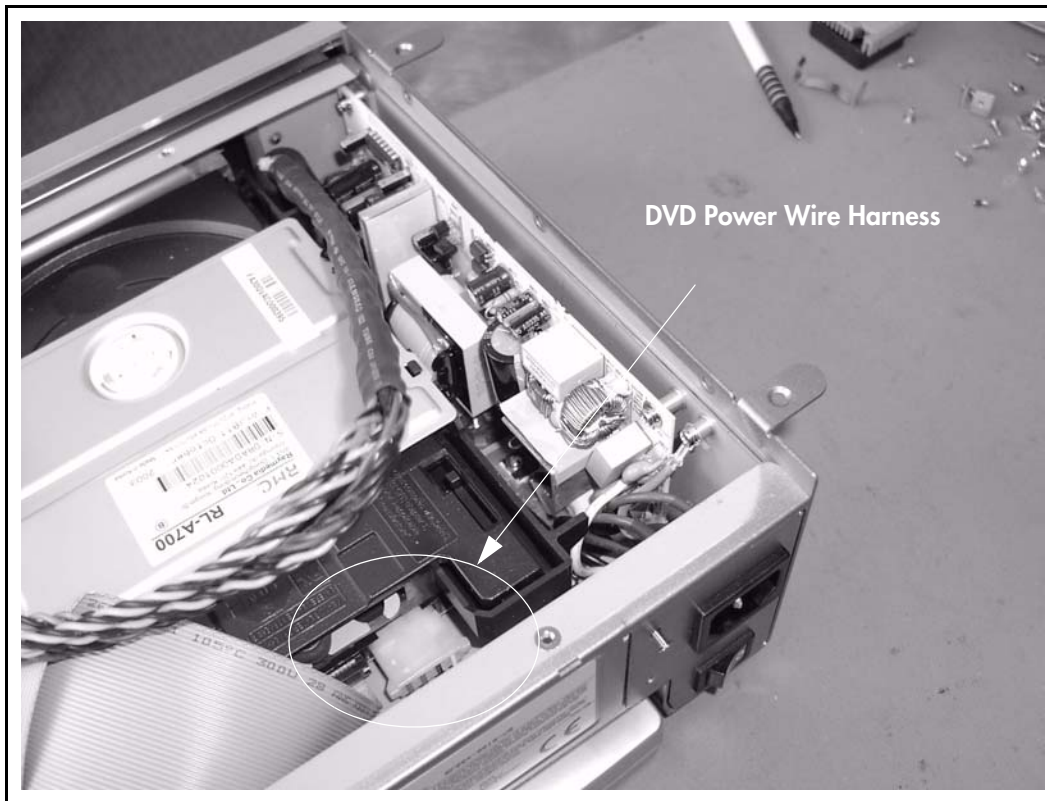
FIGURE 23. Remove the DVD Power Wires

4. Remove the DVD power wires from the back side of the DVD unit.

Note: The power wires are difficult to seat. If the DVD is not functional, often it is because this harness is not tight.
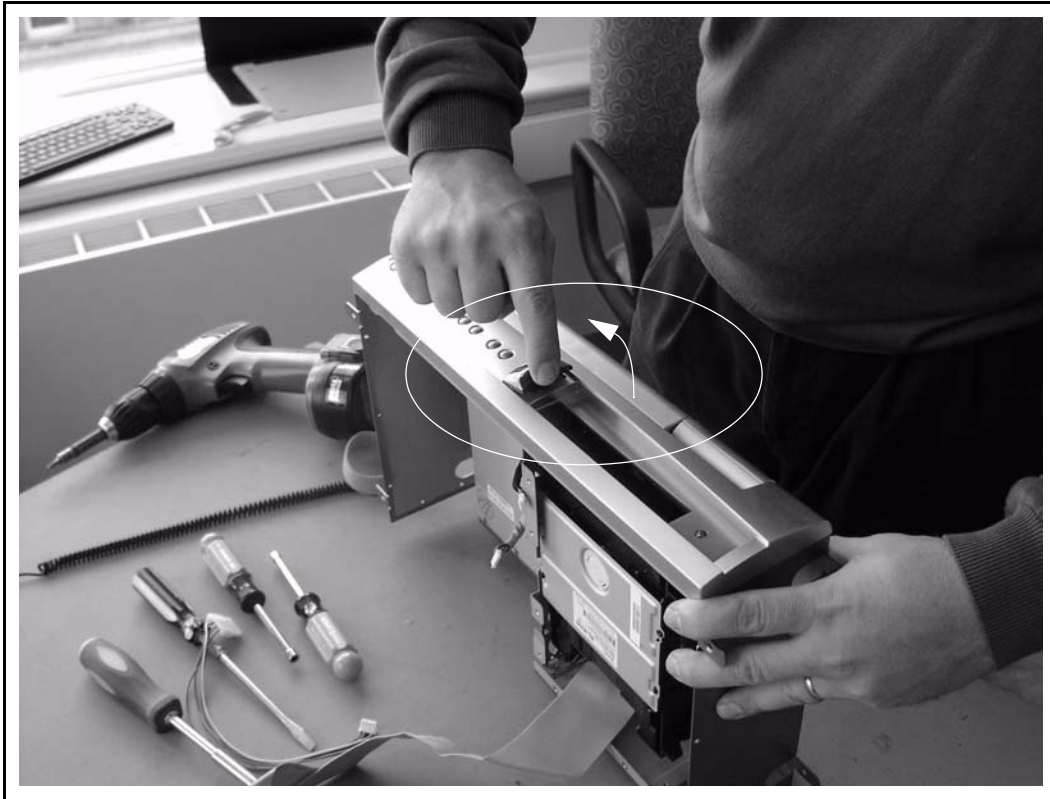
FIGURE 24. Remove the IR Detector Cover

5. Remove the cover from the IR dector with your finger.

Note: Clean fingerprints off the cover before replacing.
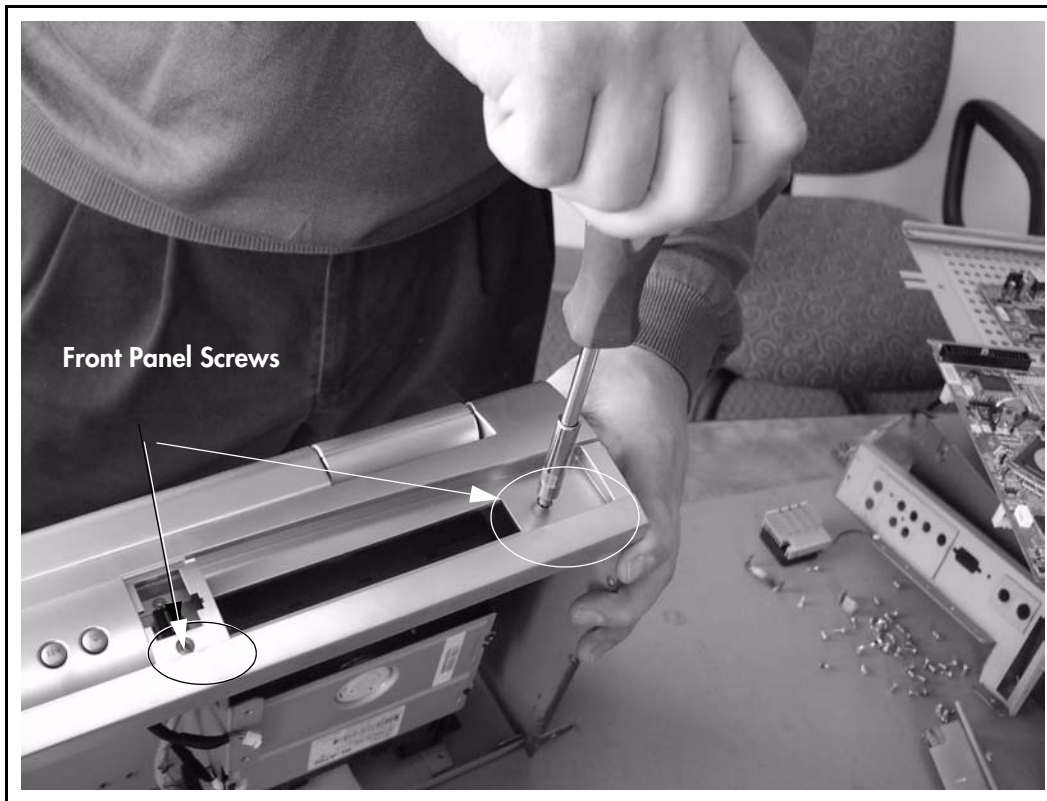
Front Panel Screws

FIGURE 25. Screws on the Front Panel

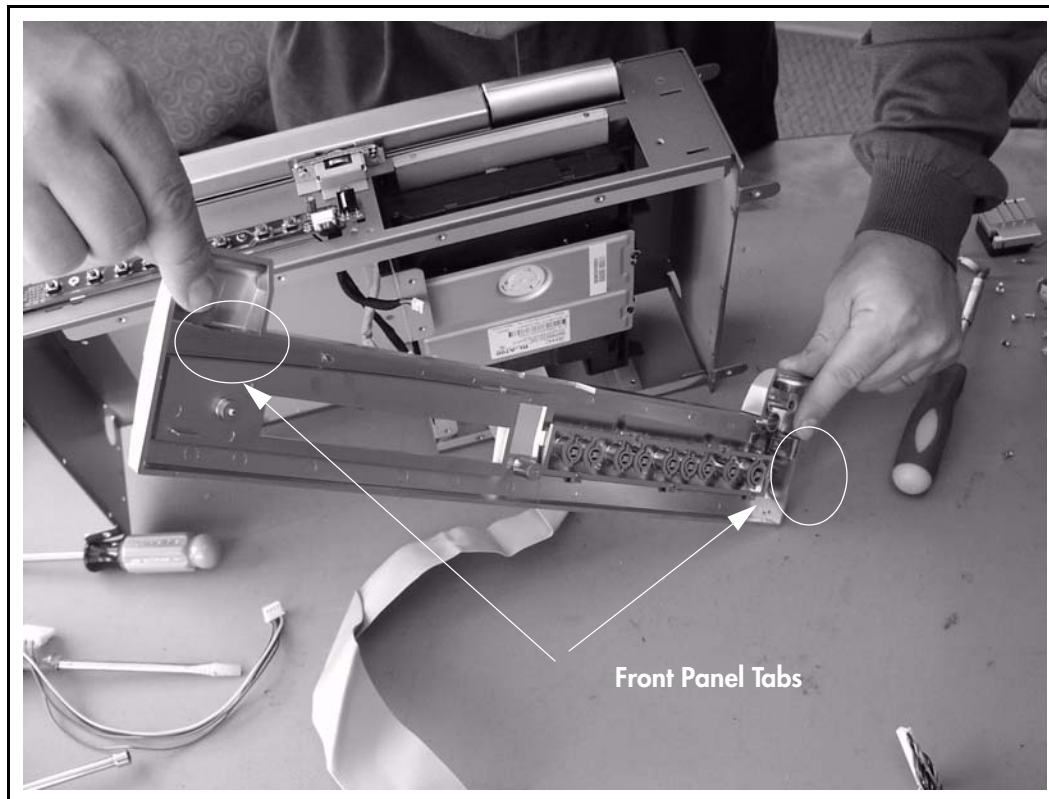**6.** Remove the two phillips-head screws that hold the front panel to the DVD Tray.

FIGURE 26. Tabs on the Front Panel

7. Pull or pry the Front Panel off the main unit.
8. The front panel has tabs that snap onto the front chassis.

   Note: The front panel is very visible to the consumer. Do not scratch the front panel or damage it while prying.
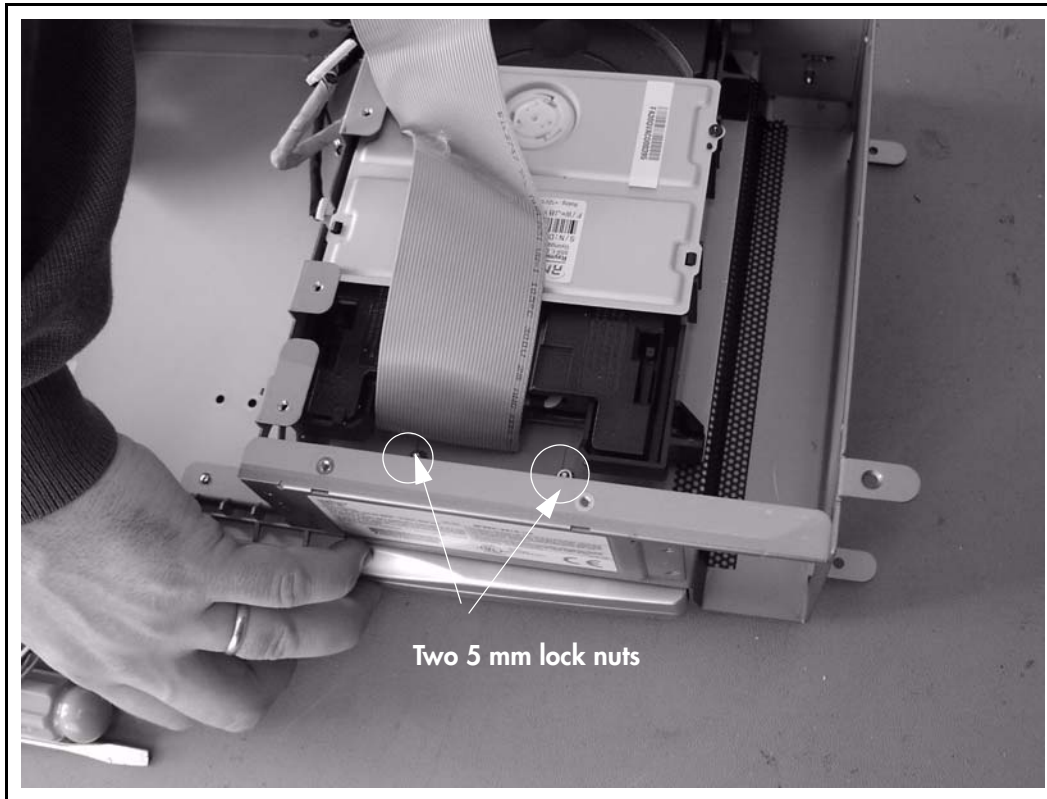
FIGURE 27. Nuts Securing the DVD Tray

9. Remove the two 5 mm nuts securing the DVD Tray to the bottom of the chassis.

FIGURE 28. DVD Removed From Chassis

10. Manuever the DVD Drive Unit up and out of the chassis.

• **End Procedure**

To Replace the DVD Pllayer and Front Panel:
1. Follow the above procedure in reverse order.

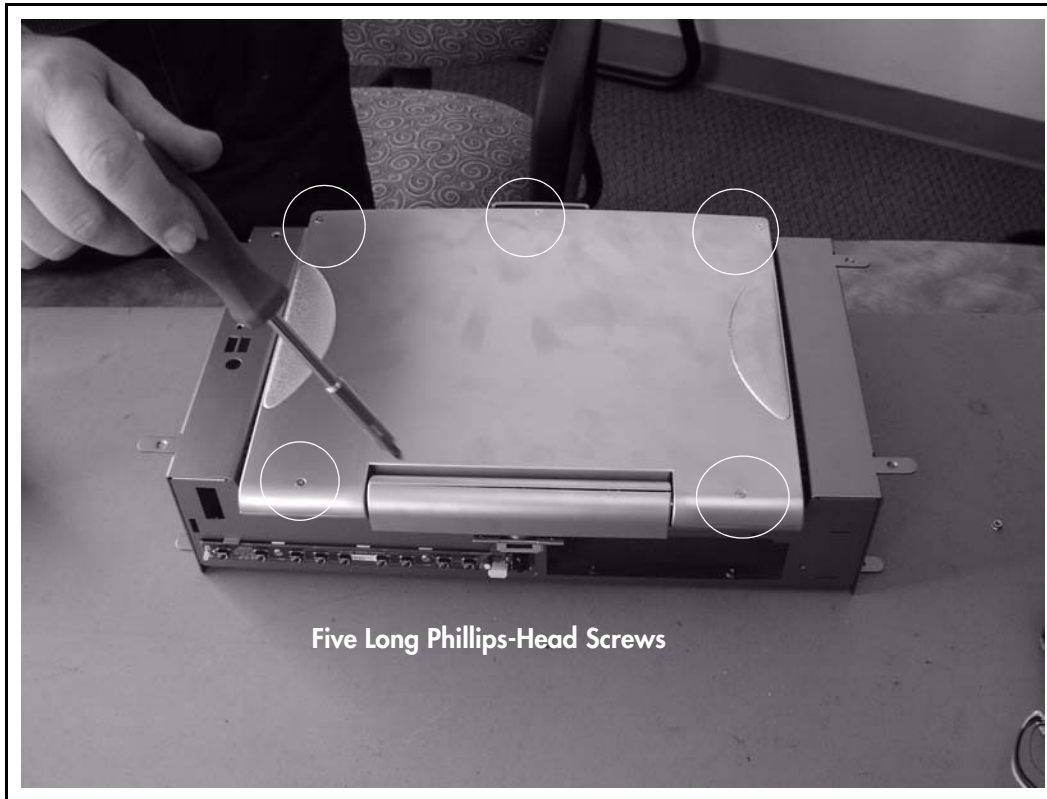• **End Procedure**

Five Long Phillips-Head Screws

FIGURE 29. Screws in the Display Assembly

Disassembling and Reassembling the Flipscreen Display

The Flipscreen display is the entire fold-down monitor unit that attaches to the pivot arm of the chassis. Inside the display assembly are the backlight board, the front and back display covers, the LCD panel, and the touch panel.

Note: The touch panel membrane is very vulnerable during assembly and disassembly. Be careful not to damage it with sharp edged tools or by resting it on top of sharp-edged objects.

Before disassembling the flipscreen it is not necessary to remove the speakers or the Chassis Top Cover.

To remove the Flipscreen Back Cover:
1. Remove the 5 long phillips-head screws from the back cover.
2. Using your fingers, separate the back cover along the edge seam far enough to insert a flathead srewdriver inside.
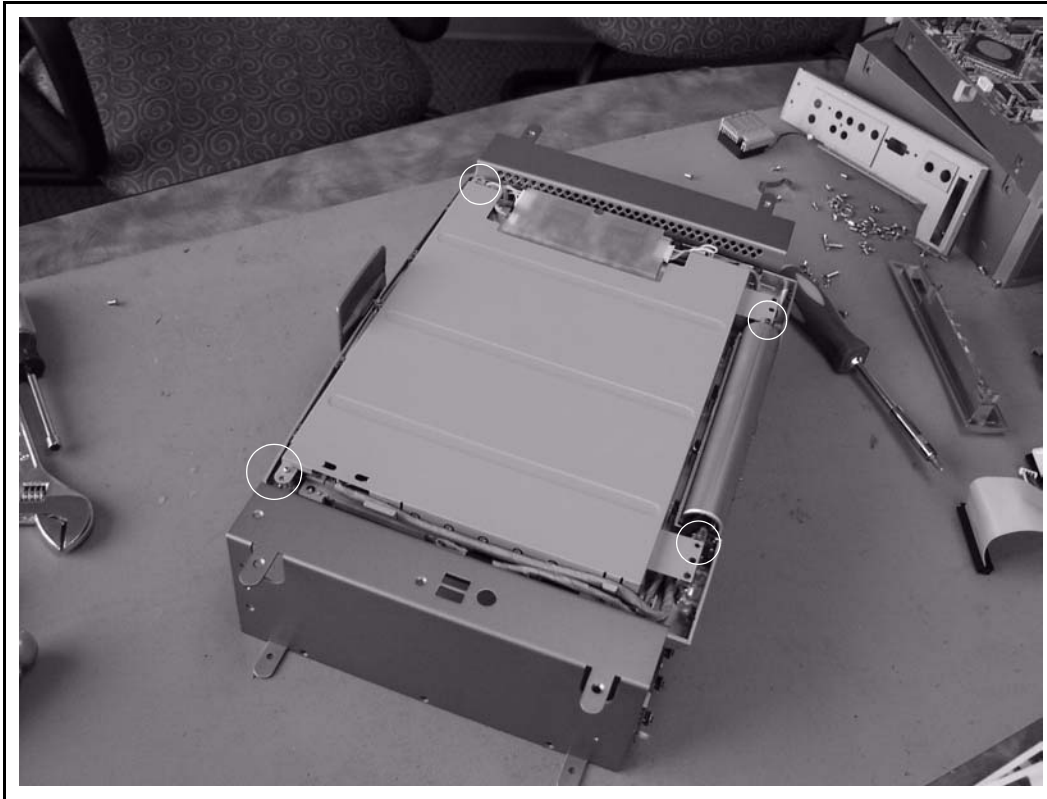3. Gently pry open the back cover.

FIGURE 30. The Inner Display Plate

4. Remove the screws on the inner display plate.

Notice the way the inner display plate helps keep the cables away from the edges of the display back panel.
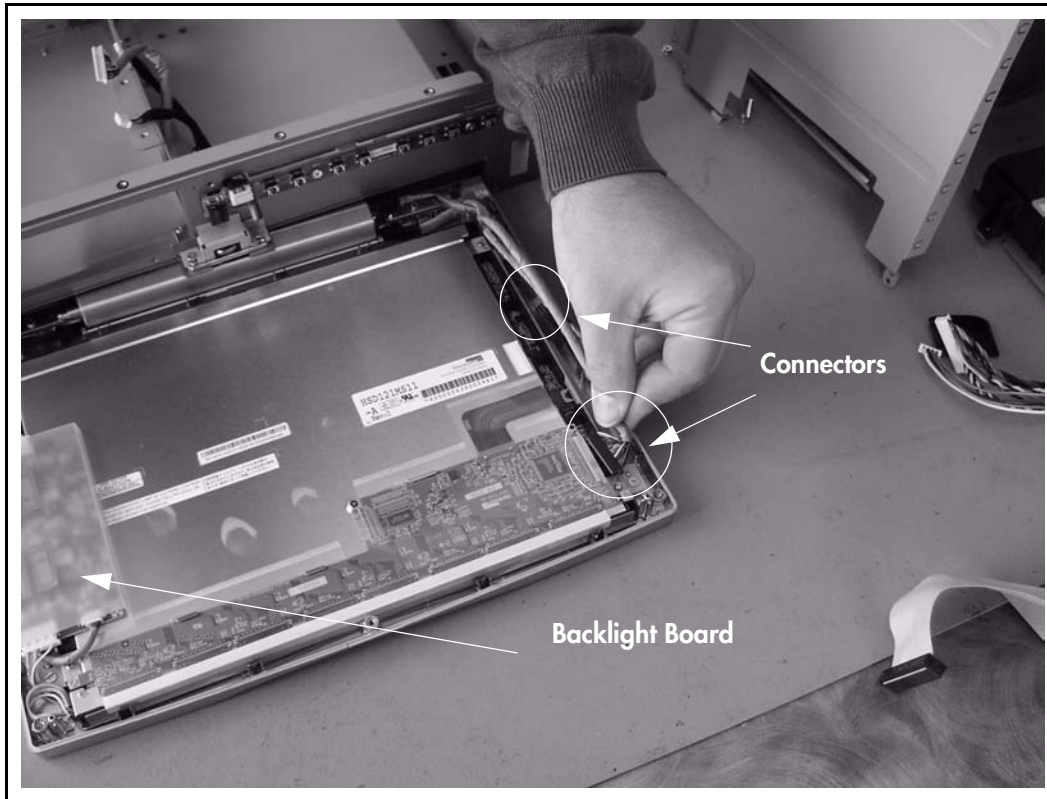
FIGURE 31. LCD Panel and Backlight Board

5. Remove the two cable connections from the side of the LCD panel.

Note: The small ribbon cable is marked on one side with a white stripe. The white stripe goes on the same side as the arrow designating pin 1 on the connector.
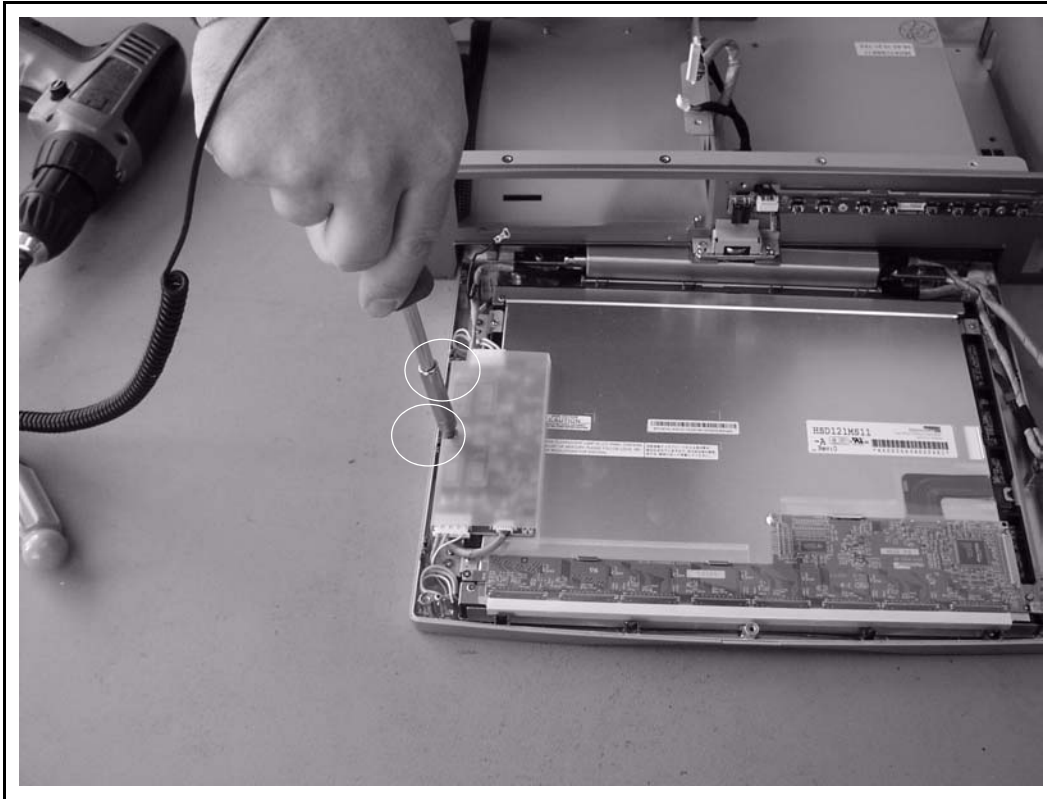
FIGURE 32. Screws on the Backlight Board

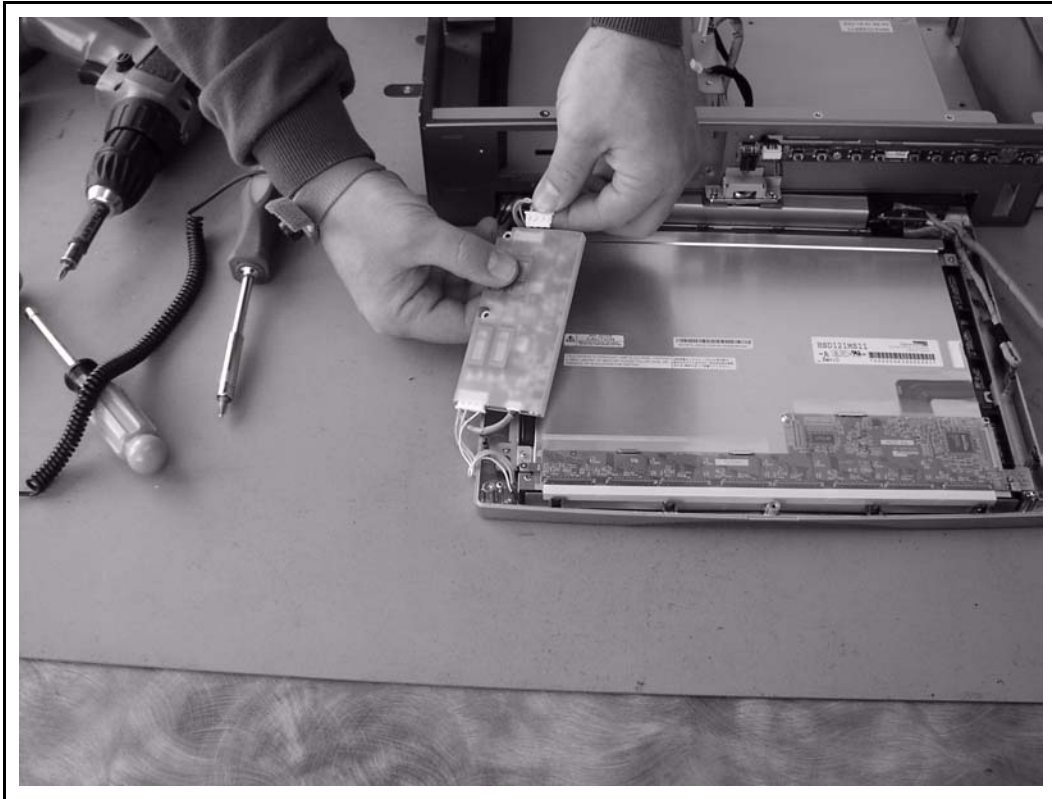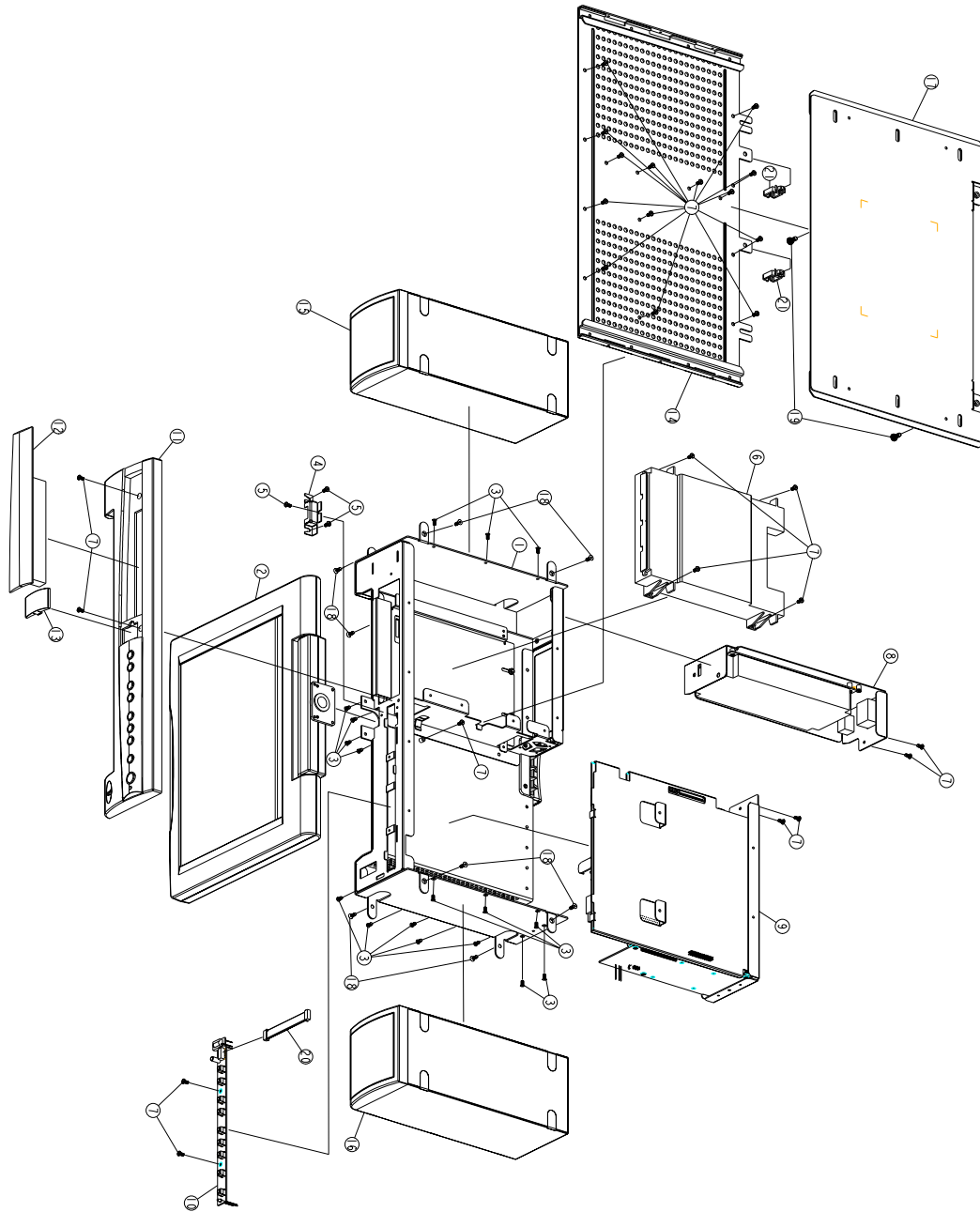**6.** Remove the two phillips-head screws securing the backlight board.

FIGURE 33. Wire Connectors on the Backlight Board

7. Remove the three wire connectors attached to the Backlight Board.

Exploded Mechanical View

Parts List

	IHAITZUBE07 FLIPSCREEN, HAI, BLACK/ NTSC/ US/ 266MHZ		
NO	QUANTA P/N	DESCRIPTION	QTY
1	36HAICSBE03	HAI CHASSIS-BASE (BLACK) ASSY	1
2	25HAILABE00	HAI LCD (BLACK) ASSY	1
3	MM30060FC10	SCREW M3.0*6.0-F(NI,NYLOK)	17
4	FBHAI014012	HINGE-SHIELD	1
5	MM30040IC10	SCREW M3.0*4.0-I(NI)(NYLOK)	3
6	22HAIDLBE01	HAI DVD LOADER ASSY	1
7	MM30060IC19	SCREW M3.0*6.0-I(NI)(NYLOK)	27
8	AF093B00001	POWER SUPPLY 93W SLS0319D03057 REV.00	1
9	24HAIBABE25	HAI M/B SHIELD BASE (NTSC BLACK) ASSY	1
10	33HAIBB0004	HAI BUTTON BRD ASSY	1
11	37HAIFCBE01	HAI FRONT-COVER (BLACK) ASYY	1
12	EBHAI001018	DVD-FRONT-COVER	1
13	EBHAI002014	IR-WINDOW	1
14	34HAICSBE01	HAI CHASSIS-COVER ASSY	1
15	DNQHAILB009	SPEAKER ASSY HAI KSG-QHAIL-B (10W)	1
16	DNQHAIRB006	SPEAKER ASSY HAI KSG-QHAIR-B (10W)	1
17	21HAISMBE04	HAI SYSTEM MOUNT ASSY	1
18	MF30080FBJI	SCREW F3.0*8-F(NI)	8
19	MM40100BBS7	SCREW M4.0*10.0-B(NI)(WASHIER)	2
20	DD0HAITH004	CABLE ASSY HAI MB-BB (16P/16P,REV2A)	1
21	EBHAI009019	WIRE-SADDLE-CM-10M	2