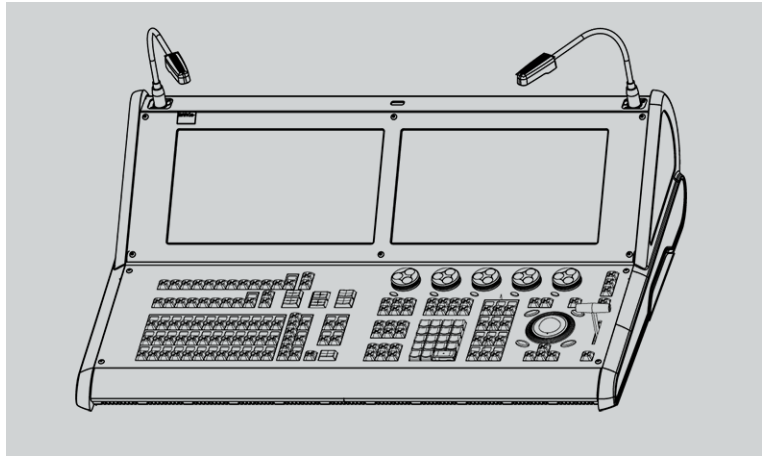


EC-200 to EC-210 Conversion Kit



Instructions

Barco Inc, Image Processing

3078 Prospect Park Drive, Rancho Cordova, CA , 95670, USA
www.barco.com/en/support
www.barco.com

Registered address: Barco NV

President Kennedypark 35, 8500 Kortrijk, Belgium
www.barco.com/en/support
www.barco.com

Changes

Barco provides this manual 'as is' without warranty of any kind, either expressed or implied, including but not limited to the implied warranties or merchantability and fitness for a particular purpose. Barco may make improvements and/or changes to the product(s) and/or the program(s) described in this publication at any time without notice.

This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information in this publication; these changes are incorporated in new editions of this publication.

The latest edition of Barco manuals can be downloaded from the Barco web site www.barco.com or from the secured Barco web site <https://www.barco.com/en/signin>.

Copyright ©

All rights reserved. No part of this document may be copied, reproduced or translated. It shall not otherwise be recorded, transmitted or stored in a retrieval system without the prior written consent of Barco.

Guarantee and Compensation

Barco provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults Barco must be informed immediately in writing of any complaints.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of complaint, Barco can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other services provided by Barco, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of Barco.

If the purchaser or a third party carries out modifications or repairs on goods delivered by Barco, or if the goods are handled incorrectly, in particular if the systems are operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by Barco either.

The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Trademarks

Brand and product names mentioned in this manual may be trademarks, registered trademarks or copyrights of their respective holders. All brand and product names mentioned in this manual serve as comments or examples and are not to be understood as advertising for the products or their manufacturers.

Software License Agreement

You should carefully read the following terms and conditions before using this software. Your use of this software indicates your acceptance of this license agreement and warranty.

Terms and Conditions:

1. No redistribution of the software is allowed.
2. Reverse-Engineering. You may not reverse engineer, decompile, disassemble or alter this software product.

Disclaimer of Warranty:

This software and the accompanying files are sold "as is" and without warranties as to performance or merchantability or any other warranties whether expressed or implied. In no event shall Barco be liable for damage of any kind, loss of data, loss of profits, business interruption or other pecuniary loss arising directly or indirectly. Any liability of the seller will be exclusively limited to replacement of the product or refund of purchase price.

Federal Communications Commission (FCC Statement)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference at his own expense

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

EN55022/CISPR22 Class A ITE (Information Technology Equipment)

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning : This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Warning : This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Patent protection

Please refer to www.barco.com/about-barco/legal/patents

Introduction

1

Overview

- ESD recommendations
- Ordering the EC-200 to EC-210 conversion kit

General

This kit contains all necessary parts and instructions for the customer to upgrade an EC-200 to an EC-210.

1. Disassemble the chassis, screen frame, and keyboard assembly components required to gain access to the parts that the conversion kit replaces.
2. Remove the EC-200 parts.
3. Install the EC-210 conversion kit parts.
4. Reassemble the keyboard assembly, screen frame, and chassis.

Methodology

Read and understand all instructions in this document prior to performing the upgrade.

Most procedures in this guide include multiple steps to gain access to the parts that must be replaced. A workflow flow chart to all of the procedures and their relationships is provided. Please refer to the flow chart to familiarize yourself with the sequence of procedures.

1.1 ESD recommendations



WARNING: Always switch power off and unplug the cords from the device before performing any maintenance operations described in this guide.



WARNING: The device can be damaged by electrostatic discharge (ESD). When handling the device and any of its components, caution must be taken so that damage does not occur. Damage due to inappropriate handling is not covered by the warranty.



CAUTION: Upgrade at your own risk.

If you are not comfortable with ESD precautions or working with sensitive electronic components, please refer the upgrade to a qualified Barco service center. Damage due to electrostatic discharge (ESD) is not covered under warranty.

ESD Precautions

The following precautions must be taken:

- Perform the Service procedures only at approved anti-static work station equipped with anti-static mat.
- At all times use a conductive wrist strap attached to a solid earth ground.
- Always discharge yourself by touching a grounded bare metal surface before coming in contact with ESD sensitive electronic.

1.2 Ordering the EC-200 to EC-210 conversion kit

The EC-200 to EC-210 conversion kit

The part number for this kit is R9004796. Please contact your local Barco representative to order the conversion kit.

Conversion process

2

Overview

- EC-200 unit overview
- Process overview
- Conversion kit parts
- Removing EC-200 components
- Installing EC-210 components

2.1 EC-200 unit overview

EC-200 orientation and main components

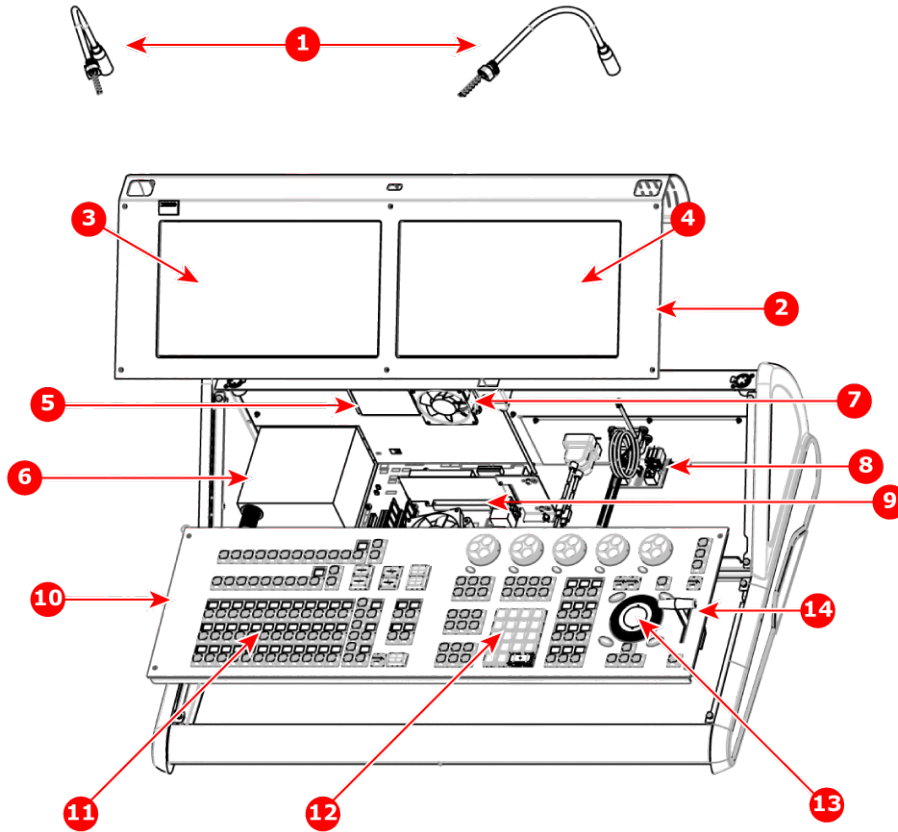


Image 2-1: EC-200: main components

- | | | | |
|---|----------------------|----|------------------------------|
| 1 | Desklights | 8 | Ethernet board |
| 2 | Screen Frame | 9 | Motherboard and graphic card |
| 3 | Touch screen (Left) | 10 | Keyboard assembly |
| 4 | Touch screen (Right) | 11 | CTRL keypad (left) |
| 5 | SSD | 12 | PROG keypad (right) |
| 6 | Power supply | 13 | Trackball |
| 7 | Rear unit fan | 14 | T-bar |

Behind the touchscreen assembly

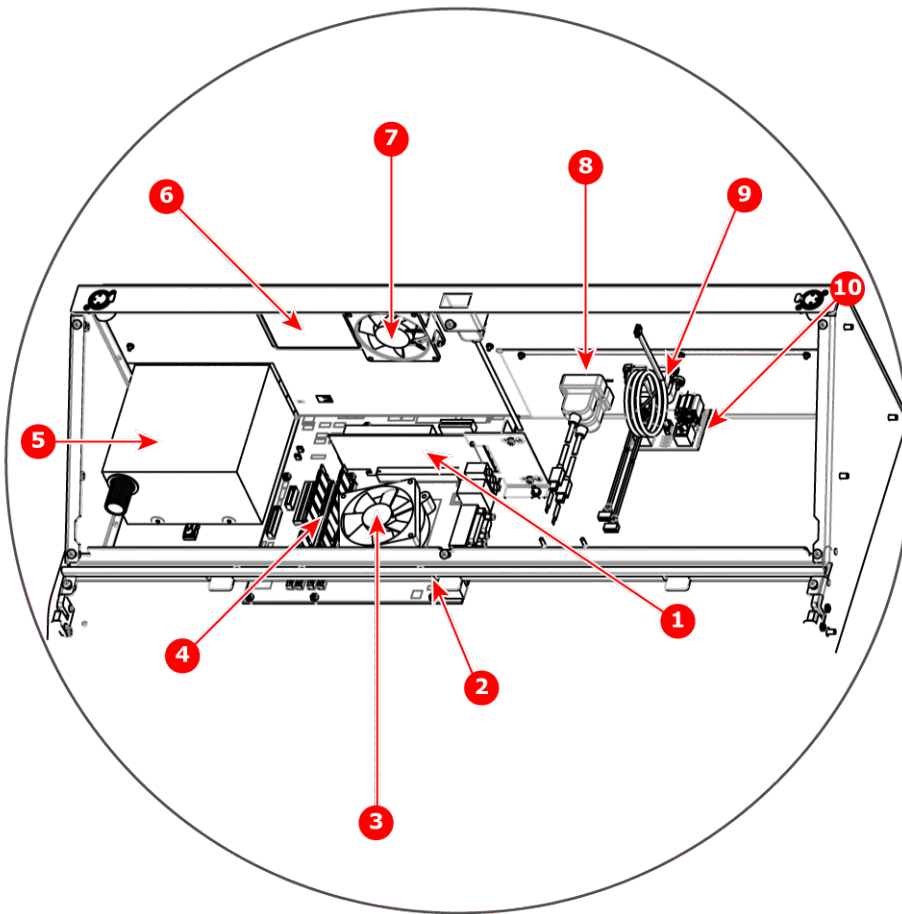


Image 2-2: Upper chassis: behind the touchscreen assembly

- | | |
|-----------------------|------------------------------|
| 1 Video card | 6 SSD |
| 2 Motherboard | 7 Rear unit fan |
| 3 CPU cooler | 8 Rear DVI connectors |
| 4 DIMMs | 9 USB connectors |
| 5 Power supply | 10 Ethernet board |

2.2 Process overview

Flow chart

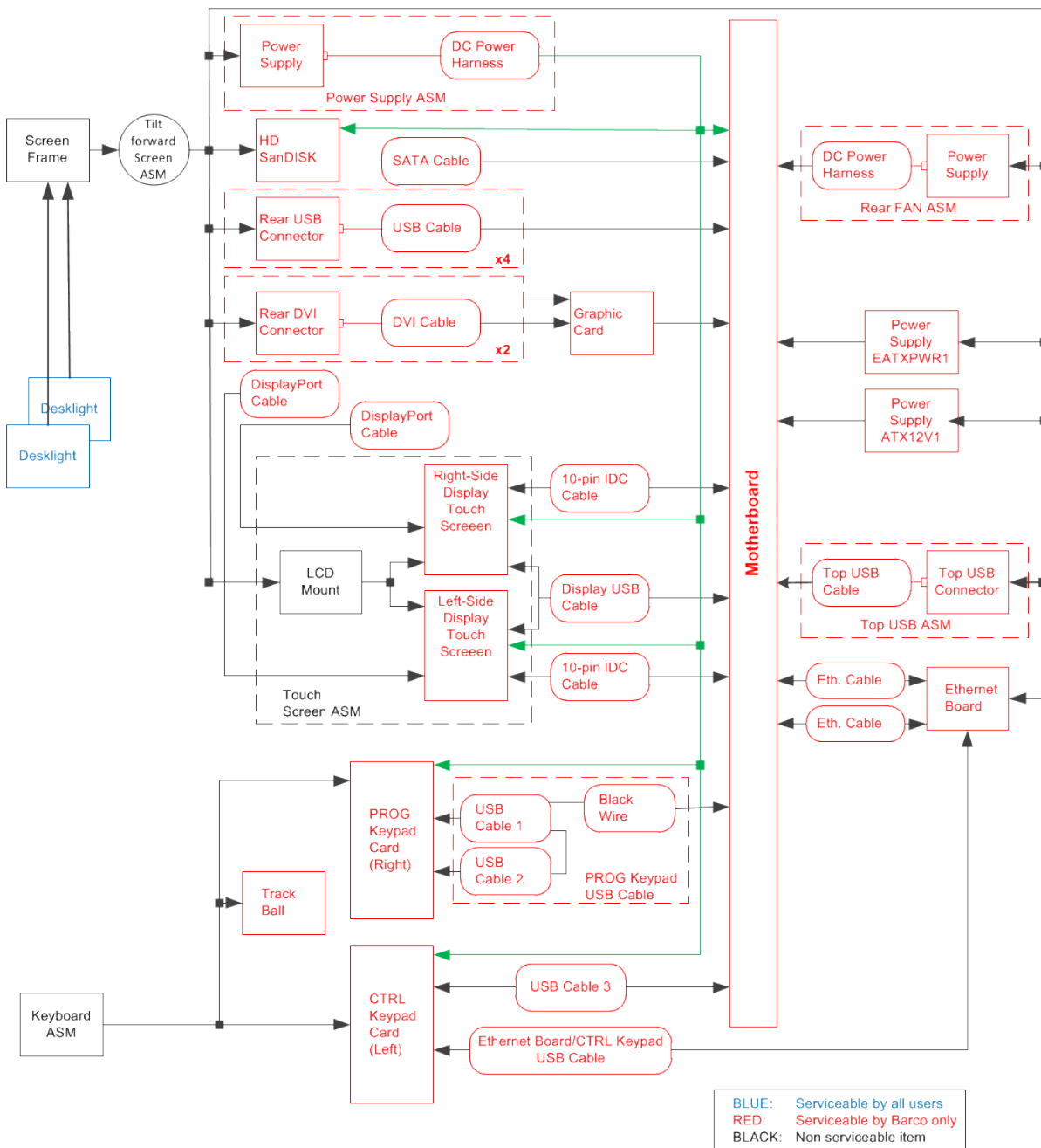


Image 2-3: Conversion process flow chart

Process

Follow this process to convert an EC-200 controller to an EC-210 controller.

1. Remove the EC-200 components.
 - a) Upper chassis
 - b) Left and right touchscreen assembly cable disconnection
 - c) Upper chassis disconnections
 - d) Rear panel elements
2. Install the EC-210 components.
 - a) Rear I/O plate assembly

- b) Lower chassis
- c) Motherboard installation
- d) Rear I/O plate installation
- e) Final motherboard connections
- f) Touchscreen assembly connections
- g) Chassis reassembly

2.3 Conversion kit parts

EC-200 to EC-210 conversion kit parts

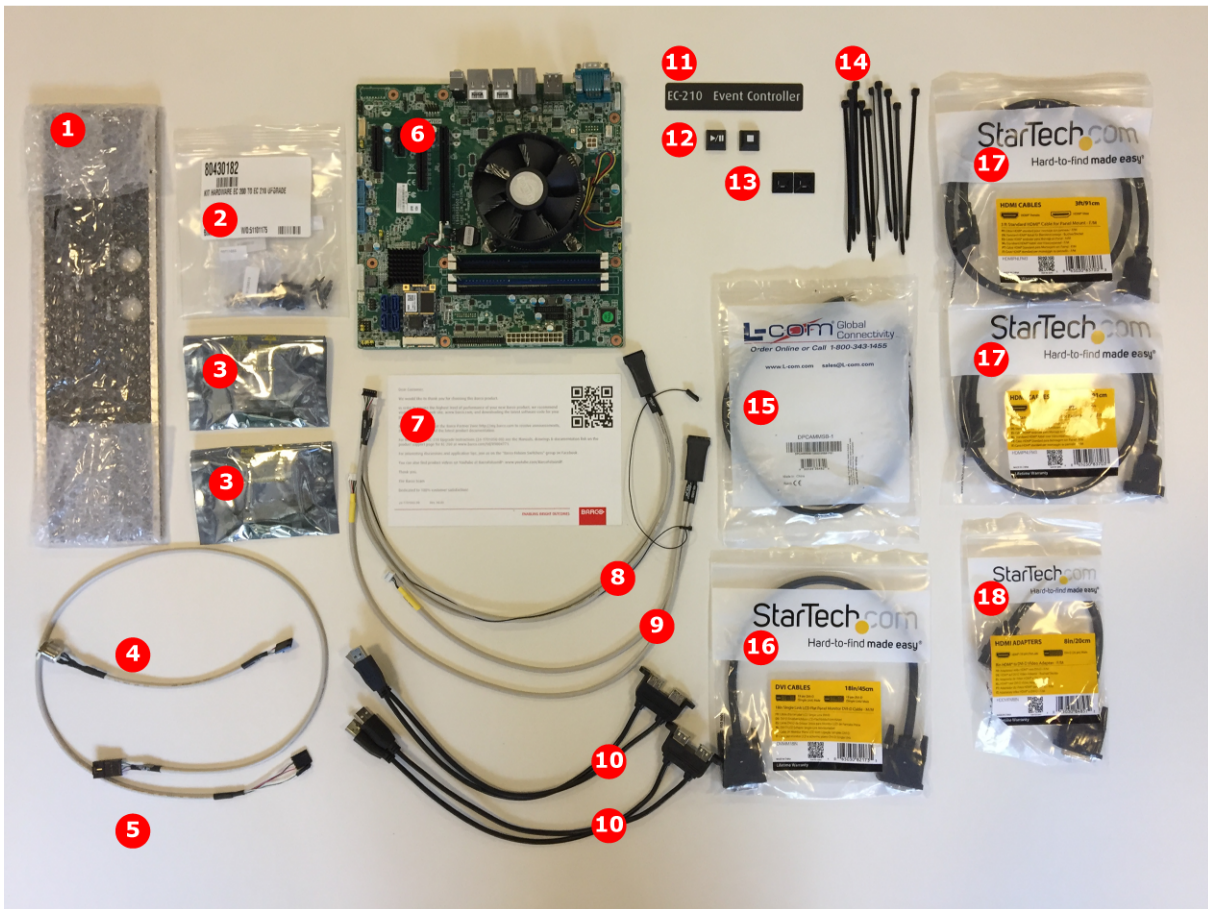


Image 2-4: EC-200 to EC-210 conversion kit parts

- | | |
|---|---|
| <p>1 11-1701018-90 – PLATE REAR I/O EC-210 UPGRADE</p> <p>2 80430182 – KIT HARDWARE EC 200 TO EC 210 UPGRADE</p> <p>3 03-1401006-90 – ASM EC-210 HARNESS BD (x2)</p> <p>4 90409637EF – POWER BUTTON ASSEMBLY, EC-210</p> <p>5 90409634EF – MOTHERBOARD POWER SWITCH CABLE</p> <p>6 90903115EF – ASSEMBLED MOTHEBOARD AIM-585</p> <p>7 26-1701065-00 – EC-210 UPGRADE INST REF CARD</p> <p>8 90409626EF – CABLE USB MTHRBD TRACKBALL</p> <p>9 90409627EF – CABLE USB TOUCHSCREEN 20 PIN</p> | <p>10 90409629EF – DUAL USB TYPE A PANEL F TO M (x2)</p> <p>11 99310666 – FRONT LABEL EC-210 UPGRADE KIT</p> <p>12 90405353 – KIT KEYCAP SET EC-210 UPGRADE</p> <p>13 99330183EF – MNT, CABLE TIE, .75"SQ, ADHSV (x2)</p> <p>14 13-9900006-90 – CBL TIE 5.6" X .12"W BLK (x10)</p> <p>15 90409630EF – CABLE DISPLAY PORT LEFT</p> <p>16 90409628EF – 18" SNGL LNK DVI-D CBL -M/M</p> <p>17 90409635EF – 3FT STD HDMI CBL PANEL MNT F/M (x2)</p> <p>18 90409638EF – CBL 8 IN HDMI/DVI-D VID ADP F/M</p> |
|---|---|

EC-200 to EC-210 conversion kit parts list

Part number	Description	Quantity
80430182	KIT HARDWARE EC 200 TO EC 210 UPGRADE (Hardware fastener kit)	1
90405353	KIT KEYCAP SET EC-210 UPGRADE	1
90409626EF	CABLE USB MTHRBD TRACKBALL 20 (PROG keypad / trackball, 20-pin)	1
90409627EF	CABLE USB TOUCHSCREEN 20 PIN	1
90409628EF	18" SNGL LNK DVI-D CBL -M/M	1
90409629EF	DUAL USB TYPE A PANEL F TO M	2
90409630EF	CABLE DISPLAY PORT LEFT	1
90409634EF	MOTHERBOARD POWER SWITCH CABLE	1
90409635EF	3FT STD HDMI CBL PANEL MNT F/M	2
90409637EF	POWER BUTTON ASSEMBLY, EC-210	1
90409638EF	CBL 8 IN HDMI/DVI-D VID ADP F/M	1
90903115EF	ASSEMBLED MOTHEBOARD AIM-585	1
99310666	FRONT LABEL EC-210 UPGRADE KIT	1
99330183EF	MNT,CABLE TIE,.75"SQ,ADHSV	2
03-1401006-90	ASM EC-210 HARNESS BD	2
11-1701018-90	PLATE REAR I/O EC-210 UPGRADE	1
13-9900006-90	CBL TIE 5.6" X .12"W BLK	10
26-1701065-00	EC-210 UPGRADE INST REF CARD	1

2.4 Removing EC-200 components



We highly recommend reading these instructions from start to finish before beginning the upgrade process.

Required tools

- Allen wrench 1/16 inch
- Allen wrench 2 mm
- Allen wrench 2.5 mm
- Allen wrench 3 mm
- Allen wrench 4 mm
- Nut driver 5 mm
- Nut driver 5.5 mm
- Nut Driver 8 mm
- Phillips screwdriver PH1
- Phillips screwdriver PH2
- Pliers
- Torx screwdriver T10

Upper chassis

1. 1. Make sure the EC-200 unit is powered off and the power cord is disconnected from the back of the unit

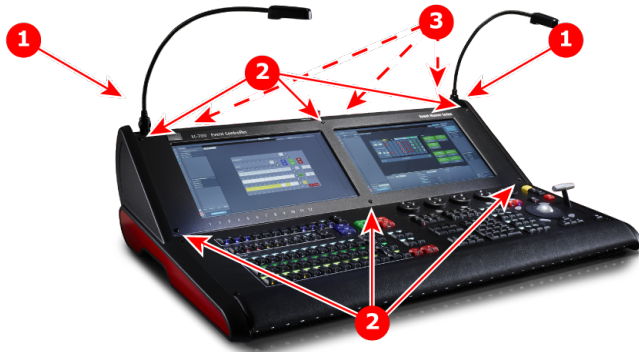


Image 2-5: Desklights and screws

- 1 Desklights
- 2 Screen frame screws—front (3 mm)
- 3 Screen frame screws—rear (2.5 mm)

- 2. Remove the desklights (work lights), if installed.
- 3. Remove the 6 screws on the front of Screen Frame and the 3 screws on the back of the Screen Frame Cover. Then remove the Screen Frame from the Base Unit.

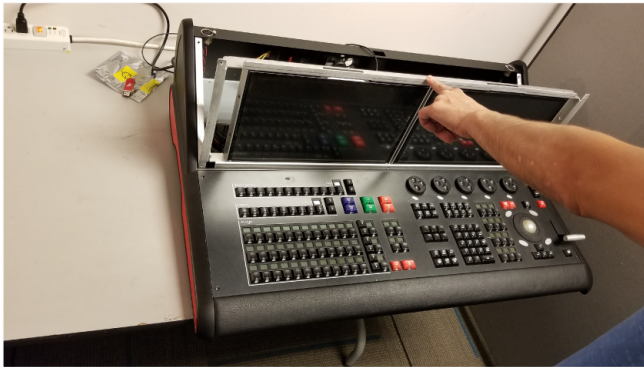


Image 2-6: Tilted touchscreen assembly

- 4. Tilt the touchscreen assembly forward.

Left and right touchscreen assembly cable disconnection

- 1. Disconnect the USB cables, power cable, and gray-ribbon COM cables that connect from the motherboard to the RS-232 interface boards on the back of the touchscreen assemblies.
The RS485 (Comm) port cables may remain attached to the motherboard.
- 2. Use the appropriate Allen wrench (either 3 mm or 4 mm) to remove the brackets holding the Video Cables in place.
- 3. Remove the DisplayPort cables that go from the display to the video card, and remove the cables from the unit.
- 4. Cut the tie wraps that hold these cables to the touchscreen assembly.

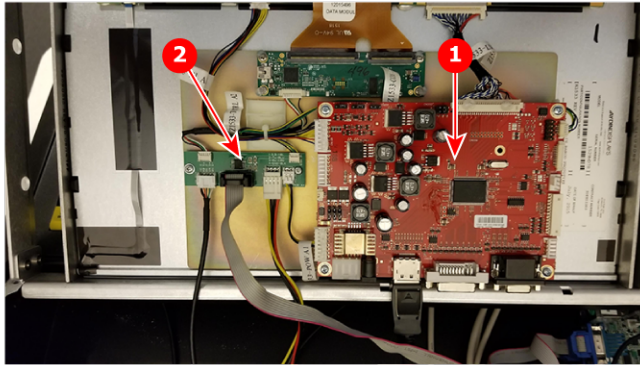


Image 2-7: Rear view of touchscreen assembly, showing touchscreen interface boards

- 1 Breakout board
- 2 RS-232 interface (harness) board

5. Remove the touchscreen assembly from the EC-200 unit.



Note: After the screen assembly is removed, access holes for three of the motherboard screws can be seen in the support bar that runs the width of the unit.

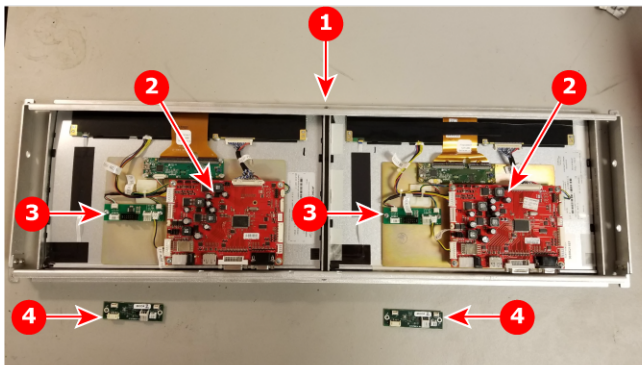


Image 2-8: Rear view of screen assembly, showing touchscreen interface boards

- 1 Touchscreen assembly (rear)
- 2 Breakout board
- 3 RS-232 interface board (EC-200)
- 4 USB interface board (EC-210)

6. Carefully disconnect the connectors that are attached to the RS-232 interface board on the rear right-side display.
7. Remove the screws that attach the RS-232 interface board (green board to side of the larger, red break-out board) to the back of screen assembly.

Use a T10 Torx driver (or a 1/16" Allen wrench) to remove the two screws. (Older systems have two Phillips screws.) The two screws will be used to install the new EC-210 USB interface board.

8. Install the USB interface board, provided in the EC-210 upgrade kit, in the location where you just removed the EC-200 RS-232 interface board.

Make sure the board is in the correct orientation. You can reference the left-side RS-232 interface board to verify the correct orientation.

Screw the board into place using the two screws removed in the previous step.

Refer to Image 2-9 for Step 7 through Step 9.

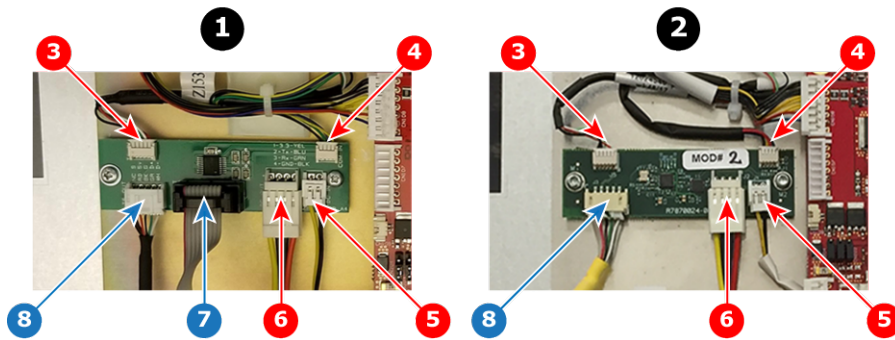


Image 2-9: Touchscreen interface board connections

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 RS-232 interface board (EC-200) 2 USB interface board (EC-210) 3 Touchscreen In (J5) 4 Comm In (J1 – Comm to Display Interface) | <ul style="list-style-type: none"> 5 DC In (J4) 6 DC Out (J2) 7 Comm Out (Comm to motherboard; not used in EC-210) 8 Touchscreen Out (J3 – USB connection) |
|--|--|

9. Reconnect the Touchscreen In (J5), Comm In (J1), and DC In (J4), cables.
 Make sure the connectors are in the correct orientation before plugging them in. You can reference the left-side RS-232 interface board connectors to verify you have the right-side display harness cable connectors in the correct orientation.
10. Discard the old Comm Out and Touchscreen Out cables from the EC-200.
11. Repeat Step 5 through Step 9 for the RS-232/USB interface board on the left-side display.

Upper chassis

Make the following upper-chassis disconnections.

1. Disconnect the Power Supply Connectors from the Motherboard.

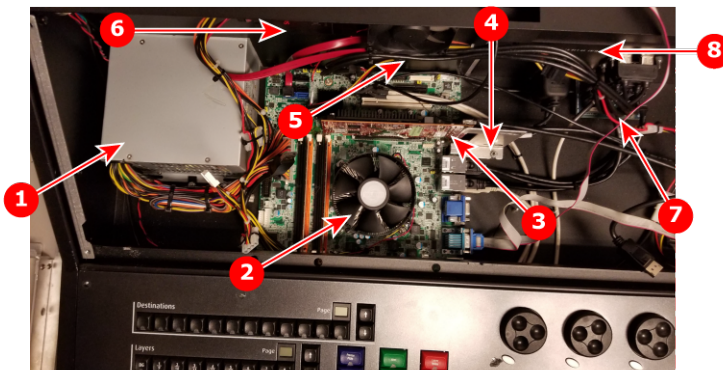


Image 2-10: Upper-chassis disconnections

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Power supply 2 Motherboard with CPU and CPU cooler 3 Video card 4 Video card and bracket | <ul style="list-style-type: none"> 5 Rear unit fan 6 SSD 7 Ethernet board (on rear I/O plate) 8 Rear I/O plate |
|---|--|

Note: The HD SanDisk is difficult to see in Image 2-10; it is on the rear panel of the chassis, between the rear unit fan and the power supply.

2. Disconnect the power supply cable from the solid state drive, and zip-tie it to the power cable bundle coming from the power supply.
3. Unplug the two rear panel USB 10 pin connectors from the Motherboard.
4. Use a 5 mm nut driver to remove the nut securing the video-card bracket to the chassis and remove the bracket.

5. Unplug the video card from the motherboard and remove it from the Unit.
Press the white retention clip away from the rear of the unit to release the card from the motherboard.
6. Unplug the rear Chassis fan from the motherboard.
7. Unplug the red SATA SSD cable from the motherboard.
8. Unplug the Ethernet cables from the RJ45 connectors on the motherboard.
9. Disconnect the two RS-232 comm cables from the DB9 connectors on the motherboard.
10. Cut the tie wraps holding the RS-232 ribbon cables in place and remove these RS-232 ribbon cables from the unit.
11. Unplug the 10-pin USB PROG keyboard / trackball connector from the motherboard.
12. Unplug the 10-pin USB touchscreen connector from the motherboard.
13. Unplug the two USB cables from the USB ports on the motherboard.
14. Remove the black reset line.
15. Remove the eight motherboard screws (three through the access holes and two that were under the video card).
16. Remove the motherboard from the chassis.
The CPU and the CPU fan do not need to be removed from the motherboard.

Rear-panel elements

1. Remove the screws holding the SSD to the rear chassis sheet metal and remove the SSD along with the SATA cable from the unit.
2. Remove the six screws that secure the I/O plate to the rear panel, and remove the I/O plate from the chassis.

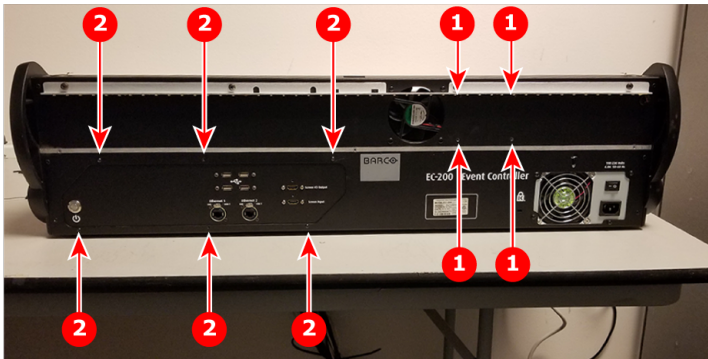


Image 2-11: EC-210 rear panel, showing screws for SSD and rear I/O plate

- 1 SSD screws (x4)
- 2 Rear I/O plate screws (x6)



Note: The SSD is generally to the right of the rear unit fan, when viewed from the rear of the unit. In some early production units, however, the SSD was on the left side of the rear unit fan.

3. Cut the zip ties as needed.
4. Disconnect the Ethernet LED cable from the Ethernet board.
5. Remove the Ethernet connectors from the I/O plate.



Note: The DVI connector and the USB headers are not reused. The Ethernet connectors are reused.

6. Remove the small Ethernet board from the I/O plate, and move the small Ethernet board out of the way.

7. Remove the Rear I/O plate along with the DVI and USB cables that are attached to it.

2.5 Installing EC-210 components



You may use room-temperature-vulcanizing (RTV) silicone to help secure some of the motherboard connections, to prevent these connections from coming loose during transit. These instructions will identify with a note those connections that may be stabilized with RTV silicon.

Required tools

- Allen wrench 1/16 inch
- Allen wrench 2 mm
- Allen wrench 2.5 mm
- Allen wrench 3 mm
- Allen wrench 4 mm
- Nut driver 5 mm
- Nut driver 5.5 mm
- Nut Driver 8 mm
- Open-end wrench 5 mm
- Phillips screwdriver PH1
- Phillips screwdriver PH2
- Pliers
- Torx screwdriver T10

Rear I/O plate assembly

1. Attach the Ethernet connectors, panel-mount USB cables, and panel-mount HDMI connector to the rear I/O plate.
 1. Attach the Ethernet connectors, panel-mount USB cables, and panel-mount HDMI connector through the inside of the rear I/O plate.
 2. Install the dual USB connectors with the open part of the connector on the bottom, as shown in Image 2-12.

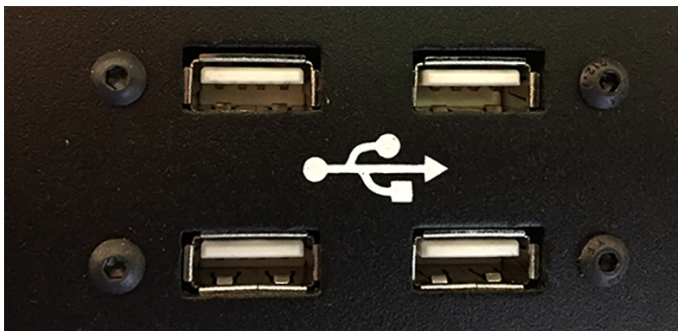


Image 2-12: Dual USB connectors on the rear I/O plate

3. Screw in the Ethernet connectors, panel-mount USB cable, and panel-mount HDMI connector screws from the outside of the rear I/O plate.
 4. Hold the nuts on the inside of the rear I/O plate with a pair of pliers (or use an adjustable wrench or a 5 mm open-end wrench).
2. Attach the power switch to the rear I/O plate.
 1. Insert the power switch assembly through the power-switch hole in the rear I/O plate from the outside face (the face on the opposite side of the plate from the Ethernet board).
 2. Apply the retaining nut for the power switch on the inside of the rear I/O plate (the same side of the plate on which the Ethernet board is attached).
 3. Tighten the retaining nut with an adjustable wrench (or an open ended wrench of the correct size) until snug (about 4 to 6 inch-pounds).



Image 2-13: EC-210 rear I/O plate with connections

Lower chassis

1. Remove the four screws that secure the keyboard assembly to the lower chassis.

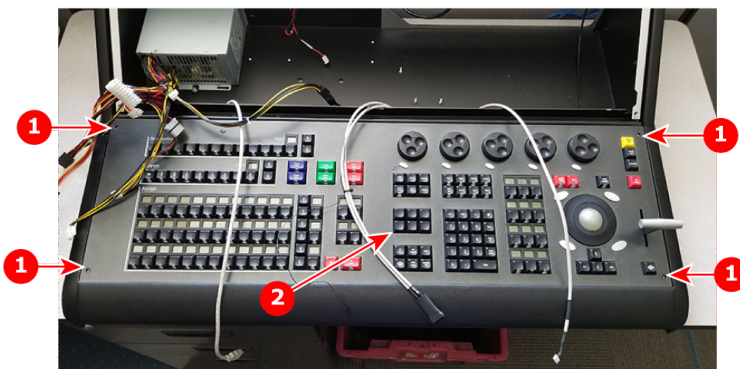


Image 2-14: Lower chassis

- 1 Lower-chassis screws
- 2 EC-200 future expansion button group

2. Tilt up the keyboard assembly and insert the left and right edges of the keyboard assembly in the chassis slots to hold the keyboard assembly upright.

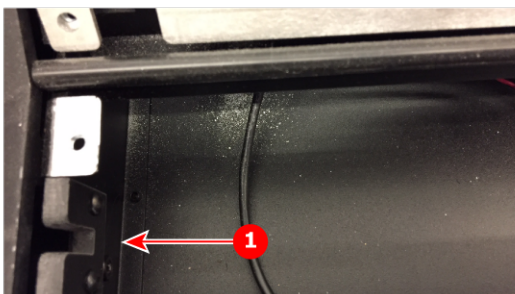


Image 2-15: Chassis slot (left) for keyboard assembly

- 1 Left-side chassis slot for keyboard assembly (The right side of the chassis also has a slot.)

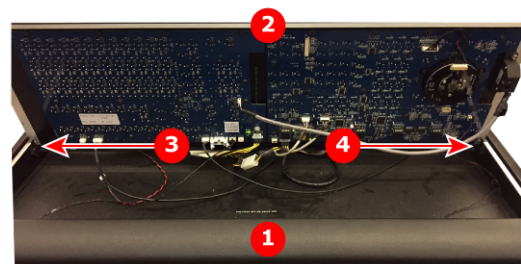


Image 2-16: Keyboard assembly in chassis slots

- 1 Lower chassis
- 2 Keyboard assembly
- 3 Chassis slot on left side
- 4 Chassis slot on right side

3. Disconnect the EC-200 trackball cable.
4. Connect the EC-210 trackball cable.

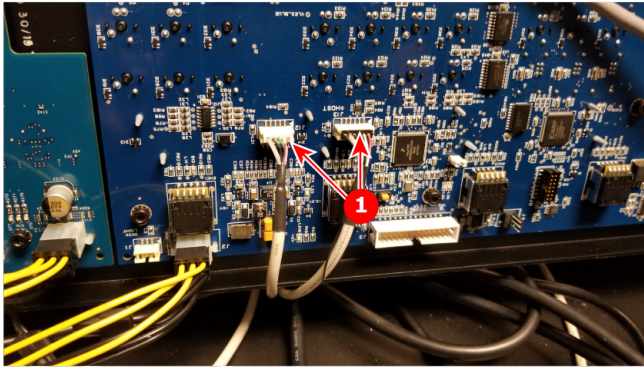


Image 2-17: Trackball-cable connections

- 1 Trackball (right-side) USB connectors from USB910 on the motherboard
5. Close the lower chassis
 1. Put the lower edge (the edge near the wrist rest) in place first, and then lower the rest of the keyboard assembly in place.
 2. Set the keyboard assembly in place.



Note: Do not secure the keyboard assembly in place with its four screws. You will need to raise the keyboard assembly to route certain cables when making touchscreen assembly connections. You will secure the keyboard assembly during the final chassis reassembly.

6. Remove the first two blank keys from the second row of the EC-200 future expansion group buttons. (See #2 in Image 2-14.)

The buttons pop off.

7. Install the “Play/Pause” and “Stop” buttons from the conversion kit.
See #1 in Image 2-19 for the position of the “Play/Pause” and “Stop” keys.



Image 2-18: “Play/Pause” and “Stop” buttons

8. Organize the cables as shown in Image 2-19.

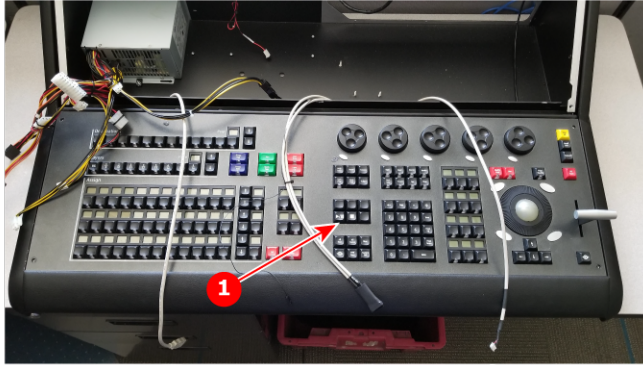


Image 2-19: Cables from the lower chassis and "Play/Pause" and "Stop" keys

- 1 "Play/Pause" and "Stop" keys

Motherboard installation

1. Slide the lower edge of the motherboard under the lower chassis.

The lower edge has the 4-pin ATX12V1 and the CPUFAN1 connectors. The DIMMs should be on the left-hand side of the CPU cooler.

2. Align the motherboard carefully over the eight mounting posts, taking care not to slide the motherboard; this can damage components on the back of the motherboard.

The three screw holes on the lower edge of the motherboard should be under the access holes in the support bar that runs the width of the unit.

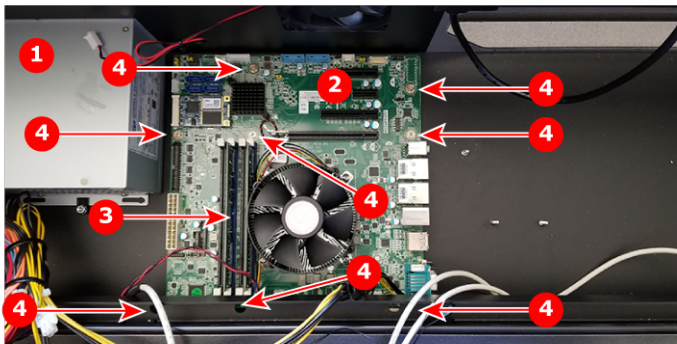


Image 2-20: Motherboard in position

- 1 Power supply
- 2 Motherboard
- 3 DIMMs
- 4 Motherboard screws (x8)

3. Screw in the eight screws that secure the motherboard to the chassis.

Initial motherboard connections

The initial motherboard connections can be made before the rear I/O plate is installed.

1. Refer to Image 2-21 and Image 2-22 for the positions of the motherboard headers for the initial motherboard connections.

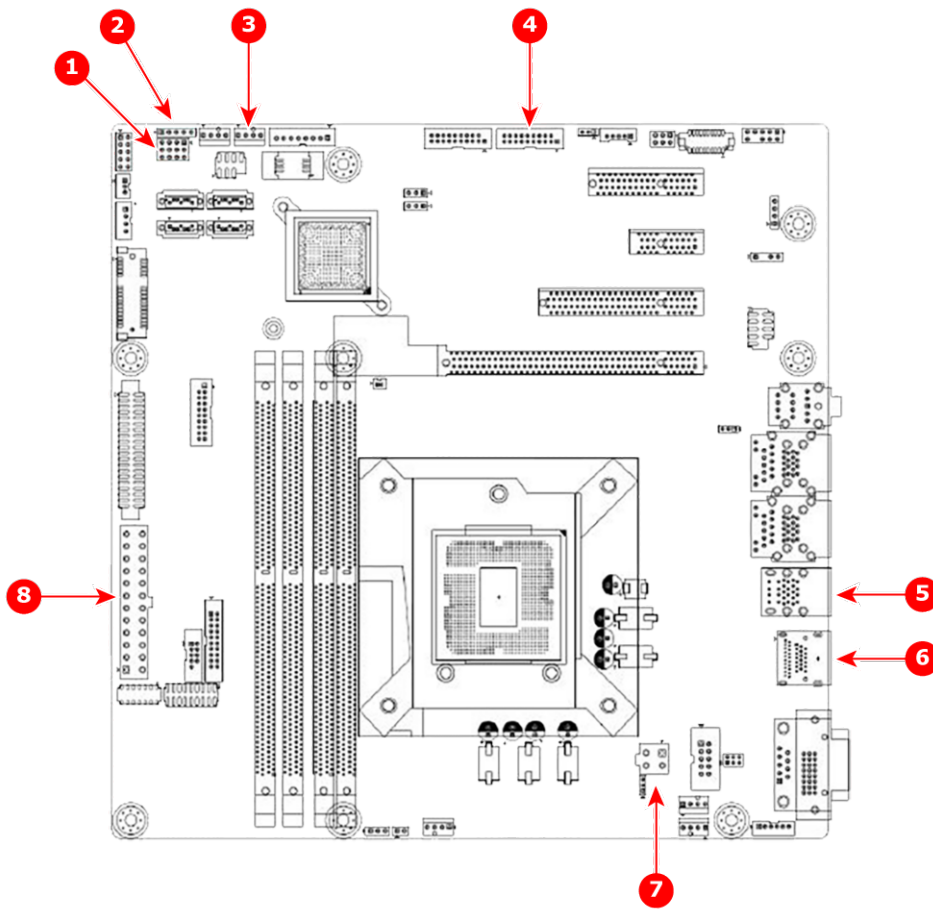


Image 2-21: Initial motherboard connections

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Black reset line and power button at JFP1 2 Power button LED at JFP2 3 Rear system fan at SYSFAN2 4 USB to right side of keyboard (the PROG keypad) at USB910 | <ul style="list-style-type: none"> 5 USB to top at USB561112 6 DisplayPort cable to the left side of the touchscreen assembly at DP1 (top of the DP1 +HDMI1 header) 7 Auxiliary power at ATX12V1 8 Power supply at EATXPWR1 |
|--|---|

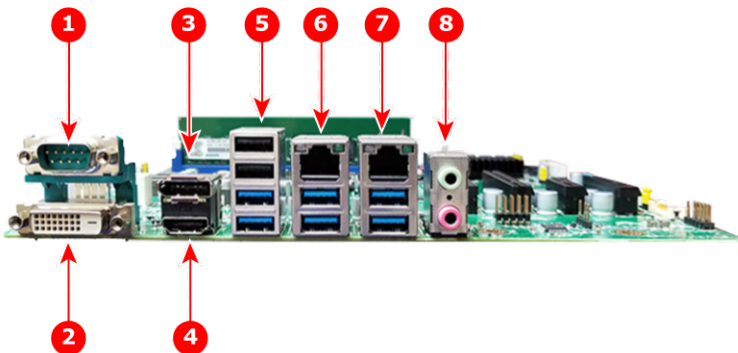


Image 2-22: Motherboard I/O connections

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 COM1 2 DVI1 3 DP1+HDMI1 (DisplayPort on top) 4 DP1+HDMI1 (HDMI on bottom) | <ul style="list-style-type: none"> 5 USB561112 (USB 2.0 on top; USB 3.0 on bottom) 6 LAN1_USB12 (RJ-45 on top; USB 3.0 on bottom) 7 LAN2_USB34 (RJ-45 on top; USB 3.0 on bottom) 8 AUDIO1 |
|--|---|

2. Connect the rear unit fan to SYSFAN2.

Make sure the key tab on the header connector aligns with the slot on the back side of the fan connector. (This is a 3-pin connector installed on 4-pin header.)

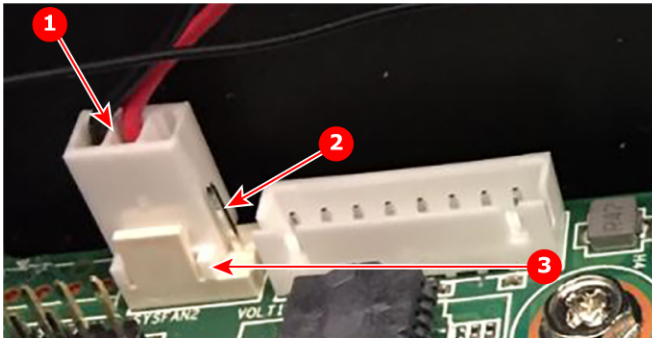


Image 2-23: SYSFAN2 connection

- 1 3-pin connector from rear unit fan to 4-pin SYSFAN2 connection on the motherboard
- 2 Unused pin
- 3 Header key tab and fan connector slot

3. Connect the USB to top cable to the bottom connector in the USB561112 connector stack, as shown at #5 in Image 2-22 and at #2 in Image 2-24.

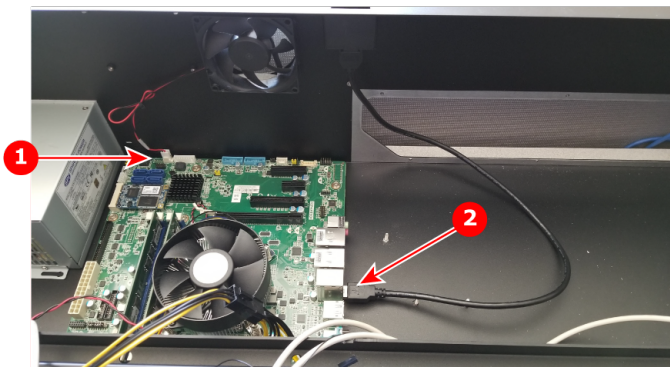



Image 2-24: Motherboard connections: rear unit fan and USB to top


- 1 Rear unit fan at SYSFAN2
- 2 USB to top at USB561112

4. Connect one end of the DisplayPort-to-left side cable (90409630EF) to the DP1+HDMI1 header, shown at #3 in Image 2-22.

This is the DisplayPort to DisplayPort cable with manufacturer's number DPCAMMSB-1.

 *Tip:* It is best to route this cable along the bottom of the unit, just in front of the motherboard. You may have to lift the keyboard assembly again to do this.

5. Connect the USB cable from the right side of the keyboard (the PROG keypad) / trackball at USB910 on the motherboard, shown at #4 in Image 2-21.

 *Note:* Add some silicone sealant or RTV silicone to the 20-pin USB910 connector, near the polarizing post, to prevent this connector from coming loose during transit.

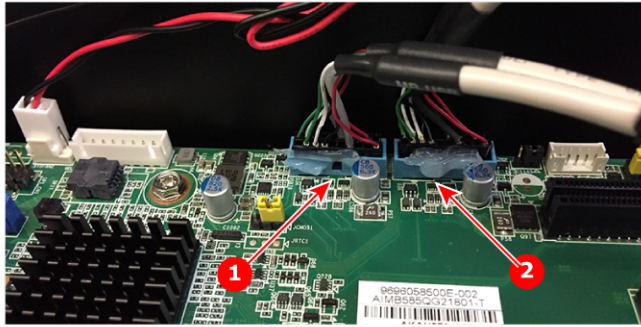


Image 2-25: RTV silicon on USB connectors


- 1 USB78 connector
- 2 USB910 connector


6. Connect Cable 90409634EF to the cable labeled 90409631EF. This is the Power button assembly, P/N 90409637EF.

7. Connect the power-button LED cable (5-pin connector on 90409634EF) to JFP2.

Make the connection so that the red wire is connected to pin 1.

Tie-wrap the power-button cable to the bottom holes of the rear unit fan.

 *Note:* Add some silicone sealant or RTV silicone for all the connections to JFP1 and JFP2, to prevent these connections from coming loose during transit.

 *Note:* For Step 7 refer to Image 2-26.

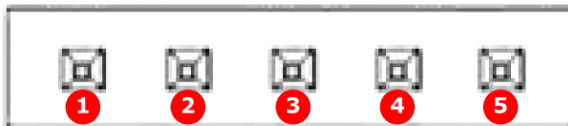


Image 2-26: JFP2 pinout

- | | |
|--------------------|------------------------|
| 1 Pin 1: LED power | 4 Pin 4: Keyboard lock |
| 2 Pin 2: NC | 5 Pin 5: GND |
| 3 Pin 3: GND | |

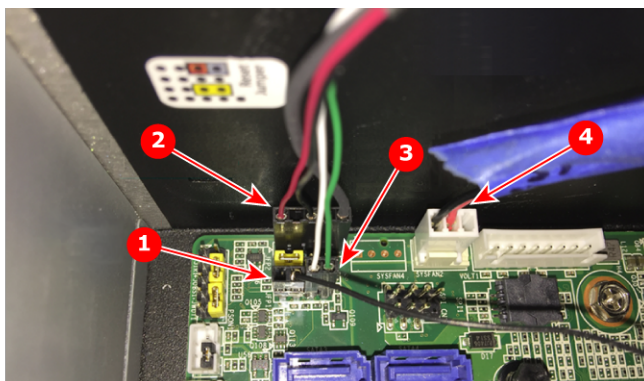



Image 2-27: Motherboard connections: reset, power button, power-button LED, and rear unit fan

- 1 Reset connection from right-side keyboard
- 2 Power button LED connection
- 3 Power button connection
- 4 Rear unit fan at SYSFAN2

 *Note:* For Step 8 and Step 9 refer to .

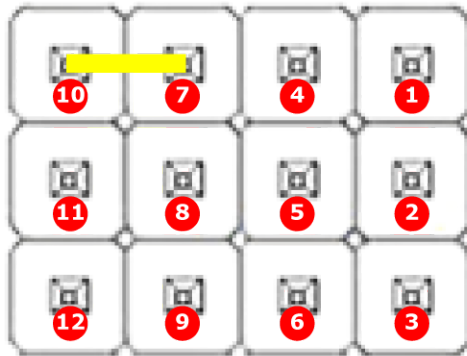


Image 2-28: JFP1 pinout

- | | |
|-------------------------------|---------------------------------|
| 1 Pin 1: +5V | 7 Pin 7: SPK_P3 |
| 2 Pin 2: HDD LED+ | 8 Pin 8: SMB_Data |
| 3 Pin 3: Power button+ | 9 Pin 9: System reset+ |
| 4 Pin 4: SPK_P2 | 10 Pin 10: SPK_P4 |
| 5 Pin 5: HDD LED- | 11 Pin 11: SMB_CLK |
| 6 Pin 6: Power button- | 12 Pin 12: System reset- |

8. Connect the black reset line (2-pin connector) to JFP1.
Make the connection so that the black wire is connected to pin 9 of JFP1.
9. Connect the power-button cable (2-pin connector on 90409634EF) to pins 3 and 6 of JFP1.
Make the connection so that the green wire is connected to pin 3 and the white wire is connected to pin 6.
10. Connect the USB to left side of keyboard (white USB cable) to the second port from the bottom at USB561112.
11. Connect the power supply to the motherboard at EATXPWR1.
12. Connect the auxiliary power to the motherboard at ATX12V1.

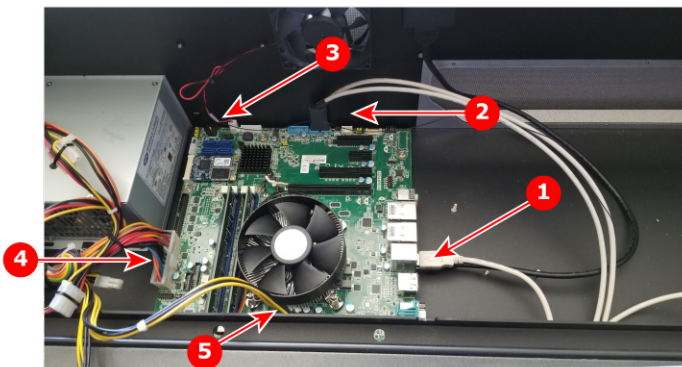


Image 2-29: Motherboard connections: USB, reset line, and power supply

- | | |
|---|--|
| 1 USB to left side of keyboard at USB561112 | 4 Power to motherboard at EATXPWR1 |
| 2 USB to right side of keyboard at USB910 / trackball | 5 Auxiliary power to motherboard at ATX12V1 |
| 3 Reset line (attached to Pin 9 of the JFP1 header on the motherboard) | |

Rear I/O plate installation

1. Fit the rear I/O plate to the inside of the rear panel of the chassis.
2. Secure the rear I/O plate to the rear panel with the six screws.

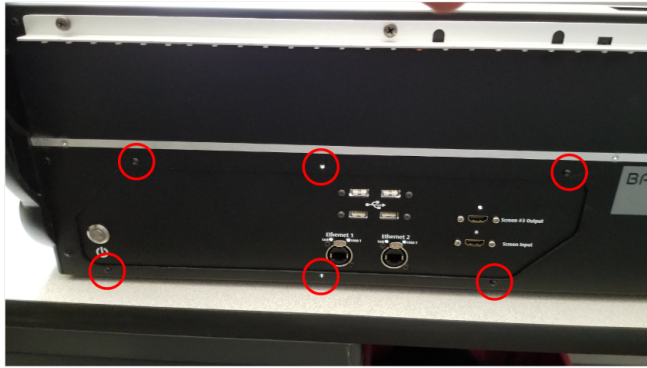


Image 2-30: Outside of the rear I/O plate, showing the six screw positions

3. Attach the Ethernet LED cable (90409590EF) to J5 on the Ethernet board.

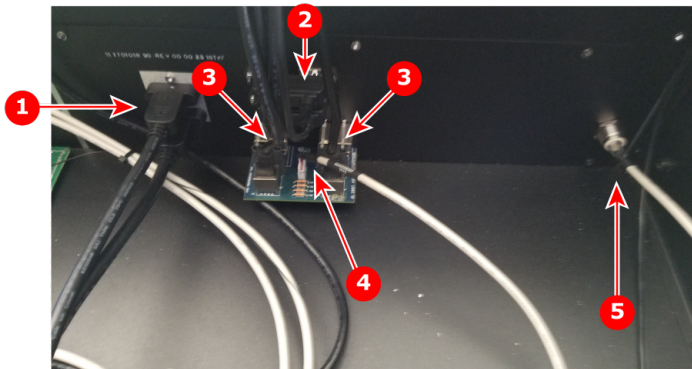


Image 2-31: Rear I/O plate and Ethernet board connections

- | | |
|---------------------------------------|---------------------------------|
| 1 Rear I/O plate HDMI connections | 4 Ethernet LED cable connection |
| 2 Rear I/O plate USB connections | 5 Power switch |
| 3 Rear I/O plate Ethernet connections | |

Final motherboard connections

The rear unit fan, USB to top, USB to left side of the keyboard (CTRL), USB to right side of keyboard (PROG), and the power supply (EATXPWR1) connections were made to the motherboard immediately after motherboard installation. Now that the rear I/O plate has been installed, the final motherboard connections can be made.

1. Refer to Image 2-32 and Image 2-33 for the positions of the motherboard headers for the initial motherboard connections.

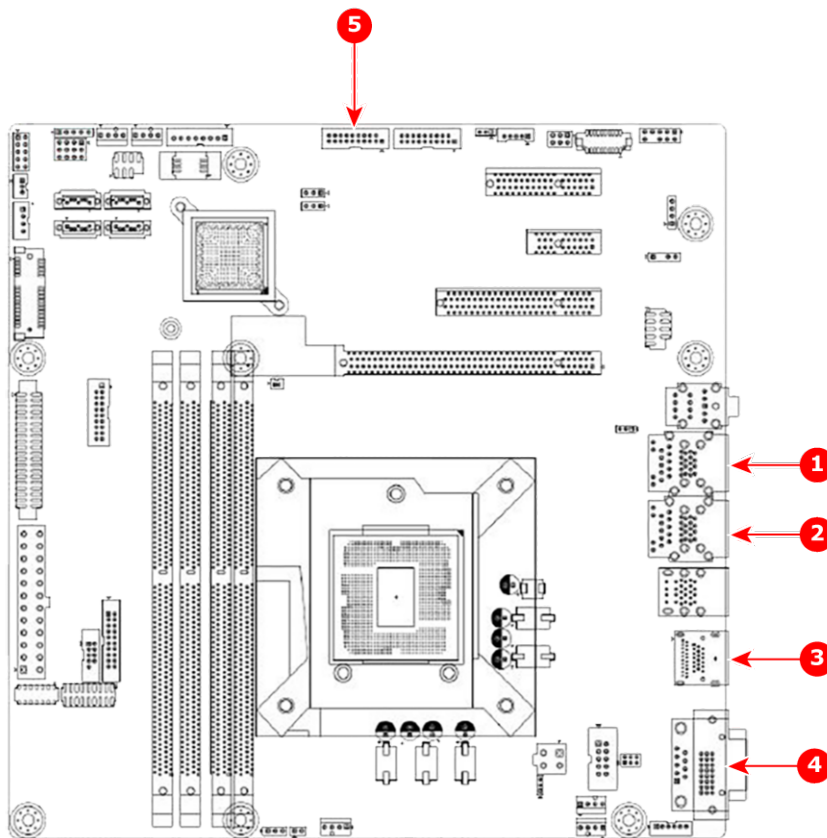


Image 2-32: Final motherboard connections

- | | |
|---|--|
| <p>1 Cable from the J3 connection on the Ethernet board to the Ethernet connection at the LAN2_USB34
Lower left USB cable from the rear I/O plate to top USB connector of LAN2_USB34
Lower right USB cable from the rear I/O plate to bottom USB connector of LAN2_USB34</p> <p>2 Cable from the J4 connection on the Ethernet board to the Ethernet connection at the LAN1_USB12
Upper left USB cable from the rear I/O plate to bottom USB connector of LAN1_USB12
Upper right USB cable from the rear I/O plate to top USB connector of LAN1_USB12</p> <p>3 HDMI Output (“Screen 3”)—the top HDMI connection on the rear I/O plate—to the HDMI connector at the DP1+HDMI header</p> | <p>4 18" single link DVI-D male-to-male cable (90409628EF) from the right-side display assembly to the DVI connector at the DVI1 header</p> <p>5 USB from the display assembly to the USB78 connection</p> |
|---|--|

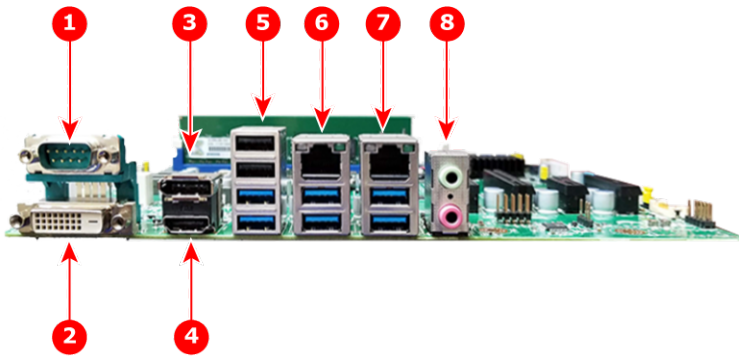


Image 2-33: Motherboard I/O connections

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 COM1 2 DVI1 3 DP1+HDMI1 (DisplayPort on top) 4 DP1+HDMI1 (HDMI on bottom) | <ul style="list-style-type: none"> 5 USB561112 (USB 2.0 on top; USB 3.0 on bottom) 6 LAN1_USB12 (RJ-45 on top; USB 3.0 on bottom) 7 LAN2_USB34 (RJ-45 on top; USB 3.0 on bottom) 8 AUDIO1 |
|--|---|

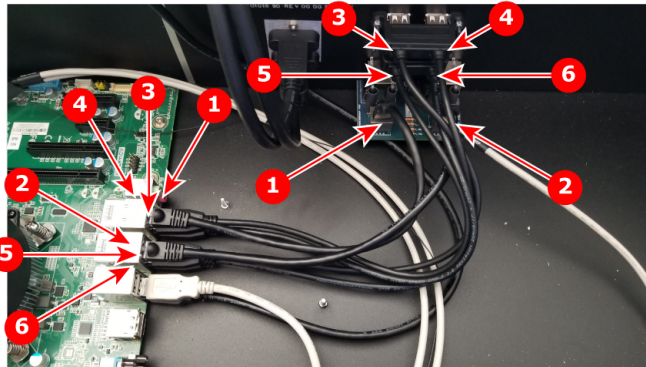


Image 2-34: Ethernet and USB connections from the Ethernet board to the motherboard

- | | |
|---|---|
| <ul style="list-style-type: none"> 1 Ethernet cable: J3 to LAN2_USB34 2 Ethernet cable: J4 to LAN1_USB12 3 USB: upper left to bottom of LAN2_USB34 | <ul style="list-style-type: none"> 4 USB: upper right to top of LAN2_USB34 5 USB: lower left to top of LAN1_USB12 6 USB: lower right to bottom of LAN1_USB12 |
|---|---|

2. Connect the Ethernet cables from the rear I/O plate.
 1. Run the cable from the J3 connection on the Ethernet board to the Ethernet connection at the LAN2_USB34 motherboard header.
 2. Run the cable from the J4 connection on the Ethernet board to the Ethernet connection at the LAN1_USB12 motherboard header.
3. Connect the USB cables from the rear I/O plate:
 1. upper left to bottom of LAN2_USB34,
 2. upper right to top of LAN2_USB34,
 3. lower left to top of LAN1_USB12, and
 4. lower right to bottom of LAN1_USB12.
4. Zip tie the Ethernet/USB bundle.
5. Connect HDMI output (“Screen 3”)—the top HDMI connection on the rear I/O plate—to the HDMI connector at the DP1+HDMI header.
Coil and tie wrap the extra length of the HDMI output (“Screen 3”) cable.
6. Connect one end of the 18" single link DVI-D male-to-male cable (90409628EF) from the right-side display assembly to the DVI connector at the DVI1 header.

- Connect the 20-pin connector of the USB cable from the display assembly to the USB78 connection.



Note: Add some silicone sealant or RTV silicone to the 20-pin USB78 connector, near the polarizing post, to prevent this connector from coming loose during transit.

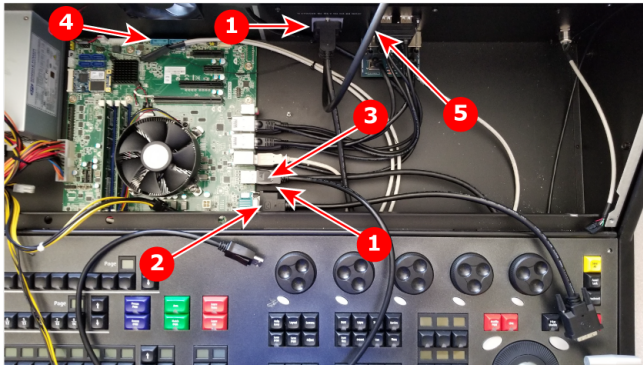


Image 2-35: HDMI output, DVI-D male-to-male cable, DisplayPort-to-left side cable, USB from the display assembly, and DVI to HDMI pigtail adapter connections

- | | |
|--|---|
| <ol style="list-style-type: none"> HDMI Output (“Screen 3”) to the HDMI connector at the DP1+HDMI header 18" single link DVI-D male-to-male cable (90409628EF) at the DVI1 header DisplayPort-to-left side cable at DPI+HDMI1 | <ol style="list-style-type: none"> USB from the display assembly at the USB78 connector (cable not shown) See Image 2-36 for a view of USB78 and USB910 with cables inserted. DVI to HDMI pigtail adapter to the HDMI cable from the HDMI Input |
|--|---|

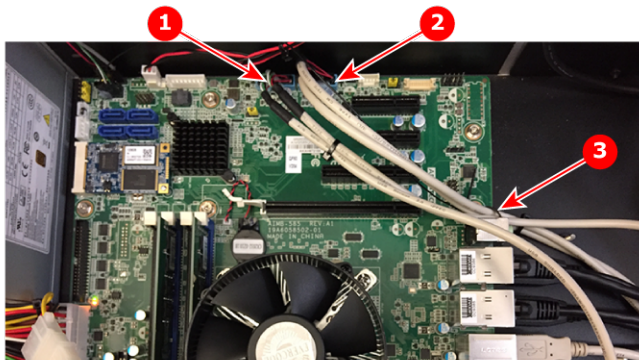


Image 2-36: USB connections from display assembly and from right side of keyboard

- USB from the display assembly at USB78
- USB from the right side of keyboard and trackball at USB910
- USB from the right side of keyboard and trackball zip-tied to the AUDIO1 header

Touchscreen assembly connections

- Refer to Image 2-37 and Image 2-38 for connections and zip-tie locations for the right side of the touchscreen assembly. These images show the rear of the right side of the touchscreen assembly; this screen is on the right side, when viewed from the front.

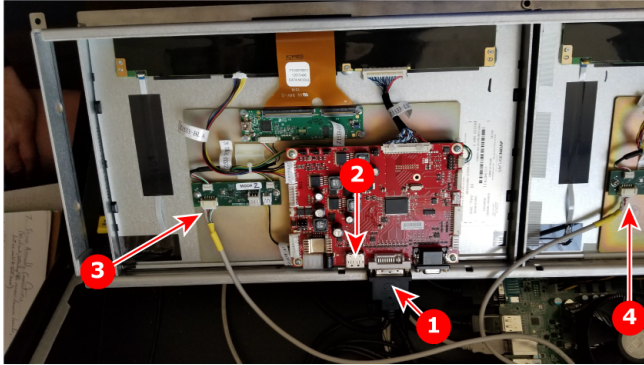



Image 2-37: Touchscreen assembly—right-side connections

- 1 Right-side display DVI (from motherboard)
- 2 DisplayPort (not connected on the right-side display)
- 3 USB input (from USB78 on motherboard) to right side (longer cable)
- 4 USB input (from USB78 on motherboard) to left side (shorter cable)


- 2. Attach the right-side DVI cable from the motherboard.
- 3. Attach the DisplayPort cable from the motherboard to the left-side display.

Note: The right-side DVI cable and the right-side DisplayPort cable should be routed under the USB input cable from the USB78 header on the motherboard to the right-side USB interface board. This should not be a problem, if you route the DVI and DisplayPort cables before you route the USB cable.

 Route the left-side video cables along the bottom of the unit in front of the motherboard. Route the power cable for the right-side display at the same time. These cables can be routed and tie wrapped to the anchor point located on the bottom of the unit near the center. A 12-volt black and yellow power cable is already tie wrapped at this location.

You may need to raise or remove the keyboard assembly to route these cables.

- 4. Attach the USB input cable from the USB78 header on the motherboard to the right-side USB interface board.

 *Note:* Two USB cables run from the USB78 header on the motherboard. The longer cable runs to the right-side USB interface board, and the shorter cable runs to the left-side USB interface board. The length of each cable determines the USB interface board to which it connects.

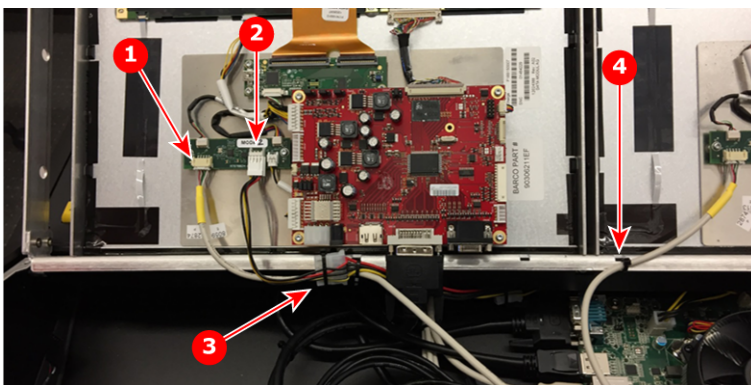


Image 2-38: Right-side ties

- 1 USB input (from USB78 on motherboard) to right side
- 2 Power to right side
- 3 USB input cable and power cable zip-tied together to the touchscreen assembly frame
- 4 USB input cable (from USB78 on the motherboard) to the left-side USB interface board zip-tied to the touchscreen assembly frame

- 5. Route the USB input cable (90409627EF from USB78 on the motherboard) and the power cable to the right-side USB interface board and zip-tie them together to the touchscreen assembly frame. (See #3 in Image 2-38.)

6. Route the USB input cable (90409627EF from USB78 on the motherboard) to the left-side USB interface board and zip-tie it to the touchscreen assembly frame. (See #4 in Image 2-38.)

The rear of the left-side touchscreen assembly is shown in Image 2-39; this screen is on the left side, when viewed from the front.

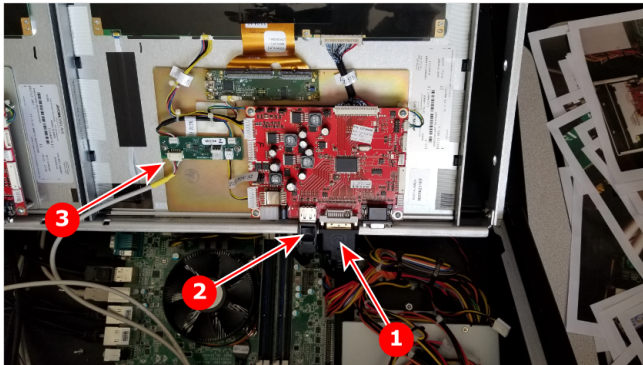



Image 2-39: Touchscreen assembly—left-side connections

- 1 DVI cable from the HDMI Input (“Screen Input”) on the rear I/O plate
- 2 DisplayPort (from motherboard) to left-side display
- 3 USB input (from USB78 on motherboard) to left side

7. Connect the DVI to HDMI pigtail adapter to the HDMI cable from the HDMI Input (“Screen Input”) on the rear I/O plate.

HDMI Input is the bottom HDMI cable from the rear I/O plate.

Place a tie-wrap mount on the floor of the chassis near the connection point of the HDMI input cable to the left-side touchscreen assembly and tie wrap the cable to the mount.

 *Note:* You may need to raise or remove the keyboard assembly to route these cables.

8. Attach the DVI to HDMI pigtail adapter from the HDMI Input (“Screen Input”) on the rear I/O plate to the DVI cable connection on the left-side touchscreen assembly.

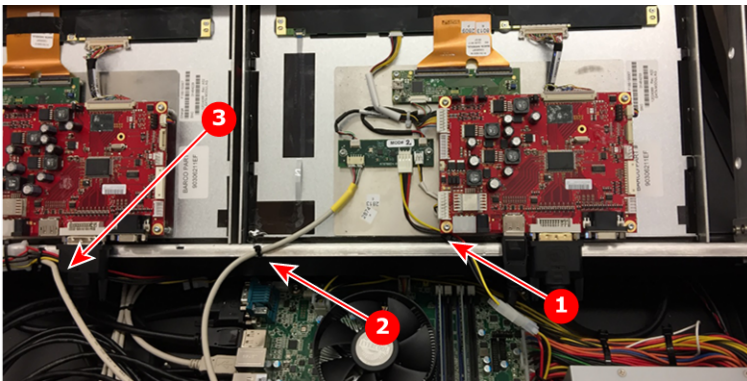




Image 2-40: Touchscreen assembly—left-side cable ties

- 1 Power to the left side, zip-tied to the left-side breakout-board standoff
- 2 USB input (from USB78 on motherboard) to left side, zip-tied to the hole in the display frame near the point where it connects to the USB interface board
- 3 Power and USB input to the right side

 *Note:* It is important to tie wrap these cables as shown so that they do not come into contact with the fan blade when the display assembly is put back into its normal position.

9. Attach the USB input cable from the USB78 header on the motherboard to the left-side USB interface board.
10. Zip tie the USB interface-board input cable to the hole in the touchscreen assembly frame. (See #2 in Image 2-40.)

11. Attach the power cable to the left-side USB interface board and zip-tie it to the left-side breakout-board standoff. (See #1 in Image 2-40.)

 *Tip:* Tie wrap the USB and other video cables to keep them from flopping around during transit.

12. Zip-tie the 20-pin USB cable from USB910 to the AUDIO1 connector housing on the motherboard.

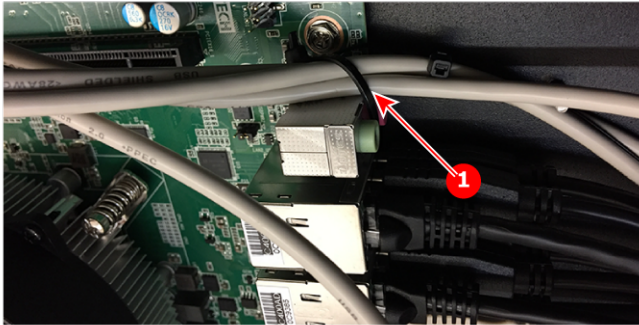



Image 2-41: USB from the right side of keyboard and trackball to USB910 zip-tied to AUDIO1 connector housing

- 1 USB cable zip-tied to AUDIO1 connector housing

 *Note:* The USB cable to the left-side display assembly may not be long enough to be zip-tied to the AUDIO 1 connector housing.

Final chassis reassembly and power-on test

1. Put the touchscreen assembly in place.
2. Put the keyboard assembly in place, but do not secure it with the screws.
3. Put the screen frame in place over the touchscreen assembly, but do not secure it with the screws.
4. Perform a power-on test with the touchscreen and keyboard assemblies in place but not secured.
 1. Connect the unit to power. (Plug in the unit.)
 2. Make sure that the power supply switch is in the ON position.
The unit may power on, but if it does not, press the power button to turn on the power.
A Barco logo appears on each display as the unit boots.
 3. Check the power button on the rear of the unit.
The red ring around the power button should be illuminated.
 4. Verify that the touchscreens are functioning properly on both the left and right displays.
 5. Press the power button again.
The touchscreen displays the message, "Do you really want to power off the EC-200/EC-210?"
 6. Select "Power off" on the touchscreen, and the unit should power down gracefully.
Once the unit has passed a power-on test, proceed with the final chassis reassembly.
5. Secure the keyboard assembly in place with the four screws.
6. Secure the screen frame in place over the touchscreen assembly with the six screws in front and three screws in back.
7. Affix the EC-210 product-label sticker over the EC-200 product label.
8. Reattach the desklights.



Image 2-42: Final assembly

- 1 Desklights
- 2 Screen frame screws—front (3 mm)
- 3 Screen frame screws—rear (2.5 mm)
- 4 Product label

