ESD Safety Instructions

ATTENTION: Read “Requirements for ESD Safe Work Stations” before proceeding to card replacement instructions.

Requirements for ESD Safe Work Stations

Biamp Systems requires any field service of Tesira products to be performed on ESD-safe (Electrostatic Discharge) workstations. This will minimize the chances of damaging the sensitive circuitry contained in Biamp products. Damage is typically not noticeable to a user and may not occur immediately. See Figure 1 for one example of a factory ESD-safe work station.

Other options for an ESD-safe work station is using a conductive mat, conductive wrist-strap and grounding cords as shown in Figure 2.

- The wrist strap is electrically connected to mat and chassis of the unit under test
- The grounding cord connects to a common connection with the wrist strap ground which is connected to a ground point (electrical outlet)

Grounding will drain most of the static charge off to ensure the voltage potentials of the technician and equipment remain equal.

When working outside a shop environment (in the “field”) a fully protected, ESD-safe workstation may not be practical. In this situation it is critical to ensure the technician and equipment under test are at the same voltage potential. This applies to ESD-sensitive parts that may be removed.

Damage from ESD occurs from the rapid discharge of electricity through circuitry or components. Taking proper ESD precautions makes sure no discharge can occur, as the voltage between the user and the unit is the same.

Figure 3 shows the minimum ESD precautions (ESD wrist strap connected to the unit under test).

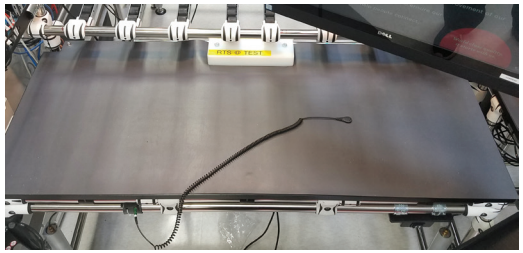


Figure 1 Factory ESD-Safe Work Station

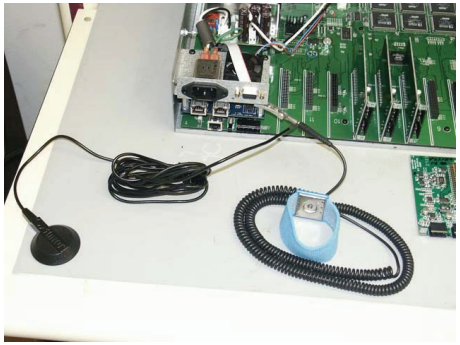


Figure 2 Wrist Strap and Grounding Cords



Figure 3 Minimum Configuration Workstation

ESD Safety Instructions

An ESD-safe work mat may be rolled out and trimmed to fit a clean, solid work surface. Mat surface should be cleaned weekly with a mild detergent and water or a static-control cleaning solution. Solvents should not be used to clean ESD-safe surfaces as they can compromise the conductive nature of the work surface. Food should never be consumed at an ESD-safe workstation.

Figure 4 shows an example of an ESD-safe work surface that includes a wrist strap with a grounding cord and a grounding cord that snaps into the ESD mat. The ESD mat grounding cord connects to a common connection with the wrist strap ground which is then connected to a ground point (electrical outlet).



Figure 4 ESD-Safe Work Surface

Wrist straps should be adjusted for a comfortable, snug fit. They must be in contact with bare skin and never worn over a cuff or sleeve. The ground cord snaps directly to the buckle on the wrist strap.

Other ESD workstation options include heel-strap grounders as well as floor mats that may also be connected to a common grounding point.

It is the responsibility of the technician to make sure work performed is done so in an ESD-safe environment. ESD products described herein are available from numerous manufacturers/distributors.

Ordering Tesira Server Cards

Tesira SERVER and SERVER I/Os that are ordered with factory-installed I/O cards have these cards placed within the device in a specific order. If modifying I/O cards in these devices, it is important to know the proper order in which the cards are installed.

Server Card Order

Tesira SERVER-I/O has 14 card slots while the Tesira SERVER has three. Certain slots have restrictions as to the type of cards that can be installed.

- The last slot in either device (slot 14 in the SERVER I/O; slot 3 in the SERVER) must always have a network card installed (SNC-1 or SNC-2, depending on the type of server.) This card is factory-installed and does not need to be ordered separately.
- SERVER: slot 2 must have an AVB-1 card installed; slot 1 can support an additional AVB-1 card.
- SERVER-IO: only slots 11-13 can support audio networking cards (SCM-1 and DAN-1,) and slot 13 is the only slot that can support an AVB-1 card.
- A SERVER-IO can support the following in any combination:
  - » Maximum of one AVB-1 card
  - » Maximum of two SCM-1 cards
  - » Maximum of two DAN-1 cards
  - » Maximum of six telephony cards (STC-2, SVC-2)
- SERVER and SERVER-IO both ship with one DSP-2 card installed.
  - » Two additional DSP-2 cards may be installed in the SERVER-IO
  - » Seven additional DSP-2 cards may be installed in the SERVER

Each I/O card is either an input card, output card, telephony card or an audio networking card. The card type will affect the slot in which it is located.

When viewing the Tesira server from the rear panel:

- Input cards are populated from the right-hand side
- Audio networking cards are populated from the left-hand side
- Telephony cards are populated from the left, after any audio networking cards
- Output cards are populated from the left, after any audio networking or telephony cards
- Any blank/empty slots will be in the middle between the input and output cards (assuming both are installed)
- A maximum of twelve input/output cards may be installed (SIC-4, SEC-4, SAC-4 SOC-4)

Tesira Server Cards

Figure 5 shows a Tesira SERVER-IO with cards installed in the slots as noted:

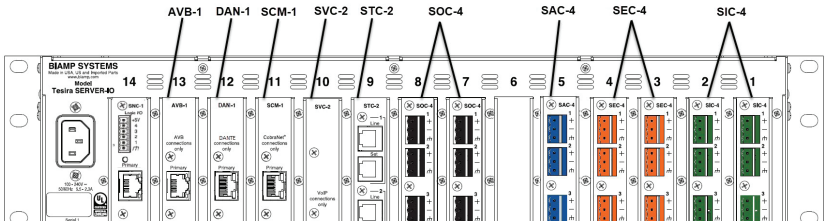


Figure 5 Tesira SERVER IO Card Order

Server Identification

New SERVER and SERVER IO chassis may be identified by the following features:

- One mounting hole to secure the cards through the main board to the chassis
- Single mounting point on the board of the chassis for cards (some chassis may have tape over the front row card holes on the main board while newer versions will not have these holes)

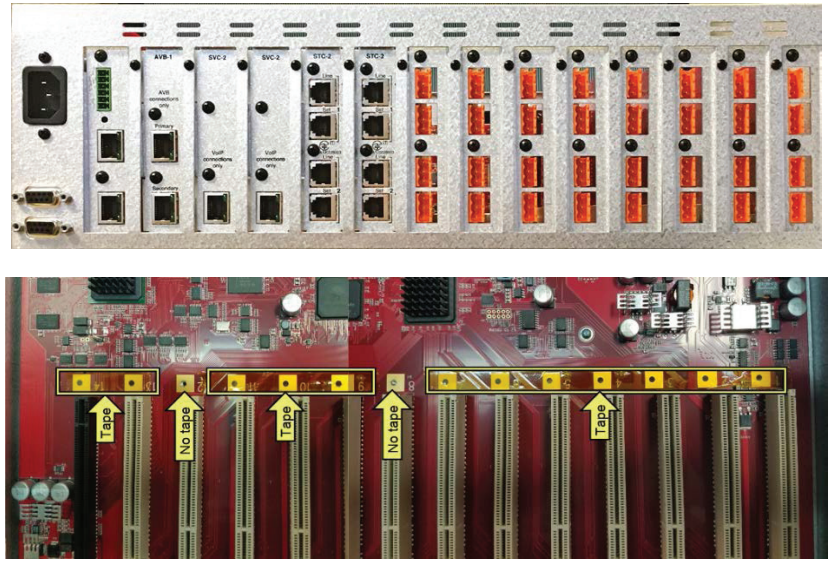
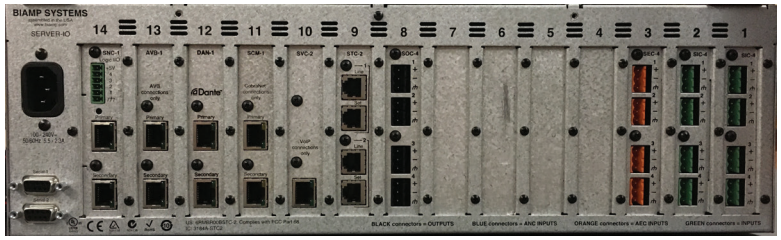
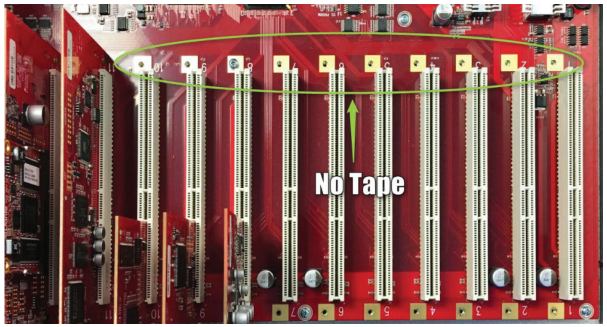


Figure 4 ESD-Safe Work Surface

Old SERVER and SERVER IO chassis may be identified by the following features:

- Three screws secure each card plate to the rear of the chassis
- Two mounting holes to secure cards through the main board to the chassis





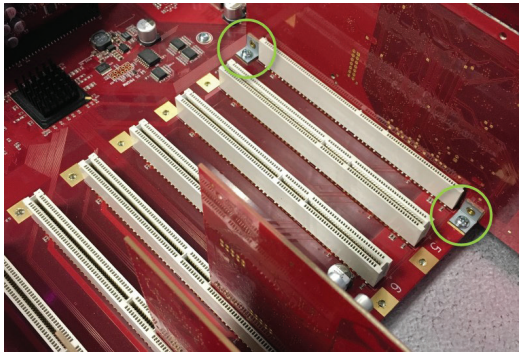


Figure 7 Server Identification

Server Identification

New SERVER and SERVER IO chassis may be identified by the following features:

- A single hole on the face plate of the card to secure it to the rear of the chassis
- A single mounting bracket on the body of the card to screw through the main board to the chassis

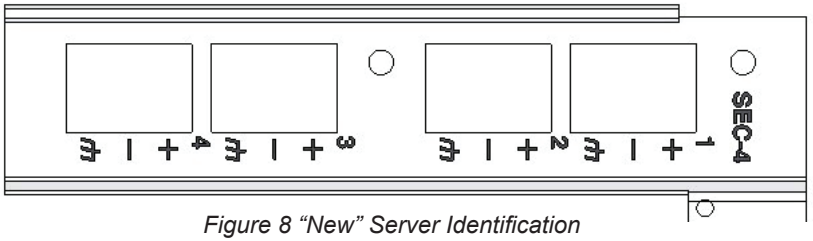


Figure 8 “New” Server Identification

Old SERVER and SERVER IO chassis may be identified by the following features:

- Three holes on the plate of the card to secure it to the rear of the chassis
- Two mounting brackets for screws through the main board to the chassis

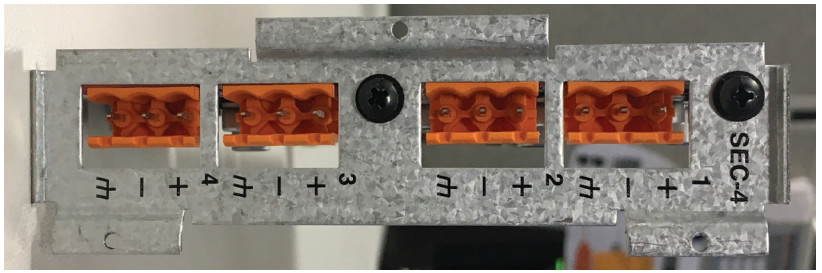


Figure 9 “Old” Server Identification

Removing & Installing I/O Cards in Tesira Servers

NOTE: Refer to Requirements for ESD Safe Work Stations before proceeding.

1. Before removing power from the Tesira server, do the steps that follow:
   a. Save a backup copy of the configuration file loaded in the Tesira server (if applicable)
      i. Connect to the Tesira system with Tesira software.
      ii. Disconnect from the system and choose File → Save As.
   b. "Reset Device" on the Tesira server to clear out the configuration file. This is done from the Device Maintenance window in Tesira software (System→ Network→ Perform Device Maintenance).
   c. Update firmware to the latest version on the Tesira server to avoid mismatches when adding new I/O cards to an older device. See http://support.biamp.com for firmware upgrade instructions.

CAUTION: FAILURE TO FOLLOW ESD REQUIREMENTS CAN RESULT IN DAMAGE TO EQUIPMENT.

NOTE: Procedures are similar for new and older chassis, except where specified.

2. Remove the top cover:
   a. Disconnect all cables (including the power cable) and connectors from the Tesira server.
   b. Move the device to an ESD-work area with a grounded, anti-static mat.
   c. Properly ground yourself using an ESD wrist strap.
   d. For new chassis:
      i. Remove the six screws along the top of the front and rear panels
      ii. Pull up on the tabs protruding from the rear of the top cover to dislodge it.
      iii. Pull the top up to remove it from the chassis.
   e. For an old chassis:
      i. Remove the three screws along the top of the front and rear panels
      ii. Pull up on the tabs protruding from the rear of the top cover to dislodge it.
      iii. Pull the top cover towards the rear of the device to remove it. Manipulate (wiggle) the top cover as required to dislodge the stepped tabs out of their slots.

3. To remove and replace an I/O card, do the steps that follow:
   a. For new chassis, remove the screw that secures the I/O card to the rear chassis (located at the top-right of the card face plate).
   b. For older chassis, remove the three screws that attach the card to the rear of the chassis.
   c. Remove the screw that secures the I/O card to the main board.

NOTE: DSP-2 cards (internal to the unit) are secured with two screws. Grasp the front and back of the I/O card and carefully lift upward to unseat it from the chassis.

   d. Place the removed card in an ESD-safe/ant-static bag. Use the bag a new card was packaged in after removal, if desired.
   e. See previous section on card order and insert the new card into the appropriate slot.
      i. Apply gentle downward pressure until the card fully seats.
   f. Secure the I/O card onto the main board using the previously-removed screws.

NOTE: Older cards have a front and rear mounting bracket; new cards have only one bracket. If installing old cards on a new chassis, or a new card in an older chassis, only install the screw at the rear of the main board.

   g. Secure the I/O card to the rear of the chassis using the previously-removed screws (top-right of the card face plate).

NOTE: Older cards installed in a new chassis will only need to be secured at the top right hole. The same applies to new cards installed in an older chassis.

4. To install an additional card, do the steps that follow:
   a. See previous section on card order to make sure cards are installed correctly.
   b. Remove the screw from the main board where the new card will be installed.
   c. If installing a DSP-2 card (internal to the unit,) remove both screws from the slot.
   d. For older chassis, remove two screws that secure the cards to the main board.
   e. If a “short” card is being added to an older server, only the screw at the rear of the unit needs to be removed and reused.
   f. Remove the screw(s) that secure the metal plate covering the hole the new card will occupy and remove the plate (older chassis will have three screws securing the plate.) The metal plate may be discarded.
   g. See previous section on card order and insert the new card into the appropriate slot.
   h. Apply gentle downward pressure until the card fully seats.
   i. Secure the I/O card onto the main board using the previously-removed screws.

NOTE: Older cards have a front and rear mounting bracket; new cards have only one bracket. If installing old cards on a new chassis, or a new card in an older chassis, only install the screw at the rear of the main board. Older chassis mount cards internally with one or two screws through the main board depending on the length of the board.

   j. Secure the I/O card to the rear of the chassis using the previously-removed screws (top-right of the card face plate.)

NOTE: Older cards installed in a new chassis will only need to be secured at the top right hole. The same applies to new cards installed in an older chassis.

5. For a new chassis, install the top cover as follows:
   a. Place the top cover on the chassis and line up the tabs. Push down to secure the cover.
   b. Install the six screws that secure the cover to the chassis.

6. For an old chassis, install the top cover as follows:
   a. Line up the top cover tabs with slots at the front of the chassis.
   b. Push down on the rear of the top cover to secure it to the chassis.
   c. Install the three screws that secure the rear panel to the top cover.
      i. Make sure the rear cover tabs slide into the rear panel. This may require manipulation of the rear panel (slightly prying it away from the top cover).

7. To modify and reload the configuration file, do the steps that follow:
   a. Reattach all previously removed cable connections and apply power to the Tesira server.
   b. Start the Tesira software and open the configuration (.tmf) file from the software.
      i. Go to System→Equipment Table and locate the serial number of the device that was modified.
      ii. Click the serial number to open the drop-down menu and select “None.”
      iii. Click OK to close the Equipment Table window.
   a. Modify the configuration file based on the I/O cards that have been added or removed from the system.
   b. From System→Equipment Table click the serial number column of the device that was modified.
      i. Make sure the drop-down menu includes the serial number of the device.
      ii. Select the serial number to assign it to the device in the Equipment Table.
      iii. Click OK to close the Equipment Table window.
   c. Go to System→Network→Send Configuration to send the modified file to the Tesira server.

EX-MOD Card Order

EX-MOD, the Tesira modular AVB expander, has three card slots that accept expander input and output cards (listed below). If an EX-MOD contains different types of cards, they will always be installed in the following order from the lowest slot number to the highest:

A. EIC-4
B. EIOC-4
C. EOC-4
D. EOC-4

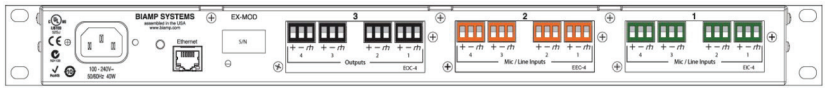


Figure 10 EX_MOD Card Order Example

Removing and Installing I/O Cards in Tesira EX-MOD

NOTE: Refer to Requirements for ESD Safe Work Stations before proceeding.

8. Before removing power from the Tesira server, do the steps that follow:
   a. Save a backup copy of the configuration file loaded in the Tesira device (if applicable)
      i. Connect to the Tesira system with Tesira software.
      ii. Disconnect from the system and choose File → Save As.
   b. “Reset Device” on the Tesira device to clear out the configuration file. This is done from the Device Maintenance window in Tesira software (System→ Network→ Perform Device Maintenance).
   c. Update firmware to the latest version on the Tesira device to avoid mismatches when adding new I/O cards to an older device. See http://support.biamp.com for firmware upgrade instructions.

CAUTION: FAILURE TO FOLLOW ESD REQUIREMENTS CAN RESULT IN DAMAGE TO EQUIPMENT.

9. Remove the top cover:
   a. Disconnect all cables (including the power cable) and connectors from the Tesira server.
   b. Move the device to an ESD-work area with a grounded, anti-static mat.
   c. Properly ground yourself using an ESD wrist strap.
   d. Remove the three back screws, two side screws and three front screws that secure the cover to the chassis.

10. To remove and replace an I/O card, do the steps that follow:
    a. Remove the two screws at each corner of the card that secure it to the main board.
    b. Carefully lift up and push the card away from the chassis.
    c. Place the removed card in an ESD-safe/ant-static bag. Use the bag a new card was packaged in after removal, if desired.
    d. See previous section on card order and insert the new card into the appropriate slot.
    e. Apply gentle downward pressure until the card fully seats.
    f. Secure the I/O card onto the main board using the previously-removed screws.

11. Install the top cover:
    a. Put the cover in place on the chassis and align the screw holes.
    b. Install the three back screws, two side screws and three front screws that secure the cover to the chassis.

Amplifier Card Order

The Tesira Amplifiers have three card slots that accept expander input and output cards (listed below). If an amplifier contains different types of cards, they will always be installed in the following order from the lowest slot number to the highest:

A. EIC-4
B. EIOC-4
C. EOC-4

Removing & Installing I/O Cards in Tesira Amplifiers

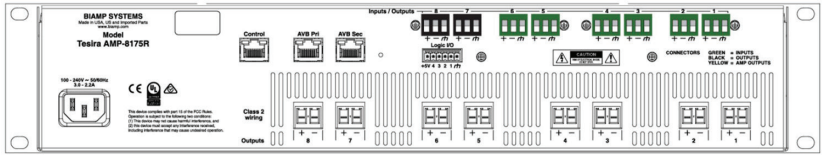


Figure 11 Amplifier Card Order

NOTE: Refer to Requirements for ESD Safe Work Stations before proceeding.

12. Before removing power from the Tesira server, do the steps that follow:
    a. Save a backup copy of the configuration file loaded in the Tesira device (if applicable)
        i. Connect to the Tesira system with Tesira software.
        ii. Disconnect from the system and choose File → Save As.
    b. “Reset Device” on the Tesira device to clear out the configuration file. This is done from the Device Maintenance window in Tesira software (System→ Network→ Perform Device Maintenance).
    c. Update firmware to the latest version on the Tesira server to avoid mismatches when adding new I/O cards to an older device. See http://support.biamp.com for firmware upgrade instructions.

CAUTION: FAILURE TO FOLLOW ESD REQUIREMENTS CAN RESULT IN DAMAGE TO EQUIPMENT.

13. Remove the top cover:
    a. Disconnect all cables (including the power cable) and connectors from the Tesira amplifier.
    b. Move the device to an ESD-work area with a grounded, anti-static mat.
    c. Properly ground yourself using an ESD wrist strap.
    d. Remove the six screws that secure the cover to the chassis.

14. To remove and replace an I/O card, do the steps that follow:
    a. Remove the two screws at each corner of the card that secure it to the main board.
    b. Carefully lift up and push the card away from the chassis.
    c. Place the removed card in an ESD-safe/ant-static bag. Use the bag a new card was packaged in after removal, if desired.
    d. See previous section on card order and insert the new card into the appropriate slot.
        i. Apply gentle downward pressure until the card fully seats.
    e. Secure the I/O card onto the main board using the previously-removed screws.

15. Install the top cover:
    a. Put the cover in place on the chassis and align the screw holes.
    b. Install the six screws that secure the cover to the chassis.

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Warranty

https://www.biamp.com/legal/warranty-information

Safety and Compliance

www.biamp.com/compliance

Please contact support for factory service or visit the website to locate your nearest Authorized Field Service Station. You must obtain a Return Authorization (R/A) number prior to the return of your product for factory service.