



WSG-HD Waves SoundGrid Option Card Installation

The WSG-HD Waves SoundGrid Option Card for VENUE | E6LX and E6L engines lets you integrate Waves SoundGrid with your Avid® VENUE | S6L system.

For information on supported Option cards, visit:

<https://www.avid.com/products/venue-s6l-system>

This guide shows how to install a WSG-HD Waves SoundGrid Option Card into E6LX and E6L engines.



Images shown in this guide (such as cable colors or hardware configuration) may not exactly match your system.

Required Materials

Included:

- 1x WSG-HD Card
- 1x 6-inch Ethernet cable, for internally connecting cards
- 1x replacement Back Bracket (for E6L only)
- 1x replacement Option Card Bracket (for E6L only)
- 1x NETWORK slot (double-wide) faceplate for E6L112 or E6L 192/144 running VENUE 8.0 or higher

Not Included (must be acquired separately):

- Phillips #2 screwdriver (not included), 12-inch recommended
- Anti-Static wrist strap (not included)
- Foam or other soft surface to place the card on
- Table or other flat work surface strong enough to support the E6L Engine Core

How to Proceed

Refer to the section appropriate for your model of engine:

E6LX

- See [E6LX WSG-HD Waves SoundGrid Option Card Installation](#).

E6L

- See [E6L WSG-HD Waves SoundGrid Option Card Installation](#).



E6LX WSG-HD Waves SoundGrid Option Card Installation

The WSG-HD Waves SoundGrid Option Card for the VENUE | E6LX engine lets you integrate Waves SoundGrid with your Avid® VENUE | S6L system.

This section shows how to install a WSG-HD card into E6LX.

 *Images shown in this guide (such as cable colors or hardware configuration) may not exactly match your E6LX.*

Required Materials

Included:

- 1x WSG-HD Card
- 1x 6-inch Ethernet cable, for internally connecting cards
- 1x Option Card Rear Bracket (included with E6LX engines)

 *The WSG-HD card includes an original Option Card Rear Bracket (with a blue captive thumbscrew). E6LX engines include newer Rear Brackets (with black captive thumbscrews). Either Option Card Rear Bracket can be used when installing a WSG-HD card into an E6LX engine.*

- 1x replacement Back Bracket (not needed for E6LX)
- 1x replacement Option Card Bracket (not needed for E6LX)
- 1x replacement faceplate for E6L-112 (not needed for E6LX)

Not Included (must be acquired separately):

- Phillips #2 screwdriver (not included), 12-inch recommended
- Anti-Static wrist strap (not included)
- Foam or other soft surface to place the card on
- Table or other flat work surface strong enough to support the E6LX Engine Core

Installing a WSG-HD Card

Installing a WSG-HD Waves SoundGrid Option card in E6LX consists of the following steps:

- Removing the E6LX engine core
- Installing the card
- Replacing hardware
- Confirming Installation

Removing the E6LX Engine Core

E6LX Option cards are installed in the E6LX engine core, which slides out of the E6LX chassis.

To remove the E6LX engine core:

- 1 Put on your anti-static wrist band and configure according to its instructions.
- 2 Shut down your system, and disconnect any cables connected to your E6LX engine.
- 3 Place your E6LX on a table or other flat surface that provides enough room for the E6LX engine core to be removed comfortably. Make sure your surface is clear of any debris.
- 4 On the back of the E6LX, loosen the two screws that secure the core to the engine chassis using a Phillips screwdriver.

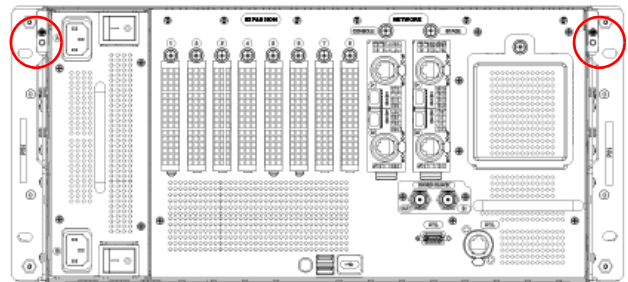


Figure 1. Screws to loosen on the back of the E6LX

- 5 Using the handle, slowly slide the core out of the E6LX chassis completely and place it on your work surface.

 **Caution:** The core is heavy!

Installing the Card

The E6LX engine core has eight half-length PCIe slots for Option cards. When standing at the back of the E6LX engine, Expansion slots 1–8 are arranged left-to-right as shown in Figure 2.

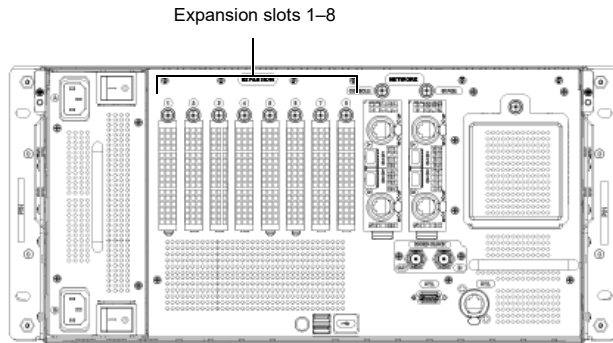


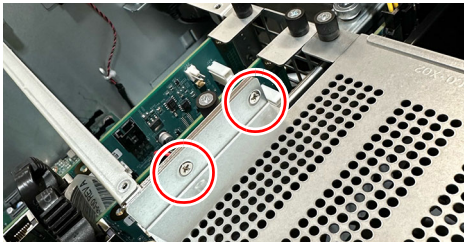
Figure 2. E6LX Expansion card slots 1–8

You can install one WSG-HD card into an E6LX engine. The WSG-HD card must be installed in **EXPANSION** slot 8 (only).

Before installing cards you must first remove the card retaining bracket.

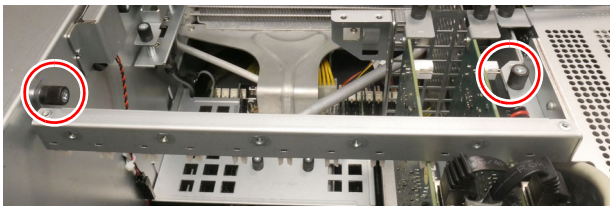
To remove the card retaining bracket:

- 1 Looking inside the core and locate the E6LX card retaining bracket.
- 2 On the right side of the card retaining bracket, locate and remove the two Phillips screws that help secure the bracket to the core. Set them aside (you will re-install them after installing cards).



Screws to remove from card retaining bracket

- 3 Locate the two thumbscrews that secure the bracket above the Expansion slots and loosen them completely.



E6LX card bracket (shown retaining multiple cards)

- 4 Carefully remove the bracket and set it aside.

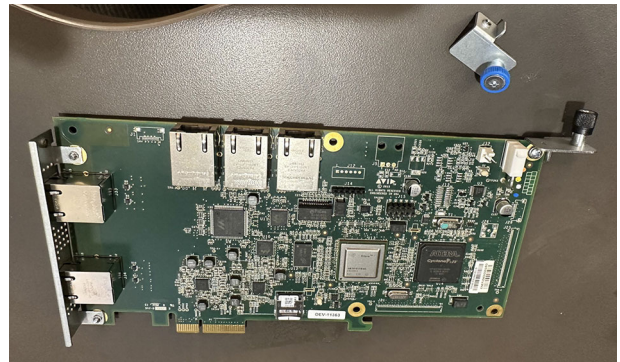
To install a WSG-HD card:

- 1 Locate Expansion slot 8 and loosen the thumbscrew to remove the blank faceplate. The faceplate can be recycled or discarded.



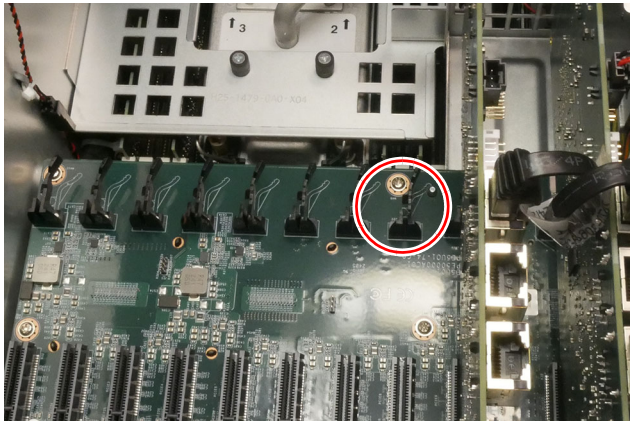
Slot 8 faceplate removed

- 2 Remove the WSG-HD card from its packaging and place it on your padded surface. Be careful to handle the card by its edges only.
- 3 Before proceeding, make sure there is a Rear Bracket with captive thumbscrew installed on the card. If one is not present, install one onto the card using its included mounting fastener. Rear Brackets are included with the WSG-HD card, and newer card brackets are included with the E6LX engine (either model Rear Bracket can be used).



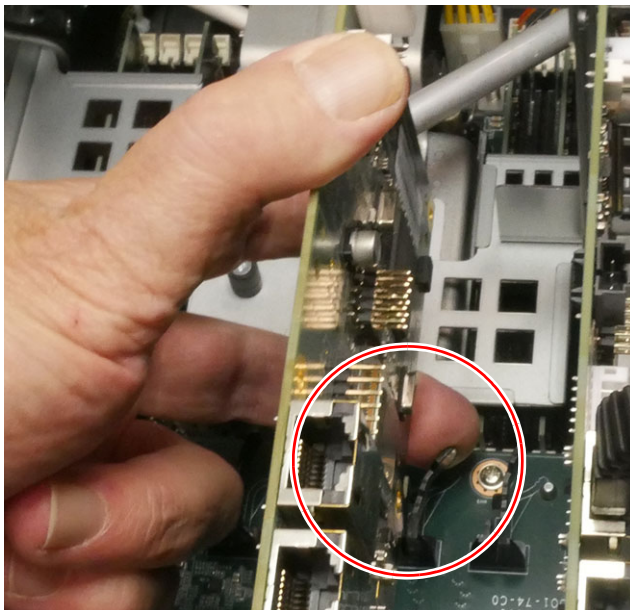
WSG-HD card with Rear Bracket installed (newer E6LX bracket shown installed on the card, with older bracket shown above)

- 4 Locate the card retaining clip for slot 8. You will need to open this clip before the card will fully seat into its PCIe connectors.



Card retaining clip for slot 7

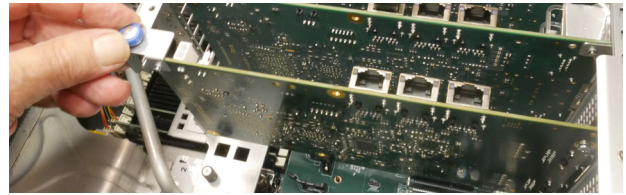
- 5 Align the WSG-HD card's PCIe connectors with the corresponding slot 8 PCIe expansion slot.
- 6 Use one hand to bring the card into position and to push open the card retaining clip, then use your other hand to open the card retaining clip at the lower rear of the card.



Example of opening a card retaining clip

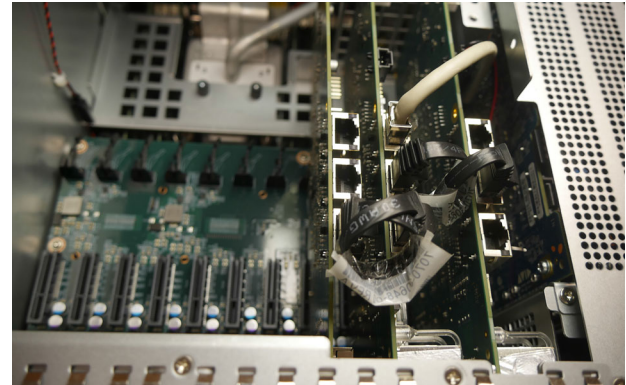
- 7 Firmly press the card into the PCIe slot. Make sure the card is fully seated in the PCIe slot and that the retaining clip clicks into position.
- 8 From the back of the core, make sure the faceplate of the card is correctly aligned with the open slot and then secure the card to the core by tightening the captive thumbscrew.

- 9 Secure the rear of the card by tightening the card Rear Bracket thumbscrew to the core frame.



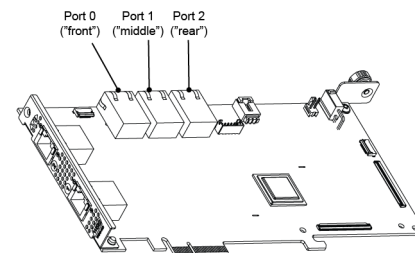
Securing the card Rear Bracket (original Rear Bracket shown)

- 10 Using the included Ethernet jumper cable, connect port 0 of the CONSOLE AVB-192 to the port 0 on the WSG-HD card.



WSG-HD card correctly jumpered to CONSOLE AVB-192 card

Card ports are numbered as follows:



Port numbers

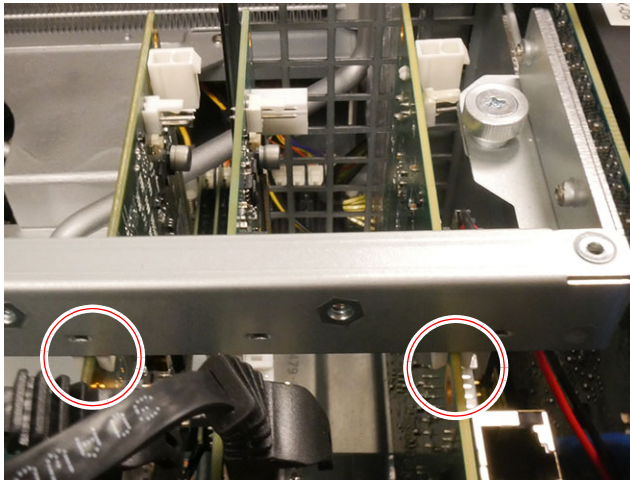
- 11 If the E6LX engine already has one or more MLN-192 Milan Option cards, make sure all cards are internally cabled as shown in [E6LX Multi-Card Cabling Reference](#).
- 12 Proceed to [Replacing E6LX Hardware](#).

Replacing E6LX Hardware

After installing the card, replace the retaining bracket and put the core back into the E6LX chassis.

To replace E6L hardware:

- 1 Re-install the card retention bracket across the top of the cards. The bracket has card guide slots on its underside; make sure each Option card, as well as all network cards, are aligned with these guide slots. Also, make sure no wires are pinched by the bracket, such as the red and black power cable connected to the primary network card.



Card retaining bracket correctly positioned

- 2 Tighten the captive thumbscrews securing the bracket to the E6LX engine core, and reinstall the two additional Phillips screws to the side of the bracket.
- 3 Slide the core back into the E6LX chassis, making sure the connectors face outward. To allow the core to slide back into the chassis, pull the two small blue tabs toward you.



Blue tab (right side shown)

- 4 Continue sliding the core into the chassis until it is fully seated, and the core back panel is flush with the back of the chassis.
- 5 Tighten the two thumbscrews to secure the core to the chassis.

Removing an Option Card

If you ever need to remove a WSG-HD card from an Option card slot, do the following:

- Remove the E6LX Engine core.
- Remove the card retaining bracket.
- Completely loosen the captive thumbscrew that secures the faceplate of the card to the back panel of the E6LX core.
- Completely loosen the captive thumbscrew that secures the rear of the card to the core frame.
- To remove an Option card, release its retaining clip using one finger then use your other hand to pull the card out of its PCIe slot and carefully lift the card out of the core.

Confirming Installation

After installing WSG-HD, confirm that you successfully installed the card.

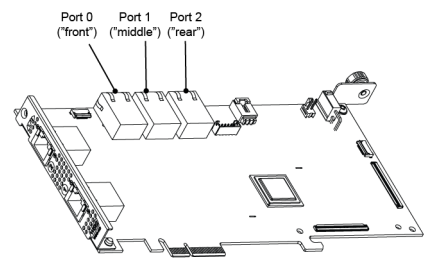
To confirm installation:

- 1 Connect power to the E6LX, and connect an audio network cable from your S6L control surface to E6LX.
- 2 Power on your S6L and E6LX.
- 3 Go to the Options > Devices page. Your newly installed WSG-HD card should appear in the appropriate slot in the Expansion Cards column.

For software installation and firmware update instructions see the *SoundGrid for VENUE Systems.pdf* from Waves.com. For more information on configuring and using the WSG-HD Card to integrate Waves SoundGrid with your VENUE S6L system, see the *VENUE S6L System Guide*.

E6LX Multi-Card Cabling Reference

When multiple cards are installed in E6LX, make sure they are internally cabled as shown in the following images and diagrams. Card ports are numbered as follows:



Port numbers

1x WSG-HD and 1x MLN-192

with 1x MLN-192 AND WSG-HD		EXPANSION								CONSOLE STAGE	
 	1	2	3	4	5	6	7	8			
							2	2	2	2	Rear
							1	1	1	1	Mid
							0	0	0	0	Front
						MLN-192 #1		WSG-HD			

Cabling for 1 WSG-HD card in slot 8, with 1 MLN-192 card in slot 7

1x WSG-HD and 2x MLN-192

with 2x MLN-192 AND WSG-HD		EXPANSION								CONSOLE STAGE	
  	1	2	3	4	5	6	7	8			
						2	2	2	2	2	Rear
						1	1	1	1	1	Mid
						0	0	0	0	0	Front
						MLN-192 #1	MLN-192 #2	WSG-HD			

Cabling for 1 WSG-HD card in slot 8, with 2 MLN-192 cards in slots 6 and 7



E6L WSG-HD Waves SoundGrid Option Card Installation

The WSG-HD Waves SoundGrid Option Card for the VENUE | E6L engine lets you integrate Waves SoundGrid with your Avid® VENUE | S6L system.

Installing an Option card in E6L-192 or E6L-144 consists of the following steps:

- Acquiring the required materials
- Removing the E6L engine core
- Removing AVB-192 Network Cards
- Replacing the Back Bracket and Option Card Bracket
- Installing the WSG-HD Card
- Re-installing AVB-192 Network Cards and connecting internal jumper cables
- Replacing hardware
- Confirming Installation

E6L-112 supports a maximum of 2 Option cards, and installation varies slightly from the steps listed above, as noted throughout this guide.

 Images shown in this guide (such as cable colors or hardware configuration) may not exactly match your E6L.

Required Materials

Included:

- 1x WSG-HD Card
- 1x 6-inch Ethernet cable, for internally connecting cards
- 1x replacement Back Bracket
- 1x replacement Option Card Bracket
- 1x NETWORK slot (double-wide) faceplate for E6L112 or E6L 192/144 running VENUE 8.0 or higher

Not Included (must be acquired separately):

- Phillips #2 screwdriver (not included), 12-inch recommended
- Anti-Static wrist strap (not included)
- Foam or other soft surface to place the card on
- Table or other flat work surface strong enough to support the E6L Engine Core

Removing the E6L Engine Core

WSG-HD cards are installed in the E6L engine core, which slides out of the E6L chassis.

To remove the E6L engine core

- 1 Put on your anti-static wrist band and configure it according to its instructions.
- 2 Shut down your system, and disconnect any cables connected to your E6L engine.
- 3 Place your E6L on a table or other flat surface that provides enough room for the E6L engine core to be removed comfortably. Make sure your surface is clear of any debris.

 If your E6L engine is installed in a rack and there is enough room inside the rack to access the inside of the core, instead of completely removing the core you can slide it out until it catches, and then proceed with installation.

- 4 On the back of the E6L, loosen the four thumbscrews that secure the core to the engine chassis.

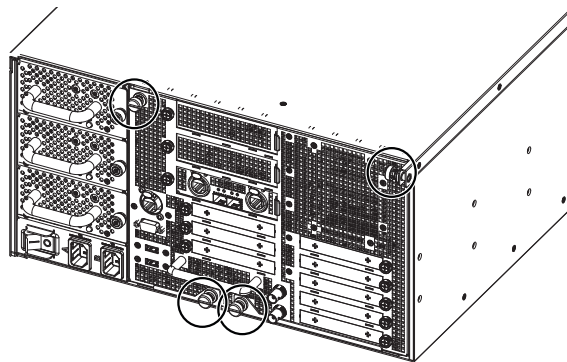


Figure 3. Four thumbscrews on the back of the E6L

- 5 Simultaneously pull the two bottom thumbscrews outward so the latches they are attached to are fully extended, as shown in Figure 4.

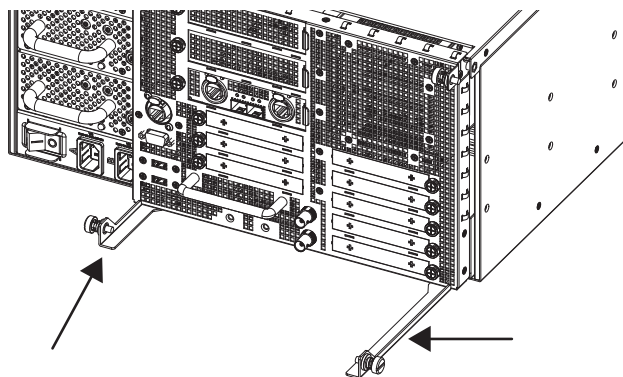


Figure 4. Latches fully extended

- 6 Using the handle, slowly slide the core partially out, locate the interior catch on the right side of the tray, and press it to release the core from the chassis.

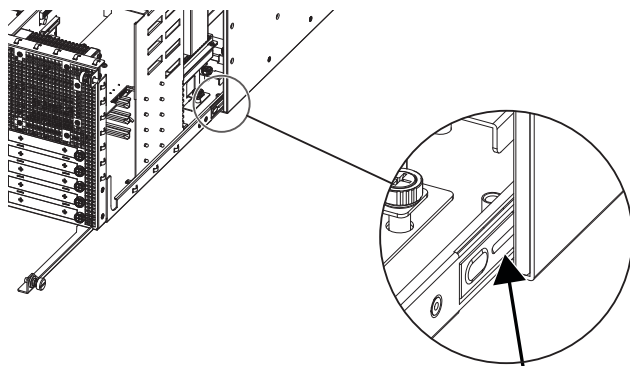


Figure 5. Location of the interior catch

- 7 Slowly slide the core out of the E6L chassis completely, and place it on your work surface.

⚠ The core will not slide out of the E6L chassis until the latches are fully extended and the catch has been released.

Remove AVB-192 Network Cards

E6L-192 and E6L-144 Only

Before installing a WSG-HD Card in an E6L-192 or E6L-144, both AVB-192 Network Cards must be temporarily removed.

If you are installing into an E6L-112, skip to [Installing WSG-HD into NETWORK Slot 3 \(Required for E6L-112, Optional for E6L-192/144\)](#).

To remove AVB-192 Network Cards:

- 1 On systems with two AVB-192 Network Cards, disconnect the short Ethernet cable that connects the upper AVB-192 Network Card (slot 2/middle) to the lower AVB-192 Network Card (slot 1/lower). Set the cable aside (you will re-install it later).
- 2 Disconnect all cables connected to the AVB-192 Network card in slot 1/Master.
 - Disconnect the small power cable assembly at left from its connector on the AVB-192 card. Use your thumb to depress the catch, then pull to disconnect the cable.
 - Disconnect the Ethernet cable that connects the E6L to the AVB-192 card.

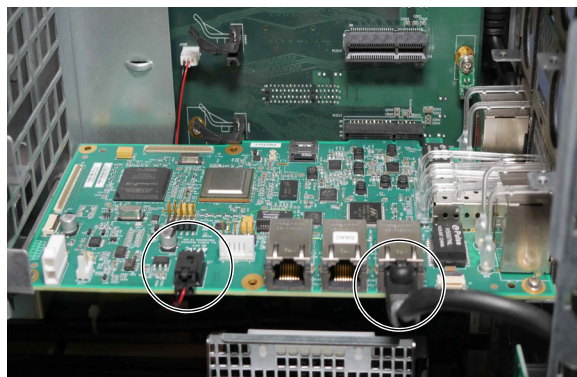


Figure 6. AVB-192 cables to disconnect (Master AVB-192 shown)

- 3 With all cables removed, loosen the exterior captive thumbscrew that secures the faceplate of the Network card to the E6L. (On systems with two AVB-192 Network Cards, start with the “top” card (in slot 2)).



Figure 7. Loosening the exterior thumbscrew

- 4 Using a #2 Phillips screwdriver, loosen the rear bracket captive thumbscrew that secures the back of the AVB-192 Network card to the chassis.

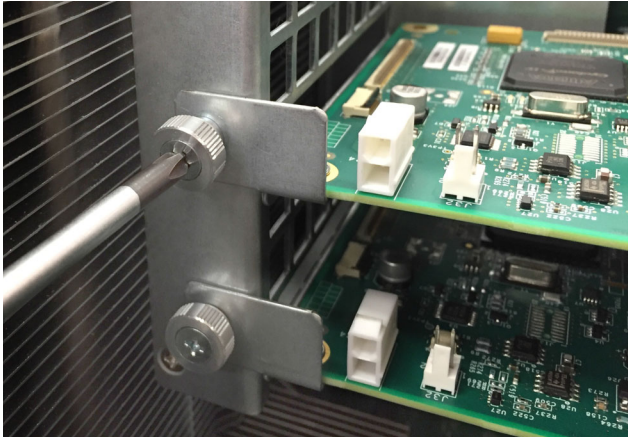


Figure 8. Loosening a rear bracket thumbscrew

- 5 Release the AVB-192 card from its PCIe slots by doing the following (when two AVB-192 cards are present, start with the upper card):
 - With one hand, lift the tab on the retaining clip to release the card from its clip.
 - With your other hand, pull the card out of its PCIe port.

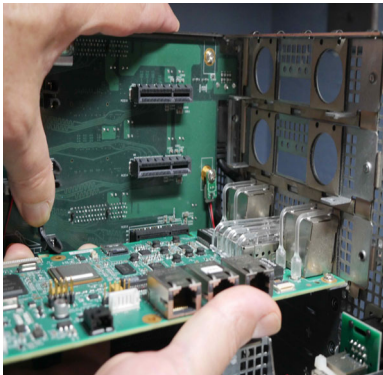


Figure 9. Lifting the tab using a thumb and disconnecting the AVB-192 card from its PCIe slot

- 6 Slowly lift the back of the card upwards along the bracket (you might need to use your other hand to pull the bracket back slightly so the card can clear its guide slots).

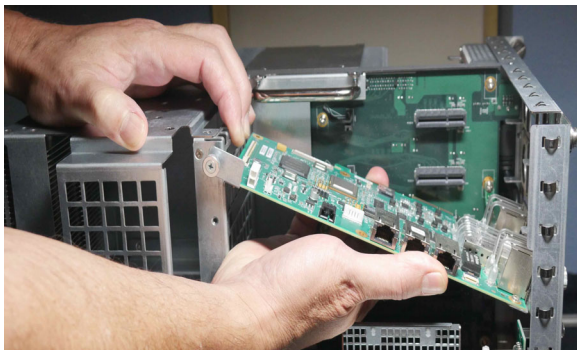


Figure 10. Removing an AVB-192 card

- 7 Carefully remove the card from the core and set it aside.
- 8 On systems with two AVB-192 Network Cards, repeat the previous steps for the lower AVB card.

Replace the Back Bracket and Remove the Option Card Bracket

The WSG-HD Card package includes one Back Bracket and one Option Card Bracket.

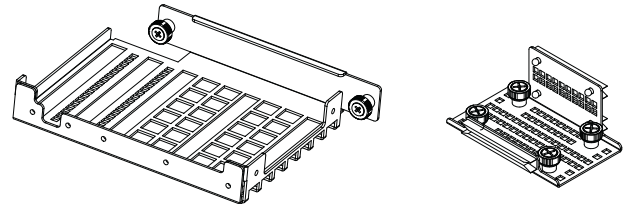


Figure 11. Back Bracket (left) and Option Card Bracket (right)

Back Bracket Not all E6L Engines will require the new Back Bracket.

- If your E6L-192 or E6L-144 Engine Core has the original Back Bracket (shown below), you must replace the old bracket with the included new Back Bracket. Note that the original bracket has only three receivers for card-retaining thumbscrews, while the new bracket has five.

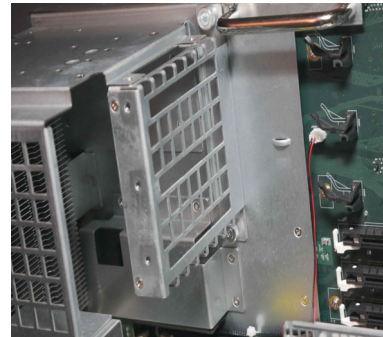


Figure 12. Original back bracket

- If your E6L Engine Core already has the newer Back Bracket, and/or you are installing the WSG-HD card into NETWORK slot 3, skip to [Installing WSG-HD into NETWORK Slot 3 \(Required for E6L-112, Optional for E6L-192/144\)](#).

Option Card Bracket Not all E6L Engines will require the new Option Card Bracket.

- If you are installing the WSG-HD card into an older E6L-192 or E6L-144 Engine, you must replace the original Option Card Bracket with the new Option Card Bracket included with the WSG-HD Card.
- If you are installing the WSG-HD card into an E6L-112, you do not need to install the new Option Card Bracket.

Replace the Back Bracket

To remove the old bracket:

- 1 Make sure you have removed all AVB-192 Network Cards as instructed previously.
- 2 Using a #2 Phillips screwdriver, remove the two fasteners from the top of the back bracket. Set the fasteners aside (you will use them to secure the new bracket).

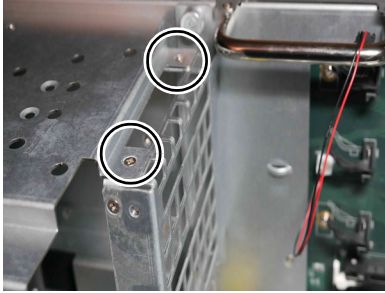


Figure 13. Top fasteners to remove from the original back bracket

- 3 Using a #2 Phillips screwdriver, loosen the two captive thumbscrews that secure the back bracket to the interior wall of the engine core.

Before loosening the second thumbscrew be sure to hold onto the bracket with your other hand to prevent it from falling onto other components.

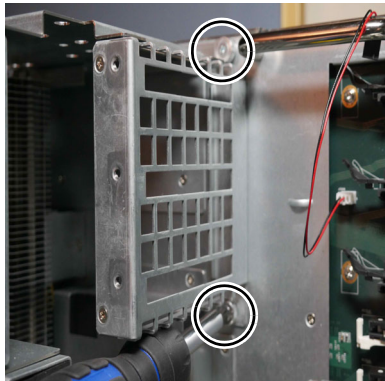


Figure 14. Removing back bracket captive thumbscrews

- 4 Remove the old bracket (it can be discarded).

To install the new back bracket:

- 1 Orient the bracket in position as shown, making sure its upper tabs are under the upper tabs on the chassis. Use your fingers to start the upper captive thumbscrew, enough to hold the new bracket in place.

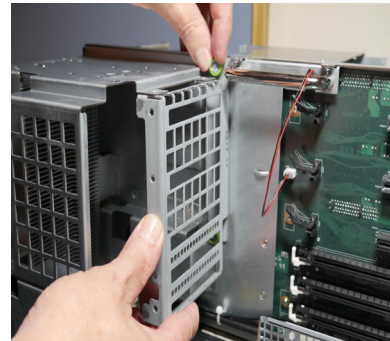


Figure 15. Positioning the new back bracket

- 2 Using a #2 Phillips screwdriver, align and insert the two captive thumbscrews on the back bracket into their threaded receivers on the inner wall of the core.

For the lower thumbscrew, a 12-inch long #2 Phillips screwdriver is recommended.

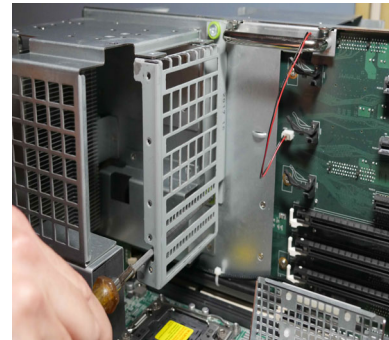


Figure 16. Securing the new back bracket

- 3 Replace the two screws to secure the top of the new bracket to the tabs on the chassis.

Replace the Option Card Bracket

To replace the option card bracket:

- 1 Using a #2 Phillips screwdriver, loosen the two captive thumbscrews that secure the bracket to the chassis.

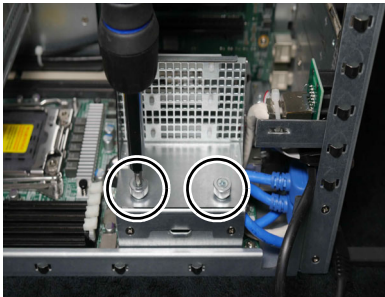


Figure 17. Removing the original Option Card bracket

- 2 Remove the old bracket and set it aside (it can be discarded).
- 3 Position the new bracket as shown, with its two slots facing inward and its single slot facing outward, and align its captive thumbscrews with their threaded receivers on the chassis. (The new Option Card bracket is reversible to allow for future E6L option card development.)

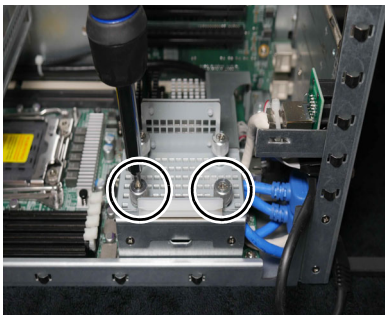


Figure 18. Installing the new Option Card bracket

- 4 Using a #2 Phillips screwdriver, tighten the thumbscrews to secure the new bracket.

Install the WSG-HD Card

WSG-HD Card installation differs depending on the type of E6L engine. Follow the instructions in the section appropriate for your E6L engine:

- **Installing WSG-HD into EXPANSION slot 6 (E6L-192 and E6L-144 only)**
- **Installing WSG-HD into NETWORK Slot 3 (Required for E6L-112, Optional for E6L-192/144)**

Installing WSG-HD into EXPANSION slot 6 (E6L-192 and E6L-144 only)

The E6L-192 and E6L-144 engine core has eight half-length PCIe slots for Option cards. When standing at the back of the E6L engine, **EXPANSION** slots 1–5 are at the lower right and slots 6–8 are in the middle (below the AVB slots) as shown in Figure 19.

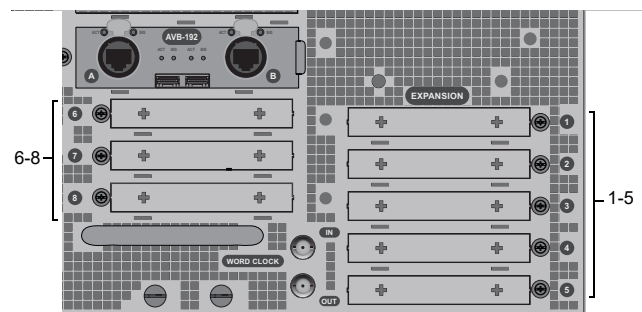


Figure 19. E6L Expansion slots 1–5 (lower right) and 6–8 (upper left)

When installing a WSG-HD card into E6L-192 and E6L-144 when there are no MLN-192 card(s), the WSG-HD Card *must* be installed in **EXPANSION slot 6**. See [Installing WSG-HD into Slot 6](#).

When one or more MLN-192 cards are installed, the WSG-HD card can be installed in slot 6 *or* in **NETWORK 3**

Before you start installing any Option cards, refer to [Slot and Jumper Cable Guidelines for Option Cards in E6L Engines](#) and follow the diagrams found there for slot and jumper cable requirements.

Installing WSG-HD into Slot 6

To install a WSG-HD Card in slot 6:

- 1 Remove the faceplate from slot 6 by loosening its captive thumbscrew and then pulling it out of the slot.

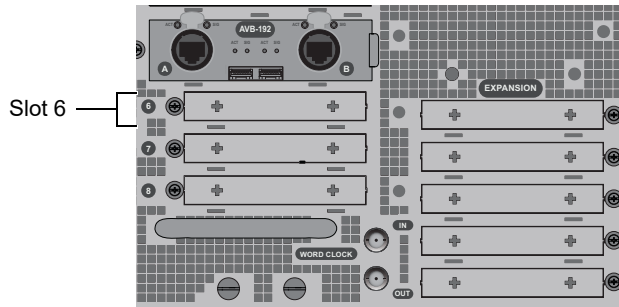


Figure 20. Slot 6 for WSG-HD Card

- 2 Remove the WSG-HD Card from its packaging and hold it by its edges.

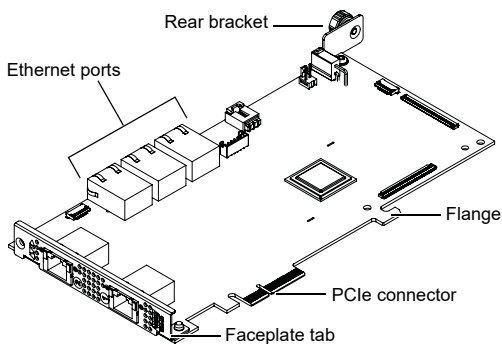


Figure 21. WSG-HD Card

- 3 Inside the unit, place the face of the card into position in slot 6, with the back of the card tilting upwards.

⚠ Before inserting the card, make sure the red and black AVB-192 power cable is above the card and out of the way.

Using two hands, hold the front of the card in place in the slot with one hand, and slowly move the back of the card downwards along the back bracket until the card is horizontal.

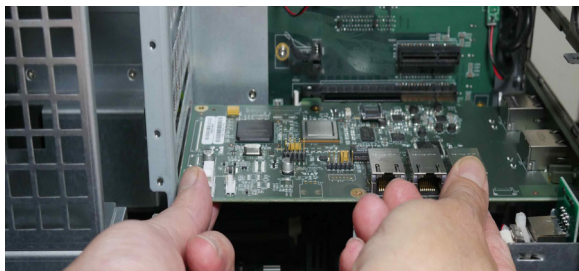


Figure 22. Guiding the WSG-HD Card into position

- 4 From the back of the core, make sure the faceplate of the Option card is correctly aligned with the open slot cover.

- 5 Align the PCIe connector on the card with the corresponding PCIe port, and align the flange on the card with the retaining clip on the PC board.
 - 6 Applying pressure along the full length of the card, press it firmly into the PCIe port and clip.
- When fully seated, the retaining clip moves into its closed position.

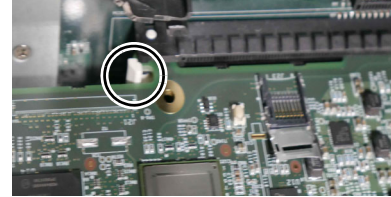


Figure 23. Retaining clip closed, when card is fully seated

- 7 When the card is properly seated in the slot, tighten the exterior captive thumbscrew to secure the faceplate of the card to the back panel of the E6L.
- 8 Tighten the rear bracket captive thumbscrew to secure the back of the card to the back bracket.



Figure 24. Securing the card to the back bracket

Later, after you have re-installed the AVB-192 Network Card(s) you will connect the WSG-HD Card.

- 9 Proceed to “Re-Install the AVB-192 Cards” on page 14.

Installing WSG-HD into NETWORK Slot 3 (Required for E6L-112, Optional for E6L-192/144)

If you are installing a WSG-HD card into an E6L-112, the WSG-HD card must be installed in AVB **NETWORK** slot 3.

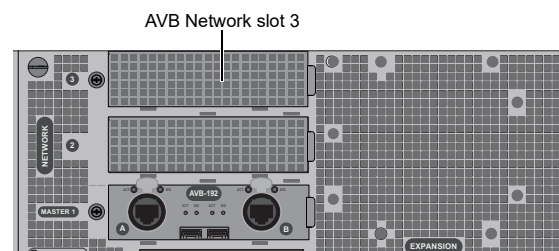


Figure 25. E6L AVB Network slot 3 (top)

Before you start installing any Option cards, refer to [Slot and Jumper Cable Guidelines for Option Cards in E6L Engines](#) and follow the diagrams found there for slot and jumper cable requirements.

The E6L-112 compatible faceplate, included with the WSG-HD card, must be installed before installing an Option card in AVB NETWORK slot 3.

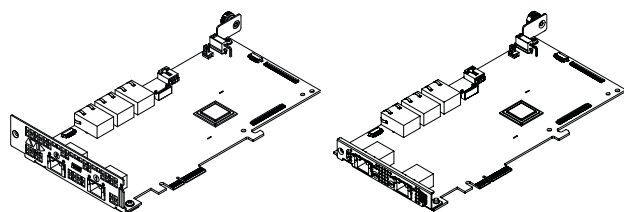


Figure 26. WSG-HD card with NETWORK slot-compatible (double-wide) faceplate (shown at left) and E6L-192/144 compatible faceplate (single-wide, shown at right)

To install the faceplate for NETWORK slot 3:

- 1 Place the WSG-HD card on your padded work-surface face-down.

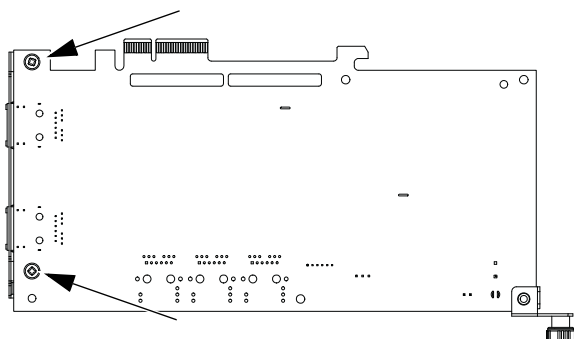


Figure 27. Underside of WSG-HD card showing fasteners to remove to replace faceplate

- 2 Using a #2 Phillips screwdriver, remove the two screws that secure the faceplate to the card. Keep the screws nearby to use to secure the new faceplate.
- 3 Remove the faceplate and set it aside.



Keep the faceplate in case you want to move this card into an Option card slot in the future.

- 4 Turn the WSG-HD card over so it is face-up.
- 5 Take the new E6L-112-compatible AVB Network faceplate and place it against the WSG-HD card. Make sure it is oriented correctly and that its mounting tabs sit *below* the card.



This is different from how the Option slot faceplate is attached to the card; tabs on the AVB Network faceplate sit below the card and are secured from above, while those on the Option faceplate sit above the card and are secured from below.

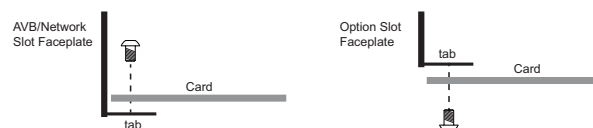


Figure 28. Orientation of faceplate, card, and fasteners for AVB Network slot 3 (shown at left) and Option card slots (at right)

- 6 Using the two screws you removed earlier, secure the faceplate to the card from the top.

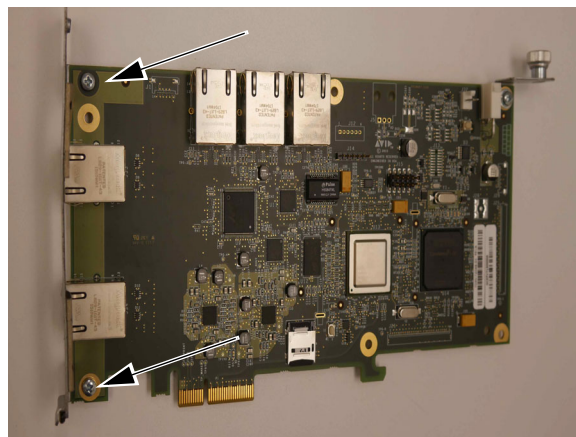


Figure 29. Top view showing fasteners to secure an E6L-112 compatible faceplate to a WSG-HD card

To install the WSG-HD card into AVB Network slot 3:

- 1 Hold the card by its edges.
- 2 Inside the unit, place the face of the card into position in the slot, with the back of the card tilting upwards.
- 3 Using two hands, hold the front of the card in place in the slot with one hand, and slowly move the back of the card downwards along the sheet metal until the card is horizontal.
- 4 Once the card is horizontal, make sure the tab on the right side of the faceplate is outside of the E6L chassis slot.
- 5 Align the PCIe connector on the card with the corresponding PCIe port, and align the flange on the card with the retaining clip on the PC board.
- 6 Lift the tab on the retaining clip, and then press the card firmly into the PCIe port and clip.

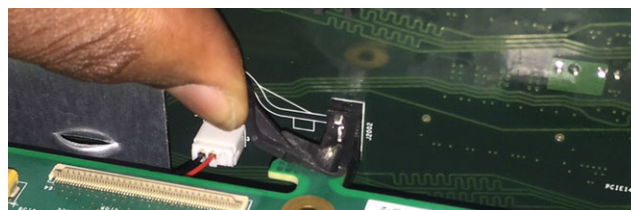


Figure 30. Lifting the tab on the retaining clip

- 7 When the card is properly seated in the slot, tighten the exterior captive thumbscrew to secure the faceplate of the card to the back panel of the E6L.

- 8 Tighten the rear bracket captive thumbscrew to secure the back of the WSG-HD card to the back bracket.

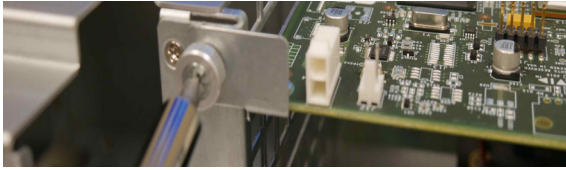


Figure 31. Securing the card to the back bracket

- 9 Using the included Ethernet jumper cable, connect the card as shown the diagram appropriate for your configuration (see [Slot and Jumper Cable Guidelines for Option Cards in E6L Engines](#)).

- 10 Proceed to [Re-install the E6L Engine Core](#).

Additional Information

If you ever want to remove the WSG-HD card from the E6L-112 and install it into Option card slot 6 of an E6L-192 or E6L-144, be sure to re-install the original Option slot faceplate.

Re-Install the AVB-192 Cards

E6L-192 and E6L-144 Only

After installing a WSG-HD card into an E6L-192 or E6L-144, re-install AVB-192 Network Card(s) in the following sequence:

- Master 1 (lowest) slot
- Slot 2 (if re-installing a second AVB-192 Network Card)

To re-install the Master AVB-192 card:

- 1 Making sure the red and black power cable is safely clear (above the card), place the face of the card into position in its slot (the lowest slot 1/Master AVB slot) with the back of the card tilting upwards.
- 2 Slowly move the back of the card downwards along the sheet metal until the card is horizontal.

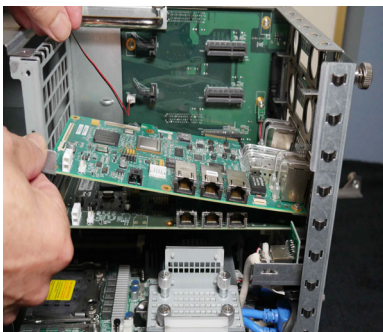


Figure 32. Lowering the AVB-192 card into position while keeping the power cable clear

- 3 Once the card is horizontal, make sure the tab on the faceplate of the Network card is positioned on the outside of the slot.

- 4 Align the PCIe connector on the card with the corresponding PCIe port, and align the flange on the card with the retaining clip on the PC board.
- 5 Lift the tab on the retaining clip and press the card firmly into the PCIe port and clip.

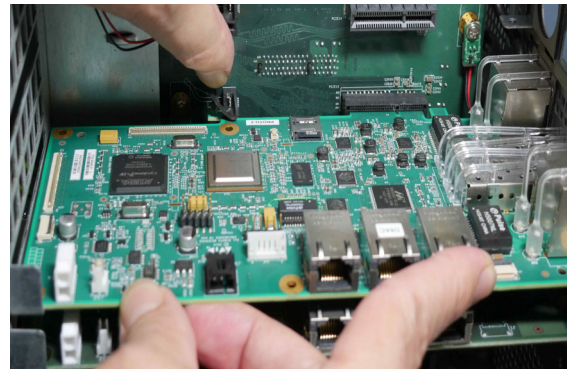


Figure 33. Inserting the AVB-192 card into its PCIe port

- 6 When the card is properly seated in the slot, tighten the exterior captive thumbscrew to secure the faceplate of the card to the back panel of the E6L.
- 7 Tighten the rear bracket captive thumbscrew to secure the back of the card to the back bracket.

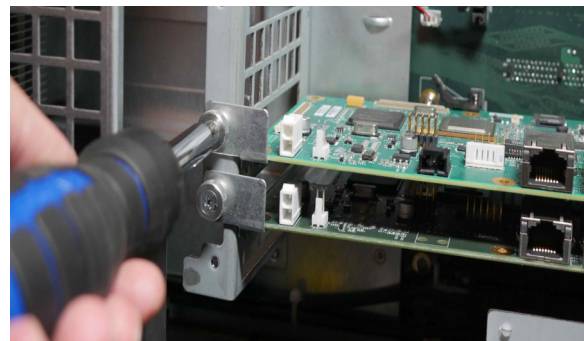


Figure 34. Securing the AVB-192 card to the back bracket

- 8 Re-connect the red and black power cable to the AVB-192 card.

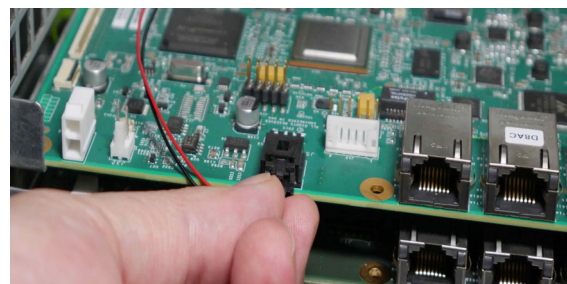


Figure 35. Re-connecting the Master AVB-192 power cable

- 9 See the next steps to re-install the second AVB-192 Network card.

To re-install the second AVB-192 Network card:

- 1 Inside the unit, place the face of the card into position in the slot, with the back of the card tilting upwards.

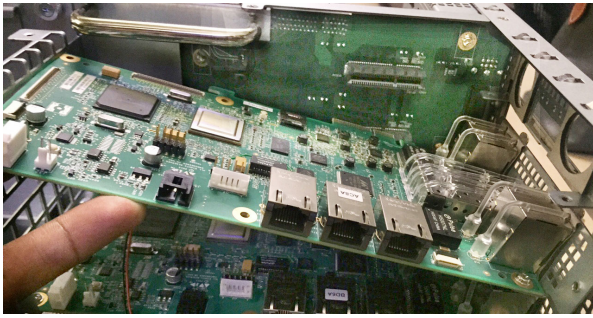


Figure 36. Placing the card into position inside the engine

- 2 Using two hands, hold the front of the card in place in the slot with one hand, and slowly move the back of the card downwards along the sheet metal until the card is horizontal.
- 3 Once the card is horizontal, make sure the tab on the faceplate of the Network card is positioned on the outside of the slot.



Figure 37. Proper position of the Network card faceplate tab

- 4 Align the PCIe connector on the card with the corresponding PCIe port, and align the flange on the card with the retaining clip on the PC board.

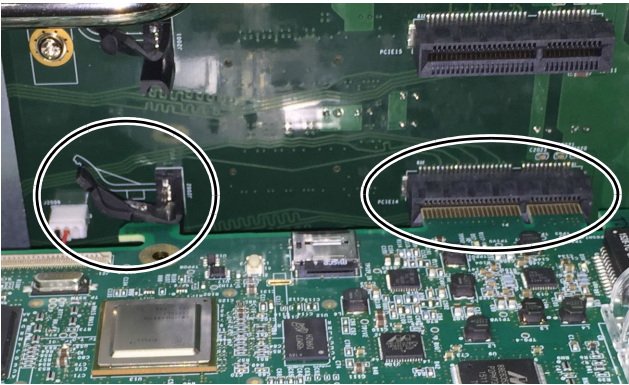


Figure 38. Aligning the and the PCIe connector to the port (right) and the card flange to the retaining clip (left)

- 5 Lift the tab on the retaining clip, and then apply pressure along the entire edge of the card to press it firmly into the PCIe port and clip.

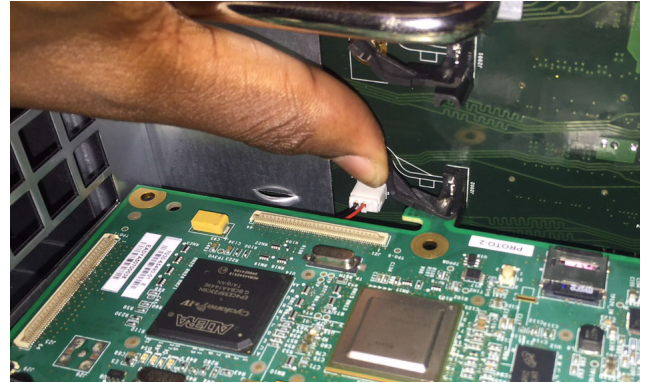


Figure 39. Lifting the tab on the retaining clip

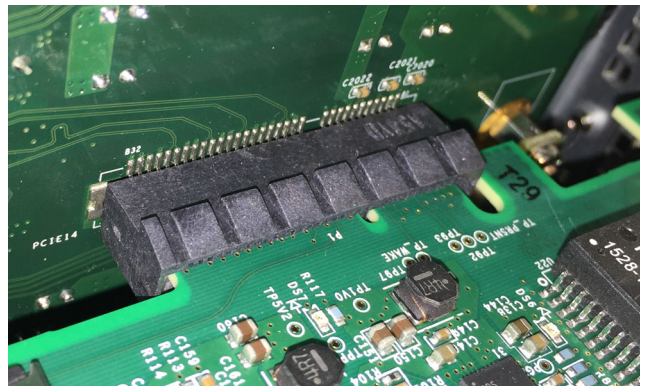


Figure 40. The Network card PCIe connector properly seated in the PCIe slot

- 6 Tighten the exterior captive thumbscrew to secure the faceplate of the Network card to the E6L.



Figure 41. Tightening the exterior thumbscrew

- 7 Tighten the rear bracket captive thumbscrew to secure the back of the card to the chassis.

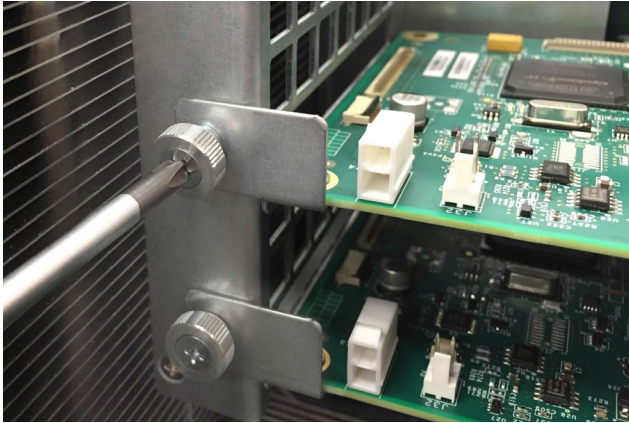


Figure 42. Tightening the rear bracket thumbscrew

- 8 Using the included Ethernet jumper cable, connect cards as shown the diagram appropriate for your configuration (see [Slot and Jumper Cable Guidelines for Option Cards in E6L Engines](#)).

 *Original factory cabling may vary. Follow the instructions in this guide to achieve the recommended cabling scheme.*

- 9 Proceed to [Re-install the E6L Engine Core](#).

Re-install the E6L Engine Core

- 1 Slide the core back into the E6L chassis, making sure the connectors face outward.

When the core is fully seated into the chassis, the two latches at the bottom of the chassis should be fully collapsed.

- 2 Tighten the four thumbscrews to secure the core to the chassis.

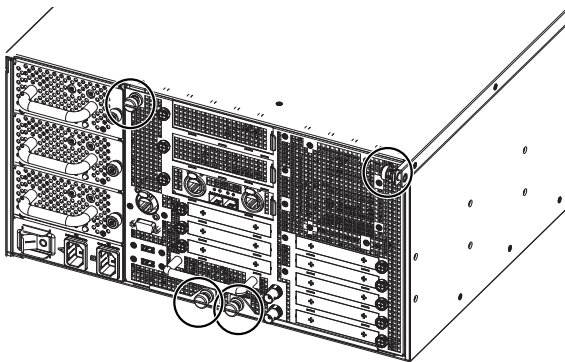


Figure 43. Four thumbscrews on the back of the E6L

- 3 Proceed to [Confirming Installation](#)

Confirming Installation

After installing the WSG-HD card, confirm that the installation was successful.

To confirm installation:

- 1 Connect power to the E6L engine, and connect audio network cables from the S6L control surface to the E6L engine (see the *VENUE S6L Installation Guide.pdf* for connection details).
- 2 Power on your control surface and engine, and if necessary pair the engine to the control surface.
- 3 Go to the Options > Devices page. Your newly installed WSG-HD card should appear in the appropriate slot in the Expansion Cards column.

If the newly installed WSG-HD card does not appear in the Options > Devices page, make sure VENUE 5.7 or higher is installed on your system.

- 4 For software installation and firmware update instructions see the *SoundGrid for VENUE Systems.pdf* from Waves.com.

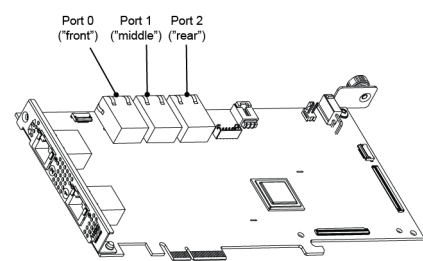
For more information on configuring and using the WSG-HD Card to integrate Waves SoundGrid with your VENUE S6L system, see the *VENUE S6L System Guide*.

Slot and Jumper Cable Guidelines for Option Cards in E6L Engines

The following diagrams show where Option cards can be installed, and how they must be connected internally using jumper cables:

- [E6L-192 and E6L-144 Slot and Jumper Cable Guidelines](#)
- [E6L-112 Slot and Jumper Cable Guidelines](#)

Card ports are numbered as follows:



Port numbers

E6L-192 and E6L-144 Slot and Jumper Cable Guidelines

Slot and cabling requirements vary depending on the type and number of Option cards being installed.

- [1x WSG-HD](#)
- [1x MLN-192](#)
- [2x MLN-192](#)
- [1x WSG-HD and 1x MLN-192](#)
- [1x WSG-HD and 2x MLN-192](#)

1x WSG-HD

Slot: EXPANSION slot 6

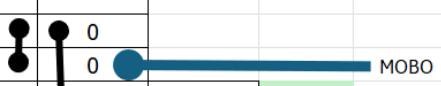
with 1x WSG-HD			Rear	Middle	Front			
	NETWORK	3						
	NETWORK	2	2	1	0			
	MASTER	1	2	1	0			
	EXPANSION	6	2	1	0	WSG-HD	1-5 n/a (MADI only)	MOBO
		7						
		8						

Slot and internal jumper cable connections for 1x WSG-HD in an E6L-192/144

1x MLN-192

Slot: EXPANSION slot 6

with 1x MLN-192			Rear	Middle	Front		
	NETWORK	3					
	NETWORK	2	2	1	0		
	MASTER	1	2	1	0		
	EXPANSION	6	2	1	0	MLN #1	1-5 n/a (MADI only)
		7					
		8					



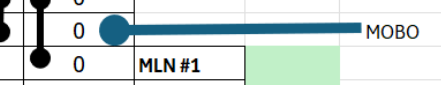
Slot and internal jumper cable connections for 1x MLN-192 in an E6L-192/144

2x MLN-192

Slots: EXPANSION slots 6 and 7

 2x MLN-192 cards requires VENUE 8.0 or later.

with 2x MLN-192			Rear	Middle	Front		
	NETWORK	3					
	NETWORK	2	2	1	0		
	MASTER	1	2	1	0		
	EXPANSION	6	2	1	0	MLN #1	1-5 n/a (MADI only)
		7	2	1	0	MLN #2	
		8					



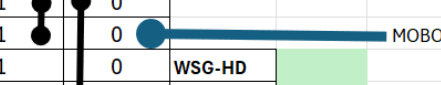
Slot and internal jumper cable connections for 2x MLN-192 cards in an E6L-192/144

1x WSG-HD and 1x MLN-192

When installing 1x WSG-HD and 1x MLN-192 in an E6L-192 or E6L-144, two slot positions are allowed to support existing (pre-VENUE 8.0) configurations in which the WSG-HD card was only supported in EXPANSION slot 6. Beginning with VENUE 8.0 the WSG-HD card can be installed in either EXPANSION slot 6 or NETWORK slot 3. Which slot you choose will depend on whether or not any MLN-192 card(s) are installed. Regardless of which slot scheme you choose, make sure to follow the jumper cable connections shown below.

WSG-HD in EXPANSION Slot 6, MLN-192 in EXPANSION Slot 7

with 1x MLN-192 AND WSG-HD			Rear	Middle	Front		
	NETWORK	3					
	NETWORK	2	2	1	0		
	MASTER	1	2	1	0		
	EXPANSION	6	2	1	0	WSG-HD	1-5 n/a (MADI only)
		7	2	1	0	MLN #1	
		8					



Slot and internal jumper cable connections for 1x WSG-HD in EXPANSION slot 6 and 1x MLN-192 card in EXPANSION slot 7 in an E6L-192/144

WSG-HD in NETWORK Slot 3, MLN-192 in EXPANSION Slot 6

This configuration leaves EXPANSION slot 7 available to add a second MLN-192 card.

with 1x MLN-192 AND WSG-HD				Rear	Middle	Front		
 	NETWORK	3		2	1	0	WSG-HD	
	NETWORK	2		2	1	0		
	MASTER	1		2	1	0		MOBO
EXPANSION		6		2	1	0	MLN #1	1-5 n/a (MADI only)
		7						
		8						

Slot and internal jumper cable connections for 1x WSG-HD in NETWORK slot 3 and 1x MLN-192 card in EXPANSION slot 6 in an E6L-192/144

1x WSG-HD and 2x MLN-192

Slots: WSG-HD in NETWORK slot 3, MLN-192 cards in EXPANSION slots 6 and 7

with 2x MLN-192 AND WSG-HD				Rear	Middle	Front		
  	NETWORK	3		2	1	0	WSG-HD	
	NETWORK	2		2	1	0		
	MASTER	1		2	1	0		MOBO
EXPANSION		6		2	1	0	MLN #1	1-5 n/a (MADI only)
		7		2	1	0	MLN #2	
		8						

Slot and internal jumper cable connections for 1x WSG-HD in NETWORK slot 3 and 1x MLN-192 card in EXPANSION slot 6 in an E6L-192/144

E6L-112 Slot and Jumper Cable Guidelines

E6L-112 engines support a maximum of two Option cards. WSG-HD (if any) *must* be installed in NETWORK slot 3. In addition:

- Only 1x MLN card is supported in E6L-112.
- The maximum of 2x Option cards include MADI-192 MADI Option cards, if any.

1x WSG-HD

Slot: NETWORK slot 3

with WSG-HD				Ports (L to R)			
	NETWORK	3		2	1	0	WSG-HD
	NETWORK	2		2	1	0	
	MASTER	1		2	1	0	
EXPANSION		6					
		7					
		8					

Slot and internal jumper cable connections for 1x WSG-HD in NETWORK slot 3 an E6L-112

1x MLN-192

Slot: NETWORK slot 3

		Ports (L to R)				
with 1x MLN-192 (in NETWORK slot 3)	NETWORK	3	2	1	0	MLN #1
	NETWORK	2	2	1	0	
	MASTER	1	2	1	0	
	EXPANSION	6				
		7				
		8				

Slot and internal jumper cable connections for 1x MLN-192 in NETWORK slot 3 an E6L-112

1x WSG-HD and 1x MLN-192

Slots: NETWORK slot 3 (WSG-HD) and EXPANSION slot 1 (MLN-192)

with 1x WSG-HD and MLN-192
(in NETWORK slot 3 and Exp. slot 1)

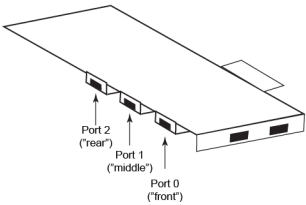


		Ports (L to R)									
NETWORK	3	2	1	0	WSG-HD						
NETWORK	2	2	1	0							
MASTER	1	2	1	0							
EXPANSION	6				MOBO	0	1	2	MLN #1	1	EXPANSION
	7									2	
	8									3	
										4	
										5	

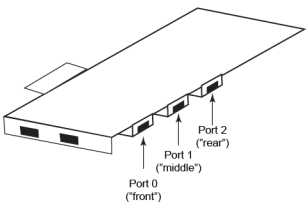
Slot and internal jumper cable connections for 1x WSG-HD in NETWORK slot 3 and 1x MLN-192 in EXPANSION slot 1 in an E6L-112

Note: In the above table, card port numbers are oriented as they appear when installing the cards into either side of the core.

E6L EXPANSION Slots and Ports Orientation
EXPANSION Slots 6-8



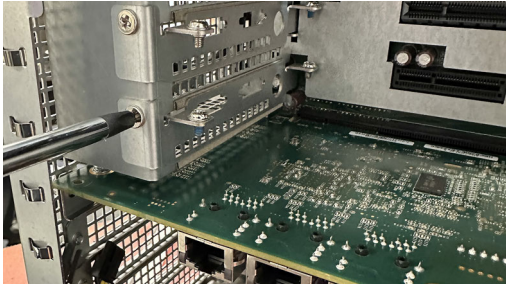
EXPANSION Slots 1-5



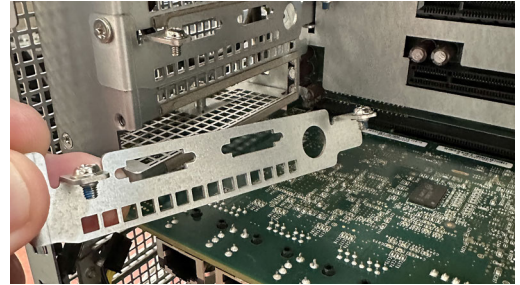
To connect the MLN-192 card port 0 to port 0 on the NETWORK 2 AVB card:

- 1 Remove the two AVB-192 cards. (See [Remove AVB-192 Network Cards.](#))
- 2 Use a longer (+/- 50cm) cable with suitable flexibility and with a very short “jacket” and low profile on the connection angle (such as the [L-Comm Super-Slim](#)). This type of cable is required in order to avoid obstructing the engine side panel when reinstalling the engine core

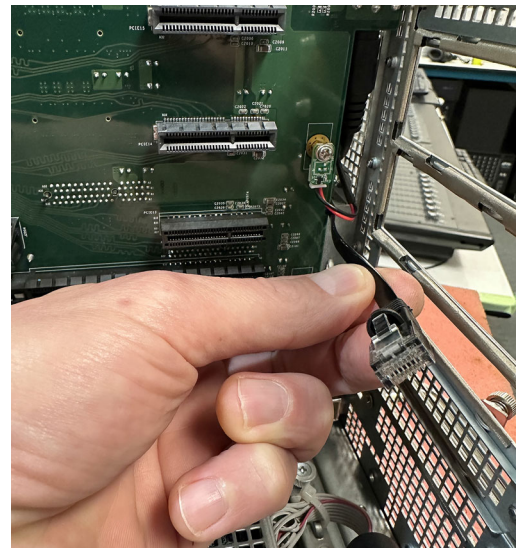
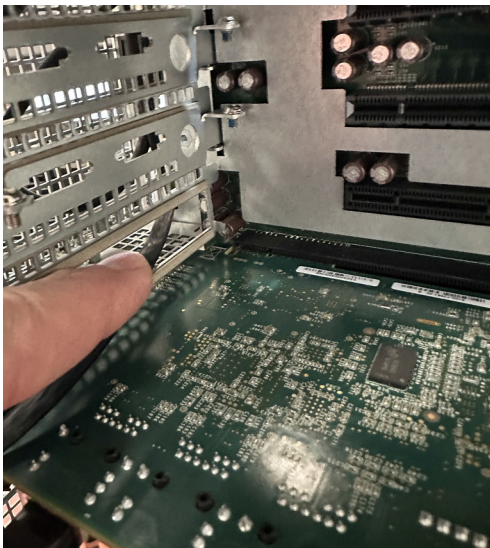
- 3 Use a Phillips screwdriver to remove the screw securing the lowest HDX expansion card slot cover plate and remove the cover plate. The jumper cable will be routed through this space.



Removing the slot cover over the lowest HDX expansion slot



- 4 Connect one end to port 0 on the MLN-192 card.
- 5 Route the other end of the jumper cable through the opening from the HDX faceplate you removed earlier and feed it through to the other side of the core where the AVB-192 cards were located.



Routing the jumper cable through the HDX slot opening (shown at left) and to the AVB-192 slots (shown at right)

- 6 Re-install the AVB-192 cards into the **MASTER** and **NETWORK 2** slots (see [Re-Install the AVB-192 Cards](#)). Be careful to route the MLN-192 jumper cable below the lowest (MASTER) AVB-192 card (so it does not lay between the two AVB-192 cards).
- 7 Connect the other end to port 0 on the **NETWORK 2** AVB card.



Example cable routing and connection to an MLN-192 card in EXPANSION slot 1 of an E6L-112 (shown at left) and important clearance for the side panel (shown at right)