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sbRIO-9605

INSTALLATION INSTRUCTIONS

NI 9693 Two-Slot C Series RIO Mezzanine Card

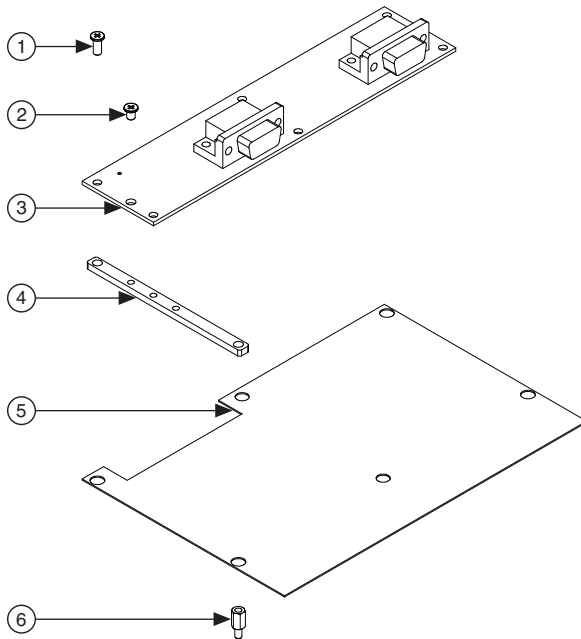
The National Instruments 9693 two-slot C Series RIO Mezzanine Card is an accessory you can use to connect two board-only C Series modules to the sbRIO-9623/9626.



Note You need a 4.5 mm socket driver and a #1 Phillips screwdriver to install the NI 9693.

The NI 9693 kit contains the following components:

Figure 1. Contents of the NI 9693 Kit



1	M3 × 7 mm Silver Low-Profile Screw (x7)	4	C Series Module Support Bracket (x3)
2	M3 × 4 mm Black Low-Profile Screw (x10)	5	Isolator Sheet
3	NI 9693	6	M3 × 7 mm Standoff (x6)



Caution National Instruments makes no electromagnetic compatibility (EMC) or CE marking compliance claims for the NI 9693. The end-product supplier is responsible for conformity to any and all compliance requirements.



Caution The NI 9693 must be installed inside a suitable enclosure prior to use. Hazardous voltages may be present.



Caution Follow proper ESD precautions to ensure you are grounded before installing hardware.



Caution The protection provided by the NI 9693 can be impaired if the NI 9693 is used in a manner not described in this document.

Installing the NI 9693

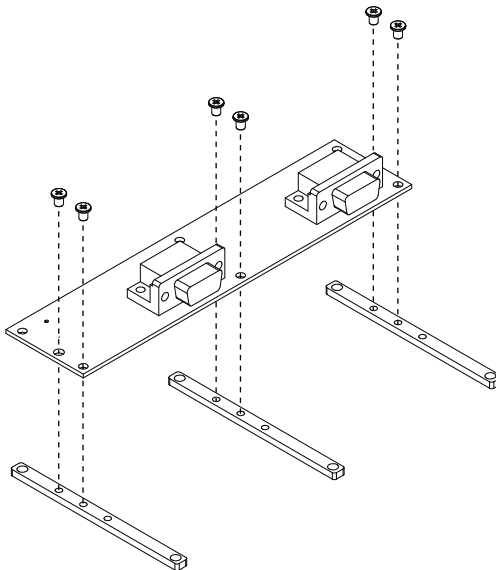
Complete the following steps to install the NI 9693:

1. Attach the three C Series support brackets to the NI 9693 using six of the M3 × 4 mm black, low-profile screws included in the kit, as shown in Figure 2.



Note Do not tighten the screws until you reach step 8. You may need to adjust the brackets during assembly.

Figure 2. Attaching the Support Brackets to the NI 9693

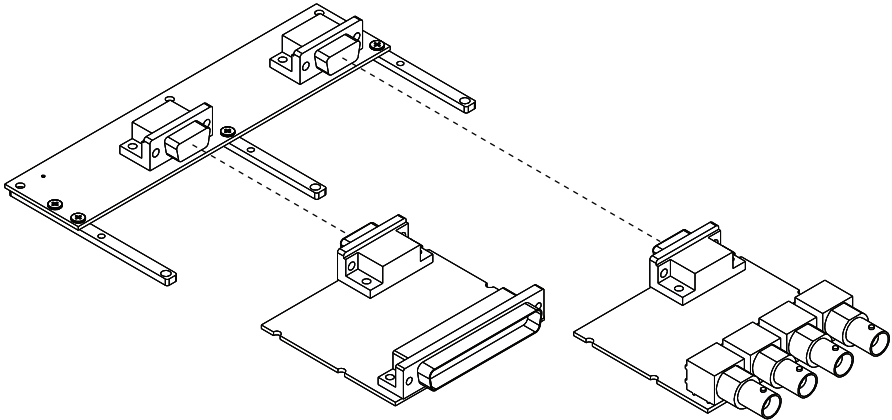


2. Plug board-only C Series modules into the NI 9693 as shown in Figure 3.



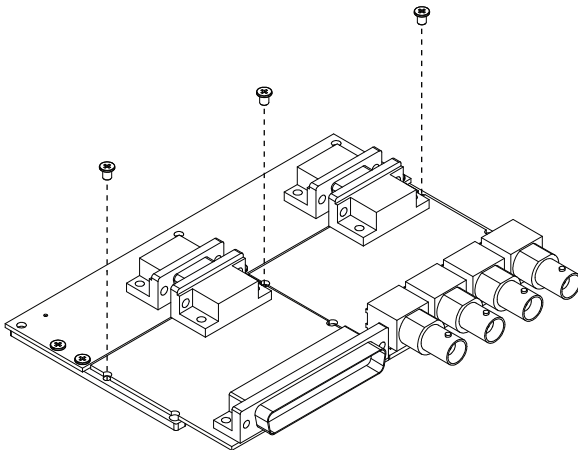
Caution Do not allow C Series module support brackets to contact components on the secondary side of board-only C Series modules. Contacting components can cause damage.

Figure 3. Plugging Board-Only C Series Modules into the NI 9693



3. Screw three of the remaining M3 × 4 mm black, low-profile screws into the holes shown in Figure 4.

Figure 4. Inserting Three Screws into the Module and Bracket Holes

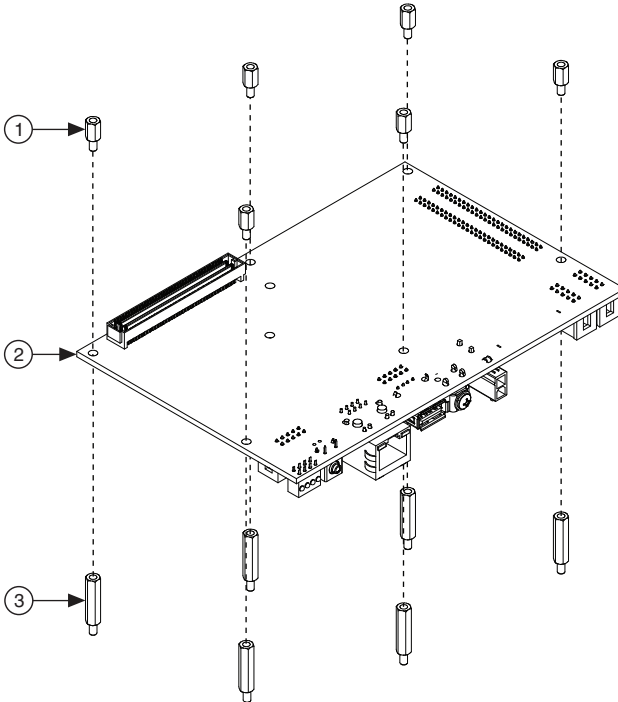


4. Insert the six M3 × 7 mm standoffs from the secondary side of the sbRIO device into the six mounting standoffs for your application, as shown in Figure 5. The mounting standoffs are not included in the NI 9693 kit.



Note You can attach the NI 9693 to an NI sbRIO-9605 or NI sbRIO-9606. You must support the NI 9693 mounting holes that overhang the sbRIO device with standoffs that are 9.2 mm (0.36 in.) taller than the mounting standoffs described in step 4.

Figure 5. Inserting the Standoffs into the sbRIO Device

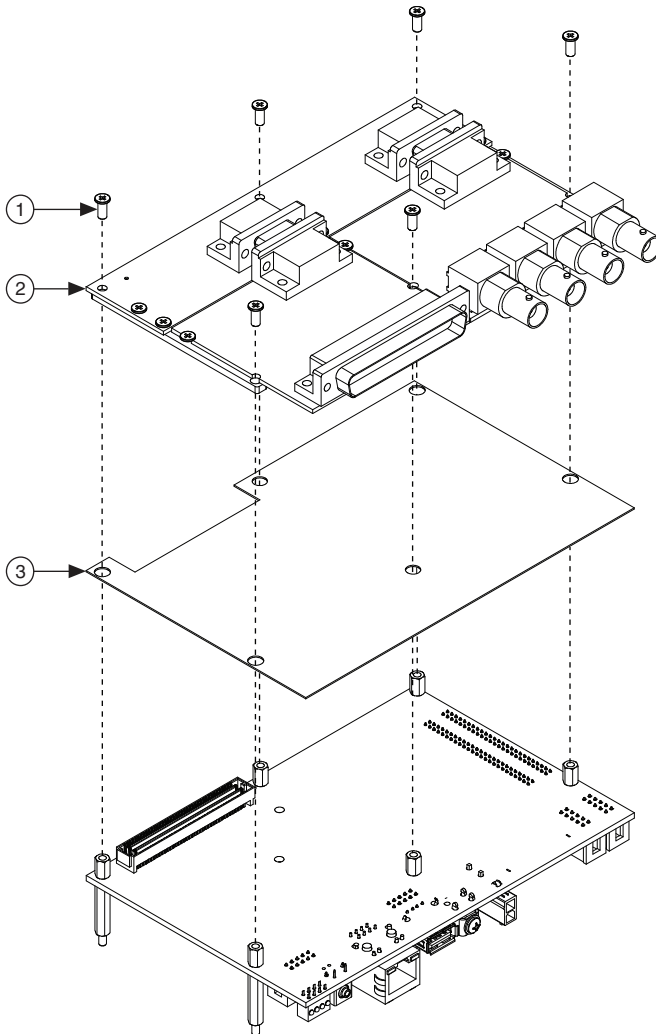


1	M3 × 7 mm Standoff (x6)	2	sbRIO Device	3	Mounting Standoff (x6, Not Provided)
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5. Tighten the standoffs together to 0.45 N · m (4.0 lb · in.). Do not overtighten.
6. Press the isolator over the standoffs so that 1 to 2 mm of standoff protrude through the holes.

- Align the holes in brackets attached to the NI 9693 with the tops of the M3 × 7 mm standoffs, and insert the six M3 × 7 mm silver low-profile screws included in the NI 9693 kit, as shown in Figure 6.

Figure 6. Inserting the Standoffs into the sbRIO Device



1 M3 × 7 mm Silver Low-Profile Screw (x6)

2 NI 9693

3 Isolator

- Tighten all the screws to 0.45 N · m (4.0 lb · in.). Do not overtighten.

The following figures show the dimensions of the assembled NI 9693 and sbRIO device with two board-only C Series modules.

Figure 7. Side View with Dimensions

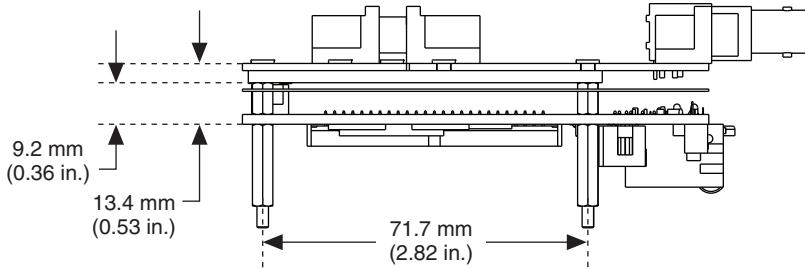
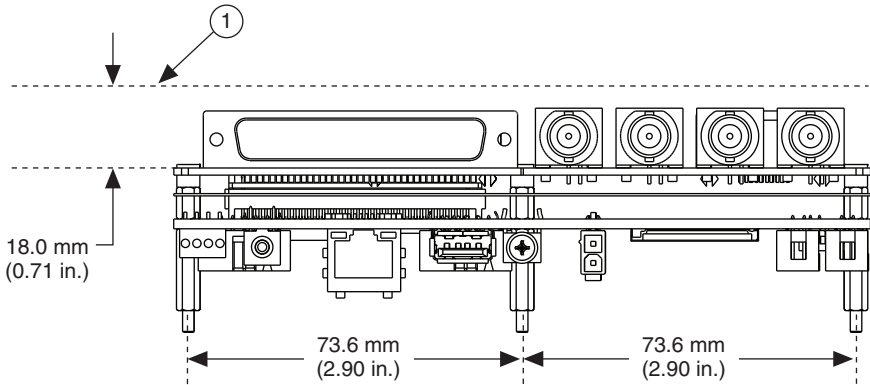


Figure 8. Rear View with Dimensions



1 Recommended Keepaway from Modules

Specifications

Refer to the documentation for the sbRIO device and the board-only C Series modules for the specifications of those products.

Physical Characteristics

If you need to clean the device, wipe it with a dry towel.

Torque for screws	0.45 N · m (4.0 lb · in.)
Weight.....	70 g (2.5 oz)

Environmental

Operating temperature
(IEC 60068-2-1, IEC 60068-2-2) -40 to 85 °C

Thermal validation of an sbRIO system assembled with the NI 9693 requires validating the sbRIO device and board-only C Series modules. Measure the operating temperature of board-only C Series modules 0.3 in. (7.6 mm) above the module surface. Refer to the documentation of the sbRIO device and board-only C Series modules for operating temperature limits and, if applicable, for typical specifications.

Storage temperature
(IEC 60068-2-1, IEC 60068-2-2) -40 to 85 °C

Operating humidity (IEC 60068-2-56)..... 10 to 90% RH, noncondensing

Storage humidity (IEC 60068-2-56)..... 5 to 95% RH, noncondensing

Maximum altitude..... 5,000 m

Indoor use only.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

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