

OPERATING INSTRUCTIONS AND SPECIFICATIONS

NI 9694

Digital I/O Breakout RMC

This guide describes how to connect and use the NI 9694 with NI sbRIO devices through the RIO Mezzanine Card (RMC) connector.

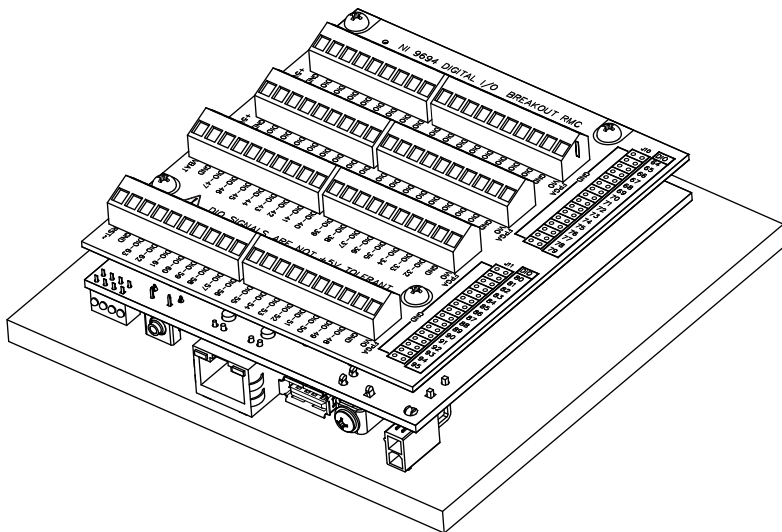


Caution National Instruments makes no product safety, electromagnetic compatibility (EMC), or CE marking compliance claims for NI sbRIO devices. The end-product supplier is responsible for conformity to any and all compliance requirements.



Caution Do not operate the NI 9694 in a manner not specified in these operating instructions. Product misuse can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it to National Instruments for repair.

Figure 1. NI 9694 Board Overview

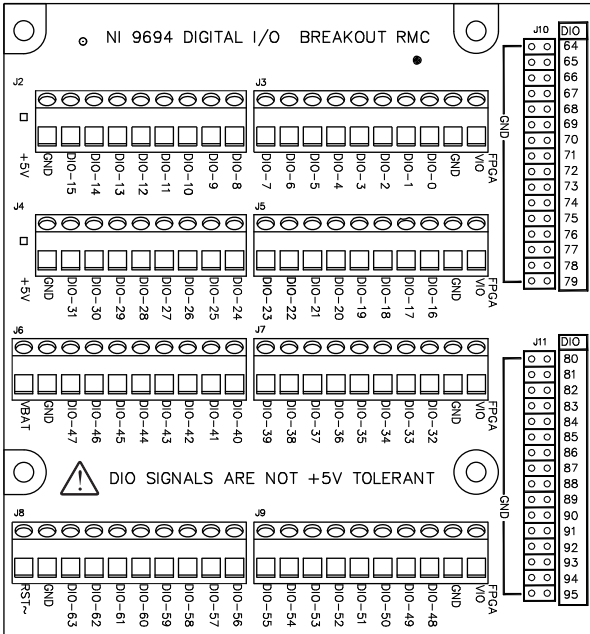


I/O and Other Components on the NI 9694

Figure 2 shows the primary side surface of the NI 9694. For information on pin functions and definitions, consult the user manual for your NI sbRIO device.

Primary Side

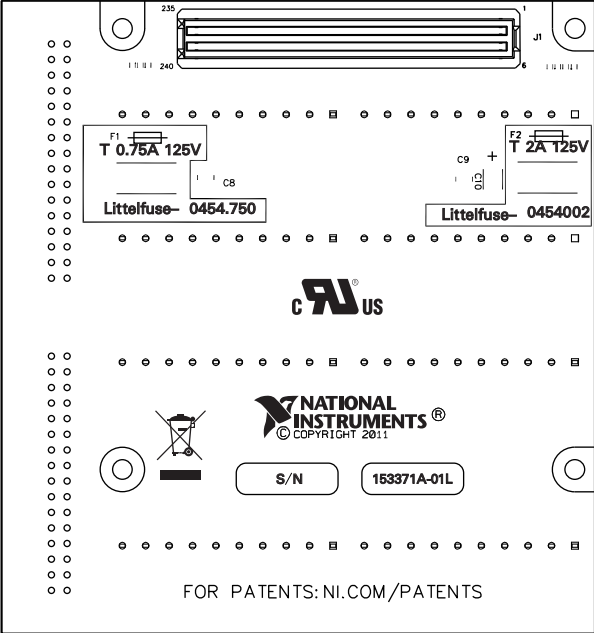
Figure 2. Primary Side Surface of the NI 9694



Secondary Side

Figure 3 shows the secondary side surface of the NI 9694. For more information on the RMC connector, refer to the user manual for your NI sbRIO device.

Figure 3. Secondary Side Surface of the NI 9694



Mating the NI 9694 to NI sbRIO Devices

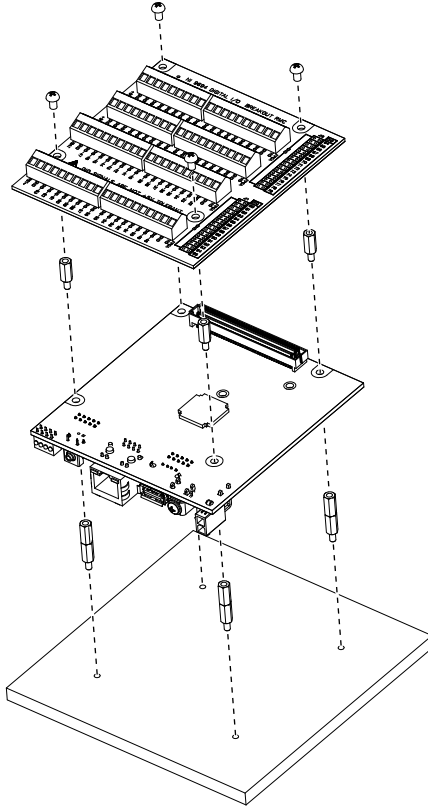
Figure 4 provides an example of mating the NI 9694 to a device with an RMC connector and mounting the mated pair to a surface.



Note Mounting holes on the NI sbRIO device are designed to accommodate M3 or 4-40 fasteners, and standoffs or bosses up to 4.5 mm or 3/16 in. in diameter.

For more information about mating to an NI sbRIO device, refer to the user manual for your device.

Figure 4. Mating the NI 9694 via RMC



Specifications

Unless otherwise noted, the following specifications are typical for the range -40 to 85 °C for the NI 9694.

3.3 V Digital I/O

Number of DIO channels

On screw terminals	64 channels
On 100-mil spacing holes	32 channels

Max tested current per channel..... ± 3 mA

Max tested current, all lines..... 288 mA

Input logic levels

Input low voltage, V_{IL}	0 V min; 0.8 V max
Input high voltage, V_{IH}	2.0 V min; 3.465 V max

Output logic levels

Output high voltage, V_{OH} sourcing 3 mA	2.4 V min; 3.465 V max
Output low voltage, V_{OL} sinking 3 mA	0.0 V min; 0.4 V max

Power Output

5 V

1.5 A, $\pm 5\%$ voltage tolerance

FPGA VIO (3.3 V)

0.33 A, $\pm 5\%$ voltage tolerance

Fuse

5 V fuse (F2)

Manufacturer	Littelfuse, part number 0454002 (or equivalent)
Ampere rating	2 A
Voltage rating.....	125 V
Speed	Time delay

FPGA VIO fuse (F1)

Manufacturer	Littelfuse, part number 0454.750 (or equivalent)
Ampere rating	750 mA
Voltage rating.....	125 V
Speed	Time delay

Physical Characteristics

Weight..... 82 g (2.89 oz)

Environmental

The NI 9694 is for indoor use only.

Local ambient temperature near device
(IEC 60068-2-1, IEC 60068-2-2).....-40 to 85 °C



Note The local ambient temperature measurement locations used to validate the compatible NI sbRIO device are sufficient to validate the NI 9694.

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

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

Storage humidity (IEC 60068-2-56) 5 to 90%, noncondensing

Maximum altitude.....5,000 m

Pollution Degree 2

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