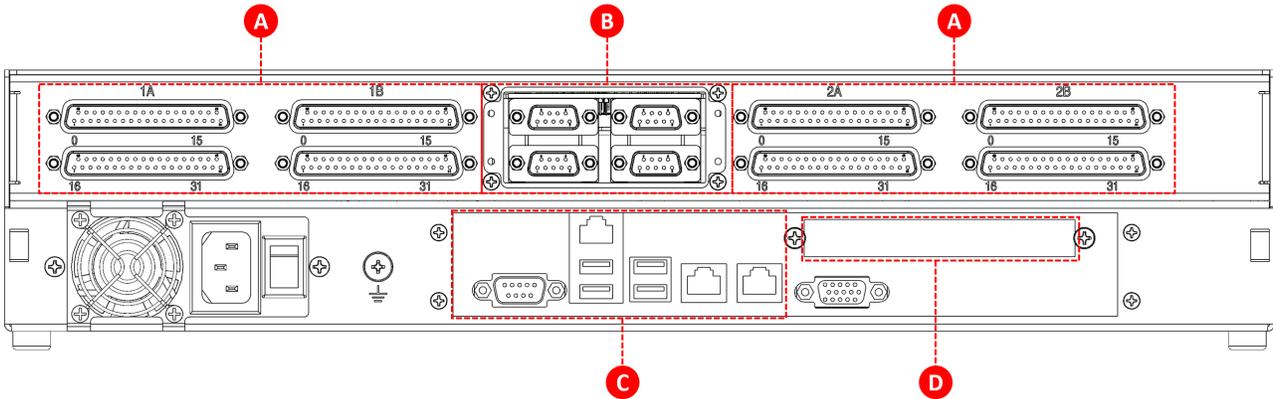


# OP4512 Rear Interface

- [OP4512 Standard Configuration](#)
- [OP4512 I/O Expansion Options](#)
- [OP4512 PCIe Optional I/O cards](#)

## OP4512 Standard Configuration



**A.** DB37 connectors for digital or analog inputs and outputs.

**B.** In the **standard OP4512 configuration**, this section contains a DB9 connector module for RS422 signals typically used to transmit differential encoder inputs and outputs, however, **other options are available**.

- See [OP4512 I/O Expansion Options](#) below for detailed information on available configuration options.

**C.** Standard computer connectors (from left to right):

- 1 Serial Port (COM1)
- 1 IPMI LAN port
- 2 USB port 2.0
- 2 USB port 3.0
- 2 network Gigabit Ethernet RJ-45 Ports
- 1 VGA Port
- Unit Identifier (UID) switch

**D.** 1 PCIe free slots are available for optional I/O card. See [OP4512 PCIe optional I/O cards](#) below.

## OP4512 I/O Expansion Options

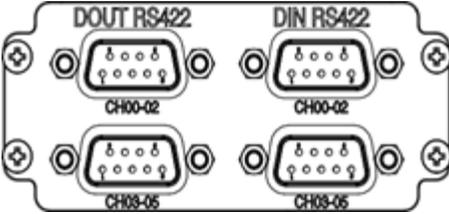
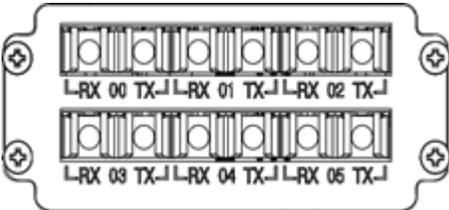
The OP4512 comes with an **RS-422 Connector Kit (OP5969-1) factory installed by default**.

The **optional Fiber-Optic Connector Kit (OP5969-2)** can also be installed. It will replace the default connector kit, since **only ONE of these connector kits can be installed in an OP4512 at a time**.



The **optional connector kit must be selected at the time of purchase and factory-installed**.

If the **OP3811 or the OP3812 GPS Synchronization Connectors PCIe I/O cards** are ordered, **none of the following expansion options can be installed** because the I/O cards also require a connector plate to be installed in the same location.

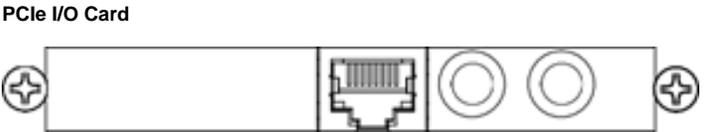
<b>RS422 Connector kit</b> <b>(OP5969-1)</b>		<b>DEFAULT connector kit installed</b> The DB9 connectors for RS422 signals are typically used to transmit differential encoder inputs and outputs. Refer to the <a href="#">OP5969-1 User Manual</a> for specifications and pin assignment.
<b>Fiber-Optic Connector kit</b> <b>(OP5969-2)</b>		<b>Optional connector kit</b> Fiber-optic connector kit provides 6 RX and 6 TX channels. These channels can be used as digital I/Os or for low-speed communication protocols. The ORION protocol, developed by OPAL-RT is compatible with these channels and available in custom bitstreams. Refer to the <a href="#">OP5969-2 User Manual</a> for specifications and pin assignment.

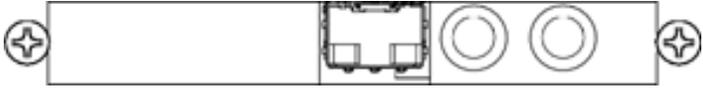
## OP4512 PCIe Optional I/O cards

There are several PCIe options available for the OP4512.

**!** Only **ONE** of the I/O cards may be installed in an OP4512 at a time.

The **PCIe optional I/O card** must be selected at the time of purchase and factory-installed.

<b>OP5451</b> <b>Copper cable</b>		Passive/active PCIe expansion with standard PCIe iPass x4 connector interface. This option is used to connect the OP4512 to an OPAL-RT expansion I/O chassis. The option comes as a kit, including a copper cable. <table border="1" data-bbox="992 1037 1484 1297"> <thead> <tr> <th>Option</th> <th>Platform</th> <th>Type of cable</th> </tr> </thead> <tbody> <tr> <td>OP5451</td> <td>OP4512 to OP4520 OP4512 to OP5607</td> <td>Copper cable, 2 m (6 ft)</td> </tr> <tr> <td></td> <td>OP4512 to OP5705-IO OP4512 to OP5707-IO</td> <td></td> </tr> </tbody> </table>	Option	Platform	Type of cable	OP5451	OP4512 to OP4520 OP4512 to OP5607	Copper cable, 2 m (6 ft)		OP4512 to OP5705-IO OP4512 to OP5707-IO	
Option	Platform	Type of cable									
OP5451	OP4512 to OP4520 OP4512 to OP5607	Copper cable, 2 m (6 ft)									
	OP4512 to OP5705-IO OP4512 to OP5707-IO										
<b>OP3411</b>		CANbus protocol expansion board with a CANbus standard 25-pin connector interface.									
<b>OP3811</b>	<b>PCIe I/O Card</b>  <b>Connector plate</b>	The GPS time synchronization (IEEE 1588) with <b>RJ45 connector interface</b> comes in <b>2 parts</b> : the <b>PCIe card</b> and the <b>connector plate</b> with an external synchronization input connector and fiber-optic synchronization output.  If this option is selected, none of the I/O Expansion Options (OP5969-1, OP5969-2) could be installed because the connector plate needs to be installed at the same place.									

<p>OP3812</p>	<p><b>PCIe I/O Card</b></p>  <p><b>Connector plate</b></p>	<p>GPS time synchronization (IEEE 1588) with <b>SFP connector interface</b> comes in 2 parts: the <b>PCIe card</b> and the <b>connector plate</b> with an external synchronization input connector and fiber-optic synchronization output.</p> <p>If this option is purchased, none of the I/O Expansion Options (OP5969-1, OP5969-2) could be installed because the connector plate needs to be installed at the same place.</p>
<p>OP3821</p>		<p>Dual-port PCIe x1 Gigabit Ethernet interface.</p>