

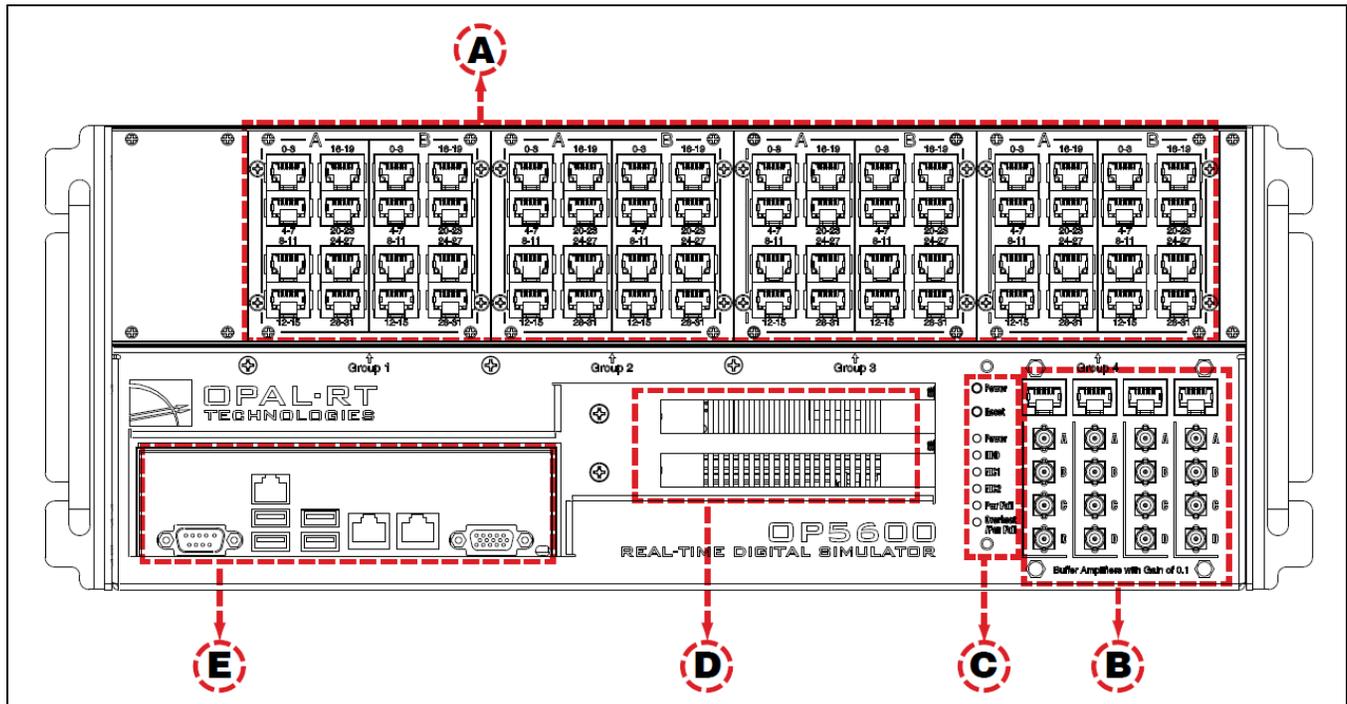
OP5600V2 Hardware Interface

- OP5640 (Spartan-3) Configuration
 - Front Interface
 - Back Interface
- OP5660 (Virtex-6) Configuration
 - Front Interface
 - Back Interface

The interfaces provided on the OP5600 simulator vary depending on the system configuration selected, OP5660 (Virtex-6) or OP5640 (Spartan-3).

OP5640 (Spartan-3) Configuration

Front Interface



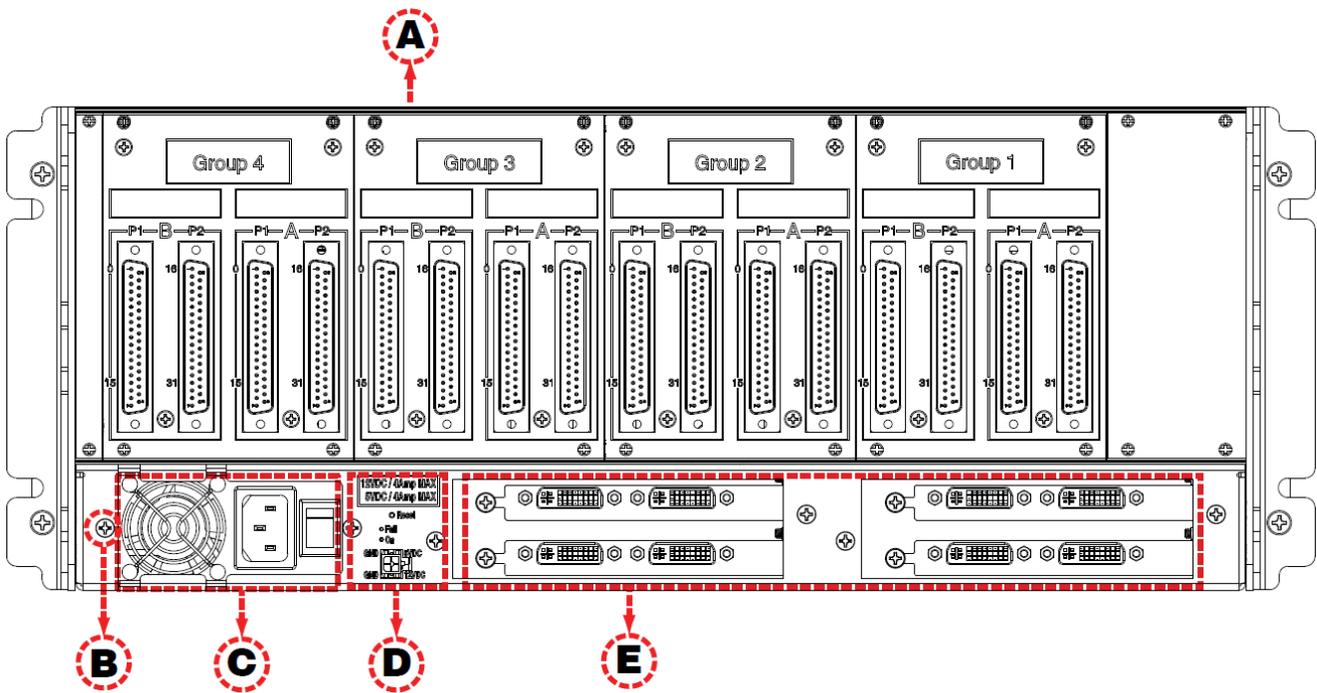
- A**
- 4 panels of RJ45 connectors provide connections to monitor output from mezzanine I/O boards. Each connector is linked to front and back mezzanines on the carrier board. Analog mezzanines (channels 0-15) will use only the first column of connectors. Digital mezzanines will use both columns (channels 0-15 in the first column and channels 16-31 on the second column of connectors). See [DB37F Connections](#) and [RJ45 connections](#) for more details.
- B**
- Monitoring RJ45 connectors with mini-BNC terminals: RJ45 cables connect from a channel on an RJ45 panel to one of four RJ45 monitoring connectors. Mini-BNC connectors allow for quick cable connections to monitoring devices (such as an oscilloscope).
- C**
- Target computer monitoring interface. Two pushbuttons include **POWER** in top position to start the target computer and **RESET** in the bottom position to reset the target computer. There are 6 LED indicators:

LED	NAME	Description
Green	Power	On indicates that the unit is powered up.
Green	HDD	On indicates that the hard disk drive is operating.
Green	NIC1	On indicates that network port 1 is in use.

Green	NIC2	On indicates that network port 2 is in use.
Red	Power Fail	On indicates a power fault.
Red	Overheat/Fan Fail	On indicates either that unit has overheated or a fan fault.

- D**
Optional PCI or PCIe connector slots (by default, these spaces are covered by blank plates if there are no optional PCI cards. If there are PCI cards installed, the spaces contain the PCI connectors).
- E**
Standard computer connectors (left to right): mouse and keyboard, USB ports, monitor, network. Although the use of these connectors is optional but not required to use the OP5600, one network port is required for network connection.

Back interface



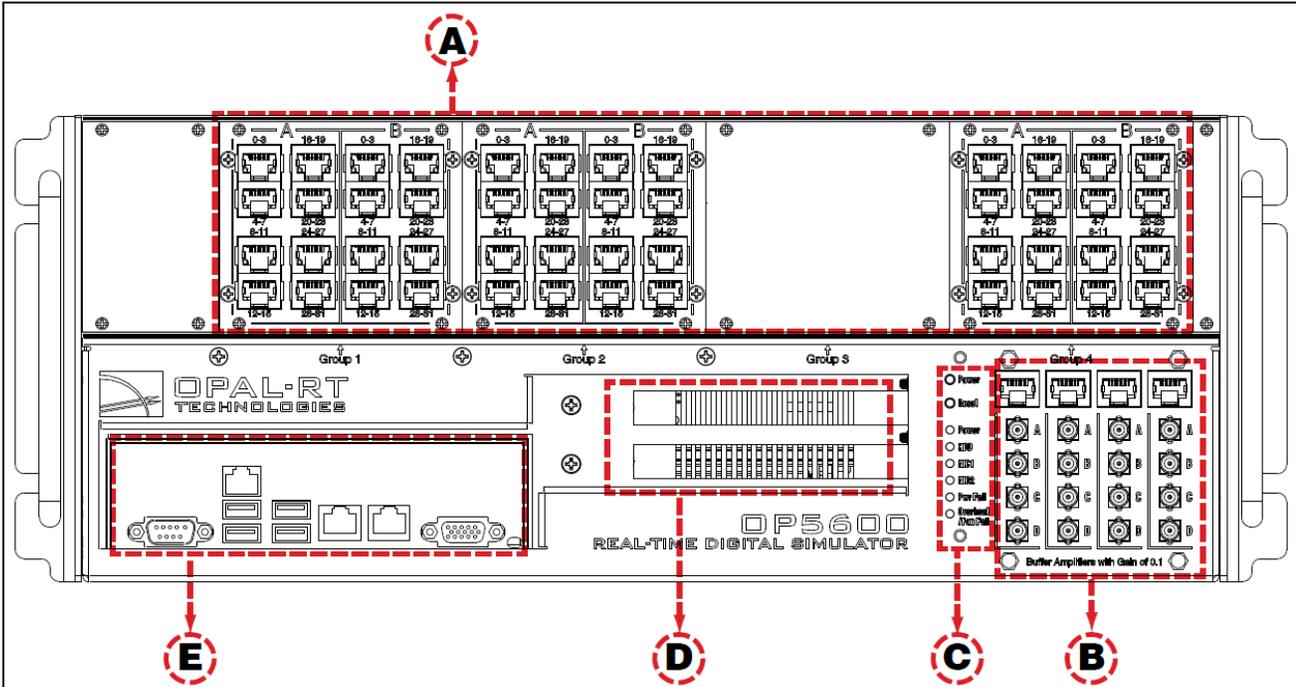
- A**
DB37F I/O connectors (see the table in [DB37 Pin Assignments](#) for more details). The images in [DB37F Connections](#) illustrates the links between the mezzanines and the DB37 I/O connectors
- B**
Ground The OP5600 may be subjected to EMI when placed in proximity to other devices. Make sure to connect the OP5600 ground to the rack to prevent any EMI related damage to the simulator (see the figure in [Connecting the Ground Screw](#))
- C**
The power connector and power **On/Off switch**
- D**
Power reset and 5/12V power source connector for test purposes:
 - Pushbutton reset after 4A overcurrent shutdown
 - Red LED indicates a fault, the green LED indicates the nominal function
 - Microfit connector for 5V or 12V power allows users to test whether I/Os are functioning. Each voltage has its own ground reference. Caution: these power sources are not
- E**

Optional PCI or PCIe connector

OP5660 (Virtex-6) Configuration

Front Interface

The OP5660 monitoring interface is nearly identical to the OP5640, except that there are 3 RJ45 monitoring panels and one panel with an LCD screen instead of 4 RJ45 monitoring panels.



A
3 panels of RJ45 connectors provide connections to monitor output from mezzanine I/O. Each connector is linked to front and back mezzanines on the carrier board. Analog mezzanines (channels 0-16) will use only the first column of connectors. Digital mezzanines will use both columns (channels 0-15 in the first column and channels 16-31 on the second column of connectors). See [DB37F Connections](#) and [RJ45 connections](#) for more details.

B
Monitoring RJ45 connectors with mini-BNC terminals: RJ45 cables connect from a channel on an RJ45 panel to one of four RJ45 monitoring connectors. Mini-BNC connectors allow for quick cable connections to monitoring devices (such as an oscilloscope).

C
Target computer monitoring interface. Two pushbuttons include **POWER** in top position to start the Target computer and **RESET** in the bottom position to reset the Target computer.

There are 6 LED indicators:

LED	NAME	Description
Green	Power	On indicates that the unit is powered up.
Green	HDD	On indicates that the hard disk drive is operating.
Green	NIC1	On indicates that network port 1 is in use.
Green	NIC2	On indicates that network port 2 is in use.
Red	Power Fail	On indicates a power fault.

Red	Overheat/Fan Fail	On indicates either that unit has overheated or a fan fault.
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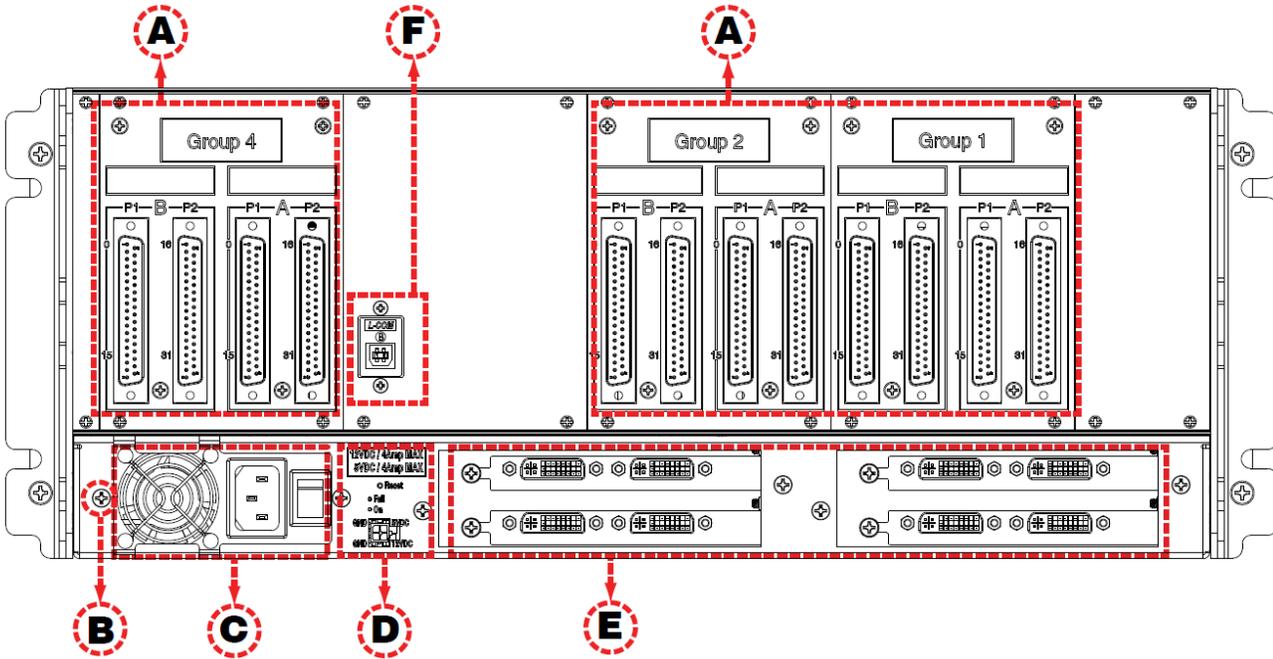
D

Optional PCI or PCIe connector slots. By default, these spaces will be covered by blank plates if there are no optional PCI cards. If there are PCI cards installed, the spaces will contain the PCI connectors.

E

Standard computer connectors (left to right): mouse and keyboard, USB ports, monitor, network ports. One network port must be connected, the use of the other connectors is optional but not required during the real-time simulation.

Back Interface



A

DB37F I/O connectors (see the table in [OP5600 v2: DB37 Pin Assignments](#) for more details). The images in [DB37F Connections](#) illustrates the links between the mezzanines and the DB37 I/O connectors

B

Ground The OP5600 may be subjected to EMI when placed in proximity to other devices. Make sure to connect the OP5600 ground to the rack to prevent any EMI related damage to the simulator (see [Connecting the Ground Screw](#))

C

The power connector and power **On/Off switch**

D

Power reset and 5/12V power source connector for test purposes:

- Pushbutton reset after 4A overcurrent shutdown
- Red LED indicates a fault, the green LED indicates a nominal function
- Microfit connector for 5V or 12V power allows users to test whether I/Os are functioning. Each voltage has its own ground reference. Caution: these power sources are not

E

Optional PCI or PCIe connector

F

The USB connector for JTAG programming (used in the event of lost or damaged FPGA configuration).