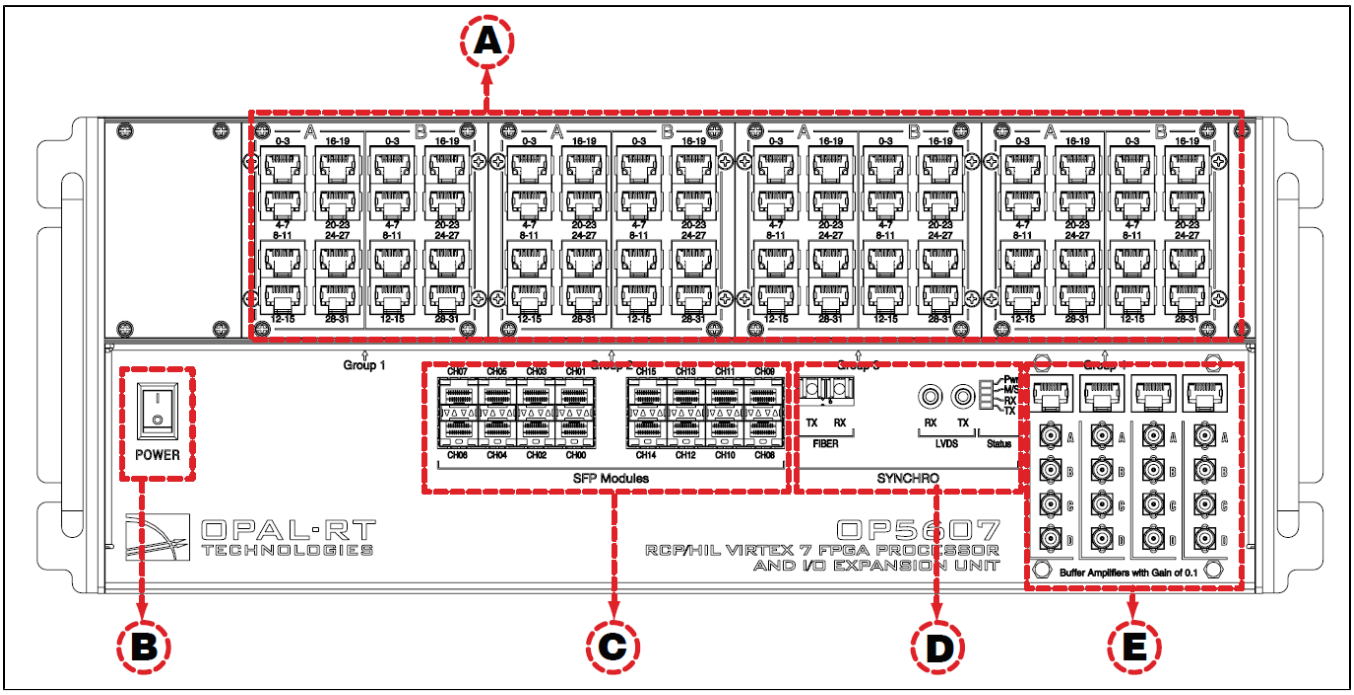
OP5607 Hardware Interface

- Front Interface
- Back Interface

Front Interface



A

RJ45 connector panels provide connections to monitor signals from mezzanine I/O boards. Each connector is linked to one mezzanine 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 the mezzanines connector image and the RJ45 pinouts for more detailed information.

B

OP5607 power switch

C

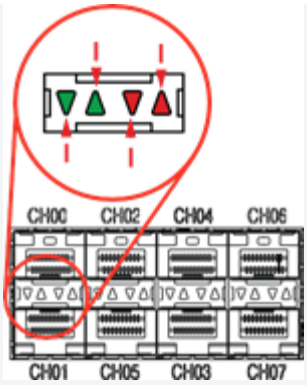
SFP (small form-factor pluggable) ports controlled from the FPGA, for **MUlti-System Expansion link (MuSE)** communication with other FPGA simulators or with third-party devices. Each socket controls one communication link. SFP transceivers and fiber optic cables must be selected according to the type and speed of the communication protocol implemented in the FPGA (OPAL-RT MuSE link or third-party device connection).

MuSE link requires specific SFP and cable:

- SFP: Avago AFBR-57R5APZ
- Cable: LC-LC multimode 850nm optical fiber

The LEDs (light pipes) associated with the selected channel will light to indicate the channel is selected. LEDs are arrow-shaped to indicate the channels to which they are associated. The LED upward arrow points to the top channel, the downward arrow points to the bottom channel (see below)

LED	Color	Description	CH00
	Green	ON = SFP is inserted OFF = no SFP is present BLINK = channel active	
	Green	ON = SFP is inserted OFF = no SFP is present BLINK = channel active	
	Red	OFF = connection okay ON = transmission fault BLINK = reception loss	

	Red	OFF = connection okay ON = transmission fault BLINK = reception loss	 **CH01**

D

Synchronization connectors (fiber optic and audio) and a series of four LEDs on the front panel display the device status

LED	Power On	After Load & During Execution	After Reset
Tx	OFF	GREEN**	OFF
Rx	OFF	GREEN**	OFF
M/S	Default*	ORANGE = Slave	GREEN
PWR	GREEN	GREEN	GREEN

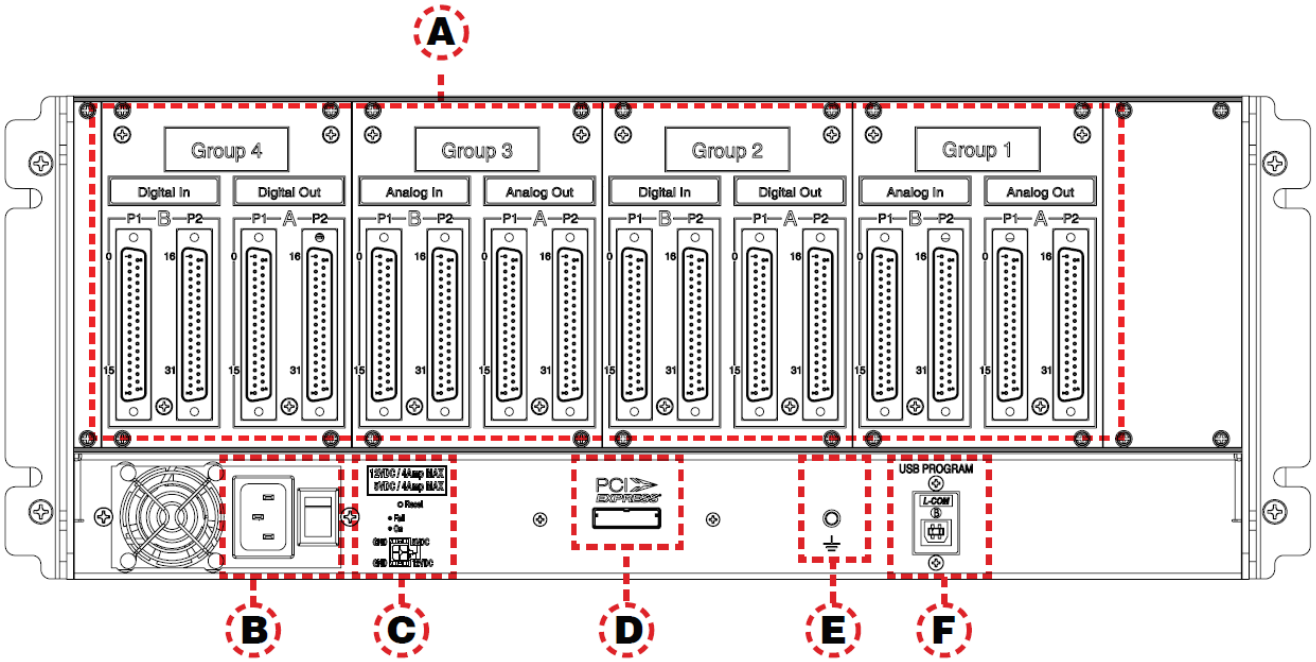
*The color of the LED on power-on depends on the default FPGA configuration: when the FPGA board is programmed in slave synchronization mode, the LED will be orange; when it is programmed in master mode, the LED will be green.

**Tx and Rx provide synchronization information. When transmitting the synchronization signal, the Tx LED will be green. When receiving the synchronization signal, the Rx LED will be green.

E

RJ45 connectors with mini-BNC terminals for monitoring. Mini-BNC connectors allow for quick cable connections to monitoring devices (such as an oscilloscope).

Back Interface



A

DB37F I/O connectors (see OP5607 Pin Assignments for more details). The image illustrates the links between the mezzanines and the DB37 I/O connectors

B

The power connector and power On/Off switch

C

Standard +5/+12 V PC connector

D

PCIe connector for the communication link to the real-time computer. This port is unused when the unit is configured as a remote unit for MuSE

E

Chassis ground

F

USB JTAG for VC707