Phoenix Selection Guide

SDI / HD-SDI Frame Grabbers

Description

This selection guide helps you choose which of the Phoenix SDI / HD-SDI frame grabbers is most suitable for your application. There are four variants of the boards:

- The D10HDSDI with x1 PCI Express, part number AS-PHX-D10HDSDI-PE1.
- The D20HDSDI with x1 PCI Express, part number AS-PHX-D20HDSDI-PE1.
- The D10HDSDI with x4 PCI Express, part number AS-PHX-D10HDSDI-PE4.
- The D20HDSDI with x4 PCI Express, part number AS-PHX-D20HDSDI-PE4.

There are just two decisions to make:

- D10 or D20?
- x1 or x4 PCI Express?

D10 or D20?

The D10 has one BNC connector and the D20 has two BNC connectors. Therefore a D10 board can only have one SDI or HD-SDI source connected, but a D20 board can have two sources connected.

With the D20 boards, it is possible to capture data from either BNC under software control, or, subject to details explained next, to capture data from both BNCs simultaneously.

x1 or x4 PCI Express?

The key difference here is the size of the edge connector on the board that plugs into the computer. x4 boards have a larger connector that allows data to be captured at a higher data rate than a x1 board.

A x1 board can capture data from a single HD-SDI[1] source, or two SDI sources, but cannot keep up with the amount of data generated by two HD-SDI sources simultaneously.

Therefore to capture data from two HD-SDI sources simultaneously a x4 board is needed.

Note that a x4 board will only work correctly in a PCI Express slot in your computer that supports x4 operation. Therefore you need to check that your computer supports x4 operation before ordering a x4 board. See the end of the document for more information.

Phoenix x1 frame grabbers have a part number ending PE1; x4 frame grabbers PE4.

[1] OEM customers developing custom applications using the Phoenix SDK, who want to transfer RGB data over the PCI Express bus, need a x4 board for a single HD-SDI source. This point is not relevant to many users, including Catalyst® ones. OEM customers should contact Phoenix Support for advice.

Selection Table

These points are summarised in the table below:

Source	Phoenix Frame Grabber Needed
Single SDI or HD-SDI source	AS-PHX-D**10**HDSDI-PE**1**
One of two connected SDI or HD-SDI sources	AS-PHX-D**20**HDSDI-PE**1**
Two simultaneous SDI sources	AS-PHX-D**20**HDSDI-PE**1**
Two simultaneous HD-SDI sources	AS-PHX-D**20**HDSDI-PE**4**

Identifying PCI Express Connectors

The only reliable way of identifying which PCI Express connectors in your computer will accept x4 boards is to check the computer's documentation, or to contact the computer manufacturer.

Alternatively, a simple and quick way of checking the width of PCI Express supported is by the length of the connector on the motherboard. For safety, power off the computer, and use a plastic ruler, to measure the connector!

PCI Express Width	Length in mm (inches)
x1	25.0 (0.984)
x4	39.0 (1.535)
x8	56.0 (2.205)
x16	89.0 (3.504)

Note that any PCI Express connector should support a x1 board.

Most x8 and x16 connectors will support a x4 board, but this is not always the case – in some computers these connectors will only work at x1 speed, which is of little use if you plan to use a x4 board. Also some x16 slots are dedicated for graphics use and will not work with any other board. This is why we recommend checking the computer's documentation.

To confuse things further, all Apple Mac Pros use x16 connectors regardless of the PCI Express width supported. However all PCI Express Apple Macs (to date – rev 3,1) support both x1 and x4 boards, although some earlier models need the width set using an Apple configuration program, as described in Phoenix Technical Note 009.

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