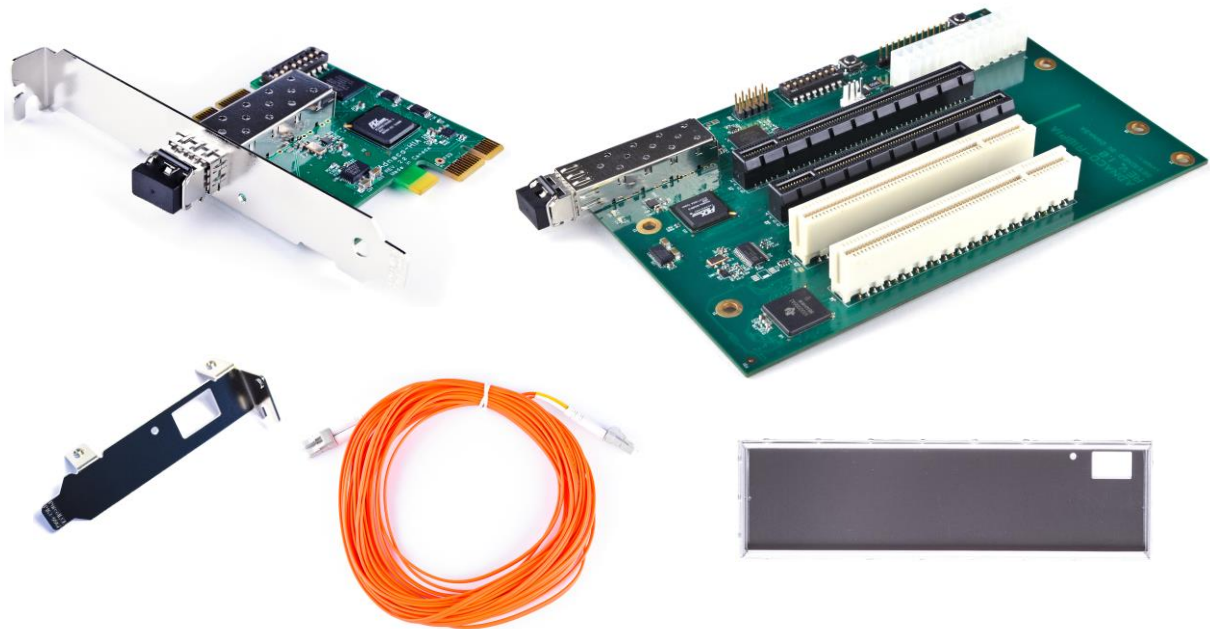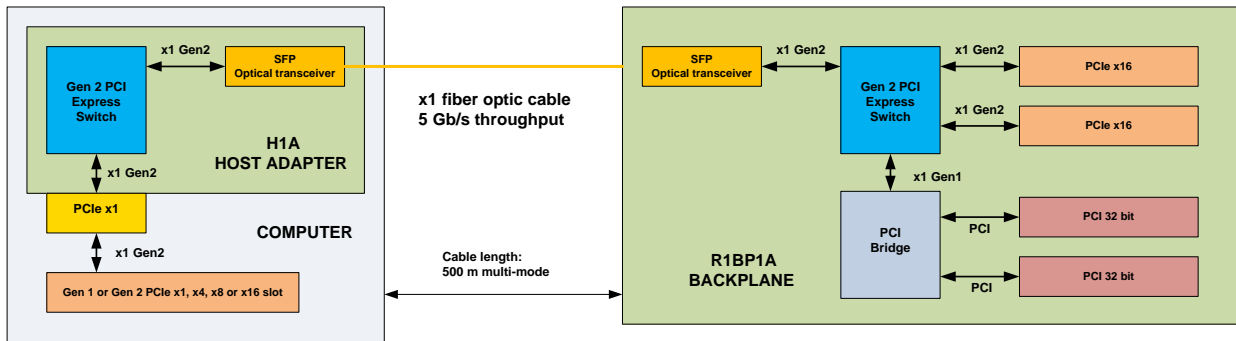## PCIe/PCI Over Fiber Optic Expansion System: 2 PCIe and 2 PCI slots

The Adnaco-S1A PCI/PCIe Gen 2 Expansion System allows operation of 2 PCI and 2 PCIe cards over fiber optic cable at distances up to few hundred meters (depending on the types of transceivers and cables) from the host computer system. No additional programming and drivers are required. Any type of PCI and PCI Express peripherals can be used including audio, video, graphics, USB, FireWire, SATA, data-acquisition, and network cards.

Product Features:

- 2 PCIe and 2 PCI cards that can operate simultaneously in remote backplane
- Selectable 2.5 GT/s or 5 GT/s PCIe communication over fiber optic cable
- Optical isolation
- Standard pluggable SFP+ transceivers
- R1BP1A backplane with 2 PCIe x 16 slots (electrical x1) and 2 PCI slots
- R1BP1A operating temperature: -40^0 to $+85^0$ C with qualified transceivers
- R1BP1A can be mounted in any standard ATX or MicroATX case
- Processor and OS independent and tested with:
  - Windows x86/x64: XP, 7, 8, 8.1, 10
  - Linux x86/x64
  - VxWorks

S1B system diagram:

Cable length:

- Multi-Mode fiber optic transceivers and cable:
  - 250+ m at 2.5 GT/s data rate with OM2 cable
  - 100+ m at 5.0 GT/s data rate with OM2 cable
  - 300+ m at 5.0 GT/s data rate with OM3 cable
  - 500+ m at 5.0 GT/s data rate with OM4 cable

Data transfer performance depends on the cable length. The measured performance is shown in the PCIe Gen 2 Performance application note.

S1A system consists of:

- H1A: host adapter
- H1-LP: low profile bracket for H1A
- R1BP1A: backplane with 2 PCIe and 2 PCI slots
- FC1: LC-LC duplex fiber optic cable
- R1BP1-IO: I/O shield

S1A system ordering information

Part number: S1A-YY-XXX-S

Table 1: S1A part number options

Configurations	Description
S1A-00-000	**Base configuration:** • H1A-00: host adapter without transceiver – 1 pcs • H1-LP: low profile bracket for H1A – 1 pcs • R1BP1A-00: backplane without transceiver – 1 pcs
YY – optical transceivers	H1A and R1BP1B are supplied with the transceivers listed below: **00** – without optical transceivers **01** – multi-mode transceivers, operating temperature from 0^0 to $+70^0$ C **02** – single-mode transceivers, operating temperature from 0^0 to $+70^0$ C **03** – multi-mode transceivers, operating temperature from -40^0 to $+85^0$ C
XXX – cable length	**XXX** – cable length in meters: 001, 010, 025, 050, 100 **000** – supplied without cable Cable type matches transceivers type: multi-mode or single-mode Multi-mode: OM2, 50/125µm, duplex, LC-LC Single-mode: OS1, 9/125µm, duplex, LC-LC Custom configurations are available
S – I/O shield	**S** –R1BP1-IO I/O shield included Leave blank - supplied without I/O shield

Table 2: Components Part Numbers

Part Number	Description
H1A-YY	PCIe Gen2 host adapter **YY** –transceiver options are shown in Table 1
R1BP1A-YY	PCIe Gen2 backplane with 2 PCIe and 2 PCI slots **YY** –transceiver options are shown in Table 1
FCx-XXX	LC-LC, duplex fiber optic cable **x** – fiber type 1 – multi-mode, OM2, 50/125µm 2 – single-mode, OS1, 9/125µm **XXX** – cable length in meters: 001, 010, 025, 050, 100 Custom configurations are available
H1-LP	Low profile bracket for H1A
R1BP1-IO	I/O shield for R1BP1B

Documentation

The documents listed below can be downloaded from the S1A web page

1. Quick Start Guide
2. How to disable PCIe power management in Windows application note
3. PCIe Gen 2 User's Guide
4. PCIe Gen 2 Performance
5. H1A Data Sheet
6. R1BP1A Data Sheet
7. R1BP1A drawing with dimensions