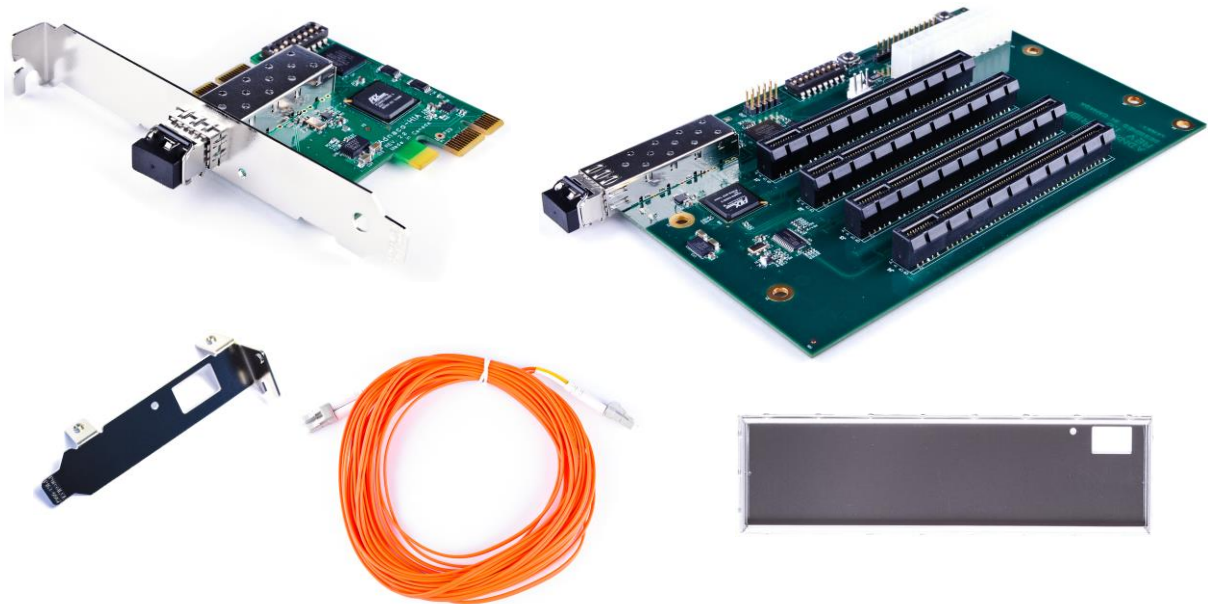## 5 Gb/s PCIe Gen 2 Over Fiber Optic Expansion System: 4 PCIe slots


The Adnaco-S1B 5GT/s PCIe Expansion System allows operation of 4 PCIe x1, x4, x8 and x16 cards remotely from the computer system. No additional programming and drivers are required. Any type of PCI Express peripherals can be used including audio, video, graphics, USB, FireWire, SATA, data-acquisition, and network cards.

Product Features:

- 4 PCIe cards can operate simultaneously in remote backplane
- Backplane with 4 PCIe x16 slots (electrical x1)
- Selectable 2.5 GT/s or 5 GT/s PCIe communication over fiber optic cable
- Optical isolation
- Standard pluggable SFP+ transceivers
- R1BP1B backplane with 4 PCIe x 16 slots (electrical x1)
- R1BP1B operating temperature: -40^0 to $+85^0$ C with qualified transceivers
- R1BP1B 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:
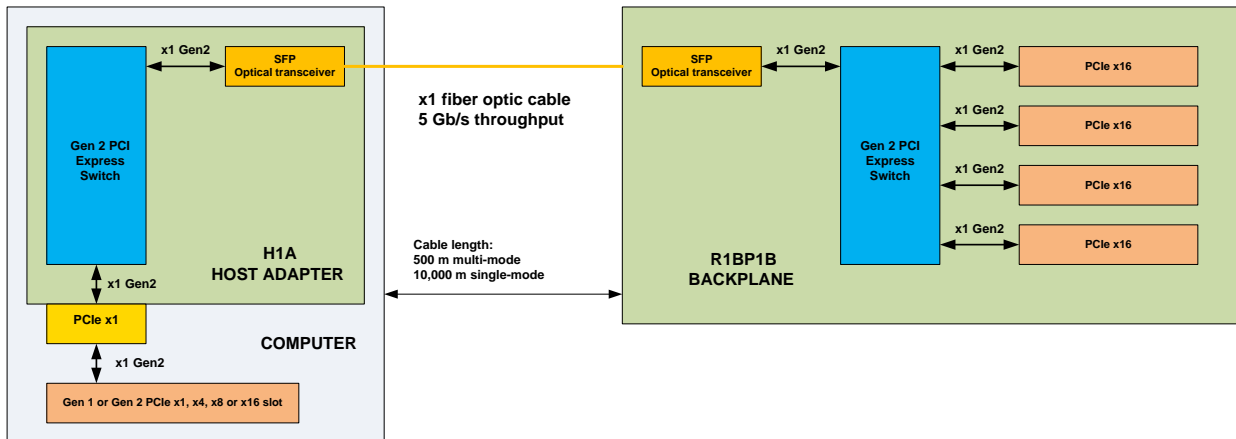
Cable length:

- 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
- Single-Mode fiber optic transceivers and cable:
  - 2+ km – at 5.0 GT/s data rate with OS1 cable
  - 10 km – at 5.0 GT/s data rate with OS2 cable

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

S1B system consists of:

- H1A: host adapter
- H1-LP: low profile bracket for H1A
- R1BP1B: backplane with 4 PCIe slots
- FC1: LC-LC duplex fiber optic cable
- R1BP1-IO: I/O shield

S1B system ordering information

Part number: S1B-YY-XXX-S

Table 1: S1B part number options

Configurations	Description
S1B-00-000	**Base configuration:** • H1A-00: host adapter without transceiver – 1 pcs • H1-LP: low profile bracket for H1A – 1 pcs • R1BP1B-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
R1BP1B-YY	PCIe Gen2 backplane with 4 PCIe 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 S1B 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. R1BP1B Data Sheet
7. R1BP1B drawing with dimensions