USB 3.0/2.0 Over Fiber Optic Extension System

The Adnaco-S3B system includes a remote standard USB 3.0 host controller which can operate at distances up to several kilometers (depending on the types of transceivers and cables, contact us for details) from the location of your computer. Powered by Adnaco PCIe over-fiber-optic technology, the Adnaco-S3B was designed to suit many applications with the standard USB 3.0 host interface. The unique feature of this USB extension is the use of PCI Express over fiber optic technology. The computer's PCI Express bus is extended over a fiber optic cable and a standard USB 3.0 host controller is used in the remote unit.

Product Features:

- 2 USB ports compliant with USB 3.0 specification
- Each USB port supports
  - Super-Speed (5.0 Gbps)
  - High-Speed (480 Mbps)
  - Full-Speed (12 Mbps)
  - Low-Speed (1.5 Mbps) data rates
- TI TUSB7320 USB host controller
- Communication over LC-LC fiber optic cable using x1 PCIe lane at 5.0 GT/s data rate
- Standard pluggable SFP+ transceivers
- Windows 7, 8, 10 and Linux OS

Cable length:

- Multi-Mode fiber optic transceivers and cable:
  - 100+ m with OM2 cable
  - 300+ m with OM3 cable
  - 500+ m with OM4 cable
- Single-Mode fiber optic transceivers and cable:
  - 2+ km with OS1 cable

Data transfer performance depends on the cable length. The measured performance is shown in the USB Extension Performance application note.

S3B system consists of:

- H1A: host adapter
- H1-LP: low profile bracket for H1A
- R1USB30B-E: remote USB host adapter in enclosure
- FC1: LC-LC duplex fiber optic cable
- Power supply with interchangeable AC plugs: NA, EU, UK, AU

S3B system ordering information

Part number: S3B-YY-XXX-P-E

Table 1: S3B part number options

Configurations	Description
S3B-00-000-E	**Base configuration:** • H1A-00: host adapter without transceiver • H1-LP: low profile bracket for H1A • R1USB30B-00: remote adapter in enclosure without transceiver • Power supply is not included
YY – optical transceivers	H1A and R1USB30B 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
P – power supply	**P** – power supply included Leave blank – supplied without power supply

Table 2: Components Part Numbers

Part Number	Description
H1A-YY	PCIe Gen2 host adapter **YY** – transceiver options are shown in Table 1
R1USB30B-YY-E	Remote USB 3.0 host adapter **YY** – transceiver options are shown in Table 1 **-E** – supplied in enclosure Leave blank - supplied without enclosure
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

Documentation

The documents listed below can be downloaded from the S3B 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. USB Extension Performance
5. H1A Data Sheet
6. R1USB30B Data Sheet

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