

# USB2.0 to Fiber Optic Media Converter



**Features:**

- Supports USB 2.0 over fiber
- Smaller size and Compact than 2173
- Four USB Hub Ports, each hub port provides attached device with 5VDC power (up to 500mA)
- Power, Optical Signal Detect, Link Status, and Device port status LED indicators
- LC optical connectors
- Din Rail Mounting
- Improved Operation for Vista Operating System
- Supports USB 1.1 and USB 2.0 controller
- Works with National Instrument controllers

- Operation Mode:** USB 2.0
- Input/Output Interface:** USB Type A
- Transmission Line Interface:** LC optical connector is standard
- Transmission Distance:** See distance chart
- Transmitter Output Power:** MMF -9dBm Minimum 62.5micron  
SMF -9dBm Minimum
- System Wavelength:** 850 or 1300 nm
- Data Rate:** 1.5, (USB 1.0) 12,(USB 1.1) and 480 (USB 2.0) Mbps
- Bit Error Rate:** 10<sup>-9</sup>
- Receiver Sensitivity:** MMF(850nm) -17dBm Minimum  
MMF(1300nm) -20dBm Minimum  
SMF(1300nm) -20dBm Minimum
- Operating Temperature:** 0 °C to 70 °C
- Weight:** 0.75 lb (340 grams)
- Input Power:** 5VDC  
External with power supply - 5W typical (S.I.Tech #2166 - 100 to 240 VAC, 50/60 Hz, to 5VDC, UL, CE, & TUVGS Listed)
- Metal Enclosure:** 4.75" X 3.75" X 1.000"

S.I.Tech 2181/2182 USB media converter pair extends the range of USB 2.0 beyond the USB 5 meter limit. The USB media converters are compliant with the USB 2.0 specification supporting low speed(1.5 Mbps), full speed(12 Mbps), and high speed(480 Mbps) USB data transfer.

The 2181/2182 are enumerated as generic USB hub and provide a 4-port USB hub at distances up to 2 Km over fiber optic cable. The 2181 connects to host PC through USB type B connector. The 2182 connects to USB peripherals through USB type A connector.

**OPERATING DISTANCE FOR FIBER OPTIC CABLE**

| Fiber Size (Microns) | Attenuation dB/Km |        | Bandwidth MHz/Km |             | Distance Meters |        | Distance Feet |        |
|----------------------|-------------------|--------|------------------|-------------|-----------------|--------|---------------|--------|
|                      | 850nm             | 1300nm | 850nm            | 1300nm      | 850nm           | 1300nm | 850nm         | 1300nm |
| 50                   | 3.0               | 1.5    | 600              | 600         | 500             | 600    | 1650          | 1800   |
| 62.5                 | 4.0               | 1.5    | 200              | 600         | 275             | 600    | 900           | 1800   |
| 10 SM                | Unspecified       | 0.4    | Unspecified      | Unspecified | -               | 5000   | -             | 16000  |

SM - Single mode option - 1300nm (Application limits may be exceeded)  
Optical Unit Connection: Connect the optical transmission line to the T and R receptacles.  
Note which cable channel goes to Tx or Rx by noting cable imprint.  
If you are using Laser Enhanced multimode fiber, depending upon its bandwidth, longer distances maybe possible.

*Meets FCC requirements of Class B, Part 15 Computing Devices Standard, USB Standard.  
Specifications subject to change without notice.*



Note: 2181/2182 require USB2.0 root hub support from USB 2.0 host controller.  
**The USB 2.0 host controller will be identified in the Windows Device Manager as "Enhanced" or EHCI controller.**

Note: 2182 5 watts typical, additional USB devices power (5V, up to 500ma) can increase 2182 power to 16 watts.

