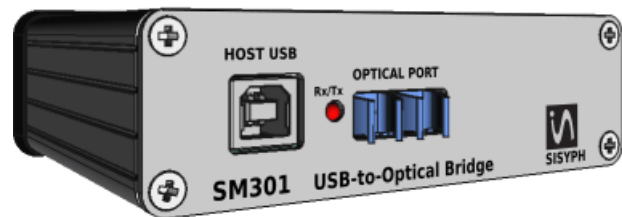


Datasheet

SM301 *Nemausus* USB-to-Optical Communications Bridge

Features

- Complete electrical isolation between PC and platform
- USB 2.0 to *Optical Versatile Link™*
- Low-cost, robust optical cable
- Up to 1Mbaud



Applications

- Noise-immune communications
- Remote control of SPK-Platforms

General Description

Overview

The SM301 *USB-to-Optical Communications Bridge* provides communications between the host computer and a remote client through an optical fiber interface. An internal FTDI™ chip encodes the data stream from the USB port to a pair of asynchronous UART signals. Coupling between the UART Tx- and Rx-lines and their associated optical cable is then achieved using Broadcom™

transceivers. Due to the nature of the optical transmission, the SM301 is recommended for communications with SPK-Series Platforms in noisy environments or where a complete electrical isolation is required. As SPK platforms are supplied with the SK810 *Interfaces Controller* module, which accepts both USB and optical cables, no additional hardware is required on the platform side to connect the optical cable.

General Characteristics

The adapter is designed to be operated in laboratory environment.

Operating Temperature

Range +15 °C to +40 °C,
non-condensing.

Connectors

USB USB 2.0, receptacle type B
Optical HFBR-0500ETZ Series
Broadcom Versatile Link,
duplex, non-latching receptacle

Optical Port

Wavelength 660 nm
Bitrate 1 MBaud max.
Cable Length 50 m max.

Indicator

Any optical port activity is indicated by a LED.

Power

The SM301 operates from the power supply delivered by the host *via* the USB interface. A maximum current of 80 mA can be drawn from the +5 V.

Case Physical Properties

Material Anodized aluminium (6063)
Color Clear, black, blue or red
Dimensions 103 × 80 × 34 mm.
Weight ≈ 250 g.

Warranty

One (1) year parts and labor on defects.

Using the SM301

The host computer is connected to the USB-to-Optical Communications Bridge using an USB 2.0 type B cable. The bridge accepts one pair of optical cables (3 m or 10 m). The user can use his own cables, which are also available from Sisyph (see Accessories section below). The UART is then configured through the serial port settings assigned to the internal bridge IC (FT231X). No driver installation should be necessary as FTDI drivers are now supported by Linux and Windows operating systems.

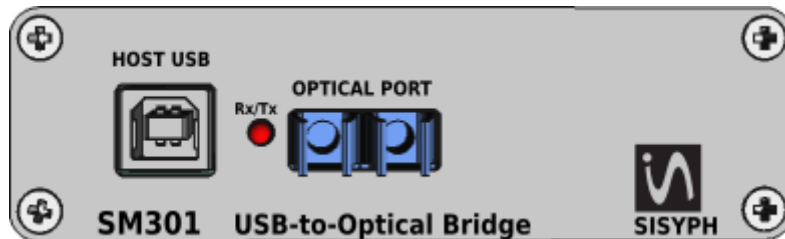


Figure 1: Wiring of the SM301 bridge should be straightforward. The host computer and the optical cable are connected to their respective interfaces. The Rx/Tx indicator will flash when data is coming from or going to the optical interface.

Ordering Information

SM301 Module

Ordering Code	Front-Panel Options
SM301	USB-to-Optical Communications Bridge

Accessories

Accessories and optional parts described in this section are not included in the SM301's package and must be therefore ordered separately if required.

Ordering Code	Description
SCM841	USB 2.0 cable, type A male to type B male, 1 meter length.
SCM071	3-m, optical cable, single (Rx,Tx) pair.
SCM072	10-m, optical cable, single (Rx,Tx) pair.

Certification

Signals and Systems for Physics certifies that this product met its published specifications at the time of shipment.

Safety and Preparation for Use

The SM301 *USB-to-Optical Communications Bridge* is not designed, intended, or sold for use in hazardous environments requiring fail-safe operation, including without limitation, operation of nuclear facilities, aircraft or spacecraft control systems, and life support or weapons systems. The user must assure that any failure or misapplication of the SM301 *USB-to-Optical Communications Bridge* cannot lead to a consequential failure of any interconnected equipment that could lead to loss of life or limb, or property damage. The illustrations, charts, and discussions shown in this document are intended solely for purposes of example. Since there are many variables and requirements associated with any particular control application, *Signals and Systems for Physics* does not assume responsibility or liability for actual use based upon the examples shown in this publication.

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