



Installation/Operation Instructions



Fiber Optic Video Transmission System

NT/NR-1HK-SFP

Digitally Encoded Multi-rate 12G-SDI Video
using the Small Form Pluggable (SFP+)
Optical Module

Ver. 02/2026 B

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1.0 Product Description

Meridian's 12G-SDI fiber products are part of our expanding DigiCool product family. The NT/NR-1HK-SFP product supports one channel of SMPTE compliant industry standard, broadcast quality digital video over single-mode fiber.

These units transmit and receive real-time video and no video compression is utilized. Integrated Re-clocker ensures maximum performance over long fiber distance. This product incorporates the industry standard Small Form Pluggable (SFP+) optical modules. In addition to single-mode SFP+ modules, CWDM options are available.

The NT/NR-1HK-SFP is the stand-alone model. This product is powered by 5VDC power supply (Part # WP-USB).

Optional conformal coating provides an additional level of protection from environments with high moisture and humidity.

2.0 Installation

The NT/NR-1HK-SFP is a stand-alone module and can be mounted in either a horizontal or vertical position. There are two mounting holes for # 6 (maximum) hardware.

The mini-USB power connector is located on the front of the module. For proper operation of this module Meridian recommends the WP-USB power supply with output of 5VDC. Two mounting holes provided for mini-USB locking power cable.

3.0 Product Signal Format & Specifications

The tables below identify the specifications for the various signals that these modems transmit/receive.

VIDEO

Formats	ST-2082-1(12G), ST-2081-1(6G), ST-424(3G), ST-292(HD), ST-259(SD)
Nominal Level	0.8 Vp-p, 1.0 Vp-p max.
Data Rate	270Mbps - 12Gbps
Impedance	75 Ohm
Gain	Unity
Input Coupling	AC
Return Loss	>15 dB
Jitter (Pathological Data Pattern)	< 0.2 UI
Bit-Error Rate	10 ⁻¹²

CONNECTORS

Video	75 Ohm BNC (Gold Center Pin)
Optical	LC
Power	MINI-USB

OPTICAL

The SFP series products are available for both single-mode and multimode fiber optic applications and either one or two fiber versions. Recommended optical speed for this product is 12Gbps. For more specifications on a SFP optical devices go to SFP data sheet or go to:

WWW.MERIDIAN-TECH.COM -> PRODUCTS -> ACCESSORIES -> SFP OPTICAL DEVICES

Common SFP modules		
Part Number	Fiber Type	Fibers
SMT1300J10	Single-mode 6G Transmitter, 1310nm, 10Km	1
SMT1550J20	Single-mode 6G Transmitter, CWDM*, 20Km	1
SMR1300J10	Single-mode 6G Receiver, 1310nm, 10Km	1
SMT1300K10	Single-mode 12G Transmitter, 1310nm, 10Km	1
SMT1550K20	Single-mode 12G Transmitter, CWDM*, 20Km	1
SMR1300K10	Single-mode 12G Receiver, 1310nm, 10Km	1

Optical devices are Compliant with Class 1 Laser Safety Rating.

*When using higher power CWDM lasers, an external attenuator of 3dB minimum is required when performing short distance testing, to eliminate optical overload at the Rx unit.

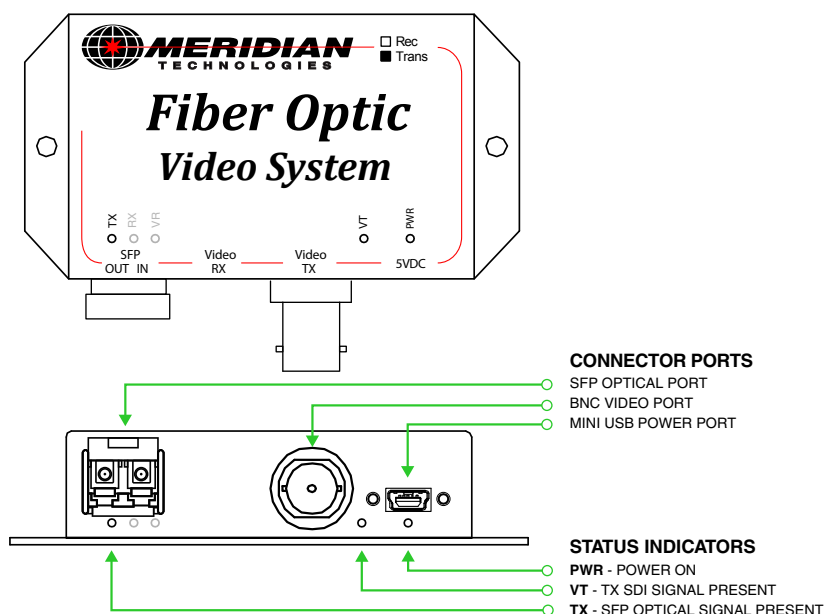
*When using in a system with a CWDM multiplexer/demultiplexer, it is essential that the specific wavelengths to and from these units be connected to the corresponding input/output wavelengths on the CWDM mux/de-mux units. Otherwise, the individual wavelengths will not pass through the CWMD mux/de-mux device.

4.0 Module Pinout Diagram

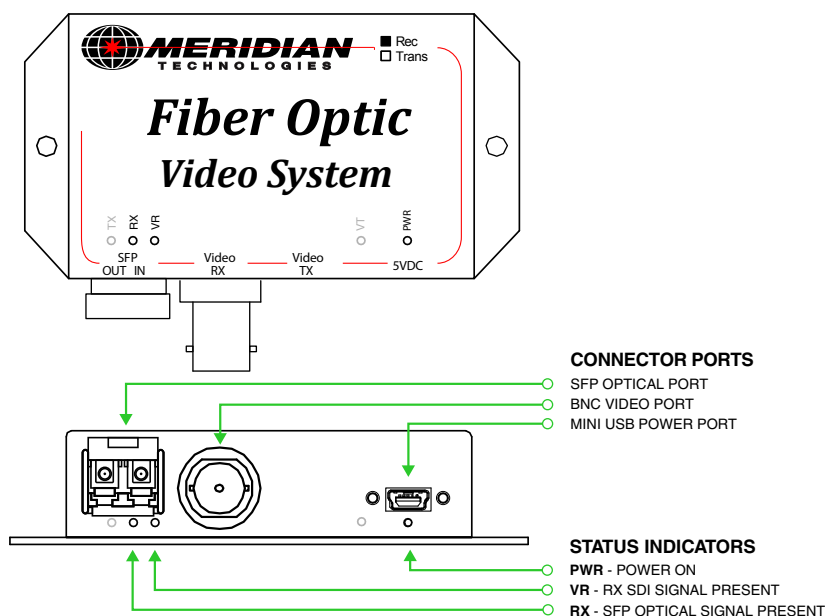
Figure below shows connectors and LED status indicators locations for the NT/NR-1HK-SFP modules.

PINOUT DIAGRAM

NT-1HK-SFP



NR-1HK-SFP

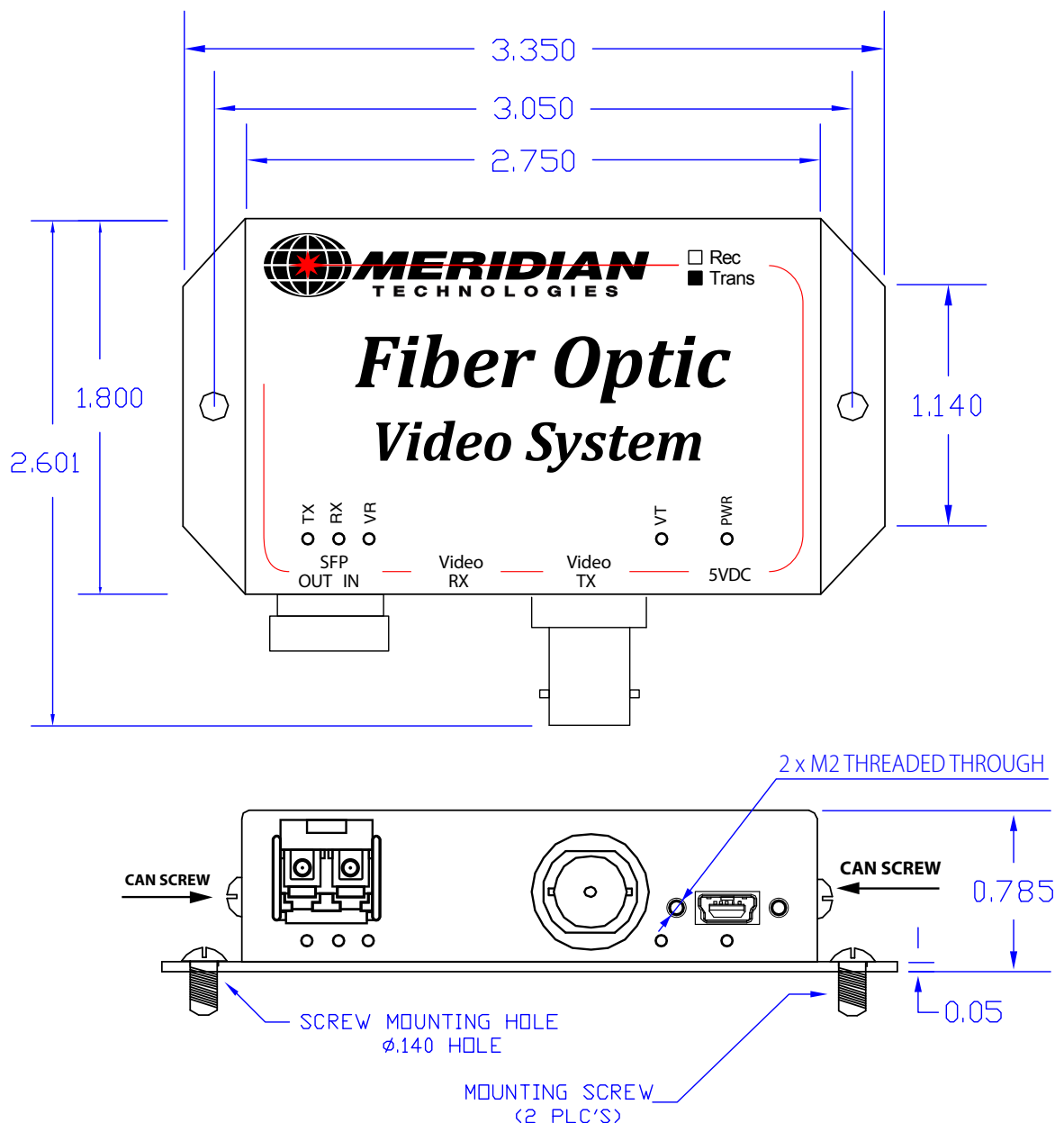


5.0 Mechanical Dimensions

Module physical dimensions: Length – 3.35” (86mm), Width – 1.8” (46mm), Height – 0.785” (20mm). Module weight: 0.22 lb. (100g)

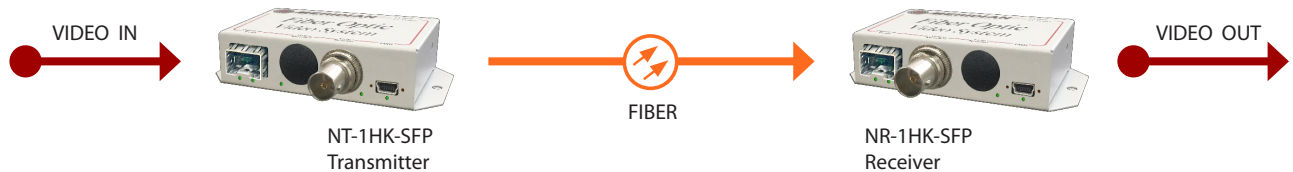
MECHANICAL DIMENSIONS

NT/NR-1HK-SFP



6.0 Connection Diagram

Figure below shows the connection diagram for the NT-1HK-SFP (Transmitter) and NR-1HK-SFP (Receiver) modules.



7.0 Troubleshooting

Below is a listing of several problems that may arise during the installation & operation of the modules. If you are having difficulty installing or operating the modules, please refer to this list below.

- | | |
|-----------------|--|
| Problem: | <i>No video at output of module</i> |
| Action: | Check to ensure that the monitor is ON and the video cable is connected to the Rx module. With an optical power meter, verify that the wavelength for the suspect optical channel is working properly (NR unit). |
| Problem: | <i>Power light off</i> |
| Action: | Check power connection. |
| Problem: | <i>SDI signal light off</i> |
| Action: | Check SDI input signal connection. |

If the problem still persists after reviewing the above items, please contact Meridian technical support (+1-516-285-0000)

