Installation/Operation Instructions

Fiber Optic USB, Keyboard & Mouse With Audio

Transmission System

Part Numbers:

FT/FR-1Q2A/1Q2A-X

(USB 2.0 Extender with 3-port Hub & 2-channel Audio Tx/Rx)

FT/FR-1Q/1Q-X

(USB 2.0 Extender with 4-port Hub)

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1.0 Product Description

Meridian's FT/FR-1Q2A/1Q2A-x & FT/FR-1Q/1Q-x products are fiber optic modems that transmit keyboard, mouse and two channels of 16-bit audio over one optical fiber using digital transmission technologies. At the transmit side, the USB interface connects directly to a computer's standard USB 2.0 port (type B) and provides a 4-port USB 2.0 (type A) hub with stereo audio at the receiver side.

This product series uses Meridian's standard 1-slot wide chassis mount card assembly and plugs into the following Meridian chassis: SR-500/S, SR-1002/S, SR-1600/S and SR-2001 & SR-2000 series equipment chassis.

Both ST and FC optical connectors are supported, depending on the part number. An ST optical interface is available for both multimode and singlemode fiber applications. The FC optical interface is available only for singlemode products. Conformal coating provides an additional level of protection from environments with high humidity.

2.0 Installation

The FT/FR-1Q2A/1Q2A-x products are one-slot wide cards and, as such, occupy one slot in Meridian's standard chassis. To install in the chassis, orient the cards with the Meridian logo at the top of the module and slide onto the top and bottom card guides in the chassis. Press securely on the top and bottom of the module to ensure that it is fully seated in the chassis so that the electrical connector mates with the chassis-mounted motherboard. Once installed, manually tighten the two thumbscrews located at the top and bottom of the card. Do not use tools to secure and do not over tighten.

Note: A fully populated subrack should have forced-air cooling to avoid excessive heat buildup inside the chassis. A fan assembly tray (P/N FA-2000/1) with three (3) fans is available from Meridian and should be installed under the 19" SR-2000/1 whenever possible.

3.0 Product Signal Format & Specifications

The KVM module that comprises the FT/FR-1Q2A/1Q2A transmission system can be ordered individually by the following part number: FT-1Q2A/1Q2A-x (transmitter side w/audio) & FR-1Q2A/1Q2A-x (receiver side w/audio) or FT-1Q/1Q-x (transmitter side w/out audio) & FR-1Q/1Q-x (receiver side w/out audio) These USB, Keyboard, Mouse & Audio modules transmit and receive the following signals:

Signal Type	Channels	Transmit	Receive
Audio (47 KOhm Unbalanced)	2	Yes	Yes
Data USB 2.0	3		

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

Audio	
In/Out Impedance	47K ohm Unbalanced
Frequency Response	10Hz to 18KHz
SNR	>80dB (weighted) @ 1KHz
In/Out Level	0 dBm (1Vp-p, max)
THD	<0.02% @ 1KHz
Digitized Resolution	16 bit

Connectors	
KVM	4-pin USB (type A & B)
Audio	3.5mm Phone Jack
Optical	Singlemode – ST or FC Multimode - ST

4.0 Optical specification

The table below lists the optical specifications for both singlemode and multimode fiber applications.

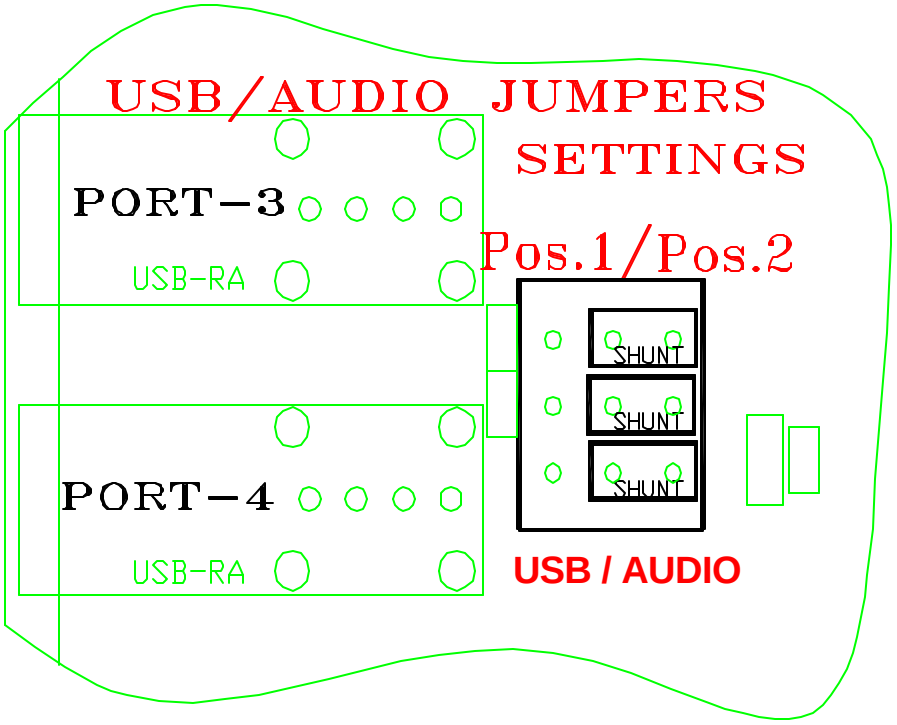
Optical Specifications						
Fiber Type/Size (um)	Optical Output(dBm)	Rx Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical connector	Optical Dynamic Range (dB)
Multimode (FP Laser) 62.5/125	-6	-16	10	850/1300	ST	20
Singlemode (FP Laser) 9 / 125	-6	-21	15	1310/1550	ST, FC	20

5.0 USB/Audio Jumper Settings

Four USB ports can be used to connect your computer keyboard, mouse or other USB 2.0 device such as a flash drive or external HDD. The fourth of the USB port can also be switched to transmit the computer audio output and line input channels and provides them on standard 3.5mm stereo jacks on the receive unit.

There are three jumpers located directly behind the USB 2.0 Port-4 connector. These jumpers are used to set Port-4 for input/output audio channels. This is default setting for FT/FR-1QA2A/1QA2A-x. If this settings need to be changed, move all jumper's from position-2 (audio settings) to position-1 (USB settings) This is default setting for FT/FR-1Q/1Q-x

The figures below illustrate these jumpers and how they are configured



6.0 Front Panel Pinout Assignment Diagrams

Figure 6.1, 6.2 & 6.3 below shows the front panel layout, connector location, indicator location, pinout assignment and USB/audio input/output connection for both the TX and RX modules.

6.1 USB & Audio Status Indicators

There are function status indicator lights on the left associated with FT-1Q2A/1Q2A modules and are identified as follows:

Power:	**Green (ON)**
Diagnostic:	**Green (OK), Red (alarm)**
OPTIC:	**RX Green (OK), TX Laser Red (Error)**
USB Active:	**Green Flashing (OK)**
USB Link:	**Green**
UH (USB Host):	**Green**

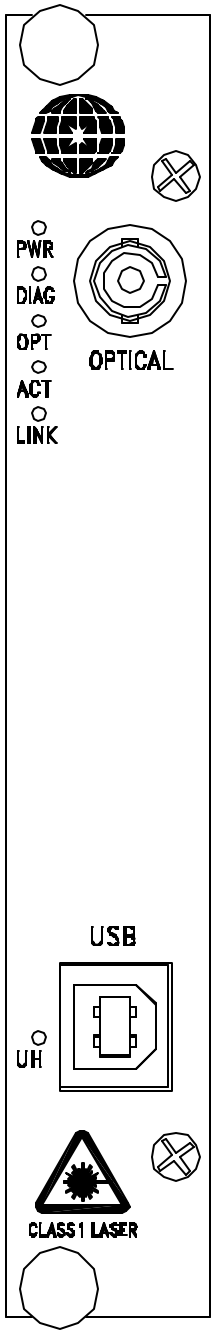
There are function status indicator lights on the left associated with FR-1Q2A/1Q2A modules and are identified as follows:

Power:	**Green (ON)**
Diagnostic:	**Green (OK), Red (alarm)**
OPTIC:	**RX Green (OK), TX Laser Red (Error)**
USB Active:	**Green Flashing (OK)**
USB Link:	**Green**
AE (Audio):	**Green (OK), Red (Error)**
UH (USB Host):	**Green**

FT-1Q2A/1Q2A-X
FT-1Q/1Q-X
PINOUT DIAGRAM

STATUS INDICATORS

PWR - POWER (GREEN)
DIAG - CARD DIAGNOSTIC
(GREEN-OK, RED-ALARM)
OPT - TX LASER ERROR (RED)
/RX OPTICAL SIGNAL (GREEN)
ACT - USB ACTIVE (FLASHING GREEN)
LINK - USB LINK (GREEN)



OPTICAL PORT (ST, FC)

UH - USB HOST (GREEN)

USB PC
(TYPE B)

Figure 6.1

FT-1Q2A/1Q2A or FT-1Q/1Q
Front Panel Layout Diagram

FR-1Q/1Q-X

PINOUT DIAGRAM

STATUS INDICATORS

PWR - POWER (GREEN)
DIAG - CARD DIAGNOSTIC
(GREEN-OK, RED-ALARM)
OPT - TX LASER ERROR (RED)
/RX OPTICAL SIGNAL (GREEN)
ACT - USB ACTIVE (FLASHING GREEN)
LINK - USB LINK (GREEN)

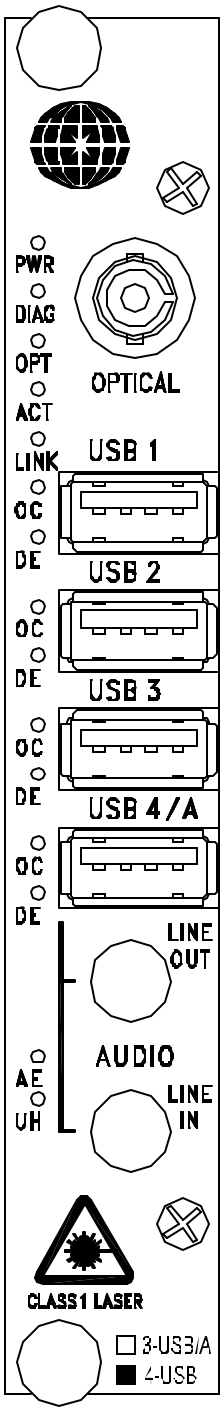
OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

AE - NA
UH - USB HOST (GREEN)



OPTICAL PORT (ST, FC)

USB DEVICE (PORT 1) (TYPE A)

USB DEVICE (PORT 2) (TYPE A)

USB DEVICE (PORT 3) (TYPE A)

USB DEVICE (PORT 4) (TYPE A)

Figure 6.2

FR-1Q/1Q-x Front Panel Layout Diagram

FR-1Q2A/1Q2A-X

PINOUT DIAGRAM

STATUS INDICATORS

PWR - POWER (GREEN)
DIAG - CARD DIAGNOSTIC
(GREEN-OK, RED-ALARM)
OPT - TX LASER ERROR (RED)
/RX OPTICAL SIGNAL (GREEN)
ACT - USB ACTIVE (FLASHING GREEN)
LINK - USB LINK (GREEN)

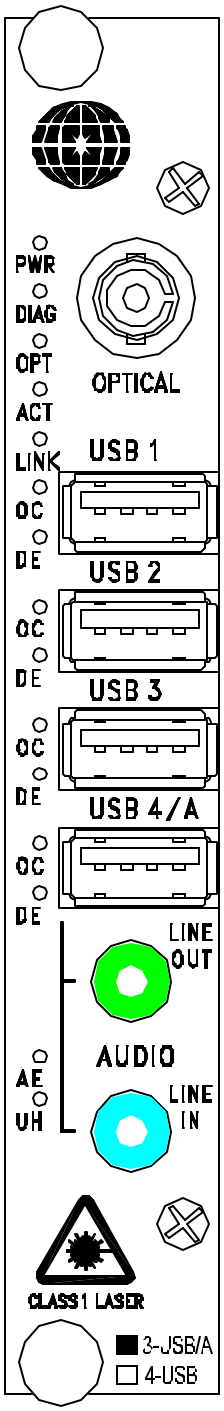
OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

OC - OVER CURRENT (RED)
DE - PORT ENABLE (GREEN)

AE - AUDIO (GREEN-OK, ERROR-RED)
UH - USB HOST (GREEN)



OPTICAL PORT (ST, FC)

USB DEVICE (PORT 1)
(TYPE A)

USB DEVICE (PORT 2)
(TYPE A)

USB DEVICE (PORT 3)
(TYPE A)

USB DEVICE (PORT 4)
(TYPE A)

AUDIO OUTPUT (GREEN)
(3.5mm STEREO JACK)

AUDIO INPUT (BLUE)
(3.5mm STEREO JACK)

Figure 6.3

FR-1Q2A/1Q2A-x
Front Panel Layout Diagram

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: *Module does not fit in chassis slots*
Action: Check module orientation. Meridian "Globe" must be oriented on the top left hand side of the module. Make sure the card guides in the chassis are aligned with the extrusion on the module.

Problem: *Card power LED does not light when power to the module/subrack is applied or power indicator turns on and off*
Action: Check power supply to ensure that it is plugged in and turned on. If flashing continues, move module to another chassis or location in the same chassis, if available.

Problem: *No Data or Audio*
Action: 1 - Ensure that the modules are seated properly in their respective chassis and that power is applied to each unit
2 – Check to ensure that the fibers are properly connected FT-1Q2A/1Q2A connected to FT-1Q2A/1Q2A module

Problem: *No Audio*
Action: Check the audio connections to ensure that the audio inputs and outputs are connected to the appropriate Audio line.

If the problem still persists after reviewing the above items, please contact Meridian technical support (516-285-1000).

Part Number Variations

The table below lists the various part numbers and description that are available for this series of product.

Transmitter	Receiver	Wavelength (nm)	Fiber Interface	Optical Connector
FT-1Q2A/1Q2A-2	FR-1Q2A/1Q2A-2	850/1300	Multimode	ST
FT-1Q2A/1Q2A-5	FR-1Q2A/1Q2A-5	1310/1550	Singlemode	FC
FT-1Q2A/1Q2A-5ST	FR-1Q2A/1Q2A-5ST	1310/1550	Singlemode	ST
FT-1Q/1Q-2	FR-1Q/1Q-2	850/1300	Multimode	ST
FT-1Q/1Q-5	FR-1Q/1Q-5	1310/1550	Singlemode	FC
FT-1Q/1Q-5ST	FR-1Q/1Q-5ST	1310/1550	Singlemode	ST

Note: FT & FR-1Q2A/1Q2A-x cards are NOT compatible with the older DT & DR-1Q2A/1Q2A-x cards.

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