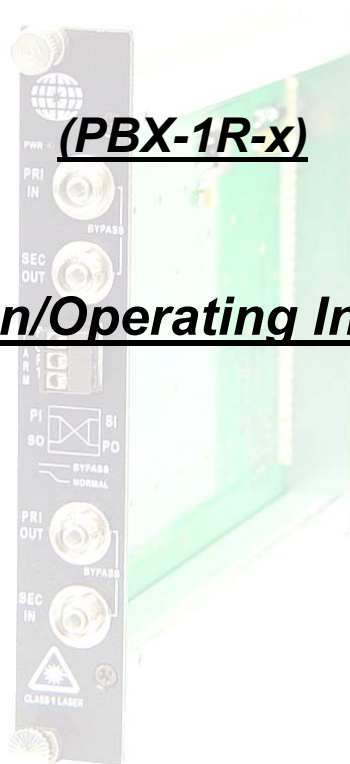




Fiber Optic Bypass Switch



Installation/Operating Instructions

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PBX-1R-x
Fiber Optic Bypass Switch
Installation/Operating Instructions

1.0 Product Description

Meridian's product series PBX-1R-x are non-latching optical bypass switches that are typically used to reconfigure string, redundant or hot-standby video or data networks. 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-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

Refer to Appendix 1 at the back of this manual for the module part numbers applicable in this manual.

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

2.0 Installation

Series PBX-1R-x products are one-slot wide cards and, as such, occupy one slot in Meridian's standard chassis (SR-500/S, SR-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis). To install in these chassis, orient the card 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 these and do not over tighten.

3.0 Operation

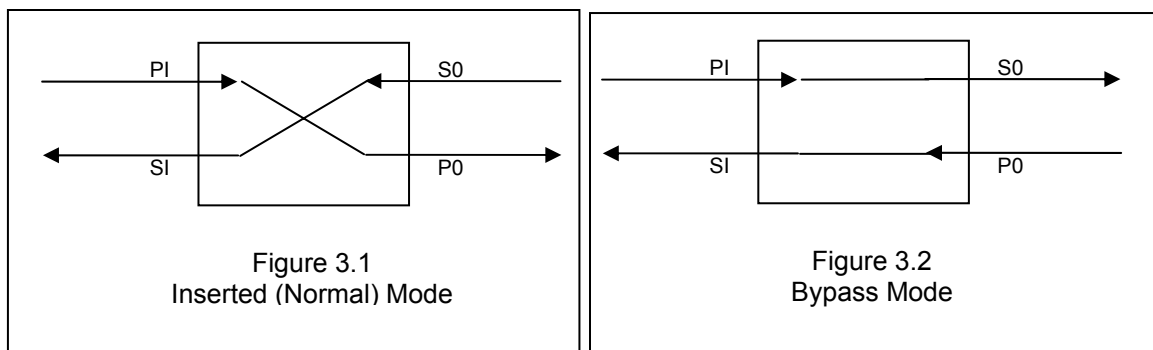
Under normal operation, the switch is activated. The table below shows the state of the optical connections in both the normal (activated) and bypass modes.

Switch State	Optical Connections	
Normal (activated)	PI connected to P0	SI connected to S0
Bypass	PI connected to S0	SI connected to P0

In order for the switch to be in the "Normal" mode, it is necessary that power be applied to the module and that the front panel Alarm Input (pins 1 & 2) are shorted together.

3.1 Schematic Diagram

The following diagram shows the schematic diagram of the bypass switch.



4.0 Product Specifications

The PBX-1R-x series products are passive optical devices. The optical specifications are listed below:

Fiber Type	62.5/125µm, 50/125µm multimode or 9/125µm singlemode
Wavelength range	1240nm to 1640nm
Insertion loss	2.0dB, typical, multimode 1.0dB, typical, singlemode
Switching speed	5ms, typical
Crosstalk	75dB, typical; 60dB, maximum

Again, refer to Appendix 1 for the product part number and associated functional description. The above number and type of signals will vary based on the product part number.

Connectors	
Optical	Singlemode – ST or FC Multimode - ST
Alarm	3-pin screw terminal connector

5.0 Optical & Electrical Input/Output Assignment

Figure 5.1 below shows the front panel optical & electrical input/output connections

OPTICAL BYPASS SWITCH PINOUT DIAGRAM

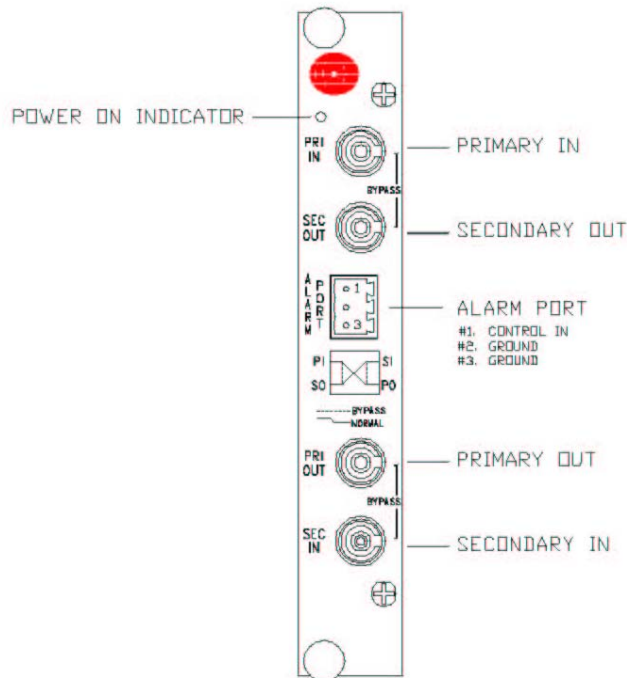


Figure 5.1
Optical Bypass Switch Front Panel Diagram

5.1 Alarm Port

The alarm port on the front panel can be used in two different ways

1. Manual switch enable/disable
2. Automatic switch interface to Meridian's T1/E1 modules

In order to activate the switch, the control input pin #1 must be connected to ground (pins #2 or #3). For manual operation, this can be accomplished by simply placing a short between these two pins. When used in conjunction with Meridian's T1/E1 data modems, the Alarm port on the bypass switch is connected directly (pin-for-pin) to the Alarm port on the T1/E1 modem. In this configuration the bypass switch will revert to the bypass mode (de-energize) if the associated T1/E1 modem loses power.

5.2 Typical Connections

The diagrams below illustrate how the bypass switches are optically connected in an actual system. Figure 5.2 shows the configuration for normal operation. Figure 5.3 shows the optical configuration when the bypass switch is in the bypass (unpowered) mode. In this instance, the electronic equipment (T1 mux/demux) units at this specific node location are bypassed and the optical signal proceeds to the set of optical switches/modems in the next node location.

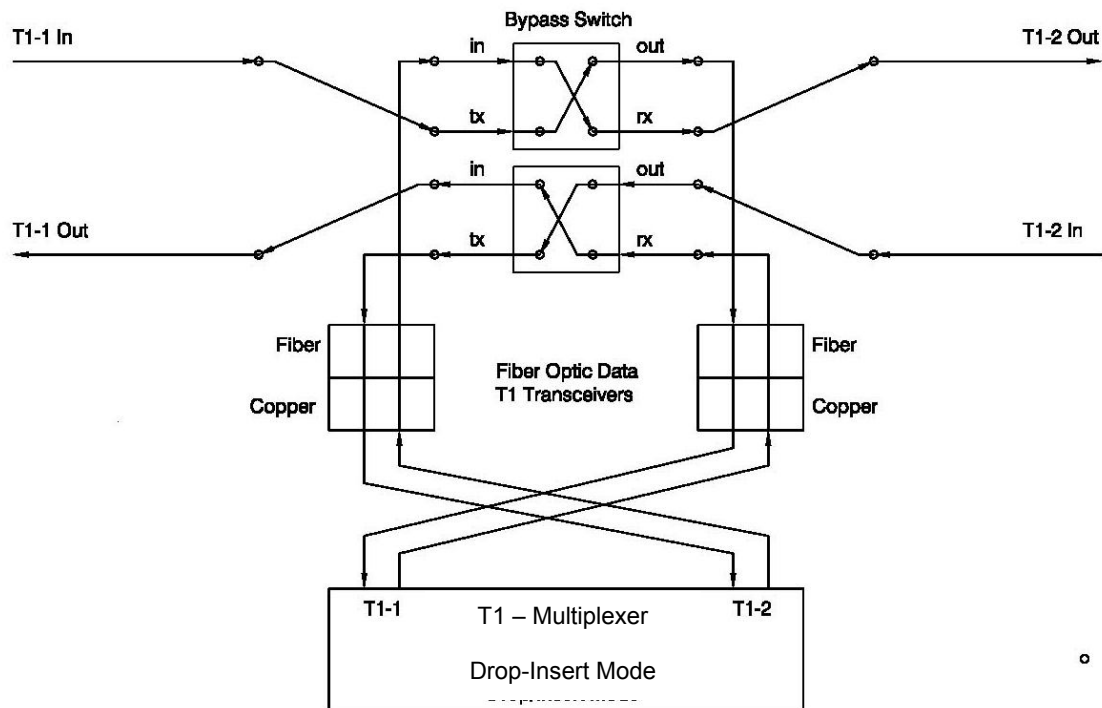


Figure 5.2

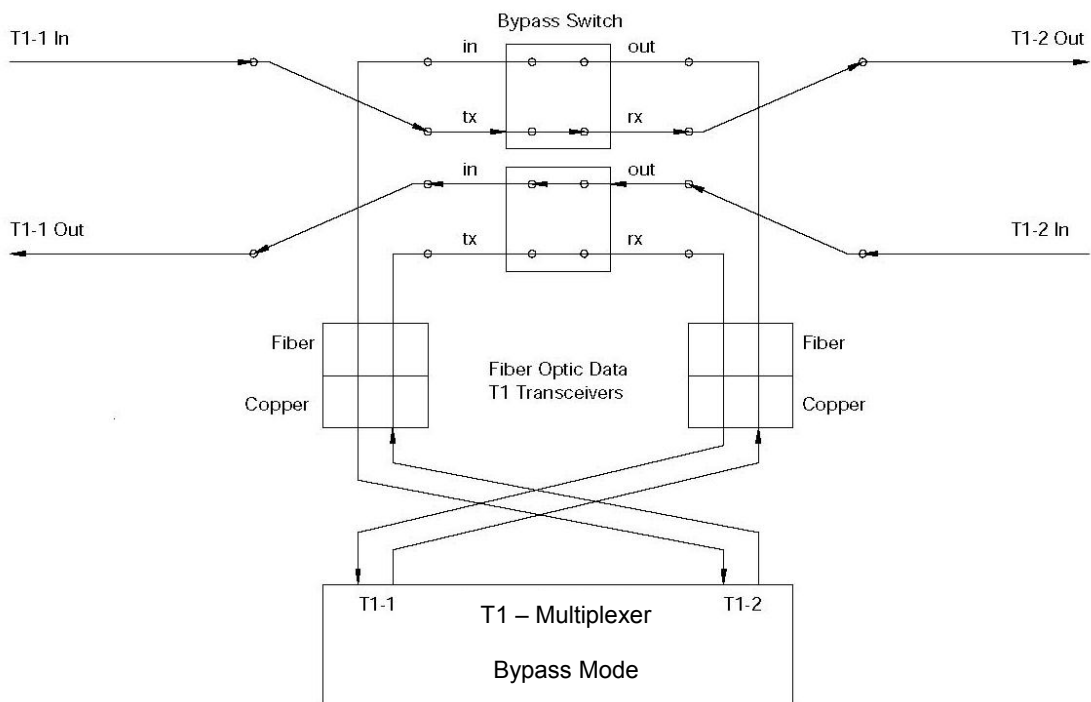


Figure 5.3

6.0 Front Panel Indicator Lights

There is a red power indicator light on the top of the module. In order for the switch to activate, this light must be on as well pins 1 & 2 of the Alarm Port be shorted together.

7.0 Product Part Numbers

See Appendix 1 for a listing of the product part numbers and their description that pertain to this document.

8.0 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:** *Switch does not activate*
Action: Ensure that pins 1 & 2 of the alarm input are shorted together
- Problem:** *Optical continuity cannot be obtained*
Action: Recheck the optical connections per section 5 of this manual

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

Appendix 1 – Applicable Part Number Variations

The table below indicates the part numbers and product description that are included in this manual. The Input/Output diagram in section 4.0 shows the optical & electrical connections.

Part Numbers	Description
PBX-1R-0	Optical bypass switch, 62.5/125µm multimode fiber
PBX-1R-1	Optical bypass switch, 50/125µm multimode fiber
PBX-1R-3	Optical bypass switch, 9/125µm singlemode fiber