



## *INSTALLATION AND OPERATING INSTRUCTIONS*

# **PR-9000R**

### **DESCRIPTION**

The PR-9000R is a rack mount card fiber optic receiver that converts three independent (IM) intensity modulated light signals from optical cables to high resolution 160 MHz per channel RGB or three (3) 75 Ohm composite (monochrome) video signals.

### **SYSTEM COMPATIBILITY**

The PR-9000R is compatible with RGB and RS-170 and RS-343A video signals.

Meridian Technologies monitor end PR-9000R card units plug into any of the following Meridian Technologies chassis: part #s SR-4000, SR-4001, SR-2000, SR-2001, SR-1500, SR-1200 and SR-1000. PR-9000R receivers are compatible with source end PT-9000R RGB/monochrome and PT-9200R VGA converter to RGB (video) transmitter cards.

The PR-9000R RGB/monochrome receiver cards incorporate Automatic Gain Control Circuitry and features full optical dynamic range capability (see specifications); units require no user adjustments for speedy installation and long-term reliability.

### **INSTALLATION**

To install the PR-9000R, it is necessary to allow enough space to accommodate the bend radii of the optical cables connected to it. The unit slides into any slot of the above-mentioned sub-racks or desk chassis and requires as short as practical BNC terminated coaxial cables to output the video signals. Series 9000 receivers are compatible with 50/125 and 62.5/125 micron multimode fibers.

Slide the top and bottom card extrusions along the mirror image card guides (not in spaces

between the guides). There is a GLOBE (part of Meridian's logo) at the top of card front panel to indicate proper top to bottom orientation. Push hard to make good connection to mother board - loud snap indicates good installation. There are two knurled captive screws on top and bottom of front panel that hold each card to the sub-rack. These must be locked by hand in a clockwise manner (do not over tighten).

There is an LED on the top portion of the front panel that will light up once the power supply to the sub-rack is turned on. The LED is connected to the + and - supply circuitry of the card. Once receiver card is installed in sub-rack, please connect:

a) coaxial cables to the correct ports.

Please note the R (red) port is on top, the G (green for sync) is in the middle and the B (blue) is on bottom of card front panel

b) fiber optic cables to the optical ports; these have to be marked as to the corresponding R, G and B channel.

Should the PR-9000R card be utilized as a 3 channels monochrome, sync on all 3 channels transmission system the installation procedure is the same as if it were an RGB unit. Please be sure that the fiber optic cables are clearly marked as to top, middle or bottom channel.

**WARNING: A FULLY LOADED SUBRACK REQUIRES FORCED AIR COOLING. TO AVOID OVER HEATING OF CARD UNITS, WHENEVER POSSIBLE INSTALL EVERY OTHER SLOT.**

Meridian recommends the installation of fan assembly units in between subracks to provide adequate ventilation to the high-density rack system. Use Meridian Technologies P/N FA-2000 which is an EIA 19"L x 5 1/4"H sub-rack (see manual for FA-2000).

## **POWER SUPPLY**

The unit is powered via a mother board by a switcher 110/220V supply which is provided with the sub-rack or desk chassis.

## **DIAGNOSTICS**

There are no diagnostics indicators on the front panel of the PR-9000R card. Extensive diagnostics are available only when the units are ordered with diagnostics option and installed into:

a) SR-2000 Master sub-rack with or without SR-2001 expansion units or SR-4000 Master sub-rack with or without SR-4001 and/or SR-2001 expansion units, (see appropriate SpectraSmart manual for details)

b) SR-1500, SR-1200 and SR-1000 with either SI-1500 Status Interface (local diagnostics) card or CI-1500 Computer Interface (PC remote diagnostics) card (see appropriate SpectraSmart manual for details).

## **TROUBLE SHOOTING HINTS - PR-9000R RGB/monochrome receiver**

**Problem** - Card does not seem to fit in slot;

- a) check top to bottom orientation; globe must be on upper portion of card front panel;
- b) make sure card extrusions are aligned (top to bottom) with mirror image card guides and not in between guides;
- c) try another slot, guides may be in incorrect location.

**Problem** - Card LED does not light up when power to sub-rack is applied; power supply LED goes on and off; after short period of time LED again turns on then turns off (repeat of cycle).

WHEN CARD UNITS ARE INSTALLED IN 18 OR 36 SLOT SUBRACKS, MINIMUM LOAD IS REQUIRED FOR POWER SUPPLY LED TO STAY ON - 3 CARDS. DESK CHASSIS DO NOT REQUIRE MINIMUM LOAD FOR POWER SUPPLY LED TO TURN AND STAY ON.

- a) try card in another slot and look for change in condition; if no change,
- b) try same card in another sub-rack, which has power supply LED on and houses cards that have lit up LEDs; if LED lights up no problem with card, if LED still off card is faulty, send back for warranty repair.
- c) for problem with sub-rack and/or power supply check appropriate sub-rack installation and maintenance manual.

**Problem** - 4 Cards are installed in SR-1200 desk chassis and slot #3 is only slot whose card's LED is not on;

- a) take card from slot #3 and install in another slot of same chassis, if condition is same card is faulty;
- b) try a "good card" in slot #3. If "good card's" LED does not light up, there is an additional problem with Mother Board; will not affect other cards but mother board assembly should be replaced if all slots are needed (see appropriate sub-rack manual for replacement procedure).

## TROUBLE SHOOTING HINTS - PT/PR-9000R RGB/MONOCROME COMPLETE SYSTEM

Cable plant documentation is the most important aspect of an installed communication system. Speedy recovery from a system that is potentially in trouble is possible when fiber optic and copper cables are properly identified. A most common problem with an RGB system is the installation of the fiber optic or coaxial cables to the wrong ports.

**Problem** - Cards are installed, power indicators are on but video picture on monitor presents only horizontal lines.

The issue is at the transmitter side - Green marked coaxial cable has either been connected to wrong port on PT-9000R transmitter card or there is a mismatched connection from the RGB source.

**Problem** - Video picture on monitor stable but colors are incorrect or incomplete (blue and/or red are missing). The only assumption made here is that the input coaxial cable connection to the green channel on the PT-9000R transmitter is correct. The other cables (fiber optic and/or coaxial) are loose or not connected if colors are mixed or missing.

ONLY ONE MISSMATCHED OR MISSING CONNECTION IS NEEDED TO PRODUCE A VIDEO PICTURE THAT IS STABLE BUT WITH THE WRONG OR MISSING COLORS.

Must try to rearrange all combinations of fiber and coaxial (except green input on PT-9000R transmitter) connections to correct or complete picture colors.

**Problem** - RGB source is on, RGB monitor is on, fiber optic system is on (power LEDs are on) but video on monitor screen is absent.

a) At monitor end, replace suspect receiver card with known good card. If still negative, take suspect receiver card and install in another location where link is OK; If receiver does not perform, return it for warranty repair. If receiver card performs, return it to original slot in first chassis;

b) go to transmitter end; replace suspect transmitter card with known good card. If still negative, take suspect transmitter card and install in another location where link is OK; if transmitter does not perform, return it for warranty repair. If transmitter card performs return it to original slot.

c) connect same transmitter to receiver from OK link to check if mother board connector in sub-rack (where transmitter is installed) is OK. If transmitter card does not perform, part of the trouble is the slot in connection. If transmitter performs, it and slot are OK.

d) install original receiver in another slot of desk chassis to check if slot had problem with mother board connection. If receiver performs, problem is with mother board slot. If receiver does not perform in second slot, first replace power supply and try again.

e) if still negative, remove chassis and install in a location where link is OK to test first if chassis mother board assembly is OK. If chassis does not perform, try with another power supply. If still negative, try card in another slot. If card performs in only one slot or if none of the slots operate, replace mother board (check manual on appropriate chassis for replacement procedure).

f) If chassis and receiver perform in another location, the cabling documentation to the original desk are incorrect.