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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Original Version	May 02
1.1	Updated safety section and added assembly and labeling sections	July 05

1. OVERVIEW

The 7705EO-3 offers three independent channels of electrical to optical conversion, economically, in a single module. Each independent channel accepts one serial video input, complying with SMPTE 259M (143-360Mb/s), SMPTE 310M (19.4Mb/s), SMPTE 344M (540Mb/s), M2S or DVB-ASI (270Mb/s), and provides one fiber output, with an optical wavelength of 1310nm.

The 7705EO-3 is designed as a companion to the 7705OE-3 optical to electrical converter. The 7705EO-3 can be housed in either a 1RU frame, that will hold up to three modules, or a 3RU frame, that will hold up to fifteen modules, providing 45 channels of optical conversion in a single 3RU frame.

Features:

- Supports all SMPTE259M standards with operation from 143Mb/s – 360Mb/s.
- Supports additional standards of SMPTE305M (SDTi), SMPTE310M (19.4Mb/s), SMPTE344M (540Mb/s), M2S and DVB-ASI (270Mb/s).
- Fully hot swappable from front of frame, with no fiber or BNC disconnect /reconnect required.
- High density - accommodates up to 45 independent channels of optical conversion, in a single 3RU frame.
- Automatic cable equalization to > 300m at 270 Mb/s
- Operation with multi-mode or single-mode fiber
- SC/PC, ST/PC or FC/PC connector options
- Tally output on Frame Status bus upon loss of input signal

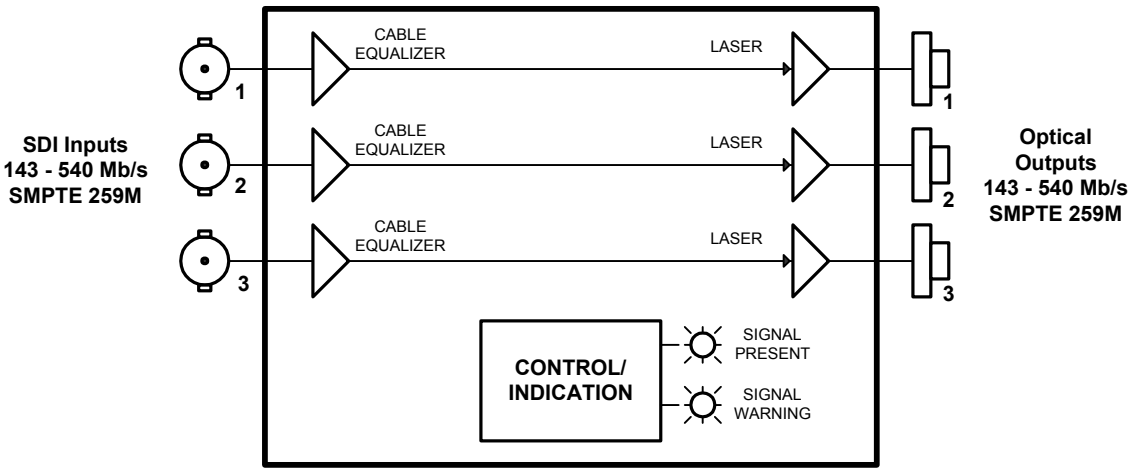

Figure 1: 7705EO-3 Block Diagram

2. INSTALLATION

The 7705EO-3 comes with a companion rear plate that has three BNC connectors and three SC/PC (shown), ST/PC or FC/PC optical connectors. For information on mounting the rear plate and inserting the module into the frame see the 7700FR chapter section 3.

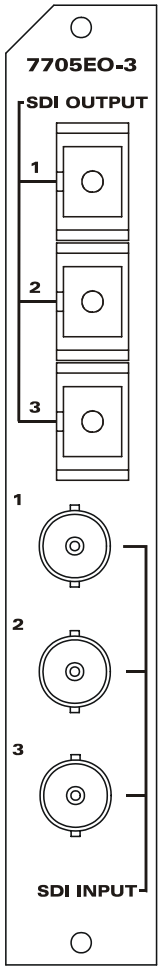

Figure 2: 7705EO-3 Rear Panel

SDI INPUT Input BNC connectors for 10-bit serial digital video signals compatible with the SMPTE 259M, SMPTE 305M, SMPTE 344M, DVB-ASI or SMPTE 310M standards. These inputs provide adaptive compensation for up to 250m of industry standard Belden 8281 cable, at 270Mb/s.

SDI OUTPUT There are three SC/PC (shown), ST/PC or FC/PC female optical connectors with the video output converted to an optical signal as specified in section 3.2

2.1. CARE AND HANDLING OF OPTICAL FIBER

2.1.1. Safety

CLASS 1 LASER PRODUCT

Background colour: yellow
Triangular band: black
Symbol: black

2.1.2. Assembly

Assembly or repair of the laser sub-module is done only at Evertz facility and performed only by qualified Evertz technical personnel.

2.1.3. Labeling

Certification and Identification labels are combined into one label. As there is no enough room on the product to place the label it is reproduced here in the manuals.

- There is no date of manufacture on this label as it can be traced by bar code label placed on the Printed circuit board of each Evertz plug-in module
- The Model number is one of: 7705EO13-3

Figure 3: Reproduction of Laser Certification and Identification Label

2.1.4. Handling and Connecting Fibers

Never touch the end face of an optical fiber. Always keep dust caps on optical fiber connectors when not connected and always remember to properly clean the optical end face of a connector before making a connection.

The transmission characteristics of the fiber are dependent on the shape of the optical core and therefore care must be taken to prevent fiber damage due to heavy objects or abrupt fiber bending. Evertz

recommends that you maintain a minimum bending radius of 5 cm to avoid fiber-bending loss that will decrease the maximum attainable distance of the fiber cable. The Evertz fiber optic modules come with cable lockout devices, to prevent the user from damaging the fiber by installing a module into a slot in the frame that does not have a suitable I/O module. For further information about care and handling of fiber optic cable see section 3 of the Fiber Optics System Design section of this manual binder.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUTS

Standards: SMPTE 259M A, B, C, D, SMPTE 344M, SMPTE 305M, SMPTE 310M (19.4Mb/s) or DVB-ASI.
Number of Inputs: 3 (independent channels)
Connector: BNC input per IEC 169-8
Equalization: Automatic to 300m (typ) @ 270 Mb/s with Belden 8281 or equivalent cable
Return Loss: > 15 dB up to 540 Mb/s

3.2. OPTICAL OUTPUTS

Standard: SMPTE 297M
Number of Outputs: 3 (independent channels)
Connector: Female SC/PC, ST/PC or FC/PC
Return Loss: > 14 dB
Rise and Fall Time: 400-700 ps
Fiber Size: 9 μm core / 125 μm overall
Wavelength: 1310nm (nominal)
Output Power: -7.5dBm ± 1dB

3.3. ELECTRICAL

Voltage: +12VDC
Power: 6 Watts.
EMI/RFI: Complies with FCC regulations for class A devices.
Complies with EU EMC directive.

3.4. PHYSICAL

7700 or 7701 frame mounting:
Number of slots: 1

4. STATUS INDICATORS AND DISPLAYS

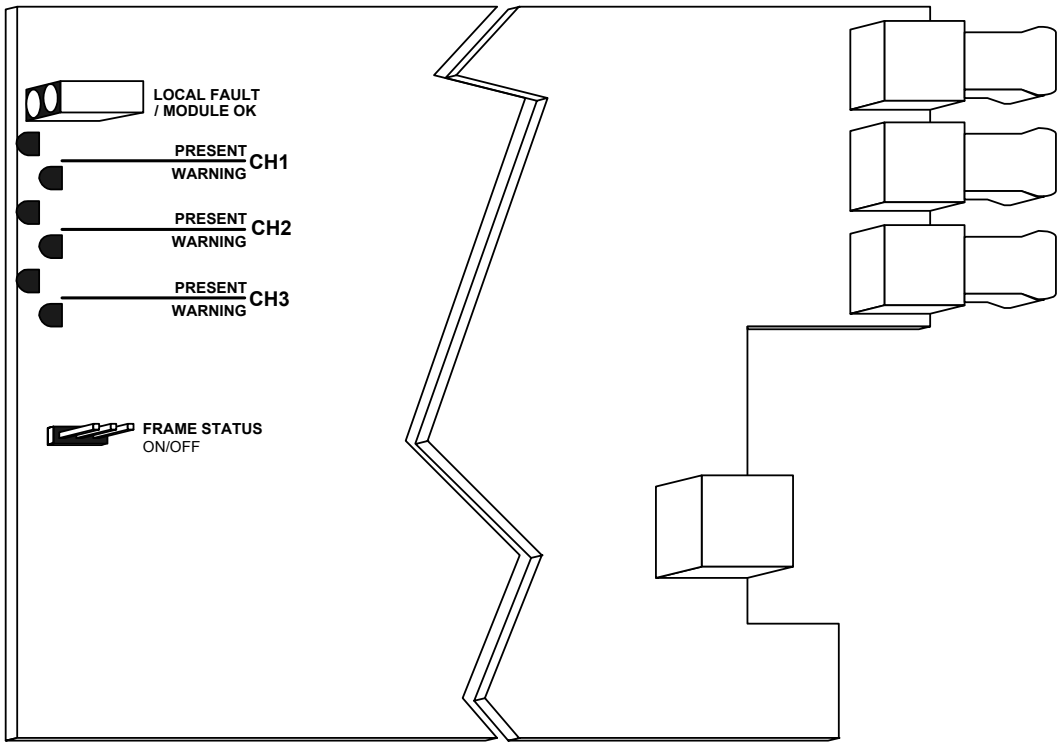

Figure 4: Location of Status Indicators and Jumpers

4.1. STATUS INDICATOR LEDS

Two large LEDs on the front of the board indicate the general health of the module

LOCAL FAULT: This Red LED indicates poor module health and will be On if there is no valid input signal on all 3 inputs, if a laser fault exists on any channel, or if a local input power fault exists (i.e.: a blown fuse). The LOCAL FAULT indication can also be reported to the frame through the FRAME STATUS jumper.

MODULE OK: This Green LED indicates good module health. It will be On when a valid input signal is present on at least one of the input channels, and all the lasers and board power are good.

There are three pairs of small LEDs that indicate the status for each channel.

PRESENT: This Green LED indicates the presence of a valid input video signal.

WARNING: This Red LED indicates poor operation of the optical output laser.

5. JUMPERS AND LOCAL CONTROLS

5.1. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS

The FRAME STATUS jumper determines whether local faults (as shown by the Local Fault indicator) will be connected to the 7700FR frame's global status bus.

FRAME STATUS To monitor faults on this module with the frame status indicators (on the Power Supply FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position. (default)

When this jumper is installed in the Off position local faults on this module will not be monitored.