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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Original Version	June 99
1.1	Added Figure 3,4	Nov 99
1.2	Added Safety notice	Mar 00
1.3	Added jumper locations for Rev B board (Figure 5 added) Added ST/PC and FC/PC connector options Specifications updated	July 00
1.4	Specifications updated	Feb 01
1.4.1	Figure 1 updated	Jan 02
1.5	Added jumper information for LOCK Jumper	Dec 02

1. OVERVIEW

The 7705OE Fiber to Electrical converter provides an economical method of converting incoming optical distribution for SMPTE 259M (143 - 540 Mb/s) serial digital signals to in-plant coaxial distribution. The companion 7705EO Electrical to Fiber converter facilitates conversion from coaxial distribution at the source. The converter features one optical input with three re-clocked serial digital outputs. The 7705OE has been designed to be used primarily as a reclocking SMPTE 259M or DVB-ASI distribution amplifier, however, SMPTE 310M (19.4 Mb/s) signals can also be reclocked.

Features:

- Normal mode for SMPTE 259M (143 ⇒ 540 Mb/s) or DVB-ASI signals - autodetects correct bitrate
- Jumper selectable mode for SMPTE 310M (19.4 Mb/s)
- Fully hot-swappable from front of frame with no fiber or BNC disconnect required
- Independent isolated output drivers to ensure no cross channel loading effects and maintain polarity from input to output for DVB-ASI applications.
- 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

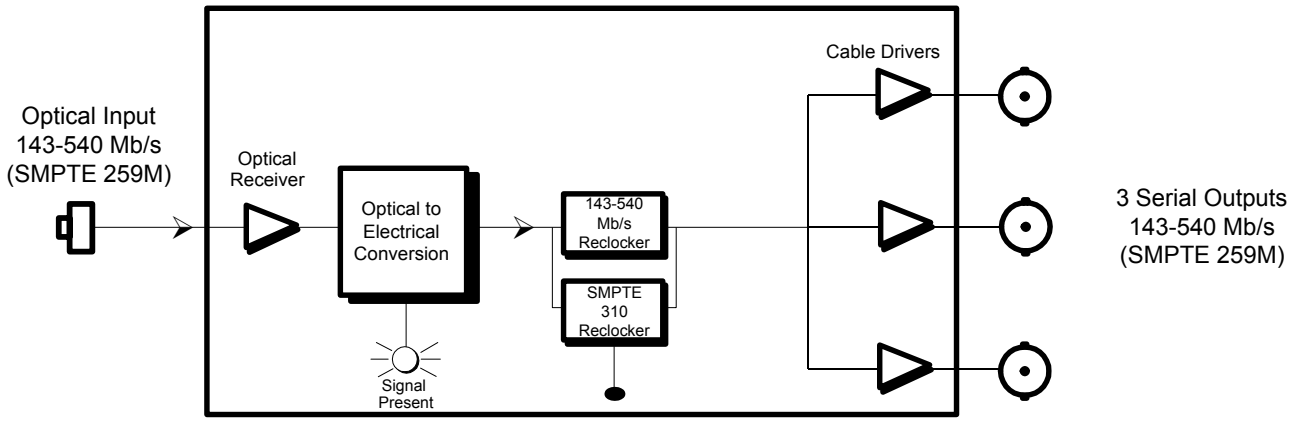

Figure 1: 7705OE Block Diagram

2. INSTALLATION

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

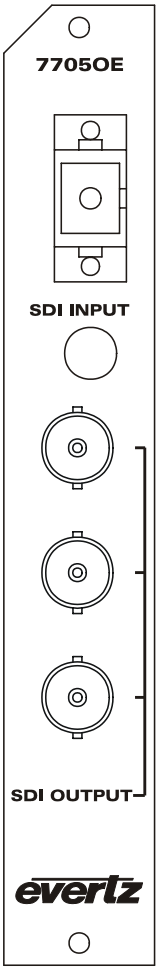

Figure 2: 7705OE Rear Panel

SDI INPUT There is a SC/PC (shown), ST/PC or FC/PC female connector for optical 10-bit serial digital video signals compatible with the SMPTE 259M, DVB-ASI or SMPTE 310M standard. See section 5.1 for information on choosing the correct video standard.

SDI OUTPUT There are three BNC connectors with reclocked serial component video outputs, compatible with the SMPTE 259M, DVB-ASI or SMPTE 310M standard.

2.1. CARE AND HANDLING OF OPTICAL FIBER

2.1.1. Safety

Never look directly into an optical fiber. Non-reversible damage to the eye can occur in a matter of milliseconds.

The laser modules used in the Evertz fiber optic modules are Class I, with a maximum output power of 2mW, and wavelengths of either 1310 nm or 1470 to 1610 nm.

2.1.2. Handling And Connecting Fibers

Never touch the end face of an optical fiber.

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 3 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 chapter of this manual.

3. SPECIFICATIONS

3.1. OPTICAL INPUT

Standards:
Normal: SMPTE 259M A, B, C, D (143 to 540 Mb/s) or DVB-ASI
Jumper Selectable: SMPTE 310M (19.4)
Connector: SC/PC, ST/PC or FC/PC female housing
Maximum Input Power: 0 dBm
Wavelength 1310 nm to 1610 nm
Optical Sensitivity: -30 dBm @ 270 Mb/s
Fiber Size: 62 μm core / 125 μm overall

3.2. SERIAL VIDEO OUTPUTS:

Number of Outputs: 3 Per Card-Reclocked.
Standards: same as input
Connectors: 3 BNC per IEC 169-8
Signal Level: 800mV nominal
DC Offset: 0V ±0.5V
Rise and Fall Time: 900ps nominal
Overshoot: <10% of amplitude
Return Loss: > 15 dB up to 540 Mb/s
Wide Band Jitter: < 0.2 UI

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 LEDS

MODULE OK This Green LED will be On when the module is operating properly

LOCAL FAULT This Red LED will be On when the *CARRIER PRESENT* LED is Off or when there is a fault in the module power supply.

CARRIER PRESENT: This Green LED will be On when there is a valid signal present at the module input.

5. JUMPERS

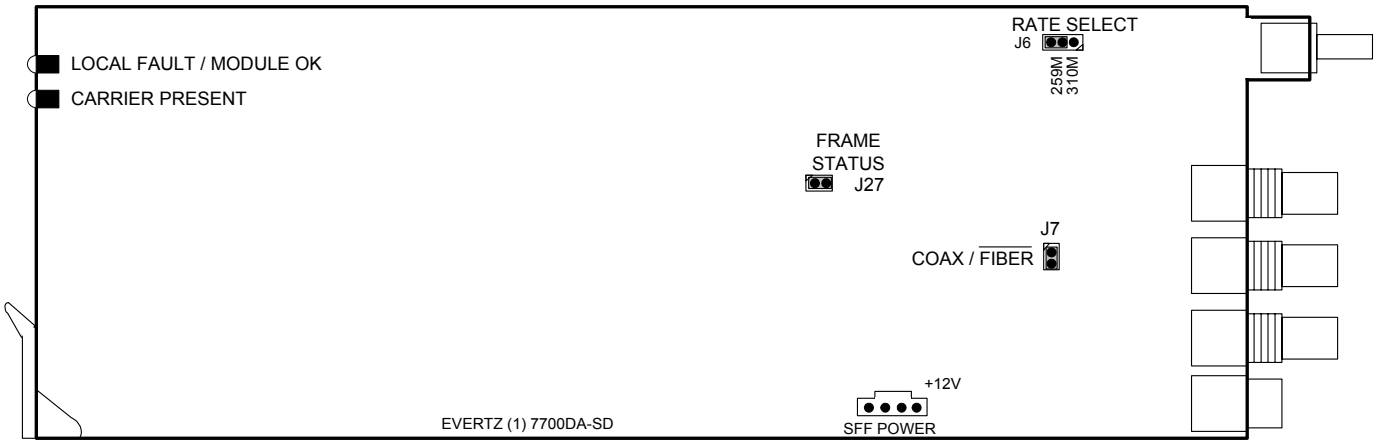

Figure 3: Jumper Locations for Rev 1 DA Cards

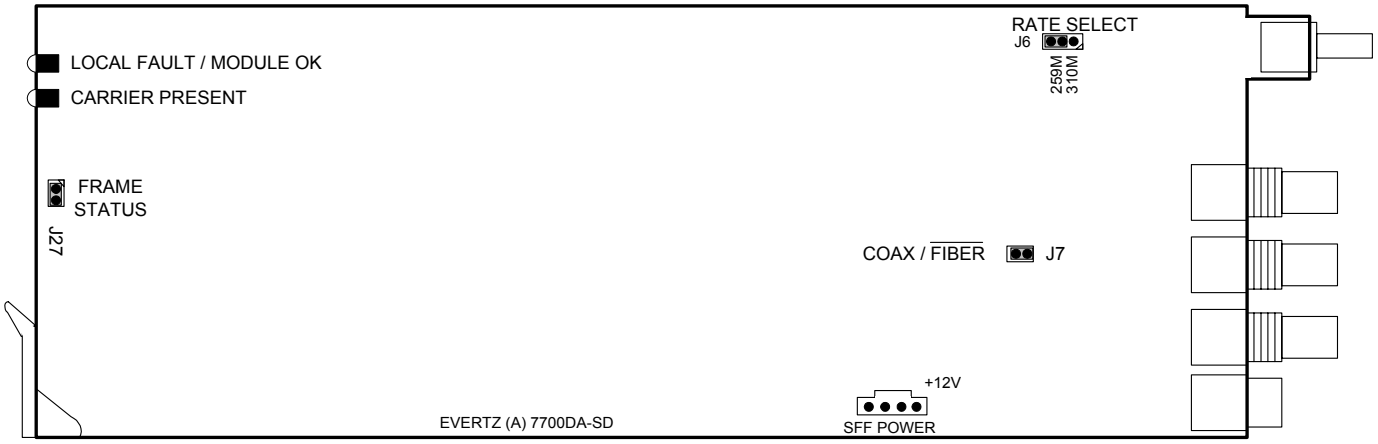

Figure 4: Jumper Locations for Rev A DA Cards

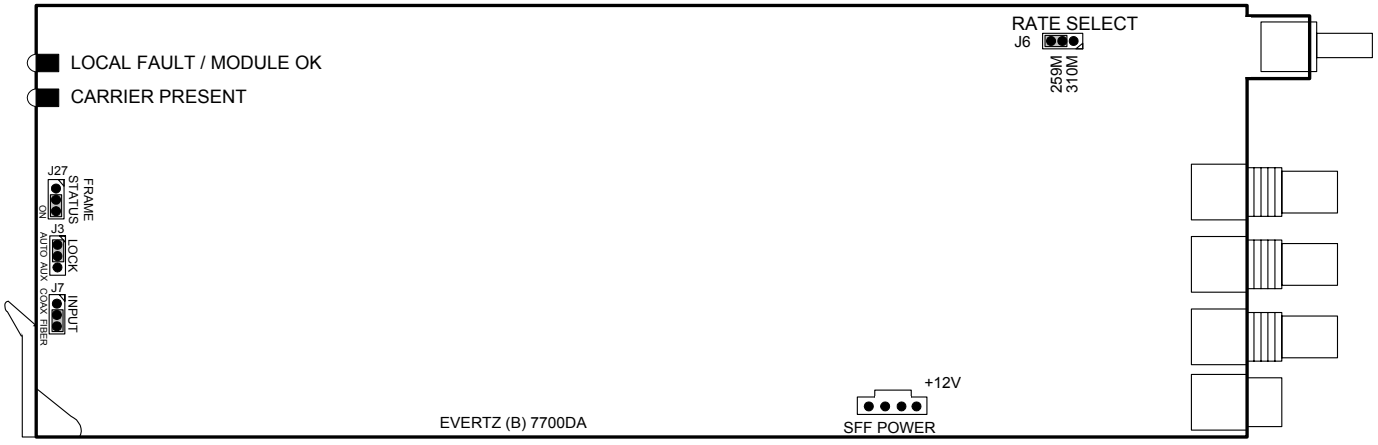

Figure 5: Jumper Locations for Rev B DA Cards

5.1. SELECTING THE VIDEO STANDARD

The RATE SELECT jumper J6, located ot the top rear of the module, determines whether the module will operate as a distribution amplifier with SMPTE 259M (143 to 540 Mb/s) or DVB-ASI video signals or with SMPTE 310M (19.4 Mb/s) signals. The LOCK jumper J3 located at the front of the module alsoneeds to be set correctly

RATE SELECT To set the module to operate with SMPTE 259M or DVB-ASI signals install the jumper in the 259M position.

To set module to operate with SMPTE 310M signals install the jumper in the 310M position.

LOCK To set the module to operate with SMPTE 259M or DVB-ASI signals install the jumper in the AUTO position.

To set module to operate with SMPTE 310M signals install the jumper in the AUX position.

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

The FRAME STATUS jumper J27, located at the front of the module 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 PS FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position. On Rev 1 and Rev A boards install the jumper. (default)

When this jumper is installed in the Off position local faults on this module will not be monitored. On Rev 1 and Rev A boards remove the jumper and re-install it so that only one side is connected.