

TABLE OF CONTENTS

1. OVERVIEW.....	1
2. INSTALLATION.....	2
2.1. CARE AND HANDLING OF OPTICAL FIBER.....	3
2.1.1. Safety	3
2.1.2. Handling and Connecting Fibers.....	3
3. SPECIFICATIONS.....	4
3.1. OPTICAL INPUT.....	4
3.2. SERIAL VIDEO OUTPUTS.....	4
3.3. ELECTRICAL	4
3.4. PHYSICAL	4
4. STATUS LEDS	5
5. JUMPERS.....	6
5.1. SELECTING THE VIDEO STANDARD	7
5.2. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS.....	7

Figures

Figure 1-1: 7705OE Block Diagram	1
Figure 2-1: 7705OE Rear Panel.....	2
Figure 5-1: Jumper Locations for Rev 1 DA Cards	6
Figure 5-2: Jumper Locations for Rev A DA Cards.....	6
Figure 5-3: Jumper Locations for Rev B DA Cards.....	6

REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
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 5-3 added) Added ST/PC and FC/PC connector options Specifications updated	July 00
1.4	Specifications updated	Feb 01
1.4.1	Figure 1-1 updated	Jan 02
1.5	Added jumper information for LOCK Jumper	Dec 02
1.6	Updated Features and Technical Specifications	Nov 08

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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:

- Optical to electrical converter for all SMPTE 259M standards with operation from 143Mb/s to 360Mb/s
- Supports additional standards of SMPTE 305M (SDTi), SMPTE 310M (19.4Mb/s), SMPTE 344M (540Mb/s), M2S and DVB-ASI (270Mb/s)
- Supports multi-mode or single-mode fiber
- Fully hot-swappable from front of frame with no fiber or BNC disconnect/reconnect required
- Occupies one card slot and can be housed in either a 1RU frame which will hold up to 3 modules, a 3RU frame which will hold up to 15 modules, 3RU portable frame that holds up to 7 modules or a standalone frame which will hold 1 module
- Comprehensive signal and card status monitoring via four digit card edge display

Input:

- Optical input range from 1270nm to 1610nm
- Input sensitivity to -32dBm
- SC/PC, ST/PC, FC/PC connector options

Outputs:

- Three serial digital BNC outputs for loop-through or monitoring
- Wideband Jitter < 0.2 UI

Status LEDs:

- Signal presence indication
- Module status indication

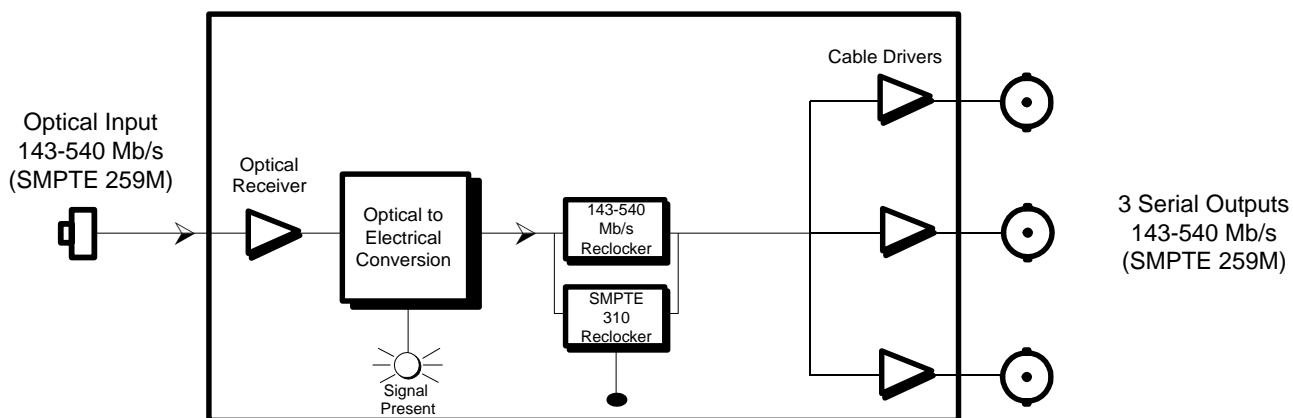


Figure 1-1: 7705OE Block Diagram

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 section 3 of the 7700FR chapter.

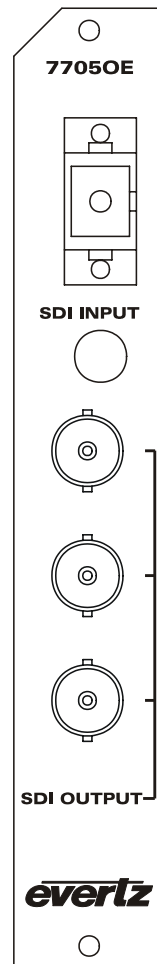


Figure 2-1: 7705OE Rear Panel

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 selecting 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

Standards: SMPTE 259M A, B, C, D, SMPTE 297M, SMPTE 305M, SMPTE 310M,
SMPTE 344M, M2S, DVB-ASI

3.1. OPTICAL INPUT

Number of Inputs: 1
Connector: SC/PC, ST/PC, FC/PC Female Housing

Operating Wavelength: 1270nm to 1610nm
Optical Sensitivity: -32dBm
Max. Input Power: 0dBm

3.2. SERIAL VIDEO OUTPUTS

Number of Outputs: 3 per card reclocked
Connector: 1 BNC per IEC 61169-8 Annex A
Signal Level: 800mV nominal
DC Offset: 0V \pm 0.5V
Rise and Fall Time: 900ps nominal
Overshoot: < 10% of amplitude
Return Loss: > 15dB up to 540Mb/s
Wideband Jitter: < 0.2 UI

3.3. ELECTRICAL

Voltage: +12V DC
Power: 6W
EMI/RFI: Complies with FCC Part 15, Class A
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 <i>CARRIER PRESENT</i> 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

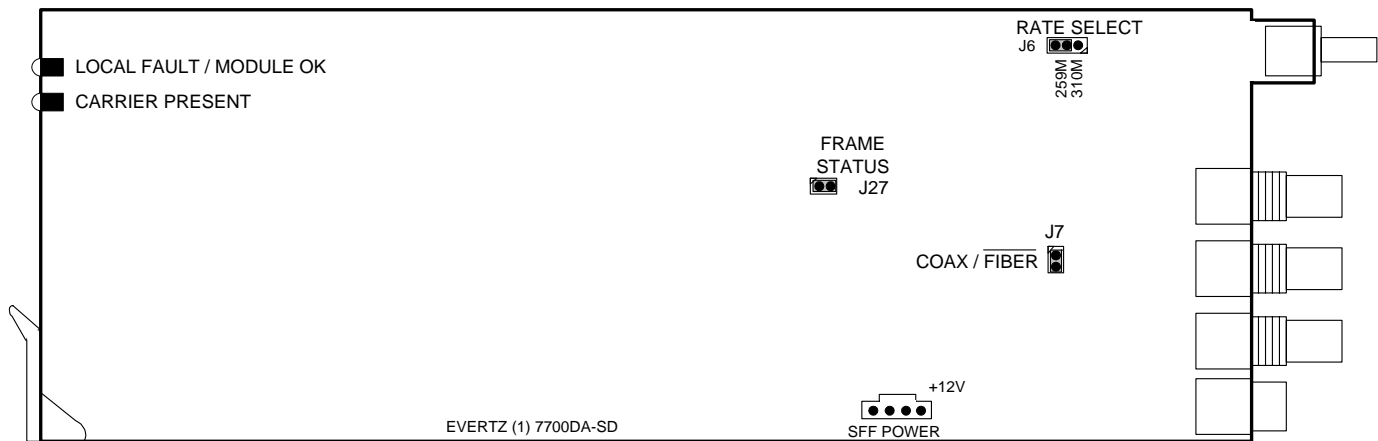


Figure 5-1: Jumper Locations for Rev 1 DA Cards

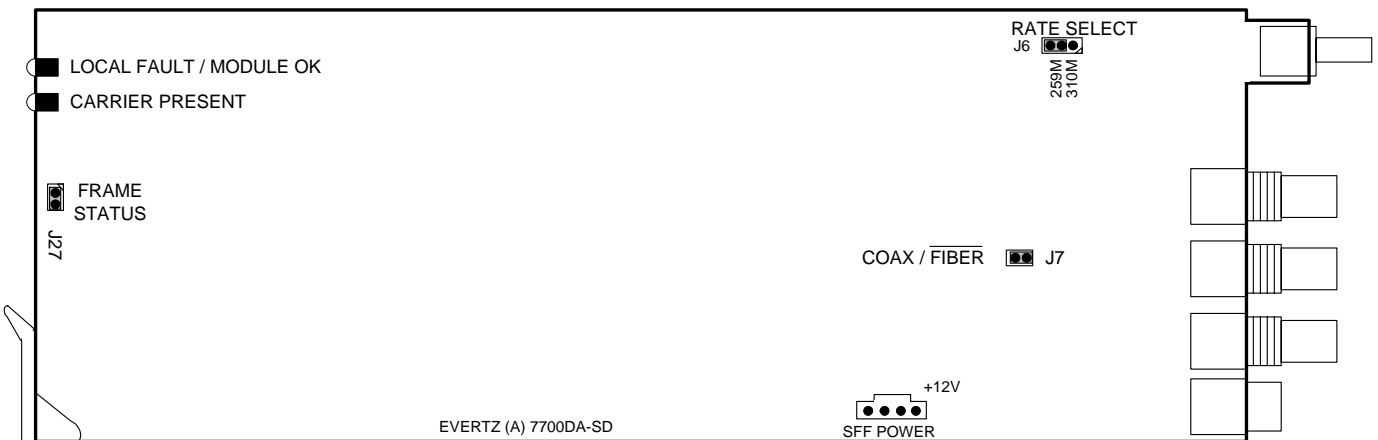


Figure 5-2: Jumper Locations for Rev A DA Cards

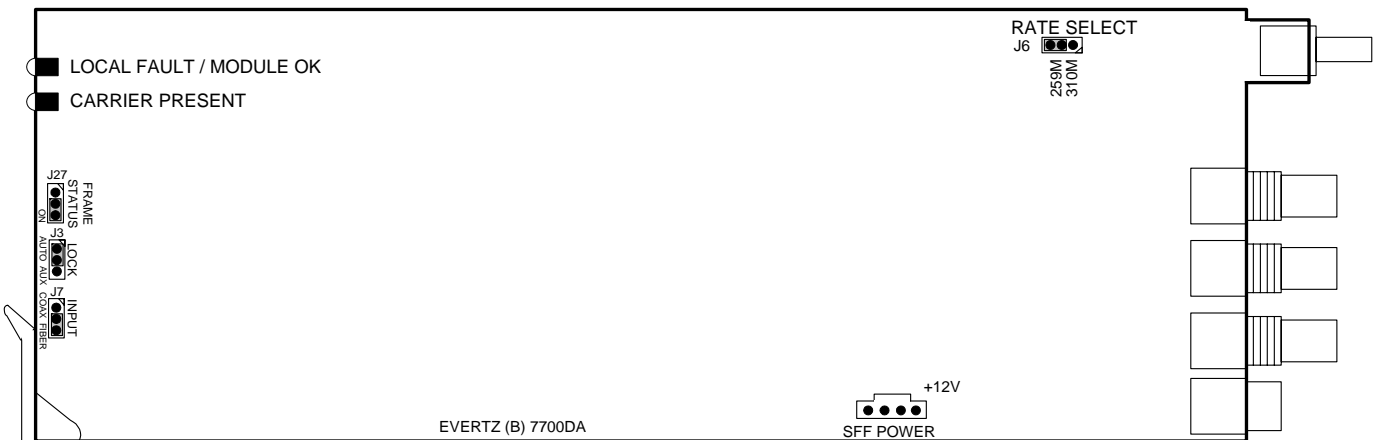


Figure 5-3: Jumper Locations for Rev B DA Cards

5.1. SELECTING THE VIDEO STANDARD

The RATE SELECT jumper J6, located at 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 also needs 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 the 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 the 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.

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