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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	Oct 03
2.0	Second release	Jul 04
3.0	Updated safety and added assembly and labeling section	July 05
4.0	Updated from 7707IFT/IFR to new part numbers	Jan 06
4.1	Updated features, specs & *Vista*LINK® section, fixed format	Nov 08

1. OVERVIEW

The 7707IFTA and 7707IFRA IF Transmitter/Receiver modules are used for transmitting IF satellite signals over fiber optic cable. The 7707IFTA accepts one IF coaxial input and provides a fiber optic output signal. An additional BNC IF output is also available for monitoring or further signal distribution. The 7707IFRA accepts a fiber optic input from the 7707IFTA and provides two IF output signals via BNCs. Monitoring and control of card status and parameters is provided locally via card edge and remotely via *Vista*LINK® capability.

The 7707IFTA and 7707IFRA modules each occupy one card slot and can be housed in either a 1RU frame, which will hold up to three modules, or a 3RU frame which will hold up to 15 modules.

Features:

- Broadband operation - 70 or 140MHz
- Protocol transparent - handles all video, audio and data modulation formats
- Fully hot swappable from front of frame
- Available with BNC or F type connector options
- Available in SC/PC, ST/PC, FC/PC and APC connector options
- Supports multi-mode and single-mode fiber optic cable
- Comprehensive signal and card status monitoring via four digit card-edge display or remotely through SNMP and *Vista*LINK® capability

7707IFTA Features

- 30-200MHz bandwidth
- Wide dynamic range RF input (-5 to -65dBm)
- Protocol transparent - transmits all video, audio and data modulation formats
- Supports manual and automatic gain control on IF input
- Wide AGC hold range (45dB) using 7707IFTA + 7707IFRA
- Additional IF BNC output for monitoring or distribution
- Available with BNC or F-Type connector options
- Available with output wavelengths of 1310nm, 1550nm, CWDM (ITU-T G.694.2 compliant) and DWDM (ITU-T G.694.1 compliant)
- Supports single-mode and multi-mode fiber optic cable
- Available in SC/PC, ST/PC, FC/PC and APC connector options
- Fully hot-swappable from front of frame
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and *Vista*LINK®
- *Vista*LINK® capability is available when modules are used with the 3RU 7700FR-C or 350FR portable frame and a 7700FC *Vista*LINK® Frame Controller module in slot 1 of the frame

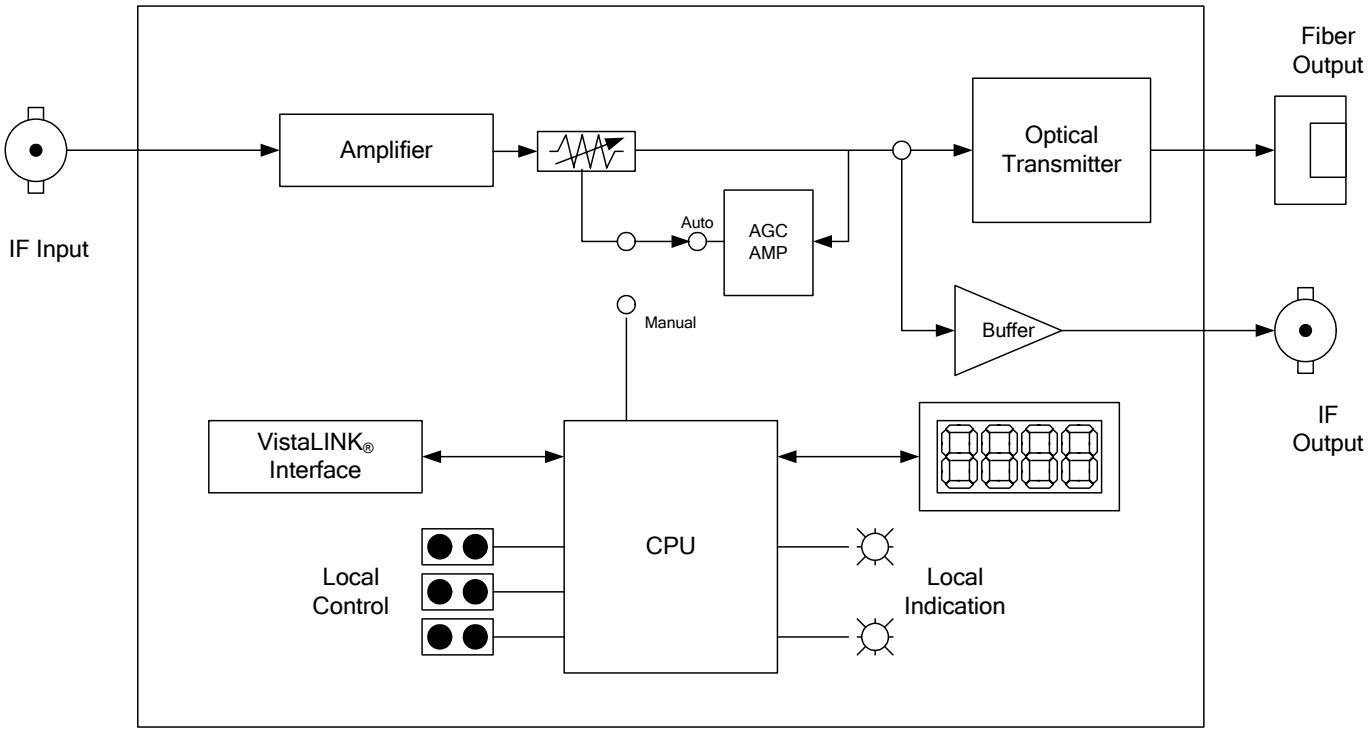

Figure 1-1: 7707IFTA Block Diagram

7707IFRA Features

- 30-200MHz bandwidth
- Protocol transparent - receives all video, audio and data modulation formats
- Supports manual and automatic gain control (AGC)
- Wide AGC hold range (45dB) using 7707IFTA + 7707IFRA
- Two IF outputs for extra signal distribution or monitoring functions
- IF output power independent of optical loss (within AGC range)
- Available with BNC or F-Type connector options
- Wide range optical input (1270nm to 1610nm)
- Supports single-mode and multi-mode fiber optic cable
- Available in SC/PC, ST/PC, FC/PC and APC connector options
- Fully hot-swappable from front of frame
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and *Vista*LINK®
- *Vista*LINK® capability is available when modules are used with the 3RU 7700FR-C or 350FR portable frame and a 7700FC *Vista*LINK® Frame Controller module in slot 1 of the frame

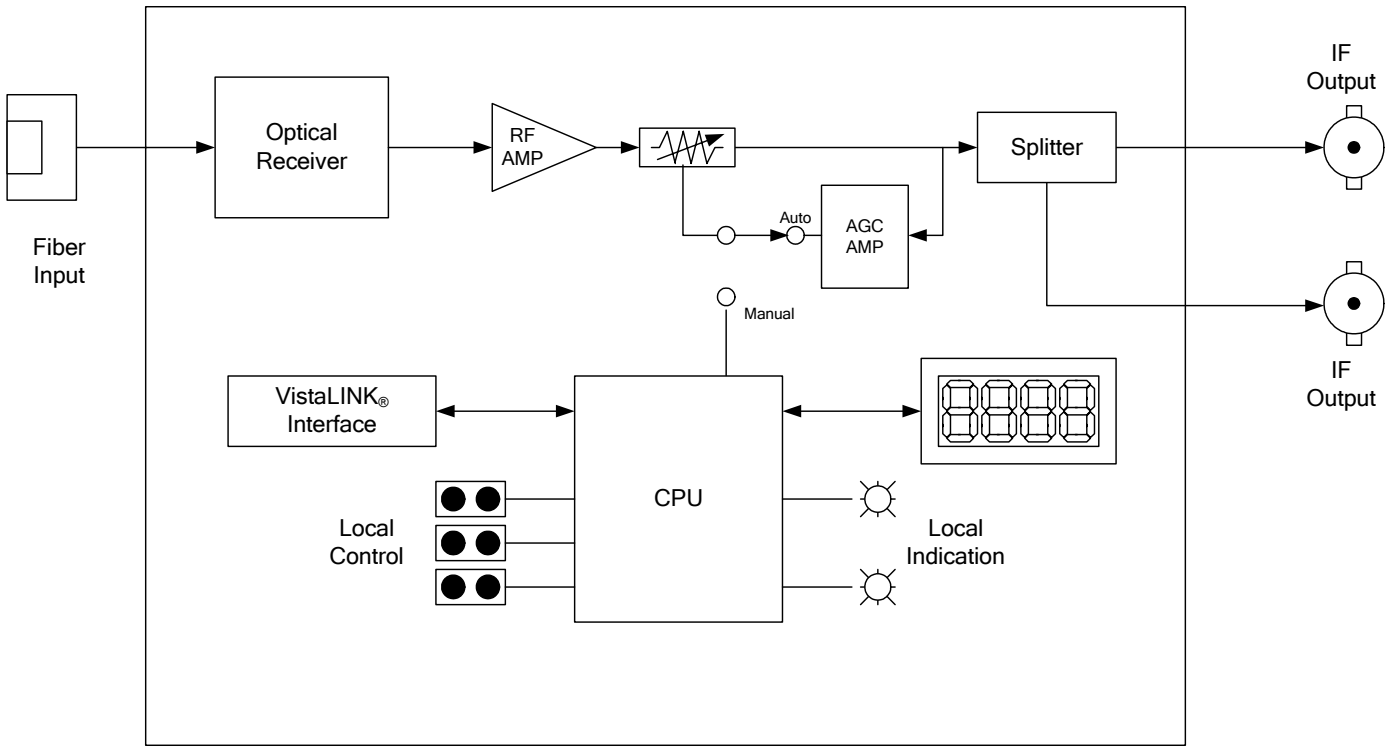

Figure 1-2: 7707IFRA Block Diagram

2. INSTALLATION

Each of the modules in the 7707IFA series comes standard with a companion +3RU rear plate. The rear plate must be specified during the time of order. SC/PC, ST/PC or FC/PC optical connector are available for these modules and must be specified during the time of order. For information on mounting the rear plate and inserting the module into the frame, see the 7700FR manual for detailed instructions.

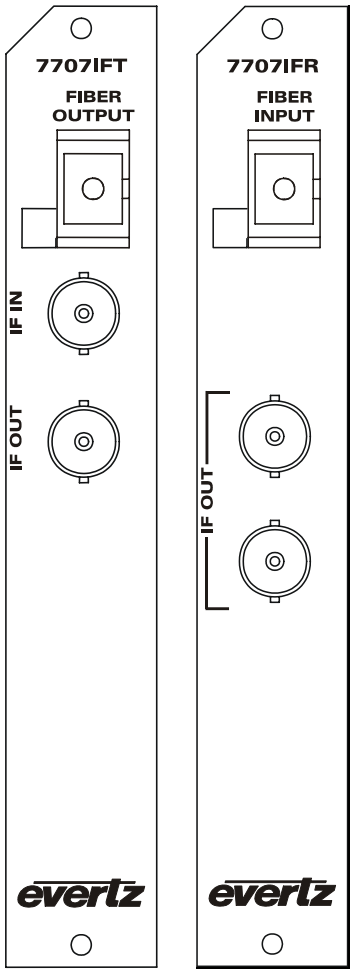

Figure 2-1: 7707IFTA / 7707IFRA Rear Panels

2.1. 7707IFTA CONNECTIONS

IF IN: Input BNC connector for IF satellite signals

IF OUT: Output BNC is an IF output for monitoring or further signal distribution of your IF satellite signals.

FIBER OUTPUT: SC/PC, ST/PC or FC/PC female connector with the optical output from the 7707IFTA as shown in section 3.1.3. This connector should be connected to the FIBER IN connector of a 7707IFRA module at the destination end with a suitable fiber optic cable. The 7707IFTA transmits on the wavelength marked on the rear panel.

2.2. 7707IFRA CONNECTIONS

FIBER INPUT: SC/PC, ST/PC or FC/PC female connector with the optical input to the 7707IFRA as shown in section 2.7.2. This connector should be connected to the FIBER OUT connector of a 7707IFTA module at the origination end with a suitable fiber optic cable.

IF OUT: Two output BNC connectors for distributing IF satellite signals. The BNC nearest the bottom of the rear panel is the primary output and will provide slightly better performance than the secondary output located directly under the fiber optic input.

2.3. CARE AND HANDLING OF OPTICAL FIBER

2.3.1. 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 IF fiber optic modules are Class I, II, and III depending on the required output wavelength.

2.3.2. 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 the user maintains 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.

3. SPECIFICATIONS

3.1. 7707 IFTA SPECIFICATIONS

3.1.1. IF Input

Connector:	1 BNC per IEC 61169-8 Annex A (F-type optional)
I/O Impedance:	75 Ω (50 Ω optional)
Input Frequency Range:	30-200MHz
Input Signal Range:	-5 to -65dBm
AGC Hold Range:	-10 to –35dBm
Return Loss:	> 18dB

3.1.2. IF Monitoring Output

Number of outputs:	1
Connector:	1 BNC per IEC 61169-8 Annex A (F-type optional)
I/O Impedance:	75 Ω (50 Ω optional)
Return Loss:	> 18dB
Flatness:	± 1 dB @ 30 – 200MHz ± 0.2dB @ 36MHz BW
Output Signal Level AGC Mode:	-20dBm ± 0.5dBm (Within AGC Range)
Output Signal Level Manual Mode:	(Input signal) + (Manual Gain setting) ±1dB
Intermodulation Products:	-50dBc (-10dBm RF in, AGC mode)
Carrier to Noise:	37dB @ 36MHz BW (-30dBm RF at IFTA input, AGC on IFTA/IFRA and 0dBm optical power to IFRA)

3.1.3. Optical Output

Number of outputs:	1
Connector:	Female SC/PC, ST/PC, FC/PC
Operating Wavelength:	
Standard:	1310nm, 1550nm (nominal)
CWDM:	1270nm to 1610nm
DWDM:	C-Band/L-Band Wavelengths (ITUG.694.1)
Optical Power:	
1310nm FP:	0dBm ±1dBm
1310nm, 1550nm & CWDM DFB:	+2dBm ±1dBm
DWDM DFB:	+7dBm ± 1dBm
Fiber Size:	9 μm core / 125 μm overall

3.1.4. Electrical

Voltage:	+12VDC
Power:	6 Watts (Non-DWDM), 9 Watts (DWDM)
EMI/IFI:	Complies with FCC Part 15, Class A EU EMC Directive

3.1.5. Physical

7700 or 7701 frame mounting:
Number of slots: 1

3.2. 7707IFRA SPECIFICATIONS

3.2.1. IF Output

Number of outputs: 2
Connector: 2 BNC per IEC 61169-8 Annex A
I/O Impedance: 75 Ω (50 Ω optional)
Return Loss: 18dB (30 to 200MHz)
Output
AGC mode: -10dBm (within AGC range)
Manual mode: -5 to –65dBm (dependent on RF input level, optical loss & gain setting)

Intermodulation Products: -50dBc max (-10dBm RF at IFTA input, AGC on IFTA/IFRA and 3dB optical loss)
Flatness: ± 1.5dB (30MHz to 200MHz)
± 0.2dB (any 36MHz bandwidth)
Carrier to Noise: 37dB @ 36MHz BW (-30dBm RF at IFTA input, AGC on IFTA/IFRA and 0dBm optical power to IFRA)

3.2.2. Optical Input

Number of inputs: 1
Connector: Female SC/PC, ST/PC, FC/PC
Operating Wavelength: 1270nm - 1610nm
Maximum Input Power:
Standard: +3dBm
-H Version: -7dBm
Optical Sensitivity:
Standard: -14dBm @ 35dB C/N @ 36MHz BW
-H Version: -23dBm @ 35dB C/N @ 36MHz BW
-29dBm @ 25dB C/N @ 36MHz BW

3.2.3. Electrical

Voltage: +12VDC
Power: 5 Watts
EMI/IFI: Complies with FCC Part 15, Class A
EU EMC Directive

3.2.4. Physical

7700 or 7701 frame mounting:
Number of slots: 1

4. STATUS INDICATORS AND DISPLAYS

4.1. 7707IFTA STATUS INDICATORS

The 7707IFTA module has 9 LED Status indicators on the front card edge to show operational status of the card at a glance.

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 illuminated if a board power fault exists (i.e.: a blown fuse) or if the laser is nearing the end of the life cycle. 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 the board power is good.

There are 7 small LEDs on the card edge. Six of which indicate the status of the incoming IF signal, laser status, and AGC/manual operation.

IF HIGH: This red LED (LED1) will be On when the incoming IF signal is higher than the set upper IF Threshold trip point.

IF OK: This green LED (LED2) will be On when the incoming IF signal is within the set upper and lower IF Threshold trip points.

IF LOW: This yellow LED (LED3) will be On when the incoming IF signal is lower than the set lower IF Threshold trip point.

LASER FAIL: This red LED (LED4) will be On when the laser is at the end of its life. This is a sign that the laser should be replaced immediately.

LASER OK: This green LED (LED5) will be On when the output laser is operating with its normal output power.

LED 6: The LED (LED6) is not used on this product.

AGC ON: This Green Led (LED 7) is On when AGC Mode is enabled and Off when Manual mode is enabled. To enable AGC mode, set DIP switch 4 to the OFF position (away from PCB). To disable AGC and set to manual mode, set DIP switch 4 to the ON position (towards PCB).

4.2. 7707IFRA STATUS INDICATORS

The 7707IFRA modules have 9 LED Status indicators on the front card edge to show operational status of the card at a glance.

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 during the absence of a valid optical input signal, 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 optical input signal is present, and the board power is good.

There are 7 small LEDs that indicate the status of the output IF signal and optical input signal.

IF HIGH: This red LED (LED1) will be On when the output IF signal is higher than the set upper IF output threshold trip level.

IF OK: This green LED (LED2) will be On when the output IF signal is within the set upper and lower threshold trip levels.

IF LOW: This yellow LED (LED3) will be On when the output IF signal is lower than the set lower IF output threshold trip level.

OPTICAL INPUT HIGH: This red LED (LED4) will be On when the input optical power is to high.

OPTICAL INPUT OK: This green LED (LED 5) will be On when the input optical power is within the rated input range.

OPTICAL INPUT LOW: This yellow LED (LED6) will be On when the optical power is lower than the rated input range.

AGC ON: This green (LED7) is on when AGC mode is enabled and Off when manual mode is enabled. To enable AGC mode, set DIP switch 4 to the OFF position (away from PCB). To disable AGC and set to manual mode, set DIP switch 4 to the ON position (towards PCB).

5. DIP SWITCH CONTROLS

5.1. IFTA DIP SWITCH CONTROLS

The 7707IFTA modules are equipped with a 4 position DIP switch at the front card edge. All positions are assigned sequentially such that switch 1 is located at the top of the DIP switch (farthest from the card ejector). Table 5-1 gives an overview of the front DIP switch functions and section 2.6.1 describes the front DIP switch function in more detail. The On (closed) position is down, or closest to the printed circuit board. The Off (open) position is up, or farthest from the printed circuit board.

DIP Switch	Function
1	
2	
3	
4	AGC Disable

Table 5-1: Front DIP Switch Functions

5.1.1. Configuring IFTA for AGC or Manual mode

The 7707IFTA input IF stage has an automatic gain control (AGC) that adjusts to varying input IF levels. If the input IF level differs from –20dBm the AGC will adjust the level so that the level presented to the optical link is maintained at –20dBm. To set the unit in AGC (Automatic Gain Control) mode, set Dip 4 to the Off (away from PCB) position, conversely, to set the unit in Manual mode, set Dip 4 to the On (towards PCB) position. Once the card has been set to Manual mode, the user can adjust the IF gain values manually via the card edge menu system. See section 7.2.3.2. In AGC mode the monitor port will be constant at –20dBm ± 2dBm with input levels between –20 and –40dBm.

NOTE: In order to conduct a frequency response sweep, the 7707IFA cards must be set and configured to Manual Mode and not AGC mode.

5.2. IFRA DIP SWITCH CONTROLS

The 7707IFRA modules are equipped with a 4 position DIP switch at the front card edge. All positions are assigned sequentially such that switch 1 is located at the top of the DIP switch (farthest from the card ejector). The On (closed) position is down, or closest to the printed circuit board. The Off (open) position is up, or farthest from the printed circuit board.

DIP Switch	Function
1	
2	
3	
4	AGC Disable

Table 5-2: Front DIP Switch Functions

5.2.1. Configuring IFRA for AGC or Manual mode

The DIP switches control the gain of the IF output section of the 7707IFRA and can be used to adjust for losses in varying lengths of fiber optic cable in the system. The 7707IFRA output IF stage has an automatic gain control (AGC) that adjusts to varying input optical levels. To set the unit in AGC (Automatic Gain Control) mode, set Dip 4 to the Off (away from PCB) position. To set the unit in Manual mode, set Dip 4 to the On (towards PCB) position. Once the card has been set to Manual mode, the user can adjust the gain values manually via the card edge menu system.

In order to conduct a frequency response sweep, the 7707IFA cards must be set and configured to Manual Mode and not AGC mode.

Output IF power measurements are made with 1 m of fiber optic cable between the transmitting module and the receiving module.

6. JUMPERS

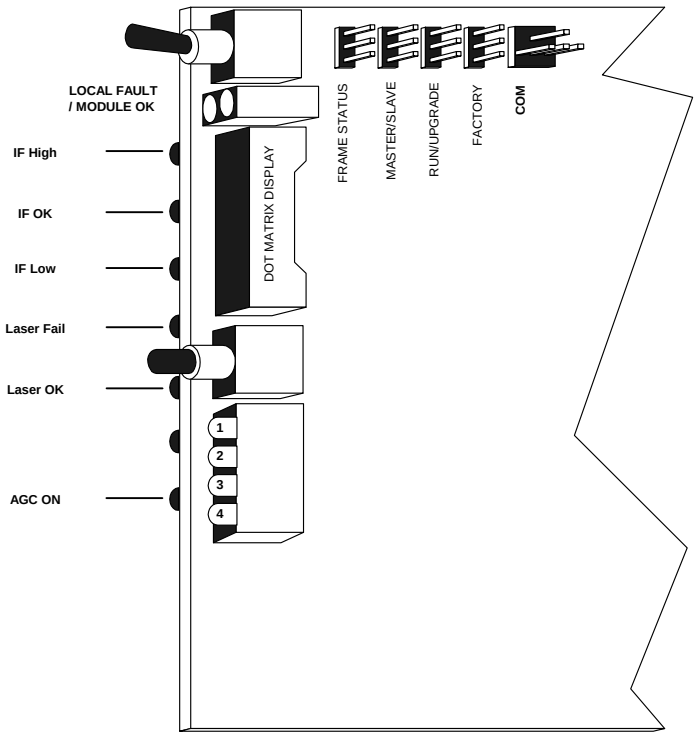

Figure 6-1: Location of 7707IFTA Jumpers and LEDs

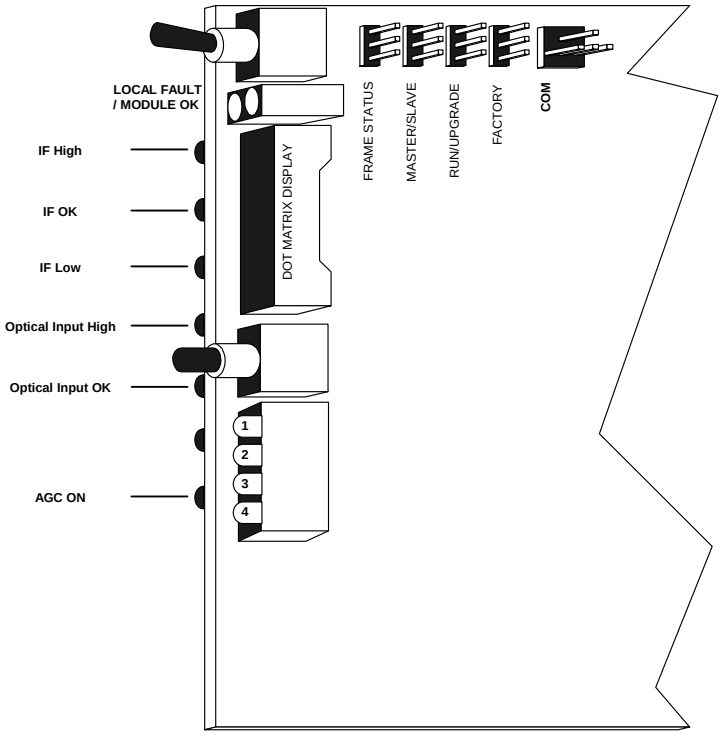

Figure 6-2: Location of 7707IFRA Jumpers and LEDs

6.1.1. Selecting Whether Local Faults Will Be Monitored By the Global Frame Status

The FRAME STATUS jumper J3 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.

6.1.2. Selecting Whether Module Will Be Controlled From the Local Controls or Through the *Vista*LINK® Interface

The MASTER jumper J38 selects whether the module will be controlled from the local user controls or through the *Vista*LINK® interface.

MASTER: When this jumper is installed in the MASTER position, the card functions are controlled through the local controls.

SLAVE: When this jumper is installed in the SLAVE position, the card functions are controlled through the *Vista*LINK® interface.

6.1.3. Configuring the Module for Firmware Upgrades

UPGRADE: The UPGRADE jumper J43 is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. See the *Upgrading Firmware* section of this manual for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move the UPGRADE jumper into the *UPGD* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header at the card edge. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section of this manual. Once the upgrade is completed, remove the module from the frame, move the UPGRADE jumper into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

7. DOT-MATRIX DISPLAY

Additional signal and card status monitoring and control over the card's parameters are provided via the 4-digit alphanumeric display located on the card edge. The card edge toggle switch is used to select whether the user is displaying status from the card (monitoring mode) or setting control parameters for the card (control mode). To select one of the display modes, press the pushbutton one or more times to exit the current display mode and return to the mode select menu item (the display will show **MON** or **SET**). Press the toggle switch to select monitor mode (**MON**) or control mode (**SET**). Once the desired mode is selected, press the pushbutton to enter that mode.

While in monitor mode, the toggle switch determines what data is being displayed on the alphanumeric display. Each time the toggle switch is pressed up/down, the display advances to the next/previous display. A message indicating what display mode is active is shown for one second. After one second without the toggle switch being pressed, the selected display data is shown. The card edge pushbutton is used to select sub-items where applicable.

7.1. CARD EDGE MENU SYSTEM

When changes are made in the menu system, the user must exit the menu system and wait 30 seconds before the new menu settings are stored in the flash memory.

7.1.1. Navigating the Menu System

While in control mode, the toggle switch and pushbutton are used to navigate through a menu system to set various parameters for the module. To enter the menu system, press the pushbutton one or more times to exit the current display mode and return to the mode select menu item. The display will show **MON** or **SET**. Press the toggle switch to select control mode (**SET**) and then press the pushbutton to enter the control mode main setup menu. Use the toggle switch to move up and down the list of available sub menus. Once the desired submenu name is displayed, press the pushbutton to select the next menu level.

In the sub menu there will be a list of parameters to adjust. To adjust any parameter, use the toggle switch to move up or down to the desired parameter and press the pushbutton. Using the toggle switch, adjust the parameter to its desired value. If the parameter is a numerical value, the number will increase if toggle switch is pushed upward and the number will decrease if the toggle switch is pressed downward. If the parameter contains a list of choices, the user can cycle through the list by pressing the toggle switch in either direction.

When desired value is reached, depress the pushbutton. This will update the parameter to the selected value and return to the mode select menu item (the display shows **SET**). To change another parameter, press the pushbutton to enter the main menu system again and continue selecting and adjusting other parameters.

Each time the toggle switch is pressed up/down, the display advances to the next/previous display. A message indicating what display mode is active is shown for one second. After one second without the toggle switch being pressed, the selected display data is shown. The card edge pushbutton is used to select sub-items where applicable.

7.2. IFTA MENUS

The following is a brief description of the top level of the menu tree that appears when the user enters the Control menu. Selecting one of these items will take you down into the next menu level.

7.2.1. User Menu / Set

RFTH Allows the user to configure the Upper and Lower Input alarm Threshold.
GAIN Allows the user to set the Gain levels of the 7707IFTA in manual mode.
DISP Allows the user to set the orientation of the front panel display.
FDEF Allows the user to resets the module to its factory default values.

7.2.2. User Menu / Mon

RFTH Allows the user to monitor the upper and lower Input alarm Threshold
PWR Allows the user to monitor the IF Input power
GAIN Allows the user to monitor the Gain
SFTV Allows the user to check the software version

7.2.3. IFTA User Menu-Set

7.2.3.1. Setting the IF Threshold

RFTH
- *UPPR*
- *LWR*

AGC (Automatic Gain Control) Mode Operation

Manual Mode Operation -7707IFTA

IF Gain Setting
Default IF Warning Thresholds

AGC
0dBm to -35dBm

0dB
0dBm to -35dBm

+10dB
-10dBm to -45dBm

+15dB
-25dBm to -50dBm

The RF threshold setting enables the user to set both the upper and lower threshold.

7.2.3.2. Adjusting the Gain

GAIN
AUTO (AGC only)
0 dB (manual only)
10 dB (manual only)
15 dB (manual only)

The gain control allows the user to control the gain of the 7707IFTA card. To manually set the Gain control, first set the 7707IFTA to manual mode dip switch. Please refer to section 5.1.1 for further details. Once the unit is in manual mode, the gain values can be adjusted to 0dB, 10dB, or 15dB. If the 7707IFTA card is in AGC mode, the display will say AGC, and no changes can be made with this menu item.

7.2.3.3. Changing the display orientation

DISP
VERT
HOR

The *DISP* control allows the user to select a horizontal or vertical orientation for the displays to accommodate mounting the module in the 3RU or 1RU frames.

7.2.3.4. Restoring Factory Defaults

FDEF
YES
NO

To restore the factory defaults, enter the FDEF control and choose yes to restore all factory settings to the 7707I. All configurations previously made to the card will be lost.

7.2.4. IFTA User Menu – Mon

The **MON** (monitoring) menu allows the user to check the status and values of the settings for the 7707IFTA card. To make changes to the settings, please refer to the User Set menu outlined in section 7.2.3.

7.2.4.1. IF-In Threshold

RFTH
UPPR
LWR

The RFTH control allows the user to monitor the upper and lower IF-Input threshold alarm set points.

7.2.4.2. IF In Power

PWR

The PWR control allows the user to monitor the power levels of the IF-IN. If the power level goes outside of the upper and lower thresholds, the display will indicate high or low respectively.

7.2.4.3. Gain

GAIN
Auto (AGC Only)
0 dB
10 dB
15 dB

The gain control allows the user to monitor the gain of the 7707IFTA card. To make changes to the gain, please refer to section 5.1.1.

7.2.4.4. Software Version

S/W

The *S/W* function allows the user to check the version of software in the card.

7.3. IFRA MENUS

The following is a brief description of the top level of the menu tree that appears when the user enters the Control menu. Selecting one of these items will take you down into the next menu level.

7.3.1. User Menu / Set

RFTH Allows the user to adjust the upper and lower IF-Out alarm Thresholds.
OPTH Allows the user to adjust the upper and lower optical threshold.
GAIN Allows the user to adjust gain values on the 7707IFRA card.
DPLY Allows the user to adjust the card edge display.
FDEF Allows the user to restore factory default settings.

7.3.2. User Menu / Mon

RFTH Allows the user to check the IF-Out alarm thresholds.
PWR Allows the user to check the IF-Out power.
OPTH Allows the user to monitor the Optical Threshold.
OPWR Allows the user to monitor the optical Power.
GAIN Allows the user to check the gain levels.
TXPW Allows the user to check what laser power is expected from the 7707IFTA optical output.
S/W Allows the user to check the software version.

7.3.3. IFRA User Menu-Set

7.3.3.1. Setting the IF Output Threshold

RFTH
- *UPPR*
- *LWR*

AGC (Automatic Gain Control) Mode Operation

Manual Mode Operation -7707IFRA

7707IFRA
TXPW +3
7707IFRA-H
TXPW -7
Default IF Warning Thresholds

AGC
-4dBm to -11dBm

+10dB
-5dBm to -30dBm

+20dB
-5dBm to -20dBm

+30dB
-5dBm to -12dBm

The RFTH control allows the user to adjust both Upper and Lower Threshold of the IF- Output

7.3.3.2. Optical Threshold

OPTH
UPPR
LWR

The OPTH control allows the user to adjust both the upper and lower optical threshold. The upper optical threshold can be adjusted between the ranges of +004 to –033 for the 7707IFRA and –007 to –033 for the 7707IFRA-H. The lower optical threshold can be adjusted between the ranges of +004 to –033 for the 7707IFRA and –007 to –033 for the 7707IFRA-H.

7.3.3.3. Adjusting the Gain

GAIN
Auto (AGC only)
0 dB (manual only)
12 dB (manual only)
24 dB (manual only)

The gain control allows the user to control the gain of the 7707IFRA card. The unit can be set to either AGC mode or manual mode. To manually set the Gain control, first set the 7707IFRA to manual mode. Once the unit is in manual mode, the gain values depend on the type of receiver ordered. The 7707IFRA configured for a +3dBm transmitter for can be adjusted to 0dB, 12dB or 24dB.

7.3.3.4. Changing the Display Orientation

DISP
VERT
HOR

The *DISP* control allows the user to select a horizontal or vertical orientation for the displays to accommodate mounting the module in the 3RU or 1RU frames.

7.3.3.5. Restoring Factory Defaults

FDEF
YES
NO

To restore the factory defaults, enter the FDEF control and choose yes to restore all factory settings to the 7707IF. All configurations previously made to the card will be lost.

7.3.4. IFRA User Menu – Mon

The **MON** (monitoring) menu allows the user to check the status and values of the settings for the 7707IFRA card. To make changes to the settings, please refer to the User Set menu outlined in section 2.19.

7.3.4.1. IF-Out Threshold

RFTH

The RFTH function allows the user to monitor the set upper and lower IF-Output threshold alarm points.

7.3.4.2. IF Out Power

PWR

The PWR function allows the user to monitor the power of the IF Output. If the power level goes outside of the upper and lower thresholds the display will indicate high or low respectively.

7.3.4.3. Optical Threshold

OPTH	The OPTH function allows the user to monitor the optical Threshold of the 7707IFRA.

7.3.4.4. Optical Power

OPWR	The OPWR function allows the user to monitor the optical power of the 7707IFRA.

7.3.4.5. Gain

GAIN *7707IFRA & 7707IFRA-H* *Auto (AGC only)* *0 dB (manual only)* *12 dB (manual only)* *24 dB (manual only)*	The gain control allows the user to monitor the gain setting of the 7707IFRA card. The unit can be set to either AGC mode or manual mode. To manually set the Gain control, first set the 7707IFRA to manual mode. Please refer to section 5.2.1 for further details. The 7707IFRA configured for a +3dBm transmitter for can be adjusted to 0dB, 12dB or 24dB.

7.3.4.6. Transmitter Power

TXPW *7707IFRA* *+3* *7707IFRA-H* *-7*	The TXPW control allows the user to set the 7707IFRA to the paired transmitter power. When connecting to a 7707IFTA that is in AGC mode, the 7707IFRA's TXPW value will be +3. This will ensure a –10dBm RF output power when the 7707IFRA is set to 0dB gain mode and has 0dBm optical input power. The 7707IFRA-H has a fixed TXPW of –7 and provides a –10dBm RF output for –7dBm optical input power (attenuated optical signal) and a 0dB gain setting on the 7707IFRA-H.

7.3.4.7. Software Version

S/W	The S/W function allows the user to check the software version currently in the 7707IFRA.

8. CARD EDGE CONTROLS

The 7707IFTA is equipped with a three position, return to center toggle switch which is used to select the various card-edge displays and menu items. It is also used in conjunction with a momentary pushbutton to select some sub-items of the menu system.

8.1. CONFIGURING GAIN LEVELS OF THE 7707IFTA AND 7707IFRA IN MANUAL MODE

The following method has been outlined to configure gain levels of the IF cards. Configuring the gain levels of the 7707IFTA and 7707IFRA cards is done via the card edge menu system. The 7707IFTA and 7707IFRA must first be placed in Manual mode. Both cards are configured for AGC (automatic gain control) mode from the factory. To configure the units for manual mode, please refer to section 5.1.1 for the 7707IFTA and section 5.2.1 for the 7707IFRA.

The IF cards provide the user with the ability to adjust the gain of both the transmitter and the receiver. Follow the logic diagram below to avoid distortion issues.

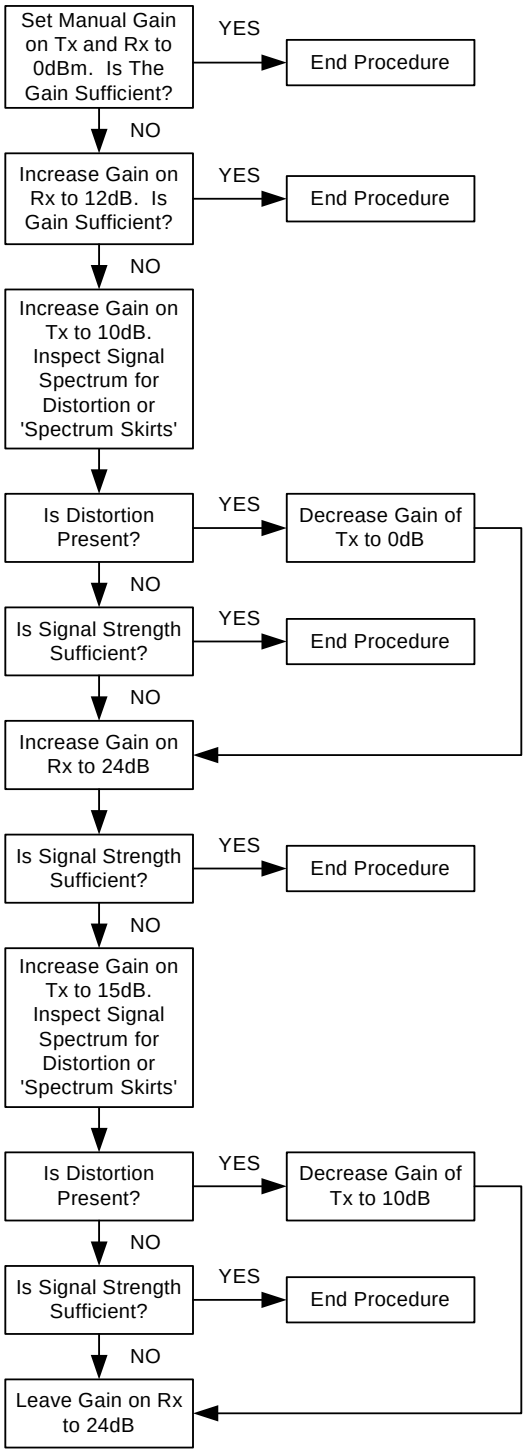

Figure 8-1: 7707IFRA Block Diagram

9. *VISTA*LINK® REMOTE MONITORING/CONTROL

9.1. WHAT IS *VISTA*LINK®?

*Vista*LINK® is Evertz's remote monitoring and configuration platform which operates over an Ethernet network using Simple Network Management Protocol (SNMP). SNMP is a standard computer network protocol that enables different devices sharing the same network to communicate with each other. *Vista*LINK® provides centralized alarm management, which monitors, reports, and logs all incoming alarm events and dispatches alerts to all the VLPro Clients connected to the server. Card configuration through *Vista*LINK® PRO can be performed on an individual or multi-card basis using simple copy and paste routines, which reduces the time to configure each module separately. Finally, *Vista*LINK® enables the user to configure devices in the network from a central station and receive feedback that the configuration has been carried out.

There are 3 components of SNMP:

1. An SNMP manager, also known as a Network Management System (NMS), is a computer running special software that communicates with the devices in the network. Evertz VL-Fiber demo Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *Vista*LINK® enabled fiber optic products.

2. Managed devices, (such as 7707EO and 7707OE cards), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz *Vista*LINK® enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC *Vista*LINK® frame controller module, which serves as the Agent.

3. A virtual database, known as the Management information Base (MIB), lists all the variables being monitored which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

For more information on connecting and configuring the *Vista*LINK® network, see the 7700FC Frame Controller chapter.

9.2. *IFTA VISTA*LINK® PARAMETERS

9.2.1. *IFTA* MONITORED PARAMETERS

Parameter	Description
Laser Failed	Indicates the optical output laser has failed.
Laser Degraded	Indicates the Optical laser has degraded.
IF Input Power Low	Indicates the input IF signal is lower than the set lower IF input threshold trip level.
IF Input Power High	Indicates the input IF signal is higher than the set upper IF input threshold trip level.

Table 9-1: 7707IFTA *Vista*LINK® Monitored Parameters

9.2.2. *IFTA* CONTROLLED PARAMETERS

Parameter	Description
Lower IF Threshold	Enables the user to set the Lower IF Threshold.
Upper IF Threshold	Enables the user to set the Upper IF Threshold.
Gain Mode	Allows the user to set the Gain of the module.

Table 9-2: 7707IFTA *Vista*LINK® Controlled Parameters

9.2.3. IFTA Traps

7707LT Trap	Description of True Condition
Laser Failed	Laser has stopped working.
Laser Degrade	Laser is nearing end of life cycle.
Radio Frequency: Input Power Low	Input RF signal power is below threshold setting.
Radio Frequency: Input Power High	Input RF signal power is above threshold setting.
Cable Shorted	LNB power has short circuited.

Table 9-3: 7707IFTA *Vista*LINK® Traps

9.3. *IFRA VISTA*LINK® PARAMETERS

9.3.1. *IFRA* MONITORED PARAMETERS

7707IFRA Monitored Parameters	
Parameter	**Description**
Optical Power Low	Indicates the optical power is lower than the rated input range.
Optical Power High	Indicates the Optical input power is higher than the rated input range.
IF Output Power Low	Indicates the output IF signal is lower than the set lower IF output threshold trip level.
IF Output Power High	Indicates the output IF signal is higher than the set upper IF output threshold trip level.
IF Cable Shorted	Indicates the IF Cable connected to the IF output BNC has a short.
Optical Power	Provides a measured reading of the Optical Power.
IF Output Power	Provides a measured reading of the Output Power.

Table 9-4: 7707IFRA *Vista*LINK® Monitored Parameters

9.3.2. *IFRA* CONTROLLED PARAMETERS

7707IFRA Controlled Parameters	
Parameter	**Description**
Lower Optical Threshold	Enables the user to set the Lower optical Threshold.
Upper Optical Threshold	Enables the user to set the Upper optical Threshold.
Lower IF Threshold	Enables the user to set the Lower IF Threshold.
Upper IF Threshold	Enables the user to set the Upper IF Threshold.
Squelch Enable	Allows the User to enable/Disable the Squelch feature.
Manual AGC Mode	Enables the user to set this feature.
IF Output Power Setting	Enables the user to set this feature.
Gain Mode	Allows the user to set the Gain of the module.

Table 9-5: 7707IFRA *Vista*LINK® Controlled Parameters

9.3.3. *IFRA* Traps

7707LR Trap	Parameter
Optical Power Low	Input optical signal power is below threshold setting.
Optical Power High	Input optical signal power is above threshold setting.
Radio Frequency: Input Power Low	Input RF signal power is below threshold setting.
Radio Frequency: Input Power High	Input RF signal power is above threshold setting.

Table 9-6: 7707IFRA *Vista*LINK® Traps