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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First release	April 2010
2.0	Configuration steps for SNMP mini agent. Added VistaLINK® screens and Card Configuration section.	June 2010

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1. OVERVIEW

The 7780ASIB2-DS3/E3 is a *Vista*LINK® enabled, DS3/E3 (44.736Mb/s) transceiver for DVB-ASI video signals. The card also has a built-in 10/100 Base T Ethernet transceiver port. This single card combines 2 asynchronous DVB-ASI signals using Time Domain Multiplex (TDM) technology. A companion 7780ASIB2-DS3/E3 card acts as a demultiplexer for the incoming signal and converts them back to separate ASI video feeds, while utilizing a separate DS3/E3 link for the outgoing signal.

Monitoring and control of card status and parameters are provided locally at the card edge or remotely via *Vista*LINK®.

The 7780ASIB2-DS3/E3 occupies two card slots in the 3 RU frame, which will hold up to 7 modules, or three modules in a 1RU frame.

Features:

- Transports signal over DS3/E3 data rates (44.736Mb/s)
- Single card TDM multiplexer and demultiplexer for two bi-directional asynchronous DVB-ASI signals
- Built-in Ethernet transceiver with one 10/100 Base-T port with FBM (Flexible Bandwidth Management)
- Interfaces directly to DS3/E3 infrastructure
- Signal transport uninterrupted by loss of any DVB-ASI input feed
- Wide input frequency range tolerance (±50ppm)
- Comprehensive signal and card status monitoring via four character card-edge display
- *Vista*LINK® – enabled offering remote monitoring, control and configuration capabilities via SNMP. *Vista*LINK® is available when modules are used with the 3RU 7800/7700 series multifame, a 7700FC *Vista*LINK® Frame Controller module in slot 1 of the frame using the 9000NCP Network Control Panel or Evertz *Vista*LINK® PRO or other third party SNMP manager software
- Automatic coaxial equalization up to 250m (Belden 1694A or equivalent cable)
- Fully hot-swappable from front of frame with no coax disconnect/reconnect required

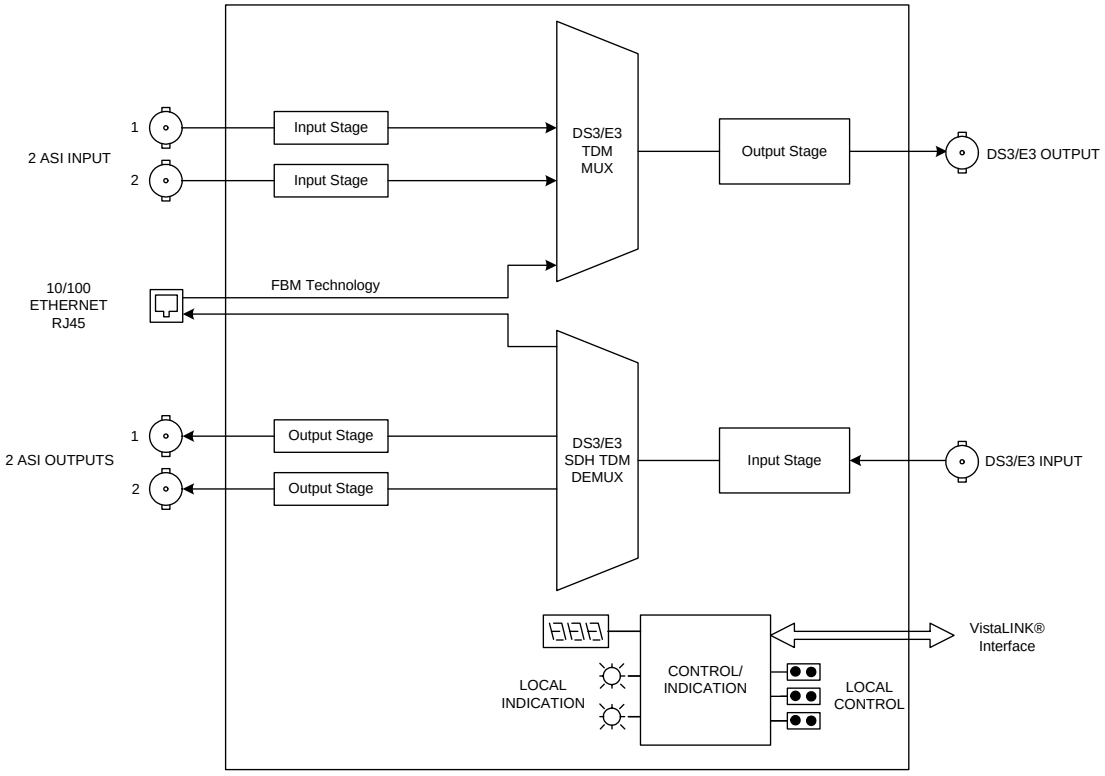


Figure 1-1: 7780ASIB2-DS3/E3 Block Diagram

2. INSTALLATION

The 7780ASIB2-DS3/E3 comes with a companion rear plate that has six BNC connectors, and two RJ45 connector. For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

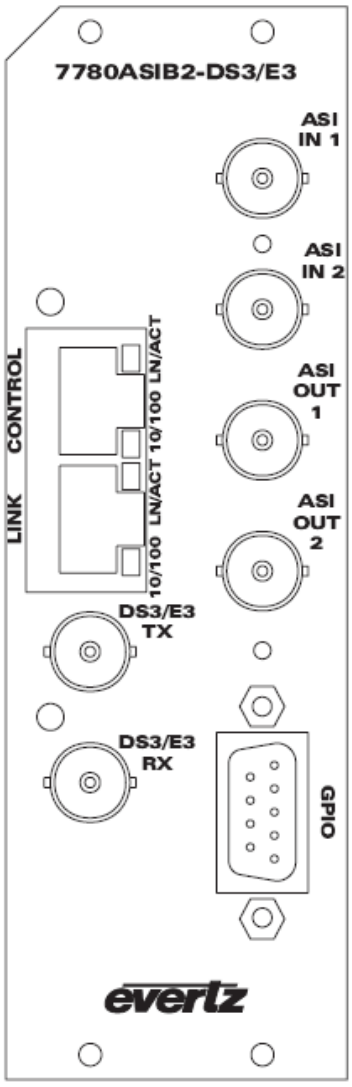


Figure 2-1: 7780ASIB2-DS3/E3 Rear Panel

ASI IN 1-2: Two independent BNC input connectors compatible with DVB-ASI for a combined usable system bandwidth of 40Mb/s. These inputs provide adaptive compensation for up to 250m of industry standard Belden 1694A cable.

ASI OUT 1-2: Two independent BNC output connectors compatible with DVB-ASI for a combined usable system bandwidth of 40Mb/s.

LINK INPUT: Isolated input BNC for DS3/E3 (44.736Mb/s) input signal.

LINK OUTPUT: Isolated output BNC for DS3/E3 (44.736Mbps) output signal.

ETHERNET PORT: RJ45 Ethernet port for transport and receive of 10/100 Base T Ethernet signal with a max bandwidth of 25Mbps. Total system bandwidth may not exceed 40Mbps.

CONTROL PORT: Allow the onboard SNMP miniagent to communicate over SNMP to the management network (VistaLINK)

Please Note: Total System Bandwidth includes bandwidth allocated for 2 ASI inputs plus 1 Ethernet transport signal.

Please Note: GPIO port is currently unavailable at the time of this writing.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standards:	DVB-ASI
Number of Inputs:	2 independent DVB-ASI signals with combined total system bandwidth of 40Mb/s
Connector:	BNC per IEC 61169-8 Annex A
Equalization:	Automatic 250m with Belden 1694 or equivalent cable
Return Loss:	> 15 dB up to 270Mb/s
Frequency Offset Tolerance:	±50ppm

3.2. SERIAL VIDEO OUTPUTS

Standards:	DVB-ASI
Number of Outputs:	2 independent DVB-ASI signals with combined total system bandwidth of 40Mb/s
Connectors:	BNC per IEC 61169-8 Annex A
Signal Level:	800mV (nominal)
DC Offset:	0V ± 0.5V
Rise and Fall Time:	900ps (nominal)
Overshoot:	< 10% of amplitude
Return Loss:	> 12dB
Wide Band Jitter:	< 0.2UI

3.3. LINK OUTPUT

Standards:	DS3/E3
Number of Outputs:	1
Connector:	BNC per IEC 61169-8 Annex A
Return Loss:	> 14 dB
Wide Band Jitter:	< 0.2UI

3.4. LINK INPUT

Number of Inputs:	1
Standards:	DS3/E3
Connector:	BNC per IEC 61169-8 Annex A
Return Loss:	> 15dB up to 270Mbps

3.5. ELECTRICAL

Voltage:	+12VDC
Power:	13 Watts

3.6. PHYSICAL

Number of Slots: 2

3.7. COMPLIANCE

Electrical Safety:	CSA Listed to CSA C22.2 No. 60065-03, UL 60065-03 IEC 60065-(2001-12) 7th Edition Complies with CE Low voltage directive 93/68/EEC
Laser Safety:	Complies with 24 CFR 1040.10 and 1040.11 except for deviations pursuant to LN No. 50, dated July 26, 2001 Complies with IEC 60825-1, Am. 2
EMI/RFI:	Complies with FCC regulations for class A devices Complies with EU EMC directive 89/336/EEC

4. STATUS INDICATORS AND DISPLAYS

The 7780ASIB2-DS3/E3 has 4 LED Status indicators and a 4 digit alphanumeric display on the front card edge to show operational status of the card at a glance. The card edge pushbutton and toggle switch are used to select various displays on the alphanumeric display. Figure 4-1 shows the locations of the indicators, pushbutton and toggle switch.

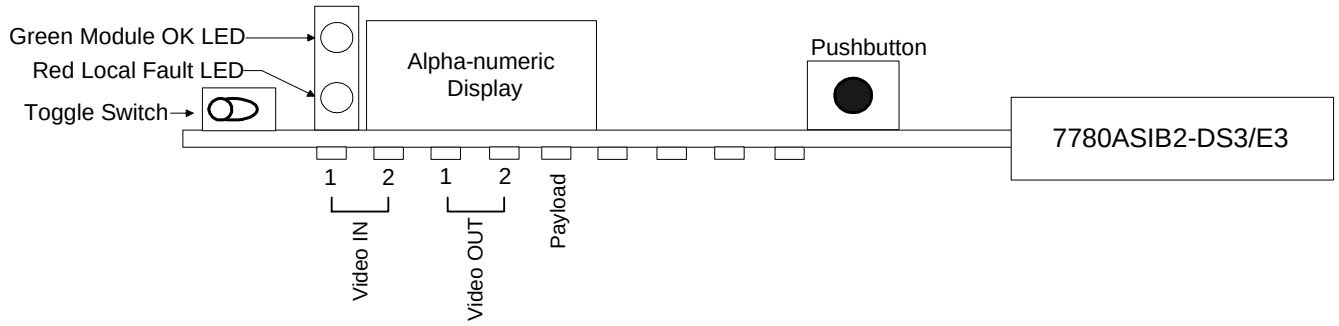


Figure 4-1: Location of Status Indicators and Controls

4.1. STATUS INDICATOR LEDS

LOCAL FAULT: On the 7780ASIB2-DS3/E3 board this Red LED will be ON if no valid link input signal is present, or if a local input power fault exists (i.e. a blown fuse).

The LOCAL FAULT indications 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 link input signal is present, and board powers are good.

VIDEO IN STATUS LED:

GREEN:	Valid signal input. No errors.
RED:	Valid signal input. Errors detected.
OFF:	No valid input detected.
YELLOW:	Input is blocked by the user from being transported through DS3 link.

VIDEO OUT STATUS LED:

GREEN:	Valid signal at output. No errors.
RED:	Valid signal at output. Errors detected.
OFF:	No valid output detected.
YELLOW:	Output is blocked by the user from being transported through output BNC.

PAYLOAD STATUS LED:

GREEN:	Payload OK.
RED:	Errors detected or signal not present.

4.2. CARD EDGE DISPLAY

Additional signal and status monitoring is provided via the 4-digit dot-matrix display located at the card-edge. The card edge toggle switch is used to select whether you are displaying status from the card (monitoring mode) or setting control parameters for the card (control mode). Press the toggle switch to select 'control mode' (CTRL) or 'monitor mode' (STAT). Figure 4-2 shows the menu structure for the 7780ASIB2-DS3/E3 card.

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
OK, LINK ERR				
BACK				
CTRL	BACK			
	PSWD	BACK		
		PSWL		
		ETH	BACK	
			MODE	MAN
				AUTO
		IN1	BACK	
			OUTP	EN
				DIS
			MAXB	0-40
		IN2	BACK	
			OUTP	EN
				DIS
			MAXB	0-40
		OUT1	BACK	
			OUTP	EN
				DIS
		OUT2	BACK	
			OUTP	EN
				DIS
	ERST	BACK		
		IASI	BACK	
			ASI1	BACK
				RST
			ASI2	BACK
				RST
		OASI	BACK	
			ASI1	BACK
				RST
			ASI2	BACK
				RST
	OASI	BACK		
		ASI1	BACK	
			CONT	
			DISC	
		ASI2	BACK	
			CONT	
			DISC	

	CIC	BACK		
		ALL	BACK	
			CLR	
		15m	BACK	
			CLR	
		24h	BACK	
			CLR	
	DISP	HORZ		
		VERT		
STAT	IASI	BACK		
		ASI1	BACK	
			RATE	
			NULL	
			DATA	
			PID	
			CCER	
		ASI2	BACK	
			RATE	
			NULL	
			DATA	
			PID	
			CCER	
		IPBW	BACK	
			USED	
	OASI	BACK		
		ASI1	BACK	
			RATE	
			NULL	
			DATA	
			PID	
			CCER	
		ASI2	BACK	
			RATE	
			NULL	
			DATA	
			PID	
			CCER	
		OPBW	BACK	
			USED	
	TDMD	BACK		
		LOSS		
		ERR		
		OK		

	ETH	BACK		
		LINK	BACK	
			UP	
			DOWN	
		SPD	BACK	
			10	
			100	
			DOWN	
		BW	BACK	
			0-25	
	DS3	BACK		
		CIC	BACK	
			15m	BACK
				TIME
				LOSS
				OOF
				AIS
				RAI
				IDLE
				SEF
			24h	BACK
				TIME
				LOSS
				OOF
				AIS
				RAI
				IDLE
				SEF
		LIC	BACK	
			15m	BACK
				LOSS
				OOF
				AIS
				RAI
				IDLE
				SEF
			24h	BACK
				LOSS
				OOF
				AIS
				RAI
				IDLE
				SEF
	VER			

Figure 4-2: Card Edge Menu

4.2.1. Control Menu

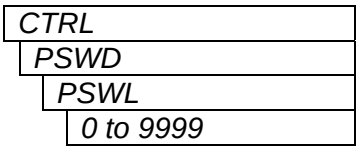
The *Control* menu enables the user to control and set different parameters on 7780ASIB2-DS3/E3 cards.

4.2.1.1. Passcode Protection Configuration

The channels' passcode protection can be controlled using menu selections. To configure the channel passcode protection from the **CTRL** menu, use the toggle switch/pushbutton to select the **PSWD** menu item. Use the toggle switch to increase or decrease the digits one at a time and use the pushbutton to select each digit until the correct passcode is entered (Default **7154**).

Once the correct passcode is entered, the user has the option of blocking individual input or output channels, along with limiting input bandwidth of a particular channel. If the correct passcode is not entered, the user may view the current configuration of these passcode protected menu items, but may not make changes.

The passcode may be changed from the **CTRL** menu. To change the passcode, use the toggle switch/pushbutton to select the **PSWD** menu item and then choose the **PSWL** menu item. A new passcode may then be selected and stored.

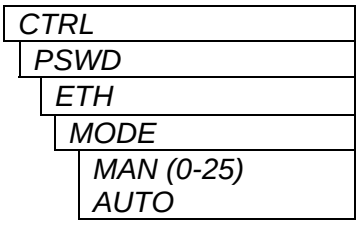


The following selections are available:

PSWL Store a new passcode (0-9999)

This menu is not available without first entering the correct passcode.

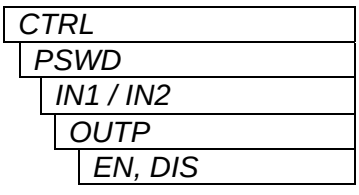
For Ethernet transport, the user may select between two modes of operation, Manual and Auto. In Manual mode, the user defines the bandwidth allocated for Ethernet transport. In Auto mode, the allocated bandwidth for Ethernet transport is the Total System Bandwidth minus the bandwidth used for ASI video transport. To configure *Ethernet Mode* from the **CTRL** menu, use the toggle switch/pushbutton to select the **PSWD** menu item and then choose the **ETH** menu item.



The following selections are available:

MAN Enable Manual mode. User selectable from 0-25Mbps
AUTO Enable Automatic mode

To configure *Input Channel Blocking* from the **CTRL** menu, use the toggle switch/pushbutton to select the **PSWD** menu item and then choose the **IN1** or **IN2** menu item, followed by the **OUTP** menu item.



The following selections are available:

EN Enable Input Channel
DIS Disable Input Channel

When Disabled, the data input on the selected signal is not placed on the DS3/E3 link data stream.

To configure *Input Channel Bandwidth* from the **CTRL** menu, use the toggle switch/pushbutton to select the **PSWD** menu item and then choose the **IN1** or **IN2** menu item, followed by **MAXB** menu item.

CTRL
PSWD
IN1 / IN2
MAXB
0 to 40

The following selections are available:

MAXB **1 to 40** for each channel with a combined total system bandwidth of **40**

This control enables the user to set the Maximum Input Bandwidth [Mb/s] per Channel Threshold.

To configure *Output Channel Blocking* from the **CTRL** menu, use the toggle switch/pushbutton to select the **PSWD** menu item and then choose the **OUT1** or **OUT2** menu item.

CTRL
PSWD
OUT1 / OUT2
OUTP
EN, DIS

The following selections are available:

EN Enable Input Channel
DIS Disable Input Channel

When Disabled, data on the selected signal is not placed on the output BNC data stream.

4.2.1.2. Input ASI & Output ASI Error Reset

The ASI Continuity Error Counter clear can be controlled using menu selections. To clear the ASI Continuity Error Counter from the **CTRL** menu, use the toggle switch/pushbutton to select the IASI for inputs 1 and 2, or OASI for outputs 1 and 2, followed by **RST** for the corresponding input or output channel.

CTRL
ERST
IASI
ASI1 / ASI 2
RST

The following selections are available:

RST Resets the corresponding *Input ASI Continuity Error Counter* to 0

CTRL
ERST
OASI
ASI1 / ASI 2
RST

The following selections are available:

RST Resets the corresponding *Output ASI Continuity Error Counter* to 0

4.2.1.3. Setting the Output Mode

This parameter allows the user to set output on loss to **DISC** or **CONT** mode. In continuous mode, the corresponding ASI output will output a valid ASI stream of nulls when an input is not present. In discontinuous mode, the output will not output a valid ASI signal when an input is not present. To configure the output mode from the **CTRL** menu, use the toggle switch/pushbutton to select the **OASI** menu item and then choose the **ASI1** or **ASI2** menu item.

- *CTRL*
  - *OASI*
    - *ASI1 / ASI2*
      - *CONT*
      - *DISC*

The following selections are available:

CONT	Sets corresponding ASI output to continuous mode
DISC	Sets corresponding ASI output to discontinuous mode

4.2.1.4. Clearing the Counters

The counter/timer clear can be controlled using menu selections. To configure the counter/timer clear from the **CTRL** menu, use the toggle switch/pushbutton to select the **CIC** menu item.

- *CTRL*
  - *CIC*
    - *ALL*
    - *15m*
    - *24h*
      - *CLR*

The following selections are available:

ALL	**CLR** to clear both counters
15m	**CLR** to clear the 15-minute counter
24h	**CLR** to clear the 24-hour counter

4.2.1.5. Setting the Orientation of the Text on the Card Edge Display

The text orientation can be controlled using menu selections. To configure the text orientation from the **CTRL** menu, use the toggle switch/pushbutton to select the **DISP** menu item.

- *CTRL*
  - *DISP*
    - *HORZ*
    - *VERT*

The following selections are available:

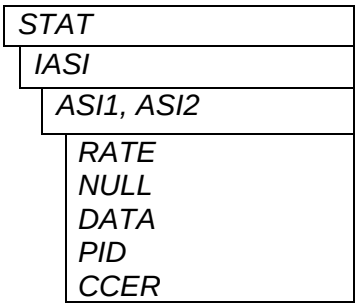
HORZ	Horizontal display
VERT	Vertical display

4.2.2. STAT Menu

When in monitoring 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 option. The card-edge pushbutton and toggle switch are used to navigate through the display menu.

4.2.2.1. Displaying Input ASI Status Information

This menu item displays information contained in the input DVB-ASI stream. Parameters such as *Total TS Bit Rate*, *Null Packet Bit Rate*, *Useful Bit Rate*, *Number of Active PID's*, and *Number of Continuity Count Errors* can be displayed. To display the *ASI Status Information* from the **STAT** menu, use the toggle switch/pushbutton to select the **IASI** menu and then choose one of **RATE, NULL, DATA, PID,** or **CCER** under **ASI(1 & 2).**

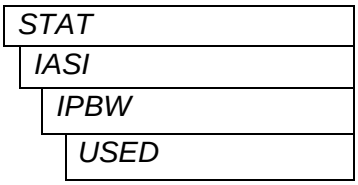


The following indications are possible:

RATE	Total TS Bit Rate
NULL	Null Packet Bit Rate
DATA	Useful Bit Rate
PID	Number of Active PID's
CCER	Number of Continuity Count Errors

4.2.2.2. Displaying the Total Input ASI Bandwidth Used

This menu selection displays the sum of the 2 input channel bandwidths. To display the *Total Input Bandwidth* used from the **STAT** menu, use the toggle switch/pushbutton to select the **IASI** menu and then choose **IPBW,** followed by **USED.**

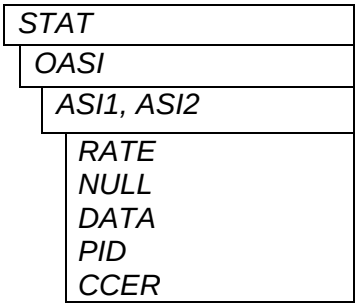


The following indications are possible:

USED	Combined Input Bandwidth

4.2.2.3. Displaying Output ASI Status Information

This menu selection displays various information contained in the output DVB-ASI stream. Parameters such as *Total TS Bit Rate*, *Null Packet Bit Rate*, *Useful Bit Rate*, Number of Active PID's, and *Number of Continuity Count Errors* can be displayed. To display the *ASI Status Information* from the **STAT** menu, use the toggle switch/pushbutton to select the **OASI** menu and then choose one of **RATE, NULL, DATA, PID,** or **CCER** under **ASI(1 & 2).**

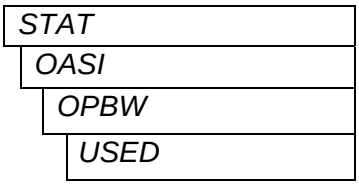


The following indications are possible:

RATE	Total TS Bit Rate
NULL	Null Packet Bit Rate
DATA	Useful Bit Rate
PID	Number of Active PID's
CCER	Number of Continuity Count Errors

4.2.2.4. Displaying the Output ASI Bandwidth Used

This menu selection displays the combined bandwidths used for the 2 video channels. To display the *Total Output Bandwidth Used* from the **STAT** menu, use the toggle switch/pushbutton to select the **OASI** menu and then choose **OPBW**, followed by **USED**.

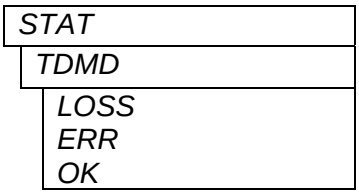


The following indications are possible:

USED	Combined Output Bandwidth

4.2.2.5. Displaying the TDMD Data Errors

This menu selection displays the errors in the clear channel TDM data. This allows user to monitor if transmission errors are occurring at the DS3/E3 network or at the TDM stream. To display the *TDMD Data Error* from the **STAT** menu, use the toggle switch/pushbutton to select the **TDMD** menu.



The following indications are possible:

LOSS	TDM Data Lost
ERR	TDM Error Detected
OK	TDM Data is present and no errors are detected

4.2.2.6. Displaying the Ethernet Status

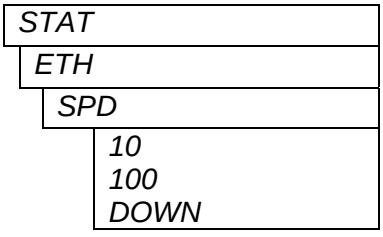
This menu selection displays the *Ethernet Status*. To display the *Ethernet Status* from the **STAT** menu, use the toggle switch/pushbutton to select the **ETH** menu and then choose **LINK.**

The following indications are possible:

UP	Ethernet input present
DOWN	Ethernet input not present

4.2.2.7. Displaying the Ethernet Speed

This menu selection displays the *Ethernet Transmission Speed*. To display the *Ethernet Transmission Speed* from the **STAT** menu, use the toggle switch/pushbutton to select the **ETH** menu and then choose **SPD.**

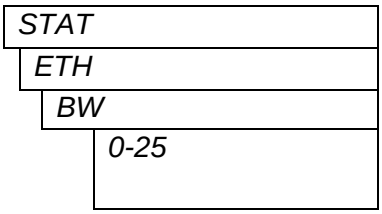


The following indications are possible:

10	10Mb/s Ethernet Link established
100	100Mb/s Ethernet Link established
DOWN	No Ethernet Link established

4.2.2.8. Displaying the Ethernet Bandwidth

This menu selection displays the current *Ethernet Bandwidth* allocated. To display the *Ethernet Bandwidth* from the **STAT** menu, use the toggle switch/pushbutton to select the **ETH** menu and then choose **BW.**

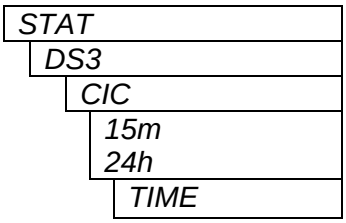


The following indications are possible:

0-25	Indicates the total bandwidth allocated for Ethernet transport in the units of Mbps

4.2.2.9. Displaying the Current Interval Counter

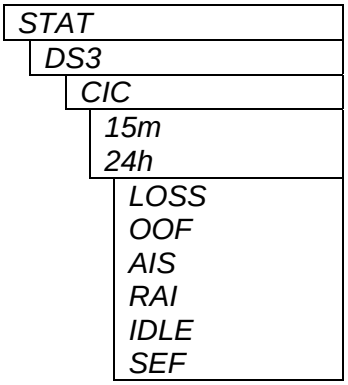
This menu selection displays *Current Interval Performance Counters*, useful for monitoring network integrity. To display performance counters from the **STAT** menu, use the toggle switch/pushbutton to select the **DS3** menu item and then choose the **CIC** menu item. The module records the *Current* performance over 15 minute and 24 hour intervals, which restart once they have expired. The corresponding status is displayed by selecting either the **15m** or **24h** menu item. To display the current timer value, select **TIME**.



The following indications are possible:

0 to **899/1440**	Timer value in seconds or minutes, for 15m or 24h timers, respectively

The following menu is available to display performance counters:

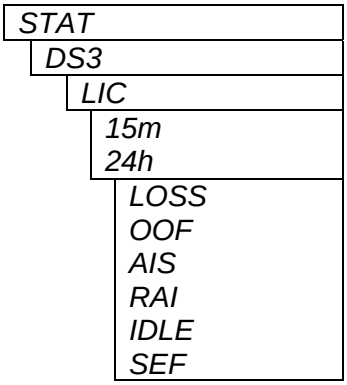


The following indications are possible:

LOSS	Signal Loss
OOF	Out Of Frame
AIS	Alarm Indication Signal
RAI	Remote Alarm Indication
IDLE	DS3 Idle Signal
SEF	Severely Errored Frame

4.2.2.10. Displaying the Last Interval Counter

This menu selection displays the *Last Interval Performance Counts* recorded each time the *Current Interval* counters expire. To display these performance counts from the **STAT** menu, use the toggle switch/pushbutton to select the **DS3** menu item and then choose the **LIC** menu item. The module records *Last* interval counts for 15 minute and 24 hour intervals. The corresponding status is displayed by selecting either the **15m** or **24h** menu item. The following selections are available to display performance counts:

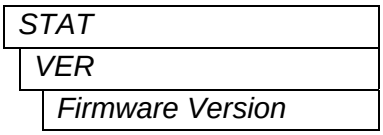


The following indications are possible:

LOSS	Signal Loss
OOF	Out Of Frame
AIS	Alarm Indication Signal
RAI	Remote Alarm Indication
IDLE	DS3 Idle Signal
SEF	Severely Errored Frame

4.2.2.11. Displaying Firmware Version

To display the module firmware version from the **STAT** menu, use the toggle switch/pushbutton to select the **VER** menu item.



VER	Firmware version

5. 7780ASIB2-DS3/E3 CARD CONFIGURATION

5.1. GENERAL

The **General** tab, as illustrated in Figure 5-1, enables the user to set control parameters and view card status information.

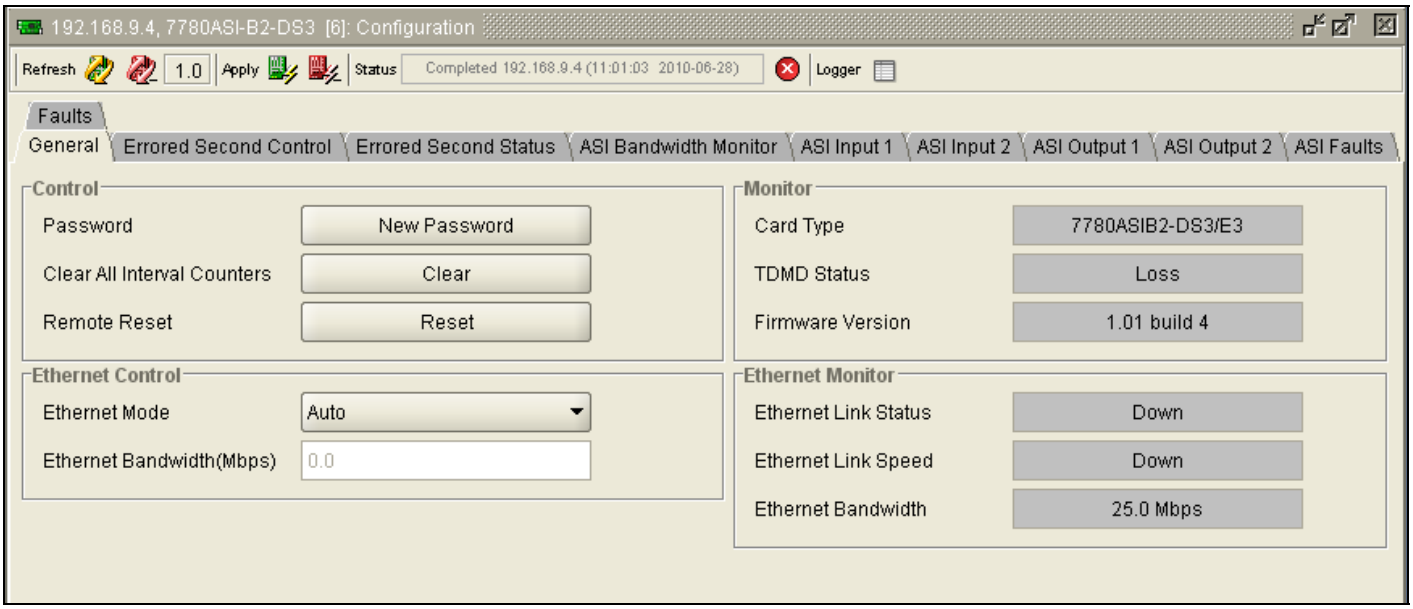


Figure 5-1: General Tab

5.1.1. Control

Password: Enables the user to set/store new passwords.

Clear Counters: Enables the user to clear all counters and reset the timer.

Remote Reset: Enables the user to remotely reset the 7780ASIB2-DS3/E3 card module.

5.1.2. Ethernet Control

Ethernet Mode: Enables the user to set *Manual* or *Auto* Ethernet mode.

5.1.3. Monitor

The **Monitor** section indicates the card model number, TDMD status, and current firmware version.

5.1.4. Ethernet Monitor

The **Ethernet Monitor** section indicates the status of the Ethernet Link Status, Speed, and Bandwidth.

5.2. ERRORED SECOND CONTROL

The **Errored Second Control** tab, as illustrated in Figure 5-2, enables the user to clear the 15-minute counter and the 24-hour counter.

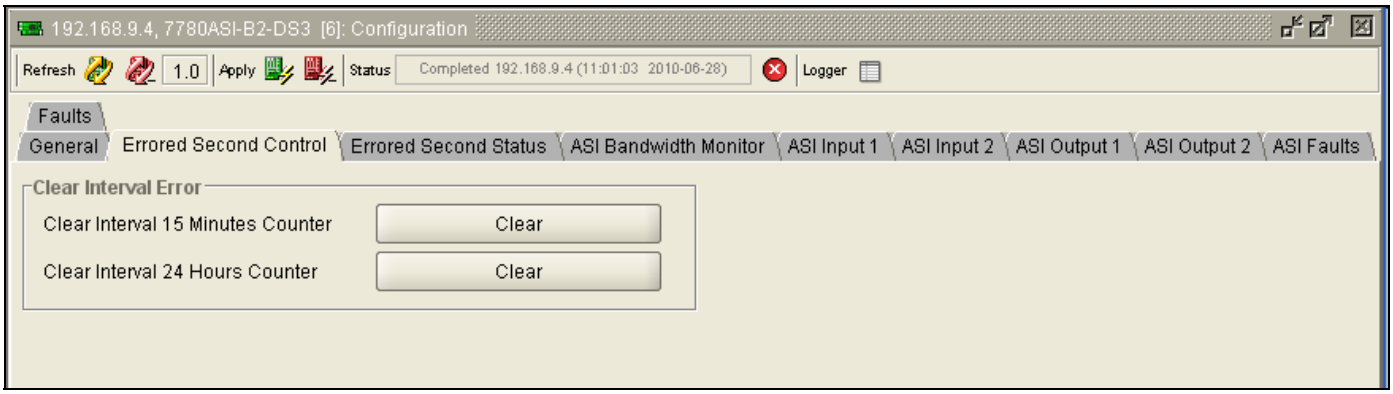


Figure 5-2: Errored Second Control Tab

5.3. ERRORED SECOND STATUS

The **Errored Second Status** tab, as illustrated in Figure 5-3, monitors the current 15 minute and current 24 hour performance counters as well as the last 15 minute and last 24 hour performance counters. The counters include Out of Frame, Signal Loss, Alarm Indication Signal, Severely Errored Frame, Remote Alarm Indication, and DS3 Idle Signal.

The **Interval Elapsed Time** indicates the current timer on the 15 minute and 24 hour counters.

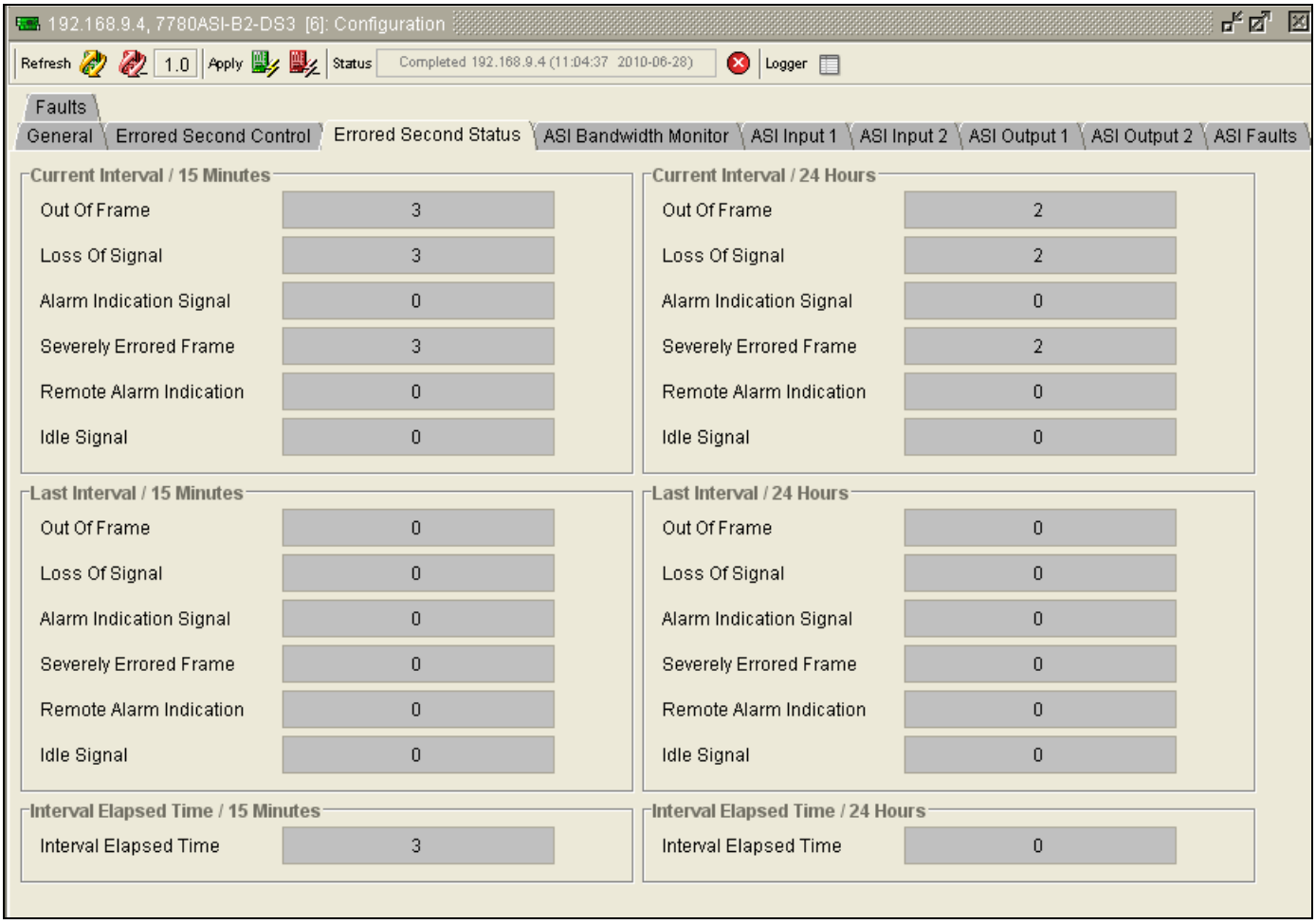


Figure 5-3: Errored Second Status Tab

5.4. ASI BANDWIDTH MONITOR

This tab indicates the sum of the two input channel bandwidths (**Input Used Data Bitrate**). It also indicates the combined bandwidths used for the 2 video channels (**Output Used Data Bitrate**).

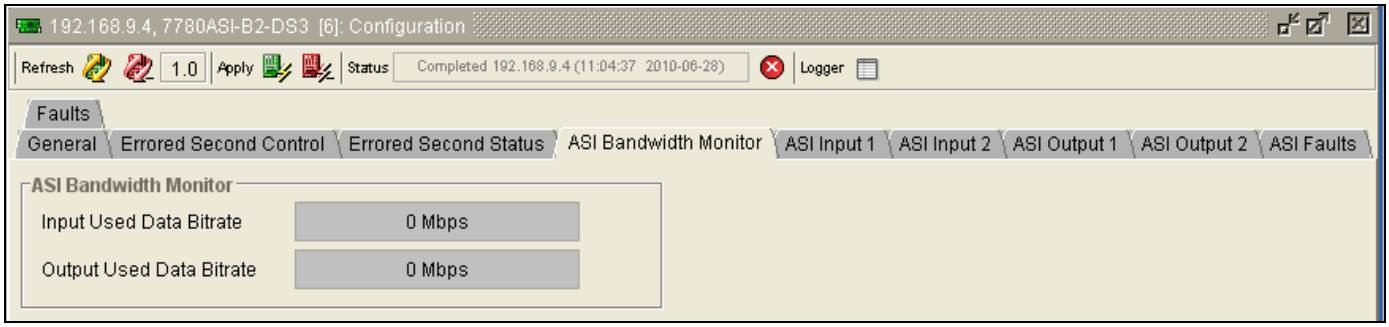


Figure 5-4: ASI Bandwidth Monitor Tab

5.5. ASI INPUT 1

This tab, illustrated in Figure 5-5, enables the user to set ASI Input controls and monitor ASI Input status information. For the sake of brevity, only **ASI Input 1** will be described.

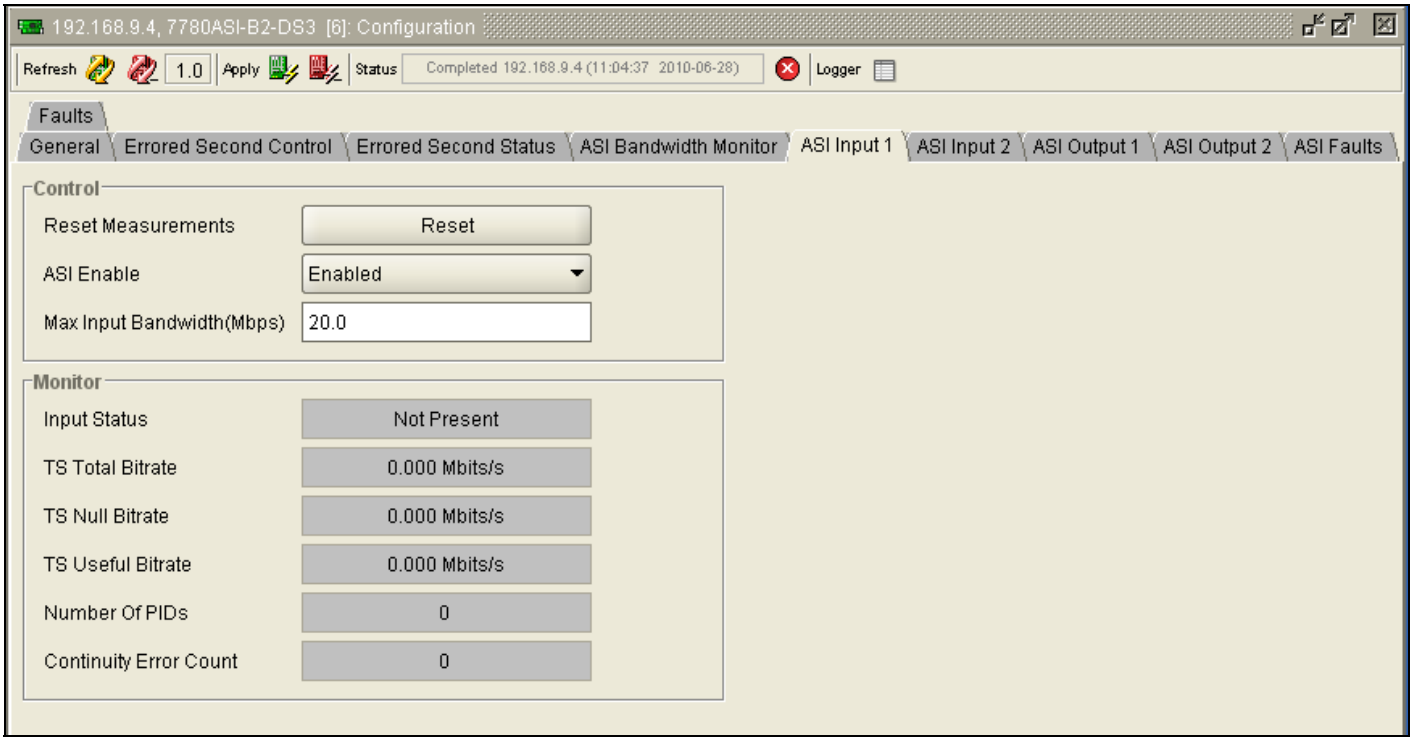


Figure 5-5: ASI Input 1 Tab

5.5.1. Control

Reset Measurement: Enables the user to reset Input Continuity Error Counter to 0.
ASI Enable: Allows the user to enable or disable ASI Input channel.
Max Input Bandwidth: Enables the user to set the Maximum Input Bandwidth (Mb/s).

5.5.2. Monitor

The **Monitor** section indicates the status of the Input ASI streams including Input Status, TS Total Bitrate, TS Null Bitrate, TS Useful Bitrate, Number of PIDs, and Continuity Error Count.

5.6. ASI OUTPUT 1

This tab, illustrated in Figure 5-6, enables the user to set ASI Output controls and monitor ASI Output status information. For the sake of brevity, only **ASI Output 1** will be described.

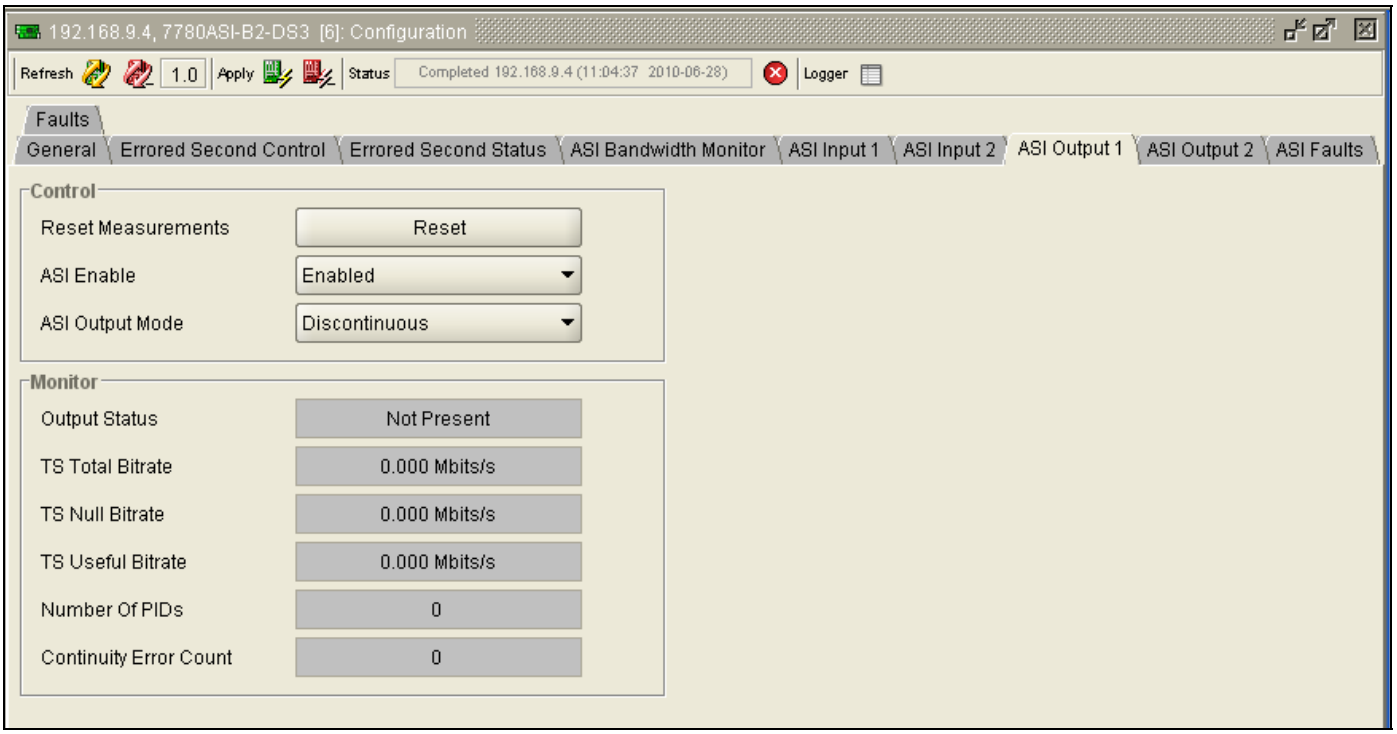


Figure 5-6: ASI Output 1 Tab

5.6.1. Control

Reset Measurement: Enables the user to reset Output Continuity Error Counter to 0.
ASI Enable: Allows the user to enable or disable ASI Output channel.
ASI Output Mode: Enables to user to set ASI output to Continuous or Discontinuous mode.

5.6.2. Monitor

The **Monitor** section indicates the status of the Output ASI streams including Output Status, TS Total Bitrate, TS Null Bitrate, TS Useful Bitrate, Number of PIDs, and Continuity Error Count.

5.7. ASI FAULTS

The *ASI Faults* tab, as illustrated in Figure 5-7, allows the user to enable or disable *ASI* traps and view trap status. To enable a particular trap, simply click the box located beside each trap so that a check-mark appears. When a check-mark is present, the trap is enabled. When a check-mark is not present, the trap is disabled.

The *ASI Trap Status* section defines whether a trap is present or missing. If the box is green, then the corresponding trap is present. If the box is red, then the corresponding trap is missing.

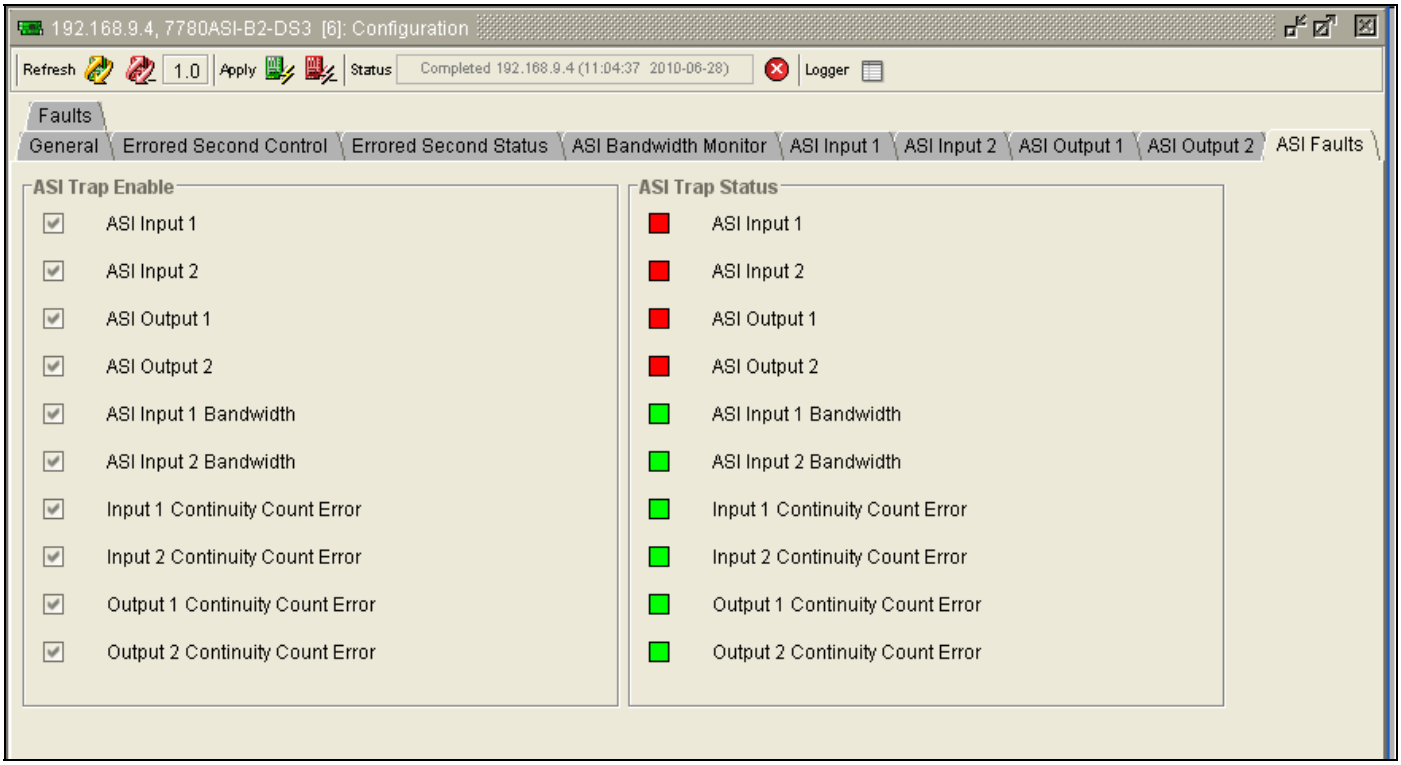


Figure 5-7: ASI Faults Tab

5.8. FAULTS

The *Faults* tab, as illustrated in Figure 5-8, allows the user to enable or disable traps and view trap status. To enable a particular trap, simply click the box located beside each trap so that a check-mark appears. When a check-mark is present, the trap is enabled. When a check-mark is not present, the trap is disabled.

The *Trap Status* section defines whether a trap is present or missing. If the box is green, then the corresponding trap is present. If the box is red, then the corresponding trap is missing.

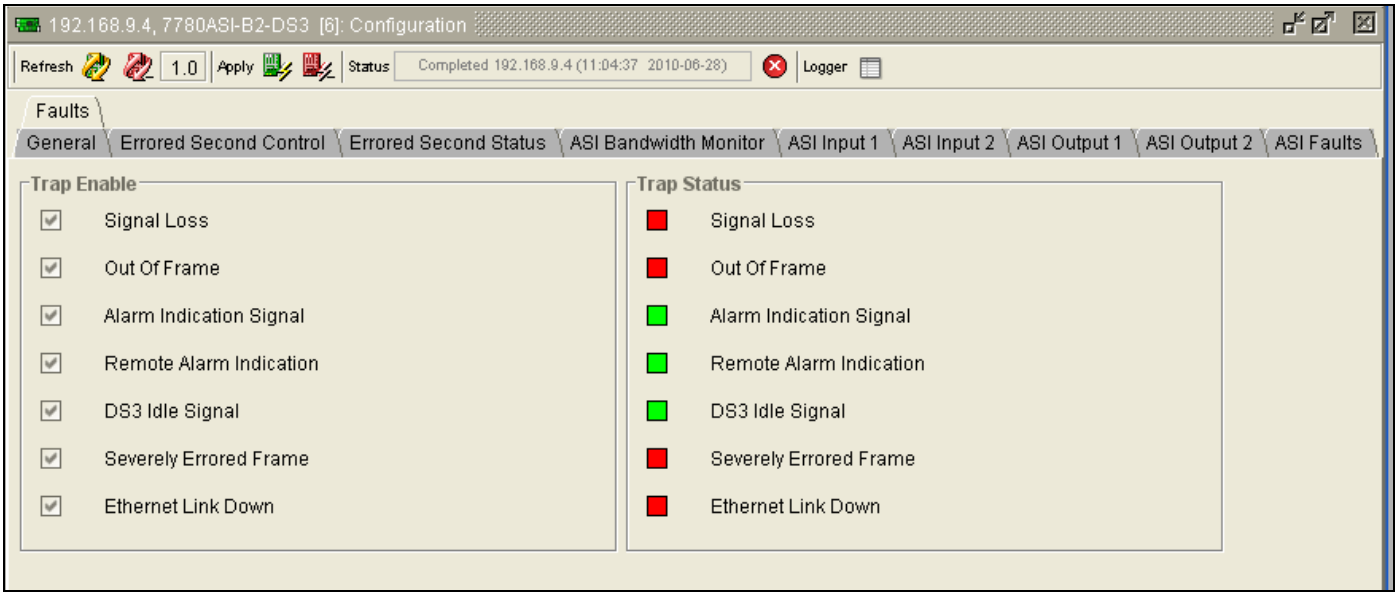


Figure 5-8: Faults Tab

6. JUMPERS

Several jumpers, located at the front of the module are used to preset various operating modes. Figure 6-1 shows the locations of the jumpers on the board.

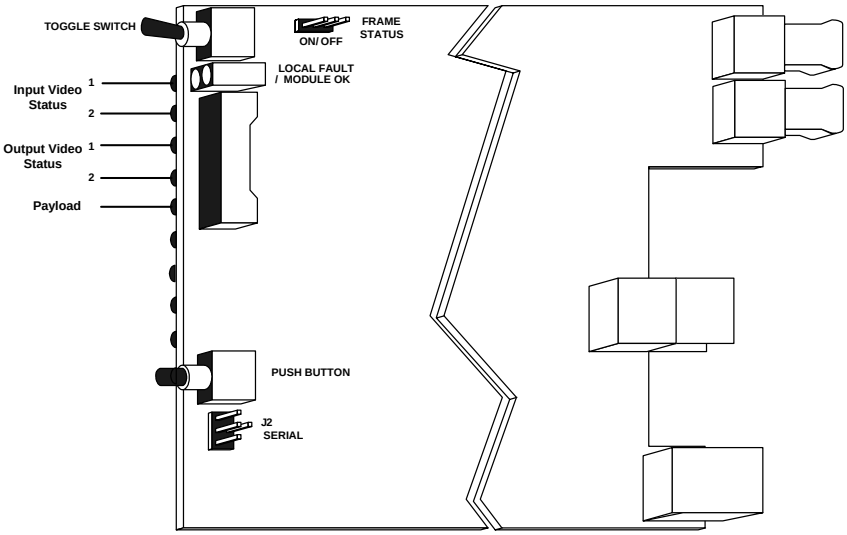


Figure 6-1: Location of Status Indicators and Jumpers

6.1. 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. Each of the cards of the module pair has a frame status jumper. Be sure to change both jumpers to the same state.

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.

6.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

The 7780ASIB2-DS3/E3 card can be configured for firmware upgrades using the UPGRADE jumpers or with the serial port 'u' command as described below.

6.2.1. Using the Upgrade Jumper

UPGRADE: The UPGRADE jumper is used when firmware upgrades are being performed on 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 *UPGRADE* 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 in the front of this manual binder. Once the upgrade is complete, 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.

6.2.2. Upgrade Serial Port Command

Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header at the card edge of the card to be upgraded. Connect this cable to your computer and run a terminal program as described in the *Upgrading Firmware* section in the front of this manual binder. Type in "u" without the quotes and hit the enter key. Follow the prompts that are presented on your terminal screen and proceed to download the new firmware specified for this card.

7. *VISTA*LINK® REMOTE MONITORING/CONTROL

7.1. 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 7780ASIB2-DS3/E3 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. The 7780ASIB2-DS3/E3 card also includes an onboard mini agent that can be accessed through the CONTROL port on the rear plate of the card. Connecting this CONTROL port to the management network will allow the unit to communicate without a 7700FC frame controller.

4. 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.

7.2. CONFIGURING THE IP ADDRESS (IF THE ONBOARD MINI AGENT IS USED)

1. Connect the upgrade cable to the 4-pin serial port header on the card.
2. Press <ENTER> to display the card's main menu. Make a selection by typing in the selection number at the '>' prompt and pressing <ENTER>

```
---- 7780ASIB2-DS3/E3 1.1 build 4 Main Menu ----

NOTE: In all menus, changes made will only take
effect if you select "Save and Exit"


(01) Network Configuration
(02) SNMP Configuration
(03) Engineering

(X) Exit
>
```

3. Select (01) to enter the Network Configuration to make changes to the network settings.
4. When done, Type 'S' and <ENTER> to save the changes

```
---- 7780ASIB2-DS3/E3 1.1 build 4 Network Configuration ----

-----------------------------------
MAC address         (null)
ip address:         0.0.0.0
netmask address:    0.0.0.0
gateway:            0.0.0.0
broadcast address: 255.255.255.255
DHCP enabled: True
-----------------------------------
(01) Set IP Address
(02) Set Netmask
(03) Set Gateway
(04) Set Broadcast Address
(05) Use DHCP

(S) Save and Exit
(X) Exit
>
```

5. At the main menu, select (02) to enter the SNMP Configuration to add SNMP trap destinations

```
---- 7780ASIB2-DS3/E3 1.1 build 4 SNMP Configuration ----

(01) Trap Destinations
(02) Community Strings

(S) Save and Exit
(X) Exit
>
```

6. Select (01) to add new or delete existing SNMP trap destination IP addresses (IP's where traps are sent)

```
---- 7780ASIB2-DS3/E3 1.1 build 4 Trap Destinations ----


(01) Add Trap Destination
(02) Remove Trap Destination

(X) Exit
>
```

7. Type ‘X’ and <ENTER> to exit
8. Type ‘S’ and <ENTER> to save the changes

Please Note: VLPro traps will be added in the next release when using only the SNMP mini agent.

7.3. *VISTA*LINK® MONITORED PARAMETERS

The following parameters can be remotely monitored through the *Vista*LINK® interface.

Parameter	Description
Card Type	Identifies the type of card.
TDMD Status	Indicates TDMD Status.
Firmware Version	Indicates current Firmware Version.
Ethernet Monitor	Indicates Ethernet Link Status, Speed, and Bandwidth.
Current Interval Performance Counters	Indicates the current 15 minute and current 24 hour performance counters, Signal Loss, Out of Frame, Alarm Indication Signal, Remote Alarm Indication, DS3 Idle Signal, and Severely Errored Frame.
Last Interval Performance Counters	Indicates the last 15 minute and last 24 hour performance counters, Signal Loss, Out of Frame, Alarm Indication Signal, Remote Alarm Indication, DS3 Idle Signal, and Severely Errored Frame.
Interval Elapsed Time	Indicates the current timer on 15 minute and 24 hour counter.
Input Used Data Bitrate	Indicates the sum of the two input channel bandwidths.
Output Used Data Bitrate	Indicates the sum of the two output channel bandwidths.
Input ASI Status Information	Indicates the status parameters of Input ASI streams, Input Status, TS Total Bitrate, TS Null Bitrate, TS Useful Bitrate, Number of PIDs, and Continuity Error Count.
Output ASI Status Information	Indicates the status parameters of Output ASI streams, Output Status, TS Total Bitrate, TS Null Bitrate, TS Useful Bitrate, Number of PIDs, and Continuity Error Count.

Table 7-1: *Vista*LINK® Monitored Parameters

7.4. *VISTA*LINK® CONTROLLED PARAMETERS

The following parameters can be remotely controlled through the *Vista*LINK® interface.

Parameter	Description
Change Passcode	Setup the Passcode used to access the Video Blocking features.
Clear Counters	Allows the user to clear all error counters and reset the timer.
Remote Reset	Allows the user to remotely reset the 7780ASIB2-DS3/E3 card module.
Ethernet Mode	Allows the user to set Manual or Auto Ethernet mode.
Reset Continuity Error Count	Allows the user to reset Input and Output Continuity Error Counter to 0.
ASI Enable	Allows the user to enable or disable ASI Input and Output channels.
Max Input Bandwidth	Enables the user to set the Maximum Input Bandwidth (Mb/s).
ASI Output Mode	Allows to user to set ASI output to Continuous or Discontinuous mode.

Table 7-2: *Vista*LINK® Controlled Parameters

7.5. *VISTA*LINK® TRAPS

The following traps can be *Vista*LINK® enabled and monitored.

Trap	Description
Input and Output ASI Loss	Triggers when there is a loss of a valid video signal on channels 1 and 2.
Input Bandwidth	Triggers when Input 1 and 2 bandwidth is exceeded.
Input and Output Continuity Count Error	Triggers when Input or Output 1 and 2 detects Continuity Count Errors.
Signal Loss	Triggers when a link loss is detected.
ASI Performance Status	Triggers when ASI Performance errors are detected: Signal Loss, Out of Frame, Alarm Indication, Remote Alarm Indication, DS3 Idle Signal, and Severely Errored Frame.
Severe Errored Frame	Triggers when one or all of severe errored thresholds are crossed.
Errored Second	Triggers when Line, Path or Section errored second is present.
Ethernet Link	Triggers when Ethernet Link is lost.

Table 7-3: *Vista*LINK® Traps

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