

7703BPX-DC-RF

2X1 RF Protection Switch

User Manual



© Copyright 2019

EVERTZ MICROSYSTEMS LTD.

5292 John Lucas Drive
Burlington, Ontario
Canada L7L 5Z9

Phone:	+1 905-335-3700	Fax:	+1 905-335-3573
Sales:	sales@evertz.com	Fax:	+1 905-335-7571
Tech Support:	service@evertz.com	Twitter:	@EvertzTV
Web Page:	http://www.evertz.com		



Version 1.0, May 2019

The material contained in this manual consists of information that is the property of Evertz Microsystems and is intended solely for the use of purchasers of the 7703BPX-DC-RF. Evertz Microsystems expressly prohibits the use of this manual for any purpose other than the operation of the 7703BPX-DC-RF.

All rights reserved. No part of this publication may be reproduced without the express written permission of Evertz Microsystems Ltd. Copies of this manual can be ordered from your Evertz dealer or from Evertz Microsystems.

This page left intentionally blank

IMPORTANT SAFETY INSTRUCTIONS

	<p>The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “Dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>
	<p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.</p>

- Read this information
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE

WARNING

DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS ARE PLACED ON THE EQUIPMENT

WARNING

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE

WARNING

THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE

INFORMATION TO USERS IN EUROPE

NOTE

This equipment with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European standards:

- EN60065 Product Safety
- EN55103-1 Electromagnetic Interference Class A (Emission)
- EN55103-2 Electromagnetic Susceptibility (Immunity)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Changes or modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	May 2019

Information contained in this manual is believed to be accurate and reliable. However, Evertz assumes no responsibility for the use thereof or for the rights of third parties, which may be affected in any way by the use thereof. Any representations in this document concerning performance of Evertz products are for informational use only and are not warranties of future performance, either expressed or implied. The only warranty offered by Evertz in relation to this product is the Evertz standard limited warranty, stated in the sales contract or order confirmation form.

Although every attempt has been made to accurately describe the features, installation and operation of this product in this manual, no warranty is granted nor liability assumed in relation to any errors or omissions unless specifically undertaken in the Evertz sales contract or order confirmation. Information contained in this manual is periodically updated and changes will be incorporated into subsequent editions. If you encounter an error, please notify Evertz Customer Service department. Evertz reserves the right, without notice or liability, to make changes in equipment design or specifications.

This page left intentionally blank

TABLE OF CONTENTS

1. OVERVIEW	1
1.1. TYPICAL CONFIGURATION	2
2. INSTALLATION	3
2.1. GPIO	4
3. SPECIFICATION.....	5
3.1. RF INPUT/OUTPUT	5
3.2. GENERAL PURPOSE INPUTS.....	5
3.3. GENERAL PURPOSE OUTPUTS	5
3.4. ELECTRICAL	6
3.5. PHYSICAL	6
4. STATUS INDICATORS AND DISPLAYS.....	7
4.1. STATUS INDICATOR LEDES	7
4.2. DOT-MATRIX DISPLAY	7
4.2.1. Displaying the RF Power of Input A and Input B	9
4.2.2. Displaying the GPI1 and GPI2 State.....	9
4.2.3. Displaying the Active Channel	9
4.2.4. Displaying the Operating Mode Status.....	9
4.2.5. Displaying the Firmware Version	10
4.2.6. Selecting the Switch Mode	10
4.2.7. Selecting High or Low as GPI Active State	11
4.2.8. Setting the RF Power Threshold for Auto Mode Switching.....	11
4.2.9. Changing the Orientation of the Text on the Display.....	11
4.2.10. Performing a Factory Reset.....	12
4.3. CONTROLLING THE SWITCH USING GPI INPUTS	12
5. JUMPERS.....	13
5.1. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS.....	13
5.2. MONITORING AND CONTROL OF 7703BPX-DC-RF CARDS THROUGH SNMP OR CARD EDGE MENU SYSTEM	13
5.3. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES (7703BPX-DC-RF ONLY).....	13
5.4. SELECTING THE GPI PULL-UP VOLTAGE.....	14
5.5. USING THE GPO OUTPUTS	14
6. VISTALINK[®] REMOTE MONITORING/CONTROL	15
6.1. WHAT IS VISTALINK[®]?	15
6.2. VISTALINK[®] MONITORED PARAMETERS.....	15
6.3. VISTALINK[®] CONTROLLED PARAMETERS.....	16
6.4. VISTALINK[®] TRAPS	16

FIGURES

Figure 1-1 : 7703BPX-DC-RF	2
Figure 1-2 : Typical Application of Protection Switch in L-band Downlink Transport System.....	2
Figure 2-1 : 7703BPX-DC-RF Rear Plate	3
Figure 2-2 : GPI Input Circuitry	4
Figure 2-3 : GPO Configuration	4
Figure 5-1 : Location of Jumpers – 7703BPX-DC-RF	13

TABLES

Table 4-1 : Setting the Switch Mode via the SET/MODE menu	10
Table 4-2: Controlling the Switch Using GPI Inputs – 7703BPX-DC-RF	11
Table 4-1: GPI Active State Switch Settings	12
Table 4-2: Controlling the Switch Using GPI Inputs – 7703BPX-DC-RF	12
Table 6-1 : VistaLINK® Monitored Parameters	15
Table 6-2 : VistaLINK® Controlled Parameters	16
Table 6-3 : VistaLINK® Traps.....	16

1. OVERVIEW

The 7703BPX-DC-RF is a wide band 2x1 RF protection switch that provides auto-changeover functionality to provide bypass protection of RF signal from 10MHz to 2250MHz and for DC LNB bias. Manual control or automation control via the GPI port is also provided. In the auto-changeover application, 7703BPX-DC-RF can be configured to have a *Main* input and a *Standby* input. In this configuration, it will automatically switch to the *Standby* input when the *Main* input power is weak or lost. It can also be set to auto-switch back to the *Main* source when this signal is re-established. This is a latching switch which maintains switch state on loss of power.

The 7703BPX-DC-RF has integrated VistaLINK[®] technology for remote control and monitoring capability via SNMP. This provides the user with the ability to locally or remotely configure and monitor parameters such as module status, selected input, power level and switching threshold.

The 7703BPX-DC-RF occupies 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 & Benefits

- Wide operating frequency range, 10MHz to 2250MHz
- Intelligent auto switching with input power detection
- User-definable threshold levels
- Maintains switch state and RF channel on loss of power to card or frame
- Supports automatic or manual control via GPI or SNMP
- Switch state indication via GPO
- Card edge LEDs indicate active input channels, output channel and power levels below threshold
- Passes DC LNB bias and 22kHz tone
- Fully hot-swappable from front of frame
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and VistaLINK[®]
- VistaLINK[®] capability is available when 7703BPX-DC-RF modules are used with the 3RU 7800FR or 350FR portable frame and a 7700FC VistaLINK[®] Frame Controller module in slot 1 of the frame

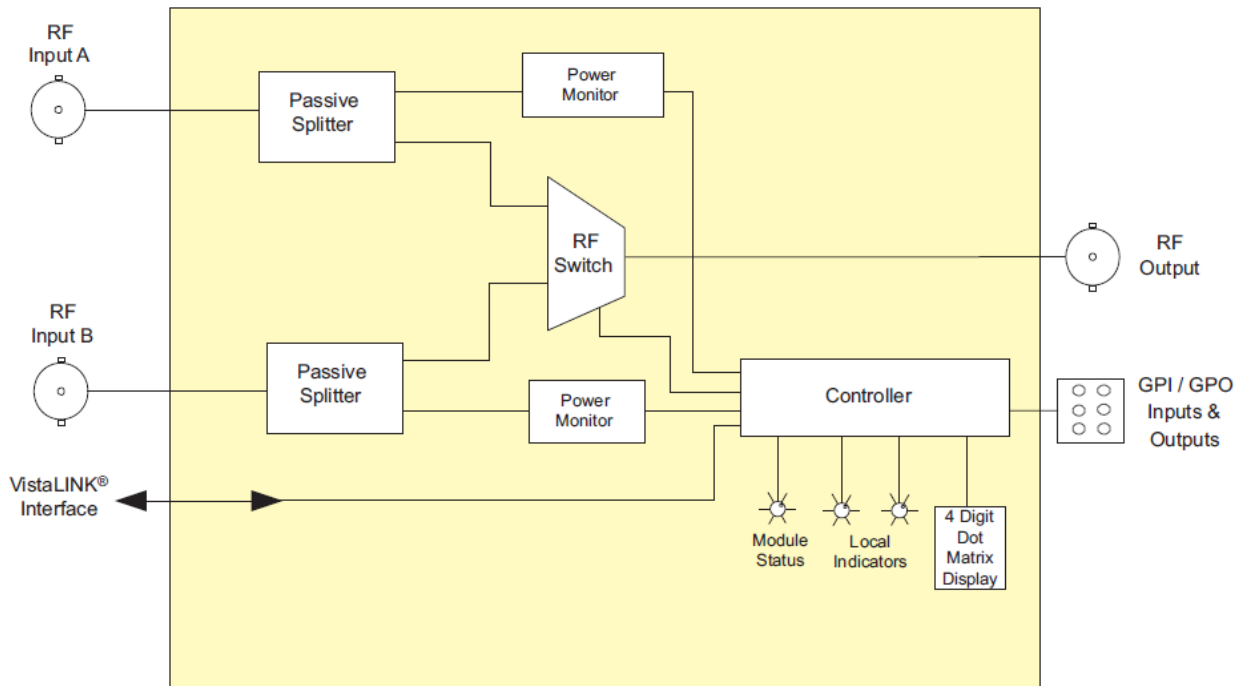


Figure 1-1 : 7703BPX-DC-RF

1.1. TYPICAL CONFIGURATION

Uni-directional Bypass Switch

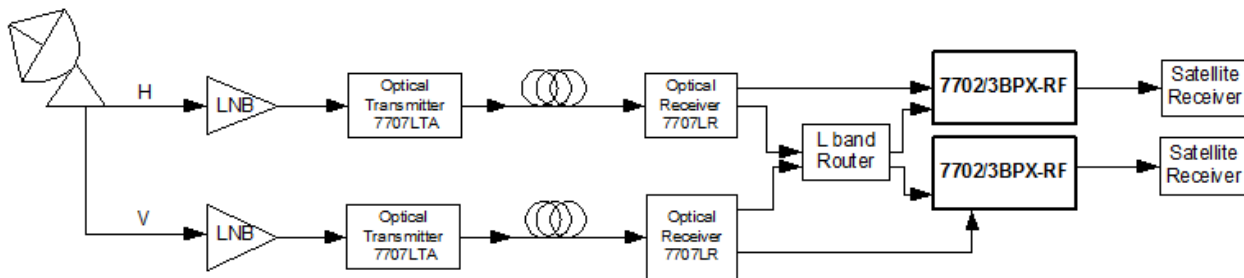


Figure 1-2 : Typical Application of Protection Switch in L-band Downlink Transport System

This diagram illustrates the use of the 7703BPX-DC-RF as a protection switch in an earth station L-band satellite downlink transport system. The received Horizontal and Vertical polarizations are fed into LNB (Low Noise Block converter) and down converted to L-band frequency (950 – 2150MHz). The Evertz Microsystems 7707LTA L-band optical transmitter converts the RF input to an optical signal that can be transported up to 60km from the antenna site to the Network Operations Centre (NOC). The 7707LR L-band optical receiver converts the optical signal to an RF output which can be directed to an L-band router for switching and distribution. In this application diagram, the 7703BPX-DC-RF is used to provide protection against router failure and directs the L-band signal to the appropriate receiver. In case of power failure to the switch, the latching mechanism keeps the switch in the same state upon failure.

2. INSTALLATION

The 7703BPX-DC-RF comes with a companion rear plate that has three BNC (F type optional) connectors and a six pin terminal strip. For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

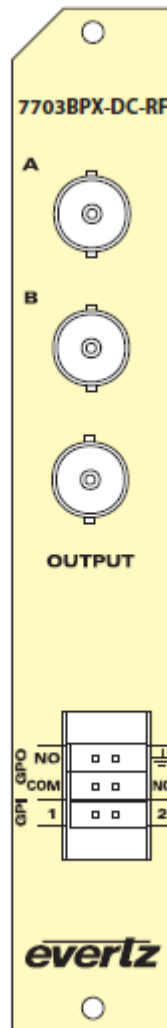


Figure 2-1 : 7703BPX-DC-RF Rear Plate

INPUT A, B: The two BNC (F type optional) connectors are RF inputs that accept frequencies over the range of 10MHz to 2250MHz. The A connector is for the *Main* input and the B connector is for the *Standby* input.

OUTPUT: This BNC (F type optional) connector is the output from the switch.

2.1. GPIO

A 6-pin removable terminal block labeled **GPIO** contains 2 GPI inputs and 2 GPO outputs

GPI's: The two top pins on the 6 pin terminal strip are used for two General Purpose inputs (GPI). The GPIs can be configured as active high or low by setting DIP switch 3. GPIs are active low when DIP switch 3 is Off and GPIs are active high when DIP switch 3 is On (positioned closest to the PCB). The GPI inputs are opto isolated with an internal pull-up resistor to +5V or +12V as shown in Figure 2-2. See section 5.4 for information on selecting the pull-up voltage.

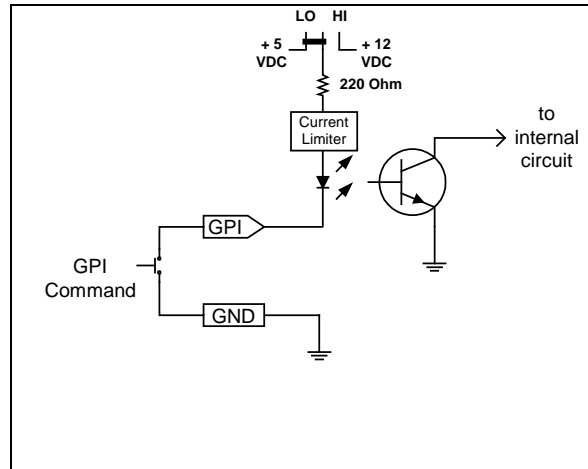


Figure 2-2 : GPI Input Circuitry

GPO: The **NC**, **NO** and **COM** pins on the 6 pin terminal strip are used for the General Purpose Output (GPO). The GPO output is a set of normally open and normally closed relay contacts as shown in Figure 2-3.

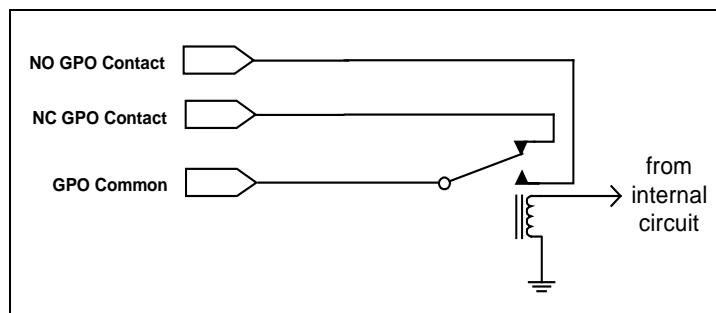


Figure 2-3 : GPO Configuration



When connecting cables to the GPIO terminal block, a ferrite core should be placed around the cable in order to reduce the electromagnetic interference to limits acceptable for Class A digital devices. The ferrite impedance should be greater than 70 ohms at 25MHz greater than 135 ohms at 100MHz

3. SPECIFICATION

3.1. RF INPUT/OUTPUT

Inputs	2
Outputs	1
Connectors	1 BNC per IEC 61169-8 Annex A (F type and SMA optional)
I/O Impedance	75Ω, 50Ω optional
Frequency Response	
10MHz - 2250MHz	< ±0.75dB
Insertion Loss	
10MHz - 2250MHz	< 2 dB
Return Loss	> 10 dB
Isolation	> 45 dB
Input Power Range	0dBm to -50dBm

3.2. GENERAL PURPOSE INPUTS

Number of Inputs	2
Type	Opto-isolated, active low with internal pull-ups to +5V
Connector	2 pins plus ground on 6 pin removable terminal strip
Signal Level	
+5V Pullup	Low: -5 to +2.5 VDC, High: 3.5 to 10 VDC
+12V Pullup	Low: -5 to +9.5 VDC, High: 10.5 to 15 VDC
Max Sink Current	(input shorted to ground) 15 mA
Max Leakage Current for input High	200 μA

3.3. GENERAL PURPOSE OUTPUTS

Number of Outputs	1
Type	“Dry Contact” relay contacts - normally open and normally closed contact provided
Connector	3 pins on 6 pin removable terminal strip

3.4. ELECTRICAL

Voltage	+12VDC
Power	4 Watts
EMI/RFI	Complies with FCC regulations for class A devices Complies with EU EMC directive

3.5. PHYSICAL

350FR	1
7700FR-C	1
7800FR	1
7801FR	1

4. STATUS INDICATORS AND DISPLAYS

The 7703BPX-DC-RF has 9 LED Status indicators on the front card edge to show operational status of the card at a glance. The 7703BPX-DC-RF also has an alphanumeric dot matrix display, toggle switch and push button. The card edge pushbutton and toggle switch is for user input. Figure 5-1 shows the location of the LEDs and card edge controls.

4.1. STATUS INDICATOR LEDES

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 RF input signal or if a board 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 RF input signal is present, and the board power is good.

There are seven small LEDs beside the LED display that indicate the status of the module:

CH A ACTIVE: This Green LED indicates that Channel A has power above threshold.

CH A PWR LOW: This Red LED indicates when the received power on Channel A is below the switching threshold set for Channel A. (See section 4.2.8)

CH B ACTIVE: This Green LED indicates that Channel B has power above threshold.

CH B PWR LOW: This Red LED indicates when the received power on Channel B is below the switching threshold set for Channel B. (See section 4.2.8)

OUTPUT INDICATOR: This Green LED is ON when Channel A is connected to the output and OFF when Channel B is connected to the output.

AUTO MODE: This Yellow LED is ON when Auto Mode is selected and OFF when Auto mode is not selected.

SWITCH BACK: This Yellow LED is OFF when Switch Back Mode is selected (For auto mode only).

4.2. DOT-MATRIX DISPLAY

Additional signal and status monitoring and control over the card's parameters are provided via the 4-digit alphanumeric display located on the card edge. To select one of two menu display modes, press the toggle switch. To go to the sub-menu press the pushbutton once to select the sub-menu display and then press the toggle switch. When in a particular display mode, press the pushbutton to display the value and use the toggle switch to change values (if applicable) and to see what status is being displayed for the particular menu item. The following display messages indicate what is being displayed. The details of each of the displays are described in the sections 4.2.1 to 4.2.10.

OK

MON

PWRA Display the input power of channel A
PWRB Display the input power of channel B
GPI1 GPI1 state
GPI2 GPI2 state
CHAN Indicates whether input A or input B is the active channel
MODE Indicates operating mode status
 AUTO Indicates Auto – No switch back
 ASB Indicates Auto - Switch Back
 EXT Indicates external (GPI) mode status
 CHAN A Indicates external mode status
 CHAN B Indicates external mode status
VER Display firmware version

SET

MODE Sets operating mode
 AUTO Auto – No switch back
 ASB Auto - Switch Back
 EXT External (GPI) mode
 CHAN A Switch to channel A
 CHAN B Switch to channel B
MINA Set Channel A's minimum power threshold
MINB Set Channel B's minimum power threshold
DISP Set Display Orientation (HORZ / VERT)
ACTV Sets High or Low as GPI Active State
FRST Factory Reset

4.2.1. Displaying the RF Power of Input A and Input B

The 7703BPX-DC-RF detects the input RF power of both inputs and displays this on the four-digit card edge display. Enter the *MON* menu item, then toggle to *PWRA* or *PWRB* and press the pushbutton. This displays the corresponding input power. The following list describes possible displays and their significance.

<i>MON</i>
<i>PWRA</i>
<i>PWRB</i>
<i>OVR</i>
<i>-10 to -50</i>
<i>LOW</i>

The video standard will be displayed from the list below:

OVR	Indicates RF input power is above threshold
-10 to -50	Numerical value of RF input power in dBm
LOW	Indicates RF input power is below threshold

4.2.2. Displaying the GPI1 and GPI2 State

The 7703BPX-DC-RF detects the status of the GPI inputs and displays this on the four-digit card edge display. Enter the *MON* menu item, then use the toggle switch to select *GPI1* or *GPI2*, and press the pushbutton.

<i>MON</i>
<i>GPI1</i>
<i>GPI2</i>
<i>High</i>
<i>Low</i>

The following list describes possible displays and their significance:

HIGH	Indicates that the selected GPI input is high
LOW	Indicates that the selected GPI input is low

4.2.3. Displaying the Active Channel

The 7703BPX-DC-RF detects the active channel and displays this on the four-digit card edge display. Enter the *MON* menu item, then use the toggle switch to select *CHAN*, and press the pushbutton to select it.

<i>MON</i>
<i>CHAN</i>
<i>CH A</i>
<i>CH B</i>

The following list describes possible displays and their significance:

CH A	Indicates that A is active channel
CH B	Indicates that B is active channel

4.2.4. Displaying the Operating Mode Status

The 7703BPX-DC-RF detects the operating mode status and displays this on the four-digit card edge display. Enter the *MON* menu item, then use the toggle switch to select *GPI1* or *GPI2*, and press the pushbutton.

MON
MODE
AUTO
ASB
EXT
CH A
CH B

The following list describes the possible displays and their significance:

AUTO	Indicates Auto – No switch back
ASB	Indicates that A is active channel
EXT	Indicates external (GPI) mode status
CHAN A	Indicates external mode status
CHAN B	Indicates external mode status

4.2.5. Displaying the Firmware Version

To view the current firmware version enter the *MON* menu, then toggle to the *VER* menu option.

MON
VER

Displays the current firmware version on the card

4.2.6. Selecting the Switch Mode

To select the desired operating mode, enter the *SET* menu and select the *MODE* menu item. The following list of modes will be displayed (*AUTO*, *ASB*, *CH A* (Manual), *CH B* (Manual) or *EXT* (External Mode)). Table 4-1 shows the operating modes for each selection.

SET
MODE
AUTO
ASB
CH A
CH B
EXT

See Table 4-1 for a list and description of the switch mode parameters.

SETTING	MODE	DESCRIPTION
AUTO	Auto	If channel A is active, it will switch to channel B if A falls below threshold (if B is above threshold). If A rises above threshold, channel B will remain the active channel, unless channel B falls below threshold, then the module will switch back to A (if A is above threshold).
ASB	Auto Switch Back	Channel A is the main input and Channel B is standby. If A falls below threshold, it will switch to B (if B is above threshold). When A returns to a level above threshold, it will switch back to A.
CH A or CH B	Manual	The active channel is selected as either Channel A or Channel B.
EXT	External (GPI)	Operating mode is selectable via the GPIs.

Table 4-1 : Setting the Switch Mode via the SET/MODE menu

To operate in external (GPI) mode, set the EXT item to ON. The Switch mode is now selectable based on the GPI1 and GPI2 settings. Table 4-2 shows the settings to achieve the desired switch state. The *Auto Switch Back* and *No Auto Switch Back* Modes operate as described in Table 4-1. The ACTV menu item controls whether the active GPI state is high or low.

Operating Mode	Manual		Auto	
	CH A	CH B	Switch Back	No Switch Back
GPI1	Active	Inactive	Inactive	Active
GPI2	Inactive	Active	Inactive	Active

Table 4-2: Controlling the Switch Using GPI Inputs – 7703BPX-DC-RF

4.2.7. Selecting High or Low as GPI Active State

The 7703BPX-DC-RF allows setting the Active state of the GPIs as high or low. Enter the SET menu and toggle to the ACTV menu item.

SET	HIGH	Sets the selected GPI input to high
ACTV	LOW	Sets the selected GPI input to low
HIGH		
LOW		

4.2.8. Setting the RF Power Threshold for Auto Mode Switching

The MINA and MINB display in the SET menu allows the user to set the minimum input RF power threshold for each channel before the auto switch function will occur. To increase the RF power threshold press the toggle switch up. To decrease the RF power threshold press the toggle switch down.

SET	The threshold will be shown in dBm.
MINA	
MINB	
dbm threshold	

4.2.9. Changing the Orientation of the Text on the Display

The DISP display allows the user to select a horizontal or vertical orientation for the displays to accommodate mounting the module in the 3RU or 1RU frames. To change the orientation of the display press the toggle switch. The following list describes possible display options and their significance.

SET	VERT	Vertical orientation suitable for modules installed in the 3RU frame.
DISP	HOR	Horizontal orientation suitable for modules installed in the 1RU frame.
HORZ		
VERT		

4.2.10. Performing a Factory Reset

The 7703BPX-DC-RF enables the user to perform a factory reset of card parameters. Enter the SET menu and navigate to the FRST menu item, then toggle to 'YES' and hit the pushbutton. This restores the default parameters of the card. The default operating mode is External and the default threshold levels are -50dBm for both channels.

SET
FRST

Selecting the *FRST* menu item will restore the card's parameters to factory default.

4.3. CONTROLLING THE SWITCH USING GPI INPUTS

In External GPI mode, the Switch mode is selectable based on the GPI1 and GPI2 settings. Table 4-2 shows the settings to achieve the desired switch state. The *Auto Switch Back* and *No Auto Switch Back* Modes operate as described in Table 4-2. DIP switch 4 controls whether GPIs are active when high or low in external mode. When the module is in Manual mode or one of the Auto modes, DIP 4 has no effect.

DIP 4	GPI Active State
Off	Active low
On	Active high

Table 4-1: GPI Active State Switch Settings

Operating Mode	Manual		Auto	
	CH A	CH B	Switch Back	No Switch Back
GPI1	Active	Inactive	Inactive	Active
GPI2	Inactive	Active	Inactive	Active

Table 4-2: Controlling the Switch Using GPI Inputs – 7703BPX-DC-RF

5. JUMPERS

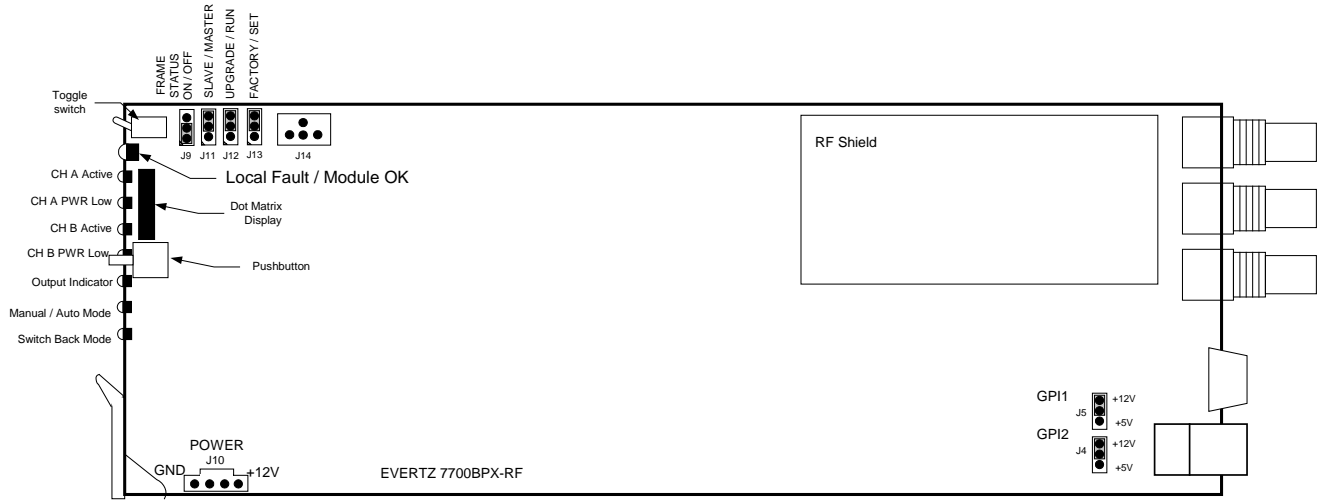


Figure 5-1 : Location of Jumpers – 7703BPX-DC-RF

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

The FRAME STATUS jumper J9 located near the top 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 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.

5.2. MONITORING AND CONTROL OF 7703BPX-DC-RF CARDS THROUGH SNMP OR CARD EDGE MENU SYSTEM

The card does not require any reconfiguration or adjustment to monitor and control through SNMP or the card edge menu system. Updates to configuration and status are visible in both systems.

5.3. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES (7703BPX-DC-RF ONLY)

UPGRADE: The UPGRADE jumper J12 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* chapter in the front of the manual binder 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 J14 at the card edge. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* chapter 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.

5.4. SELECTING THE GPI PULL-UP VOLTAGE

The GPI jumpers J4 and J5, located at the rear of the module, selects whether the general purpose inputs GPI1 and GPI2 will be pulled up to +5 volts or +12 Volts. Figure 2-2 shows the jumper configuration and the GPI input schematic. Jumper J5 is used for GPI1 and J4 is used for GPI2.

GPI: To set the pull-up voltage to +5 volts set the jumper to the LO position
To set the pull-up voltage to +12 volts set the jumper to the HI position

5.5. Using the GPO OUTPUTS

There are three pins on the 6 pin terminal strip dedicated to the GPO, NC (Normally Closed), NO (Normally Open) and Common, connected as shown in the circuit diagram of section 2.1. The common connection will switch between NC and NO on a change in state of the RF switch. This GPO is intended to indicate a change in state of the switch. The signals on NC and NO are to be provided by the user.

6. VISTALINK[®] REMOTE MONITORING/CONTROL

6.1. WHAT IS VISTALINK[®]?

VistaLINK[®] is Evertz' 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. *VistaLINK[®]* 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 *VistaLINK[®]* 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, *VistaLINK[®]* 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 *VistaLINK[®]* Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *VistaLINK[®]* enabled fiber optic products.
2. Managed devices (such as 7703BPX cards), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz *VistaLINK[®]* enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC *VistaLINK[®]* 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 *VistaLINK[®]* network, see the 7700FC Frame Controller chapter.

6.2. VISTALINK[®] MONITORED PARAMETERS

The following parameters can be remotely monitored through the *VistaLINK[®]* interface.

Parameter	Description
Input A RF Power	A range of values describing received RF power at the input A
Input B RF Power	A range of values describing received RF power at the input B
GPI1 State	Indicates the state of the GPI1 input
GPI2 State	Indicates the state of the GPI2 input
Active Channel	Indicates input A or B as the active channel
Card Type	Indicates card type as 7703BPX-DC-RF

Table 6-1 : *VistaLINK[®]* Monitored Parameters

6.3. VISTALINK® CONTROLLED PARAMETERS

The following parameter can be remotely controlled through the *VistaLINK®* interface.

Parameter	Description
Operating Mode	Sets the operating mode for the module: <ul style="list-style-type: none"> ○ External (Controlled by GPIs) ○ Auto / No Switch Back ○ Auto / Switch Back ○ Channel A ○ Channel B
RF Threshold A	Sets the value of the Input A RF threshold
RF Threshold B	Sets the value of the Input B RF threshold
Active State for GPIs	Sets the active state for GPIs - High or Low

Table 6-2 : *VistaLINK®* Controlled Parameters

6.4. VISTALINK® TRAPS

The following traps can be controlled through the *VistaLINK®* interface. Each trap will indicate a fault condition when its value is *True*.

Trap	Description for True Condition
ChannelAweak	Channel A input power is below the threshold
ChannelBweak	Channel B input power is below the threshold

Table 6-3 : *VistaLINK®* Traps