

Xitron Navigator Tartan Plugin Manual

*For use in configuring and using the Xitron Tartan
plugin for the Xitron Navigator.*

May 12, 1997

Overview

Xitron's Navigator uses both a new interface card family as well as a new plugin architecture. The new interface cards consist of a two board set. The first board is a PCI interface (called the Bus Interface or BIF) which provides an interface from the Rip software to the second board. This second board is an ISA interface which can be customized for a particular recorder family, in this case, the Tartan which uses a Pagebus interface. This card is called the Personality Board or PB2. These two cards are cabled together using an internal ribbon connector. Up to two PB2 cards can be attached to a single PCI BIF card.

Xitron's Tartan plugin, together with the Navigator RIP, custom Windows NT or Windows 95 device drivers and the 2 interface cards, provides a robust imaging solution to drive the Tartan family of recorders.

Plugins

Plugins for the Xitron Navigator RIP are Win32 dynamic link libraries. Plugins act as device drivers for the Navigator and completely control all actions of an output device for the RIP. This includes checking status's, device setup, imaging of data and advancing and cutting material. The plugin relays to the RIP all the physical characteristics of an engine such as supported resolutions and imageable area.

When the RIP has a page to image on an output device it loads the Tartan plugin and begins a series of steps to begin output. The RIP first gives the plugin a chance to initialize the engine and check that it is ready. Assuming it is, it begins to read bitmap data off disk (or render the data in "Single/If" mode) into the Printer Buffer, telling the plugin where the data is in memory. When the RIP has filled the printer buffer, the plugin starts the output device. As the output device consumes the data, the plugin relays this information to the RIP, which then refills the memory. This continues until all of the data has been output. The RIP then tells the plugin that the job is over and waits for the plugin to indicate that the recorder has finished. This process happens for each page output to an engine.

Configuring Devices

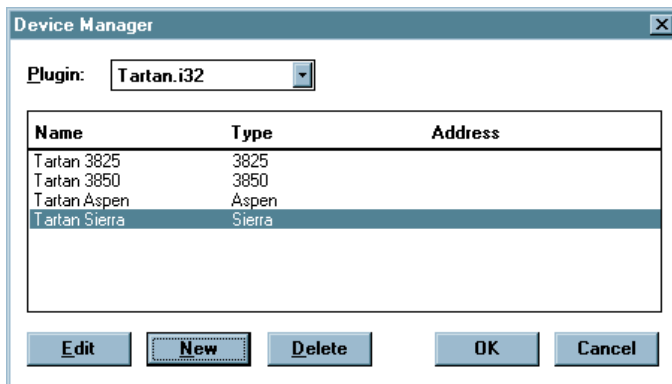
Xitron distributes the Tartan plugin with a pre-configured set of devices, one for each supported recorder in the family. In the case of the Tartan plugin, 4 devices are supported, the 3825, 3850, Aspen and Sierra. The plugin, in conjunction with firmware on the particular PB2 personality board, has the capability to drive these devices.

In addition, the RIP has the ability to have more than one plugin installed at once and within a single plugin more than one engine type may be configured at once. This enables the RIP to drive multiple recorders in the same or even different families from one PC.

Using "Device Manager" to Configure Devices

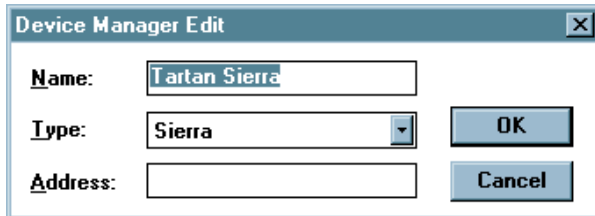
Since the Tartan plugin is preconfigured with a device for each type of supported recorder, using the Rip's "Device Manager" will not be necessary for most installations. A short discussion follows here to be thorough.

Device manager can be accessed through the pull down menu labeled “Xitron Rip” on the rip’s main menu bar. The following dialog will appear.



In the display above there are four Tartan devices configured. The names of these devices are used to refer to the recorder from the “Page Setup” dialog, when directing the RIP to output to a particular device. The device names “Tartan 3850”, “Tartan Aspen”, etc., would appear in the Output device field in the Page Setup dialog box.

To configure devices for a particular plugin select it from the listbox labeled “Plugin:”. In the case of the Tartan plugin, the entry in the “Plugin:” list box will read “Tartan.i32”. To create a new device click on the “New” button. To edit an existing device highlight it and click on “Edit” or double click on the existing device entry in the window. In either case the following dialog box will appear:



Enter the name of the device as you wish to have it appear in Page Setup in the field next to “Name:”. This name is for the users’ benefit to remember which device is configured. It can be any string of up to 32 characters. Next select the type of recorder from the listbox next to “Type:”. You can ignore the address field as it is not currently used. When you have made your selections, press “OK” to keep them or “Cancel” to ignore them.

Selecting a device for Output

To direct the Rip’s output to a specific device, the “Page setup” dialog is used. “Page setup” is available under the “Xitron Rip” menu item on the main menu bar of the rip. The following dialog will appear:

Page Setup

Output device: **Tartan Sierra** Resolution: **2540** **Vertical**
 2540 **Horizontal**

Exposure: Calibration: **(None)**
☐ Calibrate for press

Effects: **AB** Rotate: **0** ☐ Negative ☐ Mirrorprint
☐ Trim page

Optimization: **None**

Cassette: **Tartan 16"** Scaling: **100.00** % Vertical
☐ Feature: **100.00** % Horizontal

☐ Separate color jobs

☒ Recombine separations

Use the pull down list box labeled “Output device:” to select from the preconfigured devices or the device configured using Device Manager. For more information on the other settings on this dialog, refer to the Navigator Rip manual.

Additional configuration available through “Configure Device”

The push button labeled “Configure Device” in the above dialog is used to access parameters that are specific to the Tartan plugin. Clicking on this button will produce the following dialog:

Configure Tartan

☐ Select Config Configuration # **1**

Max Page Width (points)

Max Page Depth (points)

Mux String

PB2 Interface Card **PB2 Card A**

Punches ☐ Control punches from RIP

Head Punch: Station **none** Offset

1st Tail Punch: Station **none** Offset

2nd Tail Punch: Station **none** Offset

From this dialog box you may configure the following options:

- Select Config/Configuration#: You may elect to have the plugin tell the recorder to load pre-configured setups. This requires extensive setup at the Tartan and should be handled by qualified service personnel. If this box is left un-checked, not request will be sent to the recorder.

- **Max Page Width:** This value is used to override the built in width clipping in the plugin. When this value is set to 0, the plugin will always clip images at the maximum width of the recorder. If this value is non-zero, it will be used as the clip width. This value is entered in points.
- **Max Page Depth:** This value is used to set the maximum length of an imaged job. If this value is set to 0 on a Tartan recorder, the length clipping feature is essentially disabled. Non-zero values will cause the plugin to clip, or cut off, images over the set length. This value is entered in points.
- **Mux String:** This is used in an environment with a multiplexor to select one or more output devices to scan for a connection. This may be left blank except in installations using Xitron's Spinnaker multiplexing or Xitron's IPU multiplexing.
- **PB2 Interface Card:** If a second PB2 card is in the PC, you may select from this box which card to use.
- **Control Punches from RIP:** This area allows you to program punch stations from the RIP. Typically these are configured on the recorder at install time. If this box is left un-checked, punch commands are not sent from the RIP and the recorder uses whatever punch information has been pre-configured.

Tartan "Exposure" values

It is not practical to remotely program exposure values on the Tartan family of recorders. Therefore this box is grayed out in the page setups for Tartan recorders. You must configure the exposure settings on the recorder itself.

Attaching the Tartan to the Navigator Rip

The Xitron PB2 interface for Tartan recorders uses the Pagebus Interface Specification.. The Pagebus PB2 interface requires two cables from the PB2 interface card to the Recorder: one for video data and the other for command and status information. The first cable should be a mini 50 pin SCSI-type connector on one end and a 25-pin D shell male connector on the other (Xitron part number 020-0425-025). The second cable is a 'straight through' serial cable using TX, RX and ground signals. It is a 9-pin D shell female on the Navigator end and a 25-pin D shell male on the recorder end (Xitron part number 020-0402-025). Since the connections on the Tartan both use the same connector, please refer to your recorder documentation to determine which port on the recorder is for video data and which is for serial command/status data.

Plugin Errors

When a plugin encounters an error on an output device, it will print an appropriate error message. The short form of this message will appear in the Throughput Controller. The long form will appear in the RIP System Monitor window. Refer to figure 1 on the last page of this document for a sample screen of the running RIP. If the error encountered is one that can be easily remedied, i.e. recorder off-line, then the plugin will continue to periodically test the engine until the error has been cleared. During this time the user may disable output by checking the "Disable output" check box in the Throughput Controller and dragging the page to either the Active or Held queues. If the error is serious, the plugin will request that the RIP disable output and the page will be placed back in the Active Queue automatically.

Error messages common to all plugins

The following table list the error messages that are common to all the plugins developed by Xitron for the Navigator Rip.

Short Message	Long Message	Description
Invalid error code	An unidentified error condition has occurred	The error codes returned by the external device/devices are unintelligible.
PB2 read error	The plugin is having trouble reading the PB2 ISA board	The PB2 interface card has failed.
PB2 write error	The plugin is having trouble writing to the PB2 card	The PB2 interface card has failed.
PB2 unsupported	An attempt was made to run an unsupported command on the PB2	The most likely source of this problem is trying to run a specific plugin against the wrong PB2 card.
Wrong PB2 ver	This plugin does not support the installed PB2 card	The incorrect type or version of PB2 card is installed.
Version problem	The PB2 firmware is too old to run with this Plugin	The plugin requires a version of firmware newer than that installed on the PB2 card.
No eng. response	The imaging engine is not responding	Check that the cable from the PB2 to the recorder is plugged in and the recorder is powered on.
Data buffer not full	During image startup, PB2 data buffers were not full	When the page is being prepared for output, all buffers must be full before the recorder is activated. One of these buffers, on the PB2, failed to go-full in preparation for output imaging. Most likely, the 26-pin ribbon cable is installed incorrectly. Run PB2diag.
Bad eng. response	The recorder gave in invalid response for the previous operation	A correctly formatted response was received but was completely out of context for the command issued.
Invalid PB2 state	The PB2 has entered an invalid state	An internal error occurred in the PB2 interface software.
Invalid PB2 context	The PB2 has run in an invalid context	An internal error occurred in the PB2 interface software.
Pagebus U error	An UNSUPPORTED indication was received on the Pagebus interface	A Pagebus "U" error code was received on the Pagebus interface.
Pagebus Invalid	An invalid frame was received on the Pagebus interface.	A Pagebus "I" error code was received on the Pagebus interface.
Missed EOJ	While polling the buffers for empty (eoj), timed out	While waiting for output imaging to complete, a timeout occurred.
No driver	Could not access the hardware drivers for PCI and/or PB2	The drivers for the Navigator Rip are either not installed correctly or have not been started
No Xitron DLL	Couldn't find or load Xitron DLL	There is a problem with the Rip installation. The Rip cannot locate the file XDLL32.DLL, which should be located in the sw\devices directory.
No PB2 card	Can't find the PB2 card	There does not appear to be a PB2 card installed in the computer at the address specified in the XITRON33.INI file. Run the PB2Diag program, which will attempt to re-locate the PB2 card and update the XITRON33.INI file.
Data underrun	There was an underrun in the driver while imaging	An underrun, and corresponding loss of image integrity, occurred on the PCI card.
Start failed 1	Imaging start failed because of memory/driver problems	A driver error or memory allocation problem caused imaging startup to fail.

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
Bad DMA channel	Bad or invalid DMA channel	Attempt to use an old-style (non-PB2) ISA card with the 32-bit plugin. Not allowed.
Left marg. too wide	Left margin too wide	The requested left margin is so wide, it causes the image to be shifted outside the imaging area of the recorder.
Top marg. too long	Top margin too long	The top margin is set such that it will be the only thing on the page.
Neg. margin error	A negative margin is set larger than the image	A negative margin cannot be set larger than the image being set.
too much margin	Memory needed to expand right/left margins exceeds Printer Buffer	Memory, a vital system resource, is needed to expand margins when imaging. The amount of memory needed to expand the margins on this job exceeds the memory used for the Rip's print buffer.
PB2 already open	The driver to access the PB2 is already open	An internal error caused the PB2 driver to be opened more than once.
Can't alloc mem	Couldn't allocate dynamic memory	Additional memory needed while imaging was not available. Check system resource.
PB2 unsupported	The previous command is not supported by the PB2	A command was run on a PB2 card in an IPU that is unsupported.
PB2 failure	One of the PB2 boards in the PBRI has failed	PB2 cards in the IPU are in failure mode.
No GO signal	The video GO signal was not received from the remote	The IPU failed to get a Video "GO" signal on the Pagebus interface, timeout.
Devices busy	There are no available output devices on the PBRI	When attempting to mux/select in the IPU, all requested devices were busy.
Illegal error	Illegal error	An unintelligible error code was received.

Tartan specific errors

The following is a list of error messages that the Tartan plugin and Pagebus PB2 can generate. Listed first is the error message as it is displayed in the Throughput controller of the RIP. The long messages are output to the Rip's monitor window. There is a brief description of each.

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
Recorder not ready	Remote PageBus device is not on line	The recorder has not completed the last operation.
Positioning error	Film transport seek mechanism incurred a timeout	The recorder is expecting the second byte of a multi-byte command.
Positioning error	Film transport timed out trying to position	The recorder is still completing self tests.
Paper jam	The engine has a paper jam	The recorder is busy completing an operation other than self-tests.
Film already loaded	The film transport is already loaded	An error condition has occurred, causing the recorder to go offline.
Film already loaded	The film transport is already loaded	There is a cassette problem
Takeup error 1	Imaging engine's takeup gate will not close	The media transport on the recorder is jammed.
Takeup error	Imaging engine's takeup gate will	The recorder is out of film

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
2	not open	One or more of the selftests failed on the recorder
Takeup error	Imaging engine's takeup sensor went off unexpectedly	
3	Imaging engine timed out waiting for operator intervention	
Operator timeout	Imaging engine timed out waiting for takeup sensor	The video interface VSYNC bit was not sensed after VSREQ was asserted, causing a timeout. LPM mode is ON. (N/A to 3000/4000 series)
Takeup error	The polygon is not locked on the imaging engine	The 24 volt (or 12 volt) supply to the spin motor has failed
4	Material is not loaded	
Polygon error	Material is threaded	The photo unit has detected an error in either the laser diode or start of line diode (spin motor). The +/- 15 volt supply has failed.
No film loaded	Material is not threaded	
Already threaded	Takeup mechanism will not stall	While imaging on the recorder, an underrun occurred. The resulting image may be unusable. The takeup cassette footage values returned from the recorder had parity errors in them,
Film not threaded	Transport door is open	
No takeup cass	A timeout occurred waiting for the film processor	The firmware could find no indicated errors in the Status 0 register, an error in itself.
Door open	The film processor is not online or not connected	An error indicated in Status register 0 was not found in Status registers 1 or 2. This should not happen
Processor timeout	A page is waiting for output to the film processor	During imaging, the PB2 received an erroneous response. This caused imaging to stop. During imaging startup, the PB2 failed to get an asserted VSREQ back from the recorder in response to the lower PRINT signal.
Proc. not ready	The supply cassette is empty	
Waiting for proc	There is a failure in the takeup mechanism	The recorder failed to show a status of "Imaging" (PRINTQ) when starting to image.
Supply empty	There is a failure in the capstan mechanism	During image startup, the command to turn LPM mode on/off failed.
Takeup error	The page is too long for the cut sheet	The resolution value is invalid.
5	Function aborted by the operator	PB2 Firmware failed to determine the source of the problem.
Capstan failure	The recorder door is open	
Page too long	Film transport is offline	An operator pressed the abort key on the recorder's front panel.
Operator abort	The recorder's video test is running	A door on the recorder is open.
Door open		This is an error with the material handling in the Tartan. Check that the material is properly loaded.
Xport offline	Punch start failure	The recorder will not image while running tests.
Video test	Punch return failure	See the recorder documentation.
Punch error 1	Unsupported granularity (resolution)	
Punch error 2	Unable to determine engine status	The requested resolution is out of the range of the Tartan.
Resolution error	Illegal cassette selected	See the recorder documentation.
Eng. Status error	Imaging engine requires service	See the recorder documentation.
Illegal cassette	Reverse video is not available on	See the recorder documentation.
Eng. needs service		
No reverse		

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
video	this recorder	
No film processor	Film processor is not available	See the recorder documentation.
Can't override door	Cannot override door check	See the recorder documentation.
Invalid Xport mode	Invalid transport mode	See the recorder documentation.
Takeup error 6	Film takeup will not indicate stall	See the recorder documentation.
Gate Stuck	One of the gates on the recorder is stuck	See the recorder documentation.
Supply error 1	The supply gate will not close	See the recorder documentation.
Supply error 2	The supply gate will not open	See the recorder documentation.
Supply error 3	Supply sensor went off unexpectedly	See the recorder documentation.
No page waiting	There is no page waiting to the film processor	See the recorder documentation.
Invalid command	Invalid operation on a cut sheet device	See the recorder documentation.
No vacuum	There is no vacuum sensed on recorder	See the recorder documentation.
PCS error 1	Invalid PCS ioctlx input value	See the recorder documentation.
PCS error 2	Error sending PCS data to user	See the recorder documentation.
PCS error 3	Error getting PCS data from user	See the recorder documentation.
PCS error 4	No PCS hardware or no -c LTC option	See the recorder documentation.
Loadable drv error	Unknown loadable driver command	See the recorder documentation.
No material pulled	Material has not been pulled for page	See the recorder documentation.
Device busy	Selected output device is busy	See the recorder documentation.

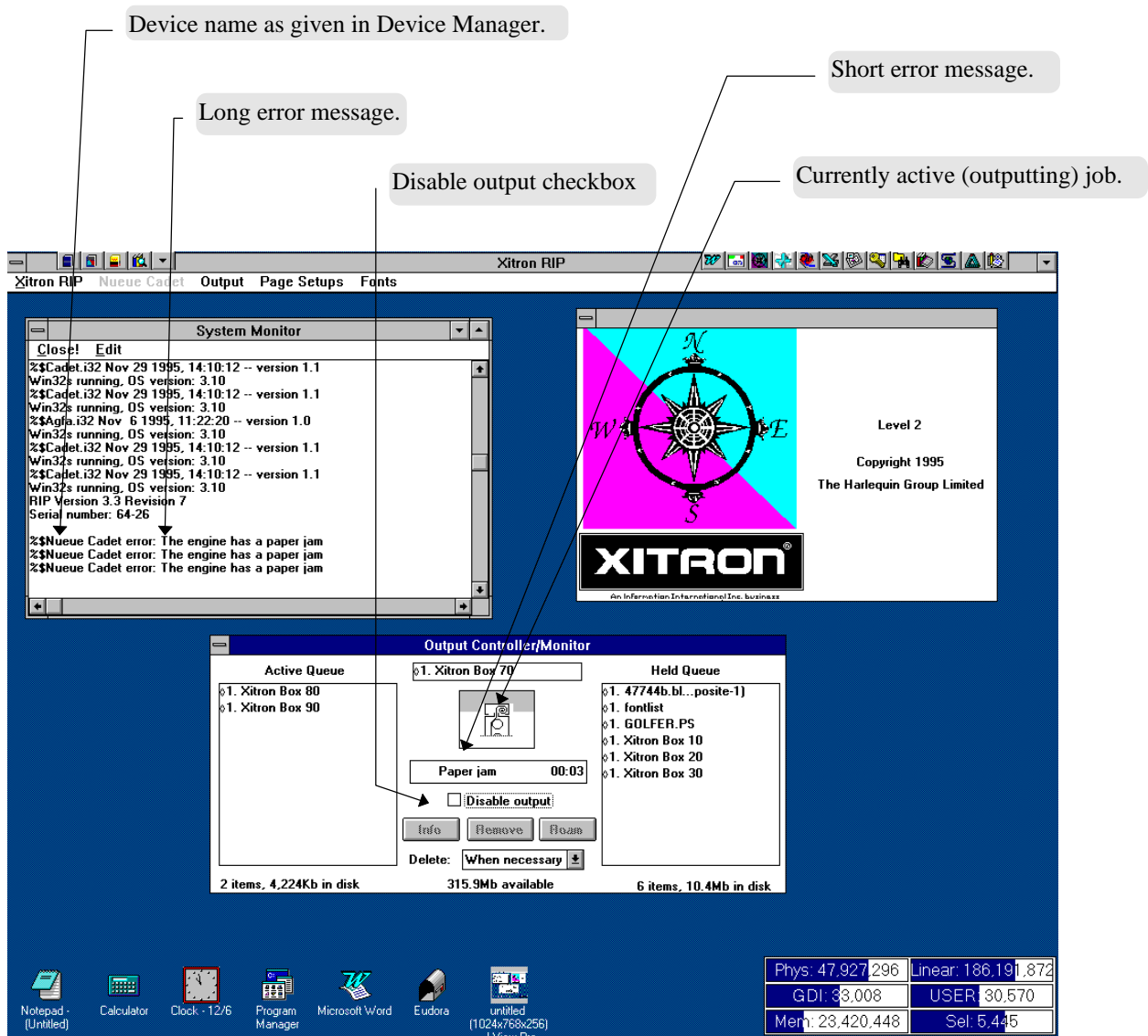


Figure 1. Xitron Navigator RIP with a plugin displaying an error message.