Xitron Navigator Monotype Plugin Manual

For use in configuring and using the Xitron Monotype plugin for the Xitron Navigator

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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, in this case, the Monotype ExpressMaster. 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 Monotype plugin, together with the Navigator RIP, custom Windows device drivers and the 2 interface cards, provides a robust imaging solution to drive the Monotype ExpressMaster.

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 Monotype 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

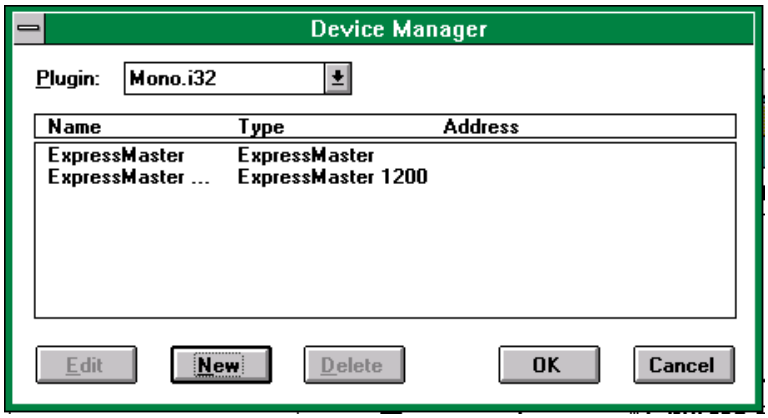
Xitron distributes the Monotype plugin with a preconfigured set of devices, one for each supported recorder in the family. In the case of the Monotype plugin, 2 devices are supported, the ExpressMaster and the ExpressMaster 1200. The plugin, in conjunction with firmware on the particular PB2 personality 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

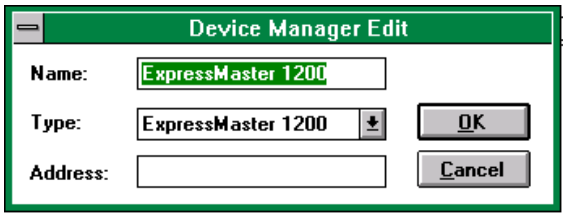
Since the Monotype plugin is preconfigured with a device for each supported recorder, Using the Rip's Device Manager will not be necessary for most installations. A short discussion follows here to be thorough.

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



In the display above there are two Monotype devices configured. The names of the 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 “ExpressMaster” and ExpressMaster 1200” would appear in the Output device field in the Page Setup dialog box.

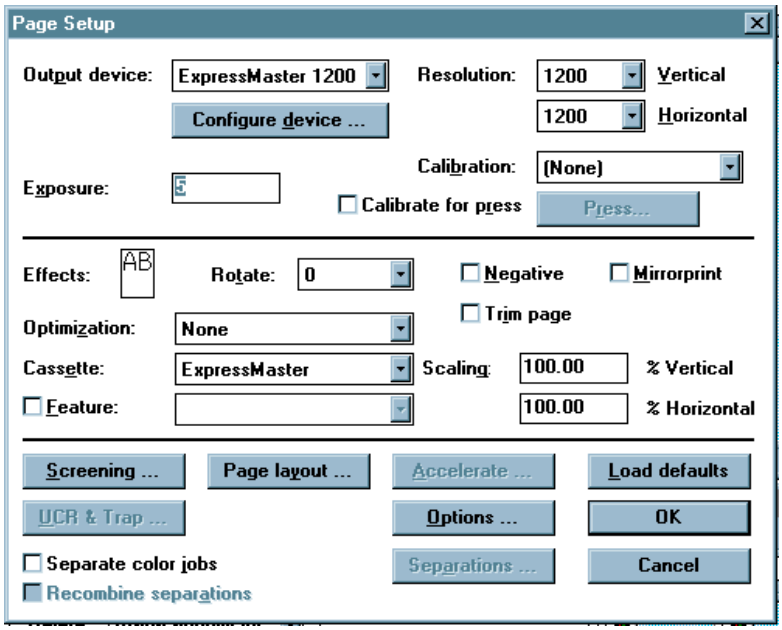
To configure devices for a particular plugin select it from the listbox labeled “Plugin:”. In the case of the Monotype plugin, the entry in the “Plugin:” list box will read “MONO.I32”. To create a new device click on the “New” button. To edit an existing device highlight it and click on “Edit” or double 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

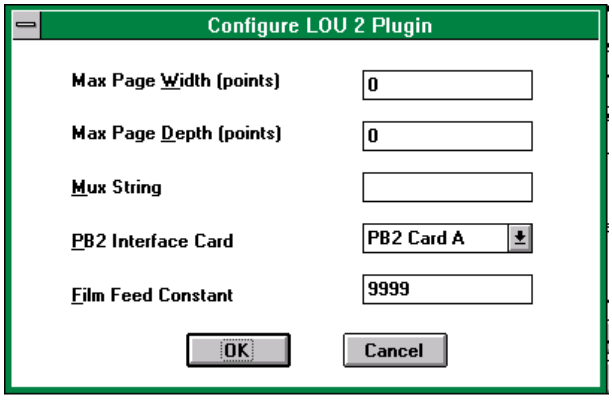
To direct the Rip’s output to the Monotype pluing, the “Page setup” dialog is used. “Page setup” is available under the “Xitron Rip” menu item on the main menu bar of the rip. The following dialog will appear:



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 NT 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 Monotype plugin. Clicking on this button will produce the following dialog:



From this dialog box you may configure the following options:

- 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 platesetter In the case of the Monotype ExpressMasters, this will be 18 inches. If this value is non-zero, it will be used as the clip width. This value is entered in points. Users of narrow ExpressMasters may wish to set this value to the width of their recorder.
- Max Page Depth: This value is used to set the maximum length of an imaged job. If this value is set to 0, the Monotype plugin’s length clipping feature will be 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.
- Film Feed Constant: This parameter is sent to the ExpressMaster to adjust the speed of film advance during imaging. This value will need to be tuned in by running output tests of images and checking that the vertical size is correct. The default value is 9999. As the ExpressMaster wears, this value is adjusted to keep the vertical size of the output images true.

ExpressMaster "Exposure" values

From the Rip it is possible to control the recorder's laser intensity to make adjustments to density. On the ExpressMaster, the exposure value can be set from 0 to 18. Values outside this range will cause errors when imaging. The default value of 5 for the "exposure" is supplied. Refer to the Navigator Rip Manual section on "Calibration" for more information on tuning this parameter in the page setup.

Attaching the ExpressMaster to the Navigator Rip

Xitron supports the ExpressMaster family of recorders using the Monotype LOU interface.

The Xitron PB2 interface board is attached to the Monotype ExpressMaster's LOU port via a Xitron supplied 3 peice cable assembly. First, cable part number 20-0431-010 is connected to the Monotype PB2 card's 50-pin mini-scsi type connector. The other end of this cable (25-pin D-shell male) is attached to a 25-pin female-female gender converter (Xitron part number 27-0002-000). The other end of the Gender converter it attached to the third part, a 25-line ribbon cable (part number 20-0433-010) with a 25-pin D-shell on one end and a 26-pin dual-row header on the other. The dual-row header connector is then routed into the back of the ExpressMaster and attached to the LOU port.

The reason for the 3-peice assembly is to allow the gender converter to be replaced with an A/B switch box. This way users can keep existing Rips attached to the ExpressMaster and switch between the Xitron Rip and the old rip.

Switching the ExpressMaster from LaserBus to LOU interface

Most expressMasters support 2 interfaces, LOU and LaserBus. To switch the Monotype ExpressMaster to accept input from the Xitron PB2 card via the LOU interface, a change to the system board may be necessary. If the ExpressMaster is configured for LaserBus, perform the following changes on the ExpressMaster's system board:

1. Switch bank "SW4" should have switch 2 moved to the off postion.
2. Jumpers labled "LK3" should be moved from the left position to the right position.

Although this switch may be performed while the ExpressMaster is running, doing so may require a soft reboot. This is performed by pressing the LOU3 reset switch labled "SW3" located above "SW4". Power cycling the ExpressMaster will also work.

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 offline, 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.

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,

Short Message	*Long Message*	*Description*
		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.
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.

Monotype specific errors

The following is a list of error messages that the Monotype plugin and Monotype 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.

Short Message	*Long Message*	*Description*
Recorder busy	Recorder busy	The ExpressMaster is busy imaging, feeding, or cutting
Cassette empty	Cassette not loaded	The ExpressMaster's cassette is not loaded
F.U. error	Film unit error	There is a problem in the ExpressMaster's film unit

Short Message	*Long Message*	*Description*
Laser error	Laser/polygon/clock/strobe photocell loop error	There is a problem in the ExpressMaster's laser imaging unit.
Offline/feeding	Unit is offline or feeding material	The ExpressMaster is offline or feeding film
Transport busy	Media transport unit is busy	The film transport mechanism on the ExpressMaster is in action.
Unknown error	Error code not found	The PB2 card could not interpret the problem source.
Bad LOU2 resp	Invalid LOU 2 response	
Job too long	Timeout during imaging -- fifo's never emptied	Over 30 minutes have elapsed since the start of the image with no end detected.
Engine failure 1	Recorder error signal at Start of Page	The LOU2 error signal was asserted at the start of the imaging process.
Recorder error 2	Recorder error signal during imaging	While imaging the LOU2 error signal was asserted.
Bad res val	Resolution value is invalid for this recorder	The resolution value invalid for ExpressMaster recorders.
Bad density val	Density value out of range (0 - 18)	The Density value is invalid for ExpressMaster recorders.
Adv. timeout	90 second timeout during an advance	The advance failed to complete on the ExpressMaster
Cut timeout	90 second timeout during a cut	The film cut failed to complete on the ExpressMaster
Pg too wide	The image is too wide for the recorder (over 18")	The PB2 interface will not image because the image data is wider that the ExpressMaster can handle.
T.margin err	The top margin is too large for the recorder	The top margin is over 20 inches.
EM error	The ExpressMaster is not responding	The ExpressMaster recorder is not responding. Check cabling and power.
Bad ES eng type	Invalid engine specific command engine type	The Engine type was invalid in the previous Engine Specific command
Bad ES cmd	Invalid engine specific command type	The Command value was invalid in the previous Engine Specific command

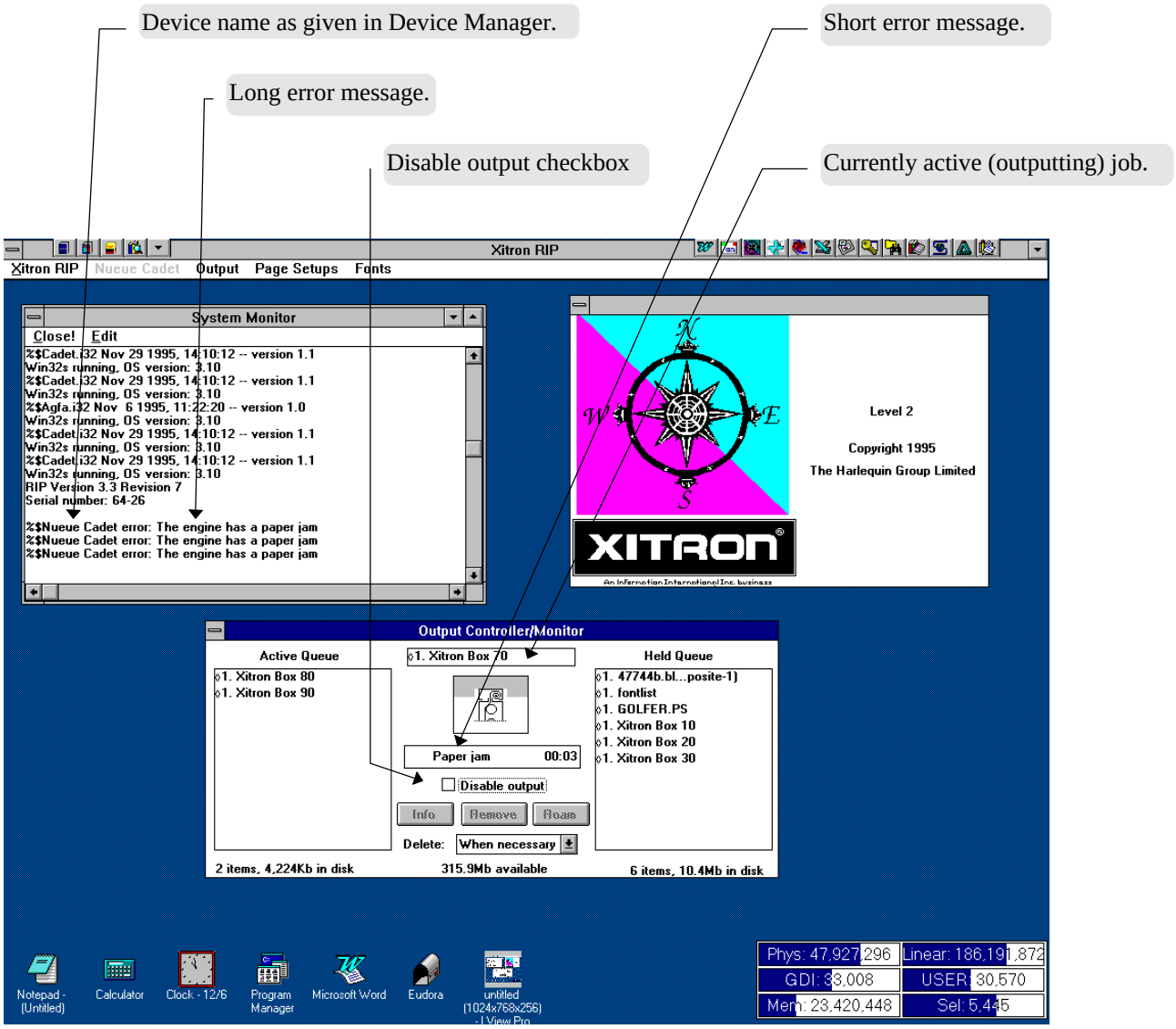


Figure 1. Xitron Navigator RIP with a plugin displaying an error message.