

# **Xitron Raster Blaster Screen DTR/MTR Device Driver Manual**

*For use in configuring and using the Xitron Screen  
Device Driver for the Xitron Raster Blaster*

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## **Overview**

Xitron's Raster Blaster uses interface cards consist of a two board set. The first board is a PCI interface. The PCI board provides an interface from the Raster Blaster software to the second board. This second board is an ISA interface. The ISA board is customized for a particular recorder family, in this case, the Screen DTR and MTR family of recorders. 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 card.

Xitron's Screen DTR/MTR Device Driver, together with the Raster Blaster, custom Windows device drivers and the 2 interface cards, provides a robust imaging solution to drive the Screen family of recorders.

## **Device Drivers**

Device Drivers for the Xitron Raster Blaster are Win32 dynamic link libraries. Device Drivers completely control all actions of an output device connected to the Raster Blaster. This includes checking status's, device setup, imaging of data and advancing and cutting material. The Device Driver relays to the Raster Blaster all the physical characteristics of an engine such as supported resolutions and imageable area.

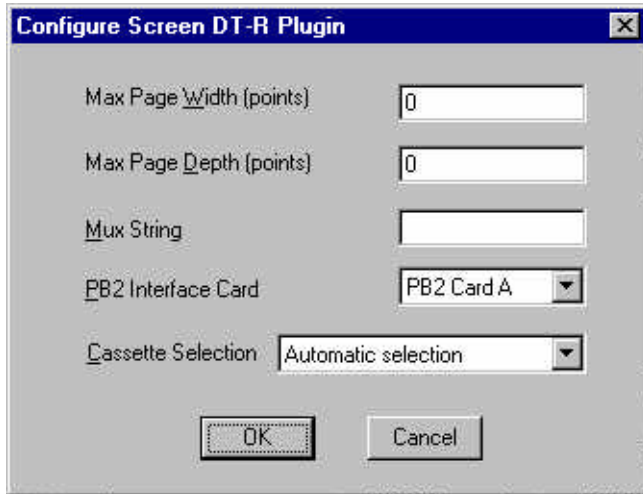
When the Raster Blaster has a page to image on an output device it loads the Screen Device Driver and begins a series of steps to begin output. The Raster Blaster first gives the Device Driver a chance to initialize the engine and check that it is ready. Assuming it is, it begins to read bitmap data off disk. When the Raster Blaster has filled the printer buffer, the Device Driver starts the output device. As the output device consumes the data, the Device Driver relays this information to the Raster Blaster, which then refills the memory. This continues until all of the data has been output. The Raster Blaster then tells the Device Driver that the job is over and waits for the Device Driver to indicate that the recorder has finished. This process happens for each page output to an engine.

## **Configuring Devices**

Xitron distributes the Screen Device Driver with a set of pre-configured devices, 5 DTR and 2 MTR. Supported devices currently include: DT-R's 1065, 2035, 2065, 3075 and 3100, and MT-R's 1100 and 1120.

## Additional configuration available through “Driver Config”

The push button labeled “Driver Config” in the Device Configuration dialog is used to access parameters that are specific to the Screen Device Driver. 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 Device Driver. When this value is set to 0, the Device Driver will always clip images at the maximum width of the recorder. In the case of Screen devices, the maximum width will vary with the selected 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 Screen recorder, the Device Driver will clip the job length at the maximum dictated by the selected recorder. Non-zero values will cause the Device Driver 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.
- **Cassette Selection:** On the DT-R3100 there are 2 supply cassettes. Which cassette is supplying media to the drum can be controlled from the rip or the 3100 itself can make the decisions. Use this setting to force the recorder to use one cassette or the other or set it to “Automatic selection” to allow the recorder to make the decision.

## Screen “Exposure” values

The Screen DTR and MTR family of recorders do not support controlling laser beam intensity (or exposure) from the Raster Blaster.

## Screen Drum Packing

The Screen DTR and MTR family of recorders have the ability to automatically arrange small images on the drum, packing them, so as to get maximum usage out of the film. The Device Driver and firmware will check if the recorder has this capability and uses it if available. If the recorder should be packing

images and it does not, check if the “Ignore Bottom Margin” option is turned on. This is located on the PB2Diag utility, under “Edit INI settings”. For drum packing to work, this option box must be checked.

## Discharge Media: Unloading media from the drum

The Screen DTR and MTR family of recorders are external drum, meaning they load a cut-sheet of media onto the outside surface of a rotating drum before imaging. Once the media has been loaded, the recorder will only unload the media if it cannot fit a new image on the existing sheet.

## Attaching the Screen recorder to the Raster Blaster

The Xitron PB2 interface for the Screen DTR/MTR family of recorders uses 2 cables, one attached to the recorders’ PIF port (parallel video data) and a second attached to a command/status link (serial, RS-232).

Use the Xitron supplied video interface cable (part no. 20-0448-035) to connect the 50-pin SCSI-2 type connector on the back of the PB2 card to the 50-pin old-style SCSI type connector on the back of the recorder (NOTE: the interface uses SCSI-type connectors, but the interface is NOT SCSI). Use the Xitron supplied serial control cable (part no. 20-0449-035) to attach the 9-pin serial port on the back of the PB2 card to the 25-pin D-Shell connector on the back of the Screen recorder.

## Device Driver Errors

When a Device Driver 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 Raster Blaster System Monitor window. Refer to figure 1 on the last page of this document for a sample screen of the running Raster Blaster. If the error encountered is one that can be easily remedied, i.e. recorder off-line, then the Device Driver 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 Device Driver will request that the Raster Blaster disable output and the page will be placed back in the Active Queue automatically.

### ***Error messages common to all Device Drivers***

The following table list the error messages that are common to all the Device Drivers developed by Xitron.

<b><i>Short Message</i></b>	<b><i>Long Message</i></b>	<b><i>Description</i></b>
<b>Invalid error code</b>	An unidentified error condition has occurred	The error codes returned by the external device/devices are unintelligible.
<b>PB2 read error</b>	The Device Driver is having trouble reading the PB2 ISA board	The PB2 interface card has failed.
<b>PB2 write error</b>	The Device Driver is having trouble writing to the PB2 card	The PB2 interface card has failed.
<b>PB2 unsupported</b>	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 Device Driver against the wrong PB2 card.
<b>Wrong PB2 ver</b>	This Device Driver does not support the installed PB2 card	The incorrect type or version of PB2 card is installed.
<b>Version problem</b>	The PB2 firmware is too old to run with this Device Driver	The Device Driver requires a version of firmware newer than that installed on the PB2

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
<b>No eng. response</b>	The imaging engine is not responding	card. Check that the cable from the PB2 to the recorder is plugged in and the recorder is powered on.
<b>Data buffer not full</b>	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.
<b>Bad eng. response</b>	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.
<b>Invalid PB2 state</b>	The PB2 has entered an invalid state	An internal error occurred in the PB2 interface software.
<b>Invalid PB2 context</b>	The PB2 has run in an invalid context	An internal error occurred in the PB2 interface software.
<b>Pagebus U error</b>	An UNSUPPORTED indication was received on the Pagebus interface	A Pagebus "U" error code was received on the Pagebus interface.
<b>Pagebus Invalid</b>	An invalid frame was received on the Pagebus interface.	A Pagebus "I" error code was received on the Pagebus interface.
<b>Missed EOJ</b>	While polling the buffers for empty (eoj), timed out	While waiting for output imaging to complete, a timeout occurred.
<b>No driver</b>	Could not access the hardware drivers for PCI and/or PB2	The drivers for the Raster Blaster are either not installed correctly or have not been started
<b>No Xitron DLL</b>	Couldn't find or load Xitron DLL	There is a problem with the Raster Blaster installation. The Raster Blaster cannot locate the file XDLL32.DLL, which should be located in the sw\devices directory.
<b>No PB2 card</b>	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.
<b>Data underrun</b>	There was an underrun in the driver while imaging	An underrun, and corresponding loss of image integrity, occurred on the PCI card.
<b>Start failed 1</b>	Imaging start failed because of memory/driver problems	A driver error or memory allocation problem caused imaging startup to fail.
<b>Bad DMA channel</b>	Bad or invalid DMA channel	Attempt to use an old-style (non-PB2) ISA card with the 32-bit Device Driver. Not allowed.
<b>Left marg. too wide</b>	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.
<b>Top marg. too long</b>	Top margin too long	The top margin is set such that it will be the only thing on the page.
<b>Neg. margin error</b>	A negative margin is set larger than the image	A negative margin cannot be set larger than the image being set.
<b>too much margin</b>	Memory needed to expand right/left margins exceeds Printer	Memory, a vital system resource, is needed to expand margins when imaging. The amount

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
	Buffer	of memory needed to expand the margins on this job exceeds the memory used for the Raster Blaster's print buffer.
<b>PB2 already open</b>	The driver to access the PB2 is already open	An internal error caused the PB2 driver to be opened more than once.
<b>Can't alloc mem</b>	Couldn't allocate dynamic memory	Additional memory needed while imaging was not available. Check system resource.
<b>PB2 unsupported</b>	The previous command is not supported by the PB2	A command was run on a PB2 card in an IPU that is unsupported.
<b>PB2 failure</b>	One of the PB2 boards in the PBRI has failed	PB2 cards in the IPU are in failure mode.
<b>No GO signal</b>	The video GO signal was not received from the remote	The IPU failed to get a Video "GO" signal on the Pagebus interface, timeout.
<b>Devices busy</b>	There are no available output devices on the PBRI	When attempting to mux/select in the IPU, all requested devices were busy.
<b>Illegal error</b>	Illegal error	An unintelligible error code was received.

### **Screen DTR/MTR specific errors**

The following is a list of error messages that the Screen DTR/MTR family of recorders can generate. Listed first is the error message as it is displayed in the Throughput controller of the Raster Blaster. The long messages are output to the Raster Blaster's monitor window. There is a brief description of each.

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
<b>Not Supported 1</b>	The command code is not supported	This error is in response to an uninterpretable message or an unidentified or unsupported command.
<b>Busy (aborted) 2</b>	The recorder is busy executing other commands	
<b>Not Supported 3</b>	The command code is not supported	The parameter in the command cannot be interpreted or is not supported.
<b>Bad value</b>	A bad parameter value was sent	The value of the parameter in the command is out of range.
<b>Offline</b>	The recorder is in local (offline) mode. Please correct	The recorder is in "local" mode (offline). The recorder will need to be switched to "remote" mode at the front panel before imaging can occur.
<b>error on recorder</b>	There is a fault on the recorder. Please correct it	A problem on the recorder is preventing execution of a command. Check the recorder's front panel for more information.
<b>Abort by user</b>	The exposure was aborted by the user at the recorder's front panel	A "Stop on the engine" has been executed from the recorder's front panel. If the stop was initiated during an exposure, the exposure probably completed and no further exposure will occur.
<b>Abort by host</b>	The exposure was aborted by the Raster Blaster (remote).	The exposure was aborted by the rip.
<b>Busy (aborted) 14</b>	The recorder is busy executing other commands (14)	An "In process" error occurred, probably because the recorder has not finished processing the previous exposure before starting the next.
<b>Standby TMO</b>	The recorder was ready, but the exposure never started	The recorder was prepared to start exposing, but the exposure never started. This timeout is used

<i>Short Message</i>	<i>Long Message</i>	<i>Description</i>
<b>OLP Jam</b>	A film error (jam) occurred in the OLP	to protect the recorder from mechanical deterioration if something goes wrong in the preparation to expose. There is a problem with discharging the media from the drum.

<b>Video underrun</b>	There was an underrun in the video transfer. Check film for errors	Image data was lost because the transfer was not in time because of a delay in handshake.
<b>No image data</b>	The recorder timed out waiting for image data from the rip	Data transfer temporarily stopped and never restarted.
<b>Imager busy</b>	The recorder is busy servicing another rip	This error may occur in situations involving multiple rips talking to the same recorder or installations involving a Screen PIF multiplexer.
<b>Error on Recorder (E)</b>	The recorder has an error. Please service it.	There is some type of error on the recorder. Check the front panel of the recorder for more information.