



Using PB2Diag August 30, 2000

PB2Diag is a utility for testing and configuring Xitron PCI interface cards and their associated drivers. PB2Diag can be used to update software on the interface cards. It is also used to manage various settings in the RIP like the quantity of messages that are output when the RIP runs and how margins are configured.

Configuration

You can start PB2Diag by selecting it from Navigator RIP group on the Start Menu. When PB2Diag starts it does the following:

- Searches for older Xitron bus interface cards, known as “Arbor” cards.
- Searches for Xitron PB2 personality cards.
- Searches for newer Xitron “Single Board” PCI bus interface cards, known as ArborSB or SBPCI cards.
- Displays its version and the Windows version.

Startup

When it first starts, the screen will look similar to this:

The screenshot shows the 'Pb2dia - Pb2diag Windows Application' window. The output text is as follows:

```
PB2Diag version 5.3 (Windows NT). 12:03:44, Aug 30 2000
Windows NT, version 5.0, build 2195
Found and opened \\.\Arbor0
Found and opened \\.\ArborSB0

Found PB2 Card 0: IOBase is 0x310
  Firmware Rev: 0x2c
  Firmware Type: 0x13
  QL Type: 0x54
  QL Rev: 0x00

No SCSI printers found on system
Found 1 PB2 Boards

0. Checking PB cabling for ioBase 0x310
-----
Check PCI PB 0 --> PB2 PB 0
-->> Looks like connection is: PCI PB 0 and PB2 PB 0
-----
```

Callouts from the right side of the image point to specific lines of output:

- Version information** points to the first line: "PB2Diag version 5.3 (Windows NT). 12:03:44, Aug 30 2000".
- A driver for the old Arbor card and the new single board were found.** points to the lines: "Found and opened \\.\Arbor0" and "Found and opened \\.\ArborSB0".
- A Private Bus card of type 0x54 was found.** points to the line: "QL Type: 0x54".
- No output devices using the SCSI interface are connected.** points to the line: "No SCSI printers found on system".
- The cabling for a legacy PB2 card was found to be port 0 to port 0.** points to the line: "-->> Looks like connection is: PCI PB 0 and PB2 PB 0".

Figure 1. Opening screen for PB2Diag.

Although Xitron is phasing out PB2 personality cards, PB2Diag still detects and tests these cards and their connection to the older Arbor PCI interface card. This is shown in

Figure 1 in the third section. The interface type, or engine family is shown in the fourth line of this section. In this example the engine type or family is 0x54, or “Speedway”. The following table lists each of the device types for Xitron PB2 cards.

| QL Type | Engine Family |
|-----------|-------------------------|
| 0x41 | Pagebus (aii 3850) |
| 0x42 | Agfa |
| 0x43 | Lino |
| 0x44 | Printware |
| 0x45 | Varityper (non-SCSI) |
| 0x46 | Monotype |
| 0x47 | Mitsubishi (non-SCSI) |
| 0x48 | Exxtra |
| 0x49 | ECRM (Pelbox) |
| 0x4A | Agfa Drum (low-res) |
| 0x4B | Agfa Drum (hi-res) |
| 0x4C | Ultre (non-SCSI) |
| 0x4D | Scitex (type 1 and 2) |
| 0x4E,0x4F | Reserved |
| 0x50 | Agfa Capstan |
| 0x51 | Agfa Drum |
| 0x52 | Agfa AV36, AV44 |
| 0x53 | Versatec |
| 0x54 | Speedway |
| 0x55 | Screen FT-R (PIF/F-PIF) |

Table 1 Device type IDs

Editing INI Settings

A handful of the settings in the Xitron33.ini file are available to be edited from PB2Diag. Select “Edit INI Settings” from the Utilities menu and you will see the following dialog:

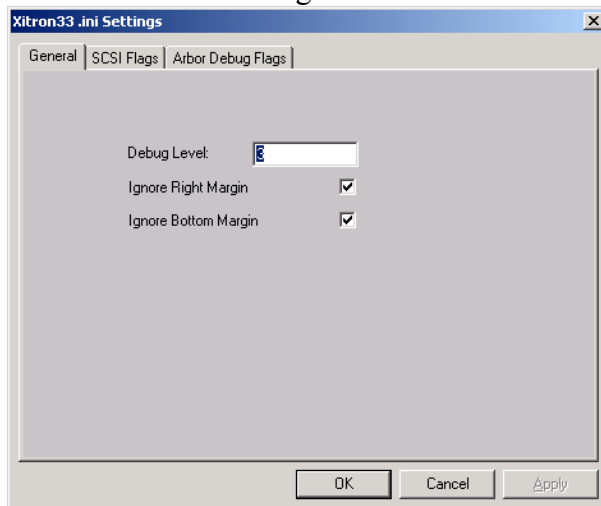


Figure 2

The items on the “General” tab are:

- **Debug Level:** The default is 0 and the range is 0 to 5. This controls how much information is output to the RIP's monitor window while jobs are outputting.
- **Ignore Right Margin:** This option causes the plugin to not output the right margin. This can improve performance by reducing the quantity of data that has to be manipulated. Typically the right margin is white and its absence will not be noticed.
- **Ignore Bottom Margin:** This option causes the plugin to not output the bottom margin. This can improve performance by reducing the quantity of data that has to be manipulated. Typically the bottom margin is white and its absence will not be noticed.

Selecting the “SCSI Flags” tab shows this page:

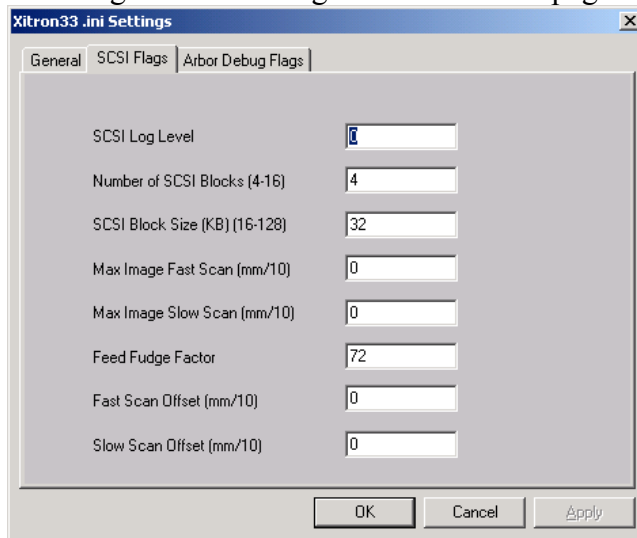


Figure 3

These items are:

- **SCSI log level:** Various values in this field enabled different phases of the SCSI protocol to be logged to disk in the file scsi.log. Typically this value will be left at 0, except during installation.
- **Number of SCSI Blocks:** This is the number of temporary blocks that raster data is copied to before being passed to the SCSI driver. On some platforms increasing this number improves download times.
- **SCSI Block Size:** The size of the temporary blocks in Kilobytes.

The remainder of these fields is obsolete and should be ignored.

The third tab, “Arbor Debug Flags” has no effect in the shipping device drivers. It is used for in house testing and should be ignored.

Changing PB2 card addresses

Under Windows NT and Windows 2000, the port I/O address for the PB2 cards is not easily determined in software. The user is asked to supply the port address during the installation. If this value needs to be changed, again, it must be done by hand. This can be done by selecting “Edit PB2 Board” under the Utilities menu. The dialog for this is shown here:



Figure 4

If the I/O port address is wrong, you would typically see a message similar to:

0. No cable check for PB2 Board at ioBase: 0x308.

This indicates that PB2Diag and the device driver for the PB2 card could not communicate with the PB2 card.

Engineer's Diagnostics

There is a special configuration dialog that typically will not need to be used except during installation. Selecting "Engineers..." from the Utilities menu accesses this. After entering a password you will see the following dialog:

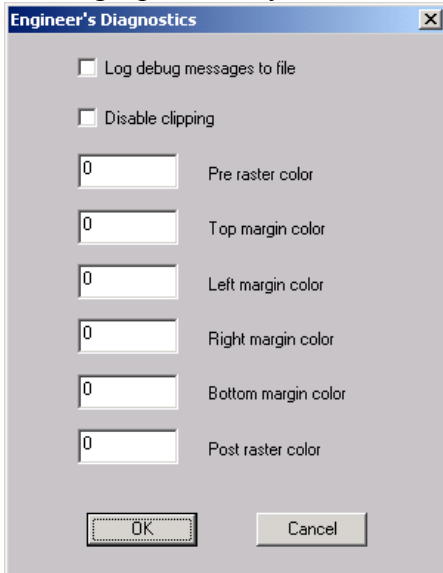


Figure 5 Engineer's Diagnostics Dialog

These items allow you to set the margin data to a bit pattern for diagnostic testing, disable the RIP's normal clipping functionality and output extensive diagnostics messages to a separate file.

Single Board Operation

The Single Board PCI interface card from Xitron has additional functionality, including a built-in debugger and the ability to re-program the interface software (also known as firmware). The debugger will never be needed for normal operation, but there is a slim chance that the firmware on the interface cards will need to be updated.

Running the Debugger

A debugging session is started by selecting “Debugger”, then the ArborSB card you wish to debug, from the the Single Board menu item. If there are two cards installed in your machine, both “ArborSB0” and “ArborSB1” will be active; normally, however, only the first card is active. To close the debugging session, simply select the card again. This menu selection is shown in Figure 6.

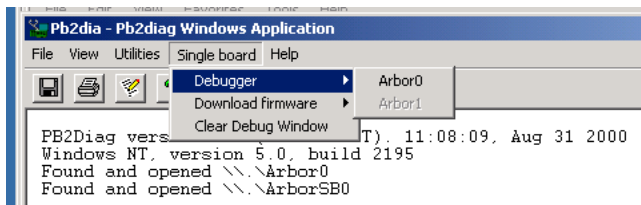


Figure 6

Firmware Update

The ArborSB cards go through a boot sequence when the PC is first powered on, and at reset, that lasts a few seconds. At the end of this boot, they start to execute the engine specific software, or firmware that has been programmed into their memory. The card can be restarted from the debugger by typing the command: “go 400”. If a keystroke is entered from the debugger during this boot process, the cards do not transfer to the firmware portion but remain in the boot state or sequence. The following screen shot shows the debugger window after the ArborSB card has been re-booted, the user hit return and the card is holding in the boot state:

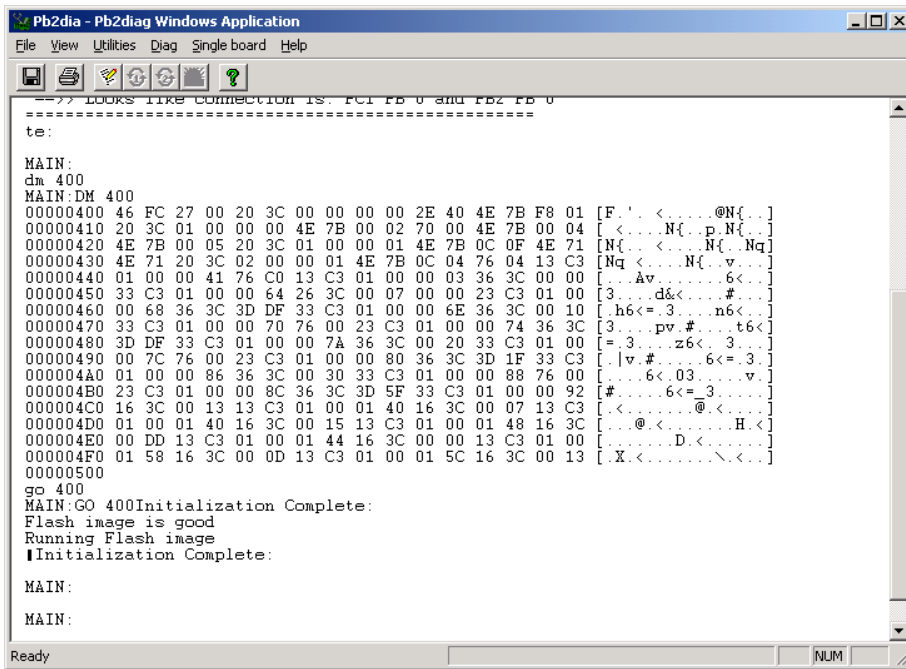


Figure 7

Now select, “Download Firmware” and the corresponding ArborSB board number from the Single Board menu. You will be prompted for the location of the file containing the new firmware. Once you select the file, the download begins. A progress dialog is displayed during the download which looks like this:



Figure 8

When the download completes you will see a number of lines in the PB2Diag window showing the results of the download:

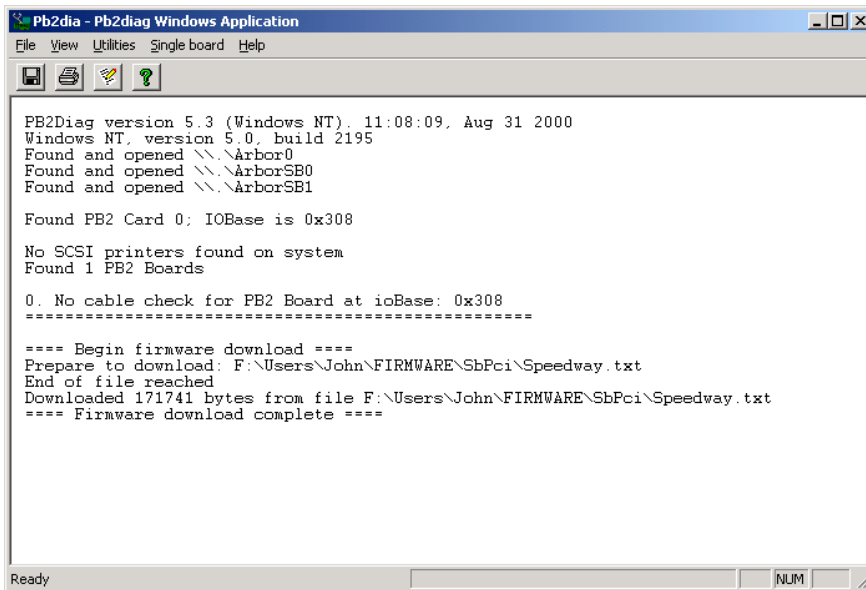


Figure 9