

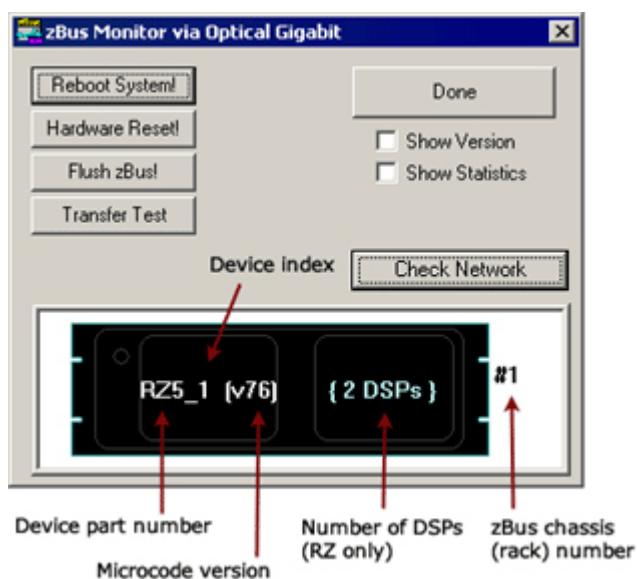
## zBUSmon Interface Testing Software

The zBus Monitor program is a tool used to test the USB, Gigabit, or Optibit connection to System 3. It is also be used to update the microcode firmware on programmable devices.

This program is installed in the C:\TDT\zDrv3 directory by default and a shortcut is added to the Desktop and to the TDT Sys3 Directory in the Start menu.

### The zBUSmon Window

When the utility is run a small monitor window is opened. All correctly connected zBus or built-in device chassis housing a programmable device, such as the RZ2 and PA5, are represented in the system diagram. Chassis housing non-programmable devices, such as the SM5 or HB7, are not displayed.



The device part number and index for each device along with the zBus chassis numbers are displayed in the system diagram. The version number of each programmable device's firmware (TDT Microcode) is also displayed within parentheses next to each device. See "Updating the Microcode" on page 21-6, for more information about the microcode.

For RZ devices, the number of installed DSPs detected is displayed on the right side of the device in the diagram. "{DSP ERROR}" is displayed in red if a DSP is expected but not identified.

## Reboot System!

The **Reboot System!** button resets all hardware in the system and reloads device drivers.

To reboot a single chassis (rack) within the system, right-click it in the diagram and click **Reboot Rack** on the shortcut menu.

## Hardware Reset!

The **Hardware Reset!** button resets connected hardware and clears all circuits and zBus triggers.

## Flush zBus!

The **Flush zBus!** button flushes interface line of commands or data.

## Transfer Test

The **Transfer Test** button tests communication between the TDT modules and the PC. This will test data transfer both to and from the PC. A progress bar is displayed indicating how much time is remaining in the test. The button text changes to “Cancel Test” during a transfer test. Click this button to end the test early.

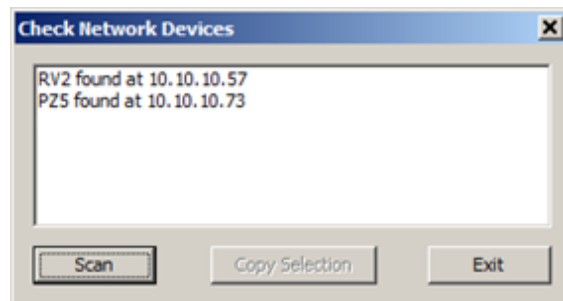
## Update All Devices

The Update All Devices button automatically programs any out of date devices in the system with the current microcode. See “Updating the Microcode ” on page 21-7, for more information about the microcode (displayed only when multiple devices connected).

## Check Network

The **Check Network** button searches across an available network connection and identifies other system 3 devices with an IP address; such as the PZ5 Amplifier, RV2 Video Tracker, or RS4 Data Streamer.

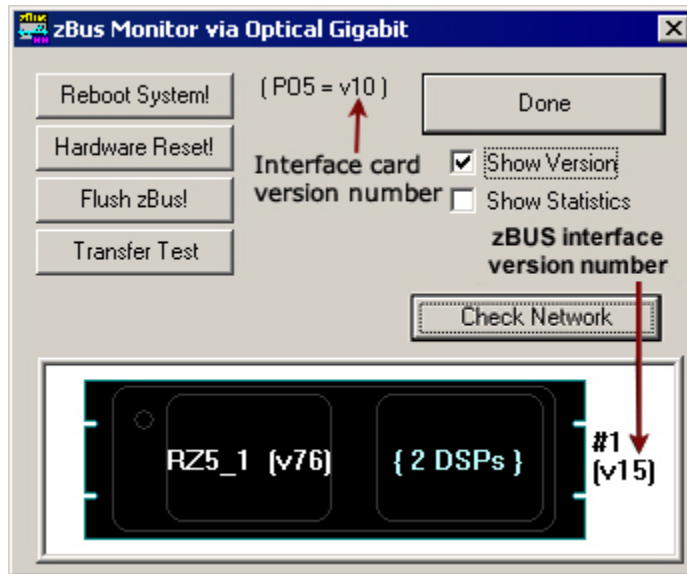
The user can click **Scan**, to rescan the network for newly connected devices.



The **Copy Selection** button enables users to place the line of characters (including the IP address) onto the windows clipboard, making it available to paste in other applications. To copy the characters, select the desired device, then click the **Copy Selection** button.

## Show Version Check Box

When the **Show Version** box is checked, the version numbers of the PC to zBus interface firmware are displayed in the hardware diagram (see figure below). The FO5/PO5 interface shows v10. The RZ interface shows v15. Do not worry if these numbers don't match.

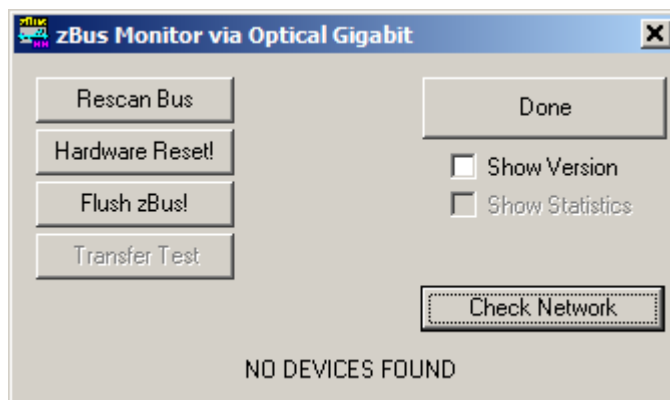


## Show Statistics

The zBUSmon program, when used with the Optical Gigabit (PO5 or PO5e) interface, provides an additional option to view system statistics. When **Show Statistics** is checked, the window expands to display the amount of data transferred and error codes if necessary. Rebooting the system, resetting the hardware, or cycling power on the zBus racks will reset the data in the expanded window.

## Rescan Bus

If no device is found when zBUSmon is run, a NO DEVICES FOUND message is displayed in place of a system diagram and the **Rescan Bus** button is displayed. This button can be used to scan for devices that have been connected or turned on after zBUSmon was launched.

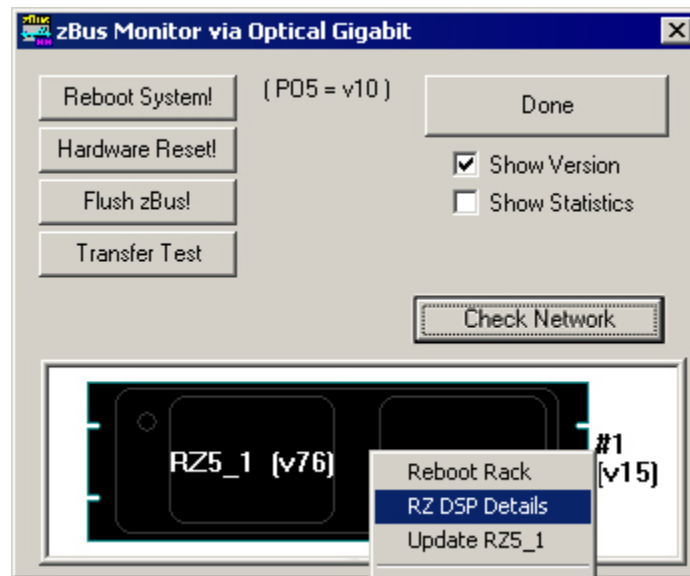


## Viewing Microcode Version for all DSPs on an RZ DSP Device

If a device has more than one DSP, the system diagram displays the number of DSPs and the microcode version for the first DSP.

To confirm the microcode version for each DSP:

1. Right-click the device in the diagram.



2. Click **RZ DSP Details** on the shortcut menu.



The zBUSmon DSP version list is displayed including the type of DSP (DSP for regular DSPs; DSPI, DSPP, DSPS, or DSPV for optical DSPs).

**Note:** Only optical DSPs built or reprogrammed by TDT after 12/18/12 will display the correct DSP type.

3. Click **OK** to close the pop-up window.

## Updating the Microcode

Programmable devices use low-level software called microcode that resides in their flash memory. The microcode contains low-level hardware instructions. The microcode for processor devices contains the DSP instructions for the RPDvEx processing components. Because the System 3 design allows users to update this software quickly and efficiently, users can take advantage of the latest software tools available without purchasing new equipment or sending devices to our manufacturing facility for upgrades.

When you install TDT Drivers, microcode with a matching version number is stored in .dxe files on the PC. The zBUSmon utility uses these files to update or reprogram processor devices in the system. The current microcode version number for each device is displayed in the utility's system diagram. For processor devices, the version number shown should be the same as the version number of the TDT Drivers installed on the PC (Note: this does not apply to the PA5, which is fixed at v30).

**If any device (or any RZ DSP) is programmed with microcode that doesn't match the currently installed release, the microcode version number will appear in red and the 'Update All Devices' button will also appear below the 'Transfer Test' button. Devices with outdated Microcode versions should be updated immediately.**

The **zBUSmon Utility** can be used to update the microcode on one or more devices. There are three options for updating:

- The **Update All Devices** button automates the process of updating all devices in a system.
- The **Update {device name}** command automates the process of updating a specified device.
- The **Program {device name}** command allows the user to select the microcode file when specifying a device to program.

## Updating All Devices in a System

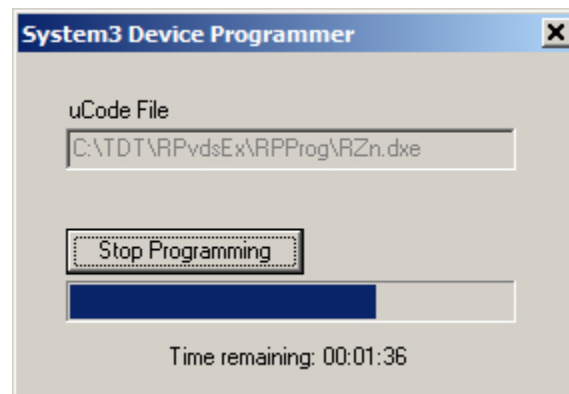
**Note:** For instructions on updating an RL2 contact TDT Support.

**To quickly update all devices in the system:**

1. In the zBUSmon utility window, click the **Update All Devices** button.

A time warning will be displayed. Most processors can be programmed in four minutes; however, the RZ processors may take up to 40 minutes (five minutes per DSP). If your system contains several devices this process could take significant time.

2. Click **Yes** to continue.



The System3 Device Programmer window is opened and programming automatically begins. Devices are programmed sequentially. A bar at the bottom of the window indicates progress for each device as it is updated.

**Note:** The PC should not be used for other tasks while devices are being reprogrammed.

If the automatic update process detects an **RX device**, a message will be displayed. Press and hold the **Mode** button on the front panel of the RX device and then click **Retry**. Release the **Mode** button when the front panel of the RX device displays **Firmware: BLANK** or **Firmware: Burning**.

If there are multiple RX processors in the system, they will be programmed in the order in which they are connected in the system. To determine the order, check the device index numbers in the zBUSmon system diagram.

The **Stop Programming** button will halt programming, but the device will need to be programmed before it can be used. It may show up as a G21K device if programming is interrupted prematurely, in which case you will have to manually program it. See Programming a Single Device Manually below.

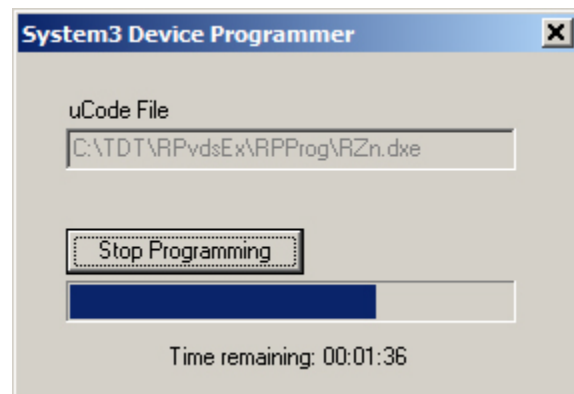
3. The dialog will close when programming has completed.

## Updating a Single Device Automatically

To automatically update a single device:

1. For all devices except RX-Series Processors, right-click the device in the system diagram, then click **Update {device name}** on the shortcut menu. If a time warning is displayed, after reading the message click **Yes** to continue.

For **RX-Series Processors only**, press and hold the **Mode** button on the front panel of the device, right-click the device in the system diagram, then click **Update {device name}** on the shortcut menu. When **Firmware: BLANK** or **Firmware: Burning** is displayed on the front panel of the device, release the **Mode** button.



The System3 Device Programmer window is opened and programming automatically begins. A bar at the bottom of the window indicates progress.

**Note:** The PC should not be used for other tasks while devices are being reprogrammed.

The **Stop Programming** button will halt programming, but the device will need to be programmed before it can be used.

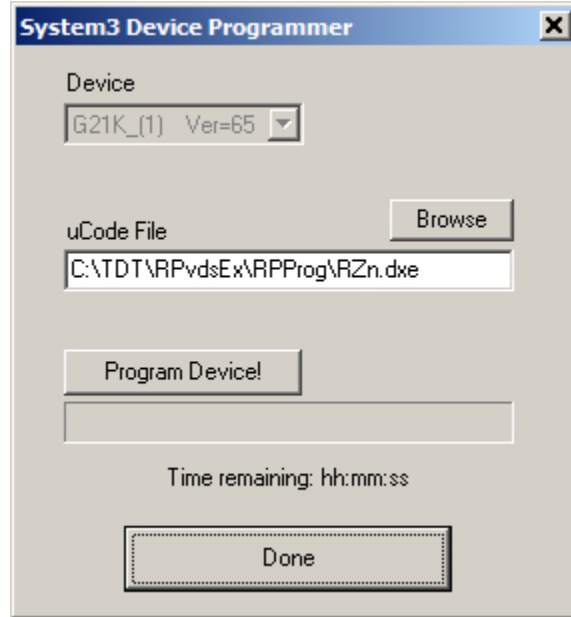
2. The dialog will close when programming has completed.

## Programming a Single Device Manually

To manually program a device:

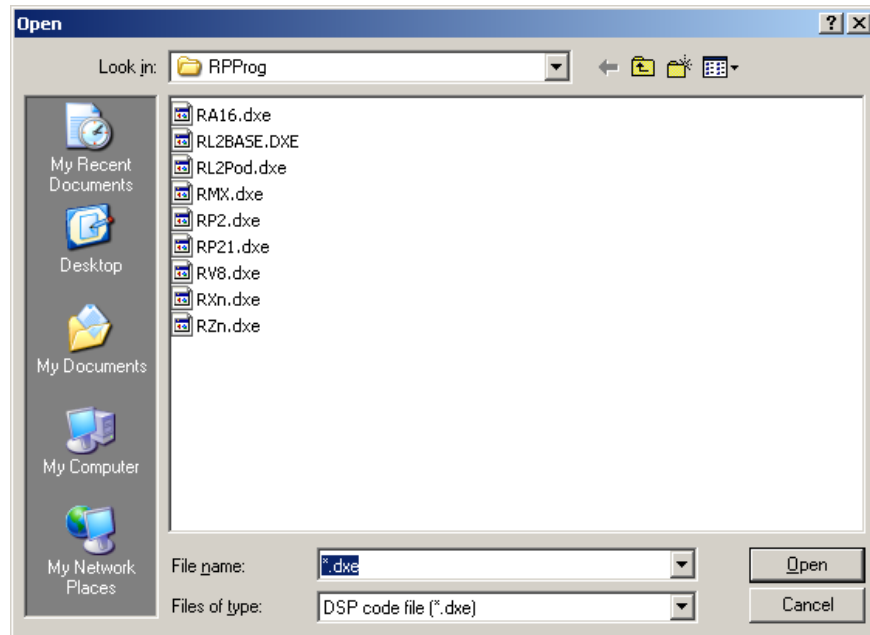
1. In the zBUSmon utility window, hold down the shift key and right-click the device in the system diagram.

- Click **Program {device name}** on the shortcut menu.



The System3 Device Programmer window is opened. In this window you can choose the desired microcode file.

- Next to **uCode File**, click the **Browse** button.



The default location for .dxe files is opened and you can select the desired file for the selected device or browse to an alternate location. The available files should include:

#### File

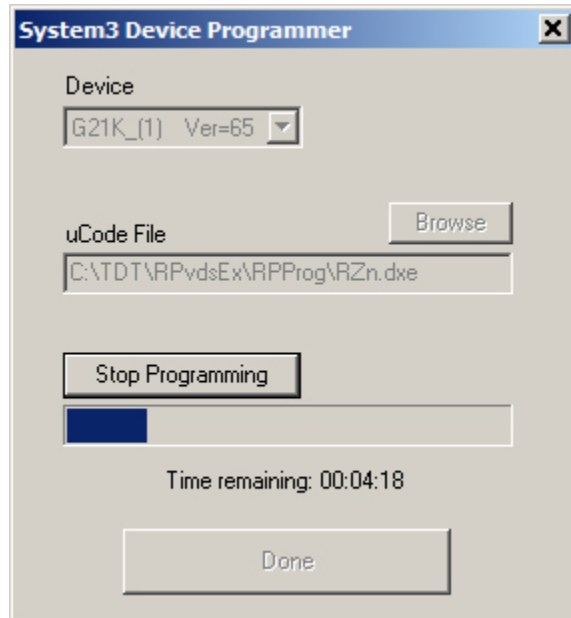
RP2.dxe  
 RP21.dxe  
 RA16.dxe  
 RV8.dxe  
 RMX.dxe  
 RXn.dxe  
 RZn.dxe

#### Device

RP2 Real-Time Processor  
 RP2.1 Enhanced Real-Time Processor  
 RA16BA Medusa Base Station  
 RV8 Barracuda Processor  
 RM1/RM2 Mobile Processors  
 RX Processors  
 RZ Z-Series Processors

- Once you have selected the desired file, click **Open**. The Open window is closed and the selected file appears in the **uCode File** box.
- For all devices except RX-Series Processors, click **Program Device!**. For **RX-Series Processors only**, press and hold the **Mode** button on the front panel of the device then click **Program Device!**. When **Firmware: BLANK** or **Firmware: Burning** is displayed on the front panel of the device, release the **Mode** button.

Programming begins and the progress bar displays the estimated time to complete the task.



**Note:** The PC should not be used for other tasks while devices are being reprogrammed.

The **Stop Programming** button will halt programming, but the device will need to be programmed before it can be used.

- When the Device Programmed message is displayed, click **OK**.