# Saturn’s Mini Desktop Apps

I have created simple apps for various utility purposes.

## Flashwriter

Graphical user interface, application

Description automatically generated

This is an application to program the FPGA configuration memory from a BIT file. Usage:

|  |  |
| --- | --- |
| Open File | Opens a dialog to select the file to be programmed into the memory,  The only format accepted is a .BIN file (a Xilinx binary format) |
| Boot Image | Selects which image to reporogram  Primary (this is the normal image to program)  Fallback (CAUTION: only reprogram if absolutely necessary) |
| Program | When pressed initiated programming; this may take 2 minutes or so. The steps are displayed and progress for each step is shown in the bar display. |
| Close | Close the application. |

## AXI ReaderWriter

Graphical user interface, text, application

Description automatically generated

This is a simple application for register reading and writing. It is intended for development, not for normal use and it is very possible to crash the raspberry pi by incorrect usage!

|  |  |
| --- | --- |
| Address | Hexadecimal address to be accessed. Should be in the range 0 to 0x1FFC, in steps of 4 |
| Data | Hexadecimal data to be written, or read from a register. |
| Write | Causes the data value entered to be written into the register with specified address |
| Read | Reads data from the register at the specified address. |
| Close | Causes the data value entered to be written into the register with specified address |

Note that if the address does not correspond to a valid register, this may hang the computer!

## Audiotest

A screenshot of a computer

Description automatically generated

This is a simple application for checking audio in and out; for example to test if a new headset or microphone is working.

|  |  |
| --- | --- |
| Test tone L, R | Plays a test tone with selectable volume while the button is pressed into the Left or Right audio channels. |
| Mic Test | Enables recording for the (adjustable) duration followed by playback of the recording. A progress bar shows how much time has elapsed, and the current operation (record/replay/idle) is indicated.  The mic level bar shows a linear representation of signal level, with max signal at the right. |
| XLR Input | If checked, selects the XLR input instead of the 3.5mm jack. |
| Mic Bias | If selected, applies bias to the 3.5mm mic input. |
| Mic Boost | If checked, increases the audio gain of the Codec by 20dB. Typically needed for dynamic microphones and not for electret ones. |
| Mic on Jack Tip | Selects the microphone signal to be on the tip of the 3.5mm jack. |
| Close | Close the application. |

## Biascheck

A screenshot of a computer

Description automatically generated

This is a simple application for setting up driver and PA bias currents. It puts the radio into transmit with no signal present, so the potentiometers to adjust bias can be set. **This is not intended for user operation.**

|  |  |
| --- | --- |
| Enter TX | When checked, the radio enters TX with no signal present. Any current in the driver stage or PA is purely the bias current/ |
| Driver Current | Shows the current into the driver stage on the Saturn board. Each potentiometer should be fully anticlockwise initially; advance the 1st to obtain 0.1A reading then advance the second until 0.2A is displayed. |
| PA Current | Shows the current into the PA stage on the RF board. Each potentiometer should be fully anticlockwise initially; advance the 1st to obtain 1.0A reading then advance the second until 2.0A is displayed. |
| Close | Close the application. |