

Initial setup for the G-rex 100.

You need to have the USB drivers in order to use the G-Rex Serial Loader program from Geckodrive.

Get them here

<http://www.ftdichip.com/Drivers/VCP.htm>

you need the XP version.

Install the drivers as in the GeckoMotion manual.

Now get the firmware files from Gecko

<http://www.geckodrive.com/product.cfm?pid=19>

The file is the DLM_GeckoMotion_xxxxx.zip file.

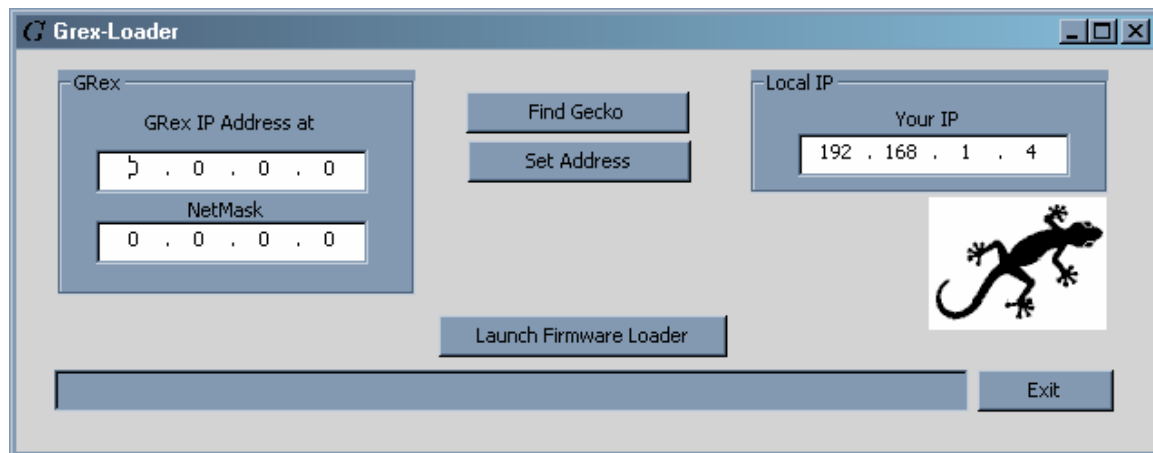
Unzip the files to a place that you can find again.

Plug in the power adaptor, the usb cable and the network cable to the G-Rex. Remember to use a crossover cable if you go direct from the PC to the G-Rex.

The G-Rex will power up. If the “DIR” leds are on the G-Rex has no firmware loaded and you will need to load it.

In your Mach4 folder there is a program named “GrexLoader.exe” make a shortcut to it and put it on your desktop.

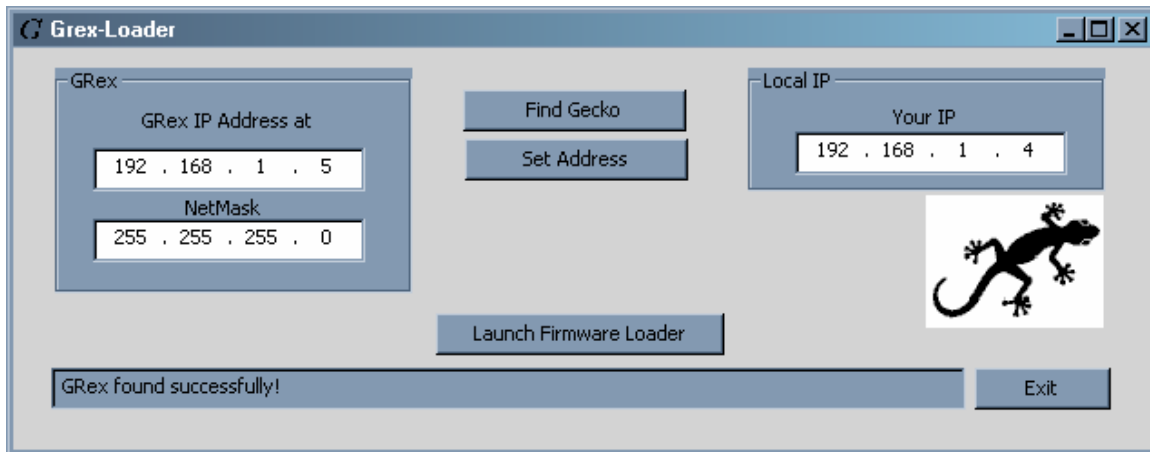
Start the GrexLoader program. You will see a screen like this



Click the “Find Gecko” button.

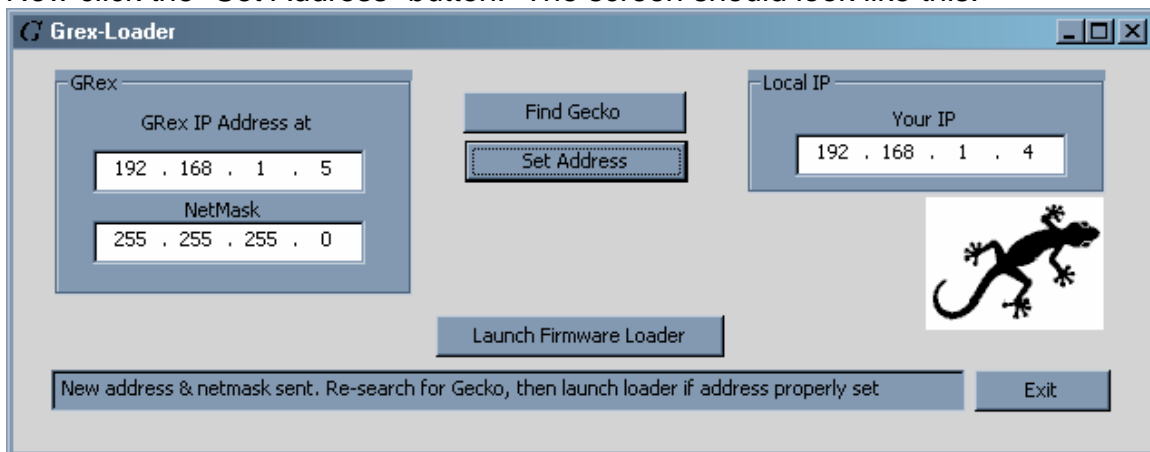
Enter the “GreX IP Address” – it should be the same as the “local IP” except the last field needs to be a different number.

Enter the “NetMask” – it should be 255.255.255.0



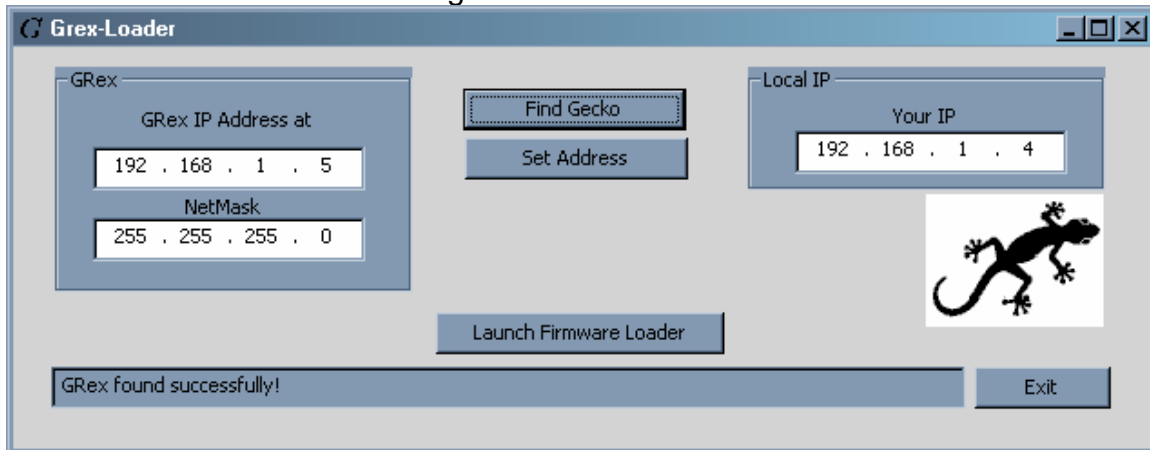
The screenshot shows the Grex-Loader application window. It has a title bar with the text "Grex-Loader" and standard window controls. The main area is divided into several sections. On the left, under the "Grex" label, there are two input fields: "Grex IP Address at" with the value "192 . 168 . 1 . 5" and "NetMask" with the value "255 . 255 . 255 . 0". In the center, there are two buttons: "Find Gecko" and "Set Address". On the right, under the "Local IP" label, there is an input field "Your IP" with the value "192 . 168 . 1 . 4". Below these fields is a small image of a gecko. At the bottom center is a button labeled "Launch Firmware Loader". At the bottom left, a status bar displays the message "Grex found successfully!". At the bottom right is an "Exit" button.

Now click the “Set Address” button. The screen should look like this.



The screenshot shows the Grex-Loader application window after the "Set Address" button has been clicked. The layout is identical to the previous screenshot, but the status bar at the bottom now displays the message "New address & netmask sent. Re-search for Gecko, then launch loader if address properly set". The "Set Address" button is highlighted with a dashed border, indicating it was the last clicked element.

Click the “Find Gecko” button again.



The screenshot shows the Grex-Loader application window after the "Find Gecko" button has been clicked again. The layout is identical to the previous screenshots, but the status bar at the bottom now displays the message "Grex found successfully!". The "Find Gecko" button is highlighted with a dashed border, indicating it was the last clicked element.

Now we are ready to load the firmware into the G-Rex. Click the “Launch Firmware Loader” button. If no firmware is running you will see an HTML page in your browser.

Current Download Manager Settings

Vendor:	(C) 2005 Xorach Controls
Datecode:	060210
Default FPGA config:	<input type="text" value="0"/>
Auto-boot time (s):	<input type="text" value="0"/>
Firmware size (bytes):	43762
Free space on flash (bytes):	991232
Current Eth. IP address:	192.168.1.5
Current netmask:	255.255.255.0
New Eth. IP address:	<input type="text" value="192.168.1.5"/>
New netmask:	<input type="text" value="255.255.255.0"/>
DHCP timeout:	<input type="text" value="0"/>
Core:	RCM3720(RCM3750)

Action:

If the default FPGA config is set to zero, then the lowest numbered configuration will be used. This configuration is loaded before running the firmware. If the default is set to -1, then the firmware will be run without any FPGA config loaded.

Auto-boot time specifies the amount of time that this download manager will wait before automatically starting up the firmware (if any) after power-up. If set less than 3, then it will wait indefinitely. If a browser connection is established within this timeout period, then the firmware will not be run until the browser commands it.

The New Ethernet IP Address, netmask and DHCP fields will not take effect until the download manager is powered off/on. Note that the IP address parameters used by the firmware may be completely independent of these settings.

The DHCP timeout specifies the number of seconds to wait for a DHCP server to respond. Set this to 0 if not using DHCP.

You can view the latest [download manager log](#).

Actions

[Run Firmware](#)

Scroll down until you find the “Upload FPGA Configuration” area and click the “upload” link

G-REX Download Manager Home Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.5/

You will need to restart the network (PPP over USB COM port) connection on the host PC.

Upload FPGA Configuration

File	Size	Description	Upload	Test	Delete
FPGA1	55663		Upload	Test	Delete
FPGA2	0		Upload	Test	Delete
FPGA3	0		Upload	Test	Delete
FPGA4	0		Upload	Test	Delete
FPGA5	0		Upload	Test	Delete
FPGA6	0		Upload	Test	Delete

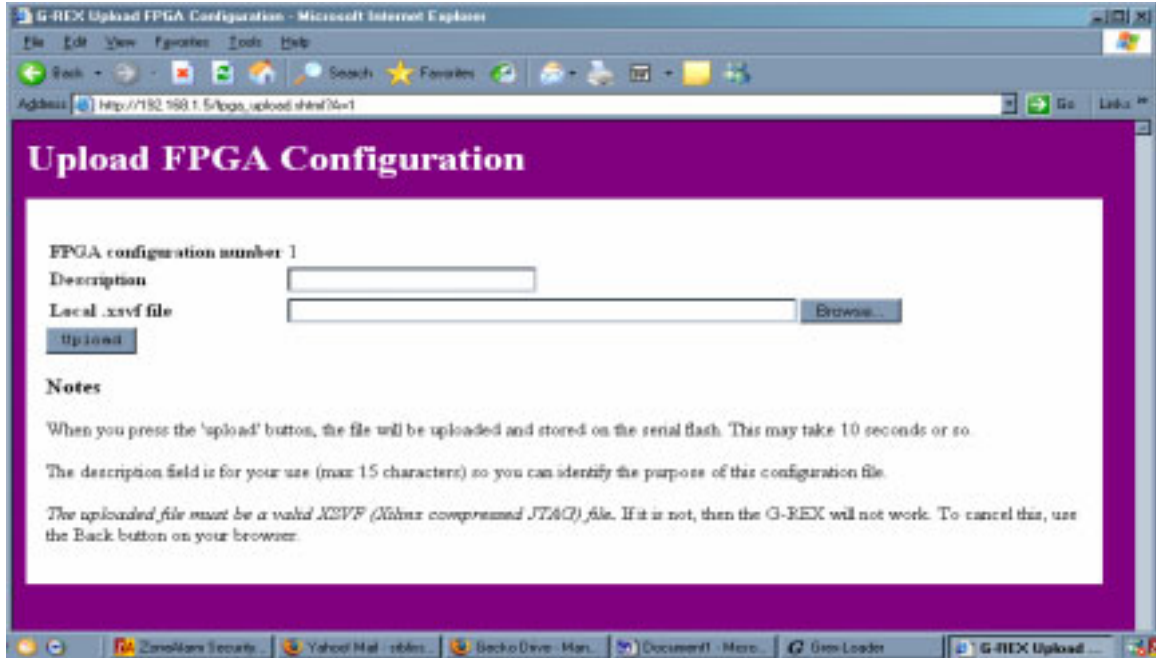
Upload White Heat Programs

File	Size	Description	Upload
WH16	0		Upload
WH17	0		Upload
WH18	0		Upload
WH19	0		Upload
WH20	0		Upload
WH21	0		Upload

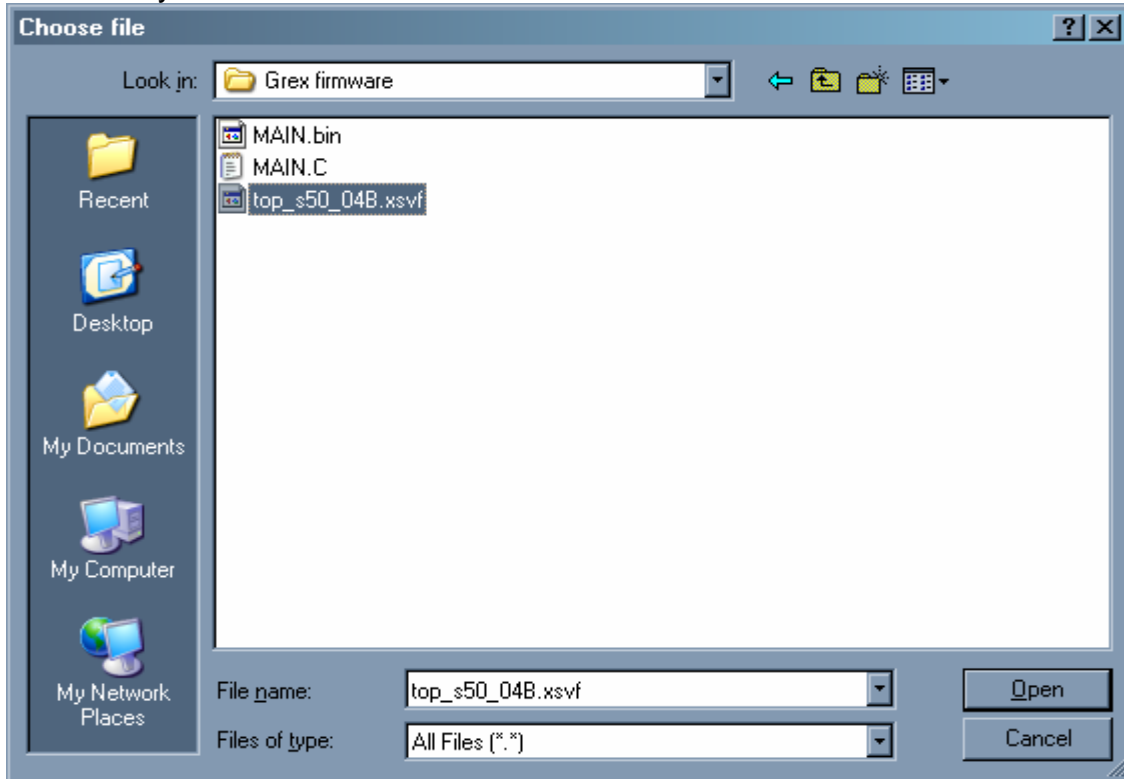
[Upload New Firmware](#)

Done Internet

Click the “Browse” button.

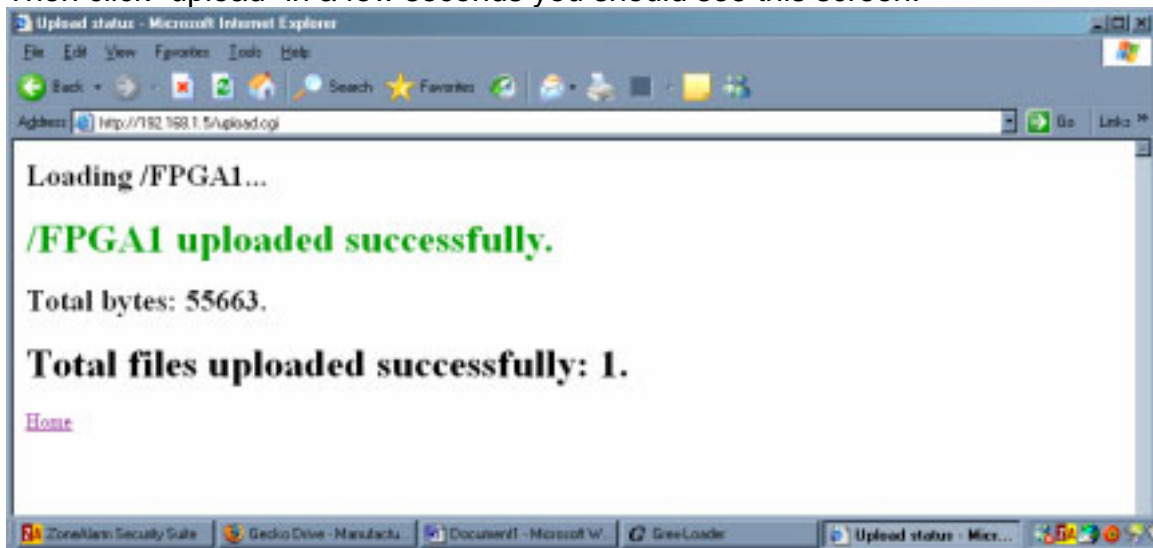


Browse to your G-rex files



Select the .xsvf file and click open.

Then click “upload” in a few seconds you should see this screen.

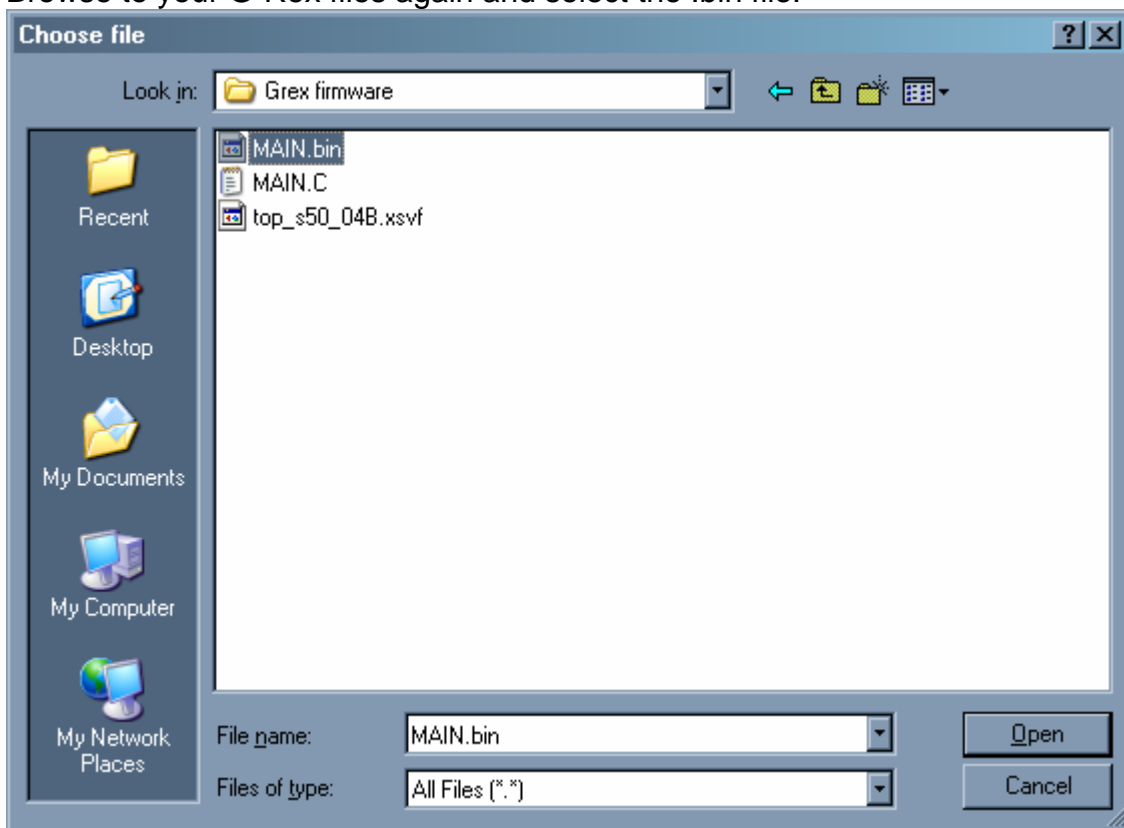


Click “Home”

Scroll down to the bottom of the page and click on “Upload New Firmware”

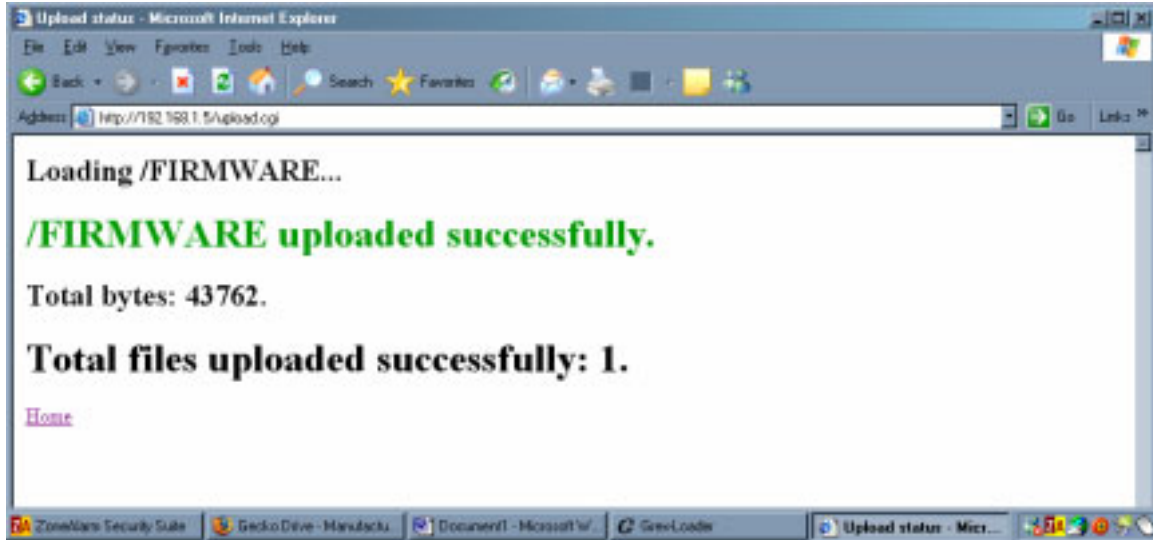
Now click on the “Browse” button.

Browse to your G-Rex files again and select the .bin file.

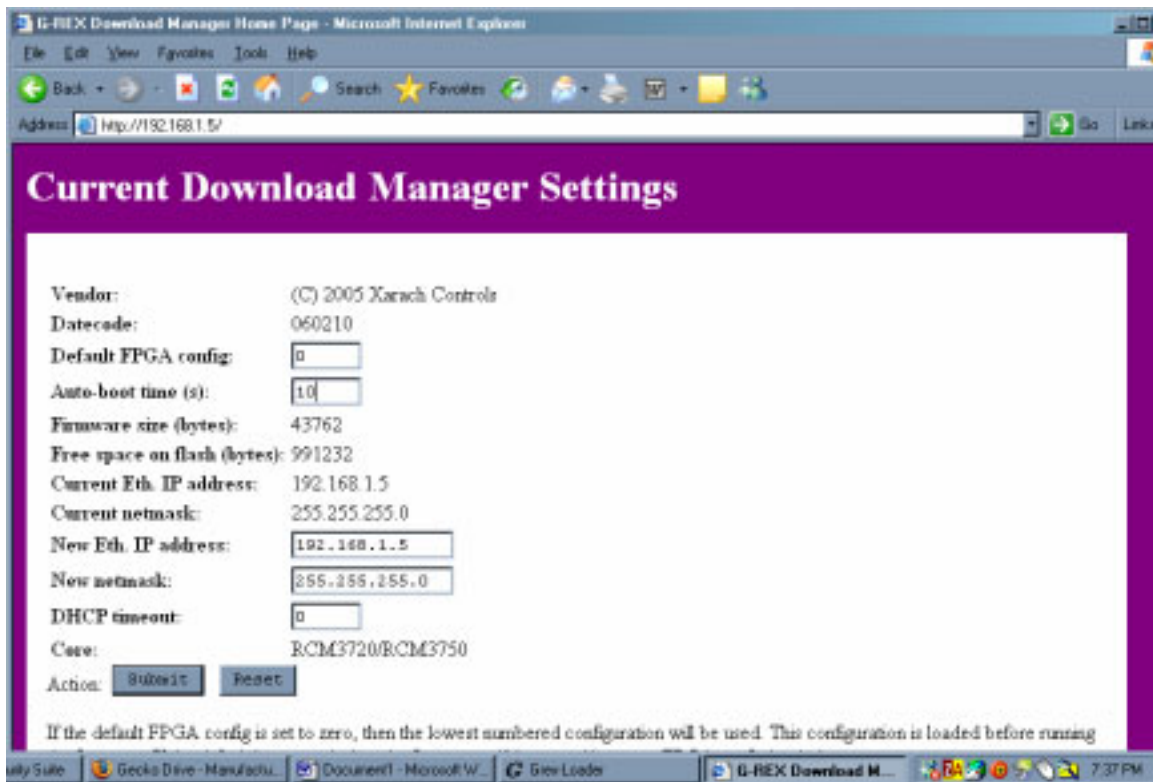


Click “Open”. Then click “Upload”

You should see a screen like this one

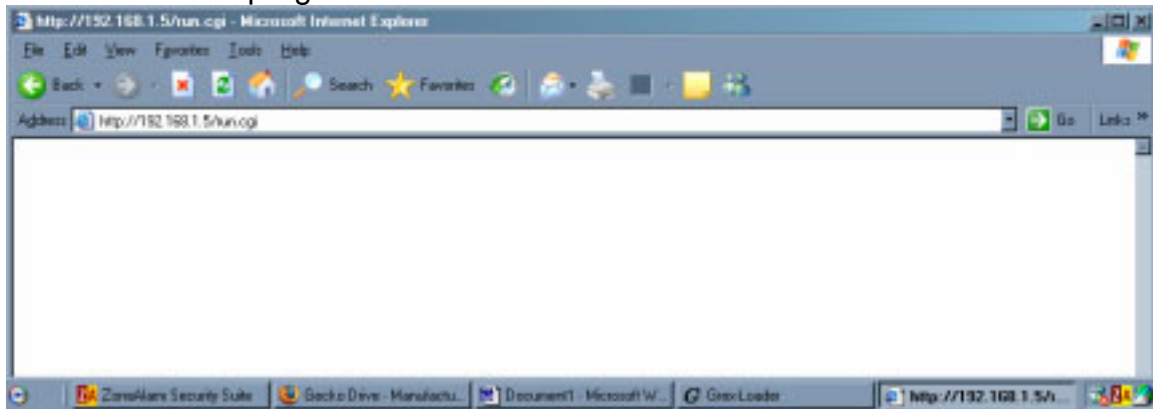


Click "Home"



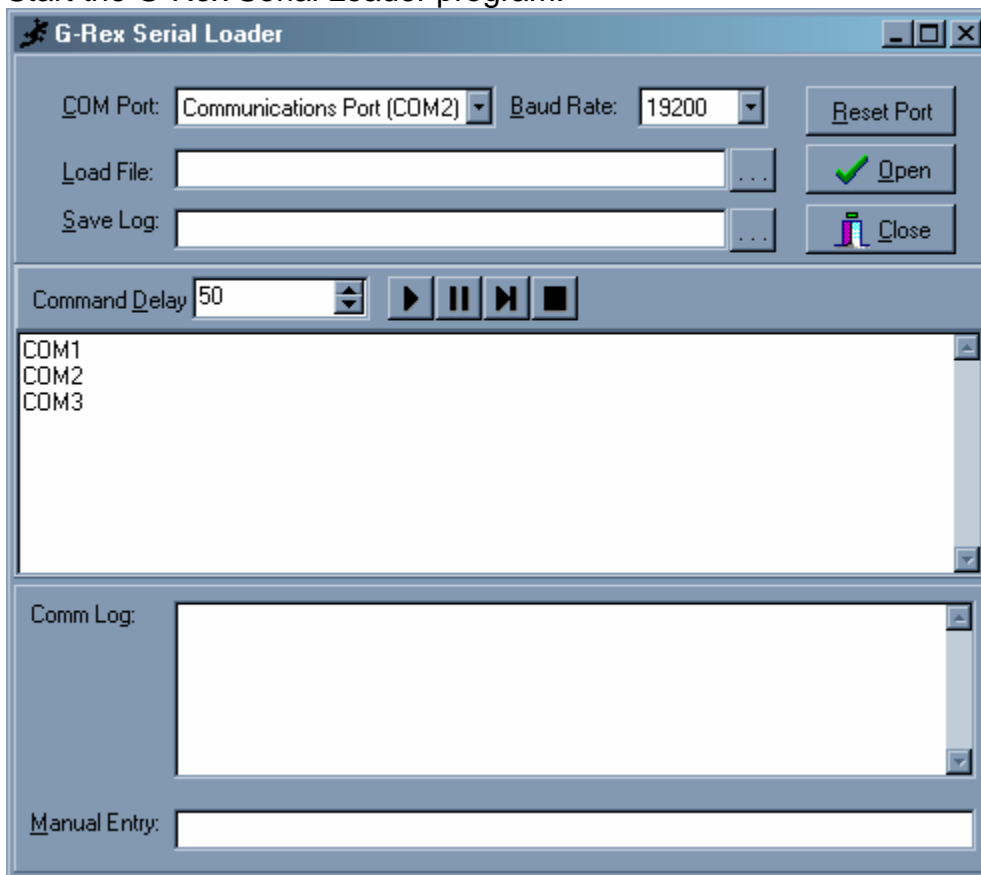
Enter 10 in the "Auto-boot time" -- this will allow 10 seconds before the G-Rex starts the firmware. If you leave the value at 0 the G-Rex will not automatically run the firmware on power up.

Click the “Submit” button. Then scroll down to Run Firmware area and click the “Run” button. You should see a blank browser screen. Close the browser and the Grex-Loader program

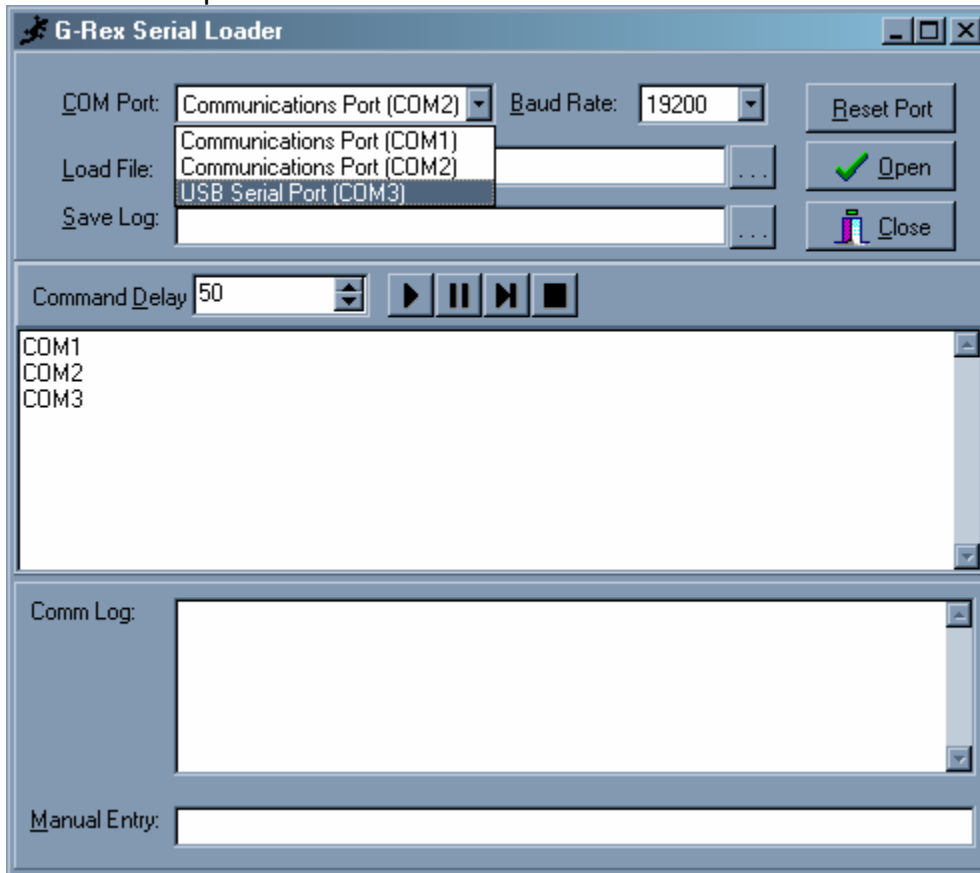


The “Run” led on the G-Rex should be Yellow now. You now have the G-Rex setup to run the Geckodrive programs.

Start the G-Rex Serial Loader program.

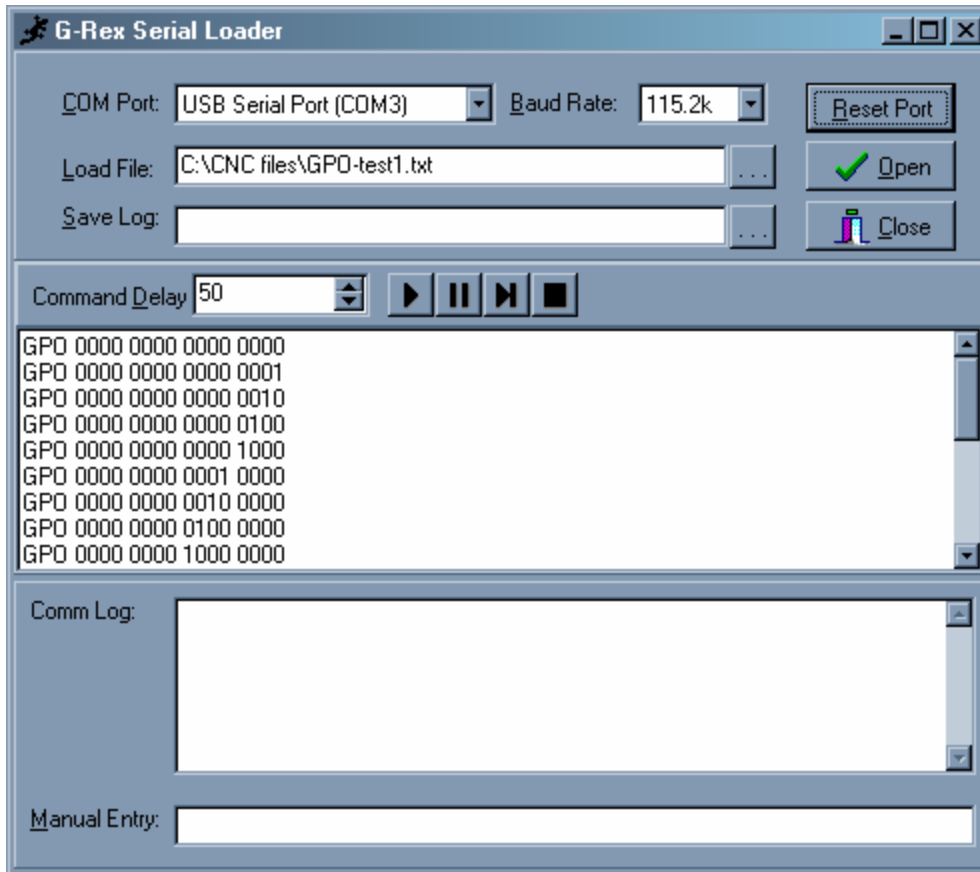


Pick the USB port.

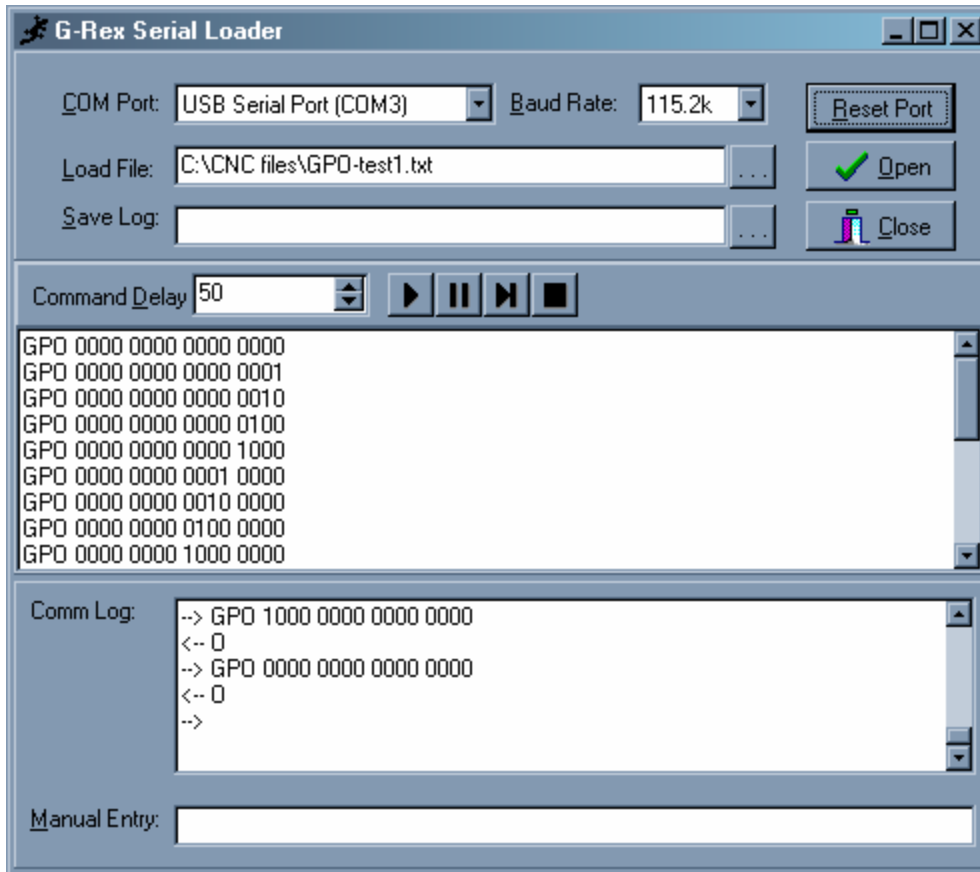


Set the Baud rate to 115.2K and open your test file. This is the one that is described in the G-Rex manual.

```
GPO 0000 0000 0000 0000
GPO 0000 0000 0000 0001
GPO 0000 0000 0000 0010
GPO 0000 0000 0000 0100
GPO 0000 0000 0000 1000
GPO 0000 0000 0001 0000
GPO 0000 0000 0010 0000
GPO 0000 0000 0100 0000
GPO 0000 0000 1000 0000
GPO 0000 0001 0000 0000
GPO 0000 0010 0000 0000
GPO 0000 0100 0000 0000
GPO 0000 1000 0000 0000
GPO 0001 0000 0000 0000
GPO 0010 0000 0000 0000
GPO 0100 0000 0000 0000
GPO 1000 0000 0000 0000
GPO 0000 0000 0000 0000
```



Click on the "... " button next to Load File and browse to the test file, click "Open". Click on the "Reset Port" button and then the "Run" arrow and you should see the output leds cycle on and off in sequence. You will also see the commands scroll by in the Comm Log window. The "← 0" is the G-Rex acknowledging the commands sent to it.

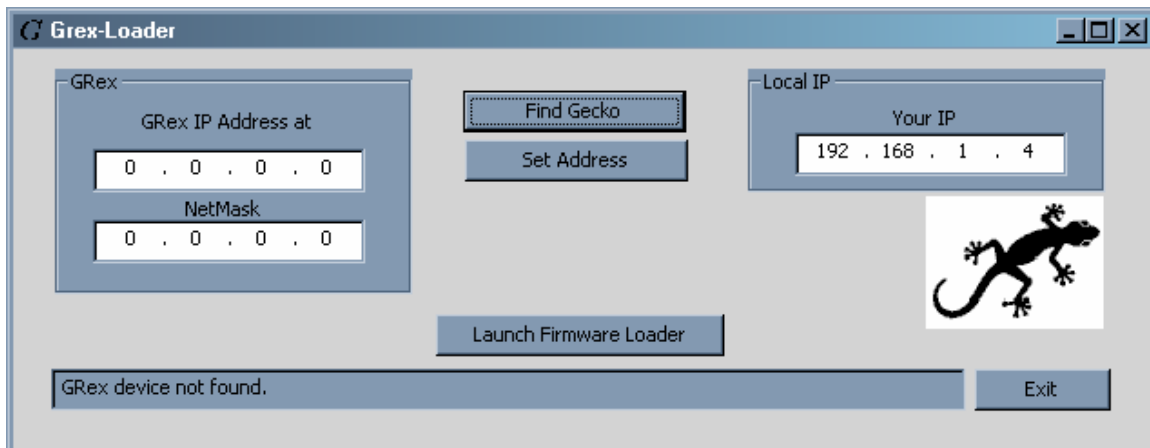


Click on “Close” to end the program.

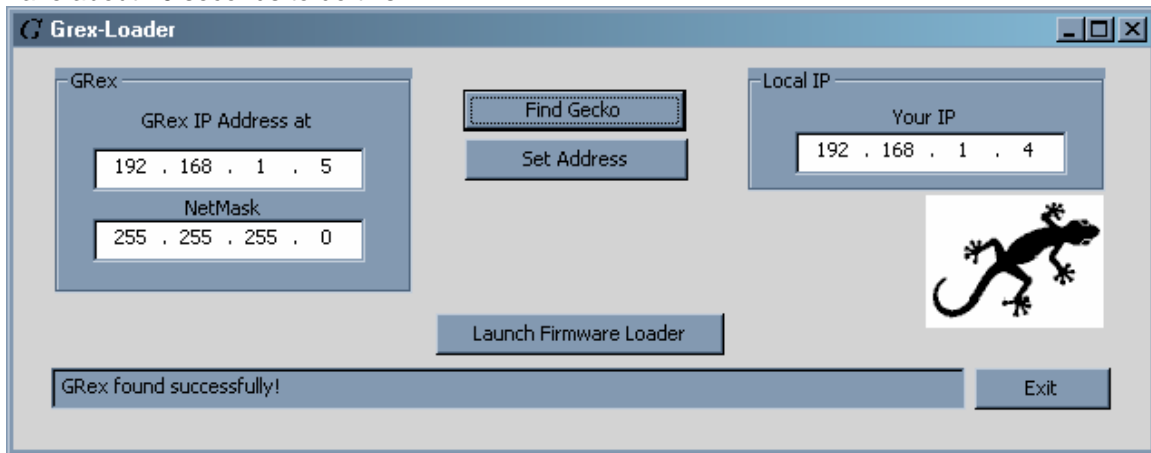
Now we are ready to load the Firmware for Mach4.

Launch the Grex_Loader program and click on the “Find Gecko” button

You should see this screen.



This is what happens when the firmware is running and you try to access the G-Rex. Unplug the power to the G-Rex and then plug it back in. Now click on the “Find Gecko” button – you only have about 10 seconds to do this.



The screenshot shows the 'Grex-Loader' application window. It has a title bar with the application name and standard window controls. The main area is divided into several sections:

- Grex Section:** Contains two input fields. The first is labeled 'Grex IP Address at' and contains the text '192 . 168 . 1 . 5'. The second is labeled 'NetMask' and contains the text '255 . 255 . 255 . 0'.
- Buttons:** There is a 'Find Gecko' button with a dotted border, a 'Set Address' button, and a 'Launch Firmware Loader' button.
- Local IP Section:** Contains an input field labeled 'Your IP' with the text '192 . 168 . 1 . 4'.
- Gecko Image:** A black silhouette of a gecko is positioned to the right of the 'Local IP' section.
- Status Bar:** A blue bar at the bottom contains the text 'Grex found successfully!' on the left and an 'Exit' button on the right.

Now Click the “Launch Firmware Loader” button.

6-HEX Download Manager Home Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: http://192.168.1.5/

You will need to restart the network (PPP over USB COM port) connection on the host PC.

Upload FPGA Configuration

File	Size	Description	Upload	Test	Delete
FPGA1	55663		Upload	Test	Delete
FPGA2	0		Upload	Test	Delete
FPGA3	0		Upload	Test	Delete
FPGA4	0		Upload	Test	Delete
FPGA5	0		Upload	Test	Delete
FPGA6	0		Upload	Test	Delete

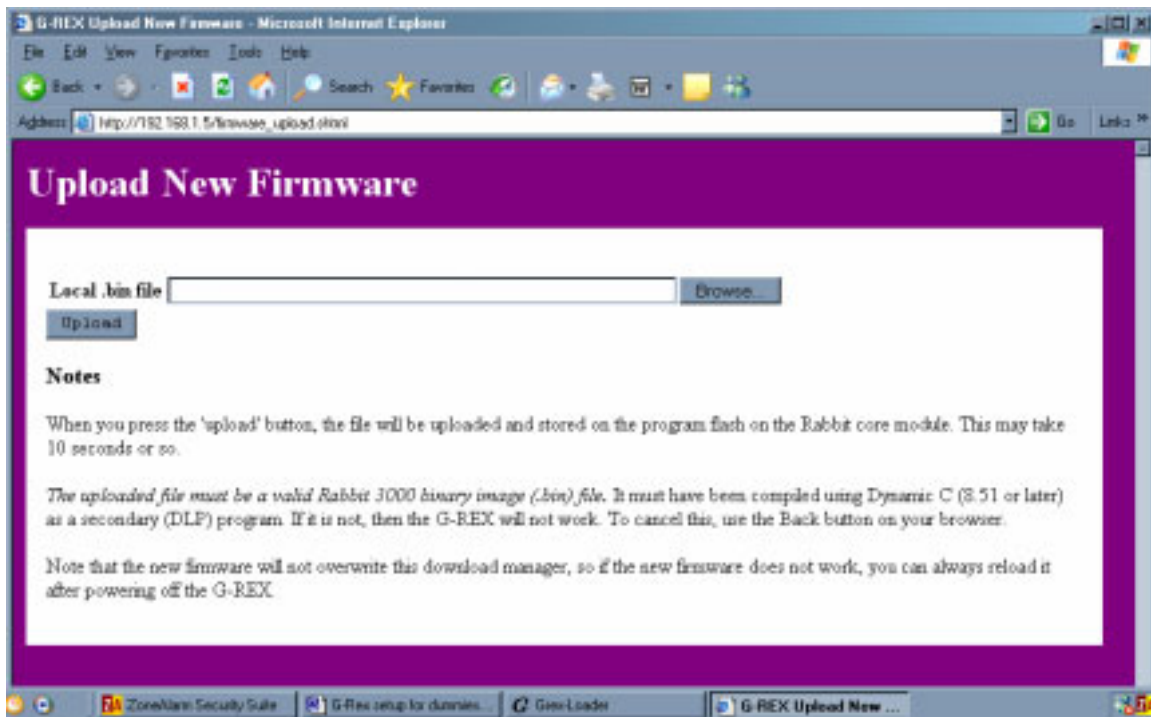
Upload White Heat Programs

File	Size	Description	Upload
WH16	0		Upload
WH17	0		Upload
WH18	0		Upload
WH19	0		Upload
WH20	0		Upload
WH21	0		Upload

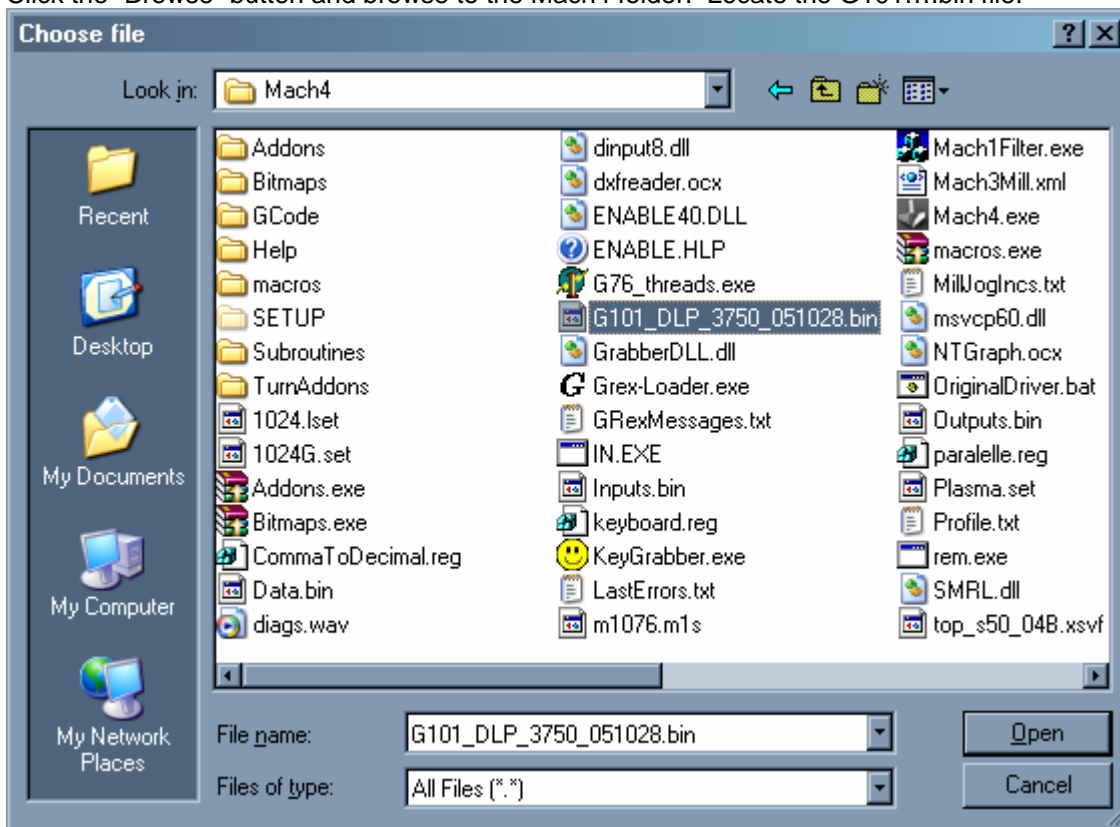
Upload New Firmware

Done Internet

Scroll to the bottom and click “Upload New Firmware”.

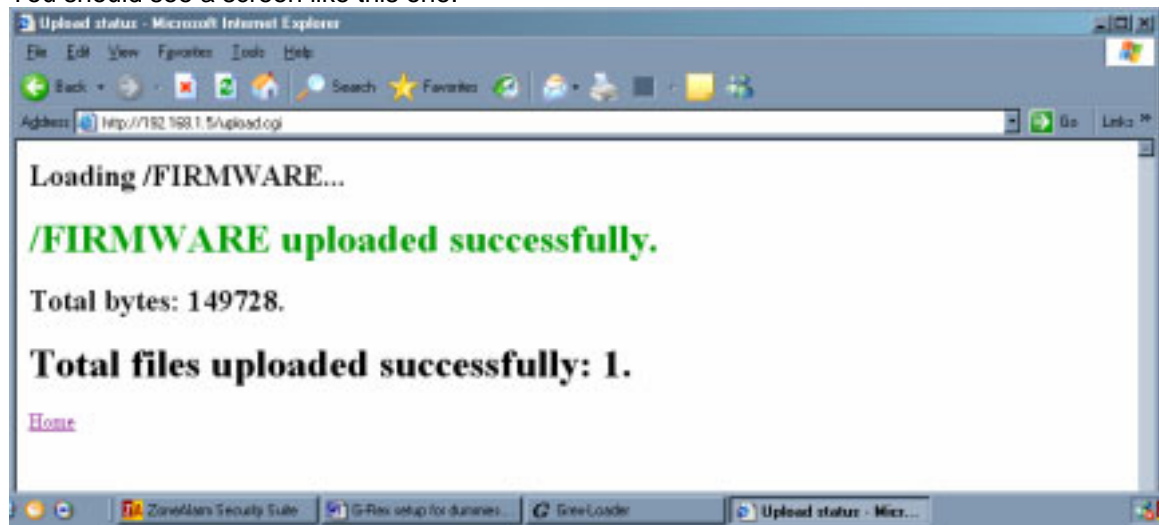


Click the “Browse” button and browse to the Mach4 folder. Locate the G101....bin file.

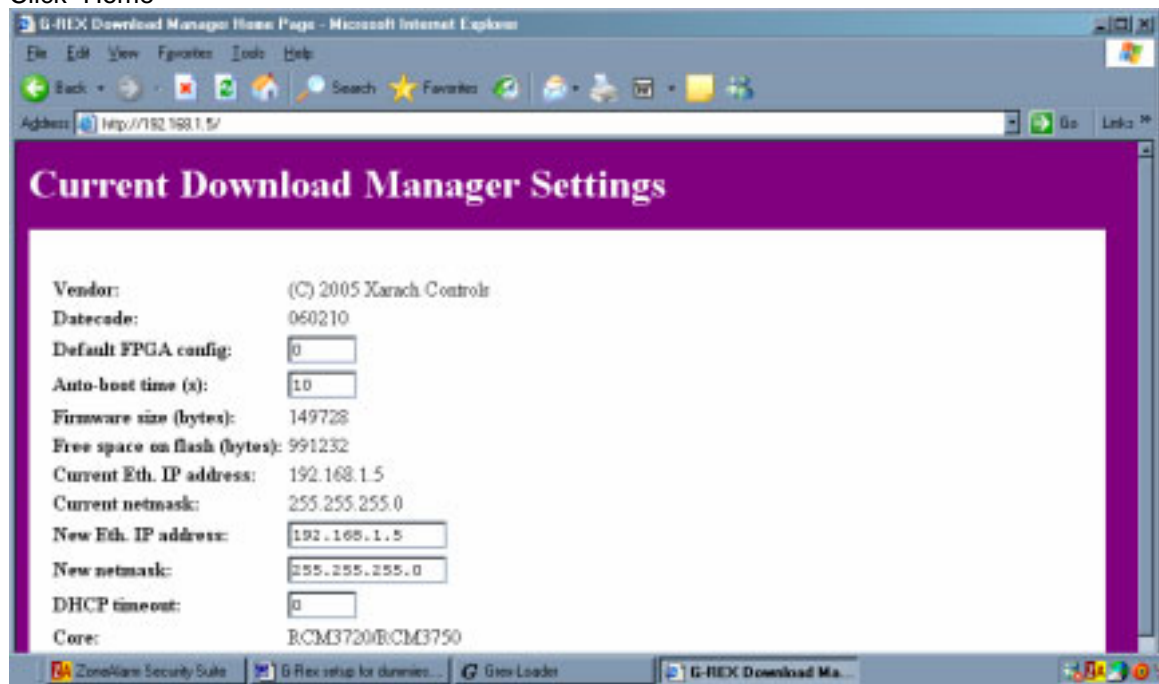


and click “Open”. Then click the “Upload” button.

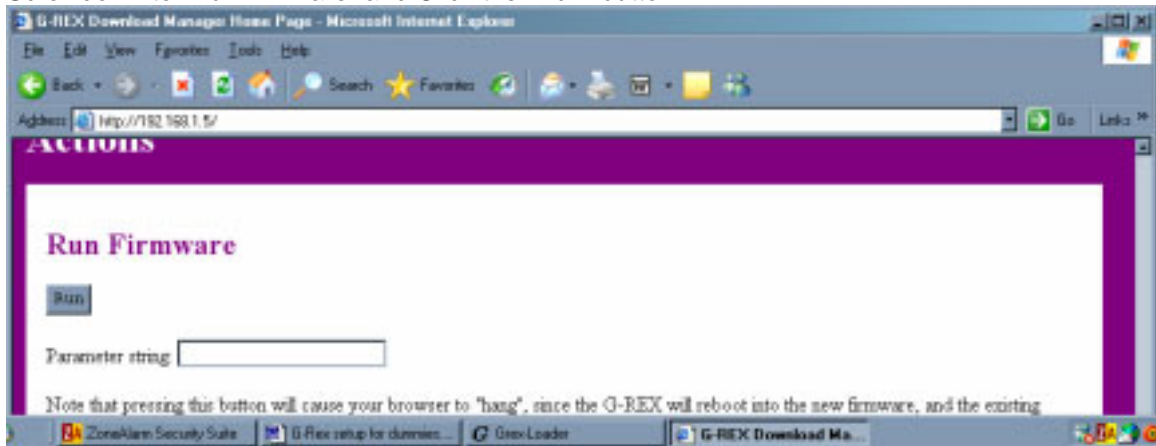
You should see a screen like this one.



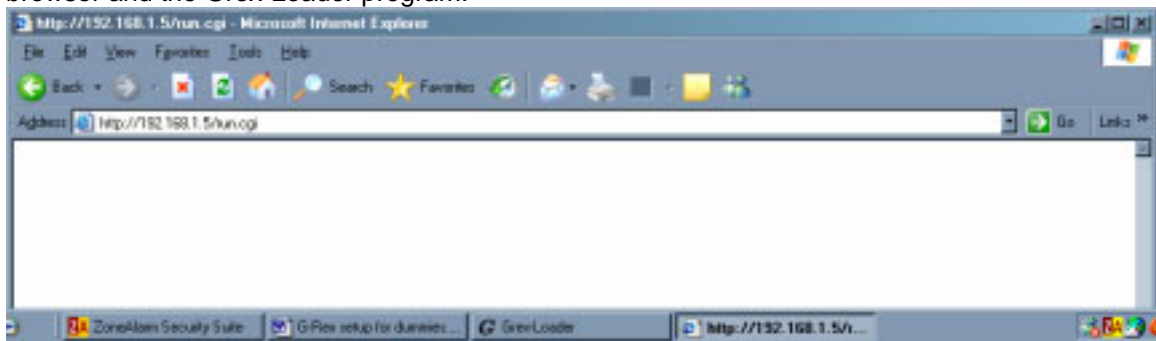
Click "Home"



Scroll down to “Run firmware” and Click the “Run” button.



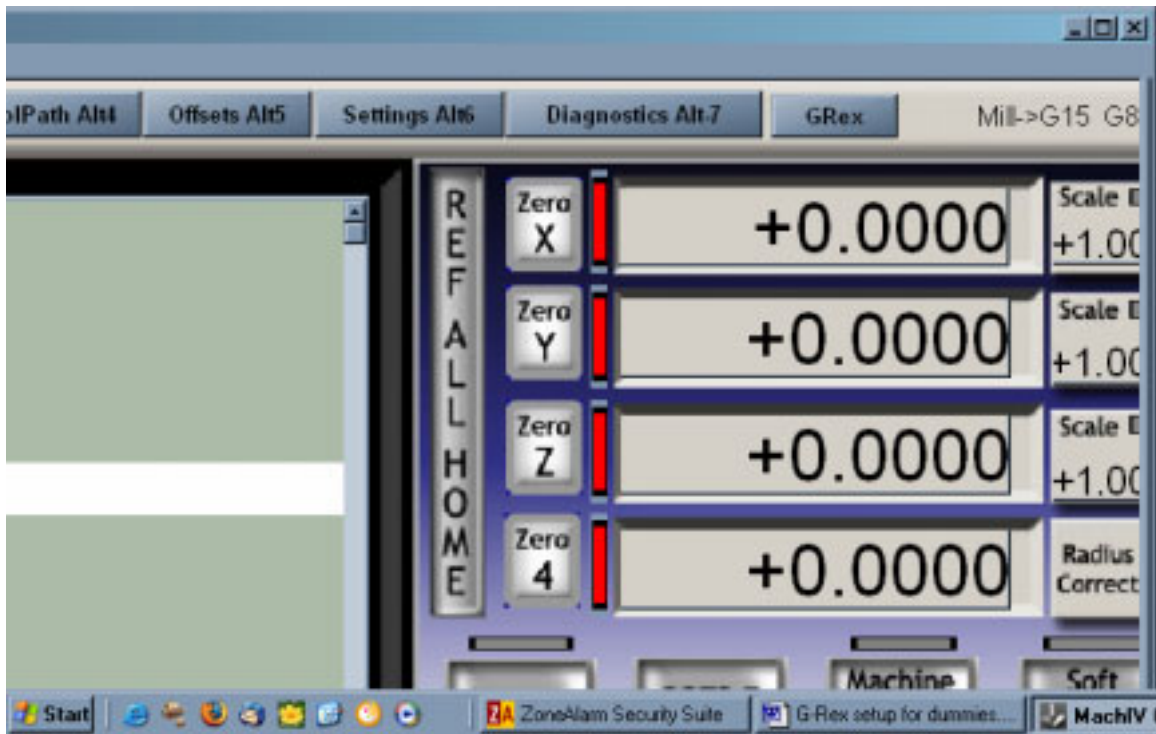
You should get a blank browser screen. The firmware for Mach4 is now running. Close the browser and the Grex-Loader program.



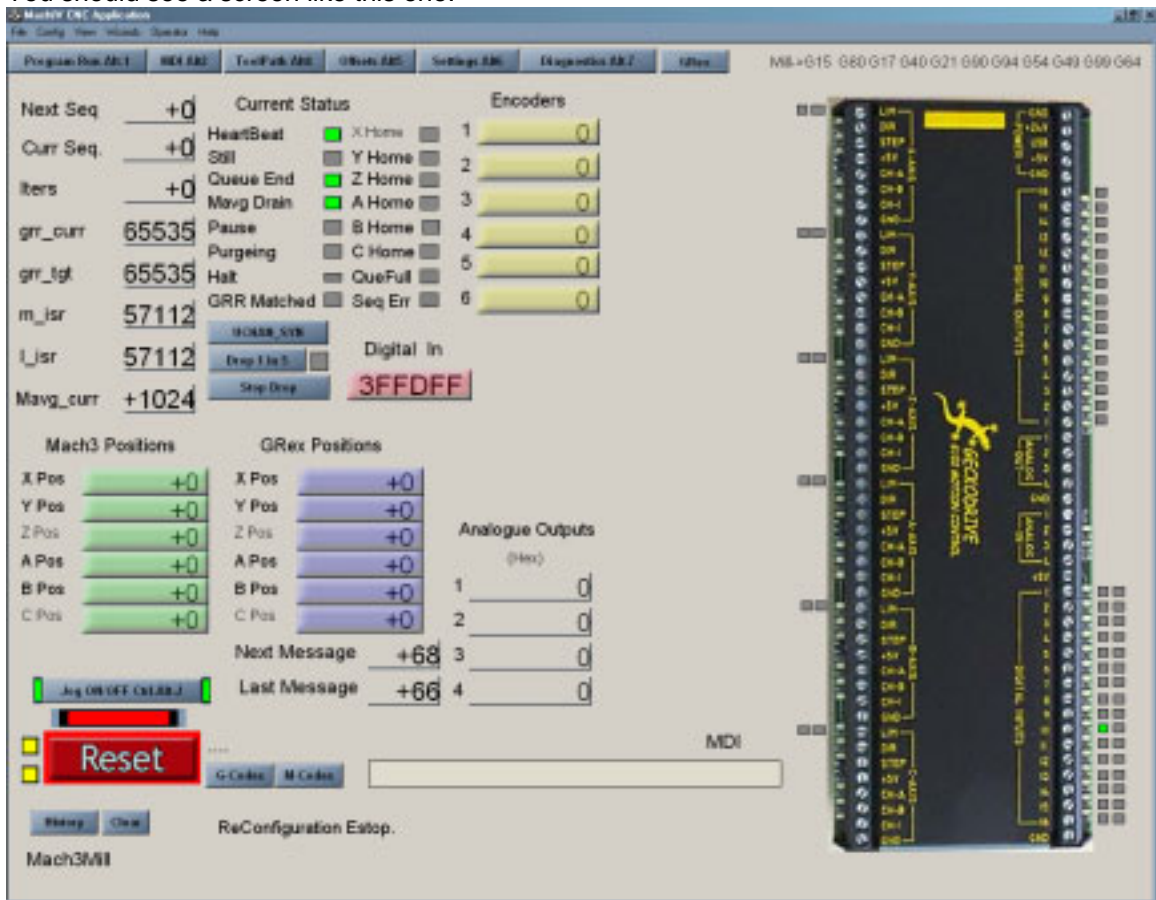
All of the LEDs on the G-Rex should be off except for “Run” – it should be yellow.

Now you are ready to start Mach4.

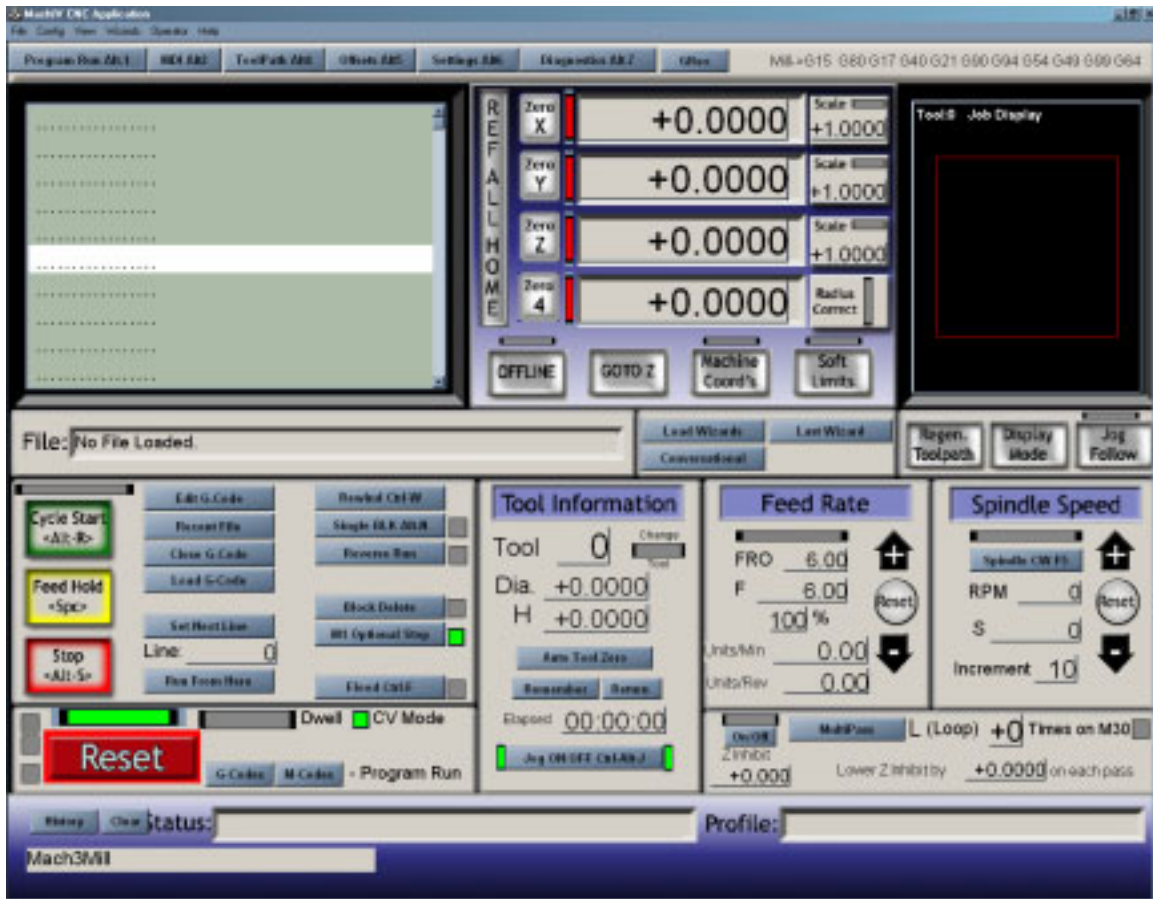
Launch Mach4. You will see a window with IP address settings. Set them the same as before and click “Make permanent” and OK.
Click the “GReX” button



You should see a screen like this one.



On my G-Rex I have a wire connecting ground and input 10 as a test – note the green led next to the input 10 on the virtual G-Rex.
Click OK and you are ready to go.
Click the “Reset” and you are ready to work with Mach4.



That's it. Now for the fun part.