FAT Controller

User Guide

Document Date: 25 October 2009
Document Revision: 01

Abstract

This User guide explains FAT Controller in detail. FAT Controller is a testing software tool that assists the user in testing µDrive and SGC modules. The software is developed for windows based platforms.

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INTRODUCTION

FAT Controller is a utility that can control μDrive and SGC modules from Windows. It is not only a useful testing tool but also a good platform for users to learn and start their application development. For the SGC modules it can also simulate most of the operation of the module and assist in the creation of simple scripts, either simulating the execution of those scripts and/or downloading them into a uSD card for execution on the display.

Startup

- Start FAT Controller and insert the module you wish to communicate with and select a com port or "No Display" from the "Port" Combo box.
- Select Baud rate from the "Speed" combo box before opening the port. PICASO SGC must begin with 9600.
- If you are using a μDrive module that's all you need to do, now you can click "Open" to begin communicating with your μDrive module.
- On the right hand side is a "Script-Pad" keeping the log of the commands entered including a textual description, the time taken and the information send and received in hex.
- Buttons "Clear Log" and "Copy to clipboard" are available for manipulating the log.
- To the left is the area for executing commands, refer to the Software Interface Specifications for the available commands and their parameters.

Settings

If you are using a display device you may like to click on "Settings" to display the settings window and change some of the settings. The settings as shown below should be self explanatory.
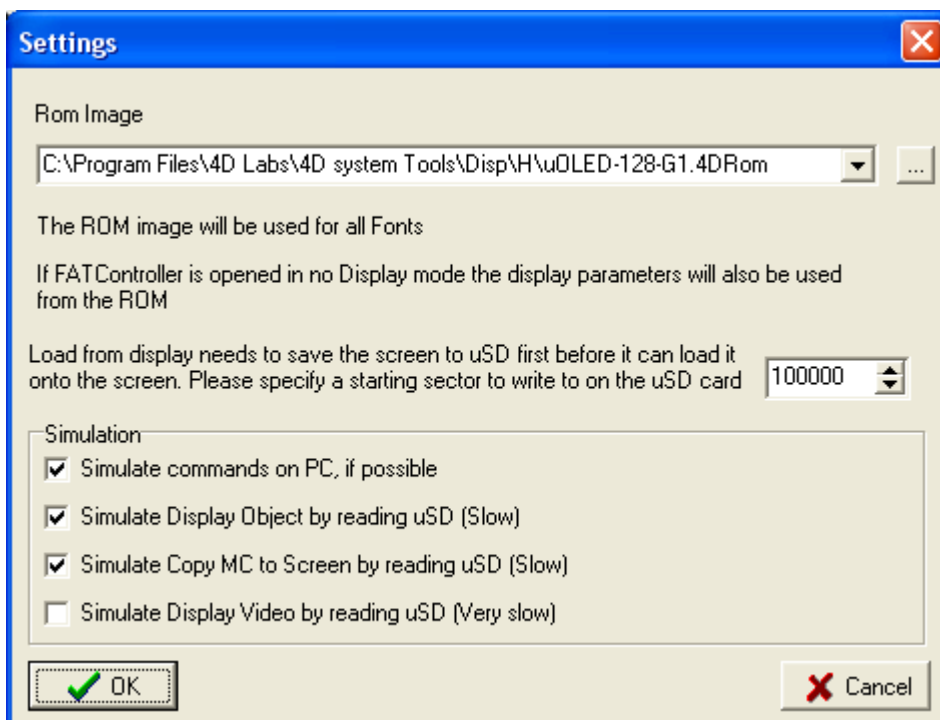

Figure 1: FAT Controller Setup Window

Display parameters, x and y sizes from a real display will override those from the 4DRom file used.

For smaller Displays there is a checkbox entitled "Magnify screen", check this to magnify the screen to fill the available space on the window. For Larger displays you can scroll 'through' the full display screen. Alternately click on the screen to detach it from the window, and then you will be able to resize it independently of the window. You can also click "Save to BMP" to save the screen to a .bmp file.

MODES OF 4D FAT CONTROLLER

There are primarily three modes of 4D FAT controller,

- MODE 1: 4D FAT Controller without any Module
- MODE 2: 4D FAT Controller with a Non Display Module (like µDrive)
- MODE 3: 4D FAT Controller with a Display Module

MODE 1

Run the FAT Controller and choose "No Display" option from the "Port" combo box. Click Open command button. You are now in the simulation mode where you can simulate the display commands without the need of any display connected to the Com port.

MODE 2

Run the FAT Controller and choose the Baud rate from the "Speed" combo box. Choose the com port from the "Port" combo box. Connect the µDrive and click Open command button. You are ready to play with the software now. In this mode all the display functions/commands are disabled. The user doesn't need to set anything to enter this mode. The software detects the type of module and does it automatically.
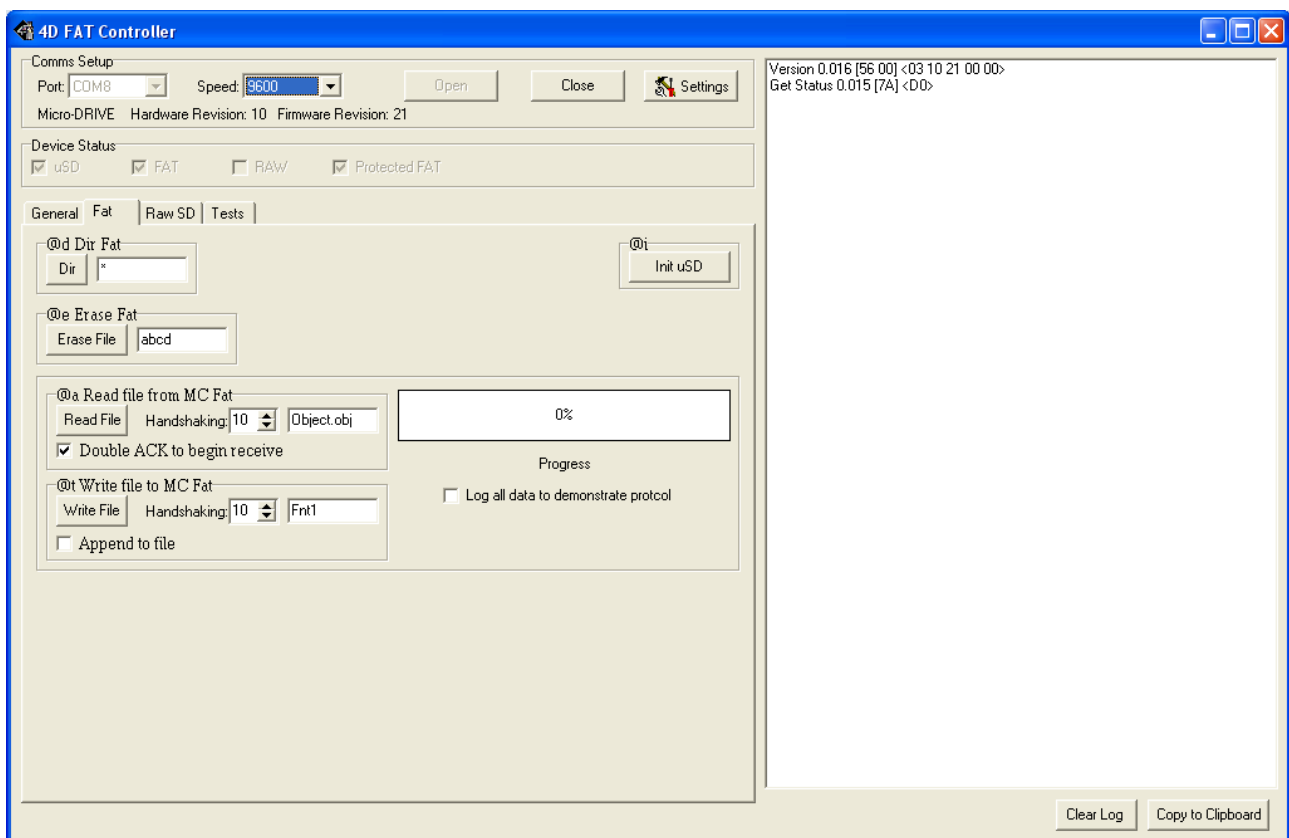

Figure 2: FAT Controller display when using µDrive Module

MODE 3

Run the FAT Controller and choose the Baud rate from the "Speed" combo box for GOLEDLOX, PICASO must be started at 9600 BAUD. Choose the com port from the "Port" combo box. Connect the display module and click Open

command button. The Script-pad will display the type of module, Firmware revision etc. In this mode FAT Controller appears with the complete set of functions to test the display modules.
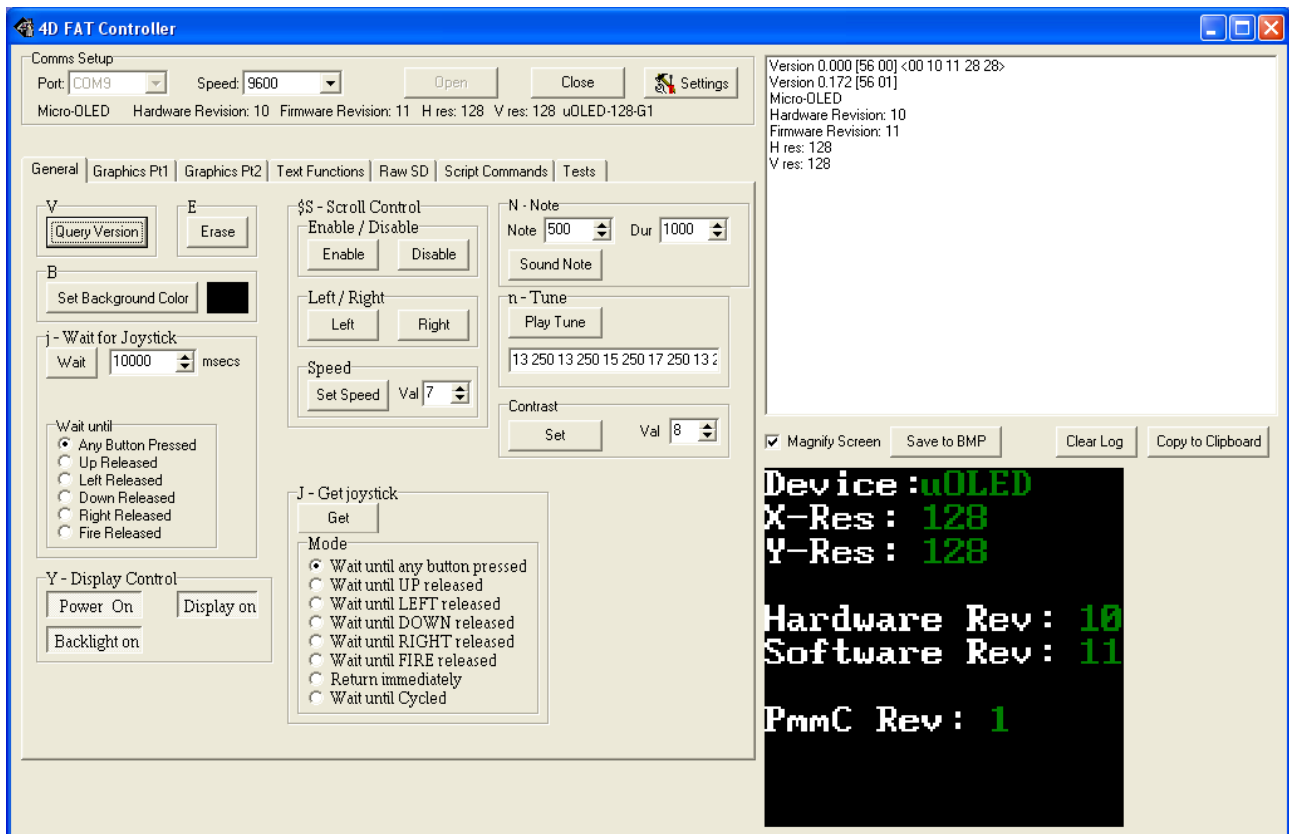

Figure 3: FAT Controller display when using Goldelox SGC Module

Figure 4: FAT Controller Display when using Picaso SGC Module

USING WITH MICRO DRIVE

The "Device Status Panel" shows the status of various settings on the µDrive.

All the Tabs, except "Tests", represent sections in the Software Interface Specifications and contain the commands described in that section. Please refer to the GOLEDLOX-DOS-COMMAND-SIS.pdf for the complete description of each command mentioned on the test software for the µDrive.

The Tests Tab contains a series of tests that execute several commands to test a specific part of your µDrive, uSD card and USB interface.

USING WITH GOLDELOX SGC

All the Tabs, except "Tests" and to a lesser extent "Script commands", represent sections in the Software Interface Specifications and contain the commands described in that section. Please refer to GOLDELOX-SGC-COMMANDS-SIS.pdf for the complete description of each command mentioned on the test software for the Goldelox SGC based modules.

On the "Graphics Pt1" tab "Send image from PC file" reads any supported image type, converts it to the required format and sends it to the display. Normal windows images are resized to the width and height specified. Files that come from a Graphics Controller GCI file are not resized.

The Tests Tab contains the tests available to exercise the uSD card on the display, as well as options to "Copy Screen to Display" and "Copy Display to Screen". "Copy Screen to Display" copies the screen to uSD first, so you must ensure that the area on the uSD drive being used for that option is not required for other purposes.

SCRIPT COMMANDS

The "Script commands" tab contains two extra panels.

SCRIPT CREATION

"Script Creation" is useful in the creation of scripts

- "Current address" is the address of the command you are about to enter. If you are creating a script with GOTOs, you can note this address for use in the target of "GOTOs". If you are creating a script to put on a uSD card and wish to offset your script from sector 0, simply add that offset to the address.
- "Clear script" clears the current script buffer.
- "Save Script" saves the script to disk; an "Exit Program" command will automatically be ended to the end of the script.

SCRIPT EXECUTION

"Script execution" is useful for testing and demonstrating the running of scripts.

- Click "Load" to load a script for execution
- Click "Step" to execute one command from a script. Delays are not executed when stepping.
- Click "Run" to run the script
- Click "Pause" to interrupt a running script. If the current command is a long "Delay" you will need to wait until it completes.

NOTES ON SIMULATION

- All colors are converted into the colors of the display and then back to "windows colors", so theoretically they are a truer representation of the colors that would appear on the display.
- All shapes are drawn using windows commands and are not exactly the same as what appears on the display. Circle often looks much better on the display than on windows.
- All fonts come from the 4DRom file selected.
- No attempt has been made to simulate
  - The speed of the display.
  - The Joystick
  - Scroll control
  - Display Control
  - Contrast
  - "Raw SD", non graphics commands

USING WITH PICASO SGC

All the Tabs, except "Tests" and to a lesser extent "Script commands", represent sections in the Software Interface Specifications and contain the commands described in that section. Please refer to PICASO-SGC-COMMANDS-SIS.pdf for the complete description of each command mentioned on the test software for the Picaso SGC based modules.

Make sure the baud rate is set to 9600 before opening the Com port, because Picaso SGC can only begin with 9600 BAUD. Later you can click on any Baud choice from the "Speed" combo box to change the BAUD rate. You will get an Acknowledgement if the change is successful.

Before using any of the raw SD commands the "Unprotect FAT" must be selected to grant raw read/write to the SD card. With the raw read/write, FAT formatting will be lost unless there is partition on the SD card.

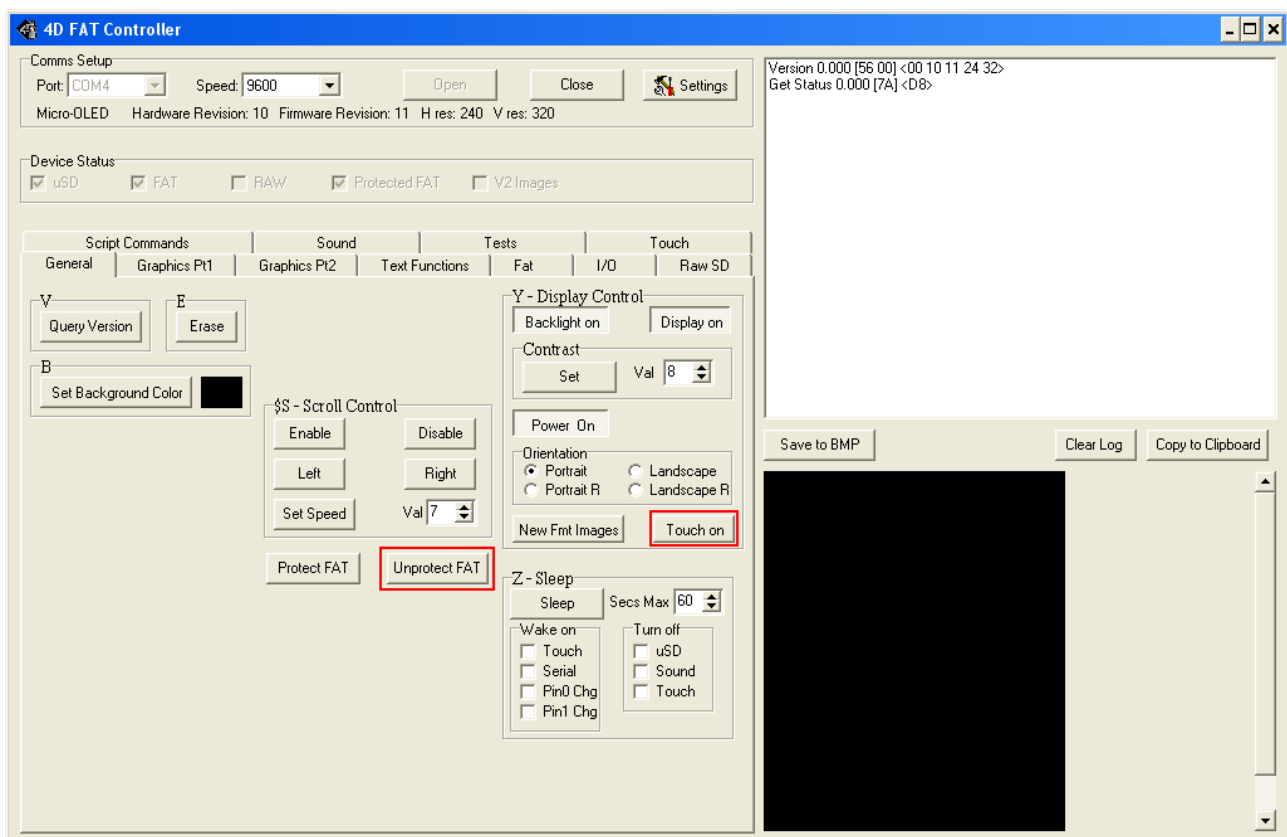To enable Touch functions, click "Touch on" button.

Figure 5: Unprotect FAT for Raw read/write, Click Touch on to enable touch options.

The Tests Tab contains tests available to exercise the uSD card on the display, as well as options to "Copy Screen to Display" and "Copy Display to Screen". "Copy Screen to Display" copies the screen to uSD first, so you must ensure that the area on the uSD drive being used for that option is not required for other purposes. Also, make sure the FAT is unprotected to permit raw read write from the uSD card which is an intermediate process for the "Copy Display to Screen" or "Copy Screen to Display" command.

On the "Graphics Pt1" tab "Send image from PC file" reads any supported image type, converts it to the required format and sends it to the display. Normal windows images are resized to the width and height specified. Files that come from a Graphics Controller GCI file are not resized.

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  - Display Control
  - Contrast
  - Touch
  - Audio
  - FAT
  - "Raw SD", non graphics commands

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