UDI's PI64 - A Complete Commodore 64 Emulator System utilizing VICE and Raspbian Wheezy

Welcome to your journey into retrocomputer heaven. This PI64 comes with almost everything you will ever need to emulate the classic Commodore 64 Computer.

This SD Card is configured with 950Hz "High" Overclocking and Expanded Filesystem. For use with Model B Raspberry Pi Boards.

#### **TURNNING ON:**

Before turning on your Raspberry Pi, install the SD card provided, hook up a TV to the video out or HDMI cable, audio cable, ethernet connector, USB Keyboard, and 1 or 2 DB9 Joystick adapters (1 is provided with this kit). Login with id: pi pw: raspberry

## **TURNING OFF:**

To shutdown Vice safely Go to F12/Settings/Quit Emulator In terminal type sudo shutdown -h now (or to reboot sudo shutdown -r now) when the system halts you can safely unplug your pi and remove your sd card.

## **Running Programs**:

 $F12 \rightarrow Autostart image to run a .prg file$ 

 $F12 \rightarrow$  Drive to attach a .d64 disk image to a drive

 $F12 \rightarrow$  Tape to attach a .tap or .t64 image to a tape machine

True Drive emulation must be on for certain programs. Off makes everything load faster. If something doesn't work, try it with true drive emulation turned on.

All programs are in the subdirectory C64 images. Over 30,000 programs have been included, in both pal and ntsc formats. NTSC and PAL emulation can be selected from F12  $\rightarrow$  Video Settings.

To reset the machine to use  $F12 \rightarrow Reset \rightarrow Soft$  or Hard Reset

There's lots of options to use cartridges and other forms of loading as well. Play around!

# Connecting to the internet and calling BBS Systems:

The PI64 is already set for use with the tcpser hayes modem emulator running at 2400 baud.

Run Striketerm. Located in -> C64images/BBS and Term/Terms/Striketerm2014.d64

Make sure Modem is set to User Port and Baud is set to 2400. type AT in terminal mode, you should get an OK in response! Full bbs list at the cbbs outpost. (http://cbbsoutpost.servebbs.com)

# **Sound Tweaks**

Try ALSA Settings if the default doesn't sound good.

#### **INSTALLING JOYSTICKS on REV 2 PI Board:**

There are 6 pins on the DB9 Connector. 1-4 are Up, Down, L, R. Pin 6 is Fire, Pin 8 is Ground.

Connect the pins in the following way to the GPIO port of the Raspberry PI  $DB9 \rightarrow GPIO$  (This configuration mimics Vice's preset NUMPAD Joystick configuration)

> Pin 1  $\rightarrow$  Pin 2 Pin 2  $\rightarrow$  Pin 3 Pin 3  $\rightarrow$  Pin 4  $Pin 4 \rightarrow Pin 17$ Pin  $6 \rightarrow$  Pin 27 Pin 8  $\rightarrow$  Gnd

A second DB9 Joystick can be added using the following configuration:

 $DB9 \rightarrow GPIO$ Pin 1  $\rightarrow$  Pin 23 Pin 2  $\rightarrow$  Pin 24 Pin 3  $\rightarrow$  Pin 25 Pin 4  $\rightarrow$  Pin 8 Pin 6  $\rightarrow$  Pin 7 Pin 8  $\rightarrow$  Gnd

If you mismatch any of the pins, don't fret. The GND needs to be connected correctly, but if you swap any of the pins for another, it's easy to fix using Vice's "Define Keyset" rule.

Setting up Joysticks / Mapping to Keysets:

 $F12 \rightarrow$  Machine Settings  $\rightarrow$  Joystick Settings  $\rightarrow$  Define Keysets Select the key you wish to define, (For example Keyset 1 Up). Push the joystick Up and that will be mapped correctly.

345	3V3	1	2	5V
343	GPIO2	3	4	5V
/	GPIO3	5	6	GND
	GPIO4	7	8	GPIO14
•••/	GND	9	10	GPIO15
789	GPIO17	11	12	GPIO18
ter port view	GPIO27	13	14	GND
C fire butter	GPIO22	15	16	GPIO23
6, fire button	3V3	17	18	GPIO24
7, + SVUC	GPIO10	19	20	GND
8, ground	GPIO9	21	22	GPIO25
9, not connected	GPIO11	23	24	GPIO8
	GND	25	26	GPIO7
	3 4 5  7 8 9 ter port view 6, fire button 7, + 5VDC 8, ground 9, not connected	3 4 5 GPIO2 GPIO3 GPIO4 GPIO4 GPIO7 GPIO27 GPIO27 GPIO27 GPIO22 GPIO27 GPIO22 SV3 GPIO3 GPIO4 GPIO4 GPIO17 GPIO27 GPIO22 SV3 GPIO2 GPIO3 GPIO17 GPIO27 GPIO21 GPIO21 GPIO21 GPIO2 GPIO3 GPIO17 GPIO22 GPIO3 GPIO17 GPIO21 GPIO21 GPIO3 GPIO17 GPIO22 GPIO3 GPIO17 GPIO22 GPIO3 GPIO17 GPIO21 GPIO17 GPIO22 GPIO3 GPIO17 GPIO21 GPIO21 GPIO3 GPIO17 GPIO22 GPIO3 GPIO17 GPIO21 GPIO21 GPIO17 GPIO22 GPIO31 GPIO17 GPIO21 GPIO21 GPIO21 GPIO21 GPIO21 GPIO21 GPIO21 GPIO21 GPIO21 GPIO22 GPIO31 GPIO21 GPIO21 GPIO22 GPIO31 GPIO21 GPIO22 GPIO31 GPIO21 GPIO22 GPIO31 GPIO21 GPIO22 GPIO31 GPIO22 GPIO31 GPIO22 GPIO31 GPIO22 GPIO32 GPIO31 GPIO22 GPIO31 GPIO22 GPIO32 GPIO32 GPIO32 GPIO22 GPIO32 GPIO32 GPIO22 GPIO32	3 4 5 3V3 1   GPIO2 3 GPIO2 5   GPIO4 7 GND 9   7 8 9 GPIO17 11   GPIO2 15 GPIO27 13   GPIO2 15 3V3 17   6, fire button 3V3 17   7, + 5VDC GPIO10 19   8, ground GPIO9 21   9, not connected GPIO11 23   GND 25 GND 25	3 4 5 3V3 1 2   GPIO2 3 4   GPIO3 5 6   GPIO4 7 8   GPIO7 8   GPIO27 11 12   GPIO27 13 14   GPIO27 13 14   GPIO22 15 16   3V3 17 18   GPIO10 19 20   gPIO9 21 22   GPIO11 23 24   GND 25 26

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**GPIO**