MAMEtopia

User Guide v1.0

Contents

About this project

This project was started when I decided I wanted to have a compact, neat and reliable MAME installation in my game cabinet, then finding there was little available to fulfil that need. The closest I could find was the xxxx-in-1 Game Box type setups which were expensive and limited in upgrade paths. I soon discovered I was not alone and realised I could both satisfy my need and help out some other like minded folk by making my own platform.

This has evolved to what you now hold in your grubby wee paws. The unit comprises the following features:

- A 90% self contained MAME machine
- On-Board joystick controllers
- Break-out PCB with power and user assignable inputs
- MONO/STEREO switchable audio from JAMMA edge and built in phonos
- 15khz video output suitable for all standard resolution JAMMA cabinets via Soft15khz
- Upgradable to latest CPU, more RAM, bigger Hard Drive, latest Motherboard
- Software infinitely upgradable

Disclaimer

So here's the deal; I can take no responsibility for improper use, damage caused by use, death caused by use or anything really. I'll help out where I can and can even supply parts but if you damage it, it's on your own head.

This product is also not intended for commercial use. Doing so is very much against the law and goes against the spirit in which this unit was intended. Any legal ramifications that arise from commercial use are the soul property of the perpetrator, i.e. not me!

I also cannot guarantee this unit will work as you expect in your cabinet since each cab is different though 99.9% of cabs out there should work with this unit just fine.

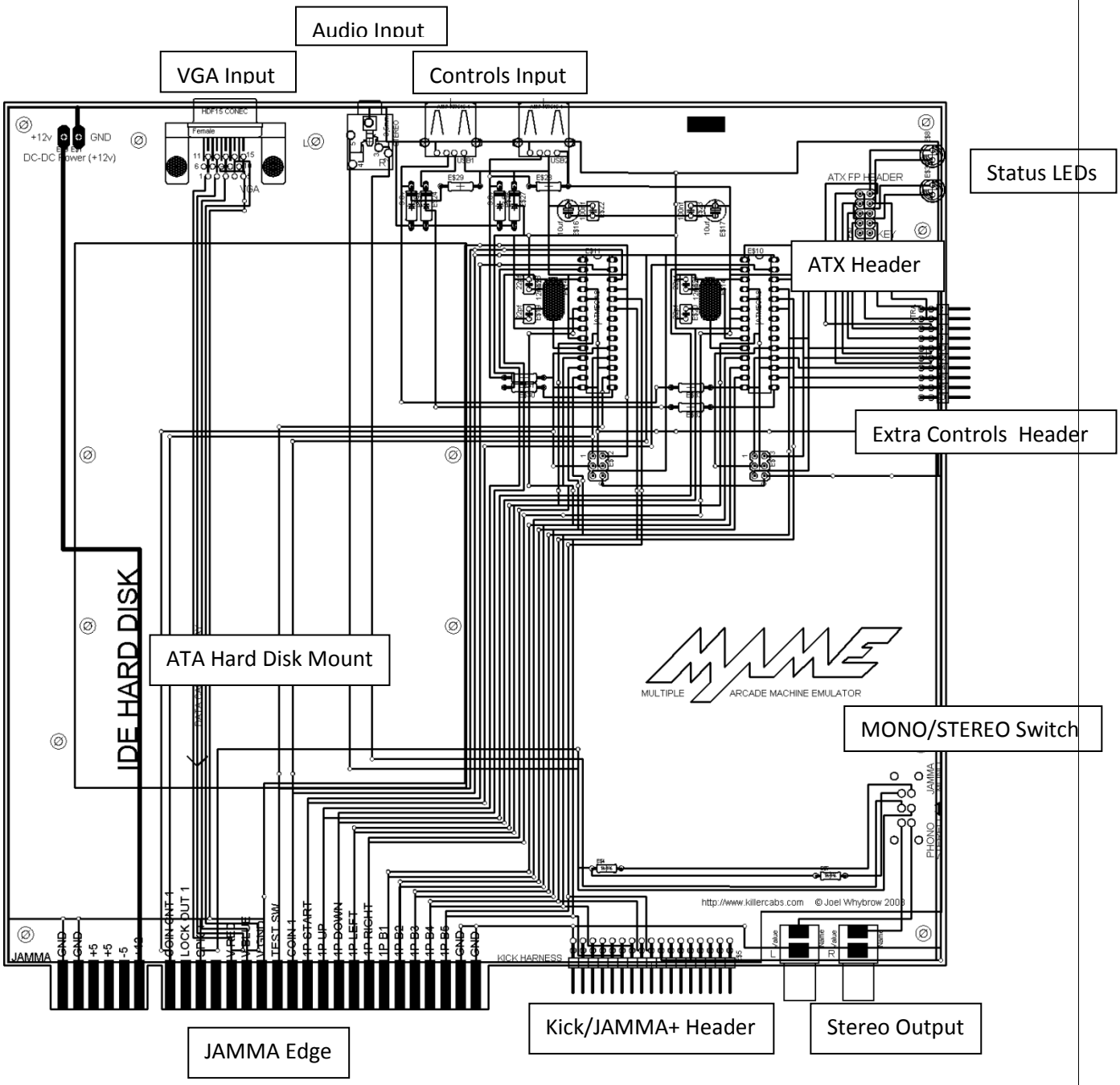
If the software fails, this is most likely a known issue (see page 10) and while irritating, there is little I can do to resolve it. The software used in the unit however is constantly updated and can be downloaded online for free.

Lastly, the software on the unit is provided FREE OF CHARGE. You have paid for the unit + PC + my time, nothing else.

Hardware

The hardware on this unit is broken down into three sections; the MAMEtopia PCB, the PC and the extra controls PCB.

The MAMEtopia PCB is outlined below and each port/connector described:



VGA Input

This connects to the VGA output socket on the PC motherboard. A standard VGA cable is supplied.

Audio Input

This connects to the Green audio output jack on the PC motherboard unless you are using an external amplifier in which case this would connect to the output of the external amplifier. The output of the PC motherboard would in this case be connected to the input of the external amplifier. A 3.5mm jack to jack lead is supplied.

Controls Input

These connect to the USB sockets on the PC motherboard.

Status LEDs

These indicate power status (green = on) and Hard Disk status (orange = accessing).

ATX Header

The unit is shipped with this lead attached and should not be removed. If you have a bare board and are attaching you own PC, make sure your motherboard does NOT have 5v connected on this header as the cable is not rated for the current it supplies.

Extra Controls Header

This header connects to the extra controls PCB and provides the user with two replicated status LEDs, a power switch, reset switch and five user assignable buttons for use in MAME.

MONO/STEREO Switch

This switches between the MONO output on the JAMMA edge connector and the STEREO phono outputs on the front of the unit.

STEREO Output

This connects to the stereo input on your game cabinet if one exists. Check your user manual for your cabinet to see what options you have here.

Kick/JAMMA+ Header

This header connects to buttons 4,5 and 6 on your control panel for both players. The layout is compatible with Capcom's CPS-2 and CPS-3 kick harnesses. Not supplied.

JAMMA Edge

This obviously connects to your JAMMA connector in your cabinet. Worthy of note is that the coin meter, tilt, test, service and coin outputs are all connected and preconfigured as per the JAMMA standard. Player buttons from 1 through 5 are also connected.

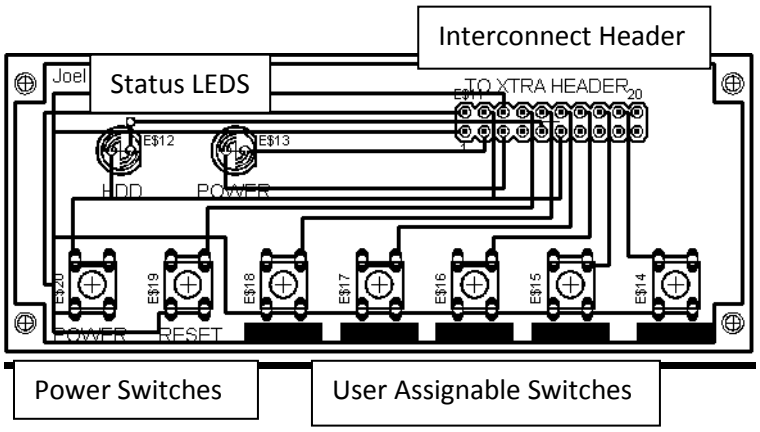
ATA Hard Disk Mount

Here is where you connect your half-height standard internal PC ATA hard disk. Note the orientation indicated on the MAMEtopia board and make sure you use non-conductive washers to avoid interference.

The PC

The board you receive will either be a ECS Geforce6100SM-M or a ECS MCP61SM-GM. An online manual and drivers for both models are included on the drivers CD provided with the unit.

The Extra Controls PCB



Status LEDs

These LEDs are identical to the status LEDs on the MAMEtopia board. They are placed on here for your convenience.

Interconnect Header

This connects to the Extra Controls header on the MAMEtopia board.

Power Switches

Use these to power the system on and off. To power off the system, close the front end then tap the power button and your unit will shut down safely. You can tap it at any point and the system will still shut down safely but your position and orientation in the frontend will not be saved for the next power on.

- **WARNING: ONLY USE RESET BUTTON IF ABSOLUTELY NESSECCARY!! DAMAGE TO YOUR HARD DISK CAN OCCUR!**

User Assignable Switches

These are controls you can use within MAME for the menu, on screen display, volume controls etc. You can set them up within the MAME menu. See page 9 for this.

Installation

- **WARNING: MAKE SURE YOUR GAME CABINET IS SWITCHED OFF BEFORE INSTALLING**

Your MAMEtopia unit will come with all connections in place unless you have purchased the bare board. To set up the unit in your cabinet, you will need to screw the stand-off feet to the inside of your machine, or if you have a rail, install as normal.

If you are using an external audio amplifier then you will need to attach the supplied 3.5mm jack to wire cable to the input on the MAMEtopia board and the output of the amplifier. Next attach the supplied 3.5mm jack to jack cable from the PC motherboard's green audio output to the input 3.5mm jack socket on the amplifier. You will then need to attach the amplifier to the side of your cabinet or on the floor of your cabinet. If possible, attach it in a service hatch as it has onboard volume, treble and bass controls. Finally attach the supplied molex power to jack cable to the power socket on the amplifier and a free hard disk power plug on your power supply.

Once you have the board in your cabinet, you will need to connect your chosen power supply (not supplied) of at least 250w. The power supply is best mounted in the same way as your MAMEtopia board if possible but if you have a standard PC power supply unit you will need to stand it on the floor of the cabinet.

- **WARNING: SOME CABINETS HAVE METAL FLOORS AND YOU WILL NEED TO PLACE A NON- CONDUCTIVE MAT BETWEEN THIS AND YOUR POWER SUPPLY TO AVOID DAMAGE TO HARDWARE!**

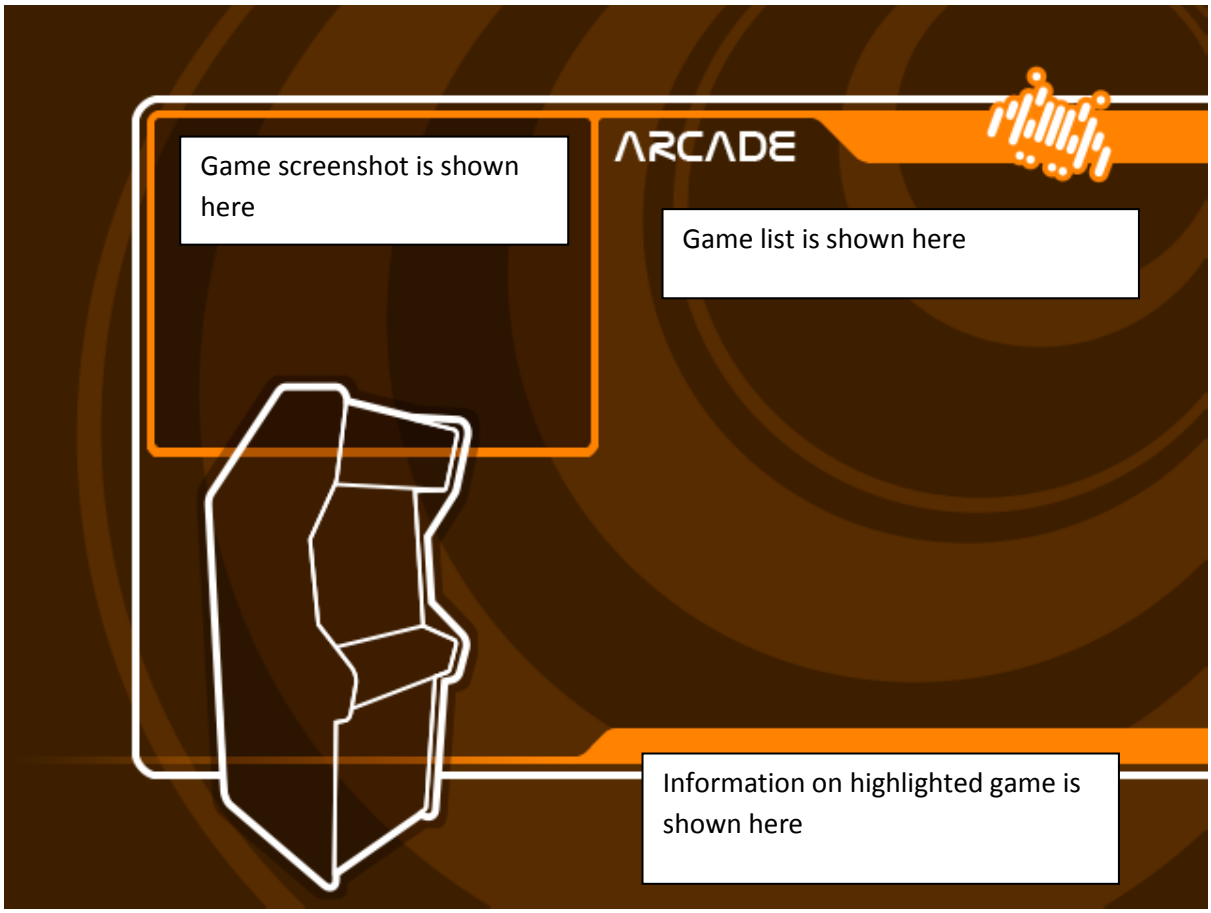
Once you have your ATX power plug and 4 pin "P4" connector attached you will need to attach your Extra Controls PCB. The best place for this is somewhere you can access with little effort like a coin door or service hatch. The PCB has stand-offs with sticker pads to make mounting easier though these can be detached and replaced with screws. Make sure you do not mount the PCB flush to any metallic surface as this will cause a short and can damage your MAMEtopia unit and PC motherboard.

Next attach your JAMMA connector and if your cabinet supports it, your Stereo cable.

Make sure all connectors are firmly in place and power on your cabinet, followed by your MAMEtopia unit. If all goes well you should see the PC BIOS screen and your MAMEtopia unit will boot into the frontend after about 30 seconds. The screen will remain blank in this time.

Controlling The Frontend

Once your MAMEtopia unit boots, you will be presented with MALA, the frontend for choosing your games. Here is an overview of MALA:



The controls for navigating MALA are as follows:

1P UP – Game up
1P Down - Game down
1P Left - Letter up
1P Right - Letter down
1P B1 - Page up
1P B2 - Page down
1P B3 - Menu
1P Start - Start game
Extra Control User Button 4 - Volume up
Extra Control User Button 5 - Volume down

Within Menu
1P UP - Move up
1P Down - Move down
1P Start - Choose/Select
1P B3 - Cancel/Exit Menu

While in MALA you can navigate around the MAME romset and launch any game directly. If you wish to choose a different emulator however, you can do so by entering the menu and selecting the desired emulator from the list. MAMEtopia comes with the current MAME romset (minus non-working/slow CHDs) and the Daphne laserdisc game emulator.

To select a filer for your roms, enter the menu and chose the filter option. This allows you to view only horizontal or vertical games, only parent roms or parent and clones etc.

MALA can also display on vertical monitors correctly. On the MAMEtopia units, MALA will enter vertical or horizontal mode depending on the last game played. For example, if you play street fighter and exit the game, you will be in horizontal mode. If you then choose Dodonpachi and exit the game, MALA will be in vertical mode. Note: to keep the position in the game list or or orientation after power off, make sure you exit MALA via the menu before turning off the system.

You can also adjust the volume in MALA to better match the volume in MAME by using the user assignable keys 4 and 5 on the Extra Controls PCB.

Controlling MAME

As with MALA, all controls in MAME are predefined, however you can change any that you wish via the MAME menu. The joystick and player buttons are as you might expect, button 1 is button 1 in the game etc.

The controls in MAME are as follows:

Extra Control User Button 1 - OSD (On Screen Display)
Extra Control User Button 2 - MAME Menu/Menu Cancel
Extra Control User Button 3 - Pause
Extra Control User Button 4 - Volume Up
Extra Control User Button 5 - Volume Down
1P Start + 2P Start - Exit game/Menu Cancel

Controls within MAME Menu
1P Up - Menu up
1P Down - Menu down
1P B1 - Menu Select
1P Start + 2P Start - Menu Cancel
Extra Control User Button 2 - MAME Menu/Menu Cancel

To set up your own user or other controls, use the MAME Menu button and navigate to *Input (General)* or *Input (This Game).* Chose the control you wish to change with the menu select button then press the button you wish to reassign it to.

Note: Some games do not support the volume control. This feature is emulated in MAME. For global volume control, use the OSD.

Known Bugs/Issues

MALA

Occasionally, MALA will crash on boot. In this event, tap the power button to shut the system down and then power it back on. This should be fixed in a future version of MALA.

MAME

Some games will not display properly on the screen. This is due to the refresh rate not being properly supported by Soft15khz. This should be fixed in a future version.

Occasionally, a game's sound will appear to skip slightly. This is due to MAME being quite power hungry in terms of the processor. Most games are catered for by the CPU but some are either not correctly emulated or just require too much horse power to run. Keep in mind MAME does not make use of 3D graphics acceleration as it tries to emulate everything fully in software. This way, when PCs are powerful enough to run those games they will be 100% accurate and will not require old hardware to run. If you have a game which is unplayable you might want to upgrade the PC's CPU.

Hardware

The USB cables supplied are NOT standard USB. Nor are the ports on the MAMEtopia board.

The audio volume may be too low even after adjusting the volume on your cabinet. In this case, you will need an external amplifier.

Most cabinet monitors will look too dim since PC RGB is not as strong as JAMMA RGB. You will most likely need to adjust the brightness/contrast on your cabinet.

A lot of games will not be properly fit to the screen. This is due to the games' native resolution being different. Real hardware exhibits this problem also and is unavoidable.