SIMULACRUMMED ARTIFISSION

BY RAFAEL LOZANO-HEMMER

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GENERAL IMPORTANT INFORMATION

This short section must be read for proper operation.

SIMULACRUMMED ARTIFFISSION (2024)

BY RAFAEL LOZANO-HEMMER

Technique

Ultra-stretch touch screen display, computer, AI avatars, AI translation, AI voice, speakers.

Description

"Simulacrummed Artifission" is an interactive display where a number of computer-generated avatars stand still and silent in suspended animation, — until the visitor activates one or several of them (by tapping on them in the small version of the work, or by pulling on a string in the large version). As they activate, each Avatar speaks an automated AI translation of James Joyce's novel "Finnegans Wake" in one of 15 languages including Urdu, Spanish, Mandarin, French, Tagalog, German, Arabic, and Hebrew. As all AI translations are in sync to the original text in English, which can be read in subtitles, the result is an uncanny representation of largely nonsensical spoken words but expressed with the same rhythm and intonation.

It took James Joyce 17 years to write his complex masterpiece, which includes many neologisms and obscure references, resulting in a nearly untranslatable text. When asked how long it might take a person to read the book he said he wanted a reader to dedicate the rest of their life to begin to understand it. This project absurdly applies AI's capacity to feign swift authoritative results with aplomb and gravitas, while keeping the flow of language even in translation.

Operation

Please refer to Appendix I - Installation for detailed system information and wiring diagram.

1. Connect the display to electrical power with the supplied power cables.
2. Flip the switch on the powerline running to the display “up” to supply power and turn it on.
3. Flip the switch on the powerline running to the display “down” to cut power and turn it off.

General Artwork Behaviours

The screen runs 4 videos of people - avatars - speaking synchronously. The avatars have two possible states, “talking” and “waiting”. When in their “talking” state their mouths move and audio is heard at the set volume level. When in their “waiting” state, they move their body but not their mouths and they don't say anything. A marquee along the bottom is displaying the text in sync with what the avatars are saying. When no interaction with the display is detected for 30 minutes a randomly selected avatar will be swapped with a different one, while preserving the state of the replaced avatar.

Interacting with the Artwork

A visitor can single tap on an avatar shown on screen and would toggle between its “waiting” and “talking” states. A double tap would swap an avatar for a random different one and the new avatar will be displayed in the same state as the previous one. Horizontal scrolling on the marquee changes the global volume, a volume of 0 forces all avatars into a waiting state.

Maintenance

Please do not clean the display surfaces with Windex or soap. Use a lint-free cloth and LCD screen liquid cleaner, such as Kensington Screen Guardian found in most computer stores. Dust the wood carefully using a microfiber cloth.

We recommend cleaning the piece at least every two months.

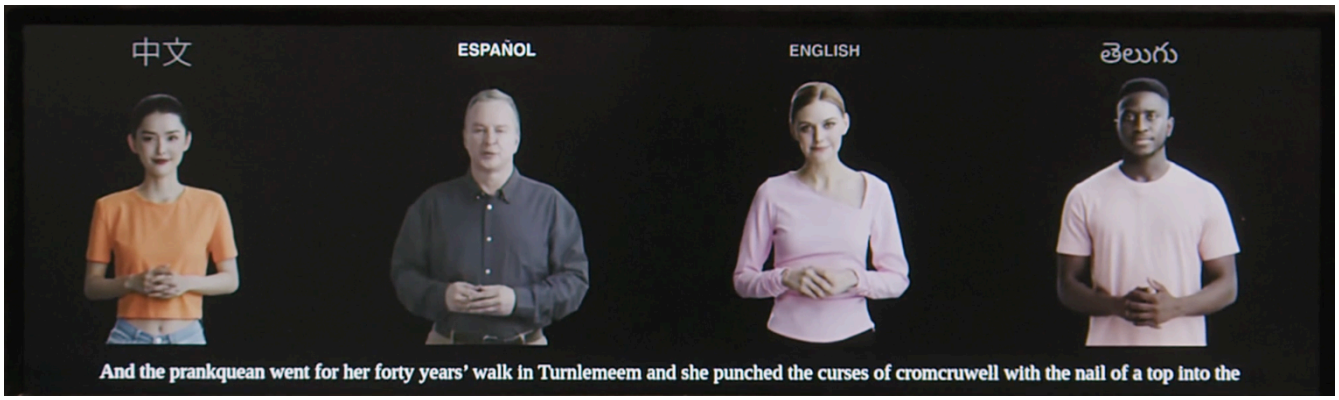
Placement Instructions

The vertical center of the artwork should be hung at 150 cm (59 inches) from the ground.

DETAILED TECHNICAL INFORMATION

Normal Software Operation

The artwork is set to automatically start when the piece is powered on. For most users the following actions are all that will be necessary. The piece is programmed to run on a Raspberry Pi running Debian 12.5 (bookworm) - Kernel: Linux 6.6.20+rpt-rpi-2712. On startup the piece should look similar to the image below.



- Tapping an individual avatar once: Puts it into its “waiting” state, muting it and swapping in a different looped video that doesn't speak.

- Tapping an individual avatar twice: Swaps an avatar for a random different one. The new avatar will assume the same state either “talking” or “waiting” as the avatar was before.

- Horizontal scrolling on the marquee: This changes the global volume. A volume of 0 forces all avatars to their “waiting” state.

Manual Software Calibration

Using the artwork's keyboard, press the "**d**" key to activate Debug Mode, which has a control panel, and data for each avatar (language, video name, and current timecode). The control panel saves the values set inside of it automatically when it is closed, when the keyboard's "**d**" key is pressed again.

Setting	Description
masterVolume	A volume multiplier for the whole project. Setting this to zero will **not** force the avatars into a "wait" state as a horizontal swipe on the marquee can do.
backgroundColor	Sets the hexadecimal value for the colour of the background.
useScreensaver	Allows for a screensaver to be activated after a certain length without interaction - touch detected on the screen - (shows the title of the piece slowly bouncing around the screen).
screensaverTimeoutInMinutes	Number of minutes of inactivity before the screensaver is activated.
showClickIndicators	Toggles showing 'click indicators,' a debug feature which is colourful circles that appear on the screen wherever was clicked, then fade out. **Must be unchecked for typical use.**

Preliminary Troubleshooting Steps

No video can be seen on screen

Ensure that the piece is properly powered on. Restart the piece by flipping the rocker switch on the power cable and allowing the piece to fully turn off. Then restart the piece by flipping the switch the other way.

If it seems like the piece has started up, you can see text and a marquee but no avatars then ensure video files are in the right place (Project Root -> src -> media -> videos. This folder should have many videos there and then another folder of videos called pauseVideos).

If this does not fix the problem consult the Wiring Diagram and inspect all connections within the artwork using that as a reference.

If there is no sound

Ensure that the volume is not set to zero. If that is not the case gently remove the piece from the wall and using the wiring diagram check all internal wiring, particularly pay attention to the following:

- make sure amp has power and its wires are still connected to the speakers;
- check the power lights on the Raspberry Pi. If off, check that the USB C supplying power to it is still in the power jack and its wires are still connected to the power hubs (Wago connectors).

Touching the screen doesn't trigger any reaction

Restart the piece. If that does not work gently remove the piece from the wall and using the wiring diagram check all internal wiring making sure things are in place as they should be. Then check that the USB cable going from the screen is still connected to the Raspberry Pi. Unplug and replug. If touch connection isn't immediately re-established, shut down. Before turning on, make sure that the USB cable is still connected, then power on.

Remote Access to Artwork's Microcontroller

There is a software installed on the microcontroller running this artwork that allows the studio to connect remotely to the artwork. This feature is helpful when you require assistance from the studio, as we can remotely connect to it, do a quick inspection, and do a debugging session of your components, if needed. In order to enable this feature, the microcontroller has to be connected to the internet at all times.

Troubleshooting Assistance

Prior to contacting the Antimodular Studio with a problem about your artwork, please ensure that you went through the preliminary troubleshooting steps outlined in the previous section.

The troubleshooting process will vary depending on the problem. In order to make the process easier, it is recommended that you collect and send the following information to the studio:

- Date and time when the problem first happened;
- Description of the problem;
- Actions taken so far and conclusions;
- Detailed photographs (or videos) displaying the problem;
- Detailed photographs (or videos) of the suspected faulty component;
- Detailed photographs (or videos) of the whole artwork and its surroundings;
- Personnel involved.

Support (Contact Us)

If you would like support for the piece, please feel free to call Lozano-Hemmer's studio in Canada:

Antimodular Research
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Montréal, Québec, Canada
H2J 2L1
Tel 1-514-597-0917
info@antimodular.com
www.antimodular.com

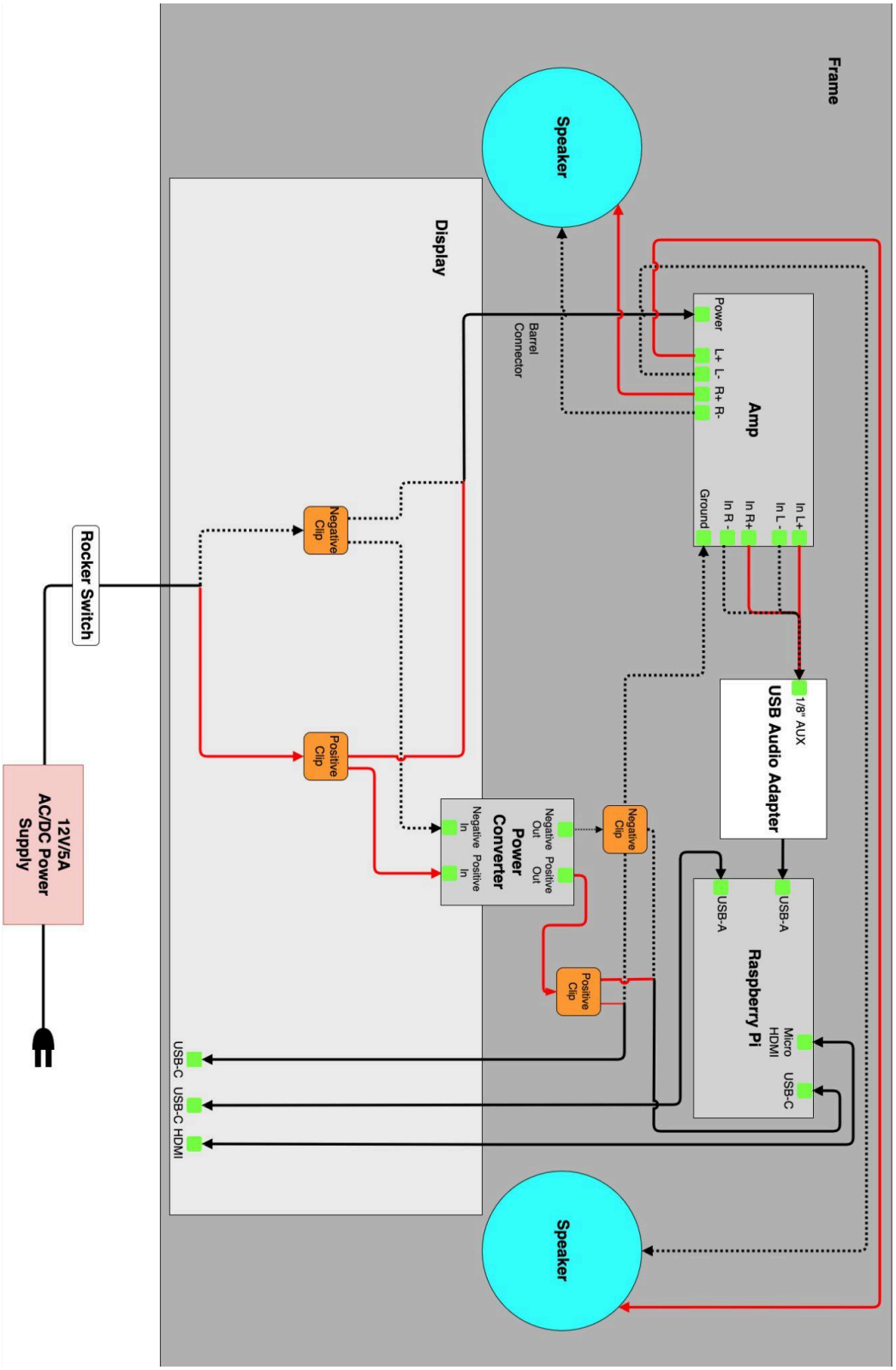
APPENDIX I - INSTALLATION

Description of Components

This artwork requires the following components:

Component	Description
Raspberry Pi	This microcontroller (Raspberry Pi 5), runs the software for the piece.
Video signal cable	Is used to connect the Pi to the display. Usually it is an HDMI cable.
Display	Touch display
Speaker(s)	Used to play the pieces audio
Amplifier	Used to amplify the audio signal from the Raspberry Pi to the speakers.
Aux to USB Adapter	If using a Raspberry Pi 5 this is necessary to connect the amplifier to the Pi.
Power Converter	Converts 12VDC current to 5VDC.
Custom Frame	Surrounds the display and keeps the components tightly in place.

Wiring Diagrams and Connections

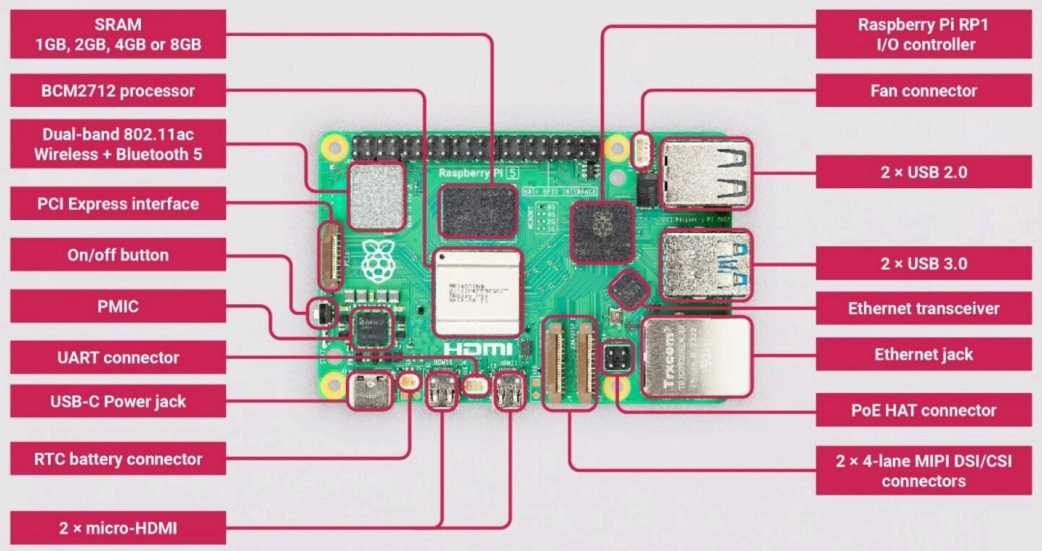


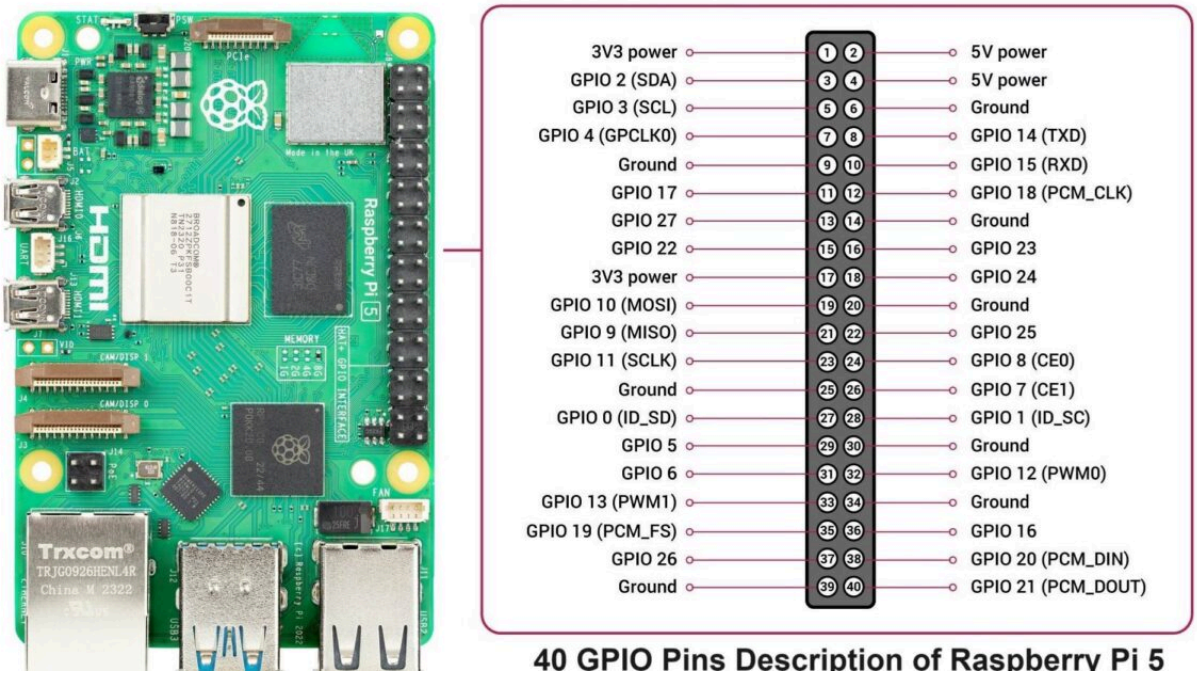
APPENDIX II - TECHNICAL DATASHEETS

Raspberry Pi

At the time writing this manual, the Raspberry Pi 5 model was used: future Pi models might be used to replace said unit.

Specification	Details
Manufacturer	Raspberry Pi
Model Number	5





40 GPIO Pins Description of Raspberry Pi 5

Display

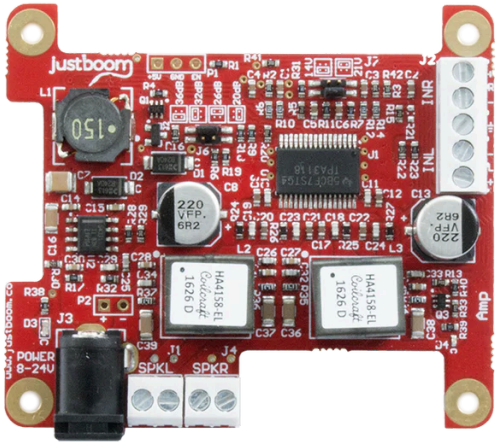
Specification	Details
Manufacturer	Asus
Model Number	PA147CDV
Dimensions	35.7 W x 12.8 L x 2.1 H cm
Weight	2.3kg
Panel Type	IPS
Viewing Angle Horizontal	178
Vertical Angle Vertical	178
Pixel Pitch	0.179 mm
Resolution	1920 x 550
Brightness	400 cd
Contrast Ration	1200:1
Refresh Rate	60hz
Touch Screen	Capactive 10 point multi touch
Ports	USB-C (2) HDMI (v1.4)
Power Consumption	Power On (Typical): < 5.05W Power Saving Mode : < 0.5W 5V, up to 2.0A

Speaker

2 units are used in the assembly of the artwork.

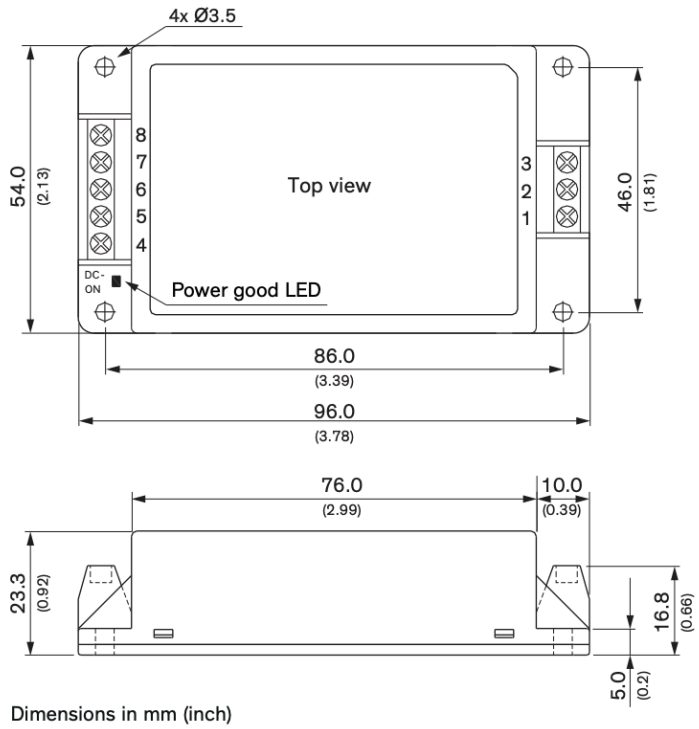
Specification	Details
Manufacturer	Dayton
Model Number	RS100-9
Impedance	8
Diameter	10cm
Power Handling	30W
Frequency Response	87-20000 Hz
Sensitivity	85.6 db

Amplifier



Specification	Details
Manufacturer	Justboom
Model Number	JustBoom Amp
Audio Quality	192kHz/ 24 bit
Inline Inputs	L+, L-, R+, R- and a ground connection.
Power Jack	2.1mm DC Input Jack
Power Requirements	8-24V power supply.

Power Converter



Dimensions in mm (inch)
Tolerances: x.x ±0.5 (±0.02)

Pinout	
Pin*	**Function**
1	Remote
2	–Vin (GND)
3	+Vin (Vcc)
4	NC
5	–Vout
6	NC
7	+Vout
8	NC

NC: Not connected
* Wires 1.5 mm^2 max.

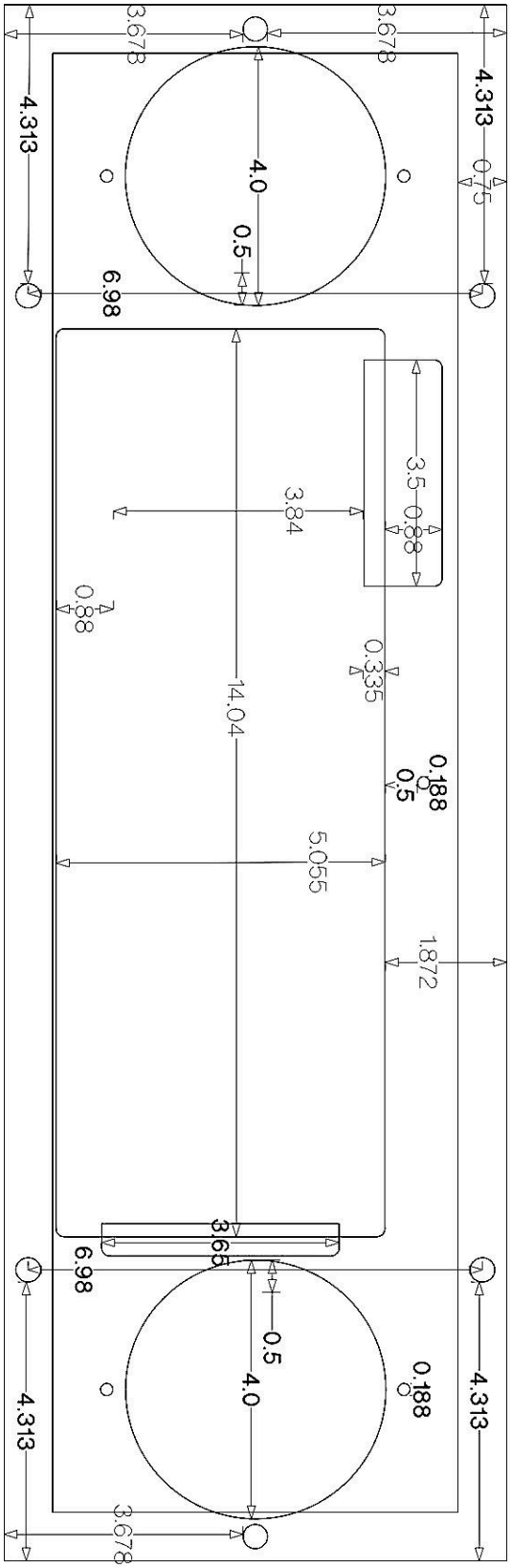
Terminal screw locked torque:
0.5 Nm max.

Specification	Details
Manufacturer	Traco Power
Model Number	TMDC 20-2411
Input Voltage Range	9-36 VDC
Output Voltage	5.1 VDC
Output Current Max	4000 mA

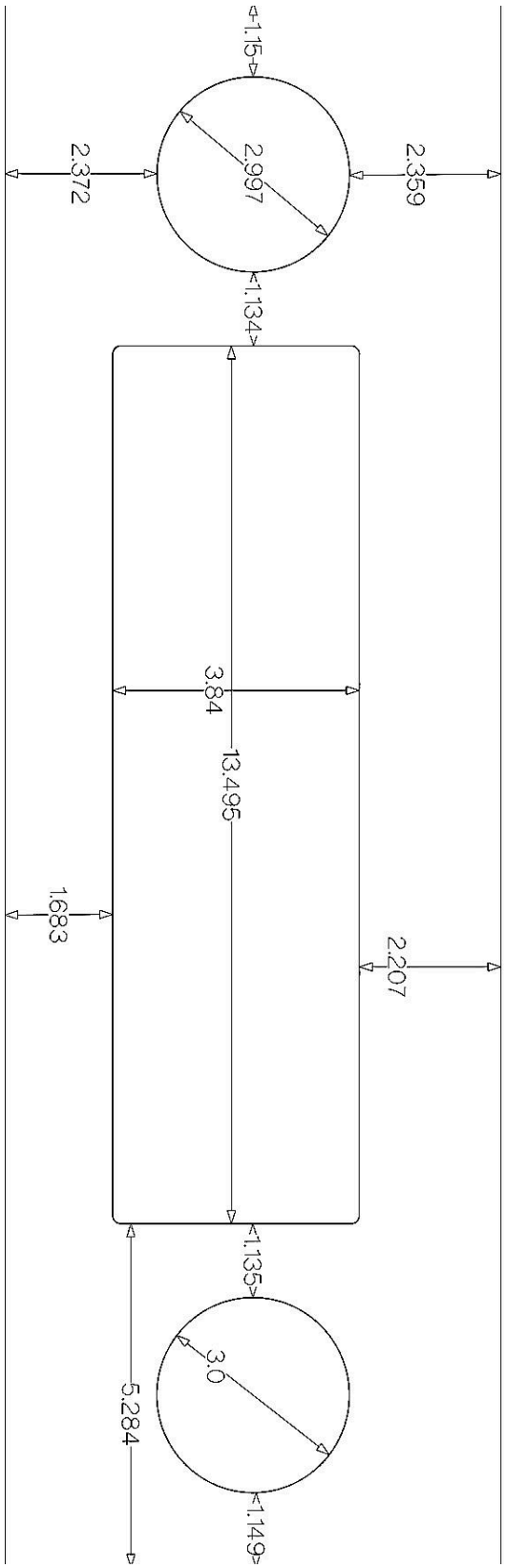
Wooden Frame

This custom built wood frame was built using North American Walnut.

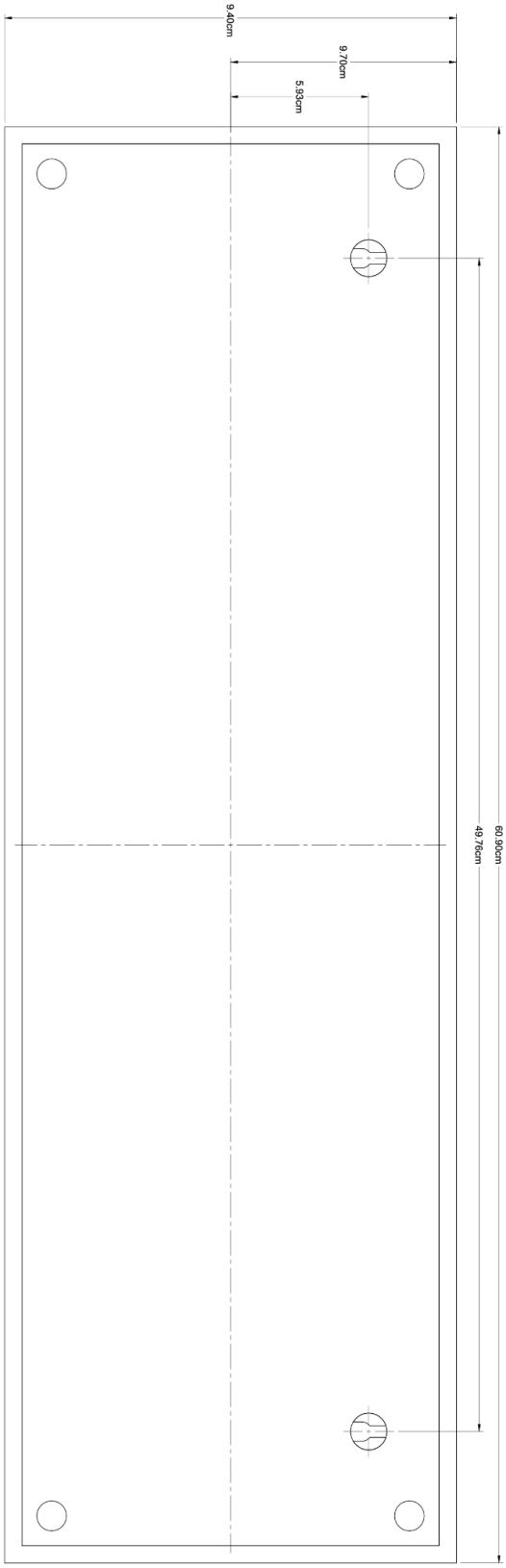
Specification	Details
Color and Finish	Stained with a coat of Osmo #3590 (Black) then two coats of Osmo Polyx oil #3034 (clear satin)
Dimensions (WxHxD)	60.3 x 19.3 x 8.3 cm (23 ¼ x 7 ½ x 3 ¼ inches)



Inside measurements



Front measurements



Back measurements

APPENDIX III - REPAIRS AND OTHER MANIPULATIONS

Minor Scratches

For a scratch that does not penetrate the unstained woo apply a few drops of OSMO #3043 to a cloth and buff it into the wood. The key mistake to avoid is applying too much; really, just a few drops on the cloth are enough. Then, use another dry cloth to wipe off the excess and blend everything for a uniform finish.