

Index

A

AC-DC power supply, 251

Adafruit's Retrogame, 232

Aluminum standoffs, 224

Arcade

artwork

layers, 344–346

rear panel, 347, 348

USB slot, 347

body assembly

add bottom/rear I/O

panel, 298, 300

add marquee panel, 300

bottom cross brace set, 294

Glue top panel, 301, 302

Monitor bezel, 295

reinforcing cabinet, 303–305

side panel, 296, 297

control panel assembly

glue together, 318

install joysticks, 319

wiring, 319–322, 324

cost breakdown, 349

desktop

cut layout, 293

design, 289

DPST, 290, 291

pine strips, 294

plywood sheet, 293

SD card access, 289

wood panel, 291

electrical wiring, AC

close-up outlet, 333, 334

harness, 324, 325, 329, 330

IEC appliance cord, 326

IEC female socket, 327

IEC socket, 332

tools, 328, 332

electrical wiring, Audio/Video

Mount Raspberry Pi, 344

speaker bracket, 341, 343

electrical wiring, DC

barrier strip, 336–338

flow chart, 338, 339

power block, 340

wired, 335

Arcade building

cabinet assembly (*see* Wood

cabinet assembly)

design review

cabinet design, 179

checklist, 176, 177

cut parts, 180, 181

laser cutter, 179

INDEX

Arcade building (*cont.*)

- mini arcade designs, 178, 179
- mini MVS drawing proof, 177
- Pololu.com, 180

monitor, 143, 144

painting

- Floetrol, 204
- materials, 201
- primer coat, 203
- spray paint, 205
- sunlight, 205
- wood putty, 202

pre-planning design

- control panel, 147
- details, 145
- LCD bezel, 147
- LCD task, 146

translate design ideas

(*see* Design Ideas into CAD)

wood selection

- Birch plywood, 140, 141
- underlayment
plywood, 141, 142

Arcade cabinet, features, 251

Arcade electronics and
switches, 245

Arcade hardware

- ball-top joysticks, 150, 151
- bat-top joysticks, 150, 152
- control panel, 153
- finger joints, 157, 158
- laser cutter, 156, 159
- LCD cross bracket, 158, 159
- monitor viewing angle, 154, 155

profiles, 153, 154

Sanwa buttons, 148

Suzo-Happ buttons, 149

Arcade input wiring

diagram, 236

Arcade, monitor

body design, 286, 288

LCD assembly, 279, 280

mounting

- attach brackets, 313, 314
- bezel layer, 311, 312
- bracket pieces, 310
- insert monitor/top cross
braces, 315
- method, 284-286

remove plastic shells, 280

remove stand hardware, 281

selection, 278, 279

TFT assembly, 282, 283

AutoCAD Fusion 360, 137

B

3 B+ model

Bluetooth, 29

Ethernet port, 28, 29

fans, 30

GPIO pins, 28

HDMI ports, 29

heatsinks, 30

MicroSD card slot, 28

MicroUSB port, 29

USB ports, 28

Wi-Fi, 29

- Battery
 - mini arcade, 267
 - power regulation shelf, 265
 - 3D printed, 266
- Buck converter, 100, 123, 247

C

- CNC machine, 95, 136
- Color TV-Game, 16
- Computer-aided
 - drafting (CAD)
 - calipers, 139
 - CNC machine, 136
 - Inkscape, 137
 - laser cutters, 136, 138
 - 123D, 138
 - SolidWorks, 137
- Configuration Editor
 - ES themes, 66–68
 - file manager, 68, 69
 - Libreto API, 62
 - Netplay, 70, 71
 - network IP, 78
 - overlays, 62
 - installation, 63, 64
 - Nintendo Game Boy, 63
 - RetroPie Setup menu
 - (*see* RetroPie Setup)
 - Runcommand Launch menu,
 - 76, 77
 - scan lines, 65
 - shaders, 65, 66
 - splash screen, 78–80

- Control panel
 - assembled, artwork, 229
 - assembled, no artwork, 229
 - binding posts, 228
 - generic keyboard encoder, 230
 - joystick, bottom view, 227
 - lock bracket, 237
 - thumb screw, 238
 - wired, PCB, 231
 - wired, USB, 231
- Cordless drill battery pack, 264
- Custom controller
 - front view, 120
 - Retro_Emulation, 118

D

- DC-DC step-down converter, 114,
 - 246, 247
- DC pigtail, 250
- Design ideas into CAD
 - control panel
 - acrylic top, 173
 - binding posts, 173, 174
 - flat head screws, 174, 175
 - locking bar
 - mechanism, 170, 171
 - locking bracket, 170
 - rubber band, 172
 - washers and nut, 175, 176
 - joystick mounting
 - CAD drawing, 161
 - calipers, 160
 - LCD mounting

INDEX

Design ideas into CAD (*cont.*)
 acrylic bezel layer, 169
 front view, 169
 OEM TFT panel, 166
 TFT mount layer 1, 166
 TFT mount layer 2, 167
 TFT mount layer 3, 168
 TFT mount layer, cross
 section, 168
2D to 3D
 2D mounting, Pi, 164
 3D mounting, RPi, 164, 165
 holes dimensions, 162
 laser cutter, 165
 mechanical drawing, 163
 mounting holes, 162
DOSBox emulator, 6
Double Pole Single Throw (DPST)
 switch, 290

E

Electronics
 power connections, 249
 wired without cabinet, 248
EmulationStation game
 carousel, 58, 61
Emulator, 19
Ethernet access port, 112

F

Foundation lists, 94
Function buttons

 in cabinet, 242
 power connection, 244
 under marquee, 241
 wired, 242, 243

G

GPIO cheat sheet, 128, 234
Ground loop
 isolator
 audio amplifier, 258
 PCB/schematic, 258
 path, 257

H

HDMI/audio cable connections, 256
HDMI port, 29

I, J

Inkscape, 137, 138

K

Keyboard-joystick, 270
Key-stick, 271-274

L

LCD mount installation
 button panel, 214
 cover, 216
 front view, 216
 inside view, 215

- H bracket, 213
- H panel, 211
- nylon spacers, 212
- panel bracket, 213
- PCB, 211
- PCB to TFT, 212
- retaining brackets, 210
- ribbon cable, 214
- TFT brackets, 210

LCD mounts

- audio amp, 219
- components, 217
- driver boards, 250
- PCB connections, 218
- speaker wiring, 226

Leaving a game

- QUIT EMULATIONSTATION, 87
- RESTART
 - EMULATIONSTATION, 86
- RESTART SYSTEM, 87
- save game, 85, 86
- SHUTDOWN SYSTEM, 87

LED matrix, 263

LEDs to PCB, 272

LED strip, 255

M

Marquee Button

- Panel, 316, 317

Monitor mounting

- method, 285, 286

Multiple Arcade Machine

- Emulator (MAME), 226

N

Neo Pixel LEDs

- glow from interior, 268
- inside arcade, 268
- jewel, 269
- mounting below marquee, 269

NES case, lids open, 108

Nostalgia-driven impulse, 103

O

One-inch speaker mount

- method, 221, 222

P, Q

PCB headers, 274

Plain black cases, 90

Power Block Arcade, 248

Pull-up resistor, 233

R

Raspberry Pi

- models, 26
- mounted, 240
- riser plate, 239
- side, before mounting, 239

Raspberry Pi case

- aluminum-molded,
 - topside, 95
- aluminum-molded,
 - underside, 96
- disassembled official, 93

INDEX

- Raspberry Pi case (*cont.*)
 - official, 92
 - partially assembled official, 93
- Read-only memory (ROM)
 - chip, 20, 21
- Rear panel, 261
- RetroFlag Genesis case, 103
 - halves, 108
 - lids open, 108
 - Pi 3 B+, 109
 - Pi 3, interior screw
 - location, 110
 - Pi turned upside down, 110
 - SD card slot, 113
 - USB hub connection, 111
- RetroFlag NES case, 103
 - bottom, 106
 - halves, 104
 - lid open, 105
 - Pi3 installed, 105
 - SD card port, 106
- Retrogame
 - requirements, 31–33
 - one-fits-most sample
 - configuration, 233
- RetroPie
 - audio, 59, 60
 - Bluetooth, 61
 - defined, 57
 - EmulationStation game
 - carousel, 58
- RetroPie installation
 - download, 34
 - Etcher, 35, 37
 - gamepad, 38
 - HOTKEY ENABLE, 38, 39
 - keyboard layout, 44
 - localisation options, 41, 42
 - main menu, 40
 - QWERTY layout, 44
 - RASPI-CONFIG, 41
 - Tab key, 45
 - timezone, 43
 - unzip, 35
- RetroPie SD Card backup
 - Mac, 81, 82
 - on PC, 82
- RetroPie Setup
 - configuration tools, 75
 - installation, 71
 - manage packages
 - core, 73
 - drivers, 74, 75
 - menu item, 72
 - optional, 73, 74
 - menu, 71
 - reboot, 76
 - uninstall, 76
- Rogue on RetroPie
 - network transfer
 - final steps, 56
 - interfacing options, 51
 - Mac, 52–55
 - RASPI-CONFIG, 51
 - SHOW IP, 52
 - SSH, 51
 - window, 55
 - USB memory stick, 49, 50

Rom installation
 DOSBox on RetroPie, 46, 47
 Rogue on RetroPie (*see* Rogue
 on RetroPie)
 Ryan's custom Power
 Block Arcade, 245
 Ryobi battery, 264

S

Sanwa-JFL joystick, 273
 SCPH-1001 model
 Playstation, 115
 building, 114
 cheat sheet mounting, 129
 DC-DC step-down board, 126
 eBay special step-down
 converter, 124
 GPIO cheat sheet, 128
 heat shrink to wires, 125
 inside view, 116
 mains voltage, 123
 mounting custom
 controller, 127
 plug, 124
 power plug connection, 130
 power supply board, 117
 power supply to step-down
 converter, 132
 PS1 power supply, 122
 PS1 shell, 121, 133
 rear cutout, 121
 SD card access, 132
 upside down mounted, 130

Skyscraper
 installation, 83
 list of games, 84, 85
 utility, 84
 Sleeve case, 97
 Speakers
 amp subassembly, 223
 cabinet size, 220
 LCD and wiring, 226
 subassembly with brackets, 225
 wires, 224
 Storage
 internal storage, 259
 rear storage, 260
 Suzo-Happ, 148–152
 Switches and buttons, 240, 316

T

3D printed cases, 97
 Han Solo in Carbonite, 102
 Top access panel, 262, 268
 Traditional tools, 135

U

UL listed power supply record, 253
 Underwriters Laboratories (UL), 252
 USB extensions, 119, 324

V

VEA mount, 101
 VESA bracket, 98, 99
 Video games, history

INDEX

Video games, history (*cont.*)

- Color TV-Game, 16
- Computer Space, 14
- Magnavox Odyssey, 15
- Nintendo Entertainment System, 16, 17
- Pong, 16
- Spacewar, 11–13
- Tennis for two, 8–11

W, X, Y, Z

- Win32DiskImager, 82
- Wizardry, 2, 4, 5, 7
- Wood cabinet assembly
 - access port, 197
 - bottom panel, 190
 - bottom rear panel, 194

- clamps, 194, 195
- control panel, 192, 198–200
- countersink holes, 184, 185
- cross braces, 185, 186
- horizontal upper I/O panel, 193
- inside view, 197
- I/O panel, 189
- LCD bezel, 186–188
- LCD button panel, 183
- LCD control panel, 182
- marquee panel, 192
- side panel, 189
- side view, 196
- storage rack, 200
- tools, 181
- top panel, 191
- top-rear access, 188