Schematic: ShaRPiKeebo V2.0

Reset Circuit
+5V
R102 10k
SW102 reset_32u4
RESETA
GND

ATMEGA32U MODULE
Crystal 16 MHZ
Y101 16 Mhz
XTAL2 XTAL1
GND
C106 1uF
UCAP
GND

ISP Programming
J109 ISP-Prog
1 2 3 4 5 6
MISOA SCKA RESETA MOSIA
GND +5V

PCB MOUTING HOLES
H101 MountingHole
H102 MountingHole
H103 MountingHole
H104 MountingHole
H105 MountingHole

RPI ZERO THREADS
RPM3 H105
RPM2 H106
RPM1 H107

2nd JOYSTICK

But1 SW104 +3.3V R107 10k GND
R108 1k
But3 SW103 R105 10k +3.3V
R106 1k BUT1
But2 SW101 +3.3V R101 10k GND
R104 1k BUT3
But4 SW106 +3.3V R109 10k GND
R110 1k BUT2
But5 SW107 +3.3V R113 10k GND
R114 1k BUT4
BUT5

RAK CHIP MODULE & PROGRAMMING
J101 RakProg2
1 BOOTR
2 RESETR
3 SWDIO
4 SWCLK
5 +3.3V
6 GND
C103 100nF GND
R103 10k +3.3V
RESETR
SWDIO / SWCLK
RST 22
VCC 24
C104 100nF +3.3V C105 10uF GND
GND 28
BOOT0 21
SW105 BOOT

PB5 PB12
TX1 RX1
PB3/ADC1 PB4/ADC2 PA15/ADC3 PA10/ADC4 PA5/ADC5
UART1_RX/PB7 UART1_TX/PB6 SWCLK/PA14 SWDIO/PA13
UART2_RX/PA3 UART2_TX/PA2 MISO/PA6 MOSI/PA7 SS/PA4 SCK/PA5
PA0 PA8 PA1 PA9
SDA/PA11 SCL/PA12 RF

PROGRak J102
R111 R112 22R TXD RXD

VOLTAGE HEADERS
J104 BATCNX
MOSI BAT+ BAT-
GND
J106 3Vsource
+3.3V +3.3V GND
J112 GPIO
1_17 I27 I19 I29
J113 SPI_P
MOSI MISO SCK I5
J108 uart TXD RXD SDA SCL
RASPBERRY GPIO
5volts +5V

RASPBERRY Decoupling Capacitors
10uF C107 0.1uF C108 0.1uF C109 0.1uF C110
+5V GND

Sharp PWR 3V: R3 0R / R2 NC
EXTMODE RPI 3V: R1 0R / R4 NC / R116 NC
EXTMODE RPI 5V: R1 NC / R4 0R / R116 NC
EXTMODE TO GND: R1 NC R4 NC / R116 0R

KB USB TO RPI USB
J107 usb32u2rpi
GND D- D+ +5V

BATT MODULE CHARGER
BATCON I103
1 BAT+ 2 BAT- GND

SHARP DISPLAY Voltage Adaptations
U102 Charger2A
OUT5v BAT GND BAT+ VIN VBUS5v
J105 OnOFF Sw
GND +5V
DISPON C111 100nF GND
EXTMODE R116 0R
EXTMODE R4 NC none RPI MODE +5V
EXTMODE R1 NC RPI MODE +3.3V
RPI MODE (High) External COM signal input
INSTALL R1 – 0R
No RPI MODE (Low) Do not install R1 Install R116 – 0R
COM signal serial input No RPI NC

ATMEGA 32U4 USB KEYBOARD MODULE
U103 ATmega32U4-MU
UCAP 6 D- 3 D+ 4 VBUS 7 AREF 42 XTAL2 16 XTAL1 17 RESET 13
UGND 15 GND
UVCC 2 VCC 14 AVCC 24 +5V
PF0 PF1 PF4 PF5 PF6 PF7
PD0 PD1 PD2 PD3 PD4 PD5 PD6 PD7
PC6 PC7 PB7 PB6 PB5 PB4 PB3 PB2 PB1 PB0
MISO MOSI SCKA
COL ROW labels: COL0–COL11, ROW0–ROW4
HWB/PE2 R118 10k GND

RPI_Connector–ML_RPI_GPIO
U104 DisplaySharp
J110 27/sharp:Raspberry_Pi_Zero_FLIPPED
3.3V SDA SCL GPIO4_GCLK GPIO17 GPIO27 GPIO22 3.3V GPIO10_SPI_MOSI GPIO9_SPI_MISO GPIO11_SPI_CLK GND ID_SD GPIO5 GPIO6 GPIO13 GPIO19 GPIO26 GND
5V 5V GND GPIO14_TXD0 GPIO15_RXD0 GPIO18 GND GPIO23 GPIO24 GND GPIO25 GPIO8_SPI_CE0_N GPIO7_SPI_CE1_N ID_SC GPIO12 GND GPIO16 GPIO20 GPIO21
RESETR I19 I29 I5 SCK MISO MOSI VIOLED DIOOW
D+ D-
EXTCOMIN DISPON CS RXD TXD +5V GND
BUT1 BUT2 BUT3 BUT4 BUT5

Sharp Memory Display
C112 100nF +5V R2 0R
C113 1uF +3.3V R3 NC
J110 Sharp Memory Display
SCK 1 MOSI 2 CS 3 DISPON 4 EXTMODE 5 DISPON_OFF VDDA VDD EXTCOMIN GNDA GND
EXTMODE DISPON EXTCOMIN
D101 VIOLED 330R R123 GND

KEYBOARD USB
U104 USB
S1 SHIELD GND A1
SBU2 B8 SBU1 A8
TX2+ B2 TX2- B3
RX2+ A11 RX2- A10
TX1+ A2 TX1- A3
RX1+ B11 RX1- B10
D+ B6 D+ A6
D- B7 D- A7
CC2 B5 CC1 A5
VBUS A4
D+ R119 22r D- R120 22r
R121 5.1k R122 5.1k
GND VBUS5v
J111 USBPOWER

Connectors:

J2 TP_C1 — 6 COL5, 5 COL4, 4 COL3, 3 COL2, 2 COL1, 1 COL0

J1 TP_R — 5 ROW4, 4 ROW3, 3 ROW2, 2 ROW1, 1 ROW0

J3 TP_C2 — 6 COL11, 5 COL10, 4 COL9, 3 COL8, 2 COL7, 1 COL6

Row labels: ROW0, ROW1, ROW2, ROW3, ROW4

Column labels: COL0, COL1, COL2, COL3, COL4, COL5, COL6, COL7, COL8, COL9, COL10, COL11

Key / Diode matrix (all diodes 1N4148):

COL0: Ky201 "1" (D201), Ky202 Q (D202), Ky203 A (D203), Ky204 Tab (D204), Ky205 CTRL (D205)
COL1: Ky206 "2" (D206), Ky207 W (D207), Ky208 S (D208), Ky209 Z (D209), Ky210 LShift (D210)
COL2: Ky211 "3" (D211), Ky212 E (D212), Ky213 D (D213), Ky214 X (D214), Ky215 ALT (D215)
COL3: Ky216 "4"/Ky217 (D216), Ky218 R (D217), Ky219 F (D218), Ky220 C (D219), Ky216 Ky221 Ky222 SPC SPC SPC (D220)
COL4: Ky223 "5" (D221), Ky224 T (D222), Ky225 G (D223), Ky226 V (D224), Ky227 ALTGR (D225)
COL5: Ky228 "6" (D226), Ky229 Y (D227), Ky230 H (D228), Ky231 B (D229), Ky232 RShift (D230)
COL6: Ky233 "7" (D231), Ky234 U (D232), Ky235 J (D233), Ky236 N (D234), Ky237 DEL (D235)
COL7: Ky238 "8" (D236), Ky239 I (D237), Ky240 K (D238), Ky241 M (D239), Ky242 ESC (D240)
COL8: Ky243 "9" (D241), Ky244 O (D242), Ky245 L (D243), Ky246 Sp-Inf (D244), Ky247 F1 (D245)
COL9: Ky248 "0" (D246), Ky249 P (D247), Ky250 BkSp (D248), Ky251 RET (D249), Ky252 F2 (D250)
COL10: Ky253 UPArrw (D251), Ky254 LArrw (D252), Ky255 F5 (D253), Ky256 F7 (D254), Ky257 F3 (D255)
COL11: Ky258 DwnArrw (D256), Ky259 Rarrw (D257), Ky260 F6 (D258), Ky261 OKBTN (D259), Ky262 F4 (D260)