VGA
CON3

12V
CON8

CON7

H5

H7

Floppy
J3

68uH
Audio

SW_SPST

D5
1N5820

L1

220uF

C50

U11

TDA1543
510 510
510 1k
1k 2k
1k 2k
75
75

RS8 510
RS7 1k
RS6 2k

U7
TXB0104PW

Floppy

J1

U17
74LS06

U18
74LS38

U6
MB8877A

C48
470uF

H1

Flash 1/2
JP2

Joystick
CON4

RS9
10k

U3''1
W25Q16

27
10k

U3
W25Q16

100n

X1
SG-7050CAN

J4

uBus

R39
10k

EP4CE6E22C8N

U4

EPM3128ATC100-5

H2

2k4

2k4

2k4

J2

FPGA JTAG

J5

AVR JTAG

J7

ESP-BUS

CY62167EV30

U2

U10
ESP-12E

RS2

TXB0104PW

U8

100n

10k

Y2
16MHz

C3
1uF

U5
ATMEGA328-AU

J6
AVR UART

3V

BT1

H3

H4

SW3

CF-CARD

Mode Selector

H6

U9
DS1307Z+

32768Hz
Y1

D4 D6 D1 D2 D7

SW_Push
SW2

SW_Push
SW1

H8

4k7
R24
R23
4k7
R22
4k7
R21
4k7
R27
X*
R3
10uF
C2
10uF
C6
750
R26
R42
R41
R40
10k
10k
10k
750
R27
100n
C52
100n
C43
820
R25
LM2596S-5
U15
12V EN
R6
1k
330
R64
330
R65
330
R66
330
R67
330
R68
330
R69
BAT54C
D3
C44
C14
100n
C58
100n
C53
100n
4k7
R8
R7
4k7
100n
C51
100n
C49
100n
C3
100n
AMS1117-1.2
AMS1117-2.5
AMS1117-3.3
R61
300
U4
U13
C11
100n
U12
C37
100n
R53
10k
R54
10k
R60
10k
C20
100n
10uF
C8
C7
C9
10uF
100n
10uF
10uF
Ferrite Bead
R1
R38
100n
C31
100n
C56
100n
C54
10k
R35
10k
R34
100n
C4
10k
100n
C15
10k
R33
100n
C16
100n
C12
100n
100n
C32
100n
C35
100n
100n
C5
100n
100n
100n
100n
100n
D8
R9
10k
22p
C1
22p
C3
C2
100n
10k
R32
10k
R31
R36
10k
100n
C27
100n
C1
10k
R30
R46
10k
R47
10k
100n
C18
10k
R37
R52
10k
C25
100n
10k
R48
10k
R50
10k
R49
10k
R51
Q
BC856
Q
BC856
47Ω
CON2
SD

Sheet:
File: karabas-pro-revD.kicad_pcb
Title:
Size: A4   Date: Rev:
KiCad E.D.A. kicad 5.1.6-c6e7f7d86ubuntu18.04.1   Id: 1/1
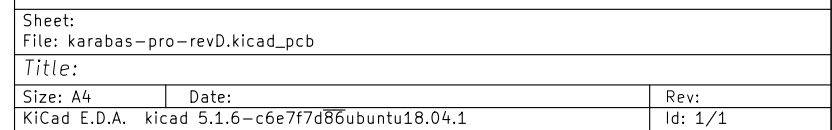
Ref	Q-ty	Value	Footprint
BT1,	1	3V	CR2032 Battery holder
C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C46, C47, C49, C51,	38	100n	C0805
C1, C2	2	10uF	C0805
C3, 10	2	1uF	C0805
C4, C5,	2	22p	C0805
C6	1	1nF	C0805
C7, C8, C9,	3	10uF	Tantalum D
C48	1	470uF	CP_Radial_D8.0mm_P3.80mm
C50	1	220uG	CP_Radial_D7.5mm_P2.50mm
CON1,	1	CF-CARD	TE_1734451-1
CON2,	1	SD	SD_TE_2041021
CON3,	1	VGA	DSUB-15-HD_Female
CON4,	1	Joystick	DSUB-9_Male
CON5,	1	Keyboard	MDIN06SS
CON6,	1	Mouse	MDIN06SS
CON7,	1	Audio	Jack_3.5mm_CUI_SJ1-3535NG
CON8,	1	5V DC	BarrelJack_Wuerth_6941xx301002
CON9,	1	Micro-SD	Molex MicroSD (mirrored)
D1, D2, D4, D6, D7,D8, D9	7	LED	L0805
D5	1	1N5820	D_DO-201AD_P15.24mm_Horizont
D3	1	BAT54C	SOT-23
FB1	1	Ferrite Bead	F0805
J1,	1	Floppy	IDC-Header_2x17
J2,	1	FPGA JTAG	IDC-Header_2x05, angled
J3,	1	Floppy 5V	PinHeader_1x04
J4,	1	uBus	PinHeader_2x04
J5,	1	AVR JTAG	IDC-Header_2x03, angled
J6,	1	AVR UART	PinHeader_1x04
J7,	1	ESP-BUS	PinHeader_2x05
JP2	1	Jumper	PinHeader_1x03
L1,	1	33uH – 68uH	L_12x12mm
R1, R2, R3,	3	2k4	R0805
Q1, Q2,	1	BC856	SOT-23
R4, R57	2	27	R0805
R5, R9, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R58, R59, R60,	28	10k	R0805
R6, R11, R14, R17,	4	1k	R0805
R7, R8, R21, R22, R23, R24,	6	4k7	R0805
R10, R13, R16,	3	2k	R0805
R12, R15, R18, R28, R29, R54, R55, R56, R62, R63	10	'470 (510)	R0805
R61, R64, R65, R66, R67, R68, R69,	7	300	R0805
R53	1	X* (see schematics)	R0805
R19, R20,	2	75	R0805
R25,	1	820	R0805

R26, R27,	2	750	R0805
R61,	1	300	R0805
SW1, SW2,	2	SW_Push	SPST_Angled_PTS645Vx58-2LFS
SW3	1	SW_DIP_x04	SPSTx04_Piano_CTS_Series
SW4	1	SW_SPST	Slider button switch
U1,	1	EP4CE6E22C8N	QFP-144
U2,	1	CY62167EV30 (ELL)	TSOP-I-48_18.4x12mm_P0.5mm
U3, U3"1	2	W25Q16 | M25P16	SOIC-8_5.23x5.23mm_P1.27mm
U4,	1	EPM3128ATC100	LQFP-100_14x14mm_P0.5mm
U5,	1	ATMEGA328-AU	TQFP-32_7x7mm_P0.8mm
U6,	1	MB8877A	DIP-40_W15.24mm
U7, U8,	2	TXB0104PW	TSSOP-14_4.4x5mm_P0.65mm
U9,	1	DS1307Z+	SOIC-8_3.9x4.9mm_P1.27mm
U10,	1	ESP-12E	ESP-12E
U11,	1	TDA1543	DIP-8_W7.62mm
U12,	1	AMS1117-3.3	SOT-223-3
U13,	1	AMS1117-2.5	SOT-223-3
U14,	1	AMS1117-1.2	SOT-223-3
U15,	1	LM2596S-5.0	TO-263-5
U17,	1	74LS06	DIP-14_W7.62mm
U18,	1	74LS38	DIP-14_W7.62mm
X1,	1	50MHz	SG8002CA-4Pin_7.0x5.0mm
Y1,	1	32768Hz	AT310_D3.0mm_L10.0mm
Y2,	1	16MHz	HC49-S