for VGA the jumpers JP1–JP3 must be closed

J1 VGA

VGA_RH JP1 VGA_RL
VGA_GH JP2 VGA_GL
VGA_BH JP3 VGA_BL
VGA_HS
VGA_VS

C1 0.1u

CN1 HDMI

VGA RESISTORS:

VGA_BL	R1 1k		GP_12	R1=270
VGA_BH	R2 330R		GP_13	R2=270
VGA_GL	R3 1k		GP_14	R3=270
VGA_GH	R4 330R		GP_15	R4=270
VGA_RL	R5 1k		GP_16	R5=270
VGA_RH	R6 330R		GP_17	R6=270
VGA_HS	R7 100R		GP_18	R7=270
VGA_VS	R8 100R		GP_19	R8=270

U1 raspberrypi-pico-module

GP_0 1	GP0	VBUS	40 +5V
GP_1 2	GP1	VSYS	39 +5V_in
GND 3	GND	GND	38 GND
GP_2 4	GP2	3V3_EN	37 GP_23_3v3EN
GP_3 5	GP3	3V3_OUT	36 +3V3_PICO
GP_4 6	GP4	ADC_VREF	35 GP_29_VREF
GP_5 7	GP5	GP28_ADC2	34 GP_28
GND 8	GND	GND_AGND	33 GND
GP_6 9	GP6	GP27_ADC1	32 GP_27
GP_7 10	GP7	GP26_ADC0	31 GP_26
GP_8 11	GP8	RUN	30 RUN
GP_9 12	GP9	GP22	29 GP_22
GND 13	GND	GND	28 GND
GP_10 14	GP10	GP21	27 GP_21
GP_11 15	GP11	GP20	26 GP_20
GP_12 16	GP12	GP19	25 GP_19
GP_13 17	GP13	GP18	24 GP_18
GND 18	GND	GND	23 GND
GP_14 19	GP14	GP17	22 GP_17
GP_15 20	GP15	GP16	21 GP_16

J5 PWR: GND, +5V, GND

J6: GND, GP_0, GP_1, +5V, GP_2, GP_3

J4 Conn_SD: SD_CS, SD_MOSI, SD_CLK, SD_MISO

C2 0.1u

J3 Micro_SD_Card: DAT2, DAT3/CD, CMD, VDD, CLK, VSS, DAT0, DAT1, SHIELD

TYPE-C-31-M-12 USB1: GND, VBUS, SBU2, CC1, DN2, DP1, DN1, DP2, SBU1, CC2, VBUS, GND, SHIELD; R14 5k1, R15 5k1

J17 USB_B_Micro: VBUS, D+, D-, ID, Shield, GND; J18

JP6 3v3_pico_en: +3V3_PICO

U4 AMS1117-3.3: VI, VO, GND; C8 10u, C9 10u

J10 USB_A_Stacked: VBUS1, VBUS2, D1+, D1-, D2+, D2-, Shield, GND1, GND2; C11 10u

J7 Mini-DIN-6: PS/2 CLK, PS/2 DATA

R22 1k, R23 1k, R26 1k, R27 1k

R24 100R GP_1, R25 100R GP_0, R20 100R PS/2_DATA_3V, R21 100R PS/2_CLK_3V

D4 3V3, D5 3V3, D6 3V3, D7 3V3

J2 EXT

GND 1	2	GP_20
GND 3	4	GP_21
GND 5	6	GP_26
GND 7	8	GP_27
GND 9	10	GP_0
GND 11	12	GP_1
GND 13	14	PWM_EN
GP_28 15	16	+3V3
LOAD_IN_D 17	18	GP_22
GND 19	20	GND
RIGHT_OUT 21	22	GP_10
LEFT_OUT 23	24	GP_11
GP_8 25	26	GP_9
GND 27	28	GP_29_VREF
PS/2_DATA_3V 29	30	GP_3
PS/2_CLK_3V 31	32	GP_2
GND 33	34	+3V3
RST 35	36	GP_23_3v3EN
GND 37	38	+5V_in
+5V 39	40	+5V

JP4 RUN; R16 1k +3V3

Audio IN J13: TN, T, RN, R, S; LOAD_IN, LOAD_IN_R

J8 IN_A: LOAD_IN, LOAD_IN_R

C6 0.1u, R9 100R, R10 10k, R11 10k, R12 10k, R13 1k, C7 0.1u

D1 4148, Q1 BC850, Q2 BC850

JOY-1 J14: J1_DATA, +5V, J2_DATA; GP_20, GND, GP_21

R18 1k GP_26, R19 1k GP_27; D2 3V3, D3 3V3; C10 0.1u

C3 0.1u ESP-PSRAM32

U3: VCC, CE, SCLK, SIO3, SIO2, SI/SIO1, SO/SIO0, VSS; GP_6, GP_7, GP_4

JP5 psram_off: GP_8

U2 TDA1387T: SCLK, LRCK, DATA, AGND, A_RIGHT, FLT, A_LEFT, VA; I2S_R, FLT, I2S_L, +5VA

C18 10u, C4 0.1u, C5 1u, R17 10R +5V

R28 620, R29 10k, C13 1u, R30 220k*, R31 1k||10n, C14 10u, Q3 BC850, C12 0.1u, R32 100

R40 620, R38 10k, C16 1u, R37 220k*, R36 1k||10n, C15 10u, Q4 BC850, C17 0.1u, R41 100

D8 4148, D9 4148, D10 4148, D11 4148

R33 51 GP_10, R34 2k GP_9, R39 51 GP_11, R42 2k GP_9

R35 200, R43 200, PWM_EN

J9 out_A; J12 Audio OUT