NTSC CPU have ÷12 divider and require 21 MHz clock.
PAL CPU have ÷16 divider and require 26 MHz clock.
Dendy CPU have ÷15 divider and require 26 MHz clock.

Earlier UA6527P revision have ÷16 divider and glitchy in some games.
Later revision have ÷15 divider and works perfectly.
It should be possible to get earlier ones working properly using
28.636 MHz clock for CPU and 26 MHz clock for PPU, but I didn't tested this.

https://www.nesdev.org/wiki/CPU_variants

https://www.nesdev.org/wiki/PPU_variants

Certain new china's cartridges won't work correctly with this
schematic due to improper handling of the PRD signal in these cartridges.
Thus, schematic workarround is required
(but it may impact compatibility with older carts, do this at your own risk).
More info:
http://www.vgdiy.com/bbs/forum.php?mod=viewthread&tid=2230
https://forums.nesdev.org/viewtopic.php?t=18877 (pt. 6)
https://www.emu-land.net/forum/index.php?topic=88313.0
https://www.emu-land.net/forum/index.php?topic=86880.0
https://www.emu-land.net/forum/index.php/topic,83552.msg1475251.html#msg1475251

JOYSTICKS

J2MIC circuit has been copied from original FC schematic mostly as is

CLOCK

AUDIO

VIDEO

POWER

For LM2596-5.0:
R11 – 0 Ohm
R13,C11 – do not install

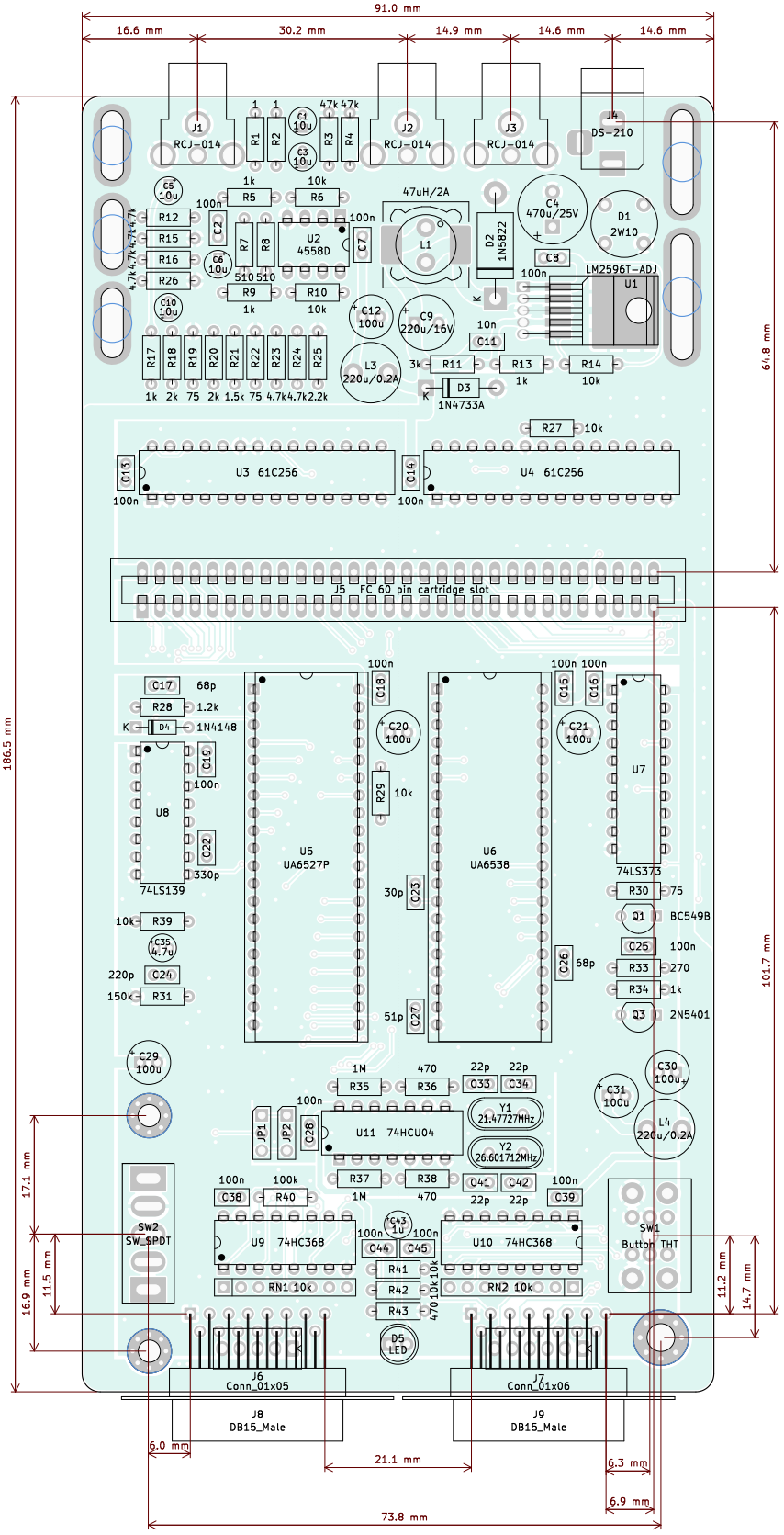
install one of L1 or L2

Famicom/NES clone
Based on original Famicom, HardWareMan, megawalkman, lm2000, HotPixel schemat
Eugene Lozovoy

Sheet: /
File: dendy.kicad_sch

Title: Dendy

Size: A3	Date: 2025-06-08	**Rev: B1**
KiCad E.D.A. 8.0.9		Id: 1/1



Dimensions: 186.5x91mm
Layers: 2
Thickness: 1.6mm

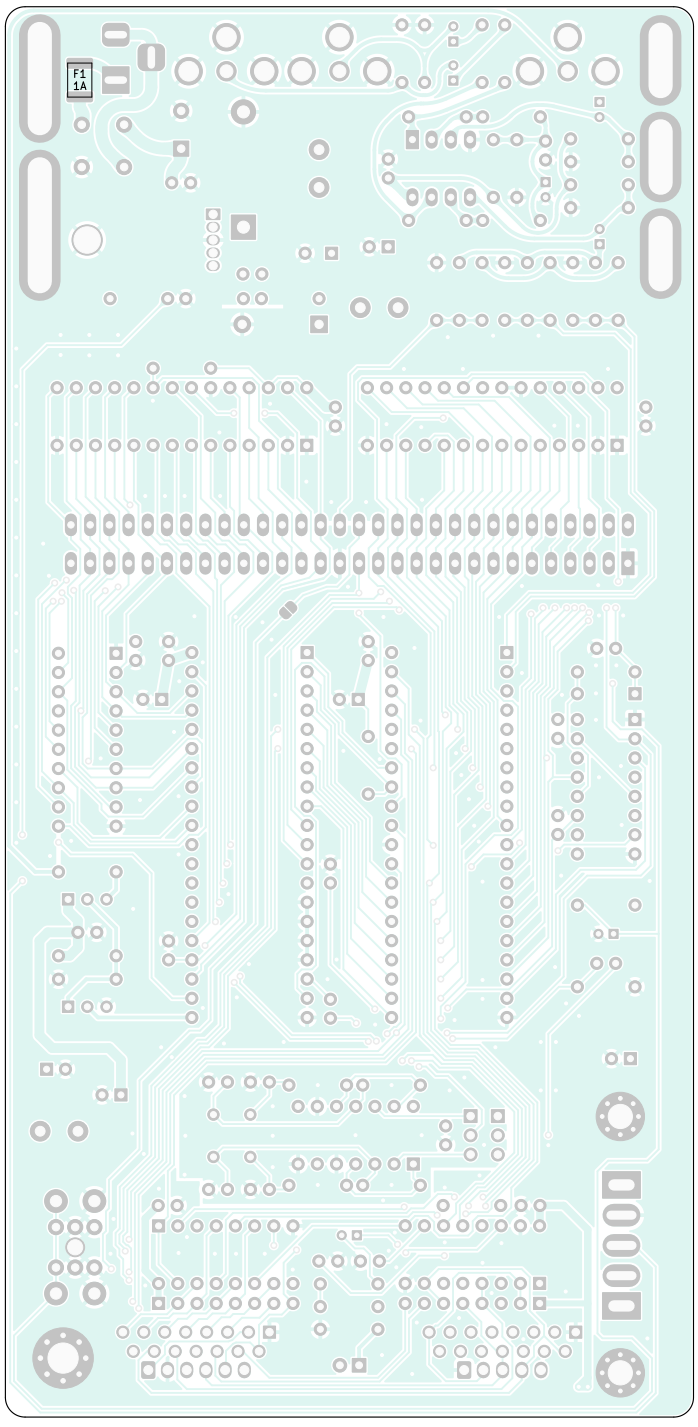
Min clearance: 0.25mm
Min track: 0.25mm
Min hole: 0.4mm
Min annular ring: 0.2mm

Eugene Lozovoy

Sheet:
File: dendy.kicad_pcb

Title: Dendy

Size: A4	Date: 2025-06-08	**Rev: B1**
KiCad E.D.A. 8.0.9		Id: 1/1



Dimensions: 186.5x91mm	Min clearance: 0.25mm
Layers: 2	Min track: 0.25mm
Thickness: 1.6mm	Min hole: 0.4mm
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Eugene Lozovoy

Sheet:
File: dendy.kicad_pcb

Title: Dendy

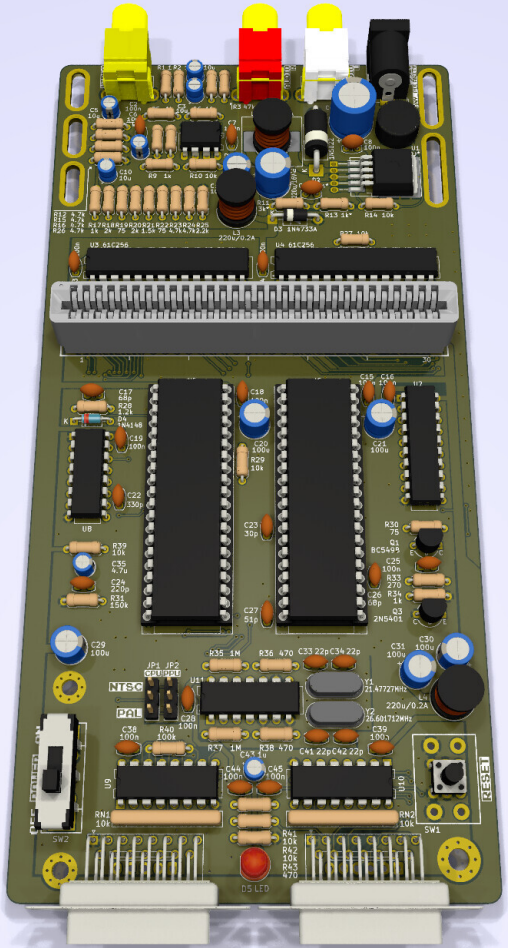
Size: A4	Date: 2025-06-08	**Rev: B1**
KiCad E.D.A. 8.0.9		Id: 1/1

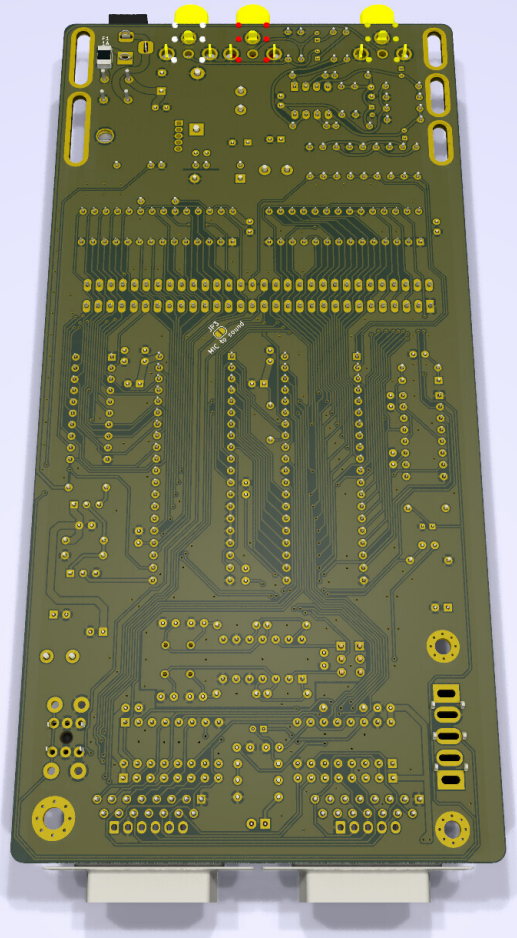
Bill Of Materials

References	Value	Footprint	Qty
C1 C3 C5 C6 C10	10u	PCM_Capacitor_THT_AKL:CP_Radial_D4.0mm_P2.00mm	5
C2 C7 C8 C13 C14 C15 C16 C18 C19 C25 C28 C38 C39 C44 C45	100n	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	15
C4	470u/25V	PCM_Capacitor_THT_AKL:CP_Radial_D10.0mm_P5.00mm	1
C9	220u/16V	PCM_Capacitor_THT_AKL:CP_Radial_D8.0mm_P3.50mm	1
C11	10n	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	1
C12 C20 C21 C29 C30 C31	100u	PCM_Capacitor_THT_AKL:CP_Radial_D6.3mm_P2.50mm	6
C17 C26	68p	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	2
C22	330p	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	1
C23	30p	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	1
C24	220p	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	1
C27	51p	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	1
C33 C34 C41 C42	22p	PCM_Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P2.50mm	4
C35	4.7u	PCM_Capacitor_THT_AKL:CP_Radial_D4.0mm_P2.00mm	1
C43	1u	PCM_Capacitor_THT_AKL:CP_Radial_D4.0mm_P2.00mm	1
D1	2W10	my:Diode_Bridge_Round_D10.0mm	1
D2	1N5822	PCM_Diode_THT_AKL:D_DO-201AD_P15.24mm_Horizontal	1
D3	1N4733A	PCM_Diode_THT_AKL:D_DO-41_SOD81_P10.16mm_Horizontal	1
D4	1N4148	Diode_THT:D_DO-35_SOD27_P7.62mm_Horizontal	1
D5	LED	LED_THT:LED_D5.0mm	1
F1	1A	Fuse:Fuse_1812_4532Metric_Pad1.30x3.40mm_HandSolder	1
J1 J2 J3	RCJ-014	my:CUI_RCJ-01X	3
J4	DS-210	Connector_BarrelJack:BarrelJack_Horizontal	1
J5	FC 60 pin cartridge slot	my:FC60	1
J8 J9	DB15_Male	Connector_Dsub:DSUB-15_Male_Horizontal_P2.77x2.54mm_EdgePinOffset9.40mm	2
JP1 JP2	Jumper_3_Bridged12	Connector_PinHeader_2.54mm:PinHeader_1x03_P2.54mm_Vertical	2
L1	47uH/2A	PCM_Inductor_SMD_AKL:L_12x12mm_H8mm	1

L3 L4	220u/0.2A	PCM_Inductor_THT_AKL:L_Radial_D8.7mm_P5.00mm_Fastron_07HCP	2
Q1	BC549B	PCM_Package_TO_SOT_THT_AKL:TO-92_Inline_Wide_CBE	1
Q3	2N5401	PCM_Package_TO_SOT_THT_AKL:TO-92_Inline_Wide_EBC	1
R1 R2	1	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	2
R3 R4	47k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	2
R5 R9 R13 R17 R34	1k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	5
R6 R10 R14 R27 R29 R39 R41 R42	10k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	8
R7 R8	510	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	2
R11	3k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
R12 R15 R16 R23 R24 R26	4.7k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	6
R18 R20	2k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	2
R19 R22 R30	75	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	3
R21	1.5k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
R25	2.2k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
R28	1.2k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
R31	150k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
R33	270	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
R35 R37	1M	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	2
R36 R38 R43	470	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	3
R40	100k	PCM_Resistor_THT_AKL:R_Axial_DIN0207_L6.3mm_D2.5mm_P7.62mm_Horizontal	1
RN1 RN2	10k	Resistor_THT:R_Array_SIP8	2
SW1	Button THT	my:FC_Reset_Switch_Universal	1
SW2	SW_SPDT	my:FC_Power_Switch_Universal	1
U1	LM2596T-ADJ (Alternatives: LM2596T-5.0)	my:TO-220-263-5_Horizontal_TabDown	1
U2	4558D	PCM_Package_DIP_AKL:DIP-8_W7.62mm_LongPads	1
U3 U4	61C256 (Alternatives: 6264, 62128, 62256, AS7C256, W24257AK)	PCM_Package_DIP_AKL:DIP-28_W7.62mm	2
U5	UA6527P (Alternatives: HA6527P, TA-03NP, MG-P-501)	PCM_Package_DIP_AKL:DIP-40_W15.24mm_Socket	1

U6	UA6538 (Alternatives: HA6538, TA-02NP, MG-P-502)	PCM_Package_DIP_AKL:DIP-40_W15.24mm_Socket	1
U7	74LS373	PCM_Package_DIP_AKL:DIP-20_W7.62mm	1
U8	74LS139	PCM_Package_DIP_AKL:DIP-16_W7.62mm	1
U9 U10	74HC368	PCM_Package_DIP_AKL:DIP-16_W7.62mm	2
U11	74HCU04	PCM_Package_DIP_AKL:DIP-14_W7.62mm	1
Y1	21.47727MHz	PCM_Crystal_AKL:Crystal_HC49-U_Vertical	1
Y2	26.601712MHz	PCM_Crystal_AKL:Crystal_HC49-U_Vertical	1


U3 61C256
U4 61C256
NTSC
PAL
RESET
SW1
SW2
D5 LED


JP3
MIC Ground