MCU is SciSys TE-1
ROM code 0609V171
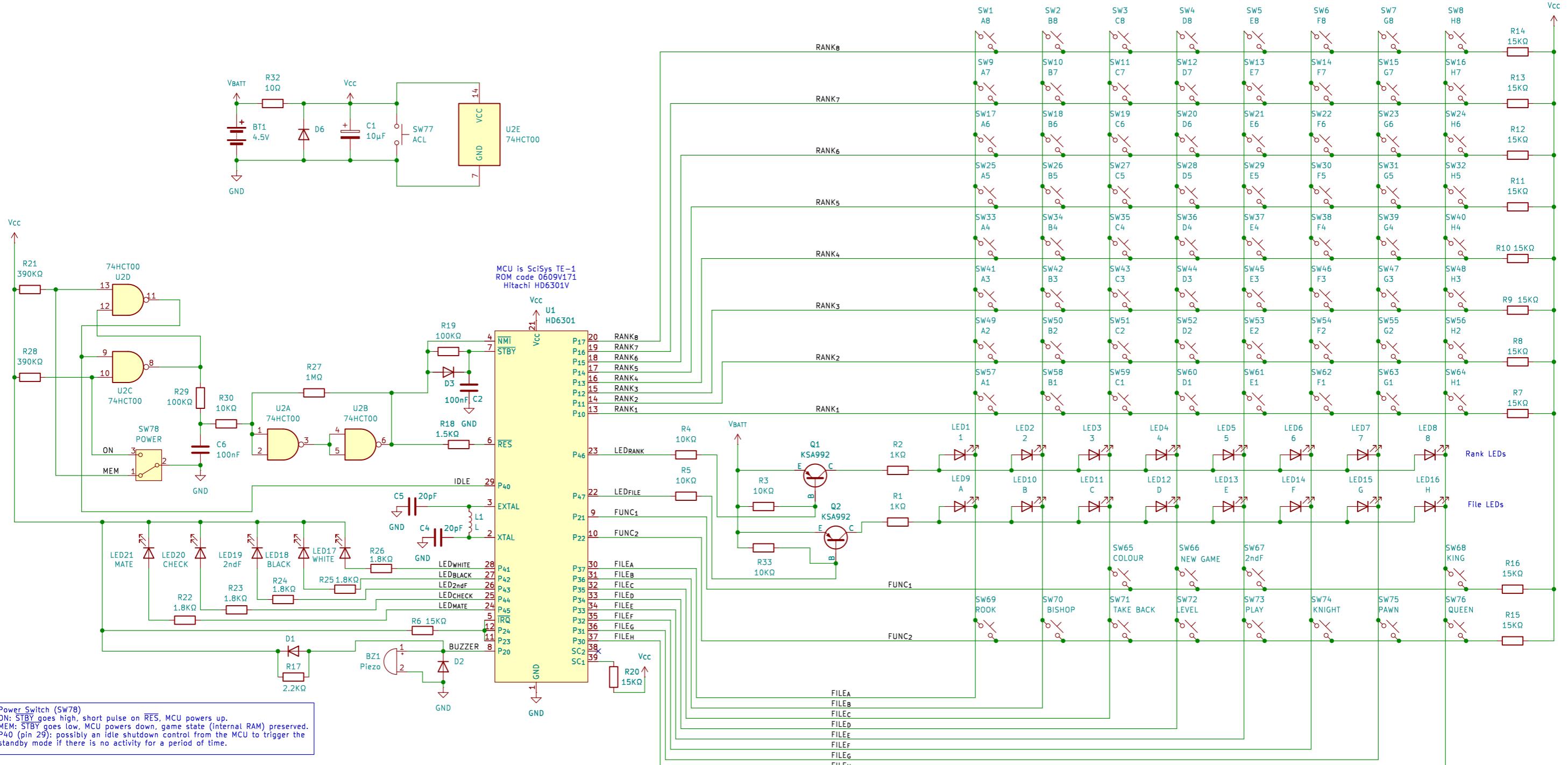Hitachi HD6301V

U1
HD6301

Power Switch (SW78)
ON: STBY goes high, short pulse on RES, MCU powers up.
MEM: STBY goes low, MCU powers down, game state (internal RAM) preserved.
P40 (pin 29): possibly an idle shutdown control from the MCU to trigger the
standby mode if there is no activity for a period of time.

SW1 A8 SW2 B8 SW3 C8 SW4 D8 SW5 E8 SW6 F8 SW7 G8 SW8 H8
SW9 A7 SW10 B7 SW11 C7 SW12 D7 SW13 E7 SW14 F7 SW15 G7 SW16 H7
SW17 A6 SW18 B6 SW19 C6 SW20 D6 SW21 E6 SW22 F6 SW23 G6 SW24 H6
SW25 A5 SW26 B5 SW27 C5 SW28 D5 SW29 E5 SW30 F5 SW31 G5 SW32 H5
SW33 A4 SW34 B4 SW35 C4 SW36 D4 SW37 E4 SW38 F4 SW39 G4 SW40 H4
SW41 A3 SW42 B3 SW43 C3 SW44 D3 SW45 E3 SW46 F3 SW47 G3 SW48 H3
SW49 A2 SW50 B2 SW51 C2 SW52 D2 SW53 E2 SW54 F2 SW55 G2 SW56 H2
SW57 A1 SW58 B1 SW59 C1 SW60 D1 SW61 E1 SW62 F1 SW63 G1 SW64 H1

RANK8 RANK7 RANK6 RANK5 RANK4 RANK3 RANK2 RANK1

R14 15KΩ R13 15KΩ R12 15KΩ R11 15KΩ R10 15KΩ R9 15KΩ R8 15KΩ R7 15KΩ

Vcc

LED1 1 LED2 2 LED3 3 LED4 4 LED5 5 LED6 6 LED7 7 LED8 8
LED9 A LED10 B LED11 C LED12 D LED13 E LED14 F LED15 G LED16 H

Rank LEDs
File LEDs

Q1 KSA992   Q2 KSA992

R4 10KΩ R5 10KΩ R2 1KΩ R1 1KΩ R3 10KΩ R33 10KΩ
VBATT

SW65 COLOUR SW66 NEW GAME SW67 2ndF
SW69 ROOK SW70 BISHOP SW71 TAKE BACK SW72 LEVEL SW73 PLAY SW74 KNIGHT SW75 PAWN SW76 QUEEN
SW68 KING

FUNC1
FUNC2

R16 15KΩ
R15 15KΩ

FILEA FILEB FILEC FILED FILEE FILEF FILEG FILEH

VBATT R32 10Ω Vcc
BT1 4.5V D6 C1 10µF SW77 ACL
U2E 74HCT00   VCC 14 GND 7
GND

R21 390KΩ 74HCT00 U2D 13 12 11
R28 390KΩ U2C 74HCT00 9 10 8
R29 100KΩ R30 10KΩ
SW78 POWER ON MEM
C6 100nF GND
U2A 74HCT00 1 2 3
R27 1MΩ
U2B 74HCT00 4 5 6
R19 100KΩ D3 C2 100nF GND
R18 1.5KΩ GND

Vcc
NMI 4
STBY 5
RES 6
P17 20 RANK8
P16 19 RANK7
P15 18 RANK6
P14 17 RANK5
P13 16 RANK4
P12 15 RANK3
P11 14 RANK2
P10 13 RANK1
P46 23 LEDRANK
P47 22 LEDFILE
P21 9 FUNC1
P22 10 FUNC2
IDLE P40 29
EXTAL 3
XTAL 2
C5 20pF L1 C4 20pF GND

LEDWHITE P41 28
LEDBLACK P42 27
LED2ndF P43 26
LEDCHECK P44 25
LEDMATE P45 24
IRQ 5
P23 11
P20 8 BUZZER

P37 30 FILEA
P36 31 FILEB
P35 32 FILEC
P34 33 FILED
P33 34 FILEE
P32 35 FILEF
P31 36 FILEG
P30 37 FILEH
SC2 38
SC1 39
R20 15KΩ Vcc
GND

LED21 MATE LED20 CHECK LED19 2ndF LED18 BLACK LED17 WHITE
R22 1.8KΩ R23 1.8KΩ R24 1.8KΩ R25 1.8KΩ R26 1.8KΩ

D1 R17 2.2KΩ BZ1 Piezo D2 GND

R6 15KΩ

LogiChess
SciSys TE-1 0609V171

Brett Hallen
Sheet: /
File: Tandy_1650_Chess.kicad_sch
Title: Tandy 1650 Electronic Chess
Size: A3   Date: 10/JAN/2026   Rev: A
KiCad E.D.A. 9.0.5   Id: 1/1