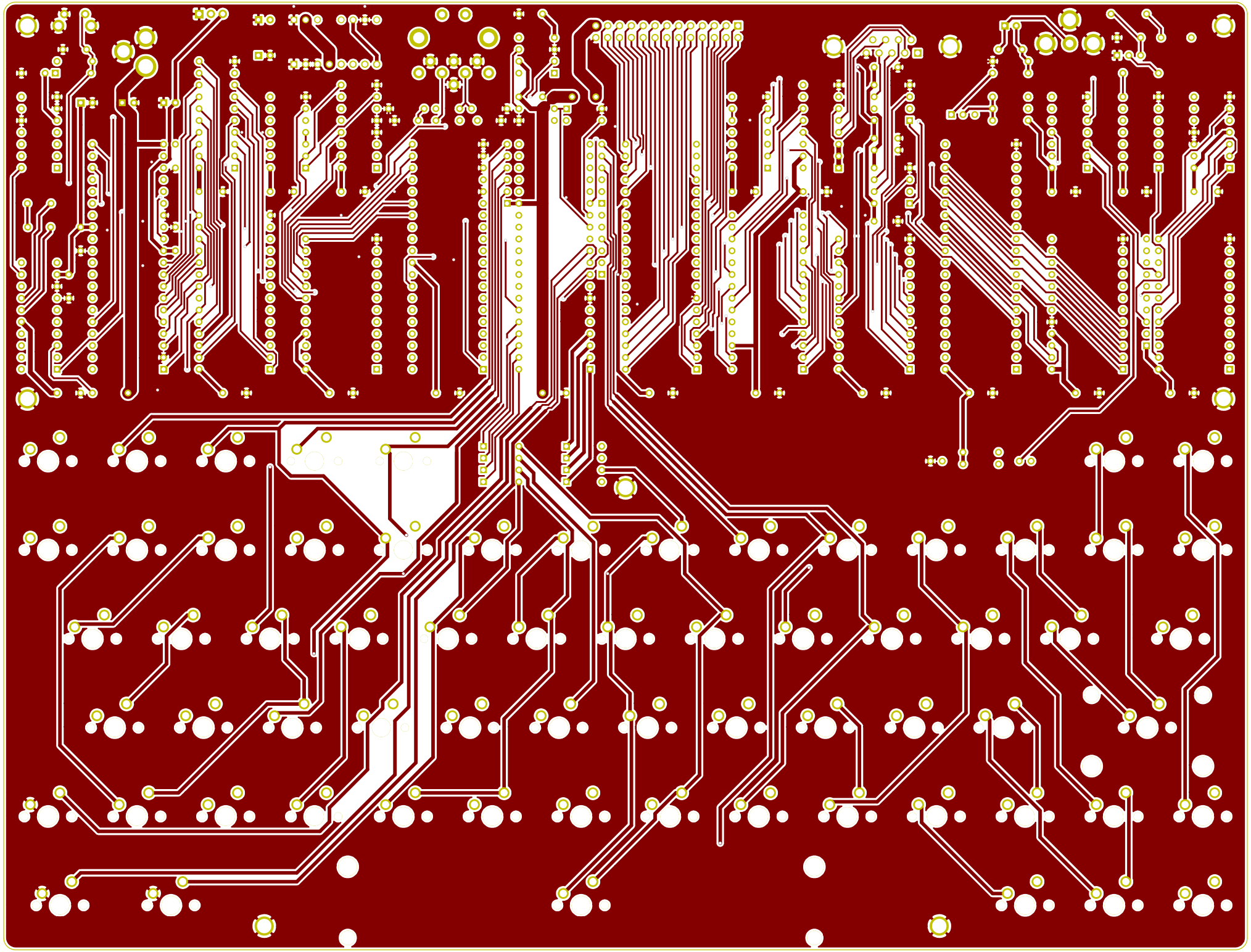

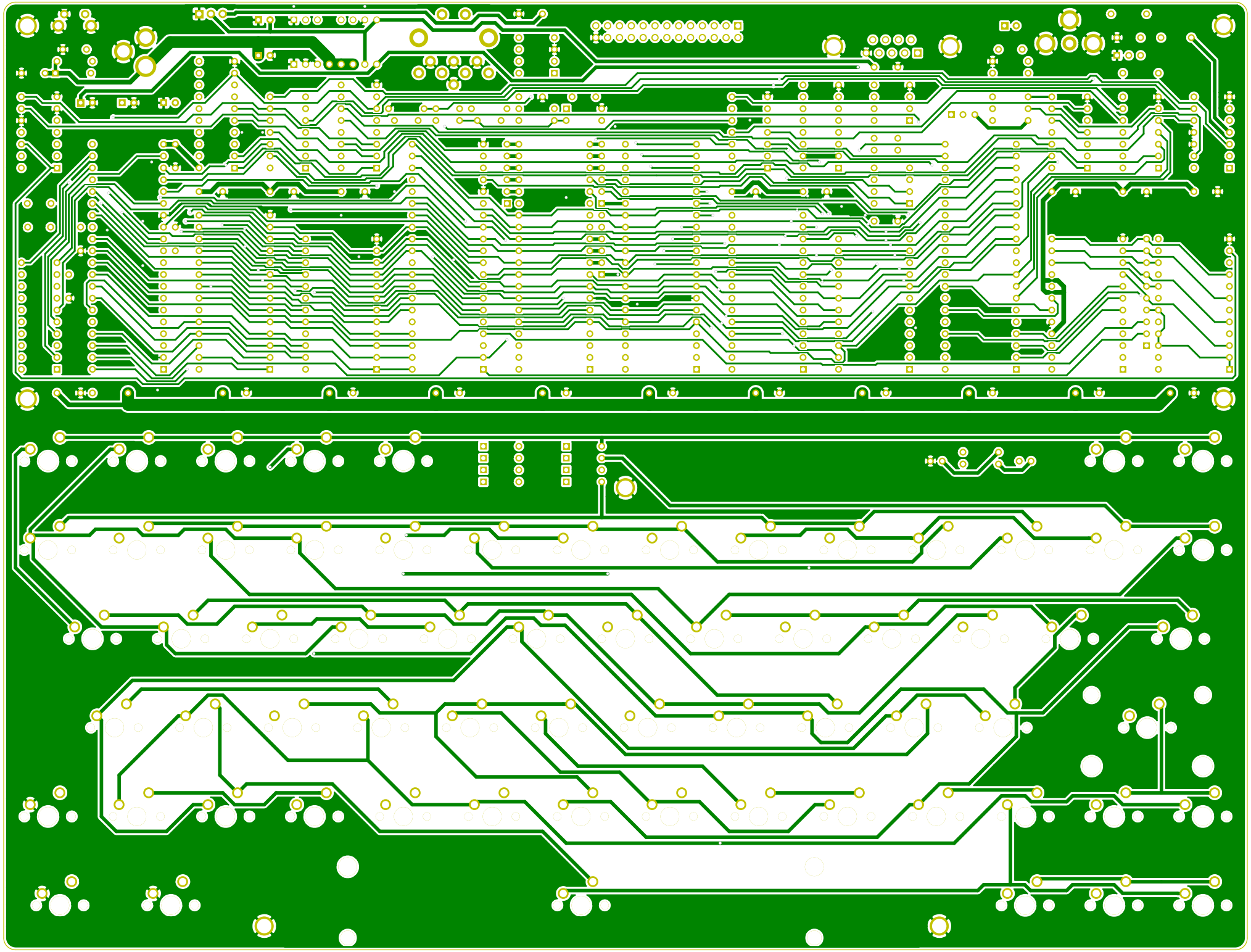

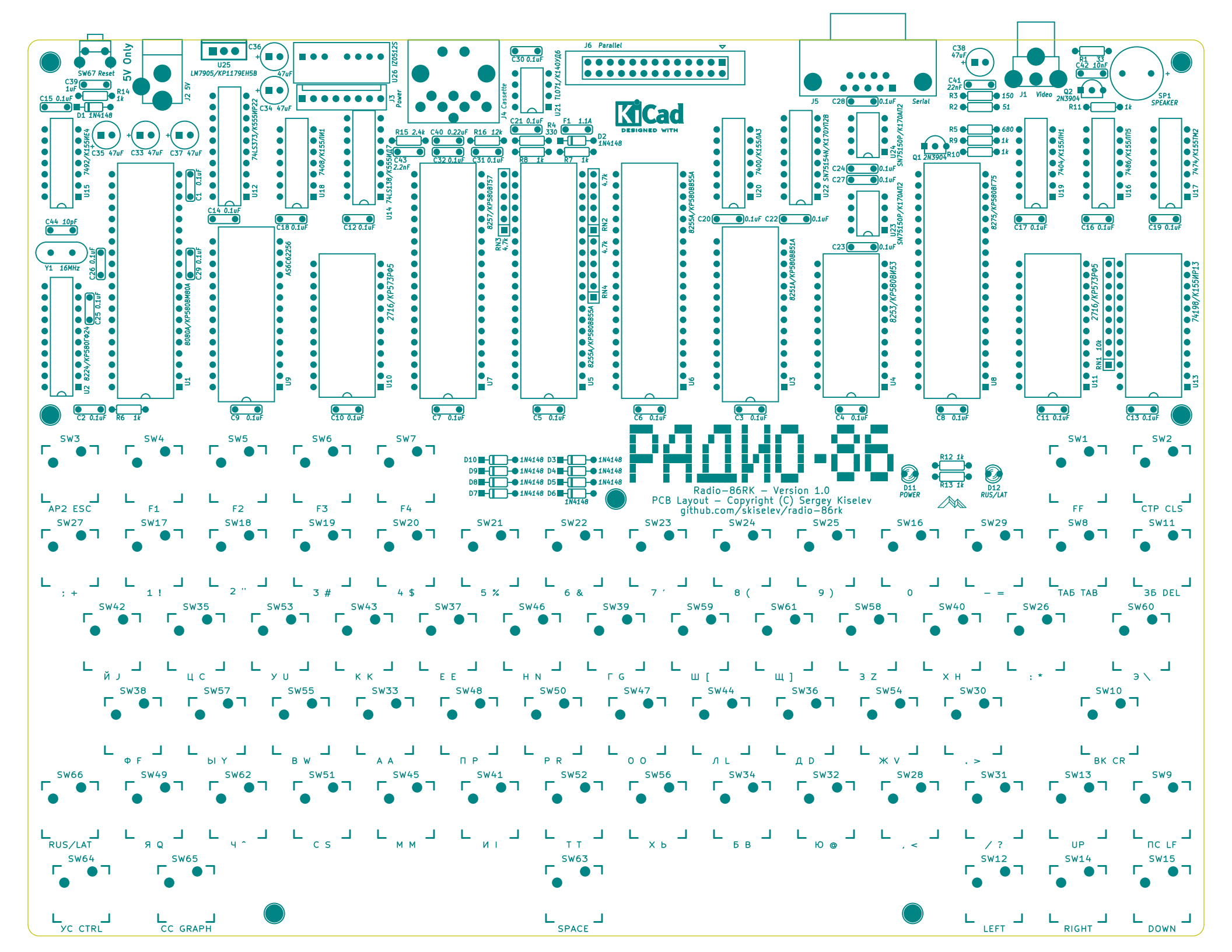
РАДИО-86
Radio-86RK - Version 1.0
PCB Layout - Copyright (C) Sergey Kiselev
github.com/skiselev/radio-86rk
SW67 Reset
5V Only
J2 5V
U25
LM7905/KP1179EH5B
J3 Power
U26 IZ05125
J4 Cassette
J6 Parallel
U21 TL071/K140УД6
J5 Serial
J1 Video
SP1 SPEAKER
Q2 2N3904
Q1 2N3904
KiCad
DESIGNED WITH
U15 7492/K155ИЕ4
U12 74LS373/K555ИР22
U18 7408/K155ЛИ1
U14 74LS138/K555ИД7
U20 7400/K155ЛА3
U22 SN75154N/K170УП2B
U24 SN75150P/K170АП2
U23 SN75150P/K170АП2
U19 7404/K155ЛН1
U16 7486/K155ЛП5
U17 7474/K155ТМ2
U1 8080A/KP580ВМ80A
U2 8224/KP580ГФ24
U9 A56C62256
U10 2716/KP573РФ5
U7 8257/KP580ВТ57
U5 8255A/KP580ВВ55A
U6 8255A/KP580ВВ55A
U3 8251A/KP580ВВ51A
U4 8253/KP580ВМ53
U8 8275/KP580ВГ75
U11 RN1 10k
U13 74198/K155ИР13
RN2 4.7k
RN3 4.7k
RN4
SW1 SW2 SW3 SW4 SW5 SW6 SW7
SW8 SW9 SW10 SW11 SW12 SW13 SW14 SW15
SW16 SW17 SW18 SW19 SW20 SW21 SW22 SW23 SW24 SW25 SW26 SW27 SW29
SW30 SW31 SW32 SW33 SW34 SW35 SW36 SW37 SW38 SW39 SW40 SW41 SW42 SW43 SW44 SW45 SW46 SW47 SW48 SW50 SW51 SW52 SW53 SW54 SW55 SW56 SW57 SW58 SW59 SW60 SW61 SW62 SW63 SW64 SW65 SW66
D11 POWER
D12 RUS/LAT
AP2 ESC
F1
F2
F3
F4
FF
СТР CLS
ТАБ TAB
ЗБ DEL
ВК CR
RUS/LAT
УС CTRL
СС GRAPH
SPACE
UP
LEFT
RIGHT
DOWN
ПС LF

Memory Map:

```
0000h –  7FFFh:  RAM (32K): 7600h – 7FFFh – Display and Monitor Memory
8000h –  BFFFh:  8255A PPI (Keyboard, Cassette, Sound Control)
9000h –  9FFFh:  8253 PIT (Sound, USART Clock)
0A000h – 0AFFFh: 8255A PPI (Parallel Interface)
0B000h – 0BFFFh: 8251A USART
0C000h – 0CFFFh: 8275 CRT Controller
0D000h – 0DFFFh: Unused
0E000h – 0EFFFh: 8257 DMA Controller (Write Only)
0E000h – 0FFFFh: ROM (Read Only)
```

Monitor Commands – Memory:

```
D<Start_Address>,<End_Address> – Display memory content in hexadecimal
L<Start_Address>,<End_Address> – Display memory content in ASCII
F<Start_Address>,<End_Address>,<Value> – Fill memory with a value
T<Start_Address>,<End_Address>,<Destination_Start_Address> – Copy memory block to destination
C<Start_Address>,<End_Address>,<Destination_Start_Address> – Compare memory block with destination
S<Start_Address>,<End_Address>,<Value> – Search memory for a value
R<ROM_Start_Address>,<ROM_End_Address>,<Destination_Start_Address> – Read from ROM connected to Parallel interface to  memory
```

Monitor Commands – Run Control and Registers:

```
X – Display and modify registers
G<Start_Address>[,End_Address] – Run code, optionally stop at the specified address
```

Monitor Commands – Cassette Input/Output:

```
I[<Offset>][,Speed] – Read data from to cassette memory at specified offset
O<Start_Address>,<End_Address>[,Speed] – Write memory to cassette. Default speed is 1Dh \ 1200 bps
```

Credits:

```
Schematic and firmware are based on Radio Magazine publications
April 1988 to June 1989: archive.radio.ru\web\ and on
Alexey Knudyakov's Radio-86RK-SRAM project: radio86rk.pbworks.com
```

Monitor Subroutines:

```
0F803h – Keyboard input – Output: A – character
0F806h – Cassette input – Input: A=0FFh – with sync
         A=00h – no sync; Output: A – data

0F809h – Print to screen – Input: C – character
0F80Ch – Cassette output – Input: C – data
0F812h – Query keyboard – Output: A=00h – key not
         pressed; A=0FFh – key pressed

0F815h – Print to screen in hex – Input: A – data
0F818h – Print string – Input: HL – string address
0F81Bh – Get key – Output: A=0FFh – key not pressed
         A=0FEh – Rus\Lat; otherwise A – key code

0F81Eh – Get cursor – Output: H – row, L – column
0F821h – Read screen – Output: A – char at cursor
0F824h – Read from cassette – Input: HL – offset
         Output: HL – start; DE – end; BC – chk.sum

0F82Ah – Calculate checksum – Input: HL – start;
         DE – end; Output: BC – checksum
0F82Dh – Initialize CRT (after cassette I/O)
0F830h\0F833h – Get\Set RAM top – Output\Input: HL
         – address
```