GIRIS TAMPONU + Q1 (V1a) + BOOST

GAIN + Q2 (V1b, soguk kirpici) + Q3 (V2a) + Q4 (V2b, source follower)

TON KATI + U2B tampon + MASTER + EL34 POWER AMP SIM (PRESENCE, RESONANCE, yumusak kirpma)

LEVEL + U3B tampon + AMP OUT + KABIN SIM (HPF 93 Hz, LPF 3.4k / 4.1k / 5.9k)

LINE OUT + KULAKLIK AMFISI (NE5532, 9 V)

BESLEME: 9 V giris, MAX1044 kattayici (+17V), VB / VB9, BOOST LED, op-amp beslemeleri

DSP 1: 3.3 V (NT7533 dijital, LDL1117 analog), STM32G473 + 25 MHz kristal, SWD, reset, BOOT0 pull-up/GATE, REVERB

MAX1044 pin1 = BOOST (V+'ya bagli, osilator ses bandi disinda). Kattayici: datasheet fig. 5.

DSP 2: ES8388 codec (I2S slave, 24 bit, 256 Fs), ADC/DAC arayuzu, U7 cikis kazanci x2.5

DSP 3: DELAY (TIME, REPEATS, MIX), CHORUS, PHASER, FLANGER, TREMOLO, VIBE potlari

DSP 4: BYPASS (analog yol, DSP hazir degilken / efektler kapaliyken)

DSP 5: KNOB LEDs (3 mm, panel side, PWM 97.66 kHz = 2 Fs, 2N7002W low side)

BYPASS footswitch (3PDT, kablolu): ON LED + bypass algilama; BOOST ve ON LED'leri kartta

Sheet: /
File: kagan.kicad_sch
Title: KAGAN AI SMD: EL34 tube amp-in-a-box
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