PRIMARY PROPOSAL / UNQUALIFIED: hardware fit, firmware pins and physical behavior require bench checks.

5V Schmitt input cells replace native non-Schmitt LCH07: diode-isolated pullups prevent field-input backfeed.

Probe: positive 3–45V signal only on J7 pin1; J7 pin3 remains protected5V. Never connect45V to power pins.

Factory: local:JP1-7 closed; chain:JP13–19 open. Bridge a chain GPIO only after cutting its local output link.

TPS26600: MODE=RTN autoretry, UVLO=IN, SHDN internalpullup, OVP tied to floating RTN (internal 33V cutoff); RTN/PowerPAD NOT GND; trusted keyed host 5V only; separatehost3V3notprotected.

Trusted keyed Y HOST supply: no separate host reverse/OV warning circuit, UB retains 0.2A automatic-retry field-output current limiting, reverse-current handling and startup control; D9/JP22 retain field fault indication and disable.

R24: R83/R84 host-only overvoltage divider removed, UB OVP pin5 tied to floating EFUSE_RTN; preserve output current allocation, auto retry, slew, reverse-current handling and fault indication. TrustedHV only; not fabrication released. V25: stale host mlswire/OV rating note and orphan JP24/JP25 silkscreen labels removed. No circuit change.

Y HOST

Y CHAIN

CUT LINK

CUT LINK

OPEN CHAIN LINK

OPEN CHAIN LINK

OPEN CHAIN LINK

OPEN CHAIN LINK

OPEN CHAIN LINK

OPEN CHAIN LINK

CUT LINK

ENDSTOP 1

CUT LINK

BAT54WS blocking pullup

10k 1%

1k 1%

100nF 50V

74LVC2G17 triple Schmitt

330R 1%

100nF 50V

ENDSTOP 2

CUT LINK

BAT54WS blocking pullup

10k 1%

1k 1%

100nF 50V

330R 1%

ENDSTOP 3

CUT LINK

BAT54WS blocking pullup

10k 1%

1k 1%

100nF 50V

330R 1%

ENDSTOP 4

CUT LINK

BAT54WS blocking pullup

10k 1%

1k 1%

100nF 50V

74LVC2G17 triple Schmitt

330R 1%

100nF 50V

ENDSTOP 5

CUT LINK

BAT54WS blocking pullup

10k 1%

1k 1%

100nF 50V

330R 1%

ENDSTOP 6

CUT LINK

BAT54WS blocking pullup

10k 1%

1k 1%

100nF 50V

PROBE 7 / POSITIVE 3–45V SIGNAL ONLY

CUT LINK

TPS4411DR6

TPS4411DR6

TLV9021 open-drain comparator

4.7k 1%

4.7k 1%

4.7k 1%

100k 1%

3.3k 1%

1M 1% HYSTERESIS

10k 1%

100nF 50V

100nF 50V

100nF 50V

BAV21W HV pullup isolation

10k 1%

SMBJ48A positive signal TVS

TPS26600 AUTO-RETRY 0.2A FIELD LIMIT/SLEW

48.8k 1%

100nF 50V

100nF 50V

10uF 16V

4.7k 1%

RED FIELD FAULT

LED3K CUT TO DARK

1k 1% POWER LED

POWER LED CUT TO DARK

GREEN 3V3 POWER

100nF 50V SOFT START

BAS21J FAULT FEED ISOLATION

BAS21J FAULT LED ANTIPARALLEL

3V3

5V_HOST

GND

5V_FIELD

GND

5V_FIELD

RTN FLOAT


Smoothieware / CERN-OHL-S-2.0
Sheet: /
File: endstop-inputs.kicad_sch


# Title: Seven-channel endstop inputs

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|---|---|
| Size: A1 | Date: 2026-10-30 |
| KiCad E.D.A. 9.0.8 | Rev: v25 |
| | Id: 1/1 |