01 / GADGETEER Y SOCKET J1 AND SEVEN IDENTICAL CHANNEL CELLS (R1–R7 1k series, R8–R14 100k bias)

02 / RADIO MODULE U1 (MDBT42Q-512KV2, ON-BOARD ANTENNA) AND SUPPLY DECOUPLING C1 C2

03 / DIRECTION STRAPS JP3–JP9, BIAS SELECT JP2, PAIR BUTTON SW1, LEDS, SWD J3, TEST POINTS

04 / OPTIONAL EXT5V ISLAND (EXT5V VARIANT ONLY): J2, D1, C3, U2, C4, JP1, JP10

CH1 CH2 CH3 CH4 CH5 CH6 CH7

GADGETEER Y

POWER FLAGS (ERC)

SWD VREF IO CLK RST GND

EXT 5V IN

NOTES

Pin map (D1): Y socket 1 +3V3, 2 +5V (to JP10 only), 3–9 GPIO CH1–CH7, 10 GND.

Channel k: J1 pin k+2 node CHk_LINE, Rk 1k to module pad, R(7+k) 100k to BIAS. JP2 factory bridged 1–2: BIAS = GND (SAFE LOW).

DIR1–DIR7: open strap = INPUT, bridged to GND = OUTPUT; firmware reads them with internal pull-ups (no pull resistors fitted).

HOST variant: J2 D1 C3 U2 C4 not fitted, JP1 JP10 open, J1.1 feeds +3V3. EXT5V variant: bridge JP1 (J1.1 becomes an OUTPUT); never mate to a powered host.

J1 pin 2 reaches only JP10 pad 2. +5V never reaches U1 (VDD abs max 3.9 V). U1 pads 40/41 omitted (symbol and footprint).

U2 EN is left floating (TPS709 datasheet 7.4: internal pull-up, never tie EN to VIN). Unused module pads and U2 pin 4 carry no-connect flags.

PWR_FLAG on GND, +3V3, EXT5V_IN, J1_5V and EXT5V_D (additive: EXT5V_D feeds U2 power_in only through passives).

Not a safety interlock. Contains FCC ID SH6MDBT42Q, IC 8017A-MDBT42Q (pre-certified module, prototype board).

CERN-OHL-S-2.0 | KiCad only | black solder mask, white silkscreen | v12 study, not for fabrication.

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Gadgeteer Y socket to nRF52832 radio endpoint, 3.3 V logic, study version, not for fabrication

Smoothieware / CERN-OHL-S-2.0

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Title: Wireless Gadgeteer extender (7-channel sampled digital I/O radio end

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