HAT RASPBERRY PI: RS485 TERISOLASI + RTC v0.1

Contoh desain rancang.in, belum diproduksi. Mekanik HAT 65 x 56,0 mm.

Main



File: main.kicad_sch

HAT Raspberry Pi: RS485 terisolasi + RTC (contoh rancang.in)

rancang.in

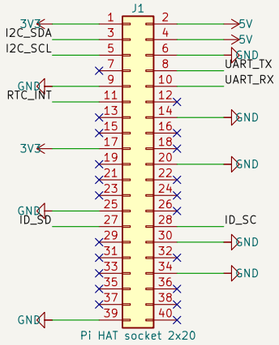
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File: hat-raspberry-pi-rs485.kicad_sch

Title: HAT Raspberry Pi RS485 v0.1

Size: A3	Date: 2026-10-28	**Rev: 0.1**
KiCad E.D.A. 10.0.8		Id: 1/2

HEADER 2x20 (SOCKET DI SISI BAWAH)

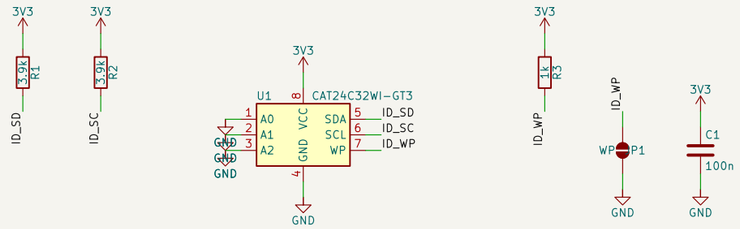
Pin 1 = 3V3; 2 dan 4 = 5V; GPIO14 TXD, GPIO15 RXD, GPIO17 INT RTC



I2C1 (pin 3/5) memakai pull-up 1.8 k di papan Pi; ID_SD/ID_SC hanya ke EEPROM.

ID EEPROM – CAT24C32

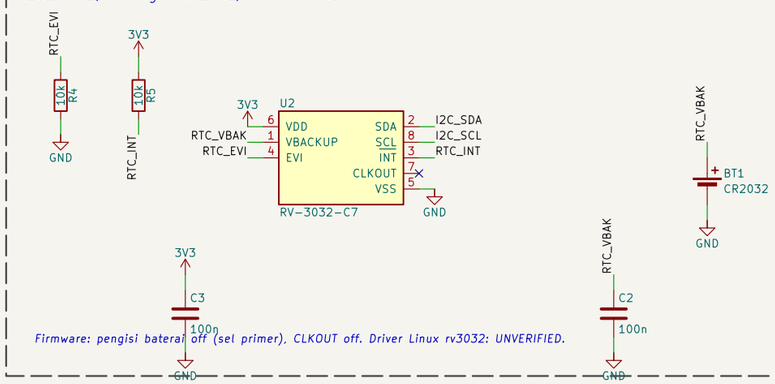
HAT: ID_SD/ID_SC (pin 27/28), alamat 0x50, WP ditarik ke 3V3



WP tinggi = terkunci. Tutup JP WP (solder) hanya saat menulis EEPROM.

RTC – RV-3032-C7

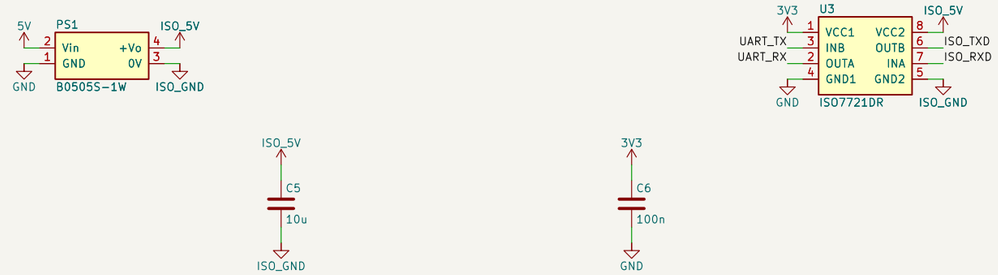
I2C1 0x51; cadangan CR2032; INT ke GPIO17



Firmware: pengisi baterai off (sel primer), CLKOUT off. Driver Linux rv3032: UNVERIFIED.

CATU DAN ISOLATOR TERISOLASI

B0505S-1W 1,5 kVDC (5 V -> ISO_5V) + ISO7721; sisi 1 = Pi, sisi 2 = bus RS485

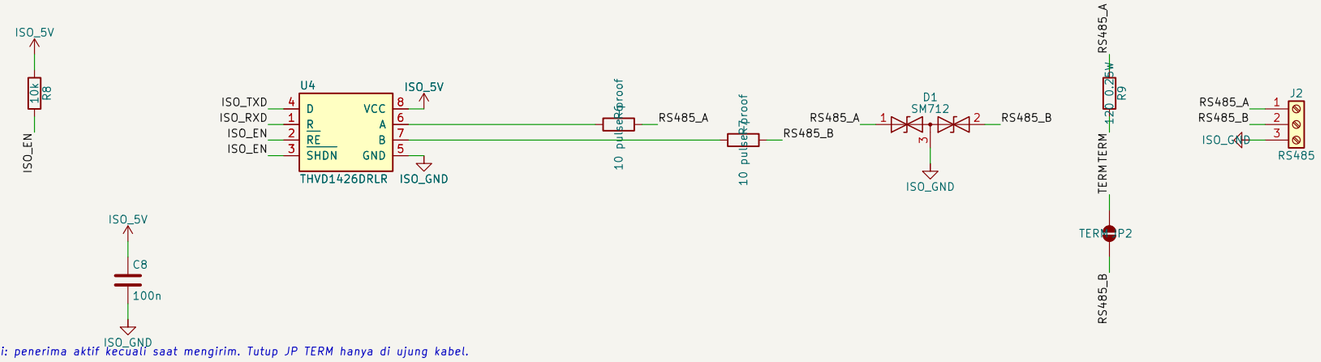


B0505S: Cin = Cout = 10 uF (datasheet EVISUN), 23 mA diam. Keluaran ISO_5V 200 mA.

ISO7721: output default tinggi bila input terbuka. Isolasi papan tidak diuji/tersertifikasi (UNVERIFIED).

TRANSCEIVER RS485 – THVD1426

Arah otomatis (dari D); proteksi SM712; terminasi 120 ohm lewat solder jumper; 3 kutub



RE dan SHDN tinggi: penerima aktif kecuali saat mengirim. Tutup JP TERM hanya di ujung kabel.

Urutan terminal: 1 A, 2 B, 3 GND terisolasi.

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rancang.in

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