

GPIO12 probably should be held low at reset or disconnected
 other option is to burn flash voltage efuse for 3.3V operation
 for GPIO2 and GPIO12 bootstrapping considerations, read
https://github.com/espressif/esp-idf/tree/master/examples/storage/sd_card
 GPIO25,26 are DAC channels that can directly replay
 audio material over i2s bus



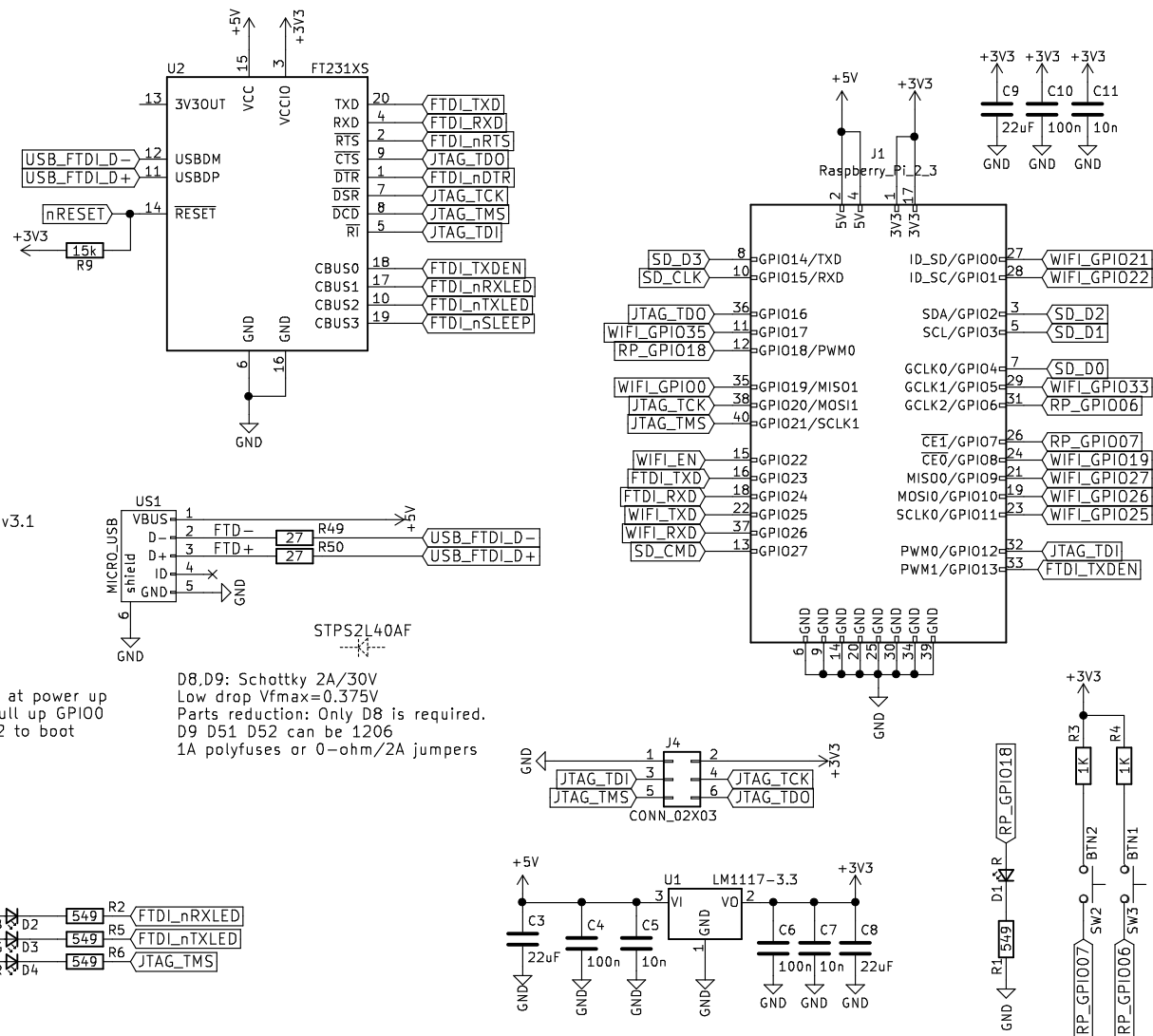
Strapping pins
(avoid using to avoid
boot problems)
GPIO0.2.4.5.12.15

WROVER GPIO16,17
used internally for PSRAM

ESP32 ADC capable pins
GPIO36,39,34,35,32,33,25,26,27,
GPIO14,12,13,15 – shared with HSPI/JTAG
Connected to BANK7 on "gpio" sheet

ESP32 VSPI pins	ESP32 HSPI pins	ESP32 JTAG slave interface
GPI05: SS	GPI012: MISO	EN: TRST_N
GPI018: SCK	GPI013: MOSI	GPI015: TDO
GPI019: MISO	GPI014: SCK	GPI012: TDI
GPI023: MOSI	GPI015: SS	GPI013: TCK
		GPI014: TMS
		FLASH over JTAG
		not yet supported.

minimum pins for compatible mode
SD_CLK, SD_CMD, SD_D0, SD_D3



Sheet: /
File: ulx4m-cm4-hat.sch

Title: ULX4M CM4 IO HAT

Size: A4	Date: 2021-11-10
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