Hardware Errata

Collection of some notes on the rev1 coordinator hardware

Assembly

- Combine 100nF capacitors on BoM
  - C804 (100V) and others (logic level) can be served by the same item
- 0402 size for bottom indicator LEDs is ass
  - They ought to be larger, 0603 or 0805
  - Alternatively, use reverse-mount LEDs that are easier to work with (and can be reflowed)
- Ethernet PHY is not recognized
  - Appears to just be a soldering issue with the pads on the SoM not making proper connection
  - Next rev should have larger SoM pads with more cream?
- Fix footprint for C802, C803
  - They are actually 3225, not 3216

Operation

- Wifi seems to be busted
  - This likely is a software issue; the module initializes correctly and is recognized on boot (with the appropriate drivers being loaded)
  - ```
    [   19.308901] mwifiex_sdio mmc0:0001:1: info: FW download over, size 616840
    bytes
    [   19.834461] mwifiex_sdio mmc0:0001:1: WLAN FW is active
    [   20.254606] mwifiex_sdio mmc0:0001:1: info: MWIFIEX VERSION: mwifiex 1.0
    (15.68.7.p189)
    [   20.261290] mwifiex_sdio mmc0:0001:1: driver_version = mwifiex 1.0
    (15.68.7.p189)
    [   32.322732] fixed-3v3: disabling
    [   32.324575] vdd_sd: disabling
    [  317.632606] mwifiex_sdio mmc0:0001:1: Firmware wakeup failed
    [  317.637160] mwifiex_sdio mmc0:0001:1: PREP_CMD: FW in reset state
    [  317.653566] mwifiex_sdio mmc0:0001:1: info: shutdown mwifiex...
    [  317.672972] mwifiex_sdio mmc0:0001:1: PREP_CMD: card is removed
    [  317.775670] mwifiex_sdio mmc0:0001:1: WLAN FW already running! Skip FW dnld
    [  317.781226] mwifiex_sdio mmc0:0001:1: WLAN FW is active
    [  327.952520] mwifiex_sdio mmc0:0001:1: mwifiex_cmd_timeout_func: Timeout cmd
    id = 0xa9, act = 0x0
    [  327.959898] mwifiex_sdio mmc0:0001:1: num_data_h2c_failure = 0
    [  327.965752] mwifiex_sdio mmc0:0001:1: num_cmd_h2c_failure = 0
    ```
    ```

```
[  327.971442] mwifiex_sdio mmc0:0001:1: is_cmd_timedout = 1
[  327.976846] mwifiex_sdio mmc0:0001:1: num_tx_timeout = 0
[  327.982131] mwifiex_sdio mmc0:0001:1: last_cmd_index = 0
[  327.987447] mwifiex_sdio mmc0:0001:1: last_cmd_id: a9 00 28 00 16 00 cd 00 1e
00
[  327.994853] mwifiex_sdio mmc0:0001:1: last_cmd_act: 00 00 13 00 01 00 01 00
00 00
[  328.002295] mwifiex_sdio mmc0:0001:1: last_cmd_resp_index = 4
[  328.008046] mwifiex_sdio mmc0:0001:1: last_cmd_resp_id: df 80 28 80 16 80 cd
80 1e 80
[  328.015874] mwifiex_sdio mmc0:0001:1: last_event_index = 1
[  328.021326] mwifiex_sdio mmc0:0001:1: last_event: 00 00 0b 00 00 00 00 00 00
00
[  328.028643] mwifiex_sdio mmc0:0001:1: data_sent=1 cmd_sent=1
[  328.034285] mwifiex_sdio mmc0:0001:1: ps_mode=0 ps_state=0
[  328.043571] mwifiex_sdio mmc0:0001:1: info: _mwifiex_fw_dpc: unregister
device
```

- No pull-up on /RF_RESET line
  - This means that every time the SoC resets, the RF part also resets. A hardware pull-up prevents this when the GPIOs go tristate during reset
- Ethernet port LEDs are ~ bright ~
  - Should be increased from 330Ω, they’re a little on the bright side. 1k is probably fine, as they needn’t be super bright

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Revision #10
Created 16 September 2022 21:47:13 by Tristan
Updated 22 October 2022 23:23:43 by Tristan