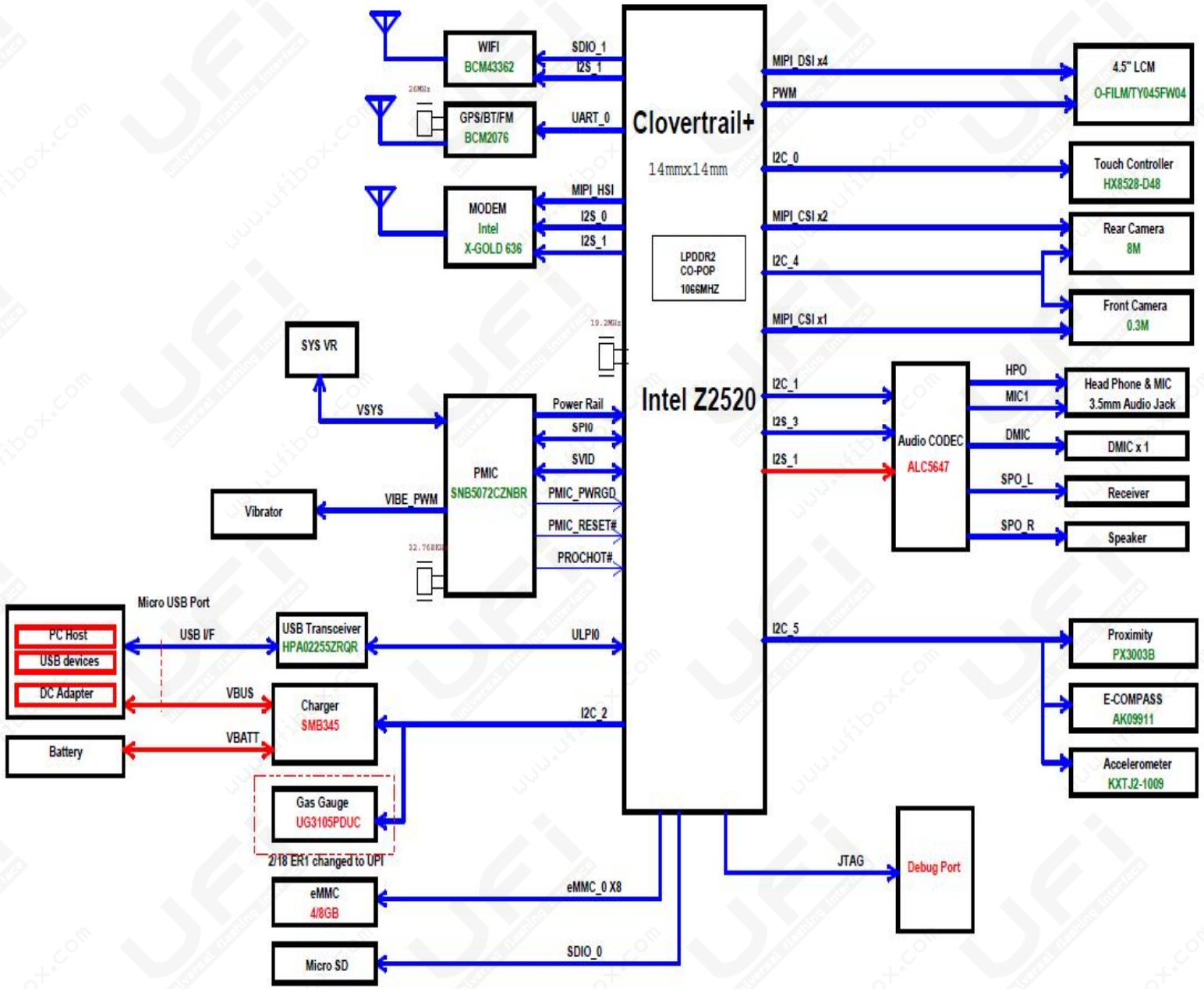
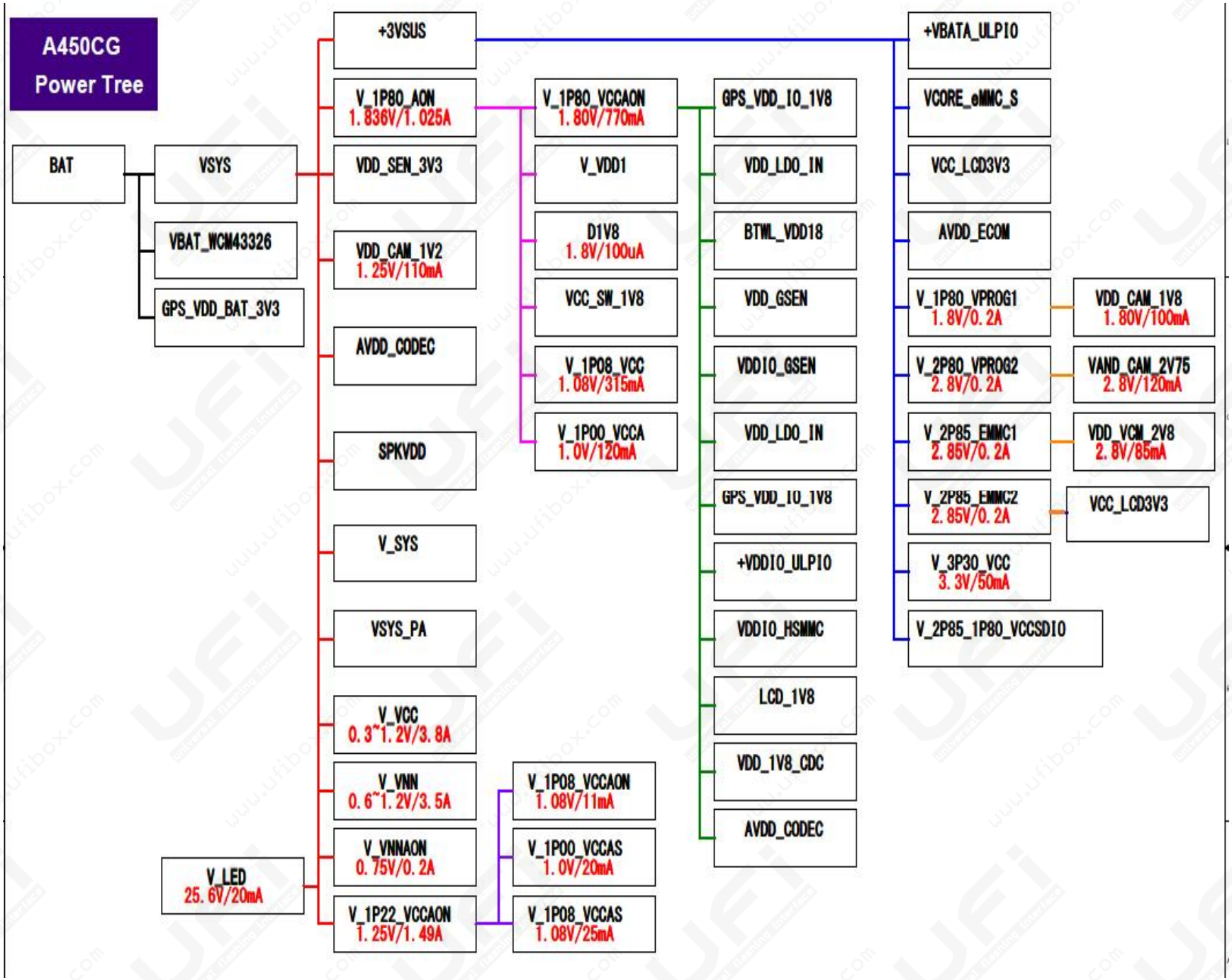
A450CG

Trouble Shooting Guide

A450CG

A450CG Block Diagram




A450CG
Power Tree
BAT
VSYS
VBAT_WCM43326
GPS_VDD_BAT_3V3
+3VSUS
V_1P80_AON
1.836V/1.025A
VDD_SEN_3V3
VDD_CAM_1V2
1.25V/110mA
AVDD_CODEC
SPKVDD
V_SYS
VSYS_PA
V_VCC
0.3~1.2V/3.8A
V_VNN
0.6~1.2V/3.5A
V_VNNAON
0.75V/0.2A
V_LED
25.6V/20mA
V_1P22_VCCAON
1.25V/1.49A
V_1P80_VCCAON
1.80V/770mA
V_VDD1
D1V8
1.8V/100uA
VCC_SW_1V8
V_1P08_VCC
1.08V/315mA
V_1P00_VCCA
1.0V/120mA
V_1P08_VCCAON
1.08V/11mA
V_1P00_VCCAS
1.0V/20mA
V_1P08_VCCAS
1.08V/25mA
GPS_VDD_IO_1V8
VDD_LDO_IN
BTWL_VDD18
VDD_GSEN
VDDIO_GSEN
VDD_LDO_IN
GPS_VDD_IO_1V8
+VDDIO_ULPIO
VDDIO_HSMMC
LCD_1V8
VDD_1V8_CDC
AVDD_CODEC
+VBATA_ULPIO
VCORE_eMMC_S
VCC_LCD3V3
AVDD_ECOM
V_1P80_VPROG1
1.8V/0.2A
V_2P80_VPROG2
2.8V/0.2A
V_2P85_EMMC1
2.85V/0.2A
V_2P85_EMMC2
2.85V/0.2A
V_3P30_VCC
3.3V/50mA
V_2P85_1P80_VCCSDIO
VDD_CAM_1V8
1.80V/100mA
VAND_CAM_2V75
2.8V/120mA
VDD_VCM_2V8
2.8V/85mA
VCC_LCD3V3

Cold Boot Timing—Power Button Pressed

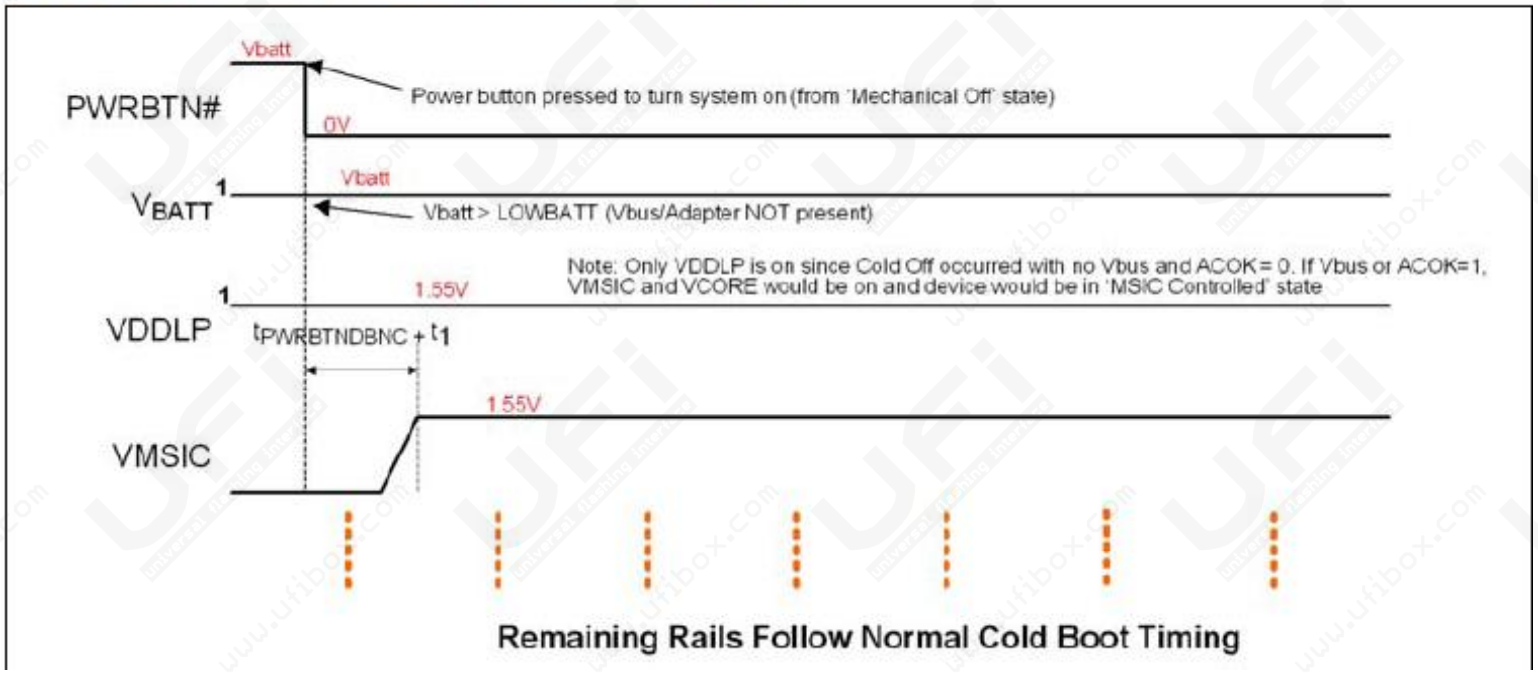
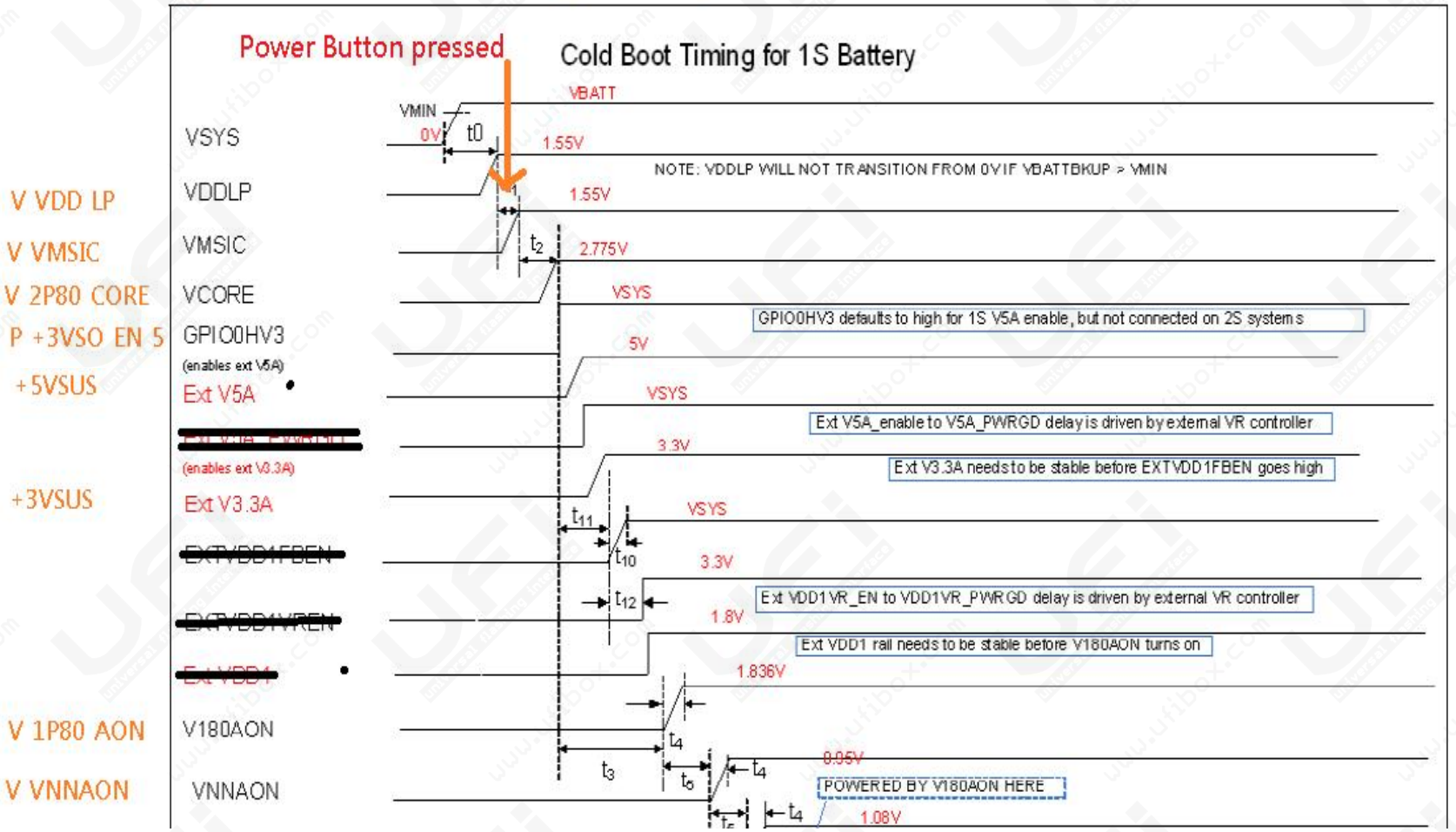
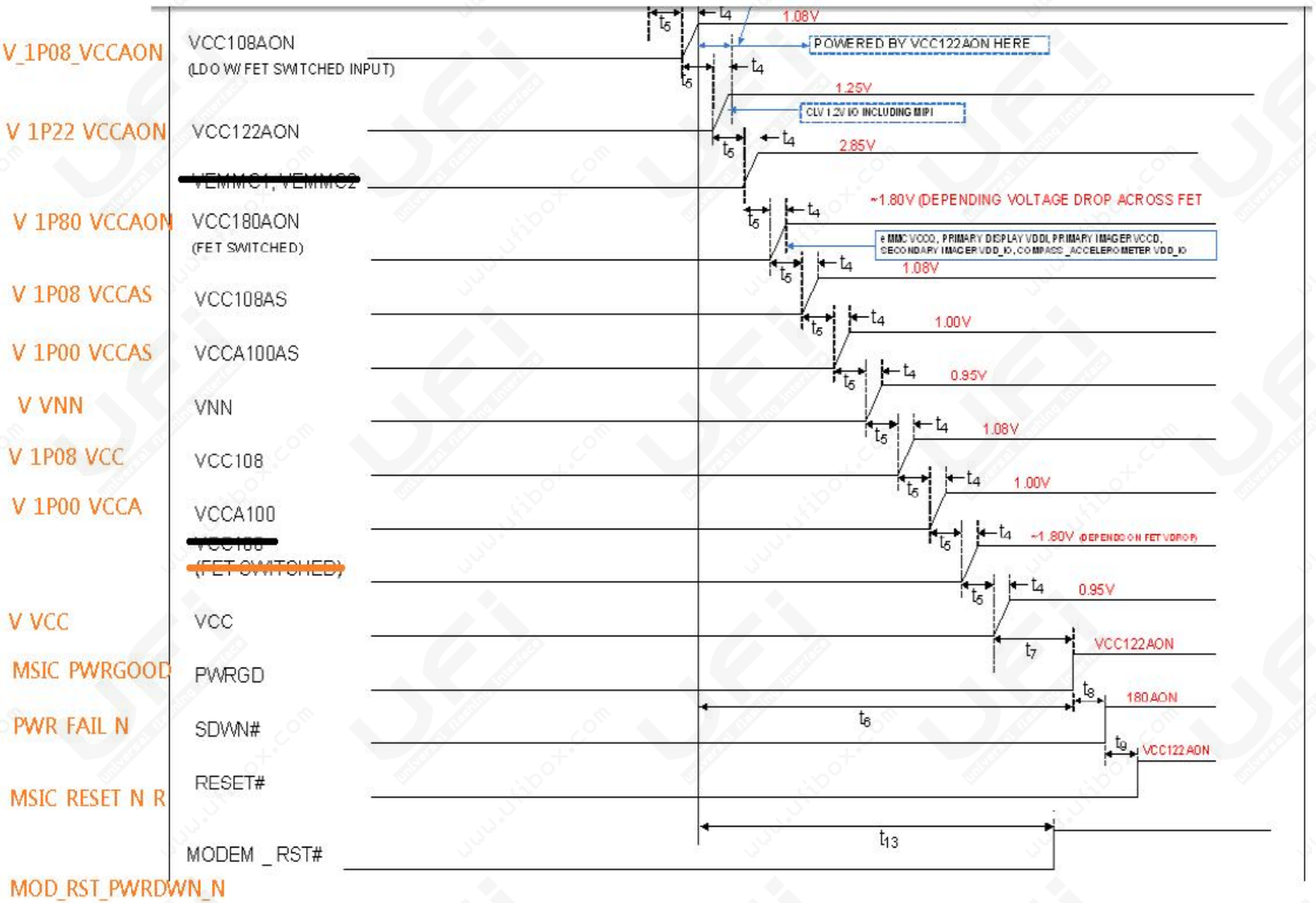


Figure 7-4. Cold Boot Timing—Battery Insertion




V_1P08_VCCAON
VCC108AON
(LDO W/ FET SWITCHED INPUT)
V 1P22 VCCAON
VCC122AON
V 1P80 VCCAON
VCC180AON
(FET SWITCHED)
V 1P08 VCCAS
VCC108AS
V 1P00 VCCAS
VCCA100AS
V VNN
VNN
V 1P08 VCC
VCC108
V 1P00 VCCA
VCCA100
V VCC
VCC
MSIC PWRGOOD
PWRGD
PWR FAIL N
SDWN#
MSIC RESET N R
RESET#
MODEM _ RST#
MOD_RST_PWRDWN_N
1.08V
POWERED BY VCC122AON HERE
1.25V
CLV 1.2V I/O INCLUDING MIPI
2.85V
~1.80V (DEPENDING VOLTAGE DROP ACROSS FET
e MMC VCCQ, PRIMARY DISPLAY VDDI, PRIMARY IMAGER VCCD,
SECONDARY IMAGER VDD_IO, COMPASS_ACCELEROMETER VDD_IO
1.08V
1.00V
0.95V
1.08V
1.00V
~1.80V (DEPENDS ON FET VDROP)
0.95V
VCC122AON
180AON
VCC122AON
t4
t5
t6
t7
t8
t9
t13

Main Board troubleshooting

Can’t Power On

Boot fail

- **檢查BAT_ID 正常對地阻抗為100KOhm**
- **CONN9601是否損件(Battery connector)**
- 檢查以下電壓是否無輸出或是與GND短路

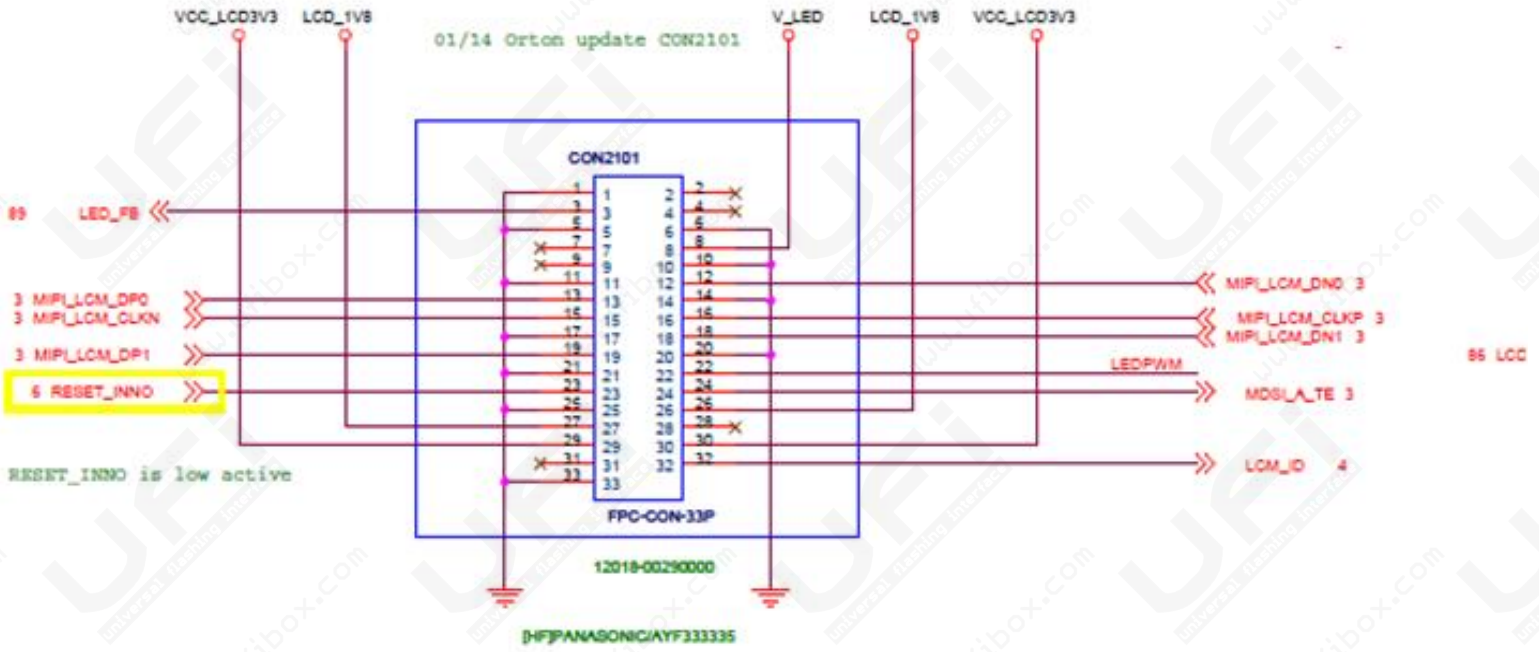
  0.80V→ V_VCC
  0.90V→ V_VNNAON
  1.00V→ V_1P00_VCCA ; V_1P00_VCCAS
  1.08V→ V_1P08_VCC; V_1P08_VCCAON; V_1P08_VCCAS
  1.22V→ V_1P22_VCCAON
  1.80V→ V_1P80_AON; V_1P80_VCCAON;
  2.80V→ V_2P80_VPROG1;
  2.85V→ V_2P85_EMMC1;
  3.30V→ +3VSUS;
- 檢查MSIC_PWRGOOD, MSIC_RESET_N電壓準位為1.25V
- 照X-Ray檢查PU8401, U301 & U1001置件是否有歪斜
- Reheat U301以確認是否有無空焊
- 更換U301 & U1001
- V_1P22_VCCAON(1.5k), V_1P80_VCCAON(3k);
  兩個對地阻抗是否偏低
- I2C_2_SDA & I2C_2_SCL 位準為1.8V

LCM

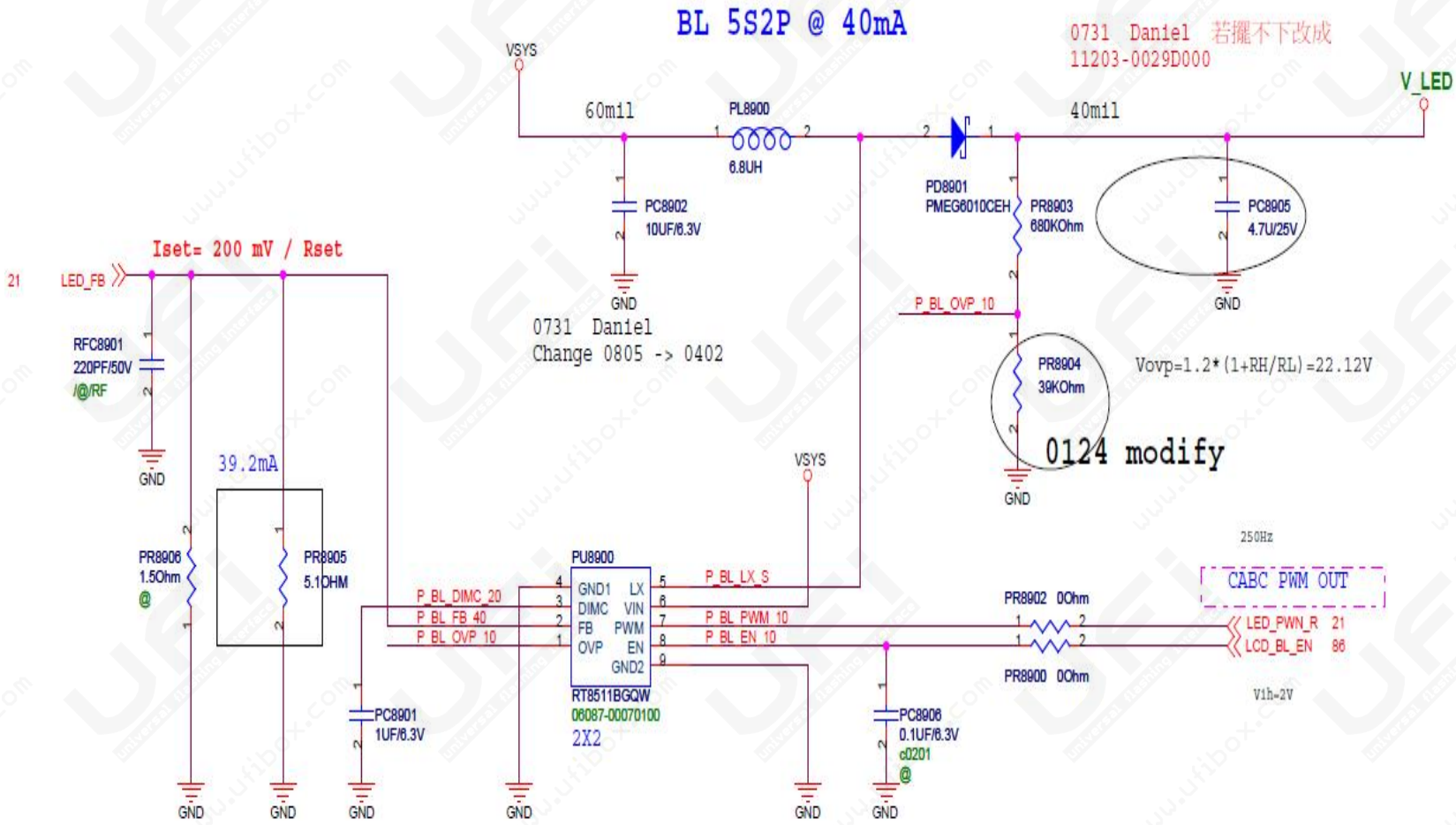
Display異常

- Check LCM CON2101是否空焊
- Check LCM FPC是否異常
- Check VCC_LCD3V3是否有2.85V(有無對地短路)
- Check LCD_1V8 是否為1.8V(有無對地短路)
- Check V_LED 點位是否約20V(有無對地短路)
- Check MIPI 訊號是否正常輸出(0.1V~0.3V)
- Check LED_PWM_R 是否有將近5KHz的PWM
- Check LCD_BL_EN是否有3.3V (High)
- Check PU8900外觀是否異常有現象或歪斜,空焊或損毀

Display 線路&點位圖



Display 線路&點位圖



Touch Panel

Touch IC

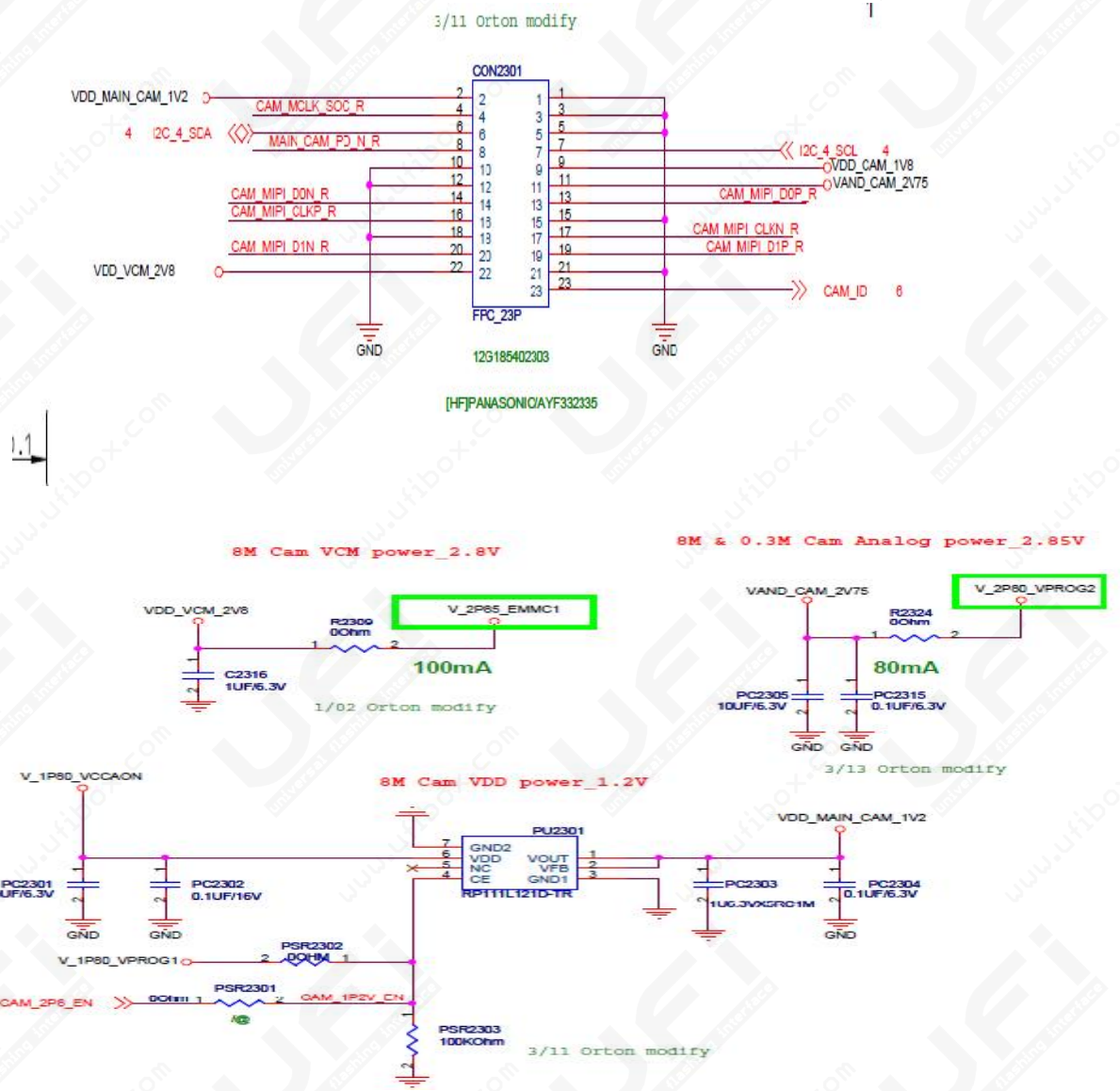
- 檢查CON1301是否有歪斜,破裂或空焊
- 檢查A3V3點位C1312.1電壓準位是否為3.3V
- 檢查D1V8點位C1316.1電壓準位為1.8V
- 檢查I2C_0_SDA, I2C_0_SCL電壓準位是否為1.8V
- 檢查U1301歪斜,空焊或損毀

Camera

8MP Camera

- 檢查**Camera**是否有插好
- 檢查**CON2301**置件是否有歪斜,空焊或損毀
- 檢查週邊零件是否有缺件,破裂
- 檢查**VAND_CAM_2V75**電壓準位是否為**2.8V**
- 檢查**VDD_MAIN_1V2**電壓準位是否為**1.2V** , 如無電壓請確認**U2301**是否異常
- 檢查**VDD_VCM_2V8**電壓準位是否為**2.8V**
- 檢查**VDD_CAM_1V8**電壓準位是否為**1.8V**

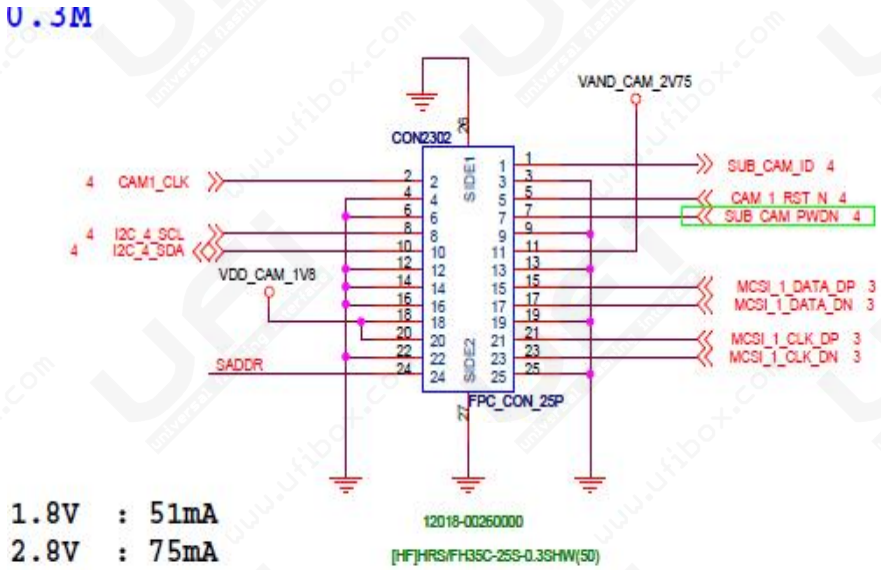
8M Camera 線路&點位圖



0.3MP Camera

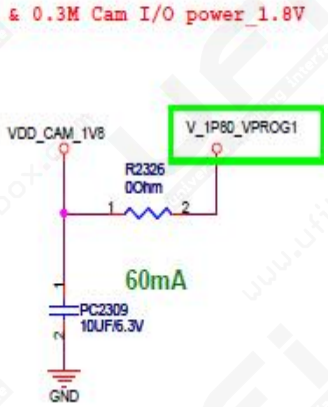
- 檢查**Camera**是否有插好
- 檢查**CON2302**置件是否有歪斜,空焊或損毀
- 檢查週邊零件是否有缺件,破裂
- 檢查**VDD_CAM_1V8**電壓準位是否為**1.8V**
- 檢查**VAND_CAM_2V75**電壓準位是否為**2.8V**

0.3M Camera 線路&點位圖



1/03 Orton removed ID PU/PD.

1/07 Orton removed R2315



USB

USB無法辨識

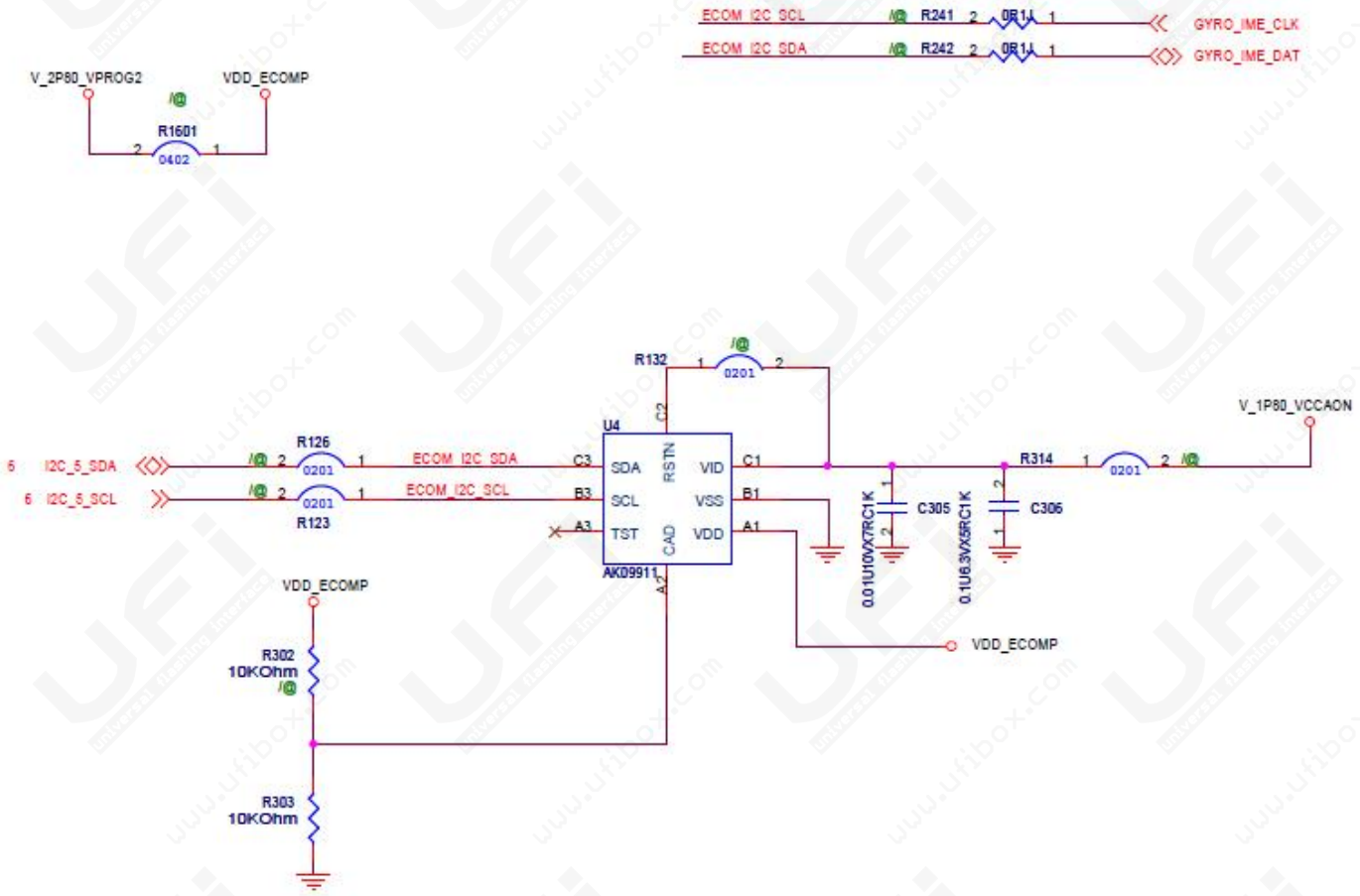
- Check USB board FPC CON 置件是否有歪斜,空焊或損毀
- **USB FPC cable**是否正常
- Check MB U1801,FPC CON1401置件是否有歪斜,空焊或損毀
- Check MB U1801偏壓+VDDIO_ULPI0, +VBATA_ULPI0是否分別是1.8V和3.3V

SENSORS

E-compass

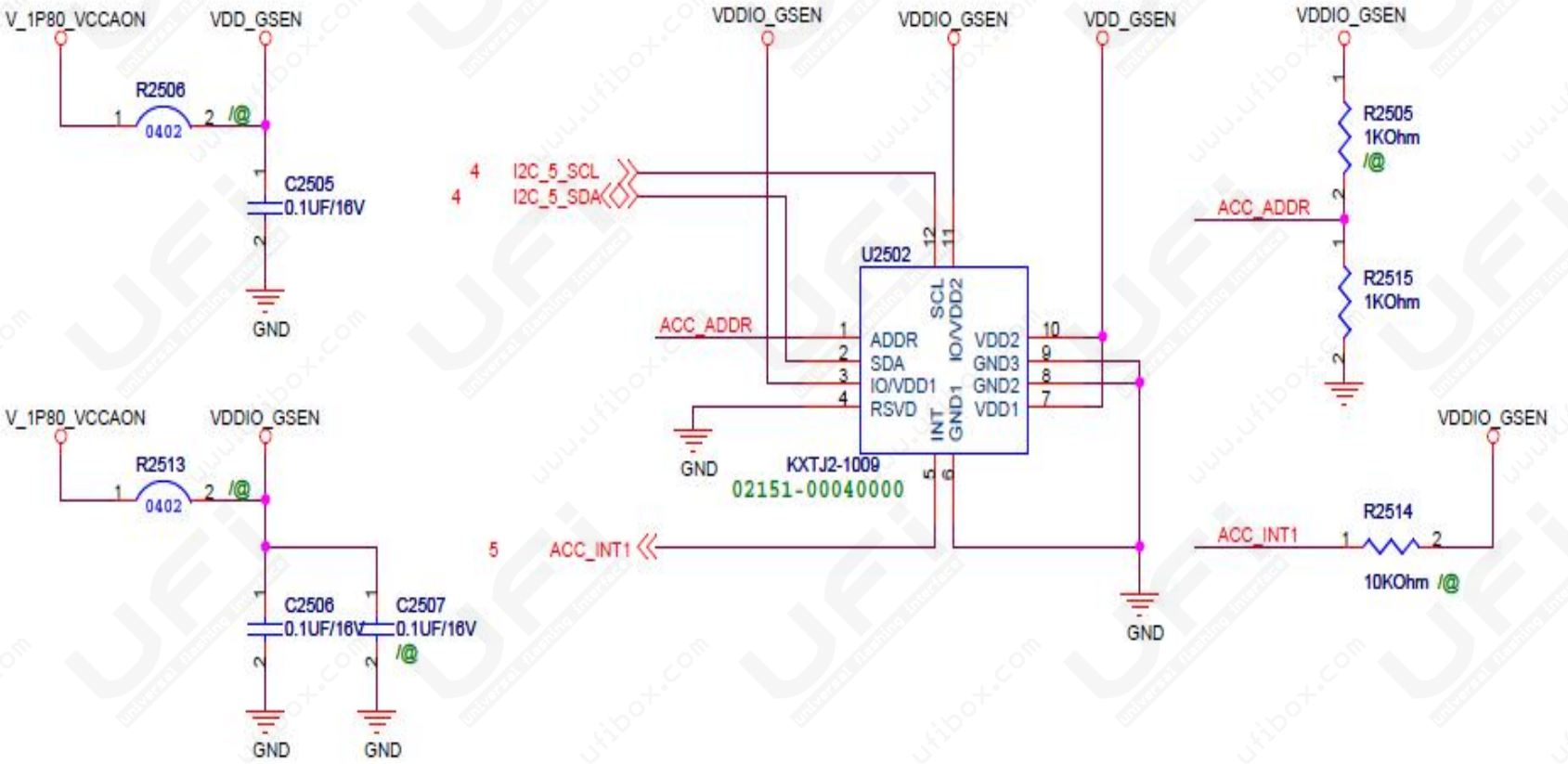
- U2501接腳是否有空焊、破損及接觸不良的情況
- AVDD_ECOM與V_1P80_VCCAON電壓是否正確
- I2C_5_SDA和I2C_5_SCL是否有正常動作
- 若上述都正常則可嘗試更換U2501本體

E-COMPASS


ECOM_I2C_SCL
/@ R241 2 0R1J 1
GYRO_IME_CLK
ECOM_I2C_SDA
/@ R242 2 0R1J 1
GYRO_IME_DAT
V_2P80_VPROG2
VDD_ECOMP
/@
R1601
2 0402 1
R132
/@
1 0201 2
C2
U4
V_1P80_VCCAON
R126
6 I2C_5_SDA
/@ 2 0201 1
ECOM_I2C_SDA
C3
SDA
RSTN
VID
C1
R314
1 0201 2 /@
6 I2C_5_SCL
/@ 2 0201 1
ECOM_I2C_SCL
B3
SCL
VSS
B1
R123
A3
TST
CAD
VDD
A1
AK09911
A2
C305
0.01U10VX7RC1K
C306
0.1U6.3VX5RC1K
VDD_ECOMP
VDD_ECOMP
R302
10KOhm
/@
R303
10KOhm

Accelerometer sensor

- U2502是否完整,有無破損及零件接腳是否有空焊的情況
- V_1P80_VCCAON電壓是否正確。
- I2C_5_SDA和I2C_5_SCL是否有動作
- 是否有受到撞擊或摔落
- 若上述都正常則可嘗試更換U2502本體

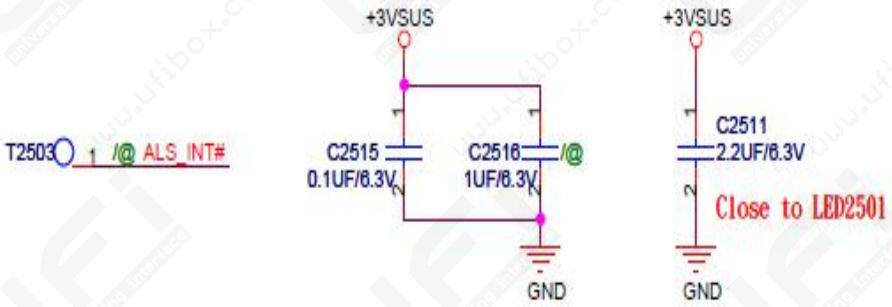

V_1P80_VCCAON
VDD_GSEN
R2506
0402
/@
C2505
0.1UF/16V
GND
V_1P80_VCCAON
VDDIO_GSEN
R2513
0402
/@
C2506
0.1UF/16V
C2507
0.1UF/16V
/@
GND
GND
4 I2C_5_SCL
4 I2C_5_SDA
VDDIO_GSEN
VDDIO_GSEN
VDD_GSEN
U2502
ACC_ADDR
ADDR
SDA
IO/VDD1
RSVD
SCL
IO/VDD2
VDD2
GND3
GND2
VDD1
INT
GND1
GND
KXTJ2-1009
02151-00040000
5 ACC_INT1
GND
VDDIO_GSEN
R2505
1KOhm
/@
ACC_ADDR
R2515
1KOhm
VDDIO_GSEN
R2514
ACC_INT1
10KOhm /@

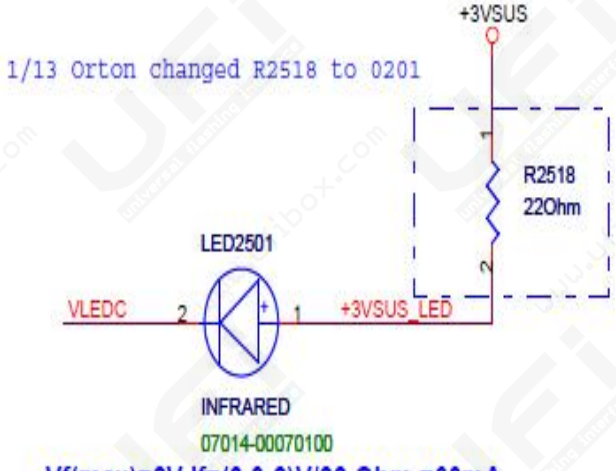
Proximity sensor

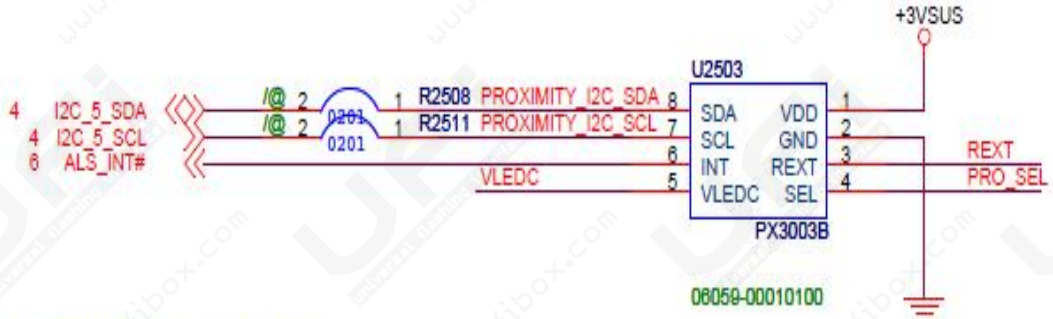
- 確認U2503是否完整,有無破損
- 零件接腳是否有空焊的情況
- +3VSUS電壓是否正確。
- I2C_5_SCL和I2C_5_SDA是否有動作
- 是否有受到撞擊或摔落
- 若上述都正常則可嘗試更換U2503本體

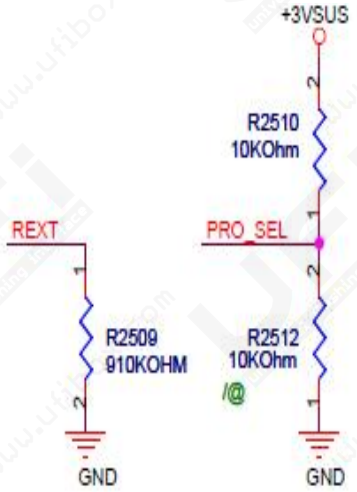
Proximity sensor

I2C Address 0X1D









Absolute Maximum Ratings at Ta = 25°C

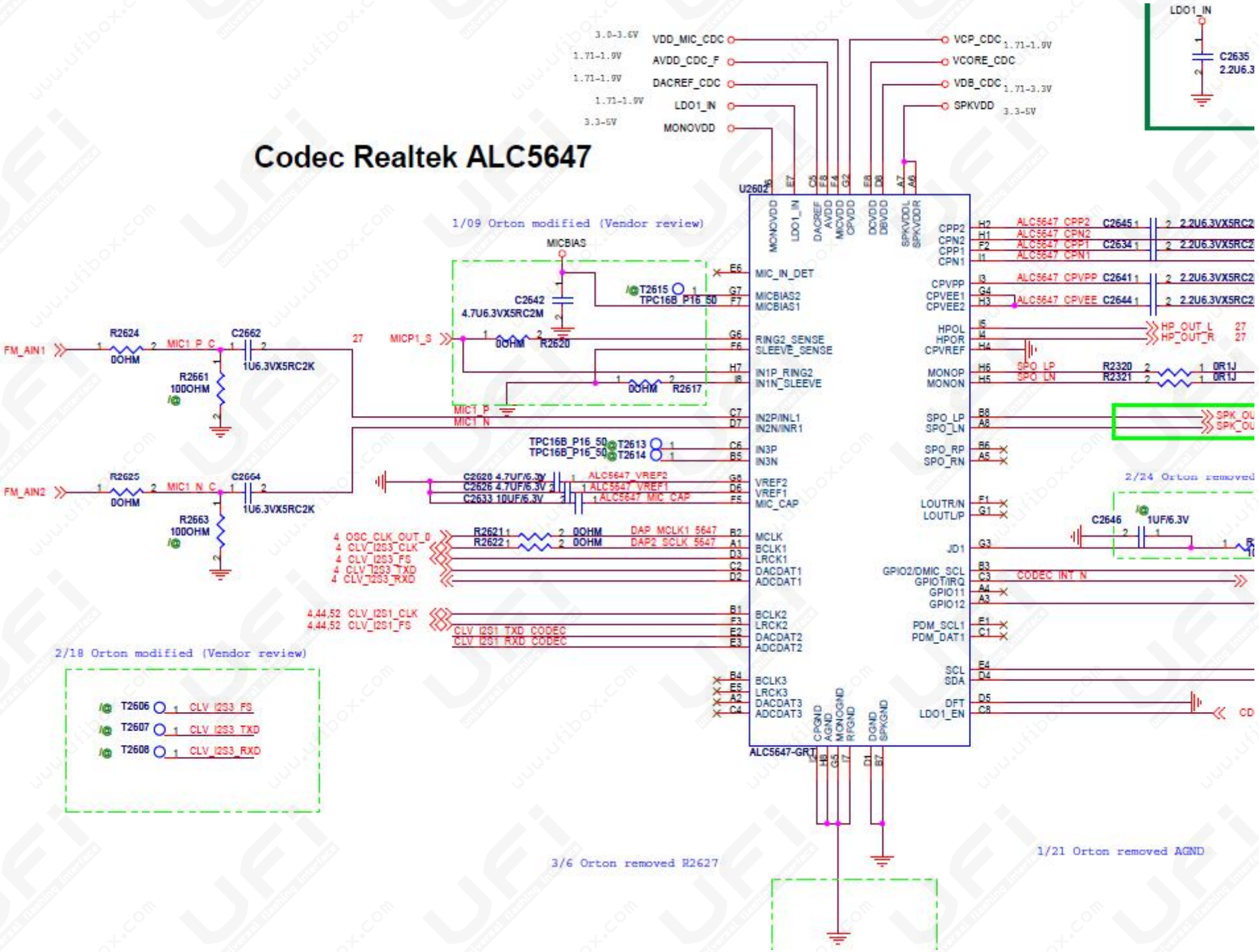
Parameter	Symbol	Rating	Unit

Audio Codec

MIC無聲音

- Check USB Board上U1 電VDD_1V8_DB是否正常
- Check U2602置件是否有歪斜,空焊或損毀
- Check 主板U2602 Power是否正常
- Check U2602周邊零件是否正常
- Check Main Board上DMIC_CLK是否有CLK 輸出
- FPC CON1401置件是否有歪斜,空焊或損毀及**FPC Cable.**

Codec Realtek ALC5647



Speaker無聲音

- Check U2602 VSYS Power是否正常
- Check MB上CON1401置件是否有歪斜,空焊或損毀
- Check USB Board上SPK Spring置件是否有歪斜,空焊或損毀
- Check Speaker本體是否正常

Headphone

- Check U2602 Power是否正常,本體PIN腳是否歪斜,空焊或損毀
- R2702,R2704是否歪斜,空焊或損毀
- Check MB J2701置件是否有歪斜,空焊或損毀

eMMC

EMMC確認

- 確認各個power domain供電狀況
  - VCORE_eMMC_S 點位 R1908---------- 3.3V
  - VDDIO_HSMMC 點位 R1901 ---------- 1.8V

- SOC U301或 eMMC U1902 外觀是否有異常，若有異常可視情況換件
- CHECK SDIO 介面 eMMC_CLK 是否有CLOCK產生

Charger

Charger無法充電

- **首先確認是否為電池過度放電，導致電量過低保護機制動作(電壓大於3.6V)**
  - 電量過低保護機制動作後，需充電至保護機制解除並且電壓達到開機條件，才能正常開機；此保護行為容易被誤判為無法充電

- 確認A/D_DOCK_IN是否5V
- USB FPC Cable是否有損壞
- 檢查**PU8101**置件是否有**歪斜,空焊或損毀**
- 檢查**週邊零件**是否有**缺件,破裂**
- 檢查**I2C_2_SCL, I2C_2_SDA (1.8V)**偏壓是否正常