

Trouble Shooting Guide-1

➤ Analysis on board follow the steps below:

- **Step 1:** Take X-ray SoC(U1), DDR, eMMC → Check process issue or not
- **Step 2:** Measure impedance & VF at power, crystal block then comparison with OK sample (OK sample value as table below)

Measure Power Block				
No.	Location	Description	Impedance (Ohm)	Voltage diode (VF)
1	L817	PWR_5V	2.86K	0.382
2	L822	PWR_DDR4_1V2	138.1	0.112
3	L815	PWR_3V3	2.55k	0.342
4	L69	PWR_CORE_1V05	129.6	0.128
5	L816	PWR_1V8	2.15K	0.334
6	L68	PWR_CPU_1V05	458.2	0.241
7	R325	PWR_DDR4_2V5	2.43K	0.323
8	C335	PWR_VTT_0V6	2.59K	0.325

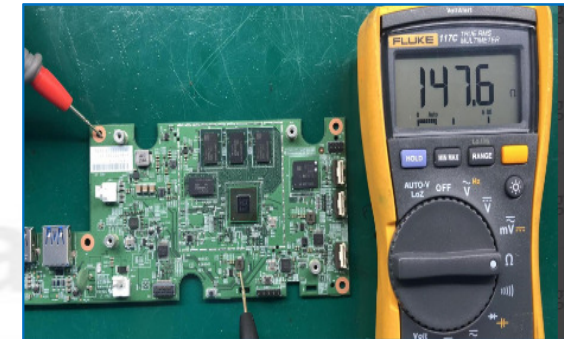
Impedance & VF value at power block

Measure Crystal Block				
No.	Location	Description	Impedance (Ohm)	Voltage diode (VF)
1	C272	BG5_CLKO	1.4M	0.396
2	C273	BG5_CLKI	1.73M	0.727

Impedance & VF value at crystal block



Frequency value (25MHz)



Ex: Measure impedance at L69 location

- **Step 3:** Use Console to check console log boot up

```
All Planes are closed. cpcb0_ctr12 = 0x40|
TZ WARNING[TEE_TARegister:53] the TA (AAC) has been registered
[ 6793]CEC(SM): -----SMCEC2SM: received cec msg:id=1-----
[ 6799]I(SM): Got Appready packet from SoC CEC: 01 00 00 00 01 00 00 00
[ 6807]I(SM): SM CEC:pcBody[4]=0x1.
[ 6810]I(SM): SMCEC2SM: sending launch req to SOC: 06 00 00 00
notify_amp_bootcomplete
```

Picture 1: Console log boot up OK

```
init cpupll 800MHz
init mempll 2400MHz
init 3GB DDR, lib version r63074
hw_init done
custom table done
asking BCM to load miniloader.
bcm_load_next_img error!init cpupll 800MHz
init mempll 2400MHz
init 3GB DDR, lib version r63074
hw_init done
custom table done
asking BCM to load miniloader.
bcm_load_next_img error!=====
```

Picture 2: Console log boot up NG

Trouble Shooting Guide-2

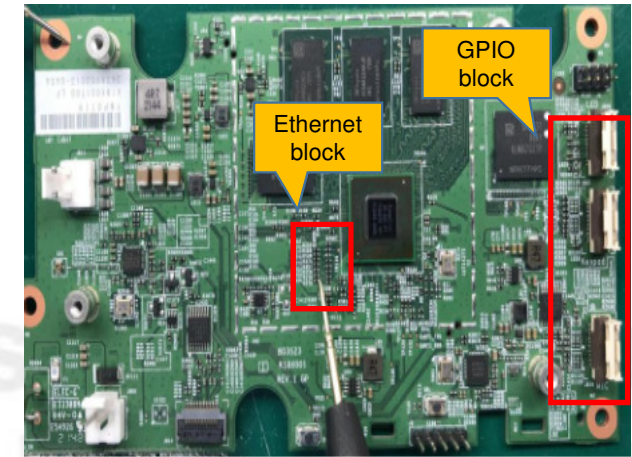
- **Step 4:** Measure impedance & VF at GPIO block then comparison with OK sample (OK sample value as table below)

Measure Ethernet Block				
No.	Location	Description	Impedance (Ohm)	Voltage diode (VF)
1	R353	BG5_NAND_CEn	4.445K	0.559
2	R354	BG5_NAND_REn	2.2M	0.554
3	R355	BG5_NAND_WEn	2.165M	0.544
4	R356	BG5_NAND_CLE	2.167M	0.559
5	R357	BG5_NAND_ALE	29.38K	0.536
6	R358	BG5_NAND_RDY	31.53K	0.552
7	R372	BG5_NAND-IO0	3.727K	0.55
8	R373	BG5_NAND-IO2	3.72K	0.553
9	R374	BG5_NAND-IO3	4.837K	0.607
10	R375	BG5_NAND-IO4	15.3K	0.616
11	R376	BG5_NAND-IO5	3.768K	0.555
12	R377	BG5_NAND-IO6	3.733K	0.545
13	R378	BG5_NAND-IO1	2.216M	0.549
14	R379	BG5_NAND-IO7	4.108K	0.569

Impedance & VF value at Ethernet block

Measure GPIO Block					
No.	Location	Description	Impedance (Ohm)	Voltage diode (VF)	Remark
1	R2996	BG5_SM_IR_RX	2.203M	0.729	LED Block
2	R2950	BG5_TW0_SDA	3.356K	0.5	
3	R2951	BG5_TW0_SCL	3.359K	0.499	
4	R2952	KB_PWR	5.205K	0.72	Keypad Block
5	R2953	KB_CH_UP	5.023K	0.637	
6	R2954	KB_CH_DN	4.896K	0.633	
7	R2955	KB_V_DN	4.964K	0.638	
8	R2956	KB_V_UP	5.335K	0.72	
9	R2957	KB_MICMute	5.136K	0.64	MIC Block
10	R2958	KB_BTPair	5.026K	0.636	
11	R2959	KB_SFM	4.975K	0.636	
12	R2938	BG5_TW0_SCL	3.347K	0.499	
13	R2939	BG5_TW0_SDA	3.349K	0.5	
14	R2942	M_DATA	7.28M	0.694	
15	R2944	BG5_SM_TDO_PCIE_R	3.784K	0.588	

Impedance & VF value at GPIO block



GPIO location connect with Soc_U1

Note:

Measure impedance: Multi meter to scale ohm

Measure voltage diode: Multi meter to scale diode

The Red meter stick put on GND

The Black meter stick put on point need to measure

➤ Summary:

- **Case 1:** Measure impedance & VF on board find out abnormal (Large difference in value compared to OK sample) ➔ Suspect Soc_U1 has pin cracked

- **Case 2:** Measure impedance & VF on board normal & console log boot up show as picture 2 ➔ Connection between Soc_U1 & PCBA not good

➔ We should be to re-solder Soc-U1 to sure pin cracked or pins be damage EOS Re-solder OK ➔ **Pin crack**
Re-solder NG ➔ **Pins be damage EOS**