

SWAN- 96.1531T00

AMP board burnout FA report

96.1531T00(AMP board)-FA report

FA step:

1. VI inspection

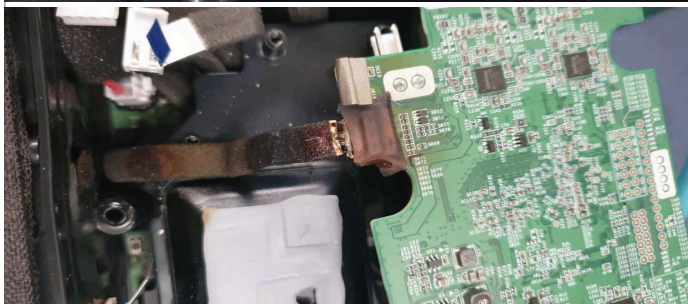


SN: 2149695001202109001829

MAC: A8:93:4A:FE:7F:19



The housing was burned and PCB 24V trace had charred.
No water vapor mark was found at top cover and LED panel.



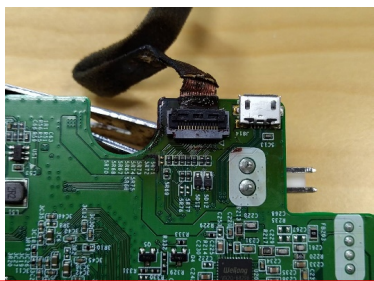
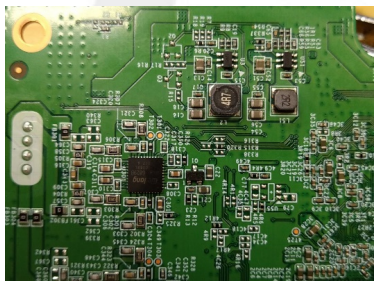
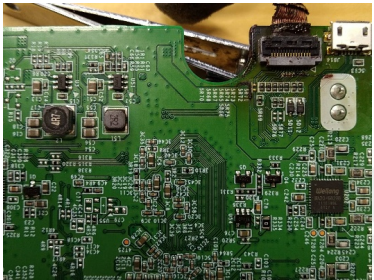
The FFC cable was burned out and charred seriously.
The heat spreader also has burned out mark.

96.1531T00(AMP board)-FA report

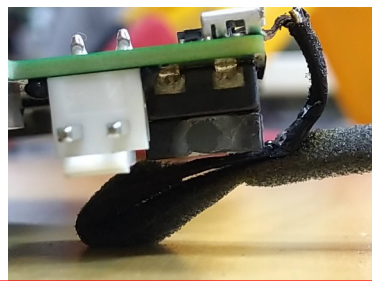
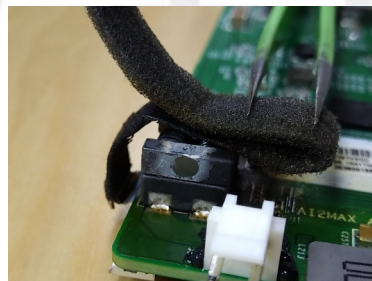
FA step:

1. VI inspection: Take apart of AMP board

Top side



Bottom side



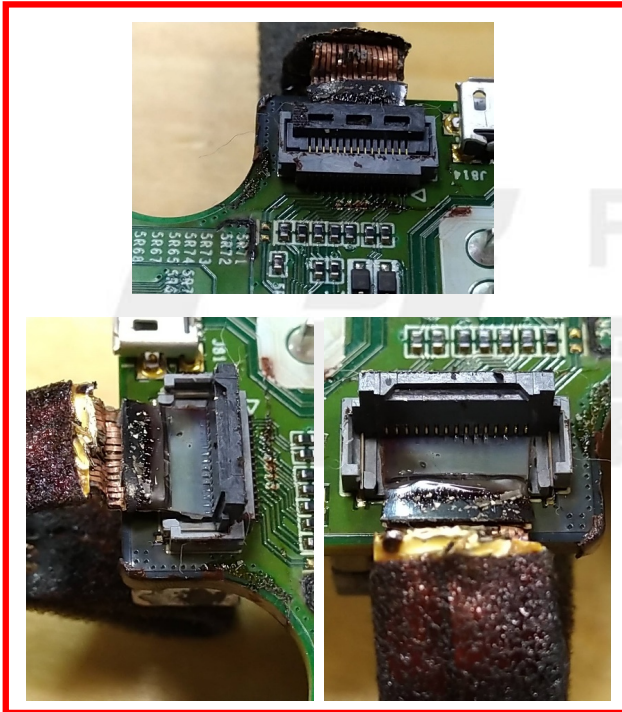
- At top side:
 1. 24V trace had charred and FFC connector was burned out.
 2. The other circuits look ok and are not affected.
- At bottom side:
 1. SOC, EMMC, and other circuit are ok.
 2. 24V power choke and capacitors were burned out at 24V frond end.
- Simulated FFC cable folding on the top of power choke, the burned out area are as well as position of choke. See next page(page 4) detail pictures.

96.1531T00(AMP board)-FA report

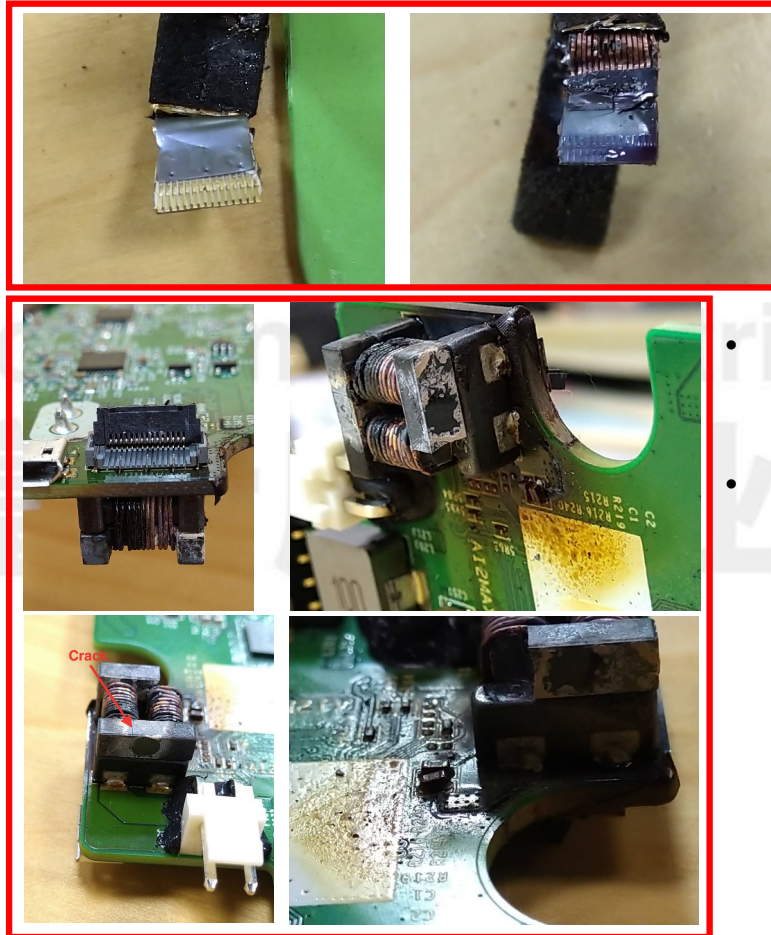
FA step:

1. VI inspection

Other detail pictures.



- Top side of FFC cable and foam seriously burned out.
- FFC cable trace is exposed.



- FFC cable:
Bottom: golden fingers are ok.
Top: Burned out mark.

- 24V trace of PCB is going to peel off by burned out.
- The core of choke has crack and damaged.

96.1531T00(AMP board)-FA report

FA step:

2. Measure the impedance of power trace

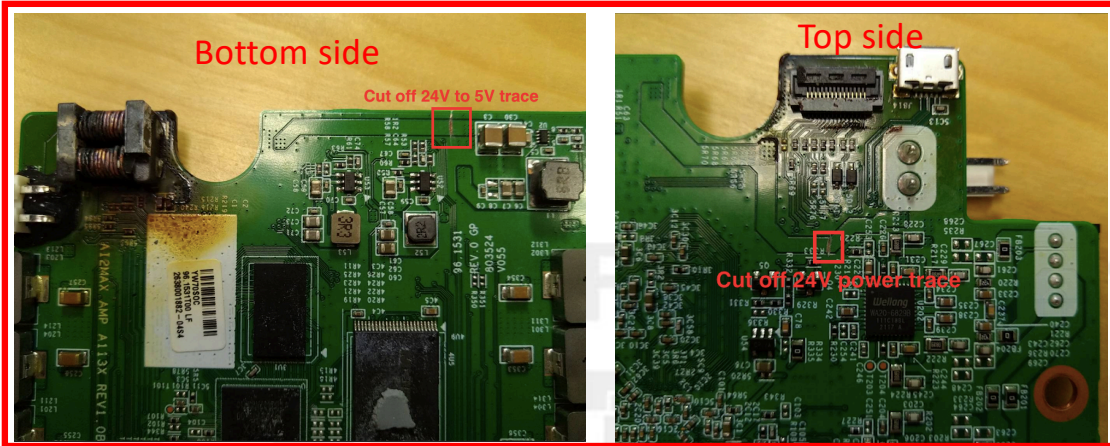
Unit: Ohm			VDD_EE	1.35V	VDDCPU	3.3V	
	24V	5V	L52	L53	L51	L2	
Defect AMP board	3.3	43.3K	454	1.72K	573	14.66K	
OK AMP board	35.05K	43.3K	454	1.79K	659	15.39K	

- Measure the impedance to compare with good amp board.
- Only 24V circuit is short to GND.

96.1531T00(AMP board)-FA report

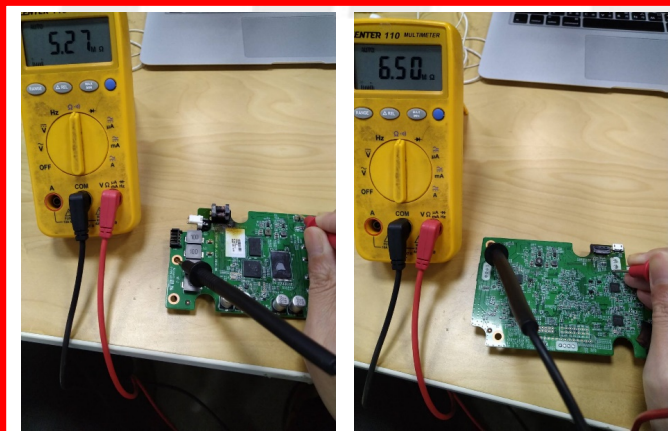
FA step:

3. Cut off 24V trace to isolate power choke circuit.



- Cut off 24V power trace:
 1. Bottom side: 24V to 5V DCDC(U2)
 2. Top side: AMP ICs and E-Caps

4. Measure 24V trace after cutting off power trace.



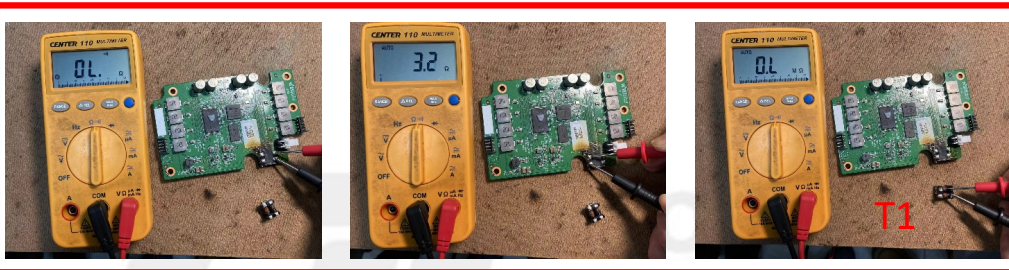
Unit: Ohm	Bottom	Top	Choke circuit
Defect AMP board	5.27M	6.5M	0.3

- After cutting off 24V power trace, the short is in choke circuit.
 1. The other circuits are normal.
 2. 24V to 5V DCDC(U2) and AMP ICs and E-caps are ok.

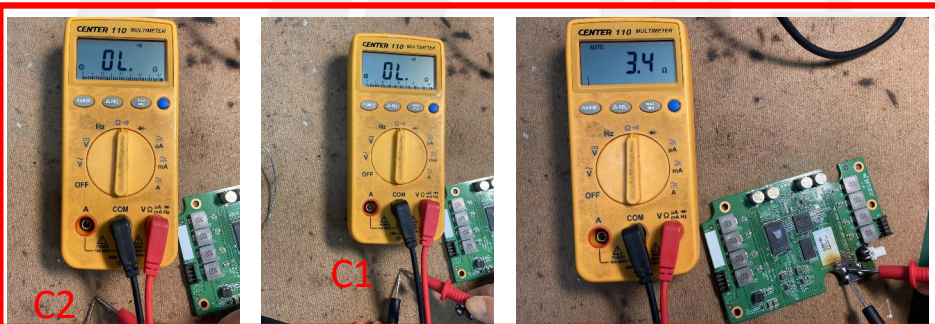
96.1531T00(AMP board)-FA report

5. Remove components:

1. Remove T1 choke, then check PCB and component.



2. Remove C1 and C2, then check PCB and component.



• Steps:

1. Remove T1 choke, the choke is ok.
Check the PCB, it is still short to GND.
2. Remove C2, C2 is ok.
Check PCB, it is still short to GND.
3. Remove C1, C1 is ok.
Check PCB, it is still short to GND.

• Summary:

1. Cut off 24V power trace to DCDC(U2) and E-caps loop, the short phenomenon is exist.
2. Remove components as choke and C1/C2 capacitor, PCB is still short to GND,
3. Suspect PCB power trace on 24V at choke circuit is short to GND.

• PCB Vendor and Choke vendor:

PCB: VGT(308.03524.055)

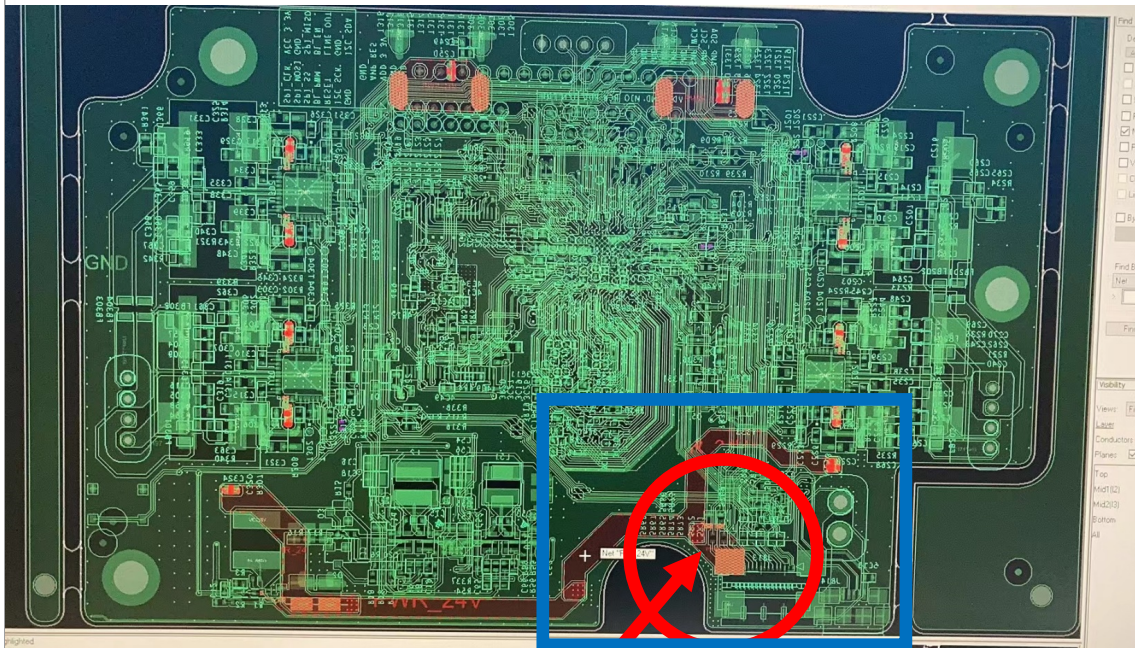
Choke: Chilisin(155.00089.005)

T1 components data

Foxconn KP_NO	Vendor	MFR_KP_NO	MFR_CODE	DATE_CODE	LOT_CODE
155.00089.005	CHILISIN	BPPM00121190172X0F	YE00001036	2135	V96-152400006HZ

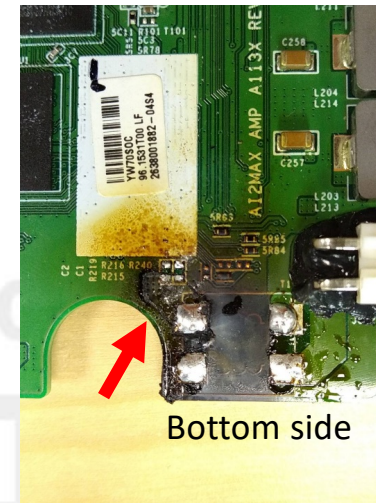
96.1531T00(AMP board)-FA report

6. Layout pictures:

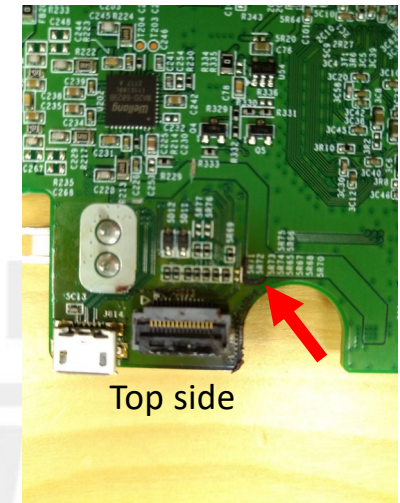


Suspect short area

Cut PCB board area



Bottom side



Top side

PCB vendor: VGT

7. Next step:

1. Return the defective PCBA to PCB vendor for x-section analysis on 2/18
2. Vietnam QA and RD will work with vendor to analyze the short circuit root cause and prepare the report