

Failure Analysis Report

0000628: [Eagle] the rebooting infinite loop during power on

ID	Project	Category	View Status	Date Submitted	Last Update
0000628	SKB Eagle (T99X171)	HW Issue	public	2019-04-18 14:22	2019-04-22 16:22
Reporter	(ALTech) SB Park	Assigned To	(HW) Sean Chiang	Due Date	2019-04-23 15:03
Priority	immediate	Severity	s2-severe	Reproducibility	always
Status	assigned	Resolution	open		
Summary	0000628: [Eagle] the rebooting infinite loop during power on				
Description	the Eagle board has a defect. Mr Kerwin will hand carry this board. debug please and find root cause. 1. symptom 1) LED : RED LED is turn on and stay (do not change white color) 2) HDMI : No HDMI output 2. check point 1) Log message (see attached file) - Cfg max: 5, cur: 5, Board id: 255, Force loop cfg LPDDR3 probe Firmware does not exist! All ddr config failed... Reset... boot times 4G12A:BL:0253b8:61aa2d:FEAT:E0F93180:2000:POC:F:RCY:0:EMMC:0:READ:0:0.0? bl2_stage_init 0x01 then rebooting 2) power 1) there is no power output of U304 (I cannot check all power rail because Foxconn does not share the schematic) 2) clock (y401) may normal operate (my scope is very poor. I just can catch the dc level of xtal)				
Tags	No tags attached.				
Attach Tags	(Separate by ",") Existing tags ☐ Attach				

FA Step:

1. Check DDR power rail P1V2, the result is no power output.
2. Check the PP_PW R_IN=5.1V, the result is ok.
3. Check the resistance conductivity on pin 4 which is output pin, compared with good PCBA. The result is 0.6V. Good PCBA is 1.1V.
4. Power on again and check console log, the fail symptom seems relative to DDR while P1V2 is no power output.
5. Change a new one power IC of U304 and the PCBA is good to boot up.
6. Suspect that when plugged-out the DC Jack power cable, thumb is very close to U304. So far there is no housing to cover the PCBA and the fingers to touch components risk are very high.
7. Please see figure 1 simulated as thumb to touch the U304 while plugged-out DC Jack cable.

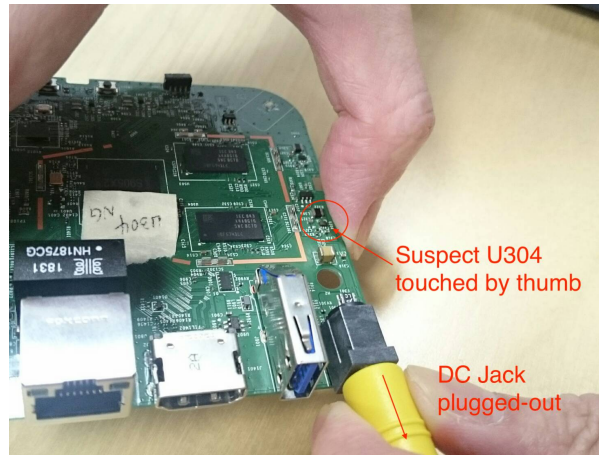


Figure 1. Simulate thumb to touch component

Conclusion:

Suspect the fingers and thumb to touch component, that ESD or short components while PCBA is power on and has very high risk without housing to cover PCBA. Even U305 has risk to be touched. Please see figure 1.