



Cisco Project

Component defect Analysis Report

FA Report No. : N019Y0218
Defect component : CISH-16-4405-01
Product Model : SRG (Dagger)
Part Number : 73-16614-07
PCBA S/N : FDO230700G6
Failure : Get ROMMON failed at 2C station
Department : Cisco project TE
Reporter : Storm Xu
Date : 02/18/2019



Background Information

Reporter

Main Reporter: Storm Xu

Employee ID: 853593

Product Failure Description

Subject

SRG (Dagger)

Phenomenon

Get ROMMON failed at 2C station

Information

Product Model: SRG Dagger (73-16614-07)

Using Tools and Software

Multi-meter---TDS 3052C

Received and Observed Data

(Issue date) : 2019/02/18

(Where): SRG debug Area

Analysis and Cause Confirmation

1. Phenomenon:

The board failed at 2C station, failure code is Get ROMMON failure, the Post code LEDs (CR0/CR3/CR4/CR6_P80) keep solid light.

2. Analysis:

1) Took the failed board (FDO230700G6) to do failure analysis, and review the failed log from 2C station as following:

```

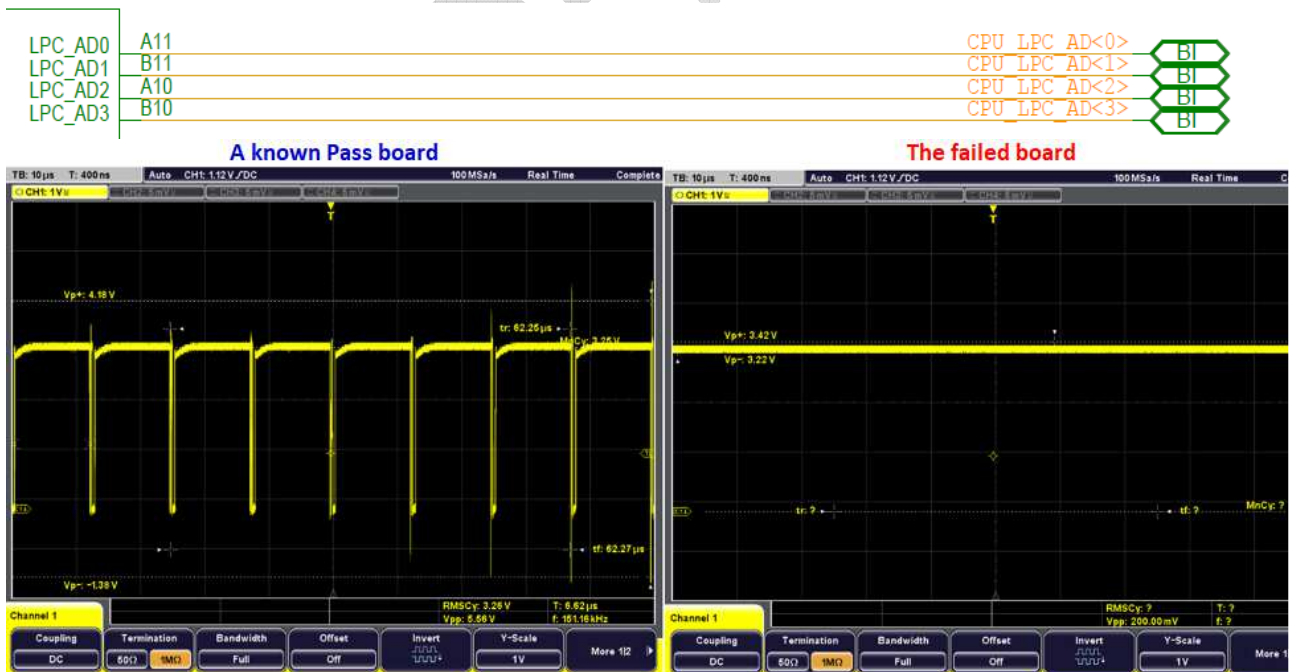
? ? ? ? ? ? ? ?
Initializing Hardware ...
? ? ? ? ? ? ? ?
Initializing Hardware ...
Checking for PCIe device presence...
%ERROR% - Did not find CPLD. Read failure!

```

%ERROR: Critical device not found on 00:01.00

%WARNING: Resetting...

- 2) Put the failure board to debug station at room temperature, then power on, found it is not stable, sometimes it can be boot up normally; sometimes it failed with get ROMMON symptom (it can be duplicated), the failure log and Post code failed status is as same as it happened at 2C station.
- 3) Based on the fail log and debug experience before, it is related with FPGA(U1_F1), we checked the FPGA and the parts around with it, no process issue found, also measured the impedance and voltages related with FPGA and CPU and compared with a known pass board, all of them are normal
- 4) Visual inspection (including 2D and 5D x-ray test) for the whole PCBA especially for FPGA (U1_F1) and CPU, no process issue found
- 5) Captured the signals between FPGA and CPU, found CPU_LPC_AD<0/1/2/3> has any abnormality after compared with a known pass board, the details as below:



- 6) Replaced FPGA with a new one, the failure symptom dis-appear



3. Primary conclusion and suggestion

1) Combined above, this issue caused by FPGA CHIP, the information as below:

Serial Number	Model	Raw Component	SN	Reel ID	DateCode	Lot Code	Vendor	Vendor PN	LoadedTime	Locations
FDO230700G6	73-16614-07	CISH-16-4405-01	FDO230700G6	S004483835	1901	S849MKB71	ALTERA	EP4CGX75DF27C7N	2/11/2019 12:00	U1_F1

Material info:

CPN: CISH-16-4405-01

MPN: EP4CGX75DF27C7N

DC: 1901

LC: S849MKB71

Vendor: ALTERA

Where used: SRG Sword Utah Dagger boards

2) Suggest sending the part to supplier for further FA if needed

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