Cisco Project

Component defect Analysis Report

FA Report No.	:	**N018Y0528**
Defect component	:	**CISH-16-4405-01**
Product Model	:	**SRG (Sword GH)**
Part Number	:	**73-16615-05**
PCBA S/N	:	**FDO2205276J/FDO22030LPG/ FDO21500YNA**
Failure	:	**GET_ROMMON failed at BST**
Department	:	**Cisco project TE**
Reporter	:	**Jizhao Yang**
Date	:	**05/28/2018**

Background Information

Reporter

Main Reporter: Jizhao Yang
Employee ID：576006

Product Failure Description

Subject

SRG (Sword GH)

Phenomenon

GET_ROMMON tests failed at BST

Information

Product Model: SRG Sword GH board 73-16615-05

Using Tools and Software:

Oscilloscope---R&S RTM 2104

Multi-meter---Fluke 115C

Received and Observed Data

(Issue date)：   2018/05/28
(Where)：   SRG debug Area

Analysis and Cause Confirmation

1. Phenomenon:
These boards failed at BST station with failure code "GET_ROMMON test failed"
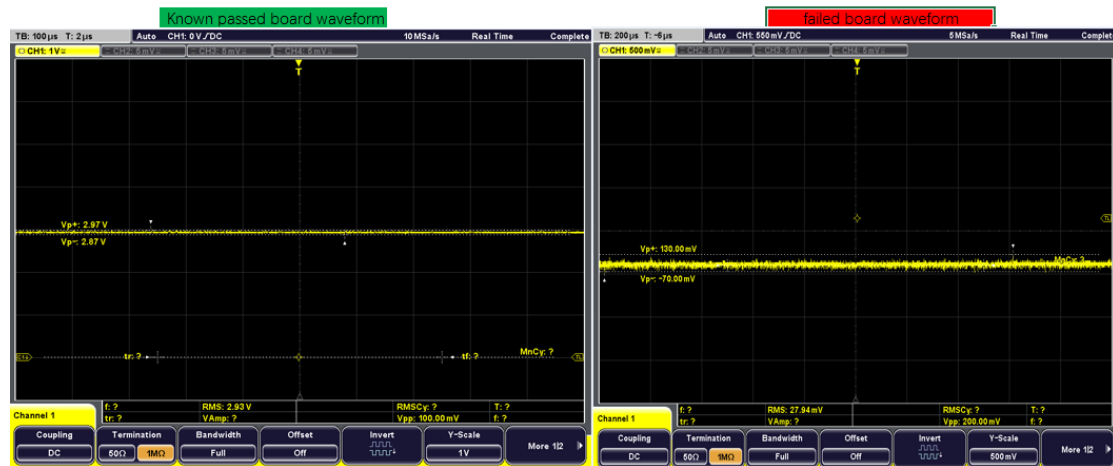
2. Analysis:

Took one failed board (FDO2205276J) to debug bench for analysis:

1) Power on the board, the post code LEDs CR0_P80 - CR7_P80 keep solid green.

2) According to debug experience, this failure may be related to U1_CPU/U1_F1 / U1_CLK.We measured related signal, found U1_F1 signal (CLK_PWR_GOOD) abnormal compared with known passed board.

Captured waveform shown as below:

CLK_PWR_GOOD signal related schematic shown as below:

3) Visual inspection (including 2D and 5D X-ray) for the whole PCBA especially for FPGA (U1_F1), no process issue found

4) Re-balled the "suspected defective" FPGA, then mounted on a board which passed BST station, the board failed BST station with the same symptom "get ROMMON failed".

5) After that, we measured the rest failed boards, all are same with FDO2205276J board. After replaced them with new U1_F1 components, all symptoms disappeared and passed BST test.

Combined above, based on debug TOI(guideline) and experience, we suspected U1_F1 failed.

3. Primary conclusion and suggestion

1) The boards "GET_ROMMON test fail" are caused by U1_F1 defective. The failed component material information shown as below:

Raw Component	SN	DateCode	Lot Code	Vendor	Vendor PN
CISH-16-4405-01	FDO22030LPG	1743	NAAAF54851A	ALTERA	EP4CGX75DF27C7N
CISH-16-4405-01	FDO2205276J	1749	NAAAF54982B	ALTERA	EP4CGX75DF27C7N
CISH-16-4405-01	FDO21500YNA	1743	NAAAF54681A	ALTERA	EP4CGX75DF27C7N

Material info:

CPN : CISH-16-4405-01

MPN: EP4CGX75DF27C7N

Where used: Sword GH

2) Send these "defective components" to supplier for further FA to find out the root cause