

BFX_UA300 (K18X001.00)

FFC cable FA report



Foxconn Industrial Internet
富士康工业互联网

Date : 21-Feb-2022
Prepared by: Rachel

D2. Description of Problems

1. Issue Description



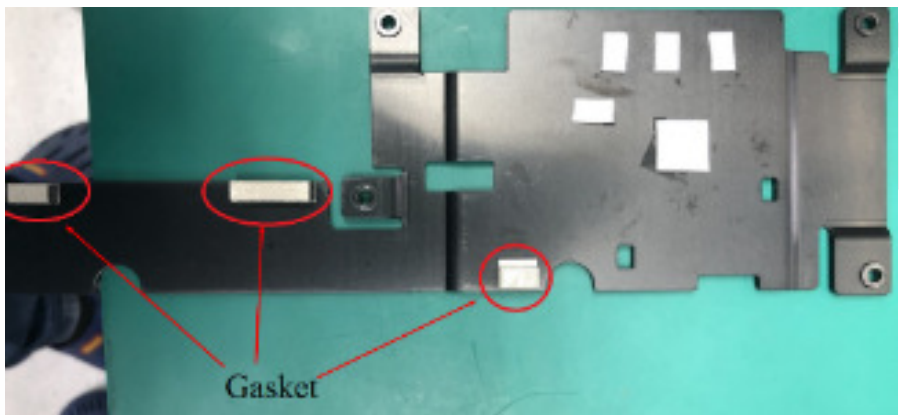
- 21-Oct, ALT customer complain [BFX-UA300] defect 2 units BFX-AU300
Symptom : No turn on the LED, No button operation.

No.	MAC ID	Shipping SN	Production date	Failure Description Feedback from Customer
1	A8934AFE796F	2149695001202199000013	27-Sep-2021	Symptom : No turn on the LED, No button operation 
2	A8934AFE797E	2149695001202199000010	27-Sep-2021	

D2. Description of Problems

2. Check Customer feedback 02 units production history

No.	MAC	SN	Frist Assembly Date	Re-Assembly Date
1	A8934AFE796F	2149695001202199000013	9/27/2021 6:59:01 PM	9/29/2021 12:30:55 AM
2	A8934AFE797E	2149695001202199000010	9/27/2021 5:49:49 PM	9/28/2021 6:21:32 PM



Result:
 Check production data of products detect two product was been rework cause gasket making AMP_SDA & GND short issue.

D3. Containment

1. Check Customer feedback 02 units production function test history

↓

Number	Log Function test online result				
	MAC ID	Shipping SN	Log Data		
1	A8934AFE796F	2149695001202199000013	 FT1_PASS.doc	 FT2_PASS.doc	 FT3_PASS.doc
			 RC_PASS.doc	 RC1_PASS.doc	 RC2_PASS.doc
2	A8934AFE797E	2149695001202199000010	 FT1_PASS.doc	 FT2_PASS.doc	 FT3_PASS.doc
			 RC_PASS.doc	 RC1_PASS.doc	 RC2_PASS.doc

↑

Result : Check log tested data is normal, LED and Button function working normal.

D3. Containment

2. Online change new FFC cable when FFC cable assembly damage



Change new FFC cable when assembly damage (Get more CABEL in work order)									
STT	FFC cable	Work Order	Qty	376.00039.005	376.00040.005	376.00044.005	376.00043.005	376.00041.005	376.00045.005
1	Cabel FFC Old	2639001053	765	5	5	5	5	5	5
2		2639001509	203	1	1	1	1	1	1
3		2639001581	1300	7	6	5	7	5	6
4		2639001826	500	3	3	3	3	3	3
5		2639001868	196	1	1	1	1	1	1
FFC cable new				376.00039.005	376.00050.005	376.00053.005	376.00052.005	376.00051.005	376.00054.005
6	Cabel FFC New	2639001984	1994	9	8	7	8	8	6
7		2639001899	1785	6	7	6	5	5	6
8		2639002138	840	6	6	5	4	5	5
9		2639001983	200	1	1	1	1	1	1
10		2639002037	238	1	1	1	1	1	1
11		2639002408	350	2	2	1	1	1	1
12		2639002380	1398	8	7	7	7	6	6
13		2639002411	600	4	4	4	3	3	3
TOTAL			10369	54	52	47	47	45	45



Result : Online production, when assembly or test function defect fail cause FFC cable, we will change new FFC cable, this is change new recorder follow each work order.

D4. FFC NG sample analysis

1. FFC cable 376.00043.005 cable NG return from Vender Checking VI

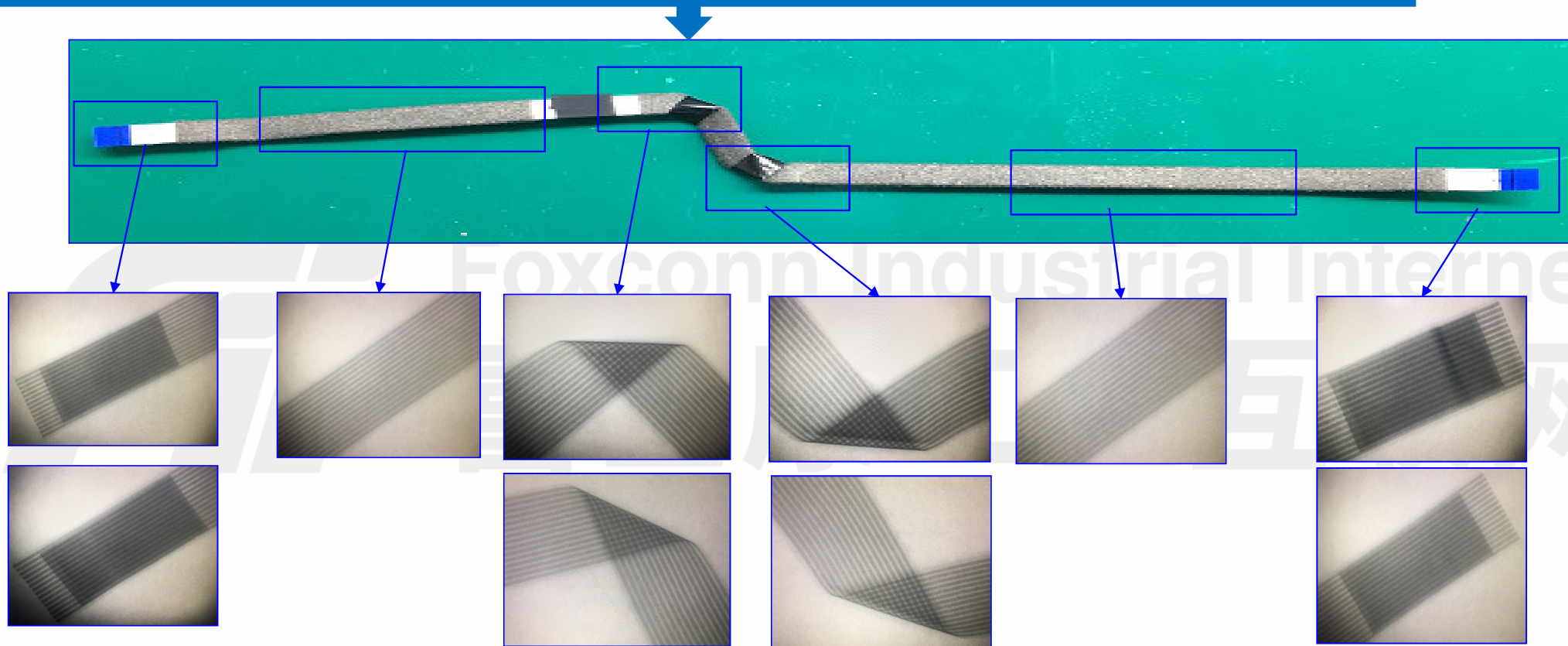
07-Feb-2022, Fii received 01 pcs FFC cable NG (From customer feedback in 2 units FPC_LED_BOARD defect)



Summary: Check visual inspection defect FFC cable had damage before Fii received on 07-Jan-2022 (as picture)

D4. FFC NG sample analysis

2. NG sample FFC cable 376.00043.005 check X-Ray result

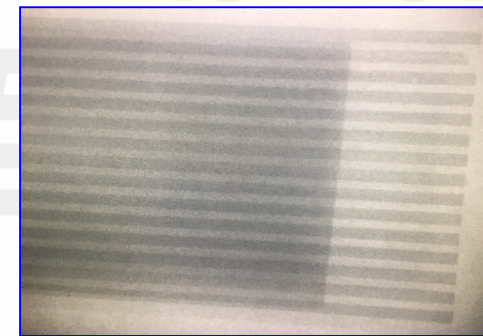
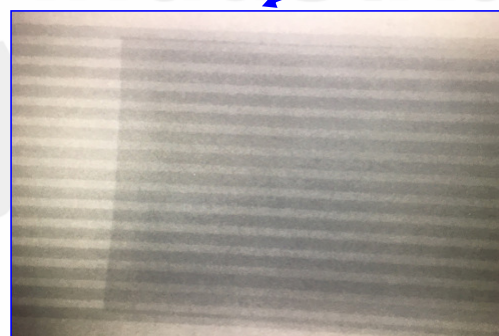
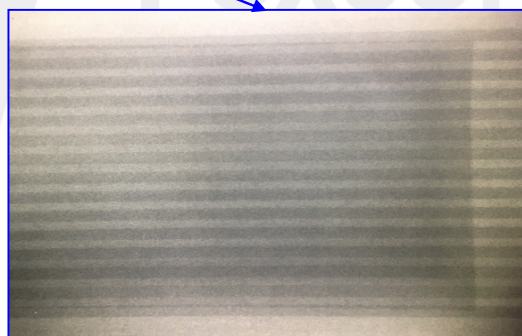
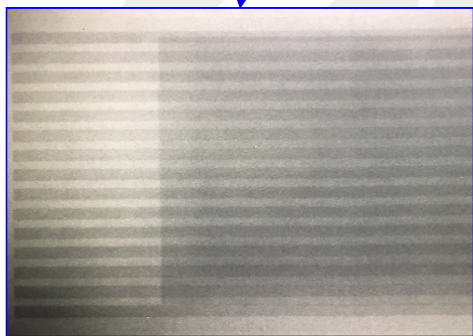


Summary: ME checking X_Ray all FPC_LED_BOARD Jack LED => **Normal**.

PE checking electrical value => **Open**.

D4. FFC NG sample analysis

3. NG sample FFC cable 376.00043.005 check X-Ray result (Detail)



Summary: ME checking X_Ray connect zone of FPC_LED_BOARD Jack LED => **Not found out open.**

D4. FFC NG sample analysis - Impedance Measurement

4. NG FFC button cable impedance measurement .

- Measure connection of 2 points of FFC button NG cable, (compared with FFC button OK cable).

→ Find out Pin 13(KB_PWR), Pin14(GND) of NG sample not connection(as Picture 2).

Pin14

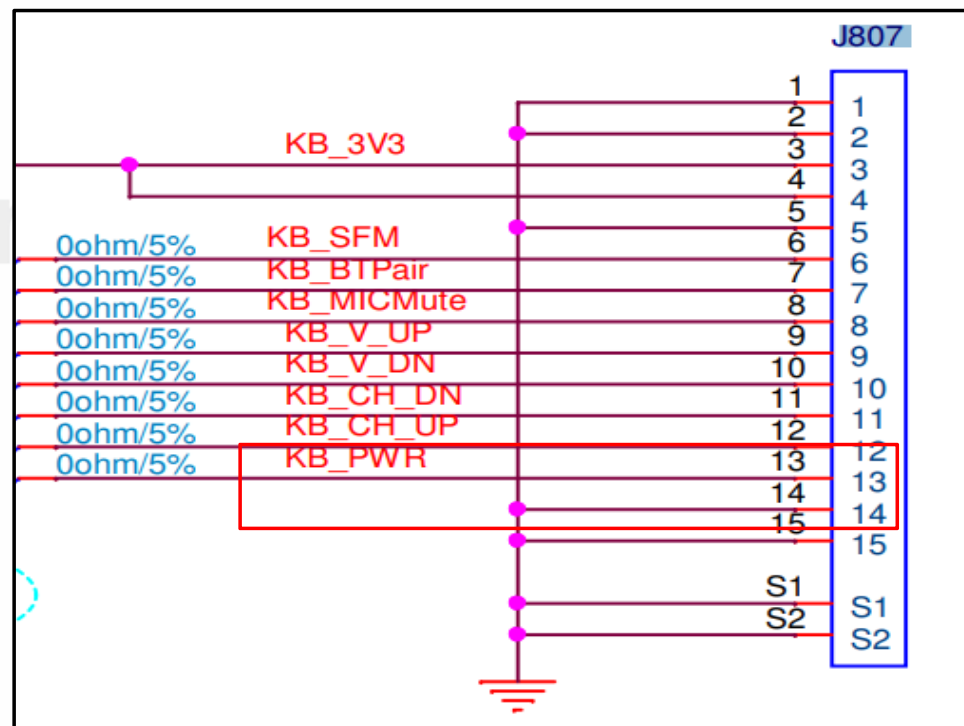
Pin13

OK sample

Pin14

Pin13

NG sample



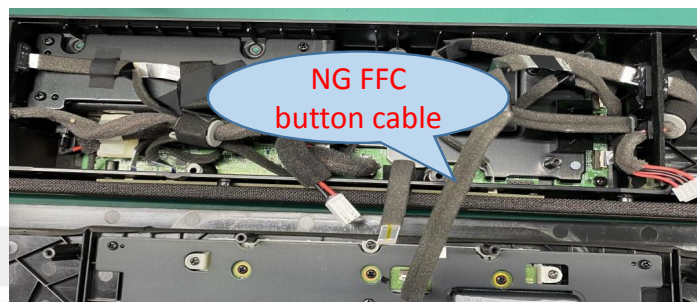
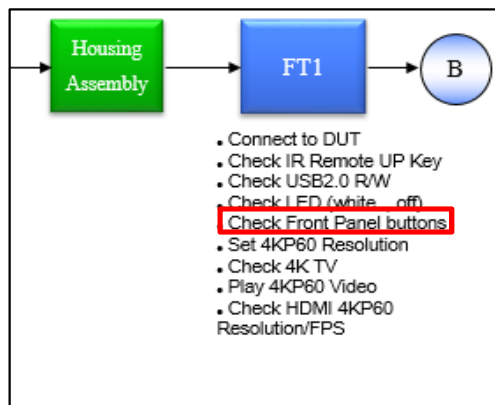
Summary:

- NG FFC cable has Pin13, Pin14 not connection.

4.FFC NG sample analysis - Re-Production Defective Product

5. Re-Assembly and function test station on line result

- Use NG FFC button cable assemble into OK product to test at FT1 station(Check Button function) at test machine FT1001.



Assemble to verify NG FFC button cable

No #	Station	Log Test	Result	Remark
1	FT1	 NG FFC cable_FT1_BUTTON1	Fail	Fail Button 0 (Power button)

2. Test Button function by hand

- Re test 3 times button function by hand, using command "**adb shell fac check_button BUTTON_0**", result fail at Power button (button 0), and other button is pass normally

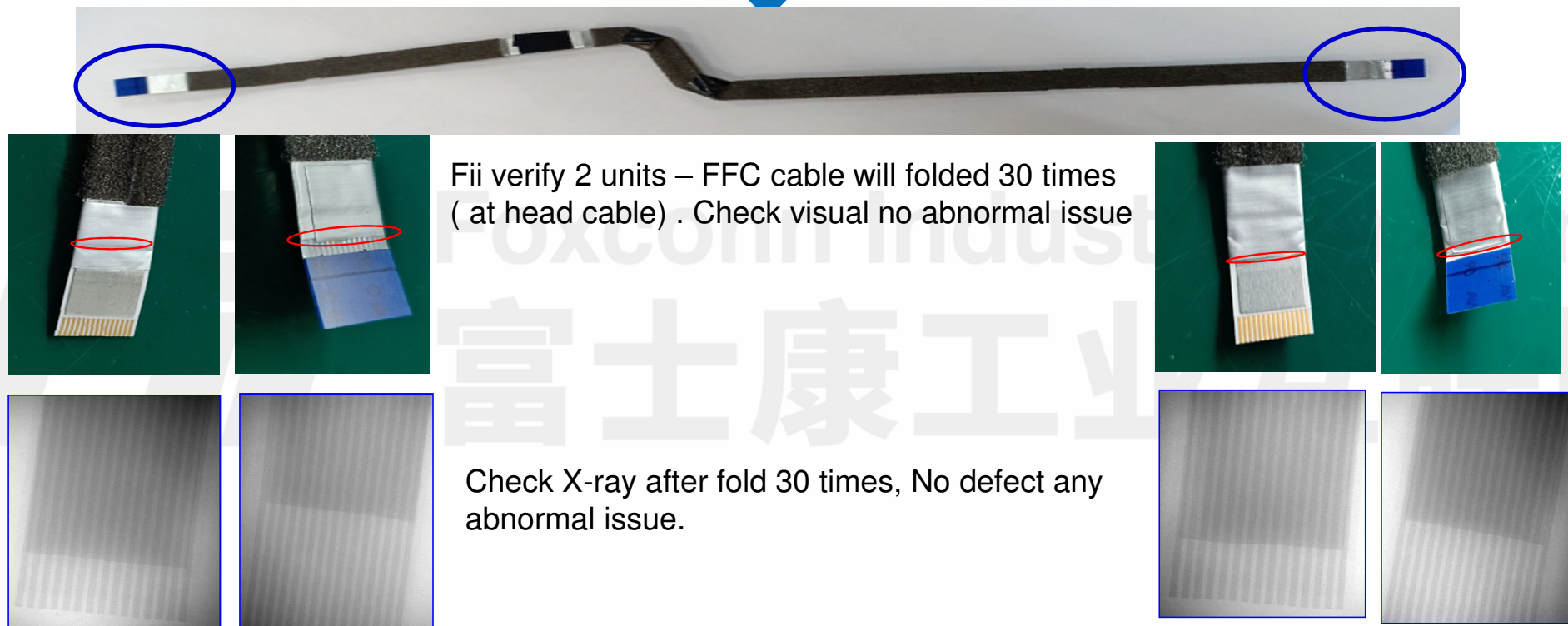
No #	Result	Remark
1	Fail	Fail Button 0 (power button), other button is pass
2	Fail	Fail Button 0 (power button), other button is pass
3	Fail	Fail Button 0 (power button), other button is pass

Summary:

- NG FFC button has Pin 13, Pin 14 not connection → test Power button fail at FT1 station.
- Pin 13, Pin 14 of FFC button cable not connection. With test process on line, can cover FFC button cable NG sample at FT1 station.

D5. Verification of Effectiveness

1、 Fii verify 02 units Fold FFC cable (OK sample) 30 times then check VI and Xray.



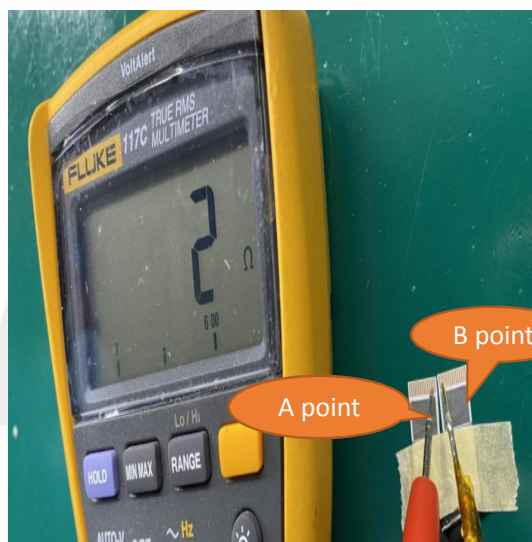
Result : Visual inspection and X-Ray, no find out abnormal issue after folded 30 times each head FFC cable.

D5. Verification of Effectiveness

2、Re-Production Defective Product with 2 units OK sample (folded 30 times)

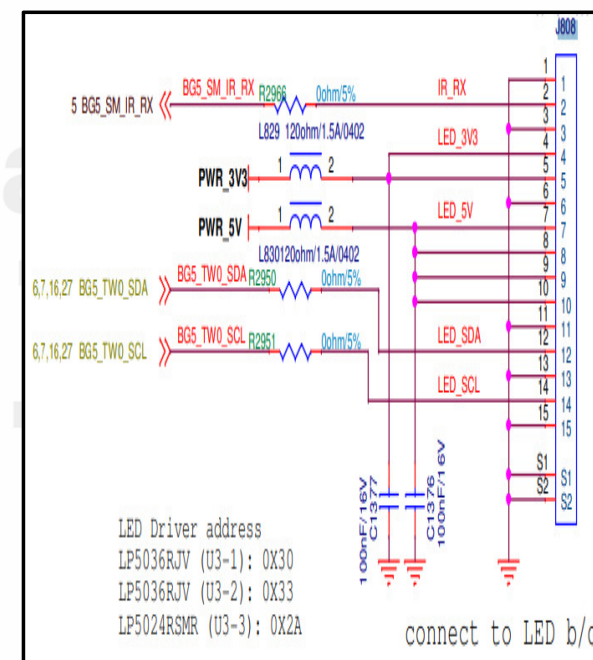
- Fold 1 points of 2 FFC led cable 30 times, then measure connection of 2 points of FFC led cable(Folded 30 times) compared with FFC led OK cable.

→ Result as table below.



Measure connection of 2 points of FFC led cable

FFC led cable measurement				
Pin Name	Value-OK sample	Value(Ω)- Sample 1	Value(Ω)- Sample 2	Result
1- GND	1.6 Ω	1.6 Ω	2 Ω	P
2- IR_RX	1.8Ω	1.6Ω	1.8 Ω	P
3- GND	1.6Ω	1.6Ω	2 Ω	P
4-LED_3V3	1.7 Ω	1.7 Ω	2 Ω	P
5-PWR_3V3	1.7Ω	1.6Ω	2 Ω	P
6- GND	1.7Ω	1.6Ω	1.6 Ω	P
7- LED_5V	1.7Ω	1.6Ω	1.8 Ω	P
8-LED_5V	1.7Ω	1.6Ω	2 Ω	P
9-LED_5V	1.6 Ω	2 Ω	2 Ω	P
10-LED_5V	1.7Ω	1.6Ω	2 Ω	P
11-GND	1.8Ω	1.6Ω	2 Ω	P
12-LED_SDA	1.7Ω	1.6Ω	2 Ω	P
13-GND	1.6Ω	1.6Ω	2 Ω	P
14-LED_SCL	1.6Ω	1.6Ω	2 Ω	P
15-GND	1.6Ω	1.6Ω	1.6 Ω	P



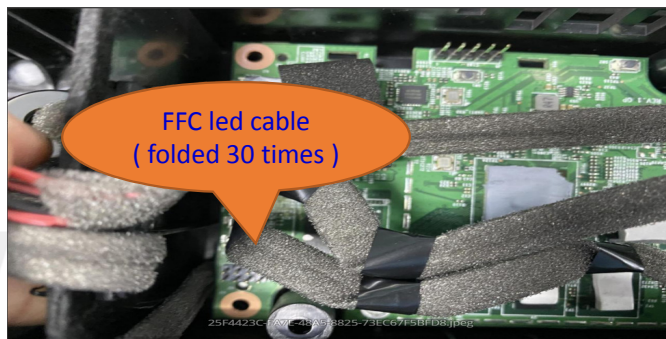
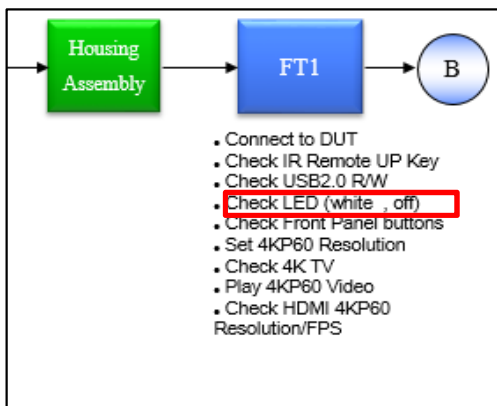
Summary:

- FFC led cable (folded 30 times) 2 points connection normally.

D5. Verification of Effectiveness

FFC OK sample Re-Production Defective Product - At test station on line

- Use FFC led cable (folded 30 times) assemble into OK product to test at FT1 station(Check led function) - test machine FT1001.



Assemble to verify FFC led cable

Sample	Station	Log Test	Result
1	FT1	 Pass FT1 station	Pass
2	FT1	 Pass FT1 station	Pass

fy FFC led cable(folded

2. Test led function by hand

- Re test 3 times led function by hand, using command “*adb shell fac set_led_color all on*”(led white), “*adb shell fac set_led_color all off* “led function is pass normally

No #	1	2	3
Sample 1	Pass	Pass	Pass
Sample 2	Pass	Pass	Pass

Summary:

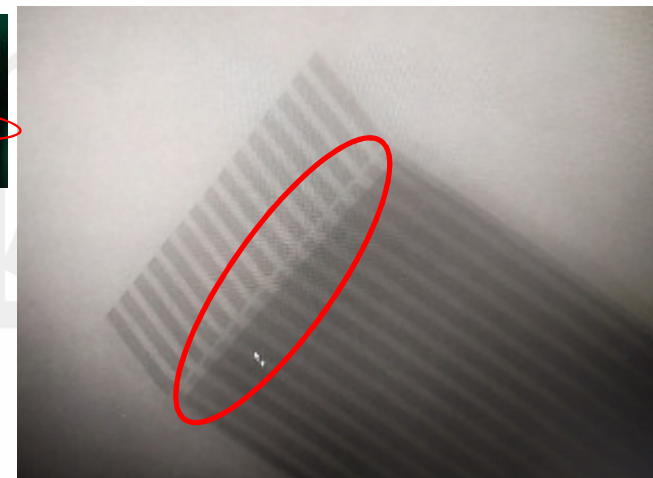
- FFC led cable (folded 30 times) test led function pass normally at all test station .

D5. Verification of Effectiveness

3、 Fii verify 01 units Fold FFC cable (OK sample) 3 times then check VI and Xray. (verification on 16-Feb-2022)



Fii verify 1 units – FFC cable will folded 3 times
(hand gold) . Check visual have abnormal issue.



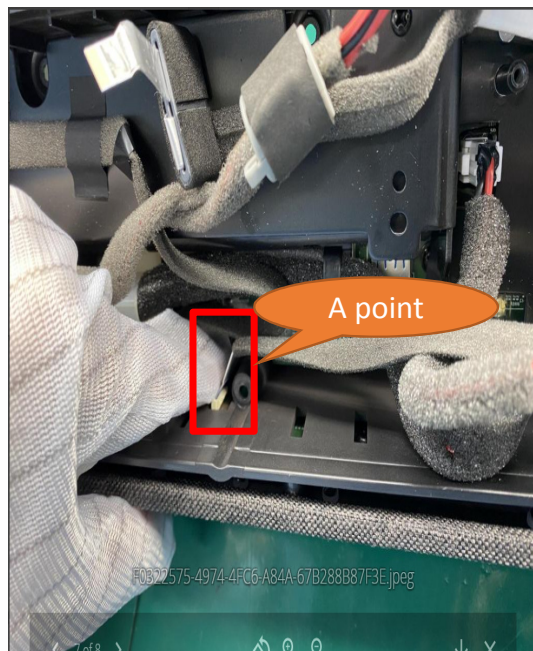
Check X-ray after fold 3 times

Result : Visual inspection and X-Ray to find out wire copper broken from pin 1 to pin 15 .

D5. Verification of Effectiveness

4、 Re-Production Defective Product with 1 units OK sample (folded A point)

- Plug FFC led cable not well then use hand fold 1 points of FFC led cable, then measure connection of 2 points of FFC led cable compared with FFC led OK cable. → Result as table below.

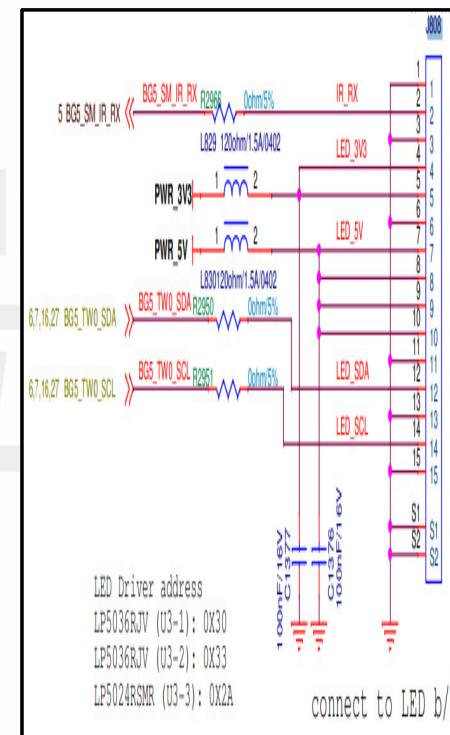


Plug FFC led cable not well then use hand fold 1 points of FFC led cable



Measure connection of 2 points of FFC led cable

FFC led cable measurement			
Pin Name	Value-OK sample	Value(Ω)-Sample 1	Result
1- GND	1.6 Ω	∞	F
2- IR_RX	1.8 Ω	∞	F
3- GND	1.6 Ω	∞	F
4-LED_3V3	1.7 Ω	∞	F
5-PWR_3V3	1.7 Ω	∞	F
6- GND	1.7 Ω	∞	F
7- LED_5V	1.7 Ω	∞	F
8-LED_5V	1.7 Ω	∞	F
9-LED_5V	1.6 Ω	∞	F
10-LED_5V	1.7 Ω	∞	F
11-GND	1.8 Ω	∞	F
12-LED_SDA	1.7 Ω	∞	F
13-GND	1.6 Ω	∞	F
14-LED_SCL	1.6 Ω	∞	F
15-GND	1.6 Ω	∞	F



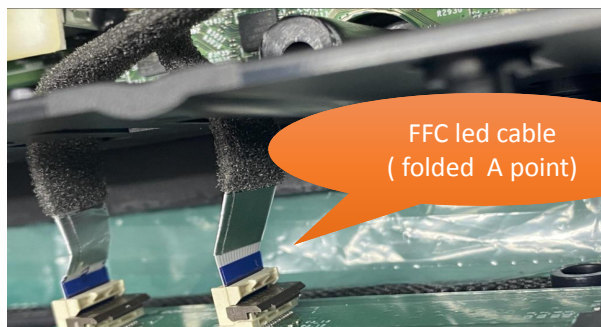
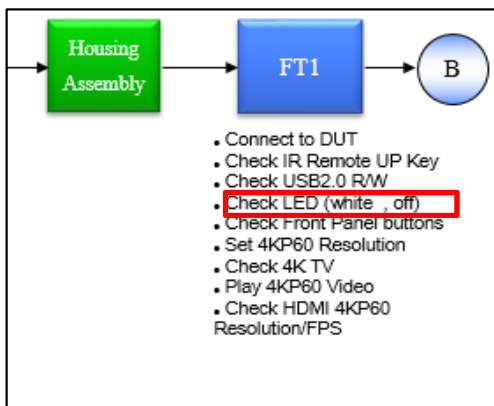
Summary:

- FFC led cable 2 points not connection.

D5. Verification of Effectiveness

1. FFC OK sample Re-Production Defective Product - At test station on line

- Use FFC led cable (folded A point) assemble into OK product to test led function



Assemble to verify FFC led cable

Result



Fail log

Fail led FT1_log
test

2. Test led function by hand

- Re test 3 times led function by hand, using command “*adb shell fac set_led_color all on*”(led white), “*adb shell fac set_led_color all off* “ led function is failure

No #	Test in 1	Test in 2	Test in 3
Sample 1	Fail	Fail	Fail
Remark	All led no light		

Summary:

- FFC led cable (folded A point) test led function failure → Cover at FT1 station

D7. Prevent Reoccurrence

1. In online process: Add SOP check all FFC cable when assembly, notice folded FFC cable follow defined the folding line . Done: 18-Feb-2022



SOP Assembly
K18X001T00.pdf

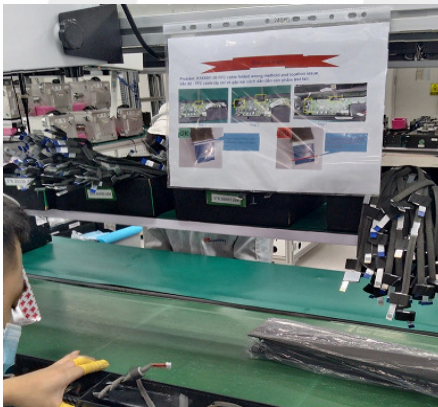


SOP Assembly
96.1531T00.pdf



SOP Final
assembly checking.pdf

2. Make Quality Alarm training OP doing online the FFC cable issue. Done: 18-Feb-2022



ALT Quality
Arlam.pdf

Summary:

- Update SOP and Quality alarm training OP online product assembly and re-checking FFC cable folding right follow SOP.

Summary

1. Online product doing follow SOP.
2. Function test no defect any FFC cable short issue .
3. 08-Feb-2022 RD had return FFC cable fail sample , - Pin 13, Pin 14 of FFC button cable not connection.
➔ With test process on line, can cover FFC button cable NG sample at FT1 station.
4.
 - ❖ Fii verify folded 02 units FFC cable (30 times) then check X-Ray and re-assembly on product, Test function PASS. (Done 10-Feb-2022)
 - ❖ Fii verify folded 1 units FFC led cable(folded A point) led function test fail.(Done 17-Feb-2022)
5. Fii update SOP assembly FFC cable and Quality alarm and continue monitor this issue online product FFC cable issue.