

SK Broadband

STB RMA Specification

for BFX-AT100

Document revision:1.3

Effectivity

2020.01.01 ~

Prepared by	SH, SON
	Manager, Development Lab #2
Approved by	SY, Yoon
	Head of Development, Development Lab #2

Revision History

Revision	Description of Change	Date
0.1	Draft release	2020.02.13
1.0	Release	2020.02.24
1.1	Update	2021.02.04
1.2	Update the packing information	2022.01.27
1.3	Update RMA policy	2023.03.31

Table of contents

1	Purpose of this document	3
2	About RMA	3
2.1	RMA policy with ALT and Customer	3
2.2	RMA policy with ALT and Foxconn	4
2.2.1	RMA process	4
2.3	Function test specification	6
3	RMA specification with ALT and Customer	8
3.1	Cosmetic criteria for RMA	8
3.2	Packing	8
4	RMA specification with ALT and Foxconn	10
4.1	PCBA repair	10
4.2	Cosmetic criteria only for RMA	10
4.2.4	Packing	11
5	Role and Responsibilities	14
5.1	ALT	14
5.2	Foxconn	14
6	RMA STB Test specification	15
6.1	Burning	15
7	Quality specification.	15
7.1	Cosmetic Inspection criteria	15
7.2	AQL LEVEL	15
7.3	OBA TEST ITEM	16
8	Special requirements	18
8.1	RMA documents	18
9	Appendix.1.	19
9.1	Defect code label	19
9.2	Defect code	19

1 Purpose of this document

This document is RMA specification of BFX-AT100 for in warranty STB. This specification is into details about manufacture repair for field returned STB. And RMA process flow.

2 About RMA

Purpose:

Defines the RMA specifications of the RMA process of BFX-AT100.

Unspecified items will follow the Foxconn's standards. But, some of specifications may be changed upon request by the customer.

ALT responsible item

ALT responsible item

2.2 RMA policy with ALT and Foxconn

ALT and Foxconn have to keep the customer RMA policy.

All returned STBs are customer property.

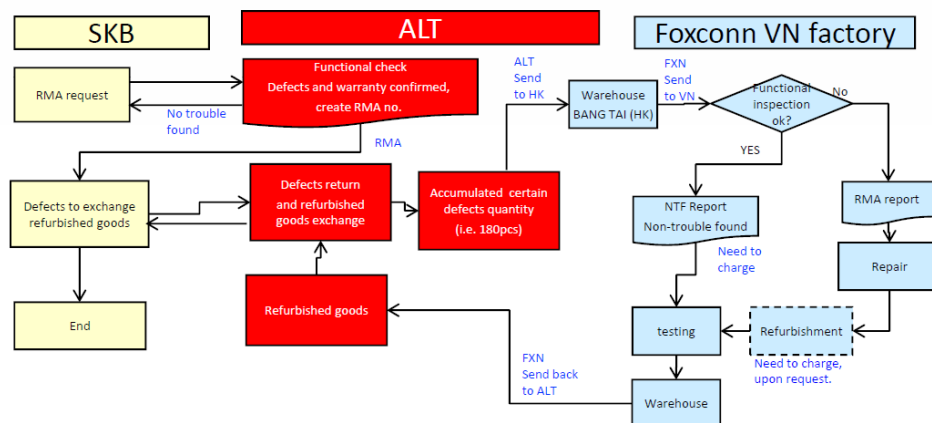
2.2.1 RMA process

Purpose:

To define RMA Process between ALT and Foxconn

Process flow:

Foxconn RMA Process (Box)



2.2.2 RMA Ship out to VN Factory

ALT will be sent monthly base to VN factory per each lot

- ALT provides the sorted RMA SN list to Fii
- ALT should ship them within **4 weeks of Fii's acceptance** of the RMA SN List.
(Inform ahead if delay is expected)
- Fii should be feedback within **2 working days** about Fii's acceptance of the RMA SN List
: Attachment#3_FORMAT RMA.xlsx

It is scheduled to be shipped every month. But it may be omitted in some cases.

2.2.3 Factory RMA period

Fii should ship RMA to VN factory in **2 weeks when it arrives HK**. For RMA,

Fii should ship to Korea in **4 weeks after arriving VN factory**.

(Inform ahead if delay is expected)

2.2.4 Factory RMA is limited to STB only.

- Foxconn RMA only responsible for the STB.

2.2.5 The information doesn't change in STB system nevertheless, change the PCBA or SoC.

- Mac address
- Customer Serial number

2.2.6 Packing requirement

- Using carton for RMA.

2.2.7 Scrap: In case of not repairable, submit the detail report -evidence for cannot be repaired and return back not repairable STB.

This is only limited to end customer fault.

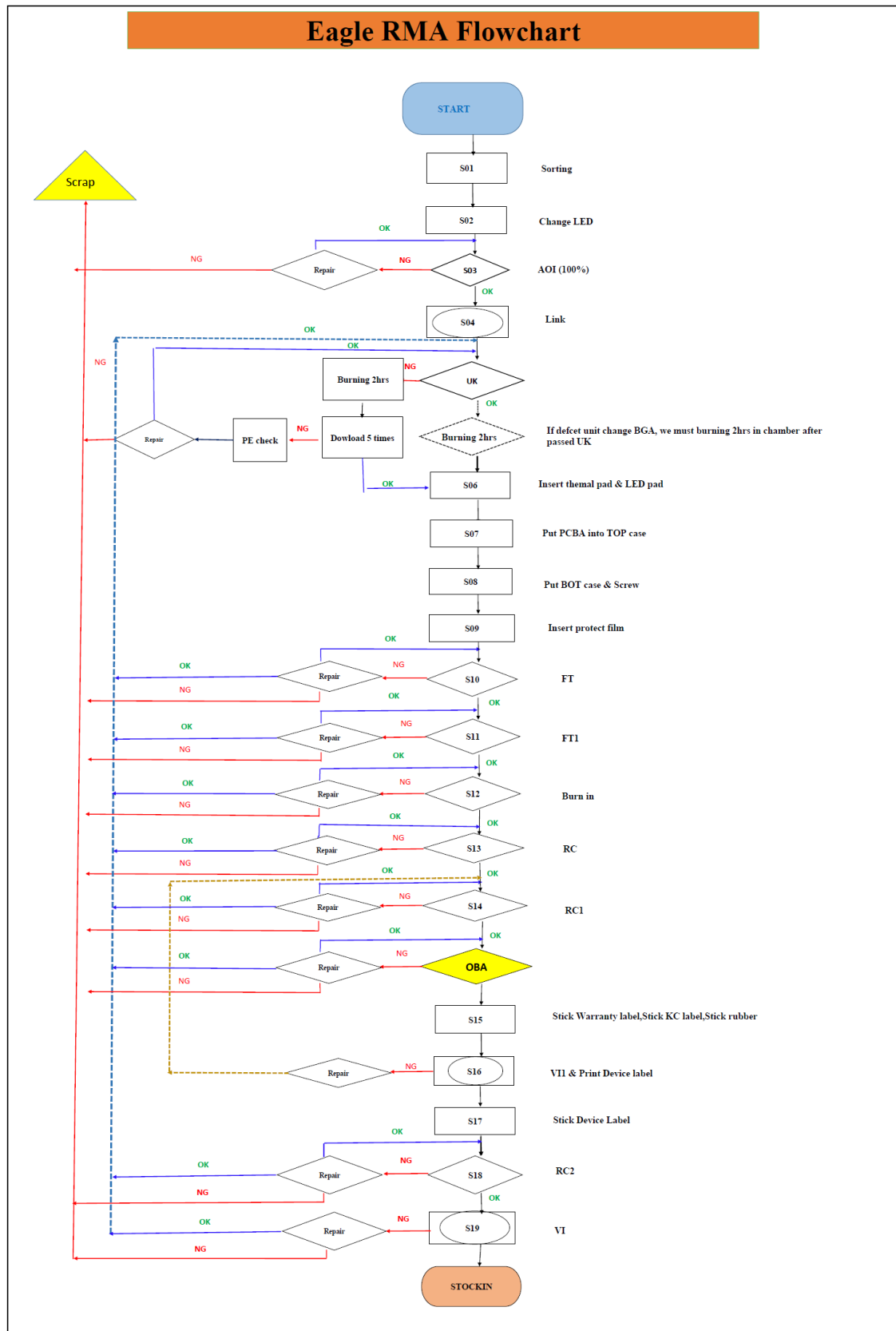
2.2.8 Report the RMA report in an attached file format.

2.2.9 Refurbishment

Not required.

If needed, will remark in RMA report with requirement and the incurred cost will settle

2.3 Factory RMA Flow chart



2.4 Function test specification

Purpose:

Define the function test spec for RMA process.

Criteria:

Follow the mass production test specification. Please refer to the "BFX-AT100_Manufacturing Specification Section 3."

CONFIDENTIAL

ALT responsible item

ALT responsible item

4 RMA specification with ALT and Foxconn

4.1 PCBA repair

Purpose:

Define the repair and rework criteria for the PCBA production process.

Criteria:

IPC-7711/21. Level of conformance Highest level. More details, please find the IPC-7711 rev.C.
But, some of acceptable condition may be changed upon request by the customer.

4.2 Cosmetic criteria only for RMA

4.2.1 Product

Criteria:

All product cosmetic components must be assembled.
And have to remove defect code in the appendix

Note. The Cosmetic inspection(scratch) will be waived due to returned unit from end customer.

4.2.2 Top assembly

Cosmetic criteria:

All of top housing assembly should be assembled.

4.2.3 Bottom assembly

Cosmetic criteria:

all bottom housing assembly should be assembled.

- If needed rubber foot refurbishment, will remark in RMA report with requirement

4.2.3.1 Device label

Criteria:

Label should be no damage and the barcode should be read normally.

- If device label has damaged – cannot read by barcode scanner, please re-issue the device label

4.2.4 Packing

Purpose:

Define the requirements for RMA product packaging between ALT and Fii VN factory

4.2.4.1 RMA Packing between Korea and Factory

Criteria:

No STB damage during delivery.

Please return it as it was received

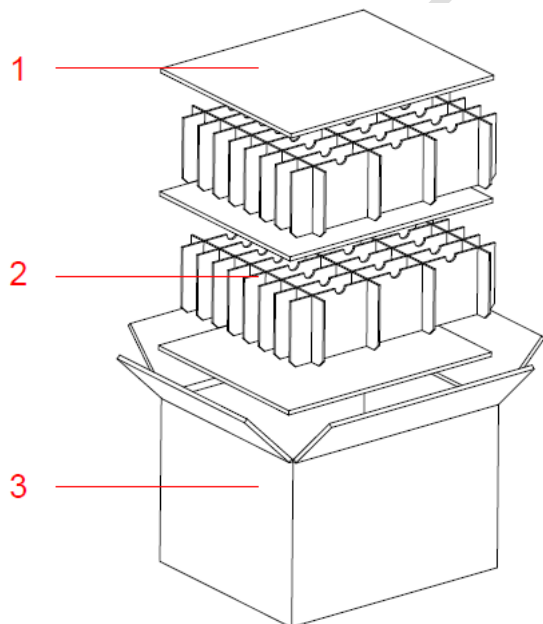
Please report packing problems when factory received RMA box.

4.2.4.2 Packing materials for RMA has ALT property.

- Should be reused during RMA for eagle project
- In case of damage during transportation, Repair and use it with box tape
- In case of severe damage that cannot be reused replace new one
- For spare inner sheet can be supplied with RMA return.
- Packing materials for RMA has ALT property.

4.2.4.3 RMA packing specification

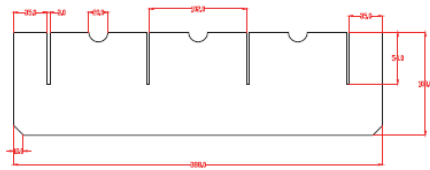
- 1 carton will be packed 42 units per 1 carton.



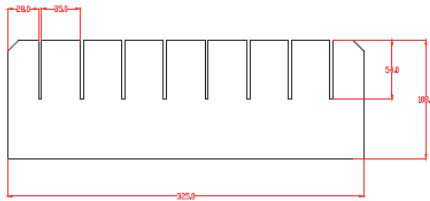
	items	material	thickness
1	board	BC FLUTE	6mm
2	partition	B FLUTE	2.5-3mm
3	carton	BC FLUTE	6mm

put 42(3*7*2) boxes in 1 carton

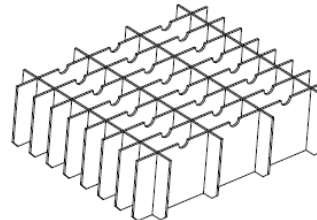
8PCS



4PCS



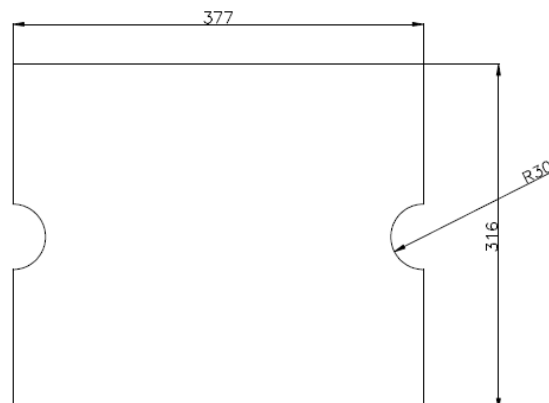
PS.
供應商來料時請將partition組裝好。



NOTE:

1. Material: B FLUTE PAPER;
2. Paper Color: Original
3. BS $\geq$ 14KGF/CM 2
4. All Material Must Match ROHS;
5. Tolerance: $\pm$ 2MM

MATERIAL (SPEC.)											SCALE 1:1
FINISH											SHEET 1/1
Select	A	B	C	EPS	EPE	BAG	CTN	LAB	USR	UNIT	PART NAME
0-6	0.05	0.05	0.10						0.20	0.05	mm
6-30	0.10	0.15	0.20	0.50	0.50	3.00			0.20	0.05	SIZE
30-120	0.15	0.20	0.30	0.50	0.50	5.00	2.00	0.25	0.10	A4	MODEL
120-300	0.20	0.30	0.40	1.00	1.00	10.00	3.00	0.30	0.15		PART NO.
300-450	0.25	0.40	0.50	2.00	2.00	15.00	5.00	0.50	0.20		520-aaaa3.005
450-600	0.30	0.50	0.60	3.00	3.00	20.00	5.00	0.80	0.20		DESIGNED
DRAFT TOLERANCE	#2										Lydia
											APPROVED
											Meredith



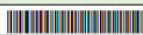
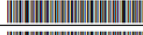
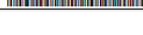
NOTE:

1. Material :BC flute paper
2. BS $\geq$ 14KGF/CM 2
3. CS $\geq$ 300Kgf
4. Mark foxconn P/N
5. Paper Color: Original
6. All parts must be complied with RoHS requirements

MATERIAL (SPEC.)											SCALE 1:8
BC Flute											SHEET 1/1
Select	A	B	C	EPS	EPE	BAG	CTN	LAB	USR	UNIT	PART NAME
0-6	0.05	0.05	0.10						0.20	0.05	mm
6-30	0.10	0.15	0.20	0.50	0.50	3.00			0.20	0.05	SIZE
30-120	0.15	0.20	0.30	0.50	0.50	5.00	2.00	0.25	0.10	A4	MODEL
120-300	0.20	0.30	0.40	1.00	1.00	10.00	3.00	0.30	0.15		PART NO.
300-450	0.25	0.40	0.50	2.00	2.00	15.00	5.00	0.50	0.20		520-aaaa1.005
450-600	0.30	0.50	0.60	3.00	3.00	20.00	5.00	0.80	0.20		DESIGNED
DRAFT TOLERANCE	#2										Eva Dong
											APPROVED
											Allen Chang

4.2.4.4 Carton label

- Example as below

Carton information					
Product Country of origin		Made in Vietnam	Netweight		xx Kg
Product PN		T99X171.00	Gross weight		XX Kg
					
Carton ID		ALT_20211223001	Product Q'ty		42pcs
					
NO	S/N	Barcode	NO	S/N	Barcode
1	2149688001201909043404		22	2149688001202003020080	
2	2149688001201904005668		23	2149688001201904051942	
3	2149688001202003041029		24	2149688001202003050719	
4	2149688001201909010069		25	2149688001201904036879	
5	2149688001202001015910		26	2149688001201909049025	
6	2149688001201909025185		27	2149688001201909059028	
7	2149688001201909019778		28	2149688001201908015523	
8	2149688001202001060793		29	2149688001201909002192	
9	2149688001202001064865		30	2149688001201909031767	
10	2149688001202001039997		31	2149688001202005096021	
11	2149688001201908013063		32	2149688001201909075528	
12	2149688001201908093032		33	2149688001202005067804	
13	2149688001202003027005		34	2149688001201908059548	

4.2.4.5 Packing example



5 Role and Responsibilities

Purpose:

Define the role and responsibilities for RMA process between ALT and Foxconn

5.1 ALT

5.1.1 Overall process handling

ALT will be shipped to Factory according to the 4.2.4 packing

5.1.2 Initial inspection.

Define the defect and assigned defect code each DUT.

Please refer to the Attachment #1 "RMA Report", ALT row.

5.1.3 Packing

ALT will be taking below process before delivery to customer.

Gift packing

Gift Labels

Caron packing

Carton Labels

5.1.4 RMA Customer incoming inspection

5.2 Foxconn

5.2.1 Repair RMA product

All returned units should be repaired to functionally normal and the cosmetic upon request

5.2.2 Write an RMA Report. In some cases, 8D reports should be submitted.

RMA report should be written concretely.

- If parts are replaced, the name of the replaced part must be recorded.

- In case of SoC failure, the manufacturer's FAR should be processed and the result report have to updated.

- Please update to the Attachment #1 "RMA Report", Foxconn row.

5.2.3 Return RMA product

IMPORTANT

All of RMA units must be returned to Korea.

6 RMA STB Test specification

Purpose:

Follow the mess production test specification. Please refer to the "BFX-AT100_Manufacturing Specification Section 3."

6.1 Burning

All repair / rework STB should be proceed burning applied FXN standard.

But It may be changed the test condition upon request by the customer.

7 Quality specification.

7.1 Cosmetic Inspection criteria

Purpose:

Define the separation criteria when packing. Cosmetic defects are not inspected at RMA process.

Criteria:

Protective film is attached or Not.

7.2 AQL LEVEL

Purpose:

Follow the mess production AQL level

Criteria:

AQL Level – 1.0 each lot should be passed.

7.3 OBA TEST ITEM

Purpose:

Follow the mess production OBA test specification. All STB function should be double checked from quality point of view.

Output:

OBA Test report should be submitted before shipment.

7.3.1 Visual inspection

Criteria:

SKIP.

7.3.2 Check front KEY (CH-/ + Key)

Criteria:

All Key should be work and feel the push sound and feeling of being pressed.

7.3.3 Check LED (Power ON and boot or standby)

Criteria:

All LED Color should be turn on the light each color – Red, Green, Blue, White
LED light uniformity on housing should be uniform

7.3.4 Check IR Remote Control function (Key Control)

Criteria:

RCU IR transmit and STB IR receive work properly

7.3.5 Check Bluetooth Remote Control function (Pairing/Un-Pairing and Key Control)

Criteria:

Bluetooth function should be work properly. – STB volume control, Voice input, Audio streaming

Bluetooth paring and unpairing work properly.

7.3.6 Check SW version

Criteria:

Default language: KOREAN

Model name:

Android TV - BFX-AT100

AOSP – BFX-UH200

Software version: depend on each PO or Lot.

7.3.7 Check YouTube APP for stream video test.

Criteria:

Stream video play working properly.

: Youtube 4K video play - VP9 codec check, Speed check

: Output resolution check – 3840 x 2160 @ 60hz

7.3.8 Check USB port.

Criteria:

USB port should be work properly.

: Check USB 2.0 / 3.0 device detection and device access

7.3.9 Check microphone test

Criteria:

Smart Karakoapp –Downing Everyising App form internet for microphone test

-> Skip due to SKB network is not available

7.3.10 Check Reset to default function

Criteria:

Factory reset should be work properly.

8 Special requirements.

The special requirements must be followed. Also, it may be changed upon request by the customer.

8.1 RMA documents.

Purpose:

To define RMA output documents after RMA. Factory should be submitted these documents before shipment.

8.1.1 Method of transferring

8.1.1.1 e-mailto:

bylee@altech.kr

jwkim@altech.kr

hylee@altech.kr

syyoon@altech.kr

shson@altech.kr

neotech1973@altech.kr

8.1.1.2 when

Every shipment

8.1.1.3 Output document list (sample)

Attachment #1 "RMA Report"

Attachment #2 "OBA Inspection report"

9 Appendix.1.

9.1 Defect code label

The defect code label will be attached on the bottom case. The text language is Korean.

Please use defect code for factory.

This defect code label should be removed after RMA.

<reference>



9.2 Defect code

SKB Defect code	SKB System code	Defect Symptom
10	E01	LED failure
19		Voice input failure
20		LAN connector failure
21		WAN connector failure
23	AS01	USB failure
25	V02	HDMI failure
70	P01	No power or Power connection failure
100	N01	Internet connection failure
120	B07	Abnormal rebooting

121	B02	booting failure
122	S11	Android system reset failure
140	V01	TV Screen failure
142	A01	Voice search failure
144	F01	IR receive failure
147	N01	SKB authorization failure
154	S01	SW update failure
156	D04	KEY failure

*Some of defect code can be changed or added according to the customer's quality policy.

End of Document.