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Computer Assembly Quality Manual

1.0 Purpose

To define the visual inspection standards and functional test criteria for QC people to follow at inprocess audit and final inspection operation.

2.0 Scope

This scope to cover assembly, testing, inspection & packaging of personal & server computer of Computer (Thailand) Co., Ltd.

3.0 Procedure

3.1 Inspection specification

3.1.1 Inspector and QC inspector to perform inspection follow inspection criteria (item 1-8 for visual inspection and item 9 for functional inspection) as following details.

Inspection criteria

Component/ Operation	Defect Description	Defect Class
1. HDD/ FDD	1.1 Wrong vendor/ type	Major
	1.2 Wrong revision	Major
	1.3 Prohibited HDD/ FDD used	Major
	1.4 Wrong panel/ color	Minor
	1.5 Scratch/ damage on panel	Minor
	1.6 Wrong position	Major
	1.7 LED protruded/ sunken	Minor

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Component/ Operation	Defect Description	Defect Class
2. Cable/ Wire	2.1 Wrong part	Major
	2.2 Scratch/ damage on insulator	Major
	2.3 Connector inserted in wrong position	Major
	2.4 Prohibited part used	Major
	2.5 Wrong position/ missing	Major
	2.6 incompletely inserted and it may impact product function.	Major
	2.7 Cable tight was not cut	Minor
3. Foreigners in housing	3.1 Conductive material	Major
	3.2 Non conductive material but make noisy while shaking	Major
	3.3 Non conductive material and no noise while shake	Minor
4. Add-on card	4.1 Wrong add-on card	Major
	4.2 PCB damage	Major
	4.3 IC label damage/ not readable	Major
	4.4 Missing/ damage parts	Major
	4.5 Prohibited part used	Major
	4.6 incompletely inserted or wrong position	Major
	4.7 Dirt/ Spot on PCB	Minor
	4.8 Missing safety label.	Major

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Component/ Operation	Defect Description	Defect Class
5. Housing	5.1 Scratch/ damage on housing surface	Minor
	5.2 Wrong color/ model	Major
	5.3 Printing damage/ missing/ not readable	Major
	5.4 Upper/ lower case deformed and impacted assembly	Major
6. Label	6.1 Label damage/ missing/ not readable/ ambiguous	Major
	6.2 Barcode label damage/ missing/ not clear	Major
	6.3 Wrong position	Minor
	6.4 Scratch but readable	Minor
	6.5 Shift position of printing	Minor
7 Front panel and nameplate	7.1 Missing/ wrong printing or nameplate	Major
	7.2 Scratch/ dirt/ spot	Minor
	7.3 Wrong cover of HDD/FDD	Minor
	7.4 Ambiguous printing/ not readable	Major
	7.5 Nameplate folded	Minor

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Component/ Operation	Defect Description	Defect Class
8. Packing / accessory	8.1 S/N / label spec on carton mismatch with product	Major
	8.2 Label upside-down	Minor
	8.3 Wrong/ missing printing/ not readable	Major
	8.4 Dirt on carton	Minor
	8.5 Damaged/ scratched carton or label	Major
	8.6 Missing/ wrong components	Major
9. Functional inspection	9.1 Can not boot, POST error	Major
	9.2 Reset button not work. Auto reset unexpectedly	Major
	9.3 Abnormal picture, wrong color	Major
	9.4 Pre run-in fail, final test fail	Major
	9.5 Wrong memory size	Major
	9.6 Noisy during test	Major
	9.7 Led can not turn on/off or faint	Major
	9.8 HDD can not boot	Major
	9.9 Shut down while testing	Major
	9.10 Fan not work	Major
	9.11 On/ off switch no function	Major

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3.2 Inprocess quality audit

3.2.1 QC inspector to perform inspection follow inprocess quality audit instruction (see attached Doc. No. PD-F-22) as following items.

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Inprocess quality audit

Doc. No. : PD-F-22

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Item	Operation	Quality Audit Description	Result	
			Accepted	Rejected
1	Material Receiving	- Check quantity, p/n & details of materials to conform as w/o stated. check materials condition such as damage, - Check materials condition such as damage, scratches, abnormalities.		
2	Material Preparation	- Check quantity and condition of Z-box and accessories (power cord, manuals, k\b, mouse pad, mouse, CD, diskette etc.). And make sure to have no damage or scratched trace, missing of part.		
3	Sub-Assembly	- Check quantity and condition of S/N labels, BIOS version, HDD, CD-ROM, RAM, Cards, HSink, CPU to conform as w/o state including details such as p/n, clearness of label, scratches, damage on part. - Check completeness and correctness of warranty sticker sticking on prepared components.		

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Item	Operation	Quality Audit Description	Result	
			Accepted	Rejected
4	Assembly	<ul style="list-style-type: none"> - Check installation of Cables, Cards, RAM, CPU, HSink, HDD, CD-ROM, make sure they are correctly installed and properly secured. - Check connectors are securely installed to socket. - Check cards are securely installed to slots. - Check screws are tightly screwed and correctly. - Check and ensure all cables and wires are properly tied and trimmed. - Check and ensure nameplate, labels are correct and in good condition. - Check and ensure that warranty sticker and S/N label are adhered on components that required to have warranty, identification and traceability (see attached warranty sticker checklist, S/N label identification and traceability checklist). 		
5	Pre Run-In Test	- Check and ensure that computer machine is performed for pre run-in tested and the failed computer machine must be recorded in the pre run-in failure report.		

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Item	Operation	Quality Audit Description	Result	
			Accepted	Rejected
6	Final Test	<ul style="list-style-type: none"> - Check and ensure that computer machine is 100% performed for final functional tested by checking from final test status record. - Passed test computer machine is identified by test passed sticker at the rear of machine (see attached test passed identification sticker). 		
7	Inspection & cleaning	<ul style="list-style-type: none"> -Check correctness of nameplate, label Celeron/ Pentium III for housing compare to spec states in S/N label. - Inspect at the rear of machine to ensure that no missing product spec label, S/N label and test passed sticker. - Inspect housing, cover to ensure that no scratches, damage or exposed coating. - Ensure that accepted computer machine is identified by QC accepted sticker at the rear of PC (see attached QC accepted identification sticker). 		
8	Packing	<ul style="list-style-type: none"> - Re-check quantity of accessories and ensure no missing or wrong parts before packing (see attached computer accessory checklist) - After packing , check correctness of label Celeron/ Pentium III for carton compare to spec states in S/N label which it is also adhered on carton. 		

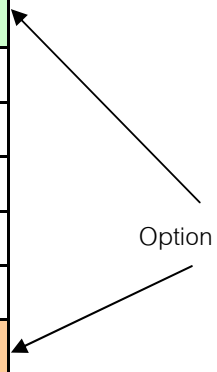
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3.2.2 Warranty sticker checklist

Warranty Sticker Checklist

Item	Warranty sticker adhered component	Opn	Qty.
1	Keyboard	Sub-assy	1
2	Mouse	Sub-assy	1
3	HDD	Sub-assy	1
4	CD-ROM	Sub-assy	1
5	CPU with Converter	Sub-assy	1
6	Memory card	Sub-assy	1
7	Add on card	Sub-assy	1
8	Power Supply	Assy	1
9	Mainboard	Assy	1
10	FDD	Assy	1
11	CPU without Converter	Assy	1



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3.2.3 S/N label identification and traceability checklist

S/N Label Identification and Traceability Checklist


Item	S/N label ID Mat'l	Size	Operation	Qty.
1	HDD	small	Assembly	1
2	CD-ROM	small	Assembly	1
3	FDD	small	Assembly	1
4	Mainboard	small	Assembly	1
5	Power Supply	small	Assembly	1
6	Housing	medium	Assembly	1
7	Warranty card	small	Packing	2
8	Carton	big	Packing	2

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3.2.4 Test passed identification sticker

Test Passed Identification Sticker

<p>MODEL NO : POWER SX EXTENSION NO. : AC RATING : ~ 100 - 120V 50 - 60HZ ~ 200 - 240V 50 - 60HZ MFG. DATE : 010206 MADE IN TAIWAN R.O.C</p>	
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3.2.5 QC accepted identification sticker

QC Accepted Identification Sticker

<p>MODEL NO : POWER SX EXTENSION NO. : AC RATING : ~ 100 - 120V 50 - 60HZ ~ 200 - 240V 50 - 60HZ MFG. DATE : 010206 MADE IN TAIWAN R.O.C</p>		
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3.2.6 Computer accessory checklist

Accessory Checklist for Model : APSX

Item	Description	Qty	Remark
1	Keyboard	1	
2	Power cord	2	
3	Mouse	1	
4	Acer warranty card	1	
5	Mouse pad	1	
6	APSX manual	1	
7	APSX SLCD	1	
8	Win manual with CD	1	add COA
9	Telephone cord	1	add fax
10	Linux	1	no COA

Accessory Checklist for Model : VT5100/ VT7100

Item	Description	Qty	Remark
1	Keyboard	1	
2	Power cord	2	
3	Mouse	1	
4	Acer warranty card	1	
5	Mouse pad	1	
6	VT5100/ VT7100	1	
7	Veriton Kit SLCD (a kit has 2 pcs of CD)	1	- Resource CD = 1 - System management solution CD = 1
8	Win manual with CD	1	add COA
9	Telephone cord	1	add fax
10	Just for starters poster	1	

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Accessory Checklist for Model : AS 6600

Item	Description	Qty	Remark
1	Keyboard	1	
2	Power cord	2	
3	Mouse	1	
4	Acer warranty card	1	
5	Mouse pad	1	
6	AS 6600 manual	1	
7	AS 6600 SLCD	1	
8	Win manual with CD	1	add COA
9	Telephone cord	1	add fax
10	Speaker	2	
11	Easy setup poster	1	

Accessory Checklist for Model : ALTOS

Item	Description	Qty	Remark
1	Keyboard	1	
2	Power cord	2	
3	Mouse	1	
4	Acer warranty card	1	
5	Mouse pad	1	
6	Altos manual	1	

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3.3 Non-conformity handling report

3.3.1 QC inspector to perform Non-conformity handling report when found discrepancies which impact to quality of product (see attached Doc. No. PD-F-23)

Issued date : 10/10/00

Doc. No. : PD-F-23

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Non-Conformity Handling Report

IPQC FQC Other

Report No. :

Date :

Sec./ Dept. :

<p>Description :</p> <p>(1) W/O No. : Model : Item No. :</p> <p>Qty : Inspected Qty : Rejected Qty : Reject rate :</p> <p>(2) Discrepancy :</p> <p>.....</p> <p>.....</p> <p>Sign/Date :</p>
<p>Cause :</p> <p>.....</p> <p>.....</p> <p>Sign/Date :</p>
<p>Action :</p> <p>.....</p> <p>.....</p> <p>Sign/Date :</p>
<p>Disposition : (QC)</p> <p><input type="checkbox"/> Return <input type="checkbox"/> Scrap <input type="checkbox"/> Sorting <input type="checkbox"/> Rework</p> <p>Special Acceptance (QC)</p> <p>.....</p> <p>.....</p> <p>Sign/Date :</p>
<p>Follow up :</p> <p>.....</p> <p>.....</p> <p>Sign/Date :</p>

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3.4 ESD control and prevention

3.4.1 To avoid the damage of electronic components which caused by Electro-static discharge during the process of manufacturing computer products.

3.4.2 The operations which required to have ESD control are sub-assembly, assembly and repair station.

3.4.3 Anti-ESD table mat with grounding wire and anti-ESD wrist strap with grounding wire are implemented at sub assembly, assembly and repair operation to prevent electronic components damage caused by ESD.

3.4.4 Anti-ESD wrist strap is daily checked by ESD wrist strap checker to make sure that it is in good condition before using. To follow ESD wrist strap testing instruction and record testing result in Anti-ESD wrist strap testing record (see attached Doc. No. PD-F-24)

Issued date : 10/10/00

Doc. No. : PD-F-24

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Doc. No. PD-F-24 Anti-ESD Wrist Strap Testing Record

Item	Operation	Name	Month												Year																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
1	Sub-assembly	บุญญิสสา ไชโยคม																																	
2	Assembly	วัชรินทร์ น้อยทัน																																	
3	Assembly	รัตดา วงศรีแก้ว																																	
4	Assembly (spare)	กิ่งกวิทย์ ลีทัพไทย																																	
5	Assembly (spare)	วาสนา หมอกสีปาน																																	
6	Repair station	ชอนสา โพธิบาล																																	

Remak : P = Pass F = Fail

Instructions and Operation Manual of Simco ESD Wrist Strap Checker M3-06251

- 1 ไล่สาย wrist strap ที่ข้อมือ.
- 2 เสียบปลั๊กของสาย wrist strap เข้าที่ jack ปลั๊ก ของ wrist trap checker (ที่ตำแหน่ง M-3).
- 3 กดปุ่ม " PUSH ON " ของ wrist trap checker ด้วยนิ้วของมือด้านที่สวมสาย wrist strap.
- 4 เมื่อกดปุ่ม " PUSH ON " wrist trap checker จะเริ่มทำงานหลังจากนั้น 1 วินาที.
- 5 สังเกตไฟของ LED, ถ้าขึ้นสีแดง แสดงว่า สาย wrist strap นั้นอยู่ในสภาพสามารถใช้งานได้ตามปกติ.
ถ้าไฟ LED ขึ้นสีแสด (LED-Hi) แสดงว่า สาย wrist strap นั้นอยู่ในสภาพไม่สามารถใช้งานได้ตามปกติ.
ถ้าไฟ LED ขึ้นสีแสด (LED-Lo) แสดงว่า battery ใกล้จะหมดแล้ว ให้เปลี่ยน battery ใหม่.
- 6 หลังจากเสร็จสิ้นการวัด นำนิ้วมือออกจาก ปุ่ม " PUSH ON " wrist strap checker จะสิ้นสุดการทำงาน.

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3.5 Inprocess quality audit sampling plan

3.5.1 QC inspector to do sampling 10% of build quantity for audit to follow inprocess quality audit instruction (ref : Doc. No. PD-F-22).

3.5.2 After audit to record audit result in form of inprocess quality audit sampling plan and result (see attached Doc. No. PD-F-25)

Issued date : 10/10/00

Doc. No. PD-F-25 Inprocess quality audit sampling plan and result

Doc. No. : PD-F-25

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Item	W/O No.	Qty	Model	Item No.	Inspect (Qty)	Rej (Qty)	Rej rate (%)	Defective/ Discrepancy	NCHR No.	CAR No.	Audited by	Date	Remark
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													

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3.5.3 QC inspector to record rejected component/ material or discrepancies found in form of Non-conformity handling report (Ref : Doc. No. PD-F-23) and also request for corrective action (Ref : Doc. No. PD-F-26 for corrective action request)

Issued date : 10/10/00

Doc. No. : PD-F-26

Doc. No. PD-F-26 Corrective Action Request

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Dept		CAR. No.	
Related Document		Audit Date	
Non-conformance :			
.....			
.....			
.....			
Auditee :		Date :	
Auditor :		Date :	
Corrective Action :			
.....			
.....			
.....			
Completion Date :		Auditee :	
Preventive Action :			
.....			
.....			
.....			
Completion Date :		Auditee :	
Follow up :			
.....			
.....			
.....			
Closed-out : <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Date :			
Remark :			
.....			
.....			

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