

CHIMEI-INNOLUX DISPLAY CORPORATION

Spec. No.: IQM070M21503

Date: 2012.07.22

7.1~12" TFT-LCD MODULE INCOMING INSPECTION SPECIFICATIONS

(For Approval Official)

CHIMEI-INNOLUX Display Corporation	(“碩翊”)
Quality Management Division	Checked Department :
Prepared By :Eben Yuan	_____
Checked By :Andrew Lin	Approved By : _____
Approved By :James Lee	Date : _____

1. Incoming Inspection

Both parties agree that the inspection specifications of TFT-LCD Modules (hereinafter known as "Modules") stipulated hereunder is the only and final standard applicable in the process of inspection. CHIMEI-INNOLUX shall be under no liability or obligation (including incidental loss, products liability or other consequential loss) whatsoever for any defect in quality or performance or shortage in quantity of the Modules that have passed such inspection.

2. Liability

2.1 Inspection Deadline

The Customer should inspect the Modules either at the Delivery Point or within twenty (20) calendar days after arrival at the Delivery Destination.

2.2 Notification of Rejection

The Customer may reject one or more defective or non-conforming Modules if the Modules fail to meet the AQL (Acceptable Quality Level) and pass the inspection. In that case, the customer should notify CHIMEI-INNOLUX of the rejection by either documents or mail within in three (3) business days from the date of reception of the Modules. Otherwise, the Modules shall be deemed to have met the AQL and passed the inspection.

3. Inspection Specifications

Both parties agree that the inspection shall contain and follow the inspection specifications stipulated in the attachment, including:

- 3.1 Scope
- 3.2 Sampling Plan
- 3.3 Panel Inspection Condition
- 3.4 Display Quality
- 3.5 Mechanics Specifications
- 3.6 Notification for Storage Handling

4. Limited Warranty

CHIMEI-INNOLUX represents and warrants that all Modules shall (i) conform to the specifications set hereunder, and (ii) be free from any defects in material and workmanship for twelve (12) months after the Customer's acceptance or deemed

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acceptance. CHIMEI-INNOLUX will replace, rework or refund the Customer for the defective or non-conforming Modules at CHIMEI-INNOLUX's option, provided that the Customer (i) promptly informs CHIMEI-INNOLUX of the defects or non-conformities within the warranty period, (ii) complies with the specifications and conditions hereunder, and (iii) complies with CHIMEI-INNOLUX's procedure for Modules replacement, reworking and/or return. The warranty period for the Modules replaced or reworked shall be the remaining term for such Modules.

5. THE WARRANTIES AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, TERMS OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. CHIMEI-INNOLUX'S WARRANTIES HEREIN APPLY ONLY TO THE CUSTOMER AND ARE NOT TO BE EXTENDED TO ANY THIRD PARTY.

6. **Governing Law**

This Agreement shall be governed and construed in accordance with the laws of the Republic of China. Both parties agree to submit any dispute, which cannot be amicably resolved, to Hsinchu District Court for the first instance.

Inspection Specifications

1. Scope

Specifications contain

- 1.1 Display Quality Evaluation
- 1.2 Mechanics Specification

2. Sampling Plan

Unless there is other agreement, the sampling plan for incoming inspection shall follow MIL-STD-105E.

- 2.1 Lot size: Quantity per shipment as one lot (different model as different lot).
- 2.2 Sampling type: Normal inspection, single sampling.
- 2.3 Sampling level: Level II.
- 2.4 AQL: Acceptable Quality Level
 - Major defect: AQL=0.65
 - Minor defect: AQL=1.0

3. Panel Inspection Condition

3.1 Environment:

- Room Temperature: $25\pm 5^{\circ}\text{C}$.
- Humidity: $65\pm 5\%$ RH.
- Illumination: 300 ~ 700 Lux.

3.2 Inspection Distance:

35 ± 5 cm

3.3 Inspection Angle:

The vision of inspector should be perpendicular to the surface of the Module.

3.4 Inspection time :

Perceptibility Test Time: 20 seconds max.

4. Display Quality

4.1 Function Related:

The function defects of line defect, abnormal display, and no display are considered Major defects.

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4.2 Bright/Dark Dots:

Defect Type	Specification	Major	Minor
Bright Dots	$N \leq 3$		●
Dark Dots	$N \leq 4$		●
Total Bright and Dark Dots	$N \leq 6$		●

Note: 1: The definition of dot: The size of a defective dot over 1/2 of whole dot is regarded as one defective dot.

Bright dot: Dots appear bright and unchanged in size in which LCD panel is displaying under black pattern.

The bright dot defect must be visible through 2% ND filter

Dark dot: Dots appear dark and unchanged in size in which LCD panel is displaying under pure red, green, blue pattern.

4.3 Pixel Definition:

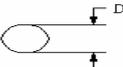
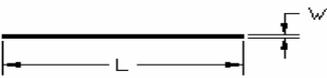
R	G	B	R	G	B	R	G	B		Dot Defect
R	G	B	R	G	B	R	G	B		Adjacent Dot Defect
R	G	B	R	G	B	R	G	B		Cluster

Note

1:If pixel or partial sub-pixel defects exceed 50% of the affected pixel or sub-pixel area, it shall be considered as 1 defect.

Note 2: There should be no distinct non-uniformity visible through 2% ND Filter within 2 sec inspection times.

4.4 Visual Inspection specifications:

<u>Defect Type</u>		<u>Specification Size</u>	<u>Count(N)</u>	Major	Minor
Dot Shape (Particle, Scratch and Bubbles in display area) 		$D \leq 0.3 \text{ mm}$	Ignored		
		$0.3\text{mm} < D \leq 0.5\text{mm}$	$N \leq 4$		•
		$D > 0.5\text{mm}$	$N=0$		
Newton Ring (Only for Touch panel)		$D \leq 70\text{mm}$	$N \leq 4$		•
		$D > 70\text{mm}$	$N=0$		
TSP Fish Eyes (Only for Touch panel) (Bubble/Dent)		$0.1\text{mm} < D \leq 0.2\text{mm}$	$N \leq 4$		•
		$0.2\text{mm} < D \leq 0.3\text{mm}$	$N \leq 3$		•
		$0.3 < D \leq 0.4$	$N \leq 2$		
Line Shape (Particles, Scratch, Lint and Bubbles in display area) 		$W \leq 0.07 \text{ mm}$	Ignored		
		$0.07\text{mm} < W \leq 0.1\text{mm}$ and $L \leq 5\text{mm}$	$N \leq 4$		•
		$W > 0.10\text{mm}$ or $L > 5\text{mm}$	$N=0$		
Bubble in cell (active area)		It should be found by eyes			•
Bezel	Scratch	No harm			•
	Dirt				•
	Wrap				•
	Sunken				•
Label	No label	No			•
	Inverted label				•
	Broken				•
	Dirt	Word can be read.			•
	Not clear	No			•
	Word out of shape				•
	Mistake	No			•
	Position	Be attached on right position			•
Screw	Not enough	No			•
	Limp	No			•

Connector	Connection status	No bend on pins and damage		•
FPC/FFC	Broken	No		•

Note: Extraneous substance and scratch not affecting the display of image, for instance, extraneous substance under polarizer film but outside the display area, or scratch on metal bezel and backlight module or polarizer film outside the display area, shall not be considered as defective or non-conforming.

5. Mechanics specifications

As for the outside dimensions and weight of the Modules, please refer to product specifications for more details.

6. Notification for Storage Handling

6.1 Storage:

6.1.1 Environment condition must be within the product specifications, otherwise the Module might be damaged.

6.1.2 Pile of stacking shall follow the instruction of CHIMEI-INNOLUX.

6.2 Handling:

6.2.1 Twisting or Bending of the Module is prohibited.

6.2.2 All chemicals are unfit for use unless otherwise instructed by CHIMEI-INNOLUX.

6.2.3 Plugging in & unplugging:

The power must be turned off before plugging in or unplugging the Module.

6.2.4 ESD protection:

The Module must not be touched without proper grounding.

6.2.5 High Voltage:

The rear side of Module must not be touched without protection.

6.2.6 Power sequence:

Shall follow the instruction of CHIMEI-INNOLUX.