

## Approved Specification

### Rev:A0

MODEL NO. : AB-J700-A800R

ISSUED DATE: 2024-7-29

| Proposed by |         |          | Customer's Approval |
|-------------|---------|----------|---------------------|
| Designed    | Checked | Approved |                     |
|             |         |          |                     |

## **AB-J700-A800R**

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Record of Revision

| Rev | Issue Date | Description | Editor  |
|-----|------------|-------------|---------|
| A0  | 2024-7-29  | Draft       | Gao Pei |
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## **AB-J700-A800R**

### **1 General Specifications**

| Feature             |                                         | Spec                       | Remark           |
|---------------------|-----------------------------------------|----------------------------|------------------|
| <b>Display Spec</b> | Screen Size (inch)                      | 7.0                        |                  |
|                     | Display Mode                            | AMOLED                     |                  |
|                     | Display method                          | Active Matrix TFT          |                  |
|                     | Resolution(dot)                         | 1080(W)x1920(H)            |                  |
|                     | Active Area(mm)                         | 87.1344 (H) x 154.9056 (V) |                  |
|                     | PPI                                     | 315                        |                  |
|                     | Pixel Configuration                     | V-style4                   |                  |
|                     | Technology Type                         | LTPS                       |                  |
|                     | With TP/Without TP                      | With TP                    |                  |
|                     | Panel Outline Dimension(W x H x D) (mm) | 89.1344*160.9056*1.028     | Include POL&Foam |
| <b>Electronic</b>   | Driver IC(Type)                         | ICNA3512                   |                  |
|                     | TP IC (Type)                            | FT3519                     |                  |
|                     | Frame Rate                              | 60/90/120/144Hz            |                  |

Note 1: Requirements on Environmental Protection: RoHS 2.0

## **AB-J700-A800R**

## **2 Input/output Terminals**

### 2.1 Main FPC Pin Assignment

FPC connector: OK-F302-39115 (Connector).

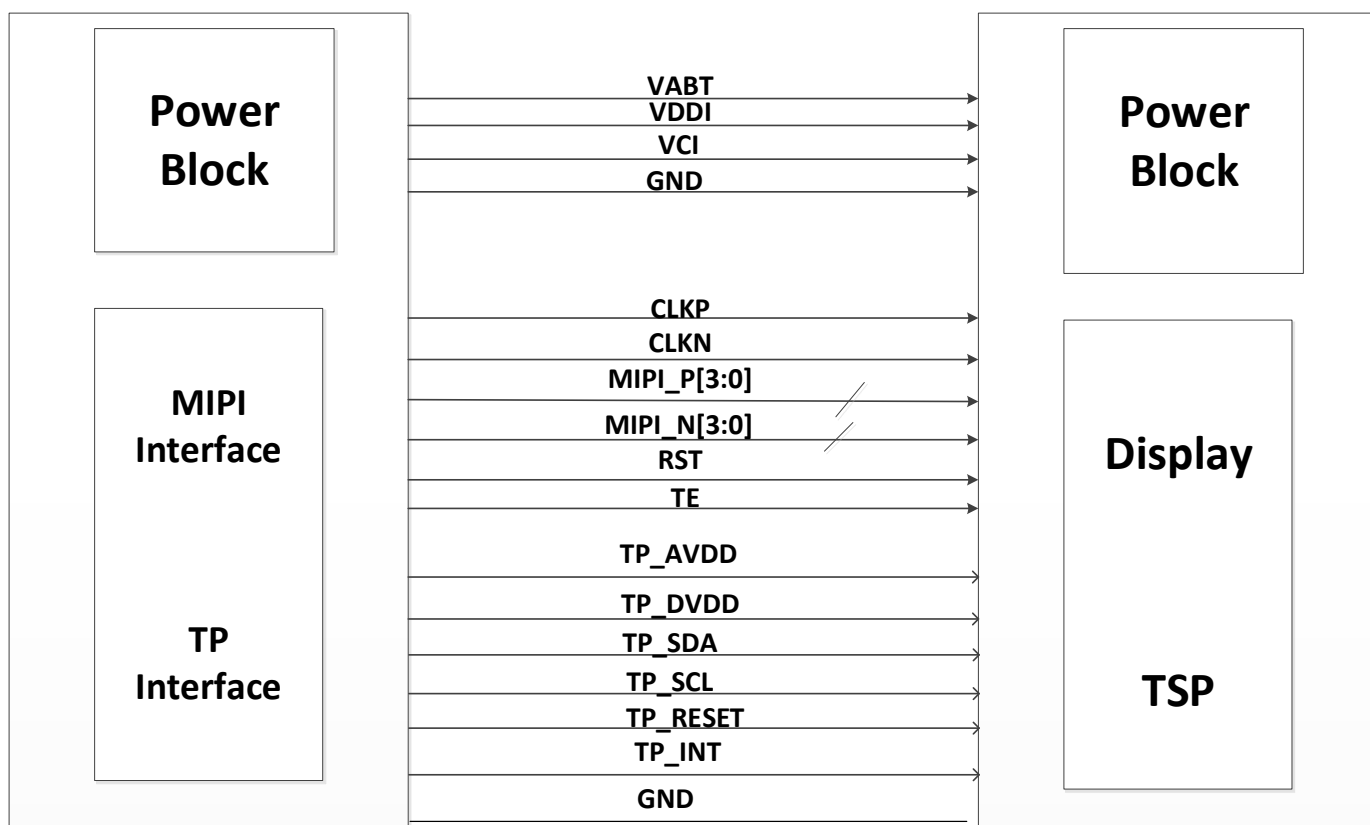
Transfer FPC: OK-F302-39115 (Goldfinger).

| No | Symbol   | I/O | Description              |
|----|----------|-----|--------------------------|
| 1  | GND      | P   | Ground                   |
| 2  | GND      | P   | Ground                   |
| 3  | GND      | P   | Ground                   |
| 4  | VBAT     | P   | Power supply for EL PMIC |
| 5  | VBAT     | P   | Power supply for EL PMIC |
| 6  | VBAT     | P   | Power supply for EL PMIC |
| 7  | VBAT     | P   | Power supply for EL PMIC |
| 8  | VBAT     | P   | Power supply for EL PMIC |
| 9  | GND      | P   | Ground                   |
| 10 | NC       | /   | No use                   |
| 11 | NC       | /   | No use                   |
| 12 | GND      | P   | Ground                   |
| 13 | D3P      | I   | MIPI data                |
| 14 | D3N      | I   | MIPI data                |
| 15 | GND      | P   | Ground                   |
| 16 | D0P      | I/O | MIPI data                |
| 17 | D0N      | I/O | MIPI data                |
| 18 | GND      | P   | Ground                   |
| 19 | CLKP     | I   | MIPI data                |
| 20 | CLKN     | I   | MIPI data                |
| 21 | GND      | P   | Ground                   |
| 22 | D1P      | I   | MIPI data                |
| 23 | D1N      | I   | MIPI data                |
| 24 | GND      | P   | Ground                   |
| 25 | D2P      | I   | MIPI data                |
| 26 | D2N      | I   | MIPI data                |
| 27 | GND      | P   | Ground                   |
| 28 | RST      | I/O | Display reset            |
| 29 | VDDI     | P   | Logic power for DDIC     |
| 30 | VCI      | P   | Analog power for DDIC    |
| 31 | TE       | O   | Tearing effect signal    |
| 32 | GND      | P   | Ground                   |
| 33 | TP_AVDD  | P   | Analog power for TP IC   |
| 34 | TP_DVDD  | P   | Logic power for TP IC    |
| 35 | TP_SDA   | I/O | IIC SDA for TP IC        |
| 36 | TP_SCL   | I   | IIC SCL for TP IC        |
| 37 | TP_RESET | I   | RESET for TP IC          |
| 38 | TP_INT   | I   | INT for TP IC            |
| 39 | NC       | /   | No use                   |

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Note: I=Input; O=Output; P=Power; I/O=Input / Output

### 2.2 MCU and Display Module Interface Conflagration



## 3 Absolute Maximum Ratings

### 3.1 Driving AMOLED Panel

Maximum Ratings (Voltage Referenced to VSS) VSS=0V, Ta=25°C

|               | Item                  | Symbol | MIN | MAX | Unit |
|---------------|-----------------------|--------|-----|-----|------|
| Display Power | Logic Power supply    | VCI    | -   | 3.6 | V    |
|               | Analog Power supply   | VDDIO  | -   | 3.6 | V    |
|               | Power IC Power Supply | VBAT   | -   | 7   | V    |

Note: Functional operation should satisfy the limits in the Electrical Characteristics tables or Pin Description section. If the module exceeds the absolute maximum ratings, permanent damage may occur. Besides, if the module is operated with the absolute maximum ratings for a long time, the reliability may also drop.

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### 4 Electrical Characteristics

#### 4.1 Driving AMOLED Panel

Ta=25°C

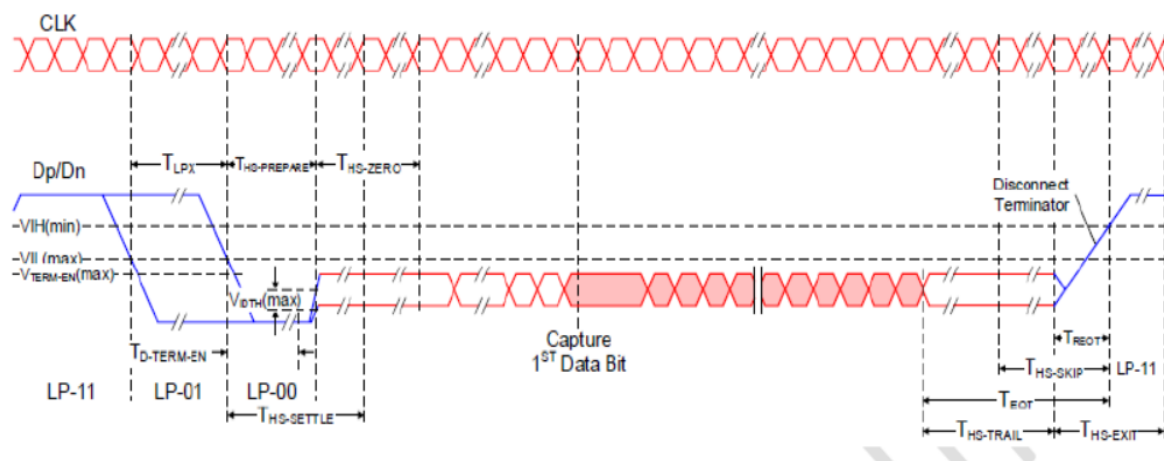
| Item                            |            | Symbol | MIN       | TYP | MAX       | Unit |
|---------------------------------|------------|--------|-----------|-----|-----------|------|
| Logic Power supply              |            | VDDI   | 1.65      | 1.8 | 1.95      | V    |
| Analog Power supply             |            | VCI    | 2.65      | 3   | 3.60      | V    |
| Default Positive Output Voltage |            | VBAT   | 4.0       | 4.2 | 4.8       | V    |
| Input Signal Voltage            | High Level | VIH    | 0.70*VDDI | -   | VDDI      | V    |
|                                 | Low Level  | VIL    | 0.00      | -   | 0.30*VDDI | V    |
| Output Signal Voltage           | High Level | VOH    | 0.80*VDDI | -   | VDDI      | V    |
|                                 | Low Level  | VOL    | 0.00      | -   | 0.20*VDDI | V    |

Note: The current and power consumption were tested under White pattern, 25°C

### 5 AC Characteristics

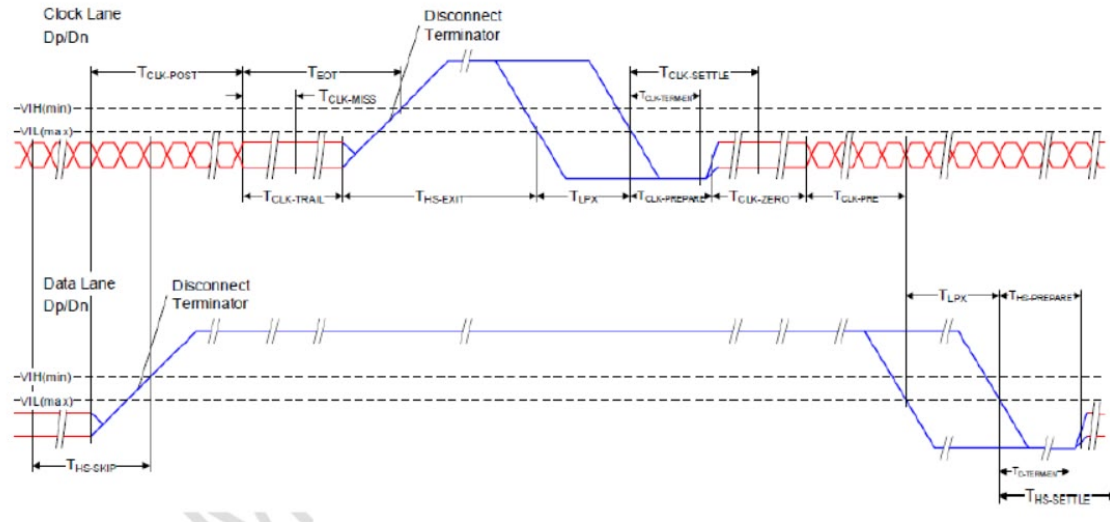
#### 5.1 MIPI Interface Characteristics

##### HS Data Transmission Burst



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### HS clock transmission



### Timing Parameter:

| Parameter                        | Description                                                                                                                                                                                                                  | Min                               | Typ | Max              | Unit | Notes |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----|------------------|------|-------|
| $T_{CLK-MISS}$                   | Timeout for receiver to detect absence of Clock transitions and disable the Clock Lane HS-RX.                                                                                                                                |                                   |     | 60               | ns   | 1, 6  |
| $T_{CLK-POST}$                   | Time that the transmitter continues to send HS clock after the last associated Data Lane has transitioned to LP Mode. Interval is defined as the period from the end of $T_{HS-TRAIL}$ to the beginning of $T_{CLK-TRAIL}$ . | 60 ns + 52*UI                     |     |                  | ns   | 5     |
| $T_{CLK-PRE}$                    | Time that the HS clock shall be driven by the transmitter prior to any associated Data Lane beginning the transition from LP to HS mode.                                                                                     | 8                                 |     |                  | UI   | 5     |
| $T_{CLK-PREPARE}$                | Time that the transmitter drives the Clock Lane LP-00 Line state immediately before the HS-0 Line state starting the HS transmission.                                                                                        | 38                                |     | 95               | ns   | 5     |
| $T_{CLK-SETTLE}$                 | Time interval during which the HS receiver should ignore any Clock Lane HS transitions, starting from the beginning of $T_{CLK-PREPARE}$ .                                                                                   | 95                                |     | 300              | ns   | 6, 7  |
| $T_{CLK-TERMEN}$                 | Time for the Clock Lane receiver to enable the HS line termination, starting from the time point when Dn crosses $V_{ILMAX}$ .                                                                                               | Time for Dn to reach $V_{TERMEN}$ |     | 38               | ns   | 6     |
| $T_{CLK-TRAIL}$                  | Time that the transmitter drives the HS-0 state after the last payload clock bit of a HS transmission burst.                                                                                                                 | 60                                |     |                  | ns   | 5     |
| $T_{CLK-PREPARE} + T_{CLK-ZERO}$ | $T_{CLK-PREPARE}$ + time that the transmitter drives the HS-0 state prior to starting the Clock.                                                                                                                             | 300                               |     |                  | ns   | 5     |
| $T_{D-TERMEN}$                   | Time for the Data Lane receiver to enable the HS line termination, starting from the time point when Dn crosses $V_{ILMAX}$ .                                                                                                | Time for Dn to reach $V_{TERMEN}$ |     | 35 ns + 4*UI     |      | 6     |
| $T_{EOT}$                        | Transmitted time interval from the start of $T_{HS-TRAIL}$ or $T_{CLK-TRAIL}$ to the start of the LP-11 state following a HS burst.                                                                                          |                                   |     | 105 ns + n*12*UI |      | 3, 5  |
| $T_{HS-EXIT}$                    | Time that the transmitter drives LP-11 following a HS burst.                                                                                                                                                                 | 100                               |     |                  | ns   | 5     |

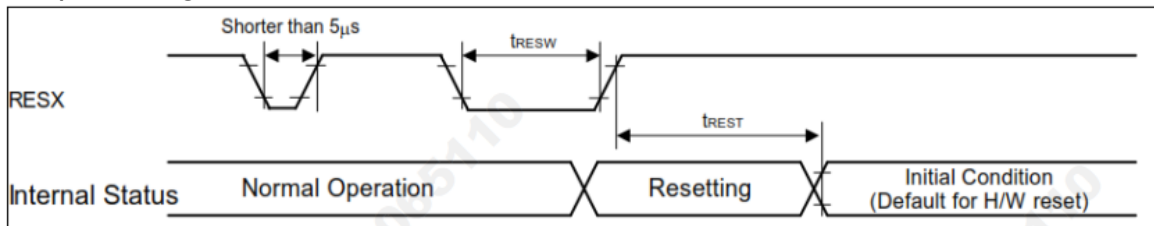


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| Parameter                      | Description                                                                                                                                                                                                                                                                                                         | Min                                                           | Typ | Max                           | Unit          | Notes   |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----|-------------------------------|---------------|---------|
| $T_{HS-PREPARE}$               | Time that the transmitter drives the Data Lane LP-00 Line state immediately before the HS-0 Line state starting the HS transmission                                                                                                                                                                                 | $40\text{ ns} + 4 \cdot UI$                                   |     | $85\text{ ns} + 6 \cdot UI$   | ns            | 5       |
| $T_{HS-PREPARE} + T_{HS-ZERO}$ | $T_{HS-PREPARE}$ + time that the transmitter drives the HS-0 state prior to transmitting the Sync sequence.                                                                                                                                                                                                         | $145\text{ ns} + 10 \cdot UI$                                 |     |                               | ns            | 5       |
| $T_{HS-GETTLE}$                | Time interval during which the HS receiver shall ignore any Data Lane HS transitions, starting from the beginning of $T_{HS-PREPARE}$ .<br>The HS receiver shall ignore any Data Lane transitions before the minimum value, and the HS receiver shall respond to any Data Lane transitions after the maximum value. | $85\text{ ns} + 6 \cdot UI$                                   |     | $145\text{ ns} + 10 \cdot UI$ | ns            | 6       |
| $T_{HS-SKIP}$                  | Time interval during which the HS-RX should ignore any transitions on the Data Lane, following a HS burst. The end point of the interval is defined as the beginning of the LP-11 state following the HS burst.                                                                                                     | 40                                                            |     | $55\text{ ns} + 4 \cdot UI$   | ns            | 6       |
| $T_{HS-TRAIL}$                 | Time that the transmitter drives the flipped differential state after last payload data bit of a HS transmission burst                                                                                                                                                                                              | $\max(n \cdot 8 \cdot UI, 60\text{ ns} + n \cdot 4 \cdot UI)$ |     |                               | ns            | 2, 3, 5 |
| $T_{INIT}$                     | See Section 6.11.                                                                                                                                                                                                                                                                                                   | 100                                                           |     |                               | $\mu\text{s}$ | 5       |
| $T_{LPX}$                      | Transmitted length of any Low-Power state period                                                                                                                                                                                                                                                                    | 50                                                            |     |                               | ns            | 4, 5    |
| Ratio $T_{LPX}$                | Ratio of $T_{LPX(MASTER)}/T_{LPX(SLAVE)}$ between Master and Slave side                                                                                                                                                                                                                                             | 2/3                                                           |     | 3/2                           |               |         |
| $T_{TA-GET}$                   | Time that the new transmitter drives the Bridge state (LP-00) after accepting control during a Link Turnaround.                                                                                                                                                                                                     | $5 \cdot T_{LPX}$                                             |     |                               | ns            | 5       |
| $T_{TA-GO}$                    | Time that the transmitter drives the Bridge state (LP-00) before releasing control during a Link Turnaround.                                                                                                                                                                                                        | $4 \cdot T_{LPX}$                                             |     |                               | ns            | 5       |
| $T_{TA-SURE}$                  | Time that the new transmitter waits after the LP-10 state before transmitting the Bridge state (LP-00) during a Link Turnaround.                                                                                                                                                                                    | $T_{LPX}$                                                     |     | $2 \cdot T_{LPX}$             | ns            | 5       |
| $T_{WAKEUP}$                   | Time that a transmitter drives a Mark-1 state prior to a Stop state in order to initiate an exit from ULPS.                                                                                                                                                                                                         | 1                                                             |     |                               | ms            | 5       |

### 5.2 Display RESET Timing Characteristics

Reset input timing:



VDDIO=1.65 to 1.95V, VCI=2.65 to 3.6V, AGND=DGND=0V, Ta=-40 to 85°C

### Timing Parameters

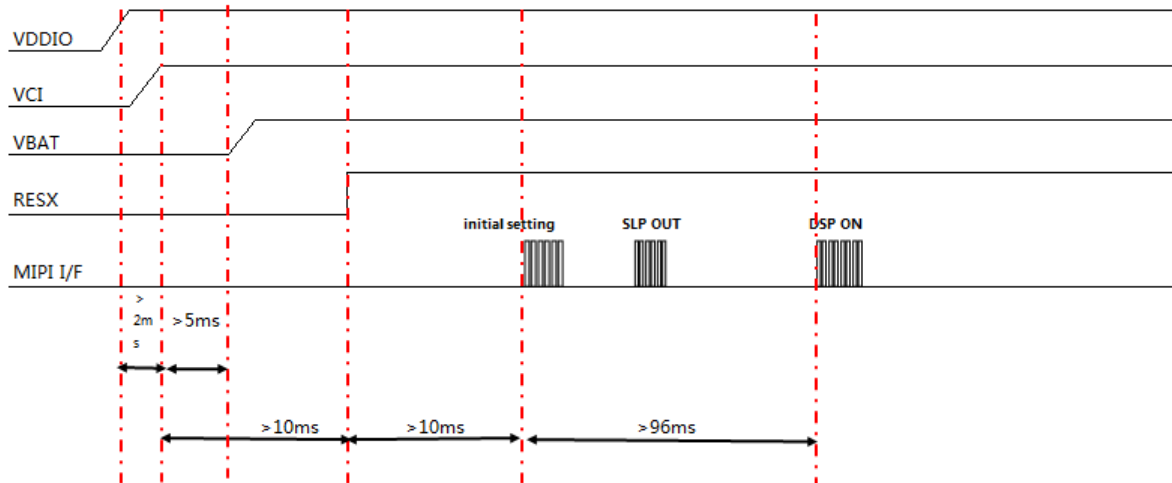
| Symbol     | Parameter                 | Related Pins | Min. | Typ. | Max. | Note                                     | Unit          |
|------------|---------------------------|--------------|------|------|------|------------------------------------------|---------------|
| $t_{RESW}$ | *1) Reset low pulse width | RESX         | 10   | -    | -    | -                                        | $\mu\text{s}$ |
| $t_{REST}$ | *2) Reset complete time   |              |      |      | 5    | When reset applied during sleep in mode  | ms            |
|            |                           |              |      |      | 120  | When reset applied during Sleep out mode | ms            |

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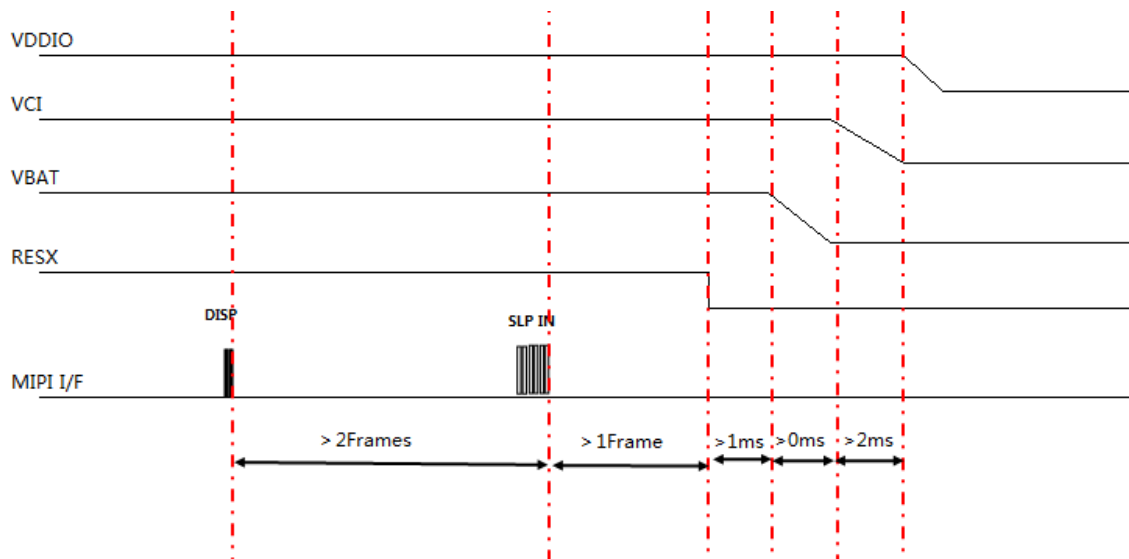
### **6 Recommended Operating Sequence**

#### **6.1 Display Power on / off Sequence**

##### **6.1.1 Power On Sequence**



##### **6.1.2 Power Off Sequence**



## **AB-J700-A800R**

### **7 Touch Design**

#### **7.1 Touch Panel Design**

| Item         |                  | Description              | Notes |
|--------------|------------------|--------------------------|-------|
| Touch Design | Sensor structure | On cell                  |       |
|              | Sensor pitch     | Tx: 4.359mm, Rx:4.3042mm |       |
|              | Sensor pattern   | Diamond                  |       |
|              | CH Number        | 20(Tx) / 36(Rx)          |       |
|              | Trace mode       | 2T1R                     |       |
|              | TP IC            | FT3519                   |       |

#### **7.2 General Specifications**

| NO | ITEM                         | SPEC                         | REMARK |
|----|------------------------------|------------------------------|--------|
| 1  | Precision @ D7mm Finger(mm)  | center≤1.0mm<br>border≤1.5mm |        |
| 2  | Jitter @D7mm Finger(mm)      | center≤0.4mm<br>border≤0.5mm |        |
| 3  | Sensitivity @D5mm Finger(mm) | w/o line broken              |        |
| 4  | Report rate                  | 120Hz                        |        |
| 5  | Touch Point                  | Max 10 Fingers               |        |

#### **7.3 Electrical Characteristics**

##### **7.3.1 Maximum Ratings**

| Item                               | Symbol    | MIN | MAX | Unit |
|------------------------------------|-----------|-----|-----|------|
| TP power supply Input              | TSP_AVDD  | 2.7 | 3.6 | V    |
| TP power supply for logic circuits | TSP_VDDIO | 1.7 | 3.6 | V    |

##### **7.3.2 Power supply DC characteristics**

| Item                               | Symbol    | MIN | TYP          | MAX | Unit |
|------------------------------------|-----------|-----|--------------|-----|------|
| TP power supply Input              | TSP_AVDD  | 2.8 | 2.8/3.0/3.3  | 3.6 | V    |
| TP power supply for logic circuits | TSP_VDDIO | 1.7 | 1.8/TSP_AVDD | 3.6 | V    |

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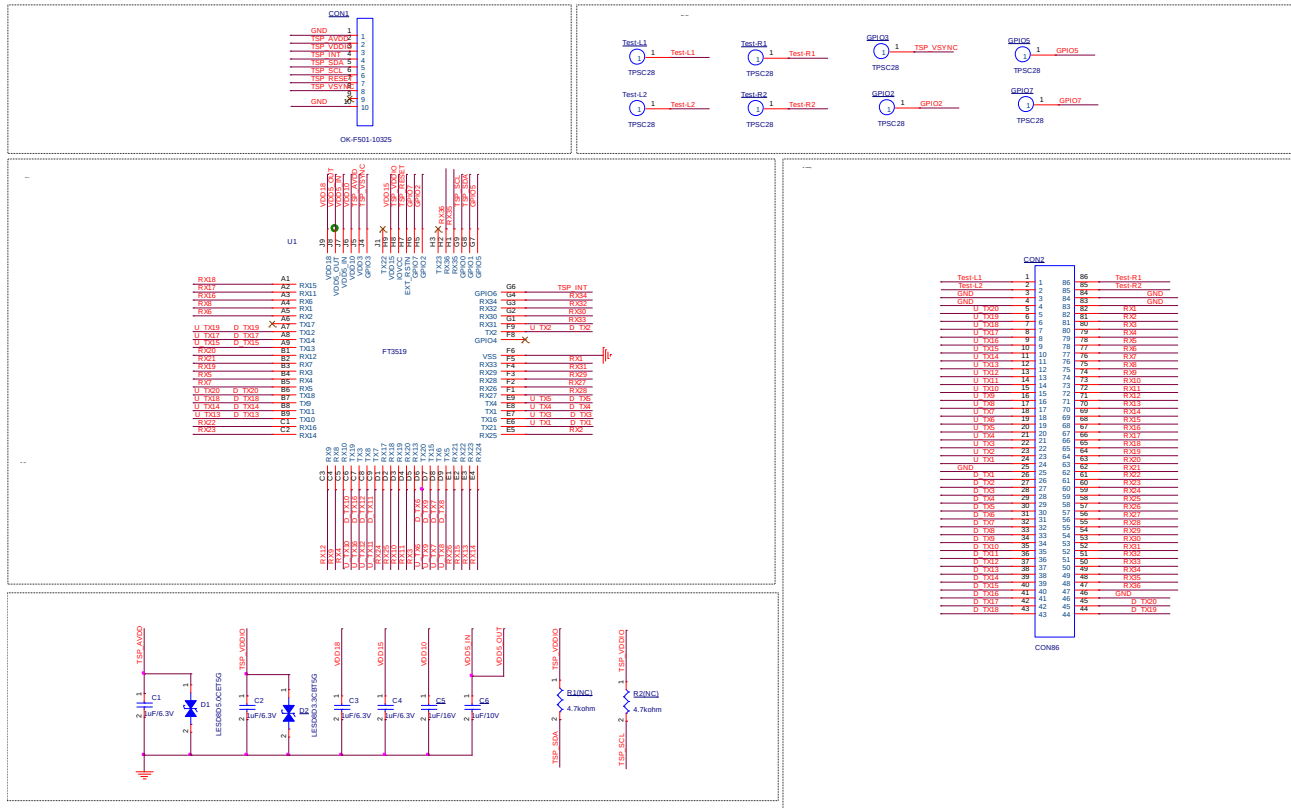
### 7.4 TP FPC Pin Assignment

| No | Symbol    | I/O   | Description                      |
|----|-----------|-------|----------------------------------|
| 1  | GND       | GND   | Ground                           |
| 2  | TSP_AVDD  | Power | Analog Power for Touch Panel     |
| 3  | TSP_VDDIO | Power | Digital Power for Touch Panel    |
| 4  | TSP_INT   | O     | Interrupt signal for Touch Panel |
| 5  | TSP_SDA   | I/O   | SDA pin for Touch Panel          |
| 6  | TSP_SCL   | I     | SCL pin for Touch Panel          |
| 7  | TSP_RESET | I     | Reset Pin for Touch Panel        |
| 8  | TSP_VSYNC |       | TE input for display VSYNC       |
| 9  | NC        | /     | /                                |
| 10 | GND       | GND   | Ground                           |

### 7.5 Touch Design

| Item         | Description      | Notes  |
|--------------|------------------|--------|
| Touch Design | Sensor structure | Oncell |

### 7.6 Touch FPCB Schematic



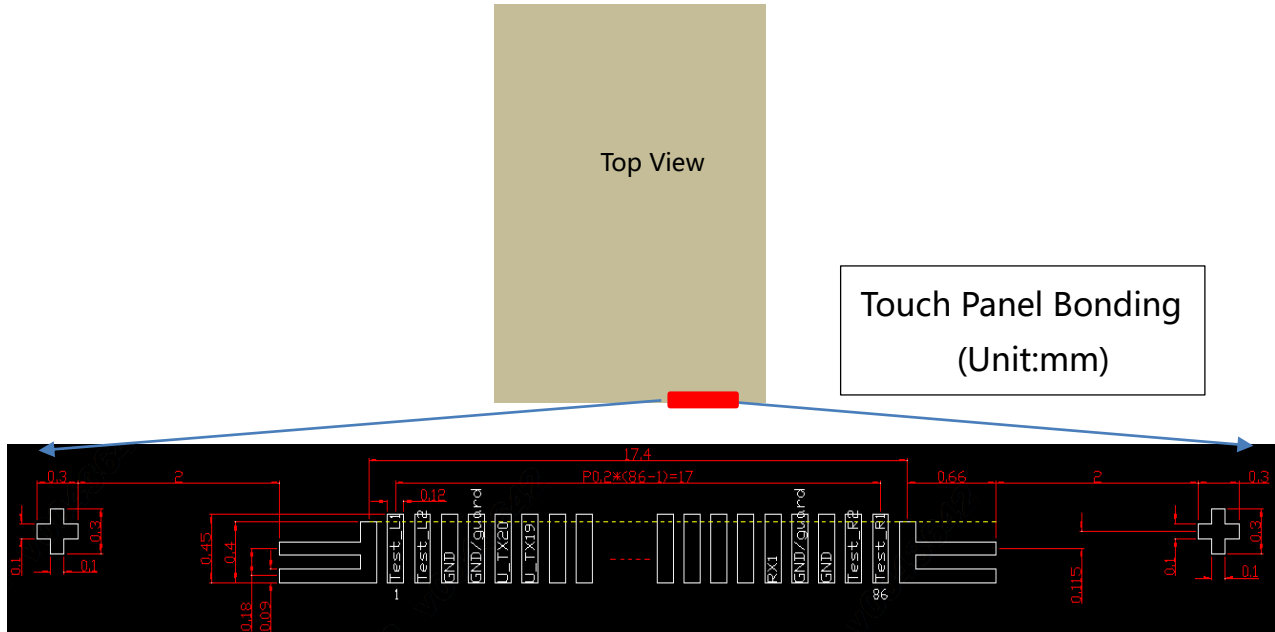
## **AB-J700-A800R**

### 7.7 TSP FPC Electronic Part List

| Item | Reference      | Specification             |
|------|----------------|---------------------------|
| 1    | C1 C2 C3<br>C4 | 1uF/6.3V/0402             |
| 2    | C5             | 1uF/16V/0402              |
| 3    | C6             | 1uF/10V/0402              |
| 4    | D1             | Bi-directional /5V/0402   |
| 5    | D2             | Bi-directional /3.3V/0402 |
| 6    | U1             | Touch IC ,FT3519          |

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### 7.8 Touch Panel Pin Assignment



#### Detailed Pin Assignment

| Pin Number | Pin Name  | Pin Number | Pin Name  | Pin Number | Pin Name  | Pin Number | Pin Name  |
|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| 1          | Test_L1   | 23         | U_TX2     | 45         | D_TX20    | 67         | RX16      |
| 2          | Test_L2   | 24         | U_TX1     | 46         | GND/Guard | 68         | RX15      |
| 3          | GND       | 25         | GND/Guard | 47         | RX36      | 69         | RX14      |
| 4          | GND/Guard | 26         | D_TX1     | 48         | RX35      | 70         | RX13      |
| 5          | U_TX20    | 27         | D_TX2     | 49         | RX34      | 71         | RX12      |
| 6          | U_TX19    | 28         | D_TX3     | 50         | RX33      | 72         | RX11      |
| 7          | U_TX18    | 29         | D_TX4     | 51         | RX32      | 73         | RX10      |
| 8          | U_TX17    | 30         | D_TX5     | 52         | RX31      | 74         | RX9       |
| 9          | U_TX16    | 31         | D_TX6     | 53         | RX30      | 75         | RX8       |
| 10         | U_TX15    | 32         | D_TX7     | 54         | RX29      | 76         | RX7       |
| 11         | U_TX14    | 33         | D_TX8     | 55         | RX28      | 77         | RX6       |
| 12         | U_TX13    | 34         | D_TX9     | 56         | RX27      | 78         | RX5       |
| 13         | U_TX12    | 35         | D_TX10    | 57         | RX26      | 79         | RX4       |
| 14         | U_TX11    | 36         | D_TX11    | 58         | RX25      | 80         | RX3       |
| 15         | U_TX10    | 37         | D_TX12    | 59         | RX24      | 81         | Rx2       |
| 16         | U_TX9     | 38         | D_TX13    | 60         | RX23      | 82         | RX1       |
| 17         | U_TX8     | 39         | D_TX14    | 61         | RX22      | 83         | GND/Guard |
| 18         | U_TX7     | 40         | D_TX15    | 62         | RX21      | 84         | GND       |
| 19         | U_TX6     | 41         | D_TX16    | 63         | RX20      | 85         | Test_R2   |
| 20         | U_TX5     | 42         | D_TX17    | 64         | RX19      | 86         | Test_R1   |
| 21         | U_TX4     | 43         | D_TX18    | 65         | RX18      |            |           |
| 22         | U_TX3     | 44         | D_TX19    | 66         | RX17      |            |           |

## **AB-J700-A800R**

### **8 Optical Characteristics Optical Specification**

| Item             |       | Symbol | Condition | Min     | Typ     | Max     | Unit   | Remark                                           |
|------------------|-------|--------|-----------|---------|---------|---------|--------|--------------------------------------------------|
| View Angle       |       | θT     | CR≥20000  | 80      |         |         | Degree | Note 2<br>Test<br>Equipment:CS2000A              |
|                  |       | θB     |           | 80      |         |         |        |                                                  |
|                  |       | θL     |           | 80      |         |         |        |                                                  |
|                  |       | θR     |           | 80      |         |         |        |                                                  |
| Contrast Ratio   |       | CR     | θ=0°      | 100,000 |         |         |        | Note1<br>Note3<br>Test<br>Equipment:CS2000A      |
| Chromaticity     | White | x      |           | (0.290) | (0.310) | (0.330) |        | Note 4<br>Test<br>Equipment:CS2000A              |
|                  |       | y      |           | (0.296) | (0.316) | (0.336) |        |                                                  |
|                  | Red   | x      |           | (0.652) | (0.682) | (0.712) |        |                                                  |
|                  |       | y      |           | (0.285) | (0.315) | (0.345) |        |                                                  |
|                  | Green | x      |           | (0.200) | (0.240) | (0.280) |        |                                                  |
|                  |       | y      |           | (0.676) | (0.716) | (0.756) |        |                                                  |
|                  | Blue  | x      |           | (0.108) | (0.138) | (0.168) |        |                                                  |
|                  |       | y      |           | (0.016) | (0.046) | (0.076) |        |                                                  |
| Uniformity       |       | U      |           | 75      |         |         | %      | Note1<br>Note5<br>Test<br>Equipment:CS2000A      |
| NTSC             |       |        |           |         | 100     |         | %      | Note4                                            |
| Normal-Luminance |       | L      |           | 720     | 800     | 880     | Cd/m²  | Note1<br>Note6<br>Test<br>Equipment:CS2000A      |
| HBM-Luminance    |       | L      |           | 900     | 1000    | 1100    | Cd/m²  | Note1<br>Note6<br>Test<br>Equipment:CS2000A      |
| Flicker          |       |        |           |         |         | -30     | dB     | Note8<br>Test Equipment:CA410<br>(Green127 60HZ) |
| Cross-talk       |       |        |           |         |         | 2       | %      | Note7<br>Test<br>Equipment:CS2000A               |

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|                       |           |      |     |     |     |    |                                                                          |
|-----------------------|-----------|------|-----|-----|-----|----|--------------------------------------------------------------------------|
| Response Time         | $T_{ON}$  | 25°C | -   | -   | 2   | ms | Note9<br>Test Equipment :<br>Oscilloscope and<br>photoelectric converter |
|                       | $T_{OFF}$ |      |     |     |     |    |                                                                          |
| Gamma<br>(Gray16-240) |           |      | 2.0 | 2.2 | 2.4 |    | Test Equipment : CA410                                                   |

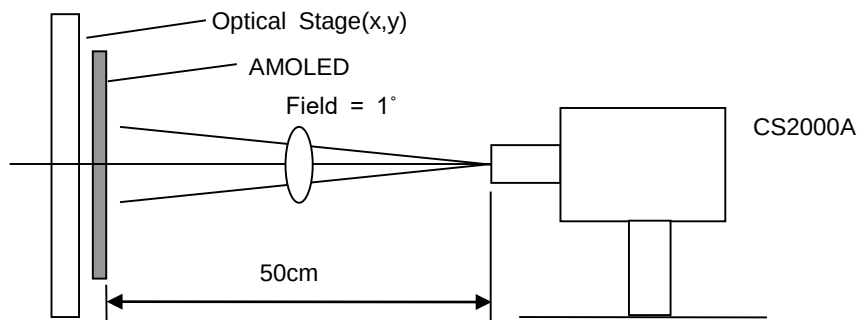
\* **Reference value.**

Test Conditions:

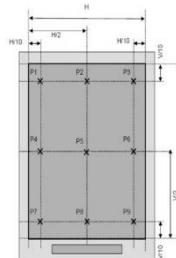
1. the ambient temperature is 25°C.
2. The test systems refer to Note1 and Note2.

Note 1: Definition of optical measurement system.

The optical characteristics should be measured in dark room. The optical properties are measured at the center point of the AMOLED screen. All input terminals AMOLED panel must be ground when measuring the center area of the panel.



Optical Characteristic Measurement Equipment and Method

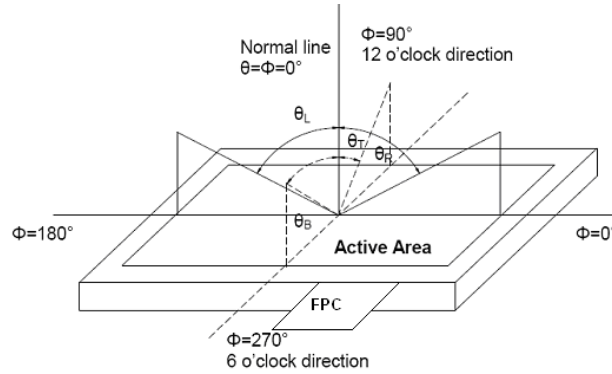


Measuring point for surface luminance

Note 2: Definition of viewing angle range and measurement system.



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Definition of viewing angle

Note 3: Definition of contrast ratio

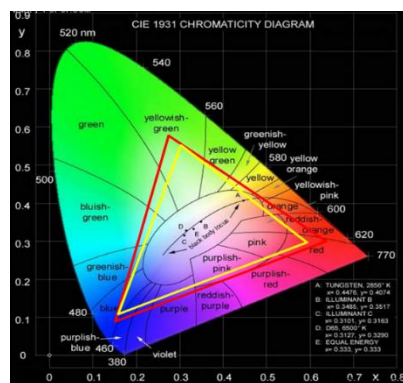
$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when AMOLED is on the "white" state}}{\text{Luminance measured when AMOLED is on the "Black" state}}$$

"White state ": A state where the AMOLED should be driven by  $V_{\text{white}}$ .

"Black state": A state where the AMOLED should be driven by  $V_{\text{black}}$ .

Note 4 Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of AMOLED.



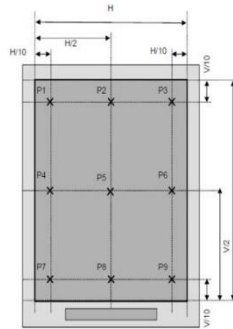
Note 5: Definition of luminance uniformity

Active area is divided into 9 measuring areas. Every measuring point is placed at the center of each measuring area.

## **AB-J700-A800R**

Luminance Uniformity(U) = Lmin/ Lmax

L-----Active area length W----- Active area width



Definition of uniformity

Lmax: The measured maximum luminance of all measurement position.

Lmin: The measured minimum luminance of all measurement position.

Note 6: Definition of luminance:

Measure the luminance of white state at center point.

Note 7: Cross Talk

A. Measure luminance at the position, P0.

B. Calculate cross talk as below equation.

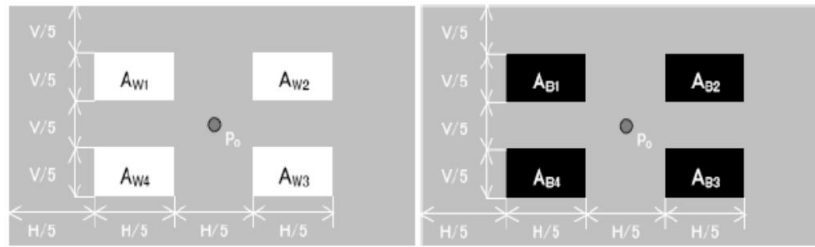
$$L_{W\_OFF} = \frac{L_{W1} + L_{W2} + L_{W3} + L_{W4}}{4}$$

$$L_{B\_OFF} = \frac{L_{B1} + L_{B2} + L_{B3} + L_{B4}}{4}$$

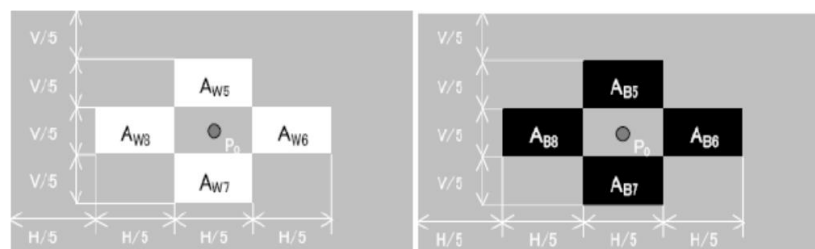
$$\text{crosstalk} = \frac{|L_{Wi\_ON} - L_{W\_OFF}|}{L_{W\_OFF}} \times 100\% \quad (i = 5 \text{ to } 8)$$

$$\text{crosstalk} = \frac{|L_{Bi\_ON} - L_{B\_OFF}|}{L_{B\_OFF}} \times 100\% \quad (i = 5 \text{ to } 8)$$

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(a)  $L_{W\_OFF}$ ,  $L_{B\_OFF}$  measuring pattern



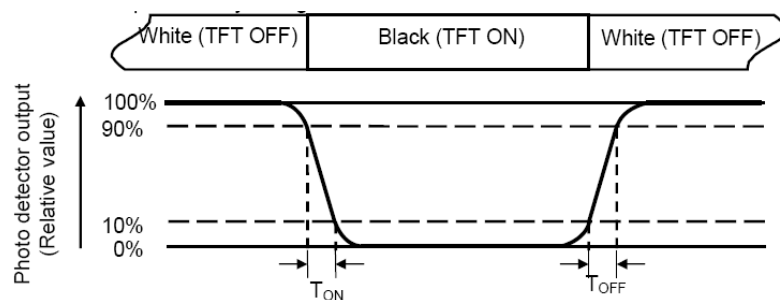
(b)  $L_{W\_ON}$ ,  $L_{B\_ON}$  measuring pattern

### Note 8: Flicker

Adjust the sample to Green127 at 60Hz @800nit, measure Flicker value by JEITA with CA410.

### Note 9: Definition of response time

The response time is defined as the AMOLED optical switching time interval between “White” state and “Black” state. Rise time ( $T_{ON}$ ) is the time between photo detector output intensity changing from 90% to 10%. And fall time ( $T_{OFF}$ ) is the time between photo detector output intensity changing from 10% to 90%.



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### **9 Environmental /Reliability Test**

| No | Test Item                                    | Condition                                | Remark           |
|----|----------------------------------------------|------------------------------------------|------------------|
| 1  | High Temperature Operation                   | +70°C, 120hrs                            | IEC 62341-5:2009 |
| 2  | Low Temperature Operation                    | -20°C, 120hrs                            | IEC 62341-5:2009 |
| 3  | High Temperature Storage                     | +80°C, 120hrs                            | IEC 62341-5:2009 |
| 4  | Low Temperature Storage                      | -40°C, 120hrs                            | IEC 62341-5:2009 |
| 5  | Thermal Shock (Non-operation)                | -40°C(30 min)~+80°C(30 min),<br>30Cycles | IEC 62341-5:2009 |
| 6  | High Temperature and High humidity operation | 60°C,90%RH,120hrs                        | IEC 62341-5:2009 |

## **AB-J700-A800R**

### **10 Quality Level**

#### 10.1 Definition and description

10.1.1 Critical Defect: Any defect that directly or indirectly affects personal health and safety, or causes a loss of functionality in the product's function list.

10.1.2 Major Defects: Defects that directly or indirectly affect the functionality of the product, or result in partial loss of functionality, and other defects that cannot be accepted by customers (including a collection of three or more minor defects).

10.1.3 Minor Defects: Appearance defects that do not affect product functionality and are still acceptable to customers.

#### 10.2 Execution level

10.2.1 Sampling standard: The sampling scheme of (GB/T2828.1 2012) normal inspection was adopted.

#### 10.2.2 Check item and frequency

| category     | Inspection content            | Standard                                                           | Sampling standard                                                                                | remark                                  |
|--------------|-------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------|
| General item | telecommunication /appearance | Telecommunication inspection standard & Visual inspection criteria | Critical Defect (CR Not allowed);<br>Major Defects (MA AQL 0.65);<br>Minor Defects (MI AQL 1.0); | /                                       |
| Special item | Optical test                  | Product specification                                              | 5PCS/ work order or according to customer requirements                                           | /                                       |
|              | Dimensional measurement       | drawing                                                            | 5PCS/ work order or according to                                                                 | Meet the requirements of drawings (spot |

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|  |  |  |                       |                                                                               |
|--|--|--|-----------------------|-------------------------------------------------------------------------------|
|  |  |  | customer requirements | check key dimensions);<br>Meet the requirements of the sample acknowledgment. |
|--|--|--|-----------------------|-------------------------------------------------------------------------------|

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10.2.3 Number of defects criterion decide  $CR=CR, MA=CR +MA, MI=CR +MA+ MI$ .

10.2.4 When a product has two flaws, More serious defect judgment .

10.2.5 Manufacturing department functional test and appearance inspection perform full inspection, The quality department shall execute as above 5.2.1~ 5.2.4.

### 10.3 Content

10.3.1 Inspector qualification: Inspectors must be trained and obtain a job certificate before they can inspect products.

10.3.2 Inspection condition: OLED does not light the light source  $1000\pm 200\text{lux}$  ; OLED light source is not higher than 200LUX, Surrounded by a black background.

10.3.3 Inspection distance: The standard viewing distance for all surfaces of the detected object is  $30\text{CM}\pm 5\text{CM}$ .

10.3.4 Inspection perspective : The angle between the product and the horizontal plane is  $45^\circ$ , and the eyes are perpendicular to the inspection plane. During inspection the product needs to rotate  $45^\circ$  up, down, left and right. The observation line of sight needs to be within the half section of the cone. The observation angle is  $45^\circ$  with the vertical axis of the product apex. The central axis of the cone must be standard and perpendicular to the product surface and pass through the fluorescent lamp; For non-conventional display defects (including but not limited to local bright lines or local floodlights), the observation angle is 75 degrees from the normal of the product surface; Full visual angle of appearance..

10.3.5 Inspection time: the inspection time without lighting is at least 10-12 seconds; The time of OLED lighting inspection for each picture is 1~3 seconds.

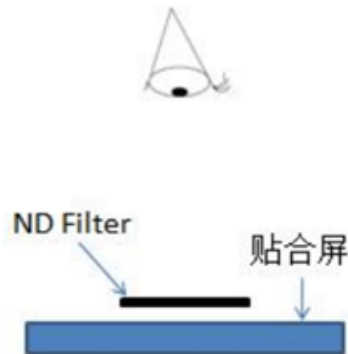
10.3.6 Test temperature: room temperature  $15-35^\circ\text{C}$ , ambient humidity: 20-75%RH.

10.3.7 Inspection picture: If there are no special requirements, refer to the pass Angle inspection screen library, if each model has special requirements, it is combined with customer requirements and the needs of the factory process assessment.

### 10.4 Inspection tools:

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10.4.1 ND Filter: The ND filter is placed at a distance of 2-3cm above the defect for 2-3S to judge whether the defect is visible. As Figure below: (ND Filter is used to test mura isochromatic and light unevenness).



10.4.2 Point gauge (point gauge in the figure below is recommended), determination method:

as shown in the figure, the point gauge film can cover is pass, and the point gauge film can not cover is Fail. For example, a maximum of 0.2mm same-color spot defect is allowed on the Class A surface, and the pass that can be covered by 0.2mm on the film, The one that can be covered is Fail



Imperfections of various shapes      Inspection Dot



**Pass:** Imperfection is smaller than the inspection dot



**Fail:** Imperfection is larger than the inspection dot



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10.4.3 Microscopic examination: use 20-50 times adjustable microscope and 10-30 times test eyepiece.

10.4.4 Digital caliper: resolution 0.01mm.

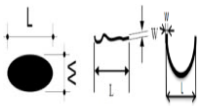
10.4.5 Projector: anime microscope, 3D projector.

### 10.5 Judgment description

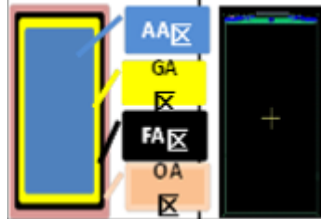
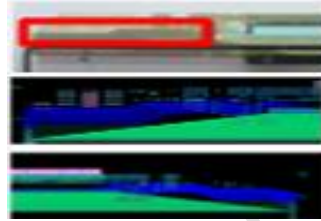
10.5.1 The measurement accuracy shall refer to the specification definition. When the measurement equipment accuracy is higher than the specification definition, the measured value needs to be rounded to the size of edge collapse is 0.20mm, and the thousandth is the reference position, which is rounded to 0.200~0.204mm is ok,  $\geq 0.205$ mm, it is judged as NG.

10.5.2 In addition to the tools used above, if additional inspection tools are needed to assist the judgment, they can only be carried out after the coordination of both parties.

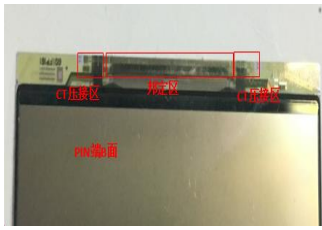
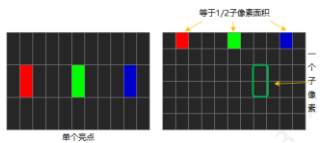
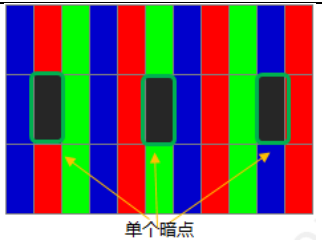
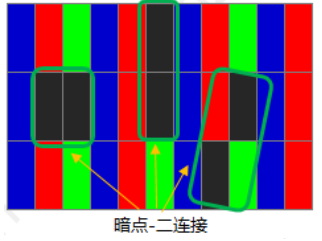
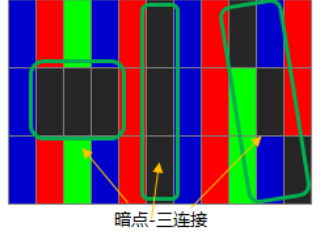
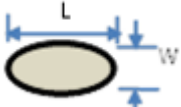
### 10.5.3 Bad code and definition

| Code and name |            | legend                                                                              | Instructions                                                                                                                                                                                                                                                                                                  |
|---------------|------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N             | Number     | -                                                                                   | Visually calculate the number; The statistics of the total number of defects does not include the completely "omitted" part. For the column defined as "omitted" and "omitted", it is not counted as the number of defects if it meets the requirements, otherwise it is calculated as an independent defect. |
| L             | Length(mm) |  | Dot line distinguishing rule: L is the long side, W is the short side.<br>A. When $L > 3W$ , handle as per line, otherwise handle as per point.                                                                                                                                                               |
| W             | Width(mm)  |                                                                                     | When it is judged as line defect, S-shaped or C-shaped line appears, and the enclosed amount is less than 3/4 circle, it shall be treated as line defect; otherwise. It shall be treated as point defect, and the inner tangent circle shall simulate the size of point.                                      |

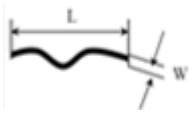
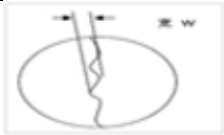
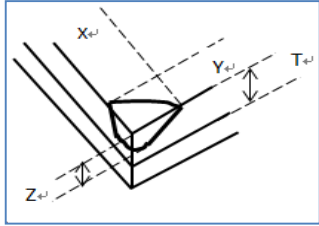
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|                                  |                               |                                                                                     |                                                                                                                                                                                                               |
|----------------------------------|-------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S                                | Area(mm <sup>2</sup> )        | -                                                                                   | Surface gauge                                                                                                                                                                                                 |
| D                                | Diameter(m<br>m)D=(L+W)<br>/2 | -                                                                                   | Point diameter calculation: calculated by half of the sum of the long side and the short side, that is, D=(L+W)/2, where D represents the diameter of the point, L is the long side, and W is the short side. |
| H                                | Depth(mm)                     | -                                                                                   | Digital micrometer                                                                                                                                                                                            |
| DS                               | Distance(m<br>m)              |   | Distance between two points or between two lines                                                                                                                                                              |
| Schematic diagram of screen area |                               |  | AA area:display area;<br>GA area:GIP circuit area;<br>FA area:Frit area;<br>OA area:outside FA area                                                                                                           |
| Leader area                      |                               |  | Screen GIP circuit area, screen data circuit area                                                                                                                                                             |
| PAD Bonding District             |                               |  | COG/FOG Bonding alignment mark and Bonding Pad on LTPS substrate                                                                                                                                              |
| PAD Non-state area               |                               |  | Screen test pad, cutting area and lead-free area on LTPS substrate.                                                                                                                                           |

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|                           |                                                                                     |                                                                                                                                                                                                                                                                                                |
|---------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CT crimp area             |    | PIN side screen body test PAD                                                                                                                                                                                                                                                                  |
| Bright                    |    | A single sub-pixel of 1 pixel (either red, green, or blue) is called a dot; The definition of highlight is that in the environment of $200\pm 50\text{Lux}$ , the pixels or points seen by employees with the naked eye are usually high, and the highlight is checked under the black screen. |
| Scotoma                   |   | A single sub-pixel of 1 pixel (either red, green, or blue) is called a dot; Dark spot is defined as a single sub-pixel that is not bright seen by the naked eye under a 100% white screen at an environment of $200\pm 50\text{Lux}$ .                                                         |
| Dark spot-two connection  |  | Two adjacent sub-pixels under the magnifying glass are not bright at the same time (horizontal, vertical and oblique)                                                                                                                                                                          |
| Dark spot –three Links    |  | The adjacent R,G and B sub-pixels under the magnifying glass are not bright at the same time (horizontal, vertical and oblique)                                                                                                                                                                |
| Foreign matter highlights | -                                                                                   | Due to the foreign matter in the polarizer, the phenomenon that appears as a bright spot is called a foreign matter bright spot.                                                                                                                                                               |
| Point defect              |  | There are bright spots and black spots in local positions, including but not limited to the internal dirt of the screen itself, pinholes, serrations, concave-convex spots, color spots, tiny bubbles,                                                                                         |

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|                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                                                     | white spots, stains on the fitting of the polarizer, poor polarizer itself and other spot-like defects. Point defects are judged by diameter.                                                                                                                                                                                                                                                                                                                                                                |
| Linear defect   |    | Linear impurities in the screen, including filaments, fibers, polarizer fitting impurities in the screen, and scratches on the surface of polarizer, etc. Linear defects are judged by length and width.                                                                                                                                                                                                                                                                                                     |
| Serrated defect |    | W: Distance from sawtooth crest to trough                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Glass chipping  |  | In the process of screen production, especially in the process of molding and cutting, the small glass missing at the glass edge is caused.<br>X direction: parallel to FOG Pad or glass edge;<br>Y direction: perpendicular to FOG Pad or glass edge;<br>Z direction: screen thickness direction; T: Thickness of single glass;                                                                                                                                                                             |
| Pockmark        | -                                                                                   | In the unit area of 10mm * 10mm, the defect point with $D \leq 0.1\text{mm}$ , $DS \geq 2\text{mm}$ , and the number $N \geq 5$ . If the customer has other requirements, follow the customer's requirements.                                                                                                                                                                                                                                                                                                |
| Dirty           | -                                                                                   | Including handprints, oil stains, fingerprints, stains, white fog and other undesirable phenomena. It is divided into erasable dirt and non-erasable dirt. Use a dust-free cloth dipped in alcohol, which can not be erased as non-erasable dirt. Wipable dirt is determined as follows:<br>A. Dry dust-free cloth can be directly erased;<br>B. Wipe with clean cloth dipped with anhydrous alcohol<br>Press the alcohol-stained dust-free cloth on the dry dust-free cloth twice to absorb excess alcohol; |

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|  |  |                                                                                |
|--|--|--------------------------------------------------------------------------------|
|  |  | Wipe back and forth with a dust-free cloth twice, and the dirt can be removed. |
|--|--|--------------------------------------------------------------------------------|

### 10.6 Inspection standard

#### 10.6.1 Telecommunications Inspection Item:

| category              | NO | Item                                                                                         | Area | Standard specification | Inspection mode | Defect type |
|-----------------------|----|----------------------------------------------------------------------------------------------|------|------------------------|-----------------|-------------|
| Insufficient function | 1  | Abnormal display                                                                             | AA   | Not allowed            | Visual          | CR          |
|                       | 2  | No display                                                                                   | AA   | Not allowed            | Visual          | CR          |
|                       | 3  | Display garbled characters, splashes, flickers, double image, distortion                     | AA   | Not allowed            | Visual          | CR          |
|                       | 4  | The picture is blurred, light or thick, diagonal stripes, inconsistent background color, etc | AA   | Not allowed            | Visual          | CR          |

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|             |    |                                                                       |    |                                                                                                                 |                                |    |
|-------------|----|-----------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------|--------------------------------|----|
| TP function | 5  | TP Test NG                                                            | AA | Not allowed                                                                                                     | Visual                         | MA |
| Dot defect  | 6  | Bright spot                                                           | AA | Not allowed                                                                                                     | Visual                         | MA |
|             | 7  | Dark dot                                                              | AA | 1.D≤0.15mm,ignore(pockmark not allowed);<br>2.D>0.15mm,Not allowed;                                             | Visual/<br>eyepiece/<br>Flinka | MI |
| line        | 8  | Bright line                                                           | AA | Not allowed                                                                                                     | Visual                         | CR |
|             | 9  | Dark line                                                             | AA | Not allowed                                                                                                     | Visual                         | MA |
|             | 10 | Micro Bright line                                                     | AA | Not allowed                                                                                                     | Visual                         | MA |
| Poor optics | 11 | Optical Test NG                                                       | AA | Failure to meet white balance/specification/acknowledgment/etc. optical test requirements is not allowed.       | Optical measuring instrument   | MA |
|             | 12 | The display color effect is different from the template or color card | AA | According to the optical CIE test                                                                               | Optical tester                 | MA |
|             | 13 | Warm and cold color mix                                               | AA | The same batch is not allowed                                                                                   | Optical tester                 | MA |
| Mura        | 14 | G&H-direction mura                                                    | AA | 1、Reference ND6% after Demura;<br>2、Reference limit sample determination<br>(Collect edge specification samples | Visual/limit sample            | MI |

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|                                                                                              |    |                                                                                   |    |                                                                                                                     |                |    |
|----------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------|----------------|----|
|                                                                                              | 15 | White spot                                                                        | AA | during production and agree with customers on 2pcs of standard samples and 2-4pcs of out-of-specification samples); |                |    |
|                                                                                              | 16 | Black spot                                                                        | AA |                                                                                                                     |                |    |
|                                                                                              | 17 | Color Mura                                                                        | AA |                                                                                                                     |                |    |
|                                                                                              | 18 | Newton ring                                                                       | AA |                                                                                                                     |                |    |
|                                                                                              | 19 | Transition grayscale color band                                                   | AA |                                                                                                                     |                |    |
|                                                                                              | 20 | Other Mura                                                                        | AA |                                                                                                                     |                |    |
| note:<br>1. The Mura class specifies the screen decision;<br>2. Limit samples are preferred. |    |                                                                                   |    |                                                                                                                     |                |    |
| Foreign body points and lines                                                                | 21 | Spot defects (different colors, black and white spots, scratches , bubbles, etc.) | AA | 1.D≤0.15mm,nonaggregation(DS≥30mm ) ignore;<br>2.0.15mm<D≤0.20mm,N≤2,DS>50mm;<br>3.D>0.2mm,Not allowed;             | Visual/ Flinka | MI |
|                                                                                              | 22 | Line defects (different                                                           | AA | 1.W≤0.03mm,L≤5mm,DS≥10mm,ignore;<br>2.0.03mm≤W≤0.05mm,L≤2mm,DS≥10m<br>m N≤ignore ;                                  | Visual/ Flinka | MI |

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|  |  |                                                                             |  |                                                                        |  |  |
|--|--|-----------------------------------------------------------------------------|--|------------------------------------------------------------------------|--|--|
|  |  | colors,<br>black and<br>White<br>spots,<br>scratches<br>, bubbles,<br>etc.) |  | 3.0.03mm≤W≤0.05mm,2<L≤5mm,DS≥10<br>mm N≤4;<br>4.L>5mm N=0,W>0.5mm,N=0; |  |  |
|--|--|-----------------------------------------------------------------------------|--|------------------------------------------------------------------------|--|--|

### 10.6.2 Appearance Inspection Item

| category | NO | Item                         | Area                          | Standard specification                                                                                                                                                                                                                                                 | Inspecti<br>on<br>mode | Defect<br>type |
|----------|----|------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------|
| Panel    | 1  | Screen<br>soiled/handwriting | All                           | 1.The front side (B side) can<br>wipe dirt wipe, not wipe dirt is<br>not allowed;<br>2.Back (side A):not controlled;                                                                                                                                                   | Visual                 | MI             |
|          | 2  | Chipping                     | PAD<br>non<br>bonding<br>area | 1.Y≤0.1mm,X&N ignore;<br>2.0.1mm≤Y≤0.5mm,X≤2mm,N<br>ignore;<br>3.B-side Not hurt Bonding<br>Mark, decide ok;                                                                                                                                                           | Visual/<br>Flinka      | MI             |
|          |    |                              | Pad<br>bonding<br>area        | 1.The cutting does not damage<br>the PAD and the circuit;<br>2.Y does not damage<br>pad1/4(Y≤0.25),X&N ignore;<br>3.When the glass back of the<br>module bonding is broken, the<br>function and performance<br>reliability are not<br>affected.,Y≤0.4mm,X&N<br>ignore; |                        |                |
|          |    |                              | OA area                       | 1.Y≤0.15mm,X&N ignore;                                                                                                                                                                                                                                                 |                        |                |



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|                               |    |                                                                                  |     |                                                                                                                                                                                                        |                       |    |
|-------------------------------|----|----------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----|
|                               |    |                                                                                  |     | 2. $0.15 < Y \leq 0.4\text{mm}$ , $X \leq 2\text{mm}$ , N ignore;<br>3. $Y > 0.4\text{mm}$ , Not allowed;<br>4. $Z \leq t$ . (Frit above glass Chipping specification card control X/Y);               |                       |    |
|                               | 3  | Salient point                                                                    | AA  | Touch is not allowed                                                                                                                                                                                   | Visual                | MI |
|                               | 4  | Flange                                                                           | OA  | 1. $Y \leq 0.2\text{mm}$ , X No control;<br>2. $Y > 0.2\text{mm}$ , Not allowed;                                                                                                                       | Visual/<br>Flinka     | MI |
|                               | 5  | Mark coloboma                                                                    | PIN | Mark defects that affect machine alignment are not allowed.                                                                                                                                            | Visual                | MI |
|                               | 6  | Glass fragment                                                                   | All | Not allowed                                                                                                                                                                                            | Visual                | MI |
|                               | 7  | Glass crack                                                                      | All | Not allowed                                                                                                                                                                                            | Visual                | MI |
|                               | 8  | Screen body warping                                                              | All | Side A and side B of the product are laid flat respectively, and one end is raised to a height (Pluggauge) $\leq 0.6\text{mm}$ .                                                                       | Visual/<br>Plug gauge | MI |
| Foreign body points and lines | 9  | Spot defects (different colors, black and white spots, scratches, bubbles, etc.) | All | 1. $D \leq 0.15\text{mm}$ , non-aggregation ( $DS \geq 30\text{mm}$ ) ignore;<br>2. $0.15\text{mm} < D \leq 0.20\text{mm}$ , $N \leq 2$ , $DS > 50\text{mm}$ ;<br>3. $D > 0.2\text{mm}$ , Not allowed; | Visual/<br>Flinka     | MI |
|                               | 10 | Line defects (different colors, black and white spots, scratches, bubbles, etc.) | All | Linear foreign body/filamentous:<br>1. $W \leq 0.03\text{mm}$ , $L \leq 5\text{mm}$ , $DS \geq 10\text{mm}$ , ignore;                                                                                  | Visual/<br>Flinka     | MI |

## **AB-J700-A800R**

|                 |    |                                    |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |    |
|-----------------|----|------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|
|                 |    |                                    |     | <p>2. <math>0.03\text{mm} \leq W \leq 0.05\text{mm}, L \leq 2\text{mm}, DS \geq 10\text{mm}</math> <math>N \leq \text{ignore}</math> ;</p> <p>3. <math>0.03\text{mm} \leq W \leq 0.05\text{mm}, 2 &lt; L \leq 5\text{mm}, DS \geq 10\text{mm}</math> <math>N \leq 4</math>;</p> <p>4. <math>L &gt; 5\text{mm}</math> <math>N=0, W &gt; 0.5\text{mm}, N=0</math>;</p> <p>Non-inductive scratch<br/>(on display/polarizer):</p> <p>1. <math>W \leq 0.03\text{mm}, L \leq 5\text{mm}, DS \geq 10\text{mm}</math>, ignore;</p> <p>2. <math>0.03\text{mm} \leq W \leq 0.05\text{mm}, L \leq 2\text{mm}, DS \geq 10\text{mm}</math> <math>N \leq \text{ignore}</math> ;</p> <p>3. <math>0.03\text{mm} \leq W \leq 0.05\text{mm}, 2 &lt; L \leq 5\text{mm}, DS \geq 10\text{mm}</math> <math>N \leq 4</math>;</p> <p>4. <math>L &gt; 5\text{mm}</math> <math>N=0</math>,<br/><math>W &gt; 0.5\text{mm}, N=0</math>;</p> |        |    |
| Protective film | 11 | The protective film body is faulty | All | <p>Invalid function, damage, missing paste is not allowed</p> <p>Bubbles, folds, bumps, dirt, raw edges, rubber overflow, etc. do not harm the body and do not control.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Visual | MI |
|                 | 12 | skewing                            | All | <p>Meet specifications such as design drawings, and the visual inspection cannot exceed the edge of the cover plate.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Visual | MI |

## **AB-J700-A800R**

|     |    |                                               |     |                                                                                            |                   |    |
|-----|----|-----------------------------------------------|-----|--------------------------------------------------------------------------------------------|-------------------|----|
| POL | 13 | POL Edge overflow                             | AA  | 1、 $W \leq 0.2\text{mm}$ , not control;<br>2、 $W > 0.2\text{mm}$ , not allowed;            | Visual/<br>Flinka | MI |
|     | 14 | POL scratch                                   | AA  | No damage body is not controlled, damage body according to the point, line specifications; | Visual            | MI |
|     | 15 | POL Salient point /Dent                       | AA  | Reference point/line class specifications;                                                 | Visual/<br>Flinka | MI |
|     | 16 | POL bubble line                               | All | Not allowed outside AA zone within 0.25mm;                                                 | Visual/<br>Flinka | MI |
|     | 17 | POL crease/indentation                        | AA  | Does not affect CG fit OK or reference limit sample;                                       | Visual            | MI |
|     | 18 | The edge of the polarizer overflows and warps | AA  | Cannot be extended to AA area;                                                             | Visual            | MI |

## **AB-J700-A800R**

|     |    |           |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |    |
|-----|----|-----------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----|
| IC  | 19 | IC damage | All | Visually not allowed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Visual            | MA |
| FPC | 20 | FPC       | All | <p>1. Welding, tinning, breakage, shedding, warping, cracking, PIN skew, missing, etc. are not allowed;</p> <p>2. Check the piano lid closed and opened once</p> <p>3. connector is shipped in closed state;</p> <p>4. Polarity welding, such as capacitance and; inductance, package size, component direction error is not allowed;</p> <p>5.Components missing, damaged and virtual welding must not exist;</p> <p>6.The parts on the FPC must beconsistent with the product BOM table, and there are incorrect, multiple, or missing parts, which are not allowed;</p> <p>7.FPC scratches/scratches are based onthe absence of exposed copper;</p> <p>8.The connector should not be stained with tin or residual tin beads, and the connector welding foot should not be connected to tin;</p> | Visual/<br>Flinka | MI |

## **AB-J700-A800R**

|  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |
|--|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|  |  |  |  | <p>9. There should be no visible dirt on the surface, and the one that can be removed by wiping is judged to be acceptable, but the ratio between the number of defects and the total number of sampling is more than 2%;</p> <p>10. FPC raw edges and burrs are not controlled;</p> <p>11. FPC screen printing poor: content error is not allowed, can not be recognized is not allowed;</p> <p>12. FPC shape damage: the damage exceeds 1/2 of the distance S between the edge of the plate and the nearest conductor, and is not allowed; Broken &gt; 2.5mm not allowed;</p> <p>13. FPC punching poor: missing punching positioning hole or positioning hole damage is not allowed;</p> <p>14. Creases/Indentations: Indentations in the circuit area should not cause the back of the covering film to turn white; Non line area indentation should not cause FPC damage;</p> <p>15. FPC ink resist welding does not allow bubbles, covering film bubbles do not allow exposure or bridging of metal conductors;</p> |  |  |
|--|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|

## **AB-J700-A800R**

|  |    |                      |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |    |
|--|----|----------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----|
|  |    |                      |                    | <p>16.FPC reinforcement board:<br/>Reinforcing plate cracking,<br/>falling off is not allowed;</p> <p>17.The separation of the<br/>reinforced plate from the FPC<br/>starting layer is not allowed;</p> <p>18.Reinforcing plate convex<br/>point: <math>D \leq 0.25\text{mm}</math>, and does not<br/>affect the overall thickness;</p> <p>19.FPC Foreign body (except<br/>gold finger):</p> <p>a punctiform: <math>D \leq 0.5\text{mm}</math>, <math>N \leq 3</math>;</p> <p>b. threadiness : Length and<br/>width <math>\leq 0.3 \times 5\text{mm}</math>;</p>                                                                                                       |                   |    |
|  | 21 | FPC Goldfinger<br>NG | Goldfinger<br>area | <p>1.Goldfinger cracked: The<br/>length and width of the<br/>cracked/broken tip of the<br/>goldfinger <math>\leq</math> line width ;</p> <p>2.Gold finger copper leakage:<br/><math>W \leq 1/3</math> line width, <math>L \leq</math> line width,<br/><math>N</math> ignore;</p> <p>3.Goldfinger notch <math>W \leq 1/3</math> line<br/>width <math>W</math>, length <math>L \leq 1/2</math> line<br/>width <math>W</math>, unlimited quantity, all<br/>the above conditions are<br/>allowed.</p> <p>4.Gold finger crush/scratch can<br/>not expose copper, can not<br/>have concave and convex, no<br/>visual depth, does not affect the<br/>assembly acceptable.</p> | Visual/<br>Flinka | MI |

## **AB-J700-A800R**

|      |    |                                         |            |                                                                                                                                                                                                                                                                                                                                                    |                   |    |
|------|----|-----------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----|
|      |    |                                         |            | <p>5. Golden fingers should not have sharp Angle folds and dead folds</p> <p>6. FPC gold finger should not be oxidized black, scald, brown, electroplating should not be oxidized discoloration phenomenon</p>                                                                                                                                     |                   |    |
|      | 22 | connector                               | connect or | <p>There should be no tin or residual tin bead phenomenon on the connector, and there should be no chain phenomenon on the connector welding foot; PIN deformation should not exceed 0.05mm control; Does not affect the point function: visually watch pin folding, pin falling off, extrusion deformation of the outer frame is not allowed;</p> | Visual/<br>Flinka | MI |
|      | 23 | FPC Bonding<br>bendsup after<br>bonding | FPC        | <p>The length of the overlap between the FPC goldfinger two-point mark and the screen lead is not less than 1/2 point mark length;</p>                                                                                                                                                                                                             | Visual/<br>Flinka | MI |
| TAPE | 24 | TAPE warping,<br>wrinkled, foreign      | ALL        | <p>1. Warping is not allowed;</p> <p>2. Folds and foreign bodies should not be higher than POL</p>                                                                                                                                                                                                                                                 | Visual            | MI |
|      | 25 | TAPE damaged                            | ALL        | <p>2mm*2mm, Maximum two on each side</p>                                                                                                                                                                                                                                                                                                           | Visual/<br>Flinka | MI |
|      | 26 | TAPE attached<br>status                 | ALL        | <p>1. Tape is attached near the Pol edge and does not cover the Pol on the CF side.</p>                                                                                                                                                                                                                                                            | Visual            | MI |

## **AB-J700-A800R**

|       |    |                 |                |                                                                                                                                                                                                                                                                                                                                                              |                   |    |
|-------|----|-----------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----|
|       |    |                 |                | 2. Tape opening position should not touch the Connector;                                                                                                                                                                                                                                                                                                     |                   |    |
| Other | 27 | Insulating tape | Bonding area   | No obvious folds and bubbles                                                                                                                                                                                                                                                                                                                                 | Visual            | MI |
|       |    |                 | Component area | 1. Scratches and glue flowers are not controlled;<br>2. Do not wipe dirt is not allowed;<br>3. The deviation of insulation tape shall not exceed the edge of the product, and the rest shall be determined according to the requirements of the drawing;<br>4. Raw edge, overflow is not controlled;<br>5. Broken, incomplete, missing stickers not allowed; | Visual            | MI |
|       | 28 | Composite tape  | All            | 1. The composite tape is not allowed to leak out of the screen edge;<br>2. It is not allowed to cause light leakage or affect the assembly and thickness of the composite tape due to fold and tissue;<br>3. Damage of composite tape is not allowed;<br>4. The size of the poor punching of the composite tape meets                                        | Visual/<br>Flinka | MI |



## **AB-J700-A800R**

|  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |
|--|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|  |  |  |  | <p>the requirements of the drawing;</p> <p>5.The dirt and foreign matters of the composite tape shall not be wiped, and the foreign matters shall be carried out according to the Dot Line standard;</p> <p>6.The burr of the composite tape shall not exceed the edge of the screen;</p> <p>7.No control of glue flower and overflow of composite tape;</p> <p>8.No control of glue flower and overflow of composite tape;</p> <p>9.Composite tape bubble: D &lt;5mm, N ignore;</p> <p>10.Composite tape bump point: sharp Angle bump point D&lt;0.3mm, N≤3; Smooth bump D&lt;0.8mm, N&lt;3;</p> <p>11.Composite tape foreign body (foreign body between copper foil and blue film) : D≤0.3mm,N≤3;</p> <p>12.Compound tape edge serrated: 0.5*3mm, N≤3;</p> <p>13.The color difference of the protective film in the composite tape is not controlled;</p> <p>14.Copper foil indentation dead folding in composite tape is not</p> |  |  |
|--|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|

## **AB-J700-A800R**

|  |    |                                     |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |    |
|--|----|-------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----|
|  |    |                                     |             | <p>allowed, does not affect assembly and thickness is not controlled; Or reference limit sample;</p> <p>15.The foreign body concave points of copper foil in composite tape are not controlled;</p>                                                                                                                                                                                                                                                                                                                                                                                        |                   |    |
|  | 29 | sealant                             | Gummed area | <p>1.Bonding area: The bonding area should not be broken, the bubbles on IC and FPC are not controlled, and the thickness of the gel should not exceed the POL level.</p> <p>2.Other areas: line area is not allowed to break glue, do not expose the line, bubble diameter &lt; 1mm, the colloidal thickness shall not be higher than the POL plane.</p> <p>3.IC ontology: need to be fully covered (customer requirements to meet customer requirements);</p> <p>4.FPC body: No banded colloid with a width greater than 1mm or point-like colloid with a diameter greater than 2mm.</p> | Visual/<br>Flinka | MI |
|  | 30 | Silicone glue/high temperature glue | All         | <p>1.Silicone rubber overflow should not exceed 0.2mm</p> <p>2.High temperature glue can exceed FPC, but not on the release film</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Visual/<br>Flinka | MI |

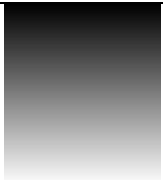
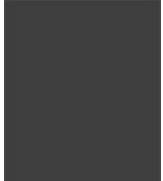
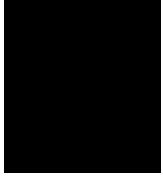
## **AB-J700-A800R**

|                          |    |                      |     |                                                                                                                                                                                                            |                        |    |
|--------------------------|----|----------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----|
|                          | 31 | ACF attached         | All | ACF adhesive length exceeds both ends of the FPC by 0.2mm ~ 1mm, Do not go beyond the edge of the screen, Lead area ACF effective lap width greater than 2/3 FPC goldfinger width,, No bubbles, folds, etc | Visual/<br>Flinka      | MI |
| Two-dimensional code     | 32 | Two-dimensional code | ALL | It is not allowed to be unable to scan or not easy to scan (more than three consecutive scans can be identified), the appearance is clear, no blur, printing loss and other bad                            | Barcode scanner/Visual | MI |
| Defects in outer packing | 33 | Mixed product        | /   | not allowed                                                                                                                                                                                                | -                      | -  |
|                          | 34 | Dirt, handwriting    | All | Handwriting residue and handwriting impressions are not allowed; Water/oil residue is not allowed                                                                                                          | -                      | -  |
|                          | 35 | Package              | All | Refer to the specification of packing pattern book and process SOP                                                                                                                                         | -                      | -  |
| Overall dimension        | 36 | Overall dimension NG | /   | Not allowed to exceed the dimensions and tolerances required by the specification drawings                                                                                                                 | --                     | -  |

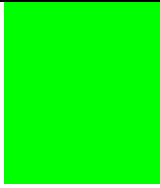
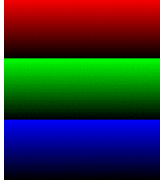
### 10.7 Inspection screen

| Serial number | picture                                                                             | Picture name | Check item        | remark |
|---------------|-------------------------------------------------------------------------------------|--------------|-------------------|--------|
| 1             |  | Image        | Picture exception | /      |

## **AB-J700-A800R**

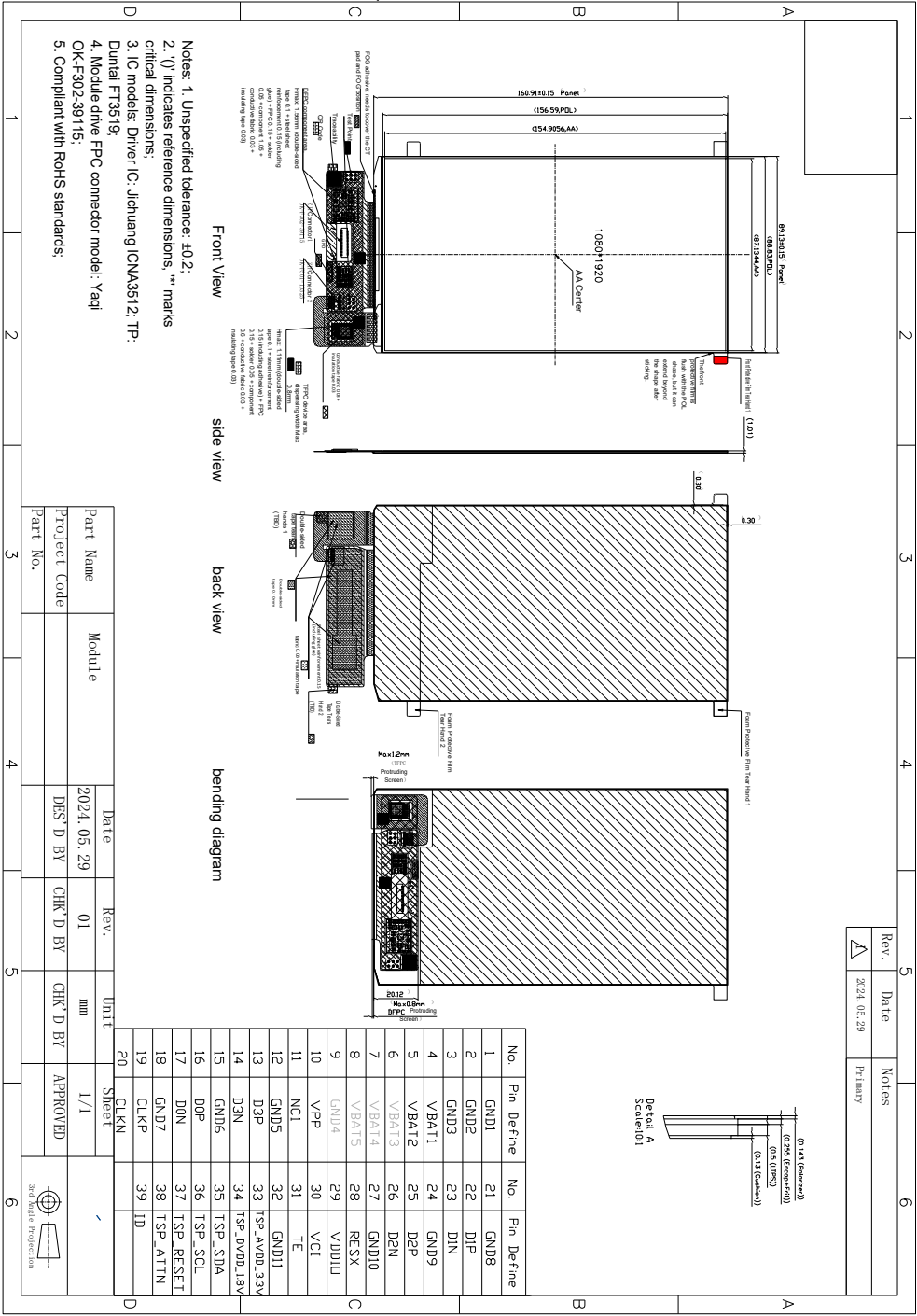
|   |                                                                                     |             |                                                             |   |
|---|-------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------|---|
| 2 |    | HSCALE      | OTP NG、Abnormal function                                    | / |
| 3 |    | VSCALE      | OTP NG、Abnormal function                                    | / |
| 4 |   | W_GRAD(32)  | mura poor auxiliary decision screen                         | / |
| 5 |  | W_GRAD(64)  | Point, line, foreign body/line, mura                        | / |
| 6 |  | W_GRAD(128) | Point, line, foreign body/line, mura                        | / |
| 7 |  | WHITE       | Point, line, foreign body/line, mura                        | / |
| 8 |  | Black       | Bright spot class, bright line class, dark state mura class | / |
| 9 |  | HBM WHITE   | Points, lines, foreign body points/lines                    | / |

## **AB-J700-A800R**

|    |                                                                                     |                                                                                                                                                                                                                                |                                                                               |   |
|----|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---|
| 10 |    | RED                                                                                                                                                                                                                            | Points, lines, foreign body<br>points/lines                                   | / |
| 11 |    | GREEN                                                                                                                                                                                                                          | Points, lines, foreign body<br>points/lines                                   | / |
| 12 |   | BLUE                                                                                                                                                                                                                           | Points, lines, foreign body<br>points/lines                                   | / |
| 13 |  | RGB3H                                                                                                                                                                                                                          | OTP NG、Abnormal function                                                      | / |
| 14 |  | 1080_Word                                                                                                                                                                                                                      | Display exception (word<br>distortion, blurring, failure to<br>display, etc.) | / |
| 15 |  | Complex                                                                                                                                                                                                                        | Microbright line                                                              | / |
| 16 |  | Black and white bar screen<br>+ low 51 values<br>Note: The low 51 value is<br>assigned to the 51<br>register, 51, 00, 02, which<br>is the state when the<br>brightness bar of the<br>analog client is pulled to<br>the lowest. | Splash screen                                                                 | / |

AB-J700-A800R

11 Mechanical Drawing

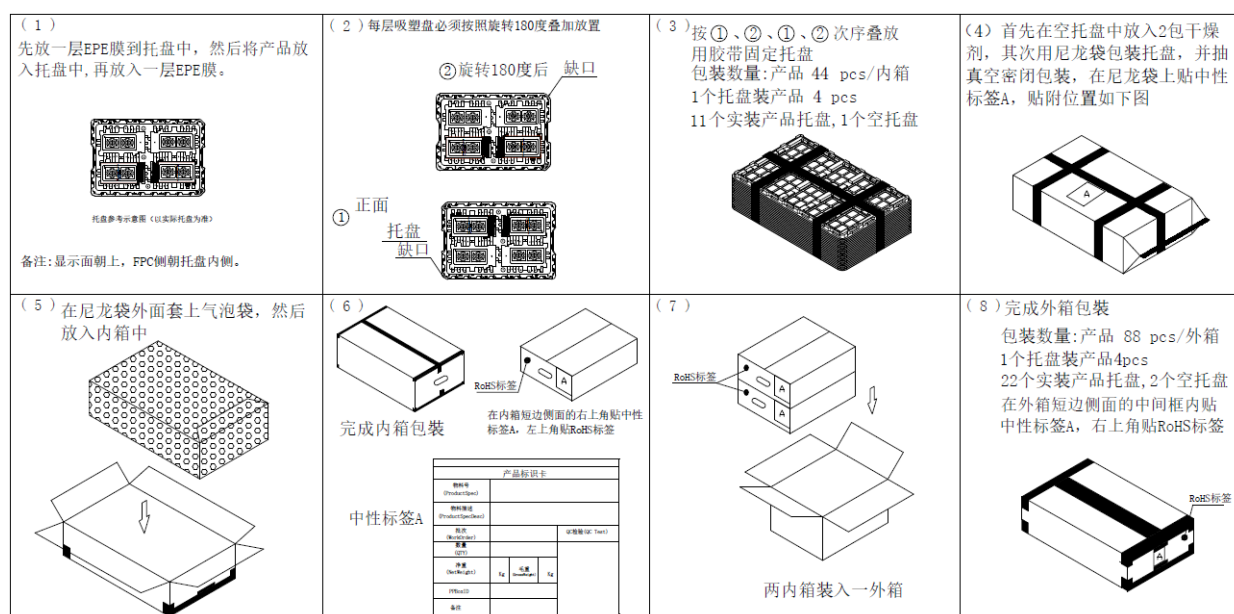


Picture 1

## AB-J700-A800R

### Packing Drawing

| Packing Condition           | Contents                                  |
|-----------------------------|-------------------------------------------|
| Packing Type                | TRAY + Carton packing type                |
| TRAY material model         | tray (10 <sup>4</sup> ~10 <sup>9</sup> Ω) |
| Tray packing type           | See the picture 2                         |
| Number of panels per tray   | 4pieces                                   |
| Number of Tray per carton   | 24units (( 22units +2empty)PET tray )     |
| Number of panels per carton | 88pieces                                  |



Picture 2

## **AB-J700-A800R**

### **12 Precautions for Use of AMOLED Modules**

#### **12.1 Handling Precautions:**

- 12.1.1 The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from height.
- 12.1.2 Do not press down the screen or the adjoining areas too hard because the color tone may be shifted.
- 12.1.3 The polarizer covering the display surface of the AMOLED module is soft and easily scratched. Handle this polarizer carefully.
- 12.1.4 If the display surface is contaminated, blow on the surface and gently wipe it with a soft dry cloth. If it is still not completely clear, moisten the cloth with ethyl alcohol.
- 12.1.5 Solvents may damage the polarizer. Do not use water, ketone or aromatic solvents except ethyl alcohol.
- 12.1.6 Do not attempt to disassemble the AMOLED Module.
- 12.1.7 If the logic circuit power is off, do not apply the input signals.
- 12.1.8 To prevent destruction from static electricity, be careful to maintain an optimum working environment.
- 12.1.9 Be sure to make yourself in contact with the ground when handling with the AMOLED Modules.
- 12.1.10 Tools required for assembly, such as soldering irons, must be properly ground.
- 12.1.11 To reduce the generation of static electricity, do not conduct assembly or other work under dry conditions.
- 12.1.12 To protect the display surface, the AMOLED Module is coated with a film. Be careful when peeling off this protective film, because static electricity may generate. ■

#### **12.2 Storage Precautions:**

- 12.2.1 When storing the AMOLED modules, be sure that they are not directly exposed to the sunlight or the light of fluorescent lamps.



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- 12.2.2 The AMOLED modules should be stored under the storage temperature range. If the AMOLED modules will be stored for a long time, the recommended condition is:
- 12.2.3 Temperature: 0°C~40°C Relatively humidity: ≤80%
- 12.2.4 The AMOLED modules should be stored in the room without acid, alkali or harmful gas.
- 12.2.5 Transportation Precautions:
- 12.2.6 The AMOLED modules should not be suffered from falling and violent shocking during transportation. Besides, excessive press, water, damp and sunshine, should be avoided.