

# Osptek Display

## AMOLED SPECIFICATION

Model No:

**FLS-AM0178R585-A**

*osptek*<sup>®</sup>

## Version History

[illegible]

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## 1 Scope

This Specification defines AMOLED manufactured by Shenzhen Osprey Optoelectronics Technology Co., Ltd. , from here on refer as OSP. In the case of any unspecified item, it may require both OSP and the party designs this module into its product to work out a solution.

## 2 Features

### 2.1 Product Applications

Smart Watch(On-cell)

### 2.2 Product Features

- 1) Display color: 16.7M (RGB x 8bits)
- 2) Display format: 1.78”(368RGBx448)
- 3) Pixel arrangement: Real RGB arrangement
- 4) Interface: MIPI/SPI
- 5) Driver IC: SH8601A0 TP IC: CHSC5816

## 3 Mechanical Specifications

| Item                                   | Specification         | unit |
|----------------------------------------|-----------------------|------|
| Panel outline                          | 34.8*41.04            | mm   |
| LTPS Glass outline                     | 30.6*37.99            | mm   |
| Number of dots                         | 368(W) x RGB x 448(H) | dots |
| Active area                            | 28.7*34.94            | mm   |
| Diagonal size                          | 1.78                  | inch |
| Pixel pitch                            | 78*78                 | μm   |
| Glass thickness<br>(LTPS/Encap. glass) | 0.2 / 0.3             | mm   |
| Weight                                 | TBD                   | g    |

## 4 Maximum Rating

| Parameter                  | Symbol | Spec |      |      | Unit | Note |
|----------------------------|--------|------|------|------|------|------|
|                            |        | Min. | Typ. | Max. |      |      |
| Analog/boost power voltage | VCI    | -0.3 | -    | 5.5  | V    | -    |
| I/O voltage                | VDDIO  | -0.3 | -    | 5.5  | V    | -    |
| Operating temperature      | Top    | -20  | -    | 70   | °C   | -    |
| Storage temperature        | Tstg   | -40  | -    | 80   | °C   | -    |

## 5 Electrical Specifications

### 5.1 Electrical Characteristics

#### 5.1.1 Power Characteristic:

| Item                  | Symbol | Min. | Typ. | Max. | Unit | Remark |
|-----------------------|--------|------|------|------|------|--------|
| AMOLED Power positive | ELVDD  | 3.0  | 4.6  | 5.0  | V    | -      |
| AMOLED power Negative | ELVSS  | -4.0 | -2.0 | -0   | V    | Ref    |
| Digital Power supply  | VDDIO  | 1.65 | 1.8  | 3.3  | V    | Ref    |
| Analog Power supply   | VCI    | 2.7  | 2.8  | 3.6  | V    | Ref    |

#### 1) Normal Mode

**Power Supply:** IOVCC=1.8V VCI=2.8V

**Frame Frequency:**  $F_{\text{frame}}=60\text{HZ}$  @ 25degC, Brightness 500 nits, Command Mode,

| Display Condition        | Symbol           | Min. | Typ. | Max. | Unit | Remark |
|--------------------------|------------------|------|------|------|------|--------|
| 100% Pixel On<br>500nits | IELVDD<br>/ELVSS | -    | 27.9 | -    | mA   | Ref    |
|                          | IVCI             | -    | 6    | 7.2  | mA   | Ref    |
|                          | IVDDIO           | -    | 2    | 2.4  | mA   | Ref    |

#### 2) Idle Mode

**Power Supply:** IOVCC=1.8V VCI=2.8V

**Frame Frequency:**  $F_{\text{frame}}=15\text{HZ}$  @ 25degC, Brightness:50nits, OPR:10%,Command Mode

| Display Condition       | Symbol           | Min. | Typ. | Max. | Unit | Remark                   |
|-------------------------|------------------|------|------|------|------|--------------------------|
| 10% Pixel On<br>50 nits | IELVDD<br>/ELVSS | -    | 2.8  | -    | mA   | Supplied by<br>Driver IC |
|                         | IVCI             | -    | 3.5  | 4.5  | mA   | Ref                      |
|                         | IVDDIO           | -    | 1.2  | 1.5  | mA   | Ref                      |

#### 3) Deep Standby Mode

| Display Condition | Symbol                   | Min. | Typ. | Max. | Unit | Remark |
|-------------------|--------------------------|------|------|------|------|--------|
| Deep Standby      | IVCI                     | -    | -    | 15   | uA   | -      |
|                   | IVDDIO                   | -    | -    | 4    | uA   | -      |
|                   | Power<br>Consumpti<br>on | -    | -    | <50  | uW   | Ref    |

#### 5.1.2 Driver IC

**SH8601A.**

## 5.2 TP IC Recommended Operating Conditions

Touch IC: CHSC5816(refer to the datasheet)

| Symbol                 | Description                 | Min | TYP | MAX  | UNIT |
|------------------------|-----------------------------|-----|-----|------|------|
| VCCA                   | Analog power supply voltage | 2.7 | 2.8 | 3.6  | V    |
| V <sub>IN</sub> (I2C)  | Input voltage range         | 0   | -   | 3.6  | V    |
| V <sub>OUT</sub> (I2C) | Output voltage range        | 0   | -   | 3.6  | V    |
| V <sub>IN</sub> (INT)  | Input voltage range         | 0   | -   | 3.6  | V    |
| V <sub>OUT</sub> (INT) | Output voltage range        | 0   | -   | 3.6  | V    |
| V <sub>OUT</sub> (TX)  | Output voltage range        | 0   | -   | VCCA | V    |
| V <sub>OUT</sub> (RX)  | Input voltage range         | 0   | -   | VCCA | V    |

The logo for Osptek, featuring a stylized 'X' shape composed of two overlapping triangles, one light blue and one light purple, positioned above the word 'osptek' in a lowercase, sans-serif font. A registered trademark symbol (®) is located to the upper right of the 'k'.

| Item              | Spec                               | Remark                                                                 |
|-------------------|------------------------------------|------------------------------------------------------------------------|
| Operating voltage | 2.7-3.6V                           |                                                                        |
| Operating current | 2mA                                |                                                                        |
| Linearity         | Center part $\leq$ 1mm             | Test tool: $\varnothing$ 7mm copper cylinder                           |
|                   | The peripheral position $\leq$ 2mm |                                                                        |
| Sensitivity       | No broken line                     | Lineation with 5mm/s&20mm/s respectively by $\Phi$ 7mm copper cylinder |
| Response time     | $\leq$ 10ms                        |                                                                        |

### 5.3 I/O Connection

#### 5.3.1 COF Bonding FPC PAD Define

| No. | Symbol         | Function                                              |
|-----|----------------|-------------------------------------------------------|
| 1   | NFC_ANT2       | Near Field Communication Antenna 2                    |
| 2   | NFC_ANT1       | Near Field Communication Antenna 1                    |
| 3   | GND            | Ground                                                |
| 4   | TP_INT(1.8V)   | Touch IC's interrupt to Host                          |
| 5   | TP_SDA(1.8V)   | Touch IC I2C data                                     |
| 6   | TP_SCL(1.8V)   | Touch IC I2C clock                                    |
| 7   | TP_RESET(1.8V) | This signal will reset Touch IC.Signal is active low. |
| 8   | TP_VDD(3.3V)   | Power supply for Touch IC                             |
| 9   | TP_VDD(3.3V)   | Power supply for Touch IC                             |
| 10  | GND            | Ground                                                |
| 11  | CLKN           | MIPI DSI clock lane-                                  |
| 12  | CLKP           | MIPI DSI clock lane+                                  |
| 13  | GND            | Ground                                                |
| 14  | D0N            | MIPI DSI data lane0-                                  |
| 15  | D0P            | MIPI DSI data lane0+                                  |

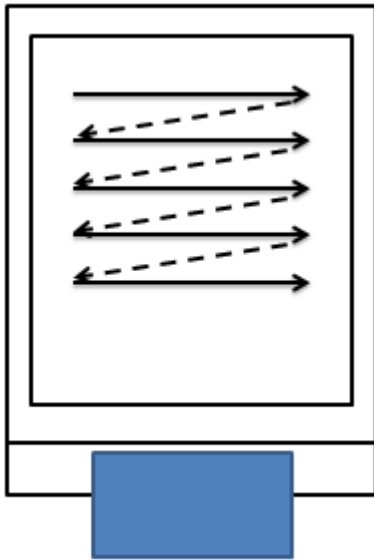
|    |             |                                                                                                                                                                                                                      |
|----|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 | VDDIO(1.8V) | Power supply for I/O block provided from outside<br>VDDI < 0.05V (When power is turned off)                                                                                                                          |
| 17 | VDDIO(1.8V) | Power supply for I/O block provided from outside<br>VDDI < 0.05V (When power is turned off)                                                                                                                          |
| 18 | VCI_EN      | Power Supply for Analog Circuits<br>VCI < 0.05V (When power is turned off)                                                                                                                                           |
| 19 | REST        | Reset                                                                                                                                                                                                                |
| 20 | TE          | Tearing effect signal is used to synchronize MCU to frame memory                                                                                                                                                     |
| 21 | GND         | Ground                                                                                                                                                                                                               |
| 22 | QSPI_CLK    | This pin is used to be serial interface clock                                                                                                                                                                        |
| 23 | QSPI_SI03   | Serial input signal in QSPI serial data interface                                                                                                                                                                    |
| 24 | QSPI_SI02   | Serial input signal in QSPI serial data interface                                                                                                                                                                    |
| 25 | QSPI_SI01   | Serial input signal in QSPI serial data interface                                                                                                                                                                    |
| 26 | QSPI_SI00   | Serial input signal in QSPI serial data interface                                                                                                                                                                    |
| 27 | QSPI_CS     | Chip selection pin ;Low enable ,high disable.                                                                                                                                                                        |
| 28 | GND         | Ground                                                                                                                                                                                                               |
| 29 | IM1         |                                                                                                                                                                                                                      |
| 30 | MTP_PWR     | Power supply for OTP.<br>Leave the pin to open when not in use.                                                                                                                                                      |
| 31 | VBAT(3.7V)  | Power Supply for DC/DC Converter Circuit                                                                                                                                                                             |
| 32 |             | This is the power supply pin for the internal buffer of the DC/DC voltage converter.It must be connected to external source when the converter is used.It should be connected to VDD when the converter is not used. |
| 33 |             |                                                                                                                                                                                                                      |
| 34 | GND         | Ground                                                                                                                                                                                                               |
| 35 | GND         | Ground                                                                                                                                                                                                               |
| 36 | GND         | Ground                                                                                                                                                                                                               |

### 5.3.2 TP FPC connector pin Define

| Pin No. | Symbol    | I/O   | Function Description | When not use |
|---------|-----------|-------|----------------------|--------------|
| 1       | GND       | -     | GND                  |              |
| 2       | TSP_INT   | I     | IIC interface        |              |
| 3       | TSP_SDA   | Power | Power                |              |
| 4       | TSP_SCL   | I     | IIC interface        |              |
| 5       | TSP_VCC   | Power | Power                |              |
| 6       | TSP_RESET | I/O   | Interrupt            |              |

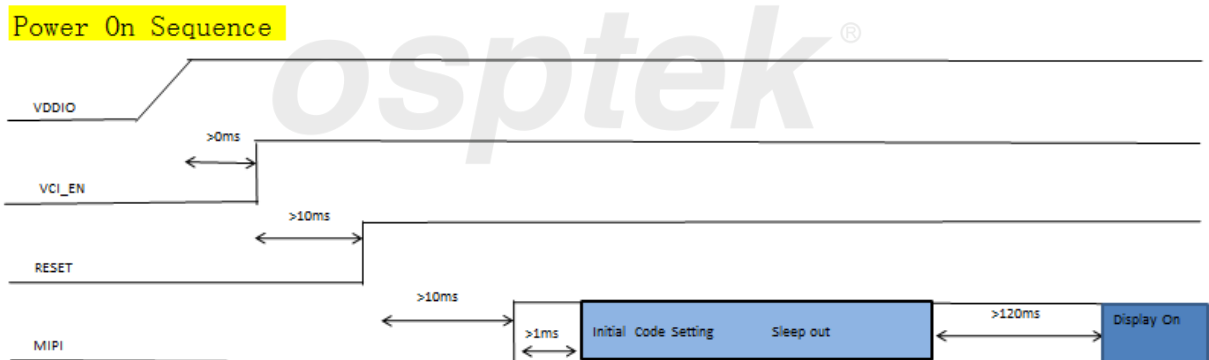


## 5.4 Graphic memory writing direction



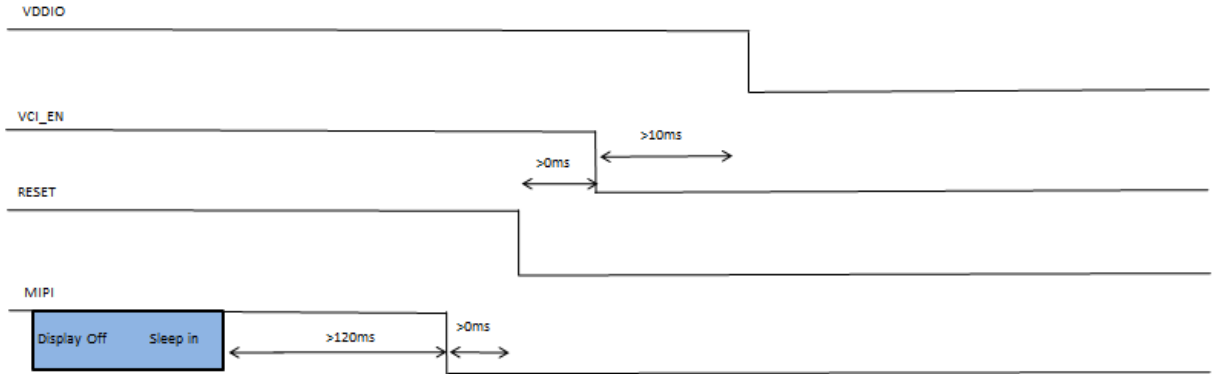
## 5.5 Recommended Operating Sequence

### 5.5.1 Power on sequence



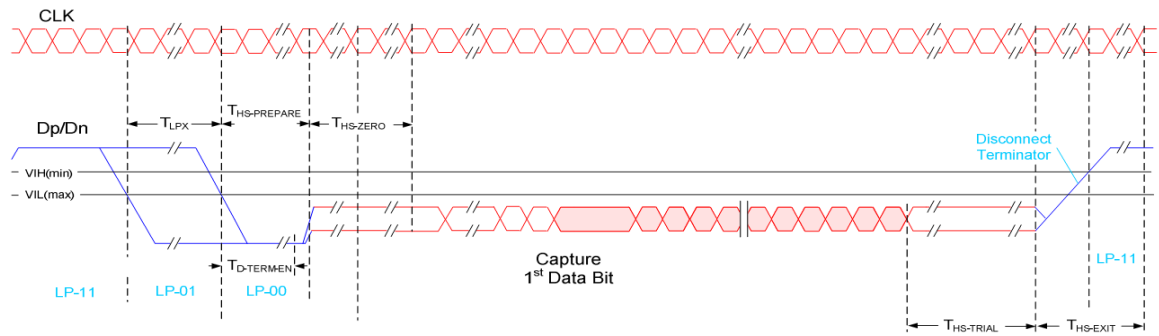
### 5.5.2 Power off sequence

## Power Off Sequence



### 5.5.3 AC Characteristics (MIPI)

## HS Data Transmission Burst



## HS Clock Transmission



|                        |                                                                                                                                  |                               |   |                |    |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---|----------------|----|
|                        | associated Data Lane beginning the transition from LP to HS mode.                                                                |                               |   |                |    |
| TCLK-SETTLE            | Time interval during which the HS receiver shall ignore any Clock Lane HS transitions, starting from the beginning of TCLK-PRE.  | 95                            | - | 300            | ns |
| TCLK-TERM-EN           | Time for the Clock Lane receiver to enable the HS line termination, starting from the time point when Dn crosses VIL, MAX.       | Time for Dn to reach VTERM-EN |   | 38             | ns |
| THS-SETTLE             | Time interval during which the HS receiver shall ignore any Data Lane HS transitions, starting from the beginning of THSPREPARE. | 85 ns + 6*UI                  |   | 145 ns + 10*UI | ns |
| TEOT                   | Time from start of THS-TRAIL or TCLK-TRAIL period to start of LP-11 state                                                        | -                             | - | 105ns+48*UI    | ns |
| THS-EXIT(1)            | time to drive LP-11 after HS burst                                                                                               | 100                           | - | -              | ns |
| THS-PREPARE            | Time to drive LP-00 to prepare for HS transmission                                                                               | 40ns + 4*UI                   | - | 85ns+6*UI      | ns |
| THS-PREPARE + THS-ZERO | THS-PREPARE + Time to drive HS-0 before the Sync sequence                                                                        | 145ns + 10*UI                 | - | -              | ns |
| THS-SKIP               | Time-out at RX to ignore transition period of EoT                                                                                | 40                            | - | 55ns+4*UI      | ns |
| THS-TRAIL              | Time to drive flipped differential state after last payload data bit of a HS transmission burst                                  | 60 + 4*UI                     | - | -              | ns |
| TLPX                   | Length of any Low-Power state period                                                                                             | 50                            | - | -              | ns |

|            |                                                                 |        |        |        |    |
|------------|-----------------------------------------------------------------|--------|--------|--------|----|
| Ratio TLPX | Ratio of TLPX(MASTER)/TLPS(SLAVE) between Master and Slave side | 2/3    | -      | 3/2    | ns |
| TTA-GET    | Time to drive LP-00 by new TX                                   | 5*TLPX | 5*TLPX | 5*TLPX | ns |
| TTA-GO     | Time to drive LP-00 after Turnaround Request                    | 4*TLPX | 4*TLPX | 4*TLPX | ns |
| TTA-SURE   | Time-out before new TX side starts driving                      | TLPX   | -      | 2*TLPX | ns |

#### Timing requirements for RESETB

When RESETB of the reset pin equals to Low, it will be in the condition of reset.

When it is in the condition of reset, it will make the device recover the initial set.

However, in order to avoid the reset noise cause reset, there is a mechanism to judge about whether the reset is needed or not.

The closed interval of Low can be shown as the following.

(Test condition: VDDIO=1.65V~3.6V, VSS=0V, TA=-20°C~+70°C)

| Parameter             | Symbol | Conditions | Spec |      |      | Unit |
|-----------------------|--------|------------|------|------|------|------|
|                       |        |            | Min. | Typ. | Max. |      |
| Reset low pulse width | Trst   | -          | 20   | -    | -    | μs   |

Table: Reset timing



## 6 Electro-Optical Specification

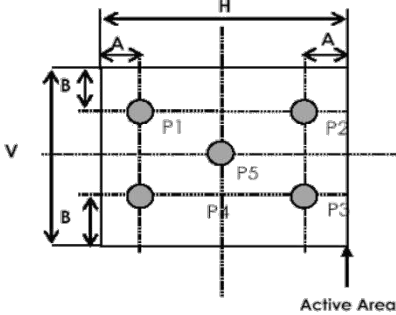
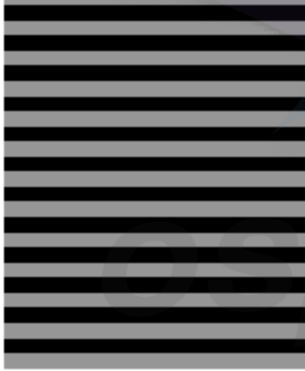
Test condition: 25°C±3°C, 65±20%RH, darkroom.

| No | Item                  | Symbol | Condition                | Value |        |      | Unit              | Remark |
|----|-----------------------|--------|--------------------------|-------|--------|------|-------------------|--------|
|    |                       |        |                          | Min.  | Typ.   | Max. |                   |        |
| 1  | Brightness            | L      | Full white<br>Without CG | 450   | 500    | 550  | cd/m <sup>2</sup> | Note1. |
| 2  | Brightness Uniformity | UL     | Full white               | 80    | 85     | -    | %                 | Note4  |
| 3  | Contrast Ratio        | CR     | Normal<br>θ=Φ=0°         | 10000 | 100000 | -    | -                 | Note3. |

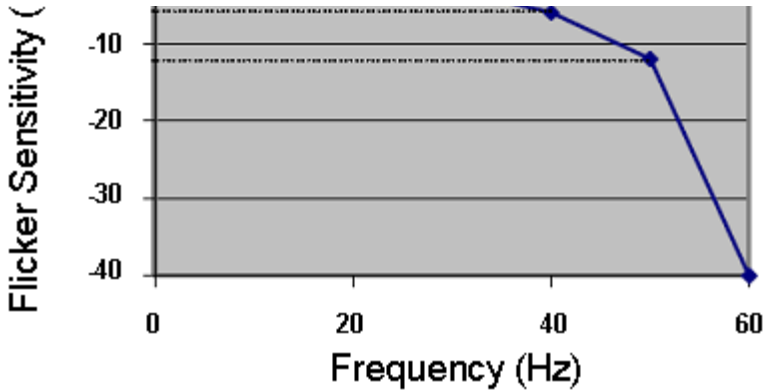
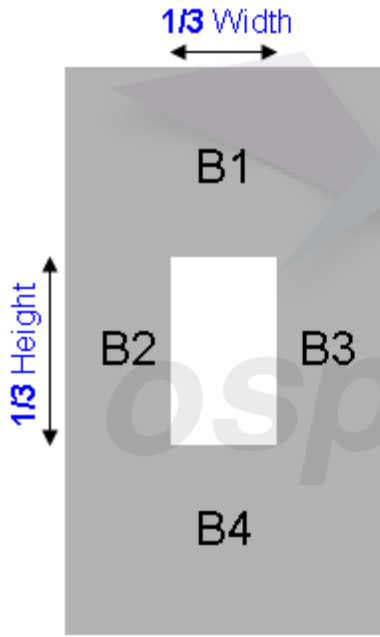
|    |                                   |       |          |                                                                                                                |                                                            |                  |       |            |        |
|----|-----------------------------------|-------|----------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------|-------|------------|--------|
| 4  | Response time                     |       | Ton+Toff | Normal<br>$\Theta=\Phi=0^{\circ}$                                                                              | -                                                          | 2                | 4     | ms         | Note2. |
| 5  | Color<br>Coordinate of<br>CIE1931 | White | X        | Normal<br>$\Theta=\Phi=0^{\circ}$                                                                              | 0.27                                                       | 0.29             | 0.31  | -          | Note1. |
|    |                                   |       | Y        |                                                                                                                | 0.29                                                       | 0.31             | 0.33  |            |        |
|    |                                   | Red   | X        |                                                                                                                | 0.647                                                      | 0.687            | 0.727 |            |        |
|    |                                   |       | Y        |                                                                                                                | 0.272                                                      | 0.312            | 0.352 |            |        |
|    |                                   | Green | X        |                                                                                                                | 0.175                                                      | 0.225            | 0.275 |            |        |
|    |                                   |       | Y        |                                                                                                                | 0.679                                                      | 0.729            | 0.779 |            |        |
|    |                                   | Blue  | X        |                                                                                                                | 0.102                                                      | 0.143            | 0.183 |            |        |
|    |                                   |       | Y        |                                                                                                                | 0.002                                                      | 0.043            | 0.083 |            |        |
| 6  | Color Gamut                       |       | NTSC     | CIE1931                                                                                                        | 90                                                         | 105              | -     | %          |        |
| 7  | Viewing<br>Angle                  |       |          | Top/Bottom/Right/Left<br>CR ratio $\geq 1000$                                                                  | 80                                                         |                  |       | $^{\circ}$ | Note3. |
| 8  | Gamma                             |       |          | Log(Lv-<br>Lb)=log(V)+log(a<br>)<br>V(Gray)=<br>48,72,104,132,<br>164,192,224<br>Lum(gray255)=3<br>50nit       | 2.0                                                        | 2.2              | 2.4   | -          |        |
| 9  | Flicker                           |       |          | Normal<br>$\Theta=\Phi=0^{\circ}$                                                                              | -                                                          | -35 <sup>®</sup> | -30   | dB         | Note6. |
| 10 | Crosstalk                         |       |          | -                                                                                                              | -                                                          | -                | 4     | %          | Note7. |
| 11 | Color shift                       |       |          | $\theta L=30^{\circ}$                                                                                          |                                                            |                  | 6     |            |        |
| 12 | OLED Life Time                    |       |          | 0.95*(TYP<br>brightness)<br>At 25 $^{\circ}$ C ,with<br>white color<br>pattern                                 | 150                                                        |                  |       | hrs        | Note8. |
| 13 | Image Retention                   |       |          | With 8*8<br>black-white chess<br>board test<br>image, lighting<br>on with<br>maximum<br>luminance for<br>10min | 8*8 black-white chess board 10min,to<br>G128,20s disappear |                  |       |            |        |

See the note in the table below:

| No     | Item          | Details                                                                                                                                                        |
|--------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note1  | Brightness    |                                                                                                                                                                |
| Note 2 | Response time |                                                                                                                                                                |
| Note 3 | Viewing Angle | <p>Contrast Ratio</p> <p>Dark Room C.R=LW/LB</p> <p>LW: full white brightness of display center P0;</p> <p>LB: full black brightness of display center P0.</p> |
| Note 4 | Brightness    |                                                                                                                                                                |

|        |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | Uniformity                |  <p>A: 1/4H<br/>B: 1/4V<br/>H.V: Active Area</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Note 5 | Luminance decrease ration | <p>Definition of Luminance decrease ratio<br/>Test pattern : Full White<br/>The luminance decrease ratio is calculated by using following formula:</p> $\text{Luminance decrease ration} = 1 - \frac{\text{Luminance test at left, right, top, bottom :}}{\text{Luminance test at left, right, top, bottom}}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Note 6 | Flicker                   | <p>Suggested Instruments: <b>Konica Minolta CA-310</b> or <b>Klein Instruments K-8</b></p>  <p>Odd row : <b>L0</b> Black<br/>Even row : <b>L186</b> gray level</p> <p><b>Flicker Test Pattern</b></p> <p>The flicker level is defined by <b>Fast Fourier Transformation (FFT)</b> as follows:</p> $\text{Flicker} = 20 \log_{10} \left( 2 \frac{f_{FFTC}(n)}{f_{FFTC}(0)} \right) + FS(Hz) \quad (\text{dB})$ <p>Where<br/> <b>fFFTC(n)</b> is the n-th FFT coefficient.<br/> <b>fFFTC(0)</b> is the 0-th FFT coefficient which is DC component.<br/> <b>FS(Hz)</b> is the flicker sensitivity as a function of frequency.<br/> The peak flicker level shall be reported based on the calculation using above formula in which FS(Hz) is determined by the flicker weighing factor shown below.</p> |



|        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Note 7 | Crosstalk | <p>Crosstalk shall be calculated by the luminance of <b>B1~B4</b> and <b>G1~G4</b> in the patterns shown below.</p> <p>Box Pattern: <b>L128</b> gray level background with a <b>L255</b> White window in the central area.</p> <p>Gray Pattern: <b>L128</b> gray level background only.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><b>Box Pattern</b></p> </div> <div style="text-align: center;">  <p><b>Gray Pattern</b></p> </div> </div> <p><i>Crosstalk</i></p> $\equiv \text{Maximum} : \left\{ \frac{ B1 - G1 }{G1}, \frac{ B2 - G2 }{G2}, \frac{ B3 - G3 }{G3}, \frac{ B4 - G4 }{G4} \right\} \times 100\%$ |
| Note 8 | Life Time | <p>OLED life time is defined by the <b>Minimum Duration Time</b> that the luminance is decayed to a specific ratio (ex. <b>92%</b>) of initial state.</p> <p>Test Pattern under duration period: <b>L255</b> White</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## 7 Reliability

### 7.1 Environmental Test

| Item                                | Main spec                                  | No. of failures /<br>No. of examinations |
|-------------------------------------|--------------------------------------------|------------------------------------------|
| High Temperature Operation          | 70°C / 240hrs                              | 0/10                                     |
| Low Temperature Operation           | -20°C / 240hrs                             | 0/10                                     |
| High Temperature Storage            | 80°C / 240hrs                              | 0/10                                     |
| Low Temperature Storage             | -40°C / 240hrs                             | 0/10                                     |
| High Temperature Humidity Operation | 60°C/90%RH/ 240hrs                         | 0/32                                     |
| Thermal Shock                       | -40°C~85°C dwell time=0.5hr,<br>100cycles. | 0/10                                     |

### 7.2 Electrical Test

| Item              | Main spec                                        | Note                                                                                                                                                                                            |
|-------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air Discharge     | ±4 kV , 150pF/330Ω<br>(Module level; without CG) | 5Points, Each 10times.<br>After one time discharge,<br>panel and gun touch the<br>ground, through the whole<br>test, turn on ion fan. No<br>degradation of OLED<br>performance after this test. |
| Contact Discharge | ±2kV, 150pF/330Ω<br>(Module level; without CG)   |                                                                                                                                                                                                 |

### 7.3 Mechanical Test

| Test item                    | Test condition                                                                      | Note    |
|------------------------------|-------------------------------------------------------------------------------------|---------|
| Packing vibration-proof test | 2g, f=10->55->10Hz apply in each of X, Y, and Z direction for 30 min                | Package |
| Packing Drop test            | Drop the packing from 60cm height, 6-faces, 3-edges and 1-corner(one time for each) | Package |

## 8 Outline Dimension Drawing

客户姓名: 客户地址: 客户电话: 客户邮箱: 客户签名: 客户日期: 客户备注:

REV. A DESCRIPTION New DATE 20220528

MAIN PCB PWA DESCRIPTION

NO. SYMBOL

|    |          |
|----|----------|
| 1  | IPC-ANIZ |
| 2  | IPC-AMIT |
| 3  | IPC-AMIT |
| 4  | IPC-AMIT |
| 5  | IPC-AMIT |
| 6  | IPC-AMIT |
| 7  | IPC-AMIT |
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TP PWA DESCRIPTION

| NO. | SYM. | DESCRIPTION |
|-----|------|-------------|
| 1   | NO   | NO          |
| 2   | NO   | NO          |
| 3   | NO   | NO          |
| 4   | NO   | NO          |
| 5   | NO   | NO          |
| 6   | NO   | NO          |

正视图

侧视图

背视图

弯折参考示意图

NOTES:

1. OPERATING TEMPERATURE: -10°C TO 60°C
2. STORAGE TEMPERATURE: -20°C TO 70°C
3. DRIVING IC: SH8601A

TP IC: CHSC5816

4. DISPLAY MODE: LTPS-AMOLED
5. GENERAL TOLERANCE: ±0.20mm
6. SPECIAL REQUIRE: NO
7. WITH " " MARK DIMENSIONS ARE IMPORTANT DIMENSIONS.
8. WITH " ( ) " MARK DIMENSIONS ARE REFERENCE DIMENSIONS.
9. REQUIREMENTS ON ENVIRONMENTAL PROTECTION: ROHS .

| APPROVALS               | DATE | SCALE 1:1 | TITLE  |
|-------------------------|------|-----------|--------|
| DRAWN:                  |      | UNIT      | MODULE |
| CHECK:                  |      | mm        |        |
| APPROVAL:               |      |           |        |
| MODEL: FLS-AM0178R565-A |      |           |        |
| DWG NO. A               |      |           |        |
| PAGE 1/1                |      |           |        |

深圳市鱼鹰光电科技有限公司  
Shenzhen Osprey Optoelectronics Technology Co., Ltd.

## 9 Packing Specification

TBD

## 10 The Control of Hazardous Substances

The control of Hazardous substances refer to OSP document 《有害物质管控标准书》 (Standard document for the Control of Hazardous substances) OSP –IS- 110, the latest version.

