



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**

# Precaution in use of TFT module



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## RECORDS OF REVISION

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2019/05/30		First issue
A	2019/12/27		Add 8.(8).lteam
B	2023/11/2		Add 8.(9).lteam

## Precaution in use of TFT module

Please pay attention to the following when you use this TFT LCD panel

### 1. MAKER HAVE THE RIGHT TO CHANGE

- (1) Irresistible factor, Maker have the right to change the passive components, including backlight adjust resistors.(Resistors, capacitors and other passive components will have different appearance and color caused by the different supplier)
- (2) Irresistible factor, Maker have the right to change the PCB/FPC/Back light/Touch Panel... Rev.(In order to satisfy the supplying stability, management optimization and the best product performance...etc, under the premise of not affecting the electrical characteristics and external dimensions, Maker have the right to modify the version.)

### 2. MOUNTING PRECAUTIONS

- (1) You must mount a module using arranged in four corners or four sides.
- (2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.
- (3) Please attach a transparent protective plate to the surface in order to protect the polarizer. Transparent protective plate should have sufficient strength in order to the resist external force.
- (4) You should adopt radiation structure to satisfy the temperature specification.
- (5) Acetic acid type and chlorine type materials for the cover case are not describe because the former generates corrosive gas of attacking the polarizer at high temperature and the latter causes circuit break by electro-chemical reaction.
- (6) Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.Do not touch the surface of polarizer for bare hand or greasy cloth.
- (7) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
- (8) Do not open the case because inside circuits do not have sufficient strength.

### 3. OPERATING PRECAUTIONS

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage :  
 $V=\pm 200\text{mV}$ (Over and under shoot voltage)
- (2) Response time depends on the temperature. (In lower temperature, it becomes longer.)
- (3) Brightness depends on the temperature. (In lower temperature, it becomes lower) And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
- (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
- (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (6) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimize the interference.

### 4. ELECTROSTATIC DISCHARGE CONTROL

Since a module is composed of electronic circuits, it is not strong to electrostatic discharge. Make certain that treatment persons are connected to ground through wristband etc. And don't touch interface pin directly.

### 5. PRECAUTIONS FOR STRONG LIGHT EXPOSURE

Strong light exposure causes degradation of polarizer and color filter.

### 6. STORAGE

When storing modules as spares for a long time, the following precautions are necessary.

- (1) Store them in a dark place. Do not expose the module to sunlight or fluorescent light. Keep the temperature between  $5^{\circ}\text{C}$  and  $35^{\circ}\text{C}$  at normal humidity.
- (2) The polarizer surface should not come in contact with any other object. It is recommended that they be stored in the container in which they were shipped

## 7. HANDLING PRECAUTIONS FOR PROTECTION FILM

- (1) When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) The protection film is attached to the polarizer with a small amount of glue. Is apt to remain on the polarizer. Please carefully peel off the protection film without rubbing it against the polarizer.
- (3) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the polarizer after the protection film is peeled off.

## 8. OTHER PRECAUTIONS

- (1) Avoid applying excessive shocks to the module or making any alterations or modifications to it.
- (2) Don't make extra holes on the printed circuit board, modify its shape or change the components of TFT module.
- (3) Don't disassemble the TFT module.
- (4) Don't operate it above the absolute maximum rating.
- (5) Don't drop, bend or twist TFT module..
- (6) Soldering: only to the I/O terminals.
- (7) Storage: please storage in anti-static electricity container and clean environment.
- (8) Inform the customer : Please note that when using the module, do not put any tape on the module parts. When the tape is removed, the functional structure of the part may be damaged, causing the module to have electrical abnormalities.  
If the module is restricted and it is unavoidable to apply tape on the parts, there are the following ways to avoid this abnormal situation :
  - (8-1) The adhesive force of the application tape cannot be greater than that of [3M-600] tape
  - (8-2) After the tape is applied, there should be no tearing operation.
  - (8-3) When it is necessary to peel off the tape, it is recommended to use a heating-assisted method. ◦
- (9). The limitation of FPC bending, please refer to the following instructions

