SPECIFICATION

Revision: 0.1

HTP51503-01UTAP-E

This module uses ROHS material

PRODUCT : LCD MODULE
MODEL NO. : HTP51503-01UTAP-E
SUPPLIER : SHENZHEN HONGDA TECHNOLOGY CO., LTD
DATE : 2012-03-21

REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
0.1	2012-03-21	First Release	Preliminary

宏大审核/日期：　　客户确认/日期：

CONTENTS

WRITTEN BY LJ.
CHECKED BY LMC
APPROVED BY LMC.

GENERAL INFORMATION

Item	Contents	Unit
MODELE SIZE	5.15	"
LCD Type	TFT TRANSMISSIVE	/
Viewing Direction	12:00	O'Clock
Module Area(W*H*T)	74.00*125.00*2.3	mm^3
Active Area(W*H)	67.32*112.2	mm^2
Number of Dots	480 (RGB)*800	/
Driver IC	HX8363A	/
Colors	65K	/
BackLight Type	LED	/
Module Power Consumption	/	mw
Interface Type	3 wire serial + RGB interface	/
Input Voltage	2.8	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	Vdd	-0.3	4.6	V
Input Voltage	Vin	-0.3	Vdd+0.3	V
Operating Temperature	Top	-10	60	℃
Storage Temperature	Tst	-20	70	℃
Humidity	RH	/	90%(Max 60℃)	RH

ELECTRICAL CHARACTERISTICS

DC CHARACTERISTICS

Parameter	Symbol	Min	Type	Max	Unit
Supply Voltage for Logic	Vdd-Vss	2.7	2.8	2.9	V
Input Current	Idd	/	TBD	TBD	mA
Input Voltage H Level	Vih	0.8Vdd	Vdd	Vdd	V
Input Voltage L Level	Vil	0	0	0.2Vdd	V
Output Voltage H Level	Voh	0.8Vdd	Vdd	Vdd	V
Output Voltage L Level	Vol	0	0	0.2Vdd	V

BACKLIGHT CHARACTERISTICS

Item	Symbol	Min	Type	Max	Unit	Condition
Forward voltage	Vf	/	3.2	3.4	V	If= 30 mA
Luminance	Lv	4000	/	/	cd/m^2	
Number of LED	/	10			Piece	/
Connection mode	P	Parallel			/	/

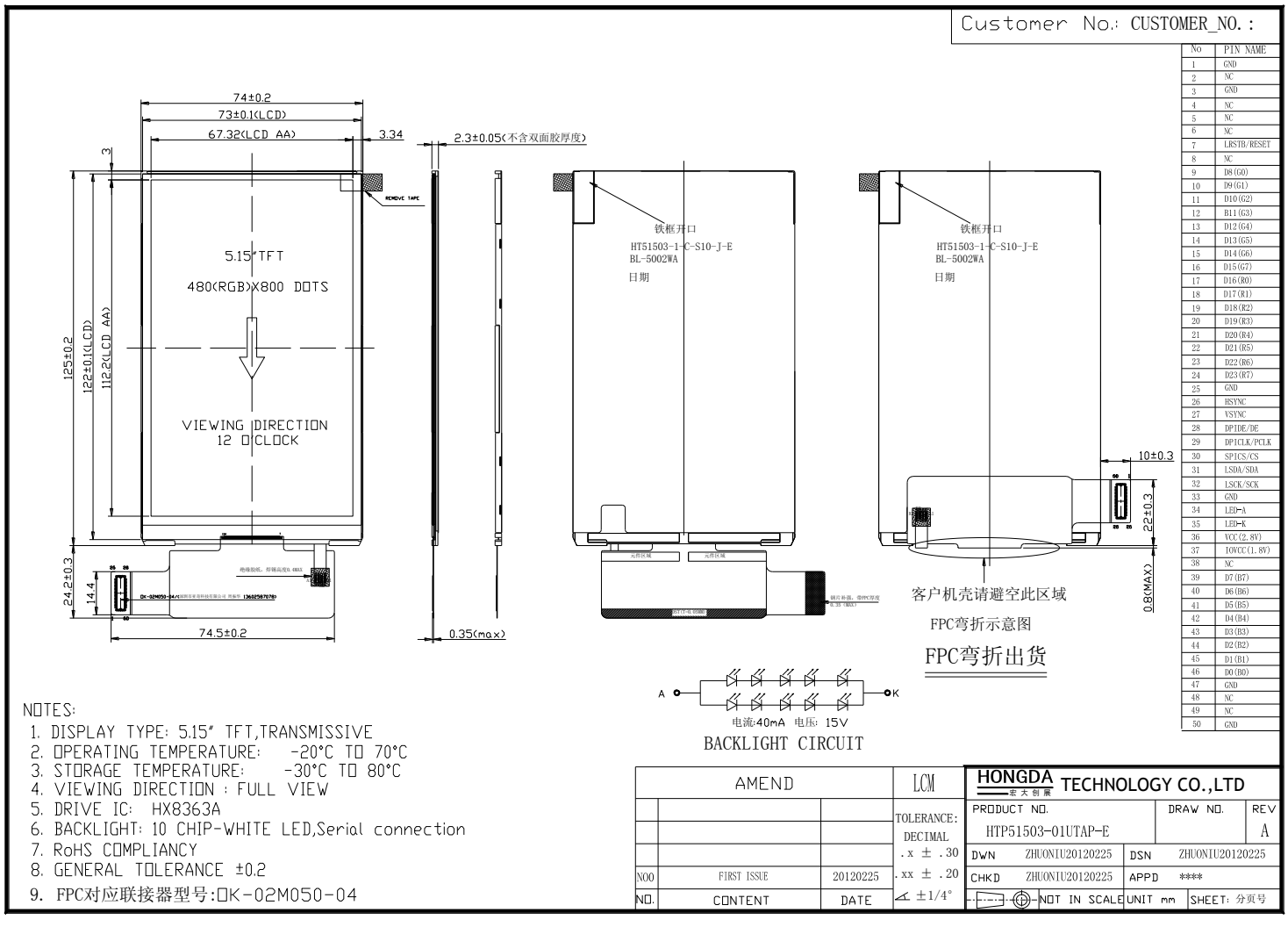
MODULE BACKLIGHT CHARACTERISTICS

项目	符号	最小值	典型值	最大值	单位	测试条件
均匀性 (Uniformity)	Avg	80	/	/	%	If= 30mA (恒定电流测试)
色度坐标(Colour Coordinate)	X	0.26		0.31	/	
	Y	0.26		0.31	/	

TIMING OF POWER SUPPLY

PLEASE REFER TO THE DRIVER IC SPECIFICATION.

EXTERNALDIMENSIONS



ELECTRO-OPTICAL CHARACTERISTICS

Please refer to external drawing.

INTERFACE DESCRIPTION

<table>
<tr><th>No.</th><th>SYMBOL</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>GND</td><td>P</td><td>Power ground.</td></tr>
<tr><td>2</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>3</td><td>GND</td><td>P</td><td>Power ground.</td></tr>
<tr><td>4</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>5</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>6</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>7</td><td>/RESET</td><td></td><td>Reset pin. Setting either pin low initializes the LSI. Must be reset after power is supplied</td></tr>
<tr><td>8</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>9</td><td>D8(G0)</td><td>I/O</td><td rowspan="16">
<table>
<tr><th>Data bus</th><th>Used</th><th>Unused</th></tr>
<tr><td>16-bit bus</td><td>DB21~17,
DB13~8,
DB5~1</td><td>DB23~22,
DB16~14,
DB7~6, DB0</td></tr>
<tr><td>18-bit bus</td><td>DB21~16,
DB13~8,
DB5~0</td><td>DB23~22,
DB15~14,
DB7~6</td></tr>
<tr><td>24-bit bus</td><td>DB23~D0</td><td>--</td></tr>
</table>
Let the unused pins open for each mode.
</td></tr>
<tr><td>10</td><td>D9(G1)</td><td>I/O</td></tr>
<tr><td>11</td><td>D10(G2)</td><td>I/O</td></tr>
<tr><td>12</td><td>D11(G3)</td><td>I/O</td></tr>
<tr><td>13</td><td>D12(G4)</td><td>I/O</td></tr>
<tr><td>14</td><td>D13(G5)</td><td>I/O</td></tr>
<tr><td>15</td><td>D14(G6)</td><td>I/O</td></tr>
<tr><td>16</td><td>D15(G7)</td><td>I/O</td></tr>
<tr><td>17</td><td>D16(R0)</td><td>I/O</td></tr>
<tr><td>18</td><td>D17(R1)</td><td>I/O</td></tr>
<tr><td>19</td><td>D18(R2)</td><td>I/O</td></tr>
<tr><td>20</td><td>D19(R3)</td><td>I/O</td></tr>
<tr><td>21</td><td>D20(R4)</td><td>I/O</td></tr>
<tr><td>22</td><td>D21(R5)</td><td>I/O</td></tr>
<tr><td>23</td><td>D22(R6)</td><td>I/O</td></tr>
<tr><td>24</td><td>D23(R7)</td><td>I/O</td></tr>
<tr><td>25</td><td>GND</td><td>P</td><td>Power ground.</td></tr>
<tr><td>26</td><td>HSYNC</td><td>I</td><td>Line synchronizing signal.</td></tr>
<tr><td>27</td><td>VSYNC</td><td>I</td><td>Frame synchronizing signal.</td></tr>
<tr><td>28</td><td>DE</td><td>I</td><td>A data ENABLE signal in RGB I/F mode.</td></tr>
<tr><td>29</td><td>PCLK</td><td>I</td><td>Dot clock signal.</td></tr>
<tr><td>30</td><td>/CS</td><td>I</td><td>Chip select signal.
Low: chip can be accessed.
High: chip cannot be accessed.</td></tr>
<tr><td>31</td><td>SDI</td><td>I</td><td>Serial data input pin in serial interface operation.</td></tr>
<tr><td>32</td><td>SCL</td><td>I</td><td>Serves as a write signal and writes data at the rising edge.
When operate in serial interface, it serves as SCL (Serial Clock)</td></tr>
<tr><td>33</td><td>GND</td><td>P</td><td>Power ground.</td></tr>
</table>

<table>
<tr><td>34</td><td>LED_A</td><td>P</td><td>LED light anode.</td></tr>
<tr><td>35</td><td>LED_K</td><td>P</td><td>LED light cathode.</td></tr>
<tr><td>36</td><td>VCC_2.8V</td><td>P</td><td>A power supply for the analog power, the logic power, DC/DC converter.
VCC = 2.5 ~ 3.3V. Type=2.8V.</td></tr>
<tr><td>37</td><td>IOVCC_1.8V</td><td>P</td><td>A power supply for the I/O circuit. IOVCC= 1.65 ~ 3.3V. Type=1.8V.</td></tr>
<tr><td>38</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>39</td><td>D7(B7)</td><td>I/O</td><td rowspan="8"><table><tr><th>Data bus</th><th>Used</th><th>Unused</th></tr><tr><td>16-bit bus</td><td>DB21~17,
DB13~8,
DB5~1</td><td>DB23~22,
DB16~14,
DB7~6, DB0</td></tr><tr><td>18-bit bus</td><td>DB21~16,
DB13~8,
DB5~0</td><td>DB23~22,
DB15~14,
DB7~6</td></tr><tr><td>24-bit bus</td><td>DB23~D0</td><td>--</td></tr></table></td></tr>
<tr><td>40</td><td>D6(B6)</td><td>I/O</td></tr>
<tr><td>41</td><td>D5(B5)</td><td>I/O</td></tr>
<tr><td>42</td><td>D4(B4)</td><td>I/O</td></tr>
<tr><td>43</td><td>D3(B3)</td><td>I/O</td></tr>
<tr><td>44</td><td>D2(B2)</td><td>I/O</td></tr>
<tr><td>45</td><td>D1(B1)</td><td>I/O</td></tr>
<tr><td>46</td><td>D0(B0)</td><td>I/O</td></tr>
<tr><td>47</td><td>GND</td><td>P</td><td>Power ground.</td></tr>
<tr><td>48</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>49</td><td>NC</td><td>/</td><td>No Connect.</td></tr>
<tr><td>50</td><td>GND</td><td>P</td><td>Power ground.</td></tr>
</table>

Let the unused pins open for each mode.

□.APPLICATION CIRCUIT

Please consult our technical department for detail information.

□.INITIAL CODE

Please consult our technical department for detail information

手机显示模块出货检验标准

一、内容：

1、抽样方案（Sampling & Acceptable Quality Level ）： 按照抽样方案 GB/T2828.1-2003，一般检查水平Ⅱ级，划分产品可以接受或拒绝的等级如下：

重缺陷：采用 AQL 0.65　　轻缺陷：采用 AQL 1.0

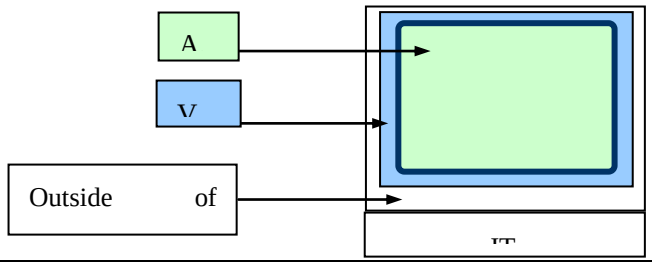
2、检查条件：

在 20～40W 日光灯的光照环境下，被检查样品放在离检查者眼睛 30cm 的位置，检查者在垂直方向 45 度范围内观察。

3、检查区域定义(Definition Of Inspection Area)：

A.A：Active Area

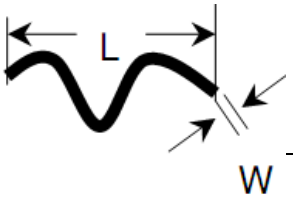
V.A：Viewing Area

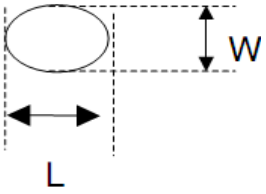
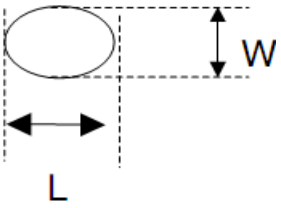


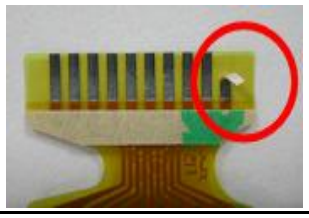
4、外观检查标准(Visual inspection criterion in cosmetic)

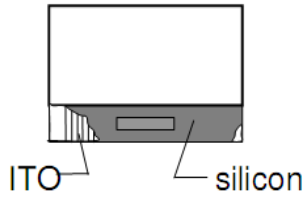
玻璃缺陷(Glass defect)				
序号(NO)	缺陷(Defect)	缺陷等级	检验标准(Criteria)	备注(Remark)
1	尺寸(dimension)	轻(Minor)	按照图纸(By engineering diagram)	
2	玻璃(Cracks)	重(Major)	延伸性破裂(Extensive crack)【拒收 Reject】	

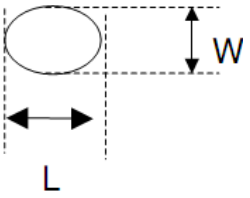
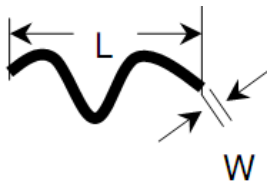
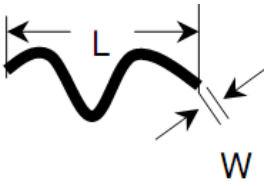
LCD V.A.区内的外观缺陷(LCD appearance defect with in V.A.)					
序号(NO)	缺陷(Defect)	缺陷等级	检验标准(Criteria)		备注(Remark)
1	毛丝,划痕(Fiber,scratches)	轻(Minor)	缺陷规格(Defect Spec.)	允许数量（Permissible Q'ty）	1.L：Length， W：Width； 2、Disregard if out of V．A.
			W≦0.03mm	忽略不计（Disregard）	
			L≦4.0mm，0.03mm < W≦0.05mm	2	

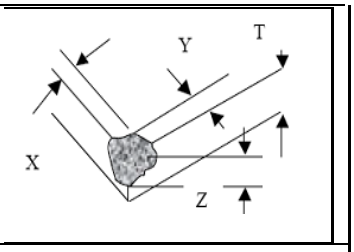
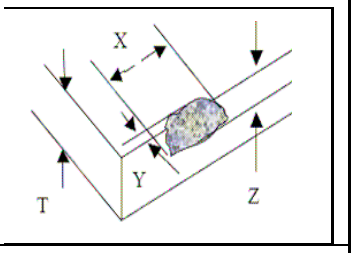
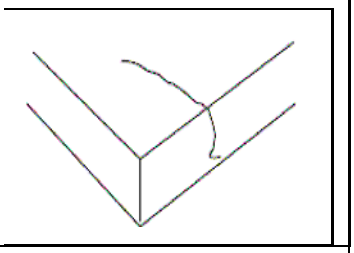
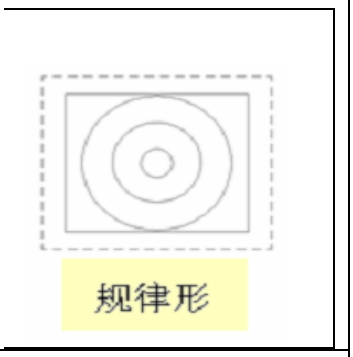


			L≦4.0mm，0.05mm < W≦0.08mm	1	
			W > 0.08mm	0	
2	污点,圆型的(Dirty Spots)	轻 (Minor)	缺陷规格 (Defect Spec.)	允许数量 （Permissible Q'ty）	1. D=（L+W）/2，L：Length，W：Width； 2.Disregard if out of V．A． 
			D≦0．10mm	忽略不计 （Disregard）	
			0.10mm < D≦0．15mm	2	
			0.15mm < D≦0．20mm	1	
			D > 0．20mm	0	
3	偏光片凹痕 (Polarizer dent)	轻 (Minor)	缺陷规格 (Defect Spec.)	允许数量 （Permissible Q'ty）	1. D=（L+W）/2，L：Length，W：Width； 2、Disregard if out of V．A． 
			D≦0．20mm	忽略不计 （Disregard）	
			0.20mm < D≦0．30mm	2	
			0.30mm < D≦0．50mm	1	
			D > 0．50mm	0	

FPC				
序号 (NO)	缺陷(Defect)	缺陷等级	检验标准(Criteria)	备注(Remark)
1	铜线剥离 (Copper peeling)	重 (Major)	Not allowed	

硅胶(Silicon)				
序号 (NO)	缺陷(Defect)	缺陷等级	检验标准(Criteria)	备注(Remark)
1	硅胶涂量 (Amount of silicon)	重 (Major)	ITO 暴露(ITO exposed) 【拒收 Reject】	

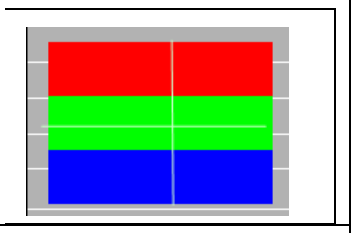
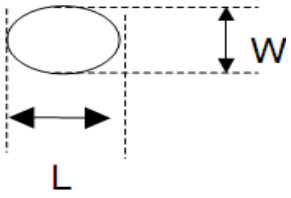
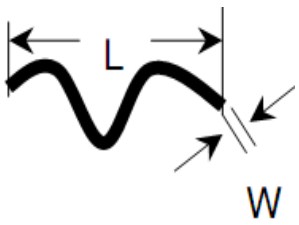
<table>
<tr><th colspan="5">Touch Panel</th></tr>
<tr><th>序号(NO)</th><th>缺陷(Defect)</th><th>缺陷等级</th><th colspan="2">检验标准(Criteria)</th><th>备注(Remark)</th></tr>
<tr><td rowspan="5">1</td><td rowspan="5">污点,圆型(Dirty Spots,Round type)</td><td rowspan="5">轻 (Minor)</td><td>缺陷规格 (Defect Spec.)</td><td>允许数量 （Permissible Q'ty）</td><td rowspan="5">1、D=（L+W）/2，L：Length， W：Width； 2、Disregard if out of V．A.
  </td></tr>
<tr><td>D≦0．1mm</td><td>忽略不计 （Disregard）</td></tr>
<tr><td>0.1mm < D≦ 0．20mm</td><td>2</td></tr>
<tr><td>0.20mm < D≦ 0．25mm</td><td>1</td></tr>
<tr><td>D > 0．25mm</td><td>0</td></tr>
<tr><td rowspan="5">2</td><td rowspan="5">划痕(Scratches)</td><td rowspan="5">轻 (Minor)</td><td>缺陷规格 (Defect Spec.)</td><td>允许数量 （Permissible Q'ty）</td><td rowspan="5">1、L：Length， W：Width； 2、Disregard if out of V．A.
  </td></tr>
<tr><td>L≦5.0mm,W≦ 0.03mm</td><td>忽略不计 （Disregard）</td></tr>
<tr><td>L≦4.0mm， 0.03mm < W≦ 0.05mm</td><td>2</td></tr>
<tr><td>L≦3.0mm， 0.05mm < W≦ 0.08mm</td><td>1</td></tr>
<tr><td>L > 2.0mm,W > 0.08mm</td><td>0</td></tr>
<tr><td rowspan="5">3</td><td rowspan="5">线缺陷 (Line defect)</td><td rowspan="5">轻 (Minor)</td><td>缺陷规格 (Defect Spec.)</td><td>允许数量 （Permissible Q'ty）</td><td rowspan="5">1、L：Length， W：Width； 2、Disregard if out of V．A.
  </td></tr>
<tr><td>L≦5.0mm， W≦ 0.02mm</td><td>忽略不计 （Disregard）</td></tr>
<tr><td>L≦4.0mm， 0.02mm < W≦ 0.04mm</td><td>2</td></tr>
<tr><td>L≦3.0mm， 0.04mm < W≦ 0.06mm</td><td>1</td></tr>
<tr><td>L > 3.0mm,W > 0.06mm</td><td>0</td></tr>
<tr><td>4</td><td>角破碎 (Corner chip)</td><td>轻 (Minor)</td><td colspan="2">X≦3.0mm,Y≦3.0mm, Z≦T</td><td></td></tr>
</table>

				
5	边缘破碎 (Edge chip)	轻 (Minor)	X≦3.0mm,Y≦3.0mm, Z≦T	
6	破裂(Crack)	重 (Minor)	Not allowed	
7	牛顿环(Newton's ring)	轻 (Minor)	规律形（Regularity）： 当牛顿环面积小于整个 TP 面积的 1/6 且点亮后，不影响文字及直线失真，判为 OK。 （The area of the Newton's ring is less than 1/6 area of the touch panel；and no character affected and line distorted after touch panel lightening. It s ok.）	
			非规律形（Non-regularity）：当牛顿环面积小于整个 TP 面积的 1/3 且点亮后，不影响文字及直线失真，判为 OK。 （The area of the Newton's ring is less than 1/3 area of the touch panel；and no character affected and line distorted after touch panel lightening. It s ok.）	

5、点亮时的外观检查标准(Visual inspection citerion in electrical display)

液晶显示模块电测缺陷(LCM Electrical defect)

序号 (NO)	缺陷(Defect)	缺陷等级	检验标准(Criteria)	备注(Remark)
1	不显示 (No display)	重 (Major)	不允许(Not allowable)	

2	缺划 (Missing line)	重 (Major)	不允许(Not allowable)		
3	显示异常（Display abnormally）	重 (Major)	不允许(Not allowable)		
3	TFT 点缺陷 (TFT Dot defect)	重 (Major)	缺陷规格 (Defect Spec.)	允许数量（Permissible Q'ty）	1、Disregard if out of A．A.
			亮点(Bright dot)	1	
			暗点(Dark dot)	2	
4	显示不均（Mura）	轻 (Minor)	参照极限样板（Bye limited sample）		
5	背光污点,圆型(BL Dirty Spots,Round type)	轻 (Minor)	缺陷规格 (Defect Spec.)	允许数量（Permissible Q'ty）	1、D=（L+W）/2，L：Length， W：Width； 2、Disregard if out of V．A. 
			D≦0．1mm	忽略不计（Disregard）	
			0.1mm < D≦0．15mm	2	
			0.15mm < D≦0．2mm	1	
			D > 0．2mm	0	
6	划痕、线缺陷 (Scratches、Line defect)	轻 (Minor)	缺陷规格 (Defect Spec.)	允许数量（Permissible Q'ty）	1．L：Length， W：Width； 2.Disregard if out of V．A. 
			L≦2.0mm，W≦0.02mm	忽略不计（Disregard）	
			L≦3.0mm，0.02mm < W≦0.03mm	2	
			L≧2.0mm，0.03mm < W≦0.05mm	1	
			L≧2.0mm，W > 0.05mm	0	

二、其它（Others）

1. 本标准未尽事宜，应由双方协商处理。
Issues that are not defined in this document shall be discussed and agreed with both parties. (Customer and supplier)
2. 除非另有书面约定，否则此标准应适用于自双方签字之日起生效。
Unless otherwise agreed upon in writing, the criteria shall be applied to both parties. (Customer and supplier)

RELIABILITY TEST

Test method is according normal reliability test. Please refer to the reliability test report.

PRECAUTIONS FOR USING LCD MODULES

Handing Precautions

(1) The display panel is made of glass and polarizer. As glass is fragile. It tends to become or chipped during handling especially on the edges. Please avoid dropping or jarring. Do not subject it to a mechanical shock by dropping it or impact.
(2) If the display panel is damaged and the liquid crystal substance leaks out, be sure not to get any in your mouth. If the substance contacts your skin or clothes, wash it off using soap and water.
(3) Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary. Do not touch the display with bare hands. This will stain the display area and degradedinsulation between terminals (some cosmetics are determined to the polarizer).
(4) The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully. Do not touch, push or rub the exposed polarizers with anything harder than an HB pencil lead (glass, tweezers, etc.). Do not put or attach anything on the display area to avoid leaving marks on. Condensation on the surface and contact with terminals due to cold will damage, stain or dirty the polarizer. After products are tested at low temperature they must be warmed up in a container before coming is contacting with room temperature air.
(5) If the display surface becomes contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If it is heavily contaminated, moisten cloth with one of the following solvents
- Isopropyl alcohol
- Ethyl alcohol
Do not scrub hard to avoid damaging the display surface.
(6) Solvents other than those above-mentioned may damage the polarizer. Especially, do not use the following.
- Water
- Ketone
- Aromatic solvents
Wipe off saliva or water drops immediately, contact with water over a long period of time may cause deformation or color fading. Avoid contacting oil and fats.
(7) Exercise care to minimize corrosion of the electrode. Corrosion of the electrodes is accelerated by water droplets, moisture condensation or a current flow in a high-humidity environment.
(8) Install the LCD Module by using the mounting holes. When mounting the LCD module make sure it is free of twisting, warping and distortion. In particular, do not forcibly pull or bend the I/O cable or the backlight cable.
(9) Do not attempt to disassemble or process the LCD module.
(10) NC terminal should be open. Do not connect anything.
(11) If the logic circuit power is off, do not apply the input signals.

(12) Electro-Static Discharge Control， Since this module uses a CMOS LSI, the same careful attention should be paid to electrostatic discharge as for an ordinary CMOS IC. To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.
- Before remove LCM from its packing case or incorporating it into a set, be sure the module and your body have the same electric potential.Be sure to ground the body when handling the LCD modules.
- Tools required for assembling, such as soldering irons, must be properly grounded. Make certain the AC power source for the soldering iron does not leak. When using an electric screwdriver to attach LCM, the screwdriver should be of ground potentiality to minimize as much as possible any transmission of electromagnetic waves produced sparks coming from the commutator of the motor.
- To reduce the amount of static electricity generated, do not conduct assembling and other work under dry conditions. To reduce the generation of static electricity be careful that the air in the work is not too dried. A relative humidity of 50%-60% is recommended.As far as possible make the electric potential of your work clothes and that of the work bench the ground potential
- The LCD module is coated with a film to protect the display surface. Exercise care when peeling off this protective film since static electricity may be generated
（13）Since LCM has been assembled and adjusted with a high degree of precision, avoid applying excessive shocks to the module or making any alterations or modifications to it.
- Do not alter, modify or change the shape of the tab on the metal frame.
- Do not make extra holes on the printed circuit board, modify its shape or change the positions of components to be attached.
- Do not damage or modify the pattern writing on the printed circuit board.
- Absolutely do not modify the zebra rubber strip (conductive rubber) or heat seal connector.
- Except for soldering the interface, do not make any alterations or modifications with a soldering iron.
- Do not drop, bend or twist LCM.

Storage Precautions

When storing the LCD modules, the following precaution is necessary.
(1) Store them in a sealed polyethylene bag. If properly sealed, there is no need for the dessicant.
(2) Store them in a dark place. Do not expose to sunlight or fluorescent light, keep the temperature between 0□ C and 35□ C.
(3) The polarizer surface should not come in contact with any other objects. (We advise you to store them in the container in which they were shipped).

Others

Liquid crystals solidify under low temperature (below the storage temperature range) leading to defective orientation or the generation of air bubbles (black or white). Air bubbles may also be generated if the module is subject to a low temperature.
If the LCD modules have been operating for a long time showing the same display patterns, the display patterns may remain on the screen as ghost images and a slight contrast irregularity may also appear. A normal operating status can be regained by suspending use for some time. It should be noted that this phenomenon does not adversely affect performance reliability.
To minimize the performance degradation of the LCD modules resulting from destruction caused by static electricity etc., exercise care to avoid holding the following sections when handling the modules.
- Exposed area of the printed circuit board.
-Terminal electrode sections.

Precautions for Operation

(1) Viewing angle varies with the change of liquid crystal driving voltage (VLCD). Adjust VLCD to show the best contrast.
(2) It is an indispensable condition to drive LCD's within the specified voltage limit since the higher voltage then the limit cause the shorter LCD life.An electrochemical reaction due to direct current causes LCD's undesirable deterioration, so that the use of direct current drive should be avoided.
(3) Response time will be extremely delayed at lower temperature than the operating temperature range and on the other hand at higher temperature LCD's show dark color in them.However those phenomena do not mean malfunction or out of order with LCD's, Which will come back in the specified operating temperature.
(4) If the display area is pushed hard during operation, the display will become abnormal. However, it will return to normal if it is turned off and then back on.
(5) A slight dew depositing on terminals is a cause for electro-chemical reaction resulting in terminal open circuit. Usage under the maximum operating temperature,50%RH or less is required.
(6) Input each signal after the positive/negative voltage becomes stable.
(7) Please keep the temperature within specified range for use and storage. Polarization degradation, bubble generation or polarizer peel-off may occur with high temperature and high humidity.

Safety

(1) It is recommended to crush damaged or unnecessary LCDs into pieces and wash them off with solvents such as acetone and ethanol, which should later be burned.
(2) If any liquid leaks out of a damaged glass cell and comes in contact with the hands, wash off thoroughly with soap and water.

Limited Warranty

Unless agreed between H.D.and customer, H.D.will replace or repair any of its LCD modules which are found to be functionally defective when inspected in accordance with H.D. LCD acceptance standards (copies available upon request) for a period of one year from date of shipments.Cosmetic/visual defects must be returned to H.D. within 90 days of shipment. Confirmation of such date shall be based on freight documents. The warranty liability of H.D. limited to repair and/or replacement on the terms set forth above. H.D will not be responsible for any subsequent or consequential events.

Return LCM under warranty

No warranty can be granted if the precautions stated above have been disregarded. The typical examples of violations are :
- Broken LCD glass.
- PCB eyelet is damaged or modified.
- PCB conductors damaged.
- Circuit modified in any way, including addition of components.
- PCB tampered with by grinding, engraving or painting varnish.
- Soldering to or modifying the bezel in any manner.

Module repairs will be invoiced to the customer upon mutual agreement. Modules must be returned with sufficient description of the failures or defects. Any connectors or cable installed by the customer must be removed completely without damaging the PCB eyelet, conductors and terminals.

PACKING SPECIFICATION

TBD

PRIOR CONSULT MATTER

1.①For H.D.standard products, we keep the right to change material, process ... for improving the product property without notice on our customer.
②For OEM products, if any change needed which may affect the product property, we will consult with our customer in advance.
2.If you have special requirement about reliability condition, please let us know before you start the test on our samples.

FACTORY

FACTORY NAME: Shenzhen Hongda Technology CO., LTD
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