Display Future Ltd
www.displayfuture.com

LCD MODULE SPECIFICATION

Model: DF-SSC1011---M2

This module uses ROHS materials

For customer acceptance

Customer		date
Approved		
Comments		

The standard product specification may change without prior notice in order to improve performance or quality. Please contact Display Future Ltd for updated specification and product status before design for the standard product or release of the order.	Revision	1.0
	Engineering	
	Date	2018/01/4
	Our Reference	

REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
1.0	2018-01-4	First Release	

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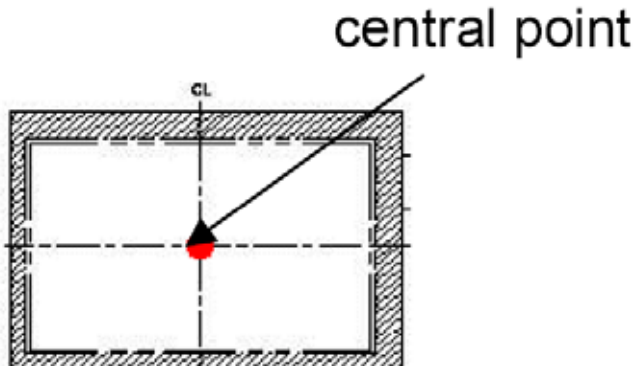
DVD player, UMPC, POS, MID

■ GENERAL SPECIFICATIONS

Composition: 10.1 inch Capacitive Touch Panel (CTP).
Interface: USB for the CTP.

Item	Specification	Unit
Type	Transparent type projected capacitive touch panel	
Input mode	Human's finger	
Outline Dimension	250.8(W) x 156.8(H) x 2.45 (D)	mm
Active area	223.72(W)(typ.) x126.28(H)(typ.)	mm
Transparency	≧85%	%
Haze	≦1.0%	%
Hardness	7H (min) [by JIS K5400]	Pencil hardness
Weight	160 (typ)	g
Report rate	MAX:122	Points/sec
Response time	15	ms
Point hitting life time	1,000,000 times min.	Note 1

Note 1: Use 8 mm diameter silicon rubber/force 3N to knock on the same point twice per second (no-operating), after test function check pass.



■ ABSOLUTE MAXIMUM RATINGS

Symbol	Description	Min	Typ	Max	Unit	Notes
VCC1	Supply voltage	-0.3	-	6.5	V	
VIO	DC input voltage	-0.3	-	VCC1+0.3	V	

■ ELECTRICAL CHARACTERISTICS

Symbol	Description	Min	Typ	Max	Unit	Notes
VCC1	Supply voltage	--	5.0	--	V	
GND	Supply voltage	-	0	-	V	
I	Supply current		60		mA	At VCC1=5.0
	System clock frequency			20	MHz	At VCC1=5.0

■ PIN CONNECTIONS

No.	Name	I/O	Description
1	VCC1	P	Power; VCC1 =5.0V(typ.)
2	D-	Signal	USB Signal
3	D+	Signal	USB Signal
4	GND	P	Ground

Note: Interface protocol please refer to Universal Serial Bus Specification Revision 1.1

■ APPEARANCE SPECIFICATION

1 Process/Content:

1.1 Inspection equipment： fluorescent lamp，functional test jig，magnifying glass, Vernier caliper, ESD wrist strap.

1.2 Environment demand

1.2.1 Temperature：25±5℃

1.2.2 Humidity：30-75%RH

1.2.3 Illuminance：Fluorescent light（appearance：800-1200UXL function：100-500UXL）

1.3 Inspection process

1.3.1 Inspect distribution operation

1.3.2 Shift team leader is in charge of distributing work when work order goes to OQC inspection of finished products

1.3.3 Products of great emergency or especially asked by customer should be finished in advance.

1.3.4 All the items should be fully inspected before shipment.

1.3.5 The inspection standard & specification should be carried out according to customer's demand. If customer has no other standard & specification, just stick to this one.

1.4 Sampling plan

1.4.1 Do tests regularly according to MIL-STD-105E. Single sampling plan is arrived out according to LevelⅡ.

1.4.2 Defect definition

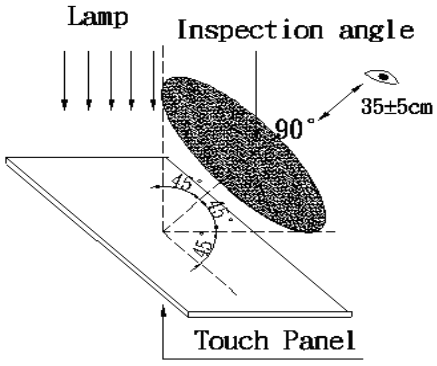
1.4.2.1 Major defect is inspected according to AQL 0.40%.

1.4.2.2 Minor defect is inspected according to AQL 0.40%.

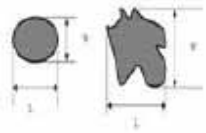
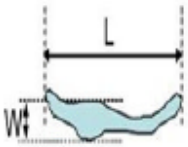
1.5Appearance inspection

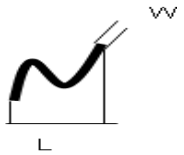
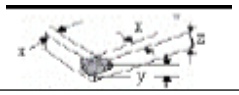
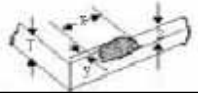
1.5.1 Appearance inspection method

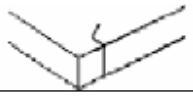
Inspection angle spacing：30-40cm



1.5.2 Appearance inspection standard

<table>
<tr><th>Item</th><th>Spec</th><th>Statement</th></tr>
<tr><td>Foreign material
Punctiform</td><td>
<table>
<tr><th>Spec</th><th>Q’ty allowed</th></tr>
<tr><td>D＞0.5mm</td><td>0</td></tr>
<tr><td>0.3mm≦D≦0.5mm</td><td>5</td></tr>
<tr><td>D＜0.3mm</td><td>Disregarded</td></tr>
</table>
</td><td> 
D= (L + W) / 2</td></tr>
<tr><td>Foreign material
Linear</td><td>
<table>
<tr><th>Spec</th><th>Q’ty allowed</th></tr>
<tr><td>W＞0.1mm L＞5mm</td><td>0</td></tr>
<tr><td>0.05mm≦W≦0.1mm
L≦5mm</td><td>5</td></tr>
<tr><td>W＜0.05mm</td><td>Disregarded</td></tr>
</table>
</td><td> 
L : Long W : Width</td></tr>
<tr><td>Image uniformity</td><td colspan="2">Gray color can be seen on RGB through ND5%</td></tr>
</table>

<table>
<tr><td>TP scratch</td><td>
<table>
<tr><th>Spec</th><th>Q’ty allowed</th></tr>
<tr><td>W＞0.07mm L＞7mm</td><td>0</td></tr>
<tr><td>W≦0.07mm L≦7mm</td><td>5</td></tr>
</table>
</td><td>  </td></tr>
<tr><td>TP dented spot</td><td>
<table>
<tr><th>Spec</th><th>Q’ty allowed</th></tr>
<tr><td>D＞0.5mm</td><td>0</td></tr>
<tr><td>0.3mm≦D≦0.5mm</td><td>5</td></tr>
</table>
</td><td> 
D= (L + W) / 2</td></tr>
<tr><td>TP overflows or lacks of glue</td><td colspan="2">±0.45mm</td></tr>
<tr><td>Surface broken</td><td colspan="2">X<2mm Y<2mm Z<glass</td><td>  </td></tr>
<tr><td>Edge broken</td><td colspan="2">X<2mm Y<2mm Z<glass</td><td>  </td></tr>
</table>

Rift	Not allowed	
Bubble appears in protection film	D>10mm N=0 5≦D≦10mm N=2 D<5 disregarded	
TP deviation	According to the specifications of customer's drawing	
Bubble	D≦0.2mm disregarded 0.2mm＜D≦0.3mm N≦2 0.3mm＜D not allowed No influence on appearance and function in invisible area OK	
Printing ink	No light leak Silk-screen saw tooth：S≦0.1 disregarded 0.1mm≦S≦0.15mm N=5 S＞0.15 ng LOGO break line NG Script dim，printed backwards，no printing in wrong place	
Finger print	Not allowed	
Stain	Stain on surface can be removed OK Bonding surface has no influence on appearance and function OK Can't be removed & not allowed	
Protection film	Bent isn't allowed No lift up Bent is allowed L＜10MM N≦5	

■ QUALITY ASSURANCE

1 Test Condition

1.1 Temperature and Humidity(Ambient Temperature)

Temperature : 25 ± 5°C
Humidity : 65 ± 5%

1.2 Operation

Unless specified otherwise, test will be conducted under function state.

1.3 Container

Unless specified otherwise, vibration test will be conducted to the product itself without putting it in a container.

1.4 Test Frequency

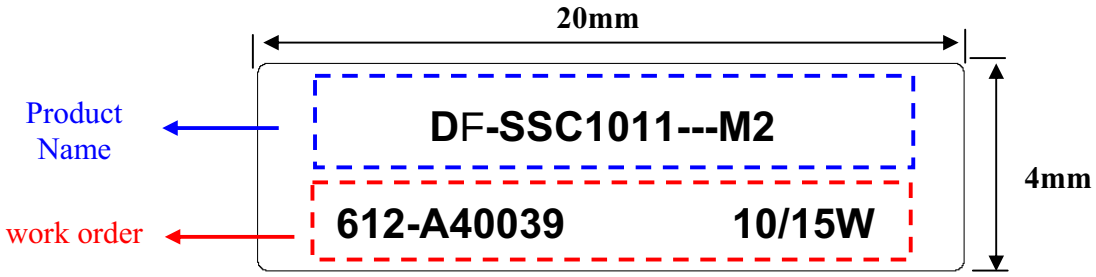
In case of related to deterioration such as shock test. It will be conducted only once.

1.5 Test Method

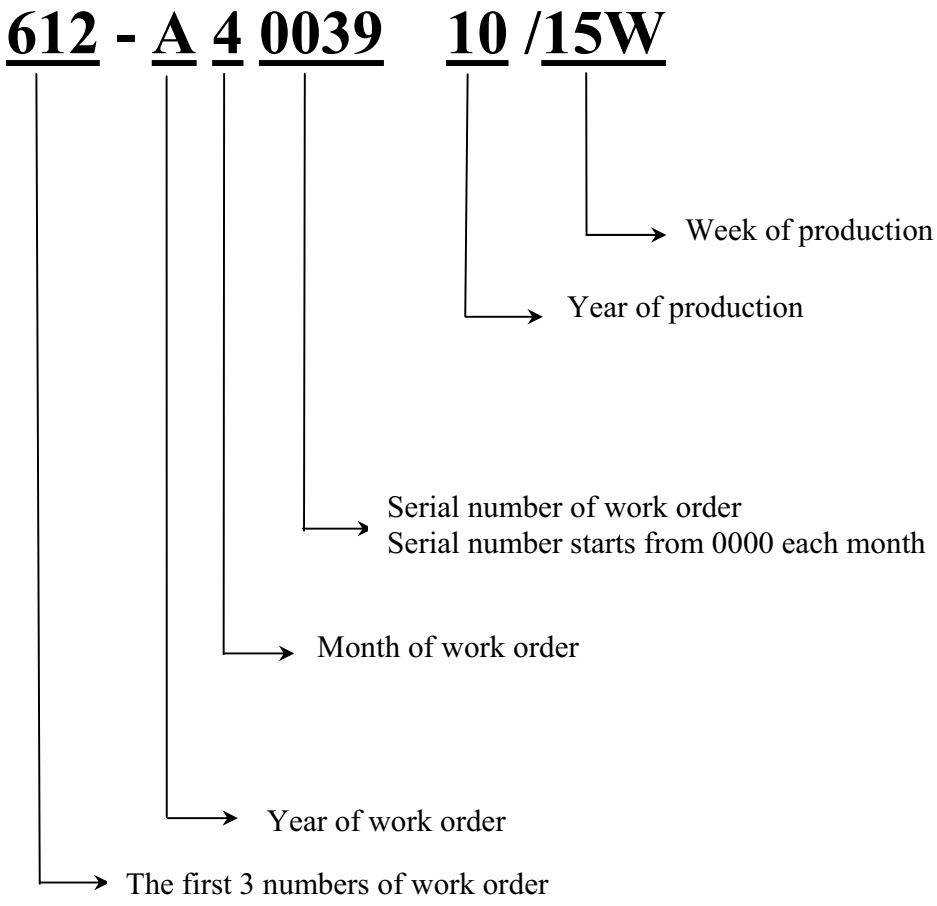
Reliability Test Item & Level		Test Level
No.	Test Item	
1.	Low Temperature Storage Test	T= -30℃ ,120hrs after 24 hrs at room temperature and test.
2.	High Temperature Storage Test	T= 80℃ ,120hrs after 24 hrs at room temperature and test.
3.	High Temperature and High Humidity Storage Test	T= 60℃, 90%RH,120hrs after 24 hrs at room temperature and test.
4.	Thermal Cycling Test (No operation)	-30 ℃ 30min ~ 80 ℃ 30 min , 100 Cycles after 24 hrs at room temperature and test.
5.	Vibration Test (No operation)	Frequency :10 ~ 55 HZ Amplitude :1.5 mm Sweep time : 11 mins Test Period: 6 Cycles for each direction of X, Y, Z
6.	ESD TEST	150pF,330Ω Air:± 15KV;Indirect Contact: ± 8KV 10 times/point;4 points/panel face

■ CTP PRODUCT LABEL DEFINE

CTP Product Label style:



Work order Define:



■ PRECAUTIONS IN USE CTP

1. ASSEMBLY PRECAUTIONS
   (1) Since Touch Panel is consist of glass, please be careful your hands to be injured during handing. You must wear gloves during handing.
   (2) Do not touch, push or rub the exposed touch panel, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.
   (3) Do not stack the touch panels together. Do not put heavy objects on touch panel.
   (4) Please do not take a CTP to pieces and reconstruct it. Resolving and reconstructing modules may cause them not to work well.
   (5) Please excessive force or strain to the panel or tail is prohibited, Do not lift touch panel by cable(FPC).
   (6) Use clean sacks or glove to prevent fingerprints and/or stains left on the panel. Extra attention and carefulness should be taken while handling the glass edge.
   (7) Please pay attention for the matters stated below at mounting design of touch panel enclosure.
   Enclosure support to fix touch panel must be out of active area.(do not design enclosure presses the active area to protect from miss put)
2. OPERATING PRECAUTIONS
   (1) Please be sure to turn off the power supply before connecting and disconnecting signal input cable.
   (2) Please do not change variable resistance settings in CTP. They are adjusted to the most suitable value. If they are changed, it might happen CTP does not satisfy the characteristics specification
   (3) Be careful for condensation at sudden temperature change. Condensation makes damage to sensor or electrical contacted parts.
   (4) CTP 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.
   (5) Touch the panel with your finger or stylus only to assure normal operation. Any sharp edged or hard objects are prohibited.
   (6) Operate the panel in a steady environment. Abrupt variation on temperature and humidity may cause malfunction of the panel.
3. ELECTROSTATIC DISCHARGE CONTROL
   (1) The operator should be grounded whenever he/she comes into contact with the CTP. Never touch any of the conductive parts such the copper leads on the FPC and the interface terminals with any parts of the human body.
   (2) The CTP should be kept in antistatic bags or other containers resistant to static for storage.
   (3) Only properly grounded soldering irons should be used.
   (4) If an electric screwdriver is used, it should be well grounded and shielded from commentator sparks.
   (5) The normal static prevention measures should be observed for work clothes and working benches; for the latter conductive (rubber) mat is recommended
   (6) Since dry air is inductive to statics, a relative humidity of 50-60% is recommended.
5. STORAGE PRECAUTIONS
   (1) When you store touch panel for a long time, it is recommended to keep the temperature between 0°C-40°C without the exposure of sunlight and to keep the humidity less than 90%RH.
   (2) Please do not leave touch panel in the environment of high humidity and high temperature such as 60°C 90%RH
   (3) Please do not leave touch panel in the environment of low temperature; below -20°C.
6. OTHERS
   For the packaging box, please pay attention to the followings:
   a. Please do not pile them up more than 5 boxes. (They are not designed so.) And please do not turn over.
   b. Please handle packaging box with care not to give them sudden shock and vibrations. And also please do not throw them up.
   c. Packing box and inner case for CTP are made of cardboard. So please pay attention not to get them wet. (Such like keeping them in high humidity or wet place can occur getting them wet.)
7. LIMITED WARRANTY
   Unless otherwise agreed between Display Future and customer, Display Future will replace or repair any of its CTP which is found to be defective electrically and visually when inspected in accordance with Display Future acceptance standards, for a period on one year from date of shipment. Confirmation of such date shall be based on freight documents. The warranty liability of Display Future is limited to repair and/or replacement on the terms set forth above. Display Future will not responsible for any subsequent or consequential events.

■ OUTLINE DRAWING