



PRODUCT SPECIFICATIONS

Customer :

Model :

Date :

Version:

Acceptance Sheet			
Onetouch Technologies Co., Ltd.			
(Supplier)		(Purchaser)	
Date	Approval Signature	Date	Approval Signature

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SPECIFICATION REVISION RECORD

Customer :
Customer NO. :

Issue Date : April 1st, 2008
Model :

NO.	Version	Issue Date	Summary of Changes	Page

<Remarks>

1. Circumscription

The specification applies to the capacitive touch panel.

2. Features

Item	Specifications
(1) Type	Capacitive
(2) Input Method	Finger
(3) Connector	FFC

3. General Specification

Item	Specifications
(1) Outside Dimensions	
(2) View Area	
(3) Active Area	
(4) Total Thickness	(Glass only, not including tape, wires and/or solder if used).
(5) Tail Length	

4. Environmental Conditions

Item	Specifications
(1) Operation Temperature	-20℃ ~ +70℃
(2) Operation Humidity	20%RH ~ 85% relative humidity, non-condensing *
(3) Storage Temperature	-40℃ ~ +85℃
(4) Storage Humidity	10%RH ~ 90% relative humidity, non-condensing *
(5) Waterproof	Not damaged by running water applied to the active area.

Note: *The environment is under normal atmosphere pressure.

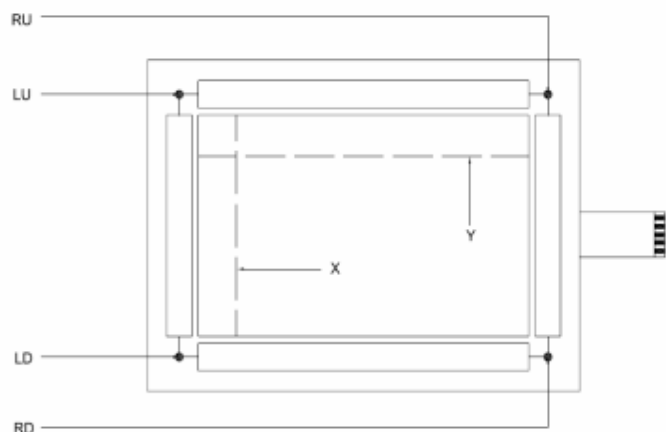
*While the environment temperature is above 65℃, the humidity will be allowed in below 50%RH.

5. Optical Characteristics

Item	Specifications
(1) Light Transmission	$\geq 85\%$ (accordance with ASTM D 1003)
(2) Haze	Clear surface $\leq 5\%$; 2% Antiglare Surface $\leq 15\%$; 2%
(3) Gloss	Antiglare Surface 90;20 gloss

6. Electrical Characteristics

Item	Specifications
(1) Supply voltage	DC5V
(2) Loop Resistance	X:50~600 Ω , Y:50~600 Ω (See Figure 1)
(3) Linearity	$X \leq 1.5\%$, $Y \leq 1.5\%$
(4) Response	According to Integration time of controller
(5) Insulation	$\geq 20M\Omega/25V(DC)$
(6) Endurance	No acting damage at DC50V/60sec.



Note : Loop Resistance X = short RU and RD , short LU and LD , measure the resistance between RU and LU.

Loop Resistance Y = short RU and LU , short RD and LD, measure the resistance between RU and RD

7. Mechanical Characteristics

Item	Specifications	Conditions
(1) Active Force	Standard finger	$\leq 10g$
(2) Ball Impact	13.0 ϕ DIA. Steel Ball/9g Height=30cm	1 time, no damage [Impact at center area]
(3) Static Load	500g within 30 cm ² area for 30sec	Satisfy this specification of Electrical & Mechanical Characteristics
(4) Surface Hardness	Meet pencil hardness 7H per ASTM D 3363	$\geq 7H$
(5) Peeling	800g/cm by vertical 90 ϕ	Satisfy this specification of Electrical Characteristics
(6) Pin Bending	135 ϕ 10 times left & right *IT doesn't permit 90 ϕ bending	Satisfy this specification of Electrical Characteristics
(7) Resolution	Based on controller resolution of 4096 x 4096	

8. Reliability

Item	Specifications	Conditions
(1) Constant Temperature/Humidity	35 ϕ C /90%RH, 240 hrs and normalized for 4 hrs	Satisfy this specification of Electrical Characteristics, but linearity $X \leq 2.0\%$, $Y \leq 2.0\%$
(2) Heat Cycle	70 ϕ C/240 hrs	
(3) Cold Cycle	-40 ϕ C/240 hrs	
(4) Thermal Cycle	-40 ϕ C ~70 ϕ C [60 min./cycle] *50 cycles	

9. Durability

Item	Specifications	Conditions
(1) Surface Durability	Tested in the laboratory to withstand over 160 million (mechanically simulated) touches without noticeable degradation.	Surface hardcoat cannot be scratched using any stylus with Mohs rating equal to or less than 7.

10. Positional Accuracy

Item	Specifications	Conditions
(1) Positional Accuracy	Reported touch coordinates are within 1.5% of true position (based on the diagonal dimension of the screen)	Satisfy this specification of Electrical Characteristics

11. Appearance Inspection

Item	Specifications	Conditions
(1) Appearance Inspection	The inspection was performed with 1*17W fluorescent lamp from back or side. The panel was placed 30cm away from eyes.	The flaws and impurities are allowed outside active area except for those affecting electrical functions.
(2) Defect size	Measurement tool of defect size	Magnification by Peak 1983-10X

12. Appearance Specifications

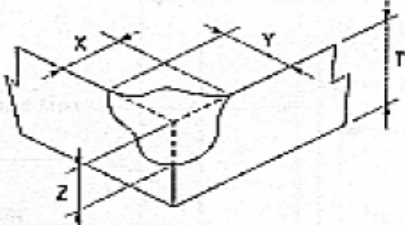
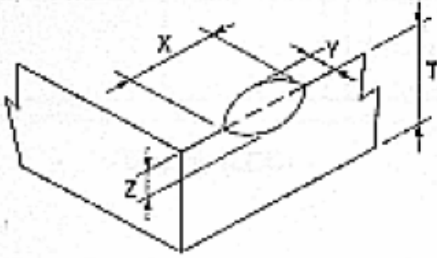
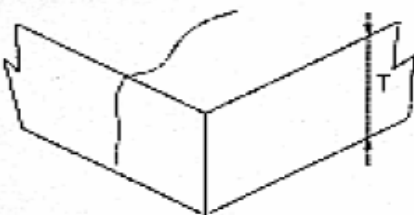
(1)

Item	Specifications
(1) Particle	D>0.4 →NG D≤0.4 (must be above 30mm apart between particles) →OK
(2) Linear Object	W>0.1mm, L>7mm, total L>25mm →NG Remark: the particle will be ignored when it is cleanable.
(3) Scratch	(1) W≤0.05 →OK (2) 0.05<W≤0.1 and L≤7mm, total L≤25mm →OK (3) W>0.1 →NG

<Remark>

1. D=Diameter
2. W=Width
3. L=Length
4. Each area contains=20 φ

(2) Glass Flaw

Item	Picture	Specification
Corner Flaw		$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Edge Flaw		$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Progressive Flaw		Note allowed

13. Chemical Resistance

Item	Specifications
(1) Chemical Resistance	Water, ammonia, isopropyl alcohol, and similar non-abrasive cleaners

14. Attention of Mounting Condition

Item	Attentions
(1) Mounting	To mounting touch panels on the displays, the supports of touch panels must be on the outside of Viewable areas. To avoid pressing error on touch panel accidentally, please remain space between the surface of panel and the Bezel.
(2) Bezel	Bezel inner must be designed between Viewable area and Active area. Bezel inner must not touch Viewable area. We recommend to use double-sided adhesive spacer type between the touchscreen and the frame bezel.
(3) Support	We recommend the support on the frame side don't metal or any electric conductor. If it is electric conductor, you must use insulating materials spacer between the touchscreen and the support.
(4) Adhesive	Use double-sided adhesive spacer type to adhere the touchscreen to the display. In general, the adhesive type should be set back slightly from the edge of the active area of the touchscreen.
(5) Edge	The edges of touch panel are not insulated, they should not come into contact with conductive materials.
(6) Tail	Wrap tail smoothly. Do not twist the tail.
(7) Route	Don't route the touch screen cable or flex tail and power wires near the backlight inverter of the LCD panel.
(8) Grounding	Please take notice of the grounding of power while mounting the touchscreen, otherwise it may have unstable situation

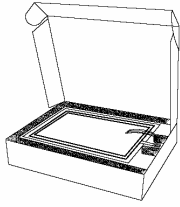
15. Guaranty

Item	Range	Except
(1) Standard Guaranty	One year guaranty on all Onetouch products. Onetouch provide for repair and replacement without any charge during this guaranty period. Onetouch reserves the right in its sole discretion to determine the defects received, and will take the responsibility if there is any defect or damages.	1. Damages caused by improper handling from clients, such as the shipping period or manufacturing processes. 2. Damages caused by either natural disaster or human factors after receiving the products. 3. Damage caused by self-repairs, and modifications or disassembling of Onetouch products from clients without prior notice.

16. Caution

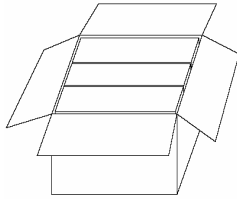
Item	Specifications
(1) Storage	Storage shall be under the temperature and humidity that mentioned in the specification. Do not expose the products to direct sunlight or piling caused damage on the surface.
(2) Unpacking	Check for the correct vertical direction of the package before unpacking.
(3) Handing	(1) In order to prevent fingerprints or stain on the products, and get a cut by sharp edges of glass, clean finger sacks or glove and mask are required during handing. (2) Do not touch the viewing area of the panel. (3) Do not handle the tail (connector) of panel directly, when you handle the touch panel. It will cause the problem of combination and reliability
(4) Cleaning	(1) Clean and soft clothes with neutral detergent and with isopropyl alcohol may be used for cleaning. (2) Do not use any chemical solvent, acidic or alkali solution.
(5) Installing and Assembling	(1) Excessive force to the panel or strain to the tail is prohibited. (2) Provide a clearance of at least 0.3mm between panel and display module. (3) Insulation and spacer should be designed around the edges of the panel to prevent water and dust.
(6) Operating	(1) Use a finger. Sharp edged or hard articles are prohibited. (2) The gathering of dew in the panel may occur with abrupt temperature or humidity changes. A stable environment condition is recommended.
(7) Others	(1) Keep the surface clean. No adhesives should be applied. (2) Avoid high voltage and static charge. (3) Onetouch has the right to change the materials and specification.

17. Package



Packing box picture inside

Each slice of PANEL is packed with bubble bag ,
6 slices of PANEL of thickness 3mm hold a case,
then four frontier fortress sponges are regular in the
case, as left picture shows.



Packing box picture outside

The case is put into a case outside one in every three ,
Like pursuing to have and show.

18. Certificate

Item	Specifications
FCC Compliance	FCC ID: KOLSMCC-88 EN55 022:1994 class B, A1:1995-12, A2:1997-08 EN50 082-1:1992 (IEC801-2:1991, IEC801-3:1984, IEC801-4:1988)
CE Compliance (declaration of conformity)	For the evaluation regarding the Electromagnetic Compatibility, the FCC compliance was applied. For the evaluation of the compliance with the Low Voltage Directive 73/23/EEC and the Amendment Directive 93/68/EEC , the T _α V Compliance was applied.
ISO 9001 : 2000	File No.: Certificate number 03/0184