

杭州凡诺电子有限公司  
FANNAL ELECTRONICS CO., LTD

**Specifications for Touch Panel**

Model NO: FN104A003C0F0W0V0

Revision: V1.0

Approved For Specifications Only

Approved For Specifications And Sample

FANNAL			CUSTOMER
PREPARED	CHECKED	APPROVED	APPROVED

Address: 6th Floor No.77 Xingwang West Road, Hangzhou, Zhejiang, China

Phone: +86 (0)571 85161516

<http://www.fannal.cn>

<http://www.fannal.com>

## 1. Record of Revision

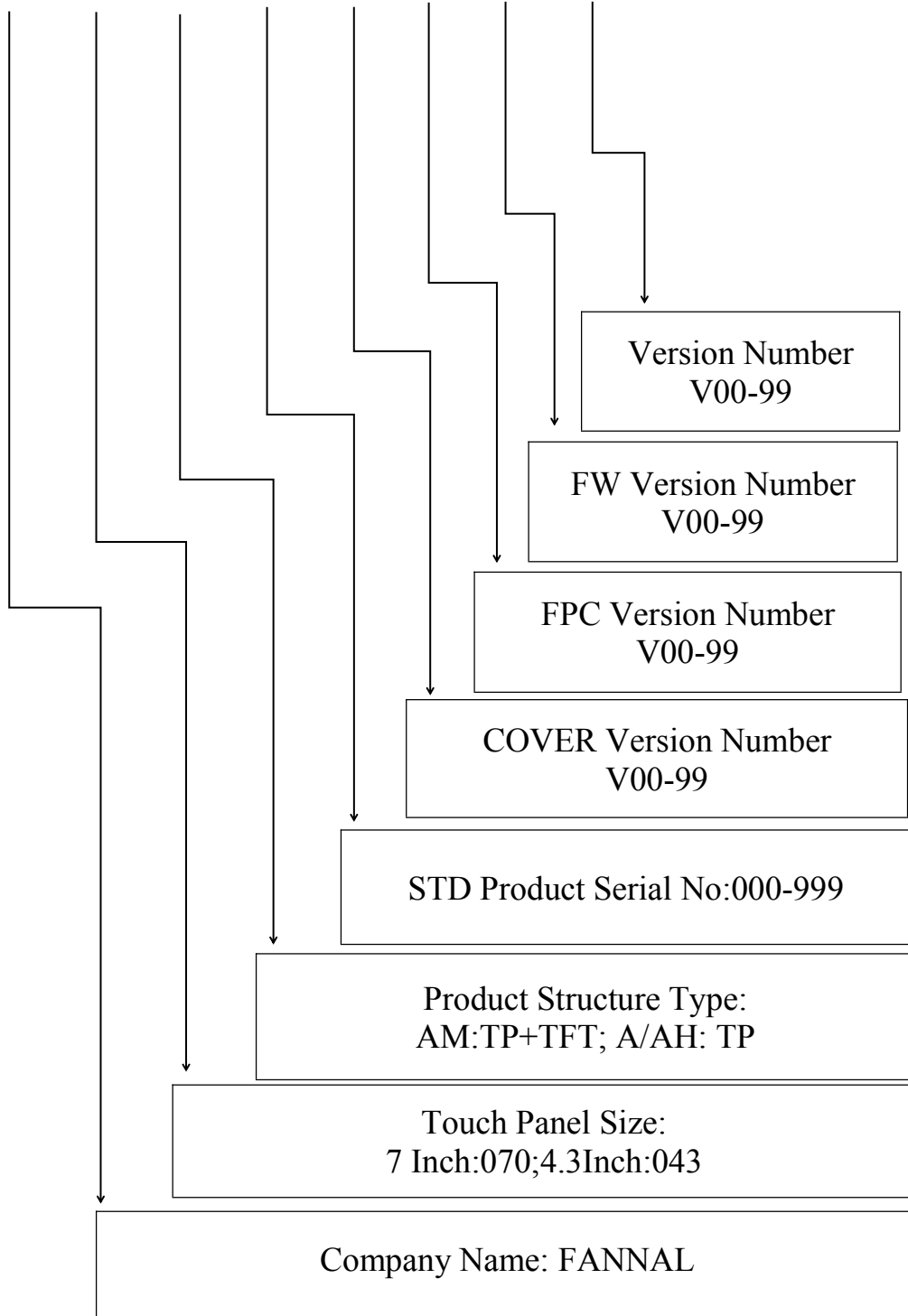
<b>NO.</b>	<b>Content</b>	<b>Page</b>	<b>Date</b>
1	Preliminary Specification was first issued	2	2017/5/3

## 2. Table of Content

<b>NO.</b>	<b>Content</b>	<b>Page</b>
1	Record of Revision	2
2	Table of Content	3
3	Module Numbering System	4
4	Application	5
5	Feature	5
6	General Specifications	5
7	Environmental Characteristic	5
8	Optical Characteristic	6
9	IC Specification	6
10	Pin Assignment	7
11	Mechanical Characteristic	8
12	Reliability Test	9
13	Function Test	9
14	Appearance Inspection	10
15	Appearance Specification	11
16	Mechanical Drawing	12
17	Packaging	13

### 3. Module Numbering System

**FN 104 A 003 C0 F0 W0 V0**



## 4. Application

This improved projected capacitive touch panel module is applied to industrial applications which required touch input.

Industrial control, medical devices and automation industries (transportation, military, smart home, and others)

## 5. Feature

NO.	Item	Specifications
1	Type	Projected Capacitive
2	Input Mode	Finger
3	Connector	COB (FPC+Controller Board)

## 6. General Specification

NO.	Item	Specifications	Unit
1	Touch Panel Size	10.4(Diagonal)	inch
2	Structure	G+G	
3	View Area	212.0(H)x159.2(V)	mm
4	Outline Dimension	246.20(H)x195.90(V)x2.0(D)	mm

## 7. Environmental Characteristic

NO.	Item	Specifications	
		Temperature	Humidity (Non-Condensing)
1	Operation	-20~70 °C	45%-90%RH
2	Storage	-30~80 °C	5%-95%RH

Note: Testing environment is under normal atmospheric pressure. When the ambient temperature is above 65°C, the humidity is allowed to be below 50%RH

## 8. Optical Characteristic

<b>NO.</b>	<b>Item</b>	<b>Specifications</b>
1	Transparency	87%±5%
2	Haze	>3%

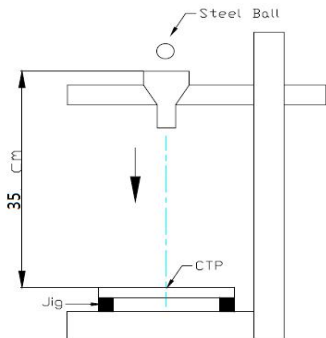
## 9. IC Specification

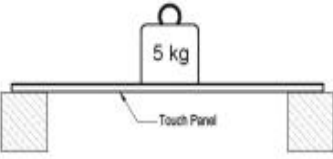
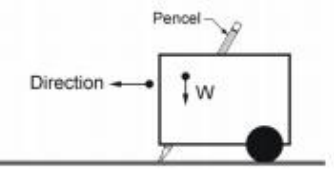
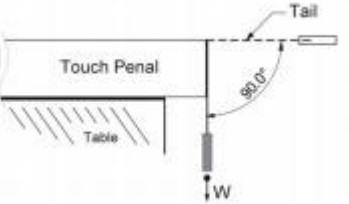
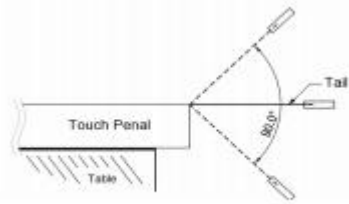
<b>NO.</b>	<b>Item</b>	<b>Specifications</b>
1	Driver IC	EXC3146
2	Detect Points	5 touch
3	Interface	USB
4	Power Supply	5.0V

## 10. Pin Assignment

Pin No.	Symbol	I/O	Description
1	GND	---	System ground
2	VDD	---	Power supply
3	GND	---	System ground
4	D+	I/O	Data +
5	D-	I/O	Data -

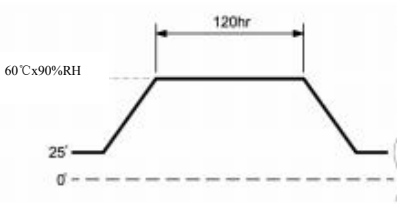
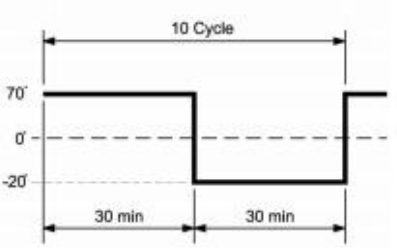
## 11. Mechanical Characteristic

NO.	Item	Condition	Specifications
1	Operating Force	Finger $\leq$ 10g	Satisfy- 1.Optical Characteristics 2.Electrical Characteristics
2	Impact	30.0 $\Phi$ DIA.Steel Ball/132g/Height=35cm/1 time, Impact at center area 	

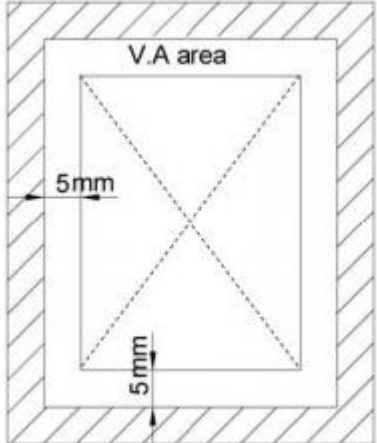
NO.	Item	Condition	Specifications
3	Static Load	5000g within 10cmΦ area for 30sec 	Satisfy- 1. Optical Characteristics 2. Electrical Characteristics  Appearance- 1. Ignore test area 2. No mechanical damage
4	Hardness	6H pencil, pressure 500g/45° 	
5	Tail Peeling	500g/cm by vertical 90° for 30sec 	
6	Tail Bending	90° 10times left & right 	



## 12. Reliability Test

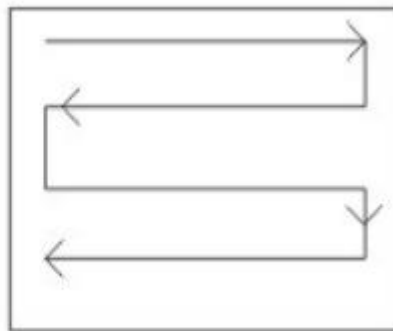
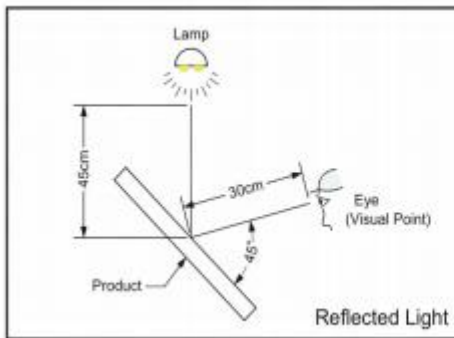
NO.	Item	Condition	Specifications
1	Constant Temperature/Humidity	<p>60°C X 90%RH, 120hrs and normalized for 24hrs</p> 	<p>Satisfy-</p> <p>1、Electrical Characteristics</p>
2	Heat Cycle	80°C/120hrs and normalized for 24hrs	
3	Cold Cycle	-30°C/120hrs and normalized for 24hrs	
4	Thermal Cycle	<p>-20°C~70°C [30min/cycle]*10cycles and normalized for 24hrs</p> 	

### 13. Function test

<p>Function Test</p>	<p>Test Method: Use <math>\Phi 8</math> copper stick to draw the square diagonal line.</p> <p>Test Area: 5mm inward view area.</p> <p>Disapproval Criteria: It is NG when we see the off-liner or jumping out spec shift.</p>	
----------------------	---	---

### 14. Appearance Inspection

The inspection is to be performed with 20W(1200 LUX)fluorescent lamp lighting from the back or side.The panel is to be placed 30cm away from eyes.(Figure 13-1)



## 15. Appearance Specification

NO.	Item	Specifications	Judgment
1	Dot Contamination	1) $D \leq 0.3\text{mm}$ , $DS \geq 10\text{mm}$ , 2) $0.30\text{mm} < D \leq 0.50\text{mm}$ , $DS > 10\text{mm}$ 3) $D > 0.50\text{mm}$	1) Ignore 2) OK with 5 3) NG
2	Linear Contamination	1) $W < 0.05\text{mm}$ 2) $0.05\text{mm} \leq W \leq 0.20\text{mm}$ $L \leq 5\text{mm}$ 3) $W \geq 0.20\text{mm}$ or $L \geq 5\text{mm}$	1) Ignore 2) OK with 5 3) NG
3	Cracks and Chips(Surface)	$X < 0.3\text{mm}$ , $Y < 0.3\text{mm}$ , $Z < \frac{1}{2}T$	Ignore

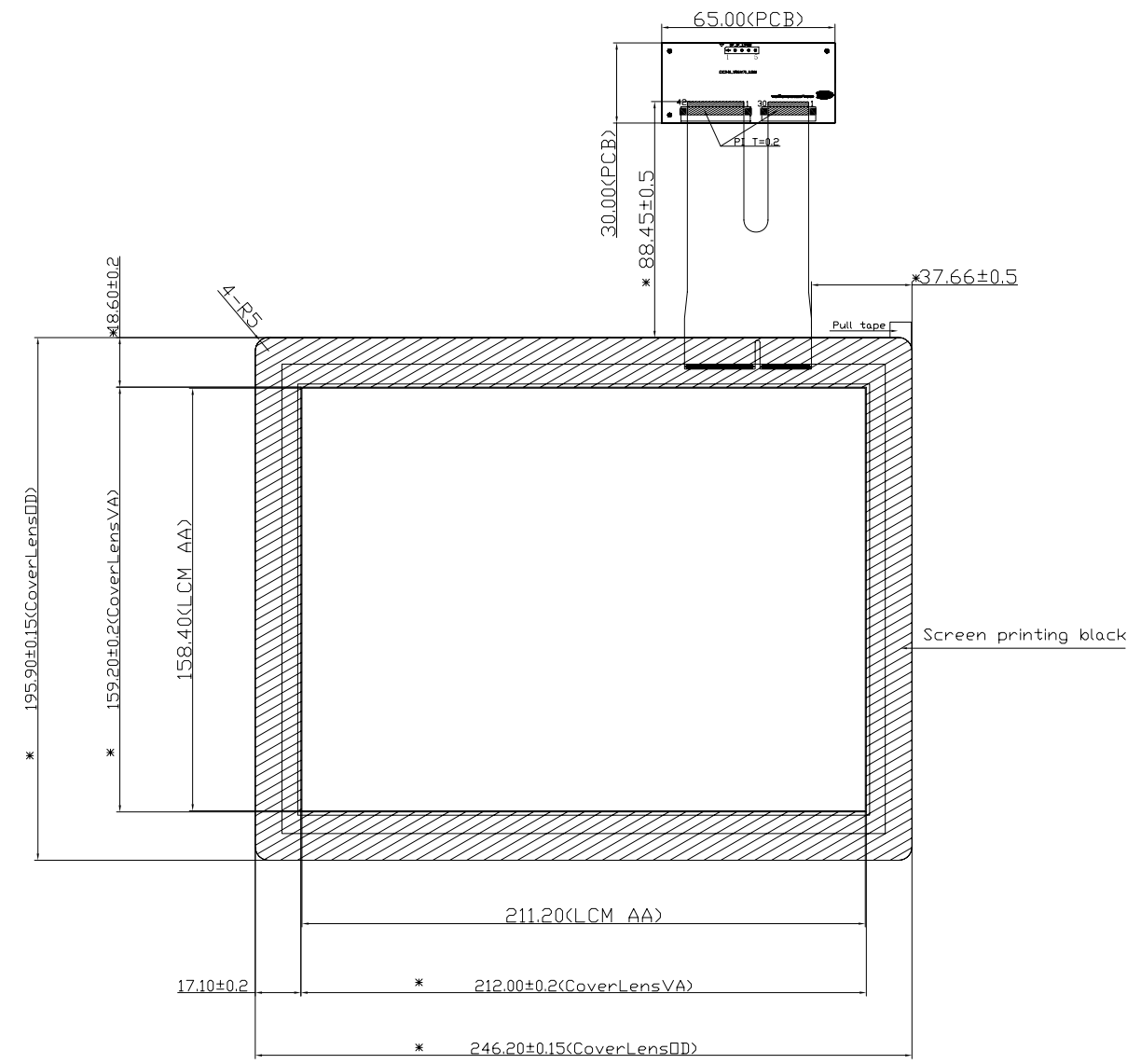
<Endorse>

1. All cosmetic defects are not accounted if found outside Active Area.  
(except for glass breakage, corner flaw, edge flaw, crack, etc. Please follow Appearance Inspection criteria upon inspection)
2. D=Diameter / W=Width / L=Length
3. Tail: Slight bend mark is allowed on the tail; crack or tear is not allowed.
4. Particle Spots: Flaws found coating if transparent, please follow Particle Spots specification.

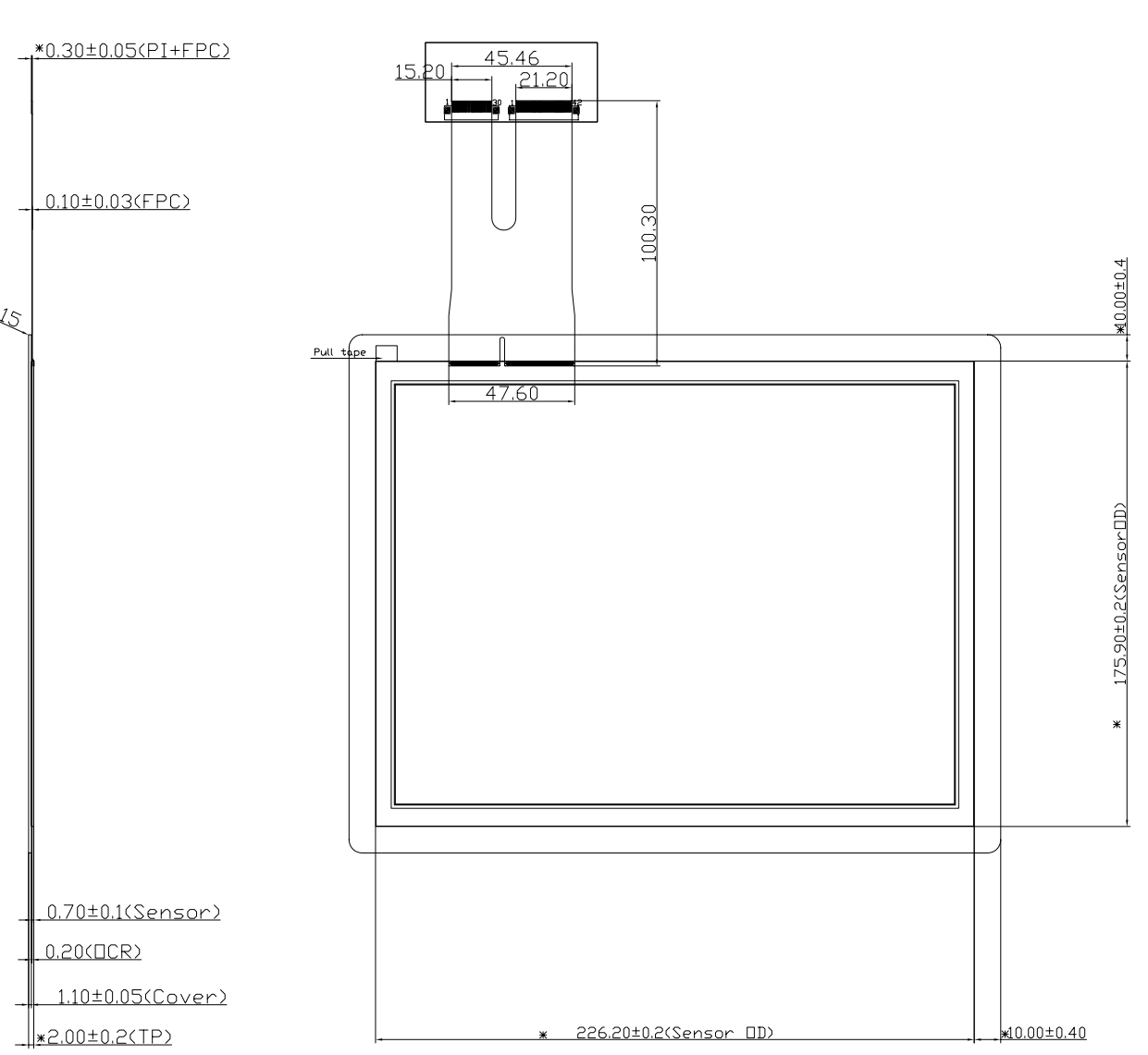
## 16. Mechanical Drawing

THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO FANNAL AND SHALL NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF FANNAL

Rev	Revision note	Date
V1.0	First Release	2017-04-14



Front view



Side view

Back view

**MODEL NO: FN104A003C0F0W0V0**

THIRD ANGLE PROJECTION

	NAME	SIGN	DATE
DRAWN:	Jevon		2017-04-14
CHECKED:	Hong		2017-04-14
APPROVED:	Jeff		2017-04-14

PROJECT NO:  
 CUSTOMER NO:  
 FILE NO:  
 SHEET 1 OF 1

TECHNOLOGY CHARACTERISTICS CTP	
PROPERTY	Requirement
IC	EETI 3146
NO OF TOUCH	5
COVER GLASS Thickness	110mm (sodalime)
ITO GLASS Thickness	0.70mm
Surface Hardness	6H
Light Transmittance	87%±5%
Operating Temperature	-20~70C*
Storage Temperature	-30~80C*
Operating Humidity	45~90%RH
Storage Humidity	5~95%RH

TP PIN ASSIGNMENT (CON1)				
1	2	3	4	5
GND	TX10	TX11	TX20	TX21
TX01	TX12	TX13	TX22	TX23
TX02	TX14	TX15	TX24	TX25
TX03	TX16	TX17	TX26	TX27
TX04	TX18	TX19	GND	NC
TX05	TX18	TX18	NC	NC
TX06	TX19	TX19	NC	NC
TX07	TX20	TX20	NC	NC
TX08	TX21	TX21	NC	NC
TX09	TX22	TX22	NC	NC

TP PIN ASSIGNMENT (CON2)				
1	2	3	4	5
GND	RX10	RX11	RX20	RX21
RX01	RX12	RX13	RX22	RX23
RX02	RX14	RX15	RX24	RX25
RX03	RX16	RX17	RX26	RX27
RX04	RX18	RX19	GND	NC
RX05	RX18	RX18	NC	NC
RX06	RX19	RX19	NC	NC
RX07	RX20	RX20	NC	NC
RX08	RX21	RX21	NC	NC
RX09	RX22	RX22	NC	NC

USB PIN DEFINITION	
Pin NO.	Definition
1	G
2	V
3	G
4	D+
5	D-

**NOTES:**  
 \*:Important Dimensions  
 TOLERANCE UNLESS: x.x ±0.3  
 OTHERWISE SPECIFIED: x.xx ±0.2  
 DIMENSIONS IN MM: ANGULAR:±1°

**RoHS**



**FANNAL ELECTRONICS CO., LTD**

## 17. Packaging

TBD