

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

Specifications for Touch Panel

Model NO: FN156A004-V2.0

Revision: V2.0

Approved For Specifications Only

Approved For Specifications And Sample

FANNAL			CUSTOMER
PREPARED	CHECKED	APPROVED	APPROVED

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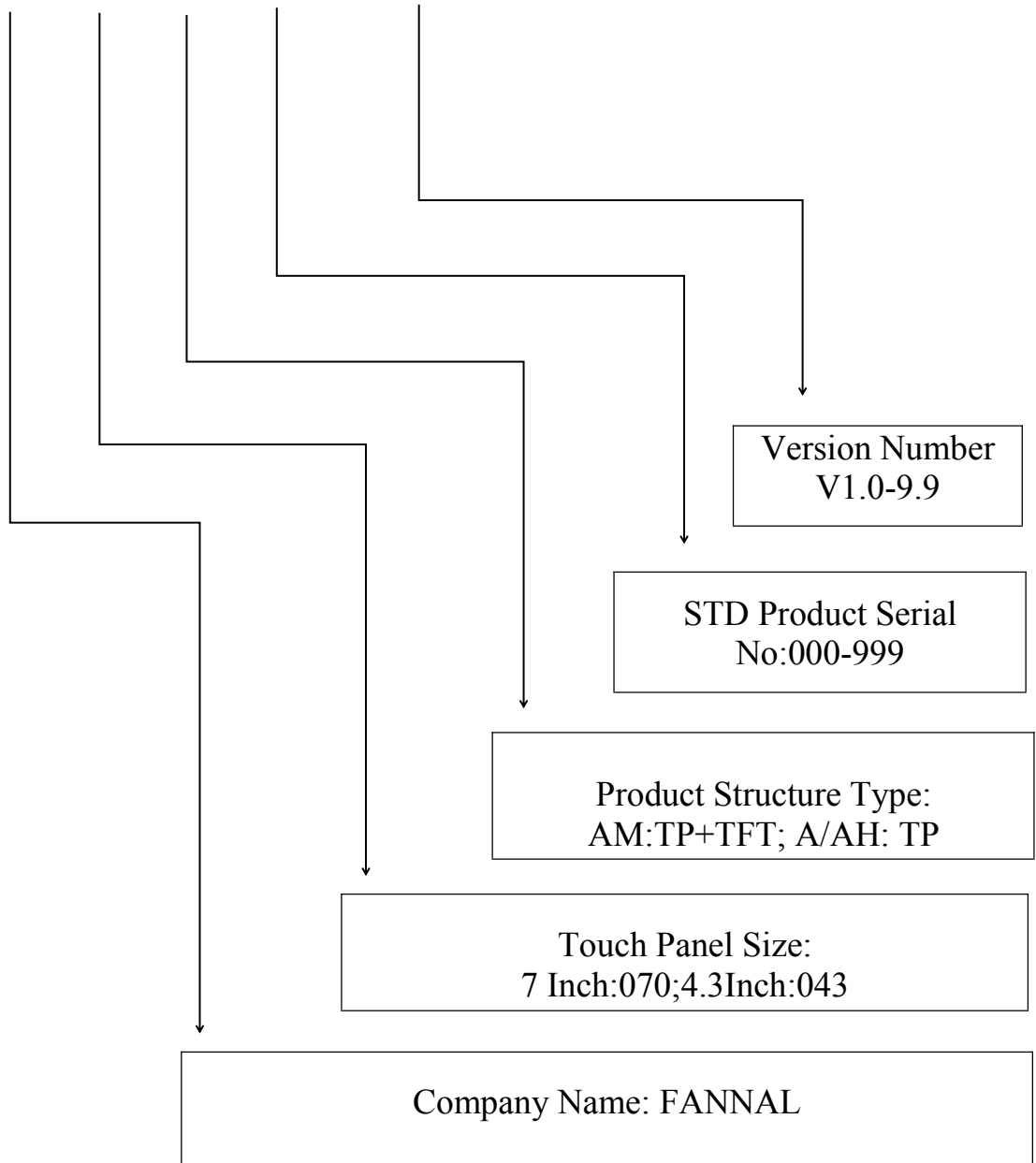
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3. Module Numbering System

FN 156 A 004 - V2.0



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	15.6(Diagonal)	inch
2	Structure	G+G	
3	View Area	344.83(H)x194.14(V)	mm
4	Outline Dimension	387.00(H)x231.00(V)x3.10(D)	mm

7. Environmental Characteristic

NO.	Item	Specifications	
		Temperature	Humidity (Non-Condensing)
1	Operation	-20~70 °C	45%-85%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

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

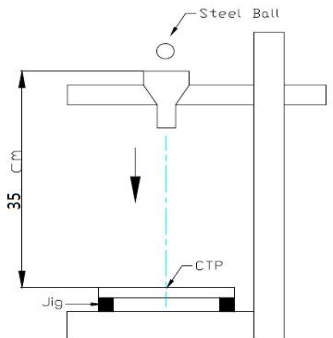
9. IC Specification

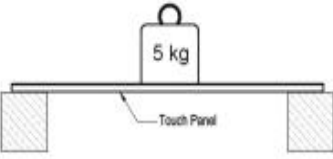
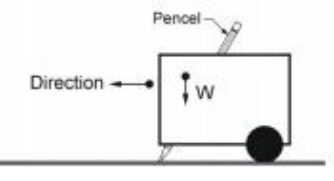
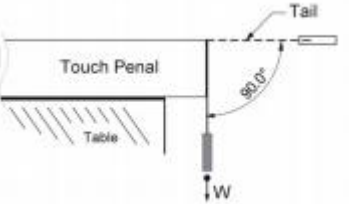
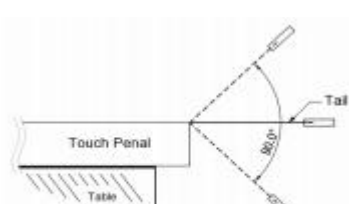
NO.	Item	Specifications
1	Driver IC	EETI 3188
2	Detect Points	10 touch
3	Interface	USB
4	Power Supply	5.0V

10. Pin Assignment

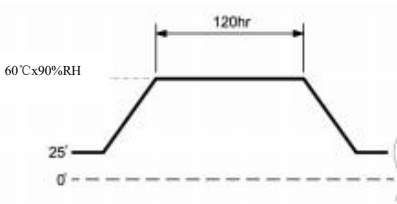
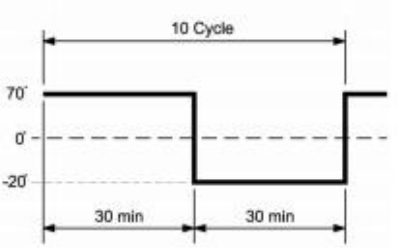
Pin No.	Symbol	I/O	Description
1	DM/D-	I/O	Data -
2	DP/D+	I/O	Data +
3	GND	---	System ground
4	VCC	---	Power supply
5	GND	---	System ground

11. Mechanical Characteristic

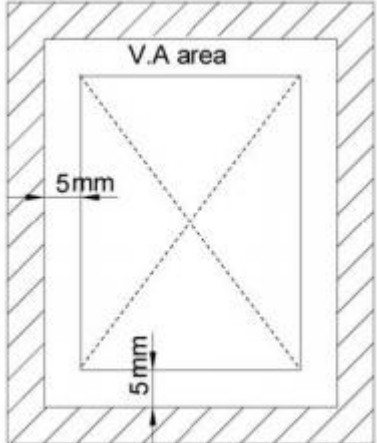
NO.	Item	Condition	Specifications
1	Operating Force	Finger \leq 10g	Satisfy- 1.Optical Characteristics 2.Electrical Characteristics
2	Impact	30.0ΦDIA.Steel Ball/132g/Height=35cm/1 time, Impact at center area 	

NO.	Item	Condition	Specifications
3	Static Load	5000g within 10cmΦ area for 30sec 	<p>Satisfy-</p> <ol style="list-style-type: none"> 1. Optical Characteristics 2. Electrical Characteristics <p>Appearance-</p> <ol style="list-style-type: none"> 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

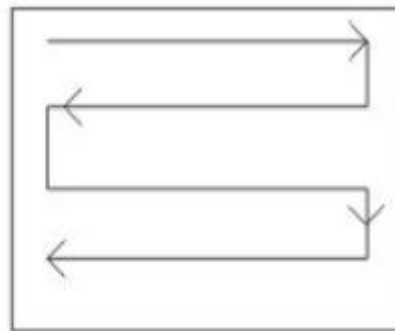
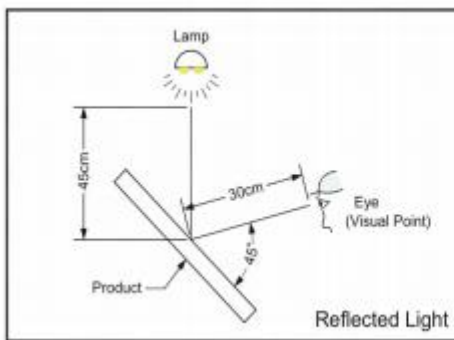
NO.	Item	Condition	Specifications
1	Constant Temperature/Humidity	<p>60°C X 90%RH, 120hrs and normalized for 24hrs</p> 	<p>Satisfy-</p> <p>1、Electrical Characteristics</p>
2	Heat Cycle	80°C/120hrs and normalized for 24hrs	
3	Cold Cycle	-30°C/120hrs and normalized for 24hrs	
4	Thermal Cycle	<p>-20°C~70°C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

13. Function test

<p>Function Test</p>	<p>Test Method: Use $\Phi 8$ 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>	
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14. Appearance Inspection

The inspection is to be performed with 20W(800-1000 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	PASS CRITERIA	
1	线状不良 Linear Defects (刮伤/擦痕/线状/杂质) (Scratch/Scrub/Fiber)	$W \leq 0.1\text{mm}$ and $L \leq 10\text{mm}$	Ignore	
		$0.1\text{mm} < W \leq 0.3\text{mm}, L \leq 10\text{mm}$	$N \leq 5, \text{Distance} \geq 10\text{mm}$	
		$W > 0.3\text{mm}$	Not Allowed	
2	点状不良 Dot Defects (气泡/杂质/白点/黑点/凹洞) (Bubble/Fiber/Particle/Spot/Dent)	$D \leq 0.35\text{mm}$	Ignore, Pitch $\geq 5\text{mm}$	
		$0.35\text{mm} < D \leq 0.5\text{mm}$	$N \leq 5, \text{Pitch} \geq 10\text{mm}$	
		$D > 0.5\text{mm}$	Not Allowed	
3	印刷不良 Printing Defects	针孔 Pine Hole $D \leq 0.35\text{mm}$	Ignore	
		漏光 Light Leakage	Peak to Peak $\leq 0.3\text{mm}$	Border Area Acceptable
			Peak to Peak $\leq 0.2\text{mm}$	Logo/icon Area Acceptable

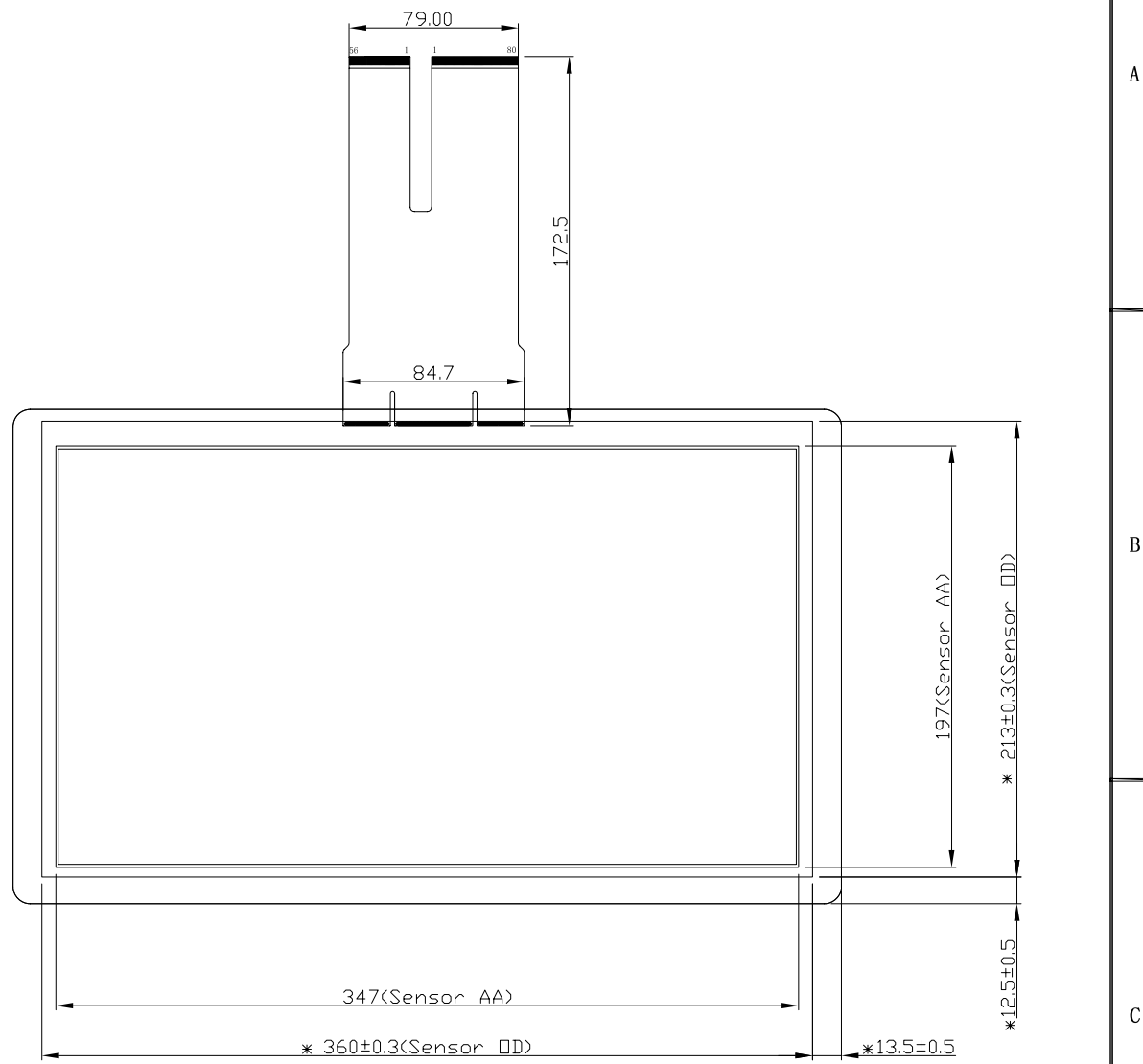
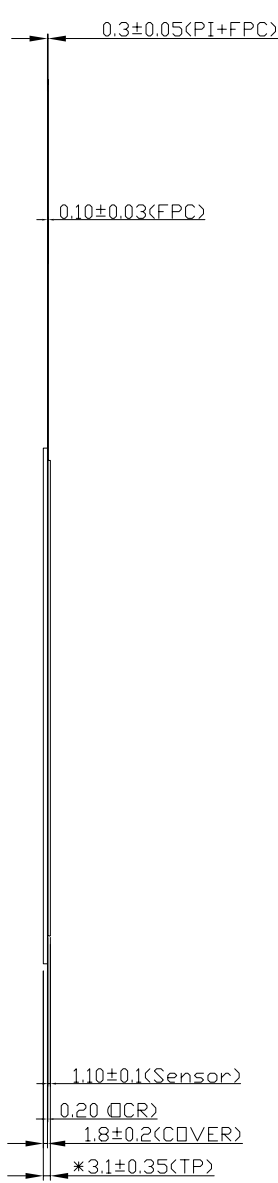
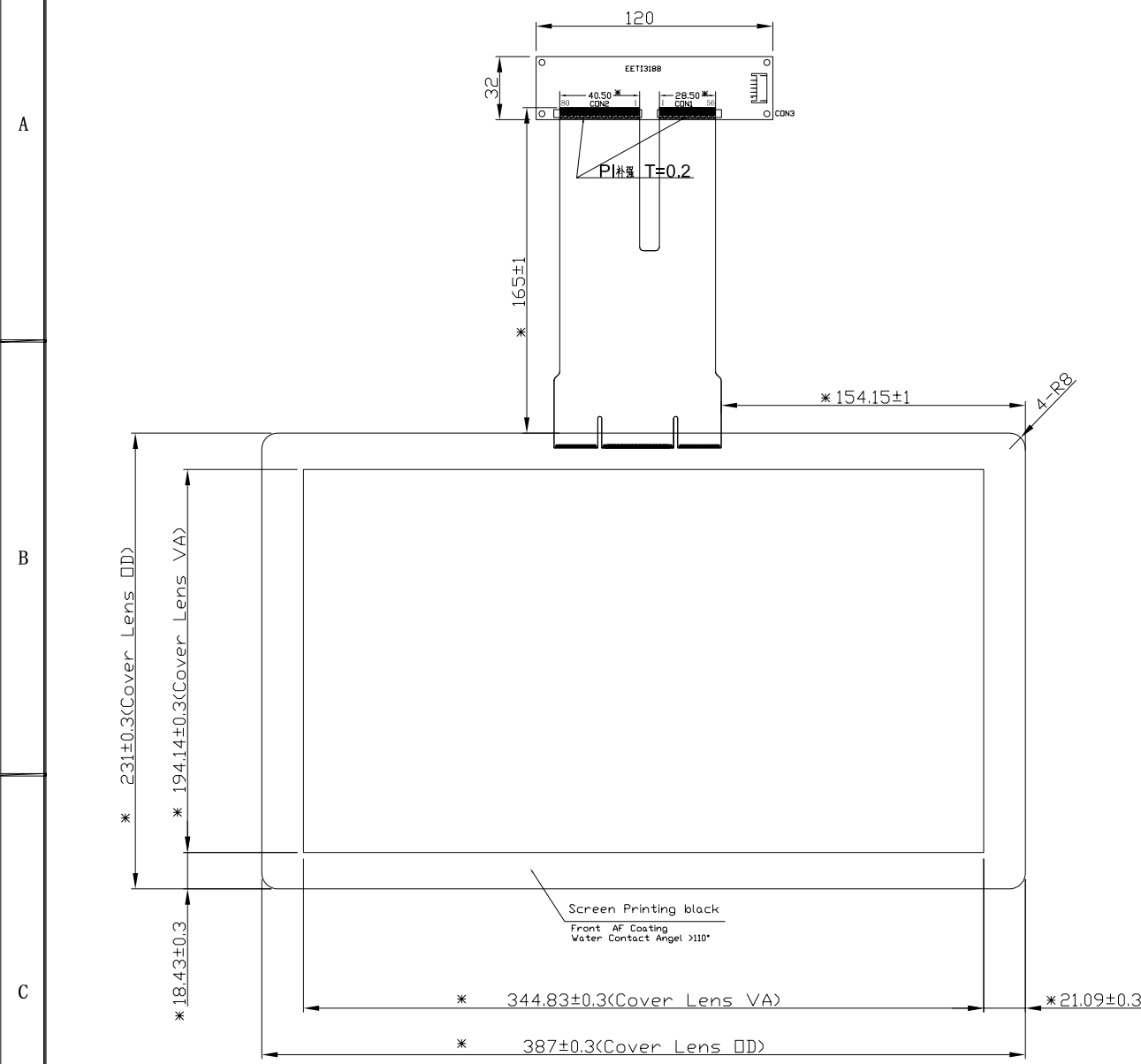
<Endorse>

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

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Rev	Revision note	Date
V1.0	On the basis of FN156AM004 - V1.0 cover plate to 2.0mm with AF, FPC extended to 165 mm	2017-04-12
V2.0	COVER 1.8MM	2017-6-9



PROPERTY	Requirement
IC	EET1-3188
NO OF TOUCH	10
COVER GLASS Thickness	1.8mm (AF Coating)
ITO GLASS Thickness	1.10mm
Surface Hardness	≧4H
Light Transmittance	≧75%±5%
Operating Temperature	-20~70°C
Storage Temperature	-30~80°C
Operating Humidity	45~85%RH
Storage Humidity	5~95%RH

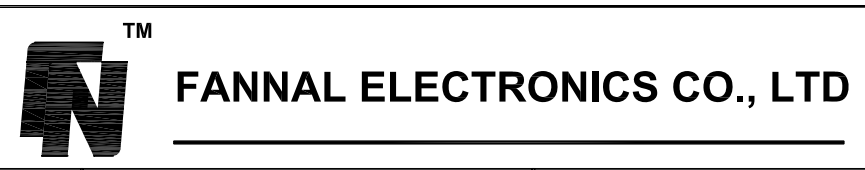
TP PIN ASSIGNMENT (CON1)	
1	GND
2	TX01
3	TX02
4	TX03
5	TX04
6	TX05
7	TX06
8	TX07
9	TX08
10	TX09

TP PIN ASSIGNMENT (CON2)	
1	GND
2	RX01
3	RX02
4	RX03
5	RX04
6	RX05
7	RX06
8	RX07
9	RX08
10	RX09

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



TP USB-PIN (CON3)				
1	2	3	4	5
DM	DP	GND	VCC	GND



MODEL NO: FN156A004-V2.0			
THIRD ANGLE PROJECTION			
	NAME	SIGN	DATE
DRAWN:	Hong		2017-6-9
CHECKED:			
APPROVED:			
PROJECT NO:			
CUSTOMER NO:			
FILE NO:			
SHEET 1		OF 1	

17. Packaging

TBD