SPECIFICATION

Customer :

Model Name: IE-A-1819CH02-C0-1

ERP NO. :

Spec Vision: V.1

Date: 2019/05/20

■ **Preliminary Specification**

☐ **Final Specification**

Approved by	Comment

Prepared by	Reviewed by	Approved by

Record of Revision

Version	Revise Date	Page	Content	Modified by
V.1	2019.05.20	-	First Issued.	DWH

Contents

1. General Specifications

NO.	Item	Specification	Remark
1	Panel Size	7.0 inch(Diagonal)	
2	Resolution	1024 x 3(RGB) x 600	
3	Driver Method	A-Si TFT active matrix	
4	Active Area	154.2144(W) x 85.92(H) mm	
5	Dot Pitch	0.1506(W) x 0.1432(H) mm	
6	Pixel Arrangement	RGB-stripe	
7	Module Size	163.8(W) x100(H) x2.8(D) mm	
8	Display Mode	Normally Black	
9	Display Color	16.7M	
10	Viewing Direction	All o'clock	
11	Interface	LVDS	
12	Driving IC	HX8282 +HX8696	
13	Weight	TBD	g

2. Pin Assignment

No.	Symbol	Function	Remarks
1	VCOM	Common Voltage	
2~3	VDD	Power for Digital Circuit	
4	NC	No connection	
5	RESET	Global reset pin. Active low to enter reset state.	
6	STBYB	Standby mode ,normally pull high	
7	GND	Power ground	
8	RXINO-	Negative LVDS differential Data inputs	
9	RXINO+	Positive LVDS differential Data inputs	
10	GND	Power ground	
11	RXIN1-	Negative LVDS differential Data inputs	
12	RXIN1+	Positive LVDS differential Data inputs	
13	GND	Power ground	
14	RXIN2-	Negative LVDS differential Data inputs	
15	RXIN2+	Positive LVDS differential Data inputs	
16	GND	Power ground	
17	RXCLKIN-	Negative LVDS differential clock inputs	
18	RXCLKIN+	Positive LVDS differential clock inputs	
19	GND	Power ground	
20	RXIN3-	Negative LVDS differential Data inputs	
21	RXIN3+	Positive LVDS differential Data inputs	
22	GND	Power ground	
23~24	NC	No connection	
25	GND	Power ground	
26	NC	No connection	
27	NC	Backlight CABC controller signal output	
28	SELB	6 bit/8 bit mode select H:6bit /L 8bit	
29	AVDD	Power for analog circuit.	
30	GND	Power ground	
31~32	LED-	Power for LED backlight(Cathode)	
33	L/R	Left / right selection	
34	U/D	Up/Down selection	
35	VGL	Gate off Voltage	
36	NC	No connection	
37			
38	VGH	Gate on Voltage	
39~40	LED+	Power for LED backlight (anode)	

3. Operation Specifications

3.1. Absolute Maximum Ratings

Voltage (AGND=GND=0V, Ta = 25℃)

Item	Symbol	Values		Unit	Remark
		Min.	Max.		
Power Voltage	VDD	-0.3	+3.96	V	
	AVDD	-0.5	+14.85	V	
	V_{GH}	-0.3	40	V	
	V_{GL}	-20.0	0.3	V	
	V_{GH}-V_{GL}	12	40.0	V	
Operating Temperature	T_{op}	-10	60	℃	
Storage Temperature	T_{st}	-20	70	℃	

Note: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings case ,the module may be permanently destroyed.

3.1.1. Typical Operation Range

Item	Symbol	values			Unit
		Min.	Typ.	Max.	
Power Voltage	VDD	3.0	3.3	3.6	V
	AVDD	9.2	9.4	9.6	V
	VGH	17	18	19	V
	VGL	-6.6	-6	-5.4	V
Input signal voltage	VCOM	2.9	3.05	3.2	V
Input logic high voltage	V_{IH}	0.7 V_{DD}	-	V_{DD}	V
Input logic low voltage	V_{IL}	0	-	0.3 V_{DD}	V

3.1.2. Current Consumption

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Current for Driver	I_{GH}	-	0.7	2	mA	VGH=18V
	I_{GL}	-	0.7	2	mA	VGL=-6V
	I_{VDD}	-	15	25	mA	VDD=3.3V
	I_{AVDD}	-	20	30	mA	AVDD=9.6V

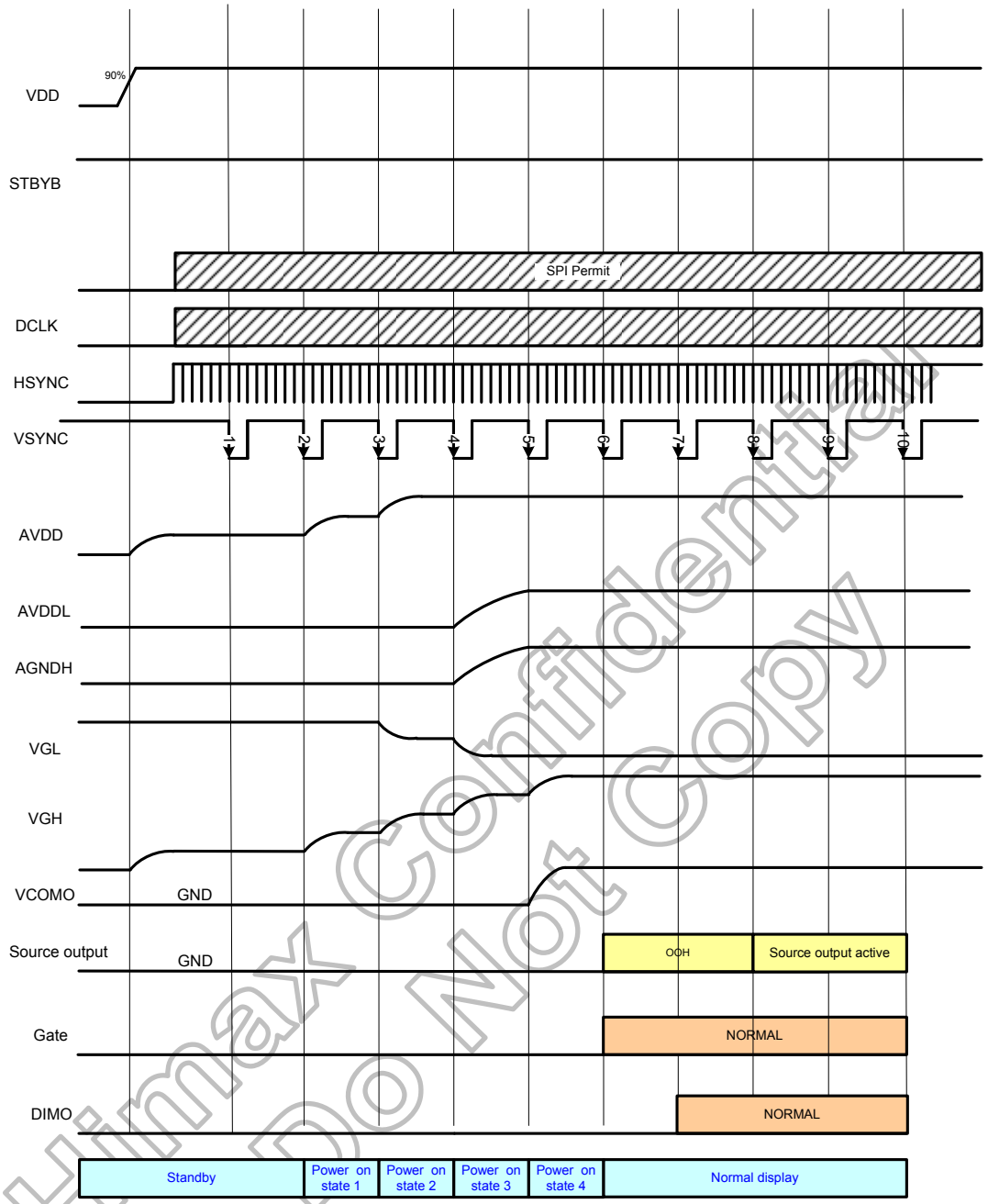
3.1.3. Backlight Driving Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage of white LED backlight	V_L	8.7	9.6	10.5	V
Current for LED backlight	I_L	105	140	175	mA
Luminance (on the module surface ,BM-7)		250	300	-	cd/m^2
LED life time	-	30000	-	-	Hr

3.2. Power Sequence

To prevent the device damage from latch up, the power on/off sequence shown below must be followed.

Power ON: VDD, GND → AVDD, AGND → V1 to V14
Power OFF: V1 to V14 → AVDD, AGND→ VDD, GND



Note: Low level = 3FH, when NBW=L (Normally white)
Low level = 00H, when NBW=H (Normally black)

Figure 8.1: Power on/off Timing Sequence

3.3. Timing Characteristics

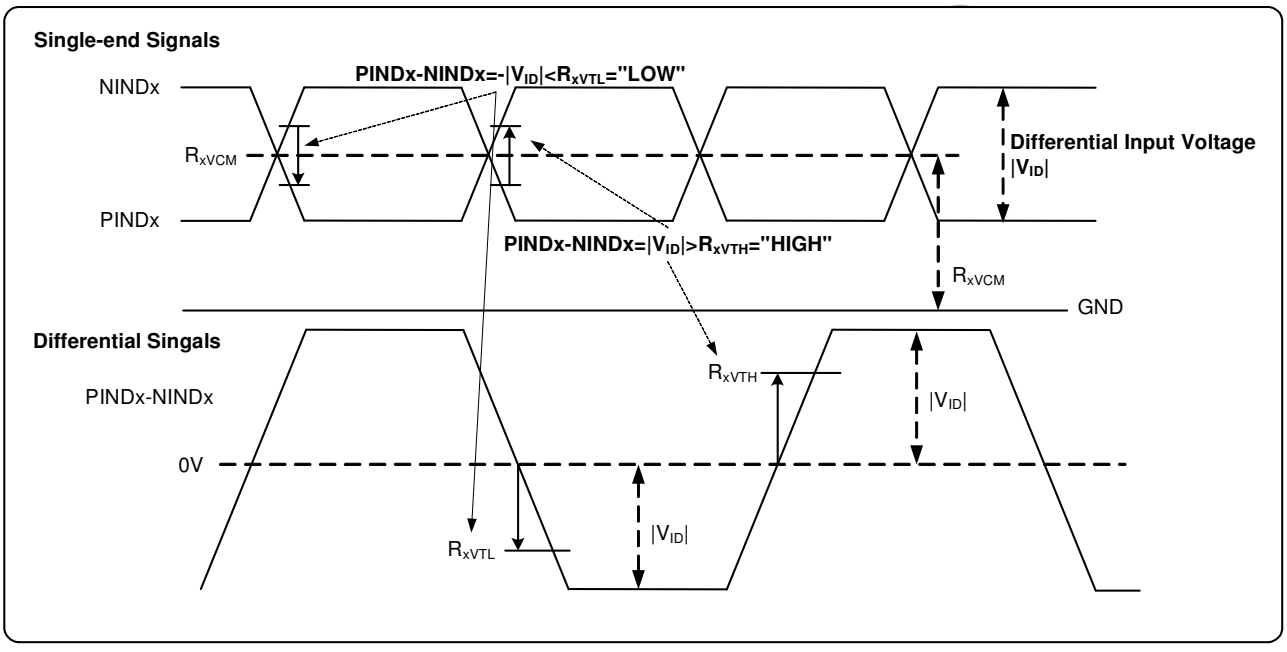
3.3.1. AC Electrical Characteristics

(TA = -20 to 70°C, VDD = 2.3 to 3.6V, AVDD = 8 to 13.5V, GND = AGND = 0V)

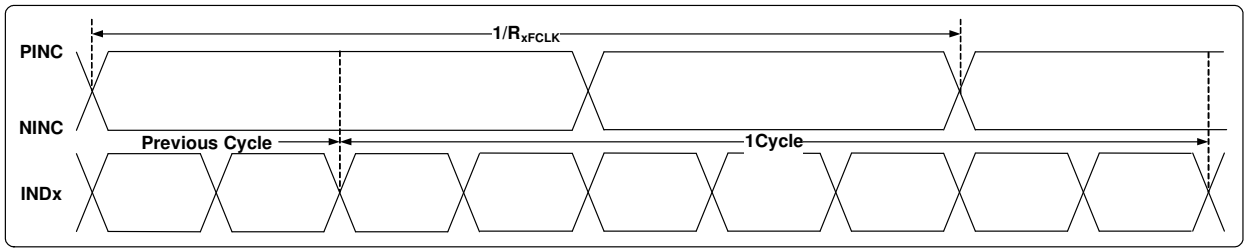
Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Clock frequency	R_{XFCLK}	20	-	71	MHz	-
Input data skew margin	T_{RSKM}	500	-	-	pS	$\|V_{ID}\|$=400mV R_{XVCM}=1.2V R_{XFCLK}=71MHz
Clock high time	T_{LVCH}	-	4/(7* R_{XFCLK})	-	ns	-
Clock low time	T_{LVCL}	-	3/(7* R_{XFCLK})	-	ns	-
PLL wake-up time	T_{emPLL}	-	-	150	µs	-

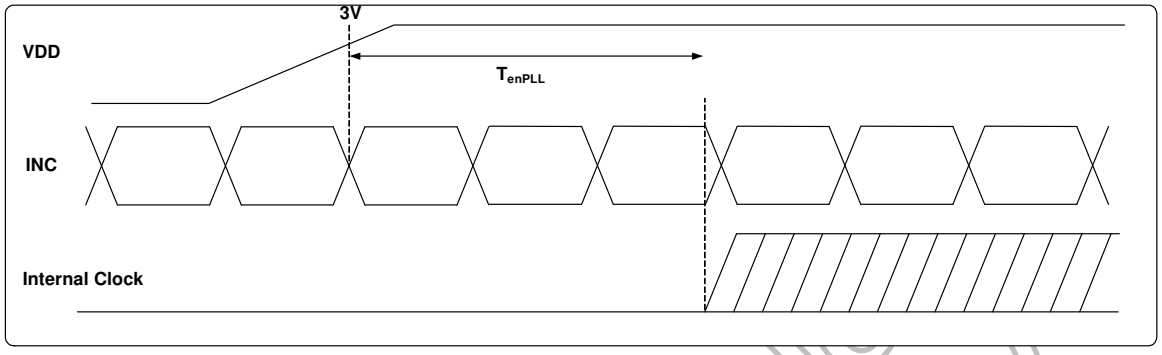
3.3.2. DC Electrical Characteristics

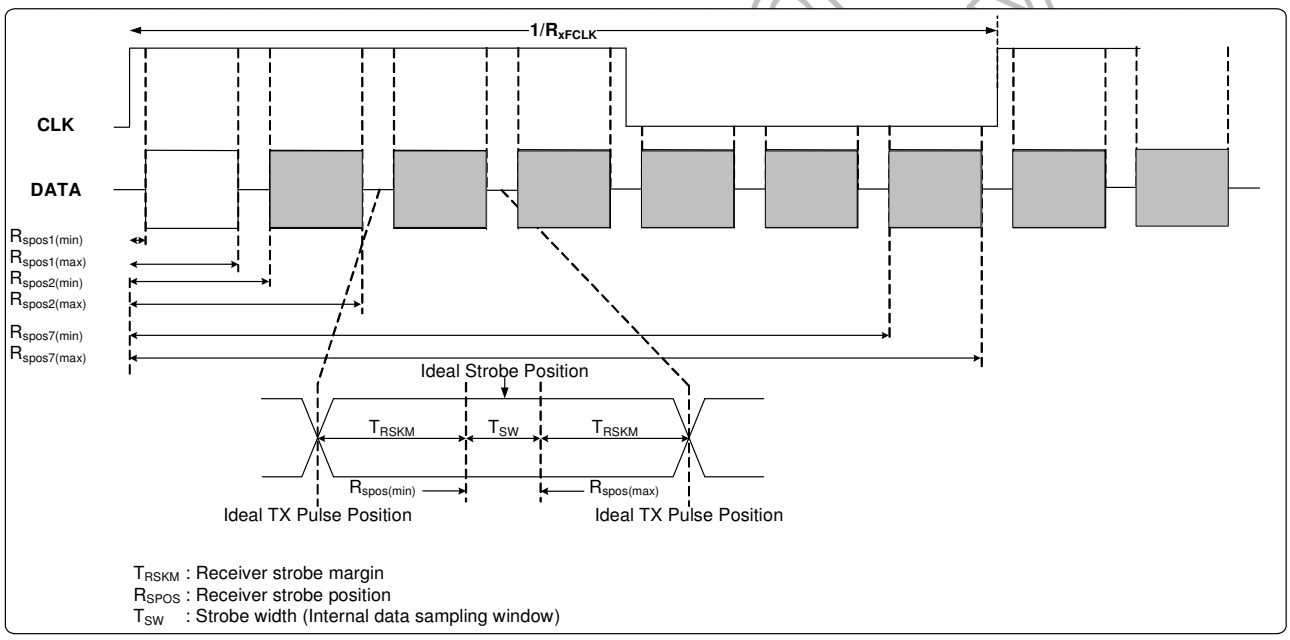
Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Differential input high Threshold voltage	R_{XVTH}	-	-	+0.1	V	R_{XVCM}=1.2V
Differential input low threshold voltage	R_{XVTL}	-0.1	-	-	V	
Input voltage range (singled-end)	R_{XVIN}	0	-	VDD-1.2+ $\|V_{ID}\|/2$	V	-
Differential input common Mode voltage	R_{XVCM}	$\|V_{ID}\|/2$	-	VDD-1.2	V	-
Differential input voltage	$\|V_{ID}\|$	0.2	-	0.6	V	-
Differential input leakage Current	RV_{Xliz}	-10	-	+10	µA	-
LVDS Digital Operating Current	Iddlvds	-	15(TBD)	30(TBD)	mA	Fclk=65MHz, VDD=3.3V
LVDS Digital Stand-by Current	Istlvds	-	10(TBD)	50(TBD)	µA	Clock & all Functions are stopped



3.3.3 Timing

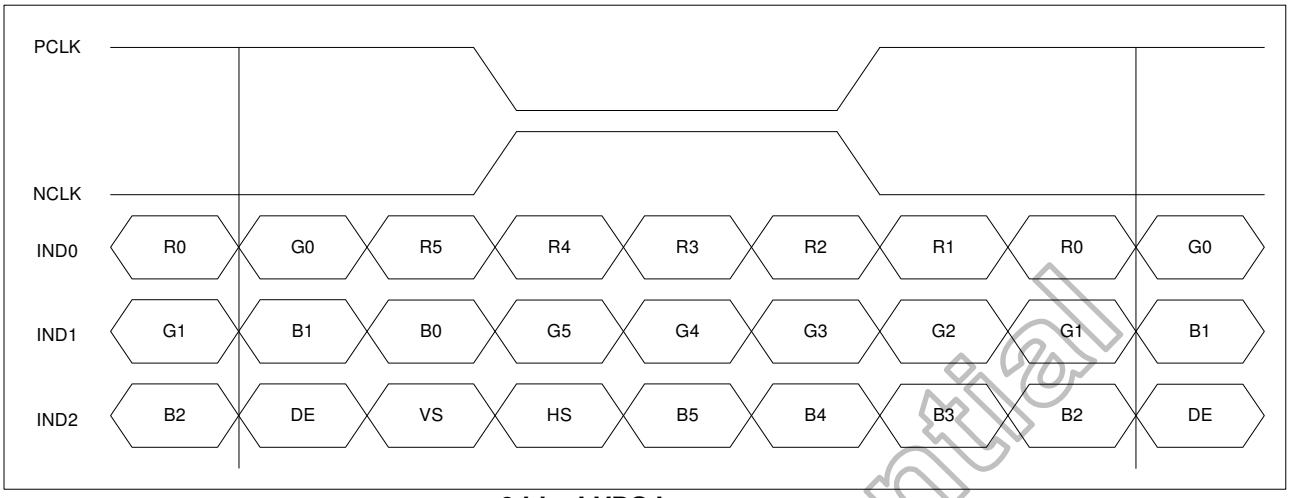




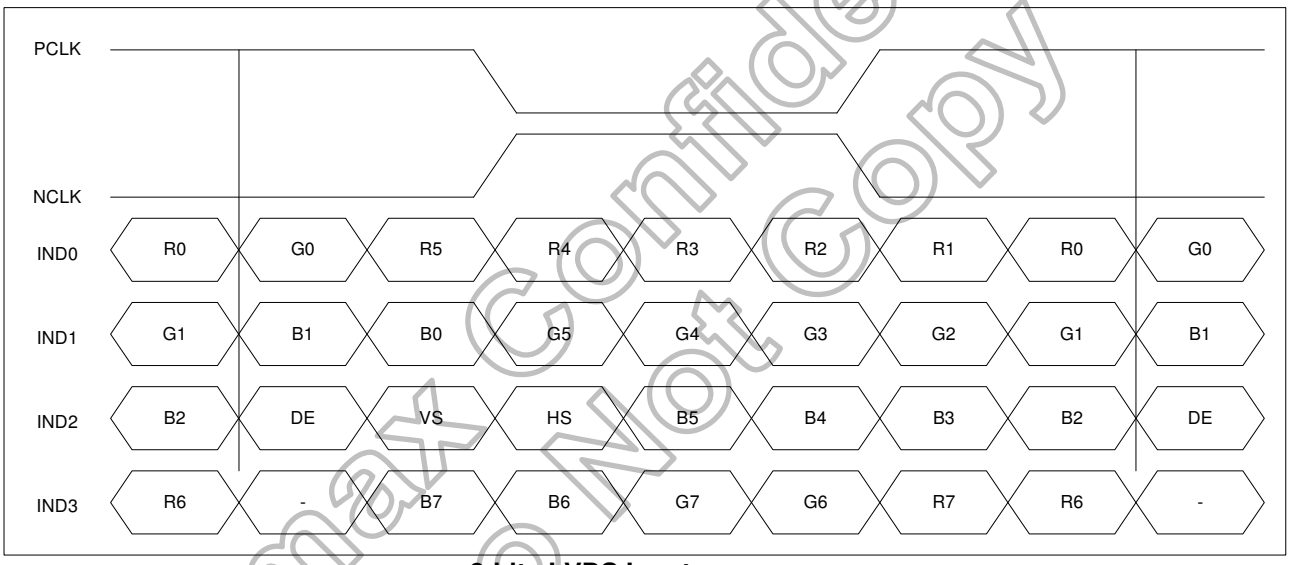


Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Modulation Frequency	SSC_{MF}	23	-	93	KHz	-
Modulation Rate	SSC_{MR}	-	-	±3	%	LVDS clock =71MHz center spread

3.3.4 Date Input Format



6-bits LVDS Input



8-bits LVDS Input

4. Optical Specifications

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Viewing Angle		θT	CR≥10	80	85	-	degree	-
		θB		80	85	-		
		θL		80	85	-		
		θR		80	85	-		
Contrast Ratio		CR	Θ=0°	600	800	-	-	-
Response Time		Ton	25℃	-	10	15	ms	-
		Toff		-	15	25	ms	-
Chromaticity	White	X	Backlight is on	0.265	0.295	0.325	-	-
		Y		0.315	0.345	0.375		
Luminance (center)		L		250	300	-	cd/m2	-
Luminance Uniformity		ΔL		75	80	-	%	-

Test Condition:

1、VDD=3.3V, IL=140mA(Backlight current)，the ambient temperature is 25℃.

5. Reliability Test Items

Item	Test Conditions	Remark
High Temperature Storage	Ta=70℃ 120h	Note1 ,Note4
Low Temperature Storage	Ta=-20℃ 120h	Note1, Note4
High Temperature Operation	Ts=60℃ 120h	Note2 ,Note4
Low Temperature Operation	Ts=-10℃ 120h	Note4
Operation at High Temperature and Humidity	+60℃,90%RH 120h	Note4
Thermal Shock	-20℃/30min~+70℃/30min for a total 100 cycles，Start with cold temperature and end with high temperature	
Package Drop Test	Height 60cm 1corner ， 3edges ， 6surfaces	
Elector Static Discharge	±2KV,Human Body Mode，150pF/330Ω	

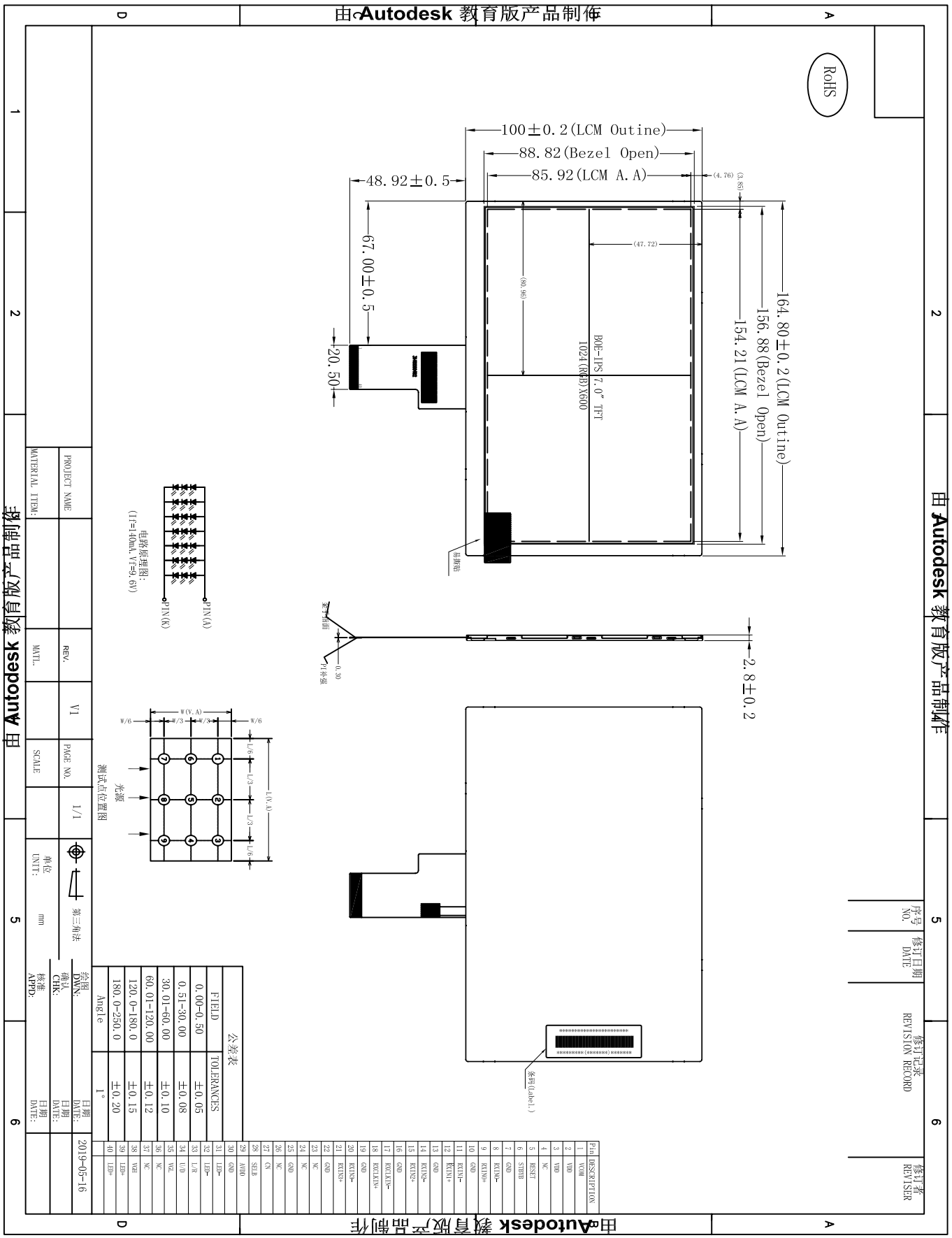
Note1:Ta is the ambient temperature of samples.

Note2: Ts is the temperature of panel's surfaces.

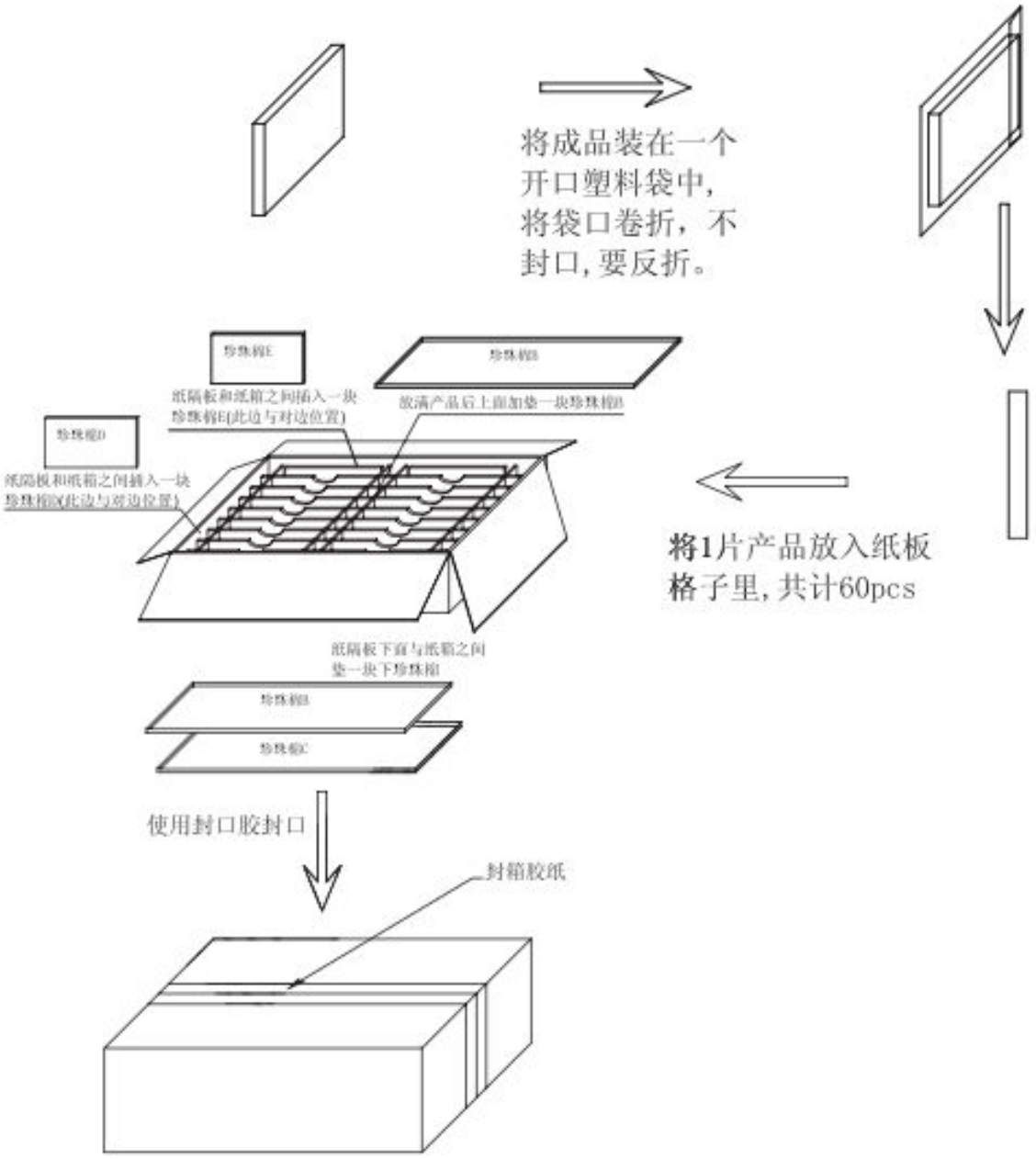
Note3: In the standard condition,there shall be no practical problem that may affect the display function.After the reliability test ,the product only guarantees operation,but don't guarantee all of the cosmetic specification.

Note4: before cosmetic and function test,the product must have enough recovery time,at least 2 hours at room temperature.

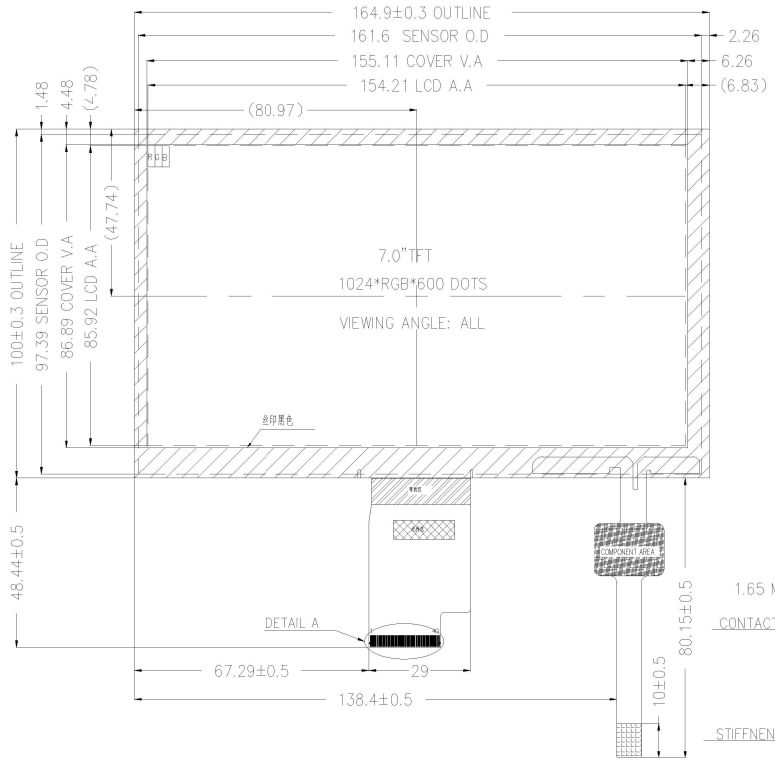
6. Mechanical Drawing

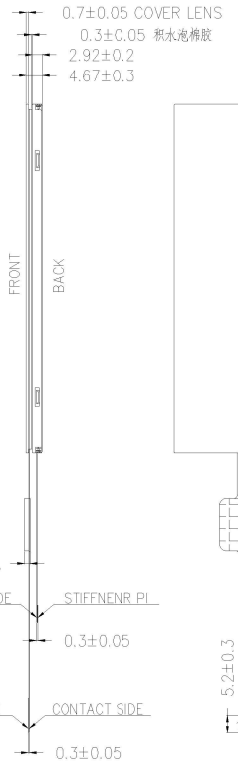


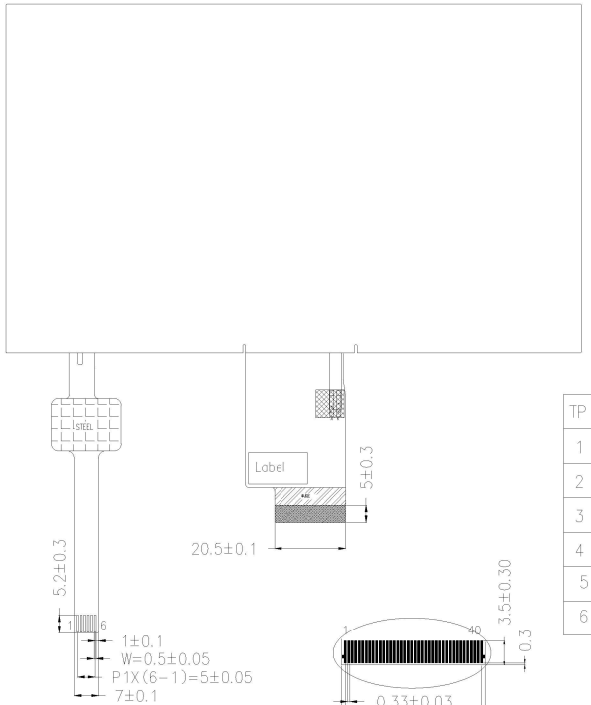
7. Package Drawing

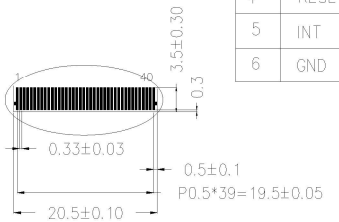


REVISE	Revision note	DATE	NAME
V0	First	2019.01.09	Wuliyan









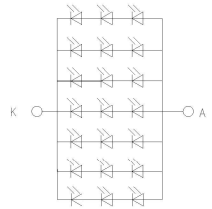
PIN FUCTION	
PIN	SYMBOL
1	VCOM
2	VDD
3	VDD
4	NC
5	RESET
6	STBYB
7	GND
8	RXIN0−
9	RXIN0+
10	GND
11	RXIN1−
12	RXIN1+
13	GND
14	RXIN2−
15	RXIN2+
16	GND
17	RXCLKIN−
18	RXCLKIN+
19	GND
20	RXIN3−
21	RXIN3+
22	GND
23	NC
24	NC
25	GND
26	NC
27	NC
28	SELB (HSD)
29	AVDD
30	GND
31	LED−
32	LED−
33	L/R
34	U/D
35	VGL
36	NC
37	NC
38	VGH
39	LED+
40	LED+

TP PIN NAME	
1	SCL
2	SDA
3	VDD
4	RESET
5	INT
6	GND

NOTES:

1. DISPLAY TYPE: 7.0"TFT,NORMALLY BLACK
2. VIEWING DIRECTION : U/L/D/R 80/80/80/80
3. TFT Driver IC :HX8282A11/HX8696A
4. CYP Driver IC : FT5426
5. Top : −20℃ ~ 70℃, Tst : −30℃ ~ 80℃
6. GENERAL TOLERANCE: ±0.2
7. LCM Luminance: 220cd/m^2 (Typical)

LED CIRCUIT DIAGRAM:



3*7=21EA If=140mA

Approved By	
Checked By	
Drawn By	Wuliyan
UNIT: mm	

InterElcom

IE-A-1819CH02-C0-1

SIZE: TFT LCD 7.0"

DWARING_NO.:

CUSTOMER_NO.