Specification Sheet

Model No. : HXJ028F0003

Description : 2.80 inch 240x 320 Pixel Resolution, MCU 8080Interface TN Panel Type TFT LCD Module ,W/O Touch Panel.

Rev No	Date	Description
V0	2017-6-28	

CONTENTS

1. General Specifications

No.	Item	Specification	Unit	Remark
1	LCD Size	2.8	inch	-
2	Panel Type	TN	-	-
3	Resolution	240RGBx320	Pixel	-
4	Display Mode	Normally White	-	-
5	Number of Colors	262K	-	-
6	Viewing Direction	12 O clock	-	Note1
7	NTSC	55%	-	Typ.
8	Contrast Ratio	500	-	
9	Luminance	250	cd/m2	Typ.
10	Module Size	50(H)x69.2(V)x2.45(D)	mm	Note1
11	Panel Active Area	43.2x57.6	mm	Note1
12	Pixel Pitch	0.06x0.18	mm	-
13	Pixel Arrangement	RGB		-
14	Weight	TBD	g	-
15	Driver IC	ST7796S	-	-
16	Driver IC RAM Size	1382400	bit	-
17	Light Source	4-LED light	-	-
18	Interface	MCU 8080	-	-
19	Operating Temperature	-20~+70		-
20	Storage Temperature	-30~+80		-

Note 1: Please refer to the mechanical drawing

2. Pin Assignments

Pin No. Pin	Symbol	Function
1-4	DB0-DB3	DATA BUS
5	GND	Ground
6	IOVCC(1.8V)	I/O Circuit Power Supply I/O
7	CS	Chip select pin
8	RS	Register select signal. 0:index register; 1:data register
9	WR	
10	RD	
11	NC	
12-15	TP interface	
16	LEDA	Backlight anode
17-20	LEDK	Backlight cathode
21	NC	
22	DB4	DATA BUS
23-30	DB8-DB15	DATA BUS
31	RESET	Chip reset signal
32	VCC(2.8V)	Analog Power Supply for LCM2.8V 2.8V
33	IOVCC(1.8V)	I/O Circuit Power Supply I/O
34	GND	Ground
35-37	DB5-DB7	DATA BUS

3. Electrical Specification

3.1 Absolute Maximum Ratings

Item	Symbol	Value	Unit	Remark
Analog Power Supply Voltage	VCI	-0.3~+6	V	-
Digital Power Supply Voltage	VDD	-0.3~+6	V	-
I/O Power Supply Voltage I/O	IOVCC	-0.3~4.5	V	-

3.2 Typical Operation Conditions

Item	Symbol	Min.	Typ.	Max.	Unit
Analog Supply Voltage	VCI	2.7	2.8	2.9	V
Digital Supply Voltage	VDD	2.7	2.8	2.9	V
I/O Supply Voltage	IOVCC	1.65	1.8/2.8	3.3	V
Input High Voltage	V_{IH}	0.8*IOVCC	-	IOVCC	V
Input Low Voltage	V_{IL}	0	-	0.2*IOVCC	V
Output High Voltage	V_{OH}	0.8*IOVCC	-	-	V
Output Low Voltage	V_{OL}	-	-	0.2*IOVCC	V

3.3 Backlight Circuit Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit
LED Current	I_B	80		-	mA
LED Voltage	Vf	3.3			V
Power Consumption	P_{BL}	-		-	mW

3.4 LCD Current Consumption

Item	Symbol	Typ.	Max.	Unit
Full Mode	VCI	-	-	mA
VCI=2.8VIOVCC=2.8V Interface TN Type=>All Black Pattern. TN=> IPS Type=>All White Pattern. IPS=> Temperature2525				
Sleep Mode	VCI	-	-	uA

VCI=2.8VIOVCC=2.8V
DC/DC converter is enabled. Internal oscillator is started and panel scanning is started.
IC
Temperature2525

4. Optical Specification

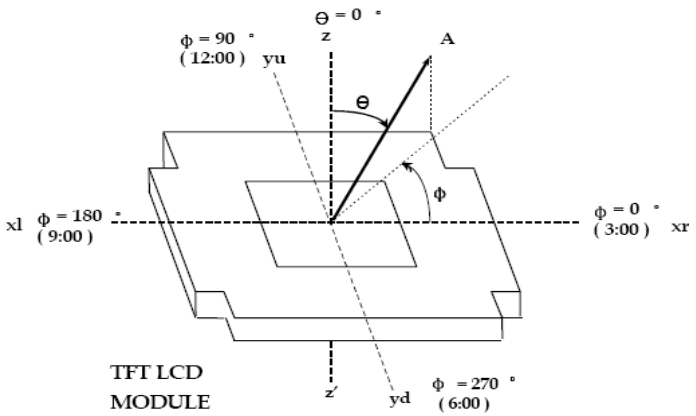
4.1 LCM Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle Range	Left	L	CR10	-	45	-	degree
	Right	R		-	45	-	
	Top	T		-	50	-	
	Bottom	B		-	20	-	
Response Time		Ton+Toff	==0	-	16		ms
Contrast Ratio		CR	==0	-	500	-	-
Luminance		L	==0	-	250	-	cd/m^2
Color Chromaticity (CIE1931)	White	W_x	Normal ==0	-	0.301	-	-
		W_y		-	0.337	-	
	Red	R_x		-	0.621	-	
		R_y		-	0.332-	-	
	Green	G_x		-	0.294	-	
		G_y		-	0.577	-	

	Blue	B_x		-	0.141	-	
		B_y		-	0.157	-	
Uniformity		U_L	==0	80	-	-	%
Flicker		-	-	No Visible			-

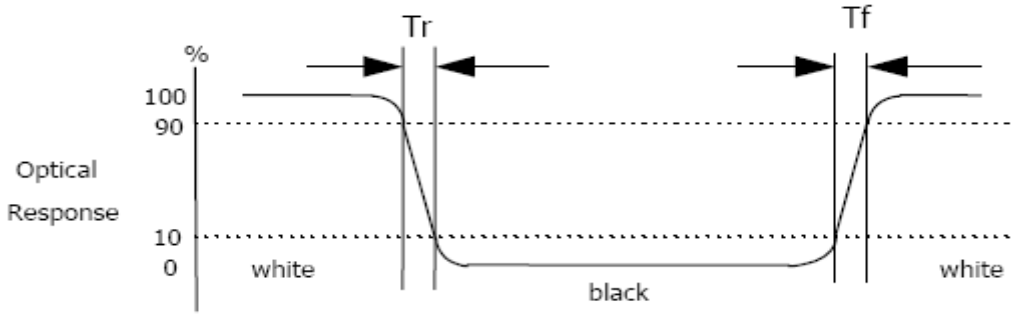
4.2 Measurement system

4.2.1 LCM Viewing Angle



Viewing angle is the angle at which the contrast ratio is greater than 10.The angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to the LCD surface.

4.2.2 Response time



Response time is the time required for the display to transition from white to black (Rising time, Tr) and from black to white (Falling time, Tf) for additional information.

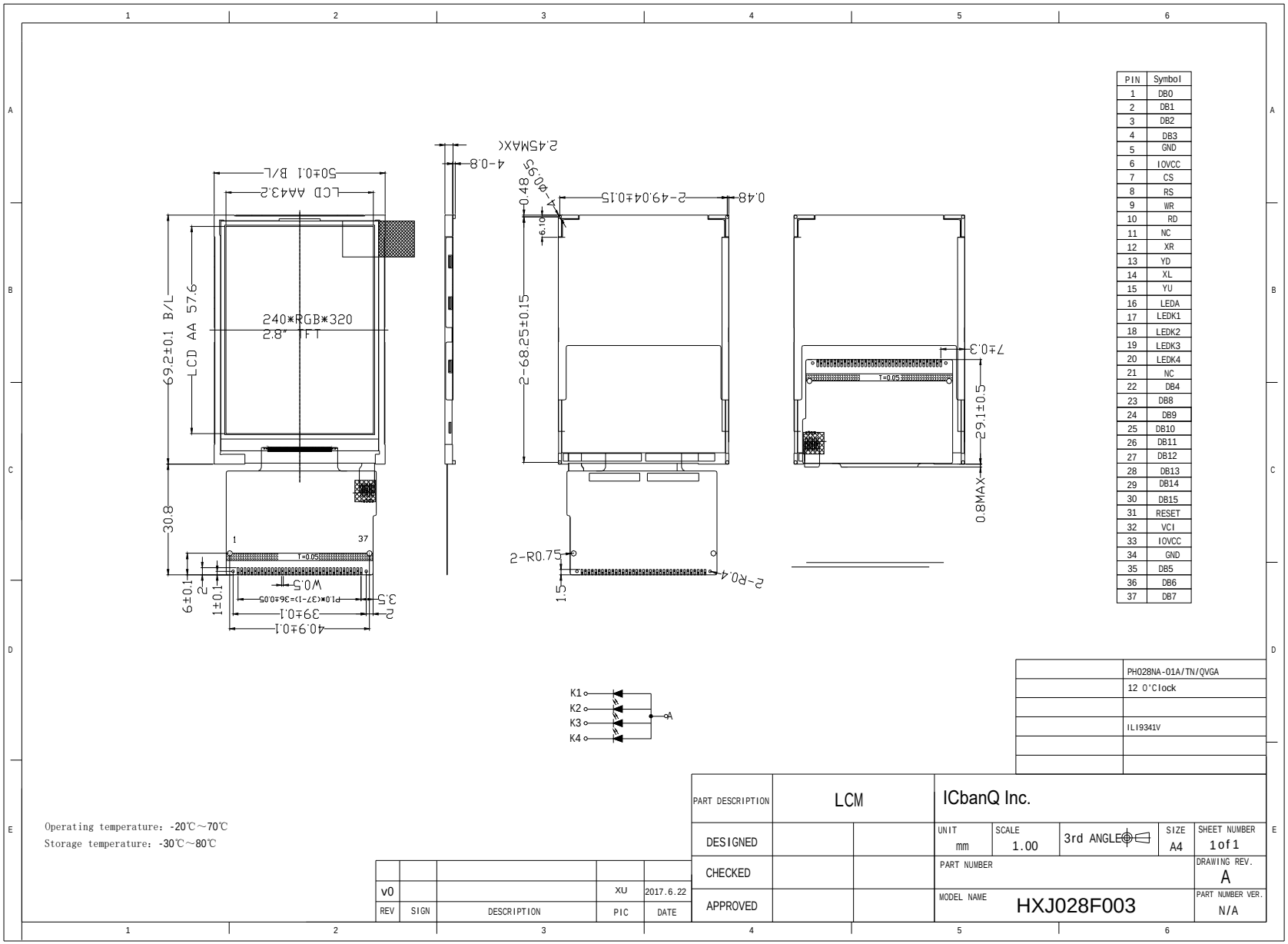
4.2.3 Contrast Ratio (CR)

Contrast Ratio (CR) is defined mathematically as:

$$\text{Contrast Ratio} = \frac{\text{Surface Luminance with all white pixels}}{\text{Surface Luminance with all black pixels}}$$

Surface luminance is the center point across the LCD surface 500mm from the surface with all pixels displaying white.

5. Mechanical Drawing



PIN	Symbol
1	DB0
2	DB1
3	DB2
4	DB3
5	GND
6	IOVCC
7	CS
8	RS
9	WR
10	RD
11	NC
12	XR
13	YD
14	XL
15	YU
16	LEDA
17	LEDK1
18	LEDK2
19	LEDK3
20	LEDK4
21	NC
22	DB4
23	DB8
24	DB9
25	DB10
26	DB11
27	DB12
28	DB13
29	DB14
30	DB15
31	RESET
32	VCI
33	IOVCC
34	GND
35	DB5
36	DB6
37	DB7

	PH028NA-01A/TN/QVGA
	12 O'Clock
	ILI9341V

Operating temperature: -20℃～70℃
Storage temperature: -30℃～80℃

REV	SIGN	DESCRIPTION	PIC	DATE
v0			XU	2017.6.22

PART DESCRIPTION	LCM		ICbanQ Inc.		
DESIGNED			UNIT mm	SCALE 1.00	3rd ANGLE / SIZE A4 / SHEET NUMBER 1of1
CHECKED			PART NUMBER		DRAWING REV. A
APPROVED			MODEL NAME HXJ028F003		PART NUMBER VER. N/A

6. Reliability Test Items

Test Item	Test Condition	Test result determinant gist
High temperature storage	80324H	Inspection after 2~4hours storage at room temperature, the sample shall be free from defects: ,LCD 2~4 1.Air bubble in the LCD; 2.Non-display; 3.Glass crack; 4. The electrical characteristics requirements shall be satisfied.
Low temperature storage	-30324H	
High temperature operation	70324H	
Low temperature operation	-20324H	
High temperature /humidity	603,90%3%RH24H	
Thermal Shock	-30/0.5h~+80/0.5h for a total 24 cycles	
Vibration Test	Frequency 10Hz~55Hz~10Hz Amplitude 1.5mm, XYZ direction for total 1H (Packing condition)	
ESD test	2KV, Human Body Mode, 150pF/330 8KV, Air Mode, 150pF/330	

Remark:

1. The test samples should be applied to only one test item.

2. Sample size for each test item is 2pcs.

3. Failure Judgment Criterion: Basic Specification, Electrical Characteristic, Mechanical Characteristic, Optical Characteristic.

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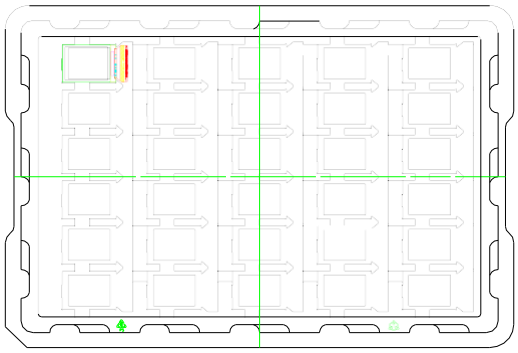
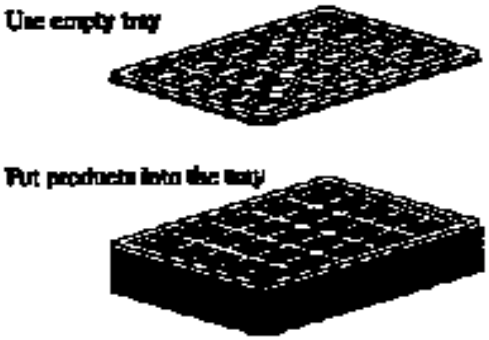
7. Packing and Storage Specification(Reference Only)

7.1 acking Method

(1)



(2)



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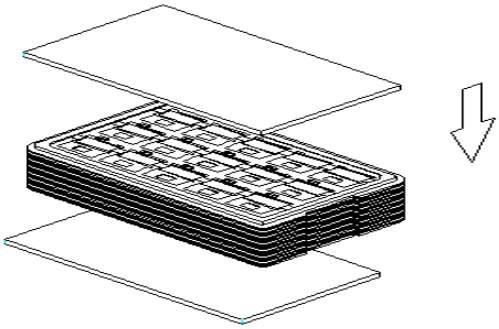

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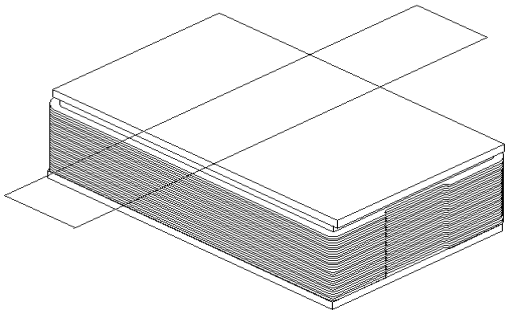

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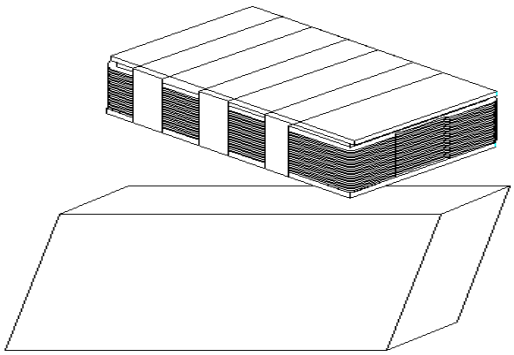

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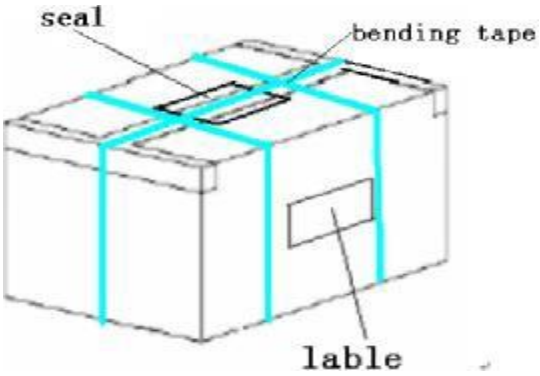

1. Put module into tray cavity. .

2. Tray stacking. .

3. Put 1 foam under the tray stack and 1 foam above. .

4. Fix the cardboard to the tray stack with adhesive tape. .

5. Put the tray stack into carton. .

6. Carton sealing with adhesive tape. .

7.2 Storage Method

1.Store in an ambient temperature of 23C5C, and in a relative humidity of 55% 15%.

Don't exceed 12 months and expose to sunlight or fluorescent light. 235C 55%15% 12

2. Store in a clean environment, free from dust, active gas, and solvent.

3. Store in antistatic container.

8. Announcements

1.Do not attempt to disassemble or process the LCD module.

2.Do not make extra holes on the printed circuit board, modify its shape or change the positions of components to be attached

3.Except for soldering the interface, do not make any alterations or modifications with a soldering iron; Ensure welding temperature at 320 C to 350 C, the welding time

control within the 10 s, welding note don't stay too long in the same place to avoid scald FPC.

320C-350C 10S

FPC

4. Other matters in not clear before use, please contact our staff to guide.

-END-