






SPECIFICATIONS

CUSTOMER : _____
MODEL NO. : **GFR240064E-BNFE**
VERSION : **D**
DATE : **2023.02.21**
CERTIFICATION : **ROHS**

Customer Sign	Approved By	Prepared By	Prepared By
			

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Revision Record

Data(y/m/d)	Ver.	Description	page
2013.11.06	A	Specification released	
2017.08.11	B	修改公司抬頭、格式統一	
2018.02.12	C	1.圖面公司抬頭及厚度公差修正 2.增加 NOTES 及檢驗標準	
2023.02.21	D	更新公司抬頭認證圖示	



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Appendix : Inspection Standard



1. FEATURES

1.1 FEATURES (GRAPHIC LCD Control Board built in Traditional Font)

- Data can be displayed on 30 columns x 4 lines by 8x16 dot matrix alphanumeric or 15 columns x 4 lines by Chinese character.
- Back Light Diming control & LCD contrast control
- Provide String mode command sets.
- Provide an interface based on RS-232, and RS-232 baud rate mode support 115200, 38400, 19200,9600
- Build in Traditional font(Big 5 encode).
- 1.6 Graphic mode control.

2. GENERAL SPECIFICATIONS

2.1 GENERAL SPECIFICATION

Item		Descriptions
Display method		Liquid crystal display
LCD type		STN Blue mode
Backlight mode		LED backlight
Brightness		25~30 cd/m ²
Display color		Blue (back color) and White (character color)
Number of character		30 columns x 4 lines 30 columns x 3 lines
Character font		8 x 16 dot matrix by alphanumeric 16 x 16 dot matrix by Chinese character
Language	SD-240B0	6500 Traditional Chinese font (Big5 code)
	SD-240B2	Europe standard
Character size		8.47mm x 4.24mm(16x8 dot matrix) 8.47mm x 8.47mm(16x16 dot matrix)
Power supply		12VDC
Panel dimensions		180 (W) x 65 (H) x 11.7 (D) mm
Total dimensions		200 (W) x 70 (H) x 28.8 (D) mm
Operating temperature		-20 ~ +70°C
Storage Temperature		-30 ~ + 80°C



3.PCB Connector:

Connector U4 LCM

No	Signal	No	Signal
1	NC	11	DB0
2	VSS	12	DB1
3	DC 5V+	13	DB2
4	VO	14	DB3
5	/WR	15	DB4
6	/RD	16	DB5
7	/CE	17	DB6
8	C/D	18	DB7
9	Backlight	19	FS
10	/RST	20	VEE

Connector J1 USB

No	Signal
1	USB VDD 5V
2	USB D-
3	USB D+
4	GND

Connector JP3

No	Signal	No	Signal
1	NC	6	RS232 DTR
2	DC 12V	7	RS232 DSR
3	DC12V	8	RS232 TX (Transmit data)
4	GND	9	RS232 RX (Receiver data)
5	GND	10	NC

Connector JP4 RS-232

No	Signal	Direction	Function description
1	DC 12V		
2	DC 5V OUTPUT		
3	RS232 TX	LCM to PC	Transmit data
4	RS232 RX	PC to LCM	Receiver data
5	GND		Signal ground



Connector JP5 Keypad

No	Signal
1	GND
2	NC
3	DOWN(active low)
4	UP(active low)

4. DIP SWITCH SETTING

4.1 BAUD RATE SELECTION

SW1	SW2	Baud rate (bps)
ON	ON	115200
OFF	ON	38400
ON	OFF	19200
OFF	OFF	9600

4.2 COMMAND TYPE SELECTION

SW3	Command type
ON	GF240C MODE
OFF	ESC/POS MODE

4.3 LOGO PATTERN SELECTION

SW4	SW5	Logo type
ON	ON	Bitmap 0
OFF	ON	Bitmap 1
ON	OFF	None (space)
OFF	OFF	No use

4.4 LANGUAGE SELECTION

SW6	Language type
ON	PC850
OFF	PC437

4.5 INITIAL MODE

SW8	MODE
ON	By Software OSD
OFF	By DIP SWITCH

Noted: Press JP5 Up key low then Power On will enter Software OSD mode
It will set the operation mode by software.



5. COMMAND LIST FOR GF24064TC

5.1.1 Esc/pos Command List

Command	Code (hex)	Function description
ESC_n	1B 5F n n=1,0	Select/cancel display cursor.
HT	09	Move cursor right.
BS	08	Move cursor left.
US LF	1F 0A	Move cursor up.
LF	0A	Move cursor down.
ESC [C	1B 5B 43	Move cursor right.
ESC [D	1B 5B 44	Move cursor left.
ESC [A	1B 5B 41	Move cursor up.
ESC [B	1B 5B 42	Move cursor down.
HOM	0B	Move cursor to home position.
US CR	1F 0D	Move cursor to right-most
CR	0D	Move cursor to left-most position.
US B	1F 42	Move cursor to bottom position.
ESC [H	1B 5B 48	Move cursor to home position.
ESC [R	1B 5B 52	Move cursor to right-most
ESC [L	1B 5B 4C	Move cursor to left-most position.
ESC [K	1B 5B 4B	Move cursor to bottom position.
US \$ x y	1F 24 x y 1<x<30,1<y<4	Move cursor to specified position.
ESC I x y	1F 6C x y 1<x<30,1<y<4	Move cursor to specified position.
CLR	0C	Clear display screen.
ESC @	1B 40	Initialize display.
US r n	1F 72 n n=1,0	Select/cancel reverse character.
US T h m	1F 54 h m 0<=h<=17	Set time h=hour ,m=minute
US U	1F 55	Display time continuously
SO	0E	Set double-width character mode .
DC4	14	Cancel double-width



5.1.2 Esc/pos Extra command:

GS q A	1D 71 41 [datax30]	Show string data 30 bytes to display
GS q B	1D 71 42 [datax30]	Show string data 30 bytes to display
GS q C	1D 71 43 [datax30]	Show string data 30 bytes to display
GS q D	1D 71 44 [datax30]	Show string data 30 bytes to display
GS q E	1D 71 45 [datax30]	Show double-height string data 30
GS q F	1D 71 46 [datax30]	Show double-height string data 30
GS r A	1D 72 41 [datax46] 0D	Marquee on line 1.
GS r B	1D 72 42 [datax46] 0D	Marquee on line 2.
GS r C	1D 72 43 [datax46] 0D	Marquee on line 3.
GS r D	1D 72 44 [datax46] 0D	Marquee on line 4.
GS r E	1D 72 45 [datax46] 0D	Double-width marquee on line 1 and
GS r F	1D 72 46 [datax46] 0D	Double-width marquee on line 3 and
ESC s	1B 73	Store the use define pattern

5.2.1 GF240C Standard Mode Command List

Command	Code (hex)	Name and description
ESC q A	1B 71 41 [datax30]	Show string data 30 bytes to
ESC q B	1B 71 42 [datax30]	Show string data 30 bytes to
ESC q C	1B 71 43 [datax30]	Show string data 30 bytes to
ESC q D	1B 71 44 [datax30]	Show string data 30 bytes to
ESC q E	1B 71 45 [datax30]	Show double-height string data 30
ESC q F	1B 71 46 [datax30]	Show double-height string data 30
ESC q G	1B 71 47 [datax46]	Marquee on line 1.
ESC q H	1B 71 48 [datax46]	Marquee on line 2.
ESC q I	1B 71 49 [datax46]	Marquee on line 3.
ESC q J	1B 71 4A [datax46]	Marquee on line 4.
ESC q K	1B 71 4B [datax46]	Double-width marquee on line 1
ESC q L	1B 71 4C [datax46]	Double-width marquee on line 3



US	1F	Clear display screen.
FF	0C	Clear display screen.
SO	0E	Set double-width character
DC4	14	Cancel double-width
ESC s	1B 73	Store the use define pattern
ESC q t	1B 71 74 h m 0<=h<=17	Set time h=hour ,m=minute.

5.2.2 GF240C Mode Extra Command List

Command	Code (hex)	Name and description
ESC q A	1B 51 41 [datax30] 0D	Show string data 30 bytes
ESC q B	1B 51 42 [datax30] 0D	Show string data 30 bytes
ESC q C	1B 51 43 [datax30] 0D	Show string data 30 bytes
ESC u A	1B 75 41 [datax30] 0D	Show string data 30 bytes
ESC u B	1B 75 42 [datax30] 0D	Show string data 30 bytes
ESC u C	1B 75 43 [datax30] 0D	Show string data 30 bytes
ESC u D	1B 75 44 [datax46] 0D	Marquee on line 1.
ESC u J	1B 75 4A [datax46] 0D	Marquee on line 2.
ESC u K	1B 75 4B [datax46] 0D	Marquee on line 3.
CLR	0C	Clear display screen.
US T h m	1B 75 45 h m 0<=h<=17 , 0<=m<=3b	Set time h=hour ,m=minute



5.3 Append Command List(Both support GF240C & Esc/pos MODE)

5.3.1. Initialize Screen

Hex : 0x1b 0x20

Dec : 27 32

5.3.2. Clear Screen

Hex : 0x1b 0x21

Dec: 27 33

5.3.3. Clear Screen Area

Hex: 0x1b 0x22 n1(start x) n2(start y) n3(end x) n4 (end y)

Dec: 27 34 n1(start X) n2(Start y) 3 (End x) n4 (End y)

0 <= n1 <= 239

0 <= n2 <= 63

0 <= n3 <= 239

0 <= n4 <= 63

5.3.4. Backlight on & Adjust backlight

Hex :0x1b 0x23 bb(Backlight value (0 - 255)

Dec : 27 35 bb

0 <= bb <= 255,

5.3.5. Backlight off

Hex: 0x1b 0x24

Dex: 27 36

5.3.6. Erase Picture in flash

Hex: 0x1b 0x25 bb(Bmp id)

Dec: 27 37

0 <= bb <= 9,0: Default BITMAP0 , 1: Default BITMAP1, 2- 9:Download picture

5.3.7. Download Picture to EEPROM

A => Hex 0x1b 0x26 n0(bmp id) n1 n2 (bmp size = n1 * 256 + n2)

Dec 27 38 n0 n1 n2

0 <= n0 <= 9,

n1 : Bmp size / 256

2: Bmp Size % 256, bmp size = Bmp file without Bmp header



B => Hex : wait 0x1b 0x30 (ack)

wait 27 48

C => Hex : 0x47 0x4D n0 n1(Bmp width) + n2 (Bmp Height) d1 d2 d3 d4.....dm

Dec : 71 77 n0 n1 n2 d0 d1 d2 d3.....dm

n0: Picture width / 256

n1: Picture width % 256

n2: Picture Height

d0 d1 d2 d3...dm : Picture data, $1 \leq m \leq 128 - 5$,

D => 1.bmp Data is not overflow

Hex : wait 0x1b 0x30 (ack)

Dec : wait 27 48

2. bmp data is overflow

Hex : 0x1b 0x32

Dec : 27 50

E => Hex : d1 d2 d3 dm

Dec : d1 d2 d3 dm

d1 d2 d3 ... dm: Picture data, $1 \leq m \leq 128$

F ==> 1.bmp Data is not overflow

Hex : wait 0x1b 0x30 (ack)

Dec : wait 27 48

2. bmp data is overflow

Hex : 0x1b 0x32

Dec : 27 50

G => Repeat step E,F until send out all bmp data

5.3.8. Show Picture in flash

Hex :0x1b 0x27 n0(start x) n1(start y) n2(bmp id)

Dec :27 39 n0 n1 n2

$0 \leq n0 \leq 239$

$0 \leq n1 \leq 63$

$0 \leq n2 \leq 9$

Start x, Start y is the corner of left top on the screen



5.3.9. Marquee Picture up

Hex : 0x1b 0x28 n0(shift bits) n1(start x) n2(start y) n3(end x) n4(end y)n5(bmp id)

Dec: 27 40 n0 n1 n2 n3 n4 n5

1 <= n0 <= 8

0 <= n1 <= 239

0 <= n2 <= 63

0 <= n3 <= 239

0 <= n4 <= 63

0 <= n5 <= 9

Start x, Start y is the corner of left top on the screen

End x, End y is the corner of right bottom on the screen

5.3.10. Marquee Picture Down

Hex : 0x1b 0x29 n0(shift bits) n1(start x) n2(start y) n3(end x) n4(end y)n5(bmp id)

Dec: 27 41 n0 n1 n2 n3 n4 n5

1 <= n0 <= 8

0 <= n1 <= 239

0 <= n2 <= 63

0 <= n3 <= 239

0 <= n4 <= 63

0 <= n5 <= 9

Start x, Start y is the corner of left top on the screen

End x, End y is the corner of right bottom on the screen

5.3.11. Marquee Picture Left

Hex : 0x1b 0x2A n0(shift bits) n1(start x) n2(start y) n3(end x) n4(end y)n5(bmp id)

Dec: 27 42 n0 n1 n2 n3 n4 n5

1 <= n0 <= 8

0 <= n1 <= 239

0 <= n2 <= 63

0 <= n3 <= 239

0 <= n4 <= 63

0 <= n5 <= 9

Start x, Start y is the corner of left top on the screen

End x, End y is the corner of right bottom on the screen



5.3.12. Marquee Picture Right

Hex : 0x1b 0x2B n0(shift bits) n1(start x) n2(start y) n3(end x) n4(end y)n5(bmp id)

Dec: 27 43 n0 n1 n2 n3 n4 n5

1 <= n0 <= 8

0 <= n1 <= 239

0 <= n2 <= 63

0 <= n3 <= 239

0 <= n4 <= 63

0 <= n5 <= 9

Start x, Start y is the corner of left top on the screen

End x, End y is the corner of right bottom on the screen

5.3.13. Download Picture to screen

Hex :0x1b 0x2C n0(start x) n1(start y) n2(end x) n3(end y) n4 n5(bmp width) n6(bmp height) n7 n8(bmp size) d1 d2

d3dm

Dec : 27 44 n0 n1 n2 n3 n4 n5 n6 n7 n8 d1 d2 d3....dm

0 <= n0 <= 239

0 <= n1 <= 63

0 <= n2 <= 239

0 <= n3 <= 63

n4 : Picture width / 256

n5: Picture width % 256

n6: Picture Height

n7: Bmp size / 256

n8: Bmp size % 256, Bmp size = Bmp file without Bmp header

d1 d2 d3.. dm: Bmp Data (m = n8)



5.3.14. Ask to report status of picture in flash

A => Hex : 0x1b 0x31

Dec : 27 49

B => Get 0x1b 0x31 n0 n1(Bmp status)

Get 27 49 n0 n1

n0=>b0 b1 b2 b3 b4 b5 b6 b7 (8 Bits for status of 8 Bmp Data in flash)

n1=>b8 b9 x x x x x x (2 bits for status of 2 bmp data in flash)

b0..b9 : 0 for Free, 1 for Occupied by Bmp Data

5.3.15. Stop Marquee action

Hex : 0x1b 0x2D

Dec: 27 45

5.3.16. Set Marquee time

Hex: 0x1b 0x2E n0

Dec: 17 46 n0

1 <= n0 <= 250, Delay time: n0 * 4ms

5.3.17. Enter Download routine;

Hex : 0x1b 0x2F 0x44 0x4F 0x57 0x4E

Dec : 27 47 68 79 87 78

5.3.18. Set TEXT MARQUEE TIMER

Hex : 0x1b 0x60 n0

Dec: 27 96 n0

1 <= n0 <= 250, Shift time = n0 * 4 ms

5.3.19. SCREEN SHIFT UP

Hex : 0x1b 0x61 n0(shift bits)

Dec : 27 97

1 <= n0 <= 8

5.3.20. SCREEN SHIFT DOWN

Hex : 0x1b 0x62 n0(shift bits)

Dec : 27 98

1 <= n0 <= 8



5.3.21. SCREEN SHIFT RIGHT

Hex : 0x1b 0x63 n0(shift bits)

Dec : 27 99

1 <= n0 <= 8

5.3.22. SCREEN SHIFT LEFT

Hex : 0x1b 0x64 n0(shift bits)

Dec : 27 100

1 <= n0 <= 8

5.3.23. ENABLE MARQUEE , Redo the marquee action

Hex : 0x1b 0x65

Dec : 27 101

5.3.24. Adjust contrast

Hex : 0x1b 0x88 bb(0<= bb <= 9)

Dec : 27 136



6. FONT TABLE

6.1 ASCII (20H – 7EH) for GF24064TC series

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0	SP	0	@	P	`	p	Chinese character							
1	!	1	A	Q	a	q								
2	"	2	B	R	b	r								
3	#	3	C	S	c	s								
4	\$	4	D	T	d	t								
5	%	5	E	U	e	u								
6	&	6	F	V	f	v								
7	'	7	G	W	g	w								
8	(	8	H	X	h	x							
9	)	9	I	Y	i	y							
A		:	J	Z	j	z								
B	+	;	K	[	k	{							
C	,	<	L	\	l	|								
D	-	=	M	]	m	}							
E	.	>	N	^	n	~								
F	/	?	O	_	o	SP								



6.2 PC-437 (80H – FFH) for GF24064E

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
80H	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
90H	É	æ	Æ	ô	ö	ò	û	ù	ÿ	ö	Ü	ñ	Ñ	ã	õ	ı
A0H	á	í	ô	ú	ç	£	¥	¤	f	i	Ã	£	Õ	õ	Ø	ø
B0H	§	´	·	±	½	¼	×	÷	Dø	dz	«	»	‡	||	-	
C0H	¶	Ð	Ð	Þ	ı	ı	λ	DZ	Ѓ	đ	τ	Nj	ø	°	®	©
D0H	‘	Ö	Υ	Ω	Γ	Д	θ	л	Ξ	Π	Σ	Υ	Φ	Ψ	Ω	α
E0H	β	γ	б	ε	ζ	η	θ	ι	κ	λ	μ	ξ	π	ρ	ς	σ
F0H	τ	ν	φ	×	ψ	ω	ı	ü	ó	ú	ı	φ	-	©	α	σ

NOTE: ASCII 20—7F same as GF24064TC



6.3 PC-850 (80H – FFH) for GF24064E

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
80H	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
90H	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	f
A0H	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	ì	«	»
B0H	§	´	·	±	¸	Á	Â	À	©	Dz	dz	«	»	¢	¥	-
C0H	¶	Ð	ð	Þ	ı	ı	á	Ã	Ѓ	¶	¶	Nj	õ	°	®	¤
D0H	ð	Ð	È	Ë	É	ı	í	î	ï	dz	Ğ	ğ	Hu	ρ	Ñ	ñ
E0H	Ó	β	ô	Ò	ô	õ	μ	ρ	ρ	Ú	Û	Ù	β	Ý	-	´
F0H	-	±	||	¾	¶	§	÷	´	°	”	,	1	3	2	‡	|

NOTE: ASCII 20—7F same as GF24064TC



7. NOTES

▪ Quality warranty period

- Within one year after shipment date. (excluding abnormal usage way and abnormal environments.)

▪ Safety

- If the LCD panel breaks, be careful not to get the liquid crystal in your mouth. If the liquid crystal touches your skin or clothes, wash it off immediately using soap and plenty of water.

Handling

- Avoid static electricity as this can damage the CMOS LSI.
- The LCD panel is plate glass; do not hit or crush it.
- Do not remove the panel or frame from the module.
- The polarizing plate of the display is very fragile; handle it very carefully

Mounting and Design

- Mount the module by using the specified mounting part and holes.
- To protect the module from external pressure, leave a small gap by placing transparent plates (e.g. acrylic or glass) on the display surface, frame, and polarizing plate
- Design the system so that no input signal is given unless the power-supply voltage is applied.
- Keep the module dry. Avoid condensation, otherwise the transparent electrodes may break.

Storage

- Store the module in a dark place where the temperature is $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$ and the humidity below 65% RH.
- Do not store the module near organic solvents or corrosive gases.
- Do not crush, shake, or jolt the module (including accessories).

Cleaning

- Do not wipe the polarizing plate with a dry cloth, as it may scratch the surface.
- Wipe the module gently with soft cloth soaked with a petroleum benzene.
- Do not use ketonic solvents (ketone and acetone) or aromatic solvents (toluene and xylene), as they may damage the polarizing plate.

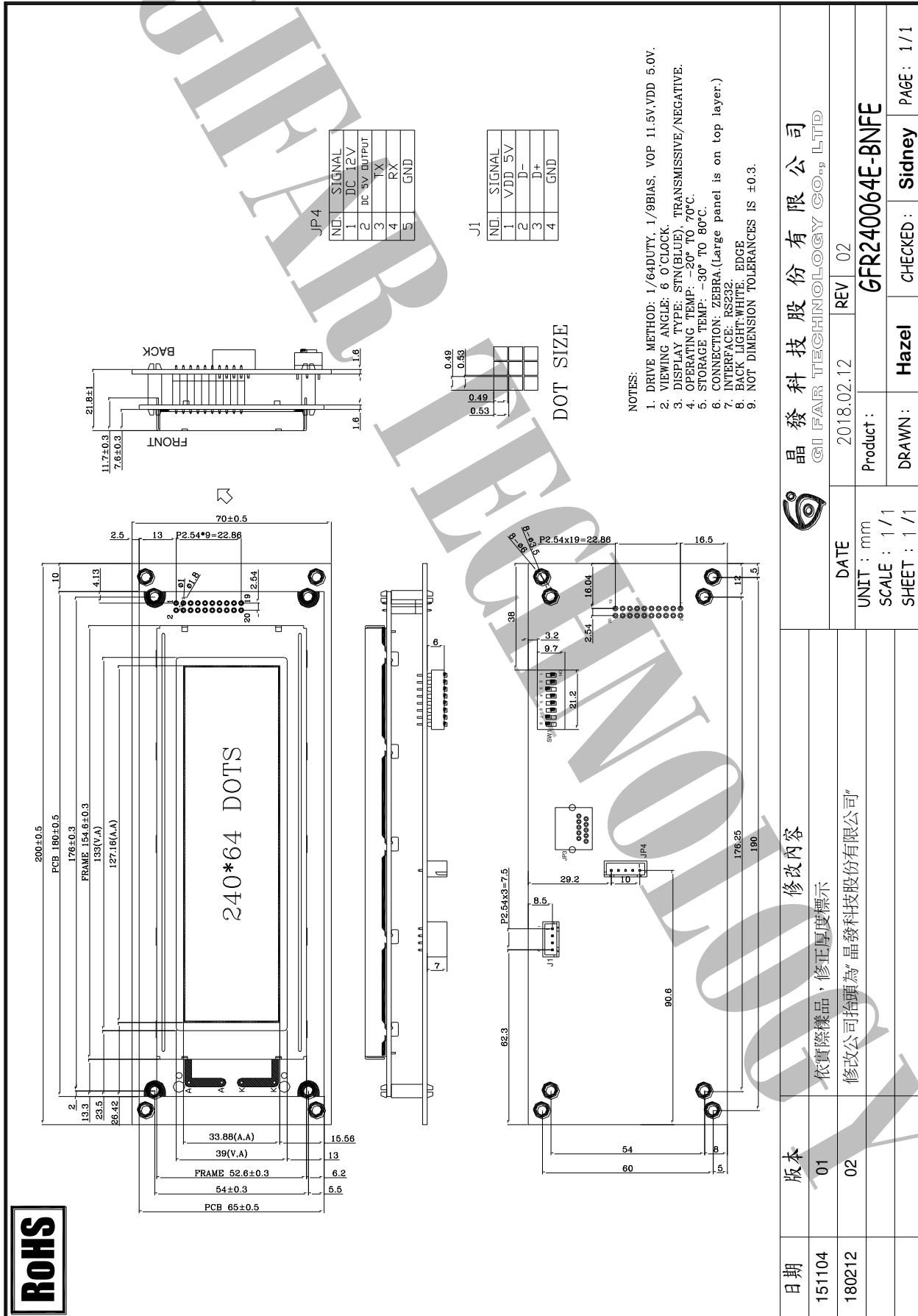
8. OPERATION PRECAUTIONS

Any changes that need to be made in this specification or any problems arising from it will be dealt with quickly by discussion between both companies.

Quality warranty period: Within one year after shipment date (excluding abnormal usage way and abnormal environments.)



9. LCM Dimension



出貨檢驗標準書
Shipping inspection standard

核准 Approved by	審核 Checked by	作成 Made by
ANDY	JACKY	RUBY

1.目的 Purpose :

規範出貨產品之檢驗項目及判斷標準，確保產品出貨能滿足客戶要求。

Standardize the inspection items and judgment standards to ensure the products that shipped out can meet customer's requirements.

2.範圍 Area :

適用於出廠之所有產品。

Applicable to all products shipped from the factory.

3.名詞解釋 Explanation of terms :

3-1 主要缺陷：亦會造成功能缺失或嚴重外觀缺陷。

Major Defects: It also causes loss of function or serious appearance defects.

3-2 次要缺陷：稍有缺陷但不影響客戶使用。

Minor defect: Slightly defective but does not affect customer use.

4.檢驗體制 Inspection system :

4-1 抽樣計劃：依 ANSI/ASQ Z1.4 一般檢驗水準 II 之 正常檢驗一次抽驗方案。

Sampling plan: According to ANSI/ASQ Z1.4 general inspection level II the normal inspection one-time sampling plan.

4-2 允收水準 Acceptable Level : (AQL)

主要缺陷 Major defect : 0.4 %

次要缺陷 Minor defect : 0.65 %

5.檢驗條件 Inspection conditions :

5-1 使用相關之檢測儀器及測試、量測工具。

Use relevant testing instrument, testing and measuring tools .

5-2 環境要求：其條件需控制在常溫下 $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 及溼度 70%RH 以下。

Environmental requirements: The conditions should be controlled at room temperature $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and humidity below 70%RH.

5-3 外觀檢驗：須在 $380\pm 20\%$ LUX 的白色日光燈下，其目視距離需於產品離 30 ± 5 cm 檢驗。

Appearance inspection: Under the white fluorescent lamp of $380\pm 20\%$ LUX , the visual distance shall be checked above the product 30 ± 5 cm.

5-4 電性測試 Electrical Testing :

5-4-1 有背光之產品需關燈並在 $5\sim 300\text{Lux}\pm 3\%$ 下檢驗。

The products with backlight should be tested at $5\sim 300\pm 3\%$ Lux.

5-4-2 無背光之產品需開燈並在 $60\sim 300\text{Lux}\pm 3\%$ 白色日光燈下檢驗。

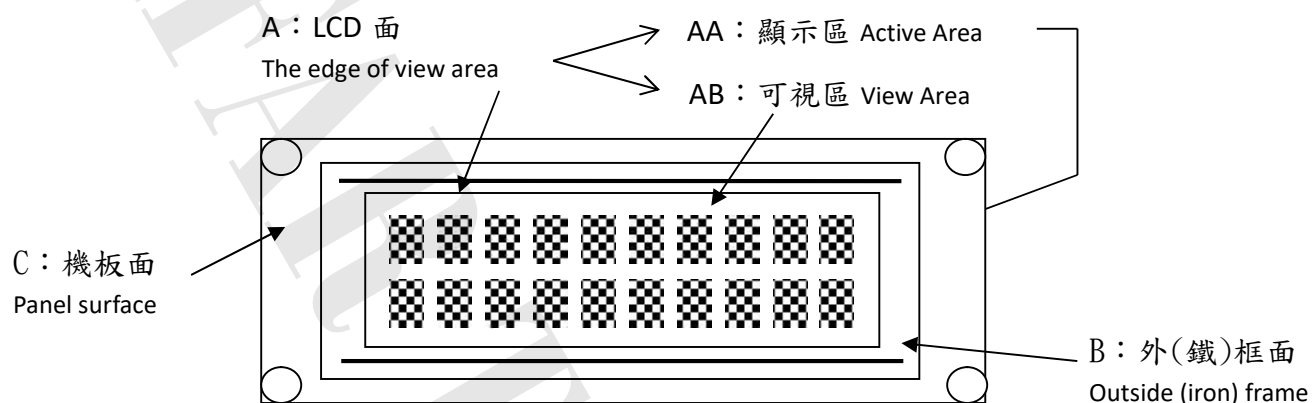
Products without backlight need to be turned on and tested under $60\sim 300 \pm 3\%$ LUX white fluorescent lamps .

5-5 檢查視角依產品視角方向。

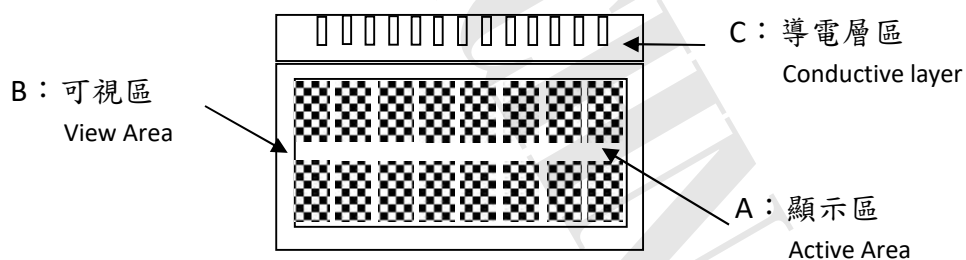
Check the viewing angle according to the product viewing angle.

5-6 其不良現象檢視區域 Bad phenomenon View area

5-6-1 適用種類 Applicable category : COB、TFT

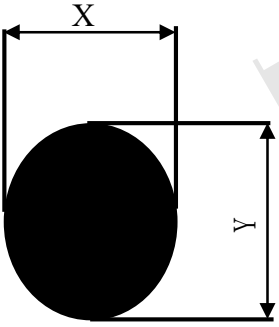
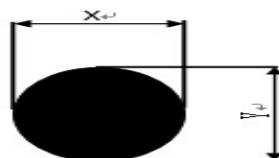
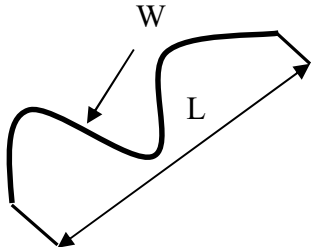


5-6-2 適用種類 Applicable category : COG、TAB、TN



6. 檢驗標準 Inspection standards

COB

種類 Category		COB																			
編號 No.	檢驗項目 Item	檢驗內容及判定標準 Inspection Content & Standard	區域 Zone	類別 Category	缺陷等級 Level																
1	點類(一) Dot (1)	黑點、刺傷...等圓狀 Black dot、Stab...and other round shape $\varphi = \frac{(X + Y)}{2}$ 	兩點距離須超過 5 mm Two points have to be ≥ 5 mm <table border="1"> <thead> <tr> <th>φ (mm)</th> <th>允收數 Acceptance Qty</th> </tr> </thead> <tbody> <tr> <td>$\phi \leq 0.1$</td> <td>無視 Ignore</td> </tr> <tr> <td>$0.1 < \phi \leq 0.25$</td> <td>3</td> </tr> <tr> <td>$0.25 < \phi \leq 0.3$</td> <td>1</td> </tr> <tr> <td>$\phi > 0.3$</td> <td>0</td> </tr> </tbody> </table>	φ (mm)	允收數 Acceptance Qty	$\phi \leq 0.1$	無視 Ignore	$0.1 < \phi \leq 0.25$	3	$0.25 < \phi \leq 0.3$	1	$\phi > 0.3$	0	A	外觀 Appearance	次要 Minor AQL0.65%					
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其點位於側邊 無視 The dot is located on the side(B area)-OK <table border="1"> <thead> <tr> <th>φ (mm)</th> <th>允收數 Acceptance Qty</th> </tr> </thead> <tbody> <tr> <td>$\phi \leq 0.3$</td> <td>無視 Ignore</td> </tr> <tr> <td>$0.3 < \phi \leq 0.5$</td> <td>3</td> </tr> <tr> <td>$0.5 < \phi \leq 1$</td> <td>1</td> </tr> <tr> <td>$\phi > 1$</td> <td>0</td> </tr> </tbody> </table>	φ (mm)	允收數 Acceptance Qty	$\phi \leq 0.3$	無視 Ignore	$0.3 < \phi \leq 0.5$	3	$0.5 < \phi \leq 1$	1	$\phi > 1$	0	B	外觀 Appearance	次要 Minor AQL0.65%								
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2	點類(二) Dot (2)	氣泡、凹凸點 Bubble、Uneven dots $\varphi = \frac{(X + Y)}{2}$ 	兩點距離須超過 5 mm Two points to be ≥ 5 mm <table border="1"> <thead> <tr> <th>φ (mm)</th> <th>允收數 Acceptance Qty</th> </tr> </thead> <tbody> <tr> <td>$\phi \leq 0.2$</td> <td>無視 Ignore</td> </tr> <tr> <td>$0.2 < \phi \leq 0.5$</td> <td>2</td> </tr> <tr> <td>$\phi > 0.5$</td> <td>0</td> </tr> </tbody> </table>	φ (mm)	允收數 Acceptance Qty	$\phi \leq 0.2$	無視 Ignore	$0.2 < \phi \leq 0.5$	2	$\phi > 0.5$	0	A	外觀 Appearance	次要 Minor AQL0.65%							
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3	線類 Line	刮傷、毛屑...等線狀 Scratch、Fiber.. and other linear shape. 	<table border="1"> <thead> <tr> <th>L (mm)</th> <th>W (mm)</th> <th>允收數 Acceptance Qty</th> </tr> </thead> <tbody> <tr> <td>--</td> <td>$W \leq 0.02$</td> <td>無視 Ignore</td> </tr> <tr> <td>$L \leq 5$</td> <td>$W \leq 0.03$</td> <td>3</td> </tr> <tr> <td>$L \leq 3$</td> <td>$W \leq 0.05$</td> <td>2</td> </tr> <tr> <td>$L > 5$</td> <td>$W > 0.05$</td> <td>0</td> </tr> </tbody> </table>	L (mm)	W (mm)	允收數 Acceptance Qty	--	$W \leq 0.02$	無視 Ignore	$L \leq 5$	$W \leq 0.03$	3	$L \leq 3$	$W \leq 0.05$	2	$L > 5$	$W > 0.05$	0	A	外觀 Appearance	次要 Minor AQL0.65%
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4	底色 Background color	同批供貨不能有明顯色差 No obvious color difference allowed in same shipment. (必要時與客端制定限度樣) (According to the gold samples if necessary)	A	外觀 Appearance	次要 Minor AQL0.65%																

5	零件位置 Parts position	與工程 BOM 上標示不符 拒收 Different with the BOM marked Reject	C	外觀 Appearance	主要 Major AQL 0.4%
6	板面潔淨 FPC/PCB's surface is clean	※ 焊接面上附著錫渣、珠 拒收 Solder side has tin slag, beads or particle Reject ※ 焊接面上附著於過多錫油 拒收 Solder side has too much tin oil Reject	C	外觀 Appearance	次要 Minor AQL0.65%
7	點、線類 (三) Dot、Line (3)	※ 於全黑、白畫面下看見之區塊狀或線狀不良 拒收 There is a block or linear in the view area under the screen is whole black or white. Reject ※ 但依 2% ND Filter 遮蓋無視 允收 But after inspecting by 2% ND Filter without seeing block or linear, it is confirmed Acceptance	AA	電訊 Electronics	次要 Minor AQL0.65%
8	點、線類 (四) Dot、Line (4)	畫面中顯示出現黑、白、亮、異色點或線狀 There is a black, white, bright or other dot or lines showing in the view area. ※ 依編號 1、3 之判定標準 According to the inspection standard: No. 1 and 3.	AA	電訊 Electronics	次要 Minor AQL0.65%
9	缺字 Lack of characters	顯示時畫面缺少部份字元 拒收 Lacking part of characters in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
10	無動作 No reaction	顯示畫面一直處於起始畫面而無法進行切換 拒收 The display (view area) always shows in the initial screen and can't be switched to others. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
11	無畫面 No display	通電後，完全無任何畫面顯示 拒收 After connecting to the power, there is no display. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
12	斷線 Broken line	顯示畫面中少直、橫線 拒收 There is a lack of vertical or horizontal lines in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
13	CROSS TALK	顯示畫面時有局部之條紋或拖影 There are some stripes or shadow/smear showing in the view area. 拒收或與客端簽訂限度樣 Reject or inspect according to the golden sample	AA	電訊 Electronics	次要 Minor AQL0.65%

14	I CON	顯示畫面缺少部份顯示圖案 拒收 Lack of partial ICON in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
15	深淺不一 Color difference	顯示畫面的對比，比其他顯示深或淺並依電氣規格(VOP) 值判定 The contrast of display is obviously lighter or darker than others and according to the VOP value in the electronics specification. 拒收或與客端簽訂限度樣 Reject or inspect according to the golden sample	AA	電訊 Electronics	次要 Minor AQL0.65%
16	畫面異常 Abnormal screen	通電後畫面出現未定義之電訊不良現象 拒收 After connecting to the power, there is an undefined electronics appearance showing in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
17	背光色不均 Uneven color of backlight	※ 點亮後 LED 有明暗不均現象依其均勻度判定 拒收 After lighting LEDs have brightness and darkness uneven the determined according to its uniformity. Reject ※ 點亮後 LED 色澤不一致 拒收 LED color is inconsistent after lighting Reject	A	電訊 Electronics	次要 Minor AQL0.65%
18	亮度不足 Lack of brightness	波長、色座標、輝度與圖面標示定義不符 拒收 Wave length, chromatic coordinates, brightness don't correspond to the definition of the drawing. Reject	A	電訊 Electronics	次要 Minor AQL0.65%
19	尺寸量測 Size Measurement	未依圖面上標示 拒收 No correspond to the indication on the drawing. Reject	ALL	外觀 Appearance	主要 Major AQL 0.4%
20	其他 Other	如發現有上述未定義之不良則與客端簽訂限度樣 If there is another undefined defective situation. It will be listed as others. The inspection standard is according to the golden sample.	ALL	電訊 Electronics 外觀 Appearance	次要 Minor AQL0.65%