

Hunan Huayuan display technology CO.,LTD

GH240128-5103

STN DOTS LCD MODULE

SPECIFICATION

Standard code	Department	Rev No.
		A/0
Checked by	Written by	Date
		2013-12-14

1. **GENERAL SPECIFICATIONS**
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1、 GENERAL SPECIFICATIONS

Screen size	5.1"(Diagonal)
Display color	Display color: White Background color: Blue
Type	STN
View angle direction	6'clock
Driver mode	1/128 DUTY 1/12 BIAS
Backlight	LED
Controller IC	RA8820
Driver IC	NT7086
Data Bus	8-bit
Temperature range	Operation: -20 °C ---- +70 °C Storage: -30 °C ---- +80 °C
Number of Dots	240 x 128
Dot size	0.4 x 0.4mm
Dot pitch	0.45 x 0.45mm
Viewing size	114.0 x 64.0mm
Active area	107.45 x 57.55mm
Outline dimension	144.0 x 104.0 x 12.0mm Max.
Weight	180.0g

2、 ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Type	Max	Unit	
Supply voltage for logic	$V_{DD}-V_{SS}$	4.8	5.0	5.2	V	
Supply Voltage for LCD Driving	$V_{dd}-V_0$	Ta=0 °C	18			
		Ta=25 °C	17.1	17.5		
		Ta=50 °C	17	17.9		
Input Voltage	V_{IH}	0.7 V_{DD}	-	$V_{DD} + 0.3$		
	V_{IL}	0	-	0.3 V_{DD}		
Supply current	I_{DD}	Backlight	-	25	35	mA
		Without LED	-	155	185	mA
Supply Voltage for LED	V_{LED}	-	5V	5.2V	V	
Supply Current for LED	I_{LED}	-	130	150	mA	

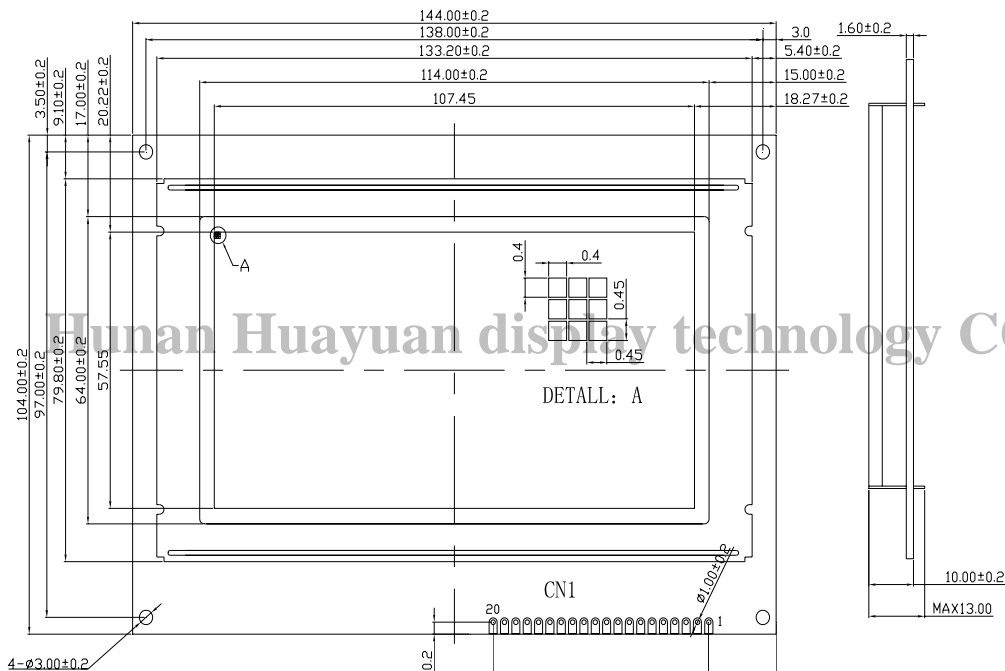
3、 ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit	Remark
Supply voltage for logic	$V_{DD}-V_{SS}$	-0.3	+7.0	V	
Supply Voltage for LCD Driving	$V_{LCD}-V_{dd}$	-0.3	19.8		
Operating temperature	T_{OP}	-25	+70	°C	
Storage temperature	T_{ST}	-30	+80		
Humidity	RH		80%		(Max50° C)

4、 OPTICAL CHARACTERISTICS

Item	Symbol	Condition	Typ.	Unit	Remark
Viewing angle	$\varnothing f$	$C_R \geq 2$	40	Radian	$\varnothing f$
	$\varnothing b$		30		$\varnothing b$
	$\varnothing l$		30		$\varnothing l$
	$\varnothing r$		30		$\varnothing r$
Response time	T_R	TA=25 °C	120	ms	
	T_F		130		
Frame Frequency	F_{RM}		64	Hz	
Contrast ratio	C_R		6.0	-	

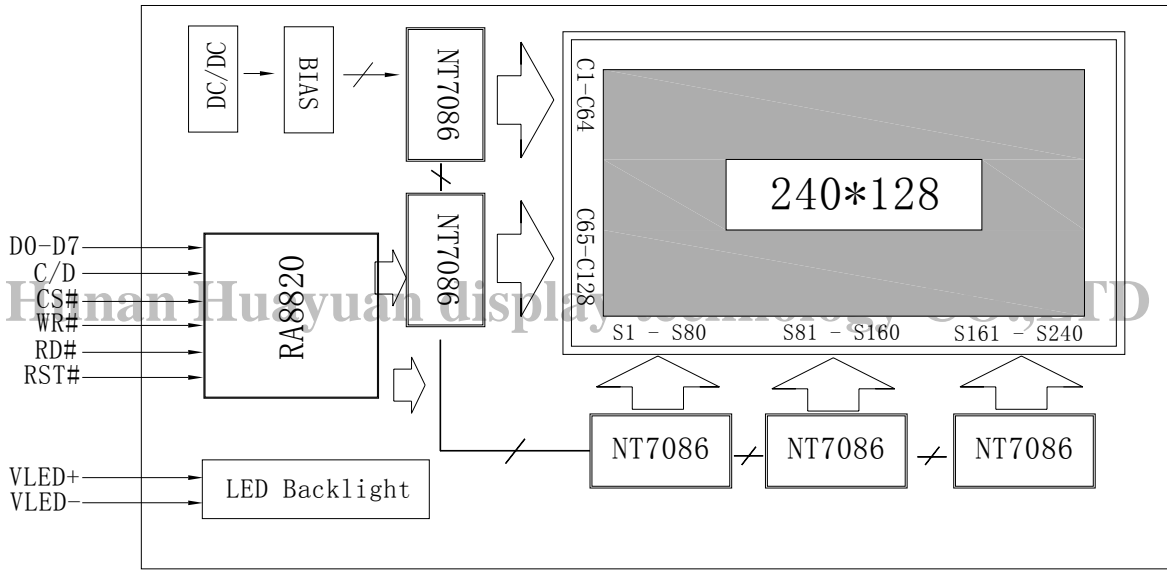
5、 EXTERNAL DIMENSIONS



6、 INTERFACE DESCRIPTION

PIN	DESC	Function
1	GND	Ground
2	VDD	Power supply for Logic circuit and LCD
3	V0	Contrast adjust
4	RS	Command/Data Select or Register Select. 1: Command Write. 0: Data Write.
5	WR#	Write Control
6	RD#	Read Control
7	CS#	Chip Select Active L.
8	BUSY	
9	RST#	Reset signal. RST#=L
10-17	D0-D7	Data Bus
18	VLCD	LCD drive voltage by the internal display
19	VLED+	LED+.
20	VLED-	LED-.

7、 BLOCK DIAGRAM



8. RELIABILITY TEST

NO	Test Project	Test Condition	Remark
1	High temperature	70°C ± 2°C 24H	After testing, the appearance and electrical performance deficiencies should not happen.
2	Low temperature	-40°C ± 2°C 24H	
3	High temperature and humidity test	40°C ± 5°C × 90%RH/24H	
4	Hot and cool shock test	-10°C ± 2 → 25°C → 70°C ± 2 (30min) (5min) (30min) 10 cycles	
5	Vibration test	10Hz-50Hz-10Hz Amplitude 1.5mm X、Y、Z each 3H	

Remark:

1. Above test number is 2 piece.
2. Do moistureproof test, should use the pure water (10M Ω resistor ").
3. individual products caused by electrostatic discharge failure damage, if the products will be reset after the restore to the normal state as a good use.
- When the panel protective film LCM, Tear down the labels slowly (more than a second recommendation).
- 4 Please use the automatic switching menu (or scroll) test mode, test mode of operation.
- 5 Suggestions Use the menu to adjust the contrast model.