(V) Preliminary Specifications
(   ) Final Specifications

Module	10.4 Inch Color TFT-LCD
Model Name	G104SN02 V1

Customer	Date

Checked &
Approved by

_____   _____

Note: This Specification is subject to change without notice.

Approved by	Date
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Prepared by

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Contents

Record of Revision

Version and Date	Page	Old description	New Description
0.0 2007/09/03	All	First Edition	

1. Operating Precautions

1) Since front polarizer is easily damaged, please be cautious and not to scratch it.

2) Be sure to turn off power supply when inserting or disconnecting from input connector.

3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.

4) When the panel surface is soiled, wipe it with absorbent cotton or soft cloth.

5) Since the panel is made of glass, it may be broken or cracked if dropped or bumped on hard surface.

6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.

7) Do not open nor modify the module assembly.

8) Do not press the reflector sheet at the back of the module to any direction.

9) In case if a module has to be put back into the packing container slot after it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.

10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.

11) After installation of the TFT Module into an enclosure (Notebook PC Bezel, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside.   Otherwise the TFT Module may be damaged.

12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.

14) The LCD module is designed so that the CFL in it is supplied by Limited Current Circuit (IEC60950 or UL1950). Do not connect the CFL in Hazardous Voltage Circuit.

15) Severe temperature condition may result in different luminance, response time and lamp ignition voltage.

16) Continuous operating TFT-LCD display under low temperature environment may accelerate lamp exhaustion and reduce luminance dramatically.

17) The data on this specification sheet is applicable when LCD module is placed in landscape position.

18) Continuous displaying fixed pattern may induce image sticking. It 's recommended to use screen saver or shuffle content periodically if fixed pattern is displayed on the screen.

2. General Description

G104SN02 V1 is a Color Active Matrix Liquid Crystal Display composed of a TFT-LCD display, a driver circuit, and a backlight system. The screen format is intended to support SVGA (800(H) x 600(V)) screen and 16.2M (RGB 8-bits) or 262k colors (RGB 6-bits). All input signals are LVDS interface compatible. Inverter card of backlight is not included.

G104SN02 V1 is designed for industrial display applications.

2.1 Display Characteristics

The following items are characteristics summary on the table under 25 ℃ condition:

Items	Unit	Specifications
Screen Diagonal	[inch]	10.4
Active Area	[mm]	211.2 (H) x 158.4 (V)
Pixels H x V		800 x 3(RGB) x 600
Pixel Pitch	[mm]	0.264 x 0.264
Pixel Arrangement		R.G.B. Vertical Stripe
Display Mode		TN, Normally White
Nominal Input Voltage VDD	[Volt]	3.3 (typ.)
Typical Power Consumption	[Watt]	6.5W (IRCFL=6mA, Black pattern)
Weight	[Grams]	495 (typ.)
Physical Size	[mm]	243.0(H) x 184.0(V) x 10.6(D) (typ.)
Electrical Interface		1 channel LVDS
Surface Treatment		Anti-glare, Hardness 3H
Support Color		16.2M / 262K colors

Temperature Range
    Operating
    Storage (Non-Operating)
	
	[ºC]
	[ºC]
		
		-30 to +85
		-30 to +85

RoHS Compliance		RoHS Compliance

2.2 Optical Characteristics

The optical characteristics are measured under stable conditions at 25℃ (Room Temperature):

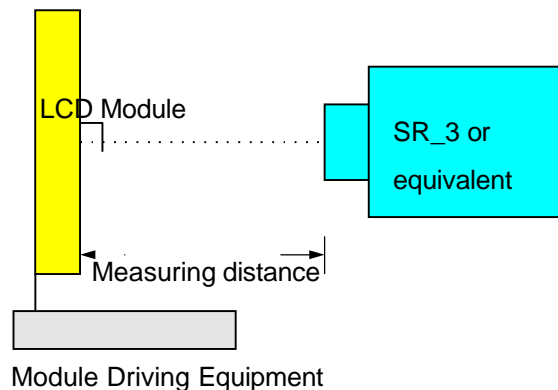| Item	Unit	Conditions	Min.	Typ.	Max.	Note
White Luminance	[cd/m2]	IRCFL= 6mA (center point)	320	400	-	1
Uniformity	%	5 Points	65	75	-	2, 3
Contrast Ratio			400	500	-	4
Response Time	[msec]	Rising	-	10	20	5
	[msec]	Falling	-	20	30	
	[msec]	Raising + Falling	-	30	50	
Viewing Angle	[degree]	Horizontal (Right) CR = 10	60	70	-	6
	[degree]	(Left)	60	70	-	
	[degree]	Vertical (Upper) CR = 10	45	55	-	
	[degree]	(Lower)	55	65	-	
Color / Chromaticity Coordinates (CIE 1931)		Red x	0.54	0.57	0.60	
		Red y	0.29	0.32	0.35	
		Green x	0.29	0.32	0.35	
		Green y	0.53	0.56	0.59	
		Blue x	0.13	0.16	0.19	
		Blue y	0.12	0.15	0.18	
		White x	0.29	0.32	0.35	
		White y	0.30	0.33	0.36	
Color Gamut	%			45	-	

Note 1: Measurement method

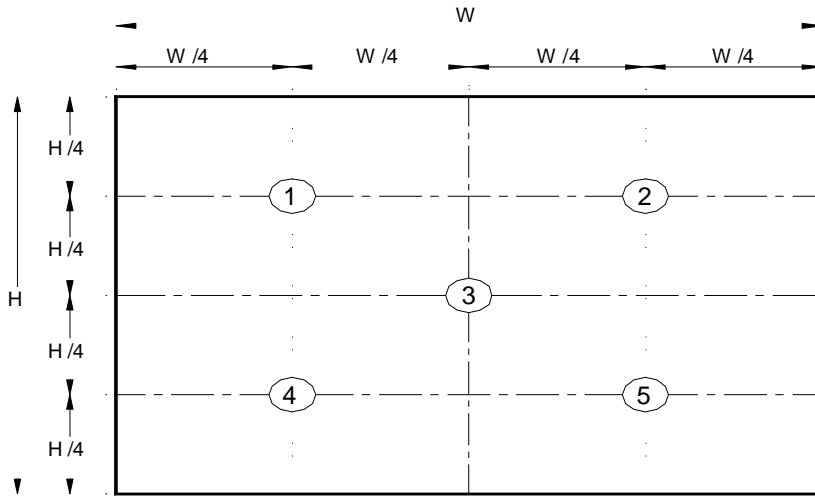Equipment Pattern Generator, Power Supply, Digital Voltmeter, Luminance meter (SR_3 or equivalent)

Aperture   1° with 50cm viewing distance

Test Point   Center

Environment   < 1 *lux*

Module Driving Equipment

Note 2: Definition of 5 points position (Display active area: 211.2mm (H) x 158.4mm (V))

Note 3: The luminance uniformity of 5 points is defined by dividing the minimum luminance values by the maximum test point luminance

$$\delta_{W9} = \frac{\text{Minimum Brightness of five points}}{\text{Maximum Brightness of five points}}$$

Note 4: Definition of contrast ratio (CR):

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "White" state}}{\text{Brightness on the "Black" state}}$$