SPECIFICATION

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DEVICE SPECIFICATION for

TFT LCD Module

Model No.

LQ020B8UB02

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- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices etc.

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- Military and space applications
- Nuclear power control equipment
- Medical equipment for life support

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1. Application

This document is applied to LQ020B8UB02, SHARP's active matrix LCD(Liquid Crystal Display) module, which is suitable for mobile application, such as a cellular phone.

2. Overview

LQ020B8UB02 is composed of a glass panel, driving IC's, a backlight system with three LED(Light-Emitting Diode)'s, and a metal frame. A frame memory is embedded in one of the IC's, and no driving signal is required for still pictures. No LED driver is mounted. This panel is normally white.

The trans-reflective glass panel works sufficiently under whichever bright or dark circumstances. Reduced color mode allows lower power consumption by decreasing colors from 65,536 to eight. In addition, partial scanning is appropriate for a mobile phone. This is a manner of refreshing only limited lines as is illustrated below:

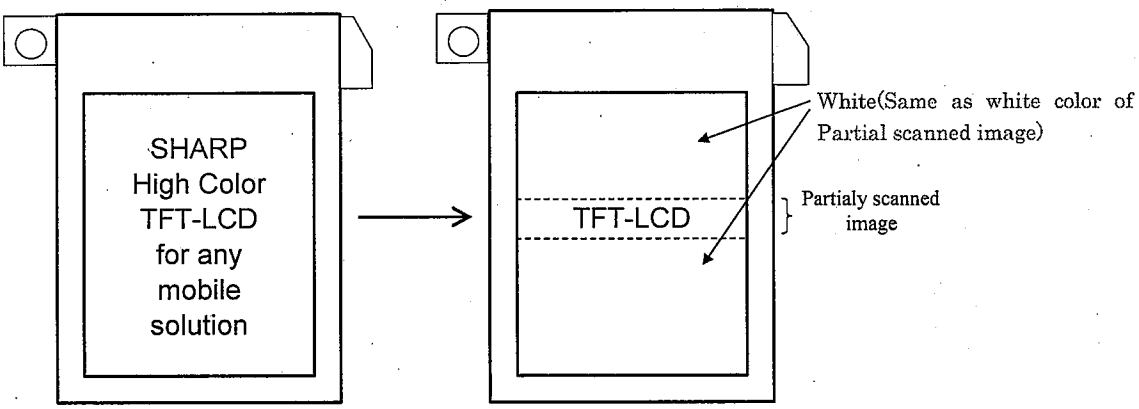

Fig. 1 Partial scanning

The diagonal size of the active area is 1.97 inches. The display panel performs 132 × RGB × 162 dot resolution and 65,536 color depth. Amorphous Silicon TFT(Thin Film Transistor) technology realizes faster response time, and it is fit for movies.

3. Mechanical Specifications

Table 1

Parameter	Specification	Unit	Remark
Screen size (diagonal)	5.01	cm	
	1.97	inch	
Active area size	31.68 (H) × 38.88 (V)	mm	
Pixel format	132 (H) ×162 (V) (1 pixel = R + G + B dots)	pixels	
Pixel pitch	0.24 (H) × 0.24 (V)	mm	
Pixel configuration	R, G, B vertical stripe		
Outline dimensions	39.1 (W) × 58.0 (H) × 3.4 (D)	mm	[Note 3-1]
Mass	12.5±0.5	g	
Surface treatment	Clear hard-coating 2H Anti-Reflection Diffuser=0%		
COG-ACF FPC-ACF	AC-8403(Hitachi Chemical) AC-7106(Hitachi Chemical)		

[Note 3-1] Protrusions and FPC(Flexible Printed Circuit) are excluded. For more detailed information, refer to Appendix A attached on the last page.

4. Input / Output Terminal

LCD-side connector: 55560-0201 (Molex)
Mating connector: 54722-0201(Molex)

Table 2

Pin No.	Symbol	I/O	Description	Remark
3	VDDI	Power supply	Power supply for digital circuits	
10	VDD	Power supply	Power supply for analog circuits	
11,12	GND	Ground		
20	RESX	Input	Reset signal (low active)	
19	CSX	Input	Chip select	
18	WRX	Input	Memory write enable (low active)	
17	RDX	Input	Memory read enable (low active)	
16	A0	Input	Address bit. Low level represents a command byte is currently on the MPU(Micro Processing Unit) bus, and high level shows a parameter byte.	
15	D0	Bi-directional	(LSB)	
14	D1	Bi-directional		
13	D2	Bi-directional		
8	D3	Bi-directional	8-bit MPU bus	
7	D4	Bi-directional	Command (A0 = low) or parameter (A0 = high)	
6	D5	Bi-directional		
5	D6	Bi-directional		
4	D7	Bi-directional	(MSB)	
9	PSD	Output	PSD signal	*1
2	VLED+	Power supply	LED power supply (anode)	
1	VLED–	Power supply	LED power supply (cathode)	

Also refer to Appendix A "Outline dimension" and Appendix B "Assignment of I/O Pin".

*1 PSD=H: Panel scanning timing, PSD=L: Panel non-scanning timing
PSD pin must be OPEN or Terminated when not use, since this pin is for output.