LCD / LCM SPECIFICATION



WINSTAR Display Co.,Ltd.
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SPECIFICATION

CUSTOMER : _____

MODULE NO.: SW3000USB000A00N0100

(SW-USB#)

APPROVED BY: **(FOR CUSTOMER USE ONLY)**	**PCB VERSION:** **DATA:**

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
A	2022/9/29		First issue

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MODLE NO：

RECORDS OF REVISION	DOC. FIRST ISSUE

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2013/09/17		First issue
A	2022/9/29		Update Rev.

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1.Mechanical Data

Item	Standard Value	Unit
Module Dimension	58x32.25	mm
Mounting hole	3.0	mm

2.Electronical Characteristics

Item	Symbol	Condition	Standard Value			Unit
			Min.	Typ.	Max.	
Input Voltage	VDD	VDD=5v	4.5	5.0	5.5	V
Supply Current	VIO	VDD=5V	7.5	10	12.0	mA

3.Feature

1. (suitable for all Character modules,except WH4004)

Pin NO.	Symbol	Function
1	VDD	Dc+5V
2	USBDM	USB data signal Minus
3	USBDP	USB data signal Plus
4	GND	Power Ground
5	GND	Power Ground

4.Communication Protocol:

Start Code	Function Code	Data	End Code

(1) Baud Rate: 9600,N,8,1

(2) Start Code: It means the package at 1st Byte, The value of Start Code is ” E7H’ (3)

Function Code: It describes the usage of data. It has 3 types will show as below:

[1] **“C”** means **Command Instruction**

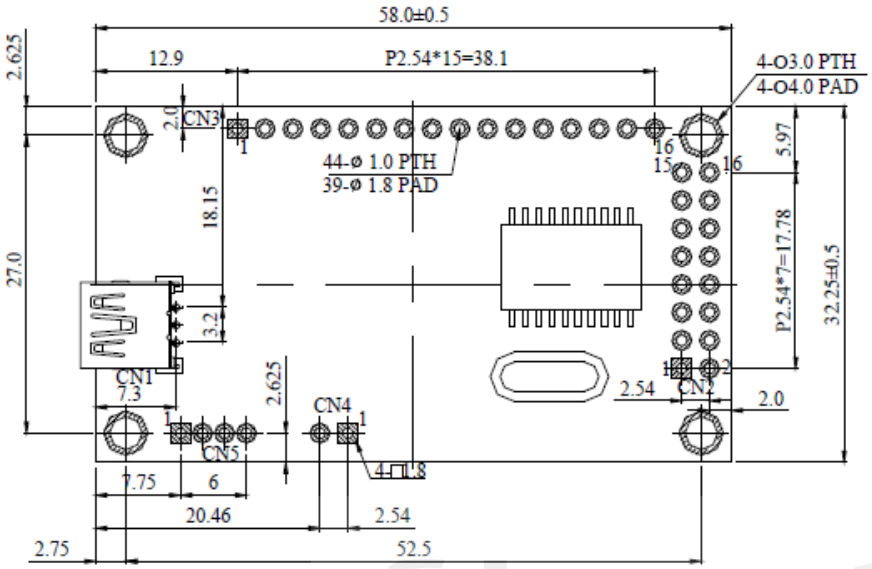
[2] **“D”** means **Data.**

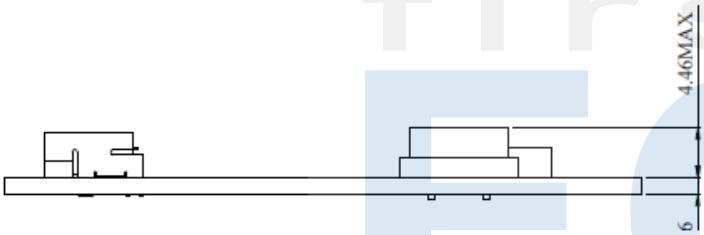
[3] **“B”** means **Backlight Control**; (4)

Data: It is for LCD control use.

(5) End Code: It means the package at last Byte, The value of End Code is “7EH”.

5.Contour Drawing





CN1

PIN NO.	SYMBOL
1	Vcc
2	USBDM
3	USBDP
4	GND
5	GND

CN5

PIN NO.	SYMBOL
1	Vcc
2	USBDM
3	USBDP
4	GND

CN4

PIN NO.	SYMBOL
1	Vcc
2	GND

CN2&CN3

PIN NO.	SYMBOL
1	Vss
2	Vdd
3	Vo
4	RS
5	R/W
6	E
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	A/Vee
16	K

The non-specified tolerance of dimension is ±0.2mm.

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6.Instructions Table:

Instruction	Function Code	Data								Description
		D7	D6	D5	D4	D3	D2	D1	D0	
B/L Control	"B"	0	0	0	0	0	0	0	B	B=0:Backlight OFF B=1:Backlight On
Clear Display	"C"	0	0	0	0	0	0	0	1	Write "20h" to DDRAM. And set DDRAM address to "00h" form AC
Return Home	"C"	0	0	0	0	0	0	1	X	Set DDRAM address to "00h" from AC and return cursor to it's original position.
Entry Mode Set	"C"	0	0	0	0	0	1	I/D	S	Set Cursor move direction and specifies display shift.
Display ON/OFF	"C"	0	0	0	0	1	D	C	B	D=1:Entrire Display On C=1:Cursor On B=1:Cursor Position On
Cursor or Display Shift	"C"	0	0	0	1	S/C	R/L	X	X	Set Cursor moving and display shift control bit, and the direction, without changing DDRAM data.
Function Set	"C"	0	0	1	1	N	F	X	X	N:number of lines is 2/1 F:Font size is 5*11/5*8
Set CGram address	"C"	0	1	A5	A4	A3	A2	A1	A0	Set CGRAM address in address counter
Set DDRAM address	"C"	1	A6	A5	A4	A3	A2	A1	A0	Set DDRAM address in address counter
Write data to RAM	"D"	D7	D6	D5	D4	D3	D2	D1	D0	Write data into internal RAM (DDRAM/CGRAM)

Note: More detail command instruction refer to ST7066U
The function of above can operate for USB Contrl Board, not all command of LCD controller can be use.

7. Power on Initial State:

(1) B/L:OFF
(2) 8 Bit interface to LCM.(Cann't be changed)
(3) Cursor on
(4) Address Auto increase.
(5) Font Size: 5*8