



深圳市拓普微科技开发有限公司

SHENZHEN TOPWAY TECHNOLOGY CO., LTD.

LM240160YCW

LCD Module User Manual

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Rev.	Descriptions	Release Date
0.1	Preliminary release	2020-05-25
0.2	Update outline drawing	2020-09-19

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1. Basic Specifications

1.1 Display Specifications

- 1) LCD Display Mode : FSTN, Positive, Transflective
- 2) Display Color : Display Data = "1" : Dark Gray (*1)
: Display Data = "0" : Light Gray (*2)
- 3) Viewing Angle : 6H
- 4) Driving Method : 1/160 duty, 1/13 bias
- 5) Backlight : White LED backlight

Note:

*1. Color tone may slightly change by Temperature and Driving Condition.

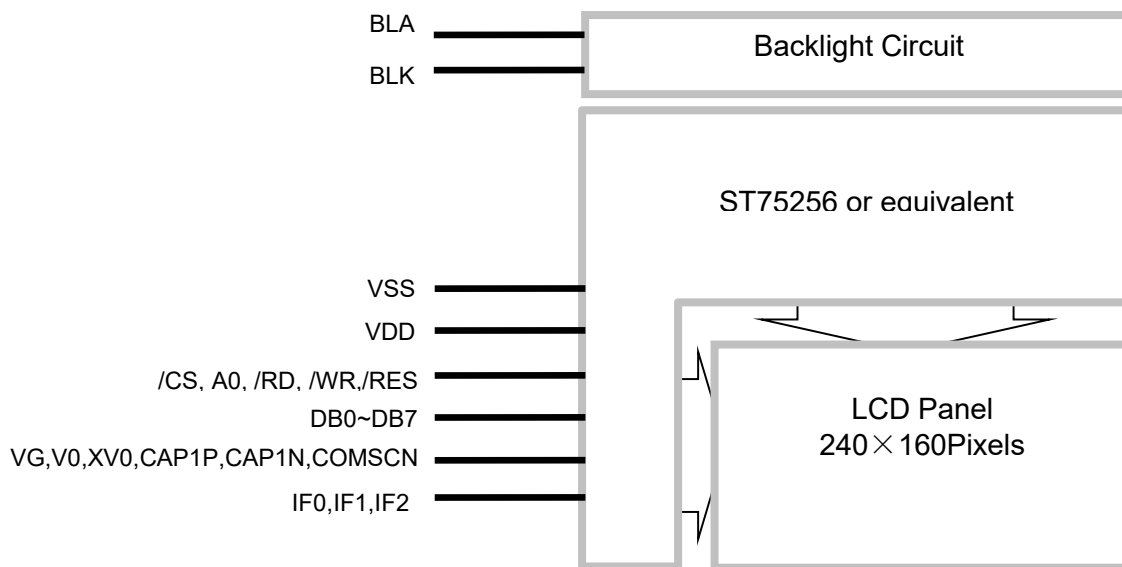
*2. The Color is defined as the inactive / background color.

*3. Fine Contrast adjustment function is necessary in the application design for optimal display result.

1.2 Mechanical Specifications

- 1) Outline Dimension : 76.9 x 63.9 x 7 (mm)(Exclude FPC Length)
(See attached Outline Drawing for details)

1.3 Block Diagram



1.4 Terminal Functions

Pin No.	PIN Name	I/O	Descriptions					
			8080 mode (default)	6800 mode	4-line	3-line	I2C mode	
1	VG	P	VG is the power of SEG-drivers.					
2	V0		Negative operating voltage of COM-drivers.					
3	XV0		XV0 is the output of the negative Vop generator.					
4	CAP1P		DC/DC voltage converter.					
5	CAP1N		Connect a capacitor between CA1P and CA1N.					
6	VDD		Positive power supply.					
7	VSS		Negative power supply,0V					
8	COMSCN	I	Set scan direction of COM. COMSCN= “L ” ; COM0--COMX ; COMSCN= “H” ; COMX—COM0; Note: COMX is determined by the DUTY setting.					
9	IF2	I	IF2	IF1	IF0	MPU interface type		
			L	L	L	4-line serial interface		
10	IF1		L	L	H	I2C serial interface		
			L	H	L	8-bit 6800 parallel interface		
			L	H	H	8-bit 8080 parallel interface		
11	IF0		H	L	L	9-bit 3-line serial interface		
12	/CS	I	/CS = L ,Chip is active. /CS = H ,Chip is non-active.				Connected to VSS.	
13	A0	I	A0 = H, Transferring the Display Data. A0 = L, Transferring the Control Data.				Connected to VDD.	
14	/RD (E)	I	When /RD is “L” , data bus is in output status.	R/W = "H":When E is "H" data bus is in output status. R/W = "L":The data are latched at the falling edge of the E signal.		Connected to VDD.		
15	/WR (R/W)	I	The data are latched at the rising edge of the /WR signa	Read / Write control input pin R/W = “H” : read R/W = “L ” : write		Connected to VDD.		
16	/RES	I	Reset input pin. When RST is “L”, internal initialization procedure is executed.					
17	DB0	I/O	8 bit bi-directional data bus			serial input clock (SCL).		
18	DB1					serial input/output data (SDA). D1 to D3 must be connected together (SDA).	SDA_IN, serial input data.	
19	DB2						SDA_OUT, D1 to D3 must be connected together (SDA).	
20	DB3					Connected to VDD.	Connected to VDD.	
21	DB4						SA[0], connected to VDD or VSS.	
22	DB5						SA[1], connected to VDD or VSS.	
23	DB6							
24	DB7							

LED Backlight

1	BLA	P	Positive power for LED backlight.
2	BLK	P	Negative power for LED backlight, 0V

2. Absolute Maximum Ratings

Items	Symbol	Min.	Max.	Unit	Condition
Supply Voltage	V_{DD}	-0.3	+4.0	V	$V_{SS} = 0V$
Input Voltage	V_{IN}	-0.3	+4.0	V	$V_{SS} = 0V$
Operating Temperature	T_{OP}	-30	+80	°C	No Condensation
Storage Temperature	T_{ST}	-30	+80	°C	No Condensation

Cautions:

Any Stresses exceeding the Absolute Maximum Ratings may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

3. Electrical Characteristics

3.1 DC Characteristics

$V_{SS}=0V$, $V_{DD}=3.3V$, $T_{OP}=25^{\circ}C$

Items	Symbol	MIN.	TYP.	MAX.	Unit	Condition / Application Pin
Operating Voltage	V_{DD}	3.0	3.3	3.6	V	VDD
Input High Voltage	V_{IH}	$0.8 \times V_{DD}$	-	V_{DD}	V	/CS, A0, /RD, /WR, /RES DB0~DB7 COMSCN
Input Low Voltage	V_{IL}	V_{SS}	-	$0.2 \times V_{DD}$	V	
Operating Current	I_{DD}	-	1.4	3.5	mA	VDD

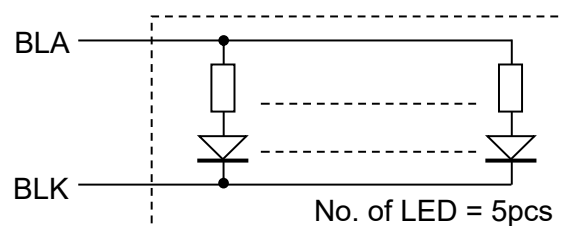
3.2 LED Backlight Circuit Characteristics

$BLK=0V$, $BLA=3.0V$, $T_{OP} = 25^{\circ}C$

Items	Symbol	MIN.	TYP.	MAX.	Unit	Applicable Pin
Forward Voltage	V_{BLA}	-	3.0	-	V	BLA
Forward Current	I_{BLA}	-	60	100	mA	BLA

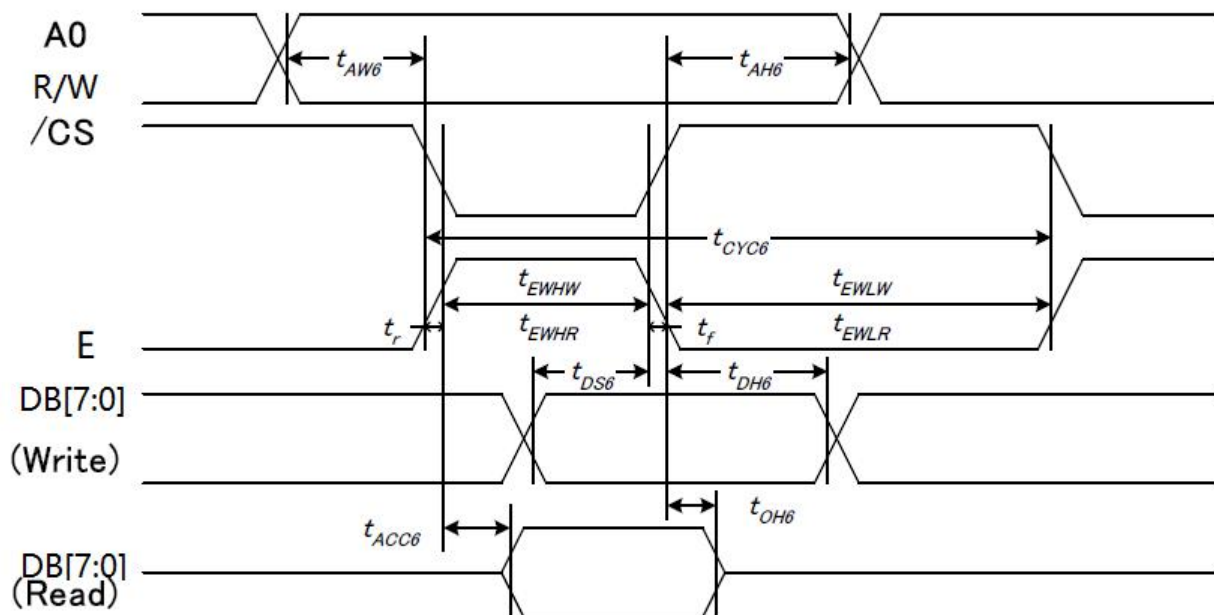
Cautions:

Exceeding the recommended driving current could cause substantial damage to the backlight and shorten its lifetime.



3.3 AC Characteristics

3.3.1 6800 Mode Interface



$V_{SS}=0V$, $V_{DD}=3.3V$, $T_{OP}=25^{\circ}C$

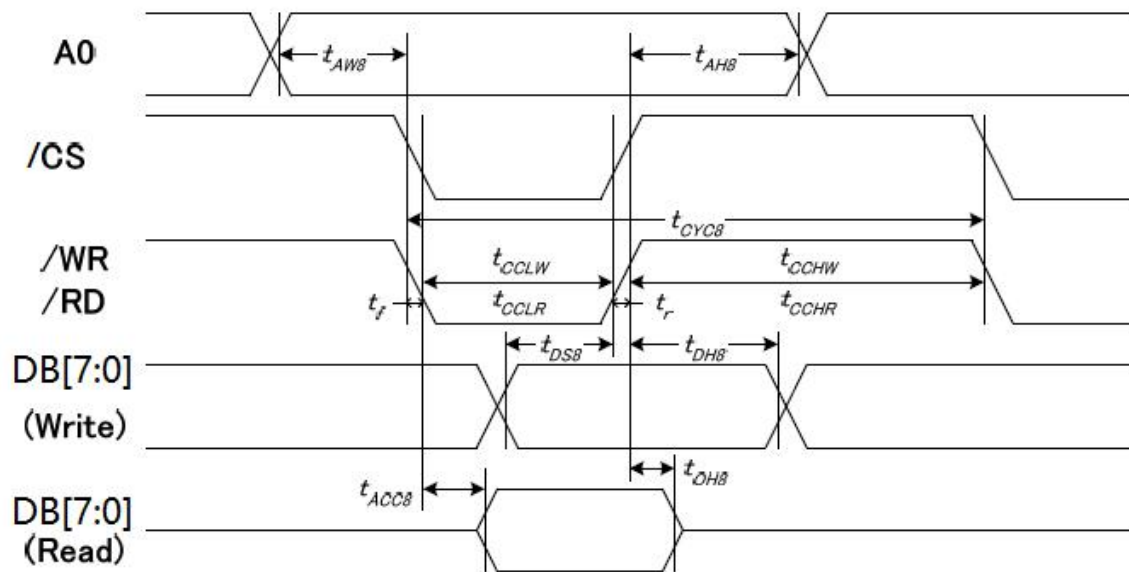
Item	Signal	Symbol	Condition	MIN.	MAX.	Unit
Address setup time	A0	taw6		20	-	ns
Address hold time		tah6		0	-	
System cycle time (WRITE)	E	tcyc6		160	-	
Enable L pulse width (WRITE)		tewlw		70	-	
Enable H pulse width (WRITE)		tewhw		70	-	
System cycle time (READ)		tcyc6		400	-	
Enable L pulse width (READ)		tewlr		180	-	
Enable H pulse width (READ)		tewhr		180	-	
Write data setup time	DB[7:0]	tds6		15	-	
Write data hold time		tdh6		15	-	
Read data access time		tacc6	CL = 30 pF	-	100	
Read data output disable time		toh6	CL = 30 pF	10	110	

Note:

*1. Input signal rise/fall time should be less than 15ns .

*2.All timing is using 20% and 80% of VDD as the reference.

3.3.2 8080 Mode Interface



$V_{SS}=0V$, $V_{DD}=3.3V$, $T_{OP}=25^{\circ}C$

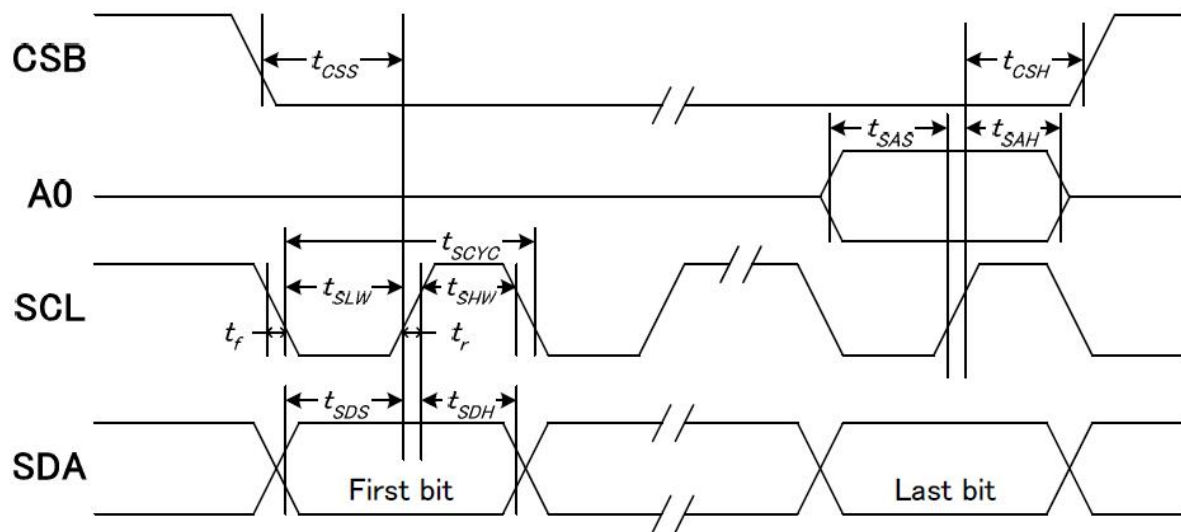
Item	Signal	Symbol	Condition	MIN.	MAX.	Unit
Address setup time	A0	taw8		20	-	ns
Address hold time		tah8		0	-	
System cycle time (WRITE)	/WR	tcyc8		160	-	
/WR L pulse width (WRITE)		tcclw		70	-	
/WR H pulse width (WRITE)		tcchw		70	-	
System cycle time (READ)	/RD	tcyc8		400	-	
/RD L pulse width (READ)		tcclr		180	-	
/RD H pulse width (READ)		tcchr		180	-	
WRITE Data setup time	DB[7:0]	tds8		15	-	
WRITE Data hold time		tdh8		15	-	
READ access time		tacc8	CL = 30 pF	-	100	
READ Output disable time		toh8	CL = 30 pF	10	110	

Note:

*1. Input signal rise/fall time should be less than 15ns .

*2.All timing is using 20% and 80% of VDD as the reference.

3.3.3 4-Line SPI Mode Interface



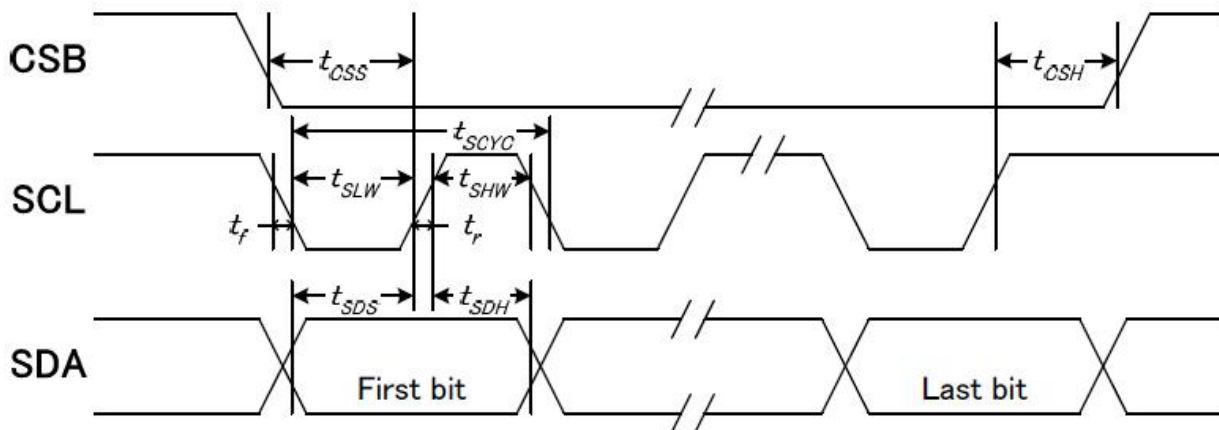
$V_{SS}=0V$, $V_{DD}=3.3V$, $T_{OP}=25^{\circ}C$

Item	Signal	Symbol	MIN.	MAX.	Unit
Serial clock period	SCLK	tscyc	80	-	ns
SCLK "H" pulse width		tshw	30	-	
SCLK "L" pulse width		tslw	30	-	
Address setup time	A0	tsas	20	-	
Address hold time		tsah	20	-	
Data setup time	SDA	tsds	20	-	
Data hold time		tsdh	20	-	
CSB-SCLK time	CSB	tcss	20	-	
CSB-SCLK time		tchsh	20	-	
CS "H" pulse width		tchwh	0	-	

Note:

1. The input signal rise and fall time (t_r , t_f) are specified at 15 ns or less.
2. All timing is specified using 20% and 80% of V_{DD} as the standard.

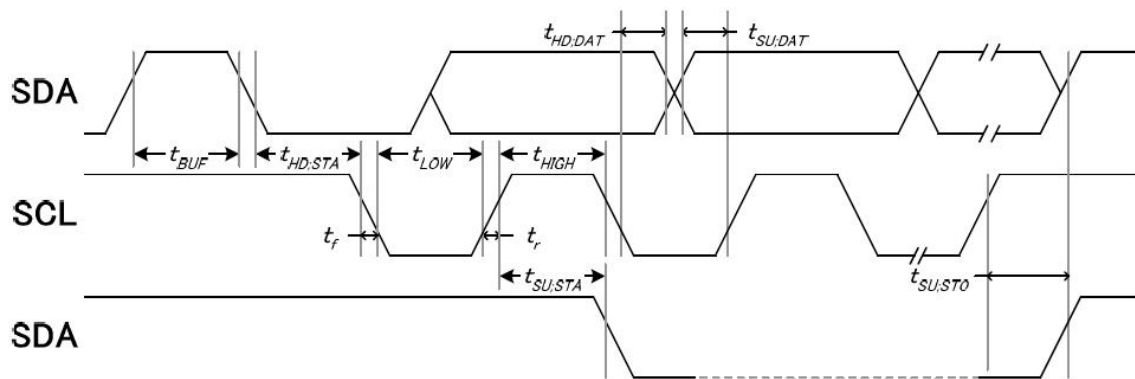
3.3.4 3-Line SPI Mode Interface

 $V_{SS}=0V, V_{DD}=3.3V, T_{OP}=25^{\circ}C$

Item	Signal	Symbol	MIN.	MAX.	Unit
Serial clock period	SCL	tscyc	80	-	ns
SCL "H" pulse width		tshw	30	-	
SCL "L" pulse width		tslw	30	-	
Data setup time	SDA	tsds	20	-	
Data hold time		tsdh	20	-	
CSB-SCL time	CSB	tcss	20	-	
CSB-SCL time		tcsh	20	-	

Note:

1. The input signal rise and fall time (t_r , t_f) are specified at 15 ns or less.
2. All timing is specified using 20% and 80% of V_{DD} as the standard.

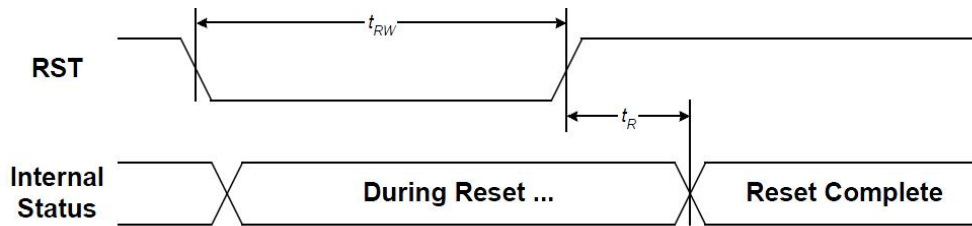
3.3.5 I²C Mode InterfaceV_{SS}=0V, V_{DD}=3.3V, T_{OP}=25°C

Item	Signal	Symbol	Rating		Unit
			MIN.	MAX.	
SCL clock frequency	SCL	f _{scl}	-	400	KHZ
SCL clock low period		t _{low}	1.3	-	us
SCL clock high period		t _{high}	0.6	-	
Data set-up time	SDA	t _{su;data}	0.1	-	
Data hold time		t _{hd;data}	0	0.9	
Setup time for a repeated START condition		t _{su;sta}	0.6	-	
Start condition hold time		t _{hd;sta}	0.6	-	
Setup time for STOP condition		t _{su;sto}	0.6	-	
Bus free time between a STOP and START		t _{buf}	0.1	-	
Signal rise time	SCL SDA	t _r	20+0.1Cb	300	ns
Signal fall time		t _f	20+0.1Cb	300	
Capacitive load represented by each bus line		cd	-	400	pF
Tolerable spike width on bus		t _{sw}	-	50	ns

Note:

1. All timing is specified using 20% and 80% of VDD as the standard.

3.3.6 Reset Timing



$V_{SS}=0V, V_{DD}=3.3V, T_{OP}=25^{\circ}C$

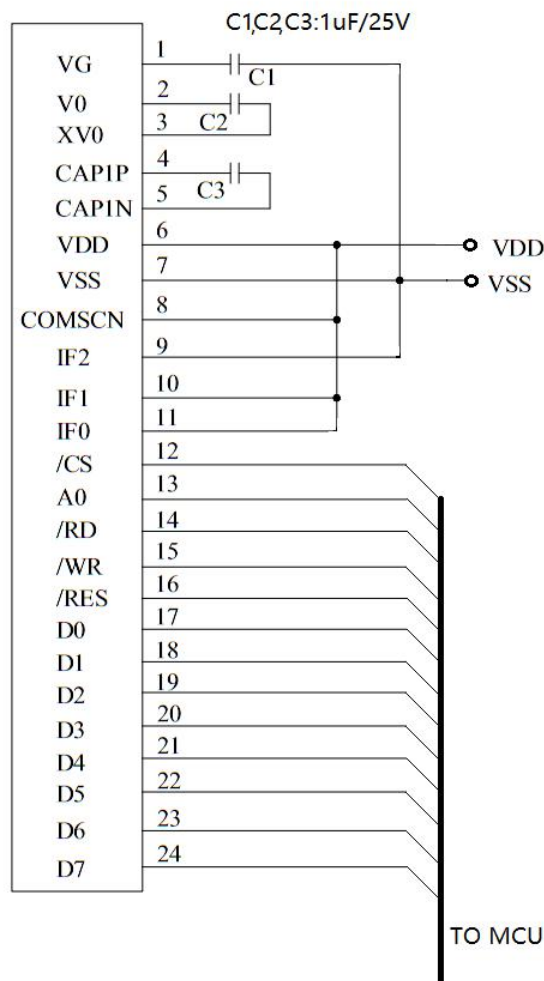
Item	Symbol	MIN.	TYP.	MAX.	Unit
Reset time	tr	-	-	1	ms
Reset LOW pulse width	trw	1	-	-	ms

Note:

*1.All timing is using 20% and 80% of VDD as the reference.

4. Function specifications

4.1 Application circuit 8080 mode (example)



4.2 Adjusting the Display Contrast

- This LCD module equipped with latest digital contrast adjustment function.
- Its display contrast could be adjusted by MCU command. (please see the command tables for details)
- It is recommended to provide a contrast adjustment interface for end-user, where the best display result could meet the individual preference in mass production.

4.3 Basic Setting

To drive the LCD module correctly and provide normally display, please use the following setting

- Set Bias 1/13
- Set Duty 1/160
- MX = 0, MY =1
- AP=0, INV=0 (Normal display)
- Analog SET
- EV control
- Power control
- Display ON

Note:

*1. These setting/commands should issue the LCD module while start up.

*2. See the Display Commands section for details.

4.4 Resetting the LCD module

The LCD module should be initialized by using /RES terminal.

While turning on the VDD and VSS power supply, maintain /RES terminal at LOW level. After the power supply stabilized, release the reset terminal (/RES=HIGH)

4.5 Display Memory Map

Page address	data	LCD Display (front view)		
0	D0 : D7			
1	D0 : D7			
2	D0 : D7			
3	D0 : D7			
4	D0 : D7		240x160 pixels	
5	D0 : D7			
:	:			
159	D0 : D7			
Column Address		00h	→	EFh

Note:

*1.MY=1

*2.MX=0

*3.Initial Display Line=0

4.6 Display Commands

INSTRUCTION	A0	R/W	COMMAND BYTE								DESCRIPTION
			D7	D6	D5	D4	D3	D2	D1	D0	
1.Extension Command	0	0	0	0	1	1	EXT1	0	0	EXT0	Set extension instruction
Ext[1:0]=0,0 (Extension Command 1)											
2.Display ON/OFF	0	0	1	0	1	0	1	1	1	DSP	Set LCD display DSP=0: Display off DSP=1: Display on
3.Inverse Display	0	0	1	0	1	0	0	1	1	INV	Set inverse display INV=0: Normal display INV=1: Inverse display
4.All Pixel ON/OFF	0	0	0	0	1	0	0	0	1	AP	Set all pixel on mode AP=0: All pixel off mode AP=1: All pixel on mode
5.Display Control	0	0	1	1	0	0	1	0	1	0	Set display control CLD :Set CL dividing ratio LF[4:0] : Set N-line inversion counter DT[7:0] : Set the number of duty FI : Set the inversion type of frame at the end of common scan cycle
	1	0	0	0	0	0	0	CLD	0	0	
	1	0	DT7	DT6	DT5	DT4	DT3	DT2	DT1	DT0	
	1	0	0	0	LF4	FI	LF3	LF2	LF1	LF0	
6.Power Save	0	0	1	0	0	1	0	1	0	SLP	Set power save mode SLP=0: Sleep out mode SLP=1: Sleep in mode
7.Set Page Address	0	0	0	1	1	1	0	1	0	1	Set Page Address Starting Page address: $00h \leq YS \leq 28h$ Ending Page address: $YS \leq YE \leq 28h$
	1	0	YS7	YS6	YS5	YS4	YS3	YS2	YS1	YS0	
	1	0	YE7	YE6	YE5	YE4	YE3	YE2	YE1	YE0	
8.Set Column Address	0	0	0	0	0	1	0	1	0	1	Set Column Address Starting Column address: $00h \leq XS \leq FFh$ Ending Column address: $XS \leq XE \leq FFh$
	1	0	XS7	XS6	XS5	XS4	XS3	XS2	XS1	XS0	
	1	0	XE7	XE6	XE5	XE4	XE3	XE2	XE1	XE0	
9.Data Scan Direction	0	0	1	0	1	1	1	1	0	0	Set normal/ inverse display of address and address scan direction
	1	0	0	0	0	0	0	C/L	MX	MY	
10.Write Data	0	0	0	1	0	1	1	1	0	0	Write data to DDRAM
	1	0	D7	D6	D5	D4	D3	D2	D1	D0	
11.Read Data	0	0	0	1	0	1	1	1	0	1	Read data from DDRAM
	1	1	D7	D6	D5	D4	D3	D2	D1	D0	
12.Partial In	0	0	1	0	1	0	1	0	0	0	Set partial area Starting partial display address: $00h \leq PTS \leq A1h$ Ending partial display address: $00h \leq PTE \leq A1h$
	1	0	PTS7	PTS6	PTS5	PTS4	PTS3	PTS2	PTS1	PTS0	
	1	0	PTE7	PTE6	PTE5	PTE4	PTE3	PTE2	PTE1	PTE0	

4.7 DisplayCommands (continue)

INSTRUCTION	A0	R/W	COMMAND BYTE								DESCRIPTION
			D7	D6	D5	D4	D3	D2	D1	D0	
13.Partial Out	0	0	1	0	1	0	1	0	0	1	Exit the partial mode
14.Read/Modify/Write In	0	0	1	1	1	0	0	0	0	0	Enable read modify write
15.Read/Modify/Write Out	0	0	1	1	1	0	1	1	1	0	Disable read modify write
16.Scroll Area	0	0	1	0	1	0	1	0	1	0	Set scroll area
	1	0	TL7	TL6	TL5	TL4	TL3	TL2	TL1	TL0	
	1	0	BL7	BL6	BL5	BL4	BL3	BL2	BL1	BL0	
	1	0	NSL7	NSL6	NSL5	NSL4	NSL3	NSL2	NSL1	NSL0	
	1	0	0	0	0	0	0	0	SCM1	SCM0	
17.Set Start Line	0	0	1	0	1	0	1	0	1	1	Set scroll start address $00h \leq SL \leq A1h$
	1	0	SL7	SL6	SL5	SL4	SL3	SL2	SL1	SL0	
18.OSC ON	0	0	1	1	0	1	0	0	0	1	Turn on the internal oscillator
19.OSC OFF	0	0	1	1	0	1	0	0	1	0	Turn off the internal oscillator
20.Power Control	0	0	0	0	1	0	0	0	0	0	Power circuit operation VB=0: OFF, VB=1: ON VF=0: OFF, VF=1: ON VR=0: OFF, VR=1: ON
	1	0	0	0	0	0	VB	0	VF	VR	
21.Set Vop	0	0	1	0	0	0	0	0	0	1	Set Vop
	1	0	0	0	Vop5	Vop4	Vop3	Vop2	Vop1	Vop0	
	1	0	0	0	0	0	0	Vop8	Vop7	Vop6	
22.Vop Control	0	0	1	1	0	1	0	1	1	VOL	Control Vop VOL=0: Vop increase one step VOL=1: Vop decrease one step
23.Read Register Mode	0	0	0	1	1	1	1	1	0	REG	Set read register mode REG=0: read the register value of VPR[5:0] REG=1: read the register value of VPR[8:6]
24.Nop	0	0	0	0	1	0	0	1	0	1	No operation
25.Read Status	0	1	D7	D6	D5	D4	D3	D2	D1	D0	Read status byte
26.Data Format Select	0	0	0	0	0	0	1	DO	0	0	DO=0; LSB on bottom (Default) DO=1; LSB on top
27. Display Mode	0	0	1	1	1	1	0	0	0	0	Set display mode DM=0 : Mono(Default) DM=1 : 4Gray Scale Mode
	1	0	0	0	0	1	0	0	0	DM	
28.ICON Control	0	0	0	1	1	1	0	1	1	ICON	Enable/Disable ICON ICON=1 ; Enable ICON=0 ; Disable

4.8 DisplayCommands (continue)

INSTRUCTION	A0	R/W	COMMAND BYTE								DESCRIPTION
			D7	D6	D5	D4	D3	D2	D1	D0	
Ext[1:0]=0,1 (Extension Command 2)											
29.Analog Circuit Set	0	0	0	0	1	1	0	0	1	0	Set analog set BE[1:0]: Booster efficiency set BS[2:0]: Set bias ratio
	1	0	0	0	0	0	0	0	0	0	
	1	0	0	0	0	0	0	0	BE1	BE0	
	1	0	0	0	0	0	0	BS2	BS1	BS0	
30.Booster Level	0	0	0	1	0	1	0	0	0	1	Set booster level
	1	0	1	1	1	1	1	0	1	BST	
31. Driving Select	0	0	0	1	0	0	0	0	0	DS	Power type DS=0: Internal (Default) DS=1 :External
32.High Power Mode	0	0	0	1	0	0	1	0	0	HPM	Set high power mode HPM=0 ; Normal Mode HPM =1 ; High Power Mode
33.Auto Read Control	0	0	1	1	0	1	0	1	1	1	Set auto-read instruction XARD=0: Enable auto read XARD=1: Disable auto read
	1	0	1	0	0	XARD	1	1	1	1	
34.OTP WR/RD Control	0	0	1	1	1	0	0	0	0	0	OTP WR/RD control WR/RD=0: Enable OTP read WR/RD=1: Enable OTP write
	1	0	0	0	WR/RD	0	0	0	0	0	
35.OTP Control Out	0	0	1	1	1	0	0	0	0	1	OTP control out
36.OTP Write	0	0	1	1	1	0	0	0	1	0	OTP write
37.OTP Read	0	0	1	1	1	0	0	0	1	1	OTP read
38.OTP Selection Control	0	0	1	1	1	0	0	1	0	0	OTP selection control Ctrl=1: Disable OTP Ctrl=0: Enable OTP
	1	0	1	Ctrl	0	1	1	0	0	1	
39.OTP Programming Setting	0	0	1	1	1	0	0	1	0	1	OTP programming setting
	1	0	0	0	0	0	1	1	1	1	
40.Frame Rate	0	0	1	1	1	1	0	0	0	0	Frame rate setting in different temperature range
	1	0	0	0	0	FRA4	FRA3	FRA2	FRA1	FRA0	
	1	0	0	0	0	FRB4	FRB3	FRB2	FRB1	FRB0	
	1	0	0	0	0	FRC4	FRC3	FRC2	FRC1	FRC0	
	1	0	0	0	0	FRD4	FRD3	FRD2	FRD1	FRD0	
41.Temperature Range	0	0	1	1	1	1	0	0	1	0	Temperature range setting
	1	0	0	TA6	TA5	TA4	TA3	TA2	TA1	TA0	
	1	0	0	TB6	TB5	TB4	TB3	TB2	TB1	TB0	
	1	0	0	TC6	TC5	TC4	TC3	TC2	TC1	TC0	

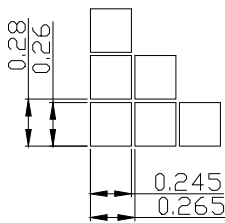
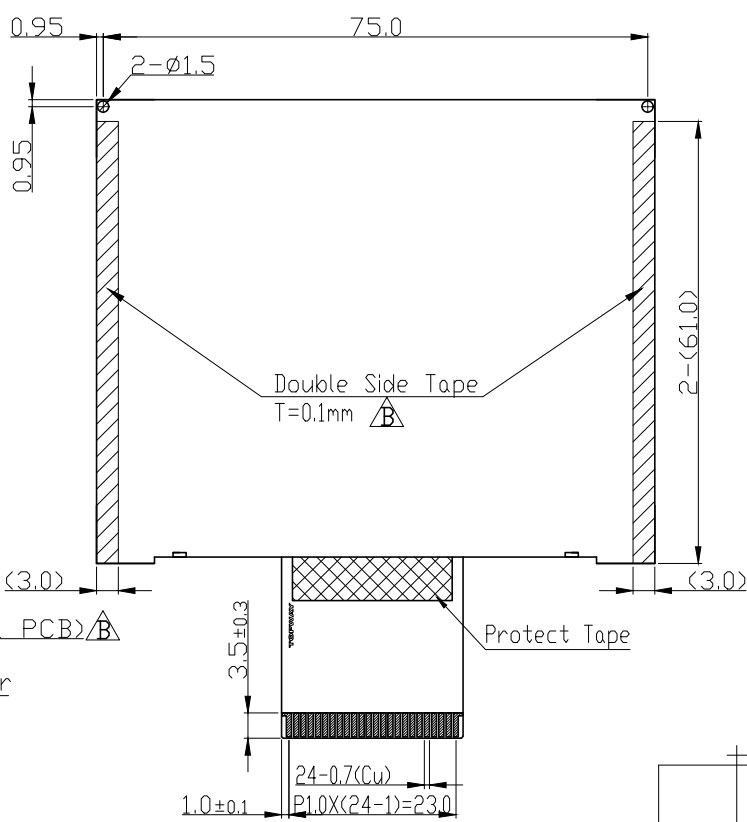
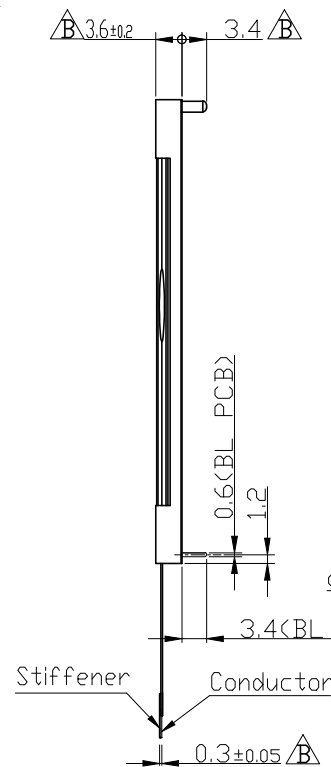
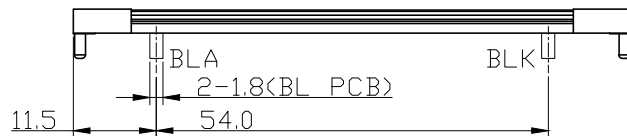
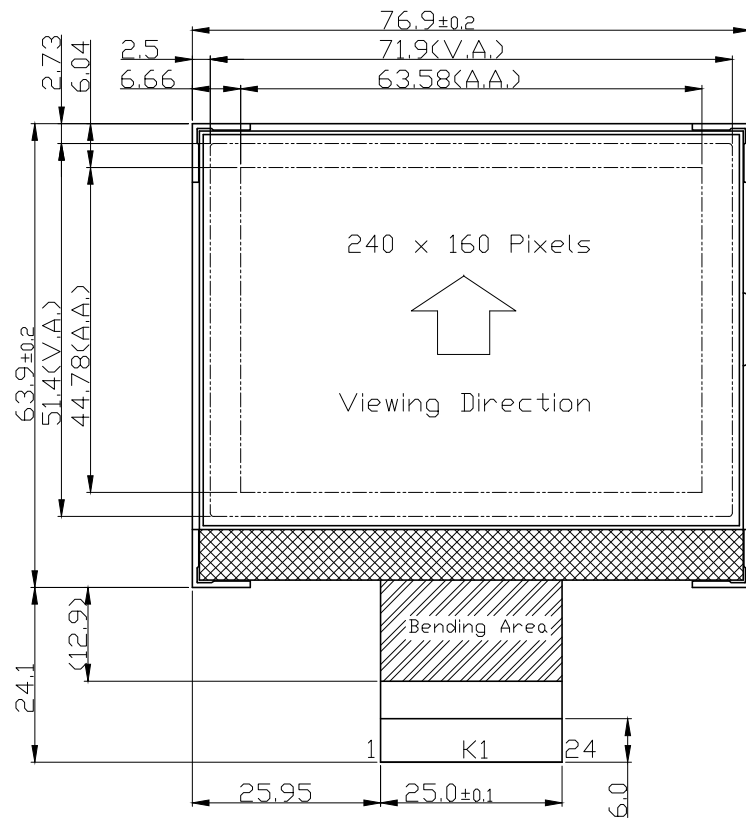
4.9 DisplayCommands (continue)

INSTRUCTION	A0	R/W	COMMAND BYTE								DESCRIPTION
			D7	D6	D5	D4	D3	D2	D1	D0	
42.Temperature Gradient Compensation	0	0	1	1	1	1	0	1	0	0	Set temperature gradient compensation coefficient
	1	0	MT13	MT12	MT11	MT10	MT03	MT02	MT01	MT00	
	1	0	MT33	MT32	MT31	MT30	MT23	MT22	MT21	MT20	
	1	0	MT53	MT52	MT51	MT50	MT43	MT42	MT41	MT40	
	1	0	MT73	MT72	MT71	MT70	MT63	MT62	MT61	MT60	
	1	0	MT93	MT92	MT91	MT90	MT83	MT82	MT81	MT80	
	1	0	MTB3	MTB2	MTB1	MTB0	MTA3	MTA2	MTA1	MTA0	
	1	0	MTD3	MTD2	MTD1	MTD0	MTC3	MTC2	MTC1	MTC0	
	1	0	MTF3	MTF2	MTF1	MTF0	MTE3	MTE2	MTE1	MTE0	
Ext[1:0]=1,0(Extension Command 3)											
43.Set ID	0	0	1	1	0	1	0	1	0	1	Set ID
	1	0	ID7	ID6	ID5	ID4	ID3	ID2	ID1	ID0	
44 Read ID	0	0	0	1	1	1	1	1	1	RID	Read ID RID=1 ; Enable RID=0 ; Disable
	0	1	D7	D6	D5	D4	D3	D2	D1	D0	

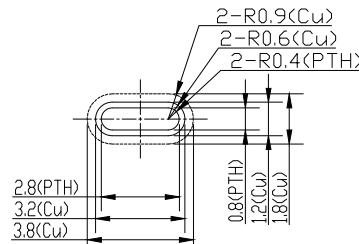
Note: *1. Do not use any other command not listed, or the system malfunction may result.
 *2. For the details of the Display Commands, please refer to ST75256 data sheet.
 *3. "--" = Disabled bit. It can be either logic 0 or 1.

5. Design and Handling Precaution

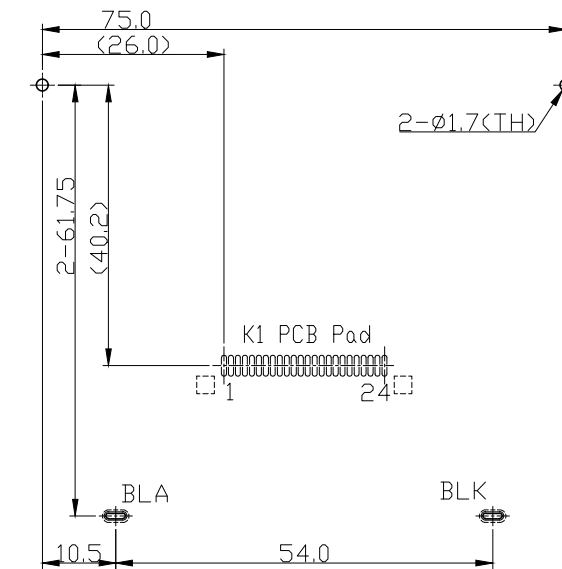
1. The LCD panel is made by glass. Any mechanical shock (eg. dropping from high place) will damage the LCD module.
2. Do not add excessive force on the surface of the display, which may cause the Display color change abnormally.
3. The polarizer on the LCD is easily get scratched. If possible, do not remove the LCD protective film until the last step of installation.
4. Never attempt to disassemble or rework the LCD module.
5. Only Clean the LCD with Isopropyl Alcohol or Ethyl Alcohol. Other solvents (eg. water) may damage the LCD.
6. When mounting the LCD module, make sure that it is free from twisting, warping and distortion.
7. Ensure to provide enough space (with cushion) between case and LCD panel to prevent external force adding on it, or it may cause damage to the LCD or degrade the display result.
8. Only hold the LCD module by its side. Never hold LCD module by add force on the heat seal or TAB.
9. Never add force to component of the LCD module. It may cause invisible damage or degrade of the reliability.
10. LCD module could be easily damaged by static electricity. Be careful to maintain an optimum anti-static work environment to protect the LCD module.
11. When peeling off the protective film from LCD, static charge may cause abnormal display pattern. It is normal and will resume to normal in a short while.
12. Take care and prevent get hurt by the LCD panel sharp edge.
13. Never operate the LCD module exceed the absolute maximum ratings.
14. Keep the signal line as short as possible to prevent noisy signal applying to LCD module.
15. Never apply signal to the LCD module without power supply.
16. IC chip (eg. TAB or COG) is sensitive to the light. Strong lighting environment could possibly cause malfunction. Light sealing structure casing is recommend.
17. LCD module reliability may be reduced by temperature shock.
18. When storing the LCD module, avoid exposure to the direct sunlight, high humidity, high temperature or low temperature. They may damage or degrade the LCD module



Pixel Details
Scale=30/1

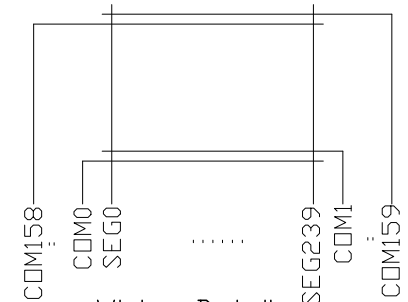


BLA&BLK Details
Scale=5/1



Application PCB Example
(PCB Thickness=1.6t, PCB Tol=±0.15mm)
Scale=6/5

K1 Terminal No.	Pin Name
1	VG
2	V0
3	XV0
4	CAP1P
5	CAP1N
6	VDD
7	VSS
8	COMSCN
9	IF2
10	IF1
11	IF0
12	/CS
13	A0
14	/RD
15	/WR
16	/RES
17	DB0
18	DB1
19	DB2
20	DB3
21	DB4
22	DB5
23	DB6
24	DB7



Wiring Details
(Top View)
Scale=free

Rev	Note	Date
C	Add Double Side Tape	Luo Lin
B	Typing Correction	2020-09-18
A	Add Application PCB Example	Luo Lin
		2020-08-27
Dwg Title LM240160YCW Outline Dwg		
Dwg No. MK-006824b-1-1		Date 2020-01-16
Scale 3/2	Tol. ±0.5	Unit mm
Approved	Checked	Drawn Luo Lin

TOPWAY

Note:

- *1. LCD Display Type : FSTN, Positive, Transflective
- *2. Viewing Direction : 6H
- *3. Duty : 1/160, Bias : 1/14, Vop : 16.0V
- *4. Operating Voltage : 3.3V
- *5. Backlight Color : White
- *6. Backlight Supply : 3.0V TYP.
- *7. Operating Temperature : -30°C~80°C
- *8. Storage Temperature : -30°C~80°C