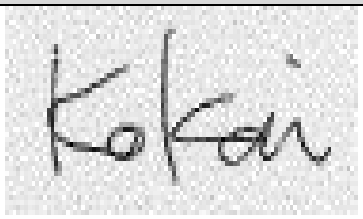
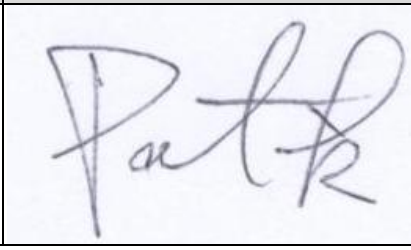
晶采光電科技股份有限公司
AMPIRE CO., LTD.

SPECIFICATIONS FOR LCD MODULE

CUSTOMER	
CUSTOMER PART NO.	
AMPIRE PART NO.	AM-1024600L7TMQW-T05H
APPROVED BY	
DATE	

☐ Approved For Specifications
☐ Approved For Specifications & Sample

APPROVED BY	CHECKED BY	ORGANIZED BY
		

RECORD OF REVISION

Revision Date	Page	Contents	Editor
2013/11/14	-	New Release	Alan
2013/12/18	18	Correct Basic Characteristic	Rober

1. FEATURES

The TFT is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This module is composed of a TFT LCD panel, a driving circuit and a back light system. This TFT LCD has a 10.1 (17:10) inch diagonally measured active display area with WSVGA(1024 x 600 pixel) resolution.

(1) 10.1 (17:10 diagonal) inch configuration
(2) One channel LVDS interface
(3) 262K color by 6 bit R.G.B signal input
(4) RoHS Compliance
(5) Halogen Free
(6) Projected Capacitive Touch Screen . I2C Interface(EETI IC)

2. PHYSICAL SPECIFICATIONS

Item	Specifications	Unit	Note
LCD size	10.1” (Diagonal)	inch	
Active area	222.72 (H) ×125.28 (V)	mm	
Number of pixels	1024(H) × 600(V)	pixels	
Pixel pitch	0.2715(H) × 0.2088(V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	262,144	colors	
Display mode	Normally white		
Dimensional outline	235.0 (Typ) ×145.8 (Typ) ×9.79(D)	mm	
Back-light	Single LED (Side-Light type)		

3. ABSOLUTE MAX. RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit.

Item	Symbol	Values		UNIT	Note
		Min.	Max.		
LED Power Supply Voltage	V_{LED}	-0.3	15.0	V	GND=0
Logic Supply Voltage	V_{DD}	-0.3	5.0	V	
Operating Temperature	T_{OPA}	-20	70	°C	
Storage Temperature	T_{STG}	-30	80	°C	

4. ELECTRICAL CHARACTERISTICS

4.1 TFT LCD Module

Item	Symbol	Values			UNIT	Note
		Min.	Typ.	Max.		
Power voltage	VDD	3.0	3.3	3.6	V	Note1
Current of power supply	IDD	-	0.3	-	A	**VDD=3.3V Black pattern**
Power voltage for LED driver	VLED	9	12.0	15.0	V	
LED driver current of power supply	ILED	-	330		mA	**VLED=12V ADJ=100%**

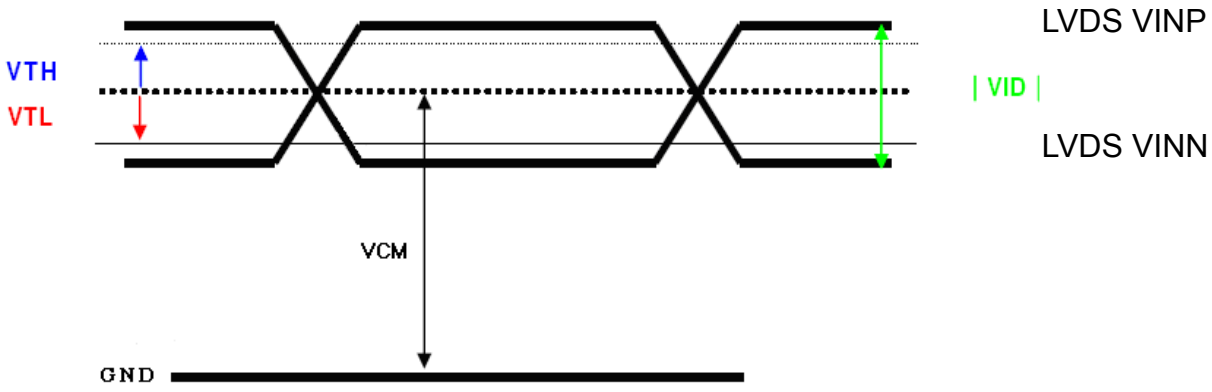
Note 1: **VDD-dip condition :**

when 2.7V≦VDD<3.0V，td≦10ms.

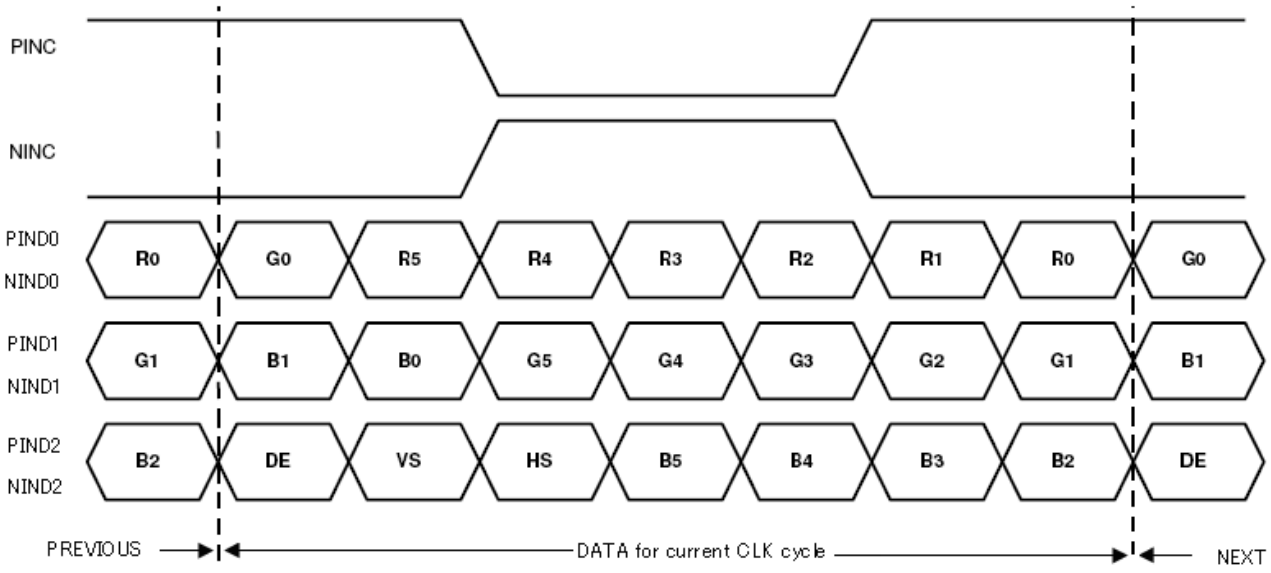
VDD＞3.0V ，VDD-dip condition should be same as VDD-turn-con condition.

4.2 Switching Characteristics of LVDS Receiver

Item	Symbol	Min.	Typ.	Max.	Unit	Condition
Differential Input High Threshold	VTH	--	--	100	mV	VCM=1.2V
Differential Input Low Threshold	VTL	-100	--	--	mV	
Input current	IIN	-10	--	+10	uA	
Differential input Voltage	|VID|	0.2	--	0.6	V	
Common Mode Voltage Offset	VCM	$\frac{\|VID\|}{2}$	1.25	2.4-$\frac{\|VID\|}{2}$	V	



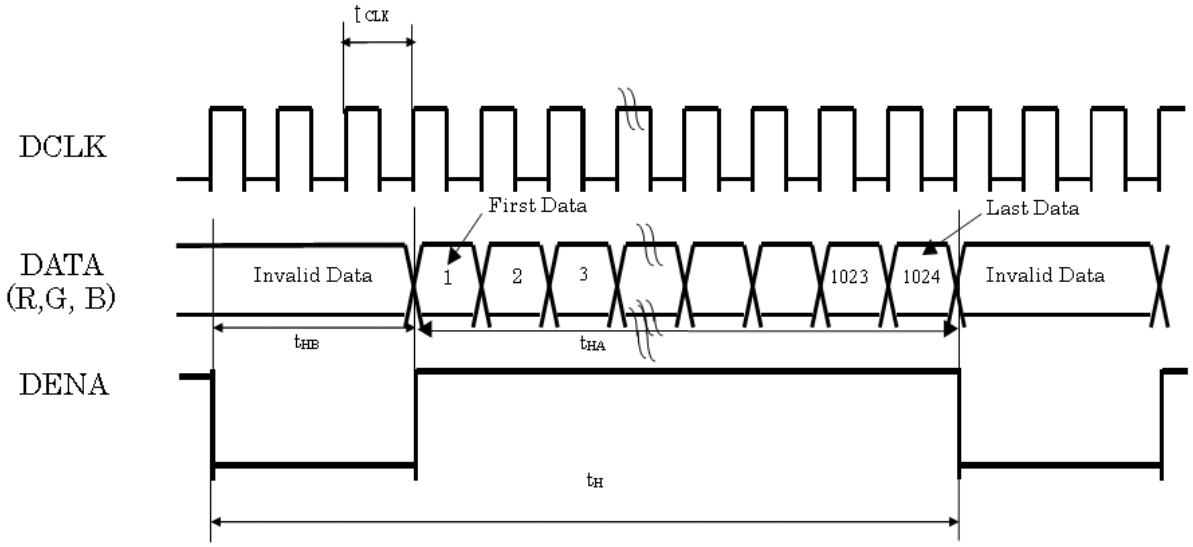
4.3 6-bit LVDS Input Data Mapping



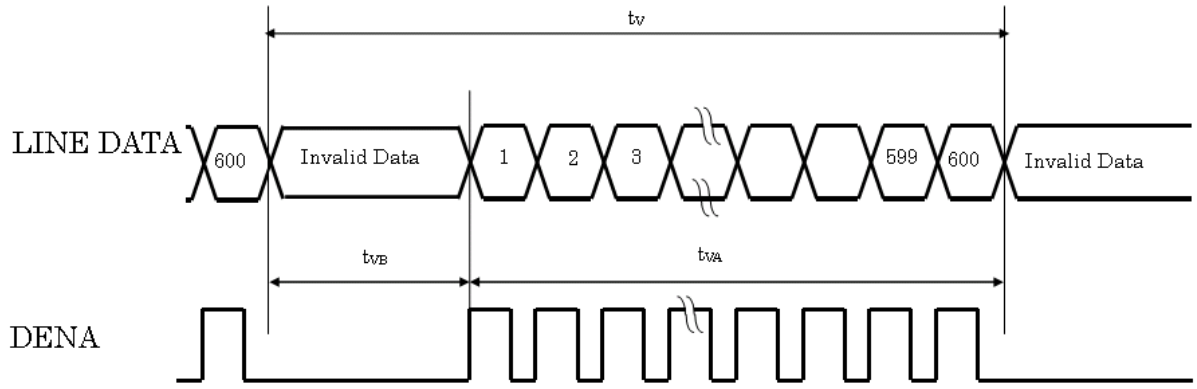
4.4 Timing characteristics of input signals

Item				Symbol	Min.	Typ.	Max.	Unit
LVDS input signal sequence	Frame Rate			tclk	41	51.2	57	MHz
LCD input signal sequence (input LVDS Transmitter)	DENA	Horizontal	Horizontal total Timing	t_H	1214	1344	1364	tCLK
			Horizontal effective Timing	t_{HA}	1024			tCLK
			Horizontal Blank Time	t_{HB}	190	320	340	tCLK
		Vertical	Vertical total Time	t_V	615	365	645	t_H
			Vertical effective Time	t_{VA}	600			t_H
			Vertical Blank Time	t_{VB}	15	35	45	t_H

Horizontal timing sequence



Vertical timing sequence

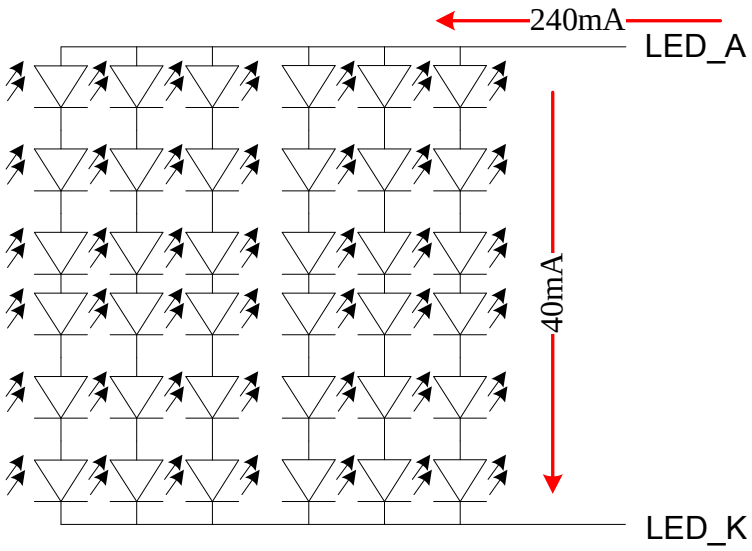


4.5 Backlight Driving Conditions

Item	Symbol	Values			Unit	Note
		Min.	Typ.	Max.		
LED Driver voltage	VLED	9	12	15	V	
Power Supply Current For LED Driver	ILED	-	330	-	mA	VLED=12V VADJ=3.3V (duty 100%)
ADJ Input Voltage	V_{ADJ}	-	3.3	VLED	V	duty=100%
LED voltage	V_{AK}	--	18.9	21.6	V	I_L =240mA Ta=25℃
LED current	I_L	--	240	--	mA	Note (1)
		--	205	--	mA	Note (1)
LED Life Time	-	--	30K	--	Hour	Note (2)

Note (1): The constant current source is needed for white LED back-light driving.
When LCM is operated over 60 deg.C ambient temperature, the I_L of the LED back-light should be adjusted to 205mA max

There are 6 Groups LED shown as below , $V_{LEDA-LEDK}$=18.9V ,Ta=25℃



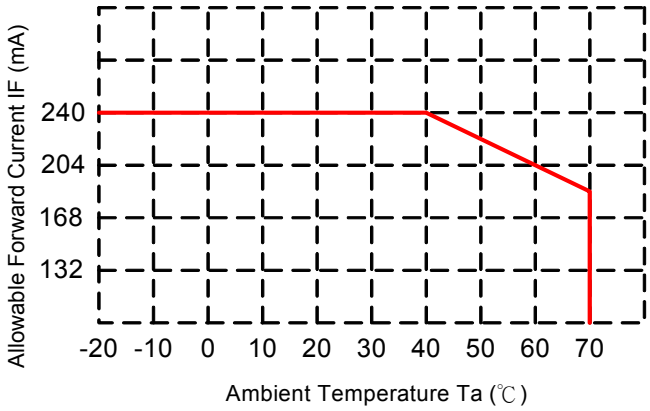
Note2 : Condition: Ta=25℃, continuous lighting

Life time is estimated data.

Definitions of failure:

1. LCM brightness becomes half of the minimum value.
2. LED doesn't light normally.

When LCM is operated over 40℃ ambient temperature, the I_{LED} should be follow :



5. OPTICAL SPECIFICATION

5.1 Optical specification

Item	Symbol	Condition	Values			Unit	Note
			Min.	Typ.	Max.		
Viewing angle	θ L	(CR≧10)	60	70	--	degree	Note1 Note2
	θ R		60	70	--		
	θ U		60	70	--		
	θ D		40	50	--		
Response time	TR	Normal θ =Φ=0°	--	5	7	msec	Note3
	TF		--	20	28	msec	
Contrast ratio	CR		400	500	--	--	Note2
Color chromaticity	WX		0.26	0.31	0.36	--	Note1 Note4
	WY		0.28	0.33	0.38	--	
	RX		0.54	0.59	0.64	--	
	RY		0.28	0.33	0.38	--	
	GX		0.29	0.34	0.39	--	
	GY		0.54	0.59	0.64	--	
	BX		0.11	0.16	0.21	--	
	BY		0.05	0.1	0.15	--	
Luminance	L		350	440	--	cd/m^2	Note4
Luminance uniformity	YU		70	--	--	%	Note5

5.2 Measuring Condition

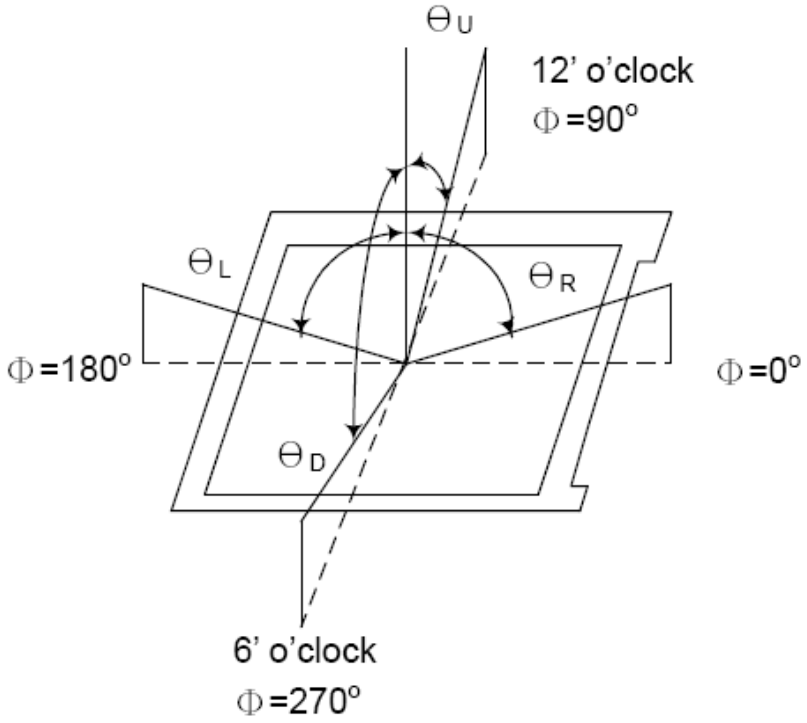
- Measuring surrounding : dark room
- Ambient temperature : 25±2℃
- 15min. warm-up time

5.3 Measuring Equipment

The optical characteristics should be measured in dark room. After 30 minutes operation, the optical properties are measured at the center point of the LCD screen. (Response time is measured by Photo detector TOPCON BM-7 of view : 1° / Height : 120mm.)

Note 1 : Definition of viewing angle range

Note 2 :

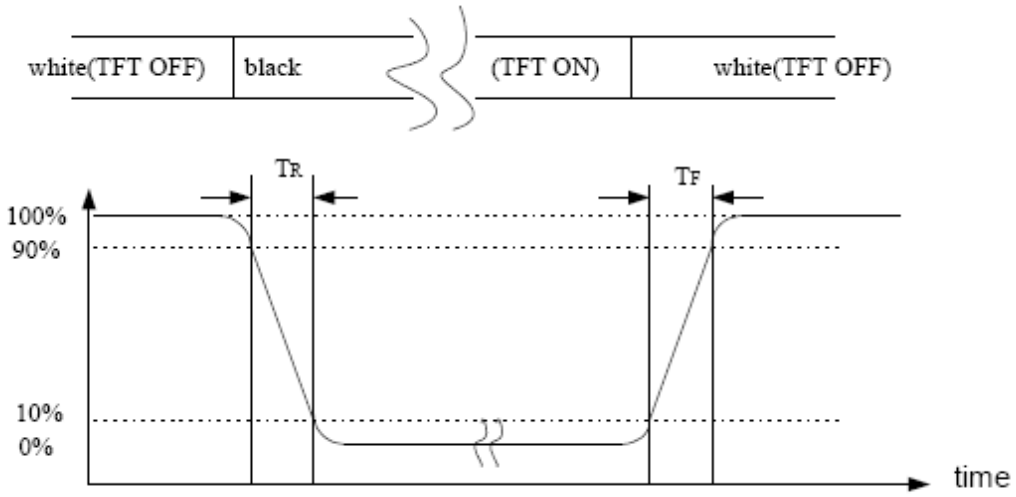


Definition of Contrast Ratio (CR) :

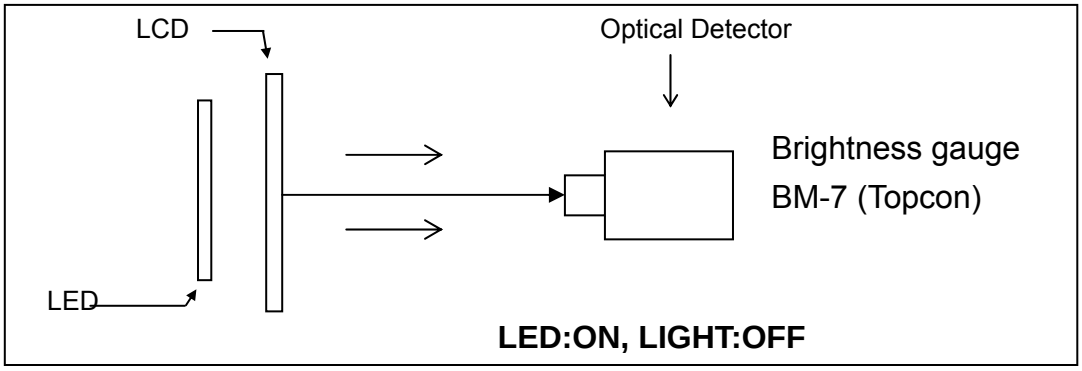
measured at the center point of panel

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

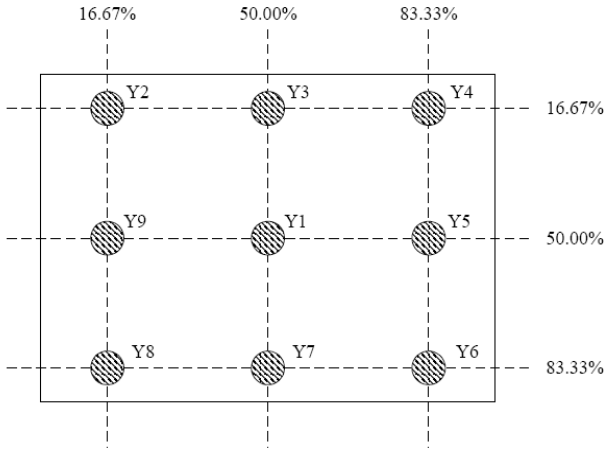
Note 3 : Definition of Response time : Sum of T_R and T



Note 4 : Definition of optical measurement setup



Note 5 : Definition of brightness uniformity



$$\text{Luminance uniformity} = \frac{\text{(Min Luminance of 9 points)}}{\text{(Max Luminance of 9 points)}} \times 100\%$$

Note 6 : Rubbing Direction (The different Rubbing Direction will cause the different optima view direction

Note 7 : Condition: Ta=25℃, Life time is estimated data.

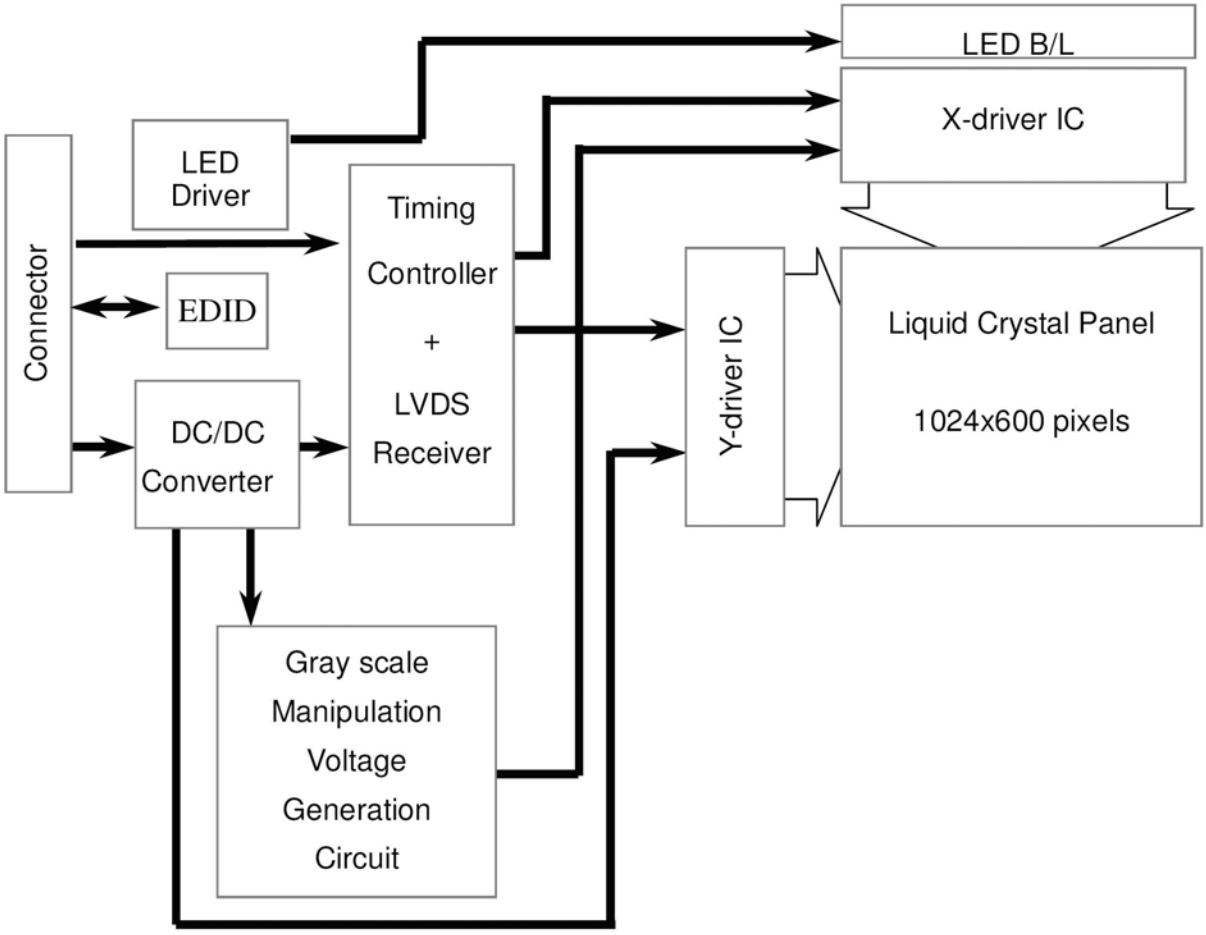
Definitions of failure:

i. LCM brightness becomes half of the minimum value.

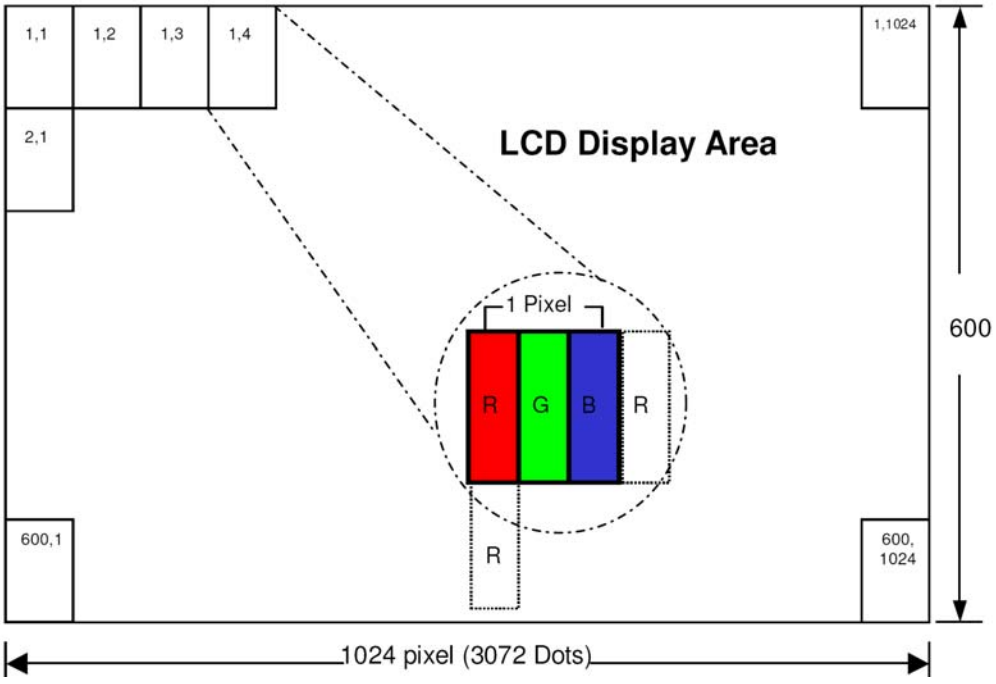
ii. LED doesn't light normally.

6. BLOCK DIAGRAM

6.1 TFTLCD Module



6.2 Pixel format



7.INTERFACE

7.1 Electrical Interface Connection

CN1(Input signal): CSTAR DS100-430-H23 (equivalent JAE FI-XB30SSRL-HF16)

Pin No.	Symbol	Description	Note
1	GND	Ground	
2	VDD	3.3V Power	
3	VDD	3.3V Power	
4	V_EDID	3.3V Power for EDID	
5	NC	No connection	
6	CLK_EDID	EDID Clock Input	
7	DATA_EDID	EDID Data Input	
8	RXIN0-	LVDS Signal - channel0-	
9	RXIN0+	LVDS Signal+ channel0+	
10	GND	Ground	
11	RXIN1-	Data Input channel1-	
12	RXIN1+	Data Input channel1+	
13	GND	Ground	
14	RXIN2-	Data Input channel2-	
15	RXIN2+	Data Input channel2+	
16	GND	Ground	
17	RXCLKIN-	Data Input CLK-	
18	RXCLKIN+	Data Input CLK+	
19	GND	Ground	
20	NC	No connection	
21	NC	No connection	
22	GND	Ground	
23	GND	Ground	
24	NC	No connection	

25	NC	No connection	
26	NC	No connection	
27	NC	No connection	
28	NC	No connection	
29	NC	No connection	
30	NC	No connection	

CN2(LED backlight): BHSR-02VS-1 (JST or equivalent)

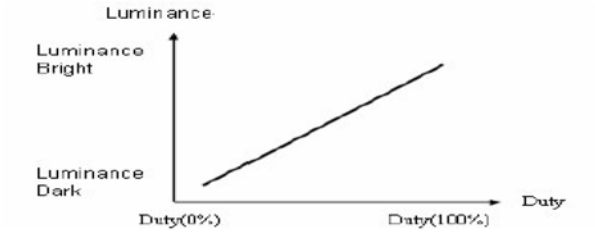
Pin No.	Symbol	Description	Note
1	A	Anode for LED backlight (+18.9V, 160mA)	
2	K	Cathode for LED backlight	

CN2(LED Driver Board): FPHTI-104TTW000(Kingfont or equivalent)

Pin No.	Symbol	Description	Note
1	+12V	Voltage for LED circuit (+12V)	
2	LED_EN	LED BLU ON/OFF	
3	GND	Power ground	
4	PWM	Adjust the LED brightness by PWM	

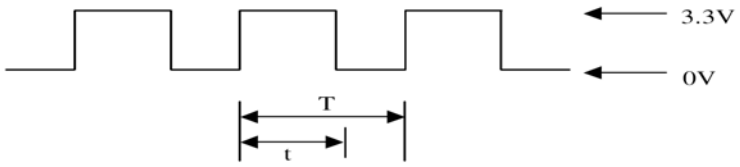
Note* : **The brightness of LCD panel could be changed by adjusting ADJ**

[Note]
(1) ADJ can adjust brightness to control Pin. Pulse duty the bigger the brighter.



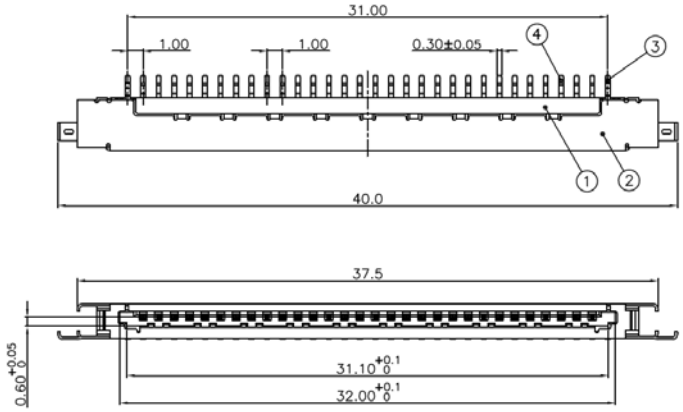
(2) ADJ Signal=0~3.3V，Operation Frequency：

Dimming Range		
PWM Frequency (F)	Duty Cycle (Min.)	Duty Cycle (Max.)
100Hz < F < 500Hz	5%	100%
500Hz < F < 20KHz	10%	100%

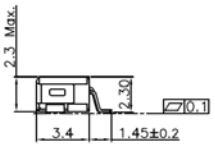


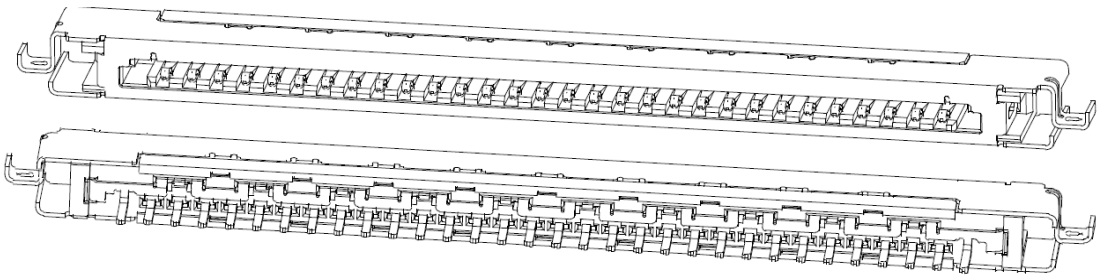
Duty Cycle = t / T *100%

(3) LVDS Connector : CSTAR DS100-430-H23



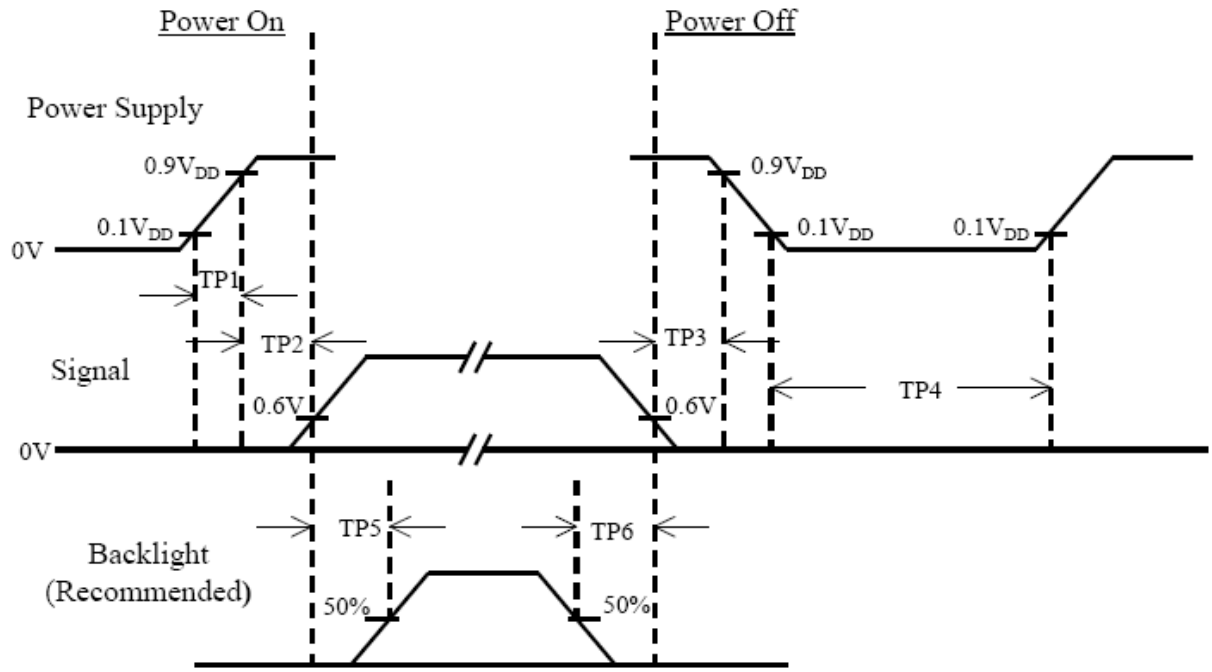
NOTES:
1.INSULATOR:THERMOPLASTIC;COLOR:BEIGE
2.CONTACT:COPPER ALLOY t=0.15mm
PLATING:CONTACT AREA 5u?GOLD,
SOLDER AREA 80~120u" TIN (LEAD FREE).
OVERALL WITH 50u?NICKEL UNDER PLATED.
3.SHELL: STAINLESS t=0.15mm
PLATING:SOLDER AREA PLATED WITH GOLD FLASH
4.GROUND: COPPER ALLOY t=0.15mm
PLATING:TIN(LEAD FREE).
ELECTRICAL:
VOLTAGE RATING:200V AC(RMS)/DC
CURRENT RATING:1A AC(RMS)/DC
CONTACT RESISTANCE:40mΩ Max.
INSULATION RESISTANCE:100MΩ Min.
DIELECTRIC WITHSTANDING VOLTAGE:500V AC(RMS)
OPERTING TEMPERATURE:-40°C~+80°C





DS100-430-H23
BOTTOM MOUNT

8. Power On/Off Sequence



Item	Min.	Typ.	Max.	Unit	Remark
TP1	0.5	--	10	msec	
TP2	0	--	50	msec	
TP3	0	--	50	msec	
TP4	500	--	--	msec	
TP5	200	--	--	msec	
TP6	200	--	--	msec	

Note：

(1) The supply voltage of the external system for the module input should be the same as the definition of VDD.

(2) Apply the lamp voltage within the LCD operation range. When the back-light turns on before the LCD operation or the LCD turns off before the back-light turns off, the display may momentarily become white.

(3) In case of VDD = off level, please keep the level of input signal on the low or keep a high impedance.

(4) TP4 should be measured after the module has been fully discharged between power off and on period.

(5) Interface signal shall not be kept at high impedance when the power is on.

9. Touch Panel SPECIFICATION

9.1 Basic Characteristic

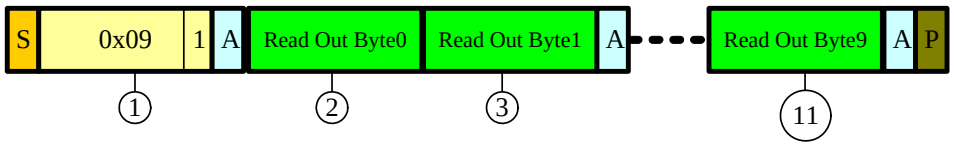
ITEM	SPECIFICATION
Type	Projective Capacitive Touch Panel
Activation	Two-fingers (Must Four-fingers)
X/Y Position Reporting	Absolute Position
Touch Force	No contact pressure required
Calibration	No need for calibration
Report Rate	Approx 25 points/sec
Control IC	**EETI EXC7200 +EX5404**

Pin definition of TP FPC:

CN6		
Pin No.	**Symbol**	**Function**
1	PWR	3.3V Regulated
2	SCL	I2C CLOCK
3	SDA	I2C DATA
4	/INT	Interrupt Request pin
5	GND	POWER GND
6	GND	POWER GND

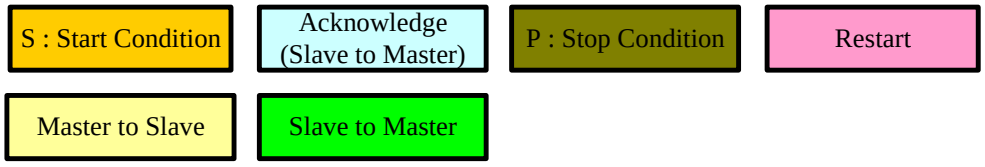
9.2 7-bit I2C address = 0x04.

The complete I2C data format:

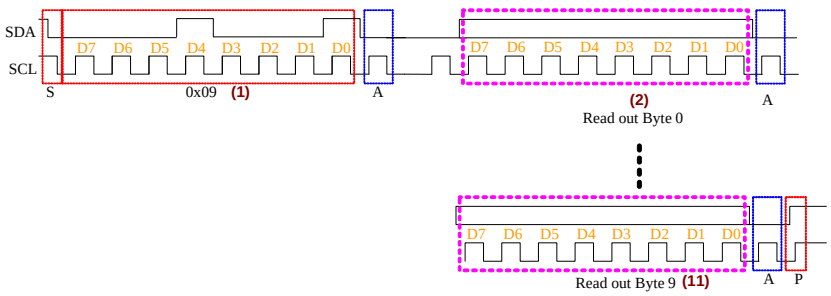


① // 7bit I2C address =0x04 Send I2C Slave address 0x04 Bit1=1 for:write

② ~ ⑪ // Read out Byte0~byte10



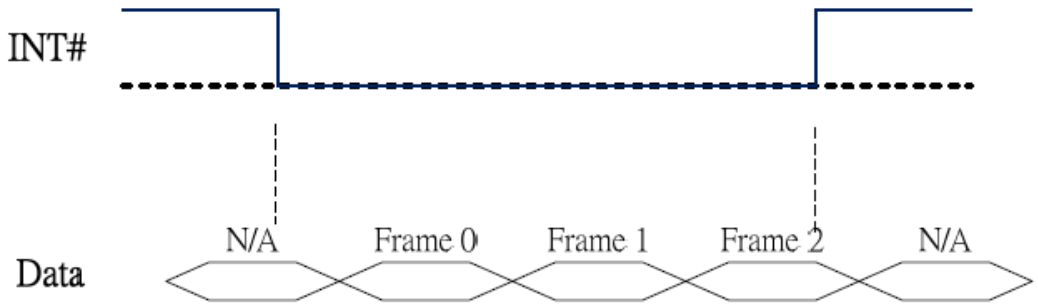
The detail Timing



Read Out Byte	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
BYTE0	0	0	0	0	0	1	0	0
	Report ID = 0x04							
BYTE1								
	BIT[7] : When this bit =1 is Valid touch. BIT[6:2] : Contact ID. BIT[1] : In range bit , this bit is always 1. BIT[0] : This bit 1 for touch down , 0 for touch lift Example: 0x83: 1st Touch Down.							

	0x82: 1st Touch Lift. 0x87: 2nd Touch Down. 0x86: 2nd Touch Lift.							
BYTE2	Touch X [3:0]				Don't care			
	X Coordination Bit [3:0] in BYTE2 Bit [7: 4]							
BYTE3	Touch X [15:4]							
	X Coordination Bit [15:4] in BYTE3							
BYTE4	Touch Y [3:0]				Don't care			
	Y Coordination Bit [3:0] in BYTE2 Bit [7: 4]							
BYTE5	Touch Y [15:4]							
	Y Coordination Bit [15:4] in BYTE3							
BYTE6								
	Reserved							
BYTE7								
	Reserved							
BYTE8								
	Reserved							
BYTE9								
	Reserved							

Interrupt starts at touch-down event and ends at touch-lift event.
During the period, coordinate report rate is related to the rate which host issues read-coordinate command.



Coordinate

Sample Code :

```
/*****************************************************************************
* Function Name    : u8 EXC7200_I2C_CoordRead(u8 Slave_Addr,u8 read_Nbyte , u16    *ByteReturn)
* Description      : Use GPIO Read N byte data from Slave device (Addr) to Host
* Input             : u8 Slave_Addr , Ex:0x04
*                     : u8 read_Nbyte
*                     : Point for touch information
*                        ByteReturn [0] = Point X1
*                        ByteReturn [1] = Point Y1
*                        ByteReturn [2] = T.B.D
*                        ByteReturn [3] = Point Y2
*                        ByteReturn [4] = Point Y2
*                        ByteReturn [5] = T.B.D
* Return
*
* #define EXC7200_I2C_CoordRead_1stTouch_Down    0x01
* #define EXC7200_I2C_CoordRead_1stTouch_Lift    0x81
* #define EXC7200_I2C_CoordRead_2ndTouch_Down    0x02
* #define EXC7200_I2C_CoordRead_2ndtTouch_Lift    0x82
*****************************************************************************/

#define EXC7200_I2C_CoordRead_1stTouch_Down    0x01
#define EXC7200_I2C_CoordRead_1stTouch_Lift    0x81
#define EXC7200_I2C_CoordRead_2ndTouch_Down    0x02
#define EXC7200_I2C_CoordRead_2ndtTouch_Lift    0x82
#define EXC7200_I2C_CoordRead_error    0x00

u8 EXC7200_I2C_CoordRead(u8 Slave_Addr,u8 read_Nbyte , u16    *ByteReturn )
{
   u8 *pBuffer ,i ;
   u8 Byte[10] ;


   IO_I2C_start();    // Start Condiction
   IO_I2C_reg_cmd_para((Slave_Addr<<1)+1); // Send I2C Slave address+1 Bit0=1 for:read
                pBuffer=IO_I2C_read_Nbyte(read_Nbyte);      // read 10 byte

                for(i=0;i<10;i++)
                    {
                            Byte[i]=*pBuffer;
                            pBuffer++;
                    }

                if( (Byte[1]==0x83) | (Byte[1]==0x82))    //
                {
                     ByteReturn[0]=((u16)((Byte[3]&0x00ff)<<4))+((u16)((Byte[2]&0x00f0)>>4)); //Point X1
                      ByteReturn[1]=((u16)((Byte[5]&0x00ff)<<4))+((u16)((Byte[4]&0x00f0)>>4)); //Point Y1
                      ByteReturn[2]= 0xFFFF;
                      ByteReturn[3]= 0xFFFF;
                      ByteReturn[4]= 0xFFFF;
                      ByteReturn[5]= 0xFFFF;
                      Previous_X1=ByteReturn[0];
                      Previous_Y1=ByteReturn[1];

                      if ( (Byte[1]==0x83))
                      {
                              return EXC7200_I2C_CoordRead_1stTouch_Down;
                      }
                      if ( (Byte[1]==0x82))
```

```
                {
                        return EXC7200_I2C_CoordRead_1stTouch_Lift;
                }

    }
                if( (Byte[1]==0x87) | (Byte[1]==0x86))    //
                {
                    ByteReturn[3]=((u16)((Byte[3]&0x00ff)<<4))+((u16)((Byte[2]&0x00f0)>>4)); //Point X1
                     ByteReturn[4]=((u16)((Byte[5]&0x00ff)<<4))+((u16)((Byte[4]&0x00f0)>>4)); //Point Y1
                     ByteReturn[5]= 0xFFFF;
                     ByteReturn[0]= Previous_X1;
                     ByteReturn[1]= Previous_Y1;
                     ByteReturn[2]= Previous_Z1;

                     if ( (Byte[1]==0x87))
                     {
                        return EXC7200_I2C_CoordRead_2ndTouch_Down;
                     }
                     if ( (Byte[1]==0x86))
                     {
                        return EXC7200_I2C_CoordRead_2ndtTouch_Lift;
                     }

    }


    return EXC7200_I2C_CoordRead_error;

}


// Example Interrupt function
void EXC7200_I2C_EXT_INT (void)
{

    u16 DataBuffer[10];
    u32 TPX1,TPY1,TPX2,TPY2;
    u16 Temp_X=0xFFFF,Temp_Y=0xFFFF;
    u16 temp;
    u8 Touch_size=4;
    u8    RStatus;

       while((ReadINT1())==0)
       {
                                RStatus = EXC7200_I2C_CoordRead(0x04,10,DataBuffer);


                                TPX1=(u16) DataBuffer[0]; //first X position
                                TPY1=(u16) DataBuffer[1]; //first Y position
                                TPX2=(u16) DataBuffer[3]; //second point X position
                                TPY2=(u16) DataBuffer[4]; //second point Y position


                                 // Remapping Touch X,Y to LCD X,Y
                                TPX1*=Current_LCM_ID.LCD_X_Max;
                                 TPX1/=2048;
                                TPY1*=Current_LCM_ID.LCD_Y_Max;
                                TPY1/=2048;
                                TPX2*=Current_LCM_ID.LCD_X_Max;
```

```
                TPX2/=2048;
                TPY2*=Current_LCM_ID.LCD_Y_Max;
                TPY2/=2048;


                switch (RStatus)
                {
                        case (EXC7200_I2C_CoordRead_1stTouch_Down):
                GUI_CircleFill(TPX1, TPY1, 2, rand()%0xFFFF);
                                // Do 1st touch down Function
                                break;
                        case (EXC7200_I2C_CoordRead_1stTouch_Lift):
                GUI_RectangleFill(TPX1-4, TPY1-4,TPX1+4, TPY1+4 ,rand()%0xFFFF);
                                // Do 1st touch Lift Function

                                break;
                        case (EXC7200_I2C_CoordRead_2ndTouch_Down):
                GUI_CircleFill(TPX1, TPY1, 2, RGB(128,128,128));
                GUI_CircleFill(TPX2, TPY2, 2, RGB(128,128,0));
                                // Do 2nd touch Down Function
                                break;
                        case (EXC7200_I2C_CoordRead_2ndtTouch_Lift):
                GUI_RectangleFill(TPX1-4, TPY1-4,TPX1+4, TPY1+4 ,RGB(128,128,128));
                GUI_RectangleFill(TPX2-4, TPY2-4,TPX2+4, TPY2+4 ,RGB(128,128,0));
                                // Do 2nd touch Lift Function
                                break;
                        default:
                                break;
                }

        }

}
```

10. RELIABILITY TEST

Test Item	Test Conditions	Note
High Temperature Operation	70±3°C , t=240 hrs	
Low Temperature Operation	-20±3°C , t=240 hrs	
High Temperature Storage	80±3°C , t=240 hrs	1,2
Low Temperature Storage	-30±3°C , t=240 hrs	1,2
Storage at High Temperature and Humidity	60°C, 90% RH , 240 hrs	1,2
Thermal Shock Test	-20°C (30min) ~ 70°C (30min) 100 cycles	1,2
Vibration Test (Packing)	Sweep frequency : 10 ~ 55 ~ 10 Hz/1min Amplitude : 0.75mm Test direction : X.Y.Z/3 axis Duration : 30min/each axis	2

Note 1 : Condensation of water is not permitted on the module.

Note 2 : The module should be inspected after 1 hour storage in normal conditions (15-35°C , 45-65%RH).

11. HANDLING & CAUTIONS

11.1 Cautions when taking out the module

Pick the pouch only, when taking out module from a shipping package.

11.2 Cautions for handling the module

11.2.1 As the electrostatic discharges may break the LCD module, handle the LCD module with care. Peel a protection sheet off from the LCD panel surface as slowly as possible.

11.2.2 As the LCD panel and backlight element are made from fragile glass material, impulse and pressure to the LCD module should be avoided.

11.2.3 As the surface of the polarizer is very soft and easily scratched, use a soft dry cloth without chemicals for cleaning.

11.2.4 Do not pull the interface connector in or out while the LCD module is operating.

11.2.5 Put the module display side down on a flat horizontal plane.

11.2.6 Handle connectors and cables with care.

11.3 Cautions for the operation

11.3.1 When the module is operating, do not lose MCLK, DE signals. If any one of these signals were lost, the LCD panel would be damaged.

11.3.2 Obey the supply voltage sequence. If wrong sequence were applied, the module would be damaged.

11 .4 Cautions for the atmosphere

11.4.1 Dewdrop atmosphere should be avoided.

11.4.2 Do not store and/or operate the LCD module in a high temperature and/or humidity atmosphere. Storage in an electro-conductive polymer-packing pouch and under relatively low temperature atmosphere is recommended.

11.5 Cautions for the module characteristics

11.5.1 Do not apply fixed pattern data signal to the LCD module at product aging.

11.5.2 Applying fixed pattern for a long time may cause image sticking.

11.6 Other cautions

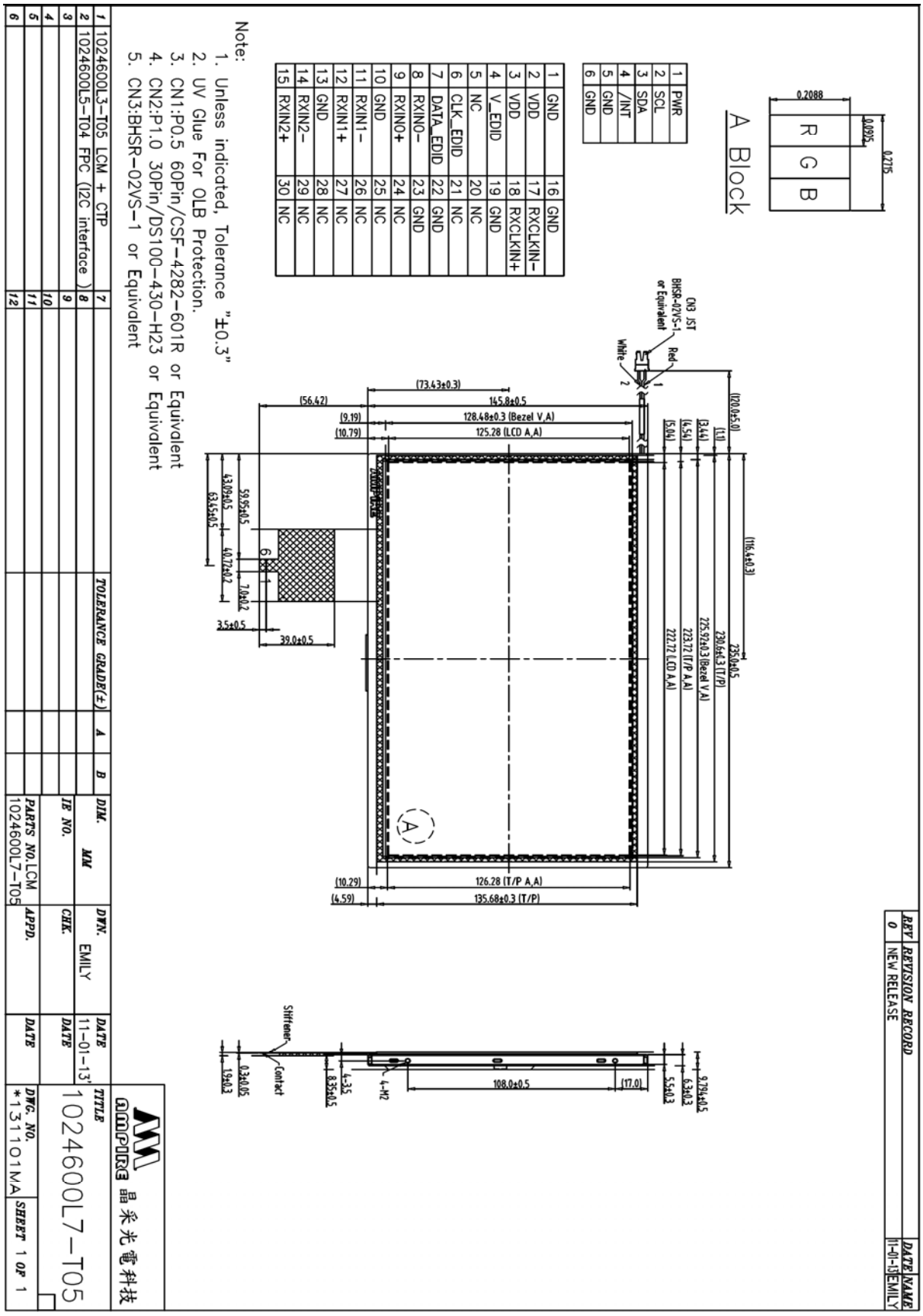
11.6.1 Do not disassemble and/or re-assemble LCD module.

11.6.2 Do not re-adjust variable resistor or switch etc.

11.6.3 When returning the module for repair or etc, please pack the module not to be broken. We recommend using the original shipping packages.

11.6.4 AMIPRE will provide one year warrantee for all products and three months warrantee for all repairing products.

12. OUTLINE DIMENSION



1	PWR
2	SCL
3	SDA
4	/INT
5	GND
6	GND

1	GND	16	GND
2	VDD	17	RXCLKIN−
3	VDD	18	RXCLKIN+
4	V_EDID	19	GND
5	NC	20	NC
6	CLK_EDID	21	NC
7	DATA_EDID	22	GND
8	RXIN0−	23	GND
9	RXIN0+	24	NC
10	GND	25	NC
11	RXIN1−	26	NC
12	RXIN1+	27	NC
13	GND	28	NC
14	RXIN2−	29	NC
15	RXIN2+	30	NC

Note:
1. Unless indicated, Tolerance "±0.3"
2. UV Glue For OLB Protection.
3. CN1:P0.5 60Pin/CSF-4282-601R or Equivalent
4. CN2:P1.0 30Pin/DS100-430-H23 or Equivalent
5. CN3:BHSR-02VS-1 or Equivalent

REF	REVISION RECORD	DATE	NAME
0	NEW RELEASE	11-01-13	EMILY

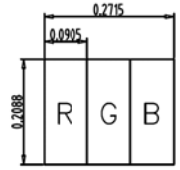
1	1024600L3-T05 LCM + CTP	7			TOLERANCE GRADE(±)	A	B	DIM.			
2	1024600L5-T04 FPC (I2C interface)	8						MM			
3		9						IB NO.			
4		10									
5		11									
6		12									

DWN.	EMILY	DATE	11-01-13
CHK.		DATE	
APPD.		DATE	
PARTS NO.	LCM 1024600L7-T05		

晶采光電科技 AMPIRE

TITLE	1024600L7-T05
DWG. NO.	*1311O1MA
SHEET	1 OF 1

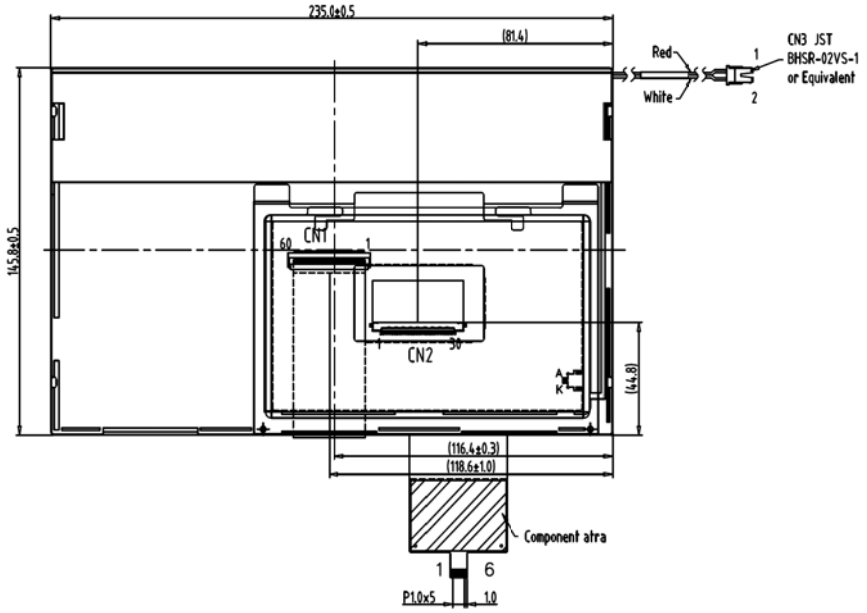
REV	REVISION RECORD	DATE	NAME
0	NEW RELEASE	11-01-13	EMILY



A Block

1	PWR
2	SCL
3	SDA
4	/INT
5	GND
6	GND

1	GND	16	GND
2	VDD	17	RXCLKIN−
3	VDD	18	RXCLKIN+
4	V_EDID	19	GND
5	NC	20	NC
6	CLK_EDID	21	NC
7	DATA_EDID	22	GND
8	RXIN0−	23	GND
9	RXIN0+	24	NC
10	GND	25	NC
11	RXIN1−	26	NC
12	RXIN1+	27	NC
13	GND	28	NC
14	RXIN2−	29	NC
15	RXIN2+	30	NC



Back view

Note:

1. Unless indicated, Tolerance "±0.3"
2. UV Glue For OLB Protection.
3. CN1:P0.5 60Pin/CSF-4282-601R or Equivalent
4. CN2:P1.0 30Pin/DS100-430-H23 or Equivalent
5. CN3:BHSR-02VS-1 or Equivalent

				TOLERANCE GRADE(±)	A	B	DIM. MM	DWN. EMILY	DATE 11-01-13	TITLE 1024600L7-T05	
1	1024600L3-T05 LCM + CTP	7									
2	1024600L5-T04 FPC (I2C interface)	8									
3		9					IE NO.	CHK.	DATE		
4		10									
5		11					PARTS NO. LCM-1	APPD.	DATE	DWG. NO. *131102MA	SHEET 1 OF 1
6		12					1024600L7-T05				

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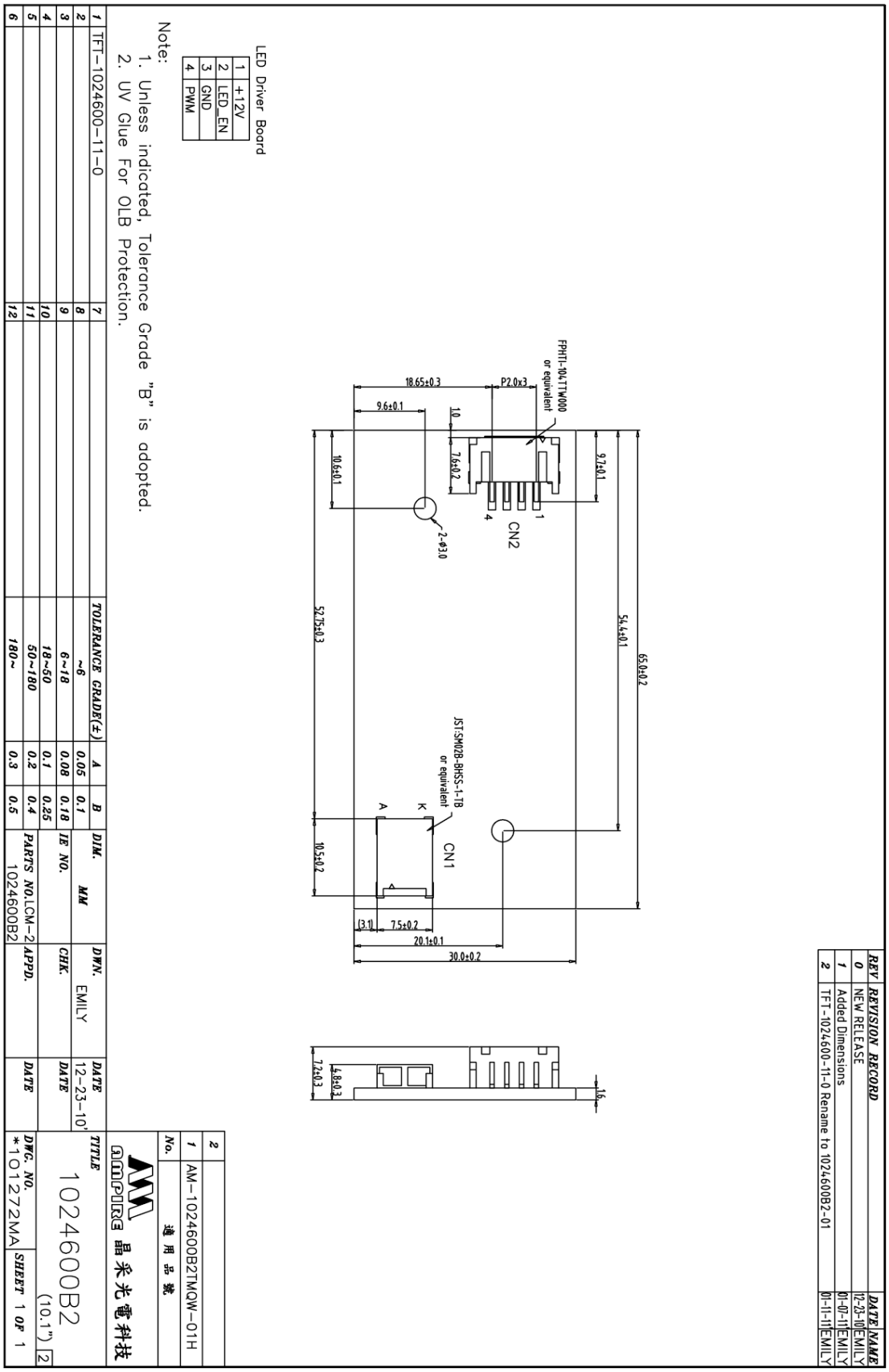
OUTLINE DIMENSION (LED driver)



13. EDID TABLE

EDID Table of 1024600L

Byte# (Decimal)	Byte# (HEX)	Field Name & Comments	Value (HEX)	Value (BIN)	Value (DEC)
0	00	Header	00	00000000	0
1	01	Header	FF	11111111	255
2	02	Header	FF	11111111	255
3	03	Header	FF	11111111	255
4	04	Header	FF	11111111	255
5	05	Header	FF	11111111	255
6	06	Header	FF	11111111	255
7	07	Header	00	00000000	0
8	08	ISA Manufacture Code LSB(3 character ID = AMI	05	00000101	5
9	09	Compressed ASCII	B0	10110000	176
10	0A	Product Code "1001"	60	01100000	96
11	0B	Hex, LSB first	12	00010010	18
12	0C	LCD module Serial No-Preferred but Optional	58	01011000	88
13	0D	LCD module Serial No-Preferred but Optional	A2	10100010	162
14	0E	LCD module Serial No-Preferred but Optional	0F	00001111	15
15	0F	LCD module Serial No-Preferred but Optional	00	00000000	0
16	10	Week of manufacture=25	19	00011001	25
17	11	Year of manufacture=2012	16	00010110	22
18	12	EDID Structure Version#=1	01	00000001	1
19	13	EDID revision#=3	03	00000011	3
20	14	Video input definition=Digital input, CRGB	80	10000000	128
21	15	Max H image size=22cm	16	00010110	22
22	16	Max V image size=13cm	0D	00001101	13
23	17	Display Gamma=2.2	78	01111000	120
24	18	Feature support(DPMS)=Active off, RGB color	0A	00001010	10
25	19	Red/green low bits(10000110)	86	10000110	134
26	1A	Blue/white low bits(00100110)	26	00100110	38
27	1B	Red x, Red x=0.592	97	10010111	151
28	1C	Red y, Red y=0.340	57	01010111	87
29	1D	Green x, Green x=0.341	57	01010111	87
30	1E	Green y, Green y=0.592	97	10010111	151
31	1F	Blue x, Blue x=0.156	28	00101000	40
32	20	Blue y, Blue y=0.127	20	00100000	32
33	21	White x, White x=0.321	52	01010010	82
34	22	White y, White y=0.33	54	01010100	84
35	23	Established timing 1	00	00000000	0
36	24	Established timing 2	00	00000000	0
37	25	Manufacturer's timings	00	00000000	0
38	26	Standard timing#1 was not used	01	00000001	1
39	27		01	00000001	1
40	28	Standard timing#2 was not used	01	00000001	1
41	29		01	00000001	1
42	2A	Standard timing#3 was not used	01	00000001	1
43	2B		01	00000001	1
44	2C	Standard timing#4 was not used	01	00000001	1
45	2D		01	00000001	1
46	2E	Standard timing#5 was not used	01	00000001	1
47	2F		01	00000001	1
48	30	Standard timing#6 was not used	01	00000001	1
49	31		01	00000001	1
50	32	Standard timing#7 was not used	01	00000001	1
51	33		01	00000001	1
52	34	Standard timing#8 was not used	01	00000001	1
53	35		01	00000001	1
54	36	Detailed timing/monitor(descriptor#1)	00	00000000	0
55	37	1024×600@60Hz: Pixel Clock=51.2MHz	14	00010100	20
56	38	Horizontal active= 1024 pixels (L8b)	00	00000000	0
57	39	Horizontal blanking= 320 pixels (L8b)	40	01000000	64

58	3A	HA(U4b): HB(U4b)	41	01000001	65
59	3B	Vertical active= 600 lines (L8b)	58	01011000	88
60	3C	Vertical blanking= 35 lines (L8b)	23	00100011	35
61	3D	HA(U4b): HB(U4b)	20	00100000	32
62	3E	H sync. Offset=53 pixels	35	00110101	53
63	3F	H sync. Width=35 pixels	23	00100011	35
64	40	V sync. Offset=4 lines	45	01000101	69
65	41	V sync. Width=5 lines	00	00000000	0
66	42	H image size= 220 mm (L8b)	DC	11011100	220
67	43	V image size= 129 mm (L8b)	81	10000001	129
68	44	Horizontal Image (U4b): Vertical Image (U4b)	00	00000000	0
69	45	No Horizontal Border=0	00	00000000	0
70	46	No Vertical Border=0	00	00000000	0
71	47	Non-interlaced, Normal display, No stereo, Digital separate sync, H/V pol Negatives	19	00011001	25
72	48	Detailed timing/monitor(descriptor#2)	44	01000100	68
73	49	1024×600 @65Hz: Pixel Clock= 57MHz	16	00010110	22
74	4A	Horizontal active= 1024 pixels (L8b)	00	00000000	0
75	4B	Horizontal blanking= 340 pixels (L8b)	54	01010100	84
76	4C	HA(U4b): HB(U4b)	41	01000001	65
77	4D	Vertical active= 600 lines (L8b)	58	01011000	88
78	4E	Vertical blanking= 45 lines (L8b)	2D	00101101	45
79	4F	HA(U4b): HB(U4b)	20	00100000	32
80	50	H sync. Offset=93 pixels	5D	01011101	93
81	51	H sync. Width=35 pixels	23	00100011	35
82	52	V sync. Offset=17 lines	15	00010101	21
83	53	V sync. Width=5 lines	04	00000100	4
84	54	H image size= 220 mm (L8b)	DC	11011100	220
85	55	V image size= 129 mm (L8b)	81	10000001	129
86	56	Horizontal Image (U4b): Vertical Image (U4b)	00	00000000	0
87	57	No Horizontal Border=0	00	00000000	0
88	58	No Vertical Border=0	00	00000000	0
89	59	EDID Module revision	00	00000000	0
90	5A	Flag	00	00000000	0
91	5B	Flag	00	00000000	0
92	5C	Flag	00	00000000	0
93	5D	Dummy Descriptor	FE	11111110	254
94	5E	Flag	00	00000000	0
95	5F	PC Maker P/N 1st Character =M	00	00000000	0
96	60	PC Maker P/N 2nd Character =3	00	00000000	0
97	61	PC Maker P/N 3rd Character =4	00	00000000	0
98	62	PC Maker P/N 4th Character =9	00	00000000	0
99	63	PC Maker P/N 5th Character =5	00	00000000	0
100	64	LCD Supplier EEDID Revision # = 1.0	00	00000000	0
101	65	Manufacture P/N = 1	00	00000000	0
102	66	Manufacture P/N = 5	00	00000000	0
103	67	Manufacture P/N = P	00	00000000	0
104	68	Manufacture P/N = X	00	00000000	0
105	69	Manufacture P/N = 1	00	00000000	0
106	6A	Manufacture P/N = 4	00	00000000	0
107	6B	Manufacture P/N(If<13 char, then terminate with ASCII code, set remaining=20h)	00	00000000	0
108	6C	Flag	00	00000000	0
109	6D	Flag	00	00000000	0
110	6E	Flag	00	00000000	0
111	6F	Data Type Tag	FE	11111110	254
112	70	Flag	00	00000000	0
113	71	SMBUS Value = 20 nit	00	00000000	0
114	72	SMBUS Value = 28 nit	00	00000000	0
115	73	SMBUS Value = 40 nit	00	00000000	0
116	74	SMBUS Value = 56 nit	00	00000000	0

117	75	SMBUS Value = 79 nit	00	00000000	0
118	76	SMBUS Value = 111 nit	00	00000000	0
119	77	SMBUS Value = 156 nit	00	00000000	0
120	78	SMBUS Value = max nit	00	00000000	0
121	79	Number of LVDS channels=1	01	00000001	1
122	7A	Panel Self Test (00-Not Present, 01-Present)	00	00000000	0
123	7B	(If<13 char, then terminate with ASCII code 0Ah, set remaining char=20h)	00	00000000	0
124	7C	(If<13 char, then terminate with ASCII code 0Ah, set remaining char=20h)	00	00000000	0
125	7D	(If<13 char, then terminate with ASCII code 0Ah, set remaining char=20h)	00	00000000	0
126	7E	Extension Flag = 00	00	00000000	0
127	7F	Checksum	2E	00101110	46