

PRODUCT SPECIFICATION



MODEL NUMBER	EX-T55HD533A01
Description	5.5" HD +30PIN FPC
Customer	
Motherboard number	

Display	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE	郭裕	刘涛	江海波
DATE	2015-4-24	2014-4-24	2014-4-24

CUSTOMER APPROVAL	SIGNATURE	DATE

Revision History

Revision	Date	Originator	Detail	Remarks
1	2015-04-24		First Release;	郭裕

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1. General Description

This display module consists of a transmissive 5.5inch 720RGBx1280, TFT a-Si Active Matrix Color LCD that is electronically and mechanically integrated. The TFT display is capable of displaying 16.7M colors.

2. Module Parameter

Features	Details	Unit
Display Size(Diagonal)	5.5"	
LCD type	α -Si TFT	
Display Mode	IPS / Transmissive / Normally Black	
Resolution	720 RGB x 1280	Landscape
View Direction	ALL	
Module Outline	70.68 (H) x128.1(V) x1.5(T) (Note1)	mm
Active Area	68.04(H) x120.96(V)	mm
Pixel Size	0.0945 x 0.0945	mm
Pixel Arrangement	RGB Vertical Stripe	
Display Colors	16.7M	
Interface	MIPI IF	
Operating Temperature	-30~80	°C
Storage Temperature	-20~70	°C
Weight	TBD	g

Note 1: Excluding hooks, posts , FPC/FPC tail etc.

3. Absolute Maximum Ratings

$V_{SS}=0V$, $T_a=25^{\circ}C$

Item	Symbol	Min.	Max.	Unit
Supply Voltage	VCC	-0.3	+4.6	V
	IOVCC	-0.3	+4.6	V
	VSP	-0.3	+6.6	V
	VSN	-6.6	+0.3	
	VGH	-0.3	+18.5	V
	VGL	-16.5	0	V
Logic signal input level	Vi	-0.3	IOVCC+0.5	V

Note 1: 90%RH max, If Ta is below 50°C; 60%RH max, If Ta is over 60°C.

4. DC Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	VCI	2.5	2.8	3.3	V
	IOVCC	1.65	2.8	3.3	V
Gate On Voltage	VGH	-	15	-	
Gate Off Voltage	VGL	-	-10	-	
Logic Low input voltage	V _{IL}	0	-	0.3* IOVCC	V
Logic High input voltage	V _{IH}	0.7* IOVCC	-	IOVCC	V
Logic Low output voltage	V _{OL}	VSS	-	0.2* IOVCC	V
Logic High output voltage	V _{OH}	0.8* IOVCC	-	IOVCC	V
Current Of Analog Supply Voltage	I _{VCC}	-	10	-	mA

5. Backlight Characteristics

5.1. Backlight Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	V _f	Ta=25 °C, I _f =40mA	-	21	-	V
Forward Current	I _f	Ta=25 °C, V _F =19.2V	-	40	-	mA
Luminance	L _v		-	300	-	cd/m ²
Uniformity	Avg		80	-	-	%
Power dissipation	P _d		-	840	-	mW
LED life time	-		10,000	15,000		Hr
Drive method	Constant current					
LED Configuration	14White LEDs in two series					

Note1: Test condition I_f=40mA, Ta=25°C.

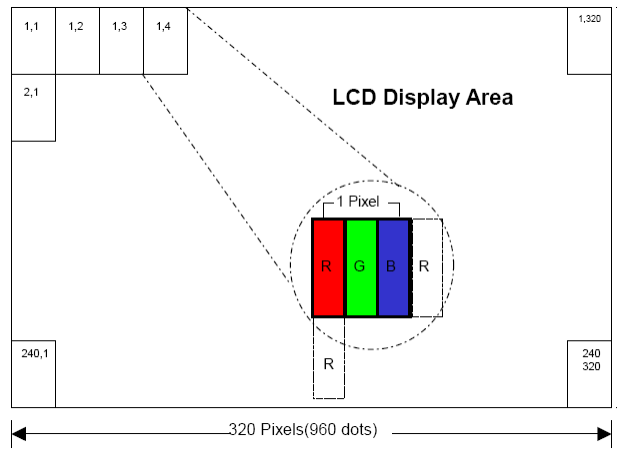
6. Optical Characteristics

Ta=25°C, VDD=2.8V, TN LC+ Polarizer

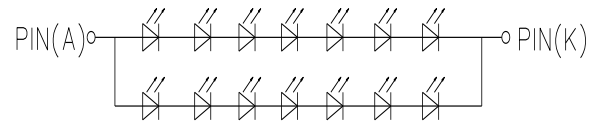
Backlight On (Transmissive Mode)	Item		Symbol	Condition	Specification			Unit
					Min.	Typ.	Max.	
	TFT Transmittance (without Polarizer)		$T\%$	Normally viewing angle	$\theta_x = \theta_y = 0^\circ$	-	4.9	-
Contrast ratio		CR	-			500	-	
Response time		$TR+TF$			-	30	-	ms
Chromaticity Transmissive	Red	XR	Center $CR \geq 10$	-	-	-		
		YR		-	-	-		
	Green	XG		-	-	-		
		YG		-	-	-		
	Blue	XB		-	-	-		
		YB		-	-	-		
	White	XW		-	0.313	-		
		YW		-	0.362	-		
Viewing Angle	Horizontal	$\theta X-$	-	80	-	Deg.		
		$\theta X+$	-	80	-			
	Vertical	$\theta Y+$	-	80	-			
		$\theta Y-$	-	80	-			
NTSC Ratio(Gamut)					-	70	-	%

7. Block Diagram and Power Supply

7.1. Pixel Format



7.2. Backlight block



7.3. Interface Pins Definition

Note :

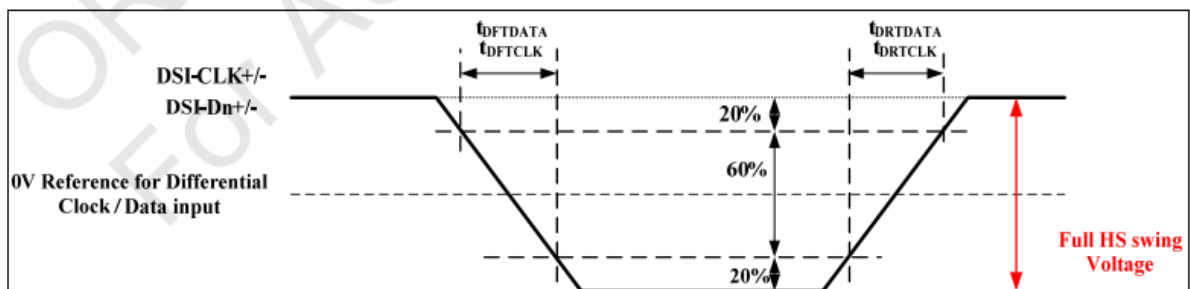
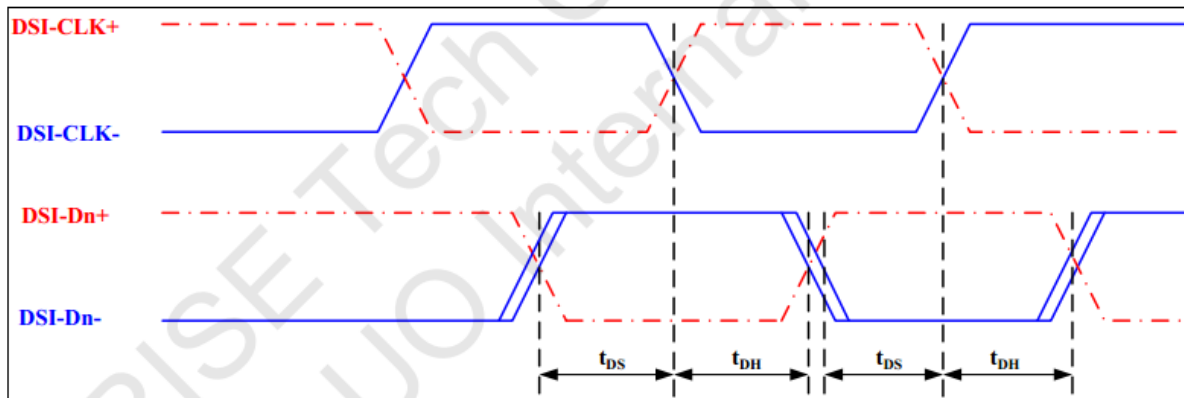
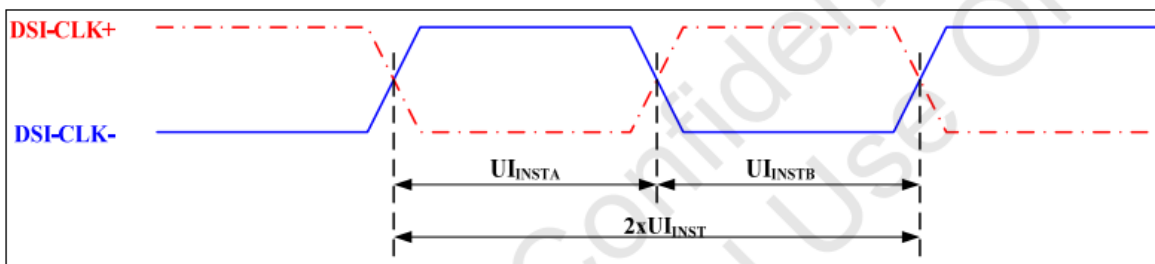
MIPI Interface for this module.

1	LEDB
2	LEDA
3	AUDD
4	AUDD
5	MIPI_TDD0
6	MIPI_TDD2
7	CND
8	MIPI_TDD1
9	MIPI_TDD4
10	CND
11	MIPI_TDD
12	MIPI_TDM
13	CND
14	MIPI_TDD0
15	MIPI_TDD0
16	CND
17	MIPI_TDD0
18	MIPI_TDD0
19	CND
20	LED2
21	CND
22	LED2
23	LED2
24	LED2
25	LED2
26	LED2
27	CND
28	CND
29	CND
30	CND
31	CND
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91	CND
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96	CND
97	CND
98	CND
99	CND
100	CND

8. AC Characteristics

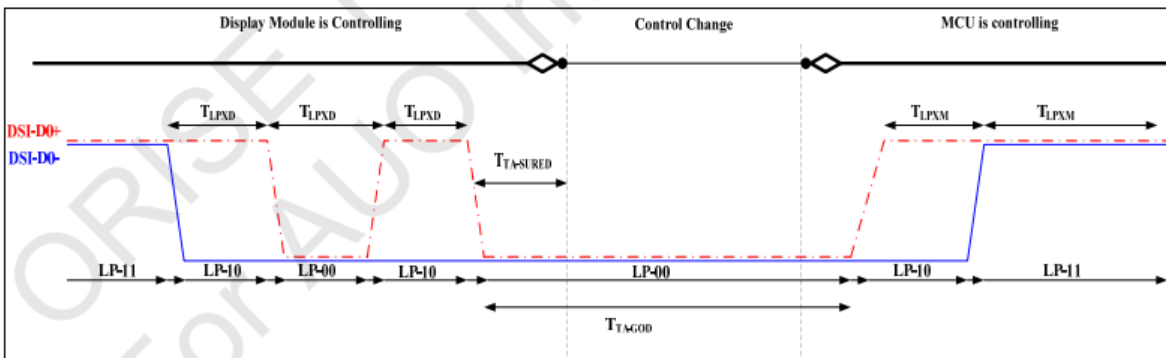
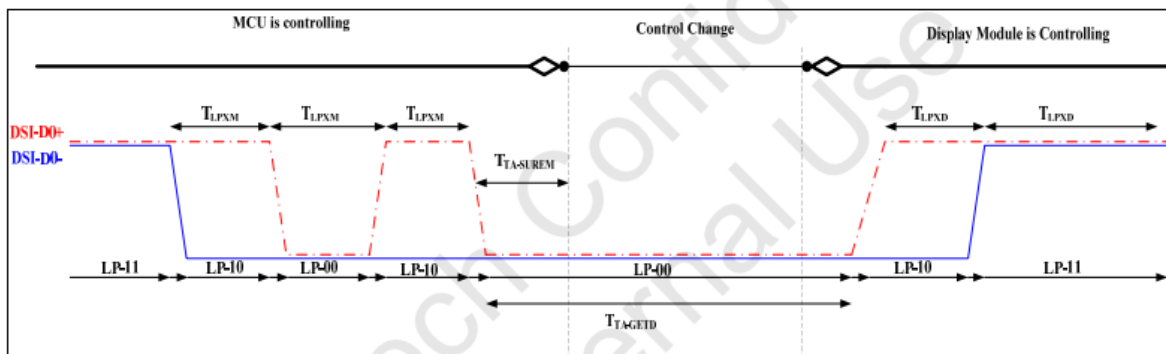
8.1.DSI Timing High speed mode

Parameter	Symbol	Parameter	Specification			Unit
			MIN	TYP	MAX	
High Speed mode						
DSI-CLK+/-	$2xU_{INST}$	Double UI instantaneous	4	-	25	ns
DSI-CLK+/-	U_{INSTA}, U_{INSTB}	UI instantaneous Halfs	2	-	12.5	ns
DSI-Dn+/-	t_{DS}	Data to clock setup time	0.15	-	-	UI
DSI-Dn+/-	t_{DH}	Data to clock hold time	0.15	-	-	UI
DSI-CLK+/-	t_{DRTCLK}	Differential rise time for clock	150	-	$0.3U_I$	ps
DSI-Dn+/-	$t_{DRTDATA}$	Differential rise time for data	150	-	$0.3U_I$	ps
DSI-CLK+/-	t_{DFTCLK}	Differential fall time for clock	150	-	$0.3U_I$	ps
DSI-Dn+/-	$t_{DFTDATA}$	Differential fall time for data	150	-	$0.3U_I$	ps



8.2 Low power mode

Parameter	Symbol	Parameter	Specification			Unit
			MIN	TYP	MAX	
Low Power mode						
DSI-D0+/-	T_{LPXM}	Length of LP-00, LP-01, LP-10 or LP-11 periods MPU → Display Module	50	-	-	ns
DSI-D0+/-	T_{LPXD}	Length of LP-00, LP-01, LP-10 or LP-11 periods Display Module → MPU	58	-	-	ns
DSI-D0+/-	$T_{TA-SURED}$	Time-out before the MPU start driving	T_{LPXD}	-	$2T_{LPXD}$	ns
DSI-D0+/-	$T_{TA-GETD}$	Time to drive LP-00 by display module	$5T_{LPXD}$	-	-	ns
DSI-D0+/-	T_{TA-GOD}	Time to drive LP-00 after turnaround request - MPU	$4T_{LPXD}$	-	-	ns
DSI-D0+/-	Ratio T_{LPX}	Ratio of T_{LPXM} / T_{LPXD} between MCU and display module	2/3	-	3/2	



9. Assembly Drawing

