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

	SIGNATURE	DATE
CUSTOMER APPROVAL		

Revision History

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

Table of Contents

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 displaying16.7M 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	ºC
Storage Temperature	-20～70	ºC
Weight	TBD	g

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

3. Absolute Maximum Ratings

V_{SS}=0V, Ta=25ºC

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 50ºC; 60%RH max, If Ta is over 60ºC.

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 ºC,I_F=40mA	-	21	-	V
Forward Current	I_f	Ta=25 ºC, 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=25ºC.

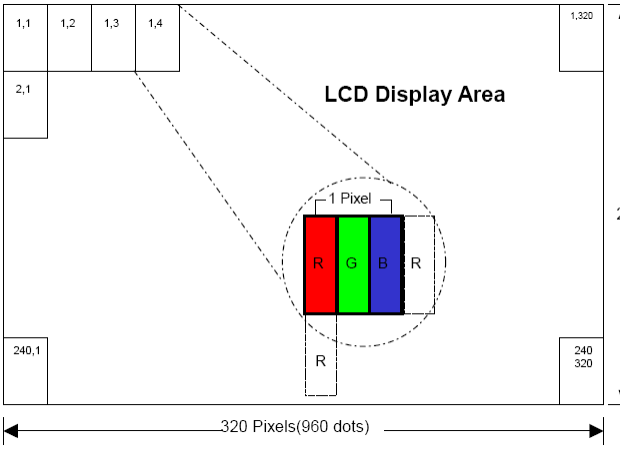
6. Optical Characteristics

Ta=25ºC, VDD=2.8V, TN LC+ Polarizer

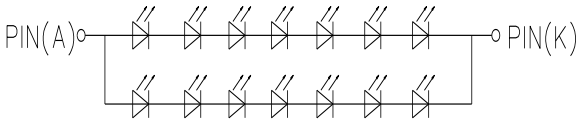
	Item		Symbol	Condition	Specification			Unit
					Min.	Typ.	Max.	
Backlight On (Transmissive Mode)	TFT Transmittance (without Polarizer)		*T%*	Normally viewing angle $\theta_X = \theta_Y$ =0º	-	4.9	-	%
	Contrast ratio		*CR*		-	500	-	
	Response time		*TR+ TF*		-	30	-	ms
	Chromaticity Transmissive	Red	*XR*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

7. Block Diagram and Power Supply

7.1. Pixel Format



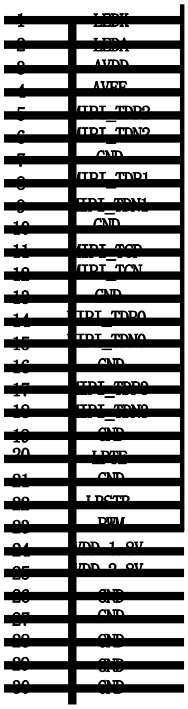
7.2. Backlight block



7.3. Interface Pins Definition

Note :

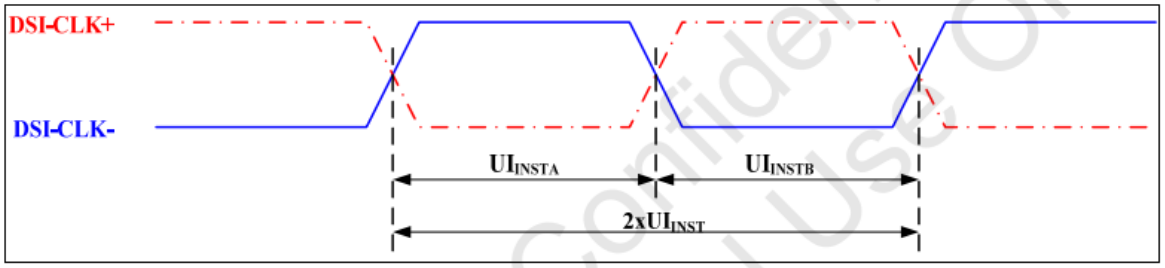
MIPI Interface for this module.

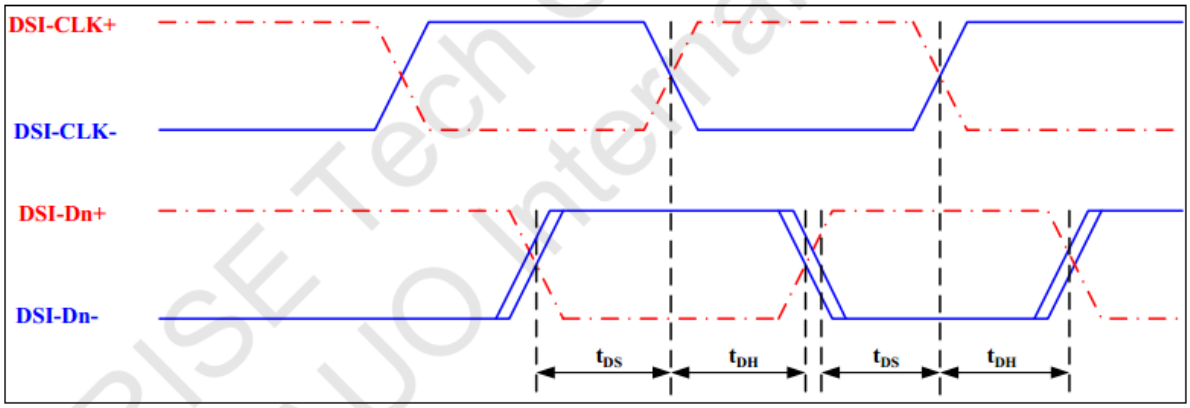


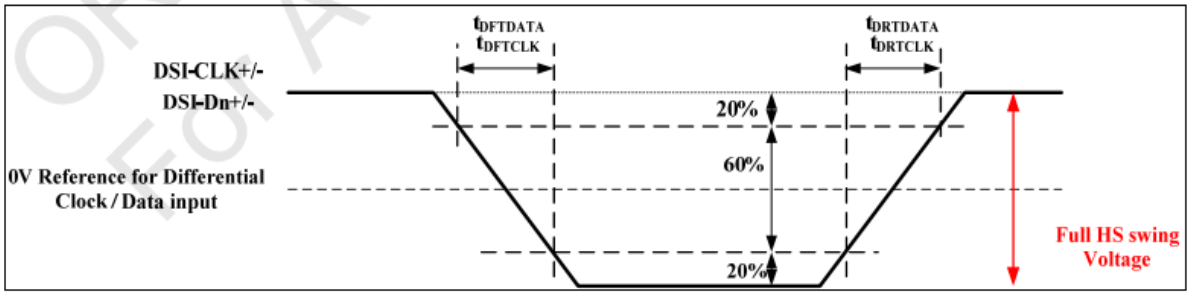
8. AC Characteristics

8.1. DSI Timing High speed mode

Parameter	Symbol	Parameter	Specification			Unit
			MIN	TYP	MAX	
High Speed mode						
DSI-CLK+/-	$2xUI_{INST}$	Double UI instantaneous	4	-	25	ns
DSI-CLK+/-	UI_{INSTA} , UI_{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	-	0.3UI	ps
DSI-Dn+/-	$t_{DRTDATA}$	Differential rise time for data	150	-	0.3UI	ps
DSI-CLK+/-	t_{DFTCLK}	Differential fall time for clock	150	-	0.3UI	ps
DSI-Dn+/-	$t_{DFTDATA}$	Differential fall time for data	150	-	0.3UI	ps

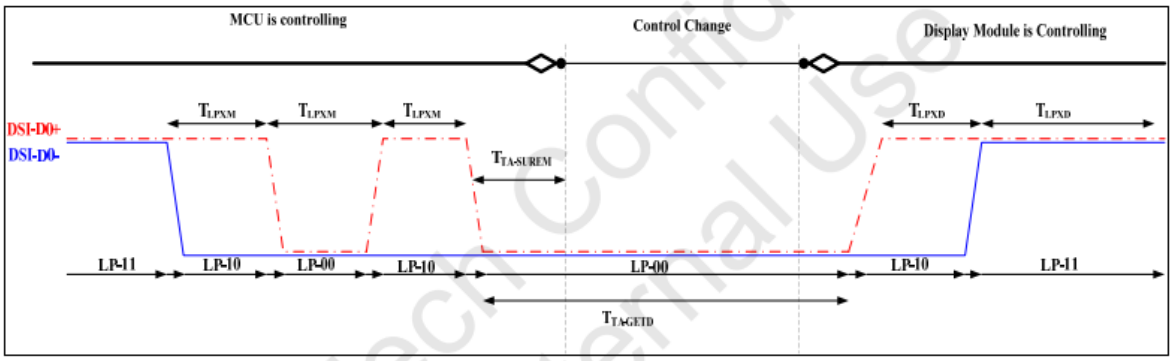


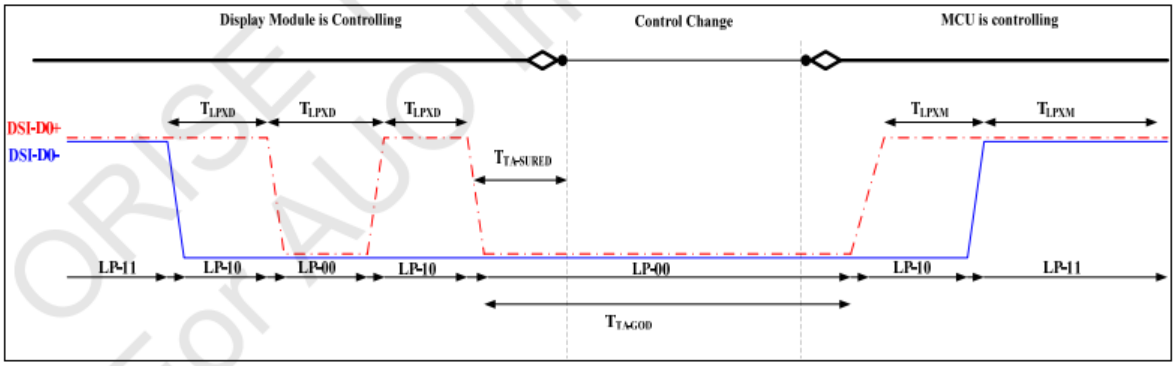




8.2 Low power mode

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}	-	$2XT_{LPXD}$	ns
DSI-D0+/-	$T_{TA-GETD}$	Time to drive LP-00 by display module	$5XT_{LPXD}$	-	-	ns
DSI-D0+/-	T_{TA-GOD}	Time to drive LP-00 after turnaround request - MPU	$4XT_{LPXD}$	-	-	ns
DSI-D0+/-	Ratio T_{LPX}	Ratio of T_{LPXM} / T_{LPXD} between MCU and display module	2/3	-	3/2	





9. Assembly Drawing