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SPECIFICATION

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CUSTOMER :

MODULE NO.:

WF35LTIACDNC0#

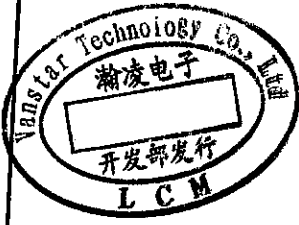
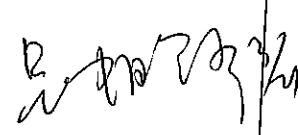
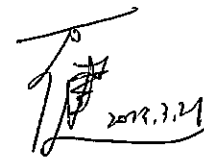
未出样, 参数仅供参考

APPROVED BY:

(FOR CUSTOMER USE ONLY)

PCB VERSION:

DATA:

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
		 2013.3.21	叶慧芬
ISSUED DATE: 2013-3-19			



DOC. FIRST ISSUE

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2013.3.19		First issue

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1. Module Classification Information

W F 35 L T I A C D N C 0 #
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

①	Brand : WINSTAR DISPLAY CORPORATION						
②	Display Type : H→Character Type, G→Graphic Type F→TFT Type						
③	Display Size : 3.5 ” TFT						
④	Model serials no.						
⑤	Backlight Type :	F→CCFL, White			T→LED, White		
⑥	LCD Polarize Type/ Temperature range/ Gray Scale Inversion Direction	I→Transmissive, W. T, 6:00 L→Transmissive, W.T,12:00					
⑦	A : TFT LCD B : TFT+FR+CONTROL BOARD C : TFT+FR+A/D BOARD D : TFT+FR+A/D BOARD+CONTROL BOARD E : TFT+FR+POWER BOARD F : TFT+CONTROL BOARD				G : TFT+FR H : TFT+D/V BOARD I : TFT+FR+D/V BOARD J : TFT+POWER BD		
⑧	Solution:						
	A: 128160	B:320234	C:320240	D:480234	E:480272	F: 640480	G: 800480
	H:1024600	I:320480	J:240320	K:800600	L:240400	M :1024768	
⑨	D: Digital L : LVDS						
⑩	Interface : N : without control board A : 8Bit B : 16Bit						
⑪	TS : N : Without TS T : resistive touch panel C : capacitive touch panel						
⑫	Version						
⑬	Special Code	#:Fit in with ROHS directive regulations					

2.Summary

This technical specification applies to 3.45' color TFT-LCD panel. The 3.45' color TFT-LCD panel is designed for camcorder, digital camera application and other electronic products which require high quality flat panel displays. This module follows RoHS.

3.General Specification

Item	Dimension	Unit
Dot Matrix	320 x RGBx240(TFT)	dots
Module dimension	76.9 x 63.9 x 4.36	mm
Active area	70.08 x 52.56	mm
Dot pitch	0.073 x 0.219	mm
LCD type	TFT, Negative, Transmissive	
View Direction	12 o'clock	
Gray Scale Inversion Direction	6 o'clock	
Backlight Type	LED,Normally White	

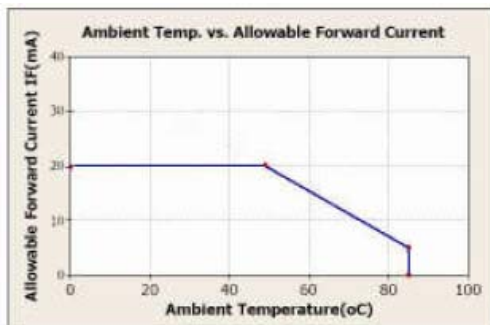
*Color tone slight changed by temperature and driving voltage.

4.Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _{OP}	-20	—	+70	°C
Storage Temperature	T _{ST}	-30	—	+80	°C

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. $\leq 60^{\circ}\text{C}$, 90% RH MAX. Temp. $> 60^{\circ}\text{C}$, Absolute humidity shall be less than 90% RH at 60°C



5. Electrical Characteristics

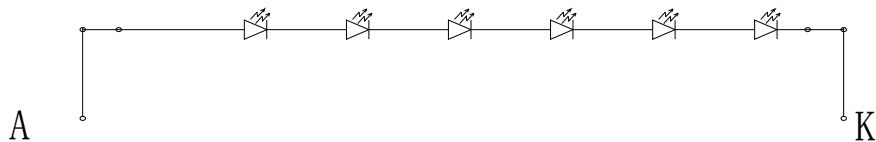
5.1. Operating conditions:

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	VCC	—	3.0	3.3	3.6	V

5.2 LED driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current		-	20	-	mA	
Power Consumption			384	408	mW	
LED voltage	VBL+	17.4	19.2	20.4	V	Note 1
LED Life Time		-	50,000	-	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



Note 2 : $T_a = 25\text{ }^{\circ}\text{C}$

Note 3 : Brightness to be decreased to 50% of the initial value

Note 4 : The single LED lamp case

6. DC Characteristics

Parameter	Symbol	Rating			Unit	Condition
		Min.	Typ.	Max.		
Low level input voltage	V_{IL}	0	-	0.3 VCC	V	
Hight level input voltage	V_{IH}	0.7 VCC	-	VCC	V	

7. AC Characteristics

Digital Parallal RGB interface

Signal	Item	Symbol	Min	Typ	Max	Unit
Dclk	Frequency	Tosc	-	6.5	10	MHz
	High Time	Tch	-	77	-	ns
	Low Time	Tcl	-	77	-	ns
Data	Setup Time	Tsu	12	-	-	ns
	Hold Time	Thd	12	-	-	ns
Hsync	Period	TH	-	408		Tosc
	Pulse Width	THS	5	30	-	Tosc
	Back-Porch	Thb		38		Tosc
	Display Period	TEP	-	320	-	Tosc
	Hsync-den time	THE	36	68	88	
	Front-Porch	Thf	-	20	-	Tosc
Vsync	Period	Tv	-	262	-	TH
	Pulse Width	Tvs	1	3	5	TH
	Back-Porch	Tvb	-	15	-	TH
	Display Period	Tvd	-	240	-	TH
	Front-Porch	Tvf	2	4	-	TH

Note: 1. $Thp + Thb = 68$, the user is make up by yourself.

2. $Tv = Tvs + Tvb + Tvd + Tvf$, the user is make up by yourself.

3. When SYNC mode is used, 1st data start from 68th Dclk after Hsync falling

CCIR601/656 Interface

Signal	Item	Symbol	Min	Typ	Max	Unit
Dclk	Frequency	Tosc	-	37	-	ns
	High Time	Tch	-	78	-	ns
	Low Time	Tcl	-	78	-	ns
Data	Setup Time	Tsu	12	-	-	ns
	Hold Time	Thd	12	-	-	ns

7.1 Waveform

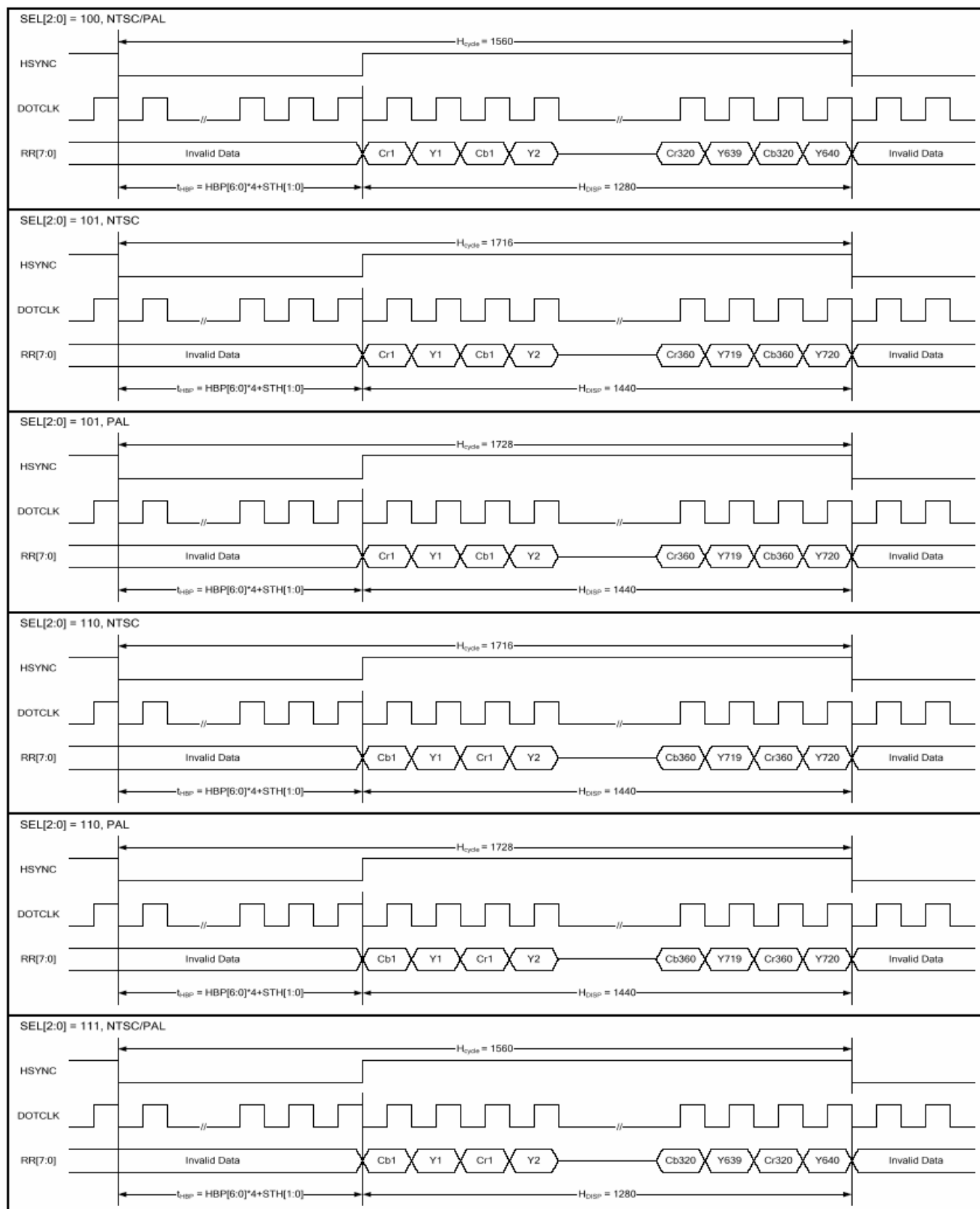


Figure 1 CCIR601 Horizontal Timing

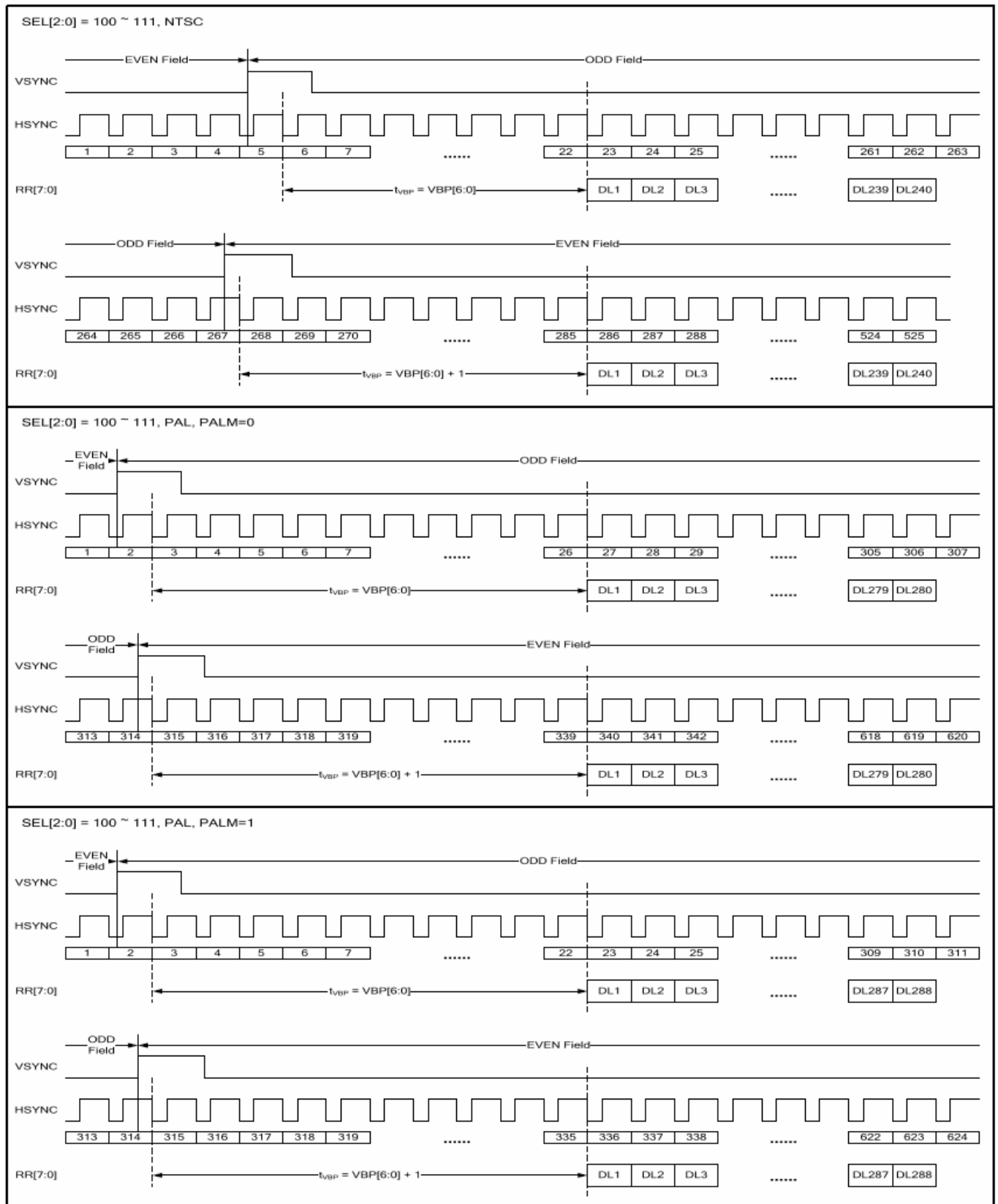


Figure 1 CCIR601 Vertical Timing

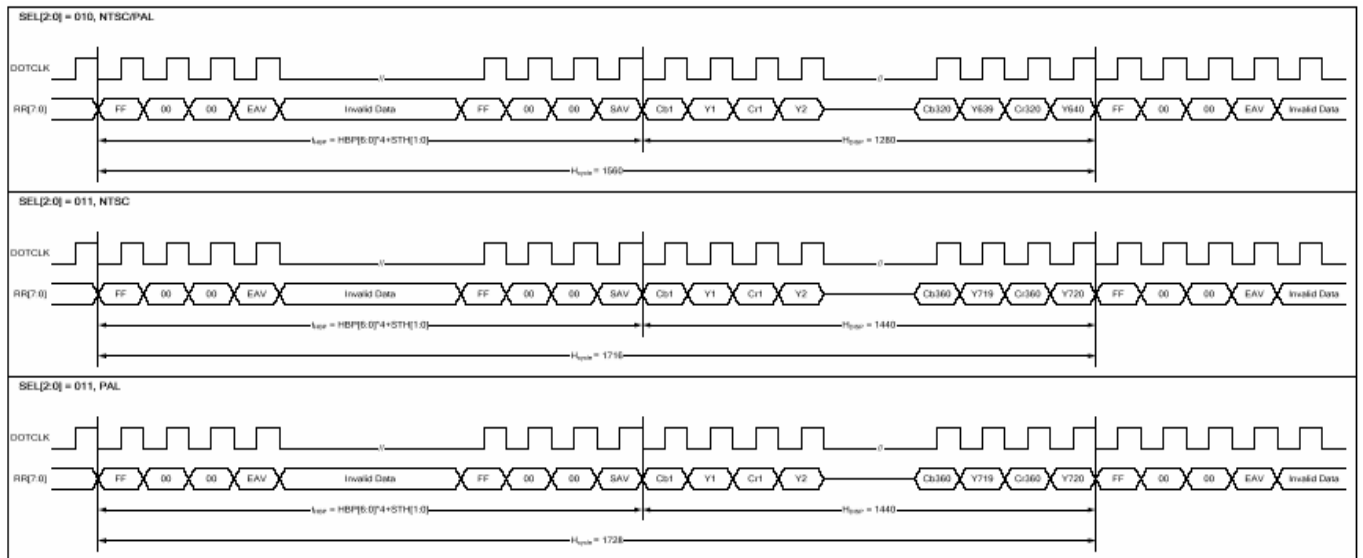


Figure 2 CCIR656 Horizontal Timing

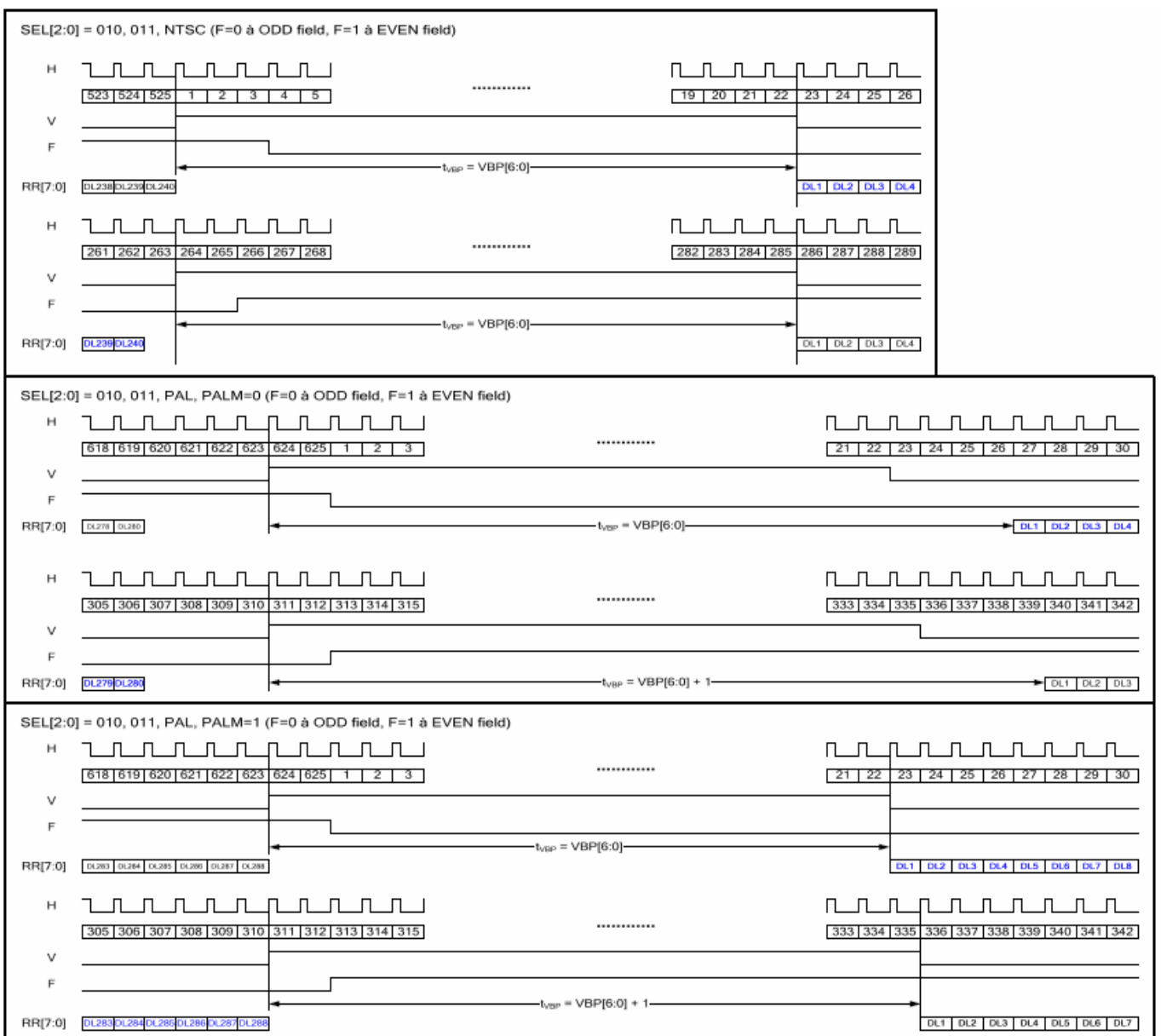


Figure 2 CCIR656 Vertical Timing

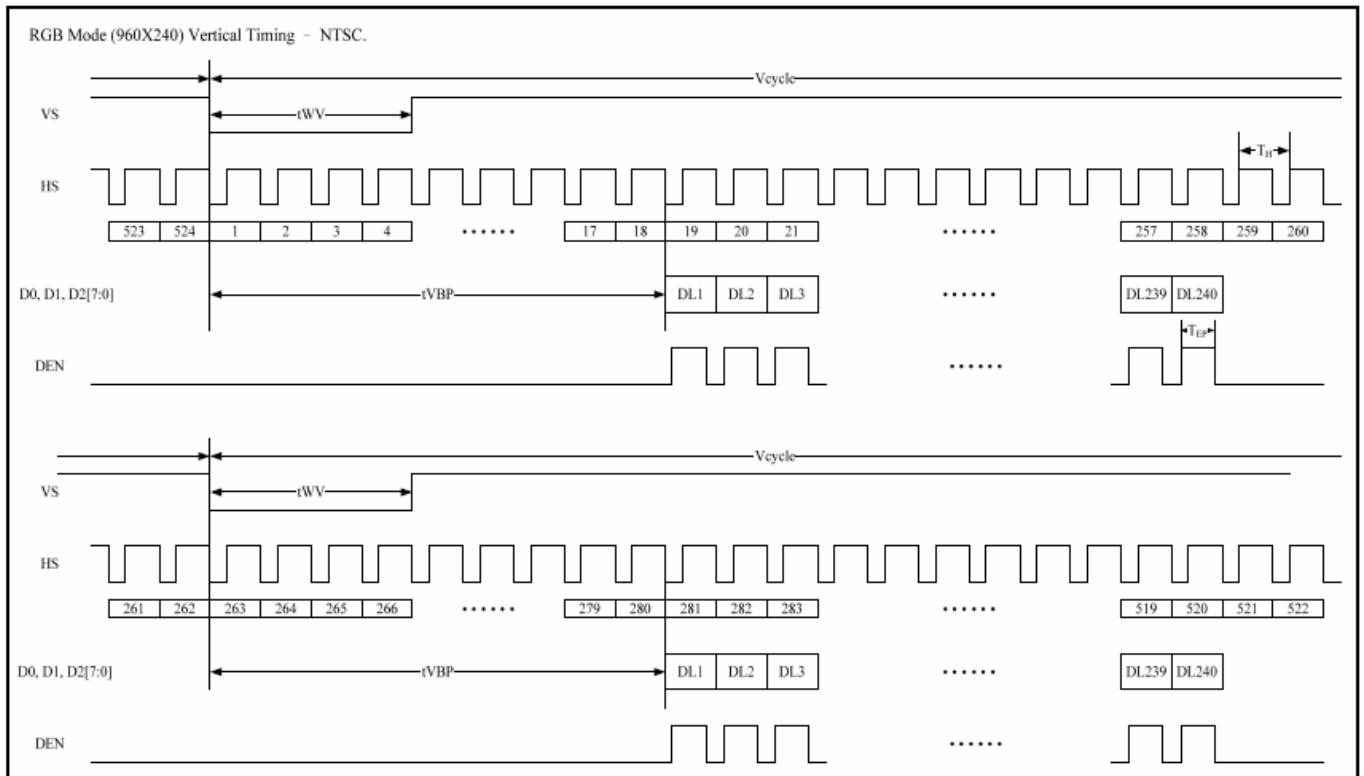
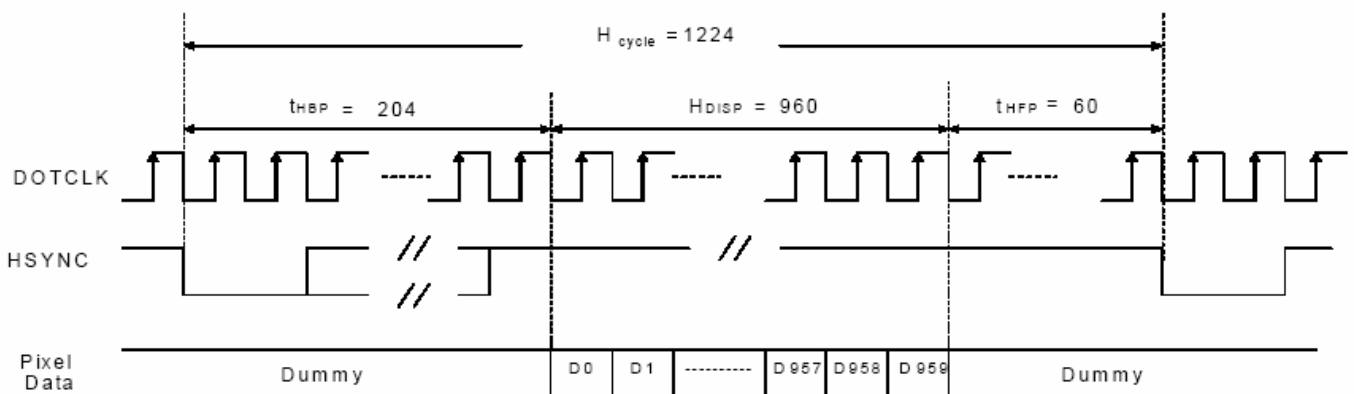
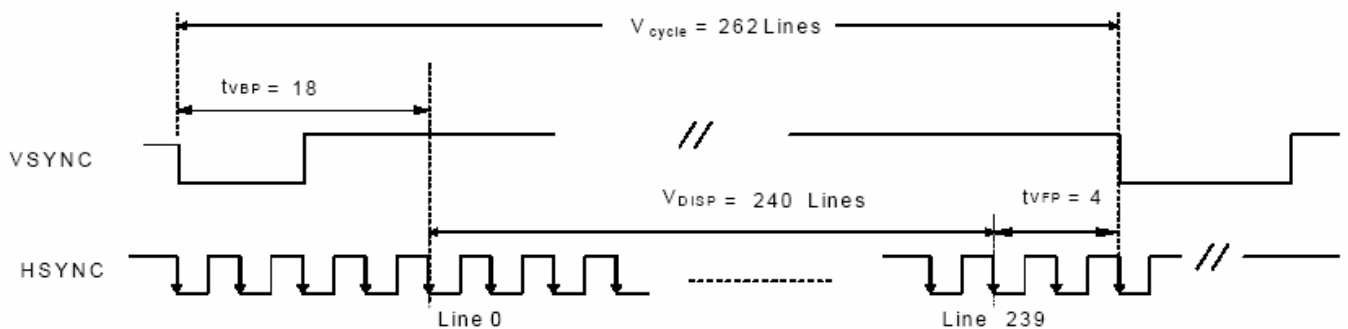


Figure 3 Digital RGB NTSC mode Vertical Data Format for 262TH



a) Horizontal Data Transaction Timing



Vertical Data Transaction Timing

Figure 3 Data Transaction Timing in Serial RGB (8 bit) Interface (SYNC Mode)

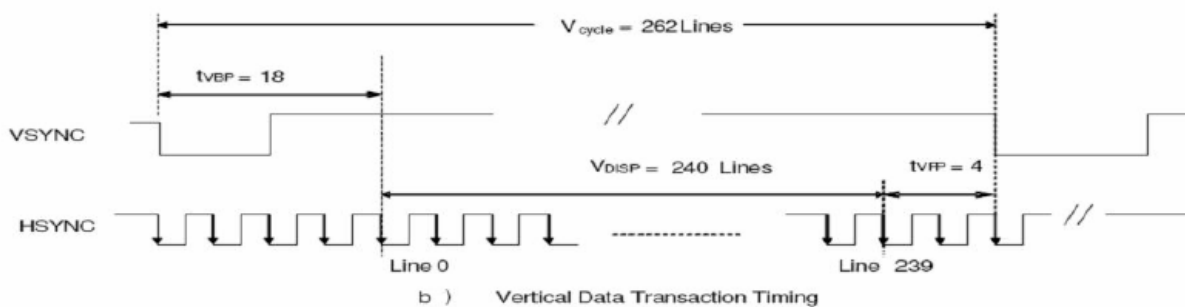
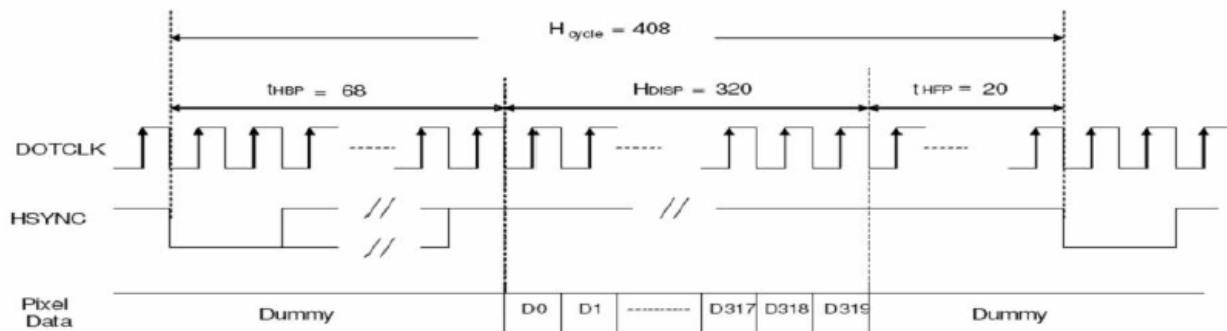
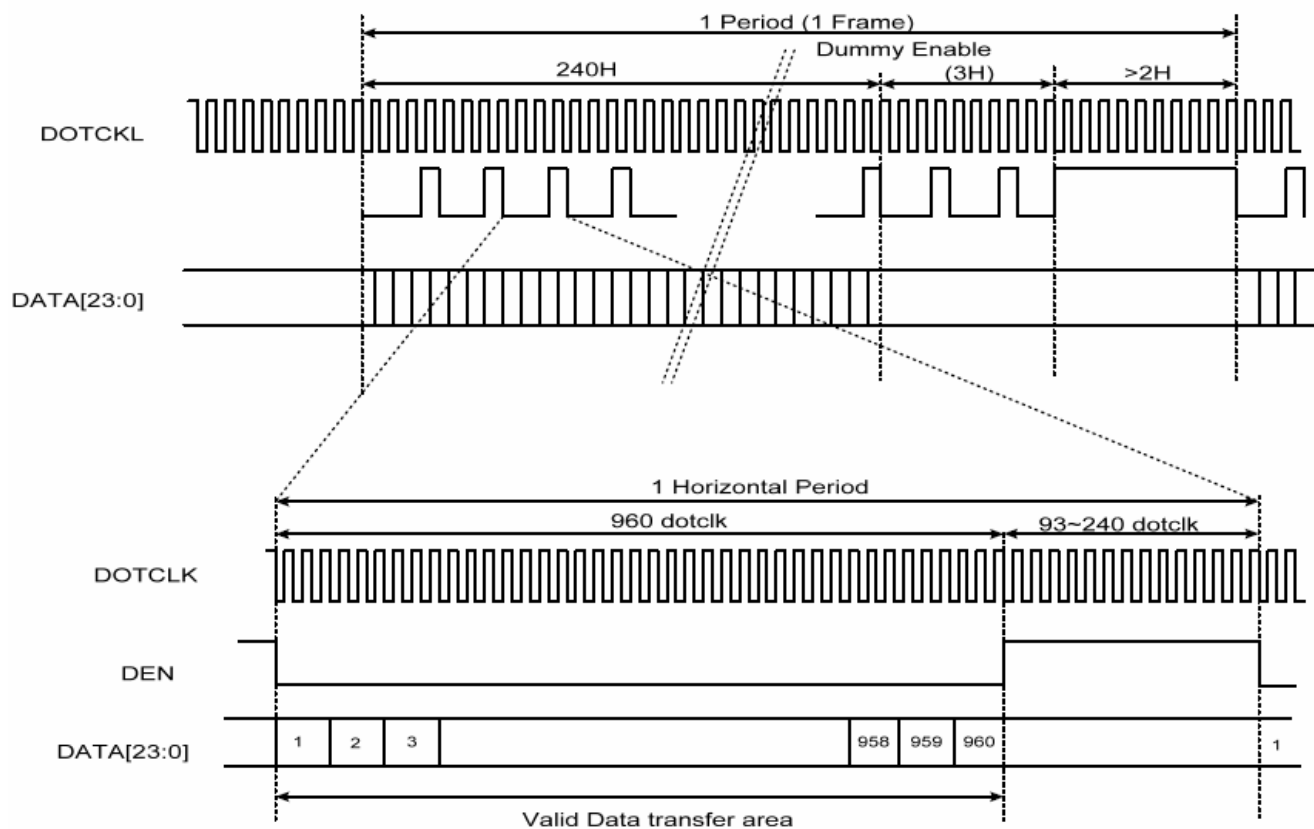


Figure 3 Data Transaction Timing in Parallel RGB (24 bit) Interface (SYNC Mode)

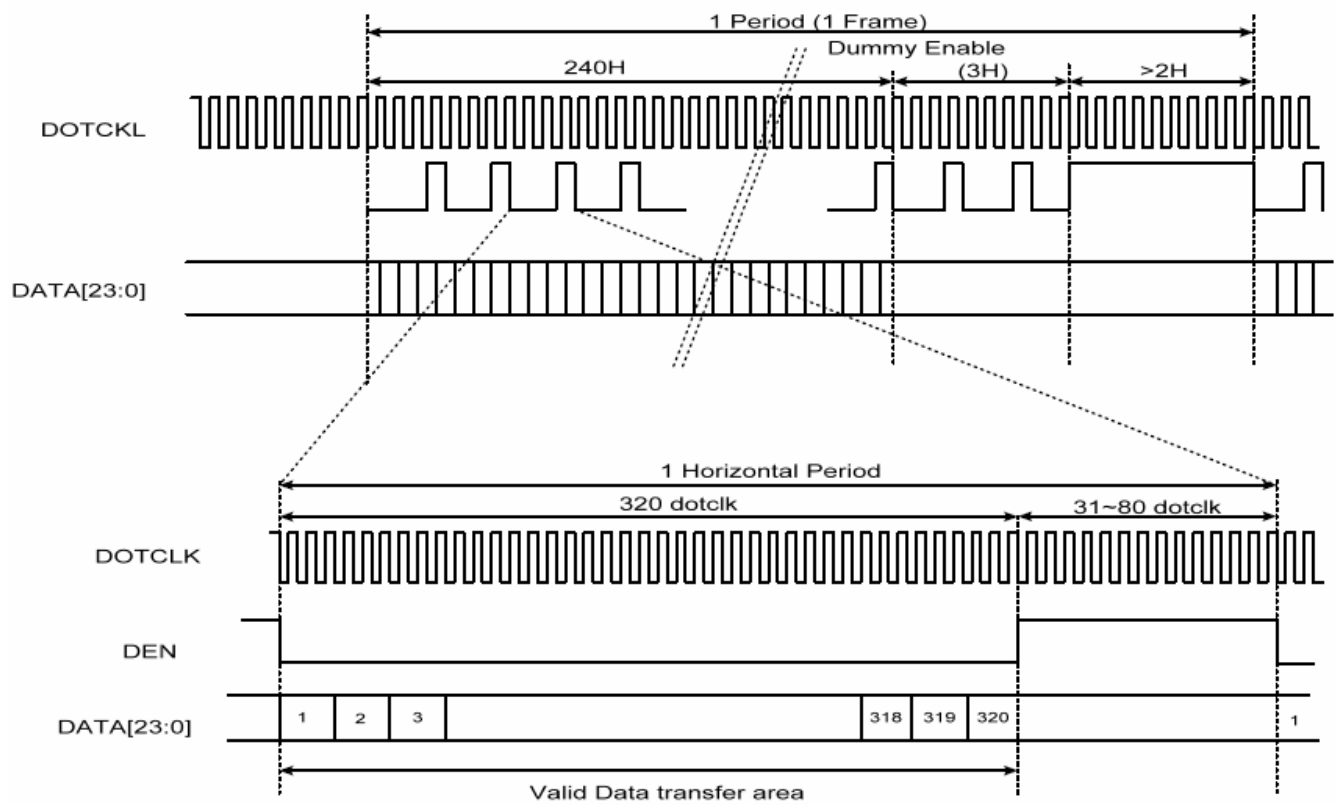


Figure 4 Data Transaction Timing in Parallel RGB (24 bit) Interface (DE Mode)

7.1.1 Clock and Sync waveforms

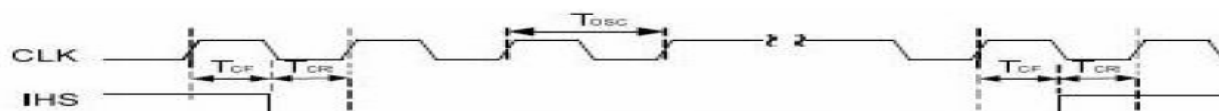


Figure 6 CLK and IHS timing waveform

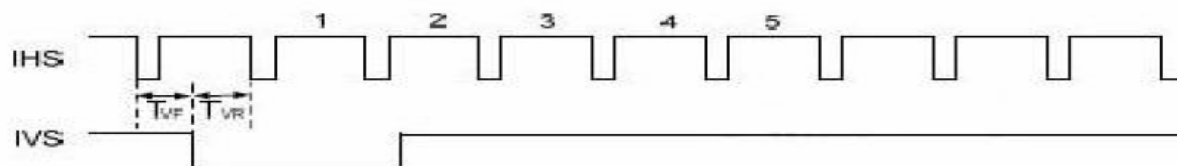
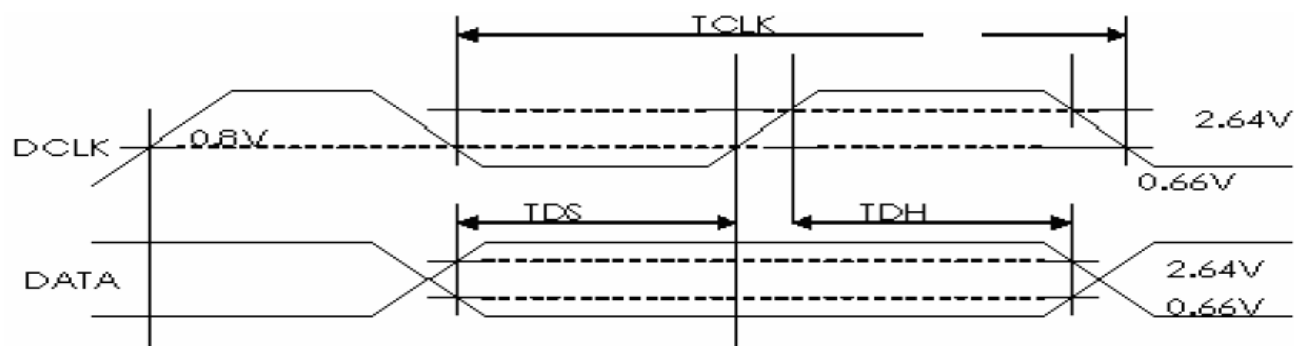
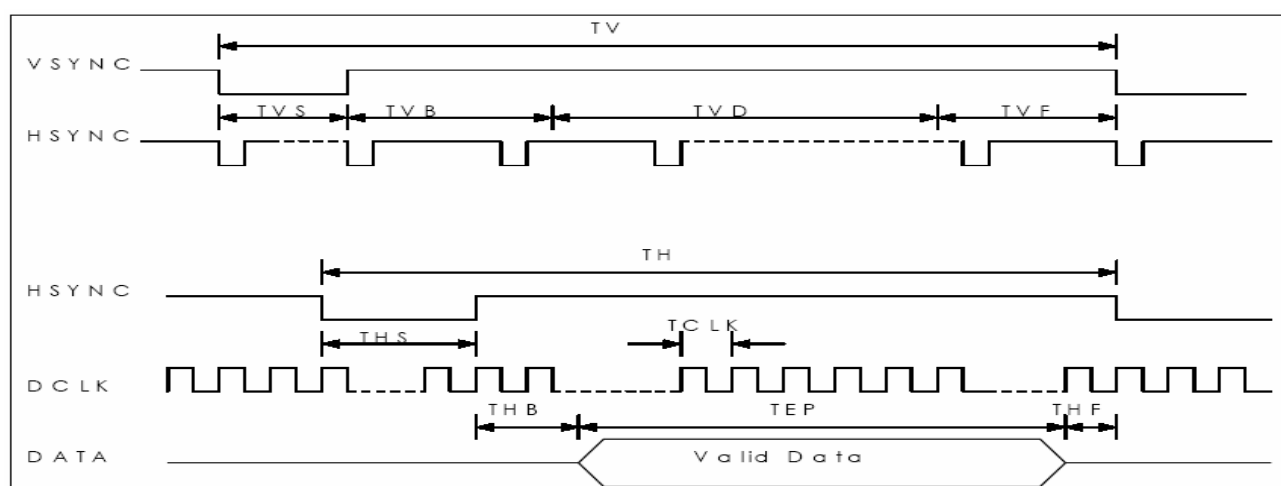
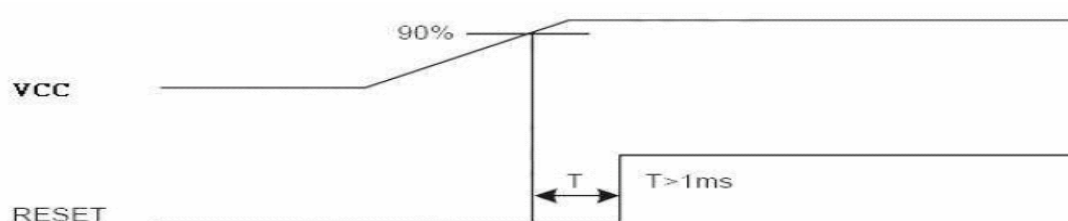


Figure 7 IHS and IVS timing waveforms



7.2 Reset Timing Chart

The RESET input must be held at least 1ms after power is stable



Reset timing

8. Optical Characteristic

Item	Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time	Tr	$\theta = 0^\circ$ 、 $\Phi = 0^\circ$	-	15	30	.ms	Note 3,5
	Tf		-	35	50	.ms	
Contrast ratio	CR	At optimized viewing angle	200	300	-	-	Note 4,5
Color Chromaticity	White	$\theta = 0^\circ$ 、 $\Phi = 0$	0.25	0.30	0.35		Note 2,6,7
			0.27	0.32	0.37		
Viewing angle	Hor.	ΘR		45		Deg.	Note 1
		ΘL		45			
	Ver.	ΦT		15			
		ΦB		35			
Brightness	-	-	240	-	400	cd/m	Center of display

Ta=25±2°C, IL=20mA

Note 1: Definition of viewing angle range

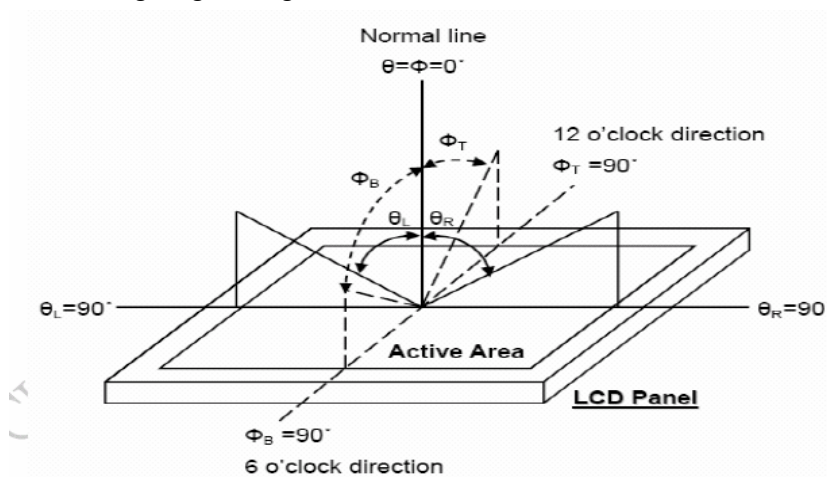


Fig. 8-1 Definition of viewing angle

Note 2: Test equipment setup:

After stabilizing and leaving the panel alone at a driven temperature for 10 minutes, the measurement should be executed. Measurement should be executed in a stable, windless, and dark room. Optical specifications are measured by Topcon BM-7 luminance meter 1.0° field of view at a distance of 50cm and normal direction.

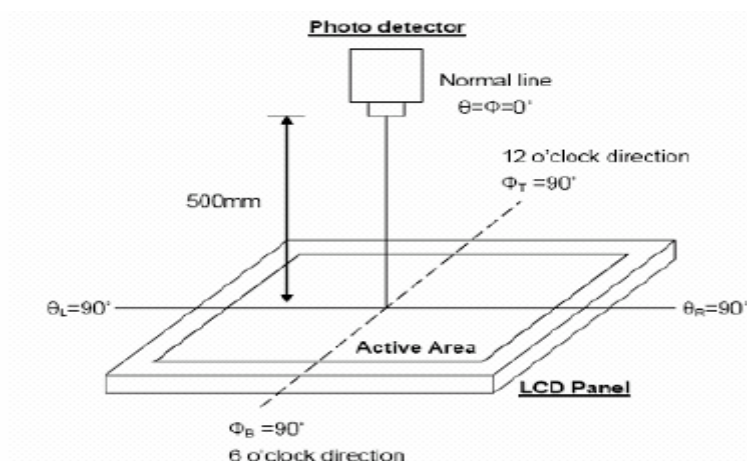
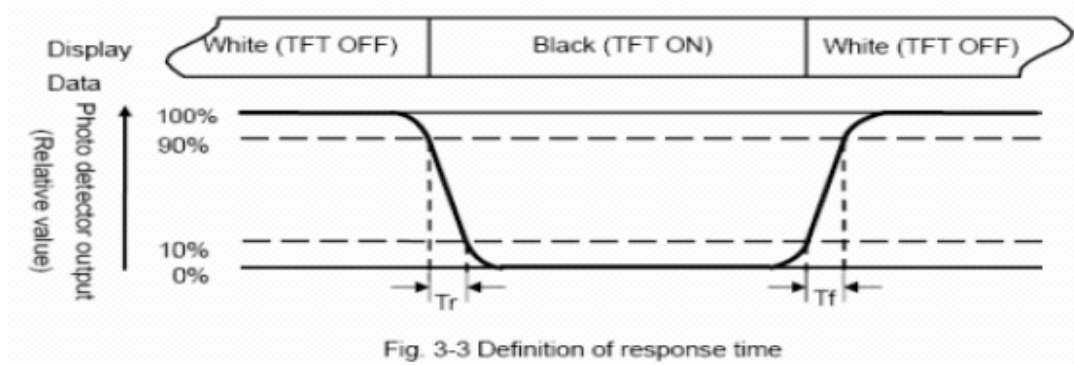


Fig. 8-2 Optical measurement system setup

Note 3: Definition of Response time:

The response time is defined as the LCD optical switching time interval between “White” state and “Black” state. Rise time, T_r , is the time between photo detector output intensity changed from 90% to 10%. And fall time, T_f , is the time between photo detector output intensity changed from 10% to 90%.



Note 4: Definition of contrast ratio:

The contrast ratio is defined as the following expression.

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD on the "White" state}}{\text{Luminance measured when LCD on the "Black" state}}$$

Note 5: White $V_i = V_{i50} \pm 1.5V$

Black $V_i = V_{i50} \pm 2.0V$

“±” means that the analog input signal swings in phase with VCOM signal.

“±” means that the analog input signal swings out of phase with VCOM signal.

The 100% transmission is defined as the transmission of LCD panel when all the input terminals of module are electrically opened.

Note 6: Definition of color chromaticity (CIE 1931)

Color coordinates measured at the center point of LCD

Note 7: Measured at the center area of the panel when all the input terminals of LCD panel are electrically opened.

$$\text{Note 8 : Uniformity (U)} = \frac{\text{Brightness (min)}}{\text{Brightness (max)}} \times 100\%$$

9. Interface

9.1. LCM PIN Definition

Pin	Symbol	I/O	Function	Remark
1	LED-		Backlight LED Ground	
2	LED-		Backlight LED Ground	
3	LED+		Backlight LED Power	
4	LED+		Backlight LED Power	
5	NC		No connection	
6	NC		No connection	
7	NC		No connection	
8	/RESET		Hardware reset	
9	SPENA		SPI interface Data Enable signal	Note:3
10	SPCLK		SPI interface Data Clock	Note:3
11	SPDAT		SPI interface Data	Note:3
12	B0		Blue Data Bit 0	
13	B1		Blue Data Bit 1	
14	B2		Blue Data Bit 2	
15	B3		Blue Data Bit 3	
16	B4		Blue Data Bit 4	
17	B5		Blue Data Bit 5	
18	B6		Blue Data Bit 6	
19	B7		Blue Data Bit 7	
20	G0		Green Data Bit 0	
21	G 1		Green Data Bit 1	
22	G 2		Green Data Bit 2	
23	G 3		Green Data Bit 3	
24	G 4		Green Data Bit 4	
25	G 5		Green Data Bit 5	
26	G 6		Green Data Bit 6	
27	G 7		Green Data Bit 7	
28	R0		Red Data Bit0/DX0	Note:4
29	R1		Red Data Bit1/DX1	Note:4
30	R2		Red Data Bit2/DX2	Note:4
31	R3		Red Data Bit3/DX3	Note:4
32	R4		Red Data Bit4/DX4	Note:4
33	R5		Red Data Bit5/DX5	Note:4
34	R6		Red Data Bit6/DX6	Note:4
35	R7		Red Data Bit7/DX7	Note:4
36	HSYNC		Horizontal sync input	
37	VSYNC		Vertical sync input	
38	DCLK		Dot Data Clock	
39	NC		No connection	
40	NC		No connection	
41	Vcc		Digital power	
42	Vcc		Digital power	
43	NC		No connection	
44	NC		No connection	
45	NC		No connection	
46	NC		No connection	
47	NC		No connection	
48	SEL2		Control the input data format /floating	Note:1

49	SEL1		Control the input data format	Note:1,5
50	SEL0		Control the input data format	Note:1,5
51	NC		No connection	
52	DE		Data Enable input	Note:2
53	DGND		Ground for digital circuit	
54	AVSS		Ground for analog circuit	

Note:

1. For digital RGB input data format, both SYNC mode and DE mode are supported. If DE signal is fixed low, SYNC mode is used. Otherwise, DE mode is used. Suggest the DE signal usually pull low.
2. For digital RGB input data format, both SYNC mode and DE+SYNC mode are supported. If DE signal is fixed low, SYNC mode is used. Otherwise, DE+SYNC mode is used. Suggest used SYNC mode!!_
3. Usually pull high._
4. IF select serial RGB or CCIR601/656 input mode is selected, only DX0-DX7 used, and the other short to GND, Only selected serial RGB_CCIR601/656 interface, DX BUS will enable, Digital input mode DX0 is LSB and DX7 is MSB.
5. Control the input data format.

SEL2	SEL1	SEL0	Format	Operating Frequency
0	0	0	Parallel-RGB data format (only support stripe type color filter)	6.5MHZ
0	0	1	Serial-RGB data format	19.5 MHZ
0	1	0	CCIR 656data format (640RGB)	24.54 MHZ
0	1	1	CCIR 656data format (720RGB)	27 MHZ
1	0	0	YUV mode A data format(Cr-Y-Cb-Y)	24.54 MHZ
1	0	1	YUV mode A data format(Cr-Y-Cb-Y)	27 MHZ
1	1	0	YUV mode B data format(Cr-Y-Cr-Y)	27 MHZ
1	1	1	YUV mode B data format(Cr-Y-Cr-Y)	24.54 MHZ

Input format	DOTCLK Freq (MHz)	Display Data	Active Area (DOTCLK)
YUV mode	24.54	640	1280
	27	720	1440

Mode	D[23:16]	D[15:8]	D[7:0]	IHS	IVS	DEN
ITU-R BT 656	D[23:16]	GND	GND	NC	NC	NC
ITU-R BT 601	D[23:16]	GND	GND	IHS	IVS	NC
8 bit RGB	D[23:16]	GND	GND	IHS	IVS	NC for HV Mode DEN for DEN Mode
24 bit RGB	R[7:0]	G[7:0]	B[7:0]	IHS	IVS	NC for HV Mode DEN for DEN Mode

9.2 SPI timing Characteristics

PARAMETER	Symbol	Min.	Typ.	Max.	Unit
SPCK period	T _{CK}	60	-	-	ns
SPCK high width	T _{CKH}	30	-	-	ns
SPCK low width	T _{CKL}	30	-	-	ns
Data setup time	T _{SET}	12	-	-	ns
Data hold time	T _{HOL}	12	-	-	ns
SPENA to SPCK setup time	T _{CS}	20	-	-	ns
SPENA to SPDA hold time	T _{CS}	20	-	-	ns
SPENA high pulse width	T _{CO}	50	-	-	ns
SPDA output latency	T _{CS}	-	1/2	-	T _{CK}

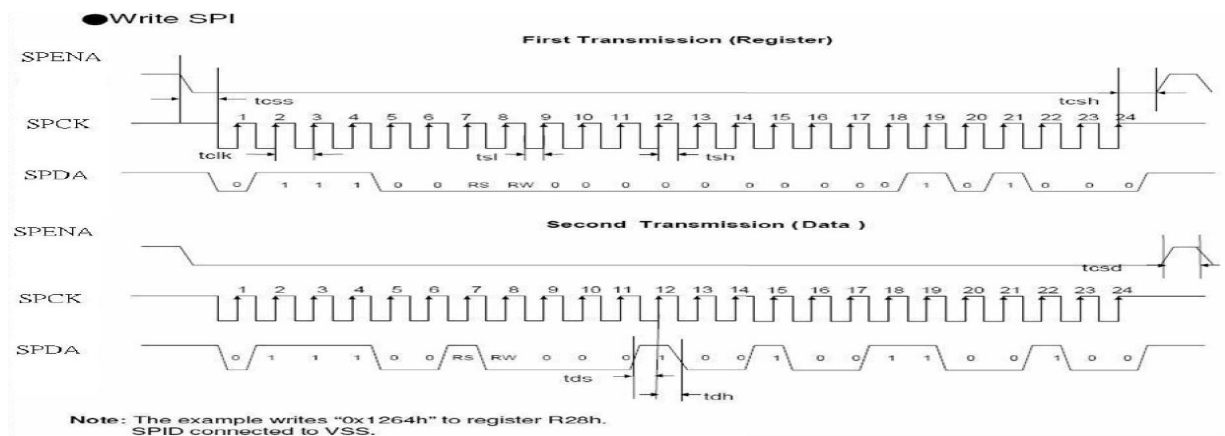


Figure9 SPI read 、write timing

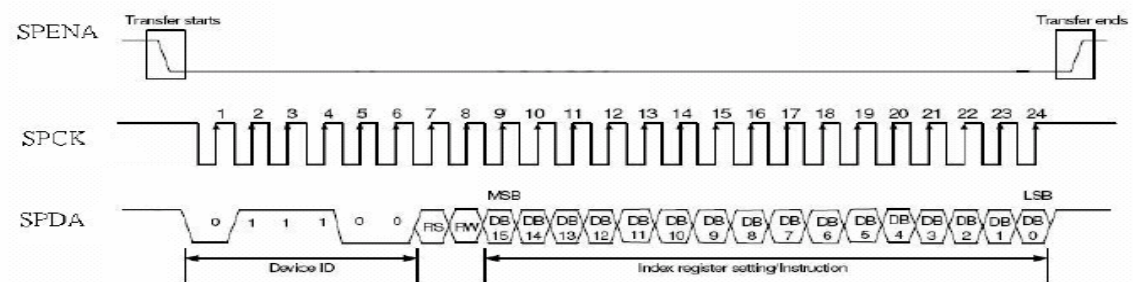
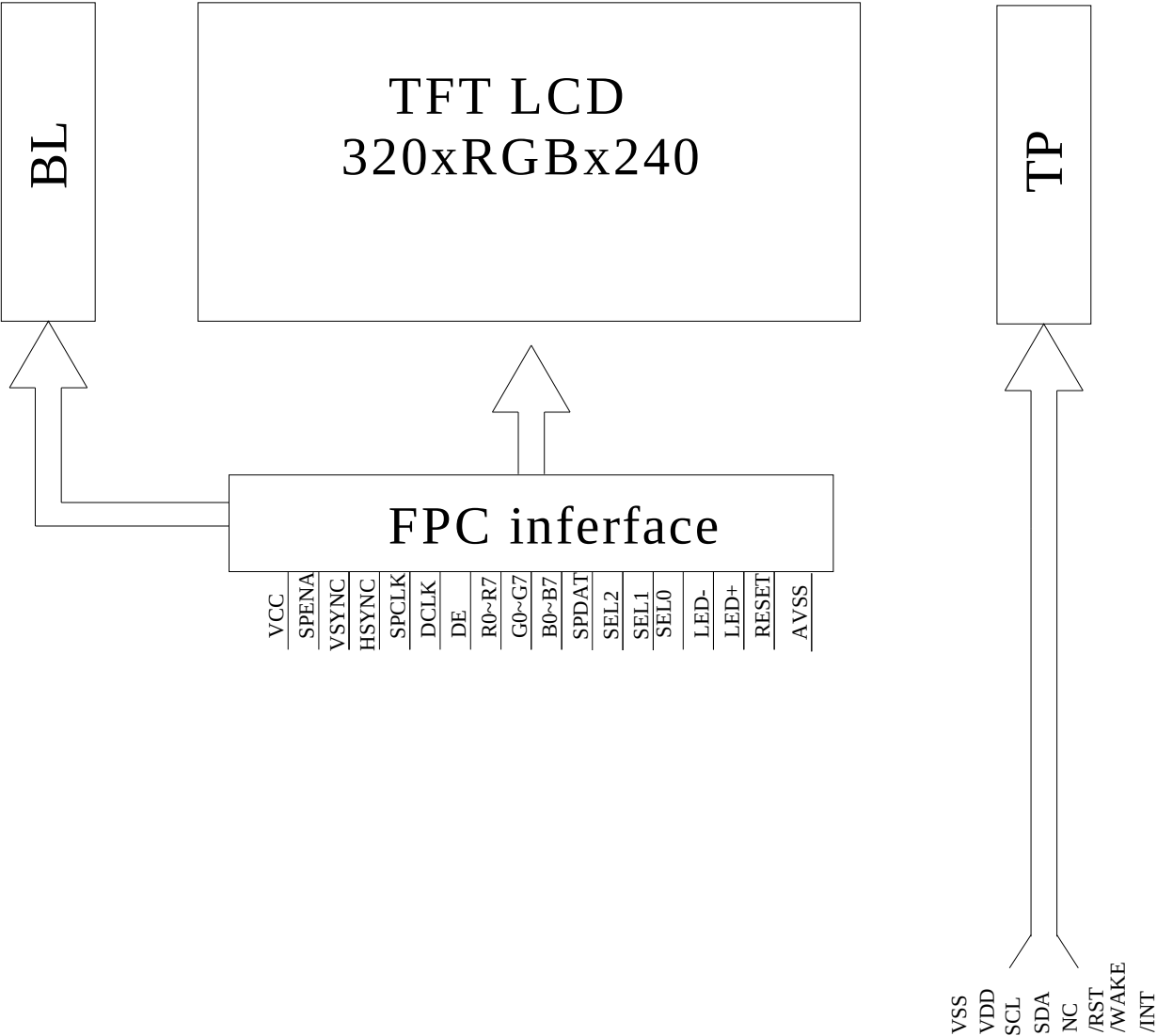


Figure10 SPI timing

9.3 Basic Display Color and Gray Scale

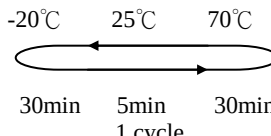
Color		Input Color Data																							
		Red								Green								Blue							
		MSB				LSB				MSB				LSB				MSB				LSB			
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Colors	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(255)	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green(255)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Blue(255)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Cyan	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Magenta	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Red	Red(0) Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(1)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(2)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Red(253)	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(254)	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(255) Bright	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green	Green(0) Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Green(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Green(253)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	Green(254)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	Green(255)Bright	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Blue	Blue(0) Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Blue(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Blue(253)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
	Blue(254)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
	Blue(255) Bright	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

10. Block Diagram



11. Reliability

Content of Reliability Test (Wide temperature, -20°C~70°C)

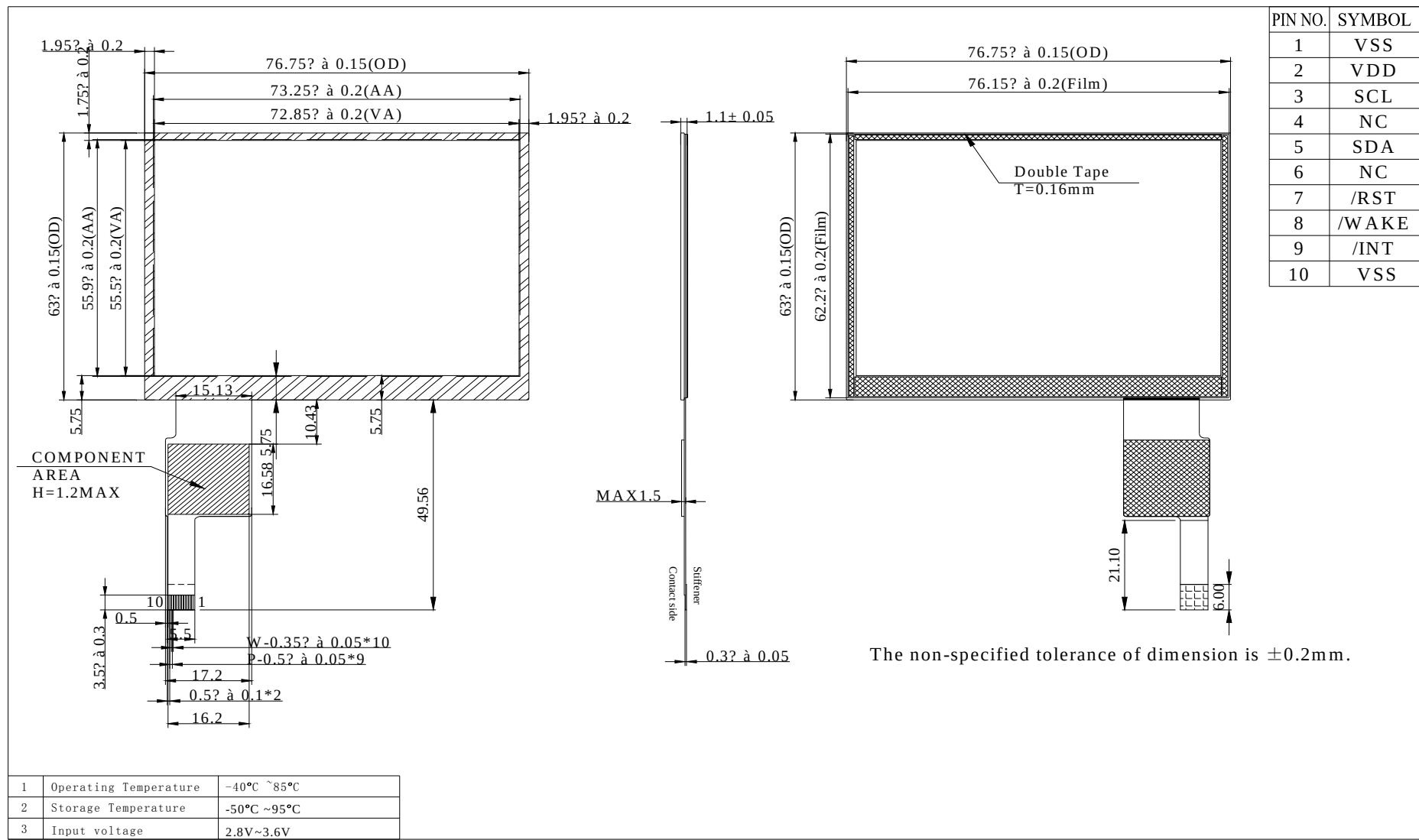
Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80°C 200hrs	2
Low Temperature storage	Endurance test applying the high storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20°C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°C,90%RH max For 96hrs under no-load condition excluding the polarizer, Then taking it out and drying it at normal temperature.	60°C,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation  -20°C 25°C 70°C 30min 5min 30min 1 cycle	-20°C/70°C 10 cycles	—
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 3 15mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=800V,RS=1.5kΩ CS=100pF 1 time	—

Note1: No dew condensation to be observed.

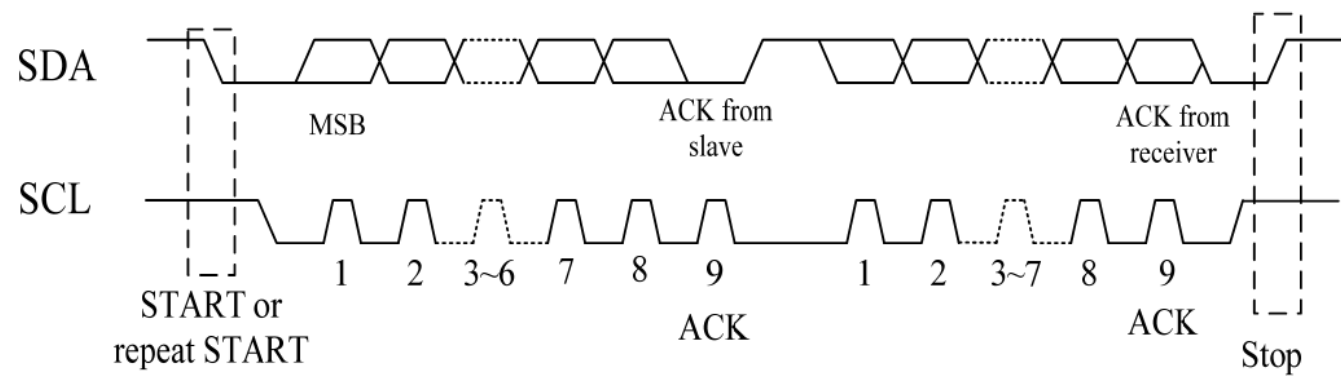
Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: Vibration test will be conducted to the product itself without putting it in a container.

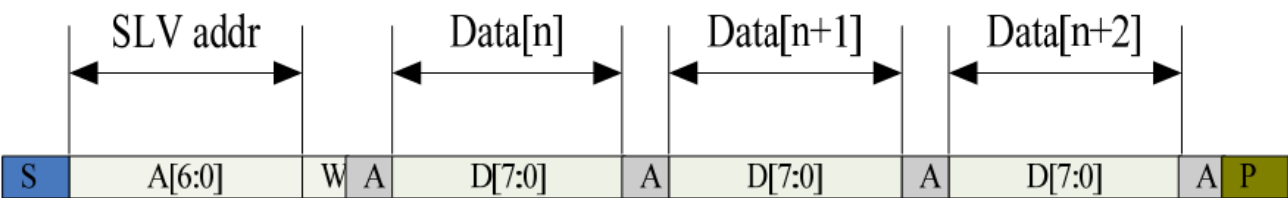
12. Touch panel Information



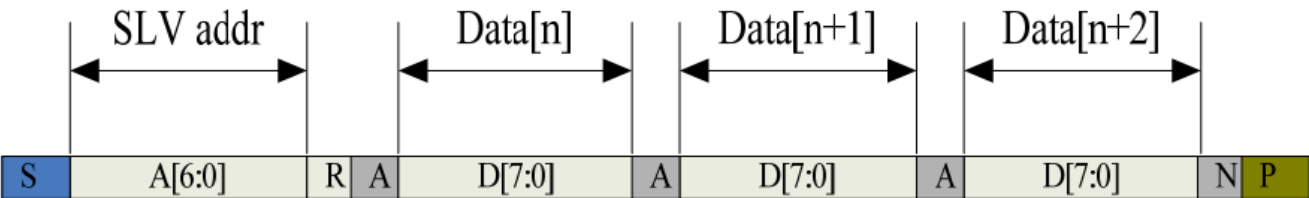
12.1 CTP I2C Timing:



I2C Serial Data Transfer Format



I2C master write, slave read



I2C master read, slave write

Mnemonics	Description
S	I2C Start or I2C Restart
A[6:0]	Slave address A[6:4]: 3'b011 A[3:0]: data bits are identical to those of I2CCON[7:4] register.
W	1'b0: Write
R	1'b1: Read
A(N)	ACK(NACK)
P	STOP: the indication of the end of a packet (if this bit is missing, S will indicate the end of the current packet and the beginning of the next packet)

Lists the meanings of the mnemonics used in the above figures

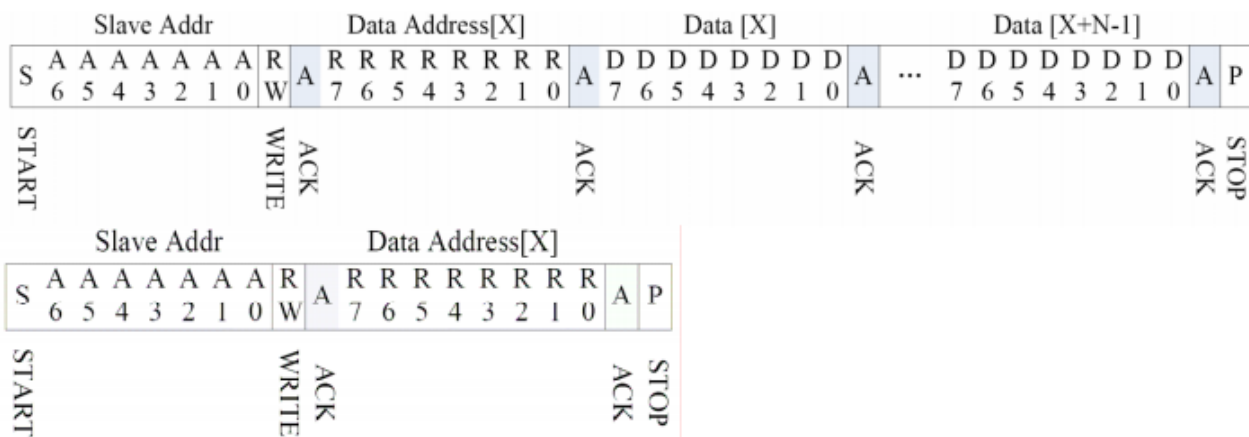
Parameter	Unit	Min	Max
SCL frequency	KHz	0	400
Bus free time between a STOP and START condition	us	4.7	\
Hold time (repeated) START condition	us	4.0	\
Data setup time	ns	250	\
Setup time for a repeated START condition	us	4.7	\
Setup Time for STOP condition	us	4.0	\

Interface Timing Characteristics

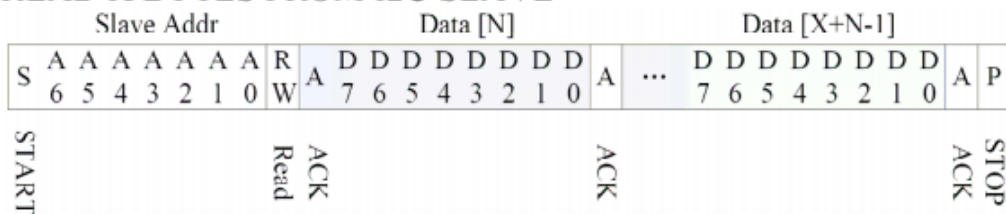
AS FOR STANDARD CTPM, HOST NEED TO USE BOTH INTERRUPT CONTROL SIGNAL AND SERIAL DATA INTERFACE TO GET THE TOUCH DATA.

HERE IS THE TIMING TO GET TOUCH DATA.

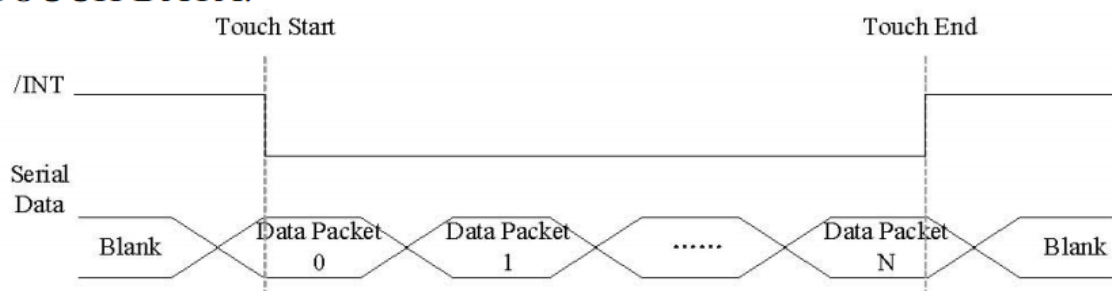
WRITE BYTES TO I2C SLAVE



READ X BYTES FROM I2C SLAVE



AS FOR STANDARD CTPM, HOST NEED TO USE BOTH INTERRUPT CONTROL SIGNAL AND SERIAL DATA INTERFACE TO GET THE TOUCH DATA, HERE IS THE TIMING TO GET TOUCH DATA.



TOUCH DATA READ PROTOCOL

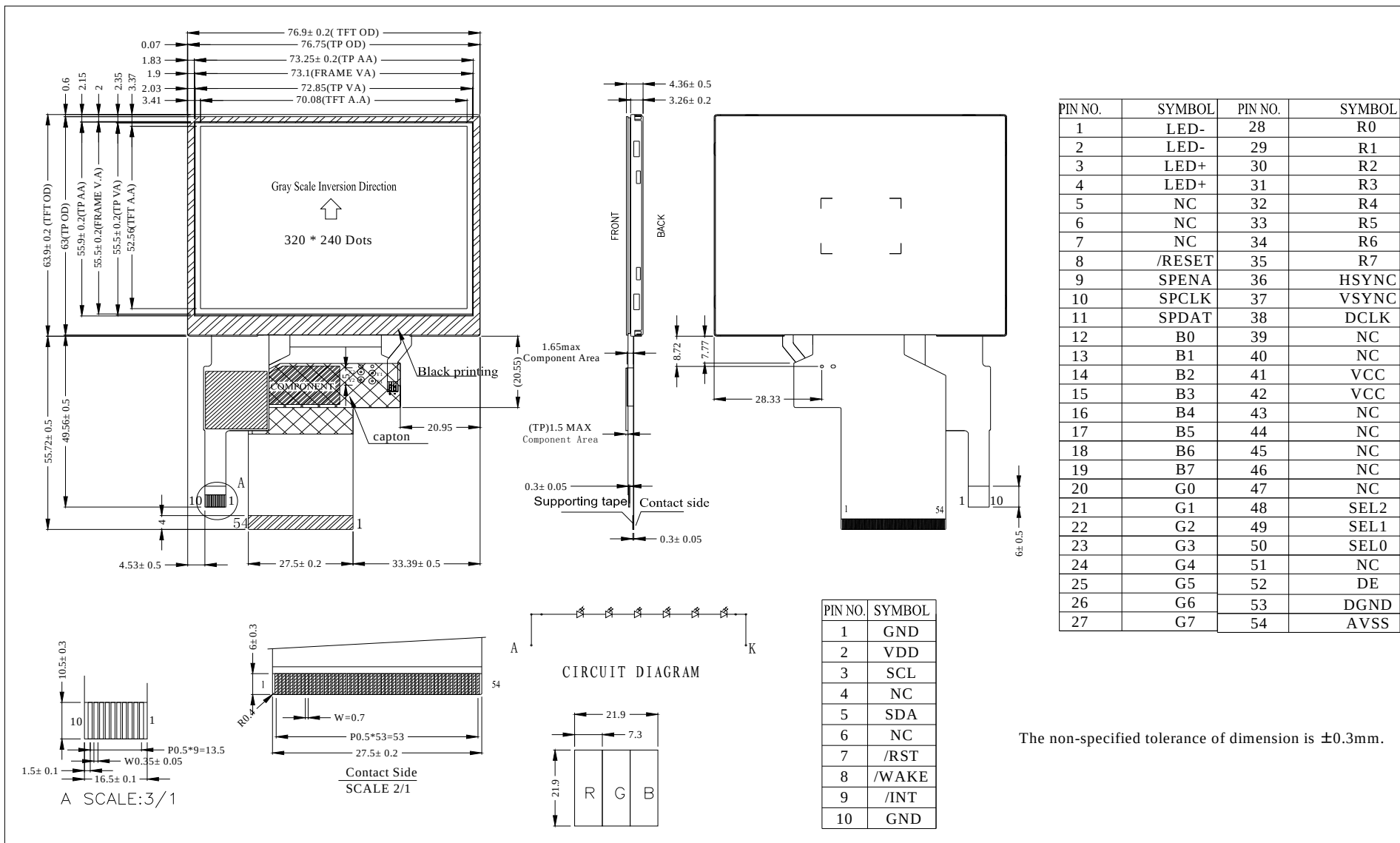
NAME	VALUE	DESCRIPTION
START CH	0xF9	START COMMAND FOR CTPM TOUCH DATA PACKET, HOST MUST SEND CTPM A START CH COMMAND BEFORE READ TOUCH DATA
1st READ BYTE ~ LAST READ BYTE		TOUCH DATA PACKET SENT BY CTPM, EACH BYTE HAS 8-BIT DATA, A TOUCH DATA PACKET CONSISTS OF N BYTE.

A DATA PACKET STARTS WITH A HEADER AND ENDS WITH CRC CODE. AS FOR 5 POINTS DATA PACKET, THE LENGTH OF THE PACKET IS ALWAYS 26 BYTES IN SPITE OF ACTUAL TOUCH POINTS.

Address	Name	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Host Access
00h	DEVIDE_MODE		Device Mode[2:0]							RW
01h	GEST_ID	Gesture ID[7:0]								R
02h	TD_STATUS					Number of touch points[3:0]				R
03h	TOUCH1_XH	1 st Event Flag				1 st Touch X Position[11:8]				R
04h	TOUCH1_XL	1 st Touch X Position[7:0]								R
05h	TOUCH1_YH	1 st Touch ID[3:0]				1 st Touch Y Position[11:8]				R
06h	TOUCH1_YL	1 st Touch Y Position[7:0]								R
07h										
08h										
09h	TOUCH2_XH	2 nd Event Flag				2 nd Touch X Position[11:8]				R
0Ah	TOUCH2_XL	2 nd touch X Position[7:0]								R

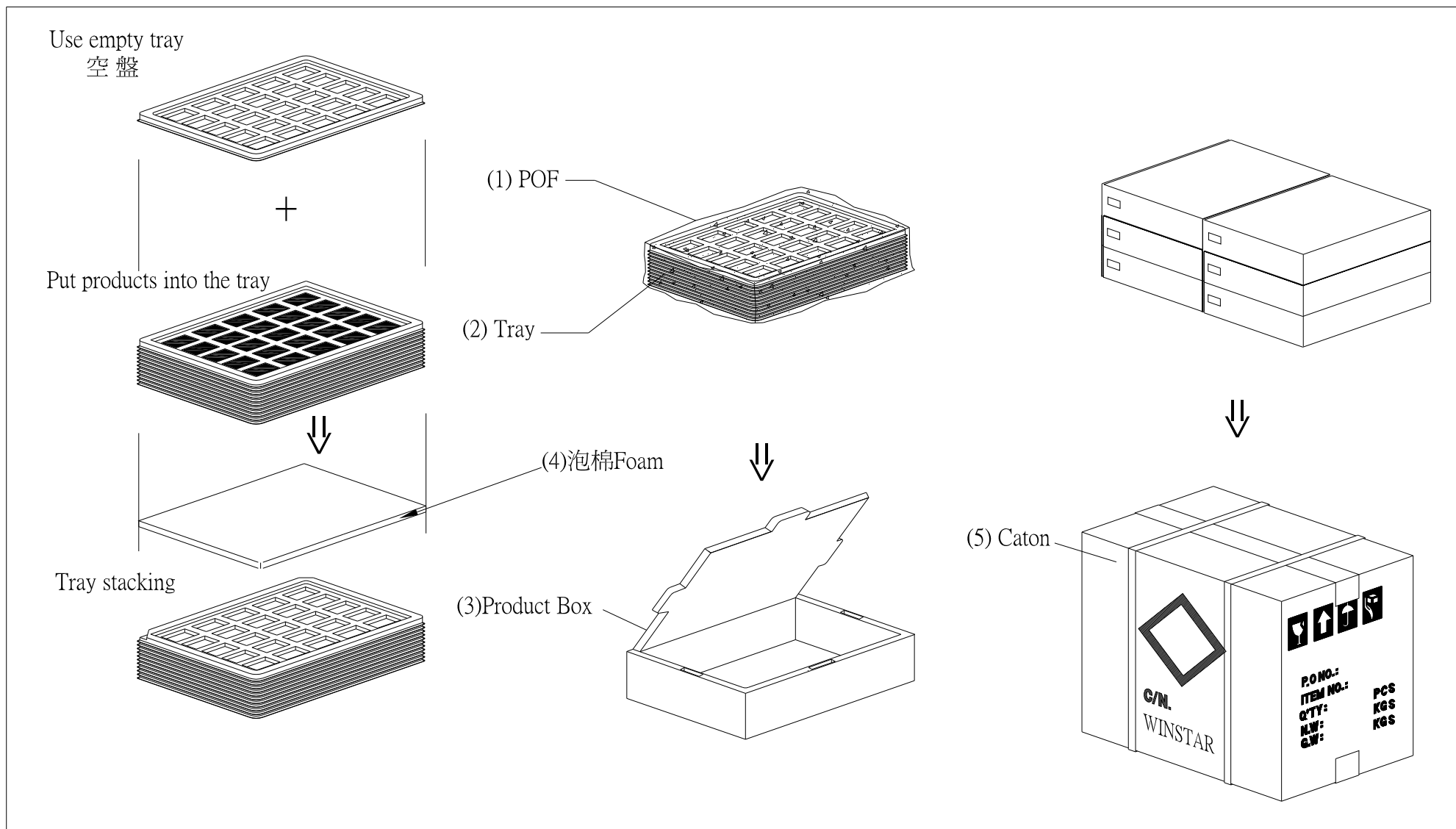
0Bh	TOUCH2_YH	2 nd Touch ID[3:0]	2 nd Touch Y Position[11:8]	R
0Ch	TOUCH2_YL	2 nd Touch Y Position[7:0]		R
0Dh				R
0Eh				R
0Fh	TOUCH3_XH	3 rd Event Flag	3 rd Touch X Position[11:8]	R
10h	TOUCH3_XL	3 rd Touch X Position[7:0]		R
11h	TOUCH3_YH	3 rd Touch ID[3:0]	3 rd Touch Y Position[11:8]	R
12h	TOUCH3_YL	3 rd Touch Y Position[7:0]		R
13h				R
14h				R
15h	TOUCH4_XH	4 th Event Flag	4 th Touch X Position[11:8]	R
16h	TOUCH4_XL	4 th Touch X Position[7:0]		R
17h	TOUCH4_YH	4 th Touch ID[3:0]	4 th Touch Y Position[11:8]	R
18h	TOUCH4_YL	4 th Touch Y Position[7:0]		R
19h				R
1Ah				R
1Bh	TOUCH5_XH	5 th Event Flag	5 th Touch X Position[11:8]	R
1Ch	TOUCH5_XL	5 th Touch X Position[7:0]		R
1Dh	TOUCH5_YH	5 th Touch ID[3:0]	5 th Touch Y Position[11:8]	R
1Eh	TOUCH5_YL	5 th Touch Y Position[7:0]		R

13. Contour Drawing



14. PACKAGE SPECIFICATION

LCM ModelWF35LTIACDNC0# Drawing NO.		LCM 包裝規格書 LCM Packaging Specifications	Approve	Check	Contact
			DATE	初版	版次 Ver
			12'11/15	12'11/15	0
1.包裝材料規格表（Packaging Material）:(per carton)					
NO.	Item	Model	Dimensions	Quantity	
1	成品（LCM）	WF35LTIACDNC0#	TBD	TBD	
2	TRAY 盤 (2)	TBD	TBD	TBD	
3	BP01 內盒(3)Product Box	PK3R1XXXXXXXXXXXX0001	332 x 280 x 100	TBD	
4	泡棉(4)Foam	-----	283 x 230 x 8	TBD	
5	外紙箱(5)Carton	PK4Q1XXXXXXXXXXXX0000	565 x 340 x 320	TBD	
6					
7					
8					
9					
2.單箱數量規格表(Packaging Specifications and Quantity) :					
(1)LCM quantity per box : no per tray			TBD	x no of tray	TBD = TBD
(2)Total LCM quantity in carton : quantity per box			TBD	x no of boxes	TBD = TBD
特 記 事 項 (REMARK)					
1. Label Specifications : MOOEL: LOT NO : QUANTITY: CHECK:					



15. Initial Code For Reference

TBD



Module Number : _____

Page: 1

1、Panel Specification :

- | | | |
|----------------------------|-------------------------------|-------------------------------------|
| 1. Panel Type : | ☐ Pass | ☐ NG , _____ |
| 2. View Direction : | ☐ Pass | ☐ NG , _____ |
| 3. Numbers of Dots : | ☐ Pass | ☐ NG , _____ |
| 4. View Area : | ☐ Pass | ☐ NG , _____ |
| 5. Active Area : | ☐ Pass | ☐ NG , _____ |
| 6. Operating Temperature : | ☐ Pass | ☐ NG , _____ |
| 7. Storage Temperature : | ☐ Pass | ☐ NG , _____ |
| 8. Others : | _____ | |

2、Mechanical Specification :

- | | | |
|-----------------------------|-------------------------------|-------------------------------------|
| 1. PCB Size : | ☐ Pass | ☐ NG , _____ |
| 2. Frame Size : | ☐ Pass | ☐ NG , _____ |
| 3. Material of Frame : | ☐ Pass | ☐ NG , _____ |
| 4. Connector Position : | ☐ Pass | ☐ NG , _____ |
| 5. Fix Hole Position : | ☐ Pass | ☐ NG , _____ |
| 6. Backlight Position : | ☐ Pass | ☐ NG , _____ |
| 7. Thickness of PCB : | ☐ Pass | ☐ NG , _____ |
| 8. Height of Frame to PCB : | ☐ Pass | ☐ NG , _____ |
| 9. Height of Module : | ☐ Pass | ☐ NG , _____ |
| 10. Others : | ☐ Pass | ☐ NG , _____ |

3、Relative Hole Size :

- | | | |
|-----------------------------|-------------------------------|-------------------------------------|
| 1. Pitch of Connector : | ☐ Pass | ☐ NG , _____ |
| 2. Hole size of Connector : | ☐ Pass | ☐ NG , _____ |
| 3. Mounting Hole size : | ☐ Pass | ☐ NG , _____ |
| 4. Mounting Hole Type : | ☐ Pass | ☐ NG , _____ |
| 5. Others : | ☐ Pass | ☐ NG , _____ |

4、Backlight Specification :

- | | | |
|---|-------------------------------|-------------------------------------|
| 1. B/L Type : | ☐ Pass | ☐ NG , _____ |
| 2. B/L Color : | ☐ Pass | ☐ NG , _____ |
| 3. B/L Driving Voltage (Reference for LED Type) : | ☐ Pass | ☐ NG , _____ |
| 4. B/L Driving Current : | ☐ Pass | ☐ NG , _____ |
| 5. Brightness of B/L : | ☐ Pass | ☐ NG , _____ |
| 6. B/L Solder Method : | ☐ Pass | ☐ NG , _____ |
| 7. Others : | ☐ Pass | ☐ NG , _____ |

>> Go to page 2 <<

Module Number : _____

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5、Electronic Characteristics of Module :

- | | | |
|------------------------------|-------------------------------|-------------------------------------|
| 1. Input Voltage : | ☐ Pass | ☐ NG , _____ |
| 2. Supply Current : | ☐ Pass | ☐ NG , _____ |
| 3. Driving Voltage for LCD : | ☐ Pass | ☐ NG , _____ |
| 4. Contrast for LCD : | ☐ Pass | ☐ NG , _____ |
| 5. B/L Driving Method : | ☐ Pass | ☐ NG , _____ |
| 6. Negative Voltage Output : | ☐ Pass | ☐ NG , _____ |
| 7. Interface Function : | ☐ Pass | ☐ NG , _____ |
| 8. LCD Uniformity : | ☐ Pass | ☐ NG , _____ |
| 9. ESD test : | ☐ Pass | ☐ NG , _____ |
| 10. Others : | ☐ Pass | ☐ NG , _____ |

6、Summary :

Sales signature : _____

Customer Signature : _____

Date : ____ / ____ / ____