

Product Specification

NHD-4.0-480480AF-ASXP-CTP

TFT Liquid Crystal Display

NHD-	Newhaven Display
4.0-	4.0" Diagonal
480480-	480xRGBx480 Pixels
AF-	Model
A-	Built-in Driver / No Controller
S-	High Brightness, White LED Backlight
X-	TFT
P-	IPS, Wide Temperature
CTP-	Capacitive Touch Panel

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Additional Resources

- **Support Forum:** <https://support.newhavendisplay.com/hc/en-us/community/topics>
- **GitHub:** <https://github.com/newhavendisplay>
- **Example Code:** <https://support.newhavendisplay.com/hc/en-us/categories/4409527834135-Example-Code/>
- **Knowledge Center:** https://www.newhavendisplay.com/knowledge_center.html
- **Quality Center:** https://www.newhavendisplay.com/quality_center.html
- **Precautions for using LCDs/LCMs:** <https://www.newhavendisplay.com/specs/precautions.pdf>
- **Warranty / Terms & Conditions:** <https://www.newhavendisplay.com/terms.html>

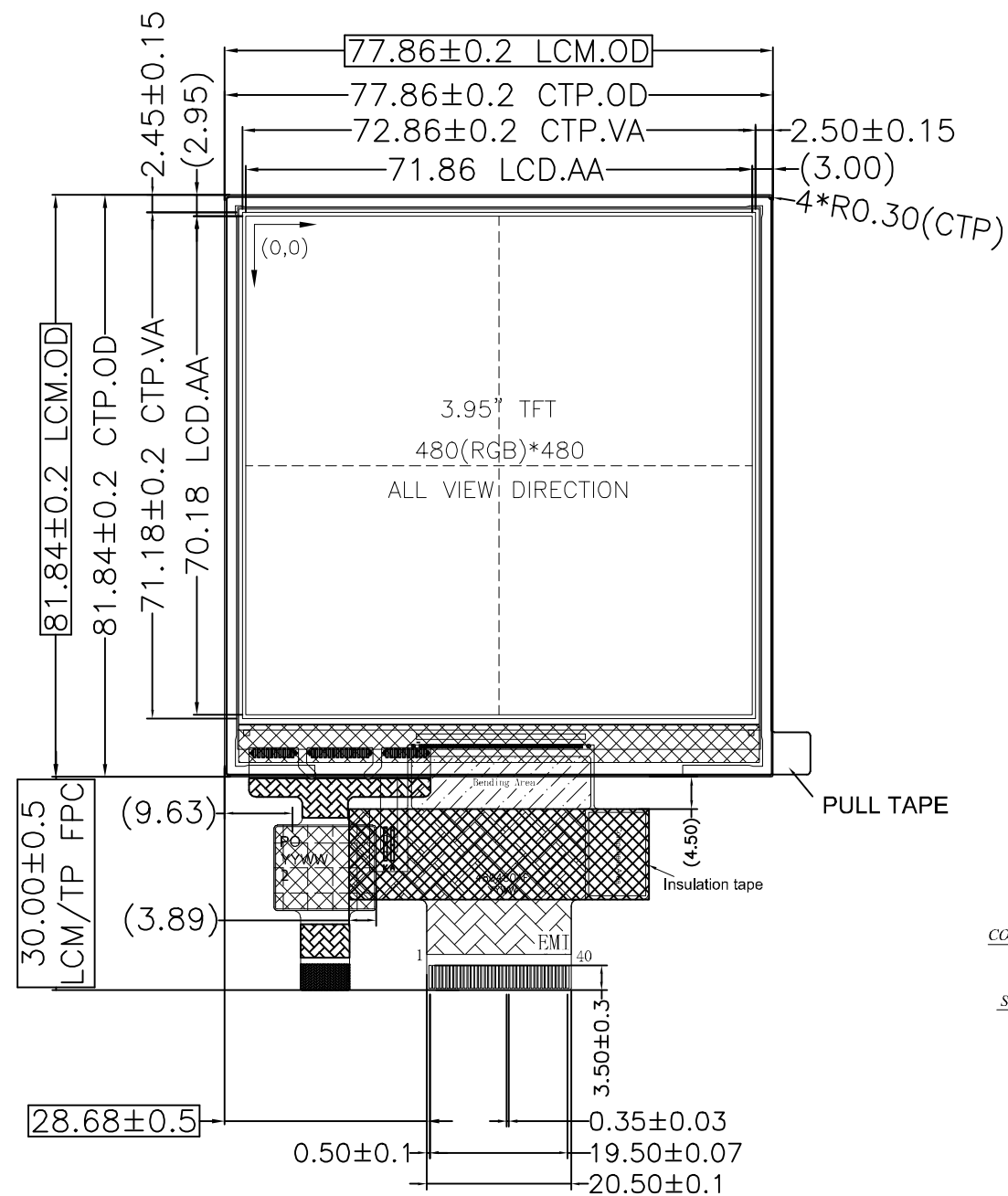


Document Revision History

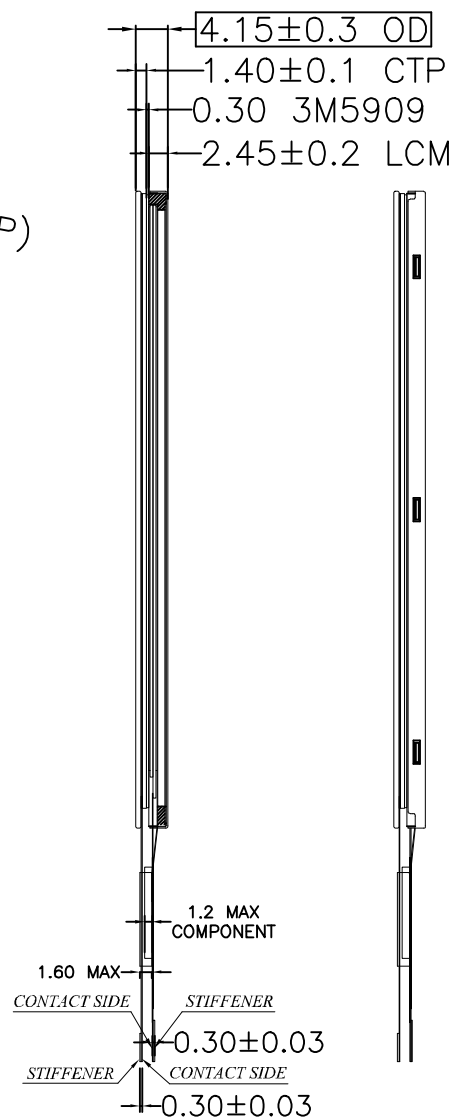
Revision	Date	Description	Changed By
-	09/03/2025	Initial Release	KL

Mechanical Drawing

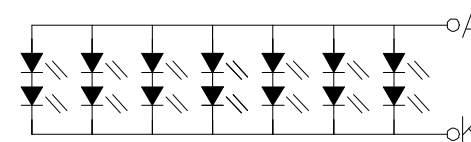
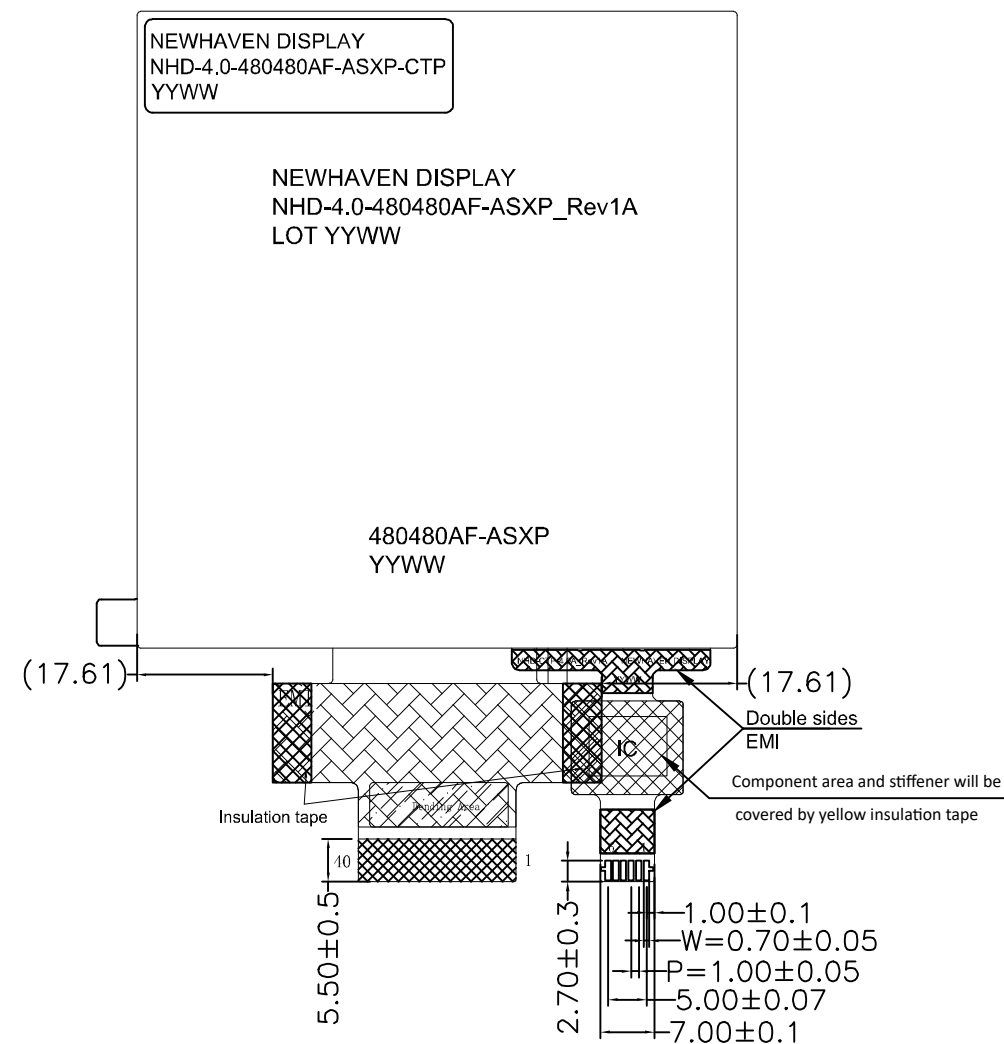
(Front View)



(Side View)



(Back View)



CIRCUIT DIAGRAM

Product Description: 4.0" 480x480 IPS TFT w/ Capacitive Touch

1. Driver IC: ST7701SN TFT, FT5426G CTP

2. Interface: 24-bit Parallel RGB TFT, 4-Wire SPI, I²C CTP

3. Power Requirement: 3.3V TFT, 6.1V/140mA Backlight, 3.3V CTP

4. Optical Features: Normally Black, Transmissive, 850cd/m²

5. Recommended FFC Connector:

TFT: 40pin 0.5mm pitch; Ex. Molex 5051104091

CTP: 6pin 1.0mm pitch; Ex. Molex 52271-0679

6. Key Features: Built-in EMI Shielding, 10-point Multitouch

TFT

1	LED_K
2	LED_A
3	GND
4	VDD
5	R0
6	R1
7	R2
8	R3
9	R4
10	R5
11	R6
12	R7
13	G0
14	G1
15	G2
16	G3
17	G4
18	G5
19	G6
20	G7
21	B0
22	B1
23	B2
24	B3
25	B4
26	B5
27	B6
28	B7
29	GND
30	PCLK
31	RESETX
32	IIS
33	VS
34	DE
35	NC
36	GND
37	CSX
38	DCX
39	SCL
40	SDA

CTP

1	VDD
2	GND
3	SCL
4	SDA
5	INT
6	RST

Standard Tolerance:
(Unless otherwise specified)

Linear: ±0.3mm

Unless otherwise specified:
• Dimensions are in Millimeters
• Third Angle Projection

NEWHAVEN DISPLAY
INTERNATIONAL

Drawing/Part Number:
NHD-4.0-480480AF-ASXP-CTP

Revision:
-

Drawn By: K. Lewis
Drawn Date: 09/03/2025

Approved By: K. Lewis
Approved Date: 09/03/2025

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Pin Description

TFT:

Pin No.	Symbol	External Connection	Function Description
1	LED_K	Power Supply	Backlight Cathode (Ground)
2	LED_A	Power Supply	Backlight Anode (140mA @ 6.1V)
3	GND	Power Supply	Ground
4	VDD	Power Supply	Supply Voltage for LCD and Logic (3.3V)
5-12	R0-R7	MPU	Red Data signals
13-20	G0-G7	MPU	Green Data signals
21-28	B0-B7	MPU	Blue Data signals
29	GND	Power Supply	Ground
30	PCLK	MPU	Dot Clock signal for RGB interface
31	RESETX	MPU	Active LOW Reset signal
32	HS	MPU	Line Synchronizing signal for RGB interface
33	VS	MPU	Frame Synchronizing signal for RGB interface
34	DE	MPU	Data Enable signal for RGB interface
35	NC	-	No connect
36	GND	Power Supply	Ground
37	CSX	MPU	Active LOW Chip Select signal
38	DCX	MPU	Data/Command selection for SPI: '1' = Data; '0' = Command
39	SCL	MPU	Serial Clock signal for SPI interface (rising edge)
40	SDA	MPU	Serial Data Input signal for SPI interface

Recommended LCD connector: 40pin 0.5mm pitch FFC; Ex. Molex 5051104091

CTP:

Pin No.	Symbol	External Connection	Function Description
1	VDD	Power Supply	Supply voltage for Logic (3.3V)
2	GND	Power Supply	Ground
3	SCL	MPU	Serial I2C Clock (Requires 4.7K Ω pull-up resistor)
4	SDA	MPU	Serial I2C Data (Requires 4.7k Ω pull-up resistor)
5	INT	MPU	Interrupt signal from touch panel module to host
6	RST	MPU	Active LOW Reset signal

Recommended connector: 6pin, 1.0mm pitch, FFC connector. Molex P/N 52271-0679

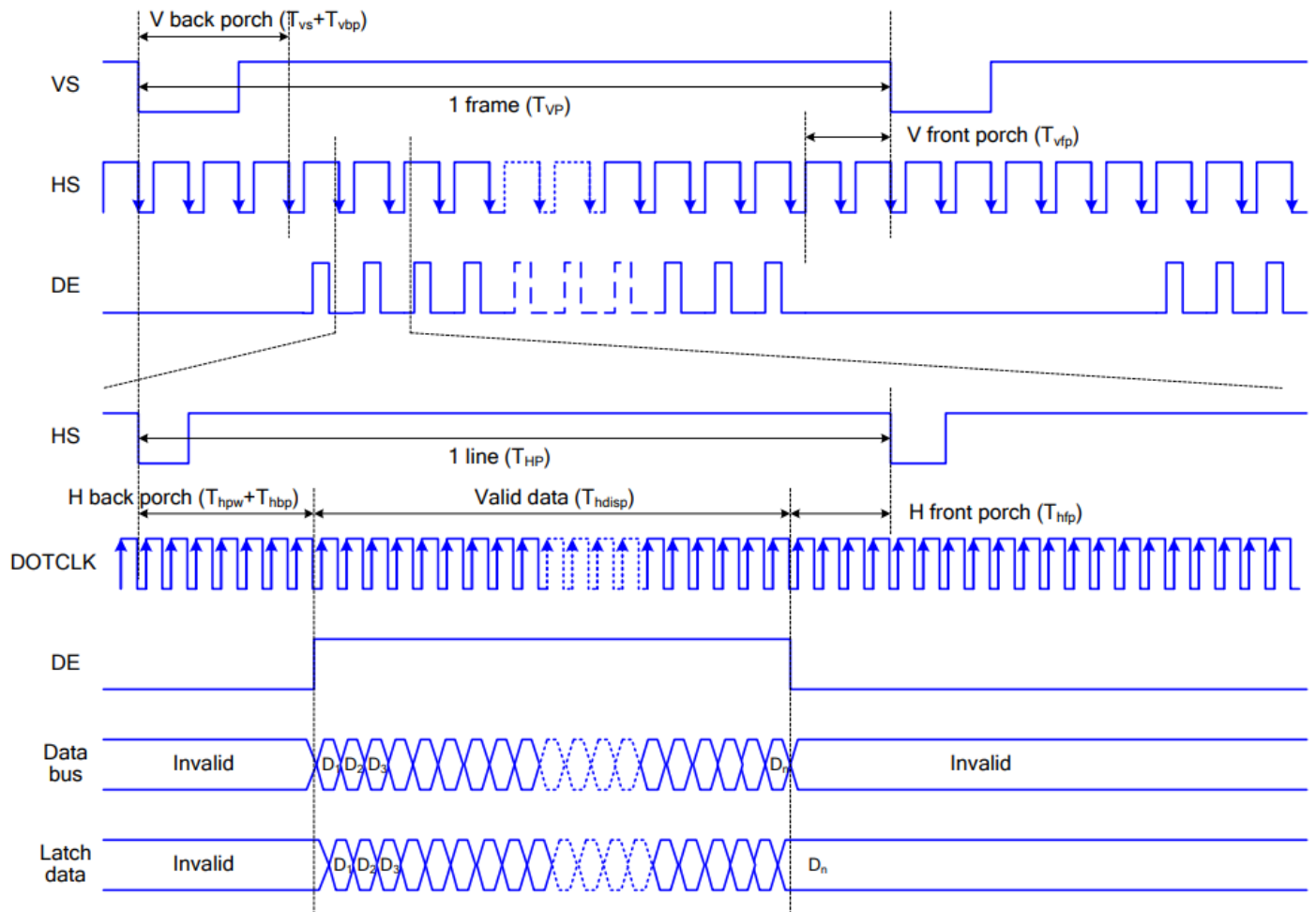


RGB Interface Mode

The ST7701SN driver IC is user configurable for DE Mode (mode 1) and HV Mode (mode 2) RGB interface.

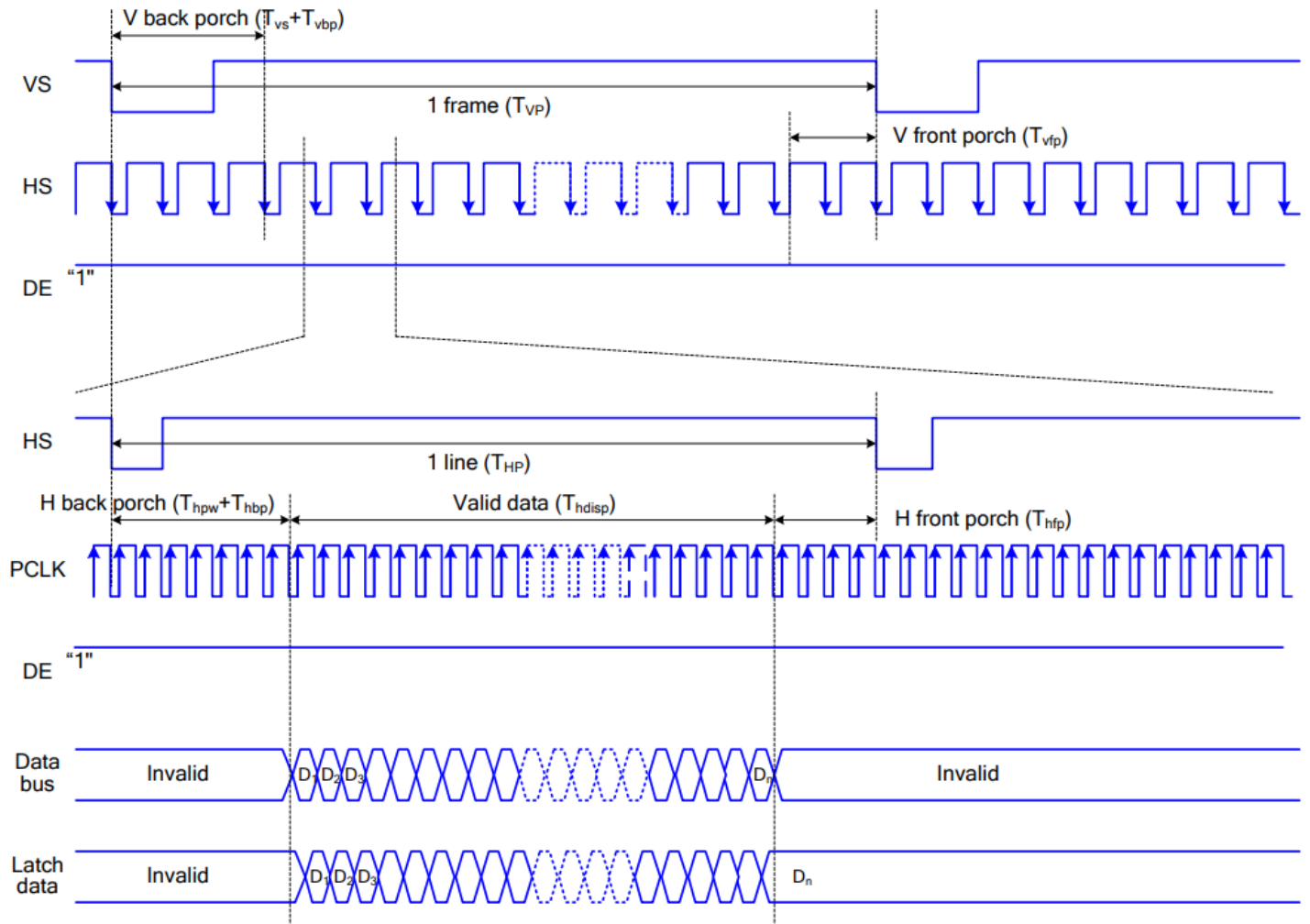
RGB Interface Mode	PCLK	DE	VS	HS	Blanking Porch Setting
DE Mode (mode 1)	Used	Used	Used	Used	Not used
HV Mode (mode 2)	Used	Not used	Used	Used	Used

DE Mode is enabled when the DE/HV bit of RGBCTR (0xC3) command is set to “0”, and DE signal is high for valid pixel data. The PCLK, HS, and VS signals are used for clocking the display data and must always be used by host controller.



Note: The setting of front porch and back porch in host must match that in IC as this mode.

HV Mode is enabled when the DE/HV bit of RGBCTR (0xC3) command is set to “1”, DE signal is ignored. VS back porch is defined by VBP_HVRGB [7:0] of RGBCTR command, and HS back porch is defined by HBP_HVRGB [7:0] of RGBCTR command. VS front porch is not used in this mode.



RGB Input Timing:

Parameter	Symbol	Min.	Typ.	Max.	Unit
Horizontal Sync. Width	hpw	2	-	255	Clock
Horizontal Sync. Back Porch	hbp	2	-	255	Clock
Horizontal Sync. Front Porch	hfp	2	-	-	Clock
Vertical Sync. Width	vs	2	-	255	Line
Vertical Sync. Back Porch	vbp	2	-	255	Line
Vertical Sync. Front Porch	vfp	2	-	-	Line

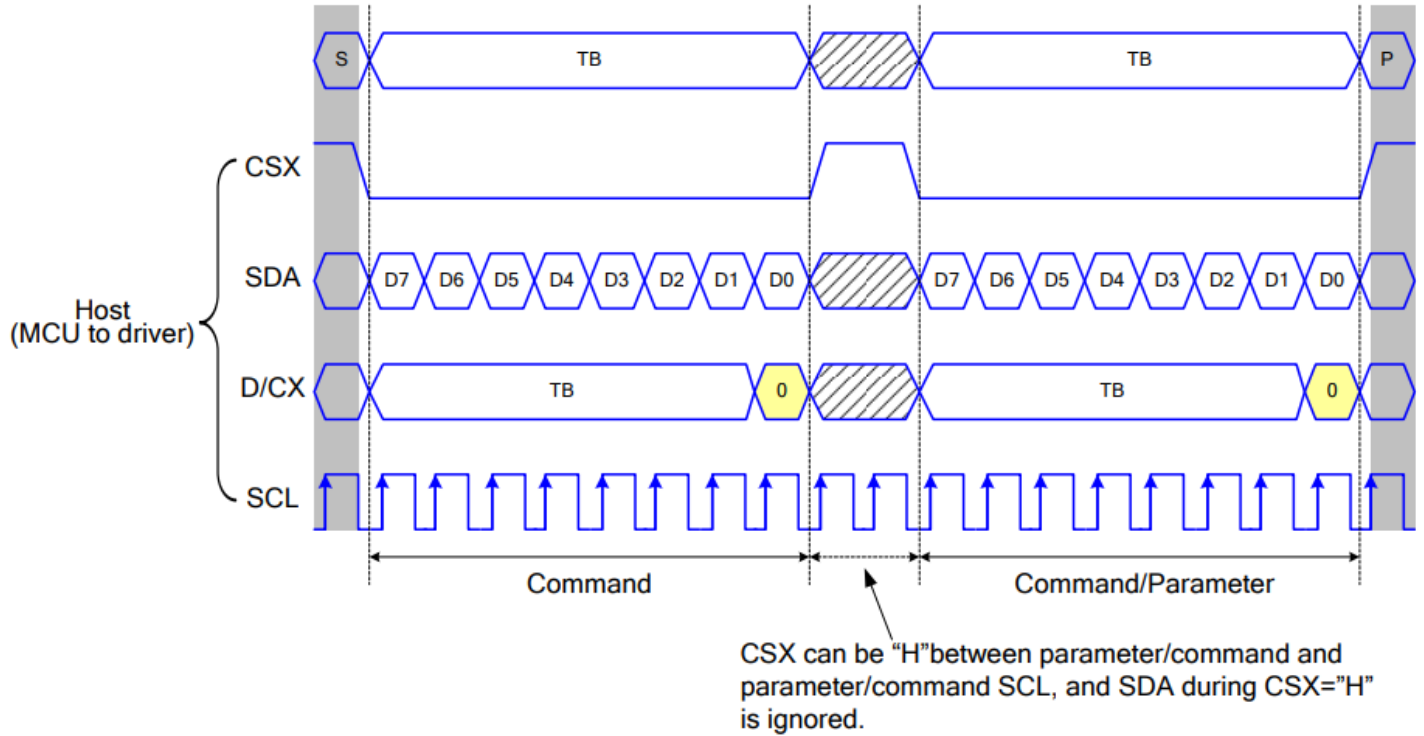
VIPF[2:0] bits of Interface Pixel Format (0x3A) command can be used to select the pixel format.

Bit	NAME	DESCRIPTION
VIPF[2:0]	Pixel Format for RGB Interface	"101"=16-bit/pixel "110"=18-bit/pixel "111"=24-bit/pixel The others=not defined

SPI Interface Mode

ST7701SN requires SPI to initialize the display before sending pixel data over RGB data lines. SPI cannot be used for sending pixel data.

4-line serial interface write protocol (write to register with control bit in transmission)



Electrical Characteristics

TFT:

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	T _{OP}	Absolute Max	-20	-	+70	°C
Storage Temperature Range	T _{ST}	Absolute Max	-30	-	+80	°C
Supply Voltage	V _{DD}	-	2.5	3.3	3.6	V
Supply Current	I _{DD}	V _{DD} = 3.3V	-	39	59	mA
"H" Level input	V _{IH}	-	0.7*V _{DD}	-	V _{DD}	V
"L" Level input	V _{IL}	-	V _{SS}	-	0.3*V _{DD}	V
"H" Level output	V _{OH}	-	0.8*V _{DD}	-	V _{DD}	V
"L" Level output	V _{OL}	-	V _{SS}	-	0.2*V _{DD}	V
Backlight Supply Current	I _{LED}	-	117	140	168	mA
Backlight Supply Voltage	V _{LED}	I _{LED} = 140mA T _{OP} = 25°C	5.4	6.1	6.8	V
Backlight Lifetime*	-		30,000	-	-	Hrs.

*Backlight lifetime is rated as Hours until **half-brightness**, under normal operating conditions. The LED of the backlight is driven by current drain; drive voltage is for reference only. Drive voltage must be selected to ensure backlight current drain is below MAX level stated.

Capacitive Touch Panel:

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	T _{OP}	Absolute Max	-20	-	+70	°C
Storage Temperature Range	T _{ST}	Absolute Max	-30	-	+80	°C
Supply Voltage	V _{DD}	-	2.7	3.3	3.6	V
Supply Current – Operating	I _{DD}	-	-	15.85	-	mA
"H" Level input	V _{IH}	-	0.7*V _{DD}	-	V _{DD}	V
"L" Level input	V _{IL}	-	V _{SS}	-	0.3*V _{DD}	V
"H" Level output	V _{OH}	-	0.7*V _{DD}	-	V _{DD}	V
"L" Level output	V _{OL}	-	V _{SS}	-	0.3*V _{DD}	V

Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Optimal Viewing Angles	Top	$\phi Y+$	$CR \geq 10$	-	80	-	°
	Bottom	$\phi Y-$		-	80	-	°
	Left	$\theta X-$		-	80	-	°
	Right	$\theta X+$		-	80	-	°
Contrast Ratio		CR	-	640	800	-	-
Luminance		L_V	$I_{LED} = 140mA$	595	850	1275	cd/m ²
Response Time (Rise + Fall)		$T_R + T_F$	$T_{OP} = 25^\circ C$	-	25	35	ms
Chromaticity	Red	X_R	-	0.58	0.61	0.64	-
		Y_R	-	0.32	0.35	0.38	-
	Green	X_G	-	0.28	0.31	0.34	-
		Y_G	-	0.55	0.58	0.61	-
	Blue	X_B	-	0.11	0.14	0.17	-
		Y_B	-	0.06	0.09	0.12	-
	White	X_W	-	0.26	0.29	0.32	-
		Y_W	-	0.29	0.32	0.35	-

Driver/Controller Information

TFT Display:

Built-in ST7701SN Driver: <https://support.newhavendisplay.com/hc/en-us/articles/14147699906711-ST7701SN>

Capacitive Touch Panel:

Built-in FT5426G Controller: <https://support.newhavendisplay.com/hc/en-us/articles/17688730921367-FT5426G>

Recommended Timing Values

Recommended RGB Timing Values:

HS Total	HFP	HBP	HS Pulse	VS Total	VFP	VBP	VS Pulse	PCLK Freq
790	150	150	10	530	20	20	10	25 MHz



Capacitive Touch Panel Registers

Register No.	Access	Register Name	Bits	Value	Description
01h	RO	Gesture ID	[7:0]	1Ch	Swipe Up
				14h	Swipe Down
				10	Swipe Left
				18	Swipe Right
				48	Zoom In
				49	Zoom Out
				00	No gesture
02h	RO	Touch Points	[7:0]	0-Ah	0: No touch detected A: 10 touch points detected
03h	RO	TOUCH1_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
03h	RO	TOUCH1_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
04h	RO	TOUCH1_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
05h	RO	TOUCH1_YH	[3:0]	0 -1	Upper 4 bits of Y touch coordinate
06h	RO	TOUCH1_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
07h	RO	TOUCH1_Weight	[7:0]		Touch Weight
08h	RO	TOUCH1_Misc	[3:0]	00-0Fh	Touch Area
09h	RO	TOUCH2_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
09h	RO	TOUCH1_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
0Ah	RO	TOUCH2_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
0Bh	RO	TOUCH2_YH	[3:0]	0 -1	Upper 4 bits of Y touch coordinate
0Ch	RO	TOUCH2_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
0Dh	RO	TOUCH2_Weight	[7:0]		Touch Weight
0Eh	RO	TOUCH2_Misc	[3:0]	00-0Fh	Touch Area
0Fh	RO	TOUCH3_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
0Fh	RO	TOUCH3_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
10	RO	TOUCH3_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
11h	RO	TOUCH3_YH	[3:0]	0 -1	Upper 4 bits of Y touch coordinate
12h	RO	TOUCH3_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
13h	RO	TOUCH3_Weight	[7:0]		Touch Weight
14h	RO	TOUCH3_Misc	[3:0]	00-0Fh	Touch Area
15h	RO	TOUCH4_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
15h	RO	TOUCH4_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
16h	RO	TOUCH4_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
17h	RO	TOUCH4_YH	[3:0]	0 -1	Upper 4 bits of Y touch coordinate
18h	RO	TOUCH4_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
1Ah	RO	TOUCH4_Misc	[3:0]	00-0Fh	Touch Area
18h	RO	TOUCH5_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved



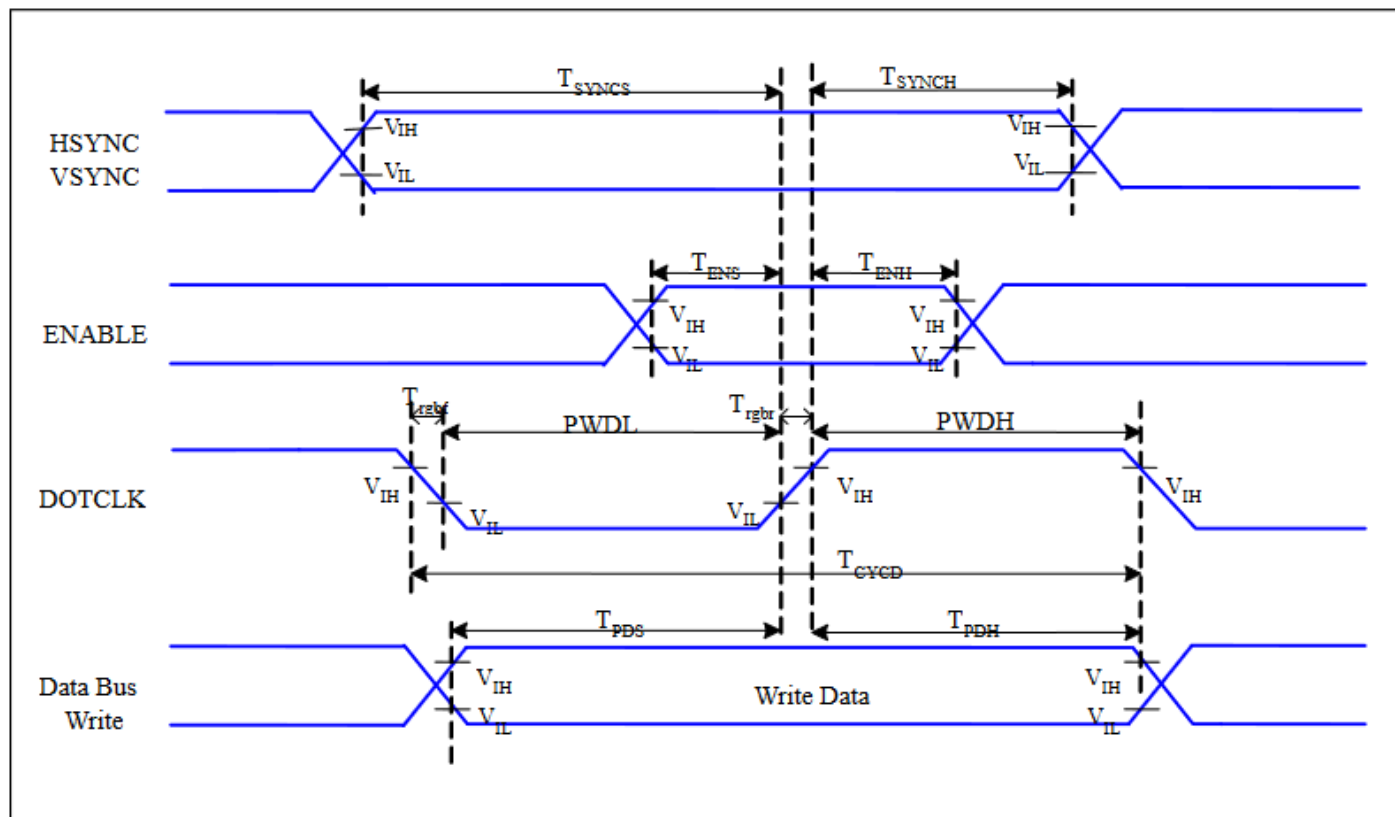
Register No.	Access	Register Name	Bits	Value	Description
1Bh	RO	TOUCH5_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
1Ch	RO	TOUCH5_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
1Dh	RO	TOUCH5_YH	[3:0]	0 -1	Upper 4 bits of Y touch coordinate
1Eh	RO	TOUCH5_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
1Fh	RO	TOUCH5_Weight	[7:0]		Touch Weight
20	RO	TOUCH5_Misc	[3:0]	00-0Fh	Touch Area
21h	RO	TOUCH6_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
21h	RO	TOUCH6_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
22h	RO	TOUCH6_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
23h	RO	TOUCH6_YH	[3:0]	0 -1	Upper 4 bits of Y touch coordinate
24h	RO	TOUCH6_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
25h	RO	TOUCH6_Weight	[7:0]		Touch Weight
26h	RO	TOUCH6_Misc	[3:0]	00-0Fh	Touch Area
27h	RO	TOUCH7_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
27h	RO	TOUCH7_XH	[3:0]	0 -1	Upper 4 bits of X touch coordinate
28h	RO	TOUCH7_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
29h	RO	TOUCH7_YH	[3:0]	0 – 1	Upper 4 bits of Y touch coordinate
2Ah	RO	TOUCH7_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
2Bh	RO	TOUCH7_Weight	[7:0]		Touch Weight
2Ch	RO	TOUCH7_Misc	[3:0]	00-0Fh	Touch Area
2Dh	RO	TOUCH8_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
2Dh	RO	TOUCH8_XH	[3:0]	0 – 1	Upper 4 bits of X touch coordinate
2Eh	RO	TOUCH8_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
2Fh	RO	TOUCH8_YH	[3:0]	0 – 1	Upper 4 bits of Y touch coordinate
30	RO	TOUCH8_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
31h	RO	TOUCH8_Weight	[7:0]		Touch Weight
32h	RO	TOUCH8_Misc	[3:0]	00-0Fh	Touch Area
33h	RO	TOUCH9_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
33h	RO	TOUCH9_XH	[3:0]	0 – 1	Upper 4 bits of X touch coordinate
34h	RO	TOUCH9_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
35h	RO	TOUCH9_YH	[3:0]	0 – 1	Upper 4 bits of Y touch coordinate
36h	RO	TOUCH9_YL	[7:0]	00 – FFh	Lower 8 bits of Y touch coordinate
37h	RO	TOUCH9_Weight	[7:0]		Touch Weight
38h	RO	TOUCH9_Misc	[3:0]	00 – 0Fh	Touch Area
39h	RO	TOUCH10_Event_Flag	[7:6]	0	Put Down
				1	Put Up
				2	Contact
				3	Reserved
39h	RO	TOUCH10_XH	[3:0]	0 – 1	Upper 4 bits of X touch coordinate
3Ah	RO	TOUCH10_XL	[7:0]	00 – FFh	Lower 8 bits of X touch coordinate
3Bh	RO	TOUCH10_YH	[3:0]	0 – 1	Upper 4 bits of Y touch coordinate
3Ch	RO	TOUCH10_YL	[7:0]	00 - FFh	Lower 8 bits of Y touch coordinate



Register No.	Access	Register Name	Bits	Value	Description
3Dh	RO	TOUCH10_Weight	[7:0]	00-FFh	Touch Weight
3Eh	RO	TOUCH10_Misc	[3:0]	00-0Fh	Touch Area
A1h	RO	ID_G_LIB_VERSION_H	[7:0]	00-FFh	App library version high-byte Default: 0
A2h	RO	ID_G_LIB_VERSION_L	[7:0]	00-FFh	App library version low-byte Default: 1h
A3h	RO	ID_G_CHIPER_HIGH	[7:0]	00-FFh	Chip Vendor ID Default: 54
A6h	RO	ID_G_FIRMID	[7:0]	00-FFh	Firmware ID Number Default: 2
A8h	RO	ID_G_VENODRID	[7:0]	00-FFh	CTPM Vendor's Chip ID Default: 79h

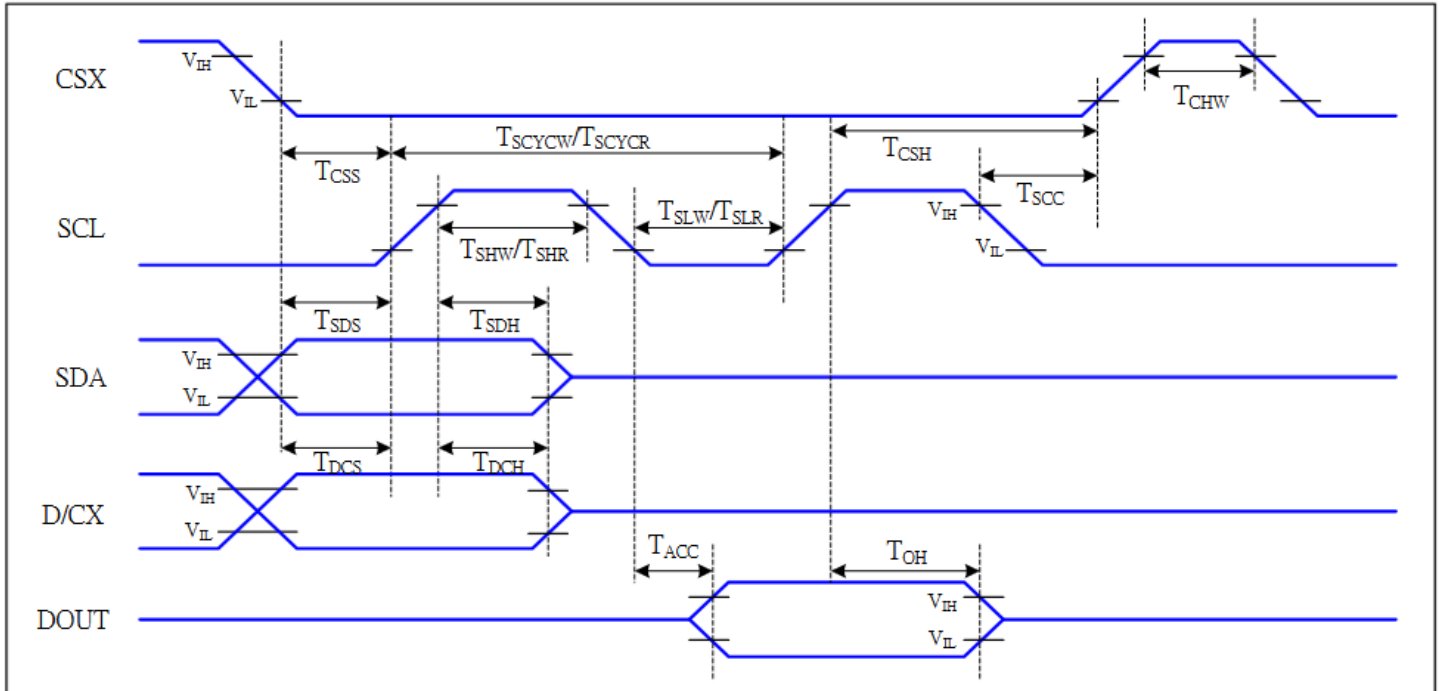
Timing Characteristics- TFT

24-bit RGB Interface Characteristics



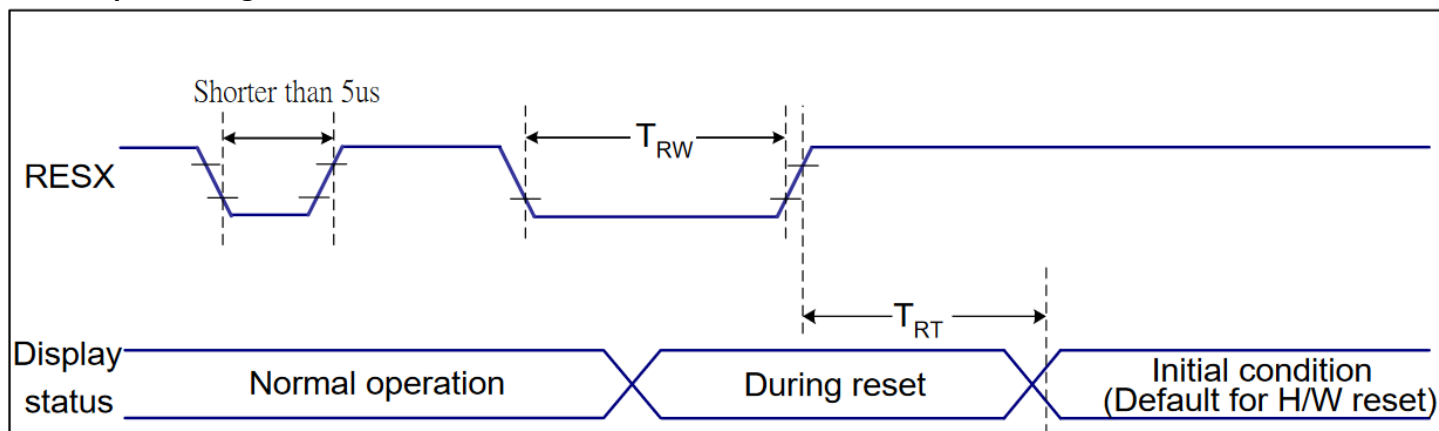
Signal	Symbol	Parameter	MIN	MAX	Unit	Description
HSYNC, VSYNC	T_{SYNCS}	VSYNC, HSYNC Setup Time	5	-	ns	
ENABLE	T_{ENS}	Enable Setup Time	5	-	ns	
	T_{ENH}	Enable Hold Time	5	-	ns	
DOTCLK	$PWDH$	DOTCLK High-level Pulse Width	15	-	ns	
	$PWDL$	DOTCLK Low-level Pulse Width	15	-	ns	
	T_{CYCD}	DOTCLK Cycle Time	33	-	ns	
	T_{rghr}, T_{rghf}	DOTCLK Rise/Fall time	-	15	ns	
DB	T_{PDS}	PD Data Setup Time	5	-	ns	
	T_{PDH}	PD Data Hold Time	5	-	ns	

Serial Interface Characteristics (4-wire serial)



Signal	Symbol	Parameter	MIN	MAX	Unit	Description
CSX	T_{CSS}	Chip select setup time (write)	15		ns	
	T_{CSH}	Chip select hold time (write)	15		ns	
	T_{CSS}	Chip select setup time (read)	60		ns	
	T_{SCC}	Chip select hold time (read)	65		ns	
	T_{CHW}	Chip select "H" pulse width	40		ns	
SCL	T_{SCYCW}	Serial clock cycle (Write)	66		ns	-write command
	T_{SHW}	SCL "H" pulse width (Write)	15		ns	
	T_{SLW}	SCL "L" pulse width (Write)	15		ns	
	T_{SCYCR}	Serial clock cycle (Read)	150		ns	-read command
	T_{SHR}	SCL "H" pulse width (Read)	60		ns	
	T_{SLR}	SCL "L" pulse width (Read)	60		ns	
D/CX	T_{DCS}	D/CX setup time	10		ns	
	T_{DCH}	D/CX hold time	10		ns	
SDA (DIN)	T_{SDS}	Data setup time	10		ns	
	T_{SDH}	Data hold time	10		ns	
SDO (DOUT)	T_{ACC}	Access time	20	50	ns	Max: CL=30pF Min: CL=8pF
	T_{OH}	Output disable time	50	50	ns	

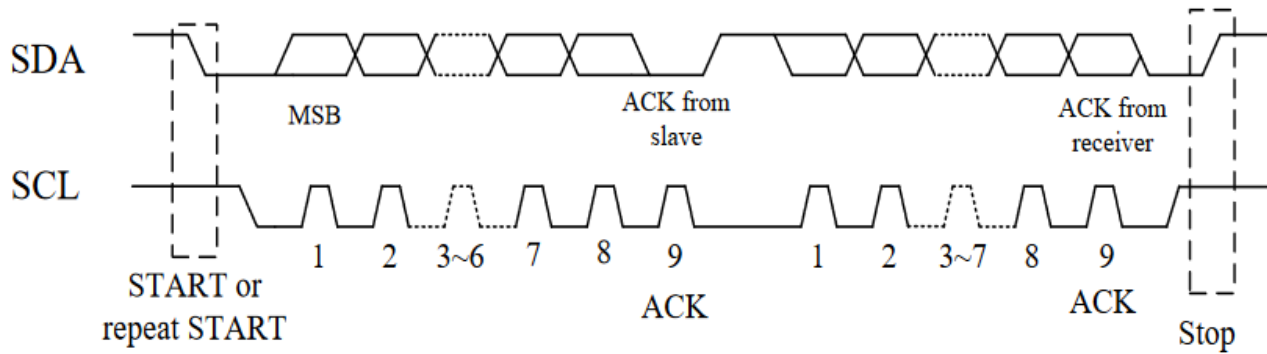
Reset Input Timing



Related Pins	Symbol	Parameter	MIN	MAX	Unit
RESX	TRW	Reset pulse duration	10	-	us
	TRT	Reset cancel	-	5 (Note 1, 5)	ms
				120 (Note 1, 6, 7)	ms

Timing Characteristics- Capacitive Touch Panel

Data Transfer Format



Parameter	Min	Max	Unit
SCL frequency	0	400	KHz
Bus free time between a STOP and START condition	1.3		us
Hold time (repeated) START condition	0.6		us
Data setup time	100		ns
Setup time for a repeated START condition	0.6		us
Setup Time for STOP condition	0.6		us

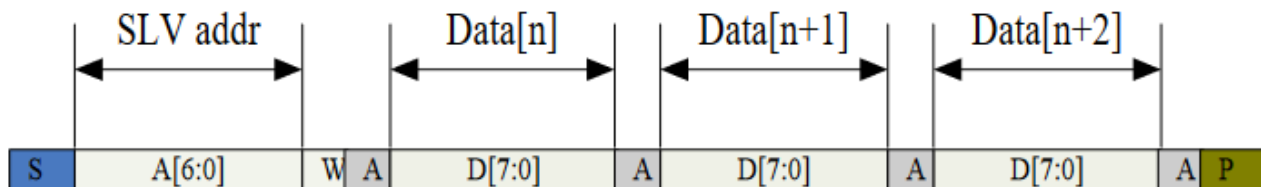


Figure 2-5 I2C master write, slave read

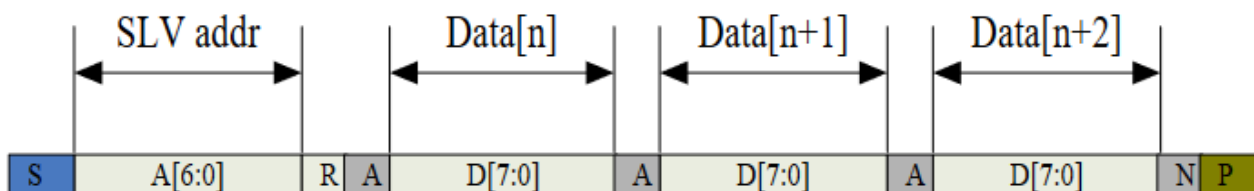


Figure 2-6 I2C master read, slave write

Power ON/Reset Sequence

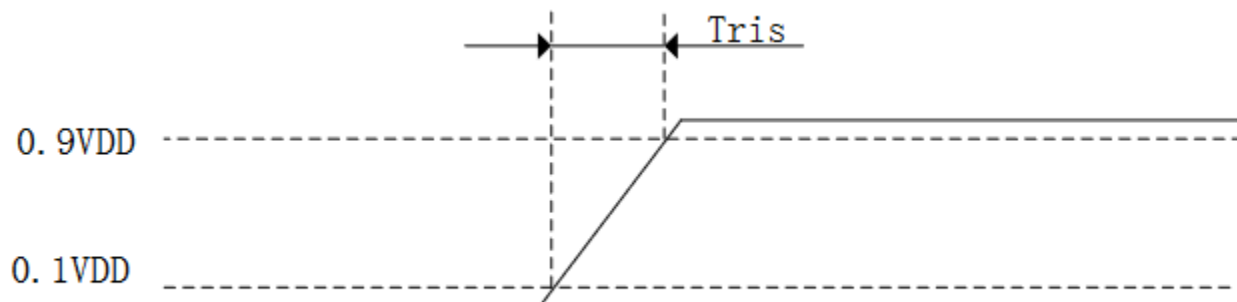
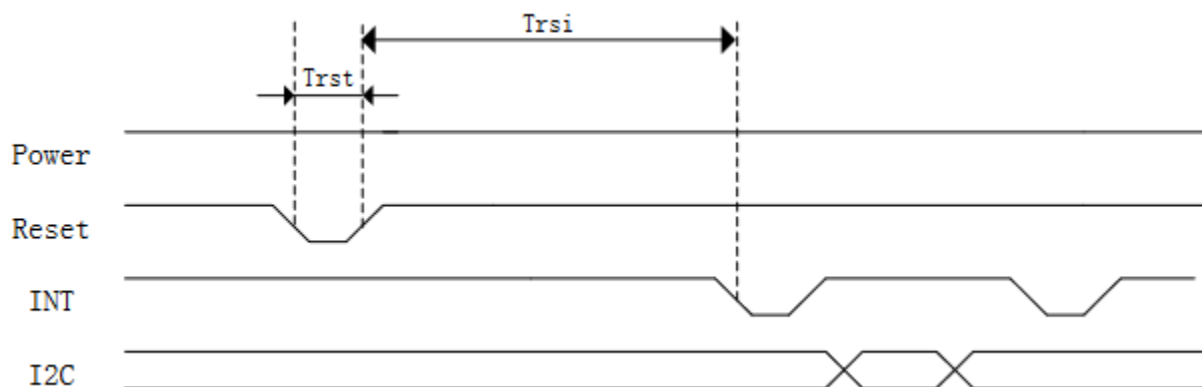
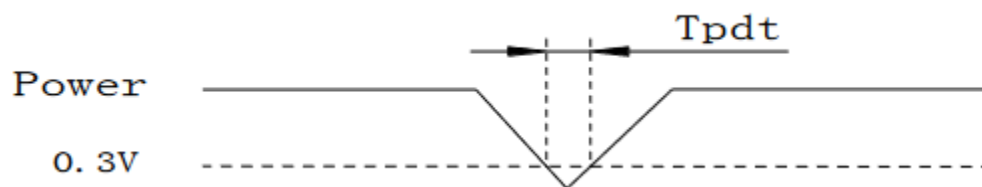


Figure 3-3 Power on time



Parameter	Description	Min	Max	Units
$Tris$	Rise time from $0.1V_{DD}$ to $0.9V_{DD}$	--	5	ms
$T_{pd\ t}$	Time of the voltage of supply being below $0.3V$	5	--	ms
$Trtp$	Time of resetting to be low before powering on	100	--	μs
T_{ivd}	Delay time of VDD powering on after IOVCC	10		μs
T_{vdr}	Reset time after VDD powering on	1	--	ms
$Trsi$	Time of starting to report point after resetting	200	--	ms
$Trst$	Reset time	1	--	ms

Sample code to read touch data:

```
i2c_start();  
i2c_tx(0x70);           //Slave Address (Write)  
i2c_tx(0x00);           //Start reading address  
i2c_stop();  
  
i2c_start();  
i2c_tx(0x71);           //Slave Address (Read)  
for(i=0x00;i<0x1F;i++)  
{touchdata_buffer[i] = i2c_rx(1);}  
i2c_stop();
```

Sample code to overwrite default register values:

```
i2c_start();  
i2c_tx(0x70);           //Slave Address (Write)  
i2c_tx(0xA4);           //ID_G_Mode  
i2c_tx(0x01);           //Disable interrupt status to host  
i2c_stop();
```

Quality Information

Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	+80°C , 240hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C , 240hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+70°C , 120hrs	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C , 120hrs	1,2
High Temperature / Humidity Storage	Endurance test applying the electric stress (voltage & current) and the high thermal with high humidity stress for a long time.	+50°C , 90% RH , 120hrs	1,2
Thermal Shock resistance	Endurance test applying the electric stress (voltage & current) during a cycle of low and high thermal stress.	-30°C,30min -> 25°C,10min -> 80°C,30min 10 cycles	
Vibration test	Endurance test applying vibration to simulate transportation and use.	Frequency range:250r/min Amplitude: 1 inch Time: 45min	3
Static electricity test	Endurance test applying electric static discharge.	Air: Vs=±8kV 10 Times	
		Contact: Vs= ±4kV 10 Times	

Note 1: No condensation to be observed.

Note 2: Conducted after 4 hours of storage at 25°C, 0%RH.

Note 3: Test performed on product itself, not inside a container.