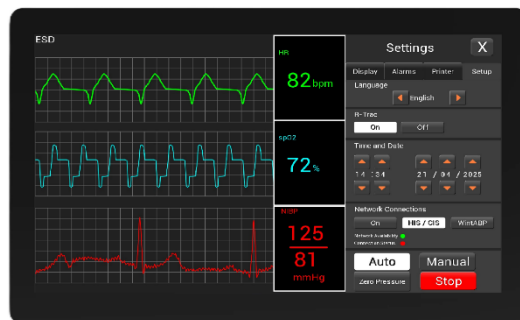


DP-1561-01A Datasheet



1 Introduction

The DP-1561-01A is a 15.6-inch high-brightness IPS display with a resolution of 1920 × 1080 pixels, featuring a projected capacitive (PCAP) touch interface for smooth and responsive multi-touch operation.

Powered by the RM97030 display controller, the module delivers rich 16.7 million color output over a dual-channel LVDS interface, ensuring stable and high-speed image transmission. Touch input is managed by the ILI2511 controller, supporting both I²C and USB interfaces for flexible integration.

1.1 Features

- 15.6-inch high-brightness IPS display with 1920 × 1080 resolution and Projected Capacitive (PCAP) touch support
- Dual-port LVDS interface enabling high-resolution display data transmission with enhanced bandwidth efficiency
- Integrated ILI2511 touch controller with I²C/USB interface for accurate, low-latency capacitive touch response
- High-contrast panel with anti-glare coating for improved visibility in various lighting conditions

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2 Part Numbers/Ordering Information

Part No.	Description
DP-1561-01A	High Brightness IPS Display 15.6 inch (1920 x 1080 resolution) with PCAP Touch

Table 1 - Part Number/Ordering Information

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3 General Specifications

3.1 Liquid Crystal Module (LCM) General Information

Item	Specification	Unit
LCD Size	15.6	inch
Number of Pixels	1920(H)RGB x 1080(V)	pixels
Display Mode	AHVA & Normally Black	-
Viewing Direction	All	o'clock
Interface	2 port LVDS with JEIDA format DE mode	-
Display Colors	16.7M Colors (RGB 8 bit)	colors
Outline Dimension (with touch)	384.2(H) x 253.6 (V) x 8.6 (D)	mm
Active Area	344.16(H) * 193.59(V)	mm
Pixel Pitch	0.17925(H) * 0.17925(V)	mm
Brightness (with touch)	860	cd/m ²
Display Driver IC	RM97030	-
Touch Panel	PCAP (Capacitive)	-
Touch Driver IC	ILI2511	-
TFT & CTP Bonding	Optical Bonding (OCA)	-
Surface Treatment	Anti-glare	-
Nitrile Gloved Touch Sensing	Supported	-
Operation Temperature	-30~70°C	°C
Storage Temperature	-30~80°C	°C

Table 2 - LCM General Information

Note: Complies with environmental protection requirements and is RoHS compliant.

4 Hardware Description

The DP-1561-01A features a 15.6-inch high-brightness IPS display with a 1920 × 1080 resolution, integrated with a projected capacitive (PCAP) touch panel directly bonded to the LCD. Figure 1 and Figure 2 show the front and back views of the DP-1561-01A, respectively.



Figure 1 - DP-1561-01A Front View



Figure 2 - DP-1561-01A Back View

The DP-1561-01A includes the following accessory boards, as illustrated in Figure 3 to Figure 6 :

- Capacitive Touch Control Board : **ILI2511C2P2V1**
- LED Backlight Inverter Board (DC-DC Inverter) : **MY-1LB2212**

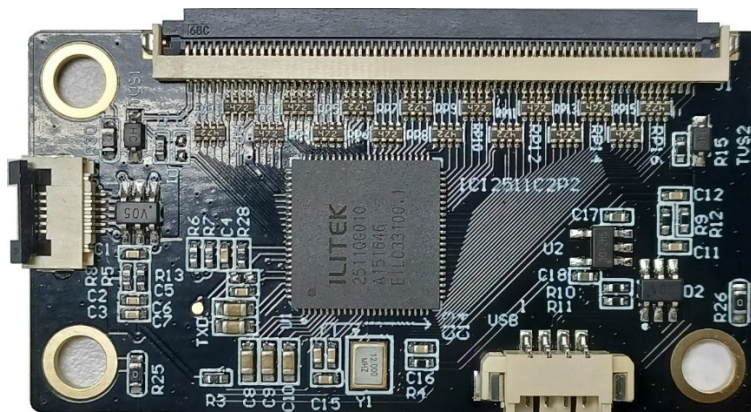
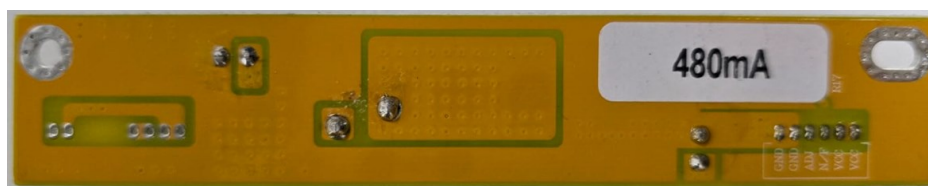

Figure 3 - Capacitive Touch Control Board Front View

Figure 4 - Capacitive Touch Control Board Back View

Figure 5 - LED Backlight Inverter Board Front View

Figure 6 - LED Backlight Inverter Board Back View

4.1 Pin Assignment

The interface connector pin configurations are described in the following sections.

4.1.1 LCM Pin Assignment

Recommended connector: I-PEX, 20455-040E-76B

Pin no	Symbol	Description	Remark
1	NC	No Connection	
2	NC	No Connection	
3	NC	No Connection	
4	NC	No Connection	
5	NC	No Connection	
6	NC	No Connection	
7	NC	No Connection	
8	NC	No Connection	
9	NC	No Connection	
10	NC	No Connection	
11	LCD_VCC	LCD Power Supply. 3.3V (typical)	
12	LCD_VCC	LCD Power Supply. 3.3V (typical)	
13	LCD_VCC	LCD Power Supply. 3.3V (typical)	
14	NC	No Connection	
15	NC	No Connection	
16	NC	No Connection	
17	GND	Ground	
18	RX00-	-LVDS differential data input	
19	RX00+	+LVDS differential data input	
20	RX01-	-LVDS differential data input	
21	RX01+	+LVDS differential data input	
22	RX02-	-LVDS differential data input	
23	RX02+	+LVDS differential data input	
24	GND	Ground	
25	RXOC-	-LVDS differential clock input	
26	RXOC+	+LVDS differential clock input	
27	GND	Ground	
28	RX03-	-LVDS differential data input	
29	RX03+	+LVDS differential data input	
30	RXE0-	-LVDS differential data input	
31	RXE0+	+LVDS differential data input	
32	RXE1-	-LVDS differential data input	
33	RXE1+	+LVDS differential data input	
34	GND	Ground	
35	RXE2-	-LVDS differential data input	
36	RXE2+	+LVDS differential data input	
37	RXEC-	-LVDS differential clock input	

38	RXEC+	+LVDS differential clock input	
39	RXE3-	-LVDS differential data input	
40	RXE3+	+LVDS differential data input	

Table 3 - LCM Pin Definition

4.1.2 Touch Connector Pin Assignment

I2C Interface Pin Definition, connector: FPC 0.5mm pitch 6pin

Pin no	Name	Type	Description
1	VDD33	P	3.3V Input power supply
2	I2C_SDA	I/O	I2C serial bus, data line
3	I2C_SCL	I/O	I2C serial bus, clock line
4	I2C_INT	O	Interrupt output
5	RSTN	I	Reset input
6	GND	P	GROUND

Table 4 - I2C Interface Touch Connector Pin Definition

USB Interface Pin Definition, connector: header 1.25mm pitch 4pin

Pin no	Name	Type	Description
1	VBUS	P	5V Input power supply
2	D-	I/O	Data -
3	D+	I/O	Data+
4	GND	P	GROUND

Table 5 - USB Interface Touch Connector Pin Definition

4.1.3 LED Backlight Inverter Connector Pin Assignment

CN1 Interface Pin Definition

Pin no	Name	Type	Description	Note
1	+12V	P	Input power supply	10.8 ~ 13.2V
2	+12V	P	Input power supply	10.8 ~ 13.2V
3	N/F	I	On/ Off Control	On=2-5V, Off=0-0.5V
4	ADJ	I	Dimming Control	0V=Min, 3.3V=Max
5	GND	P	GROUND	
6	GND	P	GROUND	

Table 6 - CN1 Interface Pin Definition

5 Specifications

5.1 Electrical Specifications

5.1.1 Absolute Maximum Ratings

Maximum Ratings for TFT LCD

Item	Symbol	MIN.	MAX.	Unit	Note
LCD Power Supply Voltage	LCD_VCC	-0.3	4.0	V	Note 1

Table 7 - Maximum Ratings for TFT LCD

Note:

1. Permanent damage may occur to the LCD module if beyond this specification.
2. Functional operation should be restricted to the conditions described under normal operating conditions.

Maximum Ratings for Capacitive Touch Control Board

Item	Symbol	MIN.	MAX.	Unit
USB 5V Power Supply Voltage	VBUS	-0.3	6.0	V
VDD Power Supply Voltage	VDD33	-0.3	3.6	V

Table 8 - Maximum Ratings for Capacitive Touch Control Board

5.1.2 Operating Conditions

Recommended Operating Condition for TFT LCD

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Analog Supply voltage	LCD_VCC	3.0	3.3	3.6	V	
Analog supply current	I _{cc}	-	260	-	mA	LCD_VCC=3.3 V

Table 9 - Recommended Operating Condition for TFT LCD

Recommended Operating Condition for CTP

Item	Symbol	Min.	Max.	Unit	Note
VDD Power Supply Voltage	VDD33	3	3.6	V	V _{DDIO} =VDD33

Table 10 - Recommended Operating Condition for CTP

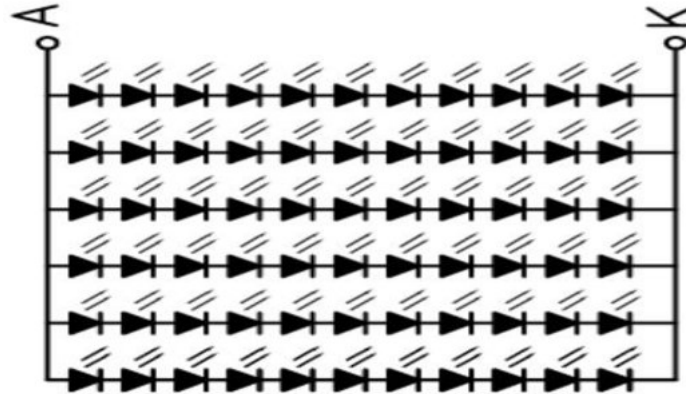
Recommended Driving Condition for Backlight

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Driving Current	I _F	-	480	-	mA	
Driving Voltage	V _F	-	33	-	V	
Power consumption	WBL	-	15.8	-	W	
Luminance	L	-	860	-	cd/m ²	With touch screen
LED Lifetime	N/A	50,000	-	-	Hours	T _a =25°C Note 1

Table 11 - Recommended Driving Condition for Backlight

Note:

1. LED lifetime is defined as the module brightness decay 50% of original brightness at $T_a=25^{\circ}\text{C}$, typical current.
2. LED circuit:


Figure 7 - Backlight LED Circuit
Recommended Operating Condition for LED Backlight Inverter

Item	Symbol	Min.	Typ.	Max.	Unit
Input Voltage	V_{in}	10.8	12	13.2	V
Input Current	I_{in}			1.8	A
Input Power	P_{in}	-		20	W
Brightness Voltage	V_{adj}	0 (Darkest)	-	3.3 (Brightest)	V
Control Voltage	Enable $V_{on}=2 - 5.0\text{V}$, Disable $V_{off}= 0 - 0.5\text{V}$				

Table 12 - Recommended Operating Condition for LED Backlight Inverter
Capacitive Touch Control Board DC Electrical Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Current	I_{op}	-	100	-	mA	
Logic Input Voltage	V_{IL}	0	-	$0.3V_{DDIO}$	V	
	V_{IH}	$0.6V_{DDIO}$	-	$V_{DDIO}+0.5$	V	
Hysteresis Voltage	V_{HY}	-	$0.2V_{DDIO}$	-	V	
Negative Going Threshold	V_{ILS}	0	-	$0.2V_{DDIO}$	V	
Positive Going Threshold	V_{IHS}	$0.6V_{DDIO}$	-	$V_{DDIO}+0.5$	V	
Logic output voltage	V_{OL}	-	-	$0.3V_{DDIO}$	V	$V_{DDIO}=3.3\text{V}$, $I_{OL}=10\text{mA}$
	V_{OH}	$0.7V_{DDIO}$	-	-	V	$V_{DDIO}=3.3\text{V}$, $I_{OH}=8\text{mA}$

Table 13 - Capacitive Touch Control Board DC Electrical Characteristics

Capacitive Touch Control Board USB DC Electrical Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Logic input voltage	$V_{IL(USB)}$	0	-	0.8	V	
	$V_{IH(USB)}$	2	-	-	V	
Differential Input Sensitivity	V_{DI}	0.2			V	(D+) – (D-)
Differential common mode range	V_{CM}	0.8		2.5	V	Includes V_{DI} range
Single-ended receiving threshold	V_{SE}	0.8		2.0	V	
Receiver hysteresis	V_{RH}		200		mV	
Logic output voltage	$V_{OL(USB)}$	0		0.3		
	$V_{OH(USB)}$	2.8		3.6		
Output signal crossover voltage	V_{CRS}	1.3		2.0		
Pull-up Resistance	R_{PU}	1.425		1.575		
Upstream port termination pull-up voltage	V_{TRM}	3.0		3.6		

Table 14 - Capacitive Touch Control Board USB DC Electrical Characteristics
LED Backlight Inverter Output Electrical Characteristics

 Test condition : $V_{in}=12V$; $V_{on}=3.3V$; $V_{adj}=3.3V$

Item	Symbol	Min.	Typ.	Max.	Unit
Output Current (per group)	I_{out}		480		mA
Output Voltage	V_{out}		33		V
Efficiency	η		93		%

Table 15 - LED Backlight Inverter Output Electrical Characteristics

5.2 Timing

5.2.1 Data Input Format for LVDS

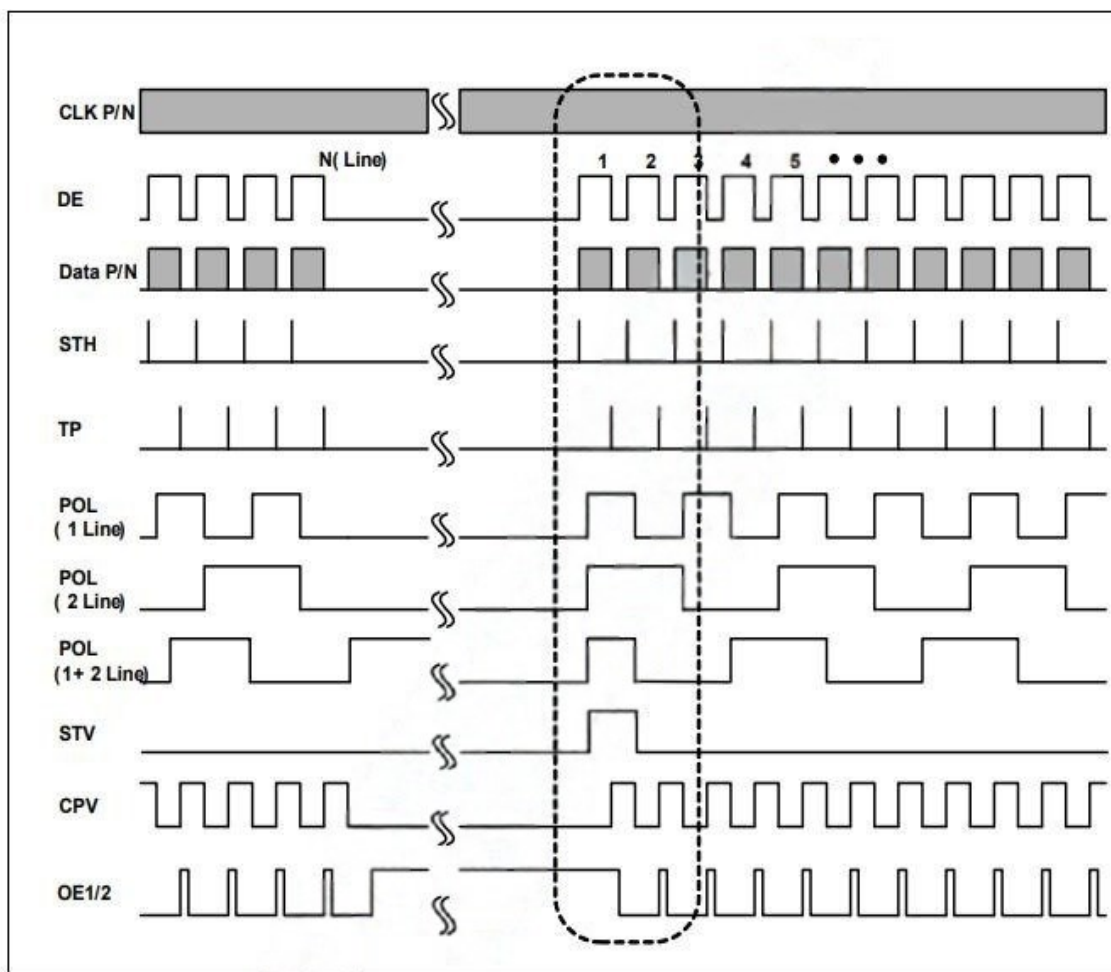


Figure 8 - Data Input Format for LVDS

5.2.2 Input Timing Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit
Clock frequency	F _{pclk}	69	75	82.5	MHz
Horizontal period area	TH	2200	2240	2280	DCLK
Horizontal display area	THD	1920	1920	1920	DCLK
Horizontal blanking area	THB	280	320	360	DCLK
Vertical period area	TV	1110	1115	1120	TH
Vertical display area	TVD	1080	1080	1080	TH
Vertical blanking area	TVB	30	35	40	TH
Frame rate	FR	55	60	65	Hz

Table 16 - Input Timing Characteristics

5.2.3 Power ON/OFF Timing

VDD_25 must be higher than VDD_11 during power on and power off.

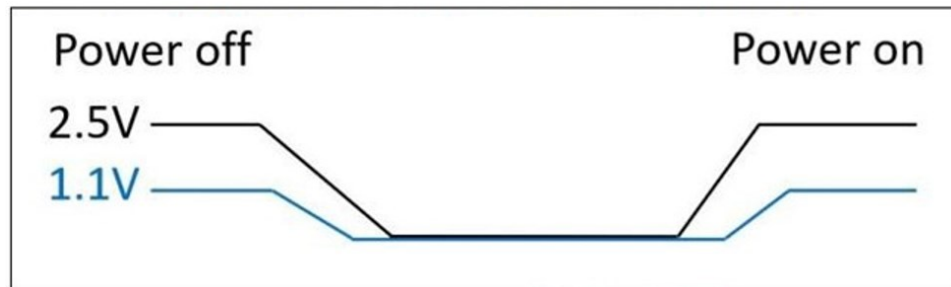


Figure 9 - Power ON/OFF Timing

5.2.4 Power ON Sequence

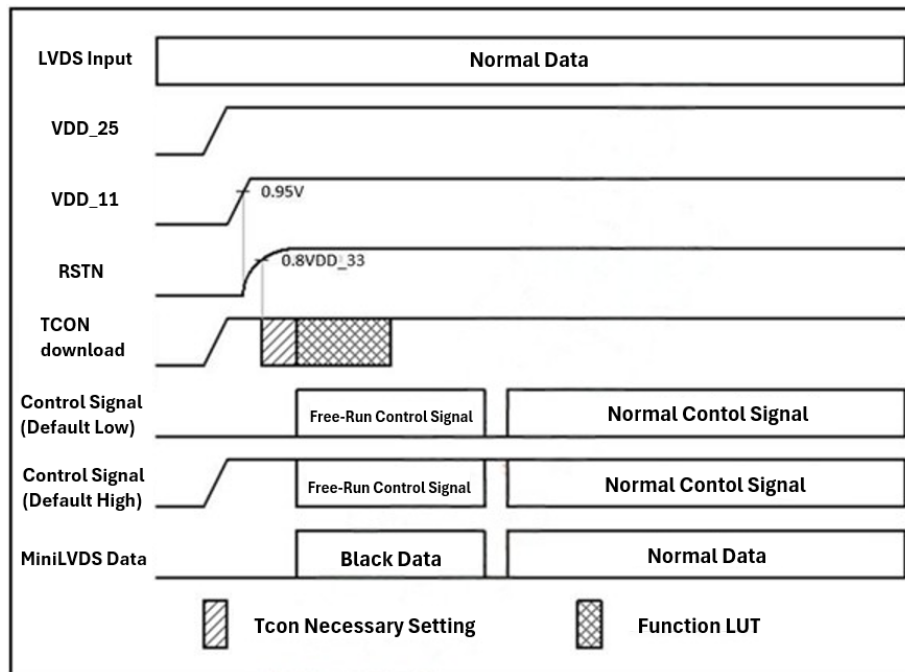


Figure 10 - Power ON Sequence

5.2.5 LED Driver IC Power On Sequence

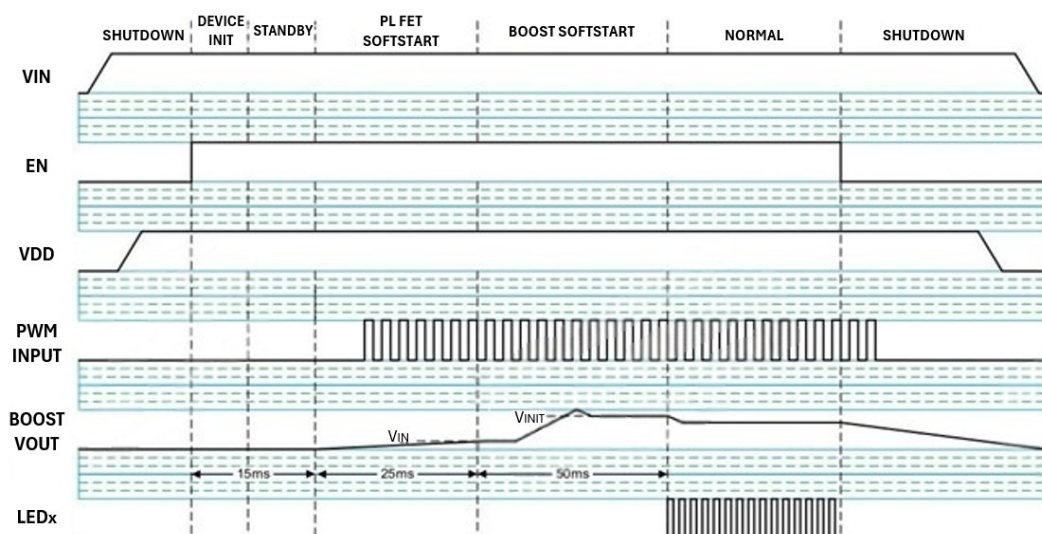


Figure 11 - LED Driver IC Power On Sequence

5.3 Optical Specifications

All optical specifications are measured under typical condition (Note 1, 2)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Response Time	Tr+Tf	$\theta=0^\circ$	--	25	30	ms	Note 3
Contrast ratio	CR	$\theta=0^\circ$	700	800	--	--	Note 4
NTSC	%	$\theta=0^\circ$	67%	72%	--	%	C-light
Viewing Angle	Top	CR ≥ 10	80	85	--	deg.	Note 5
	Bottom				--		
	Left				--		
	Right				--		
Transmittance	Tr	$\theta=0^\circ$	2.79%	3.17%	--	%	w/o APCF & Haze @ PS06W12 V3 (Silicate)
Chromaticity	White	X	$\theta=0^\circ$	0.270	0.300	0.330	@C-Light Note 6
		Y	$\theta=0^\circ$	0.300	0.330	0.360	
	Red	X	$\theta=0^\circ$	0.631	0.661	0.691	
		Y	$\theta=0^\circ$	0.290	0.320	0.350	
	Green	X	$\theta=0^\circ$	0.230	0.260	0.290	
		Y	$\theta=0^\circ$	0.555	0.585	0.615	
	Blue	X	$\theta=0^\circ$	0.109	0.139	0.169	
		Y	$\theta=0^\circ$	0.049	0.079	0.109	

Table 17 - Optical Specifications

Remark: Above table, all Values are simulated only.

Note 1: Measurement should be performed in the dark room, optically ambient temperature $=25^\circ\text{C}$

Note 2: To be measured on the center area of panel with a field angle of 1° by Topcon luminance meter BM-5, or SR3 or DMS-803 after 10 minutes operation.

Note 3: The Optical features are based on emissive spectrum of the reference light source by CIE1931C-light. The LCD spectrum of transmission must be verified with the reference light-source to achieve the specified optical characteristics.

Note 4: Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio} = \frac{\text{Photo detector output when LCD is at "White" state}}{\text{Photo detector output when LCD is at "Black" state}}$$

Note 5: Definition of viewing angle: refer to figure as below (FPC direction is at $\psi=90$).

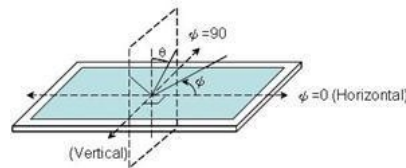


Figure 12 - Viewing Angle

Note 6: The viewing angles are measured at the center area of the panel when all the input terminals of LCD panel are electrically opened.

6 Reliability Test Items

Test Item	Test Conditions
High Temperature Storage	Ta= +80°C 240hrs
Low Temperature Storage	Ta= -30°C 240hrs
High Temperature Operation	Ta= +70°C 240hrs
Low Temperature Operation	Ta= -30°C 240hrs
High Temperature and Humidity Storage	Ta= +60°C, 90% RH 240hrs
Thermal Shock (Non-operation)	-30°C /30 min ~ +70°C /30 min for 100 cycles Start with cold temperature End with high temperature
Electrostatic Discharge	Contact = ± 6 kV, class B Air = ± 8 kV, class B

Table 18 - Reliability Test Items

Note: The test result shall be evaluated after the sample has been left at room temperature and humidity for 2 hours without load. No condensation shall be accepted. The sample will not be accepted if these defects appear:

1. Air bubble in the LCD
2. Seal leak or Glass crack
3. Non display or abnormal display
4. Brightness reduction >50%

7 Mechanical Dimensions

7.1 LED Backlight Inverter Board

All units are in millimeters (mm)

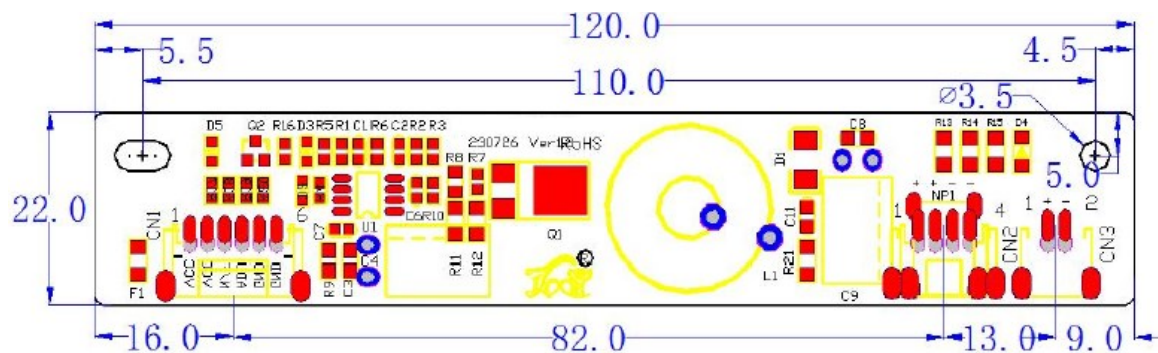


Figure 13 - LED Backlight Inverter Board Dimension

7.2 Capacitive Touch Control Board

All units are in millimeters (mm) : 26mm(W) x 50mm(L) x 4.7mm(H)

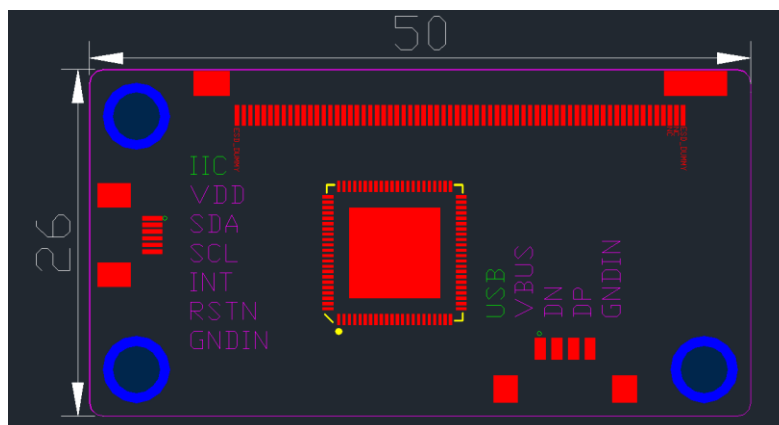


Figure 14 - Capacitive Touch Control Board Dimension

7.3 LCM Dimension

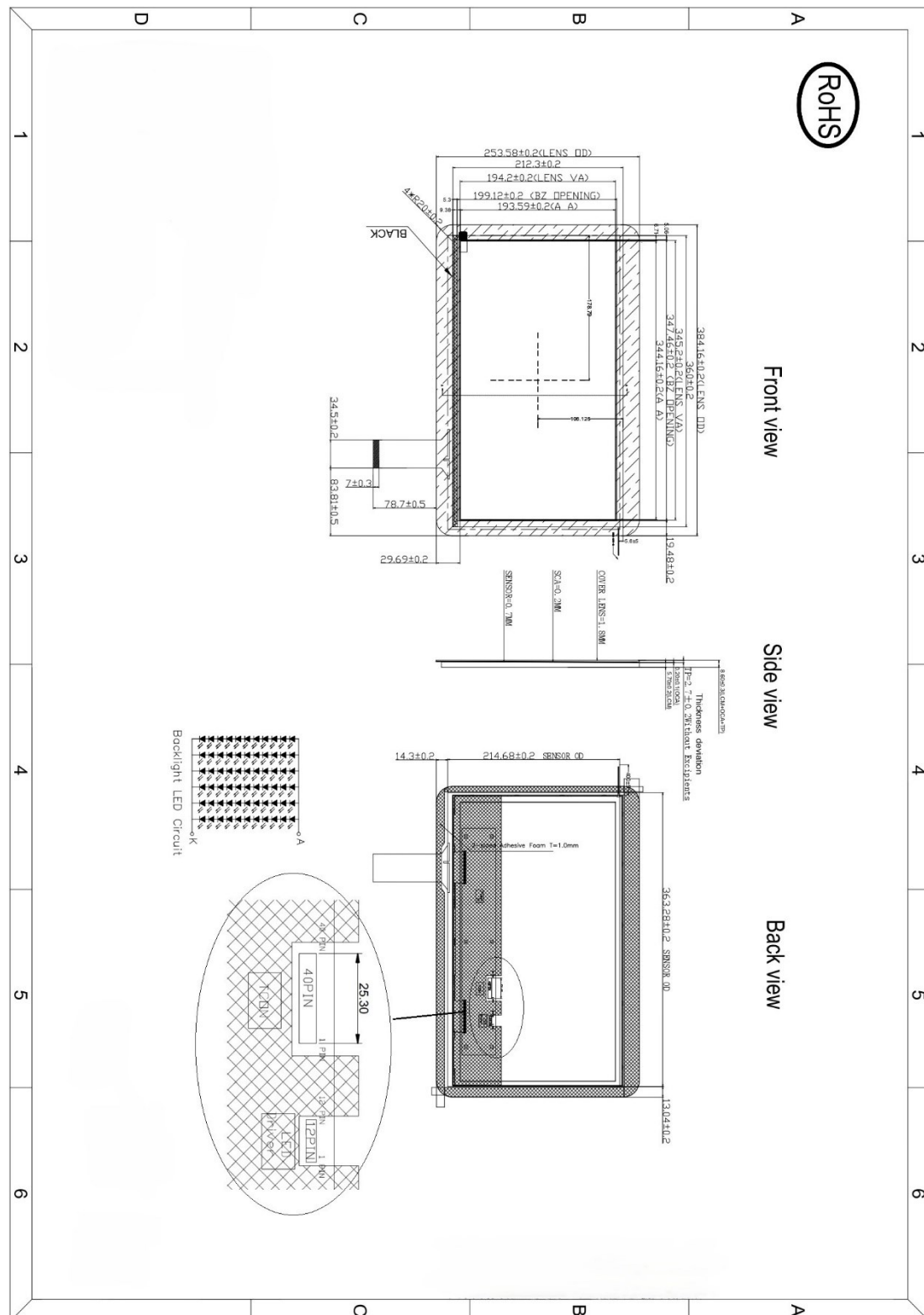


Figure 15 - LCM Dimension

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9 Warranty Statement

According to our after-sales policy, the warranty (if applicable) will be void under the following circumstances:

- The device has been damaged due to human factors, such as dropping, impact, water exposure, or unauthorized disassembly/modification.
- The device has malfunctioned due to improper use, mishandling, or usage beyond its intended design.
- The device has been disassembled, repaired, or modified by unauthorized personnel.
- Any other conditions that do not comply with our warranty policy. For details, please [contact our sales team](#).

10 Contact Information

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Appendix A – References

Document References

NA

Acronyms and Abbreviations

Terms	Description
AHVA	Advanced Hyper-Viewing Angle
APCF	Advanced Polarization Conversion Film
CTP	Capacitive Touch Panel
DC	Direct Current
FPC	Flexible Printed Circuit
HMIs	Human Machine Interfaces
IPS	In-Plane Switching
IC	Integrated Circuit
I2C	Inter-Integrated Circuit
LCD	Liquid Crystal Display
LCM	Liquid Crystal Module
LED	Light Emitting Diode
LED A	Light Emitting Diode Anode
LED K	Light Emitting Diode Cathode
LVDS	Low-Voltage Differential Signaling
PCAP	Projected Capacitive
TFT	Thin Film Transistor
USB	Universal Serial Bus

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Appendix C – Revision History

Document Title: DP-1561-01A Datasheet
Document Reference No.: BRT_000474
Clearance No.: BRT#240
Product Page: <https://brtchip.com/product-category/products/>
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Revision	Changes	Date
Version 1.0	Initial Release	27-08-2025