

Product Specification



DLC Display Co., Limited

DLC-T6.86CDH#1-AT

Features

1280(RGB) X 480

IPS/HDMI Display

With Touch

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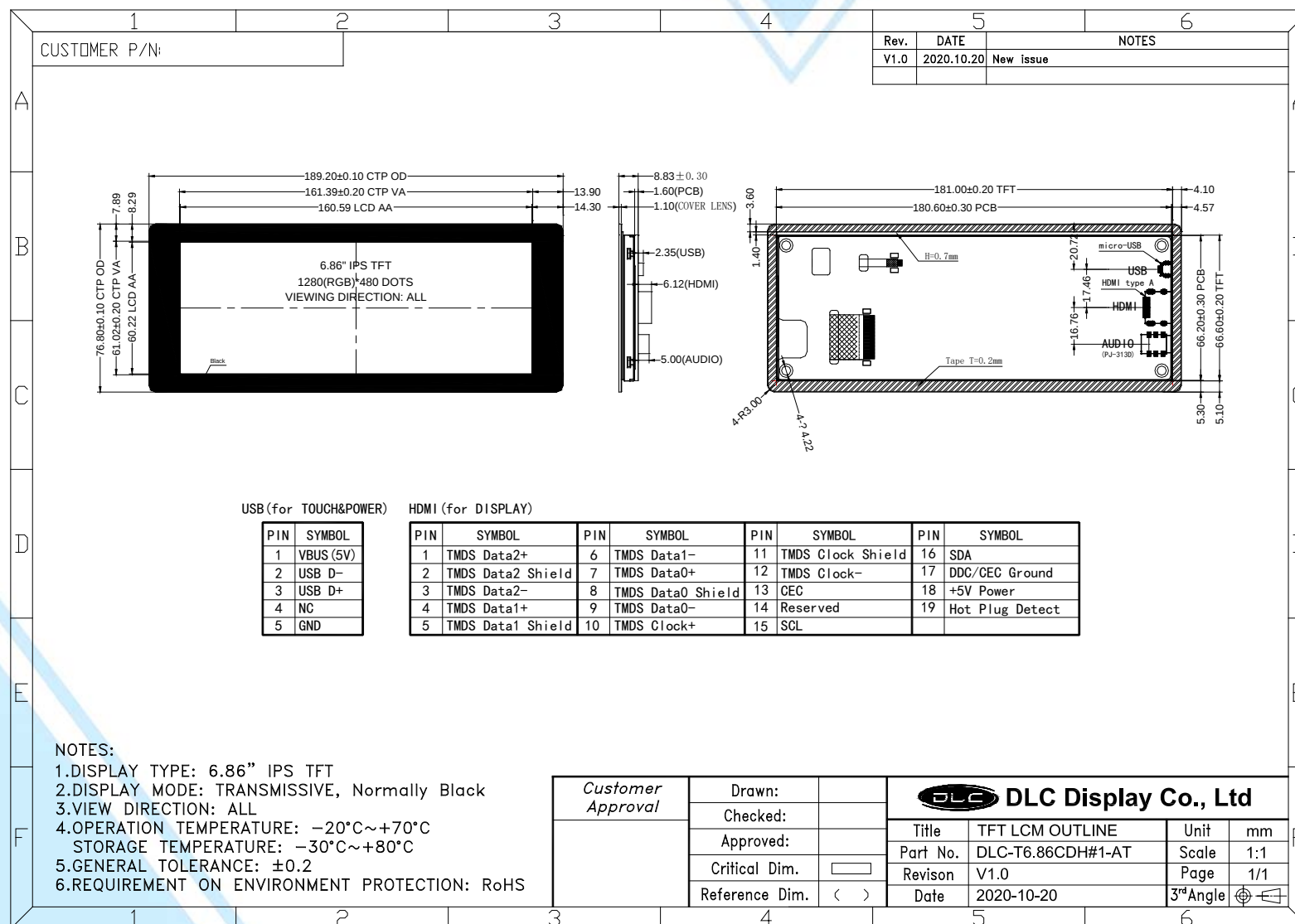
Document Revision History

Date	Revision#	Description
2020-10-20	1.0	Rev 1.0 was issued

General Description

Item	Contents	Unit
Size	6.86	inch
Resolution	1280(RGB) x 480	/
Interface	HDMI	/
Technology type	IPS	/
Pixel pitch	0.1255 x 0.1255	mm
Pixel Configuration	R.G.B. Vertical Stripe	
Outline Dimension (W x H x D)	189.20 x 76.80 x 8.83	mm
Active Area	160.59 x 60.22	mm
Display Mode	Transmissive, Normally Black	/
Viewing Direction	ALL	/
Backlight Type	LED	/

Mechanical Drawing



PIN assignment

● HDMI Interface Description

Pin No.	Symbol	Function	Remark
1	TMDS Data2+	Positive side of channel 2 TMDS low-voltage signal differential input pair	
2	TMDS Data2 shield	Ground	
3	TMDS Data2-	Negative side of channel 2 TMDS low-voltage signal differential input pair	
4	TMDS Data1+	Positive side of channel 1 TMDS low-voltage signal differential input pair	
5	TMDS Data1 shield	Ground	
6	TMDS Data1-	Negative side of channel 1 TMDS low-voltage signal differential input pair	
7	TMDS Data0+	Positive side of channel 0 TMDS low-voltage signal differential input pair	
8	TMDS Data0 shield	Ground	
9	TMDS Data0-	Negative side of channel 0 TMDS low-voltage signal differential input pair	
10	TMDS Clock+	Positive side of reference clock TMDS low-voltage signal differential input pair	
11	TMDS clock shield	Ground	
12	TMDS Clock-	Negative side of reference clock TMDS low-voltage signal differential input pair	
13	CEC	No connection	
14	Reserved (NC)	No connection	
15	SCL	DDC SCL	
16	SDA	DDC SDA	
17	DDC/CEC Ground	Ground	
18	+5V power	+5V Power	
19	Hot plug detect	Hot plug detect	

● USB Interface Description (For Touch & Power)

Pin No.	Symbol	Description	Remark
1	VBUS	USB power (5V)	
2	D-	USB Data-	
3	D+	USB Data+	
4	NC	No connection	
5	GND	Power ground	

Absolute maximum Ratings

● Electrical Absolute max. ratings

Parameter	Symbol	MIN	MAX	Unit	Remark
LCD Power Supply Voltage	VDD	-0.5	4.0	V	Ta=25° C

● Environment Conditions

Item	Symbol	MIN	MAX	Unit	Remark
Operating Temperature	TOPR	-20	70	°C	
Storage Temperature	TSTG	-30	80	°C	

Electrical Specifications

● Electrical Characteristics

Parameter of DC Characteristics	Symbol	Min.	Typ.	Max.	Unit	Remark
PCB operating voltage	VUSB	-	5.0	-	V	
LCD I/O operating voltage	VDD	3.0	3.3	3.6	V	
Input voltage "H" level	VIH	0.7*VDD	-	VDD	V	
Input voltage "L" level	VIL	VSS	-	0.3*VDD	V	
Output voltage "H" level	VOH	VDD-0.4	-	VDD	V	
Output voltage "L" level	VOL	VSS	-	VSS+0.4	V	

● CTP Characteristics

Item of CTP characteristics	Specification	Unit	Remark
Panel Type	Glass Cover + Glass Sensor		
Resolution	1280 x 480	Pixel	
Surface Hardness	≥6H		
Transparency	>82%		
Driver IC	-		
Interface Type	USB		
Support Points	5		
Sampling Rate	20~100	Hz	
Supply Voltage	3.3	V	

Optical Specification

Item		Symbol	Condition	Min	Typ.	Max.	Unit	Remark
Contrast Ratio		CR	$\theta=0^{\circ}$	-	800	-		Note1 Note2
Response Time		TR+TF	25°C	-	25	40	ms	Note1 Note3
View Angles		θT	$CR \geq 10$	-	80	-	Degree	Note 4
		θB		-	80	-		
		θL		-	80	-		
		θR		-	80	-		
Chromaticity	White	x	Brightness is on	Typ-0.05	0.2952	Typ+0.05		Note5, Note1
		y			0.3626			
	Red	x			0.6745			
		y			0.3183			
	Green	x			0.3155			
		y			0.6086			
	Blue	x			0.0790			
		y			0.1225			
Luminance		L		-	350	-	cd/m ²	Note1 Note6
Uniformity (White)		U		-	80	-	%	Note1 Note7

Environmental / Reliability Tests

No	Test Item	Condition	Judgment criteria
1	High Temp Operation	Ta= 70℃, 120hrs	Per table in below
2	Low Temp Operation	Ta= -20℃, 120hrs	Per table in below
3	High Temp Storage	Ts= 80℃, 120hrs	Per table in below
4	Low Temp Storage	Ts= -30℃, 120hrs	Per table in below
5	High Temp & High Humidity Storage	Ts= +60℃, 90% RH 120hours	Per table in below (polarizer discoloration is excluded)
6	Thermal Shock (Non-operation)	-30℃ 30 min~+80℃ 30 min, Change time:5min, 10 Cycles	Per table in below
7	ESD (Operation)	C=150pF, R=330Ω, 5points/panel Air:±8KV, 5times; Contact:±4KV, 5 times;	Per table in below
8	Vibration (Non-operation)	Frequency range:10~55Hz, Stroke:1.5mm Sweep:10Hz~55Hz~10Hz 2 hours for each direction of X.Y.Z.	Per table in below
9	Shock (Non-operation)	60G 6ms, ±X,±Y,±Z 3times, for each direction	Per table in below
10	Package Drop Test	Height:80 cm, 1 corner, 3 edges, 6 surfaces	Per table in below

INSPECTION	CRITERION(after test)
Appearance	No Crack on the FPC, on the LCD Panel
Alignment of LCD Panel	No Bubbles in the LCD Panel No other Defects of Alignment in Active area
Electrical current	Within device specifications
Function / Display	No Broken Circuit, No Short Circuit or No Black line No Other Defects of Display