



HIGHNESSTM

One of a kind

HM483FH111MX

48.3" Stretch Color TFT-LCD

Update Date
14th May 2024

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION WHICH IS SOLELY OWENED BY 'HIGHNESS MICROELECTRONICS LTD.' ANY UNAUTHORISED COPY OR PRINTING OR PUBLISHING OF INFORMATION IN THIS DOCUMENT IN PART OR IN COMPLETE IS RESTRICTED.

HIGHNESS MICROELECTRONICS LTD.

URL: www.highnessmicro.com, Email: sales@highnessmicro.com

1.0 GENERAL SPECIFICATION

Item	Specification	Unit
Type	48.3" color TFT active matrix, wide LCD	In
Display Area	1209.6(H) x 201.6(V)	mm
Pixel arrangement	Pixels RGB Vertical stripe	
Display mode	Normally Black	
Display Colors	16.7M (True Display)	
Number of Pixels	1920 x 320	pixels
Pixels Pitch	210 (H) x 630 (V)	μm
Contrast Ratio	4000:1	CR
Viewing Angles	89/89/89/89 (CR≥10)	deg
Response Time	14	Ms
Backlight	LED	
Brightness	700	cd/m ²
Panel Surface	Hard coating (3H)	
Power Consumption	≦ 60.96W	Typ
Operation Temperature	-20 ~ +70°C	
Conditions Humidity	10% ~ 80%	
Dimensions (mm)	1238 (H) x 230 (V) x 16.8 (D)	mm
Display Direction	Landscape	

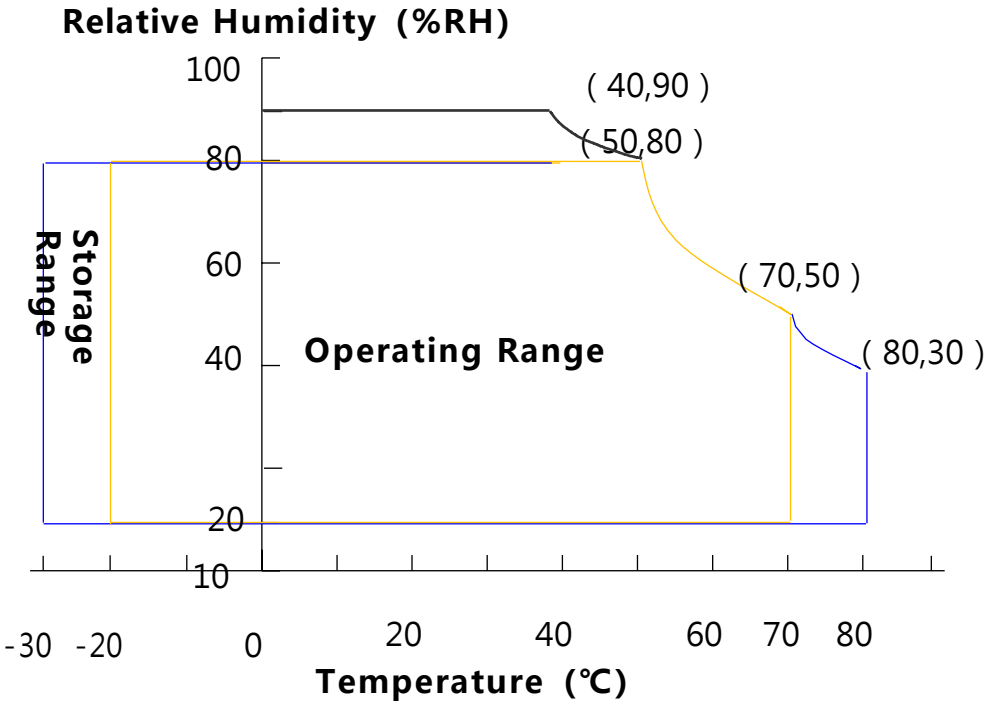
2.0 ABSOLUTE MAXIMUM RATINGS

The following are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table.

[VSS=GND=0V]

Parameter	Symbol	Min.	Max.	Unit	Remark
Power Supply Voltage	VDD	VSS-0.3	13.2	V	Ta = 25 °C
Operating Temperature	T _{OP}	-20	+70	°C	Note 1
	T _{SUR}	-20	+70	°C	
Storage Temperature	T _{ST}	-30	+80	°C	
Operating Ambient Humidity	Hop	10	80	%RH	
Storage Humidity	Hst	10	80	%RH	

Note 1 : Temperature and relative humidity range are shown in the figure below.
Wet bulb temperature should be 39 °C max. and no condensation of water.



3.0 ELECTRICAL SPECIFICATIONS

[Ta = 25 ± 2 °C]

Parameter		Symbol	Values			Unit	Remark
			Min	Typ	Max		
Power Supply Input Voltage		VDD	10.8	12	13.2	V	Note 1
Power Supply Current		IDD	-	300	940	mA	
Power Supply Ripple Voltage		VRP	-	-	300	mV	
Rush Current		IRUSH	-	-	3	A	Note 2
LVDS Interface	Differential Input High Threshold Voltage	VLVTH	-	-	+100	mV	VLVC=1.2V
	Differential Input Low Threshold Voltage	VLVTL	-100	-	-	mV	
	Input Differential Voltage	VID	100	400	600	mV	
	Common Input Voltage	VLVC	0.6	1.2	2.4 - VID /2	V	
CMOS Interface	Input High Threshold Voltage	VIH	2.7	-	3.3	V	
	Input Low Threshold Voltage	VIL	0	-	0.6	V	
Power Consumption		PDD	-	10.96		W	

Note 1 : The supply voltage is measured and specified at the interface connector of LCM.

The current draw and power consumption specified is for VDD=12.0V,

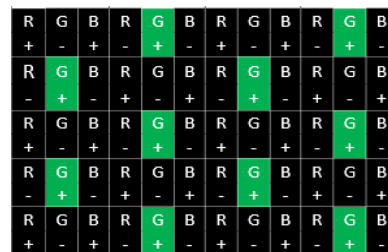
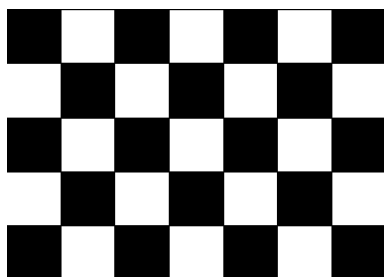
Frame rate $f_v=60\text{Hz}$ and Clock frequency = 74.25MHz.

Test Pattern of power supply current

a) Typ : Mosaic 7X5 (L0/L255)

b) Max : Vline Subline (L255)

c) Flicker Pattern



Note 2 : The duration of rush current is about 2ms and rising time of Power Input is 1ms(min)

4.0 INTERFACE CONNECTION

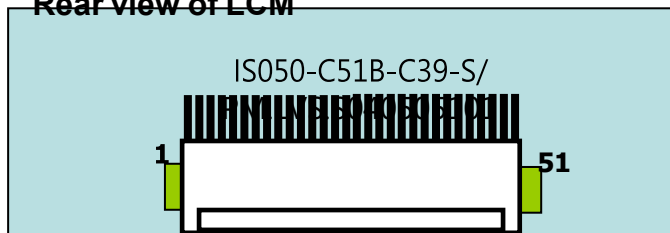
LVDS Connector: IS050-C51B-C39-S or Compatible.

Pin No	Symbol	Description	Pin No	Symbol	Description
1	GND	Ground	16	ORX2-	Odd pixel Negative LVDS differential data input.
2	SCL	I2C Clock	17	ORX2+	Odd pixel Negative LVDS differential data input.
3	SDA	I2C Data	18	GND	Ground
4	NC	No Connection	19	OCLK-	Odd pixel Negative LVDS differential clock input.
5	NC	No Connection	20	OCLK+	Odd pixel Negative LVDS differential clock input.
6	NC	No Connection	21	GND	Ground
7	SELLVDS	LVDS data format selection : L or NC : VESA	22	ORX3-	Odd pixel Negative LVDS differential data input.
8	NC	No Connection	23		
9	NC	No Connection	24	ORX3+	Odd pixel Negative LVDS differential data input.
10	NC	No Connection	25	NC	No Connection
11	GND	Ground	26	NC	No Connection
12	ORX0-	Odd pixel Negative LVDS differential data input.	27	NC	No Connection
13	ORX0+	Odd pixel Negative LVDS differential data input.	28	ERX0-	Even pixel Negative LVDS differential data input.
14	ORX1-	Odd pixel Negative LVDS differential data input.	29	ERX0+	Even pixel Negative LVDS differential data input.
15	ORX1+	Odd pixel Negative LVDS differential data input.	30	ERX1-	Even pixel Negative LVDS differential data input.

Pin No	Symbol	Description	Pin No	Symbol	Description
31	ERX1+	Even pixel Negative LVDS differential data input.	42	NC	No Connection
32	ERX2-	Even pixel Negative LVDS differential data input.	43	NC	No Connection
33	ERX2+	Even pixel Negative LVDS differential data input.	44	GND	Ground
34	GND	Ground	45	GND	Ground
35	ECLK-	Even pixel Negative LVDS differential clock input.	46	GND	Ground
36	ECLK+	Even pixel Negative LVDS differential clock input.	47	NC	No Connection
37	GND	Ground	48	VCC	+12V
38	ERX3-	Even pixel Negative LVDS differential data input.	49	VCC	+12V
39	ERX3+	Even pixel Negative LVDS differential data input.	50	VCC	+12V
40	NC	No Connection	51	VCC	+12V
41	NC	No Connection			

Notes : 1. NC(Not Connected) : This pins are only used for internal operations.
2. Input Level of LVDS signal is based on the EIA-644 Standard.

Rear view of LCM



BIST Pattern

PT1:Black	PT2:White	PT3:Red	PT4:Gree	PT5:Blue
(2sec)	(2sec)	(2sec)	n(2sec)	(2sec)

5.0 OPTICAL SPECIFICATIONS

[VDD = 12.0V, Frame rate = 60Hz, Ta =25±2 °C]

Parameter		Symbol	Condition	Min	Typ	Max	Unit				
Viewing Angle	Horizontal	Θ ₃	CR > 10	-	89	-	Deg.				
		Θ ₉		-	89	-	Deg.				
	Vertical	Θ ₁₂		-	89	-	Deg.				
		Θ ₆		-	89	-	Deg.				
Uniformity	9 Points	ΔY ₉	Θ = 0°	75%							
Contrast ratio		CR	Θ = 0°	-	4000:1	-					
Reproduction of color	White	W _x	Θ = 0° (Center) Normal Viewing Angle	TYP. - 0.03	0.291	TYP. + 0.03					
		W _y			0.321						
	Red	R _x			0.644						
		R _y			0.342						
	Green	G _x			0.306						
		G _y			0.623						
	Blue	B _x			0.150						
		B _y			0.062						
	Color Gamut							72	-	%	
	Response Time	G to G			T _g			-	14	-	ms
Gamma Scale				2.0	2.2	2.4					
Brightness		L _v		-	700	-	nit				

6.0 Backlight Unit

Pin No.	Symbol	Feature	Wire Color
1	CH1+	VLED OUT CH1	Red
2	CH1-	I Return CH1	Black
	NC	NC	NC
	NC	NC	NC
3	CH2+	VLED OUT CH2	Red
4	CH2-	I Return CH2	Black

Parameter		Min.	Typ.	Max.	Unit
LED Forward Voltage	VF	70	80	88	V
LED Forward Current	IF		600	660	mA
LED Power Consumption	PLED		48		W
LED Life-Time (MTBF)	N/A		70000		Hour

7.0 MECHANICAL CHARACTERISTICS

Parameter	Specification	Unit
Dimensional outline	1238(H) × 230(V)× 16.8(D)	mm
Weight	7.5 ± 0.5	Kg
Active area	1209.6(H) × 201.6(V)	mm
Pixel pitch	210(H) × 630(V)	μm
Number of pixels	1920(H) × 320(V)(1 pixel = R + G + B dots)	pixels

8.0 RELIABILITY TEST

The Reliability test items and its conditions are shown below.

Test Items	Conditions
High temperature storage test	Ta = 80 °C, 240 hrs
Low temperature storage test	Ta = -30 °C, 240 hrs
High temperature & high humidity operation test	Ta = 50 °C, 80%RH, 240hrs
High temperature operation test	Ta = 70 °C, 240hrs
Low temperature operation test	Ta = -20 °C, 240hrs
Thermal shock	Ta = -20 °C 60 °C (0.5 hr), 100 cycle
Electro-static discharge test	Air : 150 pF, 330Ω, 15 KV Contact : 150 pF, 330Ω, 8 KV
Altitude test	40000ft, -10°C / 24 hr, 25°C / 24 hr, -10°C / 24hr, Storage

