



LCDK271CTL1ARH01

Kit to Interface with LCD271 over HDMI and USB

111 Corning Road, Suite 116 • Cary, NC 27518

Approvals	
Model Number	LCDK271CTL1ARH01
Datasheet Revision	1.1
Drawing Revision	B

Lincoln Technology Solutions
Confidential

Customer Approval	
Approved by: _____	Date: _____

Table of Contents

Revision History	4
Document Revision	4
Hardware Revision	4
Ordering Information	5
Product Description.....	6
Compatibility.....	6
General Specification	7
Pictorial.....	8
Carrier Board – 3D Rendering, PCB-L0089R1.1	8
Carrier Board – Mechanical, PCB-0089R1.1	9
SODIMM – 3D Rendering PCB-L0074R1.2	10
SODIMM – 3D Rendering PCB-L0074R1.3	10
Connectors.....	11
Pin Out – S300, USB-C.....	12
Pin Out – S302, HDMI.....	12
Pin Out – S101, Power Jack	12
Pin Out – S100, 2 pin Power	13
Pin Out – S202, PWM, PCB-L0089R1.1	13
EDID	14
7" WUXGA	14
Absolute Max Ratings.....	15
Electrical Characteristics	15
Use Case.....	16
External PWM Control, PCB-L0089R1.1.....	17
Warnings.....	18
Appendix 1: Mechanical Drawing	19

Revision History

Document Revision

Date	Version #	Description	Created By	Checked By	Quality Approval By	Approved By
4.18.2025	0.1	Preliminary Release	ST	LH	--	JH
5.30.2025	1.0	Production Release, updated Ordering Information table from LCDK271CTL1ARH01R0.1 to LCDK271CTL1ARH01R1.0 and LCD271-070CTL1ARNTTR0.2 or LCD271-070CTL1ARNTTR0.3 to LCD271-070CTL1ARNTTR1.0	ST	LH	TT	JH
8.7.2025	1.1	Added PCB-L0074R1.2 to ordering information table, added SODIMM-3D Rendering PCB-L0074R1.2 image	ST	ZA	TT	JH

Hardware Revision

Date	Version #	Description
3.20.2025	0.1	Prototype Release
5.29.2025	1.0	Production Release

Ordering Information

LTS Part #	Parts in Kit	Name (Description)
LCDK271CTL1ARH01R1.0	PCB-L0089R1.1	Carrier Board (7 Inch, HB)
	PCB-L0074R1.2 or PCB-L0074R1.3	SODIMM (HDMI to MIPI)
	LCD271-070CTL1ARNTTR1.0	LCD271 (7" HBWG In-Cell Touch 1200 x 1920)
	0151660429 ¹	FFC (Cable FFC 40Pos 0.50mm 3")
	CHANZON 2ABL024F ¹	Power Supply (12V 2A)

Note 1: These part numbers are subject to change and may be replaced with equivalent parts.

Product Description

LCD271 requires multiple industry standard interfaces (MIPI, I2C, Backlight Driver, and various regulated voltages) which make it well-suited for cost-efficient and high-performance product integration. However, the required interfaces may not be well supported in all evaluation and product development environments. To ease the initial evaluation and development effort with LCD271, LCDK271 is offered. LCDK271 only requires HDMI for video, USB for touchscreen data, and a single power supply.

Compatibility

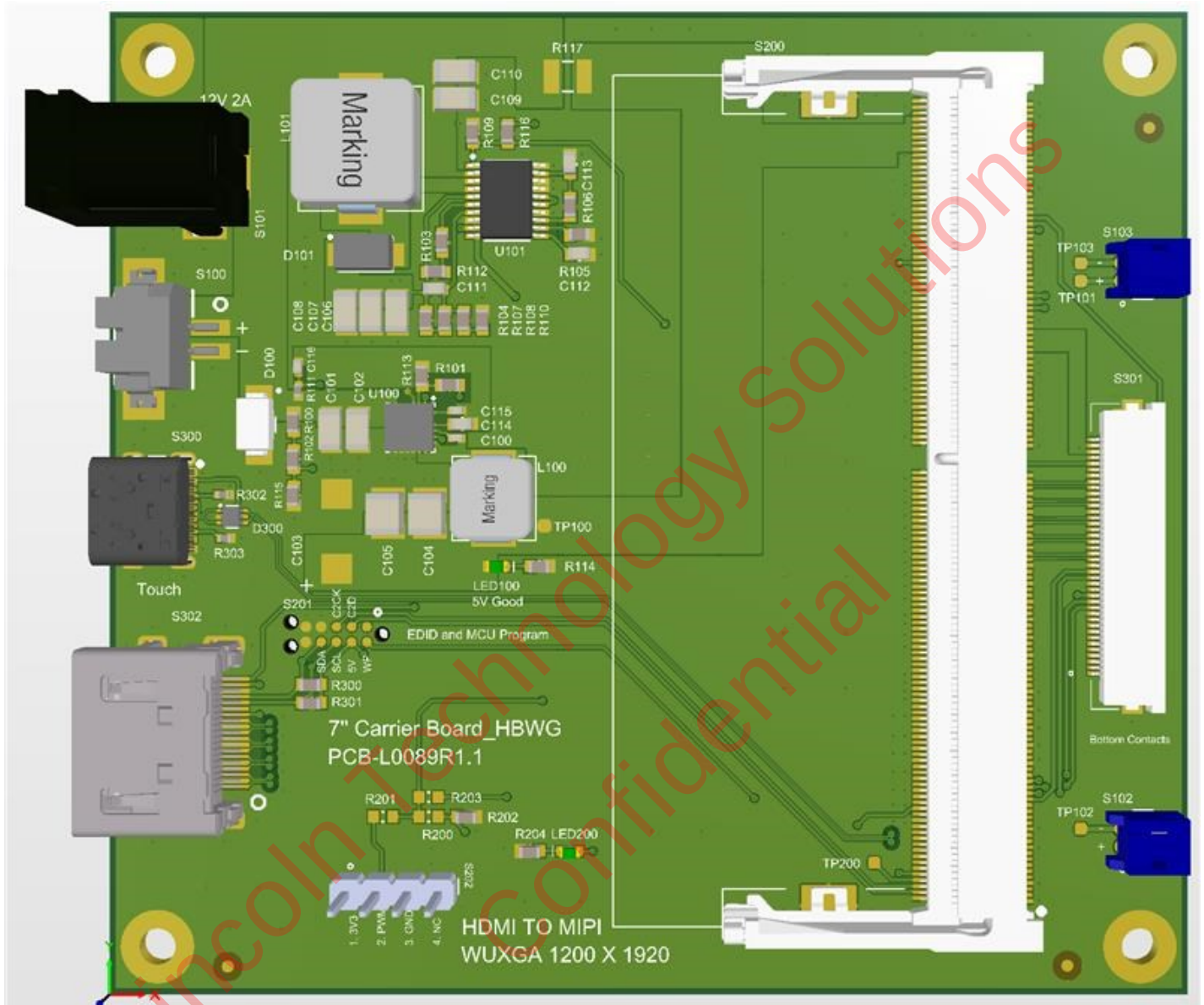
High resolution MIPI panels are most commonly native portrait orientation. The two most common resolutions supported by this module are FHD (1080x1920) and WUXGA (1200x1920). It is expected the host driving HDMI can satisfy the timing requirements as found in the EDID section below. Most Windows OS systems can output the native timing requirements and furthermore are able to rotate and flip the screen. There are dozens of Linux based platforms that are compatible as well. It must be noted that if your application is only designed for landscape mode, the GUI or capable hardware block must buffer and transpose from landscape to portrait, as there is no external buffering capability on either the SODIMM or the Carrier Board.

General Specification

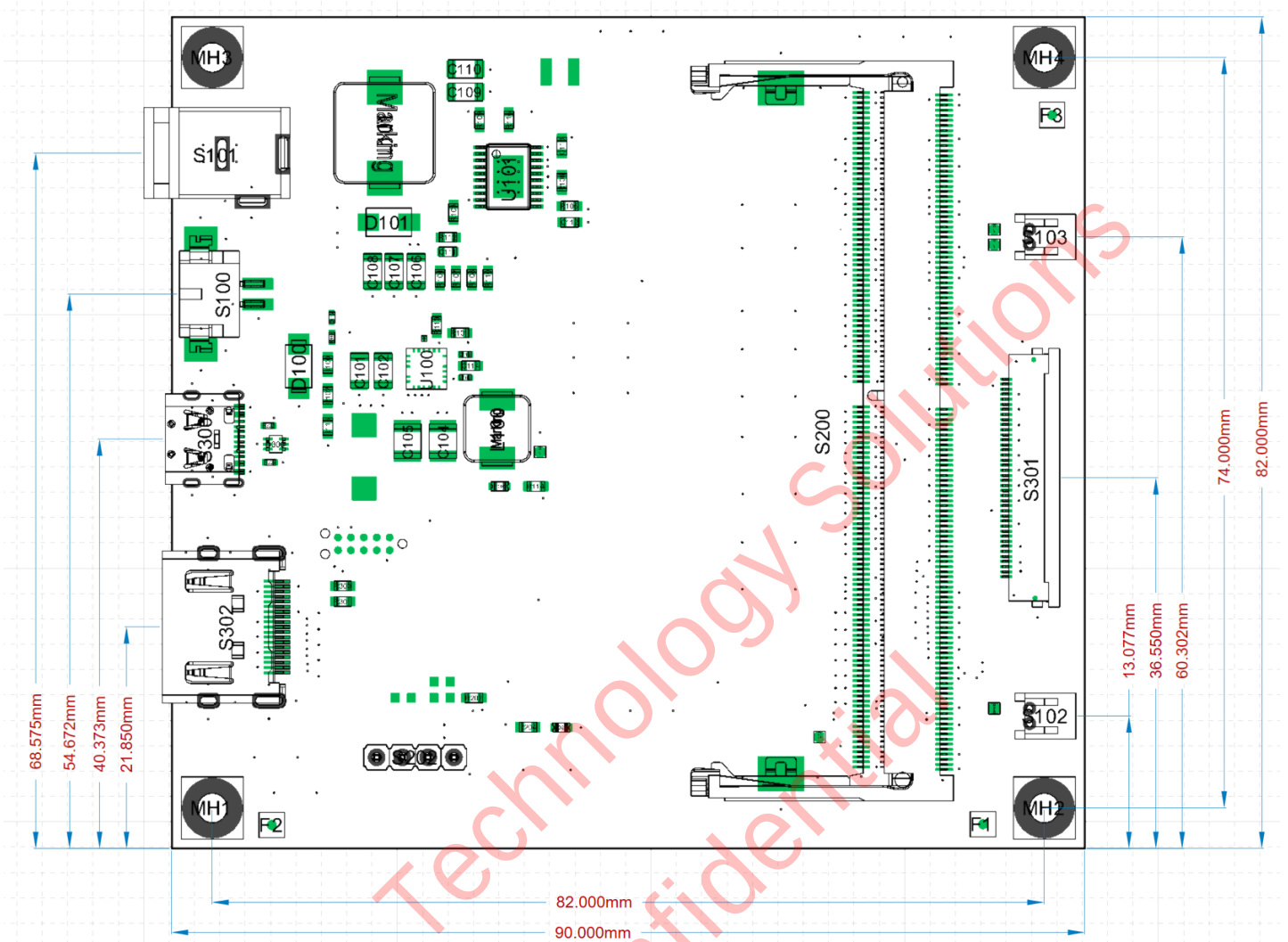
Item	Specification	Unit
Active Area—LCD271	94.5(H) x 151.2(V)	mm
Backlight Type	LED Wide Gamut	-
Display Size	7.02	inches
Outline Dimensions – Carrier Board + SODIMM	82(W) x 90(L) x 14(H)	mm
Outline Dimensions – FFC (Flat Flexible Cable)	76(L)	mm
Resolution	1200 X 1920	pixels

Pictorial

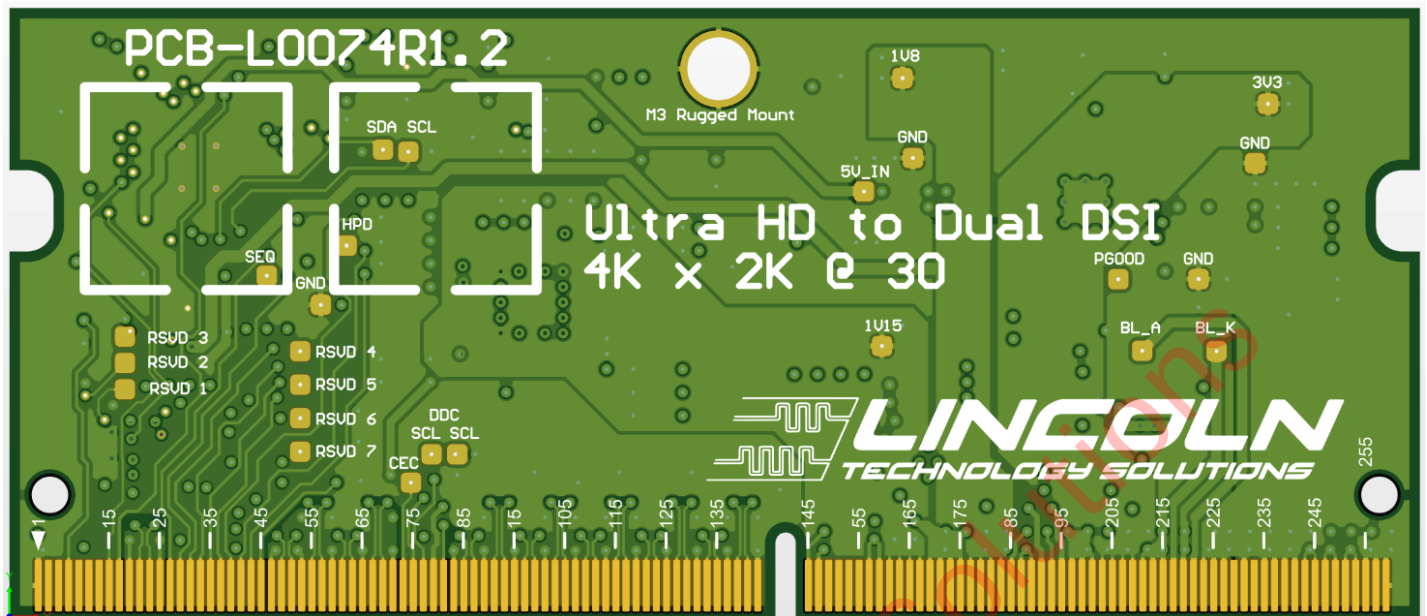
Carrier Board – 3D Rendering, PCB-L0089R1.1



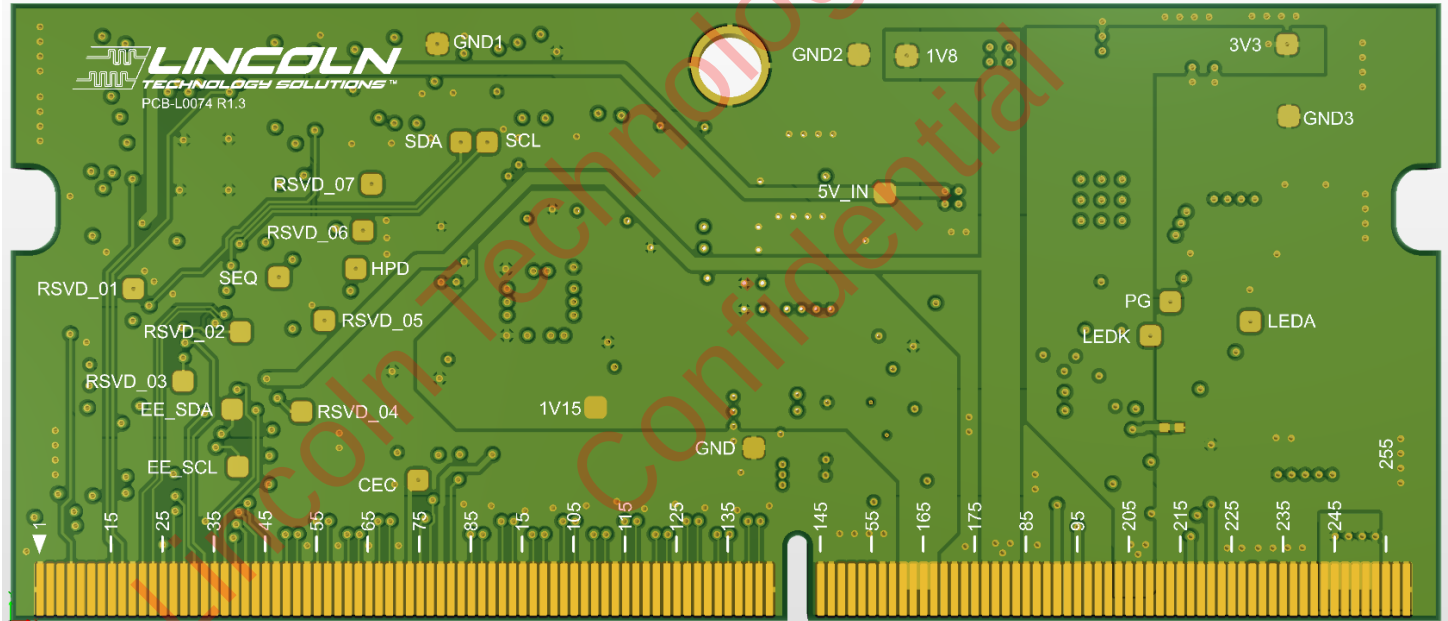
Carrier Board – Mechanical, PCB-0089R1.1



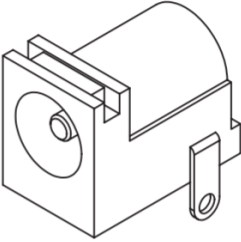
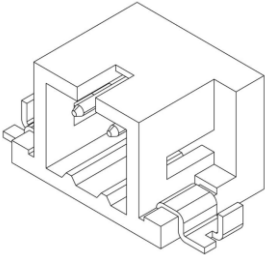
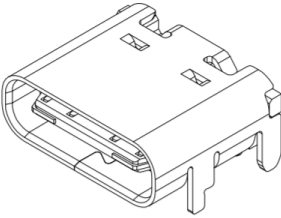
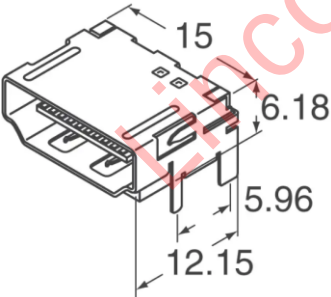
SODIMM – 3D Rendering PCB-L0074R1.2



SODIMM – 3D Rendering PCB-L0074R1.3



Connectors

Connector Type	MPN	Description
Power Jack S101 	PJ-002AH	Power input (VCC) 2.10mm ID (0.083") 5.50mm OD (0.217") 12V/2A input
2 POS Power Connector S100 	DF3EA-2P-2H(21)	Alternate power input connector 12V/2A input
USB Type C S300 	TYPE-C-31-M-12	Touch output USB-C 16 position
HDMI S302 	0471510001	Graphic input Standard Type A 19 position

4 POS Header S202, PCB-L0089R1.1	PH1-04-UA	4 position header for 3V3 enable and external PWM control
----------------------------------	-----------	---

Pin Out – S300, USB-C

The USB-C is a standard connector supporting USB connection between the Carrier Board and a USB Host (i.e. PC). The Carrier Board translates the in-cell touchscreen data from I2C to USB-HID at full speed data rates.

Pin Out – S302, HDMI

The HDMI connector is a standardized type A. It is plug and play with standard equipment. The graphical input must be capable of providing a WUGXA portrait image (1200x1920). There is onboard EDID that communicates with user equipment specifying timing and display size.

Pin Out – S101, Power Jack

Number	Pin Name	Description
1	VCC	12V power supply input
2	GND	Ground
3	GND	Ground

Pin Out – S100, 2 pin Power

Number	Pin Name	Description
1	VCC	12V power supply input
2	GND	Ground

Pin Out – S202, PWM, PCB-L0089R1.1

A 0.1" pitch header is provided as optional user flexibility. It is possible to control the enabling aka power on of the SODIMM. It is also possible to provide an external PWM signal.

Number	Pin Name	Description
1	3V_EN	Active high enable signal for 3. V3. This is pulled high on carrier board. Can be used to disable kit power without unplugging 12V input.
2	PWMO_EXT	External PWM control
3	GND	Ground
4	NC	No Connect

The PWM signal is pulled high by default making the backlight fully on. There are three different ways to control the PWM signal.

1. PWM control by SODIMM.
2. PWM control by LCD271.
3. PWM control by external signal using the connector S202 pin2.

If assistance with control of LCD dimming is needed, contact LTS.

EDID

Below is the EDID stored on the SODIMM. This is communicated over the DDC bus to the host. The host must be capable of generating timing based on these parameters. In the absence of EDID communication, it is expected the host is capable of video output using these timing specifications.

7" WUXGA

Native Portrait 1200x1920

EDID BYTES:

Byte Array																
	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	00	FF	FF	FF	FF	FF	FF	00	32	8D	00	00	00	00	00	00
10	2D	1B	01	04	80	58	32	78	22	EE	91	A3	54	4C	99	26
20	0F	50	54	00	00	00	01	01	01	01	01	01	01	01	01	01
30	01	01	01	01	01	01	28	3C	80	50	40	80	54	70	18	08
40	84	00	C4	8E	21	00	00	1E	00	00	00	10	00	00	00	00
50	00	00	00	00	00	00	00	00	00	00	00	00	00	10	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	FC
70	00	31	32	30	30	06	35	08	32	30	0A	20	20	20	00	07
80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
90	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Pixel Clock: 154.00
☐ Interlaced

H. Active Pixels: 1200
V. Active Lines: 1920

H. Blank: 80
V. Blank: 84

H. Front Porch: 24
V. Front Porch: 8

H. Sync Width: 8
V. Sync Width: 4

H. Image Size: 708
V. Image Size: 398

H. Border: 0
V. Border: 0

H. Clock: 120.31 kHz
V. Clock: 60.03 Hz

CVT 1.2 Wizard

Stereo Viewing Support

☒ No Stereo
☐ FS, R on sync
☐ FS, L on sync
☐ Side-By-Side
☐ 2Way, R on even
☐ 2Way, L on even
☐ 4Way

Sync Signal Definition

☐ Analog
☐ Digital Composite
☒ V. Sync Polarity
☐ Bipolar Analog
☒ Digital Separate
☒ H. Sync Polarity

Absolute Max Ratings

Item	Symbol	Value		Unit
		Min	Max	
Power Supply Voltage	VCC	-0.3	13	V
Operating Temperature	T _{OPR}	-20	70	°C
Storage Temperature	T _{STG}	-30	80	°C

Electrical Characteristics

Total Power is for the SODIMM + Carrier Board + LCD271 (with backlight). Backlight Power can be reduced by using the PWM signal on S202 on the Carrier Board.

Item	Symbol	Value			Unit	Note
		Min	Typ	Max		
Supply Voltage	VCC	11.4	12.0	12.6	V	Ta = 25°C
Total Power	P _{TOT}	-	10.6	-	W	Ta = 25°C, PWM = 100%
Backlight Power	P _{BL}	-	9.0	-	W	Ta = 25°C, PWM = 100%

Note: Operating LCDK271 backlight at 100% PWM for extended periods and/or in enclosed spaces or high ambient temperatures can lead to thermal concerns. If any component's surface temperature reaches 60°C, use some form of thermal management (active or passive) or use External PWM control to prevent further temperature increase.

Use Case

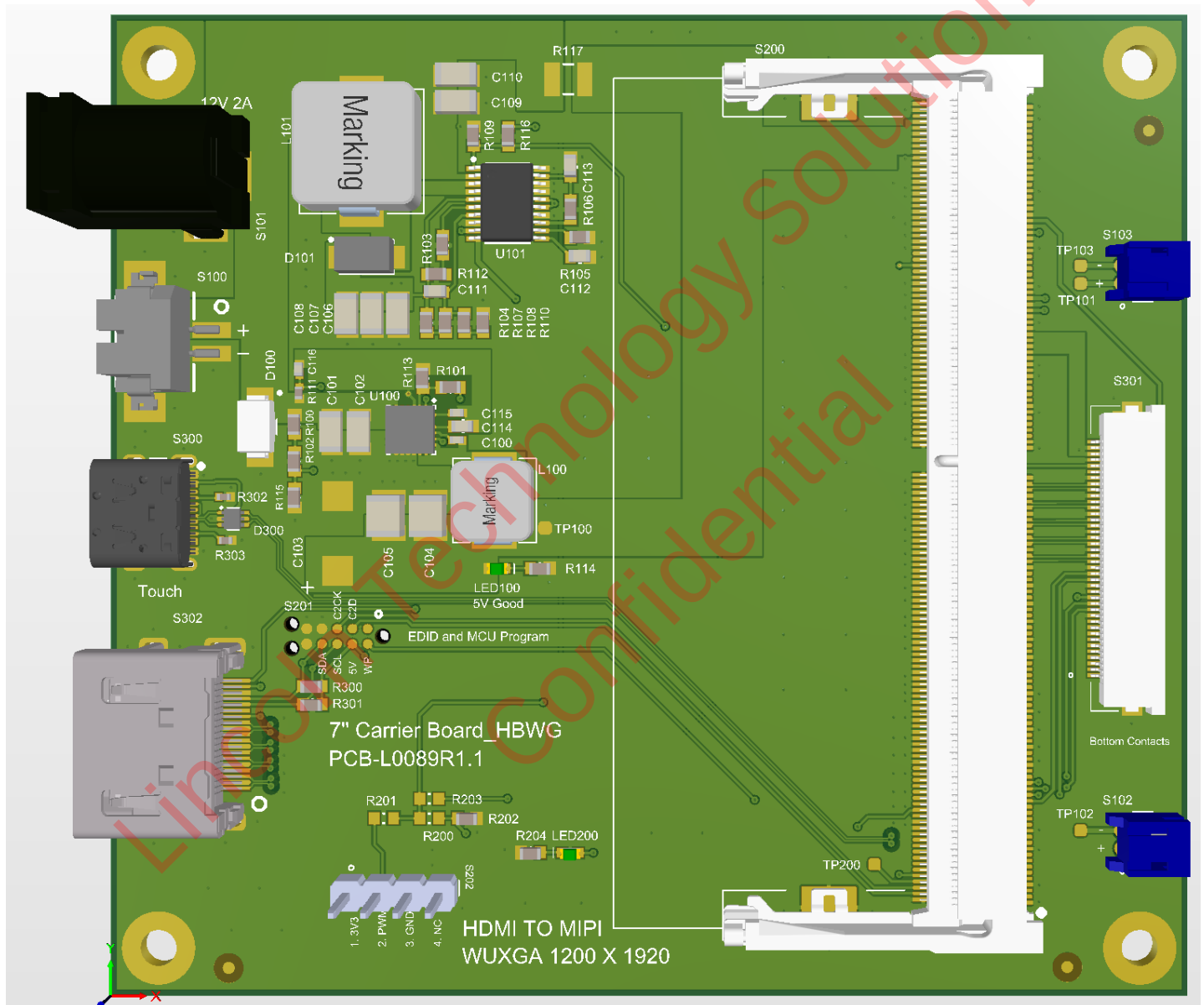
1. Insert the SODIMM into the Carrier Board.
2. Use the FFC to connect LCD271 to S301 on the Carrier Board.
3. Connect the two cabled backlight connectors on LCD271 to S102 and S103 on the Carrier Board.
4. Apply power using the Power Supply.
5. To send video data to LCD271, connect an HDMI cable between a video source (e.g. PC) and S302 on the Carrier Board.
6. To receive touchscreen input, connect a USB cable between a PC and S300 on the Carrier Board.

Lincoln Technology Solutions
Confidential

External PWM Control, PCB-L0089R1.1

Perform the following steps to use external PWM control.

1. Place a 0-ohm resistor on R200.
2. Connect external PWM signal to S202 pin2 (PWM), signal high level should be greater than 1V.
3. A 100% duty cycle turns off the backlight, a 0% duty cycle provides full brightness.
4. Recommended frequency is between 100Hz and 500Hz.



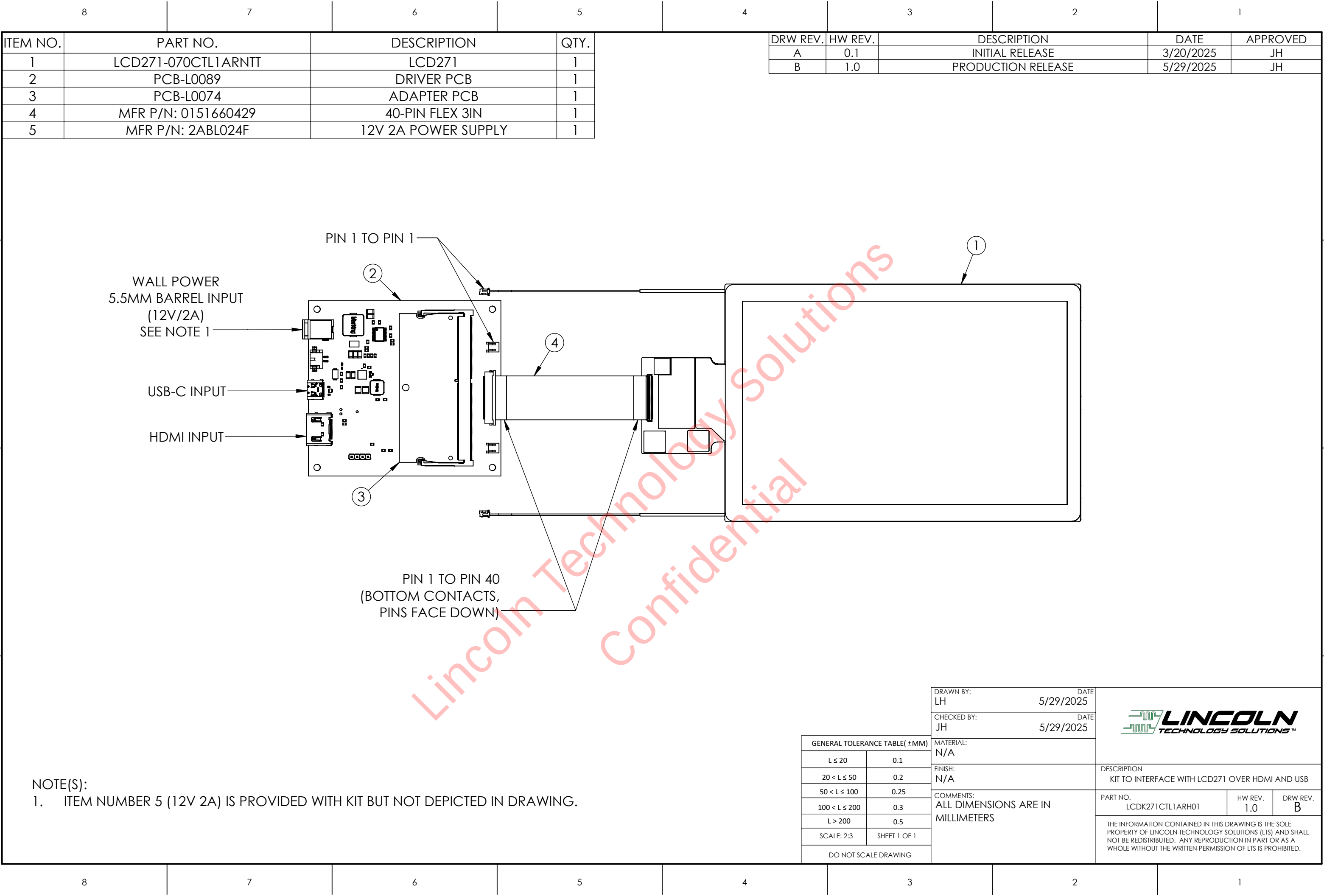
Warnings

1. Insert the SODIMM into the Carrier Board and connect LCD271 before applying power to the Carrier Board.
2. Removing the SODIMM with power connected may cause permanent damage to both the SODIMM and the Carrier Board.
3. This PCB-L0074 has been programmed for the LCD271 Module with the PCB-L0089 Carrier Board.

Lincoln Technology Solutions
Confidential

Appendix 1: Mechanical Drawing

Lincoln Technology Solutions
Confidential



8

7

6

5

4

3

2

1