

() Preliminary Specifications (V) Final Specifications

Module	13.3"(13.26") FHD 16:9 Color TFT-LCD with LED Backlight design
Model Name	G133HAN02.2
Note	LED Backlight with driving circuit design
	ernal us

		X	0
Customer	Date	Approved by	Date
		LeaDer Feng	<u>2024/8/16</u>
Checked & Approved by	Date	Prepared by	Date
	APIUS	<u>CH Tsai</u>	<u>2024/8/16</u>
Note: This Specification is without notice.	subject to change	General Display I AUO Display Plu	



Contents

1.	Handling Precautions	4
	General Description	
	2.1 General Specification	
	2.2 Optical Characteristics	7
3.	Functional Block Diagram	
4.	Absolute Maximum Ratings	12
	4.1 Absolute Ratings of TFT LCD Module	12
	4.2 Absolute Ratings of Environment	12
5.	Electrical Characteristics	14
	5.1 TET LCD Module	14
	5.2 Backlight Unit	17
6.	Signal Interface Characteristic	19
	6.1 Pixel Format Image	19
	6.2 Integration Interface Requirement	20
	6.3 Interface Timing	23
	6.4 Power ON/OFF Sequence	24
7.	Panel Reliability Test	27
	7.1 Vibration Test	27
	7.2 Shock Test	27
	7.3 Reliability Test	27
8.	Mechanical Characteristics	28
	8.1 Total Solution Outline Dimension	28
9.	Shipping and Package	29
	9.1 Shipping Label Format	29
	9.2 Carton packing	30
	9.3 Shipping Package of Palletizing Sequence	30
10	D. Appendix: EDID Description	31
	NO T	



Record of Revision

Version and Date	Page	Old description	New Description	Remark
0.1	All	First Edition		
0.2 2021/12/8	6	OP Temp:0~50℃	OP Temp:0~60℃ (panel surface temp)	(the
0.3 2022/6/13	5	Version for the Version Ve	Maximum And Million Ville D/U -0.1 pp. Pares Chammange Pares -0.1 pp. -0.2 pp. Mappe pares -0.2 pp. -0.2 pp.	D.
	7	State State <th< td=""><td>No No No<</td><td></td></th<>	No No<	
	14	Martin Martin Martin Martin Martin Martin 101 101 101 100 Martin Martin 101 101 101 100 Martin Martin 101 100 101 100 Martin Martin 101 100 100 200 Martin Martin 102 100 100 200 Martin Martin	Intel Farmer Mo. Mo. Mo. Mo. 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	
	17	Marcal Marc Marc Marc Marc Second A.S. Second Second <t< td=""><td></td><td></td></t<>		
	26	Martin Security Sa Wares V Sa	Name Applied (notified) Name P Transmit Former: And A and Former: And Former: And F	
	27			
	30			
1.0		Preliminary spec V 0.3	Final spec V1.0	
1.1	7	Unitormity	Сопtrast Ratio=2 СR-2 с ³ . 600+2 1006/2 с-2 с ³ 4, 6-2	
1.2	27	1.5 Andrahatir Farm Team Region Continue Region Re	TJ Schlidty Stori- Masker Vestlähl Masker Marco Masker Vestlähl Masker Vestländer Masker Masker Vestländer Masker Masker Vestländer Masker Masker Masker Masker Masker	
	0			
•	S?			
250				
			I	1



1. Handling Precautions

- 1) Since front polarizer is easily damaged, pay attention not to scratch it.
- 2) Be sure to turn off power supply when inserting or disconnecting from input connector.
- 3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
- 4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
- 5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
- 6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.
- 7) Do not open nor modify the Module Assembly.
- 8) Do not press the reflector sheet at the back of the module to any directions.
- 9) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.
- 10)After installation of the TFT Module into an enclosure (Notebook PC Bezel, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.
- 11)Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.
- 12)Disconnecting power supply before handling LCD modules, it can prevent electric shock, DO NOT TOUCH the electrode parts, cables, connectors and LED circuit part of TFT module that a LED light bar build in as a light source of back light unit. It can prevent electrostatic breakdown.
- 13) Continuous displaying fixed pattern may induce image sticking or abnormal display. It's recommended to use screen saver or power off panel periodically.

Jodist



2. General Description

G133HAN02.2 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel, a driver circuit, and LED backlight system. The screen format is intended to support the 16:9 FHD, 1920(H) x1080(V) screen and 16.2M colors with LED backlight driving circuit. All input signals are eDP (Embedded DisplayPort) interface compatible. a USE ON

G133HAN02.2 is designed for industrial display applications.

2.1 General Specification

The following items are characteristics summary on the table at 25 $^\circ$ C condition:

Items	Unit	Specificat	ions	2	()			
Screen Diagonal	[mm]	336.71						
Active Area	[mm]	293.472x10	293.472x165.078					
Pixels H x V		1920x3(RG	GB) x 108	0				
Pixel Pitch	[mm]	0.1529 x 0.	1529					
Pixel Format		R.G.B. Ver	tical Strip	е				
Display Mode	Ś	Normally Black						
White Luminance (ILED=20mA) (Note: ILED is LED current)	[cd/m ²]	500 typ. (center point)						
Luminance Uniformity		1.25 max.	(5 points)					
Contrast Ratio		800 typ						
Response Time	[ms]	27 typ / 35	Max					
Nominal Input Voltage VDD	[Volt]	+3.3 typ.						
Power Consumption	[Watt]	Logic power max :0.8W @3.3V White pattern LED Power max :2.57W @ VLED 12V in						
Weight	[Grams]	280 max						
R A			Min.	Тур.	Max.			
Physical Size		Length	194.8	195.3	195.8			
Include bracket	[mm]	Width	305.8	306.3	306.8			
		Thickness	-	-	3.0 (Panel Side) 3.2 (PCBA Side)			



AUO Display+	•	1
Electrical Interface		2 Lane eDP 1.2
Glass Thickness	[mm]	0.4
Surface Treatment		Glare
Support Color		16.2M colors
Temperature Range Operating Storage (Non-Operating)	[°C] [°C]	0 to +60 (panel surface temp) -20 to +60
RoHS Compliance		RoHS Compliance
AUODISPAN	coni	dential or internal use
© AUO Display Plus Corporation Proprieta		G133HAN02.2 ver.1.

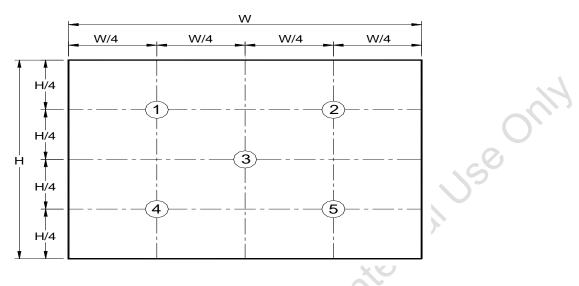


2.3 Optical Characteristics The optical characteristics are measured under stable conditions at 25° (Room Temperature) :

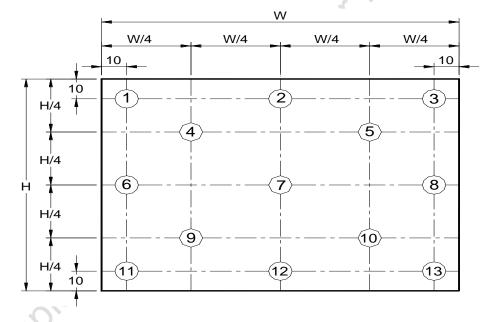
Item Symbol		Symbol	Conditions	Min.	Тур.	Max.	Unit	Note
White Luminance ILED=16.1mA (Base Panel Only)			Center point	400	500	-	cd/m2	1, 4, 5.
Viewing Angle		θR θL	Horizontal (Right) CR = 10 (Left)	80 80	89 89	-	degree	
		ψH ψL	Vertical (Upper) CR = 10 (Lower)	80 80	89 89	-	5	4, 9
Luminan Uniformi		δ5Ρ	5 Points	-	-	1.25		1, 3, 4
Luminan Uniformi		δ13Ρ	13 Points	-	<u> </u>	1.6		2, 3, 4
Contrast R	atio	CR		600	1000	-		4, 6
Cross talk Response Time		%				1.5		4, 7
		TRT	Rising + Falling	-	27	-		
	Red	Rx		0.545	0.575	0.605		
		Ry	<u> </u>	0.305	0.335	0.365		
Color /	Green	Gx		0.310	0.340	0.370		
Chromaticity		Gy	0	0.550	0.580	0.610	_	
Coodinates	Blue –	Bx	CIE 1931	0.130	0.160	0.190	-	4
	Dide	Ву	<i>y</i>	0.085	0.115	0.145	-	
	White	Wx		0.283	0.313	0.343	-	
	White	w y		0.299	0.329	0.359		
NTSC	NTSC			-	45	-		



Note 1: 5 points position (Ref: Active area)



Note 2: 13 points position (Ref: Active area)



Note 3: The luminance uniformity of 5 or 13 points is defined by dividing the maximum luminance values by the minimum test point luminance

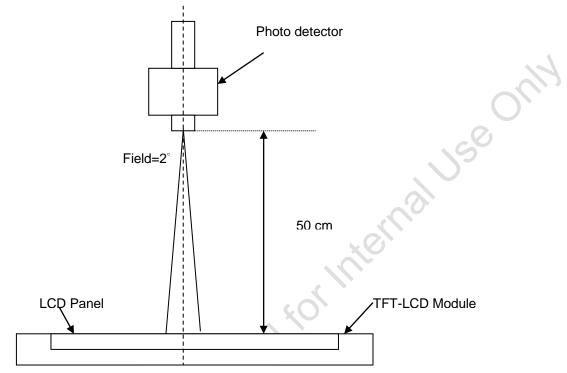
\cap	δ w5 =		Maximum Brightness of five points
	0 W5 =	=	Minimum Brightness of five points
	\$		Maximum Brightness of thirteen points
	δw13 =	=	Minimum Brightness of thirteen points

Note 4: Measurement method

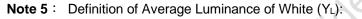
The LCD module should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during



measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 30 minutes in a stable, windless and dark room, and it should be measured in the center of screen.



Center of the screen



Measure the luminance of gray level 63 at 5 points , $Y_L = [L (1) + L (2) + L (3) + L (4) + L (5)] / 5$

L (x) is corresponding to the luminance of the point X at Figure in Note (1).

Note 6 : Definition of contrast ratio:

Contrast ratio is calculated with the following formula.

Contrast ratio (CR)= Brightness on the "White" state Brightness on the "Black" state

Note 7: Definition of Cross Talk (CT)

$$CT = |Y_B - Y_A| / Y_A \times 100$$
 (%)

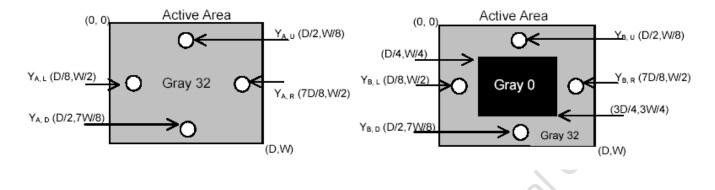
Where

Y_A = Luminance of measured location without gray level 0 pattern (cd/m₂)

 Y_B = Luminance of measured location with gray level 0 pattern (cd/m₂)

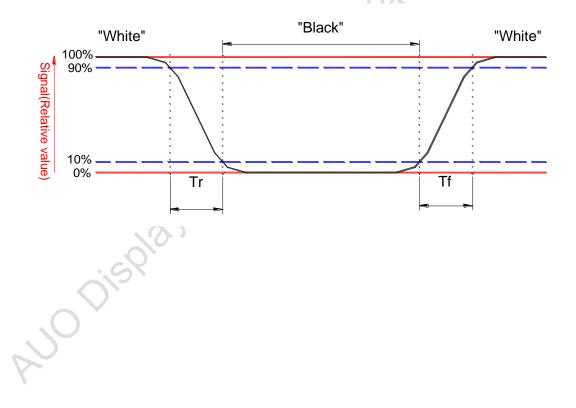
© AUO Display Plus Corporation Proprietary





Note 8: Definition of response time:

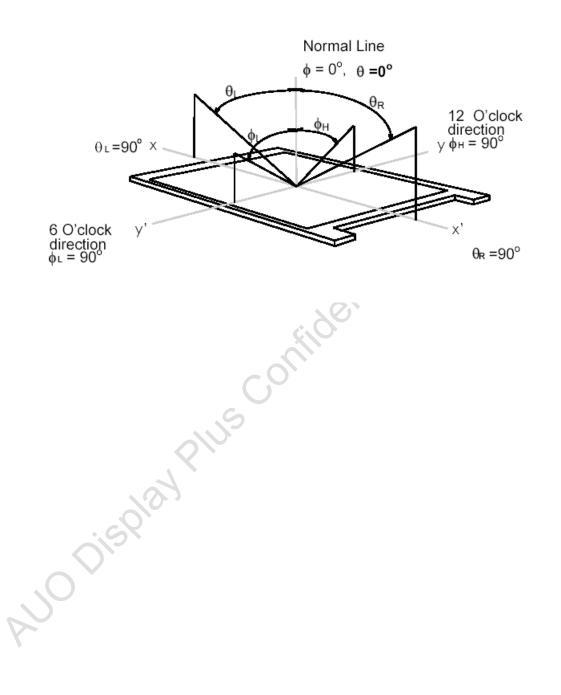
The output signals of BM-7 or equivalent are measured when the input signals are changed from "Black" to "White" (falling time) and from "White" to "Black" (rising time), respectively. The response time interval between the 10% and 90% of amplitudes. Refer to figure as below.





Note 9. Definition of viewing angle

Viewing angle is the measurement of contrast ratio ≥ 10 , at the screen center, over a 180° horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as follows; 90° (θ) horizontal left and right and 90° (Φ) vertical, high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated about its center to develop the desired measurement viewing angle.

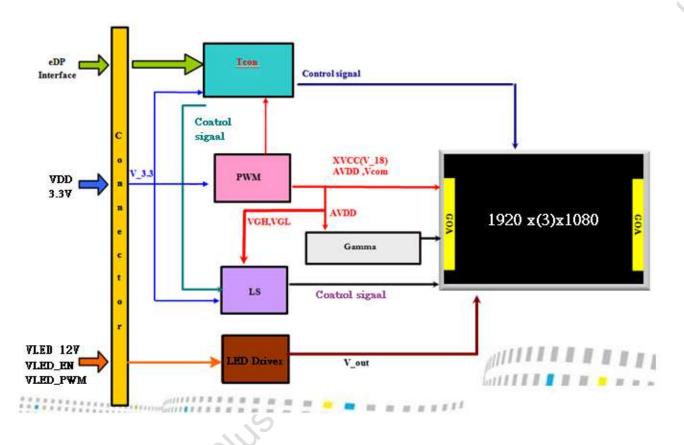


G133HAN02.2



3. Functional Block Diagram

Schematic Block Diagram



4. Absolute Maximum Ratings

An absolute maximum rating of the module is as following:

4.1 Absolute Ratings of TFT LCD Module

Item 6	Symbol	Min	Max	Unit	Conditions
Logic/LCD Drive Voltage	VDD	-0.3	4	[Volt]	Note 1,2

4.2 Absolute Ratings of Environment

Item	Symbol	Min	Max	Unit	Conditions
Operating Temperature	ТОР	0	+50	[°C]	Note 4
Operation Humidity	HOP	5	95	[%RH]	Note 4
Storage Temperature	TST	-20	+60	[°C]	Note 4
Storage Humidity	HST	5	95	[%RH]	Note 4

G133HAN02.2 ver.1.2



Note 1: At Ta (25°C)

Note 2: Permanent damage to the device may occur if exceed maximum values

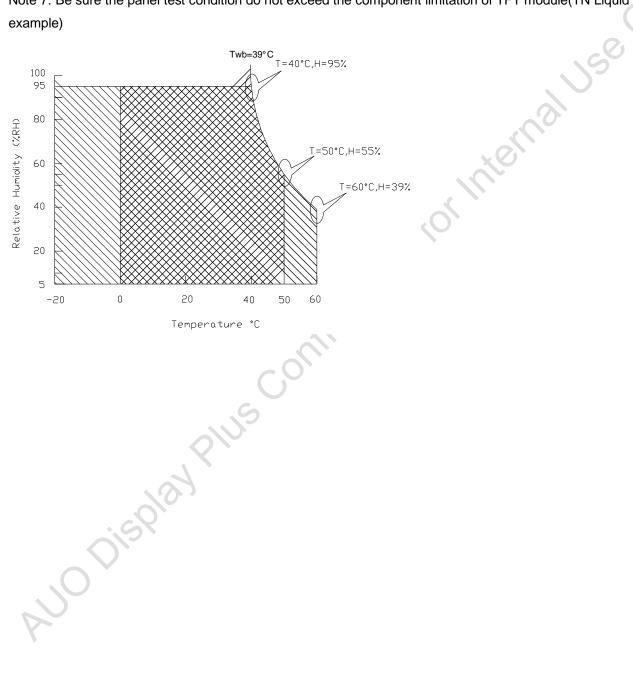
Note 3: LED specification refer to section 5.2

Note 4: For quality performance, please refer to AUO IIS (Incoming Inspection Standard).

Note 5: The packing material of system forbid to involve ammonium component

Note 6: The reliability test conditions of system do not exceed the verified conditions of TFT module

Note 7: Be sure the panel test condition do not exceed the component limitation of TFT module(TN Liquid crystal, for example)



'U



5. Electrical Characteristics

5.1 TFT LCD Module

5.1.1 Power Specification

Input power specifications are as follows:

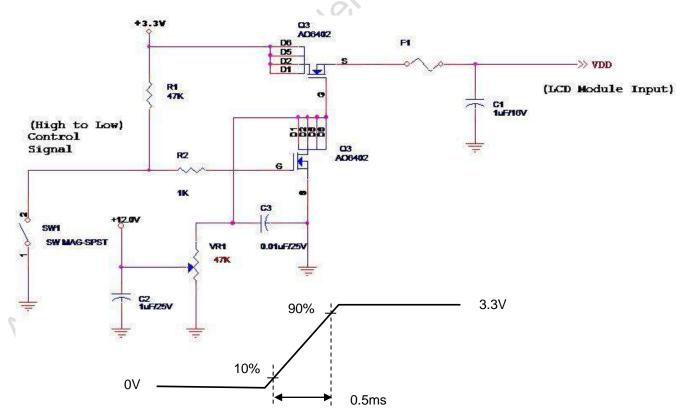
Symble	Parameter	Min	Тур	Max	Units	Note
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[Volt]	Note 1
PDD	VDD Power	-	0.7	0.8	[Watt]	Note 2
IDD	IDD Current	-	212	242	[mA]	Note 2
IRush	Inrush Current	-	-	1500	[mA]	Note 3
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	-	-	100	[mV] p-p	3

Note 1 : Measure in panel VDD

Note 2 : Maximum Measurement Condition : White pattern at VDD: 3.3V driving voltage.

The power specification are measured under 25°C and frame frenquency under 60Hz

Note 3 : Measure Condition



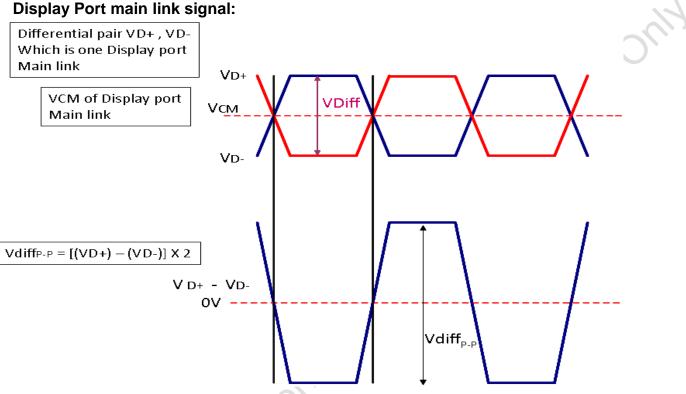
Vin rising time



5.1.2 Signal Electrical Characteristics

Signal electrical characteristics are as follows;

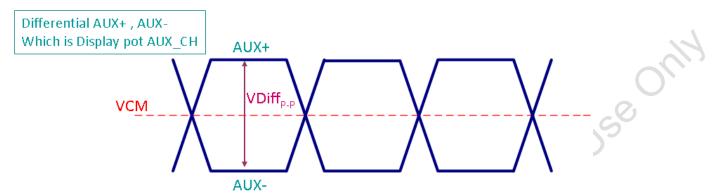
Display Port main link signal:



	Display port main link				
	S	Min	Тур	Max	unit
VCM	RX input DC Common Mode Voltage		0		V
VDiff _{P-P}	Peak-to-peak Voltage at a receiving Device	150		1380	mV
A	ODIST				



Display Port AUX_CH signal:



Display port AUX_CH						
		Min	Тур	Max	unit	
VCM	AUX DC Common Mode Voltage		0		V	
VDiff _{P-P}	AUX Peak-to-peak Voltage at a receiving Device	290		1380	mV	

Display Port VHPD signal:

Display	Port VHPD signal:	Display port VHF				
			Min	Тур	Max	unit
Vhpd	HPD Voltage	6	3	-	3.6	V
'A'	00150123					



5.2 Backlight Unit

5.2.1 LED characteristics

Parameter	Symbol	Min	Тур	Max	Units	Condition
Backlight Power					[\\/att]	(Ta-25°C) Note 1
Consumption	PLED	-	-	2.57	[Watt]	(Ta=25℃), Note 1
LED Life-Time	N/A	50,000	-	-	Hour	(Ta=25℃), Note 2

Note 1: Calculator value for reference P_{LED} = VF (Normal Distribution) * IF (Normal Distribution) / Efficiency @ VLED=12V

Note 2: The LED life-time define as the estimated time to 50% degradation of initial luminous.

5.2.2 Backlight input signal characteristics

Parameter	Symbol	Min	Тур	Max	Units	Remark
LED Power Supply	VLED (Note 1)	10.0	12.0	13.2	[Volt]	
LED Enable Input High Level	VLED_EN	2.2	-	5.5	[Volt]	
LED Enable Input Low Level	(Note 2)	-	-	0.6	[Volt]	Define as
PWM Logic Input High Level	VLED_PWM	2.2	-	5.5	[Volt]	Connector Interface
PWM Logic Input Low Level	(Note 2)	-	-	0.6	[Volt]	(Ta=25℃)
PWM Input Frequency	FPWM	200	1K	20K	Hz	
PWM Duty Ratio	Duty	1 (Note 3)		100	%	

Note 1 : Measured in panel VLED

Note 2 : Recommend system pull up/down resistor no bigger than 10kohm



AUO Display+

Note 3 : If the PWM duty ratio(min) is set between 5% to 1%, the PWM input frequency should be set below

1KHz. The brightness-duty characteristic might not be able to keep in it's linearity if the dimming control is operated in 1% to 5% range.

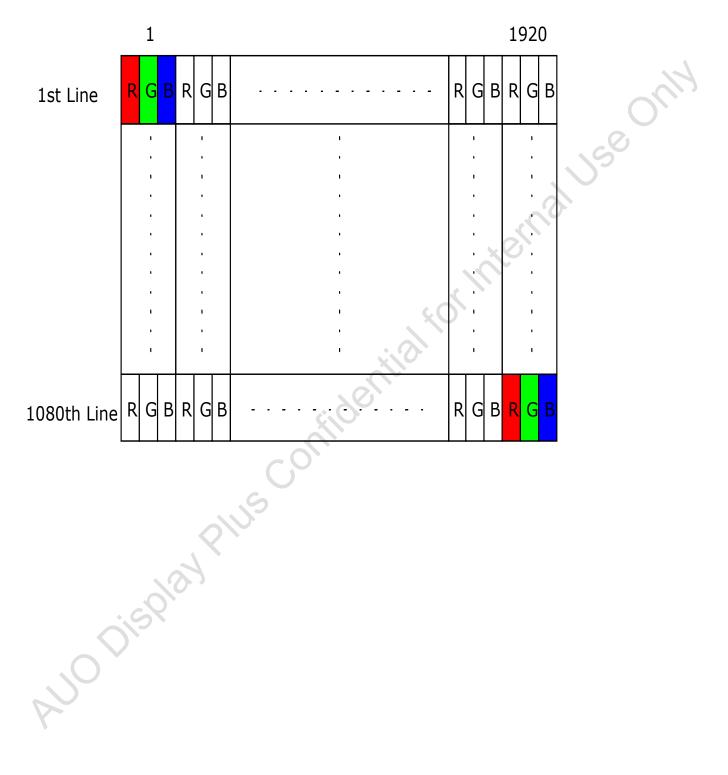


AUO Display+

6. Signal Interface Characteristic

6.1 Pixel Format Image

Following figure shows the relationship of the input signals and LCD pixel format.



_ _ _ _ _ _ _ _ _



6.2 Integration Interface Requirement

6.2.1 Connector Description

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

Connector Name / Designation				For Signal Connector				
Manufacturer			IPEX					
Type / Part Number			IPEX 20765-030E-11A (0.5mm pitch)					
Matir	Mating Housing/Part Number			IPX or compatible	N N			
2.2 Pir	n Assignment			* etn?				
Pin	Symbol		Description					
1	NC	Reserved for LCD	supplier					
2	GND	High Speed Groun	d					

6.2.2 Pin Assignment

Pin	Symbol	Description
1	NC	Reserved for LCD supplier
2	GND	High Speed Ground
3	Lane1_N	Complement Signal Link Lane 1
4	Lane1_P	True Signal Link Lane 1
5	GND	High Speed Ground
6	Lane0_N	Complement Signal Link Lane 0
7	Lane0_P	True Signal Link Lane 0
8	GND	High Speed Ground
9	AUX_CH_P	True Signal Auxiliary Channel
10	AUX_CH_N	Complement Signal Auxiliary Channel
11	GND	High Speed Ground
12	VDD	LCD logic power
13	VDD	LCD logic power
14	NC	LCD Panel Self Test Enable (Optional)
15	GND	LCD logic and driver ground
16	GND	LCD logic and driver ground
17	HPD	HPD Signal pin
18	BL_GND	LED Backlight ground
19	BL_GND	LED Backlight ground
20	BL_GND	LED Backlight ground
21	BL_GND	LED Backlight ground
22	VLED_EN	LED Backlight control on/off control
23	VLED_PWM	System PWM signal input for dimming
24	NC	Reserved for LCD supplier
25	NC	Reserved for LCD supplier
26	VLED	LED Backlight Power
27	VLED	LED Backlight Power
28	VLED	LED Backlight Power
29	VLED	LED Backlight Power



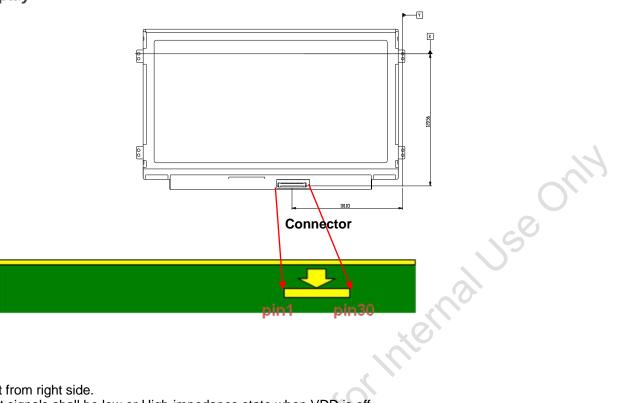
_ _ _ _ _ _ _

Reserved for LCD supplier

AND Display Plus confidential for Internal Use Only



_ _ _ _ _ _ _ _ _



- Note1: Start from right side.
- when VP the contribution Note2: Input signals shall be low or High-impedance state when VDD is off.

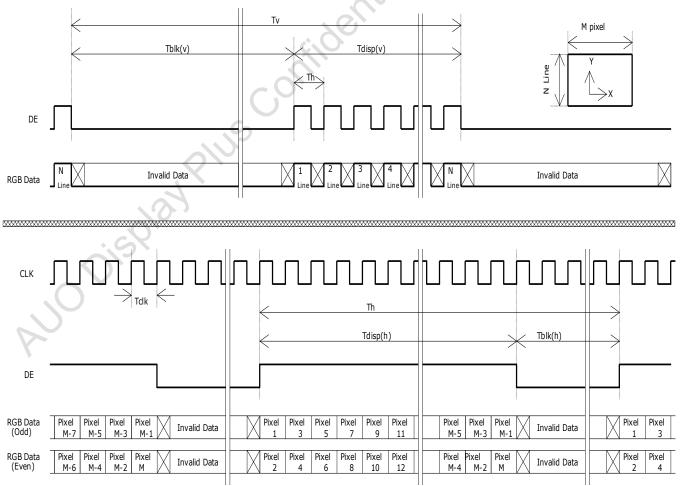
6.3 Interface Timing

6.3.1 Timing Characteristics

Basically, interface timings should match the 1920x1080 /60Hz manufacturing guide line timing.

		1		T	1		1
Para	meter	Symbol	Min.	Тур.	Max.	Unit	
Frame Rate		-		60	-	Hz	1
Clock fr	equency	1/ T _{Clock}	68	70.5	75.9	MHz	
	Period	Τv	1100	1116	1150		
Vertical	Active	Tvd		1080		TLine	5
Section	Blanking	Тив	20	36	70		
	Period	Тн	1030	1052	1100		
Horizontal	Active	Тнр		960		TClock	
Section	Blanking	Тнв	70	92	140		
							-
Note 1 : The ab	ove is as optimi	zed setting			\sim		
T imeire er elie er				, XC			
Fiming diagram							

6.3.2 Timing diagram



© AUO Display Plus Corporation Proprietary

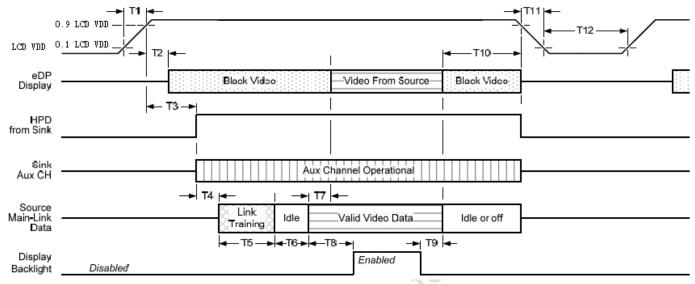
G133HAN02.2 ver.1.2



6.4 Power ON/OFF Sequence

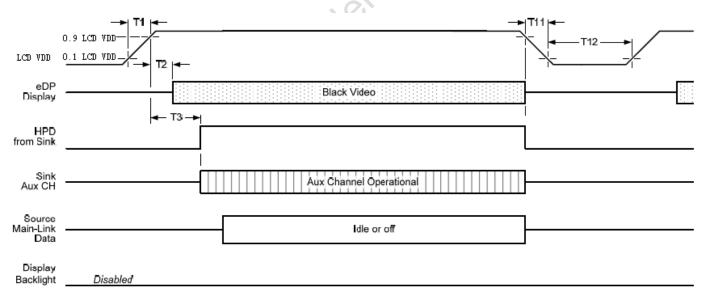
Power on/off sequence is as follows. Interface signals and LED on/off sequence are also shown in the chart. Signals from any system shall be Hi-Z state or low level when VDD is off

Display Port panel power sequence:



Display port interface power up/down sequence, normal system operation

Display Port AUX_CH transaction only:



Display port interface power up/down sequence, AUX_CH transaction only



AUO Display+

Display Port panel power sequence timing parameter:

Timing	Description	Dand bu		Limits		Notes
parameter	Description	Reqd. by	Min.	Тур.	Max.	Notes
T1	power rail rise time, 10% to 90%	source	0.5ms		10ms	
T2	delay from LCDVDD to black video generation	sink	0ms		200ms	prevents display noise until valid video data is received from the source
тз	delay from LCDVDD to HPD high	sink	0ms		200ms	sink AUX_CH must be operational upon HPD high.
Т4	delay from HPD high to link training initialization	source				allows for source to read link capability and initialize.
T5	link training duration	source				dependant on source link to read training protocol.
T6	link idle	source				Min accounts for required BS-Idle pattern. Max allows for source frame synchronization.
77	delay from valid video data from source to video on display	sink	0ms		50ms	max allows sink validate video data and timing.
Т8	delay from valid video data from source to backlight enable	source				source must assure display video is stable.
Т9	delay from backlight disable to end of valid video data	source				source must assure backlight is no longer illuminated.
T10	delay from end of valid video data from source to power off	source	0ms		500ms	
T11	power rail fall time, 905 to 10%	source			10ms	
T12	power off time	source	500ms			

Note1: The sink must include the ability to generate black video autonomously. The sink must automatically enable black video under the following conditions:

-upon LCD VDD power on (with in T2 max)-when the "Novideostream_Flag" (VB-ID Bit 3) is received from the source (at the end of T9).

-when no main link data, or invalid video data, is received from the source. Black video must be displayed within 64ms (typ) from the start of either condition. Video data can be deemed invalid based on MSA and timing information, for example.

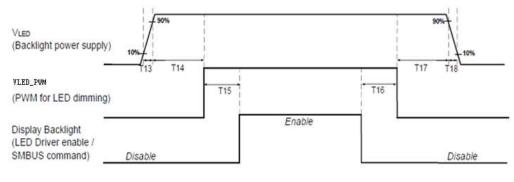
Note 2: The sink may implement the ability to disable the black video function, as described in Note 1, above, for system development and debugging purpose.

Note 3: The sink must support AUX_CH polling by the source immediately following LCD VDD power on without causing damage to the sink device (the source can re-try if the sink is not ready). The sink must be able to respond to an AUX_CH transaction with the time specified within T3 max.



_ _ _ _

Display Port panel B/L power sequence timing parameter:



	Min (ms)	Max (ms)
T13	0.2	10
T14	0	-
T15	0	-
T16	0	
T17	0	-
T18	0.2	10
Т19	1*	<u>12</u>
T20	1*	-

Seamless change: T19/T20 = 5xT_{PWM}* *T_{PWM}= 1/PWM Frequency

Note : When the adapter is hot plugged, the backlight power supply sequence is shown as below.

VLED (Backlight power supply)	90% VLED_Low 10%	
(Hot Plug)	T19 T20	
		~

- Note 1 : If T14,T15,T16,T17<10ms · The display garbage may occur. We suggest T14,T15,T16,T17>10ms to avoid the display garbage.
- Note 2 : If T13 or T18<0.5ms · the inrush current may cause the damage of fuse. If T13 or T18<0.5ms · the inrush current I²t is under typical melt of fuse Spec. · there is no mentioned problem.

© AUO Display Plus Corporation Proprietary



7. Panel Reliability Test

7.1 Vibration Test

Test Spec:

- Test method: Non-Operation
- Acceleration: 1.5 G
- Frequency: 10 - 500Hz Random
- Sweep: 30 Minutes each Axis (X, Y, Z)

7.2 Shock Test

Test Spec:

- Test method: Non-Operation
- Acceleration: 220 G, Half sine wave •
- Active time: 2 ms
- Pulse: X,Y,Z .one time for each side

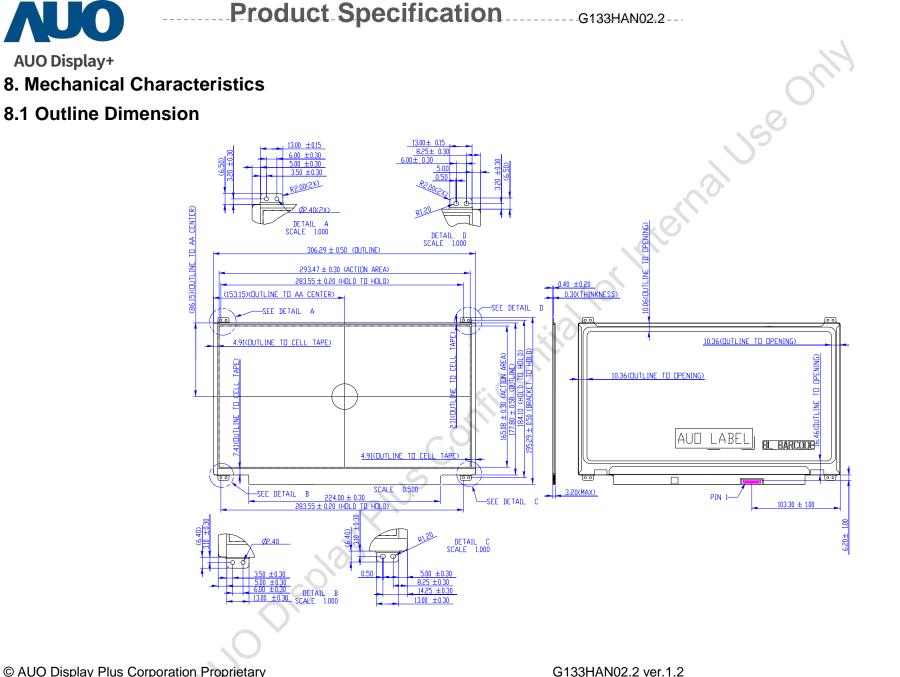
7.3 Reliability Test

Test Spec:		
• Test method:	Non-Operation	\ \
• Acceleration:	1.5 G	17
• Frequency:	10 - 500Hz Random	\mathbf{O}
• Sweep:	30 Minutes each Axis (X, Y, Z)	
	S	
Shock Test	Non-Operation 1.5 G 10 - 500Hz Random 30 Minutes each Axis (X, Y, Z) Non-Operation 220 G , Half sine wave 2 ms	
Test Spec:		
• Test method:	Non-Operation	
• Acceleration:	220 G , Half sine wave	
• Active time:	2 ms	
• Pulse:	X,Y,Z .one time for each side	
Reliability Tes		
	t	Note
Reliability Tes	t Required Condition	Note
Reliability Tes Items Temperature Humidity Bia High Temperat Operation	t Required Condition e as Ta= 40°C, 90%RH, 300h ture Ta= 50°C, 300h	Note
Reliability Tes Items Temperature Humidity Bia High Temperat Operation Low Temperat Operation	t Required Condition e as Ta= 40°C, 90%RH, 300h ture Ta= 50°C, 300h ture Ta=0°C, 300h	Note
Reliability Tes Items Temperature Humidity Bia High Temperat Operation Low Temperat Operation High Temperat Storage	t Required Condition e as $Ta = 40^{\circ}C, 90\%$ RH, 300h ture $Ta = 50^{\circ}C, 300h$ ture $Ta = 0^{\circ}C, 300h$ ture $Ta = 60^{\circ}C, 300h$	Note
Reliability Tes Items Temperature Humidity Bia High Temperat Operation Low Temperat Storage Low Temperat Storage	t Required Condition $e = Ta = 40^{\circ}C, 90\%$ RH, 300h ture Ta = 50°C, 300h ture Ta = 0°C, 300h ture Ta = 60°C, 300h ture Ta = 60°C, 250h	Note
Reliability Test Items Temperature Humidity Bia High Temperat Operation Low Temperat Operation High Temperat Storage Low Temperat	t Required Condition $e = Ta = 40^{\circ}C, 90\%$ RH, 300h ture Ta = 50°C, 300h ture Ta = 0°C, 300h ture Ta = 60°C, 300h ture Ta = 60°C, 250h	Note
Reliability Test Items Temperature Humidity Bia High Temperat Operation Low Temperat Operation High Temperat Storage Low Temperat Storage	t Required Condition e as Ta= 40°C, 90%RH, 300h ture Ta= 50°C, 300h ture Ta= 0°C, 300h ture Ta= 60°C, 300h ture Ta= -20°C, 250h	Note

Note1: According to EN 61000-4-2, ESD class B: Some performance degradation allowed. No data lost

. Self-recoverable. No hardware failures.

Product Specification G133HAN02-2---_ _ _ _ _ _ _ _



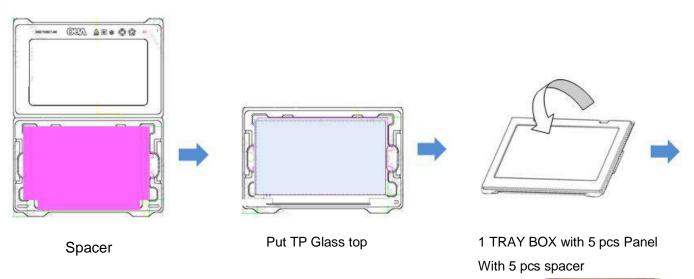


Abo Display Chinning and D

9. Shipping and Package 9.1 Shipping Label Format

•*xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Manufactured XX/XX Model No : G133HAN02.2 AU <u>Optronics</u> MADE IN XXXXXX (XXX)	CRUDUS E204356 (Pb) RoHS (15)	23 mm	
→ 90 m	m ———	>		onis

9.2 Carton Package





Put EPS BOX into ESD bag



Total 45 pcs /carton

9 TRAY box in carton



LABEL PET Band PET Band Wooden pallet

9.3 Shipping Package of Palletizing Sequence

14		Specification		Domoula	
ltem	Q'ty	Dimension	Weight (kg)	Remark	
Packing Material	I .	446(L)mm x373(W)mm x 293(H)mm	1.4	TRAY +Box	
Packing	45 pcs/carton	446(L)mm x373(W)mm x 293(H)mm	11.8	with panel & cushion	
Pallet		1150(L)mm x 910(W)mm x 132(H)mm	14		
Pallet after Packing	boxes/pallet	1150(L)mm x 910(W)mm x 1304(H)mm	300	24 carton	
ANODIS	5				

XI



_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ .

10. Appendix: EDID Description

Address	FUNCTION	Value	Note
HEX		HEX	
00	Header	00	
01		FF	
02		FF	
03		FF	
04		FF	
05		FF	
06		FF	x G`
07		00	
08	EISA Manuf. Code LSB	06	
09	Compressed ASCII	AF	
0A	Product Code	2D	
0B	hex, LSB first	22	
0C	32-bit ser #	00	
0D	<u>\</u> 0`	00	
0E	6.O	00	
0F		00	
10	Week of manufacture	33	
11	Year of manufacture	83	
12	EDID Structure Ver.	01	
13	EDID revision #	04	
14	Video input def. (digital I/P, non-TMDS, CRGB)	A0	
15	Max H image size (rounded to cm)	1D	
16	Max V image size (rounded to cm)	11	
17	Display Gamma (=(gamma*100)-100)	78	
18	Feature support (no DPMS, Active OFF, RGB, tmg Blk#1)	02	
19	Red/green low bits (Lower 2:2:2:2 bits)	59	
1A	Blue/white low bits (Lower 2:2:2:2 bits)	B5	
1B	Red x (Upper 8 bits)	92	
10	Red y/ highER 8 bits	58	
1D	Green x	58	
1E	Green y	92	
1F	Blue x	28	
20	Blue y	1E	
21	White x	50	
22	White y	54	



AUO Display+ 23 Established timing 1 00 Established timing 2 00 24 25 Established timing 3 00 Standard timing #1 26 01 01 27 01 28 Standard timing #2 01 29 2A Standard timing #3 01 2B 01 2C 01 Standard timing #4 2D 01 2E 01 Standard timing #5 2F 01 01 30 Standard timing #6 31 01 Standard timing #7 01 32 33 01 34 Standard timing #8 01 35 01 36 Pixel Clock/10000 LSB 14 37 Pixel Clock/10000 USB 37 Horz active Lower 8bits 38 80 39 Horz blanking Lower 8bits B8 HorzAct:HorzBlnk Upper 4:4 bits 70 3A Vertical Active Lower 8bits 3B 38 Vertical Blanking Lower 8bits 3C 24 Vert Act : Vertical Blanking (upper 4:4 bit) 3D 40 HorzSync. Offset 3E 10 HorzSync.Width 3F 10 VertSync.Offset : VertSync.Width 40 3E Horz&Vert Sync Offset/Width Upper 2bits 41 00 Horizontal Image Size Lower 8bits 42 25 Vertical Image Size Lower 8bits 43 A5 Horizontal & Vertical Image Size (upper 4:4 bits) 44 10 Horizontal Border (zero for internal LCD) 45 00 Vertical Border (zero for internal LCD) 46 00 Signal (non-intr, norm, no stero, sep sync, neg pol) 47 18 48 Detailed timing/monitor 00 49 descriptor #2 00 4A 00 4B 0F 4C 00 4D 00 4E 00



AUO Dis	play+	1	
4F		00	
50		00	
51		00	
52		00	
53		00	
54		00	
55		00	
56		00	
57		00	
58		00	
59		20	8
5A	Detailed timing/monitor	00	
5B	descriptor #3	00	
5C		00	
5D		FE	
5E		00	× O`
5F	Manufacture	41	А
60	Manufacture	55	U
61	Manufacture	4F	0
62		0A	
63		20	
64		20	
65		20	
66	0,5	20	
67		20	
68		20	
69	0	20	
6A	S	20	
6B		20	
6C	Detailed timing/monitor	00	
6D	descriptor #4	00	
6E		00	
6F	<u></u>	FE	
70		00	
71	Manufacture P/N	47	G
72	Manufacture P/N	31	1
73	Manufacture P/N	33	3
74	Manufacture P/N	33	3
75	Manufacture P/N	48	н
76	Manufacture P/N	41	Α
77	Manufacture P/N	4E	N
78	Manufacture P/N	30	0
79	Manufacture P/N	32	2
7A	Manufacture P/N	2E	



7B Manufacture P/N	32 2
7C	20
7D	0A
7E Extension Flag	00
7F Checksum	69
uo display Plus	ator manuse