Product Information

To:

Product Name: M116NWR7 R4

Document Issue Date: 2017/08/13

Note: 1. Please contact InfoVision Company. before designing your product based on this product.
2. The information contained herein is presented merely to indicate the characteristics and performance of our products.

Revision	Date	Page	Old Description	New Description	Remark
00	2017/03/10	--	--	First issue.	00
01	2017/05/03	21	The thickness without PCBA:3.0max	The thickness without PCBA:2.8max	01
02	2017/07/13	19 24~25 29~32	1.Dell MFG IAC00(IVE) 2.AA(V) tolerance 0.1mm	1. AA(V) tolerance 0.15mm 2.Add Dell MFG IAK00(IVO) 3.Add EDID	02
03	2017/08/13		/	Modify back cover , change Version X00 to X01, change H/W 1.1 to H/W 1.2	03
04	2017/11/15	29	EDID version X01	Change EDID version to A00	29

CONTENTS

1.0 General Descriptions

1.1 Introduction

The M116NWR7 R4 is a Color Active Matrix Liquid Crystal Display with a back light system. The matrix uses a-Si Thin Film Transistor as a switching device. This TFT LCD has a 11.6 inch diagonally measured active display area with HD resolution (1,366 horizontal by 768 vertical pixels array).

1.2 Features

- Supported HD Resolution
- eDP Interface
- Wide View Angle
- Compatible with RoHS Standard

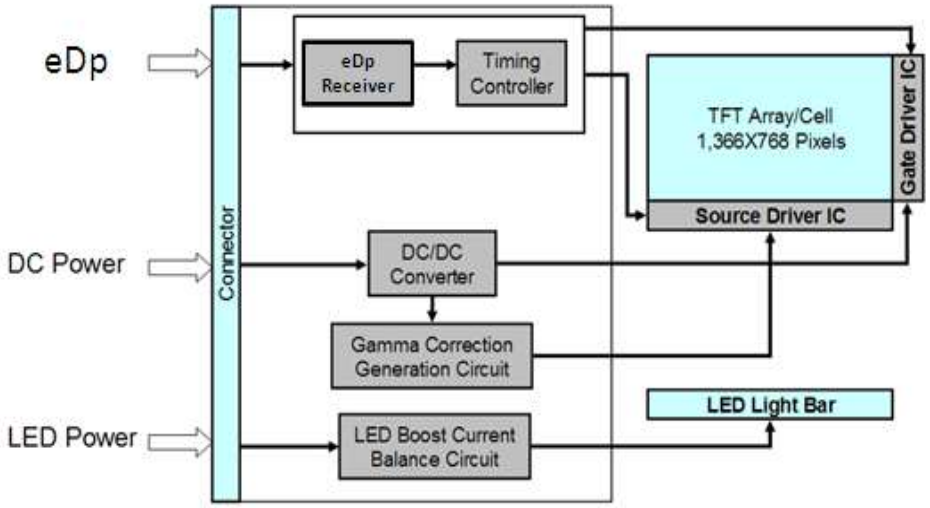
1.3 Product Summary

Items	Specifications	Unit
Screen Diagonal	11.6	inch
Active Area (H x V)	256.125 (H) x 144.00 (V)	mm
Number of Pixels (H x V)	1,366 x 768	-
Pixel Pitch (H x V)	0.1875 x 0.1875	mm
Pixel Arrangement	R.G.B. Vertical Stripe	-
Display Mode	Normally Black	-
White Luminance@5points	220 (Typ.)	cd /m^2
Contrast Ratio	800 (Typ.)	-
Response Time	25(Typ)	ms
Input Voltage	3.3 (Typ.)	V
Power Consumption	2.85(Max.) @ Black/White/R/G/B/Mosaic FV=60Hz	W
Weight	200 (Max.)	g
Outline Dimension (H x V x D)	278.5 (Typ.) x 168.5 (Typ.) x 2.8/3.0 (Max.) Without/With PCBA	mm
Electrical Interface (Logic)	eDP 1.2	-
Support Color	262 K	-
NTSC	50(Typ.)	%
Viewing Direction	All	-
Surface Treatment	Anti-glare	-

1.4 Functional Block Diagram

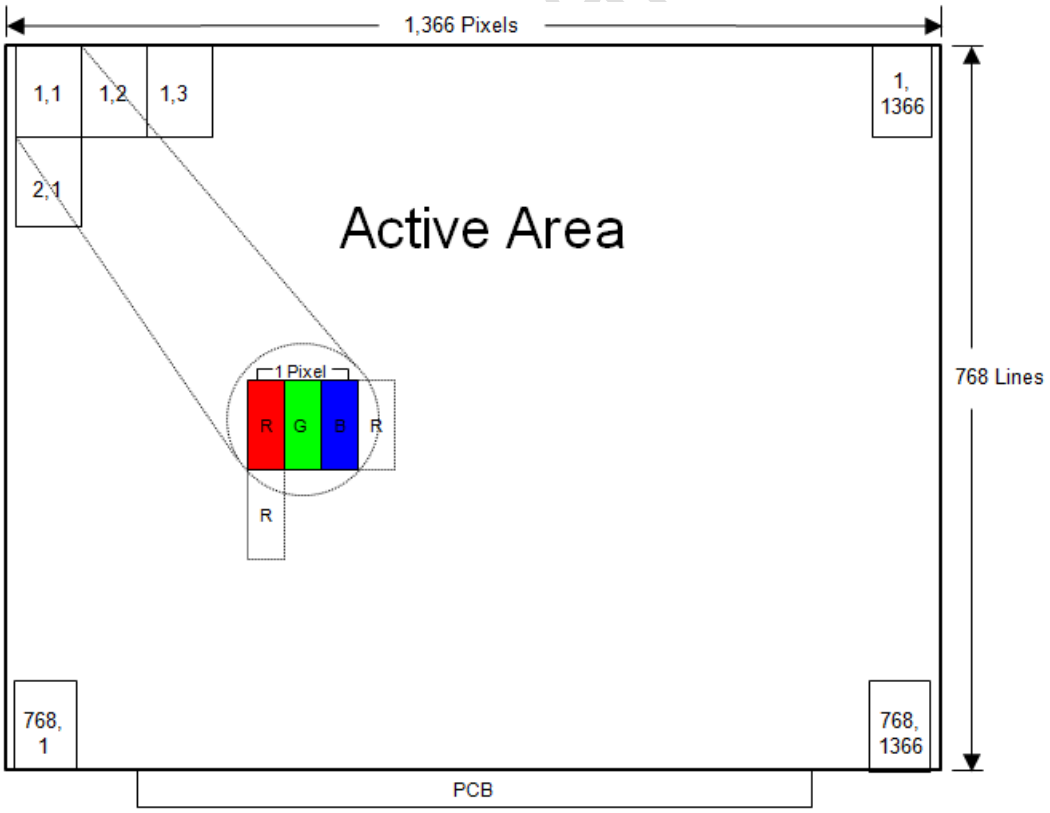
Figure 1 shows the functional block diagram of the LCD module.

Figure 1 Block Diagram



1.5 Pixel Mapping

Figure2 Pixel Mapping



2.0 Absolute Maximum Ratings

Table 1 Electrical & Environment Absolute Rating

Item	Symbol	Min.	Max.	Unit	Note
Logic Supply Voltage	V_{DD}	-0.3	4.5	V	(1),(2),(3),(4)
Logic Input Signal Voltage	V_{Signal}	3.0	3.6	V	
Operating Temperature	T_{gs}	0	50	℃	
Storage Temperature	T_a	-20	60	℃	

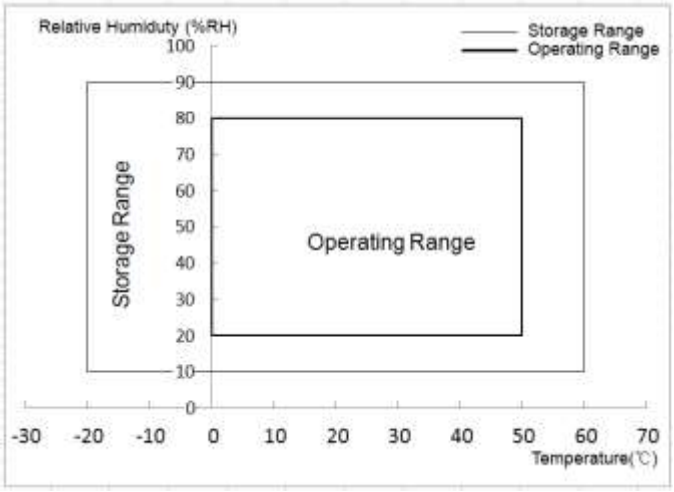
Note (1) All the parameters specified in the table are absolute maximum rating values that may cause faulty operation or unrecoverable damage, if exceeded. It is recommended to follow the typical value.

Note (2) All the contents of electro-optical specifications and display fineness are guaranteed under Normal Conditions. All the display fineness should be inspected under normal conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH.

Note (3) Unpredictable results may occur when it was used in extreme conditions. T_a= Ambient Temperature, T_{gs}= Glass Surface Temperature. All the display fineness should be inspected under normal conditions.

Note (4) Temperature and relative humidity range are shown in the figure below. Wet bulb temperature should be lower than 46℃, and no condensation of water. Besides, protect the module from static electricity.

Figure 3 Absolute Ratings of Environment of the LCD Module



3.0 Optical Characteristics

The optical characteristics are measured under stable conditions as following notes.

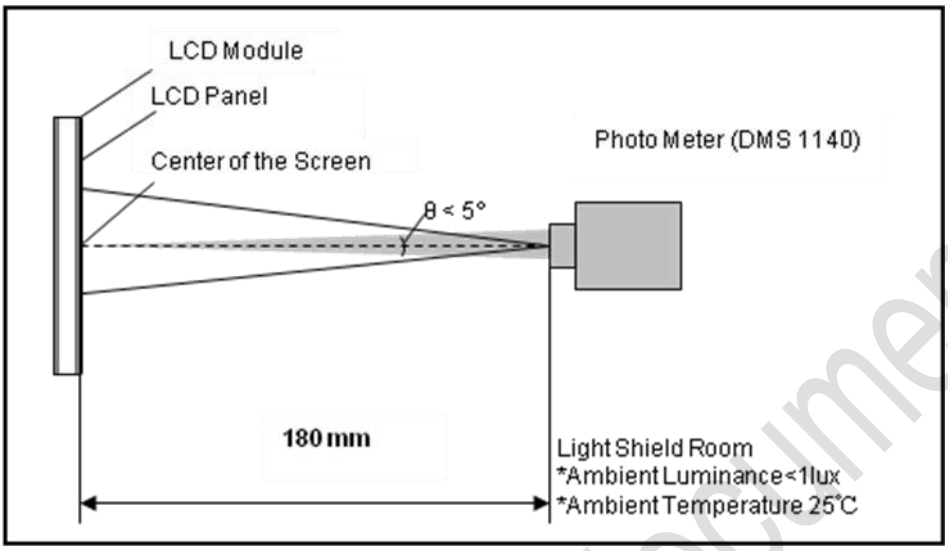
Table 2 Optical Characteristics

Item	Conditions		Min.	Typ.	Max.	Unit	Note
Viewing Angle （CR≥10）	Horizontal	θ_{x+}	80	85	-	degree	(1),(2),(3),(4)(8)
		θ_{x-}	80	85	-		
	Vertical	θ_{y+}	80	85	-		
		θ_{y-}	80	85	-		
Contrast Ratio	Center		600	800	-	-	(1),(2),(4),(8) θx=θy=0°
Response Time	Rising + Falling		-	25	35	ms	(1),(2),(5),(8) θx=θy=0°
Color Chromaticity (CIE1931)	Red x		Typ -0.03	0.603	Typ +0.03	-	(1),(2),(3),(8) θx=θy=0°
	Red y			0.357		-	
	Green x			0.352		-	
	Green y			0.596		-	
	Blue x			0.155		-	
	Blue y			0.107		-	
	White x		Typ -0.03	0.313	Typ +0.03	-	
	White y			0.329		-	
NTSC	-		47	50	-	%	(1),(2),(3),(8) θx=θy=0°
White Luminance	5 Points Average		187	220	-	cd/m^2	(1),(2),(6),(8) θx=θy=0°
Luminance Uniformity	5 Points		80	-	-	%	(1),(2),(7),(8) θx=θy=0°
	13 Points		65	-	-		

Note (1) Measurement Setup:

The LCD module should be stabilized at given ambient temperature (25℃) for 30 minutes to avoid abrupt temperature changing during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 30 minutes in the windless room.

Figure 4 Measurement Setup



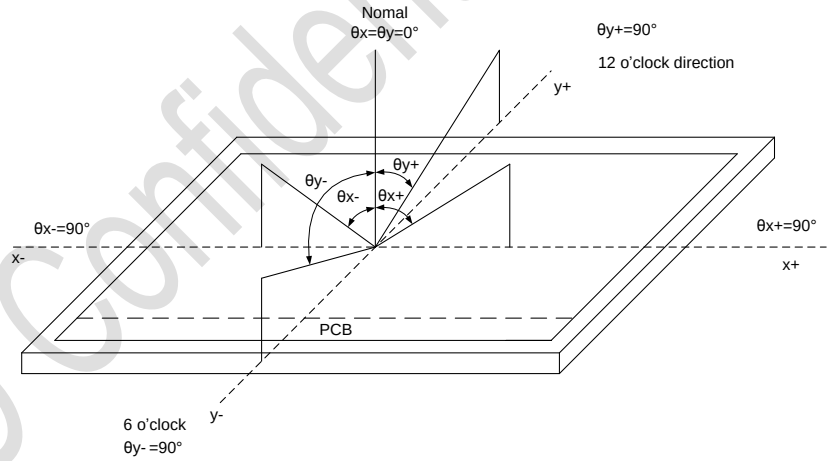
Note (2) The LED input parameter setting as:

V_{LED}: 12.0V

PWM_LED: Duty 100 %

Note (3) Definition of Viewing Angle

Figure 5 Definition of Viewing Angle



Note (4) Definition of Contrast Ratio (CR)

The contrast ratio can be calculated by the following expression:

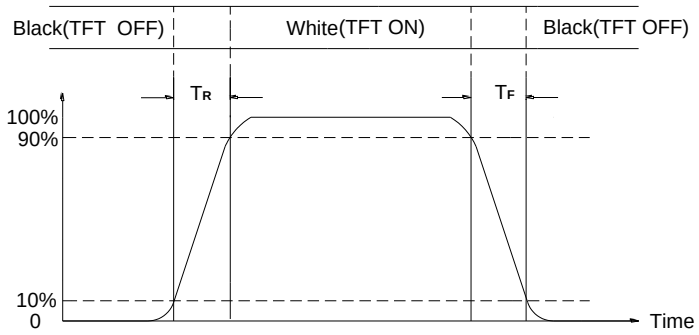
Contrast Ratio (CR) = L63 / L0

L63: Luminance of gray level 63, L0: Luminance of gray level 0

Note (5) Definition of Response Time (T_R, T_F)

Figure 6 Definition of Response Time

.



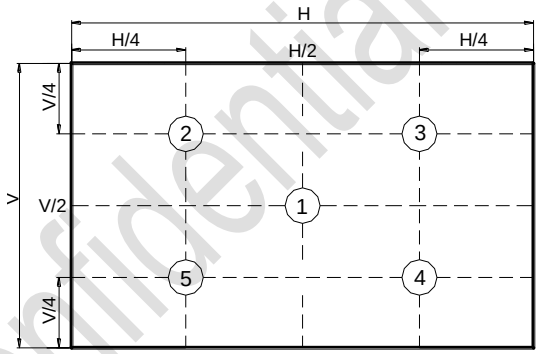
Note (6) Definition of Luminance White

Measure the luminance of gray level 63 (Ref.: Active Area)

Display Luminance=(L1+L2+L3+L4+L5) / 5

H—Active Area Width, V—Active Area Height, L—Luminance

Figure 7 Measurement Locations of 5 Points



Note (7) Definition of Luminance Uniformity (Ref.: Active Area)

Measure the luminance of gray level 63 at 5 points.

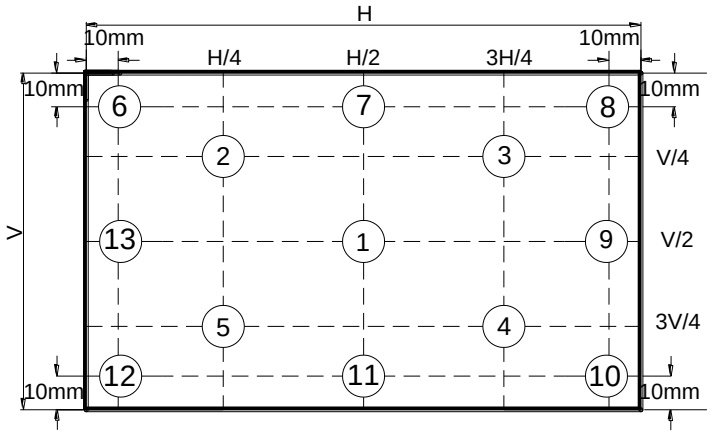
Luminance Uniformity= Min.(L1, L2, ... L5) / Max.(L1, L2, ... L5)

Measure the luminance of gray level 63 at 13 points.

Luminance Uniformity= Min.(L1, L2, ... L13) / Max.(L1, L2, ... L13)

H—Active Area Width, V—Active Area Height, L—Luminance

Figure 8 Measurement Locations of 13 Points



Note (8) All optical data are based on IVO given system & nominal parameter & testing machine in this document.

4.0 Electrical Characteristics

4.1 Interface Connector

Table 3 Signal Connector Type

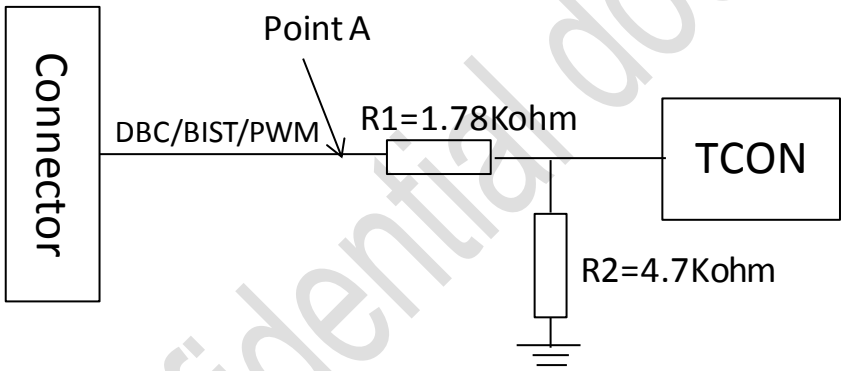
Item	Description
Manufacturer / Type	IPEX / 20455-030E-66
Mating Receptacle / Type (Reference)	TBD

Table 4 Signal Connector Pin Assignment

Pin No.	Symbol	Description	Remarks
1	DBC	Dynamic Backlight Control enable, High Active	3.0V-3.6V, (Note1)
2	H_GND	Ground	
3	NC	No Connection	
4	NC	No Connection	
5	H_GND	Ground	
6	LANE0_N	eDP RX channel 0 negative	
7	LANE0_P	eDP RX channel 0 positive	
8	H_GND	Ground	
9	AUX_CH_P	eDP AUX CH positive	
10	AUX_CH_N	eDP AUX CH negative	
11	H_GND	Ground	
12	LCD_VCC	Power Supply	3.0V-3.6V, 3.3V(typ)
13	LCD_VCC	Power Supply	3.0V-3.6V, 3.3V(typ)
14	Bist	LCD Panel Self Test Enable, When it is not used, connecting to GND is recommended, don't floating	3.0V-3.6V, (Note1)
15	H_GND	Ground	
16	H_GND	Ground	
17	HPD	Hot plug detect output	
18	BL_GND	LED Ground	
19	BL_GND	LED Ground	
20	BL_GND	LED Ground	
21	BL_GND	LED Ground	
22	BL_ENABLE	LED enable pin	3.3V input ,High Active

23	BL_PWM	System PWM Signal Input for Diming	Note 1
24	NC	No Connection	
25	NC	No Connection	
26	BL_POWER	LED Power Supply	5-21V,12V(typ)
27	BL_POWER	LED Power Supply	5-21V,12V(typ)
28	BL_POWER	LED Power Supply	5-21V,12V(typ)
29	BL_POWER	LED Power Supply	5-21V,12V(typ)
30	NC	No Connection	

Note 1: Because of the special operating voltage of TCON, we design a resistor divider to meet TCON specification; If you want to enable BIST/DBC/PWM mode, please ensure that the voltage of BIST/DBC/PWM pin is 3.0V~3.6V on Point A, especially when NB system is connecting with panel.



4.2 Signal Electrical Characteristics

Table 5 Display Port Main Link

Parameter	Description	Min.	Typ.	Max.	Unit
V_{CM}	Differentia Common Mode Voltage	0	-	0.20	V
$V_{Diff\ P-P}$ Level 1	Differential Peak to Peak Voltage Level 1	0.34	0.40	0.46	V
$V_{Diff\ P-P}$ Level 2	Differential Peak to Peak Voltage Level 2	0.51	0.60	0.68	V
$V_{Diff\ P-P}$ Level 3	Differential Peak to Peak Voltage Level 3	0.69	0.80	0.92	V
$V_{Diff\ P-P}$ Level 4	Differential Peak to Peak Voltage Level 4	1.02	1.20	1.38	V

Note: (1) Input signals shall be low or Hi- resistance state when VDD is off.

(2) It is recommended to refer the specifications of VESA Display Port Standard in detail.

(3) Follow as VESA display port standard at both 1.62 and 2.7Gbps link rates.

Figure 9 Display Port Main Link Signal

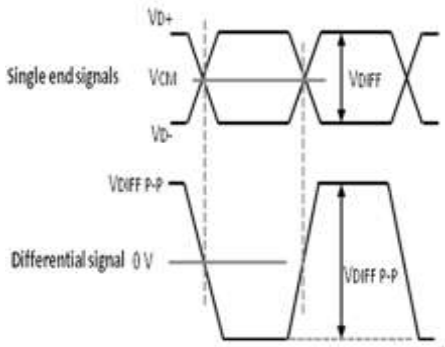


Figure10 Display Port AUX_CH Signal

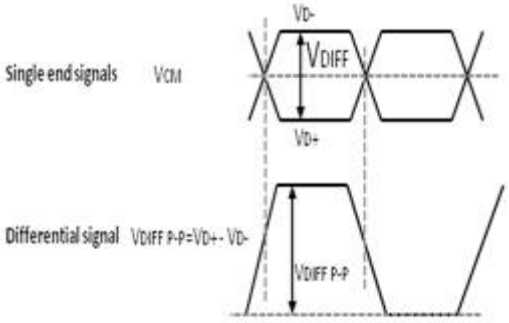


Table 6 Display Port AUX_CH

Parameter	Description	Min.	Typ.	Max.	Unit
V_{CM}	Differentia Common Mode Voltage (receiving)	-	0	-	V
$V_{Diff\ P-P}$	Differential Peak to Peak Voltage	0.4	-	0.8	V

Note: Follow as VESA display port standard

Table 7 Display Port V_{HPD}

Parameter	Description	Min.	Typ.	Max.	Unit
V_{HPD}	HPD Voltage	2.25	-	2.75	V

Note: Follow as VESA display port standard.

4.3 Interface Timings

Table 8 Interface Timings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Clock Frequency	Fclk	63.4	73.81	83.5	MHz
H Total Time	HT	1488	1532	1586	Clocks
H Active Time	HA		1366		Clocks
V Total Time	VT	776	803	810	Lines
V Active Time	VA		768		Lines
Frame Rate	FV	48	60	65	Hz

Note1：HT * VT *Frame Frequency<83.5 MHz

Note2: All reliabilities are specified for timing specification based on refresh rate of (60)Hz. However, M116NWR7 R4 has a good actual performance even at lower refresh rate (e.g. (48)Hz for power saving mode, whereas M116NWR7 R4 is secured only for function under lower refresh rate; (60)Hz at Normal mode, (48)Hz at Power save mode.

4.4 Input Power Specifications

Input power specifications are as follows.

Table 9 Input Power Specifications

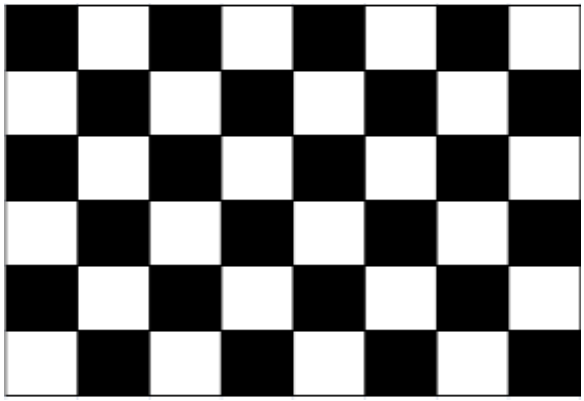
Parameter		Symbol	Min.	Typ.	Max.	Unit	Note
System Power Supply							
LCD Drive Voltage (Logic)		V_{DD}	3	3.3	3.6	V	(1),(2)
VDD Current		I_{DD}	-	-	0.38	A	(1),(3)
VDD Power Consumption		P_{DD}	-	-	1.25	W	
Inrush Current		I_{Rush}	-	-	1.5	A	(1),(4)
Allowable Logic/LCD Drive Ripple Voltage		V_{VDD-RP}	-	-	200	mV	(1)
LED Power Supply							
LED Input Voltage		V_{LED}	5	12	21	V	(1),(2)
LED Power Consumption		P_{LED}	-	-	1.6	W	(1),(5)
LED Forward Voltage		V_F	2.7	2.85	3.0	V	(1),(2)
LED Forward Current		I_F	-	14.0	-	mA	
PWM Signal Voltage	High	V_{PWM}	3	-	3.6	V	
	Low		0	-	0.6		
LED Enable Voltage	High	V_{LED_EN}	3	-	3.6	V	
	Low		0	-	0.6		
Input PWM Frequency		F_{PWM}	200	-	2,000	Hz	(1),(2),(6)
Duty Ratio		PWM	5	-	100	%	(1),(7)
LED Life Time		LT	15,000	25,000	-	Hours	(1),(8)

Note (1) All of the specifications are guaranteed under normal conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH.

Note (2) All of the absolute maximum ratings specified in the table, if exceeded, may cause faulty operation or unrecoverable damage. It is recommended to follow the typical value.

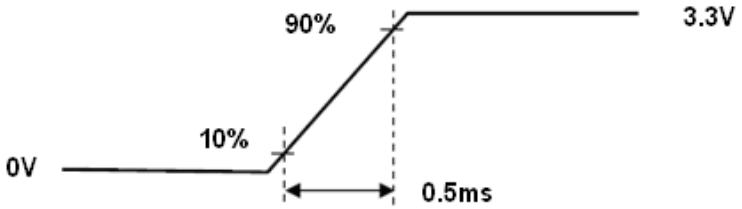
Note (3) The specified V_{DD} current and power consumption are measured under the V_{DD} = 3.3 V, F_V = 60 Hz condition and the most consumption pattern in Black/White/R/G/B/Mosaic.

Mosaic Pattern (8*6)



Note (4) The figures below is the measuring condition of V_{DD}. Rush current can be measured when T_{RUSH} is 0.5 ms.

Figure 11 V_{DD} Rising Time



Note (5) The power consumption of LED Driver are under the V_{LED} = 12.0V, Dimming of Max luminance.

Note (6) Although acceptable range as defined, the dimming ratio is not effective at all conditions. The PWM frequency should be fixed and stable for more consistent luminance control at any specific level desired.

Note (7) The operation of LED Driver below minimum dimming ratio may cause flickering or reliability issue.

Note (8) The life time is determined as the sum of the lighting time till the luminance of LCD at the typical LED current reducing to 50% of the minimum value under normal operating condition.

4.5 Power ON/OFF Sequence

Interface signals are also shown in the chart. Signals from any system shall be Hi- resistance state or low level when VDD voltage is off.

Figure 12 Power Sequence

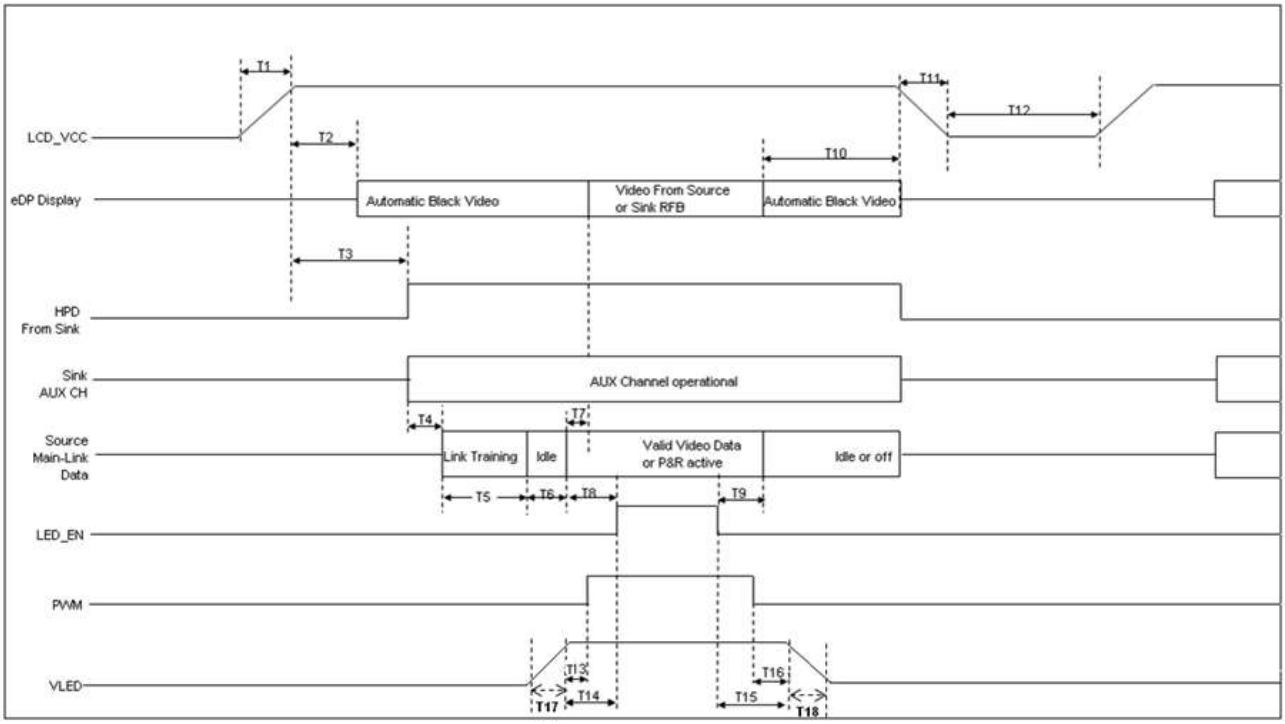


Table 10 Power Sequencing Requirements

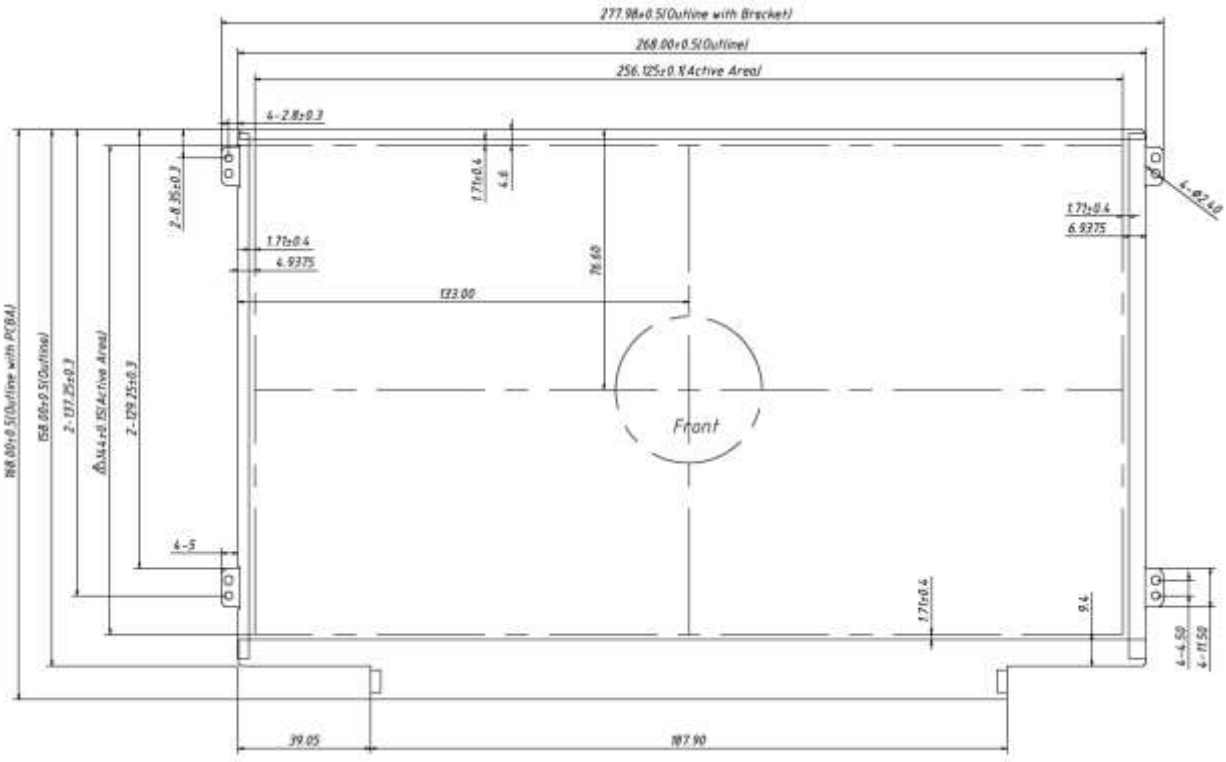
Parameter	Symbol	Unit	Min(ms)	Typ(ms)	Max(ms)
VCC Rise Time (10% to 90%)	T1	ms	0.5	--	10
Delay from VCC to automatic Black Video generation	T2	ms	0	--	200
Delay from VCC to HPD high	T3	ms	0	--	200
Delay from HPD high to link training initialization	T4	ms	--	--	--
Linking Training duration	T5	ms	--	--	--
Link idle	T6	ms	--	--	--
Delay from valid video data from Source to video on display	T7	ms	0	--	50
Delay from valid video data from Source to backlight enable	T8	ms	200	--	--
Delay from backlight disable to end of valid video data	T9	ms	--	--	--
Delay from end of valid video data from Source to VCC off	T10	ms	0	--	500
VCC fall time (90% to 10%)	T11	ms	0	--	10
VCC off time	T12	ms	500	--	--
Delay from VLED to PWM	T13	ms	0	--	--

Delay from VLED to backlight enable	T14	ms	0	--	--
Delay from backlight disable to VLED off	T15	ms	0	--	--
Delay from PWM off to VLED off	T16	ms	0	--	--
VLED Rise Time(10% to 90%)	T17	ms	0.5	-	10
VLED fall time (90% to 10%)	T18	ms	0.5	-	-

5.0 Mechanical Characteristics

5.1 Outline Drawing

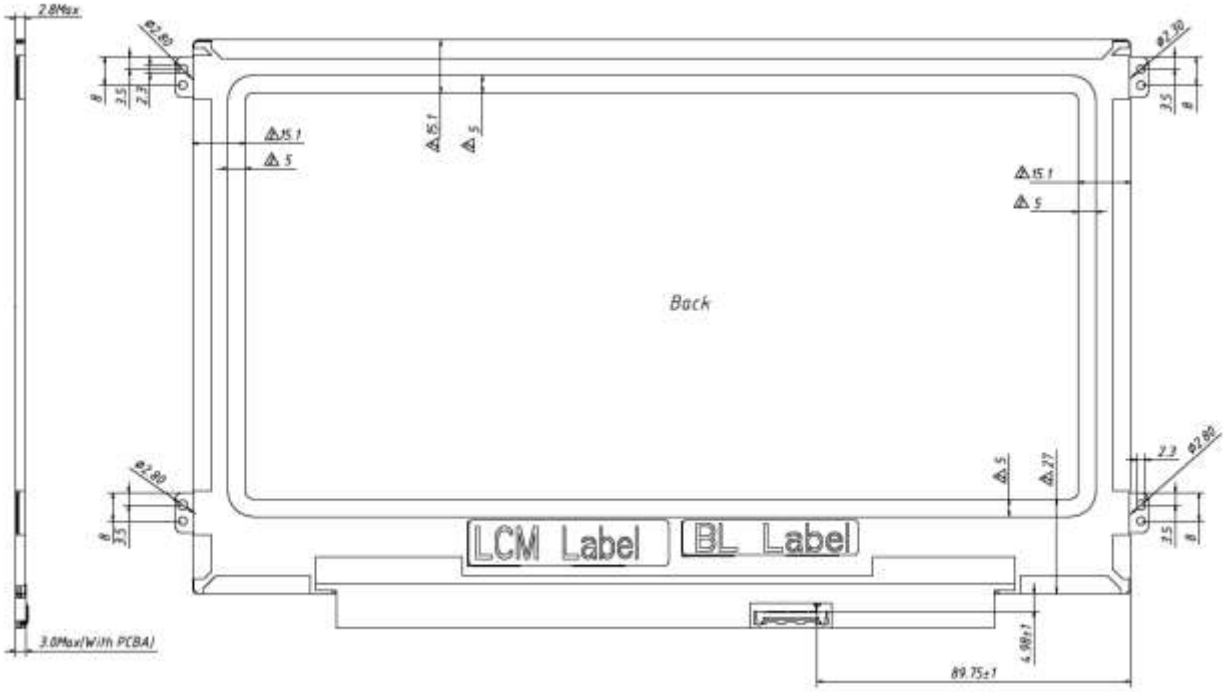
Figure 13 Reference Outline Drawing (Front Side)



Unit :mm

Note (1)Unnoted tolerance :±0.5mm.

Figure 14 Reference Outline Drawing (Back Side)



Unit :mm

5.2 Dimension Specifications

Table 11 Module Dimension Specifications

Item		Min.	Typ.	Max.	Unit
Width		277.5	278.0	278.5	mm
Height		167.5	168.0	168.5	mm
Thickness	Without PCBA	-	-	2.8	mm
	With PCBA	-	-	3.0	mm
Weight		-	-	200	g

Note: Outline dimension measure instrument : Vernier Caliper.

6.0 Reliability Conditions

Table 6 Reliability Condition

Item		Package	Test Conditions		Note
High Temperature/High Humidity Operating Test		Module	T_{gs}= 50°C,80%RH,300hrs		(1),(2),(3),(4)
High Temperature/High Humidity Storage Test		Module	T_a= 60°C,90%RH,300hrs		(1),(3),(4)
Low Temperature Operating Test		Module	T_a= 0°C,300hrs		(1),(2),(3),(4)
Low Temperature Storage Test		Module	T_a= -20°C,300hrs		(1), (3),(4)
Shock Non-operating Test		Module	210G 3ms half-sine ±x ±y ±z each aixs/1times 50G, 18msec Trapezoidal ±x ±y ±z each aixs/1times		(1),(3),(5)
Vibration Non-operating Test		Module	1.5G,10Hz~200Hz~10Hz, X Y Z each axis/0.5h		
ESD Test	Operating	Module	Contact	±8KV 150pF(330Ohm)	(1),(2),(6)
			Air	±15KV 150pF(330Ohm)	
Image Sticking	Normal temperature （25℃）	Module	Chessboard 7*5, 16hrs, change 50% Gray pattern, release 20min, ND10% invisible		(1),(2),(7)

Note (1) A sample can only have one test. Outward appearance, image quality and optical data can only be checked at normal conditions according to the IVO document before reliable test. Only check the function of the module after reliability test.

Note (2) The setting of electrical parameters should follow the typical value before reliability test.

Note (3) During the test, it is unaccepted to have condensate water remains. Besides, protect the module from static electricity.

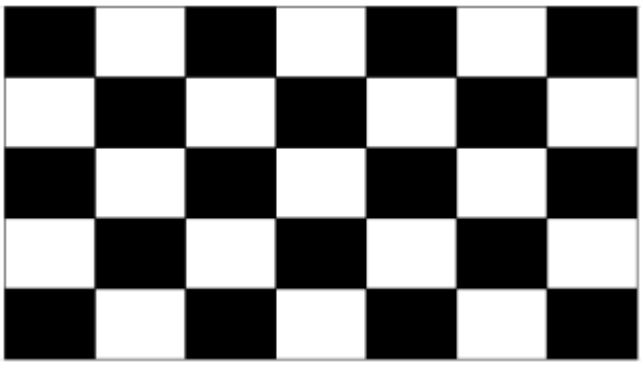
Note (4) The sample must be released for 24 hours under normal conditions before judging. Furthermore, all the judgment must be made under normal conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH. T_a= Ambient Temperature, T_{gs}= Glass Surface Temperature.

Note (5) The module should be fixed firmly in order to avoid twisting and bending.

Note (6) It could be regarded as pass, when the module recovers from function fault caused by ESD after resetting.

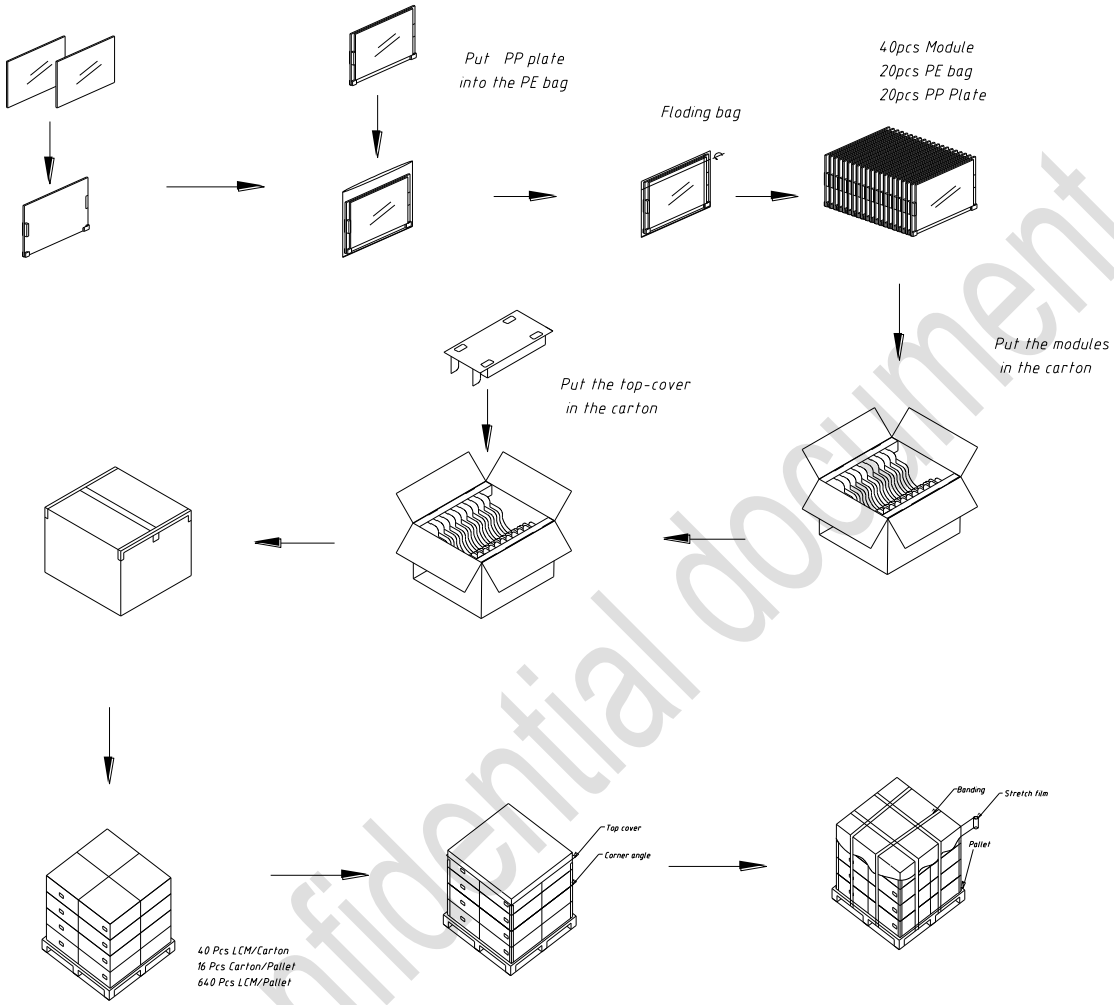
Note (7) It is recommended to follow the nominal parameter specified by IVO before the Image Sticking test. Besides, V_{com} must be adjusted to optimize display quality.

Figure 15 Image Sticking Pattern



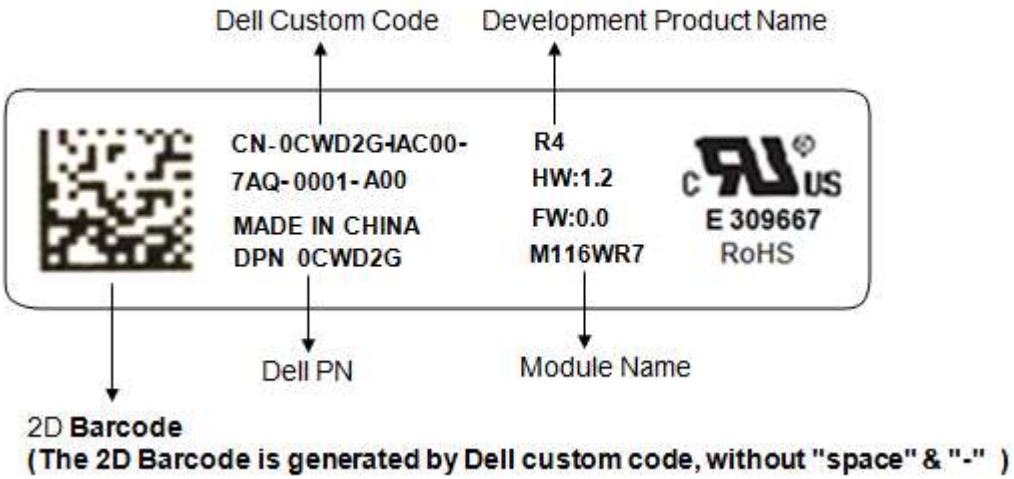
7.0 Package Specification

Figure 16 Packing Method



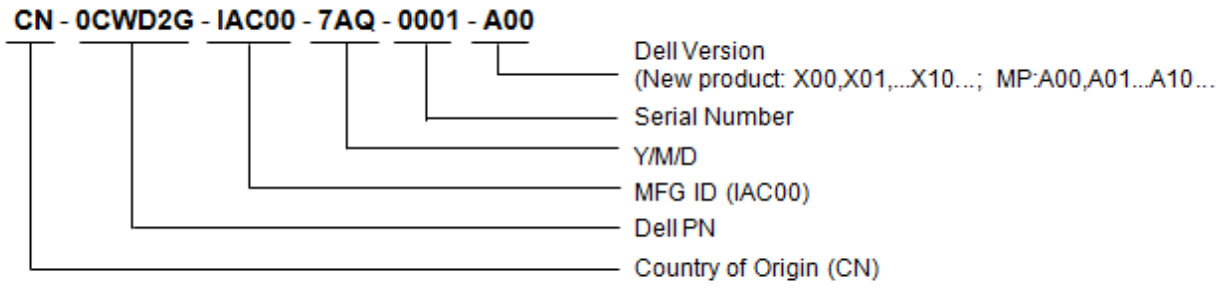
8.0 Lot Mark

8.1 For IVE (LCM#1): IAC00

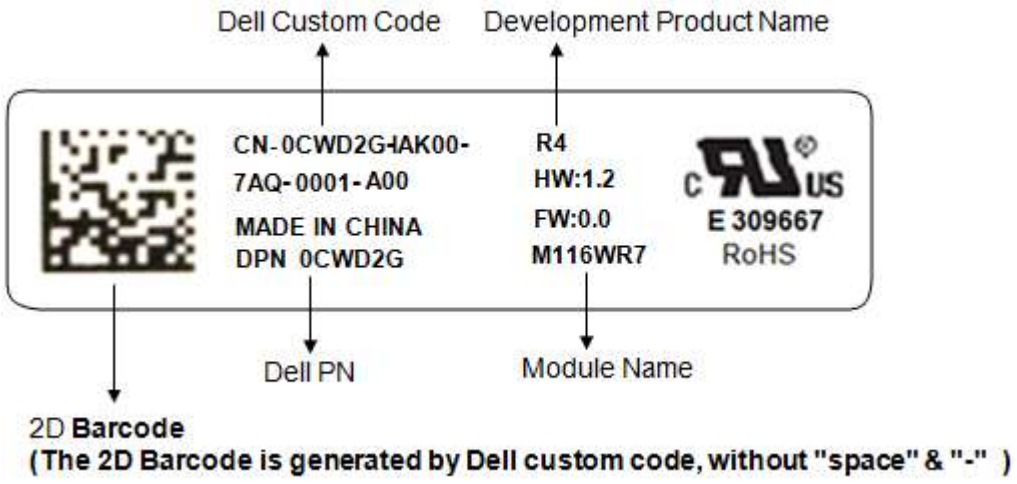


Note: This picture is only an example.

Dell Custom Code

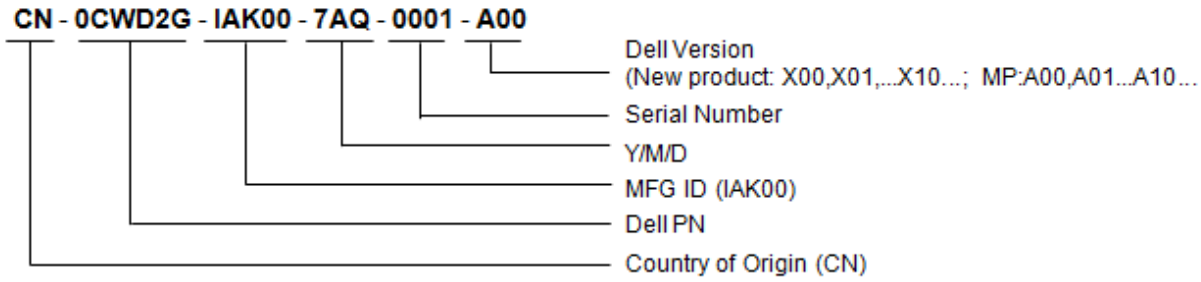


8.2 For IVO (LCM#2): IAK00

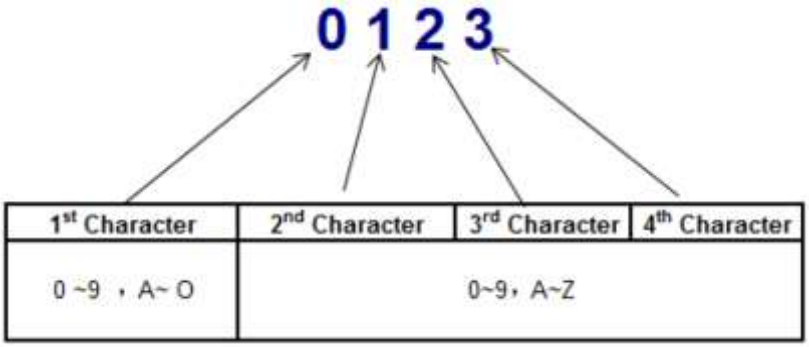


Note: This picture is only an example.

Dell Custom Code



Serial Number:



Y/M/D Number:

1st Character Year Codes

Year	2006	2007	2008	2009	2010	2011	2012	So on
Code	6	7	8	9	0	1	2	

2nd Character Month codes

Month	January	February	March	April	May	June	July	August
Code	1	2	3	4	5	6	7	8
Month	September	October	November	December				
Code	9	A	B	C				

3rd Character Day Codes

Day	1st	2nd	3rd	4th	5th	6th	7th	8th
Code	1	2	3	4	5	6	7	8
Day	9th	10th	11th	12th	13th	14th	15th	16th
Code	9	A	B	C	D	E	F	G
Day	17th	20th	21st	22nd	23rd	24th	25th	26th
Code	H	K	L	M	N	O	P	Q
Day	27th	28th	29th	30th	31st			
Code	R	S	T	U	V			

9.0 General Precaution

9.1 Using Restriction

This product is not authorized for using in life supporting systems, aircraft navigation control systems, military systems and any other appliance where performance failure could be life-threatening or lead to be catastrophic.

9.2 Operation Precaution

(1)The LCD product should be operated under normal conditions.
Normal conditions are defined as below:

Temperature: 25℃

Humidity: 55±10%

Display pattern: continually changing pattern (Not stationary)

(2) Brightness and response time depend on the temperature. (It needs more time to reach normal brightness in low temperature.)

(3) It is necessary for you to pay attention to condensation when the ambient temperature drops suddenly. Condensate water would damage the polarizer and electrical contacted parts of the module. Besides, smear or spot will remain after condensate water evaporating.

(4) If the absolute maximum rating value was exceeded, it may damage the module.

(5) Do not adjust the variable resistor located on the module.

(6) Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding may be important to minimize the interference.

(7) Image sticking may occur when the module displayed the same pattern for long time.

(8) Do not connect or disconnect the module in the “power on” condition. Power supply should always be turned on/off by the “power on/off sequence”

(9) Ultra-violet ray filter is necessary for outdoor operation.

9.3 Mounting Precaution

(1) All the operators should be electrically grounded and with Ion-blown equipment turning on when mounting or handling. Dressing finger-stalls out of the gloves is important for keeping the panel clean during the incoming inspection and the process of assembly.

(2) It is unacceptable that the material of cover case contains acetic or chloric. Besides, any other material that could generate corrosive gas or cause circuit break by electro-chemical reaction is not desirable.

(3) The case on which a module is mounted should have sufficient strength so that external force is not transmitted to the module directly.

(4) It is obvious that you should adopt radiation structure to satisfy the temperature specification.

(5) It should be attached to the system tightly by using all holes for mounting, when the module is assembled. Be careful not to apply uneven force to the module， especially to the PCB on the back.

(6) A transparent protective film needs to be attached to the surface of the module.

(7) Do not press or scratch the polarizer exposed with anything harder than HB pencil lead. In addition, don't touch the pin exposed with bare hands directly.
(8) Clean the polarizer gently with absorbent cotton or soft cloth when it is dirty.
(9) Wipe off saliva or water droplet as soon as possible. Otherwise, it may cause deformation and fading of color.
(10) Desirable cleaners are IPA (Isopropyl Alcohol) or hexane. Do not use Ketone type materials (ex. Acetone), Ethyl alcohol, Toluene, Ethyl acid or Methyl chloride. It might permanent damage to the polarizer due to chemical reaction.
(11) Do not disassemble or modify the module. It may damage sensitive parts in the LCD module, and cause scratches or dust remains. IVO does not warrant the module, if you disassemble or modify the module.

9.4 Handling Precaution

(1) Static electricity will generate between the film and polarizer, when the protection film is peeled off. It should be peeled off slowly and carefully by operators who are electrically grounded and with Ion-blown equipment turning on. Besides, it is recommended to peel off the film from the bonding area.
(2) The protection film is attached to the polarizer with a small amount of glue. When the module with protection film attached is stored for a long time, a little glue may remain after peeling.
(3) If the liquid crystal material leaks from the panel, keep it away from the eyes and mouth. In case of contact with hands, legs or clothes, it must be clean with soap thoroughly.

9.5 Storage Precaution

When storing modules as spares for long time, the following precautions must be executed.
(1) Store them in a dark place. Do not expose to sunlight or fluorescent light. Keep the temperature between 5℃ and 35℃ at normal humidity.
(2) The polarizer surface should not come in contact with any other object. It is recommended that they be stored in the container in which they were shipped.
(3) It is recommended to use it in a short-time period, after it's unpacked. Otherwise, we would not guarantee the quality.

9.6 Others

When disposing LCD module, obey the local environmental regulations.

10.0 EDID Table Format

	Byte (hex)	Field Name and Comments	Value (hex)	Value (binary)
Header	0	Header	00	00000000
	1	Header	FF	11111111
	2	Header	FF	11111111
	3	Header	FF	11111111
	4	Header	FF	11111111
	5	Header	FF	11111111
	6	Header	FF	11111111
	7	Header	00	00000000
Vendor / Product EDID Version	8	EISA manufacture code = 3 Character ID	26	00100110
	9	EISA manufacture code (Compressed ASCII)	CF	11001111
	0A	Panel Supplier Reserved – Product Code	8F	10001111
	0B	Panel Supplier Reserved – Product Code	04	00000100
	0C	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0D	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0E	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	0F	LCD module Serial No - Preferred but Optional (“0” if not used)	00	00000000
	10	Week of manufacture	00	00000000
	11	Year of manufacture	1B	00011011
	12	EDID structure version # = 1	01	00000001
	13	EDID revision # = 4	04	00000100
Display Parameters	14	Video I/P definition = Digital I/P (80h)	95	10010101
	15	Max H image size = (Rounded to cm)	1A	00011010
	16	Max V image size = (Rounded to cm)	0E	00001110
	17	Display gamma = (gamma ×100)-100 = Example: (2.2×100) – 100 = 120	78	01111000
	18	Feature support (no DPMS, Active off, RGB, timing BLK 1)	0A	00001010

Panel Color Coordinates	19	Red/Green Low bit (RxRy/GxGy)	87	10000111
	1A	Blue/White Low bit (BxBy/WxWy)	C0	11000000
	1B	Red X Rx = 0.xxx	94	10010100
	1C	Red Y Ry = 0.xxx	58	01011000
	1D	Green X Gx = 0.xxx	53	01010011
	1E	Green Y Gy = 0.xxx	92	10010010
	1F	Blue X Bx = 0.xxx	27	00100111
	20	Blue Y By = 0.xxx	24	00100100
	21	White X Wx = 0.xxx	50	01010000
	22	White Y Wy = 0.xxx	54	01010100
Established Timings	23	Established timings 1 (00h if not used)	00	00000000
	24	Established timings 2 (00h if not used)	00	00000000
	25	Manufacturer's timings (00h if not used)	00	00000000
Standard Timing ID	26	Standard timing ID1 (01h if not used)	01	00000001
	27	Standard timing ID1 (01h if not used)	01	00000001
	28	Standard timing ID2 (01h if not used)	01	00000001
	29	Standard timing ID2 (01h if not used)	01	00000001
	2A	Standard timing ID3 (01h if not used)	01	00000001
	2B	Standard timing ID3 (01h if not used)	01	00000001
	2C	Standard timing ID4 (01h if not used)	01	00000001
	2D	Standard timing ID4 (01h if not used)	01	00000001
	2E	Standard timing ID5 (01h if not used)	01	00000001
	2F	Standard timing ID5 (01h if not used)	01	00000001
	30	Standard timing ID6 (01h if not used)	01	00000001
	31	Standard timing ID6 (01h if not used)	01	00000001
	32	Standard timing ID7 (01h if not used)	01	00000001
	33	Standard timing ID7 (01h if not used)	01	00000001
	34	Standard timing ID8 (01h if not used)	01	00000001
	35	Standard timing ID8 (01h if not used)	01	00000001
Timing Descripter #1	36	Pixel Clock/10,000 (LSB)	D5	11010101
	37	Pixel Clock/10,000 (MSB)	1C	00011100
	38	Horizontal Active = xxxx pixels	56	01010110

		(lower 8 bits)		
	39	Horizontal Blanking (Thbp) = xxxx pixels (lower 8 bits)	A6	10100110
	3A	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000
	3B	Vertical Active = xxxx lines	00	00000000
	3C	Vertical Blanking (Tvbp) = xxxx lines (DE Blanking typ. for DE only panels)	23	00100011
	3D	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	30	00110000
	3E	Horizontal Sync, Offset (Thfp) = xxxx pixels	28	00101000
	3F	Horizontal Sync, Pulse Width = xxxx pixels	20	00100000
	40	Vertical Sync, Offset (Tvfp) = xx lines Sync Width = xx lines	3C	00111100
	41	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000
	42	Horizontal Image Size =xxx mm	00	00000000
	43	Vertical image Size = xxx mm	90	10010000
	44	Horizontal Image Size / Vertical image size	10	00010000
	45	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000
	46	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000
	47	Non-interlaced, Normal, no stereo, Separate sync, H/V pol Negatives, **DE only note: LSB is set to "1" if panel is DE-timing only. H/V can be ignored.**	18	00011000
Timing Descripter #2	48	Pixel Clock/10,000 (LSB)	11	00010001
	49	Pixel Clock/10,000 (MSB)	17	00010111
	4A	Horizontal Active = xxxx pixels (lower 8 bits)	56	01010110
	4B	Horizontal Blanking (Thbp) = xxxx pixels (lower 8 bits)	A6	10100110
	4C	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000
	4D	Vertical Active = xxxx lines	00	00000000
	4E	Vertical Blanking (Tvbp) = xxxx lines (DE Blanking typ.	23	00100011

		for DE only panels)		
	4F	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	30	00110000
	50	Horizontal Sync, Offset (Thfp) = xxxx pixels	28	00101000
	51	Horizontal Sync, Pulse Width = xxxx pixels	20	00100000
	52	Vertical Sync, Offset (Tvfp) = xx lines Sync Width = xx lines	3C	00111100
	53	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000
	54	Horizontal Image Size =xxx mm	00	00000000
	55	Vertical image Size = xxx mm	90	10010000
	56	Horizontal Image Size / Vertical image size	10	00010000
	57	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000
	58	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000
	59	Non-interlaced, Normal, no stereo, Separate sync, H/V pol Negatives, **DE only note: LSB is set to "1" if panel is DE-timing only. H/V can be ignored.**	19	00011001
Timing Descripter #3 Dell specific information	5A	Flag	00	00000000
	5B	Flag	00	00000000
	5C	Flag	00	00000000
	5D	Dummy Descriptor	FE	11111110
	5E	Flag	00	00000000
	5F	Dell P/N 1st Character	43	01000011
	60	Dell P/N 2nd Character	57	01010111
	61	Dell P/N 3rd Character	44	01000100
	62	Dell P/N 4th Character	32	00110010
	63	Dell P/N 5th Character	47	01000111
	64	LCD Supplier EEDID Revision #	80	10000000
	65	Manufacturer P/N	31	00110001
	66	Manufacturer P/N	31	00110001
	67	Manufacturer P/N	36	00110110
	68	Manufacturer P/N	4E	01001110
	69	Manufacturer P/N	57	01010111
	6A	Manufacturer P/N	52	01010010
	6B	Manufacturer P/N (If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	37	00110111

Timing Descripter #4	6C	Flag	00	00000000
	6D	Flag	00	00000000
	6E	Flag	00	00000000
	6F	Data Type Tag:	00	00000000
	70	Flag	00	00000000
	71	SMBUS Value = XX nits	00	00000000
	72	SMBUS Value = XX nits	41	01000001
	73	SMBUS Value = XX nits	21	00100001
	74	SMBUS Value = XX nits	16	00010110
	75	SMBUS Value = XX nits	00	00000000
	76	SMBUS Value = XXX nits	10	00010000
	77	SMBUS Value = XXX nits	00	00000000
	78	SMBUS Value = max nits (Typically = 00h, XXX nits)	00	00000000
	79	Number of LVDS receiver chips = ‘01’ or ‘02’	09	00001001
	7A	BIST Enable: Yes = ‘01’ No = ‘00’	01	00000001
	7B	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	0A	00001010
	7C	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000
	7D	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000
Checksum	7E	Extension flag (# of optional 128 EDID extension blocks to follow, Typ = 0)	00	00000000
	7F	Checksum (The 1-byte sum of all 128 bytes in this EDID block shall = 0)	C1	11000001