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SPEC. NUMBER	PRODUCT GROUP	Rev.	ISSUE DATE	PAGE
	LCM	P1	2017.10.27	1 OF 38

NV116WHM-N43

Product Specification

Rev. P1

HEFEI XINSHENG OPTOELECTRONICS TECHNOLOGY CO.,LTD

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 2 OF 38
REVISION HISTORY				
REV.	ECN No.	DESCRIPTION OF CHANGES	DATE	PREPARED
P0	-	Initial Release	2016.5.11	Zhu xiaofei
P1	-	Update EDID & label	2017.10.27	He Shuai

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 3 OF 38

Contents

No.	Items	Page
	REVISION HISTORY	2
	CONTENTS	3
1.0	General Description	4
2.0	Absolute Maximum ratings	6
3.0	Electrical specifications.	7
4.0	Optical specifications.	10
5.0	Interface Connection	15
6.0	Signal Timing Specification	18
7.0	Horizontal Timing Waveforms	20
8.0	Input Signals, Basic Display Colors & Gray Scale Of Colors	21
9.0	Power Sequence	22
10.0	Reliability Test	24
11.0	Handling & Cautions.	24
12.0	Label	25
13.0	Packing information	27
14.0	Mechanical Outline Dimension	28
15.0	EDID Table	30

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 4 OF 38

1.0 General Description

1.1 Application

- Notebook PC

1.2 General Specification

1.2.1. The followings are general specifications at the model **NV116WHM-N43**(Table 1.)

<Table 1. General Specifications>

Parameter	Specification	Unit	Remarks
Active area	256.13(H) × 144 (V)	mm	
Number of pixels	1366 (H) × 768 (V)	pixels	
Pixel pitch	0.1875(H) ×0.1875 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	262K	colors	
Display mode	Normally black		
Dimensional outline	278(H)*168(V)*3.0(Max)	mm	
Weight	195(max)	g	
Back-light	Lower edge side, 1-LED Lighting Bar type		Note 1
Power consumption	P _D :0.964 (max)	W	@mosaic pattern
	P _{BL} :1.68 (max)	W	
	P _{total} :2.644 (max)	W	

Notes : 1. LED Lighting Bar (36*LED Array)

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 5 OF 38

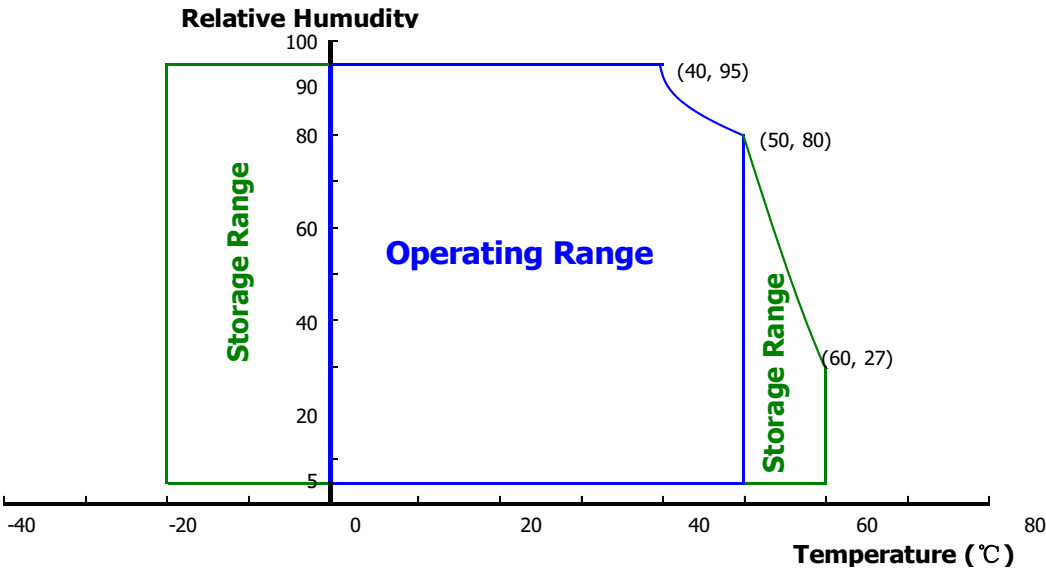
2.0 ABSOLUTE MAXIMUM RATINGS

The followings 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 2.

< Table 2. Absolute Maximum Ratings> Ta=25+/-2°C

Parameter	Symbol	Min.	Max.	Unit	Remarks
Power Supply Voltage	V _{DD}	-0.3	4.0	V	Note 1
Logic Supply Voltage	V _{IN}	V _{SS} -0.3	V _{DD} +0.3	V	
Operating Temperature	T _{OP}	0	+50	°C	Note 2
Storage Temperature	T _{ST}	-20	+60	°C	

- Notes : 1. Permanent damage to the device may occur if maximum values are exceeded functional operation should be restricted to the condition described under normal operating conditions.
2. Temperature and relative humidity range are shown in the figure below.
 95 % RH Max. (40 °C ≥ Ta)
 Maximum wet - bulb temperature at 39 °C or less. (Ta > 40 °C) No condensation.



PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 6 OF 38

3.0 ELECTRICAL SPECIFICATIONS

3.1 Electrical Specifications

< Table 3. Electrical specifications >

Ta=25+/-2°C

Parameter		Min.	Typ.	Max.	Unit	Remarks
Power Supply Voltage	V _{DD}	3.0	3.3	3.6	V	Note 1
Permissible Input Ripple Voltage	V _{RF}	-	-	300	mV	At V _{DD} = 3.3V
Power Supply Current	I _{DD}	-	197	-	mA	Note 1
Differential Input Voltage	V _{ID}	100	-	600	mV	
LCM Power Consumption	P _D	-	0.8	0.964	W	@mosaic pattern
	P _{BL}	-	-	1.68	W	Note 2
	P _{total}	-	-	2.644	W	

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.
The current draw and power consumption specified is for 3.3V at 25°C.
Typ : Mosaic Pattern

2. Calculated value for reference (V_{LED} × I_{LED})

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 7 OF 38

3.2 Backlight Unit

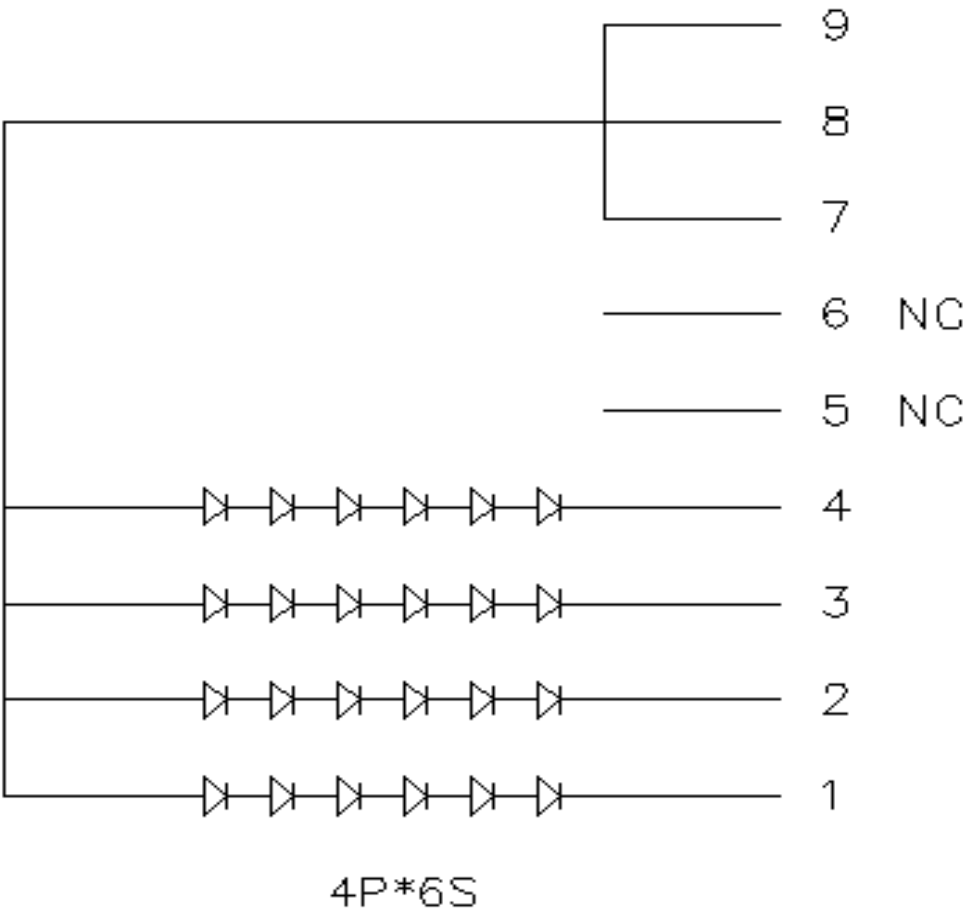
< Table 4. LED Driving guideline specifications > Ta=25+/-2°C

Parameter		Min.	Typ.	Max.	Unit	Remarks	
LED Forward Voltage		V _F	-	-	2.92	V	-
LED Forward Current		I _F	-	21	-	mA	-
LED Power Consumption		P _{LED}		-	1.68	W	Note 1
LED Life-Time		N/A	15,000	-	-	Hour	-
Power supply voltage for LED Driver		V _{LED}	5	12	21	V	
EN Control Level	Backlight on		2.0		5.0	V	
	Backlight off		0		1.0	V	
PWM Control Level	PWM High Level		2.0		5.0	V	
	PWM Low Level		0		0.1	V	
PWM Control Frequency		F _{PWM}	200	-	10,000	Hz	
Duty Ratio		-	1	-	100	%	Note3

Notes : 1Power supply voltage12V for LED Driver, Driver efficiency 88%,
 Calculator Value for reference $I_F \times V_F \times 36 / 0.88 = P_{LED}$
 2. The LED Life-time define as the estimated time to 50% degradation of initial luminous.
 3. 1% duty cycle is achievable with a dimming frequency less than 1KHz.

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			8 OF 38

3.3 LED structure



PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			9 OF 38

4.0 OPTICAL SPECIFICATION

4.1 Overview

The test of Optical specifications shall be measured in a dark room (ambient luminance ≤ 1 lux and temperature = 25±2℃) with the equipment of Luminance meter system (Goniometer system and TOPCON BM-5) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of θ and Φ equal to 0°. We refer to θ0=0 (=θ3) as the 3 o'clock direction (the “right”), θ0=90 (= θ12) as the 12 o'clock direction (“upward”), θ0=180 (= θ9) as the 9 o'clock direction (“left”) and θ0=270(= θ6) as the 6 o'clock direction (“bottom”). While scanning θand/or Φ, the center of the measuring spot on the Display surface shall stay fixed. The backlight should be operating for 30 minutes prior to measurement. VDD shall be 3.3+/- 0.3V at 25℃. Optimum viewing angle direction is 6 ’clock.

4.2 Optical Specifications <Table 5. Optical Specifications>

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	80	-	-	Deg.	Note 1
		Θ_9		80	-	-	Deg.	
	Vertical	Θ_{12}		80	-	-	Deg.	
		Θ_6		80	-	-	Deg.	
Luminance Contrast ratio		CR	$\Theta = 0^\circ$	600	800	-	-	Note 2
LCM Luminance of White	5 Points	Y_w	$\Theta = 0^\circ$ ILED = 21mA	190	220	-	cd/m ²	Note 3
LCM White Luminance uniformity	5 Points	$\Delta Y5$		80%	-	-	-	Note 4
	13 Points	$\Delta Y13$	65%	-	-	-		
White Chromaticity		x_w	$\Theta = 0^\circ$	0.283	0.313	0.329	-	Note 5
		y_w		0.299	0.329	0.359	-	
Reproduction of color	Red	x_R	$\Theta = 0^\circ$	-0.03	0.572	+0.03	-	
		y_R			0.360		-	
	Green	x_G			0.360		-	
		y_G			0.592		-	
	Blue	x_B			0.154		-	
		y_B			0.124		-	
Gamut		-	-	42	45	-	%	
Response Time (Rising + Falling)		T _{RT}	Ta= 25° C $\Theta = 0^\circ$	-	30	35	ms	Note 6
Cross Talk		CT	$\Theta = 0^\circ$	-	-	-	-	Note 7

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 10 OF 38

Notes :

1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface (see FIGURE 1).

2. Contrast measurements shall be made at viewing angle of $\Theta = 0$ and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state .
(see FIGURE 1) Luminance Contrast Ratio (CR) is defined mathematically.

CR =

Luminance when displaying a white raster

Luminance when displaying a black raster

3. Center Luminance of white is defined as luminance values of 5 point average across the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 2 for a total of the measurements per display.

4. The White luminance uniformity on LCD surface is then expressed as : ΔY =Minimum Luminance of 5(or 13) points / Maximum Luminance of 5(or 13) points.
(see FIGURE 2 and FIGURE 3).

5. The color chromaticity coordinates specified in Table 5 shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.

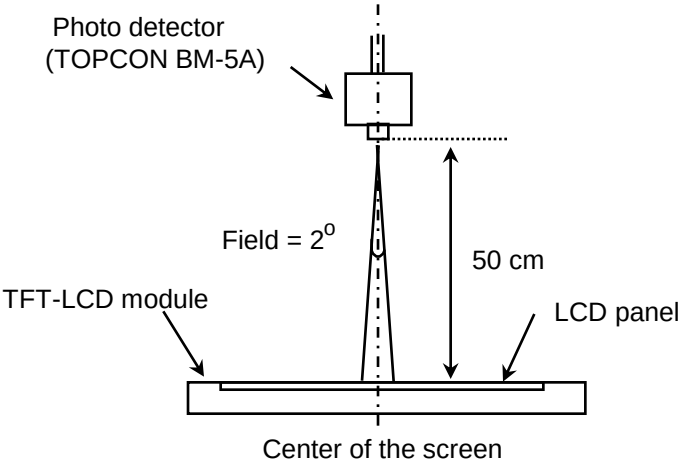
6. The electro-optical response time measurements shall be made as FIGURE 4 by switching the “data” input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is Tr, and 90% to 10% is Td.

7. Cross-Talk of one area of the LCD surface by another shall be measured by comparing the luminance (YA) of a 25mm diameter area, with all display pixels set to a gray level, to the luminance (YB) of that same area when any adjacent area is driven dark.
(See FIGURE 5).

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			11 OF 38

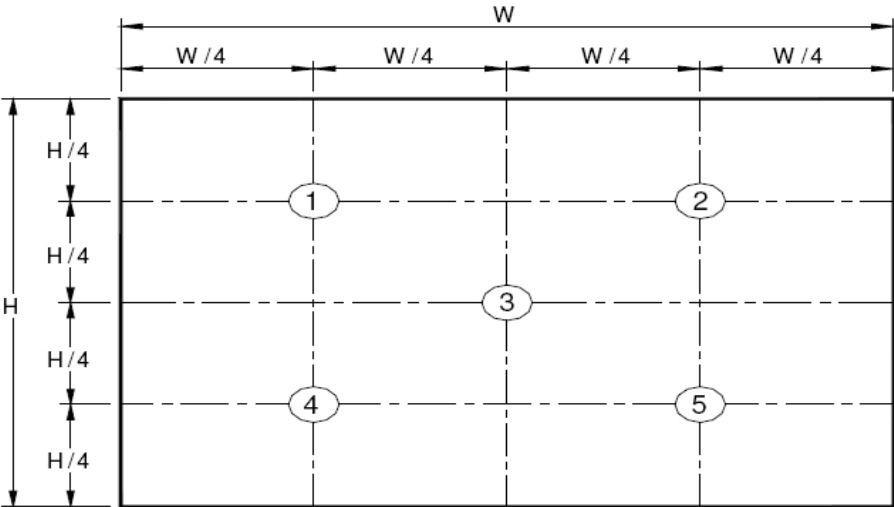
4.3 Optical measurements

Figure 1. Measurement Set Up



Optical characteristics measurement setup

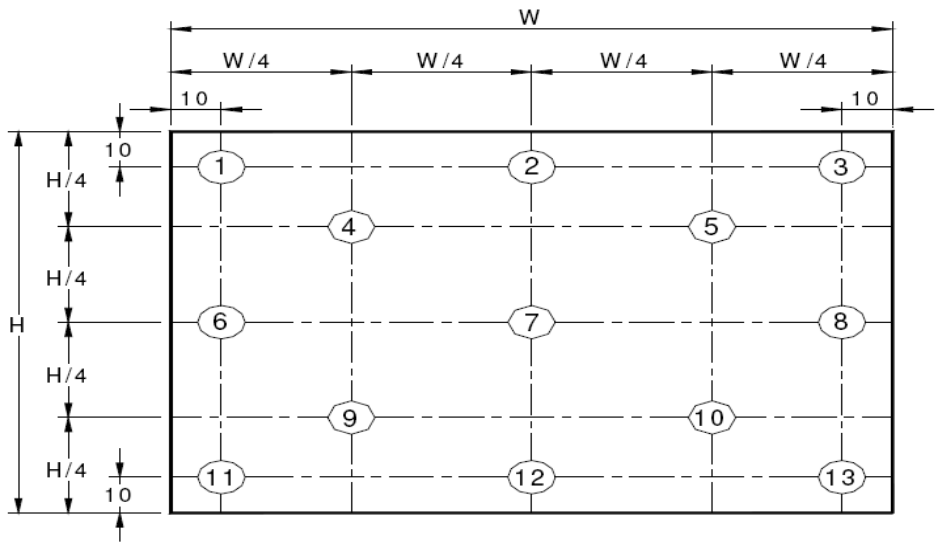
Figure 2. White Luminance and Uniformity Measurement Locations (5 points)



Center Luminance of white is defined as luminance values of center 5 points across the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 2 for a total of the measurements per display.

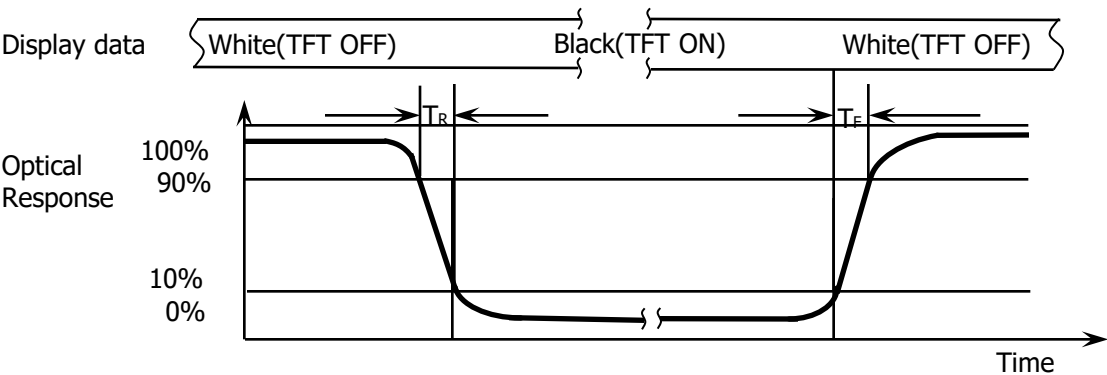
PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			12 OF 38

Figure 3. Uniformity Measurement Locations (13 points)



The White luminance uniformity on LCD surface is then expressed as : $\Delta Y5$ = Minimum Luminance of five points / Maximum Luminance of five points (see FIGURE 2) , $\Delta Y13$ = Minimum Luminance of 13 points /Maximum Luminance of 13 points (see FIGURE 3).

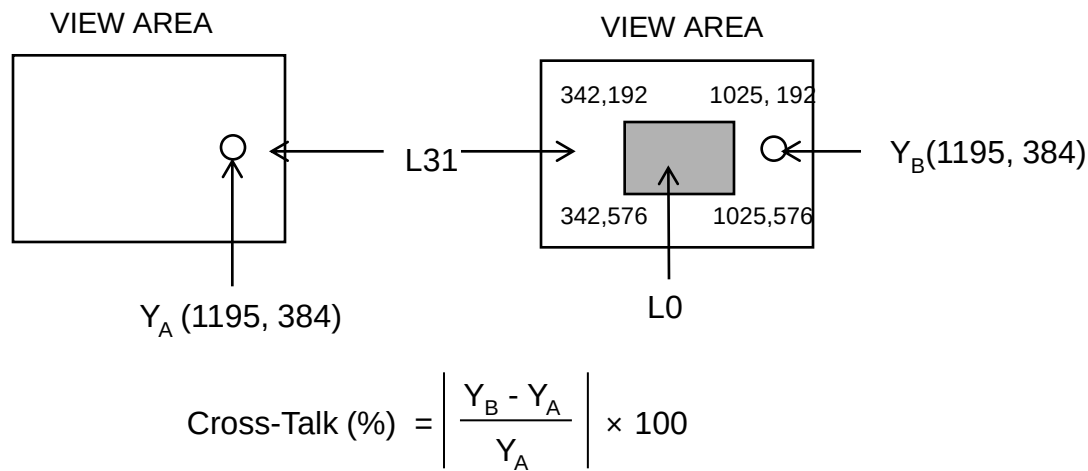
Figure 4. Response Time Testing



The electro-optical response time measurements shall be made as shown in FIGURE 4 by switching the “data” input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is Td and 90% to 10% is Tr.

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			13 OF 38

Figure 5. Cross Modulation Test Description



Where:

Y_A = Initial luminance of measured area (cd/m²)

Y_B = Subsequent luminance of measured area (cd/m²)

The location measured will be exactly the same in both patterns

Cross-Talk of one area of the LCD surface by another shall be measured by comparing the luminance (Y_A) of a 25mm diameter area, with all display pixels set to a gray level, to the luminance (Y_B) of that same area when any adjacent area is driven dark (Refer to FIGURE 5).

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 14 OF 38

5.0 INTERFACE CONNECTION.

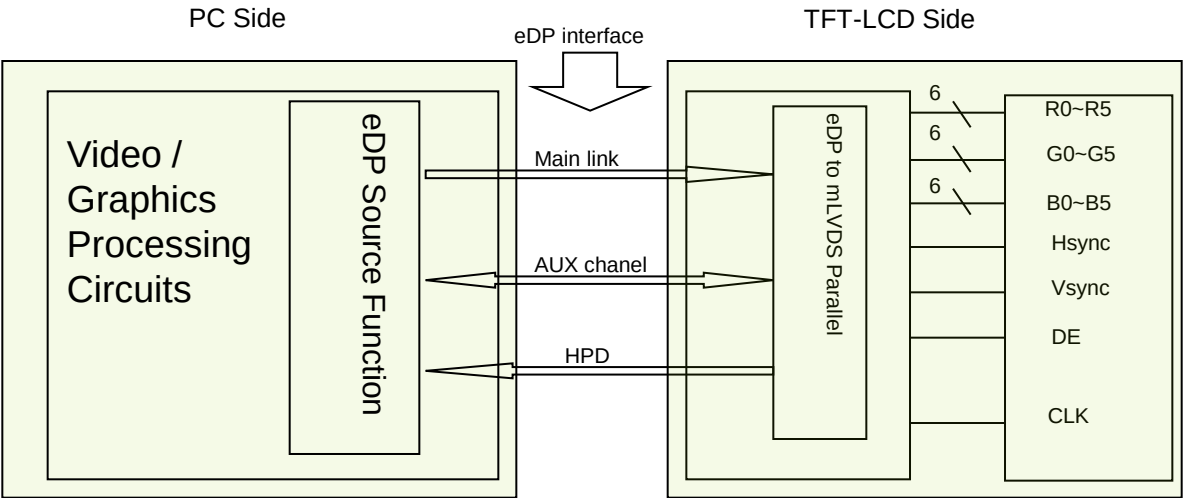
5.1 Electrical Interface Connection

The electronics interface connector is STM MSAK24025P40 or Compatible.
The connector interface pin assignments are listed in Table 6.

<Table 6. Pin Assignments for the Interface Connector>

Terminal	Symbol	Functions
Pin No.	Symbol	Description
1	CABC_ENIN	CABC input
2	H_GND	High Speed Ground
3	Lane1_N	Complement Signal Link Lane 1
4	Lane1_P	True Signal Link Lane 1
5	H_GND	High Speed Ground
6	Lane0_N	Complement Signal Link Lane 0
7	Lane0_P	True Signal Link Lane 0
8	H_GND	High Speed Ground
9	AUX_CH_P	True Signal Auxiliary Ch.
10	AUX_CH_N	Complement Signal Auxiliary Ch.
11	H_GND	High Speed Ground
12	LCD_VCC	LCD logic power (3.3V)
13	LCD_VCC	LCD logic power (3.3V)
14	BIST	enable
15	LCD_GND	LCD Ground
16	LCD_GND	LCD Ground
17	HPD	HPD signal pin
18	BL_GND	Backlight ground
19	BL_GND	Backlight ground
20	BL_GND	Backlight ground
21	BL_GND	Backlight ground
22	BL_ENABLE	3.3VDC from system
23	PWM_DIM	System PWM signal input
24	Hsync	Hsync
25	NC	No Connection
26	BL_PWR	Backlight 5~12VDC
27	BL_PWR	Backlight 5~12VDC
28	BL_PWR	Backlight 5~12VDC
29	BL_PWR	Backlight 5~12VDC
30	NC	No Connection

5-2. eDP Interface



Note. Transmitter : HX8876-F04 or equivalent.
 Transmitter is not contained in Module.

5.3.eDP Input signal

Lane 0	
R0-5:0	G0-5:4
G0-3:0	B0-5:2
B0-1:0	R1-5:0
G1-5:0	B1-5:4
B1-3:0	R2-5:2
R2-1:0	G2-5:0
B2-5:0	R3-5:4
R3-3:0	G3-5:2
G3-1:0	B3-5:0

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 16 OF 38

5.4 Back-light & LCM Interface Connection

<Table 7. Pin Assignments for the BLU & LCM Connector>

Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	Vout	LED anode connection	6	LED4	LED cathode connection
2	Vout	LED anode connection	7	LED4	LED cathode connection
3	Vout	LED anode connection	8	LED4	LED cathode connection
4	NC	No Connection	9	LED4	LED cathode connection
5	NC	No Connection			

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 17 OF 38

6.0 SIGNAL TIMING SPECIFICATION

6.1 The NV116WHM-N43 is operated by the DE only.

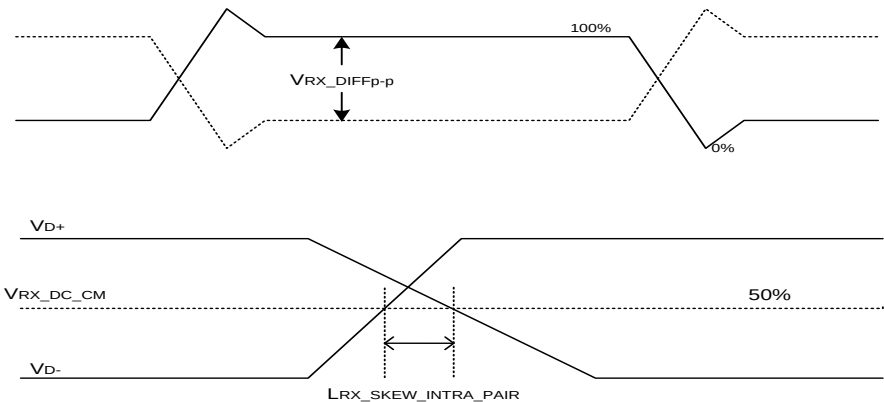
Item		Symbols	Min	Typ	Max	Unit
Clock	Frequency	1/Tc	67.5	72.3	76.3	MHz
Frame Period		Tv	778	790	802	lines
			-	60	-	Hz
			-	16.67	-	ms
Vertical Display Period		Tvd	768	768	768	lines
One line Scanning Period		Th	1446	1526	1586	clocks
Horizontal Display Period		Thd	1366	1366	1366	clocks

6.2 eDP Rx Interface Timing Parameter

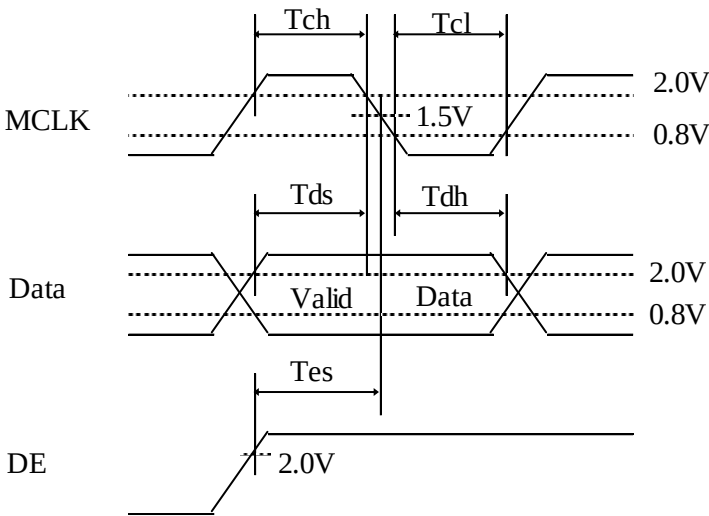
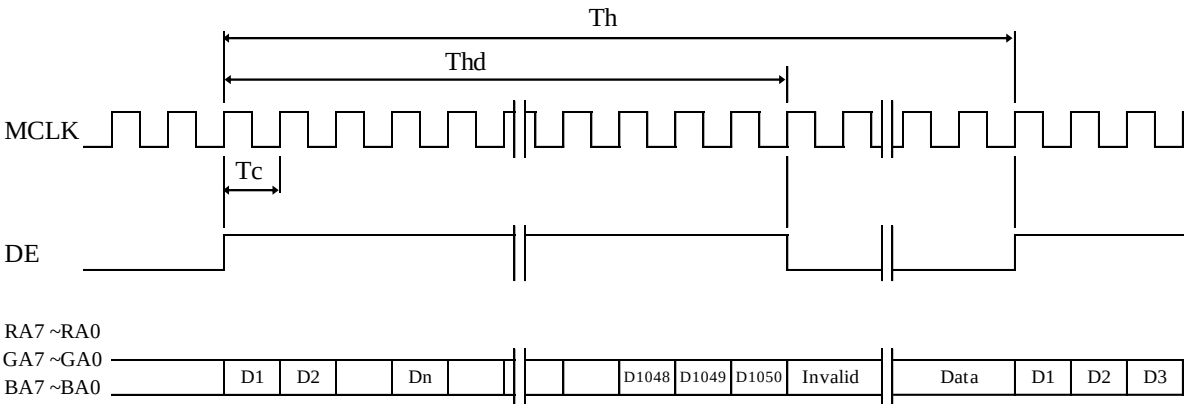
The specification of the eDP Rx interface timing parameter is shown in Table 9.

<Table 9. eDP Rx Interface Timing Specification>

Item	Symbol	Min	Typ	Max	Unit	Remark
Spread spectrum clock	SSC		0.5		%	
Differential peak-to-peak input voltage at package pins	VRX-DIFFp-p	100	0	1320	mV	
Rx input DC common mode voltage	VRX_DC_CM	-	GND	-	V	
Differential termination resistance	RRX-DIFF	80	-	100	Ω	
Single-ended termination resistance	RRX-SE	40	-	60	Ω	
Rx short circuit current limit	IRX_SHORT	-	-	20	mA	
Intra-pair skew at Rx package pins (HBR) RX intra-pair skew tolerance at HBR	LRX_SKEW_INTRA_PAIR	-	-	150	ps	



7.0 Horizontal Timing Waveforms



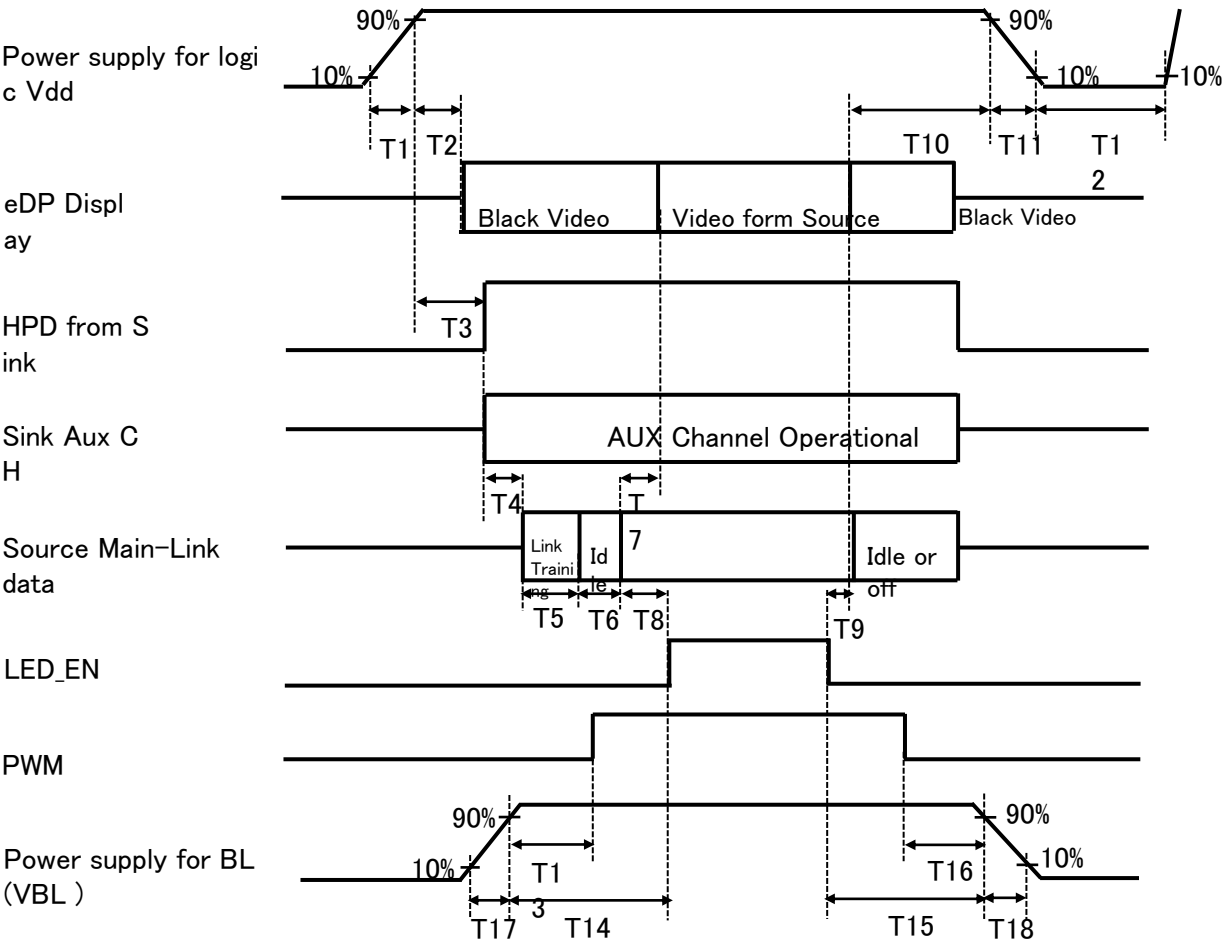
8.0 INPUT SIGNALS, BASIC DISPLAY COLORS & GRAY SCALE OF COLORS

Color & Gray Scale		RED DATA								GREEN DATA								BLUE DATA							
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Colors	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Cyan	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Magenta	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gray Scale of RED	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Darker	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	↑								↑								↑							
	▽	↓								↓								↓							
	Brighter	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	▽	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale of GREEN	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Darker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	△	↑								↑								↑							
	▽	↓								↓								↓							
	Brighter	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	▽	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Gray Scale of BLUE	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Darker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	△	↑								↑								↑							
	▽	↓								↓								↓							
	Brighter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
	▽	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Gray Scale of WHITE	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	△	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Darker	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
	△	↑								↑								↑							
	▽	↓								↓								↓							
	Brighter	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1
	▽	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			21 OF 38

9.0 POWER SEQUENCE

To prevent a latch-up or DC operation of the LCD module, the power on/off sequence shall be as shown in below



- 0.5ms ≤ T1 ≤ 10 ms
 - 0ms ≤ T2 ≤ 200 ms
 - 0ms ≤ T3 ≤ 200 ms
 - 0ms ≤ T13
 - 0ms ≤ T14
 - 0ms ≤ T17
- 0ms ≤ T7 ≤ 50ms
 - 0ms ≤ T10 ≤ 500 ms
 - 0 ms ≤ T11 ≤ 10 ms
 - 150ms ≤ T12
 - 0ms ≤ T15
 - 0ms ≤ T16
 - 0ms ≤ T18

Notes:

- When the power supply VDD is 0V, keep the level of input signals on the low or keep high impedance.
- Do not keep the interface signal high impedance when power is on. Back Light must be turn on after power for logic and interface signal are valid.

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification			PAGE 22 OF 38

10.0 RELIABILITY TEST

The Reliability test items and its conditions are shown in below.

<Table 10. Reliability test>

No	Test Items	Conditions
1	High temperature storage test	Ta = 60 °C , 240 hrs
2	Low temperature storage test	Ta = -20 °C , 240 hrs
3	High temperature & high humidity operation test	Ta = 40 °C , 90%RH, 240 hrs
4	High temperature operation test	Ta = 50 °C , 240 hrs
5	Low temperature operation test	Ta = 0 °C , 240 hrs
6	Thermal shock	Ta = -40 °C ↔ 80 °C (0.5 hr), 100 cycle
7	Drop (non-operating)	60cm/1 corner/3 edges/6 faces
8	Shock test (non-operating)	220G, Half Sine Wave 2msec ±X,±Y,±Z Once for each direction
9	Electro-static discharge test (non-operating)	Air : 150 pF, 330Ω, 15 KV Contact : 150 pF, 330Ω, 8 KV

11.0 HANDLING & CAUTIONS

- (1) Cautions when taking out the module
- Pick the pouch only, when taking out module from a shipping package.
- (2) Cautions for handling the module
- As the electrostatic discharges may break the LCD module, handle the LCD module with care. Peel a protection sheet off from the LCD panel surface as slowly as possible.
 - As the LCD panel and back - light element are made from fragile glass material, impulse and pressure to the LCD module should be avoided.
 - As the surface of the polarizer is very soft and easily scratched, use a soft dry cloth without chemicals for cleaning.
 - Do not pull the interface connector in or out while the LCD module is operating.
 - Put the module display side down on a flat horizontal plane.
 - Handle connectors and cables with care.
- (3) Cautions for the operation
- When the module is operating, do not lose CLK, ENAB signals. If any one of these signals is lost, the LCD panel would be damaged.
 - Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.

PRODUCT GROUP			REV	ISSUE DATE	BOE
LCM PRODUCT			P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE NV116WHM-N43 Preliminary Product Specification				PAGE 23 OF 38

- (4) Cautions for the atmosphere
- Dew drop atmosphere should be avoided.
 - Do not store and/or operate the LCD module in a high temperature and/or humidity atmosphere. Storage in an electro-conductive polymer packing pouch and under relatively low temperature atmosphere is recommended.
- (5) Cautions for the module characteristics
- Do not apply fixed pattern data signal to the LCD module at product aging.
 - Applying fixed pattern for a long time may cause image sticking.
- (6) Other cautions
- Do not disassemble and/or re-assemble LCD module.
 - Do not re-adjust variable resistor or switch etc.
 - When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages.

12.0 LABEL

(1) LCM label

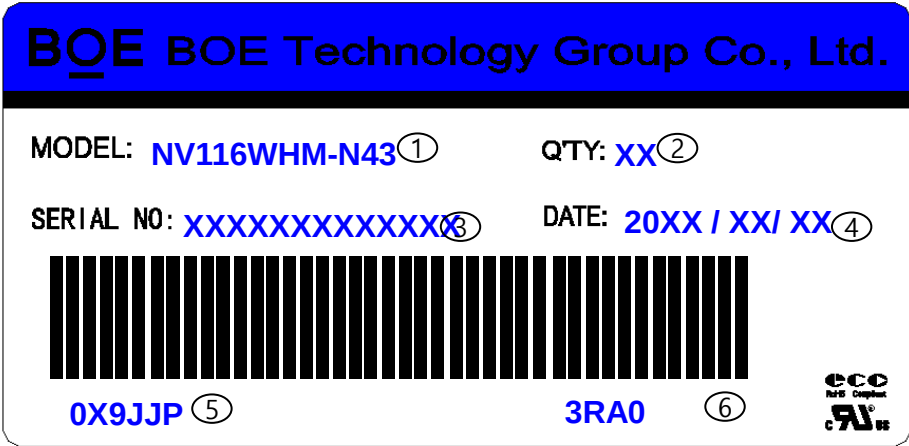


LCM ID 编码规则

序列号	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
代码	X	X	S	3	X	X	X	3	R	A	0	X	X	X	X	X	X
描述	GBN		等级	line	年		月	FG-Code后4位				Serial Number					

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			24 OF 38

(3) Box label



蓝色字体为后打印标识, 说明如下:

- 1. FG-CODE
- 2. Box 产品数量
- 3. Box ID, 编码规则如下
- 4. Box Packing 日期
- 5. 产品物料号(客户端)
- 6. FG-CODE 后四位

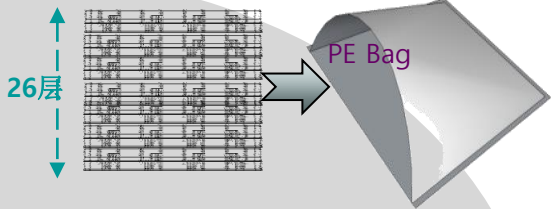
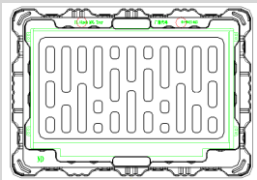
Box ID 编码规则

序号号	1	2	3	4	5	6	7	8	9	10	11	12	13
代码	X	X	X	X	X	X	X	X	X	X	X	X	X
描述	GBN代码		等级	工厂	年份		月	Rev	Serial Number				

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			25 OF 38

13.0 PACKING INFORMATION

13.1 Packing order



step 1

- Put 1pcs LCM in the Tray
- Then put one EPE Spacer on the LCM
- Then repeat the action until to 25 pieces
- At last put one empty Tray

step 2

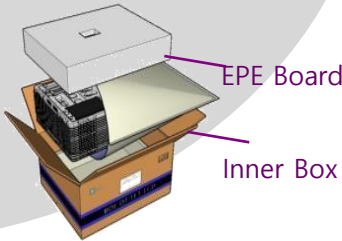
- Put the 25pcs Tray full of LCM in the PE Bag
- 25pcs LCM/PE Bag

step 4



- Put 8 Boxes on the Pallet
- Repeat put 16 Boxes
- Total:24 Boxes/Pallet

step 3



- Put the PE Bag full of Tray and LCM in the Inner Box with two E PE Board
- Total : 25pcs LCM/Box

13.2 Notes

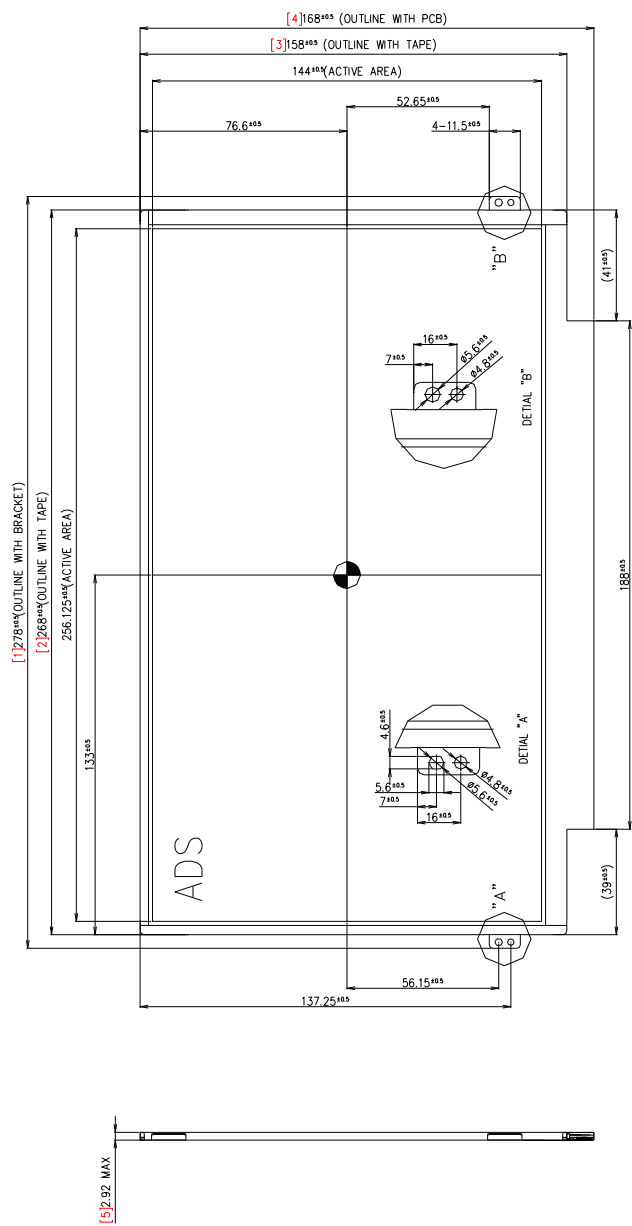
- Box Dimension: 375mm*280mm*290mm
- Package Quantity in one Box: 25pcs

PRODUCT GROUP		REV	ISSUE DATE	BOE
LCM PRODUCT		P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE			PAGE
	NV116WHM-N43 Preliminary Product Specification			26 OF 38

14. MECHANICAL OUTLINE DIMENSION

14.1 LCD Outline Dimension

Figure 6. LCD Outline Dimensions (Front view)



15.0 EDID Table

Address (HEX)	Function	Hex	Dec	crc	Input values.	Notes
00	Header	00	0		0	EDID Header
01		FF	255		255	
02		FF	255		255	
03		FF	255		255	
04		FF	255		255	
05		FF	255		255	
06		FF	255		255	
07		00	0		0	
08	ID Manufacturer Name	09	9		BOE	ID = BOE
09		E5	229			
0A	ID Product Code	97	151		1943	ID = 1943
0B		07	7			
0C	32-bit serial No.	00	0			
0D		00	0			
0E		00	0			
0F		00	0			
10	Week of manufacture	01	1		1	
11	Year of Manufacture	1B	27		2017	Manufactured in 2017
12	EDID Structure Ver.	01	1		1	EDID Ver 1.0
13	EDID revision #	04	4		4	EDID Rev. 0.4
14	Video input definition	95	149		-	digital signal/DP input
15	Max H image size	1A	26		26	26 cm (Approx)
16	Max V image size	0E	14		14	14 cm (Approx)
17	Display Gamma	78	120		2.2	Gamma curve = 2.2
18	Feature support	0A	10			RGB display, Preferred Timming mode
19	Red/Green low bits	7D	125		-	Red / Green Low Bits

15.0 EDID Table

1A	Blue/White low bits	70	112		-	Blue / White Low Bits
1B	Red x high bits	9E	158	633	0.619	Red (x) = 10011110 (0.619)
1C	Red y high bits	5B	91	363	0.355	Red (y) = 01011011 (0.355)
1D	Green x high bits	57	87	351	0.343	Green (x) = 01010111 (0.343)
1E	Green y high bits	9E	158	633	0.619	Green (y) = 10011110 (0.619)
1F	Blue x high bits	27	39	157	0.154	Blue (x) = 00100111 (0.154)
20	Blue y high bits	19	25	103	0.101	Blue (y) = 00011001 (0.101)
21	White x high bits	50	80	320	0.313	White (x) = 01010000 (0.313)
22	White y high bits	54	84	336	0.329	White (y) = 01010100 (0.329)
23	Established timing 1	00	0		-	
24	Established timing 2	00	0		-	
25	Established timing 3	00	0		-	
26	Standard timing #1	01	1			Not Used
27		01	1			
28	Standard timing #2	01	1			Not Used
29		01	1			
2A	Standard timing #3	01	1			Not Used
2B		01	1			
2C	Standard timing #4	01	1			Not Used
2D		01	1			
2E	Standard timing #5	01	1			Not Used
2F		01	1			
30	Standard timing #6	01	1			Not Used
31		01	1			
32	Standard timing #7	01	1			Not Used
33		01	1			
34	Standard timing #8	01	1			Not Used
35		01	1			

PRODUCT GROUP				REV	ISSUE DATE	BOE
LCM PRODUCT				P1	2017.10.27	
SPEC. NUMBER	SPEC. TITLE					PAGE
	NV116WHM-N43 Preliminary Product Specification					30 OF 38
15.0 EDID Table						
36	Detailed timing/monitor descriptor #1	3E	62		72.3	72.3MHz Main clock
37		1C	28			
38		56	86		1366	Hor Active = 1366
39		A0	160		160	Hor Blanking = 160
3A		50	80		-	4 bits of Hor. Active + 4 bits of Hor. Blanking
3B		00	0		768	Ver Active = 768
3C		16	22		22	Ver Blanking = 22
3D		30	48		-	4 bits of Ver. Active + 4 bits of Ver. Blanking
3E		30	48		48	Hor Sync Offset = 48
3F		20	32		32	H Sync Pulse Width = 32
40		36	54		3	V sync Offset = 3 line
41		00	0		6	V Sync Pulse width : 6 line
42		00	0		256	Horizontal Image Size = 256 mm (Low 8 bits)
43		90	144		144	Vertical Image Size = 144 mm (Low 8 bits)
44		10	16		-	4 bits of Hor Image Size + 4 bits of Ver Image Size
45		00	0		0	Hor Border (pixels)
46		00	0		0	Vertical Border (Lines)
47		1A	26			Refer to right table

15.0 EDID Table

48	Detailed timing/monitor descriptor #2	9A	154		57.9	57.86MHz Main clock
49		16	22			
4A		56	86		1366	Hor Active = 1366
4B		A0	160		160	Hor Blanking = 160
4C		50	80		-	4 bits of Hor. Active + 4 bits of Hor. Blanking
4D		00	0		768	Ver Active = 768
4E		16	22		22	Ver Blanking = 22
4F		30	48		-	4 bits of Ver. Active + 4 bits of Ver. Blanking
50		30	48		48	Hor Sync Offset = 48
51		20	32		32	H Sync Pulse Width = 32
52		36	54		3	V sync Offset = 3 line
53		00	0		6	V Sync Pulse width : 6 line
54		00	0		256	Horizontal Image Size = 256 mm (Low 8 bits)
55		90	144		144	Vertical Image Size = 144 mm (Low 8 bits)
56		10	16			4 bits of Hor Image Size + 4 bits of Ver Image Size
57		00	0		0	Hor Border (pixels)
58		00	0		0	Vertical Border (Lines)
59		1A	26			

15.0 EDID Table

5A	Detailed timing/monitor descriptor #3	00	0			ASCII Data Sting Tag
5B		00	0			
5C		00	0			
5D		FE	254			
5E		00	0			
5F		58	88		X	D/PN:X9JJP
60		39	57		9	
61		4A	74		J	
62		4A	74		J	
63		50	80		P	
64		80	128		10000000	EDID:A00
65		4E	78		N	BOE PN
66		56	86		V	
67		31	49		1	
68		31	49		1	
69		36	54		6	
6A		34	52		4	
6B		33	51		3	

15.0 EDID Table

6C	Detailed timing/monitor descriptor #4	00	0			Product Name Tag (ASCII)
6D		00	0			
6E		00	0			
6F		00	0			
70		00	0			
71		00	0		00000000	6-bit Color Depth & no FRC
72		41	65		01000001	WLED & singal light bar & one light bar
73		01	1		00100001	Frame rate 40Hz~65Hz
74		94	148		00011110	Light Controller:PWM & Max. Luminance 300
75		01	1		00000001	Front Surface: Glare & RGB v-stripe
76		10	16		00010000	DBC
77		00	0		00000000	no Motion Blur & no Active Gamma
78		00	0		00000000	no Wireless Enhancement & no In-Cell Scanner
79		09	9		00001001	1 lane edp1.2
7A		01	1		00000001	Built-In Self Test
7B		0A	10			
7C		20	32			
7D		20	32			
7E	Extension flag	00	0			
7F	Checksum	D8	216	216	-	