



PRODUCT SPECIFICATIONS

Module No.: NTD-7.0S1024600R100C

TFT(Thin-Film-Transistor) Color Liquid Crystal Display Module

General Specification

- 7.0 inch Diagonal
- 1024xRGBx600 resolution
- 24 bit RGB interface
- LED Backlight (450cd/m²)
- 16.7 M colors Normally Black
- Wide Viewing Angles
- RoHS Compliant

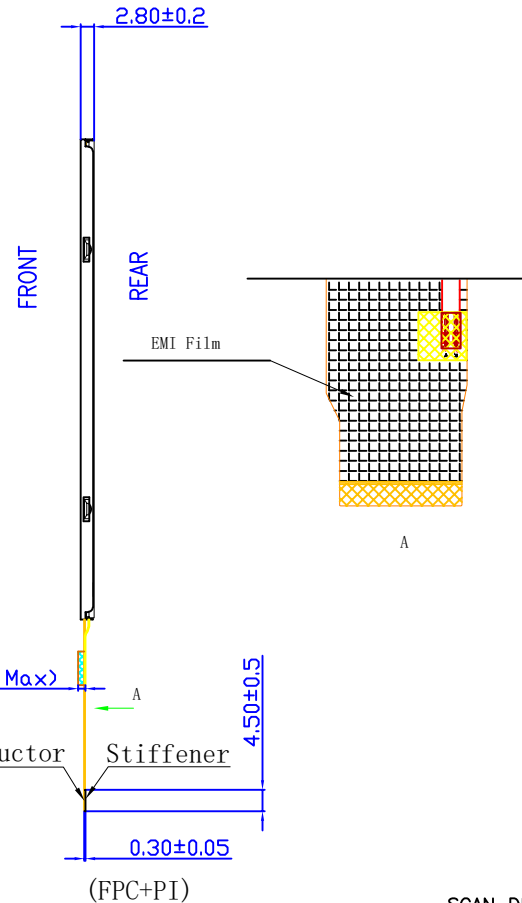
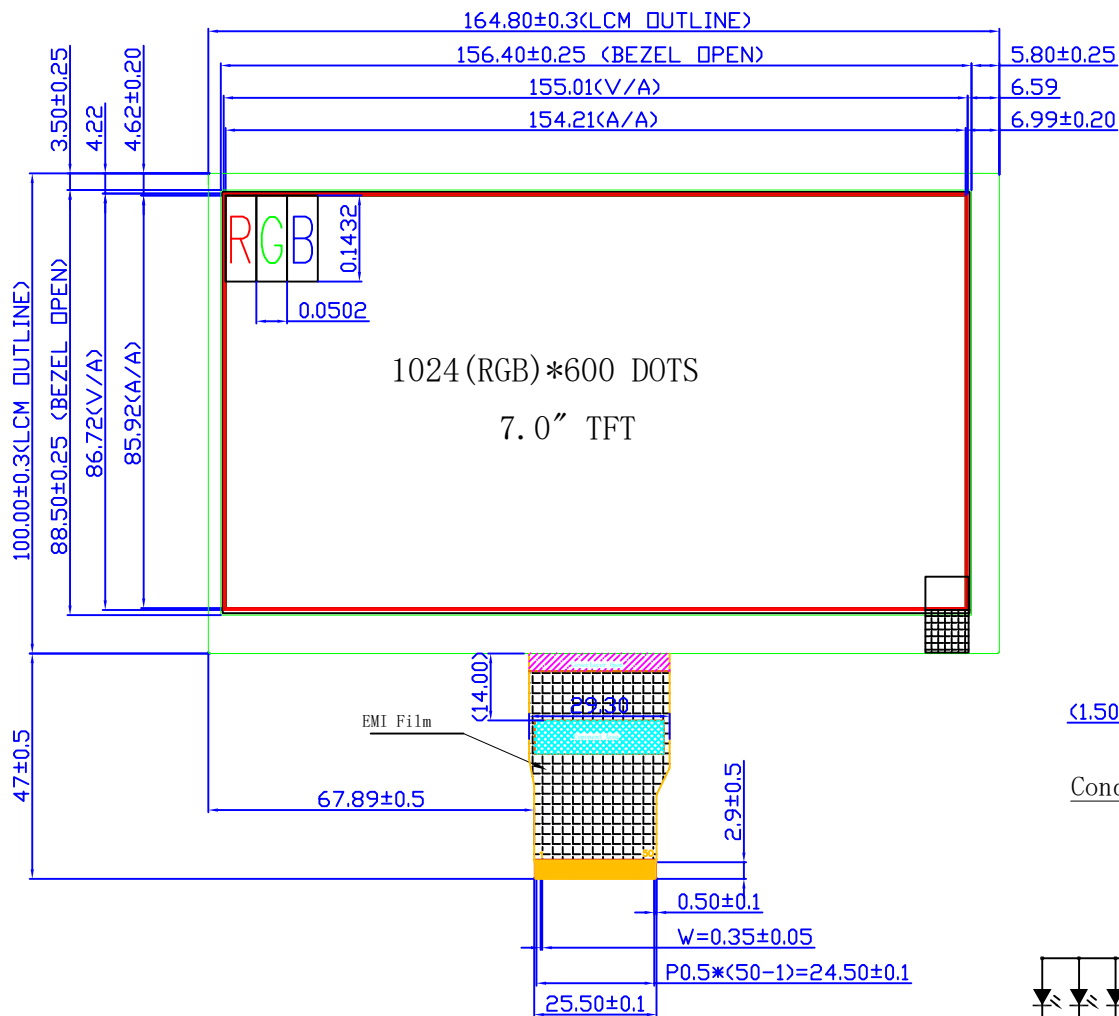
For Customer's Acceptance:

Approved By	Comment

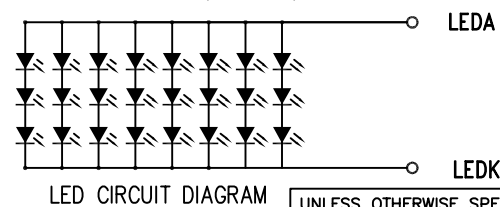
From: NewTrend Display Technology Co., Ltd.

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SYMBOL	REVISION		DATE
V0	First		



PIN NO.	SYMBOL
1	VLEDA
2	VLEDA
3	VLEDK
4	VLEDK
5	GND
6	VCOM
7	DVDD
8	MODE
9	DE
10	VS
11	HS
12~19	B7~B0
20~27	G7~G0
28~35	R7~R0
36	GND
37	DCLK
38	GND
39	L/R
40	U/D
41	VGH
42	VGL
43	AVDD
44	RESET
45	NC
46	VCOM
47	DITHB
48	GND
49	NC
50	NC



SCAN DIRECTION SETTING

L/R	U/D	Data Shifting
DVDD	GND	Left→Right, Up→Down(default)
GND	GND	Right→Left, Up→Down
DVDD	DVDD	Left→Right, Down→Up
GND	DVDD	Right→Left, Down→Up

NOTES:

1. DISPLAY TYPE: 7.0" TFT, Transmissive, Normally Black
2. VIEWING DIRECTION: U/L/D/R 85/85/85/85
3. Top: -20°C~+70°C, Tst: -30°C~+80°C
4. TFT Interface :24-bit RGB Interace, DVDD=3.3±0.3V
5. LCM Luminance:LED/450cd/m (TYP)² IF=160mA,VF=9.6V(TYP)
6. RoHS

UNLESS OTHERWISE SPECIFIED
Unit:mm
THIRD ANGLE PROJECTION:

UNLESS OTHERWISE NOTED
TOLERANCES :±0.2mm

SCALE: 1:1 SHEET: 1 OF 1

NewTrend Display Technology

DRAWING_NO. NTD-7.0S1024600R100C

DRAWN BY: APPROVED BY:

Pin Description:

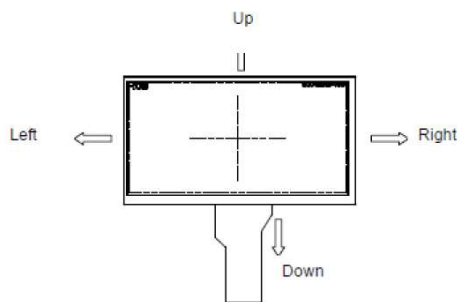
Pin No.	Symbol	Function Description	Remark
1~2	LEDA	LED backlight (Anode).	
3~4	LEDK	LED backlight (Cathode).	
5	GND	Ground.	
6	VCOM	Common Voltage.	
7	DVDD	Digital Power.	
8	MODE	DE/SYNC mode select. Normally pull high. H: DE mode. L: HSD/VSD mode.	
9	DE	Data enable input. Active high to enable the input data bus.	
10	VSYNC	Vertical sync input. Negative polarity.	
11	HSYNC	Horizontal sync input. Negative polarity.	
12~19	B7~B0	Blue Data Input	
20~27	G7~G0	Green Data Input	
28~35	R7~R0	Red Data Input	
36	GND	Ground	
37	DCLK	Clock Input	
38	GND	Ground	
39	L/R	Left or Right Display Control.	NOTE1
40	U/D	Up / Down Display Control.	NOTE1
41	VGH	Positive Power for TFT.	
42	VGL	Negative Power for TFT.	
43	AVDD	Analog Power.	
44	RESET	Global reset pin. Active low to enter reset state. Suggest to connecting with an RC reset circuit for stability. Normally pull high.(R=10KΩ, C=1μF)	
45	NC	No connection	
46	VCOM	Common Voltage.	
47	DIHTB	Dithering function enable control. (Normally pull high) DITHB="L", to enable internal dithering function. DITHB="H", to disable internal dithering function.	
48	GND	Ground.	
49~50	NC	No connection.	

【Note1】 L/R : left or right setting
U/D : up or down setting

L/R	U/D	Data shifting
DVDD	GND	Left → Right, Up → Down(default)
GND	GND	Right → Left, Up → Down
DVDD	DVDD	Left → Right, Down → Up
GND	DVDD	Right → Left, Down → Up

Definition of scanning direction:

Definition of scanning direction:



DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-20	-	+70	°C
Storage Temperature Range	T _{ST}	Absolute Max	-30	-	+80	°C
Digital Supply Voltage	DV _{DD}	-	3.0	3.3	3.6	V
Analog Supply Voltage	AV _{DD}	-	8.9	9.7	10.5	V
Gate On Voltage	V _{GH}	-	16	18	19	V
Gate Off Voltage	V _{GL}	-	-7.1	-6.0	-5.5	V
Common Voltage	V _{COM}	-	3.0	3.6	4.0	V
Input logic high voltage	V _{IH}	-	0.7*DV _{DD}	-	DV _{DD}	V
Input logic low voltage	V _{IL}	-	GND	-	0.3*DV _{DD}	V

Note 1: Please adjust V_{COM} to make the flicker level be minimum. Typ V_{COM} Voltage value is only for reference, subject to the actual effect (adjustable according to FLICKER status)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Backlight Supply Voltage	v _f	Top=25°C I _f =160mA	8.1	9.6	9.9	V
Backlight Supply Current	I _f		-	160		mA
Backlight Lifetime	-	Top=25°C I _f =160mA		50000		Hrs

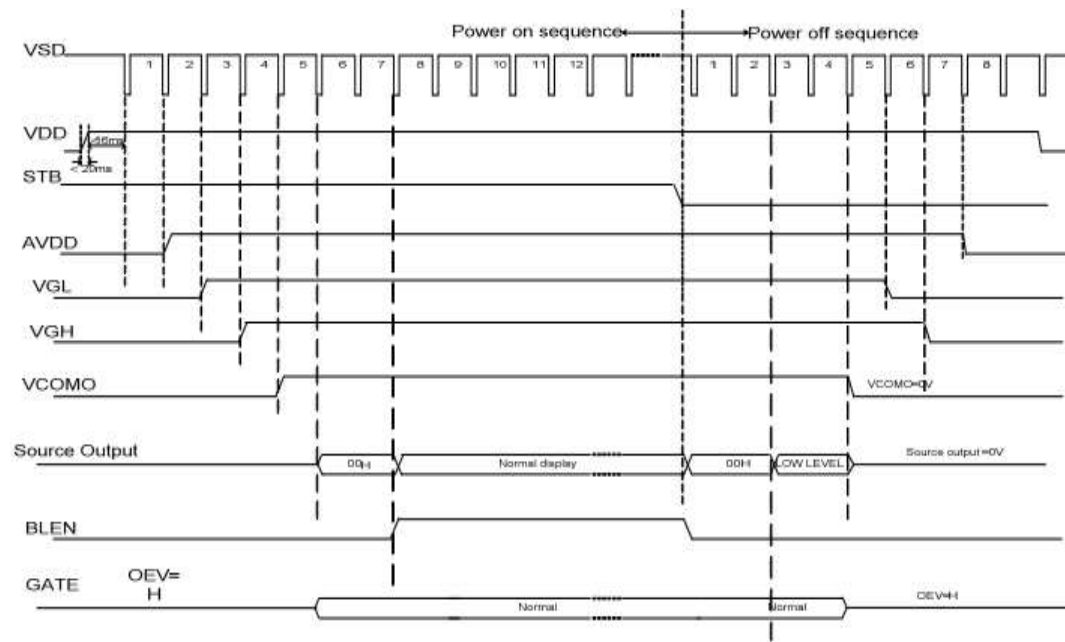
*Backlight lifetime is rated as Hours until half-brightness, under normal operating conditions. The LED of the backlight is driven by current drain, drive voltage is for reference only. Drive voltage must be selected to ensure backlight current drain is below MAX level stated.

Optical Characteristics

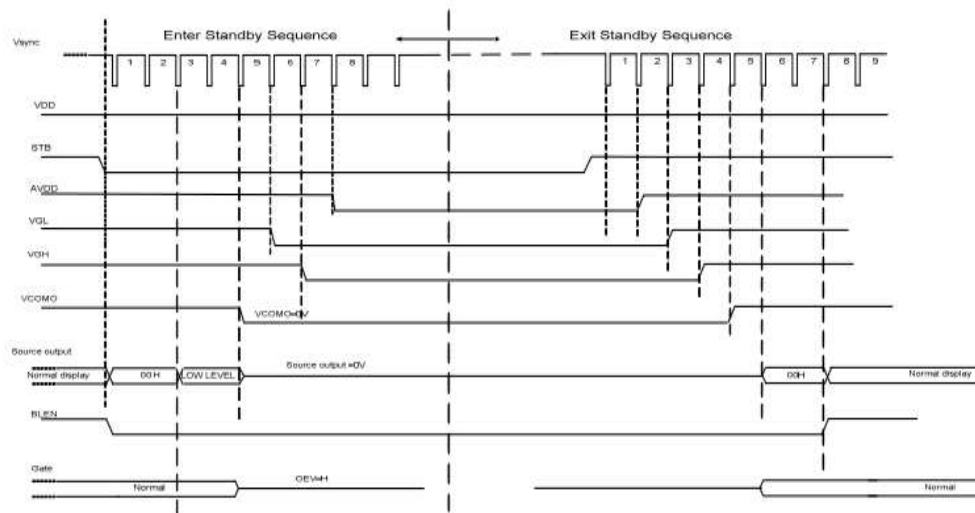
Item	Symbol	Condition	Min.	Typ.	Max.	Unit	
Operating Viewing Angles	Top	-	CR≥10	85	-	Deg	
	Bottom	-		85	-		
	Left	-		85	-		
	Right	-		85	-		
Contrast Ratio	CR	Center	600	800	-	-	
Luminance	L _v		400	450		cd/m ²	
Response Time	T _r +T _f			25	40	ms	
Chromaticity	Red	X _R	-	TYP-0.05	0.600	TYP+0.05	-
		Y _R			0.340		
	Green	X _G	-		0.364		-
		Y _G			0.578		
	Blue	X _B	-		0.149		-
		Y _B			0.114		
	White	X _w	-		0.318		-
		Y _w	-		0.356		-

Note (1) Measurement Setup: The LCD module should be stabilized at given temp. 25°C for 15 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 15 minutes in a windless room.

Power Sequence



Power On/Off timing chart

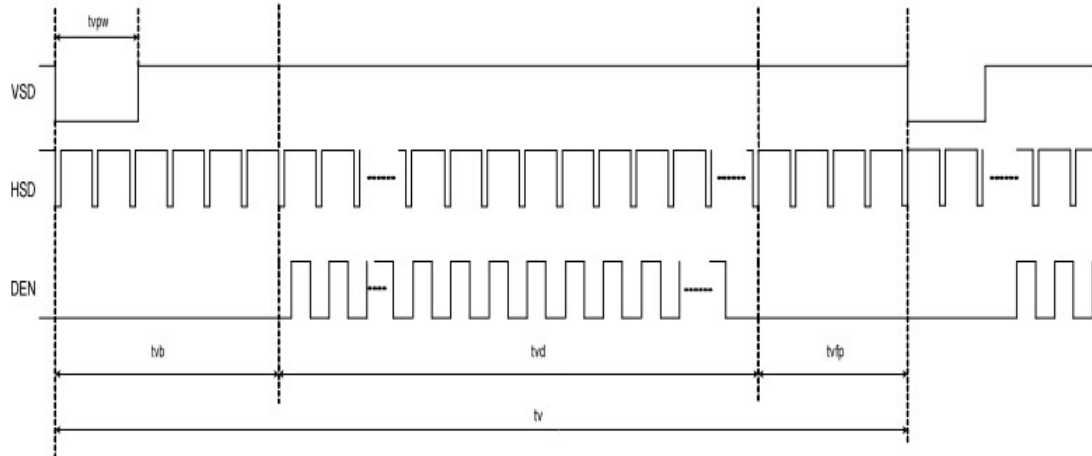


Enter and Exit Standby Mode timing chart

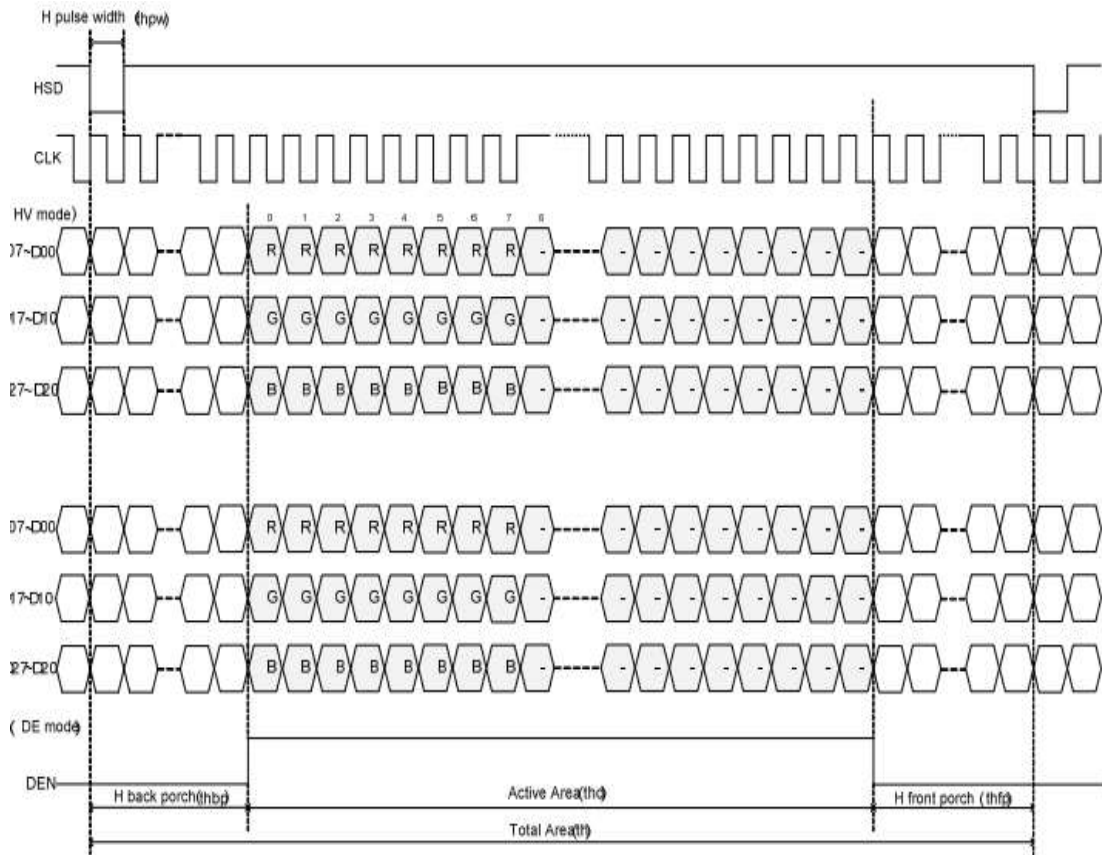
Note: Low level=3Fh, when NBW=L(Normally white)
 Low level=00h, when NBW=H(Normally black)

AC Electrical Characteristics

Vertical Input timing



Horizontal input timing



Horizontal input timing

DE mode

DE mode					
Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2	67.2	Mhz
Horizontal display area	thd	1024			DCLK
HSYNC period time	th	1114	1344	1400	DCLK
HSYNC blanking	thb+thfp	90	320	376	DCLK
Vertical display area	tvd	600			H
VSYNC period time	tv	610	635	800	H
VSYNC blanking	tvb+tvfp	10	35	200	H

HV mode

HV mode					
Horizontal input timing					
Parameter	Symbol	Value			Unit
Horizontal display area	thd	1024			DCLK
DCLK frequency@ Frame rate=60hz	fclk	Min.	Typ.	Max.	Mhz
		44.9	51.2	63	
1 Horizontal Line	th	1200	1344	1400	DCLK
HSYNC pulse width	thpw	Min.	1		
		Typ.	-		
		Max.	140		
HSYNC back porch	thbp	160	160	160	
HSYNC front porch	thfp	16	160	216	

Vertical input timing					
Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Vertical display area	tvd	600			H
VSYNC period time	tv	624	635	750	H
VSYNC pulse width	tvpw	1	-	20	H
VSYNC back porch	tvb	23	23	23	H
VSYNC front porch	tvfp	1	12	127	H

2. Storage precautions

2.1 When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.

2.2 The LCD modules should be stored under the storage temperature range. If the LCD modules will be stored for a long time, the recommend condition is:

Temperature : 10°C ~ 40°C

Relatively humidity: ≤60%

2.3 The LCD modules should be stored in the room without acid, alkali and harmful gas.

3. The LCD modules should be no falling and violent shocking during transportation, and also should avoid excessive press, water, damp and sunshine.