

**AMS347FM01**

**3.5" OLED Display Model Specification**

# Panox Display---LCD/OLED Supplier

## panoxdisplay.com

### 1.1 DISPLAY FEATURES

- 16.7M (24-bit) and 65k (16-bit) color modes
  - o 16-bit color via internal 16-bit to 24-bit converter
- 30-pin board-to-board connector
- Automatic current limit function
- Low power mode for showing limited number of pixels in low refresh rate
- On-module oscillator, RAM, DC/DC converter and timing generator
  - o Module can operate stand-alone in still image use case
- 8 discrete brightness steps

### 1.2 TOUCH FEATURES

- Multi Touch
- Chip on touch FPC
- Interface MIPI
- Touch IC =

### 1.3 POWER SUPPLY

- Analog power supply range 2.9 – 4.8V
  - o Direct connection to lithium-ion battery possible
- Digital power supply 1.65 – 1.95V (1.8V nominal)

### 1.4 ELECTRICAL INTERFACE

- OLED panel with COG OLED controller
- MIPI DSI Command mode 1 lane (1 data lane + 1 clock lane)
  - o MIPI Dphy v0.9
  - o MIPI DSI 1.01 r11
- On-module RAM 360x640

# Panox Display---LCD/OLED Supplier

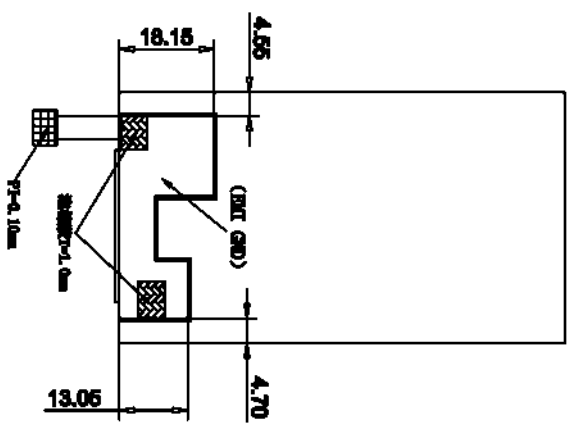
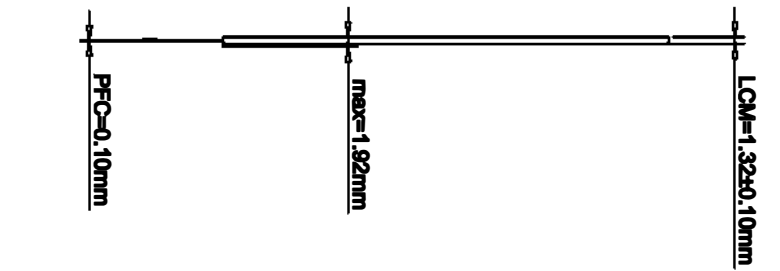
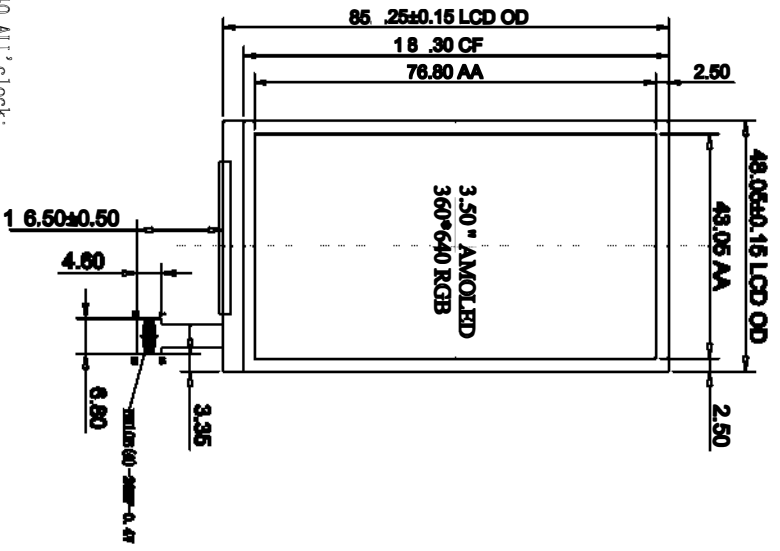
panoxdisplay.com

## 1.5 GENERAL PARAMETERS

Table 1: Specification summary table

GENERAL		
Technology		AM OLED
Display format		360*640*RGB
Pixel Density		198 ppi
Weight [g]		19g
Image mode		Normally black
Functions		Automatic current limit, Low power mode, High brightness mode
DIMENSIONS		
Diagonal size [inch]		3.50
Display module size		48.05*85.25*1.32mm
Glass size (width x height x thickness)		
Active area size		43.05*69.80
Pixel height to width ratio		1:1
Sub pixel pitch		0.0255 mm • 0.1695 mm
ELECTRICAL		
Interface		MIPI DSI 1 lane
Supply voltage	VPNL	3.7 V
	VDDI	1.8 V
I/O voltage, sideband signals		1.8 V
Display identification		Display supplier code ID and version codes readable via DSI.
OPTICAL		
Pixel arrangement		RGB stripe
Color gamut (NTSC ratio)		100 %
Polarizer absorption angle		
Output luminance		300 cd/m <sup>2</sup>
Refresh rate		60 Hz
Number of colours		16.7M (24-bit) 65k (16-bit)
ENVIRONMENTAL		
Operational temperature		-30°C to +80 °C
Storage temperature		-40 °C to +90 °C


  
**Panox Display---**LCD/OLED Supplier
   
 Panoxdisplay.com



- NOTES:**
1. Display:3.5" 360°x40, ALL' clock;
  2. Driver IC;
  3. General Tolerance: ±0.2;
  4. General angle radius:r=0.2;
  5. Check ltrms;
  6. Connector;
  7. Non-marked dimension to CAD file and general tolerance;
  8. Requirements on Environment Protection;Rohs Halogen free;
  9. working temperature:-30C-80C;

Rev.	Date	Content	Rev/ser
V1	2021-06-03	V0	YGP

MODULE DRAWING		UNMARKED TOL		VIEW DIRECTION		DRAW DATE	
VERSION: A		±0.2		SCALE 1:1		2021-06-03	
LCM NO:		PAGE TOP 1		DESIGN BY		YGP	
				CHECK BY			
				APPROVAL			

NO.	Content
1	Author
2	DED
3	ALP
4	ALM
5	ADD
6	APP
7	CHK
8	ENG
9	DED
10	DED
11	DED
12	VAL
13	VAL
14	VAL
15	VAL
16	VAL
17	VAL
18	VAL
19	VAL
20	VAL

The connector on display FPC is Molex JNAILS BM10B(6)-20DP-0.4V

. Pin layout is presented in the figures below.

Pin No	Symbol	Function	Remark
1	GND	System power ground.	
2	GND	System power ground.	
3	CLKP	Data Input	
4	CLKN	Data Input	
5	GND	System power ground.	
6	D0P	MIPI_DSI data Lane0 positive-end input pin.	
7	D0N	MIPI_DSI data Lane0 negative-end input pin.	
8	GND	System power ground.	
9	GND	System power ground	
10	GND	System power ground	
11	GND	System power ground	
12	VSEL	System power supply.(Typ.:2.8V)	
13	RESET	Reset pin.	
14	VDDI	System power supply.(Typ.:18V)	
15	VPNL	System power supply.(Typ.:3.3V)	
16	VPNL	System power supply.(Typ.:3.3V)	
17	VPNL	System power supply.(Typ.:3.3V)	
18	VPNL	System power supply.(Typ.:3.3V)	
19	TE	Tearing effect output pin.	
20	TGND	System power ground.	

# Panox Display---LCD/OLED Supplier

panoxdisplay.com

FIGURE 2. PIN LAYOUT & NUMBERING

## 1.8 DISPLAY POWER CONSUMPTION

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage	I/O Voltage	VDD3	-	1.65	1.8	2.0	V
	Operating Voltage	VCI	-	2.85	3.0	3.3	
	Battery Supply Voltage	VBAT	-	3.2	3.8	4.2	
Logic Input Voltage	"H" level	VIH	-	0.7*VDD3	-	VDD3	V
	"L" level	VIL	-	0.0	-	0.3*VDD3	
Logic Output Voltage	"H" level	VOH	IOH = -0.1mA IOL = 0.1mA	0.8*VDD3	-	VDD3	V
	"L" level	VOL		0.0	-	0.2*VDD3	
Logic Current	"H" level	IIH	VI=VDD3 or VSS		-	10.0	uA
	"L" level	IIL		-10.0	-		uA
Current Consumption	Sleep out mode Display mode	IVDD3	Frame frequency=60Hz, white pattern		(1.6)	5 (Note1)	mA
		IVCI			(27.5)	40	mA
		IBAT			(460)	610	mA
	Sleep in mode Stand by mode	IVDD3	Signals (Dotclk,Hsync,V sync,Enable) not toggling	-	(35)	60	uA
		IVCI		-	(20)	30	uA
Frame Frequency		VCI: 2.85~3.3V Ta=25℃		53	60	67	Hz

Note1, IVDD3 Current is measured with TSP Deep-Standby Mode

## 1.9 OPTICAL PARAMETERS

Nominal values in the following tables describe the performance at the temperature of 25 °C.

### 1.9.1 OUTPUT LUMINANCE

TABLE 3. OUTPUT LUMINANCE IN TEMPERATURES, DARK ROOM.

PARAMETER	TEMP [°C]	MIN	NOMINAL	MAX	DEFINITION AND SETUP
Luminance [cd/m <sup>2</sup> ]	+35	270	300	375	(3) C1 or equivalent $\theta_1 = 0^\circ$ $\Phi = 270^\circ$
	-30...+70	180	300	N/A	

### 1.9.2 CONTRAST RATIO TEMPERATURES

TABLE 4. CONTRAST RATIO IN TEMPERATURES, DARK ROOM.

PARAMETER	TEMP [°C]	MIN	NOMINAL	DEFINITION AND SETUP
Contrast ratio	+35	1000	> 1300	(1) C1 or equivalent $\theta_1 = 0^\circ$ $\Phi = 270^\circ$
	-30...+70	1000	> 1300	

TABLE 5. COLOR CHARACTERISTICS, DARK ROOM, @ + 25 °C

COLOR		MIN	NOMINAL	MAX	DEFINITION AND SETUP
White	u'	-	0.197	-	(5) C1 or equivalent $\theta_1 = 0^\circ$
	v'	-	0.461	-	
Red	u'	0.446	0.482	0.518	
	v'	0.511	0.526	0.536	
Green	u'	0.055	0.078	0.108	
	v'	0.560	0.580	0.590	
Blue	u'	0.134	0.172	0.200	
	v'	0.097	0.147	0.202	

### 1.9.3 TRC CHARACTERISTICS IN TEMPERATURES

TABLE 6. TRC IN TEMPERATURES, DARK ROOM.

PARAMETER	MIN	NOMINAL	MAX	DEFINITION AND SETUP
TRC, Gamma	2.0	2.2	2.4	(3) C1 or equivalent $\theta_1 = 0^\circ$ $\Phi = 270^\circ$