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SPECIFICATION FOR AMOLED Module

MODULE No:	ET070AM01-KT-HDMI
CUSTOMER:	

YOURITECH	INITIAL	DATE
PREPARED BY		
CHECKED BY		
APPROVED BY		

CUSTOMER	INITIAL	DATE
APPROVED BY		

Revision History

Date	Rev. No.	Page	Summary
2025.04.25	V1.0	ALL	FIRST ISSUE
2025.05.07	V1.1	ALL	Update the model
2025.05.12	V1.2	ALL	Update the model

Contents

* Description

This is a color active matrix AMOLED module using Low Temperature Poly-silicon Thin Film Transistors as a ctive switching devices, plus an HDMI board. This module has a 7.0 inch diagonally measured active are a with 1080 horizontal by 1920 vertical pixel arrays. Each pixel is divided into RED and GREEN dots, or BL UE and GREEN dots, and two pixels share RED or BLUE dots which are arranged in vertical stripe and thi s module can display 16.7M colors.

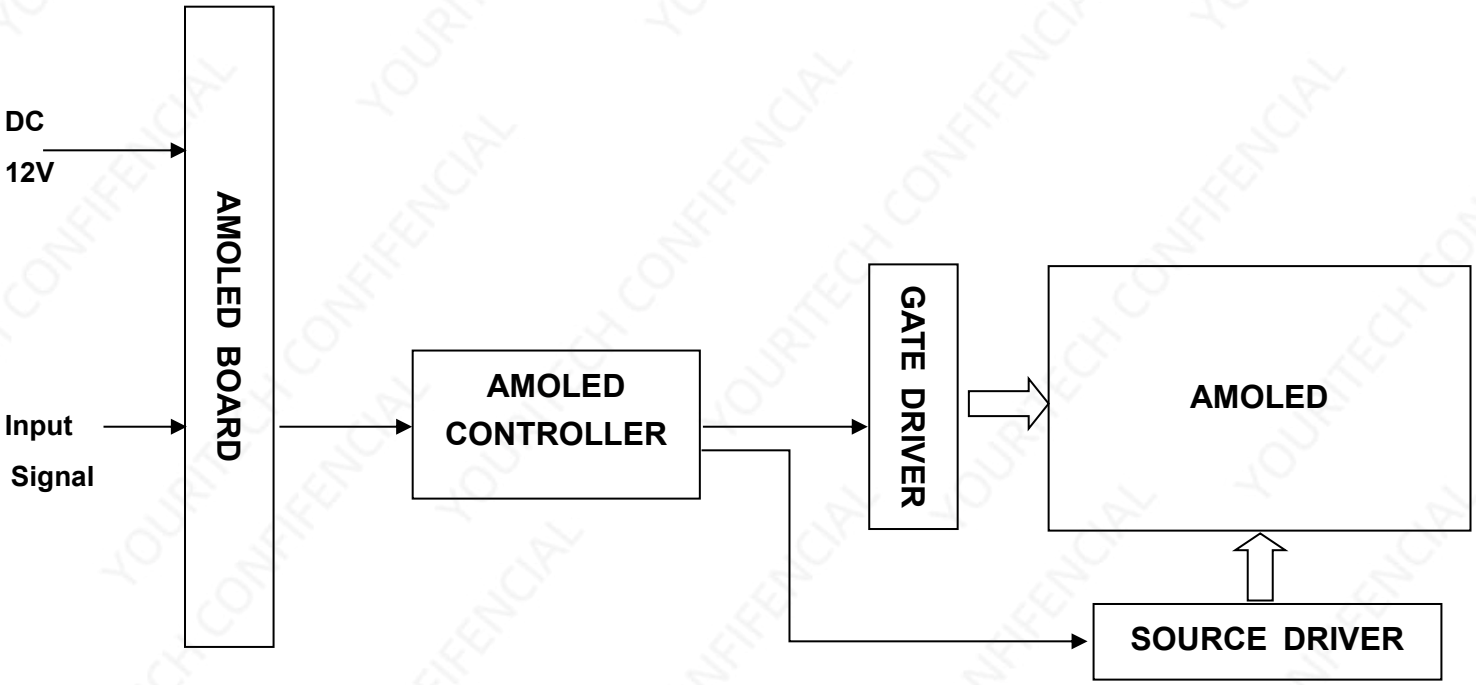
* Features

General Information Items	Specification	Unit	Note
	Main Panel		
Display area(AA)	87.1344(H)*154.9056(V) (7.0 inch)	mm	
Driver element	TFT active matrix	-	
Display colors	16.7M	colors	
Number of pixels	1080(RGB)*1920	dots	
Pixel arrangement	Real RGB arrangement	-	
Pixel pitch	TBD	mm	
Viewing angle	ALL	o'clock	
Interface	HDMI(Type A)	-	
Operating temperature	-20～+70	℃	
Storage temperature	-40～+80	℃	

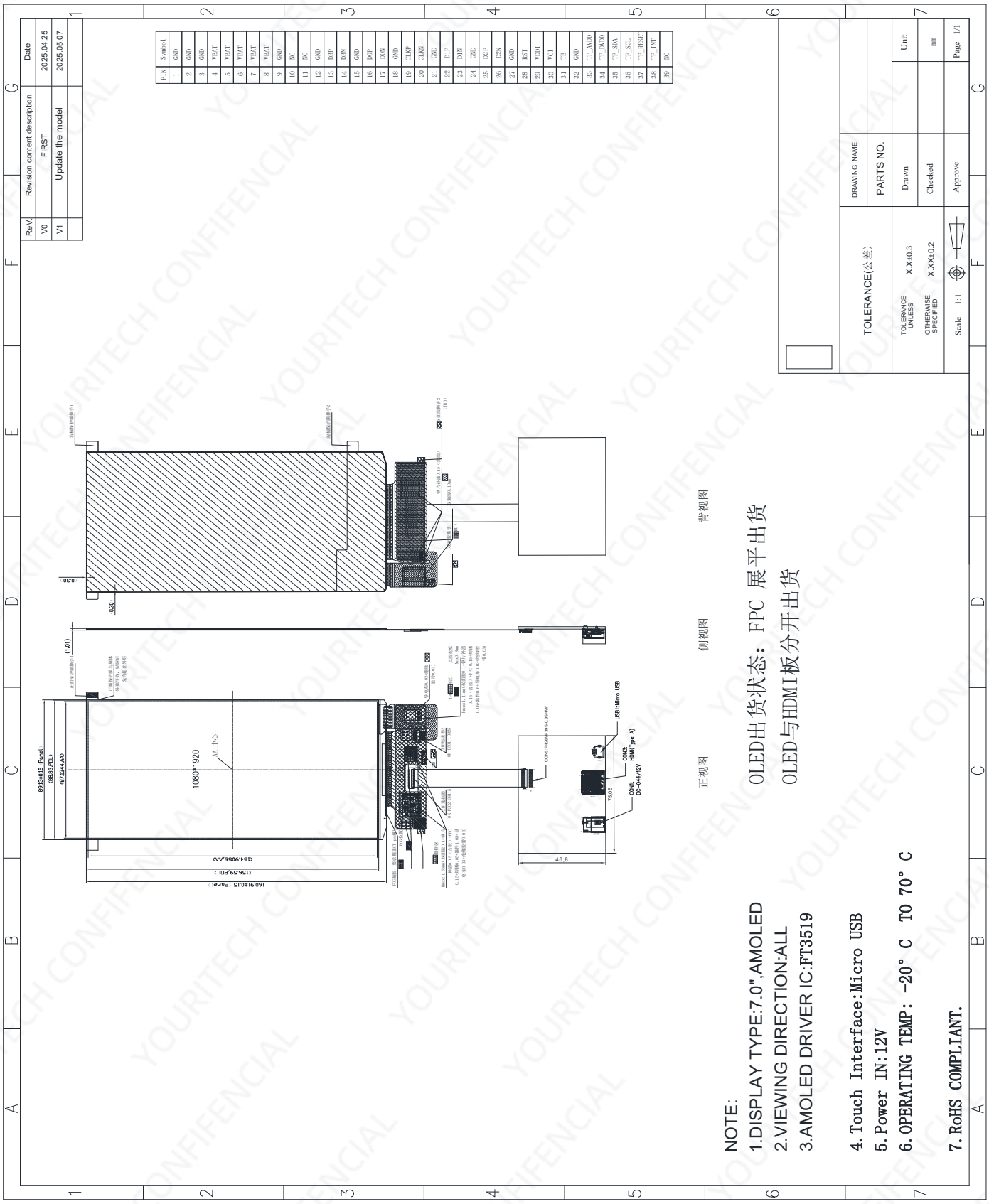
* Mechanical Information

Item		Min.	Typ.	Max.	Unit	Note
Module size	Horizontal(H)		89.1344		mm	-
	Vertical(V)		160.9056		mm	-
	Depth(D)		1.01		mm	-
Weight			36		g	OLED+PCB

1. Block Diagram



2. Outline dimension



3. Input terminal Pin Assignment

3.1 Power Input

CON1(DC-044 Socket)

NO.	SYMBOL	DISCRIPTION	I/O
1	DC_IN	Power supply (DC 12V).	P
2	GND	Ground	P
3	GND	Ground	P

3.3 HDMI Input

The type of HDMI connector is a type A.

NO.	SYMBOL	DISCRIPTION	I/O
1	RX_D2+	HDMI Receiver channel 2 positive analog input.	I/0
2	GND	Ground.	P
3	RX_D2-	HDMI Receiver channel 2 negative analog input.	I/0
4	RX_D1+	HDMI Receiver channel 1 positive analog input.	I/0
5	GND	Ground.	P
6	RX_D1-	HDMI Receiver channel 1 negative analog inpsut.	I/0
7	RX_D0+	HDMI Receiver channel 0 positive analog input.	I/0
8	GND	Ground.	P
9	RX_D0-	HDMI Receiver channel 0 negative analog input.	I/0
10	RX_CLK+	HDMI Receiver clock positive analog input.	I
11	GND	Ground.	P
12	RX_CLK-	HDMI Receiver clock negative analog input.	I
13	CEC/DET_HDMI	No connection.	
14	NC	No connection.	
15	HDMI_SCL	HDMI Receiver DDC data channel.	I
16	HDMI_SDA	HDMI Receiver DDC clock channel.	I/0
17	GND	Ground.	P
18	HDMI_5V	HDMI Supply voltage (5.0V).	P
19	HPD	HDMI Receiver hot plug detect output	O

4. AMOLED Optical Characteristics

4.1 Optical specification

Item		Symbol	Conditio	Min.	Typ.	Max.	Unit.	Note
Contrast Ratio		CR	Θ=0 Normal	TBD	--	--		(1)(2)
Response time			25℃	--	TBD		msec	(1)(3)
			-20℃	--	TBD			
LCM Luminance		LV		850	900		cd/m2	
Color gamut		S(%)		94	99	--	%	(1)
Color Filter Chromacicity	White	W_X		-0.04	0.310	+0.04		(1)(4)
		W_Y			0.319			
	Red	R_X			0.668			
		R_Y			0.331			
	Green	G_X			0.225			
		G_Y			0.685			
	Blue	B_X			0.139			
		B_Y			0.045			
Viewing angle	Hor.	$Θ_L$	CR>10	--	TBD	--		(1)(4)
		$Θ_R$		--	TBD	--		
	Ver.	$Θ_U$		--	TBD	--		
		$Θ_D$		--	TBD	--		
OLED Life Time				30000	--	--	Hrs	
Option View Direction		ALL						(5)

Measuring Condition

Measuring surrounding : dark room

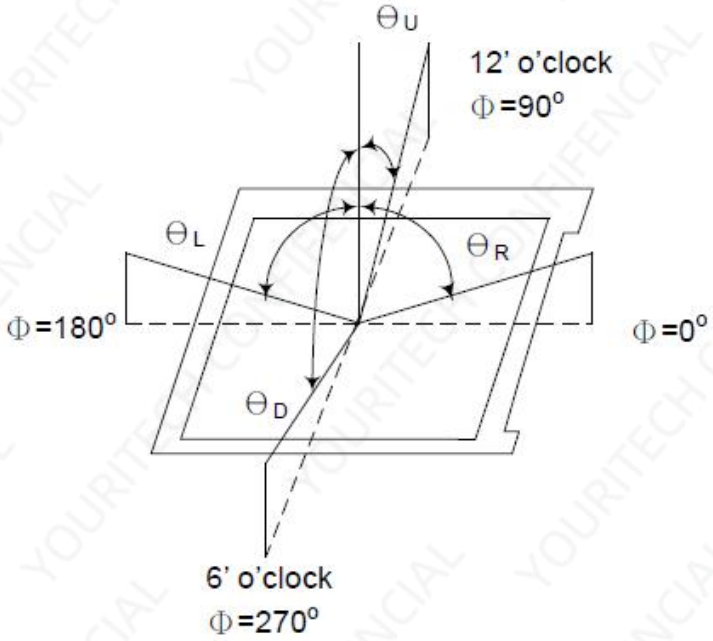
Ambient temperature : 25±2oC

15min. warm-up time.

Measuring Equipment

FPM520 of Westar Display technologies, INC., which utilized SR-3 for Chromaticity and BM-5A for other optical characteristics.

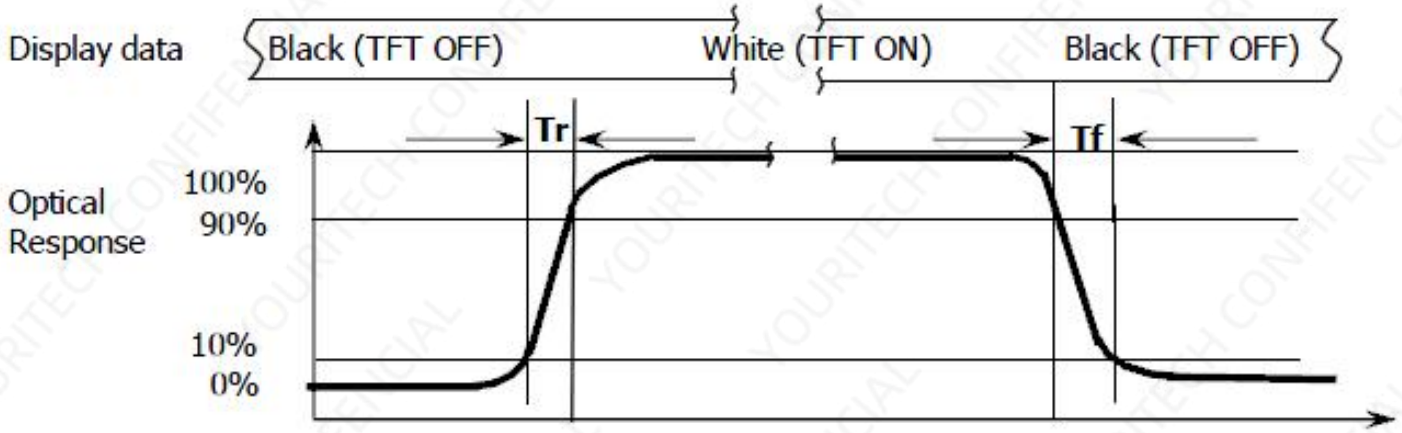
Note (1): Definition of Viewing Angle :



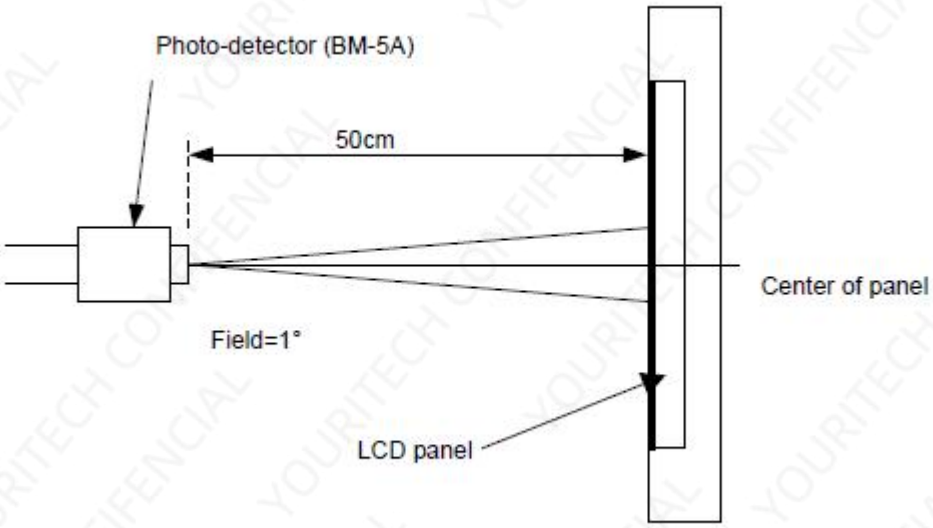
Note (2): Definition of Contrast Ratio(CR) :measured at the center point of panel

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

Note (3): Response Time



Note (4): Definition of optical measurement setup



5. AMOLED Electrical Characteristics

5.1 Absolute Maximum Rating (Ta=25 VSS=0V)

Characteristics	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	DC_IN	-0.5	12	V	Note1
Operating temperature	T_{OP}	-20	+70	℃	
Storage temperature	T_{ST}	-40	+80	℃	

NOTE: If the absolute maximum rating of even is one of the above parameters is exceeded even momentarily, the quality of the product may be degraded. Absolute maximum ratings, therefore, specify the values exceeding which the product may be physically damaged. Be sure to use the product within the range of the absolute maximum ratings.

5.2 DC Electrical Characteristics

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Note
Power Supply Voltage	DC_IN	--	--	12	V	
Normal mode Current consumption	I_{DC_IN}	--	219	--	mA	DC_IN=24V

6. Reliability Test Result

Item	Condition	Inspection after test
High Temperature Operating	60℃,96H	
Low Temperature Operating	-20℃, 96HR	
High Temperature Storage	70℃, 96HR	
Low Temperature Storage	-30℃, 96HR	
High Temperature & High Humidity Storage	+60℃, 90% RH ,96 hours.	
Thermal Shock (Non-operation)	-40℃,30 min ↔ 85℃,30 min, Change time:5min 20CYC.	

7. Cautions and Handling Precautions

7.1 Handling Precautions:

(1) The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from height..
(2) Do not press down the screen or the adjoining areas too hard because the color tone may be shifted.
(3) The polarizer covering the display surface of the AMOLED module is soft and easily scratched. Handle this polarizer carefully.
(4) If the display surface is contaminated, blow on the surface and gently wipe it with a soft dry cloth. If it is still not completely clear, moisten the cloth with ethyl alcohol.
(5) Solvents may damage the polarizer. Do not use water, ketone or aromatic solvents except ethyl alcohol. Do not attempt to disassemble the AMOLED Module.
(6) If the logic circuit power is off, do not apply the input signals.
(7) To prevent destruction from static electricity, be careful to maintain an optimum working environment.
(8) Be sure to make yourself in contact with the ground when handling with the AMOLED Modules.
(9) Tools required for assembly, such as soldering irons, must be properly ground.
(10) To reduce the generation of static electricity, do not conduct assembly or other work under dry conditions.
(11) To protect the display surface, the AMOLED Module is coated with a film. Be careful when peeling off this protective film, because static electricity may generate.

7.2 Storage Precautions.

(1) When storing the AMOLED modules, be sure that they are not directly exposed to the sunlight or the light of fluorescent lamps.
(2) The AMOLED modules should be stored under the storage temperature range. If the AMOLED modules will be stored for a long time, the recommended condition is: Temperature: 0℃~40℃ Relatively humidity: ≤80%
(3) The AMOLED modules should be stored in the room without acid, alkali or harmful gas.

7.3 Transportation Precautions:

(1) The AMOLED modules should not be suffered from falling and violent shocking during transportation. Besides, excessive press, water, damp and sunshine, should be avoided.

7. Packing

----TBD----------