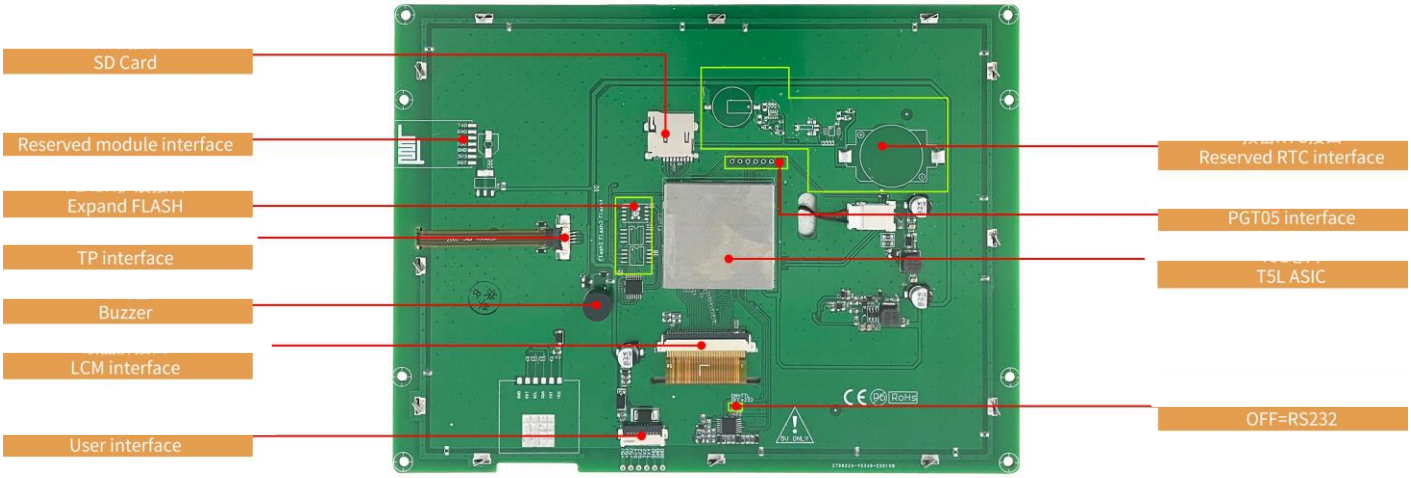
AGM-080A0I1-R

Features:

- **Based on T5L1, running DGUS II system, commercial grade.**
- **8.0-inch, 800*600 pixels resolution, 16.7M colors, TN-TFT-LCD, normal viewing angle.**
- **Resistive touch screen.**

1、Hardware and interface

1.1 Hardware interface



Hardware interface

1.2 Hardware and interface description

No.	Name	Description
1	T5L1 ASIC	Mass production in 2019,1MBytes Nor Flash on the chip, 512KBytes used to store the user database. Rewrite cycle: over 100,000 times
2	CM interface	PC50_0.5mm, RGB interface
3	RTP interface	4Pin_1.0mm interface
4	User interface	10Pin_1.0mm latching socket for power supply and serial communication. Download rate(typical value): 12KByte/s
5	Flash	16MBytes NOR Flash, for fonts, pictures and audio files. Rewrite cycle: over 100,000 times
6	Expand Flash	Expandable to 64Mbytes NOR Flash or 48Mbytes NOR Flash+512Mbytes NAND Flash
7	Buzzer	3V passive buzzer. Power: <1W
8	Reserved RTC interface	-
9	SD interface	FAT32. Download files by SD interface can be displayed in statistics. Download rate: 4Mb/s
10	Reserved module interface	Wi-Fi module: connect to the cloud platform to update remotely USB module: download files by USB flash disk
11	PGT05 interface	When product crashes by accident, you can use PGT05 to update DGUS kernel and make the product return to normal

2、Specification parameters

2.1 Display parameters

LCD Type	TN, TFT LCD
Viewing Angle	） Normal viewing angle, 70°/70°/50°/70° (L/R/U/D)
Resolution	800×600 pixels (support 0°/90°/180°/270°)
Color	24-bit 8R8G8B
Active Area (A.A.)	162.0mm (W) × 121.5mm (H)
View Area (V.A.)	164.8mm (W) × 124.3mm (H)
Backlight Mode	LED
Backlight Service Life	>10000 hours (Time of the brightness decaying to 50% on the condition of continuous working with the maximum brightness)
Brightness	250nit
Brightness Control	0~100 grade (When the brightness is adjusted to 1%~30% of the maximum brightness, flickering may occur and is not recommended to use in this range)
Note: You can use dynamic screen saver wallpapers to avoid afterimages caused by fixed page display for a long time.	

2.2 Touch parameters

Type	RTP (Resistive touch screen)
Structure	ITO film + ITO glass
Touch Mode	Support point touch and drag
Surface Hardness	3H
Light Transmittance	Over 80%
Life	Over 1,000,000 times touch

2.3 Serial interface parameters

Mode	UART2: ON=TTL/CMOS; OFF=RS232 RS232 Default RS232) UART4: ON=TTL/CMOS; OFF=RS232 (OS Only available after OS configuration)				
Voltage Level	Test Condition	Min	Typ	Max	Unit
	Output 1, Iout =-4mA	2.7	3.2	-	V
	Output 0, Iout = 4mA	-	0.1	0.4	V
	Input 1	2.4	3.3	5.5	V
	Input 0	0	-	1.0	V
Baud Rate	3150~3225600bps, typical value of 115200bps				
Data Format	UART2: N81 UART4: N81/E81/O81/N82 4 modes (OS configuration)				
Interface Cable	10Pin_1.0mm				

2.4 Electrical specifications

Rated Power	<5W	
Operating Voltage	4.5~5.5V， 5V 4.5~5.5V, typical value of 5V	
Operating Current	600mA	VCC=5V, max backlight
	200mA	VCC=5V, backlight off
Recommended power supply: 5V 1A DC		

2.5 Operating environment

Operating Temperature	-20℃~70℃ (5V @ 60% RH)
Storage Temperature	-30℃~80℃
Conformal coating	None
Operating Humidity	10%~90%RH，典型值 60%RH 10%~90%RH, typical value of 60% RH

3、Reliability test

3.1 Electrostatic discharge test

Test temperature: 25°C. Test humidity: 50%RH.

Test process: the product was placed on the test bench to perform contact and air discharge in turn of the serial screen iron frame and display area as shown in Fig.3.1 below. During the experimental process, it was observed whether the screen is dead, black, white, splash, or reboot. According to the experiment results, the performance is in line with the criteria GB/T 17626.2 B level and above.

3.1

Electrostatic discharge test

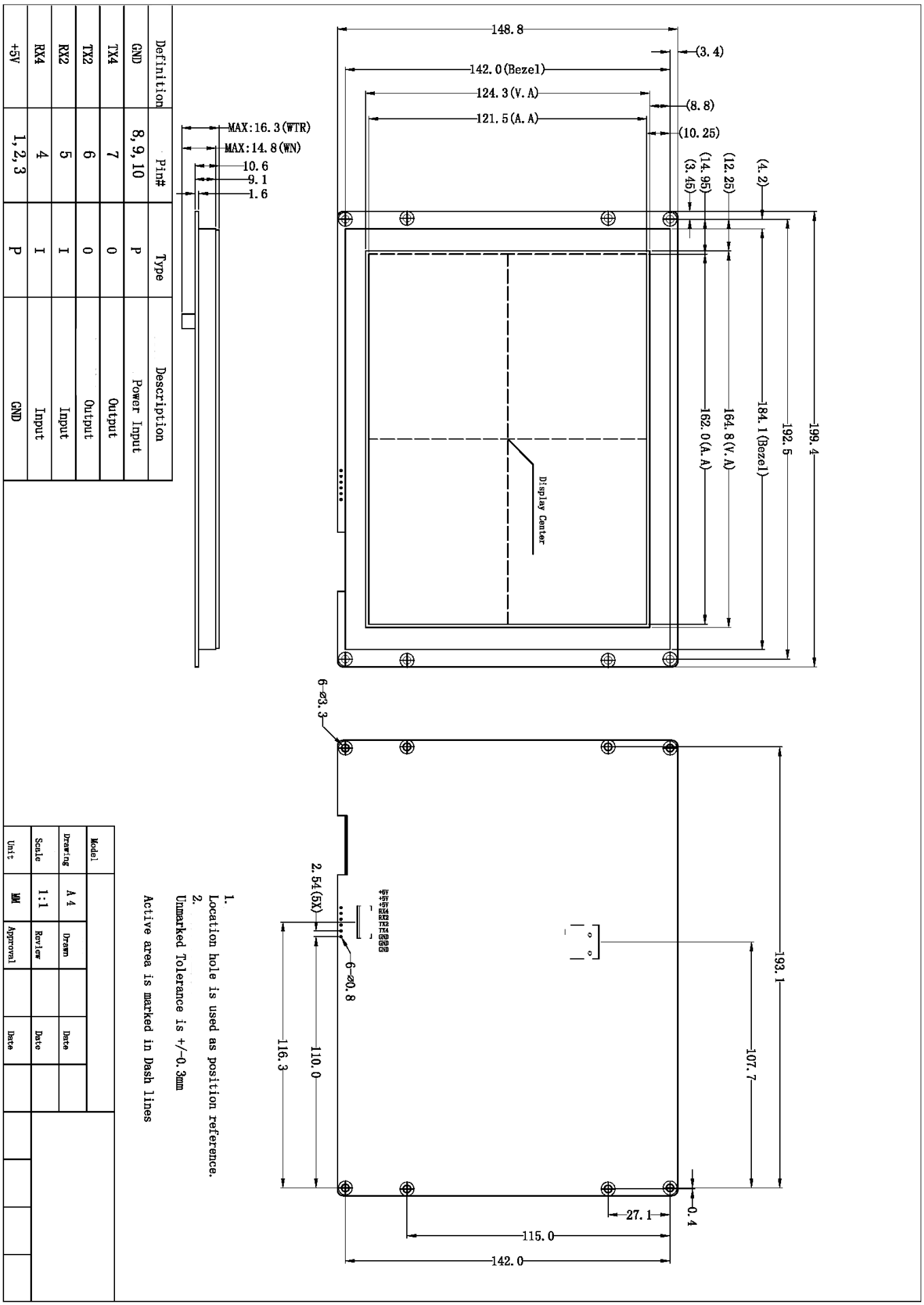
Discharge Type	Discharge Value	Result
Contact discharge	±4KV	Normal operation
Air discharge	±4KV	Normal operation

4、Packaging & dimensions

Form Factor	199.4mm (W)×148.8mm (H)×16.5mm (T)
Installation Dimensions	Positioning hole: 184.1(+0.3mm)×142.0(+0.3mm)
Net Weight	448g

Packaging Standards

Model	Dimensions	Layer	Quantity/Layer	Quantity(Pcs)
1 Carton1：	220mm(L)×160mm(W)×47mm (H)	-	-	-
2 Carton2：	250mm(L)×200mm(W)×80mm (H)	2	1	2
3 Carton3：	320mm(L)×270mm(W)×80mm (H)	-	-	-
4 Carton4：	435mm(L)×335mm(W)×290mm(H)	1	10	10
5 Carton5：	600mm(L)×430mm(W)×290mm(H)	1	30	30

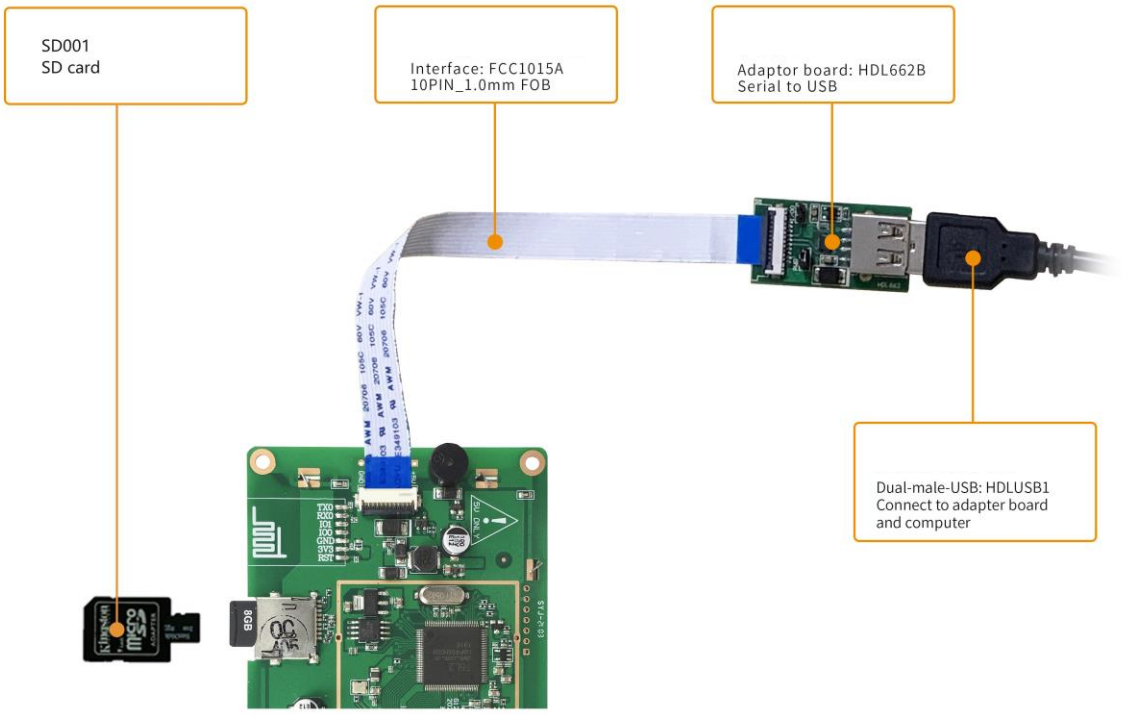


Definition	Pin#	Type	Description
GND	8, 9, 10	P	Power Input
TX4	7	O	Output
TX2	6	O	Output
RX2	5	I	Input
RX4	4	I	Input
+5V	1, 2, 3	P	GND

Model			
Drawing	A4	Drawn	Date
Scale	1:1	Review	Date
Unit	MM	Approval	Date

5、Debugging tools

It is recommended for new users smart LCMs to purchase official accessories. For more details, please refer to customer service center.



6、T5L series IC features

（1） 8051，1T 250MHz。

Mature and stable 8051 core which is the most widely used with the maximum operating frequency of T5L is up to 250MHz, 1T(single instruction cycle)high speed operation.

（2） CPU（GUI CPU）DGUS II：

Separate GUI CPU Core running DGUS II System:

- 2.4GB/S。

  High-speed display memory, 2.4GB/S bandwidth.

- 2D ,JPEG 200fps@1280*800，UI

  2D hardware acceleration, the decompression speed of JPEG is up to 200fps@1280*800 and the UI with animation and icons as its main feature is extremely cool and smooth.

- JPEG 16Mbytes SPI Flash。

  Images and icons stored in JPEG format. Adopt Low-cost 16Mbytes SPI Flash.

- 400Hz。

  Support CTP or RTP with adjustable sensitivity and maximum 400 Hz touch frequency.

- 1 15bit 32Ksps PWM

  1-way 15bit 32Ksps PWM digital power amplifier driver loudspeaker, save power amplifier cost and achieve high signal-to-noise ratio and sound quality restoration.

- 128Kbytes OS CPU

  128Kbytes variable storage space for exchanging data with OS CPU Core and memory.

- PC

  Support DGUS development and simulation on PC. Support background remote upgrade.

（3） CPU（OS CPU）8051 CPU：

Separate CPU (OS CPU) core runs user 8051 OS system and user CPU is omitted in practical application:

- 8051 64Kbytes，32Kbytes RAM。

  Standard 8051 architecture and instruction set, 64Kbytes code space, 32Kbytes on-chip RAM.

- 64bit（MDU），64bit MAC 和 64bit

  64 bit integer mathematical operation unit (MDU), including 64 bit MAC and 64 bit divider.

- 28 IO，4 UARTs，1 CAN， 8 12bit A/D，2 16bit PWM。

  28 IOs, 4-channel UARTs, 1-channel CAN, up to 8-channel 12-bit A/Ds and 2-channle 16-bit PWM of adjustable resolution.

- IAP

  Support IAP on-line simulation and debugging with unlimited number of breakpoints.

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- DGUS

Upgrade code online through DGUS system.

（4）1Mbytes Flash，

1Mbytes on-chip Flash patent encryption technology ensure code and data security.

（5）-40℃~+85℃ -55℃~105℃ IC）。

Operating temperature ranges from -40℃ to +85℃(IC operating temperature customizable from -55℃ to 105℃).

7、Revision records

Rev	Revise Date	Content	Editor
00	2019-03-21	First Edition	
01	2019-09-02	Modify Interface	
02	2019-11-26	Modify Interface Description	
03	2021-02-23	Nor Flash CAD Modify the storage temperature, output voltage, Nor Flash, peripheral, dimension, CAD drawing, figure	
04	2021-08-02	FLASH RTC） Update pictures（Add flash pad and RTC line）	
05	2021-11-04	Upgrade version	
06	2022-03-18	COB Change to cob structure, update the physical drawing	
07	2022-11-14	Modify dimension description	