



SPECIFICATION

AGM-070R0-A2-C

Revision History

Date	Rev.	Page	Description
2015-05-23	1.0	All	First issue

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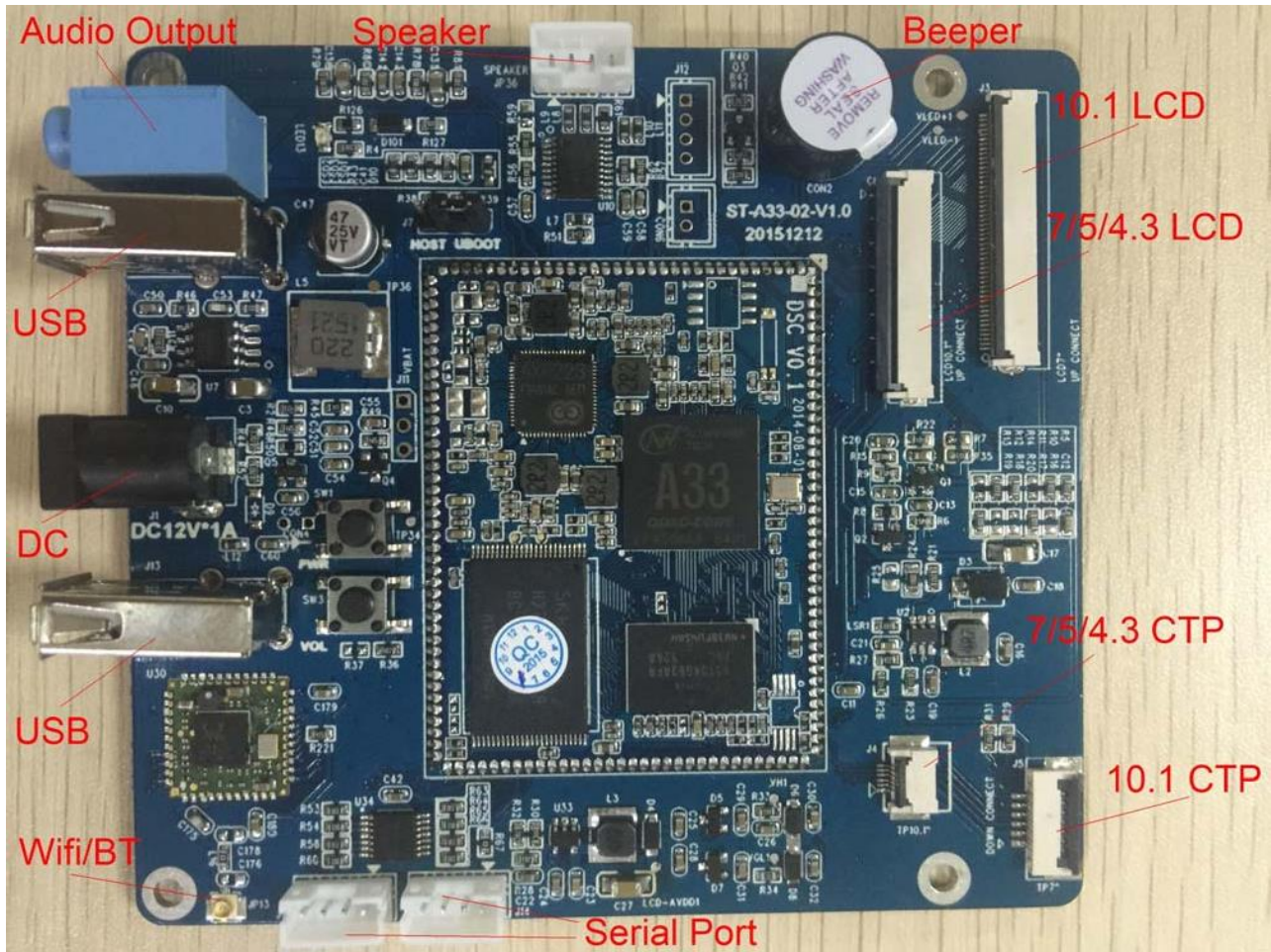
1. General Features

AGM-070R0-A2-C is a HMI board working on Android operating system, designed for customer's convenience running their products under "Android" control unit. It supports RS232/RS485 interface with customer's MCU, by sending commands via RS232/RS485 interface from customized APP, customer would easily finish development for their application with control unit based on Android system.

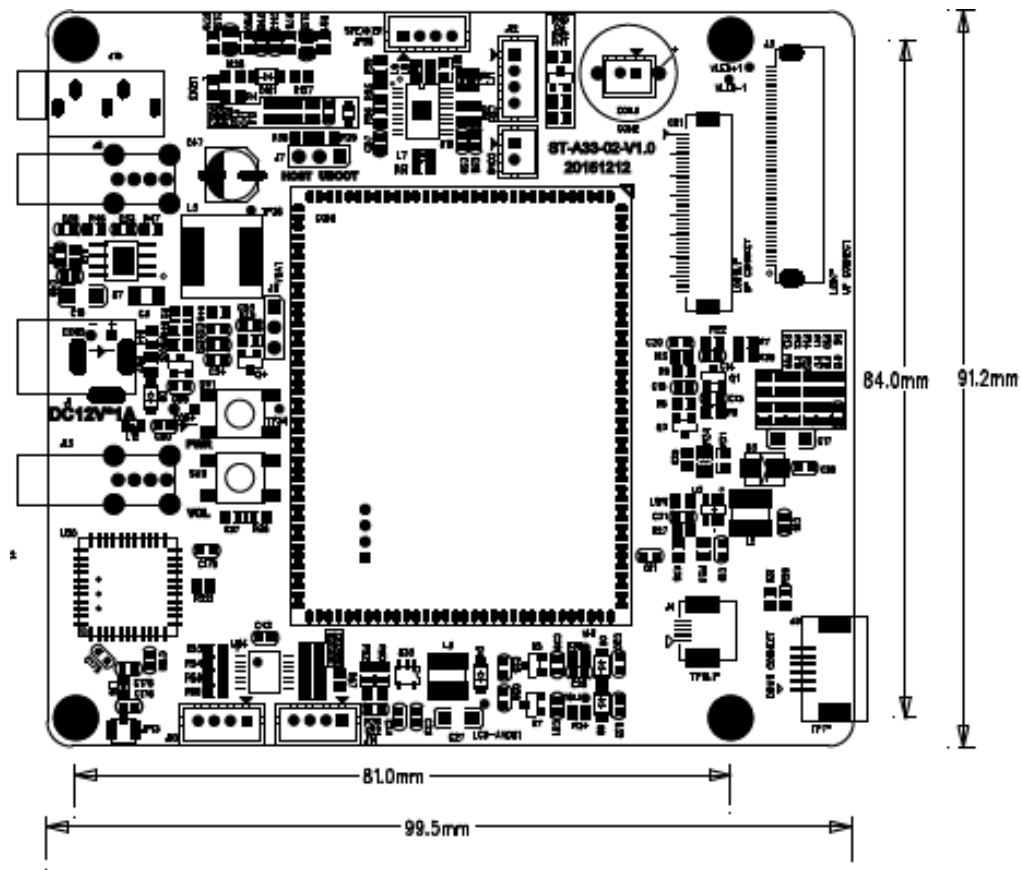
AGM-070R0-A2-C series works based on Android 4.4 operating system, uses Allwinner A33 SOC with 1.4GHZ frequency, integrated 4GB memory, supporting video playing, image viewing, VGA/Audio/LVDS/RGB signal output, RS232/RS485/ Ethernet /Wifi/3G/Bluetooth/USB interface etc.

General Features	
CPU	Allwinner A33, 1.4G frequency
Operation System	Android 4.4
Memory	DDR 512M
Internal Memory	FLASH 4GB
RS232/RS485 interface	RS232/RS485 interface
TFT LCD supported	3.5"~55" TFT LCD with RGB/LVDS interface
CTP supported	CTP with I2C interface
Internet connection supports	Ethernet/WCDMA 3G/Wifi/Bluetooth
Camera supported	Maximum 500M Pixels
Speaker Supported	Left/Right Channel
Microphone	Microphone supported
USB 2.0 interface	One OTG, two USB host, one USB inserter
VGA output	VGA signal Output
Audio Output	CVBS format output with left/right tracks
Display Resolution Supports	Max 2160P
Video Format supports	wmv、avi、flv、rm、rmvb、mpeg、ts、mp4 etc
Audio Format Supports	Mp3 etc
Image format Supports	BMP、JPEG、PNG、GIF etc
TF card	TF card integrated
Beeper	Beeper integrated
Real Time Clock supports	Supports Real Time Clock
System Updates	Support System updates via USB interface

2. Outline dimension and product pictures



AGM-070R0-A2-C with peripheral blocks, picture for reference



AGM-070R0-A2-C outline

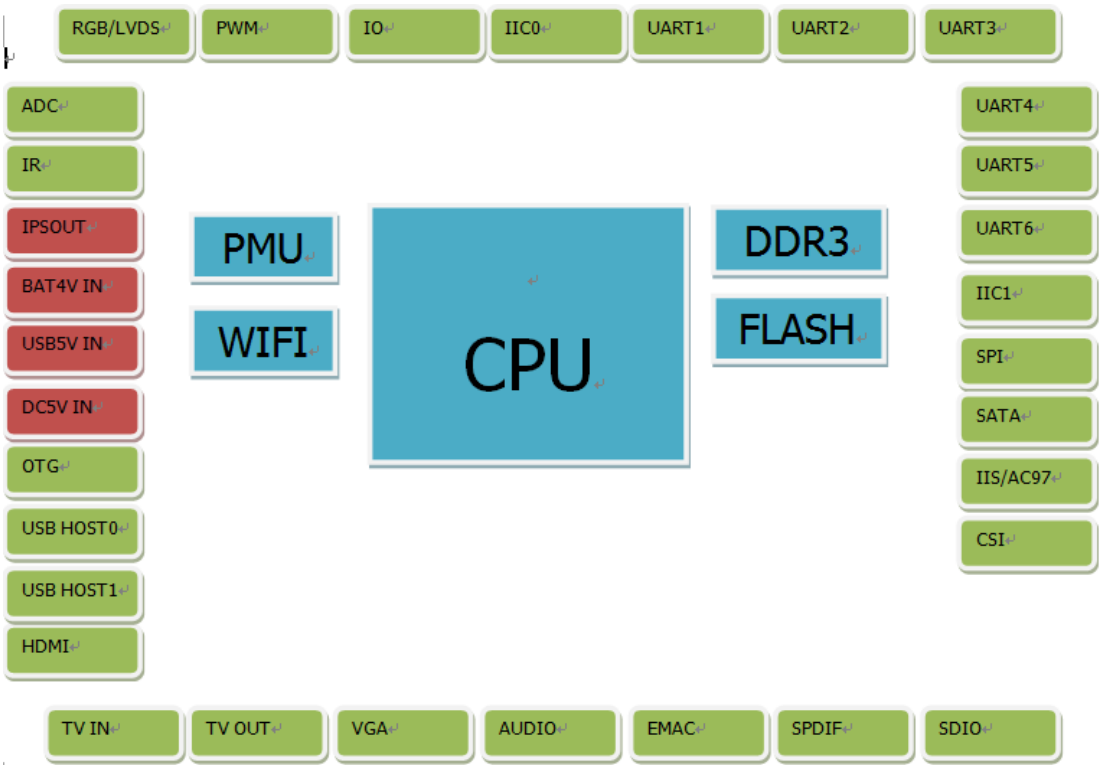


AGM-070R0-A2-C core board Front Side

3. Electrical specifications

Items		Min	Typical	Max
Power Supply	DC12V input	--	12V	
Power Consumption	Operating current	--	500mA	800mA
Environment	Operating Temp	-10°C	--	60°C
	Storage Temp	-20°C	--	70°C

4. Block Diagram



5. Pin interface description in different function block

RS232/TTL UART

Pin 1	VCC 3V
Pin 2	TX
Pin 3	RX
Pin 4	GND

RS485/TTL UART

Alternative, need customization

Other peripheral blocks customized:

Operation System:	Android 4.4			
SOC:	All Winner A33,1.4G frequency			
Memory	DDR 512MB			
Internal Memory	FLASH 4GB			
Integrated Blocks	USB 2.0×2,TF card slot×1,beeper			
interface:	☐ RS232	☐ RS485		
PCBA General Outline:				
TFT LCD Size:	☐ no need	☐ need	Size:	Pixels:
CTP:	☐ no need	☐ need, Size:		
Ethernet:	☐ no need	☐ need		
Wifi:	☐ no need	☐ need		
Bluetooth:	☐ no need	☐ need		
WCDMA 3G Module:	☐ no need	☐ need		
Camera:	☐ no need	☐ need, resolution:		
Speaker:	☐ no need	☐ need		
Microphone:	☐ no need	☐ need		
VGA Output:	☐ no need	☐ need		
Key Pad:	☐ no need	☐ need		
Other Blocks requires:				
Remark:				

6. Reliability Standard

No.	Test Item		Test Conditions	Remark
1	High Temperature	Storage	70°C, 48Hr	
		Operation	60°C, 48Hr	
2	Low Temperature	Storage	-20°C, 48Hr	
		Operation	-10°C, 48Hr	
3	High Temperature and High Humidity		40°C, 90%RH, 48Hr	
4	ESD Test		Air +/-8KV 5 times; Contact: +/-4 KV 5 times;	
5	Vibration Test(Storage)		50HZ, 30min, Amplitude: 2 cm, X/Y/Z directions	

7. Technical Service Supports

All peripheral blocks adjusted well by AGT

Customer needs to download Android system SDK from Google website, then develop software commands based on RS232/RS485 protocol

Suggest customer develop APP themselves

Experienced technical teams to share “Android” products development experience, details pls contact: projetos@agte.com.br

8 . TFT General Specifications

No.	Item	Specification	Remark
1	LCD size	7.0 inch(Diagonal)	
2	Driver element	a-Si TFT active matrix	
3	Resolution	800 × 3(RGB) × 480	
4	Display mode	Normally White, Transmissive	
5	Dot pitch	0.0642(W) × 0.1790(H) mm	
6	Active area	154.08(W) × 85.92(H) mm	
7	Module size	164.9(W) × 100.0(H) × 7.6(D) mm	
8	Surface treatment Anti-Glare		
9	Color arrangement	RGB-stripe	
10	Interface	TTL RGB-24bit parallel interface	
11	Backlight power consumption	TBD	
12	Panel power consumption	TBD	
13	Weight	TBD	

9 .TFT Pin Assignment

Pin No.	Symbol	I/O	Function	Remark
1	VLED+	P	Power for LED backlight(anode)	Note 8
2	VLED+	P	Power for LED backlight(anode)	Note 8
3	VLED-	P	Power for LED backlight(Cathode)	Note 8
4	VLED-	P	Power for LED backlight(Cathode)	Note 8
5	GND	P	Power ground	
6	V _{COM}	I	Common voltage	
7	DV _{DD}	P	Power for Digital Circuit	
8	MODE	I	DE/SYNC mode select	Note 1
9	DE	I	Data Input Enable	
10	VS	I	Vertical Sync Input	
11	HS	I	Horizontal Sync Input	
12	B7	I	Blue data(MSB)	
13	B6	I	Blue data	
14	B5	I	Blue data	
15	B4	I	Blue data	
16	B3	I	Blue data	
17	B2	I	Blue data	
18	B1	I	Blue data	Note 2
19	B0	I	Blue data(LSB)	Note 2
20	G7	I	Green data(MSB)	
21	G6	I	Green data	
22	G5	I	Green data	
23	G4	I	Green data	
24	G3	I	Green data	
25	G2	I	Green data	
26	G1	I	Green data	Note 2

27	GO	I	Green data(LSB)	Note 2
28	R7	I	Red data(MSB)	
29	R6	I	Red data	
30	R5	I	Red data	
31	R4	I	Red data	
32	R3	I	Red data	
33	R2	I	Red data	
34	R1	I	Red data	Note 2
35	RO	I	Red data(LSB)	Note 2
36	GND	P	Power Ground	
37	DCLK	I	Sample clock	Note 3
38	GND	P	Power Ground	
39	L/R	I	Left / right selection	Note 4,5
40	U/D	I	Up/down selection	Note 4,5
41	V _{GH}	P	Gate ON Voltage	
42	V _{GL}	P	Gate OFF Voltage	
43	AV _{DD}	P	Power for An log Circuit	
44	RESET	I	Global reset pin.	Note 6
45	NC	-	No connection	
46	V _{COM}	I	Common Voltage	
47	DITHB	I	Dithering function	Note 7
48	GND	P	Power Ground	
49	NC	-	No connection	
50	NC	-	No connection	

I: input, O: output, P: Power

Note 1: DE/SYNC mode select. Normally pull high.

When select DE mode, MODE="1", VS and HS must pull high.

When select SYNC mode, MODE= "0", DE must be grounded.

Note 2: When input 18 bits RGB data, the two low bits of R,G and B data must be grounded.

Note 3: Data shall be latched at the falling edge of DCLK.

9.1.1. Typical Operation Conditions

(Note 1)

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power voltage	DV _{DD}	3.0	3.3	3.6	V	Note 2
	AV _{DD}	10.2	10.4	10.6	V	
	V _{GH}	15.3	16.0	16.7	V	
	V _{GL}	-7.7	-7.0	-6.3	V	
Input signal voltage	V _{COM}	2.6	(3.6)	4.6	V	Note 4
Input logic high voltage	V _{IH}	0.7 DV _{DD}	-	DV _{DD}	V	Note 3
Input logic low voltage	V _{IL}	0	-	0.3 DV _{DD}	V	

Note 1: Be sure to apply DV_{DD} and V_{GL} to the LCD first, and then apply V_{GH}.

Note 2: DV_{DD} setting should match the signals output voltage (refer to Note 3) of customer's system board.

Note 3: DCLK,HS,VS,RESET,U/D, L/R,DE,R0~R7,G0~G7,B0~B7,MODE,DITHB.

Note 4: Typical V_{COM} is only a reference value. It must be optimized according to each LCM. Please use VR and base on below application circuit.

10. TFT Mechanical Drawing

