



# Media Player Board SWH-5159

**Specification V1.0**

## **Revision history**

<b>Revision</b>	<b>Revision date</b>	<b>Principle changes</b>
V1.0	Nov. 2014	Create based on SWH-5159 V1.0

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# 1 Overview

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## 1.1 Introduction

Signway networked multimedia player board SWH-5159 is designed based on Rockchip chipset, which has a powerful capacity of multimedia processing, together with Mstar LCD solution, helping create a professional high-definition display by offering full HD decoding up to 1080P.

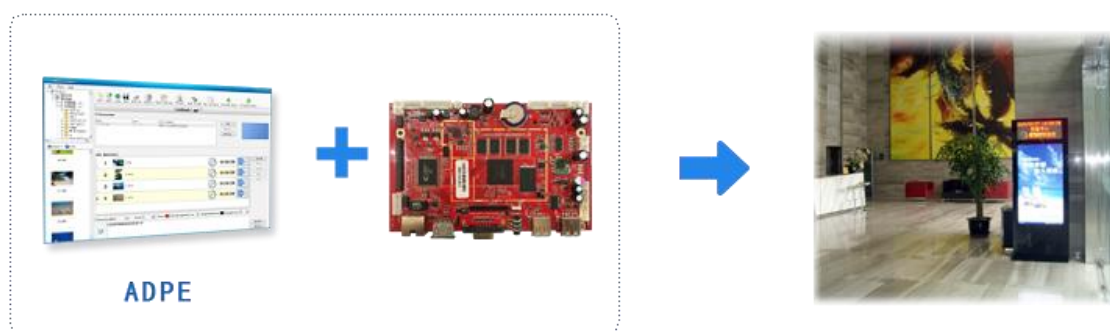
## 1.2 Features

- Compact design combining multi-media decoding, LCD drive, audio amplifier and multiple network access
- HDMI/VGA interfaces are provided for access of various 15'-100' displays with a resolution up to 1080p
- Support smooth multi-touch interaction
- Capable of running multiple playlists as scheduled, with seamless transitions between videos and images, full-screen and split-screen displays.
- Supports display of scroll text, date, time, weather and LOGO
- Supports background music playback while displaying HD images
- With intelligent scheduling, contents can be played on a loop, at a specified time or idle hours, or as instant break-ins.
- Support network time and synchronization playback
- Breakpoint resume, time download and bandwidth control help to make use of network resources more effectively.
- Auto timed on/off in multiple periods enables unattended operation
- Both vertical and horizontal displays are supported
- Support split-screen zones for web access and touch interaction
- Player operations such as adjusting playback volume, changing display screen, reboot, sleep and wake can be completed remotely with just one click
- Contents can be updated remotely, or imported or read directly from a USB disk on site
- Support hybrid Standalone/LAN/WIFI/3G networks.
- Work well with Signway GTV, ADPE and EzPoster content management system, fitting projects of any scale

## 1.3 Applications

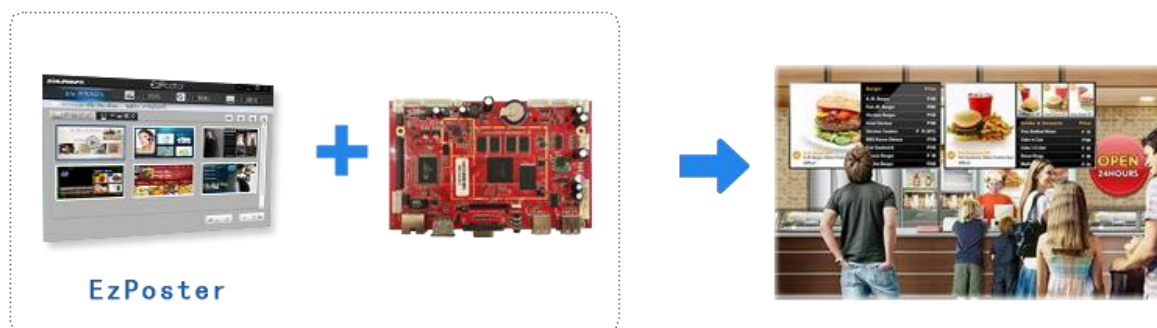
### ■ Stand-alone Work Mode

If there is only one or just a few concentrated players, it is advised to use Signway ADPE to compile programs. Programs can be exported to a USB disk and then imported to players. This is especially suitable for such occasions as restaurants, exhibitions and hotels.



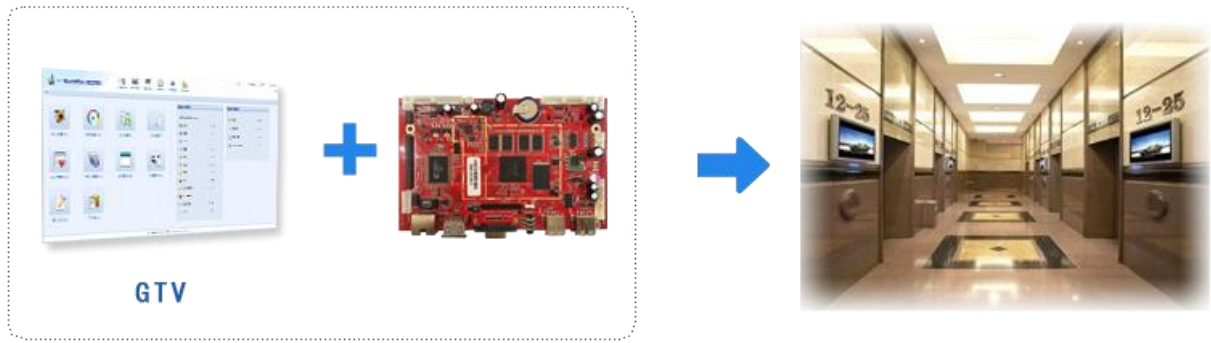
### ■ Small Scale LAN

For a small scale deployment, it is advised to use Signway EzPoster to compile programs. Programs can be distributed to players via the network or a USB disk. This is especially suitable for such occasions as meeting notifications.



### ■ WAN Deployment

For a widespread project, it is advised to use Signway CDMS to compile programs and distribute contents to players via the network of WAN, LAN, VPN, WiFi or 3G. This is especially suitable for large and super-large deployment.



# 2 Specification

Hardware Configuration	
Board	Rockchip RK3066 + ARM Dual-core Cortex A9 1.5 GHz CPU (Up to 1.6GHz) + ARM Quad Mali-400 MP GPU + HYNIX/SAMSUNG DDR3 1Gbyte + HYNIX/SAMSUNG NAND FLASH 8GB (extensible TF/USB)
Resolution	1080P Full HD
Main Features	
OS	Android 4.2.2
Contents	Support Video/Image/Text/logo/Date/Time/Weekday/Weather split-screen display and background image
Playback	<ol style="list-style-type: none"> <li>1) Contents are obtained via network and stored in local disk for playback on a loop, at a specified time or idle hours, or as instant break-ins.</li> <li>2) Contents are imported from a USB disk.</li> <li>3) Play contents stored in a USB disk.</li> </ol>
Content Management	<ol style="list-style-type: none"> <li>1) CDMS (B/S architecture) - customized templates, scheduled publish, idle-time/scheduled/looping/break-in playback, bi-directional MD5 encryption, Multi-level audits, grouped players, real-time monitoring, remote control, timed on/off, timed download, traffic control, rights control, log statistics</li> <li>2) ADPE/EzPoste (C/S architecture) – program compilation, schedule arrangement, export to a USB disk, bi-directional encryption, timed on/off</li> </ol> <p>NOTE: The player control software is required for these features.</p>
Media Formats	
Media Formats	Video: MPEG1, MPEG2, MPEG4, H.264, WMV, MKV, TS, flv Audio: MP3 Image: JPG, JPEG, BMP, PNG, GIF
Interfaces	
Power Supply	×1
Video Input	VGA×1 HDMI×1
Video Output	×1, LVDS 40 Pin, 2.0mm, Double Row, direct for 50/60Hz LCD, 8bit/10bit Screen
Audio Input	×1, Line In, 3.5mm Headphone
Audio Output	×2, 2 Pin 2.0mm, Stereo CLASS-D Amplifier, direct for 2*8W/8Ω Speaker
LAN	×1, 10/100M Ethernet
WiFi	×1, WIFI(802.11bgn)

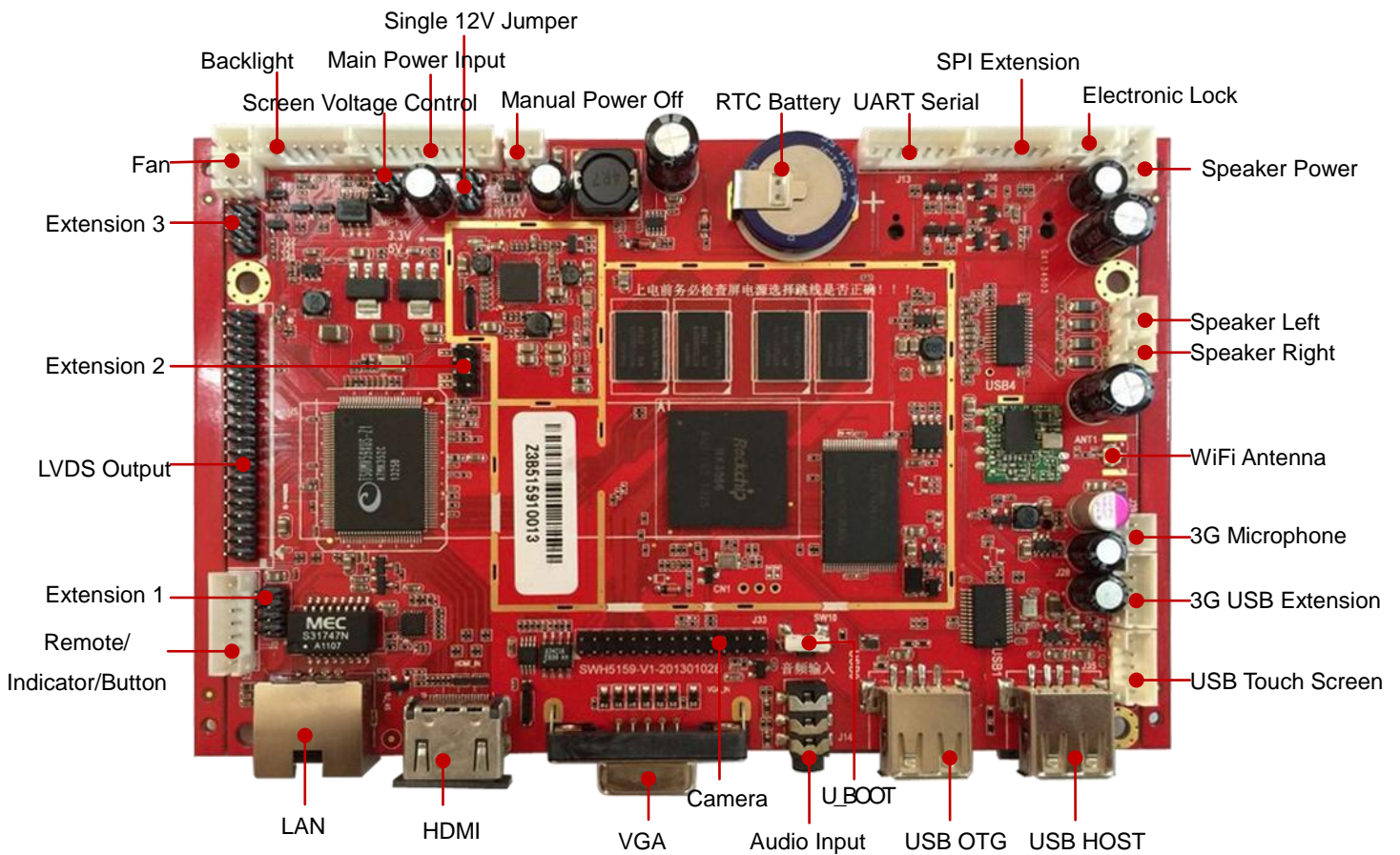
3G Module Slot	PCIE Slot (2G/3G Module) ×1 SIM Slot×1
USB2.0	USB OTG×1 (can be used as HOST) USB HOST×1
Backlight	×1, 6 Pin, 2.0mm
Fan	×2, 2 Pin, 2.0mm
IR	×1, 5 Pin, 2.0mm, Red/Green LED
Extension	Serial Port ×1 SPI×1 (can be used as serial port) Camera Input ×1 USB Touch Screen ×1
TF Card Slot	×1
<b>Other Features</b>	
RTC	Time synchronization over network and time saving when power failure
Watch Dog	WDT circuit included for auto recovery from failure
IR Input	Specified remote of NEC format
<b>Electrical Parameter</b>	
Input Power	Switching Power (STB, 5VSB, 5V, 12V) , 10Pin, 2.00mm Single 12V



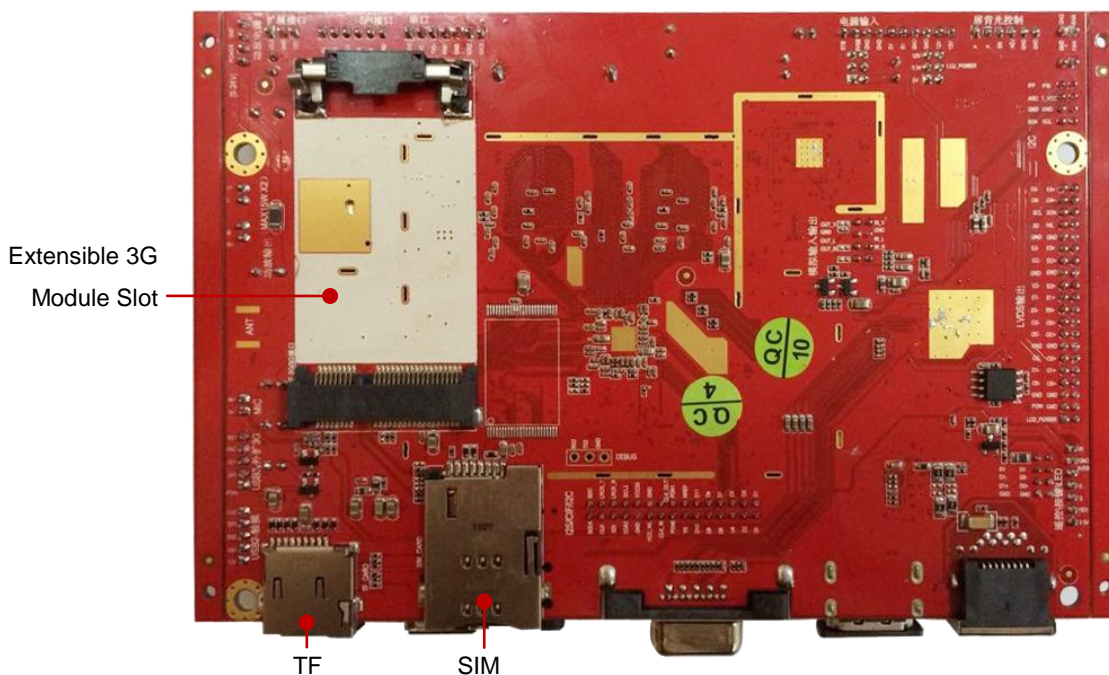
# 3 Profile

## 3.1 Profile

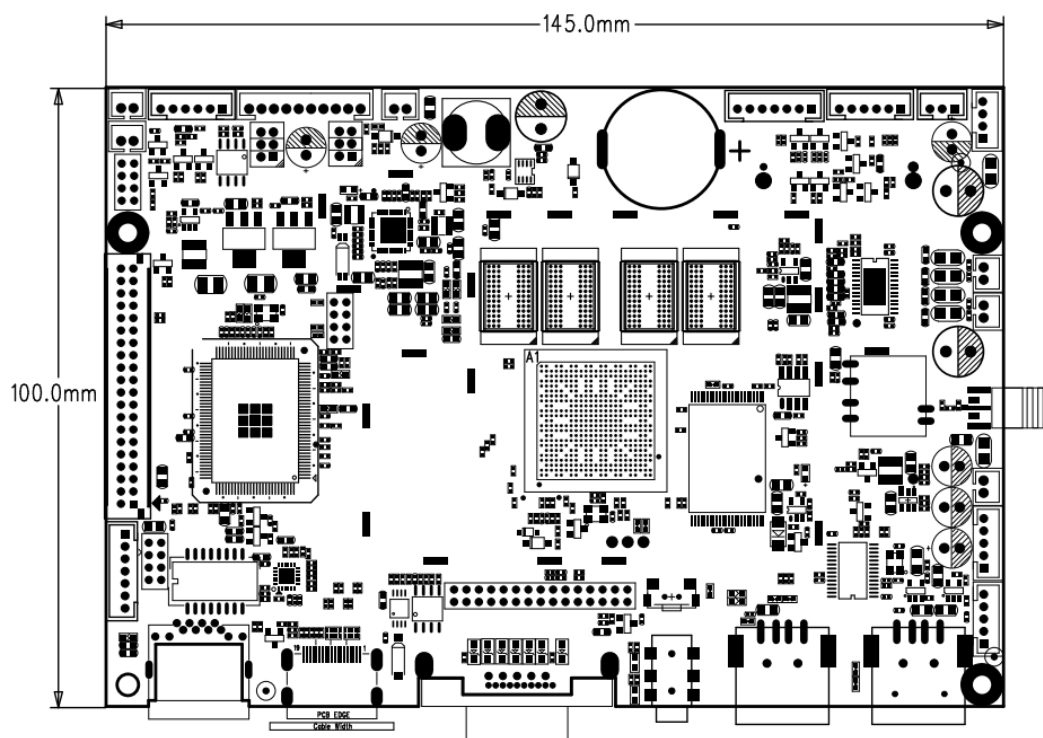
### ■ Front View



■ Rear View



3.2 Dimensions

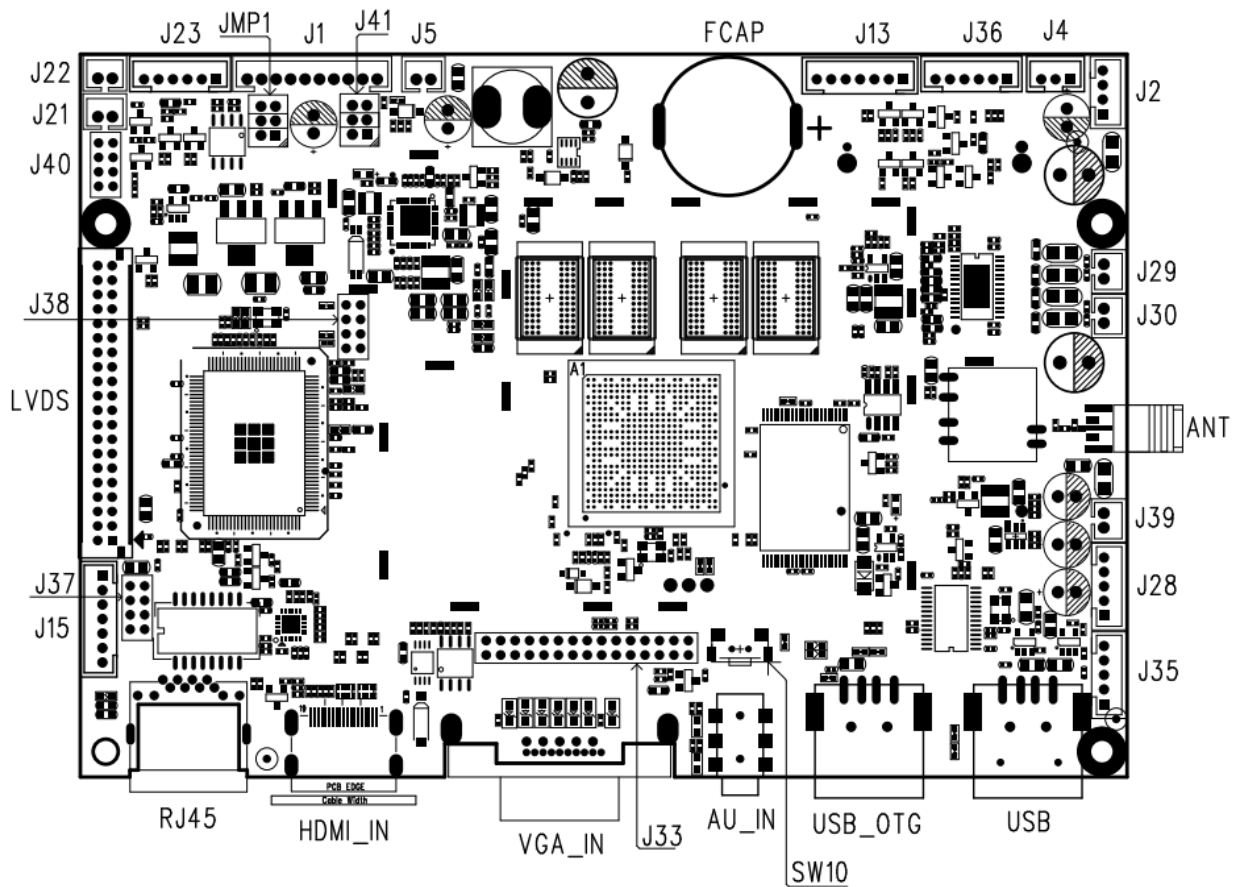


Length: 145mm, Width: 100mm, Front Max. Height: 11.5mm, Rear Max. Height: 5mm, Screw Hole:  $\Phi 3.5\text{mm}$

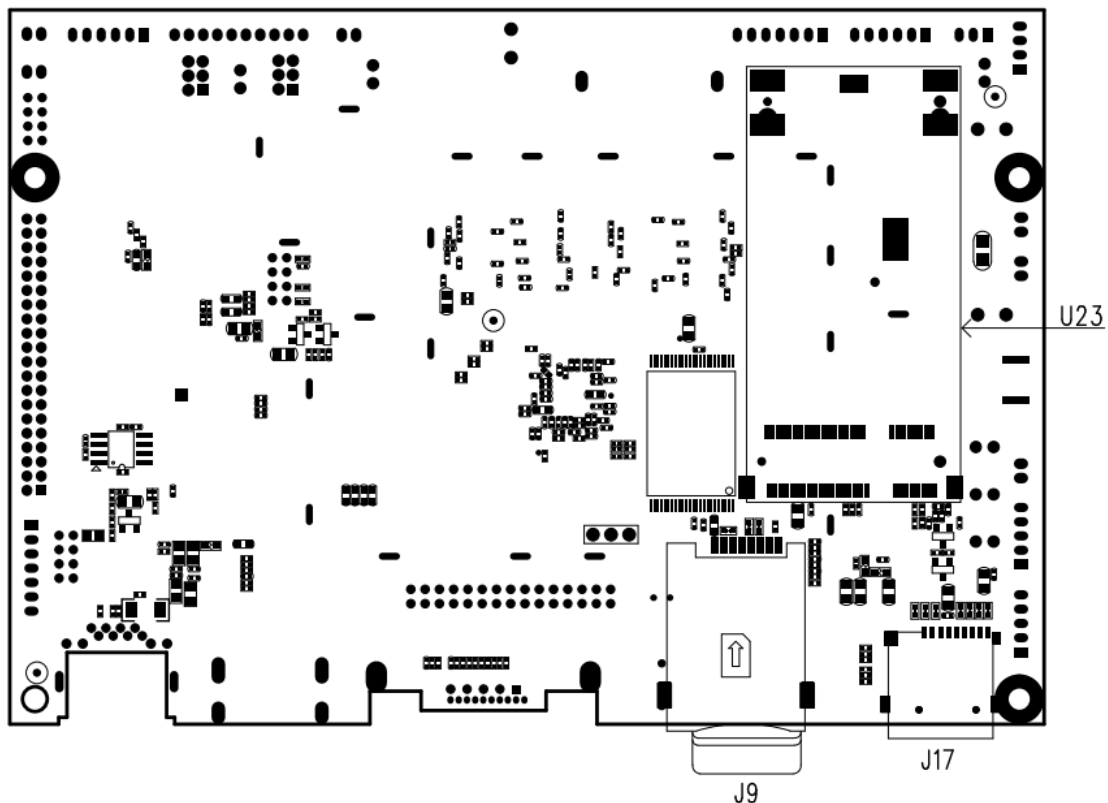
# 4 Interfaces

## 4.1 Interface Layout

### ■ Front



Rear



## 4.2 Interface Description

### ◆ J1 Main Power Input

Pin No.	Pin Name	Type	Description
1	STB	Output	Standby Power Control
2	+5V_STANDBY	Input	Standby Power, +5V
3	GND	Ground	Ground
4			
5	+5V_NAOMAL	Input	+5V general power input, not including backlight and LCD; Minimum current 1A Maximum LCD current is 1A and separate power supply is required for extra demands.
6			
7	GND	Ground	Ground
8			
9	+12V_NORMAL	Input	+12V general power input, not including backlight and LCD; Minimum current 1A Maximum LCD current is 1A and separate power supply is required for extra demands Maximum backlight current is 3A and separate power supply is required for extra demands
10			

### ◆ J2 Speaker Power Input

Pin No.	Pin Name	Type	Description
1	OP_12VIN	Power Input	+12V Power Input
2	OP_12VIN	Power Input	+12V Power Input
3	GND	Ground	Ground
4	GND	Ground	Ground

### ◆ J4 Electronic Lock

Pin No.	Pin Name	Type	Description
1	ELOCK	Output	Electronic Lock Control
2	GND	Ground	Ground
3	+12V_NORMAL	Power Output	+12 Power Output

### ◆ J5 Manual Power Off Interface

Pin No.	Pin Name	Type	Description
1	GND	Ground	Ground
2	V59_POW_EN	Input	High Level, Power Off when Low

### ◆ J13 UART Serial

Pin No.	Pin Name	Type	Description
1	UART_12V	Power Output	+12V Power Output
2	UART_5V	Power Output	+5V Power Output
3	UART0_TX	Output	UART Data Output, 3.3V TTL
4	UART0_RX	Input	UART Data Input, 3.3V TTL
5	GND	Ground	Ground
6	GPIO0_C2	Output	Output Control
7	GPIO0_C3	Output	Output Control

### ◆ J15 Remote Receiver/ Working Indicator/ Button Interface

Pin No.	Pin Name	Type	Description
1	IR	Input	Remote Receiver Input
2	GND	Ground	Ground
3	+5V	Power Output	Remote Power +5V
4	LED_R	Red Light	Indicates Standby State
5	LED_G	Green Light	Indicates Working State
6	KEY0	Input	Outer Button Input
7	+3.3V	Power Output	Button Power Output

### ◆ J21/ J22 Fan

Pin No.	Pin Name	Type	Description
1	GND	Ground	Ground
2	FAN	Power Output	12V Fan Power Output

### ◆ J23 Backlight Inverter Control

Pin No.	Pin Name	Type	Description
1	+12V_NORMAL	Power Output	+12V Backlight Power Output, Switch Controlled, Max. Current: 3A Large size multi-tube backlight with more than 3A current requires separate power supply
2			
3	BL_ON/OFF	Output	5V Backlight On/Off Signal, High/Low Configured
4	BL_ADJ	Output	Backlight DIMMING Control
5	GND	Ground	Ground
6			

### ◆ J28 3G\_USB Extension

Pin No.	Pin Name	Type	Description
1	3G_PWR	Power Output	Power Output, +5V
2	3G_DM	Input\ Output	D- Signal
3	3G_DP	Input\ Output	D+ Signal
4	GND	Ground	Ground
5	3G_RST	Output	Reset Control

### ◆ J29 Left Speaker Output

Pin No.	Pin Name	Type	Description
1	L-	Output	- Audio Signal of Left Speaker
2	L+	Output	+ Audio Signal of Left Speaker

### ◆ J30 Right Speaker Output

Pin No.	Pin Name	Type	Description
1	R-	Output	- Audio Signal of Right Speaker
2	R+	Output	+ Audio Signal of Right Speaker

### ◆ J33 Camera Input

Pin No.	Pin Name	Type	Description
1	CIP0_D0	Input	Image Data Input bit[0]
2	CIP0_D1	Input	Image Data Input bit[1]
3	CIP0_D2	Input	Image Data Input bit[2]
4	CIP0_D3	Input	Image Data Input bit[3]
5	CIP0_D4	Input	Image Data Input bit[4]
6	CIP0_D5	Input	Image Data Input bit[5]
7	CIP0_D6	Input	Image Data Input bit[6]
8	CIP0_D7	Input	Image Data Input bit[7]
9	CIP0_D8	Input	Image Data Input bit[8]
10	CIP0_D9	Input	Image Data Input bit[9]
11	CIP0_D10	Input	Image Data Input bit[10]
12	CIP0_D11	Input	Image Data Input bit[11]
13	CIP0_VS	Input	VSYNC Input
14	CIP0_HREF	Input	HREF Input
15	CIP0_PDN	Output	Control
16	CIP1_PDN	Output	Control
17	CIP0_CLKIN	Input	System Clock Input
18	CIP0_CLKOUT	Output	System Clock Output
19	VCCIO_WL	Power Output	+1.8V Power Output
20	GND	Ground	Ground
21			
22	VCC_IO	Power Output	3.3V Power Output

Pin No.	Pin Name	Type	Description
23	I2C3_SDA	Input/ Output	I2C Data
24	I2C3_SCL	Output	I2C Clock
25	I2S0_SDI	Input	Data Input
26	I2S0_LRCK_RX	Input	LRCK Input
27	I2S0_CLK	Output	General Clock Signal
28	I2S0_LRCK_TX	Output	LRCK Output
29	I2S0_SCLK	Output	Clock
30	I2S0_SDO0	Output	Data Output

### ◆ J35 USB Touch Screen Extension

Pin No.	Pin Name	Type	Description
1	+12V	Power Output	+12V Power Output
2	+5V	Power Output	+5V Power Output
3	DM	Input\ Output	D- Signal
4	DP	Input\ Output	D+ Signal
5	GND	Ground	Ground

### ◆ J36 Extensible SPI Interface

Pin No.	Pin Name	Type	Description
1	+5V	Power Output	+5V Power Output
2	SPI0_CS	Output	SPI Chip Select
3	SPI0_CLK	Output/Output	SPI Clock
4	SPI0_RXD	Input	SPI Data Input
5	SP0_TXD	Output	SPI Data Output
6	GND	Ground	Ground

### ◆ J37 Extensible Interface 1

Pin No.	Pin Name	Type	Description
1	GND	Ground	Ground
2			
3	USB1_DP	Input\ Output	D+ Signal of USB1
4	USB0_DP	Input\ Output	D+ Signal of USB0



Pin No.	Pin Name	Type	Description
5	USB1_DM	Input\ Output	D- Signal of USB1
6	USB0_DM	Input\ Output	D- Signal of USB0
7	+5V	Power Output	+5V Power Output
8			

### ◆ J38 Extensible Interface 2

Pin No.	Pin Name	Type	Description
1	AV_IN_V	Input	Video Input
2	AV_VOUT	Output	Video Output
3	GND	Ground	Ground
4			
5	AV_IN_L	Input	Audio Input
6	AV_LOUT	Output	Audio Output
7	AV_IN_R	Input	Audio Input
8	AV_ROUT	Output	Audio Output

### ◆ J39 3G\_MIC

Pin No.	Pin Name	Type	Description
1	3G_MIC-	Input	Negative 3G Microphone Input
2	3G_MIC+	Input	Positive 3G Microphone Input

### ◆ J40 Extensible Interface 3

Pin No.	Pin Name	Type	Description
1	SYS_SDA	Input/ Output	I2C Data
2	SYS_SCL	Output	I2C Clock
3	GND	Ground	Ground
4			
5	IFP	Input	Positive Tuner Input Signal
6	IFM	Input	Negative Tuner Input Signal

### ◆ JMP1 LCD Screen Voltage Control

Pin No.	Pin Name	Type	Description
1	+5V	Power Output	+5V Power Output
3	+3.3V	Power Output	+3.3V Power Output
5	+12V	Power Output	+12V Power Output
4	VCC_Panel	Power Input	Screen Power Input
5			
6			

### ◆ LVDS LVDS Signal Output

Pin No.	Pin Name	Type	Description
1	VCC_Panel	Power Output	Optional 3.3V/5V/12V LCD Power Output
2			
3			
4	GND	Ground	Power Ground
5			
6			
7	RX00-	Output	Pixel0 Negative Data (Odd)
8	RX00+	Output	Pixel0 Positive Data (Odd)
9	RX01-	Output	Pixel1 Negative Data (Odd)
10	RX01+	Output	Pixel1 Positive Data (Odd)
11	RX02-	Output	Pixel2 Negative Data (Odd)
12	RX02+	Output	Pixel2 Positive Data (Odd)
13	GND	Ground	Power Ground
14			
15	RXOC-	Output	Negative Sampling Clock (Odd)
16	RXOC+	Output	Positive Sampling Clock (Odd)
17	RX03-	Output	Pixel3 Negative Data (Odd)
18	RX03+	Output	Pixel3 Positive Data (Odd)
19	RXE0-	Output	Pixel0 Negative Data ( Even )
20	RXE0+	Output	Pixel0 Positive Data ( Even )
21	RXE1-	Output	Pixel1 Negative Data ( Even )
21	RXE1+	Output	Pixel1 Positive Data ( Even )
23	RXE2-	Output	Pixel2 Negative Data ( Even )
24	RXE2+	Output	Pixel2 Positive Data( Even )
25	GND	Ground	Power Ground
26			

Pin No.	Pin Name	Type	Description
27	RXEC-	Output	Negative Sampling Clock ( Even )
28	RXEC+	Output	Positive Sampling Clock ( Even )
29	RXE3-	Output	Pixel3 Negative Data ( Even )
30	RXE3+	Output	Pixel3 Positive Data ( Even )
31	GND	Ground	Power Ground
32			
33	3D_FLAG	Output	3D State Control
34	H/L	Output	High/Low level control
35	SYS_SCL	Output	I2C Clock
36	SYS_SDA	Input/ Output	I2C Data
37	RXO4-	Output	Pixel2 Negative Data ( Odd )
38	RXO4+	Output	Pixel2 Positive Data ( Odd )
39	RXE4-	Output	Pixel2 Negative Data ( Even )
40	RXE4+	Output	Pixel2 Positive Data ( Even )

- ◆ **J9**                   **SIM Card Slot**
- ◆ **J17**                   **TF Card Slot**
- ◆ **J41**                   **Place on 3 jumper caps when supply single 12V power.**
- ◆ **U23PCIE**           **Extensible 3G Module Slot**
- ◆ **RJ45**                 **LAN**
- ◆ **HDMI\_IN**           **HDMI Input, Max. 1080P**
- ◆ **VGA\_IN**             **VGA Input, Max. 1080P**
- ◆ **AU\_IN**              **Audio Input, work with outer VGA signal**
- ◆ **SW10**                **U\_BOOT Button for system upgrade**
- ◆ **USB\_OTG**          **USB OTG interface of main control IC for system upgrade/access or USB device connection**
- ◆ **USB**                 **USB OTG interface of main control IC for USB device connection**
- ◆ **ANT**                 **WIFI Antenna**
- ◆ **FCAP**               **Supply power for RTC when the board is powered off.**