# G6818 Development Board Introduction

Shenzhen Graperain Technology Co., Ltd.

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Release Notes

Version	Release Date	Author	Description
Rev.01	2016-4-20	David	Revision

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Chapter 1 G6818 Development Board Introduction

This document describes the hardware resources, circuit theory, supported interfaces of G6818 development platform.

G6818 development board uses Samsung's latest S5P6818 chip, based on 64 bite octa core ARM Cortex-A53 framework, it is 100% compatible to the pins of S5P4418 chip.

Features Comparsion Between S5P4418/S5P6818 Chip:

	S5P6818	S5P4418
Market time	2014	2014
Processing Technology	28nm	28nm
CPU	1.4G+	1.4G
Packaging Size	0.65mm pin pitch, 17*17mm2 513-FCBGA package	0.65mm pin pitch, 17*17mm2 513-FCBGA package
CPU framework	Cortex-A53 octa-core	Cortex-A9 quad-core
Cache capacity	32KB*4 I/D cache，1MB level 2 cache	32KB*4 I/D cache，1MB level 2 cache
DDR3 interface	Single channel 32-bit data bus，800MHz operating frequency	Single-channel 32-bit data bus，800MHz operating frequency
multimedia decoder	H.263，H.264，MPEG1，MPEG2，MPEG4，VC1，VP8，Theora，AVS，RV8/9/10，MJPEG(Almost all formats)	H.263，H.264，MPEG1，MPEG2，MPEG4，VC1，VP8，Theora，AVS，RV8/9/10，MJPEG(Almost all formats)
Multimedia coding	H.263，H.264，MPEG4，MJPEG	H.263，H.264，MPEG4，MJPEG
Display interface	RGB，MIPI，LVDS	RGB，MIPI，LVDS
Maximum display resolution	2048*1280	2048*1280
Ethernet Interface	Gigabit Ethernet	Gigabit Ethernet
GPIO level	3.3V	3.3V
ADC	8 channel 12bit 0-1.8V	8 channel 12bit 0-1.8V
USB interface	1 channel HSIC，1 channel HSIC，1 channel OTG	1channel HSIC，1 channel HSIC，1 channel OTG
Chip ID	Support the only 128bit ID number	Support the only 128bit ID number

Users can clearly find that the processing technology, level 2 cache, pin definition of S5P6818 and S5P4418 are the same, only has difference in kernel.the main frequency of S5P6818 is 1.4G+ higher than S5P44118. Because of that these two chips can use same carrier board, then users can update their products directly not need to change the hardware part.

Shenzhen Graperain Technology Co., Ltd. first to launch S5P6818 development platform, it is equipped with a complete and stable software Android5.1 operating system (Linux + qt, Ubuntu system optional), uses AXP228 launched by x-powers as the power management chip to ensure

6818 work stable and reliable. Reserved PCIE interface, UART port, parallel port camera, CSI camera interface in the carrier board.

1.1 Product Brief Introduction

G6818 development board contains of stamp hole system on module, carrier board and LCD board. The system on module uses 8-layer process design, and is stable, which could be used in tablet pc, car machine, learning machine, POS machine, game machine, industry monitoring and many other fields. The CPU uses ARM Cortex-A53 octa-core S5P6818, the highest main frequency is 1.4G+Hz.

The carrier board left rich peripherals, can debug almost all the features of the 6818. It supports Gigabit Ethernet, collect LVDS interface, MIPI interfaces, PCIE interface onboard, supports software power switch and dormancy awake. 7 inch TFT LCD screen is taken as the default LCD panel, while 4.3 inch and 5 inch can also be the optional choices. It also supports backlight brightness control.

The G6818 system on module could be used in MID, POS, PDA, PND, smart home, phone, learning machine, game machine and other kinds of industrial control filed.

G6818 SoM size：52mm*52mm

G6818 carrier board size： 185mm*110mm

1.2 Product Features

- Kernel：ARM Cortex-A53 octa-core
- Frequency：1.4G+Hz*8
- RAM：1GB/2GB DDR3(Optional), standard 1GB
- Flash： 4GB/8GB/16GB emmc(optional)，standard 8GB emmc
- 24-bit RGB interface
- 8-bit LVDS interface
- 3 channel USB HOST interface，support connecting multi USB devices simultaneously
- USB OTG interface
- 1 channel RS232 interface；2 channel TTL interface
- 2 channel TF card slot
- 4 LED indicators
- Reset button
- Software on/off button
- Onboard external speaker
- MIC input connector
- Earphone output connector
- Support free start-up configuration switch
- upports backlight brightness control
- Support HDMI interface
- Support 5-point capacitive touch control
- Support USB WIFI
- Support USB Bluetooth
- Support G-sensor

- Support peripheral expansion using various interfaces, such as SPI, I2C, UART, etc.
- Support MPEG2/MPEG4, H.263, H.264 MJPEG video encode/decode
- Support almost all format video decoding
- Support 2D, 3D high-performance graphics accelerator
- Support RTC real time clock save
- Support Gigabit wired Ethernet RTL8211E
- Support BT656/BT601/MIPI camera interface
- Support GPS interface
- Support GPRS interface
- Support external USB 3G module
- Support PCIE 3G/4G
- Support USB keyboard/mouse
- Supports infrared integration receiving head

1.3 Equipped System Brief Introduction

G6818 can be equipped with a complete stable Android 5.1, Linux + qt, Ubuntu system.

1.3.1 Android5.1

G6818 development board Android5.1.1, use Linux kernel 3.4.39.

Support：

- emmc driver
- PMU（power management）
- GVS VS070CXN 7"screen(1024x600)
- LVDS LCD screen
- MIPI LCD screen(7-inch，5.5-inch)
- 5-point capacitive touch screen(Silead GSL1680，Focal Tech)
- SD Card
- Button
- LED
- ADC
- RTC
- Buzzer
- Sleep Wake Up
- 3 channel USB HOST
- 1 channel OTG
- audio decoding(ALC5621)
- Recording
- USB WIFI
- USB Bluetooth
- G-sensor
- GPS

- BT656/BT601 camera
- MIPI(CSI) camera
- Serial port
- HDMI
- Gigabit Ethernet RTL8211E
- USB Mouse/Keyboard
- HS0038B infrared integration receiving head
- SDA7123 VGA module
- PCIE 3G/4G
- USB 3G dongle
- HDMI
- USB 3G dongle

1.3.2 Linux QT

G6818 development board support Linux + qt (QT5.4) OS，use Linux kernel 3.4.39.

1.3.3 Ubuntu

G6818 development board support Ubuntu12.04 OS，use Linux kernel 3.4.39.

Chapter 2 Hardware Resources

2.1 Hardware Interface Description
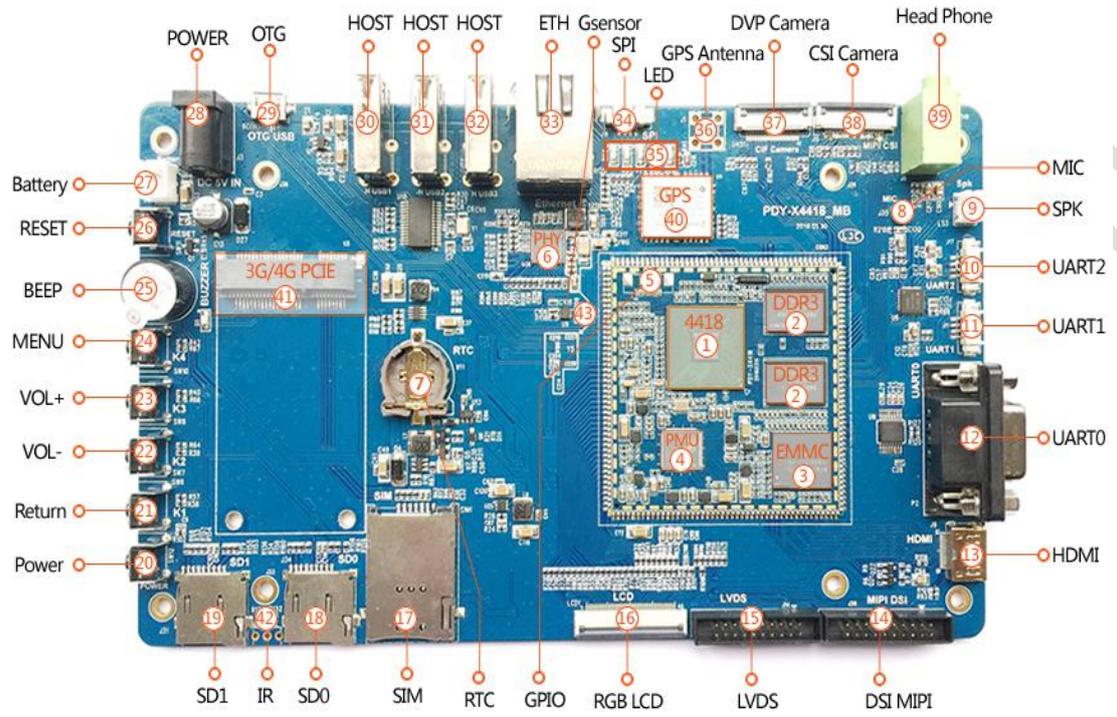
Hardware Interface Description		
Indicia	Name	Description
【1】	CPU	S5P6818，ARM Cortex A53,8*1.4+GHz
【2】	RAM	DDR3,1GBytes
【3】	ROM	eMMC，8GBytes
【4】	PMU	Power manager chip，AXP228
【5】	Extended IO	Refer to section 2.3.5
【6】	Ethernet	Ethernet PHY，RTL8211E
【7】	RTC	RTC Backup battery slot
【8】	Mic	Record input
【9】	Loudspeaker Interface	Loudspeaker output
【10】	UART2	Com3
【11】	UART1	Com1
【12】	UART0	Com0，debug com
【13】	HDMI Interface	HDMI Output
【14】	DSI MIPI Interface	MIPI Display Interface
【15】	LVDS Interface	LVDS Display Interface

【16】	RGB LCD/VGA Interface	RGB Output Interface
【17】	SIM card slot	3G/4G SIM card slot
【18】	SD card，CH0	SD card，channel 0
【19】	SD card，CH1	SD card，channel 1
【20】	On/Off Key	On/Off，Wake up
【21】	Key，RETURN	Key，K1,RETURN
【22】	Key，VOL-	Key，K2, VOL-
【23】	Key，VOL+	Key，K3, VOL+
【24】	Key，MENU	Key，K4, MENU
【25】	Buzzer	Support Active Buzzer
【26】	Hardware Reset Key	Hardware Reset
【27】	Battery Interface	Single-cell 4.2V Lithium Battery Interface
【28】	5V Power Jack	DC input
【29】	USB OTG	USB OTG Interface
【30】	USB HOST1	HUB Chip Extension，HOST
【31】	USB HOST2	HUB Chip Extension，HOST
【32】	USB HOST3	HUB Chip Extension，HOST
【33】	1000M Ethernet Interface	RTL8211E Interface
【34】	SPI Interface	SPI Interface
【35】	LED	Power indicator lamp,4 LEDs
【36】	GPS Antenna	GPS Module Antenna
【37】	DVP camera Interface	Parallel camera Interface
【38】	CSI camera Interface	Mipi camera Interface
【39】	Headset Interface	Headset output
【40】	GPS Module	GPS Module
【41】	3G/4G PCIE Interface Slot	Support 3G/4G PCIE Module
【42】	IR Receiver	HS0038 IR Receiver
【43】	G-sensor	G-sensor mma8653

2.2 Guideline for Development Board Start-up

G6818 support free start-up configuration to start model,when start the board, it will look for bootloader from SD0 to SD2 then to USB device till start the board. Default SD0 connects with TF card, SD2 connects with EMMC on system on module, USB device connects with PC though OTG cable, users can write program online with fastboot.

Users can use TF card to writ program when there is no program in EMMC. Write uboot into TF card then plug the TF card into the SD0 channel on development board then start board though SD card. Then use micro USB extension cable to upgrade the whole image though fastboot. Or users can upgrade the image offline with TF starting card. Please refer to *G6818(G6818 SBC)*

Upgrade(Programming) Manual.

The development board which already programmed image will start when power on.

2.3 Interface Definitions

2.3.1 System on Module PIN Definition1

System on Module PIN			
Pin#	**Signal**	**Pin#**	**Signal**
1	VCC3P3_SYS	24	LCD_R5
2	MCU_BACKLIGHT_PWM	25	LCD_R6
3	MCU_TOUCH_INT	26	LCD_R7
4	MCU_NRESETOUT	27	LCD_G0
5	MCU_VG_EN	28	LCD_G1
6	MCU_SDA_2	29	LCD_G2
7	MCU_SCL_2	30	LCD_G3
8	MCU_SDA_1	31	LCD_G4
9	MCU_SCL_1	32	LCD_G5
10	USBHSIC_DATA	33	LCD_G6
11	USBHSIC_STROBE	34	LCD_G7
12	MCU_USB_HOST_D-	35	LCD_B0
13	MCU_USB_HOST_D+	36	LCD_B1
14	MCU_OTG_PWRON	37	LCD_B2
15	MCU_USB-	38	LCD_B3
16	MCU_USB+	39	LCD_B4
17	DC5V_OTG	40	LCD_B5
18	MCU_USB_ID	41	LCD_B6
19	LCD_R0	42	LCD_B7
20	LCD_R1	43	LCD_DE
21	LCD_R2	44	LCD_HSYNC
22	LCD_R3	45	LCD_VSYNC
23	LCD_R4	46	LCD_CLK

2.3.2 System on Module PIN Definition 2

System on Module PIN Definition 2			
Pin#	**Signal**	**Pin#**	**Signal**
47	VCC1P0_CORE_DC	70	GMAC_MDIO
48	VCC1P0_CORE_DC	70	PHY_INT
49	VBAT	72	GMAC_TXD3
50	VBAT	73	GMAC_TXD2
51	GND	74	GMAC_TXD1
52	GND	75	GMAC_TXD0

53	VBAT_SYS	76	GMAC_TXEN
54	VBAT_SYS	77	GMAC_TXER
55	DCIN	78	MCU_SCL_0
56	DCIN	79	MCU_SDA_0
57	MCU_PWREN_SYS	80	MCU_HDMI_CEC
58	DLDO3	81	MCU_HDMI_HPD
59	DLDO2	82	MCU_HDMI_TXCN
60	ELDO3	83	MCU_HDMI_TXCP
61	GMAC_RXCLK	84	MCU_HDMI_TX0N
62	GMAC_TXCLK	85	MCU_HDMI_TX0P
63	GMAC_RXD0	86	MCU_HDMI_TX1N
64	GMAC_RXD1	87	MCU_HDMI_TX1P
65	GMAC_RXD2	88	MCU_HDMI_TX2N
66	GMAC_RXD3	89	MCU_HDMI_TX2P
67	GMAC_RXDV	90	GND
68	GMAC_MDC	91	MCU_LVDS_CLKM
69	PHY_RST	92	MCU_LVDS_CLKP

2.3.3 System on Module PIN Definition 3

System on Module PIN Definition 3			
Pin#	Signal	Pin#	Signal
93	MCU_LVDS_Y3M	116	MIPIDSI_DN1
94	MCU_LVDS_Y3P	117	MIPIDSI_DP1
95	MCU_LVDS_Y2M	118	MIPIDSI_DN0
96	MCU_LVDS_Y2P	119	MIPIDSI_DP0
97	MCU_LVDS_Y1M	120	MIPIDSI_DNCLK
98	MCU_LVDS_Y1P	121	MIPIDSI_DPCLK
99	MCU_LVDS_Y0M	122	MCU_I2S_MCLK
100	MCU_LVDS_Y0P	123	MCU_I2S_BCK
101	GND	124	MCU_I2S_SDIN
102	MIPIDSI_DP3	125	MCU_I2S_SDOUT
103	MIPIDSI_DN3	126	MCU_I2S_LRCK
104	MIPIDSI_DP2	127	MCU_HP_DET
105	MIPIDSI_DN2	128	CAM_H
106	MIPIDSI_DP1	129	CAM_V
107	MIPIDSI_DN1	130	CAM_CLK
108	MIPIDSI_DP0	131	CAM_D0
109	MIPIDSI_DN0	132	CAM_D1
110	MIPIDSI_DPCLK	133	CAM_D2
111	MIPIDSI_DNCLK	134	CAM_D3
112	MIPIDSI_DN3	135	CAM_D4

113	MIPIDSI_DP3	136	CAM_D5
114	MIPIDSI_DN2	137	CAM_D6
115	MIPIDSI_DP2	138	CAM_D7

2.3.4 System on Module PIN Definition 4

System on Module PIN Definition 4			
Pin#	**Signal**	**Pin#**	**Signal**
139	CAM_PD	162	GPIOC7
140	CAM_RST	163	GPIOB8
141	CAM_PN	164	GPIOB9
142	MCU_CAM1_MCLK	165	GPIOC11
143	UARTRXD3	166	GPIOA28
144	UARTTXD3	167	PWM2
145	UARTRXD2	168	IR
146	UARTTXD2	169	VCC1P8_RTC
147	UARTRXD1	170	MCU_SD1_CD
148	UARTTXD1	171	MCU_SD1_CLK
149	UARTRXD0	172	MCU_SD1_CMD
150	UARTTXD0	173	MCU_SD1_D0
151	MCU_SPITXD0	174	MCU_SD1_D1
152	MCU_SPIFRM0	175	MCU_SD1_D2
153	MCU_SPICLK0	176	MCU_SD1_D3
154	MCU_SPIRXD0	177	MCU_SD0_CD
155	MCU_SPI_WP	178	MCU_SD0_D3
156	MCU_KEY_VOLDN	179	MCU_SD0_D2
157	MCU_KEY_VOLUP	180	MCU_SD0_D1
158	MCU_SEN0_INT	181	MCU_SD0_D0
159	MCU_NRSETIN	182	MCU_SD0_CMD
160	MCU_PWRKEY	183	MCU_SD0_CLK
161	ADC0	184	GND

2.3.5 System on Module PIN Definition 5

Extended IO, the following part of g6818 system on module: 9 Available IO. (There is no CVBS_OUT on G4418, but leads on G6818 system on module)
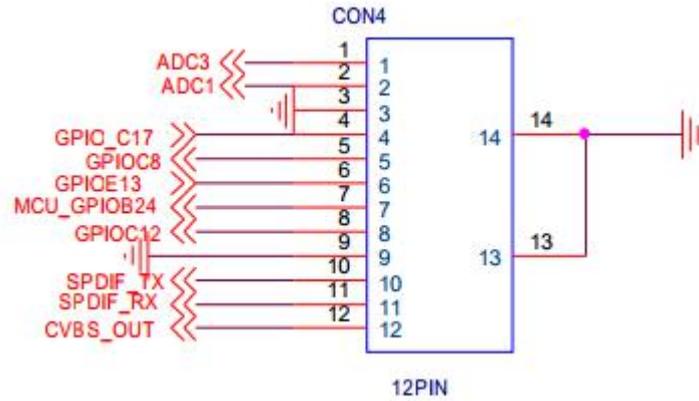
2.3.6 J18(SPI Expansion Port)

Pin	Signal	Pin	Signal
1	MCU_SPIRXD0	3	MCU_SPIFRM0
2	MCU_SPICLK0	4	MCU_SPITXD0

2.3.7 LCD1(LCD & VGA Expansion Port)

Pin	Signal	Pin	Signal
1	MCU_BACKLIGHT_PWM	21	L_B0
2	LVDS_VDD	22	L_B1
3	GND	23	L_B2
4	VCC3P3_SYS	24	L_B3
5	L_R0	25	L_B4
6	L_R1	26	L_B5
7	L_R2	27	L_B6
8	L_R3	28	L_B7
9	L_R4	29	GND
10	L_R5	30	L_DCLK
11	L_R6	31	LCD_EN
12	L_R7	32	LCD_HH
13	L_G0	33	LCD_VV
14	L_G1	34	DE
15	L_G2	35	NC
16	L_G3	36	GND
17	L_G4	37	TP_SCL
18	L_G5	38	TP_SDA
19	L_G6	39	CAP_WAKE

| 20 | L_G7 | 40 | CAP_INT |

2.3.8 J14(LVDS Expansion Port)

Pin	Signal	Pin	Signal
1	VCC3P3_SYS	11	MCU_LVDS_Y2M
2	LVDS_VDD	12	MCU_LVDS_Y2P
3	MCU_SCL_1	13	GND
4	MCU_BACKLIGHT_ PWM	14	GND
5	MCU_SDA_1	15	MCU_LVDS_CLKM
6	CAP_INT	16	MCU_LVDS_CLKP
7	MCU_LVDS_Y0M	17	MCU_LVDS_Y3M
8	MCU_LVDS_Y0P	18	MCU_LVDS_Y3P
9	MCU_LVDS_Y1M	19	MCU_NRESETOUT
10	MCU_LVDS_Y1P	20	GND

2.3.9 J12(MIPI Expansion Port)

Pin	Signal	Pin	Signal
1	VCC3P3_SYS	11	MIPIDSI_DN2
2	LVDS_VDD	12	MIPIDSI_DP2
3	MCU_SCL_1	13	GND
4	MCU_BACKLIGHT_ PWM	14	GND
5	MCU_SDA_1	15	MIPIDSI_DNCLK
6	CAP_INT	16	MIPIDSI_DPCLK
7	MIPIDSI_DN0	17	MCU_NRESETOUT
8	MIPIDSI_DP0	18	GND
9	MIPIDSI_DN1	19	MIPIDSI_DN3
10	MIPIDSI_DP1	20	MIPIDSI_DP3

2.3.10 U451(DVP Camera Interface)

Pin	Signal	Pin	Signal
1	CAM_PN	13	MCU_CAM1_MCLK
2	GND	14	CAM_D6
3	MCU_SDA_0	15	GND

4	CAM_2.8V	16	CAM_D5
5	MCU_SCL_0	17	CAM_CLK
6	CAM_RST	18	CAM_D4
7	CAM_V	19	CAM_D0
8	CAM_PD	20	CAM_D3
9	CAM_H	21	CAM_D1
10	CAM_1.8V	22	CAM_D2
11	CAM_2.8V	23	NC
12	CAM_D7	24	CAM_PN

2.3.11 J15(MIPI Camera Interface)

Pin	Signal	Pin	Signal
1	GND	14	NC
2	MIPICSI_DPCLK	15	NC
3	MIPICSI_DNCLK	16	GND
4	GND	17	MCU_SDA_0
5	MIPICSI_DP0	18	MCU_SCL_0
6	MIPICSI_DN0	19	CAM_1.8V
7	GND	20	CAM_PN
8	MIPICSI_DP1	21	MCU_CAM1_MCLK
9	MIPICSI_DN1	22	CAM_1.8V
10	GND	23	CAM_2.8V
11	NC	24	CAM_2.8V
12	NC	25	MIPI_1.2V
13	GND	26	GND

2.3.12 J11(UART1,COM1)

Pin	Signal	Pin	Signal
1	GND	3	232TXD1
2	232RXD1	4	LVDS_VDD

2.3.13 J17(UART2,COM3)

Pin	Signal	Pin	Signal

1	GND	3	UARTTXD3
2	UARTRXD3	4	VCC3P3_SYS

2.4 Hardware Interface

2.4.1 Power Switch and Socket

G6818 uses 5V/2A DC power supply, and the black jack in the picture is 5V DC power input jack.

2.4.2 Debugging Serial Port

G6818 reserve a RS232 serial port UART0, as the default debug serial port. UART1 is RS232, UART2 is TTL.

2.4.3 HDMI Interface

G6818 development board uses mini HDMI interface, with the mini HDMI extension cable, audio and video signal can be the perfect present in the monitoring terminal, to support the HDMI1.4 protocol as a TV set, display etc.

2.4.4 DVP Camera Interface

The camera interface is 24PIN camera interface, support the OV, HIMAX camera, save the camera switch board. In view of the different types of cameras, only in accordance with the camera specification, adjust the output voltage on the line. At the same time, the interface is compatible with the TVP5150 TVIN module.

2.4.5 MIPI Camera Interface

This interface is the common 26PIN camera interface, supportS OV, Himax camera, save the camera switch board. Users just need to adjust the output voltage according to the specifications of the camera for different types of cameras.

2.4.6 Ethernet Interface
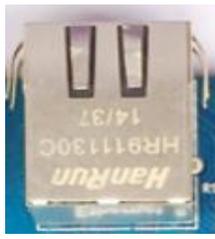
G6818 supports Gigabit wired Ethernet interface, collect RTL8211E onboard, users can access through a wired Ethernet.

2.4.7 Earphone Interface

The earphone access this interface, can realize the earphone output. Of course, can also be sent directly to the amplifier input through the interface, such as home theater audio input port, will show the development board audio signal through the home theater.

2.4.8 Speaker Interface

Development board directly supports dual speaker output, the speaker received on any interface like the picture, can realize the speaker output.

2.4.9 Record Interface

Development board support audio input. The earphone has a direct load to the development board, not through the external microphone to input.

2.4.10 TF Card Slot
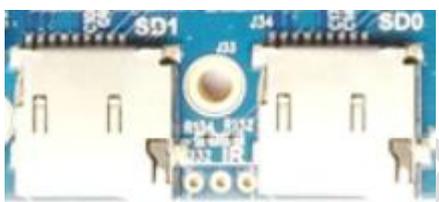
G6818 leads to 2 external TF cards, corresponding to 6818 channel 0 and channel 1, TF card can be upgraded through the channel, or store some multimedia files.

2.4.11 Independent Button

G6818 has 4 independent buttons, as follows:

Switch	Function	Switch	Function
K1	Back	K2	Volume -
K3	Volume +	K4	Menu

2.4.12 Debug LED Light

Four debugging LED lights On-board, can control on or off through the IO port.

2.4.13 Power Indicator

There is a power indicator on the right of the power socket.Please note that, when plugged in the socket, system started and the indicator will light.

2.4.14 USB OTG Interface

This interface is used to write the program, synchronization. It can use as HOST with OTG cable.

2.4.15 USB HOST Interface
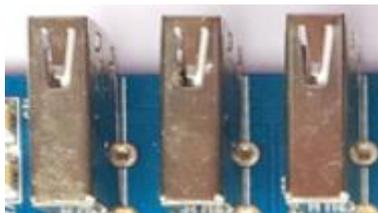
S5P6818 has USB HOST interface, G6818 development board expands 3 USB HOST2.0 interfaces though that interface, can use to connect USB WIFI, USB Bluetooth, USB mouse and

USB keyboard.

2.4.16 Power Button

System will start automatically after power on. Enter the system,lightly press power button to dormancy, press again to wake. Long press power button into shutdown interface, follow the prompts to shutdown.

2.4.17 Reset Button

When the system is working, press RESET to restart the development board, that can achieve hard reset function.

2.4.18 LCD Interface

G6818 Development Board has a 40PIN LCD interface. The associated RGB signal is connected to the LCD control panel through flexible cable, then control LCD. Meanwhile, the first pin of 40PIN interface is PWM pin which used to control the LCD backlight and adjust the multi-level backlight brightness. VGA interface and LVDS interface achieve through this interface.

2.4.19 Backup Battery
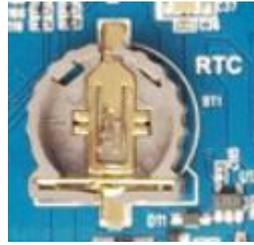
The backup battery is used to ensure that the RTC is still able to work after power failure and the system time is not lost. When G6818 development connects a lithium battery, it will supply power to the RTC, RTC will not be lost if the battery isn't off, so G6818 development board won't provide RTC backup battery.

2.4.20 Precision Adjustable Potentiometer

There is no precision adjustable potentiometer on G6818 development board.

2.4.21 Buzzer

The buzzer is active buzzer will sound when DC passes, the power on or off is controlled by the transistor. The transistor is controlled by one channel PWM, can use for testing PWM or voice prompt in suitable situation.

2.4.22 Infrared Integration Receiving Head

Here we used HS0038B integrated receiver, it has the high sensitivity and easy to use. We can realize the wireless remote control and make the G6818 development board as a

high-performance octa- core box by using it.

2.4.23 LVDS Interface

S5P6818 chip collects LVDS controller onboard, users don't need to add a LVDS conversion chip when connect LVDS display. G6818 has LVDS interface onboard can drive LVDS screen directly.

2.4.24 MIPI Interface

S5P6818 chip has MIPI controller onboard and there is MIPI interface on G6818 development board can drive MIPI screen directly.

2.4.25 Battery Interface

G6818 system on module has PMU AXP228 launched by x-powers, that supports battery to charge and discharge. There is a battery interface on G6818 carrier board can use for charging the board and charging the battery when connect the adapter. The interface is on the left of power socket.

2.4.26 PCIE 3G/4G Interface

Support PCIE 3G/4G module.

2.4.27 SPI Interface
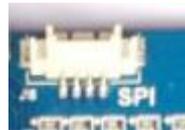
SPI extended port.

2.5 carrier board Dimension

Chapter 3 Configuration Checklist

3.1 Standard Hardware Checklist

Please pay attention to www.graperain.com or contact us directly.

3.2 Optional Hardware Checklist

Please pay attention to www.graperain.com or contact us directly.

3.3 Online Disk Data List

The development data of G6818 development board is stored in the specified online disk, users can contact us to get the download address.

The development data includes source code,build development environment, user manual, examples, schematics of system on module, carrier board and LCD panels, component package library, program tools, etc.

Chapter 4 Product Portfolio

4.1 System on Modules

G4418 SoM (SoC is Samsung S5P4418)

G6818 SoM (SoC is Samsung S5P6818)

G210 SoM (SoC is Samsung S5PV210)

M9 SoM (SoC is Qualcomm MSM8916)

4.2 Development Boards

G4418 development board (SoC is Samsung S5P4418)

G6818 development board (SoC is Samsung S5P4418)

G210 development board (SoC is Samsung S5PV210)

M9 development board (SoC is Qualcomm MSM8916)

4.3 Single Board Computers

G4418 SBC (SoC is Samsung S5P4418)

G6818 SBC (SoC is Samsung S5P6818)

G3188 SBC (SoC is Rockchip RK3188)

Instructions: For more detailed specifications and other products, please pay attention to www.graperain.com or contact us directly.