G3288 Square System on Module Introduction

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Release Note

Version	Date	Author	Description
Rev.01	2018-12-20	David	Revision

Technical support

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Catalog

Chapter 1. G3288 Square System on Module Introduction

1.1 G3288 System on Module Introduction

G3288 system on module (shorts for SOM) based on Rockchip RK3288 chip platform, which designed by Shenzhen Graperain Technology Co., Ltd.

RK3288 chip is Cortex A17 quad core CPU, 1.8Ghz, integrated Mali-T760 MP4 GPU, which supports OpenGL ES1.1/2.0/3.0, OpenVG1.1, OpenCL, Directx11, and hardware encoding 4K x 2K and 10 bits H.265 video hardware encoding. Its Antutu run 50000.

For G3288 SOM, the company equipped with 2GB/4GB DDR3, 8GB/16GB/32GB eMMC high-speed storage, independent power management system, strong network expansion capability, and many display port, which supports Android 5.1, Linux, and Ubuntu OS, all there configuration make its CPU works extremely.

G3288 development board takes stamp hole SOM and carrier board. Its SOM has expansion strongly,204PIN, 1.8GHz, 8-layer PCB immersion designed, and best electrical and anti-interference characteristics.

G3288 SOM Characters:

- Size: 55.8 x 55.8mm
- ACT 8846 power management system, works stable.
- Support kinds of capacity eMMC, default 8GB eMMC.
- Single channel DDR3, default 2GB DDR3, and 4GB optional.
- Support power sleep wake.
- Support Android 5.1, Linux, Ubuntu OS.
- Support gigabit Ethernet.
- Support HDMI 2.0.
- Support rich display port, and drive 2K display.
- Work stability and reliability.

1.2 Characteristic Parameters

Structure Parameters	
Appr.:	Stamp hole
Size:	55.8mm*55.8mm*1.2mm
Pin Pitch:	1.1mm
Pin Number:	180PIN

Layer:	8 layers

System Configuration	
CPU	RK3288
Dominant Frequency:	Quad core A17, 1.8GHz
RAM:	Standard version 2GB，4GB optional
ROM:	Standard version 4GB, 8GB/16GB/32GB
Power IC:	ACT8846

Interface Parameters	
Display:	LVDS, MIPI output
Touch :	Capacitive touch, supports USB or other expansion ports
Audio:	AC97/IIS/PCM port, supports recording and playback
SD Card:	Two channels SDIO output
eMMC :	Onboard eMMC port, no other Pin out
Ethernet:	Gigabit Ethernet
USB HOST :	Two channels HOST 2.0
USB OTG:	Single channel OTG 2.0
UART :	Five channels serial port, supports flow control serial port
PWM :	Two channels PWM output
IIC :	Five channels IIC output
SPI :	Single SPI output
ADC :	Single ADC output
Camera :	Single BT656/BT 601, one MIPI input
HDMI :	HDMI2.0 output, synchronous output of audio and video

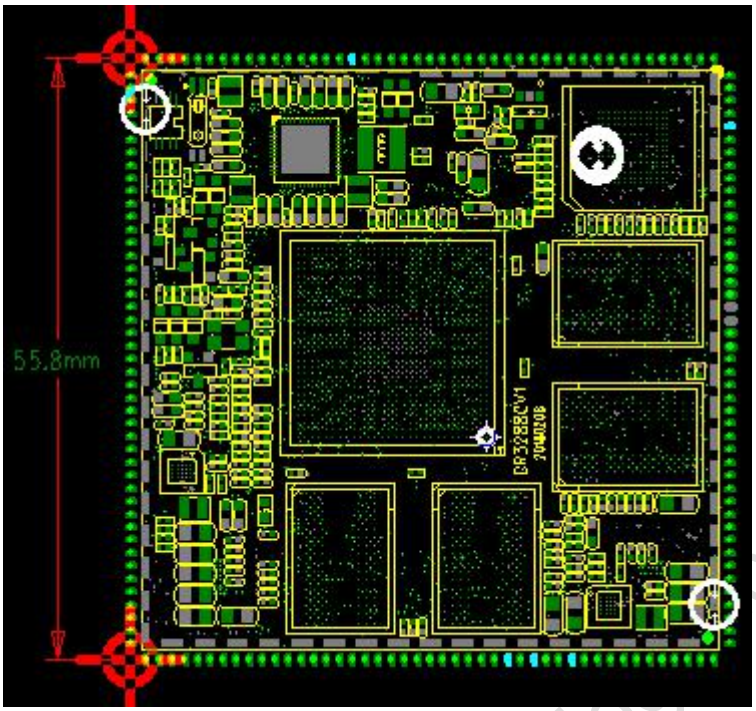
Electrical Specifications	
Input Voltage:	4.2V--5V
Output Voltage:	3.3/5V
Storage Temperature:	-30~80℃
Working Temperature:	-20~70℃

1.3 G3288 SOM Appearance

G3288 SOM Front View

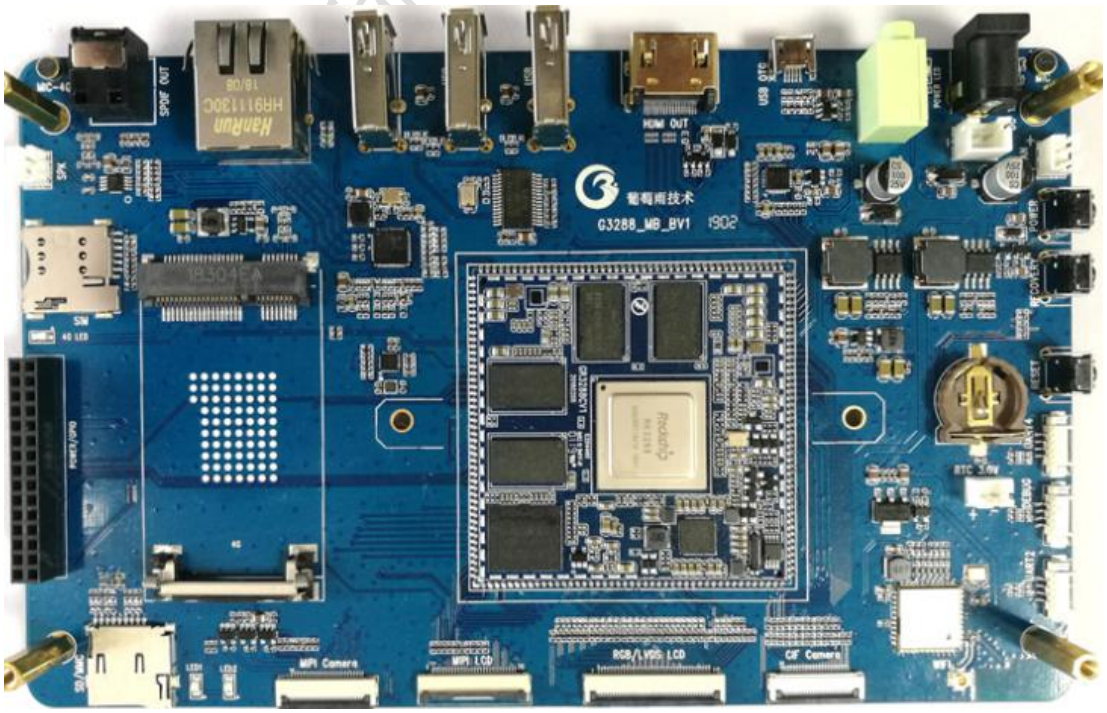
1.4 G3288 SOM Structure Chart

G3288 structure size and pin details:



1.5 G3288 SOM Development Board Appearance

More information of G3288 development board, please reference G3288 development board hardware introduction.



Chapter 2. PIN Definition

2.1 G3288 SOM PIN Definition 1

G3288 SOM PIN			
PIN #	**Signal**	**PIN #**	**Signal**
1	TOUCH_INT	24	LVDS_D8N
2	IR	25	LVDS_D9P
3	BL_EN	26	LVDS_D9N
4	TOUCH_RST	27	LVDS_CLK1P
5	LVDS_D0P	28	LVDS_CLK1N
6	LVDS_D0N	29	LCDC0_DCLK
7	LVDS_D1P	30	LCDC0_DEN
8	LVDS_D1N	31	LCDC0_HSYNC
9	LVDS_D2P	32	LCDC0_VSYNC
10	LVDS_D2N	33	MIPI_TX_D0P
11	LVDS_D3P	34	MIPI_TX_D0N
12	LVDS_D3N	35	MIPI_TX_D1P
13	LVDS_D4P	36	MIPI_TX_D1N
14	LVDS_D4N	37	MIPI_TX_CLKP
15	LVDS_CLK0P	38	MIPI_TX_CLKN
16	LVDS_CLK0N	39	MIPI_TX_D2P
17	LVDS_D5P	40	MIPI_TX_D2N
18	LVDS_D5N	41	MIPI_TX_D3P
19	LVDS_D6P	42	MIPI_TX_D3N
20	LVDS_D6N	43	I2C5_SDA_HDMI
21	LVDS_D7P	44	I2C5_SCL_HDMI
22	LVDS_D7N	45	HDMII_CEC
23	LVDS_D8P		

2.2 G3288 SOM PIN Definition 2

G3288 SOM PIN			
PIN #	**Signal**	**PIN #**	**Signal**
46	HDMI_HPD	69	CIF_CLKO
47	HDMI_CN	70	CIF_CLKI
48	HDMI_CP	71	CIF_VSYNC
49	HDMI_TX0N	72	CIF_HREF
50	HDMI_TX0P	73	CIF_D7
51	HDMI_TX1N	74	CIF_D6

52	HDMI_TX1P	75	CIF_D5
53	HDMI_TX2NN	76	CIF_D4
54	HDMI_TX2P	77	CIF_D3
55	MIPI_TX/RX_D3	78	CIF_D2
56	MIPI_TX/RX_D3	79	CIF_D1
57	MIPI_TX/RX_D2	80	CIF_D0
58	MIPI_TX/RX_D2	81	PHONE_CTL
59	MIPI_TX/RX_CL	82	SPK_CTL
60	MIPI_TX/RX_CL	83	I2S0_SDI
61	MIPI_TX/RX_D1	84	I2S0_LRCK_RX
62	MIPI_TX/RX_D1	85	I2S0_LRCK_TX
63	MIPI_TX/RX_D0	86	I2S0_SDO0
64	MIPI_TX/RX_D0	87	I2S0_SCLK
65	I2C3_SCL_CAM	88	I2S0_CLK
66	I2C3_SDA_CAM	89	I2C2_SDA_AUDIO
67	CIF_PDN1	90	I2C2_SCL_AUDIO
68	CIF_PDN0		

2.3 G3288 SOM PIN Definition 3

G3288 SOM PIN			
PIN #	**Signal**	**PIN #**	**Signal**
91	HP_DET	114	UART4_TXD
92	WIFI_REG_ON	115	3G_REG_ON
93	WIFI_CLK	116	3G_WAK_IN
94	WIFI_CMD	117	3G_WAK_OUT
95	WIFI_D3	118	PHY_INT
96	WIFI_D2	119	PHY_TXCLK
97	WIFI_D1	120	PHY_RST
98	WIFI_D0	121	MAC_RXCLK
99	RTC_CLKOUT	122	MAC_MDIO
100	GPIO7_A5_D	123	PHY_TXEN
101	UART0_RXD	124	MAC_CLK
102	UART0_TXD	125	MAC_RXDV
103	UART0_CTS	126	MAC_MDC
104	UART0_RTS	127	MAC_RXD1
105	BT_WAKE	128	MAC_RXD0
106	BT_RST	129	PHY_TXD1
107	WIFI_HOST_WA	130	PHY_TXD0
108	BT_HOST_WAKE	131	MAC_RXD3
109	UART1_RX	132	MAC_RXD2

110	UART1_TX	133	PHY_TXD3
111	UART3_RXD	134	PHY_TXD2
112	UART3_TXD	135	PHY_PMEB
113	UART4_RXD		

2.4 G3288 SOM PIN Definition 4

G3288 SOM PIN			
PIN #	**Signal**	**PIN #**	**Signal**
136	3G_GPIO1	159	VCC+5
137	OUT_VBUS_DRV	160	VCC+5
138	USB_INT	161	GND
139	OTG_DET	162	GND
140	OTG_ID	163	USB5V
141	OTG_DM	164	UART1_CTS
142	OTG_DP	165	UART1_RTS
143	HOST1_DM	166	UART3_CTS
144	HOST1_DP	167	UART3_RTS
145	HOST2_DM	168	VCC_RTC
146	HOST2_DP	169	VCC_IO
147	UART2_RXD	170	SDMMC_PWR
148	UART2_TXD	171	SDMMC_D0
149	GSEN_INT	172	SDMMC_D1
150	COMP_INT	173	SDMMC_D2
151	GRY_INT	174	SDMMC_D3
152	LIGHT_INT	175	SDMMC_CMD
153	I2C1_SDA_SENS	176	SDMMC_CLK
154	I2C1_SCL_SENS	177	SDMMC_DET
155	SPDIF	178	LCDC_BL
156	ADCIN1	179	I2C4_SCL_TP
157	RESET	180	I2C4_SDA_TP
158	PMIC_ON		

Chapter 3. Hardware Design

3.1 Design Reference

Take GR3288 SOM as hardware platform, you could refer to power design, USB design, HDMI design, LVDS design, MIPI design, Audio design, Internet (Network card, WIFI, Bluetooth) design, camera design, and so on. These are open to customers, can refer to our carrier board design.

Chapter 4. Product Portfolio

4.1 System on Module Series

G4418 SOM (Samsung S5P4418)
G6818 SOM (Samsung S5P 6818)
G3288 SOM (Rockchip RK3288)
M9 SOM (Qualcomm 8916)

4.2 Development Board Series

G4418 development board (Samsung S5P4418)
G6818 development board (Samsung S5P 6818)
G3288 development board (Rockchip RK3288)
M9 development board (Qualcomm 8916)

4.3 Single Board Computer (SBC) Series

G4418 single board computer (Samsung S5P4418)
G6818 single board computer (Samsung S5P 6818)
G3288 single board computer (Rockchip RK3288)

Instructions: More information of specifications and other products, please pay attention to website and contact us directly.

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