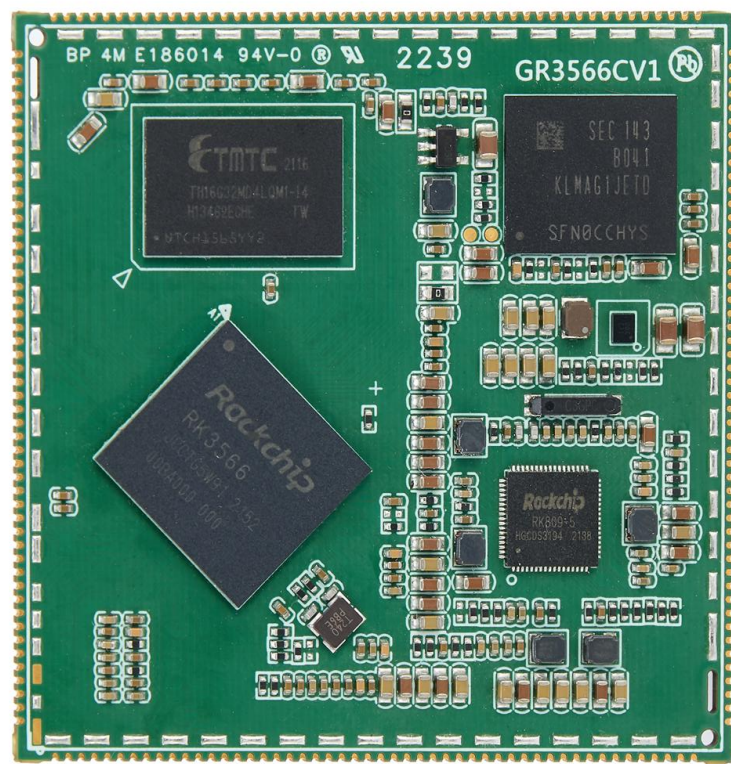


G3566 System on Module



Shenzhen Graperain Technology Co. Ltd.
www.graperain.com

Catalog

G3566 System on Module	1
Release Notes	3
G3566 SOM Introduction	4
G3566 Stamp Hole System on Module	4
Features	5
G3566 SOM Size	7
Pin Definition	8
Pin Definition	9
Pin Definition	10
Pin Definition	11
Pin Definition	12
Pin Definition	13
Pin Definition	14
Pin Definition	15
Company Introduction	16

Graperain Technology

Release Notes

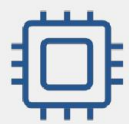
Version	Release date	Author	Description
v1.0	2022-8-28	RXS	Revision

Graperain Technology

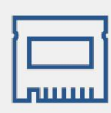
G3566 SOM Introduction

G3566 Stamp Hole System on Module

G3566 system on module takes RK3566 CPU. RK3566 CPU is quad core 64 bit Cortex-A55 processor. It adopts 22nm advanced process, the main frequency can reach up to 1.8GHz, built-in Mali-G52 GPU, 1T computing power NPU, low power consumption and high performance. G3566 SOM DDR can be up to 8GB memory. It supports PCIe2.1, SATA3.0, adopts standard interface, supports 4K 60fps H.265/H.264/VP9 video decoding. Graperrain provides complete technical information and reference design. Users can develop efficiently based on G3566 SOM.



Quad core 64 bit A55 RK3566
Frequency up to 1.8GHz
Mali-G52 2EE GPU
22nm process



Support 8GB DDR
Meet the needs of large memory applications
Support 128GB eMMC max



Support PCIe2.1 and SATA3.0
support PCIe2.1 and SATA3.0
Support SSD/HDD



Expansion interfaces
Support UART, I2C, ADC, PWM, GPIO,
USB2.0, USB3.0, HDMI, EDP,
MIPI CSI, MIPI DSI, I2S etc.



OS
Android, Ubuntu, Debian,
Buildroot+QT



Develop efficiency
Provide technical reference design

Features

Features	
SOC	RockChip RK3566
CPU	Quad core 64 bit Cortex-A55, 22nm, frequency up to 1.8GHz
GPU	ARM G52 2EE GPU. Support OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, integrate high-performance 2D hardware engine
NPU	Build-in RKNN NPU AI acceleration engine, 1Tops processing performance Support deep learning frameworks: Caffe/TensorFlow/TF-Lite/ONNX/MXNet/PyTorch/Keras/Darknet
Video Codec	4K 60fps H.265/H.264/VP9 video decoder 1080P 100fps H.265, 60fps H.264 video encoder
DDR	2GB/4GB/8GB LPDDR4/LPDDR4X
eMMC	8GB/16GB/32GB/64GB/128GB eMMC

Hardware Parameters

Ethernet	Integrate GMAC Ethernet controller, support 1000 Mbps (RJ45)
WIFI	Expandable WiFi+Bluetooth 2-in-1 module via SDIO interface: - support 2.4GHz / 5GHz dual band WiFi, 802.11a/b/g/n/ac protocol - support Bluetooth5.0 Supports extended 4G LTE/3G wireless networks
Display	1 x HDMI2.0, up to 4K@60Hz 2 x MIPI DSI, single channel support 1920x1080@60fps, dual channel support 2560x1440@60fps 1 x EDP1.3, up to 2560x1600@60fps
Audio	1 x I2S (8 channel input/output) , 2 x I2S (2 channel input/output)

Camera	1 x MIPI-CSI (single channel 4 LAN or dual channel 2 LAN)
USB	USB2.0x2, USB3.0x1
PCIE	Support PCIE 2.1
SATA	Support SATA3.0
Others	UARTx10,I2Cx5,ADCx2,PWMx16,GPIOx107,I2Sx3,SPEAKx1,HPOUTx1

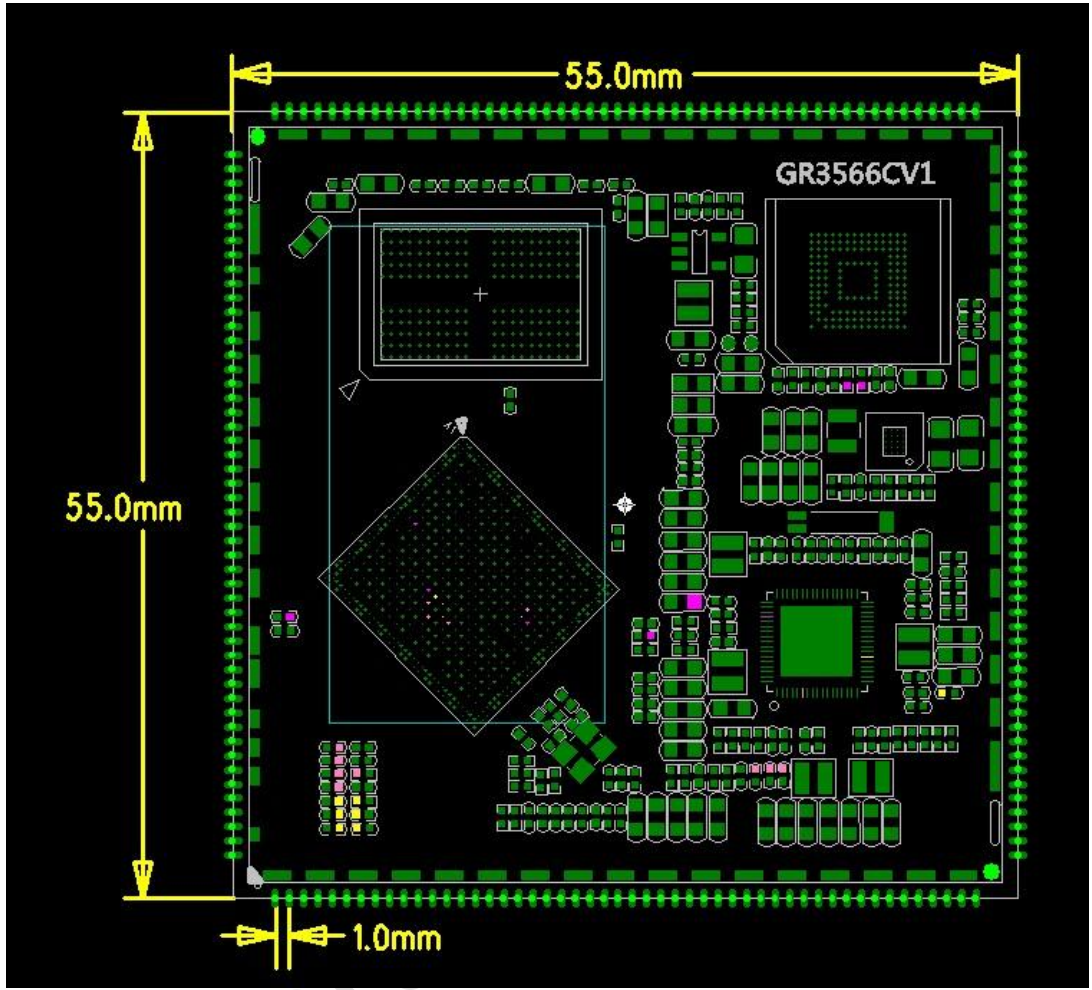
System Software

OS	Android 12, Ubuntu, Buildroot+QT, Debian
-----------	--

Other Parameters

Type	Stamp hole (1.0mm pitch)
Size	55mm x 55mm
Environment	Operating Temperature: -20°C- 80°C Storage Temperature: -30°C- 80°C Storage humidity: 10%~80 %

G3566 SOM Size



Graperain

Pin Definition

PIN No.	Pin Definition	IO Power Domain
1	MIPI_DSI_TX1_CLKP	1.8v
2	MIPI_DSI_TX1_CLKN	1.8v
3	LVDS_CLKP	1.8v
4	LVDS_CLKN	1.8v
5	LVDS_TX3N	1.8v
6	LVDS_TX3P	1.8v
7	LVDS_TX2N	1.8v
8	LVDS_TX2P	1.8v
9	LVDS_TX1N	1.8v
10	LVDS_TX1P	1.8v
11	LVDS_TX0N	1.8v
12	LVDS_TX0P	1.8v
13	HDMI_TXCLKN_PORT	1.8v
14	HDMI_TXCLKP_PORT	1.8v
15	HDMI_TX0N_PORT	1.8v
16	HDMI_TX0P_PORT	1.8v
17	HDMI_TX1N_PORT	1.8v
18	HDMI_TX1P_PORT	1.8v
19	HDMI_TX2N_PORT	1.8v
20	HDMI_TX2P_PORT	1.8v
21	HDMITX_SCL	3.3v
22	HDMITX_SDA	3.3v
23	HDMITX_CEC_M0	3.3v
24	HDMI_TX_HPDI	1.8v
25	PCIE20_REFCLKP	1.8v
26	PCIE20_REFCLKN	1.8v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
27	PCIE20_RXP	1.8v
28	PCIE20_RXN	1.8v
29	PCIE20_TXN	1.8v
30	PCIE20_TXP	1.8v
31	USB3_HOST1_SSTXP	
32	USB3_HOST1_SSTXN	
33	USB3_HOST1_SSRXP	
34	USB3_HOST1_SSRXN	
35	USB3_HOST1_DP	
36	USB3_HOST1_DM	
37	USB_OTG0_VBUSDET	
38	USB_OTG0_ID	
39	USB_OTG0_DM	
40	USB_OTG0_DP	
41	EDP_TX_D3N	1.8v
42	EDP_TX_D3P	1.8v
43	EDP_TX_D2N	1.8v
44	EDP_TX_D2P	1.8v
45	EDP_TX_D1N	1.8v
46	EDP_TX_D1P	1.8v
47	EDP_TX_D0N	1.8v
48	EDP_TX_D0P	1.8v
49	EDP_TX_AUXN	1.8v
50	EDP_TX_AUXP	1.8v
51	GND	
52	PMU_RESET	3.3v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
53	PMIC_32KOUT_WIFI	
54	GPIO0_B6	3.3v
55	GPIO0_B7	3.3v
56	GPIO0_C6	3.3v
57	UART2_TX_M0_DEBUG	3.3v
58	UART2_RX_M0_DEBUG	3.3v
59	GPIO0_C7	3.3v
60	GPIO0_C5	3.3v
61	IR_IN	3.3v
62	LCD_PWM	3.3v
63	I2S1_SDIO_M0/PDM_SDIO_M0_RK809	3.3v
64	PDM_CLK0_M0_RK809	3.3v
65	PDM_SD11_M0	3.3v
66	GND	
67	GND	
68	VCC3V3_SYS	
69	VCC3V3_SYS	
70	VCCIO_SD	1.8v-3.3v
71	SPKP_OUT	
72	SPKN_OUT	
73	HPL	
74	HPR	
75	MIC2_IN	
76	MIC1_IN	
77	POWER_KEY	
78	GPIO0_C4	3.3v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
79	GPIO0_A5	3.3v
80	TP_INT	3.3v
81	I2C1_SDA_TP	3.3v
82	I2C1_SCL_TP	3.3v
83	GPIO0_A6	3.3v
84	GPIO0_C0	3.3v
85	GPIO0_C1	3.3v
86	REFCLK_OUT_CAM	3.3v
87	SDMMC0_DET	3.3v
88	SDMMC0_D3	3.3v
89	SDMMC0_D1	3.3v
90	SDMMC0_CMD	3.3v
91	SDMMC0_D2	3.3v
92	SDMMC0_D0	3.3v
93	SDMMC0_CLK	3.3v
94	UART1_CTSN_M0	1.8v
95	UART1_TX_M0	1.8v
96	UART1_RTSN_M0	1.8v
97	UART1_RX_M0	1.8v
98	I2S2_SCLK_TX_M0	1.8v
99	I2S2_SDI_M0	1.8v
100	VCC_1V8	
101	I2S2_LRCK_TX_M0	1.8v
102	I2S2_SDO_M0	1.8v
103	SDMMC1_CLK	1.8v
104	SDMMC1_CMD	1.8v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
105	SDMMC1_D0	1.8v
106	SDMMC1_D1	1.8v
107	SDMMC1_D2	1.8v
108	SDMMC1_D3	1.8v
109	BT_REG_ON_H_GPIO2_B7	1.8v
110	WIFI_WAKE_HOST_H_GPIO2_B2	1.8v
111	WIFI_REG_ON_H_GPIO2_B1	1.8v
112	HOST_WAKE_BT_H_GPIO2_C1	1.8v
113	BT_WAKE_HOST_H_GPIO2_C0	1.8v
114	RECOVERY	
115	ADC1	
116	GPIO2_C6_D	1.8v
117	GPIO1_B1	3.3v
118	GPIO1_B0	3.3v
119	GPIO1_A1	3.3v
120	GPIO1_A0	3.3v
121	GPIO1_A4	3.3v
122	CIF_CLKOUT	1.8v
123	I2C2_SCL	1.8v
124	I2C2_SDA	1.8v
125	GPIO3_C5	3.3v
126	GPIO3_C4	3.3v
127	GPIO3_D4	1.8v
128	GPIO3_D5	1.8v
129	GPIO3_B5	3.3v
130	GPIO3_C7	1.8v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
131	GPIO3_C6	1.8v
132	GPIO3_B6	3.3v
133	GPIO3_A7	3.3v
134	GPIO3_B7	3.3v
135	UART4_RX_M1	3.3v
136	UART4_TX_M1	3.3v
137	GPIO3_B0	3.3v
138	MIPICAM1_RST_L_GPIO3_A5	3.3v
139	MIPICAM0_RST_L_GPIO3_A6	3.3v
140	GPIO3_A4	3.3v
141	GPIO3_A2	3.3v
142	GPIO3_A1	3.3v
143	GPIO4_C2_D	3.3v
144	GPIO3_D3	1.8v
145	GPIO3_D2	1.8v
146	GPIO3_D1	1.8v
147	GPIO3_C1	3.3v
148	GPIO3_D0	1.8v
149	I2C5_SCL_M0	3.3v
150	I2C5_SDA_M0	3.3v
151	GND	
152	GPIO3_C0	3.3v
153	GPIO4_C6_D	3.3v
154	GPIO4_C5_D	3.3v
155	GPIO4_C4_D	3.3v
156	GPIO4_C3_D	3.3v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
157	TP_RST	3.3v
158	USB2_HOST2_DM	
159	USB2_HOST2_DP	
160	USB2_HOST3_DM	
161	USB2_HOST3_DP	
162	ETH1_REFCLKO_25M_M1	1.8v
163	GMAC1_MCLKINOUT_M1	1.8v
164	GMAC1_MDIO_M1	1.8v
165	GMAC1_MDC_M1	1.8v
166	GMAC1_RXER_M1	1.8v
167	GMAC1_RXDV_CRS_M1	1.8v
168	GMAC1_RXD0_M1	1.8v
169	GMAC1_RXD1_M1	1.8v
170	GMAC1_RXD2_M1	1.8v
171	GMAC1_RXD3_M1	1.8v
172	GMAC1_RXCLK_M1	1.8v
173	GMAC1_TXEN_M1	1.8v
174	GMAC1_TXD0_M1	1.8v
175	GMAC1_TXD1_M1	1.8v
176	GMAC1_TXD2_M1	1.8v
177	GMAC1_TXD3_M1	1.8v
178	GMAC1_TXCLK_M1	1.8v
179	GMAC1_RSTN_GPIO3_C2	3.3v
180	GMAC1_INT/PMEB_GPIO3_C3	3.3v
181	MIPI_CSI_RX_D3N	1.8v
182	MIPI_CSI_RX_D3P	1.8v

Pin Definition

PIN No.	Pin Definition	IO Power Domain
183	MIPI_CSI_RX_D2N	1.8v
184	MIPI_CSI_RX_D2P	1.8v
185	MIPI_CSI_RX_CLK1P	1.8v
186	MIPI_CSI_RX_CLK1N	1.8v
187	MIPI_CSI_RX_CLK0P	1.8v
188	MIPI_CSI_RX_CLK0N	1.8v
189	MIPI_CSI_RX_D1N	1.8v
190	MIPI_CSI_RX_D1P	1.8v
191	MIPI_CSI_RX_D0N	1.8v
192	MIPI_CSI_RX_D0P	1.8v
193	MIPI_DSI_TX1_D3N	1.8v
194	MIPI_DSI_TX1_D3P	1.8v
195	MIPI_DSI_TX1_D2N	1.8v
196	MIPI_DSI_TX1_D2P	1.8v
197	MIPI_DSI_TX1_D1N	1.8v
198	MIPI_DSI_TX1_D1P	1.8v
199	MIPI_DSI_TX1_D0N	1.8v
200	MIPI_DSI_TX1_D0P	1.8v

Company Introduction

Graperaim is a solution company dedicated to ARM platform development. 80% of our employees are senior engineers with bachelor degree or above, who have been engaged in embedded technology development for many years. Based on the 64-bit ARM processor, which is widely used in the embedded industry, we have streamlined the circuit design and strictly controlled the hardware cost, combined with the popular Linux, Ubuntu, Android and other operating systems. Graperaim launched a series of solutions to provide system on modules + hardware customization + software development + OEM/ODM services to provide quality support services for manufacturers and R&D institutions.

Sales and service network

Shenzhen Graperaim Technology Co., Ltd.

Website: <http://www.graperaim.com>

Landline: +86 755 23025312

mail: sales@graperaim.com

Address: E-405-406, Bao'an Wisdom Valley Hi-tech Park, Yintian Rd 4th, Xixiang, Bao'an Dist., Shenzhen.