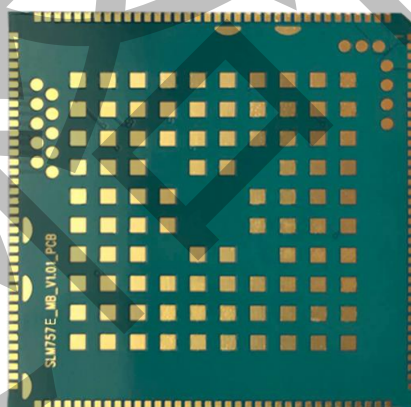


# SLM757Q 模块规格说明\_V1.03



受控文件名称	SLM757Q 模块规格说明
受控版本号	V1.03
发布机构	深圳市美格智能技术股份有限公司
发布日期	2018 年 2 月更新

# 1. 产品概述

SLM757 系列核心板是一款板卡内存为 8GB(兼容 16GB)的全球不同制式多模 LTE 智能通信模块，此模块适用于 TD-LTE/FDD-LTE/WCDMA/EVDO/TD-SCDMA/CDMA/GSM 多种网络制式的宽带智能无线通信模块。SLM757 采用 Android7.1 操作系统，可支持的接入速率：

TD-LTE: 117/30Mbps

FDD-LTE: 150Mbps/50Mbps

WCDMA 可达 DC HSPA+: 42Mbps/5.76Mbps

EVDO 可达 EVDO RevA: 3.1Mbps/1.8Mbps

TD-SCDMA 可达 HSPA: 4.2Mbps/2.2Mbps

CDMA1x: 153.6kbps/153.6kbps

GSM 可达 EDGE: 236.8kbps/236.8kbps

SLM757 在提供高速宽带数据接入的同时，可提供语音、短信、通讯簿、WiFi、BT 和 GPS 功能，可广泛应用于视频监控、安防、车载设备、智能平台手持终端等产品。

# 2. 特性列表

产品特性	描述（“*可选择支持”在硬件上有差异）
平台	Qualcomm MSM8917
CPU	Quad-core A53 (64bit) 1.4GHz
GPU	A308 600MHz
系统内存	8GB eMMC + 1GB LPDDR3 *可选择支持 16GB+2GB
操作系统	Android 7.1
尺寸	41.0x41.0x3.0mm，邮票孔封装 146pin+92pin LGA
网络频段（中国版本） SLM75QC	TDD-LTE: B38/39/40/41 FDD-LTE: B1/3/5/8 TD-SCDMA: B34/39 WCDMA: B1/B5/B8 EVDO: BC0 CDMA: BC0 GSM: B5/3/8/2
Wi-Fi	IEEE 802.11b/g/n 2.4G
Bluetooth	BT4.1
FM	Yes

GNSS		GPS/Beidou/Glonass/Galileo																				
数据接入	TD-LTE	Cat4 TD-LTE 117/30Mbps																				
	FDD-LTE	Cat4 FDD-LTE 150/50Mbps																				
	DC-HSPA+	42/11.2Mbps																				
	TD-HSPA	2.8/2.3Mbps																				
	EVDO Rev.A	3.1/1.8Mbps																				
	EDGE	Class12, 236.8kbps/236.8kbps																				
	GPRS	Class12, 85.6kbps/85.6kbps																				
SIM		DS2S 双卡双待 3.0/1.8V 支持 SIM 卡热插拔 LW/G+G with CSFB to W/G L/TDS/G+G with CSFB to TDS/G L/EVDO/CDMA1X+ G LW/TDS/G+CDMA1X, 不支持双 CDMA 卡																				
Display		Matrix: HD: 1280*800 60fps LCM Size: User defined Interface: MIPI DSI 4-lane																				
Camera (前和后双摄像头)		Interface: main: MIPI CSI 4-lane; front: MIPI CSI 4-lane 摄像头 Pixel: Max. 前置 8Mp/后置 16Mp Video decode 1080p 30 fps: H264/ MP4/ WMV9/ VC1/ DivX/ VP8 HEVC (H.265) 720p 30fps in SW Video encode 1080p 30 fps: H264/ H263/ MP4/ VP8																				
输入设备		按键 (开关机键、home、音量+、音量-) 电容式 TP																				
Reset		支持硬复位																				
应用接口		<table border="1"> <thead> <tr> <th>接口名称</th> <th>主要功能描述</th> </tr> </thead> <tbody> <tr> <td>VBAT</td> <td>3pin, 模块电源输入, 3.4V~4.2V, 标称值 3.8V</td> </tr> <tr> <td>SDIO *1</td> <td>TF Card, 最大支持 32GB</td> </tr> <tr> <td>USB</td> <td>支持 OTG USB_BOOT (强制 USB 引导, 用于紧急下载)</td> </tr> <tr> <td>BLSP ports</td> <td>6 ports(BLSP2-7), 4-bits each, multiplexed serial interface functions</td> </tr> <tr> <td>UART*3</td> <td>BLSP2,BLSP5,BLSP6 support UART, up to 4 Mbps</td> </tr> <tr> <td>I2C</td> <td>BLSP2-6 support I2C, These BLSPs use bits [1:0] for I2C</td> </tr> <tr> <td>SPI(master only)</td> <td>SPI is support by each BLSP</td> </tr> <tr> <td>ADC*2</td> <td>待客户定义</td> </tr> <tr> <td>充电功能</td> <td>模块外置充电芯片, *可以选择支持 1.5A 或 Qcharger 3.0</td> </tr> </tbody> </table>	接口名称	主要功能描述	VBAT	3pin, 模块电源输入, 3.4V~4.2V, 标称值 3.8V	SDIO *1	TF Card, 最大支持 32GB	USB	支持 OTG USB_BOOT (强制 USB 引导, 用于紧急下载)	BLSP ports	6 ports(BLSP2-7), 4-bits each, multiplexed serial interface functions	UART*3	BLSP2,BLSP5,BLSP6 support UART, up to 4 Mbps	I2C	BLSP2-6 support I2C, These BLSPs use bits [1:0] for I2C	SPI(master only)	SPI is support by each BLSP	ADC*2	待客户定义	充电功能	模块外置充电芯片, *可以选择支持 1.5A 或 Qcharger 3.0
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	马达	支持
	GPIO	53 个 GPIO,不含 BLSP 复用 GPIO
	VCOIN	实时时钟后备电池
	射频 PIN	多模 LTE 主天线 多模 LTE 分集天线 GPS 天线 2.4G WiFi-天线
	Audio	1 路主 MIC 1 路降噪 MIC 1 路免提喇叭（内置 0.8W D 类功放） 1 路听筒 1 路立体声耳机

### 3.其他制式版本

网络频段（亚欧版本） SLM75QE	TDD-LTE: B38/40/41 FDD-LTE: B1/3/5/7/8/20 WCDMA: B1/B5/B8 GSM: B5/3/8
网络频段（美洲版本） SLM757QA	FDD-LTE: B2/4/5/12/13/17/28 WCDMA: B2/4/5

## 4.SLM757 接口

### SLM757 模块 238pin 定义:

PIN#	SLM757 Pin name	Pad characteristics	Functional description
1	GND	GND	GND
2	VBUS	PI,PO	USB Voltage
3	VBUS	PI,PO	USB Voltage
4	VBUS	PI,PO	USB Voltage
5	GND	GND	GND
6	GND	GND	GND
7	FLASH_LED1+	AO	FLASH LED anode(1A)
8	GND	GND	GND
9	LCD_BL_LED_K1	AI	LCD Backlight cathode1(20mA)
10	LCD_BL_LED_K2	AI	LCD Backlight cathode2(20mA)
11	LCD_BL_LED_A	PO	LCD Backlight anode
12	CHG_LED	AI	Charge LED
13	HOUTN	AO	Haptics driver output negative
14	HOUTP	AO	Haptics driver output positive
15	VCOIN	AI,AO	Coin-cell battery or backup battery
16	BAT_THERM	AI	Battery temperature input to ADC
17	PMI8937_MPP1	AO-Z,AI,DO	Configurable MPP,PWM,ADC
18	PM8937_MPP2	AO-Z,DI,DO	Configurable MPP,PWM,ADC
19	KYPD_PWR_N1	DI	POWER ON/OFF KEY
20	PM_RESIN_N1	DI	RESET KEY
21	GPIO91_KEY1_VOL+	B-PD:nppukp	Configurable I/O,KEY VOL+
22	GPIO127_KEY2_SNAPSHOT	B-PD:nppukp	Configurable I/O,KEY VOL- or SNAPSHOT
23	GPIO128_KEY3_FOCUS	B-PD:nppukp	Configurable I/O,KEY HOME or FOCUS
24	GPIO26_MCAM_MCLK	B-PD:nppukp	Configurable I/O,main CAM MCLK
25	GPIO36_MCAM_RST_N	B-PD:nppukp	Configurable I/O,main CAM RESET
26	GPIO35_MCAM_PWDN	B-PD:nppukp	Configurable I/O,main CAM PWDN
27	GPIO28_SCAM_MCLK	B-PD:nppukp	Configurable I/O,front CAM MCLK
28	GPIO40_SCAM_RST_N	B-PD:nppukp	Configurable I/O,front CAM RESET
29	GPIO39_SCAM_PWDN	B-PD:nppukp	Configurable I/O,front CAM PWDN

30	GPIO29_CAM_I2C_SDA0	B-PD:nppukp	Configurable I/O,Dedicated camera I2C0 SDA
31	GPIO30_CAM_I2C_SCL0	B-PD:nppukp	Configurable I/O,Dedicated camera I2C0 SCL
32	GPIO62_CAM_DVDD_EN	B-PD:nppukp	Configurable I/O,LDO EN for CAM DVDD
33	GND	GND	GND
34	VREG_L11_2P95	PO	PMIC output 2.95V for SD-card power
35	VREG_L12_PX2_2P95	PO	PMIC output 2.95V for SDC2 signal
36	GPIO67_SDCARD_DET_N	B-PD:nppukp	Configurable I/O,SD card detection
37	GND	GND	GND
38	SDC2_SDCARD_CMD	BH-NP:pdpukp	Secure digital controller 2 command
39	SDC2_SDCARD_CLK	BH-NP:pdpukp	Secure digital controller 2 clock
40	SDC2_SDCARD_D0	BH-NP:pdpukp	Secure digital controller 2 data bit 0
41	SDC2_SDCARD_D1	BH-NP:pdpukp	Secure digital controller 2 data bit 1
42	SDC2_SDCARD_D2	BH-NP:pdpukp	Secure digital controller 2 data bit 2
43	SDC2_SDCARD_D3	BH-NP:pdpukp	Secure digital controller 2 data bit 3
44	GND	GND	GND
45	MIPI_CSI0_LANE1_N	AI	MIPI camera serial interface 0 lane1-
46	MIPI_CSI0_LANE1_P	AI	MIPI camera serial interface 0 lane1+
47	MIPI_CSI0_CLK_N	AI	MIPI camera serial interface 0 clock-
48	MIPI_CSI0_CLK_P	AI	MIPI camera serial interface 0 clock+
49	MIPI_CSI0_LANE2_N	AI	MIPI camera serial interface 0 lane2-
50	MIPI_CSI0_LANE2_P	AI	MIPI camera serial interface 0 lane2+
51	MIPI_CSI0_LANE0_N	AI	MIPI camera serial interface 0 lane0-
52	MIPI_CSI0_LANE0_P	AI	MIPI camera serial interface 0 lane0+
53	MIPI_CSI0_LANE3_N	AI	MIPI camera serial interface 0 lane3-
54	MIPI_CSI0_LANE3_P	AI	MIPI camera serial interface 0 lane3+
55	GND	GND	GND
56	MIPI_CSI1_LANE0_N	AI	MIPI camera serial interface 1 lane0-
57	MIPI_CSI1_LANE0_P	AI	MIPI camera serial interface 1 lane0+
58	MIPI_CSI1_CLK_N	AI	MIPI camera serial interface 1 clock-
59	MIPI_CSI1_CLK_P	AI	MIPI camera serial interface 1 clock+
60	MIPI_CSI1_LANE1_N	AI	MIPI camera serial interface 1 lane1-
61	MIPI_CSI1_LANE1_P	AI	MIPI camera serial interface 1 lane1+
62	GND	GND	GND
63	MIPI_DSI0_LANE0_N	AO	MIPI display serial interface 0 lane0-
64	MIPI_DSI0_LANE0_P	AO	MIPI display serial interface 0 lane0+
65	MIPI_DSI0_CLK_N	AO	MIPI display serial interface 0 clock-

66	MIPI_DSI0_CLK_P	AO	MIPI display serial interface 0 clock+
67	MIPI_DSI0_LANE1_N	AO	MIPI display serial interface 0 lane1-
68	MIPI_DSI0_LANE1_P	AO	MIPI display serial interface 0 lane1+
69	MIPI_DSI0_LANE3_N	AO	MIPI display serial interface 0 lane3-
70	MIPI_DSI0_LANE3_P	AO	MIPI display serial interface 0 lane3+
71	MIPI_DSI0_LANE2_N	AO	MIPI display serial interface 0 lane2-
72	MIPI_DSI0_LANE2_P	AO	MIPI display serial interface 0 lane2+
73	GND	GND	GND
74	RF_WIFI/BT	AI	RF signal for WIFI/BT
75	GND	GND	GND
76	GPIO5_UART0_RX	B-PD:nppukp	Configurable I/O,UART0 RX
77	GPIO4_UART0_TX	B-PD:nppukp	Configurable I/O,UART0 TX
78	GND	GND	GND
79	GPIO65_TP_INT_N	B-PD:nppukp	Configurable I/O,TP INT
80	GPIO64_TP_RST_N	B-PD:nppukp	Configurable I/O,TP RESET
81	GPIO11_TP_I2C3_SCL	B-PD:nppukp	Configurable I/O,TP I2C SCL
82	GPIO10_TP_I2C3_SDA	B-PD:nppukp	Configurable I/O,TP I2C SDA
83	GND	GND	GND
84	Reserved		Reserved
85	GND	GND	GND
86	GPIO61_LCD_ID	B-PD:nppukp	Configurable I/O,primary LCD ID
87	GPIO60_LCD_RST_N	B-PD:nppukp	Configurable I/O,primary LCD RESET
88	GPIO24_LCD_TE0	B-PD:nppukp	Configurable I/O,primary LCD TE
89	GND	GND	GND
90	RF_MAIN	AI	RF signal for main ANT
91	GND	GND	GND
92	GPIO15_SENSOR_I2C4_SCL	B-PD:nppukp	Configurable I/O,SENSOR I2C SCL
93	GPIO14_SENSOR_I2C4_SDA	B-PD:nppukp	Configurable I/O,SENSOR I2C SDA
94	GPIO7_I2C2_SCL	B-PD:nppukp	Configurable I/O,I2C SCL or UART0 RTS
95	GPIO6_I2C2_SDA	B-PD:nppukp	Configurable I/O,I2C SDA or UART0 CTS
96	UIM2_DET	B-PD:nppukp	Configurable I/O,UIM2 removal detection
97	UIM2_RESET	B-PD:nppukp	Configurable I/O,UIM2 reset
98	UIM2_CLK	B-PD:nppukp	Configurable I/O,UIM2 clock
99	UIM2_DATA	B-PD:nppukp	Configurable I/O,UIM2 data
100	VREG_L15_UIM2	PO	PMIC output for UIM2
101	UIM1_DET	B-PD:nppukp	Configurable I/O,UIM1 removal detection

102	UIM1_RESET	B-PD:nppukp	Configurable I/O,UIM1 reset
103	UIM1_CLK	B-PD:nppukp	Configurable I/O,UIM1 clock
104	UIM1_DATA	B-PD:nppukp	Configurable I/O,UIM1 data
105	VREG_L14_UIM1	PO	PMIC output for UIM1
106	GPIO59_SENSOR_RST	B-PD:nppukp	Configurable I/O,secondary LCD RST
107	VREG_L10_2P8_SENSOR	PO	PMIC output 2.8V for sensor
108	VREG_L22_2P8_AVDD	PO	PMIC output 2.8V for camera AVDD
109	VREG_L23_1P2_DVDD	PO	PMIC output 1.2V for camera DVDD
110	GND	GND	GND
111	GND	GND	GND
112	VREG_L17_2P85	PO	PMIC output 2.8V for LCD,CAM,TP
113	VREG_L6_1P8	PO	PMIC output 1.8V for LCD,CAM,TP,sensor
114	VREG_L5_1P8	PO	PMIC output 1.8V for digital I/Os
115	GND	GND	GND
116	CDC_HS_DET	AI	MBHC mechanical insertion/removal-detection
117	CDC_HPH_L	AO	Headphone output, left channel
118	CDC_HPH_REF	AI	Headphone ground reference
119	CDC_HPH_R	AO	Headphone output, right channel
120	MIC_BIAS2	AO	Microphone bias #2
121	MIC_IN1_M	AI	Microphone 1 input minus
122	MIC_IN1_P	AI	Microphone 1 input plus
123	MIC_BIAS1	AO	Microphone bias #1
124	CDC_EAR_M	AO	Earpiece output, minus
125	CDC_EAR_P	AO	Earpiece output, plus
126	GND	GND	GND
127	SPKR_DRV_M	AO	Class-D speaker driver output, minus
128	SPKR_DRV_P	AO	Class-D speaker driver output, plus
129	GND	GND	GND
130	RF_DIV	AI	RF signal for diversity ANT
131	GND	GND	GND
132	MIC_IN3_P	AI	Microphone input 3
133	GND_MIC	GND	Microphone bias filter ground
134	MIC_IN2_P	AI	Microphone input 2
135	GND	GND	GND
136	RF_GPS	AI	RF signal for GPS
137	GND	GND	GND



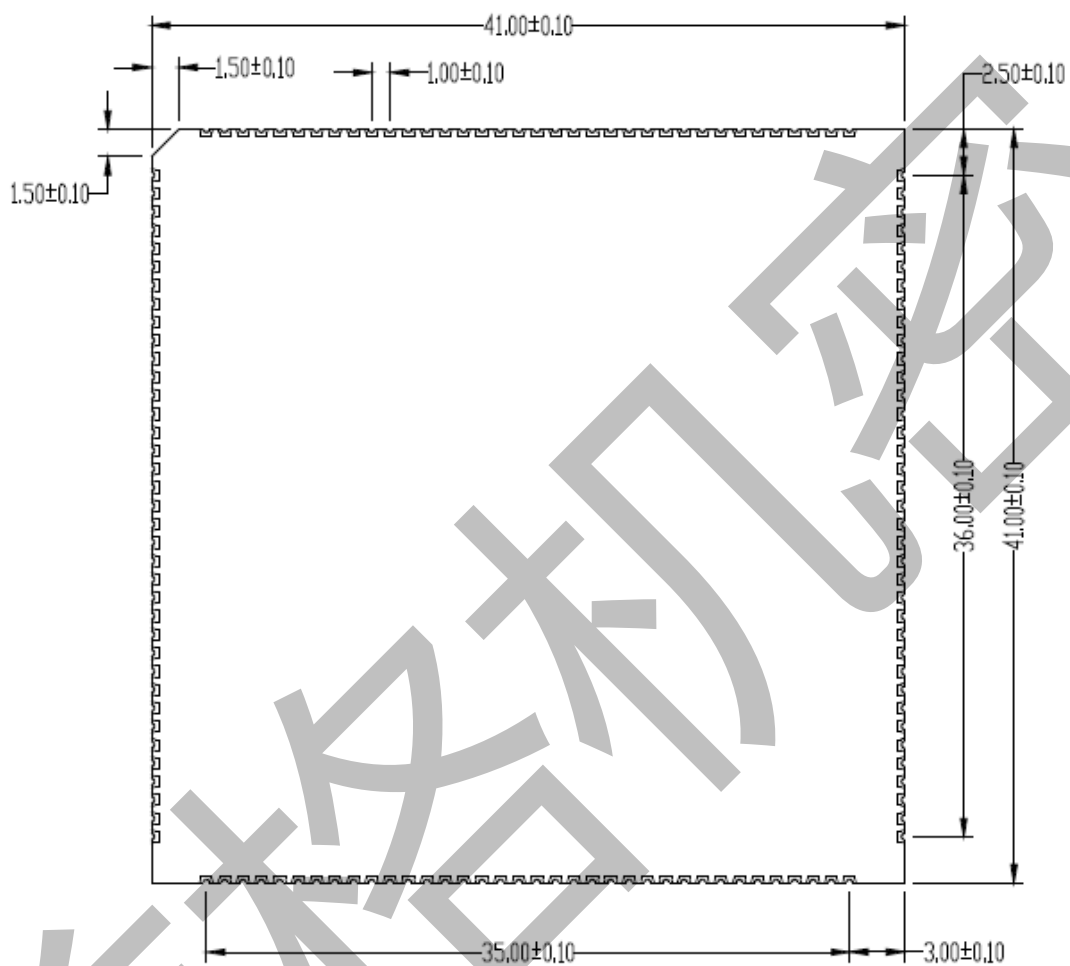
138	USB_ID	AI	USB ID
139	USB_DM	AI,AO	USB data minus
140	USB_DP	AI,AO	USB data plus
141	GND	GND	GND
142	GND	GND	GND
143	VBAT	PI,PO	Battery
144	VBAT	PI,PO	Battery
145	VBAT	PI,PO	Battery
146	GND	GND	GND
147	GND	GND	GND
148	GND	GND	GND
149	LCD_CABC	DI	PWM signal from display controller
150	GPIO8	B-PD:nppukp	Configurable I/O
151	GPIO9	B-PD:nppukp	Configurable I/O
152	GPIO92	B-PD:nppukp	Configurable I/O
153	GPIO50_FLASH_FRONT_EN	B-PD:nppukp	Configurable I/O
154	GND	GND	GND
155	GND	GND	GND
156	GPIO38_DCAM_RST	B-PD:nppukp	Configurable I/O,Depth camera reset
157	GPIO27_DCAM_MCLK	B-PD:nppukp	Configurable I/O,Depth camera MCLK
158	MIPI_CSI1_LANE2_N	AI	MIPI camera serial interface 1 lane2-
159	MIPI_CSI1_LANE2_P	AI	MIPI camera serial interface 1 lane2+
160	GND	GND	GND
161	GND	GND	GND
162	GND	GND	GND
163	GPIO33_FLASH_EN	B-PD:nppukp	Configurable I/O
164	Reserved		Reserved
165	Reserved		Reserved
166	Reserved		Reserved
167	Reserved		Reserved
168	Reserved		Reserved
169	FM_ANT	AI	Signal for FM ANT
170	GND	GND	GND
171	GND	GND	GND
172	GPIO13	B-PD:nppukp	Configurable I/O
173	GPIO93	B-PD:nppukp	Configurable I/O

174	GND	GND	GND
175	GND	GND	GND
176	GPIO130	B-PD:nppukp	Configurable I/O
177	GND	GND	GND
178	GND	GND	GND
179	GPIO44_MAG_RST_N	B-PD:nppukp	Configurable I/O,Magnetometer interrupt
180	GPIO94	B-PD:nppukp	Configurable I/O
181	GPIO95	B-PD:nppukp	Configurable I/O
182	GPIO123	B-PD:nppukp	Configurable I/O
183	Reserved		Reserved
184	GPIO125	B-PD:nppukp	Configurable I/O
185	GPIO126	B-PD:nppukp	Configurable I/O
186	GPIO129	B-PD:nppukp	Configurable I/O
187	GPIO45	B-PD:nppukp	Configurable I/O
188	GPIO31_CAM_I2C_SDA1	B-PD:nppukp	Configurable I/O,Dedicated camera I2C1 SDA
189	GPIO32_CAM_I2C_SCL1	B-PD:nppukp	Configurable I/O,Dedicated camera I2C1 SCL
190	GND	GND	GND
191	MIPI_CSI1_LANE3_P	AI	MIPI camera serial interface 1 lane3+
192	MIPI_CSI1_LANE3_N	AI	MIPI camera serial interface 1 lane3-
193	GND	GND	GND
194	GND	GND	GND
195	GND	GND	GND
196	GPIO25_LCD_TE1	B-PD:nppukp	Configurable I/O,secondary LCD TE
197	Reserved		Reserved
198	Reserved		Reserved
199	Reserved		Reserved
200	GPIO19_NFC_I2C5_SCL	B-PD:nppukp	Configurable I/O,NFC I2C SCL
201	GPIO18_NFC_I2C5_SDA	B-PD:nppukp	Configurable I/O,NFC I2C SDA
202	GPIO12	B-PD:nppukp	Configurable I/O
203	GPIO90_DMIC0_DATA	B-PD:nppukp	Configurable I/O,Digital MIC0 data
204	GPIO89_DMIC0_CLK	B-PD:nppukp	Configurable I/O,Digital MIC0 clock
205	GPIO99	B-PD:nppukp	Configurable I/O
206	GPIO98	B-PD:nppukp	Configurable I/O
207	GPIO97	B-PD:nppukp	Configurable I/O
208	GPIO96	B-PD:nppukp	Configurable I/O
209	GND	GND	GND

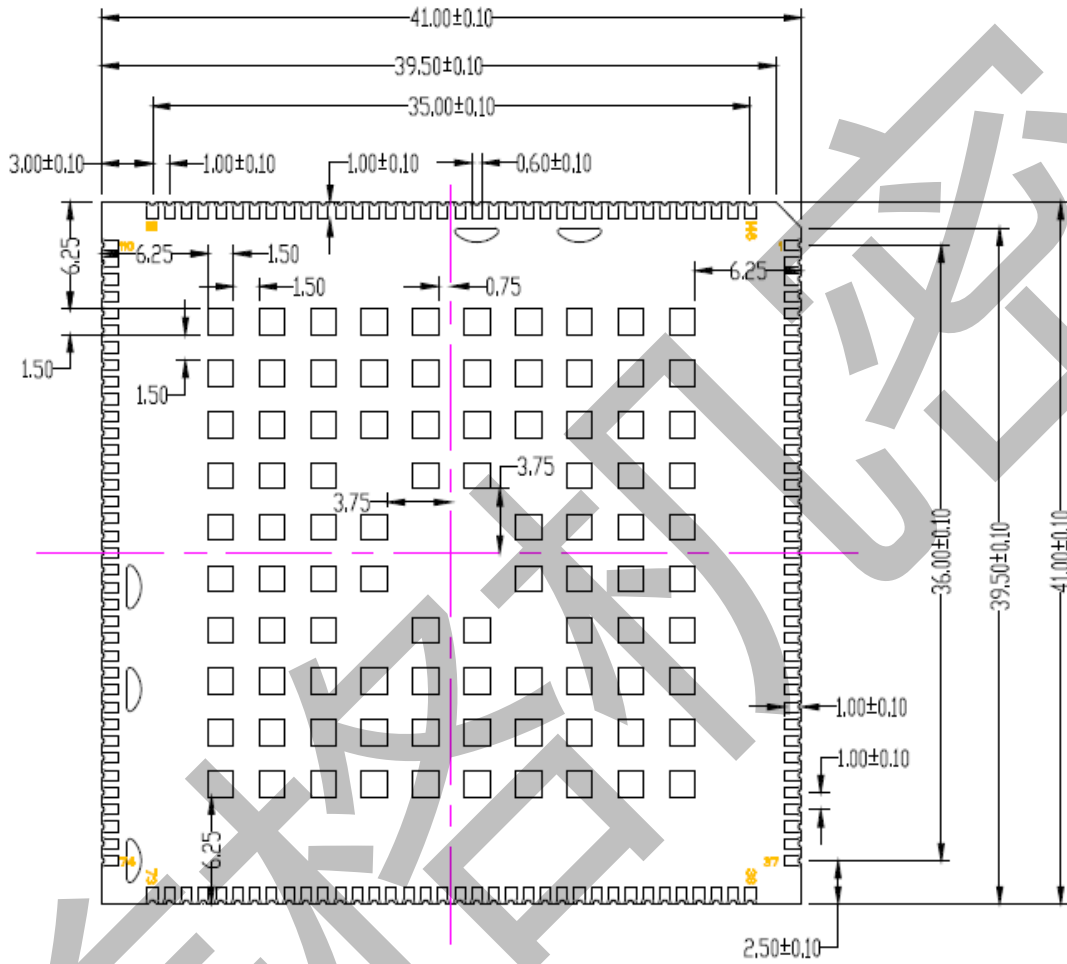
210	GND	GND	GND
211	GND	GND	GND
212	GND	GND	GND
213	GND	GND	GND
214	GND	GND	GND
215	GPIO68_DCAM_PWDN	B-PD:nppukp	Configurable I/O
216	GPIO41	B-PD:nppukp	Configurable I/O,Accelerometer interrupt2
217	GPIO42_G_INT1_N	B-PD:nppukp	Configurable I/O,Accelerometer interrupt1
218	GPIO48	B-PD:nppukp	Configurable I/O
219	GPIO46	B-PD:nppukp	Configurable I/O
220	GPIO124	B-PD:nppukp	Configurable I/O
221	Reserved		Reserved
222	Reserved		Reserved
223	GPIO17_UART1_RX	B-PD:nppukp	Configurable I/O,UART1 RX
224	GPIO16_UART1_TX	B-PD:nppukp	Configurable I/O,UART1 TX
225	GPIO88_SPI7_CLK	B-PD:nppukp	Configurable I/O,SPI CLK
226	GPIO87_SPI7_CS_N	B-PD:nppukp	Configurable I/O,SPI CS
227	GPIO86_SPI7_MISO	B-PD:nppukp	Configurable I/O,SPI MISO
228	GPIO85_SPI7_MOSI	B-PD:nppukp	Configurable I/O,SPI MOSI
229	GPIO43_PS_INT_N	B-PD:nppukp	Configurable I/O,ALSP interrupt
230	GND	GND	GND
231	GND	GND	GND
232	GND	GND	GND
233	FORCE_USB_BOOT	DI	pullup with VREG_L5 to forced USB boot
234	GPIO47	B-PD:nppukp	Configurable I/O
235	GPIO23_I2C6_SCL	B-PD:nppukp	Configurable I/O,I2C SCL or UART2 RTS
236	GPIO22_I2C6_SDA	B-PD:nppukp	Configurable I/O,I2C SDA or UART2 CTS
237	GPIO21_UART2_RX	B-PD:nppukp	Configurable I/O,UART2 RX
238	GPIO20_UART2_TX	B-PD:nppukp	Configurable I/O,UART2 TX

## 5. 模块 2D 结构图

TOP:



BOTTOM:



# 6.PIN 脚定义

