LPG-G5-WQ Module Specification

Document Version：20240625

Introduction

LPG-G5-WQ is a 5MP battery Wi-Fi Pan & Tilt camera module developed by our company, which supports Bluetooth fast network configuration and human detection, and is mainly used in high-definition video surveillance cameras.

Main Features

- Bluetooth network configuration
- Human detection
- PIR detection
- Remote wakeup
- Two-way audio
- Battery powered
- Wi-Fi connection
- Pan & Tilt
- Super night vision
- Cloud Storage
- TF Card Storage

Content

1. Product Parameters 3

2. Interface Description 4

3. Electrical Parameters 5

3.1 Absolute Electrical Parameters 5

3.2 Working Conditions 5

4. RF Parameters 6

4.1 Basic Wi-Fi Performance 6

4.2 Basic Bluetooth Performance 6

4.3 Wi-Fi RF Performance 6

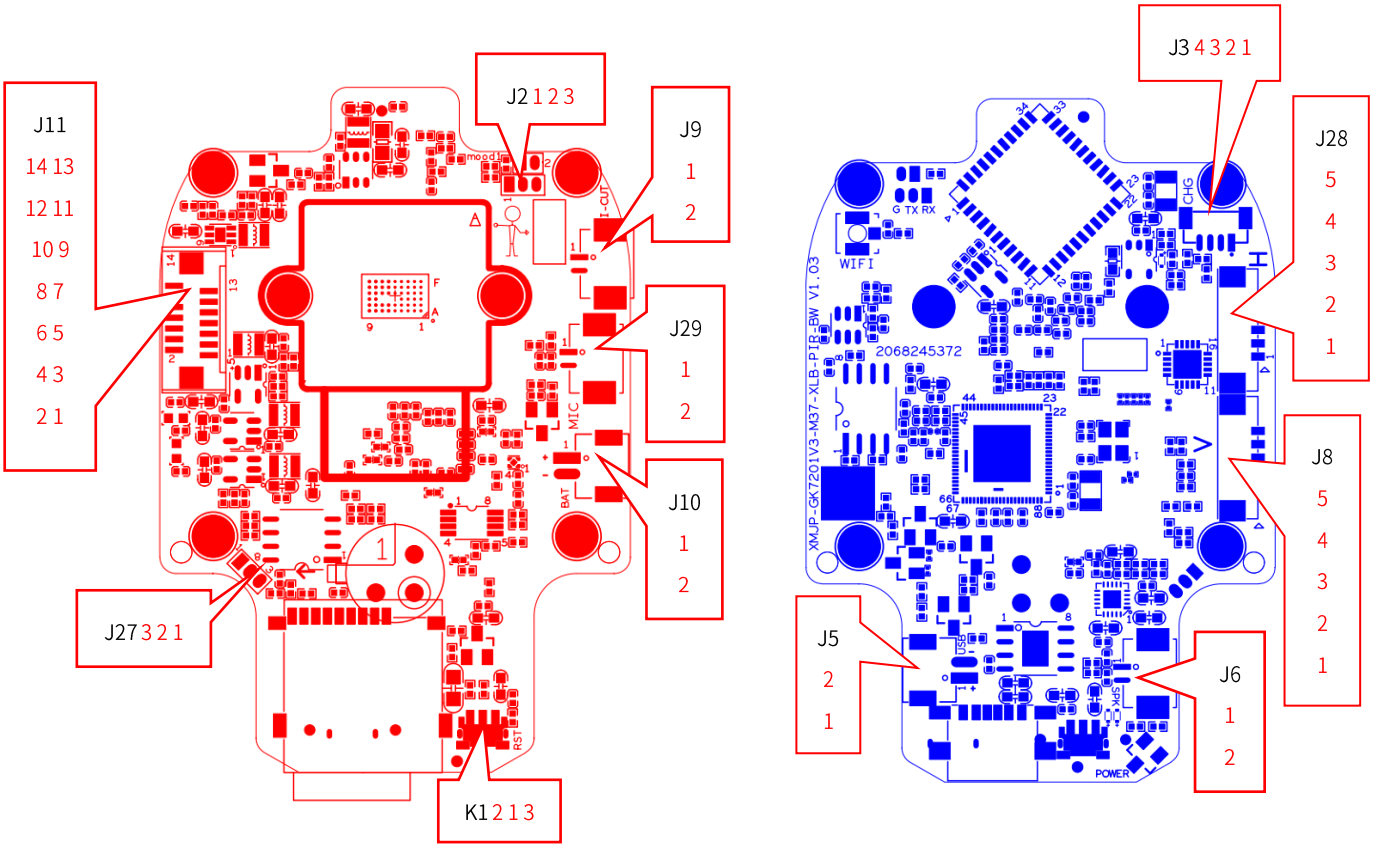
4.3.1 Wi-Fi TX Performance 6

4.3.2 Wi-Fi RX Performance 6

1. Product Parameters

Model	LPG-G5-WQ
System Structure	Single-core 32-bit DSP（GK7202V300）,pure hard compression ,watch dog
Sensor	1/2.9" Low illumination CMOS sensor
Min. Illumination	Color：0.01Lux @(F1.2,AGC ON); 0 Lux with IR Black/White: 0.001 Lux @ (F1.2,AGC ON),0 Lux with IR
Video Compression	H.265AI
Image Output	Main stream: 2880*1616@12fps ; Sub-code stream:640*360@12fps
Shutter	1/50(1/60)s to 1/10,000s
Day&Night	Support IR-CUT
DNR	Support 2D/3D noise reduction
WDR	Support
Audio Compression	G.711A codec standard, support dual voice talkback, audio and video synchronization
Audio Interface	1*input interface, support microphone input (MIC: selection range -28dB~-36dB, -33dB specification recommended); 1*output interface, support speaker output playback (speaker: 8Ω 2W specification recommended)
Network Interface	1*Wi-Fi antenna interface，support wireless network connection
Motor Interface	1* horizontal motor interface, 1*vertical motor interface
Signal Interface	1*photoresistor interface, 1*IR-CUT driver interface, support photoresistor input signal and IR-CUT, IR lamp linkage
Reset Interface	1*reset interface
Storage Mode	Local TF card, up to 256G; cloud storage
Reliability	Comprehensive lightning protection, in line with national and international standards; 3*24 hours high-temperature test stability and reliability
Smart Alarm	Supporting PIR detection support to customizing other intelligent functions
Functions	It supports remote monitoring of mobile client, push message after alarm of human detection, and supports MJPEG capture;
Mobile Monitoring	Support（iOS，Android）
Power Supply	4.2V lithium battery power supply
Dimension	44mm*58mm

2. Interface Description



Silk Screen Number	Pin Number	Pin Definition	Function
J11	1	+5V_BQ	Battery power
	2	+5V_BQ	Battery power
	3	3V3	3V3
	4	+5_USB	Charging indicates the power supply
	5	GND	GND
	6	GND	GND
	7	WLED_EN	White light signal
	8	RLED_EN	Infrared signal
	9	GND	GND
	10	ADC_IN	Photosensitive signal
	11	MCU_LED1	Blue light distribution network indicator
	12	MCU_LED2	Red light low battery indicator
	13	CHG_LED	Charging indicator
	14	--	--
J9	1	OUT1	IRCUT signal
	2	OUT2	IRCUT signal
J29	1	MIC_N	MIC signal
	2	MIC_P	MIC signal
J10	1	+5V_LI	+5V battery
	2	GND	GND
K1	1	SW_ON/OFF	Reset button

J5	1	+5V_USB	+5V USB power supply
	2	GND	GND
J28	1	+5V_M2	Horizontal motor power supply
	2	4C	Horizontal motor signal
	3	3C	
	4	2C	
	5	1C	
J8	1	+5V_M1	Vertical motor power supply
	2	V_MOTO8	Vertical motor signal
	3	V_MOTO7	
	4	V_MOTO6	
	5	V_MOTO5	
J6	1	Horn signal	Horn signal
	2	Horn signal	Horn signal
J2	1	UART_RXD	Serial port reception
	2	UART_TXD	Serial port sending
	3	GND	GND
J27	1	UART_RXD	Serial port reception
	2	UART_TXD	Serial port sending
	3	GND	GND
J3	1	CHG	Charge detection
	2	LI_BAT	Battery voltage
	3	BAT_EN	Charging enabled
	4	+5V_POWER	Charging indicator voltage

3. Electrical Parameters

3.1 Absolute Electrical Parameters

Parameter	Description	Min	Max	Unit
Ts	Storage temperature	-40	150	℃
VCC	Power supply voltage	3.3	4.2	V
Static electricity discharge voltage (Air)	TAMB-25℃	-6	6	KV
Static electricity discharge voltage (Contact)	TAMB-25℃	-3	3	KV

3.2 Working Conditions

Parameter	Description	Min	Max	Unit
Ta	Working temperature	-20	65	℃
VCC	Power supply voltage	3.3	4.2	V
VOL	I/O low-level output	0	0.7	V
VOH	I/O high-level output	2.6	3.3	V

4. RF Parameters

4.1 Basic Wi-Fi Performance

Parameter	Description
Wi-Fi standard	IEEE 802.11 b/g/n
Frequency Range	2.400 GHz ~ 2.4835 GHz
Number of Channels	2.4GHz：Ch1 ~ Ch14
Antenna Type	External IPEX interface

4.2 Basic Bluetooth Performance

Parameter	Description
Bluetooth standard	BLE 5.0 of 1Mbps
Frequency Range	2402 MHz ~ 2480 MHz
Number of Channels	39 channels

4.3 Wi-Fi RF Performance

4.3.1 Wi-Fi TX Performance

Mode	Rate	Power	EVM
802.11b	11Mbps	17dBm±2dB	≤-10dB
802.11g	54Mbps	15dBm±2dB	≤-25dB
802.11n	MCS7	15dBm±2dB	≤-28dB

4.3.2 Wi-Fi RX Performance

Working State	Rate	RX Sensitivity (Test Value)	RX Sensitivity (Standard Value)
（802.11b，20MHz）@8% PER	1Mbps	-95dBm	≤-94dBm
	2Mbps	-95dBm	≤-92dBm
	5.5Mbps	-90dBm	≤-89dBm
	11Mbps	-88dBm	≤-87dBm
（802.11g，20MHz）@10% PER	6Mbps	-90dBm	≤-86dBm
	9Mbps	-88dBm	≤-85dBm
	12Mbps	-87dBm	≤-84dBm
	18Mbps	-84dBm	≤-82dBm
	24Mbps	-81dBm	≤-80dBm
	36Mbps	-78dBm	≤-76dBm
	48Mbps	-75dBm	≤-73dBm
	54Mbps	-73dBm	≤-70dBm
（802.11n，20MHz）@10% PER	MCS=0	-90dBm	≤-86dBm
	MCS=1	-87dBm	≤-83dBm

	MCS=2	-85dBm	≤-81dBm
	MCS=3	-82dBm	≤-79dBm
	MCS=4	-79dBm	≤-76dBm
	MCS=5	-74dBm	≤-73dBm
	MCS=6	-73dBm	≤-71dBm
	MCS=7	-71dBm	≤-69dBm