# LPG-G4-GL Module Specification

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## Introduction

LPG-G4-GL is an 4MP low power consumption camera module developed by our company, which supports dual-light and can adjust the brightness of the white light lamp, and is mainly used in high-definition video surveillance cameras.

## Main Features

- Wi-Fi Connection
- HD Picture Quality
- PIR Detection
- Remote Wakeup
- Battery Powered
- Infrared Night Vision
- Two-way Audio
- TF Card Storage
- H.265AI
- Cloud Storage

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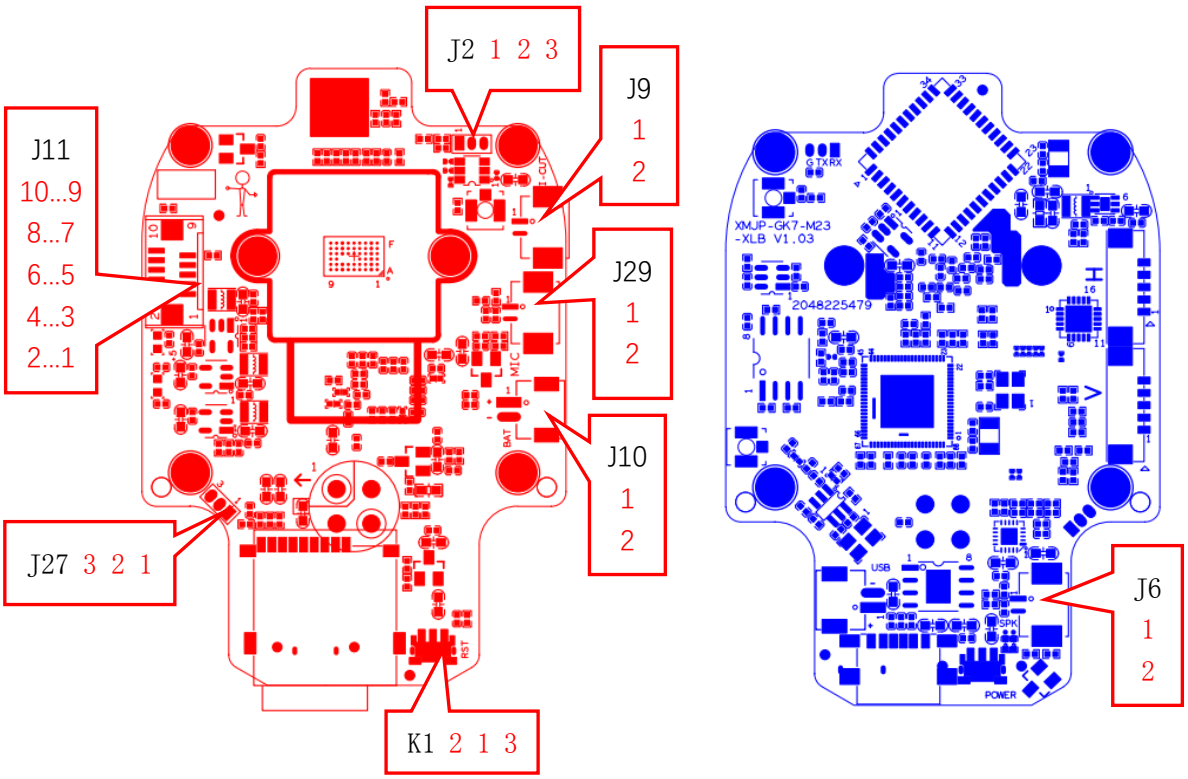
## 1. Product Parameters

| | |
|---|---|
| Model | IPG-G4-GL |
| System Structure | dual-core 32-bit DSP（GK7202V200）,pure hard compression ,watch dog |
| Sensor | 1/3" Low illumination CMOS Sensor |
| Min. Illumination | Color：0.01Lux @(F1.2,AGC ON); 0 Lux with IR<br>Black/White: 0.001 Lux @ (F1.2,AGC ON),0 Lux with IR |
| Video Compression | H.265AI |
| Image Output | Main stream: 2560*1440@12fps; Sub-code stream:800*448@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 channel input, support microphone input; 1 channel output, support speaker output playback |
| Network Interface | 1*WIFI antenna interface to support wireless network connection |
| 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 128G; cloud storage |
| Reliability | Comprehensive lightning protection, in line with national and international standards;<br>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

Dimension：44mm*58mm




| Silk Screen Number | Pin Number | Pin Definition | Function |
|---|---|---|---|
| J11 | 1 | +5V_BQ | +5V power supply |
| | 2 | +5V_BQ | +5V power supply |
| | 3 | 3.3V | 3.3V |
| | 4 | GND | GND |
| | 5 | GND | GND |
| | 6 | GPIO50 | White light signal |
| | 7 | RLED_EN | Infrared signal |
| | 8 | ADC_IN | Light sensitive signal |
| | 9 | MCU_LED1 | Blue light distribution indicator |
| | 10 | MCU_LED2 | Red low battery indicator |
| 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 |
| | 2 | GND | GND |
| | 3 | GND | GND |
| | 4 | GND | GND |

| | | | |
|---|---|---|---|
| | 5 | GND | GND |
| | 6 | GND | GND |
| | 7 | GND | GND |
| J6 | 1 | Horn signal | Horn signal |
| | 2 | Horn signal | Horn signal |
| J2 | 1 | UART_RXD | Serial Receive |
| | 2 | UART_TXD | Serial Send |
| | 3 | GND | GND |
| J27 | 1 | UART_RXD | Serial Receive |
| | 2 | UART_TXD | Serial Send |
| | 3 | GND | GND |

# 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 |

## 3.3 RF Power Consumption

| Mode | Power (mA)（VCC=3.3V） |
|---|---|
| Sleep Mode | 5uA |
| TX Test mode（2.4G HT20@17dbm） | 288 |
| RX Test mode（2.4G HT20） | 53 |

# 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 ~ Ch13 |
| Antenna Type | External IPEX interface |

## 4.2 Wi-Fi RF Performance

### 4.2.1 Wi-Fi TX Performance

| Mode | Rate | Power | EVM |
|---|---|---|---|
| 802.11b | 11Mbps | 16dBm±1.5dB | ≤-10dB |
| 802.11g | 54Mbps | 16dBm±1.5dB | ≤-25dB |
| 802.11n | MCS7 | 16dBm±1.5dB | ≤-28dB |

### 4.2.2 Wi-Fi RX Performance

| Working State | Rate | RX Sensitivity (Test Value) | RX Sensitivity (Standard Value) |
|---|---|---|---|
| （802.11b，20MHz）@8% PER | 1Mbps | －97dBm | ≤-85dBm |
| | 2Mbps | －95dBm | ≤-85dBm |
| | 5.5Mbps | －92dBm | ≤-85dBm |
| | 11Mbps | －90dBm | ≤-85dBm |
| （802.11g，20MHz）@10% PER | 6Mbps | －94dBm | ≤-85dBm |
| | 9Mbps | －92dBm | ≤-85dBm |
| | 12Mbps | －91dBm | ≤-85dBm |
| | 18Mbps | －88dBm | ≤-85dBm |
| | 24Mbps | －85dBm | ≤-85dBm |
| | 36Mbps | －82dBm | ≤-85dBm |
| | 48Mbps | －79dBm | ≤-85dBm |
| | 54Mbps | －77dBm | ≤-85dBm |
| （802.11n，20MHz）@10% PER | MCS=0 | －93dBm | ≤-85dBm |
| | MCS=1 | －90dBm | ≤-85dBm |
| | MCS=2 | －89dBm | ≤-85dBm |
| | MCS=3 | －85dBm | ≤-85dBm |
| | MCS=4 | －82dBm | ≤-85dBm |
| | MCS=5 | －78dBm | ≤-85dBm |
| | MCS=6 | －76dBm | ≤-85dBm |
| | MCS=7 | －73dBm | ≤-85dBm |