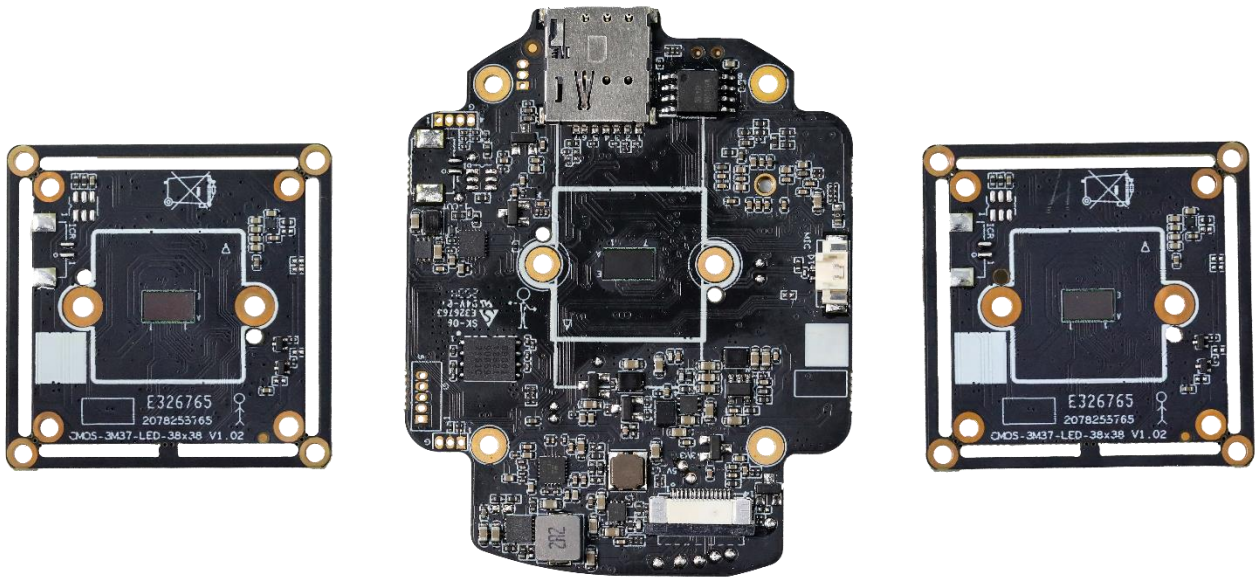


LPG-R6-4GE2Q Module Specification

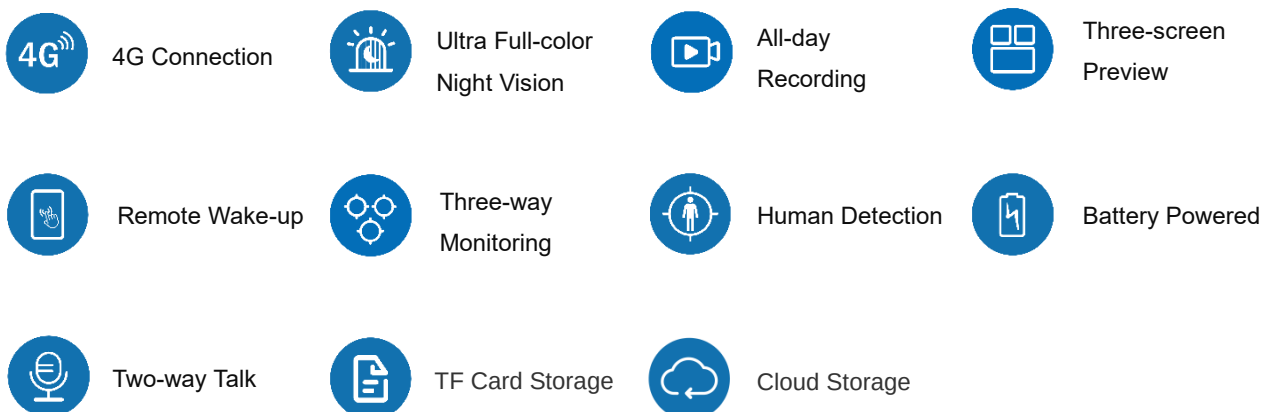
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Introduction

The LPG-R6-4GE2Q is a 6MP 4G AOV triple-lens black-light PT camera module developed by our company. Supports six-motor rotation monitoring. It features dual-SIM single standby functionality with one removable SIM card slot (supporting China Telecom cards) and one embedded SIM card (for China Mobile cards), enabling automatic 4G network switching. The module supports 1fps recording in AOV standby mode and full frame rate recording when activated. Its 4G connectivity complies with Chinese national standards and supports selected Southeast Asian 4G bands (see band support list for details). Powered by lithium battery, it can simultaneously monitor three distinct areas, making it ideal for high-definition video surveillance camera systems that require wide-area coverage and superior low-light performance.

Main Features



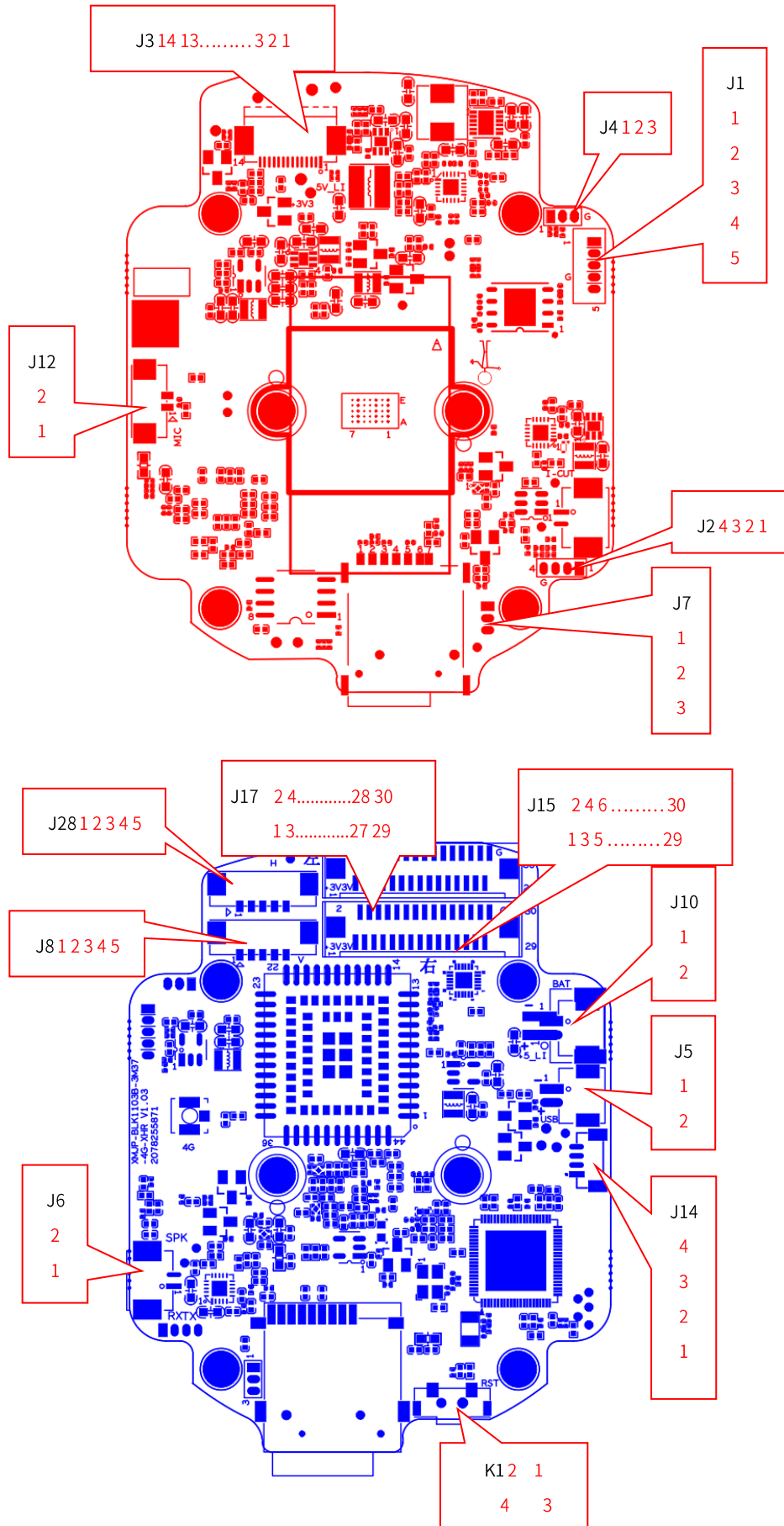
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1. Product Parameters

Model	LPG-R6-4GE2Q
System Structure	dual-core 32-bit DSP, pure hard compression, watch dog
Sensor	3*1/2.9" High performance CMOS Sensor
Min. Illumination	Color: 0.001Lux @(F1.0, AGC ON), 0 Lux with light
Video Compression	H.265AI
Image Output	Single View: Main stream: 1920*1080@12fps ; Sub-code stream: 640*360@12fps Three-panel Stitching View: Main stream: 1920*3240@12fps ; Sub-code stream: 640*1080@12fps
Shutter	1/50(1/60)s to 1/10,000s
Day&Night	Ultra Full-color Night Vision
DNR	Support 2D/3D noise reduction
WDR	Support
Audio Process	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*SIM card slot (supports CAT1 network), 1*embedded SIM (eSIM)
Motor Interface	3* horizontal motor interface, 3*vertical motor interface
Reset Interface	1*reset interface
Storage Mode	Local TF card, up to 512G; 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 human detection, support to customizing other intelligent functions
Value-added Services	Value-added services such as Cloud Storage, AI Storytelling, and AI Search require separate subscription and payment via the mobile app
Power Supply	4.2V lithium battery power supply
Dimension	52mm*66mm+38mm*38mm+38mm*38mm

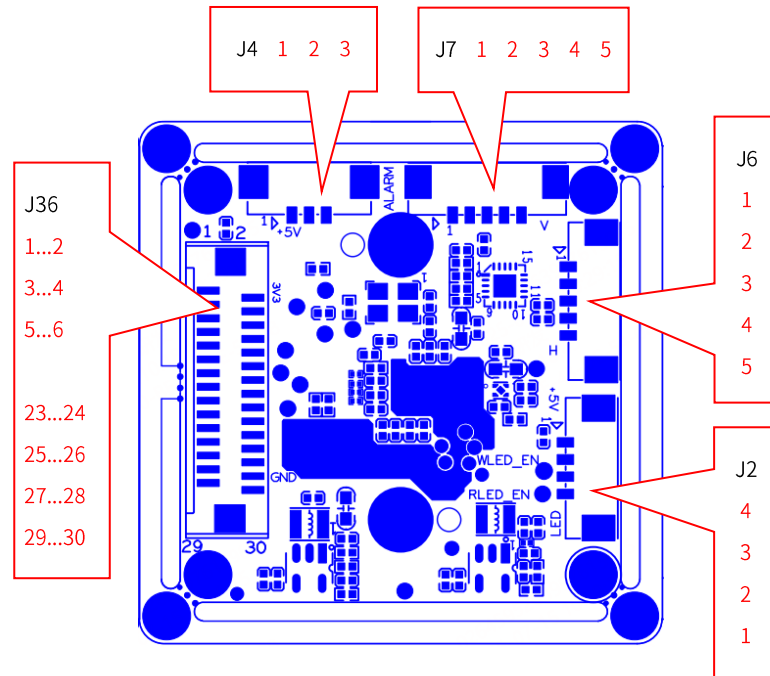
2. Interface Description



Silk Screen Number	Pin Number	Pin Definition	Function
J3	1	+5V_LI	Battery Voltage 3.3-4.2V
	2	+5V_LI	Battery Voltage 3.3-4.2V
	3	VCC_3.3V	3.3V photosensitive power supply
	4	+5V_POWER	+5V_POWER charging voltage
	5	GND	GND
	6	GND	GND
	7	WLED_EN	White light signal
	8	BWLED_EN	Low-light Signal
	9	GND	GND
	10	ADC_IN	Light-sensitive signal
	11	MCU_LED1	Blue light distribution network indicator signal
	12	LED1	Red light low battery indicator signal
	13	--	NC
	14	NC	NC
J4	1	DBG_RXD_1V8	4G module debugging RX serial port
	2	DBG_TXD_1V8	4G module debugging TX serial port
	3	GND	GND
J7	1	GND	GND
	2	UART_TXD	Master Debug Serial Port
	3	UART_RXD	Master Debug Serial Port
J12	1	MICIN_N	MIC-Signal
	2	MICIN_P	MIC+ Signal
J10	1	GND	GND
	2	+5V_LI	Battery voltage 3.3-4.2V
K1	2	SW_ON/OFF	Reset button
J14	1	CHG	Charge Detection Signal
	2	BAT_ADC	Battery Voltage
	3	BAT_EN	Charge Enable
	4	+5V_POWER	+5V_POWER Charging Voltage
J1	1	+3.3V_MCU	+3.3V WIFI power supply
	2	PC7_SWDDIO	MCU Debug Burn-in Port
	3	PD1_SWDDCLK	Microcontroller debug burn-in port
	4	GND	GND
	5	NRST	MCU debug burn-in port
J5	1	GND	GND
	2	+5V_USB	+5V USB input power
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	VOP	Horn Signal
	2	VON	Horn Signal
J36	1	VCC_3.3V	3.3V Power Supply
	2	3.3V	3.3V Power Supply
	3	+5V_LI	Battery voltage 3.3-4.2V
	4	+5V_LI	Battery Voltage 3.3-4.2V
	5	+5V	5V Voltage
	6	+5V_MOTO	5V Power
	7	GND	GND
	8	WLED_EN	White Light Signal
	9	STA_LED	Alarm Light
	10	RLED_EN	Low-light Signal
	11	MOTO_AD1_CS	Motor Address
	12	MOTOR_SDA	Motor I2C SCL
	13	MOTOR_CLK	Motor I2C SDA
	14	SID1	Sensor Address
	15	SENSOR_RST	Reset Input
	16	SENSOR_SCL	Sensor I2C SCL
	17	SENSOR_SDA	Sensor I2C SDA
	18	SENSOR_FSY	Sensor Frame Sync
	19	SENSOR_PWDN1	Sensor PWDN
	20	GND	GND
	21	SEN1_MCLK	Sensor Clock
	22	GND	GND
	23	SEN_CLK1N	MIPI CLK-
	24	SEN_CLK1P	MIPI CLK+
	25	GND	GND
	26	SEN_D2N	MIPI Data2-
	27	SEN_D2P	MIPI Data2+
	28	GND	GND
	29	SEN_D3N	MIPI Data3-

	30	SEN_D3P	MIPI Data3+
J2	1	LED1	MCU Debug Port
	2	UART1_RXD	MCU Debug Serial Port
	3	UART1_TXD	MCU debug serial port
	4	GND	MCU Debug Serial Port



Silk Screen Number	Pin Number	Pin Definition	Function
J2	1	+5V	Battery Voltage
	2	GND	GND
	3	WLED_EN	White Light Signal
	4	RLED_EN	Low Light Signal
J36	1	VCC_3V3	3.3V Power
	2	3V3	3.3V Power
	3	+5V_LI	Battery Voltage 3.3-4.2V
	4	+5V_LI	Battery Voltage 3.3-4.2V
	5	+5V_MOTO	5V Voltage
	6	+5V_MOTO	5V Voltage
	7	GND	GND
	8	WLED_EN	White Light Signal
	9	STA_LED	Alarm Light
	10	RLED_EN	Low-light Signal
	11	MOTO_AD1_CS	Motor Address

	12	MOTOR_SDA	Motor IIC
	13	MOTOR_CLK	Motor IIC
	14	SID1	Sensor Address
	15	SENSOR_RST	Reset Signal Input
	16	SENSOR_SCL	Sensor I2C
	17	SENSOR_SDA	Sensor I2C
	18	SENSOR_FSY	Sensor Frame Sync
	19	SENSOR_PWDN1	SENSOR PWDN Signal
	20	GND	GND
	21	SEN1_MCLK	Sensor Clock
	22	GND	GND
	23	SEN_CLK1N	MIPI Clock Negative Signal
	24	SEN_CLK1P	MIPI Clock Positive Signal
	25	GND	GND
	26	SEN_D2N	MIPI Data 2 Negative Signal
	27	SEN_D2P	MIPI Data 2 Positive Signal
	28	GND	GND
	29	SEN_D3N	MIPI Data 3 Negative Signal
	30	SEN_D3P	MIPI Data 3 Positive Signal
J4	1	+5V	4.3V Voltage
	2	GND	GND
	3	STA_LED	Alarm Light
J7	1	+5V_M1	Vertical Motor Power
	2	V_MOTO8	Vertical Motor Signal
	3	V_MOTO7	Vertical Motor Signal
	4	V_MOTO6	Vertical Motor Signal
	5	V_MOTO5	Vertical Motor Signal
J6	1	+5V_M2	Horizontal Motor Power
	2	4C	Horizontal Motor Signal
	3	3C	Horizontal Motor Signal
	4	2C	Horizontal Motor Signal
	5	1C	Horizontal Motor Signal

3. Electrical Parameters

3.1 Absolute Electrical Parameters

Parameter	Description	Min	Max	Unit
Ts	Storage temperature	-40	90	℃
VCC	Power supply voltage	-0.3	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	2.5	3.6	V

4. RF parameters

4.1 RF Output Power

Frequency Band	Max	Min
LTE FDD B1/B3/B5/B8	23dBm +-2.7dB	<-39dBm
LTE TDD B34/B38/B39/B40/B41	23dBm +-2.7dB	<-39dBm

4.2 RF Conduction Sensitivity

Frequency Band	RX Sensitivity
LTE FDD B1(10M)	< -97dBm
LTE FDD B3(10M)	< -97.8dBm
LTE FDD B5(10M)	< -98.6dBm
LTE FDD B8(10M)	< -100dBm
LTE TDD B34(10M)	< -100dBm
LTE TDD B38(10M)	< -98.3dBm
LTE TDD B39(10M)	< -100dBm
LTE TDD B40(10M)	< -99.3dBm
LTE TDD B41(10M)	< -99dBm

4.3 Working Frequency

3GPP Band	TX	RX	Unit
LTE FDD B1	1920~1980	2110~2170	MHz
LTE FDD B3	1710~1785	1805~1880	MHz
LTE FDD B5	824~849	869~894	MHz
LTE FDD B8	880~915	925~960	MHz

LTE TDD B34	2010~2025	2010~2025	MHz
LTE TDD B38	2570~2620	2570~2620	MHz
LTE TDD B39	1880~1920	1880~1920	MHz
LTE TDD B40	2300~2400	2300~2400	MHz
LTE TDD B41	2555~2675	2555~2675	MHz