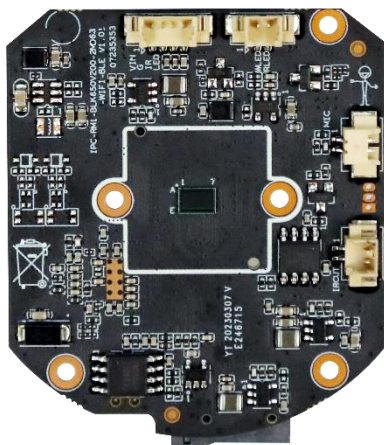
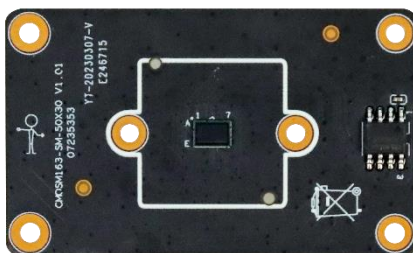


IPG-X4C-WER Module Specification

Document Version : 20230603



Introduction

IPG-X4C-WER is an 4MP Wi-Fi Bullet&PT Camera Module developed by our company, mainly used in HD video surveillance cameras.

Main Features



Bluetooth Network Configuration



One Top Two



Two-way Monitoring



Dual-screen Preview



Bullet&PT Linkage



Point and See



Human Detection



Human Tracking



H.265AI



Cloud Storage



TF Card Storage

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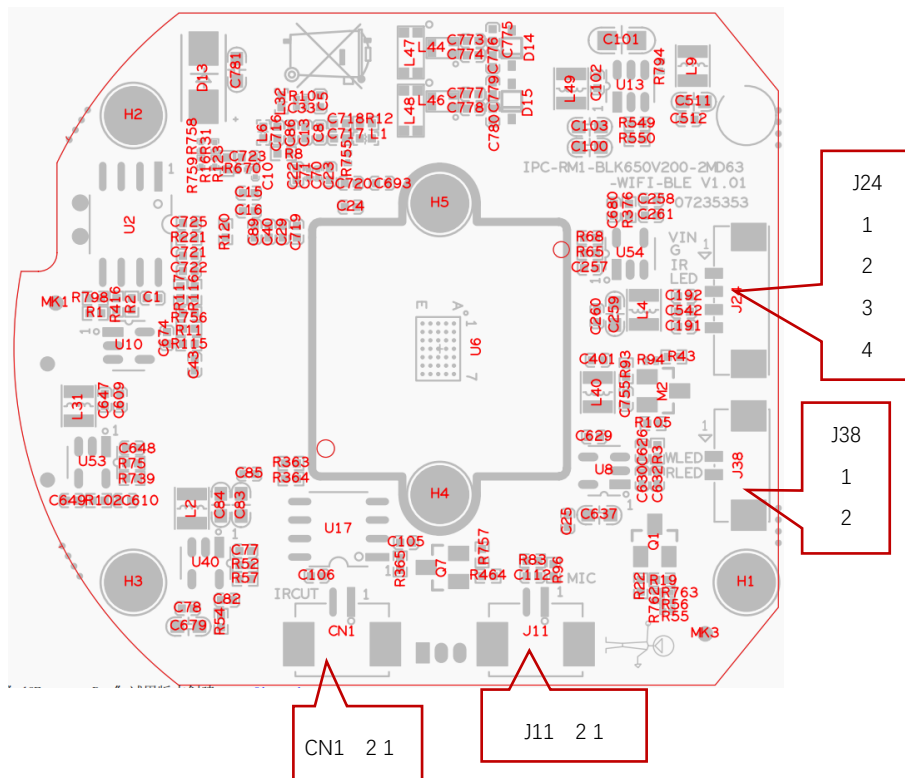
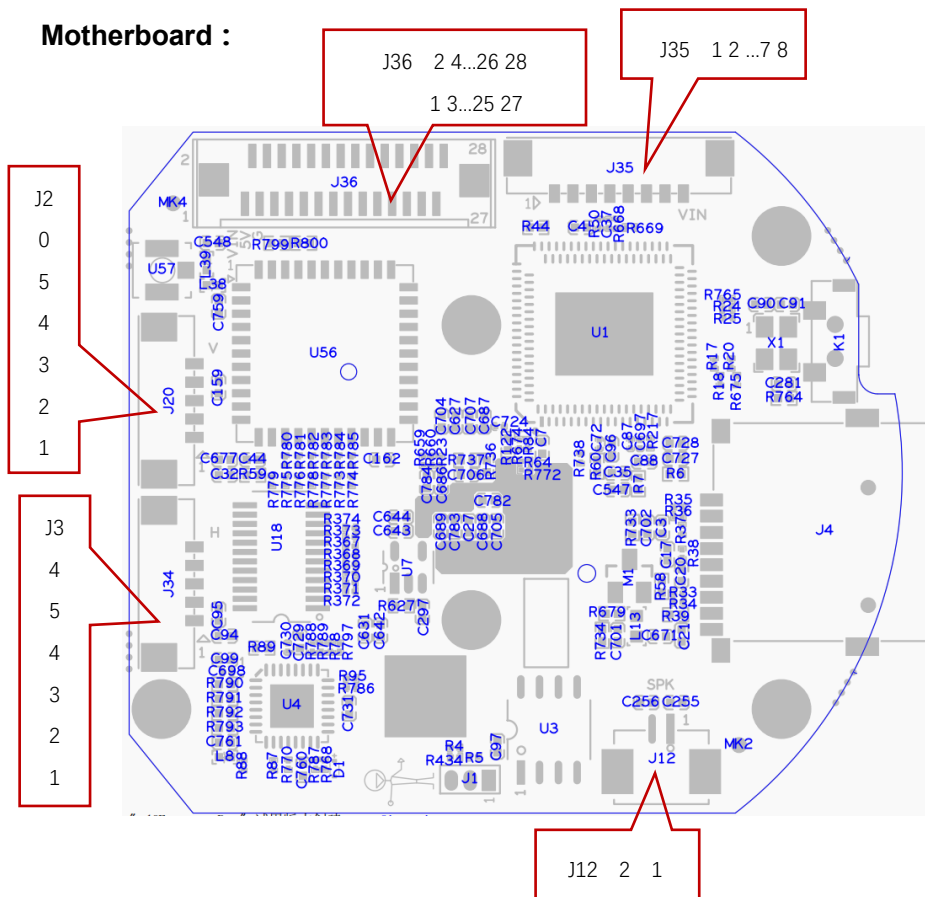
1. Product Parameters

Model	IPG-X4C-WER
System Structure	dual-core 32-bit DSP (XM650V200) ,pure hard compression ,watch dog
Sensor	2*1/4" 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: 1920*2160@12fps; Sub-code stream:640*720@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 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*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
Motor Interface	1* horizontal motor interface, 1*vertical motor interface
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; 3*24 hours high-temperature test stability and reliability
Smart Alarm	Supporting human 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;
ONVIF	support
Mobile Monitoring	Support (iOS, Android)
Power Supply	DC5V
Dimension	53mm*46mm+50mm*30mm

2. Interface Description

Motherboard dimension : 53mm*46mm ; Interface board dimension : 50mm*30mm

Motherboard :



Silk Screen Number	Pin Number	Pin Definition	Function
J36	1	VCC_IN	5V Power Supply
	2		
	3	5V	5V Power Supply
	4		
	5	GND	GND
	6		
	7	IR/LED	Hard light sensitive signal/alarm light
	8	RLED	Infrared light control signal
	9	WLED	White light control signal
	10	GND	GND
	11	IRCUTA	IRCUT driver
	12	IRCUTB	
	13	GND	GND
	14	SCL	IIC signal
	15	SDA	
	16	RST	Sensor reset
	17	GND	GND
	18	SEN0_MCLK	SENSOR-related signals
	19	GND	
	20	SEN_CLK0N	
	21	SEN_CLK0P	
	22	GND	
	23	SEN_D0N	
	24	SEN_D0P	
	25	GND	
	26	SEN_D1N	
	27	SEN_D1P	
	28	GND	
J20	1	5V	Vertical motor interface
	2	OUT8	
	3	OUT7	
	4	OUT6	
	5	OUT5	
J34	1	5V	Horizontal motor interface
	2	OUT1	
	3	OUT2	
	4	OUT3	
	5	OUT4	
J12	1	SPKN	SPK

Silk Screen Number	Pin Number	Pin Definition	Function
J36	1	VCC_IN	5V Power Supply
	2		
	3	5V	5V Power Supply
	4		
	5	GND	GND
	6		
	7	IR/LED	Hard light sensitive signal/alarm light
	8	RLED	Infrared light control signal
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	10	GND	GND
	11	IRCUTA	IRCUT driver
	12	IRCUTB	
	13	GND	GND
	14	SCL	IIC signal
	15	SDA	
	16	RST	Sensor reset
	17	GND	GND
	18	SEN0_MCLK	SENSOR related signals
	19	GND	
	20	SEN_CLK0N	
	21	SEN_CLK0P	
	22	GND	
	23	SEN_D0N	
	24	SEN_D0P	
	25	GND	
	26	-	
	27	-	
	28	GND	
J24	1	VCC_IN	5V power supply
	2	GND	GND
	3	IR	Hard photosensitive input signal
	-	-	- GND
J38	1	WLED	White light control signal
	2	RLED	Infrared light control signal
J39	1	VCC_IN	5V power supply
	2	GND	GND
	3	LED	Alarm light control signal
J1	1	OUT1	IRCUT
	2	OUT1	

3. Electrical Parameters

3.1 Absolute Electrical Parameters

Parameter	Description	Min	Max	Unit
Ts	Storage temperature	-40	150	℃
VCC	Power supply voltage	4.5	5.5	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	4.5	5.5	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

Operating	Mode	Rate	Power (mA)
TX mode	802.11b	11Mbps	186.6
	802.11g	54Mbps	158
	802.11n	HT20/MCS7	159.4
	802.11n	HT40/MCS7	161
RX mode	802.11b	/	35.7
	802.11g/n	/	
BLE TX	/	/	90.3
BLE RX	/	/	33

4. RF parameters

4.1 Basic RF Performance

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

4.2 Basic Bluetooth Performance

4.2.1 General Performance

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

4.2.2 RF Performance

Parameter	Min(dBm)	Typical(dBm)	Max(dBm)
Transmit power (Class 1)	2	5	8
Sensitivity @ BER=0.1% for GFSK (1Mbps)	/	-90	-70
Maximum Input Level	GFSK (1Mbps): -20dBm		

4.3 Wi-Fi RF Performance

4.3.1 Wi-Fi TX Performance

Mode	Rate	Power	EVM
802.11b	11Mbps	18dBm±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	1M	-94dBm	≤-83dBm
	2M	-92dBm	≤-80dBm
	5.5M	-91dBm	≤-79dBm
	11M	-88dBm	≤-76dBm
802.11g, 20MHz) @10% PER	6M	-89dBm	≤-85dBm
	9M	-88dBm	≤-84dBm
	12M	-87dBm	≤-82dBm
	18M	-84dBm	≤-80dBm
	24M	-81dBm	≤-77dBm
	36M	-78dBm	≤-73dBm
	48M	-73dBm	≤-69dBm
	54M	-71dBm	≤-68dBm
802.11n, 20MHz) @10% PER	MCS0	-89dBm	≤-85dBm
	MCS1	-86dBm	≤-82dBm
	MCS2	-84dBm	≤-80dBm
	MCS3	-80dBm	≤-77dBm
	MCS4	-77dBm	≤-73dBm
	MCS5	-72dBm	≤-69dBm
	MCS6	-71dBm	≤-68dBm
	MCS7	-70dBm	≤-67dBm
802.11n, 40MHz) @10% PER	MCS0	-89dBm	≤-82dBm
	MCS1	-85dBm	≤-79dBm
	MCS2	-83dBm	≤-77dBm