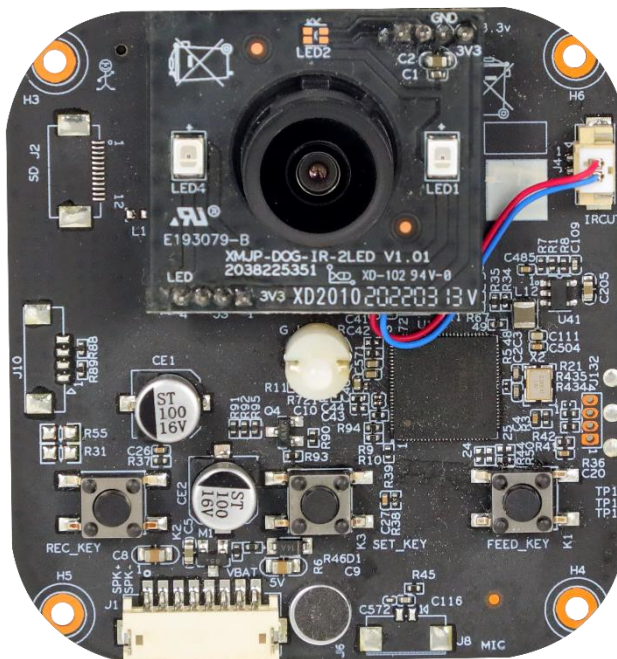


IOTG-P3WB-X4E Module Specification

Document Version : 20230719



Introduction

IOTG-P3WB-X4E is an 4MP visual pet feeder module developed by our company, which supports remote timing and dosing feeding, and is mainly applied to smart pet feeders.

Main Features



Bluetooth Network Configuration



HD Picture Quality



Pet Detection



Video Recording



Remote Feeding



Voice Interaction



H.265AI



Infrared Night Vision



TF Card Storage



Cloud Storage

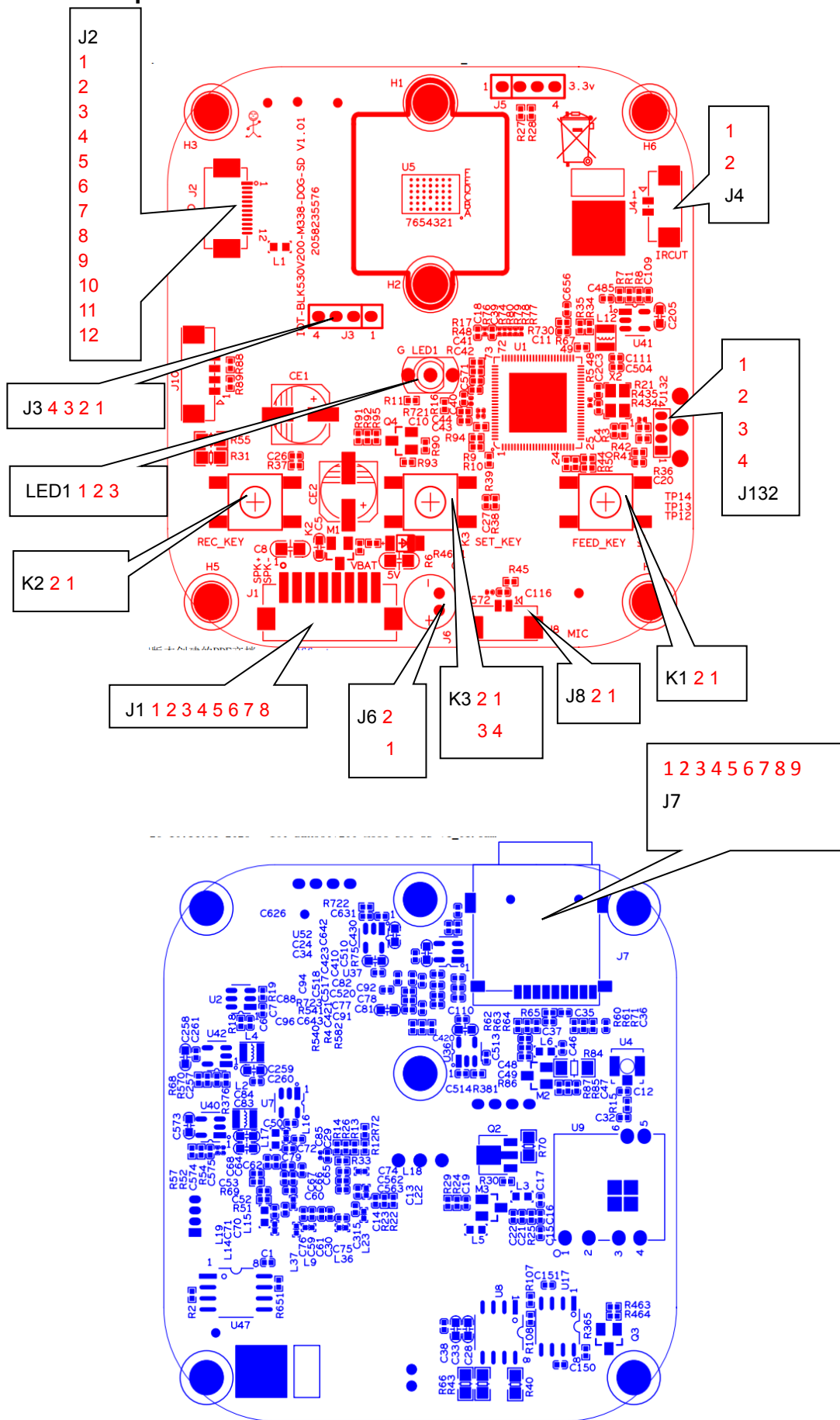
Content

1. Product Parameters	3
2. Interface Description	4
3. Electrical Parameters	7
3.1 Absolute Electrical Parameters	7
3.2 Working Conditions	7
4. RF Parameters	7
4.1 Basic Wi-Fi Performance	7
4.2 Basic Bluetooth Performance.....	8
4.3 Wi-Fi RF Performance.....	8
4.3.1 Wi-Fi TX Performance	8
4.3.2 Wi-Fi RX Performance.....	8

1. Product Parameters

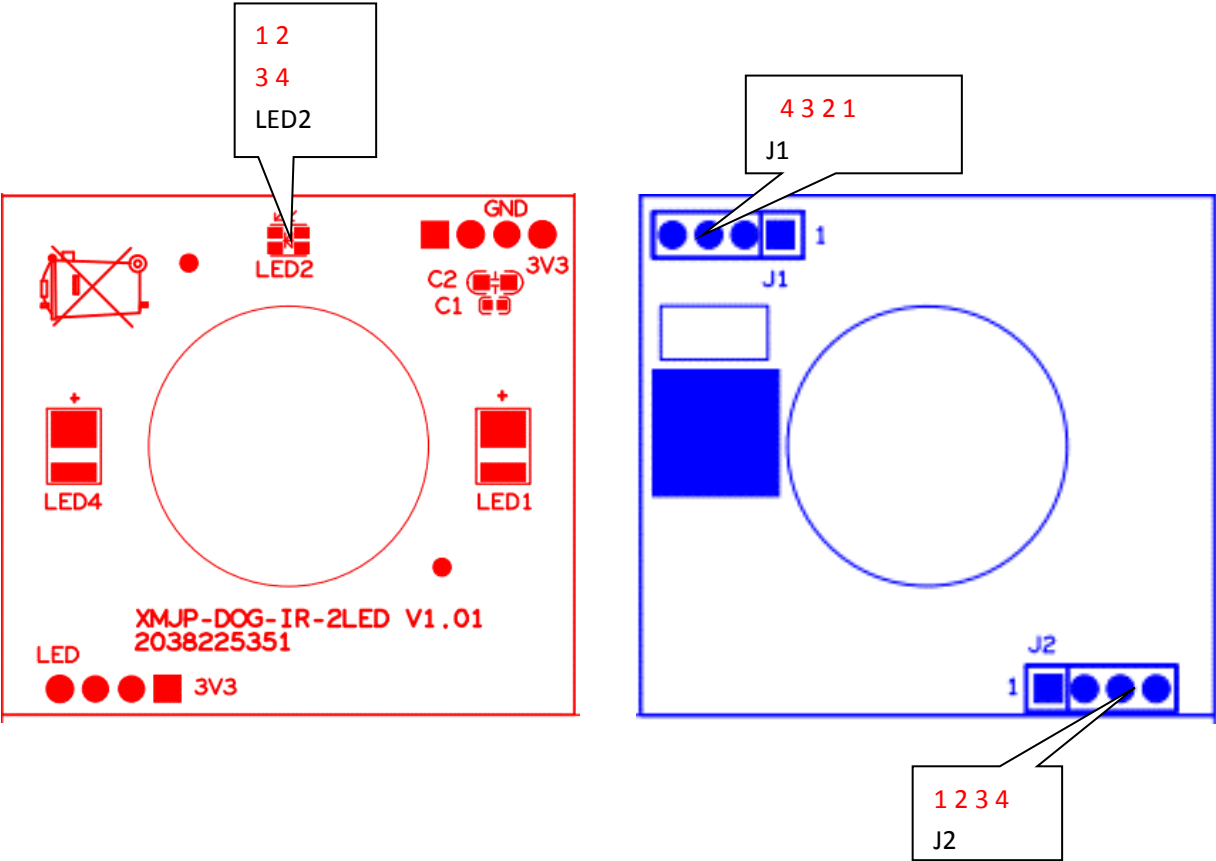
Model	IOTG-P3WB-X4E
System Structure	dual-core 32-bit DSP (XM530V200) ,pure hard compression ,watch dog
Sensor	1/2.8" high performance CMOS Sensor
Min. Illumination	Color : 0.01Lux @(F1.2,AGC ON); 0 Lux with IR Black/White: 0.001 Lux @ (F1.2,AGC ON),0 Lux with IR
Video Compression	H.265AI
Image Output	Main stream: 2560*1440@12fps; Sub-code stream:800*448@12fps
Lens	HD Lens 3.75mm-F2.2-1/2.7-M12 Interface
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*Wi-Fi antenna interface, support wireless network connection
Signal Interface	1*photoresistor interface, 1*IR-CUT driver interface, support photoresistor input signal and IR-CUT, IR lamp linkage
Button	1*Feed button, 1*Setup button, 1*Record button
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 Pet 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	DC5V
Dimension	60mm*64mm

2. Interface Description



Silk Screen Number	Pin Number	Pin Definition	Interface Definition	Function Definition
J5	1	G_GPIO_A009	Double color light red light signal	Docking Light Board
	2	R_GPIO_E130	Double color light green signal	
	3	GND	GND	
	4	3V3	3.3V Power Supply	
J3	1	3V3	3.3V power supply	Docking Lamp Plate
	2	GND	GND	
	3	IR_LED	Infrared Lamp Signal	
	4	IR_LED	Infrared Lamp Signal	
J4	1	OUT1	ircut signal	Lens Connection
	2	OUT2	ircut signal	
J2	1	CARD_DETECT	SD card detection signal	External SD Card Plate (not affixed by default)
	2	GND	GND	
	3	SD0_CLK	SD card clock signal output	
	4	GND	SD Card Clock Signal Output	
	5	SD0_CMD	SD card control command signal	
	6	SD0_DATA3	SD card data signal	
	7	SD0_DATA2	SD card data signal	
	8	SD0_DATA1	SD card data signal	
	9	SD0_DATA0	SD card data signal	
	10	GND	GND	
	11	3V3	3.3V power supply	
	12	3V3	3.3V power supply	
LED1	1	G_GPIO_A009	Dual-color light green signal	Indicator light
	2	GND	GND	
	3	R_GPIO_E130	Dual-color red light signal	
J6	1	MICN	Mic Signal	Connects to Mic (Default)
	2	AC_INL/MICP	Mic Signal	
J8	1	AC_INL/MICP	Mic Signal	Connect to mic (default not affixed)
	2	MICN	mic signal	
J132	1	GND	GND	Debugging serial port
	2	UART0_TXD	Data Transmission Signal	
	3	UART0_RXD	Data Receive Signal	
	4	BOOTSEL_0	boot signal	
K2	1	REC_KEY	Pushbutton Signal	Buttons
	2	REC_KEY	Key Signal	
	3	GND	GND	
	4	GND	GND	
K3	1	SET_KEY	Reset Signal	Reset button
	2	SET_KEY	Reset Signal	
	3	GND	GND	
	4	GND	GND	
K1	1	FEED_KEY	Feeding signal	Feed button
	2	FEED_KEY	Feeding Signal	

	3	GND	GND	
	4	GND	GND	
J1	1	SPKP	Horn+	Tail cable
	2	SPKN	Horn-	
	3	REVERSE	Motor reverse signal	
	4	FORWARD	Motor forward signal	
	5	MOT_DET	Motor limit detection signal	
	6	GND	GND	
	7	VBAT	Battery power supply	
	8	VDD_5V	5V power supply	
J7	1	SD0_DATA2	SD card data signal	SD Card Slot
	2	SD0_DATA3	SD card data signal	
	3	SD0_CMD	SD card control command signal	
	4	3V3_SD	SD card 3.3V power supply	
	5	SD0_CLK	SD card clock signal output	
	6	GND	GND	
	7	SD0_DATA0	SD card data signal	
	8	SD0_DATA1	SD card data signal	
	9	CARD_DETECT	SD card detection signal	



Silk Screen Number	Pin Number	Pin Definition	Interface Definition	Function Definition
LED2	1	NC	NC	Indicator light (reserved)
	2	G_GPIO74	Red light signal	
	3	R_GPIO73	Green light signal	
	4	GND	GND	
J1	1	R_GPIO73	Red light signal	Docking Motherboard
	2	G_GPIO74	Green light signal	
	3	GND	GND	
	4	+3.3V	3.3V Power Supply	
J2	1	+3.3V	3.3V power supply	Docking motherboard
	2	GND	GND	
	3	IR_LED	Infrared light Signal	
	4	IR_LED	Infrared light signal	

3. Electrical Parameters

3.1 Absolute Electrical Parameters

Parameter	Description	Min	Max	Unit
Ts	Storage temperature	-40	90	℃
VCC	Power supply voltage	3.3	4.2	V
Static electricity discharge voltage (Air)	TAMB-25℃	-4	8	KV
Static electricity discharge voltage (Contact)	TAMB-25℃	-4	8	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/ax
Frequency Range	2.412GHz ~ 2.4884 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	1Mbps	18dBm $\pm$ 2dB	$\leq$ -25dB
	11Mbps	18dBm $\pm$ 2dB	$\leq$ -25dB
802.11g	6Mbps	17dBm $\pm$ 2dB	$\leq$ -25dB
	54Mbps	15dBm $\pm$ 2dB	$\leq$ -30dB
802.11n	HT20/MCS7	14dBm $\pm$ 2dB	$\leq$ -30dB
	HT40/MCS7	14dBm $\pm$ 2dB	$\leq$ -30dB
802.11ax	HE20/MCS0	17dBm $\pm$ 2dB	$\leq$ -25dB
	HE40/MCS0	17dBm $\pm$ 2dB	$\leq$ -25dB
	HE20/MCS11	13dBm $\pm$ 2dB	$\leq$ -35dB
	HE40/MCS11	13dBm $\pm$ 2dB	$\leq$ -35dB

4.3.2 Wi-Fi RX Performance

Working State	Rate	Min. RX Sensitivity
802.11b	1M	-97.5dBm
	11M	-90dBm
802.11g	6M	-93.5dBm
	54M	-76.5dBm
802.11n	HT20/MCS7	-74dBm
	HT40/MCS7	-71dBm
802.11ax	HE20/MCS11	-64dBm
	HE40/MCS11	-60.5dBm