

# **Coretronic Intelligent Robotics Corporation**

## **Wireless image transmission module**

### **FLIR / P301-D**

### **User Manual**

### ***Product Feature***

- Based on the principle of TDD, key technologies such as OFDM and MIMO are used to improve frequency band utilization
- Support 64QAM, 16QAM, QPSK, BPSK modulation modes and independent dynamic adjustment of multiple code rates
- Support AES encryption, support a variety of security policies to prevent illegal monitoring and interception
- Adopt frequency hopping scheme, monitor the interference situation in real time, and automatically select the frequency hopping range; automatically and quickly change the frequency point and adjust the modulation and coding strategy (MCS) according to the interference situation of the current channel
- Built-in H.265 encoder, using advanced encoder rate control algorithm, and seamless connection with baseband automatic MCS adjustment, it is more suitable for wireless link transmission under the condition of ensuring image quality

## P301 D Module Key Specifications

category	parameter	describe
system	Memory	4Gbit DDR4
	Flash	256Mbit SPI NOR Flash
	size	60mm*35mm*6.5mm(With shield)
	weight	20g(Including shield, thermal pad)
	Power consumption	2.4G 2T2R transmitter < 7.7W@25dBm 2.4G 1T2R receiver < 3.69W 5.8G 2T2R transmitter < 7.03W@25dBm 5.8G 1T2R receiver < 4.2W
	powered by	DC 5V
	interface	60pin*2 B2B
	temperature range	Operating temperature : -30~55℃ storage temperature:-40~120℃
	wireless transmission delay	30ms
	video transmission delay	100ms@1080P60(DVP input -> DVP output)
interface	USB	USB 3.0 Host/Device
	Ethernet	10/100/1000M adaptive
	CAN	x2
	UART	x3
video	Interface video	BT.1120/BT.656 24Bit RGB888 MIPI CSI-4 lane
	Codec type	H.264 BP/MP/HP encoding and decoding H.265 MAIN/MAIN10 @L5.0 High-tier encoding and decoding MJPEG/JPEG Extended Sequential encoding and decoding
	Codec resolution	H.264 : 1080P@60fps H.265 : 4Kx2K@30fps+1080p@30fps MJPEG/JPEG : 4Kx2K@30fps
wireless	Maximum transmit power	25dBm 2.4GHz 25dBm 5.8GHz
	channel bandwidth	5M/10MHz
	maximum transfer rate	60Mbps

	Sensitivity	2.4G SLOT : -100.5dBm BPSK 10M repeat off 2.4G BR : -102.5dBm BPSK 5M repeat off 5.8G SLOT : -99dBm BPSK 20M repeat off 5.8G BR : -109dBm BPSK 5M repeat 2 times
	Frequency Hopping Scheme	Downlink: Automatic channel change frequency point Upstream: Subband Frequency Hopping
	Maximum transmission distance	15Km (open without interference)
	Networking method	point-to-multipoint
	chipset	AR9201+AR8003S
	frequency band	2.3~2.7GHz 4.9~5.9GHz

### ***Channel Table***

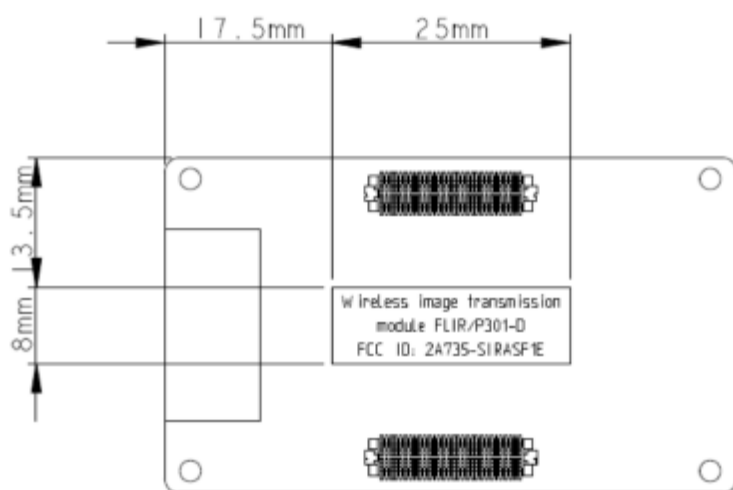
7 channels are provided for 2.4GHz@5MHz&10MHz bandwidth

8 channels are provided for 5GHz@5MHz&10MHz bandwidth

channel	frequency
1	2410MHz
2	2420MHz
3	2430MHz
4	2440MHz
5	2450MHz
6	2460MHz
7	2470MHz

channel	frequency
36	5180MHz
40	5200MHz
44	5220MHz
48	5240MHz
148	5740MHz
156	5780MHz
160	5800MHz
164	5820MHz

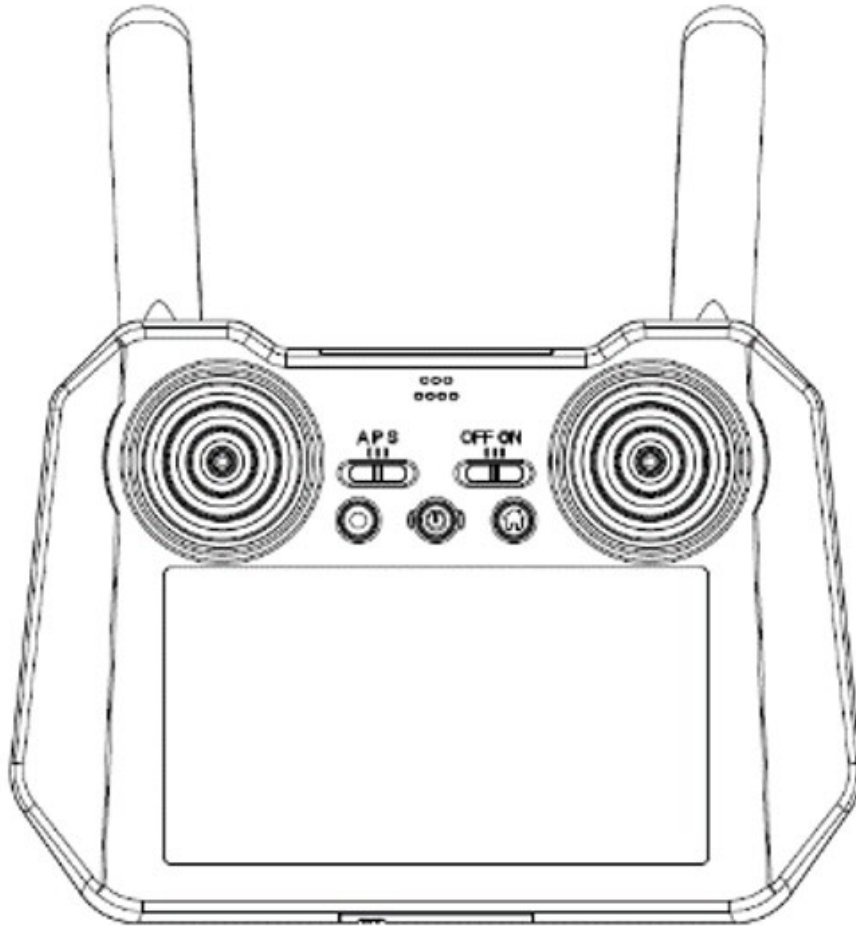
***P301-D bottom:***



Size: 60mm x 35mm x7.3mm

## ***Install the Hardware***

- The location of P301-D on the remote controller



**Step1. Put P301 in the slot after opening the housing of remote.**

**Step2. Press down into the slot**

**Step3. locking screw**

**Step.4 Installing the Antenna IPEX Connector**

**Step.5 Installing the heat sink and locking screw**

**Step.6 Install the heat shield**

**Step.7 Combine the upper and lower covers of remote by four screws.**

## **ANTENNA LIST**

This radio transmitter FCC ID: 2A735-SIRASF1E has been approved by FCC to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

### **Antenna List**

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	CIROCOMM	43N15C6V0W0010T	Dipole	4.0dBi / 2400~2500MHz 5.0dBi / 5150~5925MHz

## **FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **CAUTION:**

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated. Additional testing and certification may be necessary when multiple modules are used.

### **USERS MANUAL OF THE END PRODUCT**

In the users manual of the end product, the end user has to be informed to keep at least 20 cm separation with the antenna while this end product is installed and operated.

The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **LABEL OF THE END PRODUCT**

The final end product must be labeled in a visible area with the following " Contains FCC ID: 2A735-SIRASF1E ".