

BAND	CH1 (MHz)	CH2 (MHz)	CH3 (MHz)	CH4 (MHz)	CH5 (MHz)	CH6 (MHz)	CH7 (MHz)	CH8 (MHz)
1 - A	3700	3720	3740	3760	3780	3800	3820	3840
2 - B	3860	3880	3900	3920	3940	3960	3980	4000
3 - E	4020	4040	4060	4080	4100	4120	4140	4160
4 - F	4180	4200	4220	4240	4260	4280	4300	4320



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3.7-4.2 GHz 10W Video Transmitter
(VTX) AL4210 User Manual

1. Key Features

- Supports wide frequency band operation from 3.7 GHz to 4.2 GHz, allowing flexible frequency selection for users.
- High-efficiency DC/DC power supply supports 24V-36V wide-range voltage input.
- Quick frequency channel and power adjustment via physical buttons.
- Automotive-grade temperature-range RF crystal ensures more stable frequency performance.
- High-strength CNC machined aluminum alloy housing, paired with an external large-size turbine fan for active cooling, to maintain stable power transmission.

2. Product Specifications

- Input voltage: DC 24V – DC 36V; high and stable output power, long transmission distance
- Weight: 65g (with housing, antenna not included)
- Dimensions (L × W × H): 58 × 36 × 20 mm
- Video system: PAL / NTSC
- Transmit power: 40 dBm ± 1 dBm
- Power levels: 5 levels: 300mW, 2W, 5W, 7W, 10W
- Power adjustment: switched via the POWER button
- Transmission channels: 32 channels in total, see the frequency table for details
- Channel selection: Long press the **CHANNEL** button to switch bands; short press the **CHANNEL** button to switch channels
- Antenna interface: SMA

3. Transmitter Wiring Diagram

Interface	Definition	Function
RF OUT	RF output port	Connect to antenna for signal transmission and reception
Video	Video signal input	Connect to the video signal output of the flight controller
GND	Power ground	Connect to the power ground (negative pole) of the device
5VOUT	Voltage output	Internal power output: 5V / 1A
DATA	Half-duplex serial port	Connect to the flight controller via SMART AUDIO protocol for frequency and power adjustment
GND	Power ground	Connect to the power ground (negative pole) of

Interface	Definition	Function
		the device
VCC	Power supply	Power input, supply voltage range: 24–36V

4. VTX Mounting Hole Spacing

Please refer to the product mechanical drawing for specific hole position and dimension parameters.

5. Transmitter Operation & Adjustment

The LED next to the **CHANNEL** button indicates the current band and channel. There are 10 bands and 8 channels in total:

1. The LED first flashes to indicate the band: 1 flash = Band 1, 2 consecutive flashes = Band 2, and so on.
2. After a 1-second interval, the LED flashes to indicate the channel: 1 flash = Channel 1, 2 consecutive flashes = Channel 2, 3 consecutive flashes = Channel 3, and so on.
3. After another 1-second interval, the LED enters the power indication cycle.

The LED next to the **POWER** button indicates the current power level. There are 5 power levels in total:

- 1 flash = Level 1 power
- 2 consecutive flashes = Level 2 power
- 3 consecutive flashes = Level 3 power
- 4 consecutive flashes = Level 4 power
- 5 consecutive flashes = Level 5 power

After a 1-second interval, the LED returns to the band + channel indication cycle.

Button Operation:

- **CHANNEL** button: Short press to switch channels; long press for 3 seconds to switch bands.
- **POWER** button: Short press to switch power levels.

4.2 GHz Frequency Table