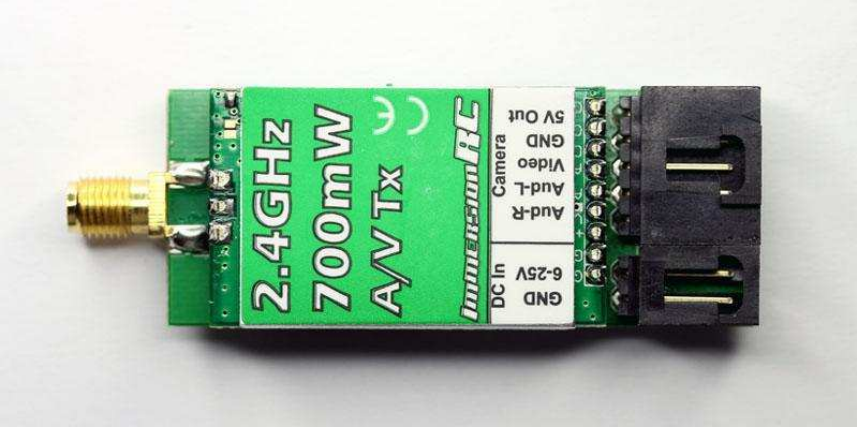
ImmersionRC 2.4GHz 700mW Audio/video transmitter

Instruction manual - International edition



Overview

The ImmersionRC 700mW 2.4GHz audio/video transmitter requires a suitable antenna (included) and a supply voltage to be connected to be functional. Please refer to the below noted images for familiarizing yourself with your audio/video transmitter prior to connecting the audio/video transmitter to your power supply and camera or audio/video source.

Package contents

The ImmersionRC 700mW 2.4GHz audio/video transmitter is shipped with the following items:

1pcs - ImmersionRC 700mW 2.4GHz audio/video transmitter.
1pcs - Linear polarized SMA male articulating, straight 2.4GHz antenna.
1pcs - Cable, featuring a Molex SL 2-pin female plug to JST 2-pin male header.
1pcs - Cable, featuring a Molex SL 5-pin female plug to bare wire ends.
1pcs - ImmersionRC sticker.

Specifications

RF Output (50 Ohm)	700mW/28.5dBm +/- 1dB
Video input (75 Ohm)	1Vpp typical
Audio input (10K Ohm)	1Vpp typical
Dimensions (LxWxH)	57x23x12mm
Weight (Grams)	22 grams
Supply Voltage	6-25V DC (2S6S LiPo)
Power Consumption	3 Watt
Power output	5V, 1.5A max.
RF output	SMA female
Battery input	2-pin Molex SL, 2.54mm
Audio/video input	5-pin Molex SL, 2.54mm
Frequencies, International Edition	2370, 2390, 2410, 2430, 2450, 2470, 2490, 2510MHz
Frequencies, USA Edition	2396, 2410, 2430MHz

NOTE: Due to FCC restrictions, transmitters shipped from USA suppliers, to USA addresses must be limited to frequencies which fall within the amateur radio band.

Connectors and Pin-Outs

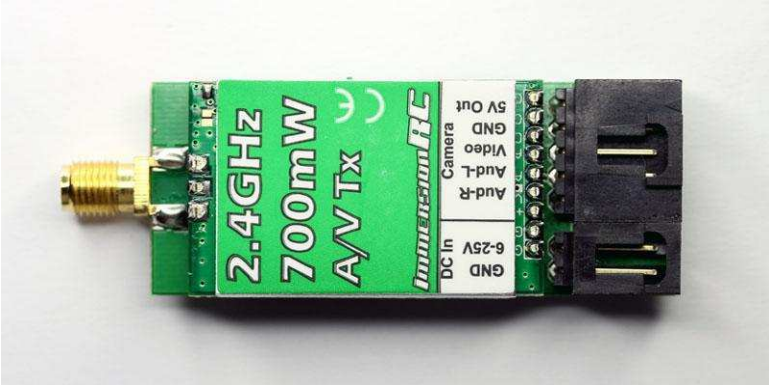


Fig 1. Top side of ImmersionRC 700mW 2.4GHz audio/video transmitter.

Center left	SMA female connector, connect your antenna here.
Top right	5-pin Molex SL, audio/video input, 5V output, Camera.
Bottom right	2-pin Molex SL, battery input, 6-25V DC, DC In.

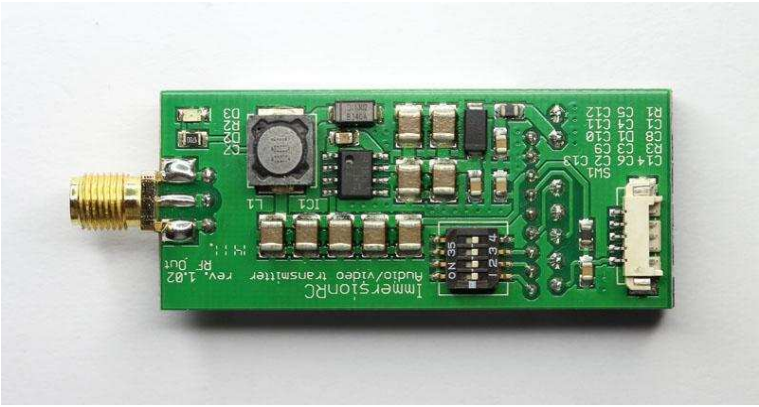


Fig 2. Bottom side of ImmersionRC 700mW 2.4GHz audio/video transmitter.

Center left	SMA female connector, connect your antenna here.
Bottom middle	Dipswitch for setting channel frequency.
Bottom right	5-pin Molex Picoblade, audio/video input, 5V output.

Please refer to the labeling on the sticker for the correct pin out for connecting your power supply and camera or audio/video source to the audio/video input.

Battery input - DC In

BATT	Positive pole (+) on battery, usually RED
GND	Negative pole (-) on battery, usually BLACK

Audio/video input, 5V output - Camera

Aud-R	Right audio channel
Aud-L	Left audio channel
Video	Video input
GND	Negative pole - of battery and/or GND of video signal
5V Out	5V **output**, 1.5A max

Please note that the minimum supply voltage required is 6V and the maximum is 25V. Do not opt to run your audio/video transmitter off of a regulated output of a BEC or similar switching or linear regulator, the audio/video transmitter is designed to be connected to your main flight battery directly.

The 5V output is NOT to be used as an input, it is an output only! **Connecting this output to another power supply, regardless of voltage, will render the audio/video transmitter defective.** The 5V output is designed to power a 5V camera directly, or, when used with our 12V step-up, a 12V camera directly. The maximum power it can supply is 1.5A.

Instructions on use

A typical setup of the ImmersionRC 700mW 2.4GHz audio/video transmitter requires the BATT-GND pins on the DC-In connector to be connected to the main flight pack directly, the audio/video input connector, labeled Camera, typically requires VID-GND-5V out to connected when a 5V camera is used.

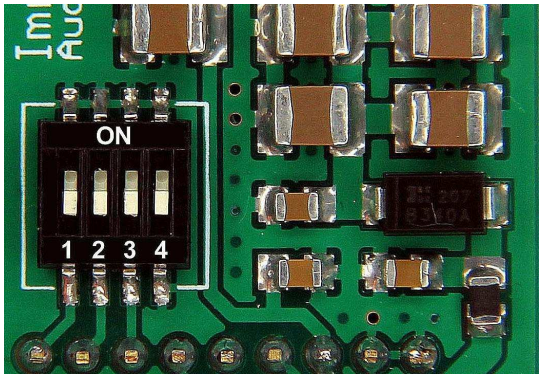
NOTE: *FatShark 5V cameras are fully compatible with ImmersionRC's transmitters and are plug-and-play with the proper connector already fitted to the supplied cable.*

NOTE: *Due to the popularity of ImmersionRC's transmitters other brands have opted to use the same connectors as ImmersionRC. In their infinite wisdom they unfortunately have opted to not use the same, industry standard, ImmersionRC pin out. This can result in significant damage to their, or ImmersionRC's, transmitters when used without verifying the pin out. The same applies to the antenna connector, other manufacturers have opted to use a RP-SMA antenna connector, which again is not compatible with the, industry standard, SMA connector. Please always check and verify your connector pin outs and type prior to use to prevent costly mistakes.*

NOTE: *In the images used in this manual the protective transparent shrink-wrap is removed to be able to take clear photos, during use the shrink-wrap should NEVER be removed as it protects the electronic components fitted to the PCB and safeguards the transmitter from accidental short-circuits when in close contact with metallic or conductive (carbon fiber) surfaces. I.e. always leave the shrink-wrap on, do NOT take it off.*

Channel frequencies

The frequency of the channel in the 2.4GHz band the audio/video transmitter transmits on is set by a total of three (3) dipswitches on the transmitter. The 4th dipswitch is not used for channel selection, hence its position doesn't matter. Please refer to the below noted image for the channel frequencies and corresponding dipswitch settings:



1	2	3	channel	frequency
on	off	on	1	**2410**
off	off	on	2	**2430**
on	on	off	3	**2450**
off	on	off	4	**2470**
on	on	on	5	**2370**
off	on	on	6	**2390**
on	off	off	7	**2490**
off	off	off	8	**2510**

Fig 3. Dipswitch and corresponding channel frequency settings.

Notes on proper use of the audio/video transmitter

- Do not run the audio/video transmitter without a suitable antenna connected.
- Do NOT remove the protective outer shrink-wrap.
- Make sure there's plenty of airflow over the transmitter for cooling.
- Make sure the antenna is properly fitted and won't come loose during use.
- Do not run the transmitter off of a regulated power supply.

Notes on troubleshooting the audio/video transmitter

- No video, black screen > cap still on camera lens, GND not connected on video.
- Poor range, dropouts > RP-SMA antenna fitted, LHCP/RHCP antennas mixed.
- No LED > 5V output shorted or excessive power draw from 5V output.
- Hum in audio > ground loop, multiple GND wires connected.
- Snowy image, black/white > wrong channel selected.
- Transmitter vanishes during powerup > neutron flux compensator needs reset.

Support

First line of support is done by the reseller. If you encounter any problems with your ImmersionRC product contact them first.

For support on issues involving equipment from other brands and also general support for ImmersionRC products, the best place to go is the ImmersionRC section of FPVlab.com.
We actively monitor this forum and provide support here.

Regulatory notice

The use of this product may be prohibited in your country/region/state, please verify that the RF output power and frequencies used by this transmitter comply with local rules and regulations, this product may require a license to operate.

Directions on safety

ImmersionRC advocates the safe use of their products, always make sure you equipment is in proper working order, is checked prior to every flight and that your are familiar with and respect the equipment's capabilities and limitations. Do NOT fly recklessly, do NOT fly near airports, freeways, towns, people, etc, basically anywhere where a equipment failure or pilot error can result in injury or damage to people and/or property.

Warranty

For warranty claims or repair requests please consult the retailer that you purchased this product from, they will be able to help you with your warranty claim or repair request.

Like Us

We would like thank you for purchasing this ImmersionRC product.

Like ImmersionRC's Facebook page and be kept up-to-date with news, product releases, firmware updates, tips and tricks, and other information relevant to the FPV hobbyist.

http://www.facebook.com/ImmersionRC

You can also follow us on Google Plus
google.com/+immersionrc

We have even been known to Tweet on occasion
https://twitter.com/@immersionrc

Manual rev1.0, ImmersionRC Limited - July 9th 2014