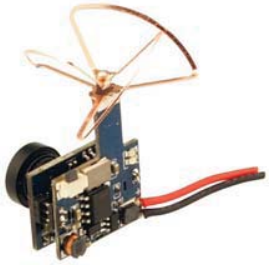
FAT SHARK
RC VISION SYSTEMS

UltraMicro FPV Camera Operation manual/specification REV A

Overview:
The UltraMicro FPV camera is a micro VGA imager paired with digital to analog converter and micro transmitter for use with ultralight RC airframes. Its 1S (3.5-4.5) volt input is designed to share onboard power supply with the micro craft (commonly powered off 1S lipo packs). The camera has DC-DC step up regulator to ensure proper operation even if supply voltage drops due to air frame demand. Low power transmitter allows for FCC license free use and is suitable for indoor and short range performance.



Electrical:
- Power supply: 3.3-5.5V (1S supply)
- Power consumption: 300mA @ 3.7V (1S)

Imager:
- 1/6" VGA CMOS

Lens:
- 0.95mm
- IR cut
- 115° diagonal FOV (90° horizontal)

Operation:
- -10 to 60C

Mechanical:
- Square: 13.2 X 17.6 X 9mm
- Lens extrude: 9mm X 10mm diameter
- Antenna extrude: 20mm X 25mm diameter
- Weight: 3.5g

Packaging
- Dimensions: bag 50 x 70 mm
- Weight: (approximately 16g)

System:
- Analog NTSC video out

Interface:
- Single push button channel control
  (1-7 then back to ch 1)
- 2p male 1.25mm JST (power, ground)

Indicators:
- Solid LED for noting power on
- Channel select LED flashes on channel change
- (Channel LED is solid on channel 1 only)

Operating Frequencies:
- 5740 MHz, 5760 MHz, 5780 MHz, 5800 Mhz, 5820 MHz 5840 Mhz 5860 MHz

Operation

When power is applied (3.3 – 5.5V) the camera and transmitter are powered. The camera has memory so the transmitter will power up in the last used channel. The top LED shows the camera has power and the lower LED flashes when channel is changed (by depressing button). The channels scroll sequentially from ch 1-7 (and back to 1). Only on channel 1 is the channel indicator a solid light.

Detailed Operation

Image is focused onto the 1/6" digital imager via the 0.95m lens. The lens has an IR filter to condition the light entering the imager to optimize image color. The camera board has an A/D conversion circuit that converts the VGA digital imager signal into an NTSC analog signal. The analog signal is transferred to the transmitter PCB and the RF circuit encodes the modulated analog signal onto the 5.8 Ghz carrier signal. The 5.8Ghz carrier signal is sent up the 50 ohm impedance antenna line to the antenna. The antenna is tuned to resonate at 5.8Ghz and the signal is transmitted into open space to be received by a compatible receiver.

FCC ID: 2ABYQFSV1251

1. This device complies with Part 15 of the FCC Rules. 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.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- - Reorient or relocate the receiving antenna.
- - Increase the separation between the equipment and receiver.
- - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- - Consult the dealer or an experienced radio/TV technician for help.