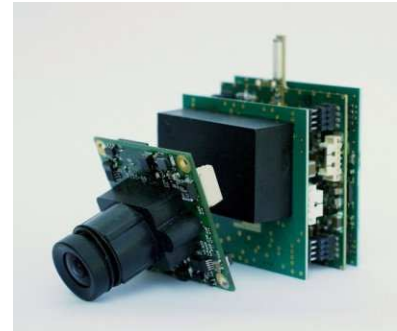


Video transmitter with GPS position data for MAV (Micro Aerial Vehicle)

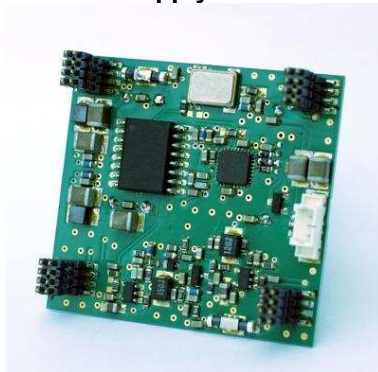
The miniature video transmitter is a special development for use in close-up range reconnaissance using miniature aerial vehicles (MAVs):

- Operating frequency range: 2400 MHz – 2450 MHz (PLL stabilized)
- High output power: 500 mW (+27 dBm)
- Lightweight: 35 g
- Small size: 3 x 4 x 5 cm
- Realtime PAL or NTSC colour video
- GPS position data transmission
- Power supply: 9 to 18 V DC

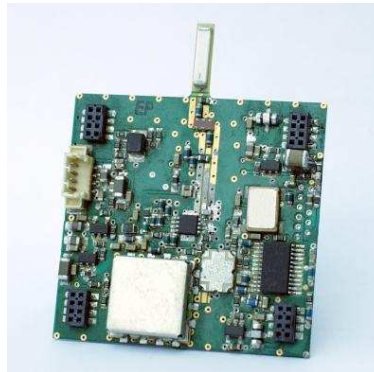


The modular system consists of:

Data modem and power supply unit



Video transmitter unit



GPS receiver unit



The miniature video transmitter has a high output power of 500 mW (+27 dBm) while being compact and lightweight in design. At the same time maximum modularity and flexibility has been maintained: All circuit boards can have 0° or 180° mounting position relative to the other boards. This enables the adaption of the positions of the GPS antenna connector, power supply and camera connector as well as the transmitter antenna to various mechanical requirements.

The power supply is suitable for an input voltage range from 9 to 18 V DC. The use of an internal DC/DC converter and integrated filters allows high noise levels in the power supply, e.g. like they may occur with electronic speed controllers.

The video transmitter is suitable for standard FBAS PAL or NTSC video signals. The video transmitter provides a connector for camera power supply up to 100 mA at 12 V DC. The transmit center frequency is PLL stabilized and can be adjusted in 0.5 MHz steps.

It is possible to use passive GPS receiving antennas or active GPS receiving antennas up to 35 mA at 3.3 V DC. The GPS receiver can be used together with the data modem, without the video transmitter unit and the video transmitter unit can be used together with the data modem, without the GPS receiver unit.

Instead of the integrated antenna, an external transmitter antenna can be fitted to the device.

Specifications:

Video transmitter unit

Operating frequency range	2400 MHz – 2450 MHz
Programmable center frequency step width (PLL stabilized)	0.5 MHz
Output power	500 mW (+27 dBm)
Cooling	Convection
Antenna	integrated
Antenna gain	+2 dBi
Video input	1 Vpp / 75 Ohm
Preemphasis Video	According to CCIR 405
Modulation	FM
Audio channels	1
Weight	8 g

Data modem and power supply unit

Modem	Bell 202 compatible
Data input	3.3 V / 5 V (TTL)
Microcontroller	8 Bit RISC
Sound carrier VCO	6.5 MHz
Modulation	FM with preemphasis
Input voltage range DC/DC converter	9 – 18 V DC
Output voltages DC/DC converter	+5 V, +12 V
Output power DC/DC converter	6.5 W
Cooling	Convection
Weight	19 g

GPS receiver unit

Receiver	u-Blox TIM-LF
GPS data	NMEA V.2.3, 4800 Baud
Data output	3.3 V TTL
GPS antenna	active 3.3 V / 35 mA or passive
Antennna connector	SMA female or soldered to the PCB
Weight (without GPS antenna)	8 g

Camera

CCD	1/3", 795 (H) x 596 (V)
Linse	3.6 mm F 2.0 / 92°
Sensitivity	0.8 Lux @ F 1.2 5600 K
Resolution	PAL, 580 Zeilen
White Balance	Automatic
Gain control	Automatic
S/N	52 dB min. / 60 dB typ. (AGC ausgeschaltet)
Power supply	12 V / 90 mA
Weight	19 g

Complete system (without camera, without GPS antenna)

Dimensions (without transmitter antenna)	40 x 40 x 28 mm
Dimensions (with transmitter antenna)	40 x 52 x 28 mm
Weight	35 g
Current consumption	430 mA @ 12 V DC

Complete system (with camera and GPS Antenna)

Weight	51 g
Current consumption	570 mA @ 12 V DC

