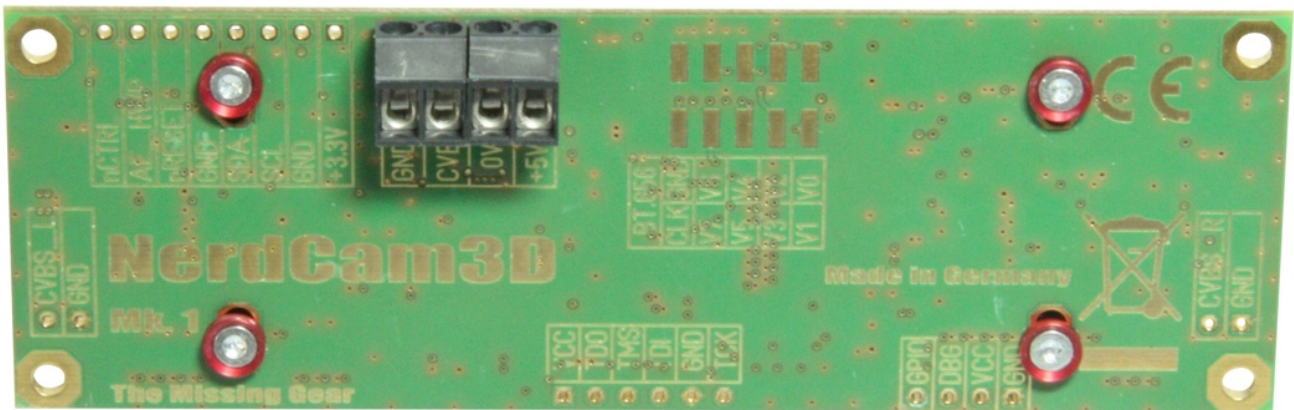


NerdCam3D



The NerdCam3D - Your Versatile Stereoscopic FPV Flight Camera



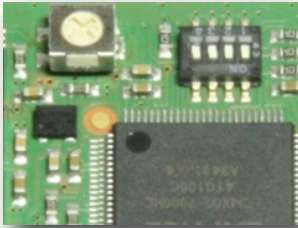
The **NerdCam3D** is a unique board camera which creates a stereoscopic analog video signal (CVBS). Unlike other 3D-board cameras the NerdCam3D supports both **Field-Sequential 3D** and **Side-by-Side 3D** video in NTSC as well as in PAL. This feature makes the camera compatible with a wide variety of legacy and state-of-the-art video goggles. The video signal created by the NerdCam3D can be fed either directly into the video goggle's AV-port or through single-channel wireless video

transmission gear. Therefore this 3D-camera is perfectly suited for all **First Person View (FPV)** applications. In particular those users already operating an 3D-capable FPV video goggle now can enjoy stereoscopic perception just by swapping their present FPV-camera for the NerdCam3D. In addition the camera features a **built-in stereoscopic on-screen display**¹ with basic status information like battery voltage, current consumption and flight time.

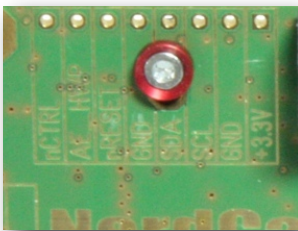
1) Requires optional PCF8591 ADC board, connected at the camera's extension port and simple external circuitry for voltage and current sensing.



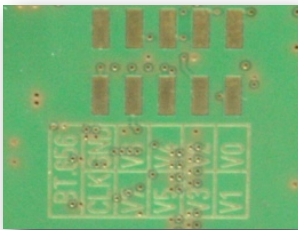
Advanced video processing with FPGA for minimum signal latency. No additional video frame buffer required.



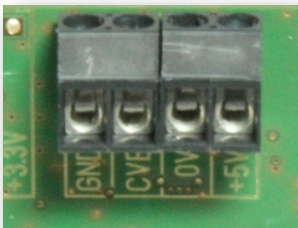
DIP-switch for basic camera set-up and potentiometer for user-specific 3D settings



Camera extension port with I2C-interface and 3.3V power supply for optional devices



Digital 3D video interface (ITU BT.656) with space for optional 0.1" dual-line header



Robust connectors for +5V DC main power supply and 3D-CVBS main video output port

BACKGROUND INFORMATION

The NerdCam3D with all its features is the result of a 3-year effort including intense field-testing by the German FPV-Community. However, it is neither a typical crowd-funded project, nor a community venture, nor an open-source activity. Instead, it started as an individual spare time project and

has finally grown into a real product. In order to respond adequately to the unprecedented reception and demand for this device, the camera was developed and qualified as ITE of Class B, according to FCC Part 15 as well as the corresponding European EMC-standards EN55022/EN55024.

MECHANICAL DATA

Size	100mm x 34mm x 30mm	Size in z-direction may depend on lenses and lens holders
Weight	ca. 35 g	With standard lenses and lens holders

ELECTRICAL DATA

Ingress Protection Marking	IP00	Installation of camera into a protective enclosure recommended
Appliance class	III	Use only with Separated/Safety Extra-Low Voltage (SELV) power sources
Power supply	+ 5V DC	+/- 5% voltage tolerance acceptable
Current consumption	ca. 340mA	
Sensor technology	CMOS	Electronic rolling shutter
Sensor resolution	640 x 480 pixel	VGA resolution
Dynamic range	70dB	
SNR _{max}	39dB	
Video outputs	1 x 3D-CVBS 2 x CVBS 1 x 3D-digital, optional	Main video output is 3D-CVBS. Separate CVBS outputs at each sensor available. 3D-digital output in ITU BT.656 format on request.
Video norm	NTSC, PAL	Due to physical sensor resolution PAL is displayed with 480 active video lines only. Usage in NTSC-mode is recommended.

OPTICAL DATA

Interaxial distance	64mm	According to the average human interpupillary distance
Infrared filter	build-in	Camera lenses equipped with IR-cut filter
Focal distance	3.6mm	Other focal distances on request

This camera was designed and made by:

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