Airborne Innovations LLC

MicroraptorHD   High Definition Flexible Wireless IP + Video Link

Very compact multiple camera 1080p video link and bidirectional datalink for micro unmanned vehicles

Features

- 720p / 1080p / SD video
- Multiple camera support
- Flexible camera interface using camera interface boards
- Bidirectional command and control / payload link
- Serial passthrough and IP bridge
- RF Output up to 1 watt

Advantages

- Incredibly compact
- Light weight - 50 grams (<1.8 oz) unhoused with radio, or 23 grams for the bare board
- Wide range power input
- Encryption available up to AES-256

Airborne Innovations' MicroraptorHD is a very compact high definition digital video link designed for the smallest unmanned vehicles. It combines a dual camera interface, a bidirectional digital video and command and control link which can be used as a primary or backup vehicle data link, and high performance H.264 video compression up to a full 1920x1080 resolution at 30 frames per second.

MicroraptorHD is an enabling technology for high definition video transmission from some of the smallest micro air vehicles. Larger vehicles can benefit from the minimal size, weight, and power requirements.

The multiple camera interface allows systems such as daytime + infrared camera combinations to be connected. Multiple combinations of imager interfaces are supported, from micro HD camera modules as small as 10mmx10mm, to component analog HD / analog SD, Sony HD Block Camera digital interface, HDMI, and camera specific digital video interfaces.

Communications interfaces include ethernet, serial, and CAN bus. Camera gimbals can be directly connected to the system for SD+HD video transmission as well as command and control of the gimbal. Multiple boards can be connected together for multiple simultaneous HD video channels with a single radio.
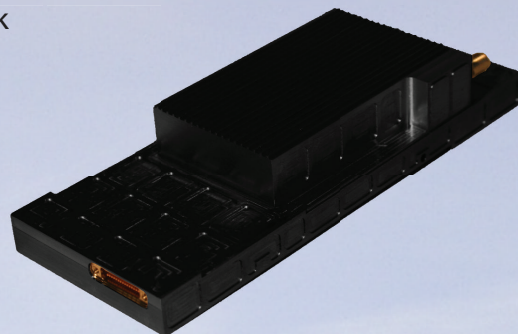
The board can be used in combination with a Microhard Nano Digital Data Link or as a standalone ethernet based video compression board for use with external datalinks.
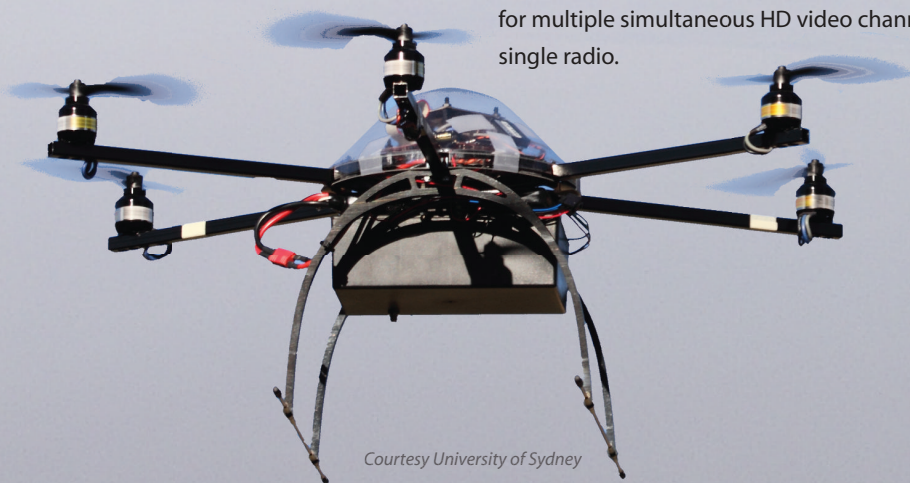
A digital video expansion port allows for future advanced features.

A microSD storage card enables high quality video and metadata recording on board.

The system has been designed with requirements and feedback from a number of commercial and military customers.

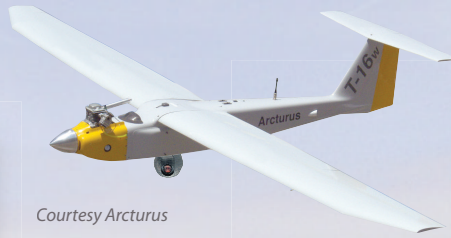**MicroraptorHD mated with Microhard NanoDDL or nVIP2400 Radio**

Courtesy University of Sydney

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MicroRaptorHD Specifications

Courtesy Arcturus

Courtesy University of Alaska

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Courtesy BAE

Specifications

Physical

- **Size**   116x45x20mm (4.56x1.77x0.78") with enclosure
  114x43x15mm (4.48x1.69x0.59") bare board with radio
  114x43x5mm (4.48x1.69x0.19")bare board

  115x43x15mm with radio, 115x43x5mm bare board

- **Weight**   50 grams (1.76 oz) unhoused
- **Power**   8-32V DC, ~6-8W with radio, <2W without radio
- **Interfaces**   Ethernet, Dual RS232, CAN bus, USB (31 pin nano)
  Dual 50 pin digital video interfaces
  Expansion digital video interface
  Radio interface
- **Video Storage**   Removeable MicroSD card (supports up to 32GB)

RF

- **RF Power Output** 1 Watt
- **Bands**   2.32 to 2.37 GHz licensed COFDM
  2.400 to 2.4835 GHz unlicensed OFDM / COFDM
  1.67 to 1.70 GHz licensed COFDM
  1.3 GHz licensed COFDM

- **Modulation**   COFDM / OFDM
- **Bandwidth**   12 Mbps
- **RF Sensitivity**   -90 to -95 dBm

Camera Interfaces

- **Micro 1080p camera module (10mm x 10mm)**
- **Component HD video input**
- **Standard definition composite video (3 inputs / SVideo)**
- **Sony HD Block camera digital input**
- **HDMI digital video input**
- **Micro IR camera**
- **Camera specific interfaces are in development for a number of unmanned vehicle digital video cameras**

Custom solutions are possible.
Please get in touch with your requirements!

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