Airborne Camera Systems Europe

ACSE MIMO

Technical data and description

REV 1.22

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1. Overview

The ACSE MIMO is a smart tactical network radio that enables rapid deployment of reliable highly secure Private Networks distributing both video streams and IP-data. Due to the wide range of operating voltages the same units can be installed for point-to-point or MANET (MESH) implementations in Land, Sea and Airborne assets.

The main advantages are:

Smart Tactical Networking

- Onboard Android™ OS - the MPU is your computer
- Install existing Android™ apps
- Run custom apps natively
- Connect & use USB devices

Stay Connected Anywhere

- Uses the Wave Relay® MANET
- Designed for mass scalability - no hop limits
- Rapid self-forming & self-healing
- True peer-to-peer - no master node

Carry Less. Do More.

- Network, voice (option), RS232 (option), RS 422 Modem (option) RS485 Modem (option) video, computer – all in one device
- More room for mission critical equipment

Stream HD Video

- Fully integrated H.264 HD video encoding/decoding
- Connect video cameras directly to the unit
- View multiple video streams simultaneously
- HD output for connection to HDMI-compatible displays
- Stream video and voice simultaneously

Intelligent RoIP Tethering

- Integrated Radio Over IP (RoIP) functionality
- Bring your LMR radio onto the network
- Communicate across separate organizations seamlessly

Interchangeable Frequency Module

- State-of-the-art MIMO technology
- High reliability in complex environments
- Cost efficient and future-proof

2. Interfaces:

Front Panel:

- HD-SDI
- GPS
- 3x Antenna
- HDMI
- Ethernet
- RS 422 / RS232 / RS 485 Modem (optional)
- Power Connector
- Power Switch
- Display (showing: Temperature / Power Consumption / Input Voltage / Option Board version / Serial Number)

Back Panel:

- USB Service Interface
- Ethernet Service Interface

3. Detailed IO description:

HD-SDI:

- HD-BNC Connection
- 3G-SDI & Composite Input
- Integrated HD H.264 Video Encoding/Decoding

GPS:

- 3.3V Active
- Situational Awareness
- Cursor-on-Target Compliant
- 1 Second Updates

3x Antenna:

- Extended Range – LOS and BLOS
- 100+ Mbps of throughput
- Maximal Ratio Combining
- Spatial Multiplexing

HDMI:

- HD Video Output

Ethernet:

- 100+ Mbps Ethernet

Serial Interface:

- optional RS 422 RS485 and RS232 to IP Modem to control 3rd Party equipment

Power Connector:

- Amphenol 2 Pin Aircraft power connector for 12V DC – 32V DC

4. Options:

- Option 1 (standard): 1 Ethernet input for external Data
- Option 2: 3 Ethernet inputs for external Data connections with integrated switch
- Option 3: 2 Ethernet inputs for external Data connections with integrated switch + RS422 / RS 485 / RS 232 Modem to IP

5. Dimensions / Weight / Temperature Range:

- Dimensions: 228,5mm (l) x 124,5mm (w) x 152 mm (h)
- Weight: est. 3kg
- Temperature Range: working temp.: -40 to 85 Celsius

6. Interchangeable RF Modules:

You have a selection of Frequency Modules:

MOD 1 – 10W L-Band Freq. Range: 1350-1390 MHz

MOD 2 - 10W S-Band Freq. Range: 2200-2507 MHz

MOD 3 – BAS Band Freq. Range: 2025 – 2150 MHz

MOD 4 – Lower C-Band Freq. Range: 4400 – 5000 MHz

Mod 5 – Upper C-Band Freq. Range: 5100 – 6000 MHz

RF Modulations: QFDM (64-QAM, 16-QAM, QPSK, BPSK)

Software Configurable Bandwidths: 5MHz, 10MHz, 20MHz

TX-RX Operating Modes: All modes from SISO to 3x3 MIMO

6-10W Transmission Power

7. Security:

- integrated Hardware Cryptographic Acceleration
- CTR-AES-256 Encryption
- HMAC-SHA-256 Authentication & Integrity
- Utilizes Suite-B Algorithms
- Cryptographically authenticated Over-the-Air Rekey and Key Zero

8. Networking:

- Advanced Wave Relay multicast Algorithms
- Seamless Layer 2 network connectivity
- Integrated serial to Ethernet capability
- Cloud Relay
- IPv4 and IPv6 compatible
- Integrated DHCP Server
- USB RNDIS Host and Device

9. Mounting:

Standard aircraft mounting tray with shock absorbing dampers.