AVIONIX openAir drone-cube station
Long range drone reception + ADS-B/MLAT/FLARM/ADS-L
All-in-one Surveillance solution

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engineering

The **openAir drone-cube station** is an all-in-one surveillance solution that combines the high-gain **drone-cube antenna** with the versatile **openAir multitrack** receiver. This system is designed to monitor and track drones and aircraft, offering a range of features and capabilities:

- **Remote ID Reception:** The drone-cube antenna is a high-performance receiver with multiple channels, capable of receiving and decoding WiFi and Bluetooth beacons from drones in compliance with Remote ID standards. This allows for the detection of both the drone's position and the pilot's location within a range of up to 6 kilometers.

- **Multitrack Receiver:** The multitrack receiver works with a combined antenna that covers both 868 MHz and 1090 MHz frequencies, simplifying the hardware setup and offering a plug-and-play solution.

- **Compact and Reliable:** The system is designed to be compact, highly reliable, and free of moving parts. With low overall power consumption (less than 10W), it is well-suited for autonomous and continuous operation when powered from a solar panel.

- **Sensitivity and Decoding:** The station is known for its best-in-class sensitivity and decoding performance allowing for an ADS-B reception range up to 250NM or 450km. The high dynamic range receiver module enables the simultaneous monitoring of aircraft in various phases of flight, including en-route, terminal area, and surface movement. This comprehensive view of aircraft activities enhances situational awareness.

- **Band-Pass Filters:** Embedded band-pass filters help maintain strong performance in areas with difficult RF conditions, reducing interference and maintaining data quality.

- **Data Transmission:** Data collected by the station can be transmitted via Ethernet LAN, WiFi, or the integrated 4G LTE modem, providing flexibility in data transfer methods.

- **Output Protocols:** The system supports a variety of output protocols, ensuring compatibility with a wide range of systems and applications while maintaining data quality.

- **Signal Reception:** The station can receive and decode various signals, including ADS-B, MODE-A/C/S, FLARM, OGN, PilotAware, FANET, ADS-L, and Drone Remote ID (DRI). This makes it a versatile solution for tracking both manned and unmanned aircraft.

- **Powering Options:** The system offers multiple powering options, allowing for adaptability to various deployment scenarios and locations.

- **Feeding Options:** The station feeds into the AVIONIX AERO network, and the Open Glider Network. Various functions exist for remote monitoring and control of the station.

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In summary, the **openAir drone-cube station** is a powerful, comprehensive, and user-friendly solution for monitoring and tracking aircraft and drones. Its integration of high-performance antenna, dynamic receiver, and versatile data transmission options makes it suitable for a wide range of applications in aviation surveillance, airspace management, and drone tracking. The system's low power consumption and reliability are additional benefits that enhance its usability and efficiency.

Technical Parameters

Power supply		
Input voltage	5-30 VDC, 110-240VAC, PoE	
Power consumption	< 10	[W]
Drone-cube antenna		
Frequency	2.4	[GHz]
Protocols	BT4, BLE, WiFi Beacon, NAN	
multitrack Receiver Input		
Frequencies	1090 and 868/915 or 978	[MHz]
Sensitivity and dynamic range	-93 to 0	dBm (1090 MHz)
Processing	>2000	Msg/sec
Air Protocols	ADS-B/MODE-ACS, UAT978, FLARM, OGN, PilotAware, FANET, ADS-L	UAT978 alternative to 868MHz protocols
GNSS receiver		
GNSS	GPS/QZSS, GLONASS, BeiDou, Galileo	
MLAT Timing accuracy	<50 ns	GNSS locked
Network connection		
Ethernet type	Cat. 5e, 10/100/1000BaseTX	RJ45 connector
Output formats	AVR, AVX, Beast, SBS1, JSON, MAVLink-v2, GDL90	ASTERIX CAT021 on request
Wi-Fi	2.4G, 802.11 a/b/g	
Environmental specification		
Ambient temperature	-20 to 40	[°C]
Rating	IP65	
Surge Protection	Gas Discharge Tube Surge Protectors and ESD Suppressor on all antenna inputs	

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