openAir outdoor is a high-performance ADS-B receiver

The solution offers excellent surveillance accuracy, update rate and identification information at lower cost compared to traditional surveillance systems. The device embeds a powerful multi-core processor that allows running multiple ASTERIX processors, a web-based CMS application and custom applications on request.

Messages are timestamped by a high-precision GNSS synchronized timestamp to detect duplicate messages received from the multiple receiver stations and enabling use in a multilateration network.

openAir1090 outdoor offers:

- Surveillance coverage in non-radar airspace

- Scalability from a single sensor system to a multi-sensor distributed MLAT system

- Easy data exchange with other systems (ASTERIX, JSON, RAW formats, SQL)

- Advanced decoding techniques, CRC correction, best-in-class decoding of overlapping signal frames

- Option for ADS-B out (site-monitor function)

- Option for integrated LTE/3G modem for wireless data distribution

- High dynamic receiver for monitoring of en-route, terminal area and surface movement at the same time

- Compact and high reliability, IP66/NEMA4 enclosure

- Low cost of ownership

- Embedded cavity band-pass filters for perfect reception performance in difficult RF environment

- Decoding according DO260/A/B, ED-129B compliant

- 110-240VAC, 9-36VDC, PoE power options

- Provides 2nd RX channel that can be used for antenna diversity on 1090MHz or to process Mode-S uplink on 1030MHz, UAT on 978MHz, FLARM/OGN on 868MHz or other RF signals on request.

Technical Parameters

Power supply		
Default	Power-over-Ethernet	802.3af and 802.3at
Option 1	9-36 VDC	
Option 2	110-240 VAC	
Power consumption	Max 15	[W]
Dimensions		
Type of enclosure	IP66 outdoor enclosure	NEMA 4
Enclosure dimensions (w * h * l)	200 * 300 * 80	[mm]
Weight	5	[kg]
1090MHz Receiver Input		
Frequency	1090	[MHz]
Antenna Input	50	[Ω] N female
Sensitivity and dynamic range	-95 to +10	dBm
BIAS-T for external LNA	Configurable, 5V/200mA	
2nd Receiver Input (option)		
Frequency	868, 978, 1030 or 1090	[MHz]
GNSS receiver		
1PPS Frequency Stability	<=5ppb	GNSS locked
Hold-over, 24 hours	< 100 ppb typ	GNSS not locked
Timestamping accuracy	<10ns RMS	with MLAT option
Network connection		
Ethernet type	Cat. 5e, 10/100/1000BaseTX	RJ45 connector
Surge protection	8kV IEC 61000-4-2	
Data protocols	TCP/IP, UDP/IP, HTTP	
IP address	Fixed or DHCP	
LTE modem (option)	u-blox LARA-R2 series	
Frequencies	LTE bands 1, 3, 8, 20, 28 other options possible	2100, 1800, 900, 800, 700 MHz
Environmental specification		
Ambient temperature	-20 to 50	[°C]
Relative humidity	<99	[%]
Cooling	passive	