The **openAir interrogator** consists of a combined high power 1030 MHz transmitter module and 1090 MHz receiver module in a single 19" rack enclosure.

Reception and transmission are done through a single antenna to simplify the installation and maintenance.

Transmissions and receptions are timestamped by a high-precision GPS synchronized timestamp for doing precise ranging and allowing the use of the results in elliptical and hyperbolical positioning algorithms.

openAir4 interrogator offers:

- Surveillance coverage in non-radar airspace

- Combined 1030 MHz transmitter and 1090 MHz receiver in 19" rack enclosure

- Works with single receive/transmit antenna

- Integrated 200W peak power amplifier for medium range Mode S interrogation

- Option to attach 2000W boost amplifier for long range interrogation

- Precise range measurements by measuring delay between Mode A/C/S interrogation and reply

- Interrogation of Mode S Enhanced Surveillance data (EHS)

- Web interface for monitoring and control

- Outputting results in various formats on network interfaces

- Compact and high reliability, designed for 24/7 operation

- Configured to be used as stratum-1 NTP time server

- Embedded band-pass filters to provide good performance in difficult RF environment

- Decoding of ADS-B messages according DO260/A/B, ED-129B compliant and output as CAT021

- Standalone operation or controllable from main processor through LAN interface

- Redundant 230VAC port supplies

- Redundant LAN interfaces

Front Panel

Item	Description
⏻	Power button with indication
RX 1090	Pulse for every reception of 1090MHz
TX 1030	Pulse for every transmission on 1030MHz
SW STATUS	Steady on when software started and working OK
GPS 1PPS	GPS fix available
NETWORK	Connected to server
HW STATUS	Steady on when no hardware problem is present
PSU 1 STATUS	Power present at PSU2 input
PSU 2 STATUS	Power present at PSU1 input
OLED DISPLAY	Status information

Rear Panel

Item	Description
GPS	WIFI antenna
BOOSTER AMP	HDMI connector for local monitor
RXTX	N-connector to connect RX/TX antenna
ETH1	1Gbit Ethernet LAN port
ETH2	1Gbit Ethernet LAN port
PSU1	100-240V AC power input
PSU2	100-240V AC power input
⏚	Grounding point

Technical Parameters

Compliance	
EUROCAE	ED-129B, ED-102/A
ICAO	Annex 10, Doc 9871, RTCA DO-260/A/B
Decoding	DF0, DF4, DF5, DF11, DF17, DF18, DF19, DF20, DF21, MODE 3A/C
Receiver characteristics	
Input Sensitivity	-93 dBm
Maximum power input	10 dBm
Frequency	1090MHz
Transmitter characteristics	
Transmit power	53 dBm
Transmit power with booster	63 dBm
Frequency	1030MHz
Performance	
Processing	up to 2500 MODE-S/sec
Targets	up to 300 tracked targets
Processing delay	10ms
Electrical characteristics	
Input voltage	110-240VAC
Power consumption	30W
Mechanical characteristics	
Type of enclosure	19" rack enclosure 2HE
Dimensions	425 * 84 * 250
Weight	6 kg
Working temperature	0 – 60 °C
Reliability	
MTBF of redundant station	>50.000h
Availability	>99,9%
GPS receiver	
Antenna/power supply	Active antenna 3.3VDC
1PPS Frequency Stability	<=5ppb GNSS locked
Hold-over, 24 hours	< 100 ppb typ GNSS not locked
Network connection	
Ethernet type	Cat. 5e, 10/100/1000BaseTX
Surge protection	IEC 61643-21
Data protocols	TCP/IP, UDP/IP, HTTP
IP address	Fixed or DHCP

For information or demonstration please contact:

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