

M10AL is the latest generation ADS-B station designed and manufactured by NRPL under ISO 9001:2008 certified quality system.

The system complies with all ICAO requirements and it has been designed using the latest, best-known technological improvements. The system is highly modular and can be either fully redundant with automatic switch-over or singlechannel for N-1 architecture.

M10AL can be used either separately or as a complement to existing PSR/MSSR radars while using only one data processing center. Several stations can be easily extended to MLAT network (airport or WAM).

#### **Main features**

- Mode S Extended Squitter (1090 ES)
- Multilateration function available
- Indoor and outdoor versions
- Fully redundant or single-channel
- Very easy start-up procedure ("plug-and-play")
- Several antenna systems (sector, omni) depending on required coverage
- No moving parts such as fan or HDD
- Dual precise GPS sensors
- Comprehensive BITE; CMS with SNMP and remote access
- Data archiving, playback and analysis
- Low power consumption, commercial AC or DC (solar panel, wind power generator)
- Built-in site monitor



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Coverage	
<ul> <li>Maximal range</li> </ul>	250 NM
<ul> <li>Altitude</li> </ul>	66 000 ft
Target load	> 2000
Data refresh interval	0.5 - 4 sec
Input data channels	1-4
Antenna system	17, 11.5, 9, 5 dBi
Probability of detection	99%
Automatic failure control	90%
MTBF	217 012 h
MTTR	5 m
Full redundancy	Yes
BITE system	Yes
Maximal power consumption	< 100 W
Input power	Commercial AC/DC
Output data format	ASTERIX CATO21,
	CAT023
Climatic conditions, Indoor	
Operation temperature:	+5°C +40°C
Humidity	≤ 80% at +25°C
Climate conditions, Outdoor	
Operation temperature:	-50°C +65°C
Humidity	≤ 98% at +25°C
Max operating altitude	10 000 ft
Operational wind speed	100 kts
Survival wind speed	120 kts

## Antenna System

- Variable number of input antenna channels (1 4)
- M10AL can be used with several antenna types . depending on required coverage:
- Three 120° degree 17 dBi gain sector antennas
- One omni-directional 11.5 dBi antenna .
- One omni-directional 9 dBi antenna .
- . One omni-directional 5 dBi antenna

### Data Processing

- Mode A/C, Mode S ES, Mode S ELS/EHS processing and 3D position calculation
- Tracking and data combining with PSR/MSSR
- Existing PSR Morava 10 / MSSR M10S radar data processor is upgradable to MLAT processing capability













## **ADS-B System**

# **Control and Monitoring System**

- Fully redundant system
- Any number of local and remote CMS terminals
- Highly adaptable to local communication lines such as serial, optic, LAN, radio link etc.
- Non-radar equipment control can be easily implemented in CMS displaying all available data
- Real-time performance calculation •
- Information archiving, replay and analysis .
- SNMP support .
- Factory remote support capability

# **Radar Data Display**

- Multiple data (plots and/or tracks) input display including PSR, MSSR, ADS-B and MLAT
- Geographical maps and air navigation charts •
- Surveillance data archiving and replay



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## **MLAT System Features**

- Consists of several M10AL stations and one or several interrogators
- M10AL can be either redundant or single-channel providing extra degree of reliability
- Using Mode A/C, Mode S ES, Mode S ELS/EHS for interrogation
- Can be used either separately or as a complement to existing PSR/MSSR radars while using only one data processing system
- Enhanced coverage calculation
- Redundant central data processing system

Output data format	ASTERIX CATO10, CATO19,
	CAT20, CAT21, CAT23
Output data filter	Geographic, altitude, range,
	identity/address
Position accuracy	50 m
Update rate	1-10 sec
Target load	1000
Interrogation type	Mode A/C, Mode S ES,
	Mode S ELS/EHS
Interrogation frequency	1030 MHz
Transmit power	Up to 2000 W
Dynamic transmit power	Yes
Sector-based interrogation	Yes







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