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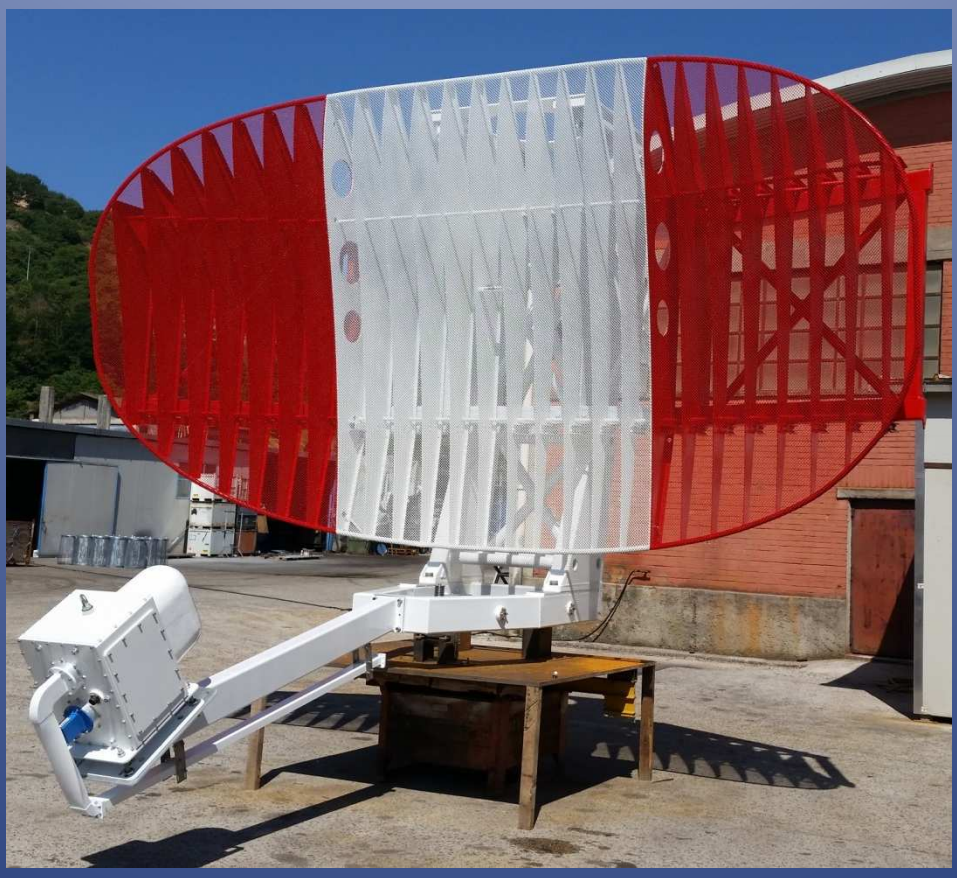
AMINA

S-Band **A**dvanced **R**adar **A**ntenna
2700 – 2900 MHz



Approach (APP) Terminal Area (TMA) Primary Surveillance Radar Antenna Subsystem

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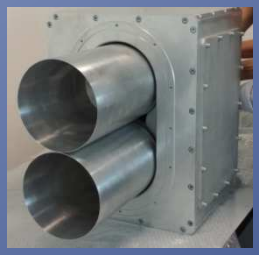
AMINA ANTENNA SUBSYSTEM

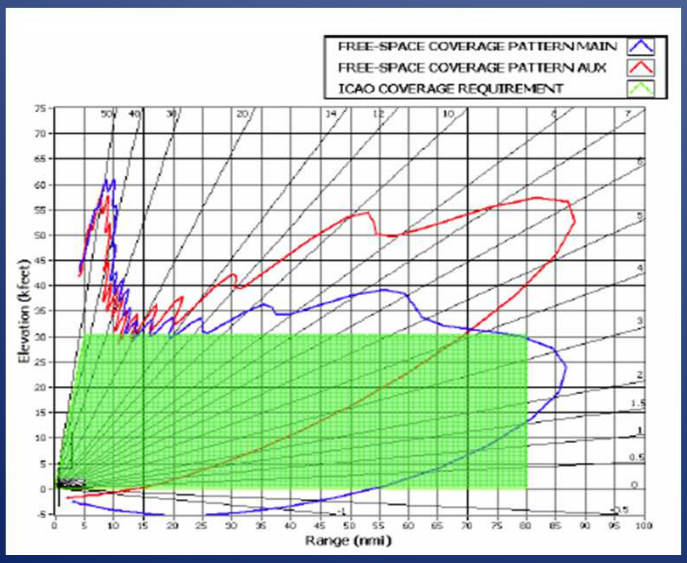
General Features

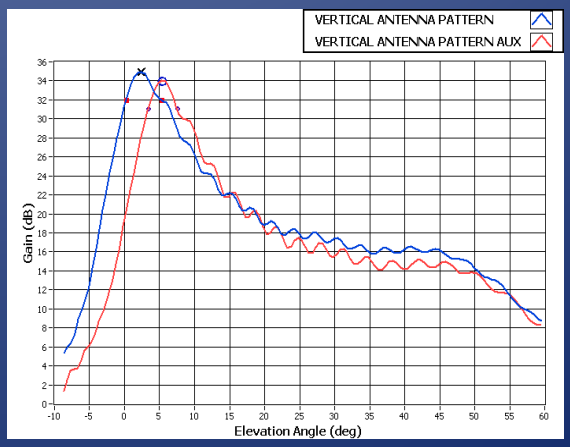
Amina Antenna - is an High Directivity S-Band full offset feed antenna designed according to latest technologies to generate better reflector shape as well as state of art feeding system.

Amina Antenna complies with ICAO and EUROCONTROL requirements stated for ATC S-band Approach (APP) Primary Radar systems for Terminal Area Applications (TMA), featuring a dual MAIN and AUX beam configuration.



Both MAIN and AUX channels are provided with circular polarization capability to improve target detection in rain conditions.
Amina Antenna provides better than cosecant squared fan beam coverage up to 45 ° (with hyper-directivity at angles > 25°), to improve overfly targets detection, and a tight slope at the horizon for MAIN and AUX beams.
MAIN and AUX beams, properly combined by the Receiver processor , can match any kind of ground clutter scenario under real-time clutter map control (Real Time Adaptability/ RTA).





Antenna structure allows the co-mounting of any linear array SSR antenna

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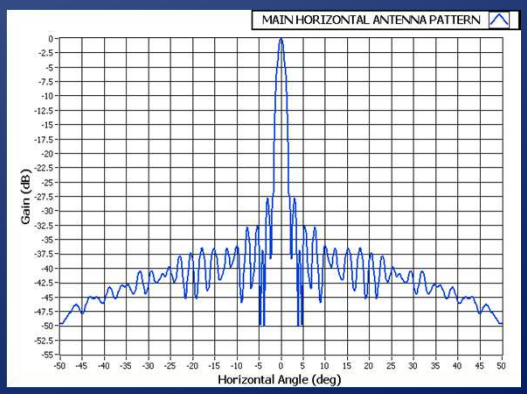
TECHNICAL DATA		
Operating Band	2700 ÷ 2900 MHz	
Polarization	Linear / Circular	
Coverage	Azimuth: 360°	Elevation: up to 45°
Rotation Rate	Up to 15 rpm	
Antenna Weight	~1000 Kg	
Dimensions	(W x D x H) m	5.39 x 4.53 x 3.15
VSWR	1.35 : 1	
Power handling MAIN Ch.	80 dB Max peak	67dB Max average
Power handling AUX Ch.	57 dB Max peak	47dB Max average
Feed Type	Dual focus offset feeds system	
MAIN beam	Antenna Gain	≥ 35 dB
	Beam Width	Horizontal 1.39° Vertical 5°
	Sidelobes	≥ 27dB
	Slope on the horizon at -3dB from the main peak	4 dB/degree
	Tilt angle	-2° to +5° manually controlled
AUX beam	Antenna Gain	≥ 35 dB
	Beam Width	Horizontal 1.39° Vertical 5°
	Sidelobes	≥ 27dB
	Squint angle Main/Aux beams	3° ± 0,5°
Diagnostic	Integrated Test Transmitter Generator (TTG) dipole for full radar processing chain check up	

Offset feed system architecture drastically reduces side-lobes



AMINA ANTENNA SUBSYSTEM

ENVIRONMENTAL DATA		
Temperature	-50 ÷ +70 °C	
Humidity	Up to 100%	
Rain operation	4 ÷ 102 mm per hour	
Solar radiation	≤ 360 BTU/hr/ft2 (1135 Watts/m2)	
Wind conditions	Operating	Survival
Without ice	240Km/h	329Km/h
With ice	172Km/h -10mm ice	229Km/h- 40mm ice

Antenna mechanical structure employs aluminum alloy and stainless steel , featuring:
- 3 frames reflector , equipped with aluminum ribs supporting the reflector mesh
- 1 main supporting structure, including SSR co-mounted antenna platform
- 1 feeding system arm

The 6 pieces construction allows for easy transportation and installation procedures.
Antenna is shipped into 4 reusable boxes.




INTERNATIONAL STANDARDS COMPLIANCE

EUROCONTROL radar surveillance in en-route and major terminal areas (TMA)
EUROCONTROL radar sensor performance
ICAO Annex 10 Vol I section 3.2
ICAO Annex 10 Vol I Att C
ICAO Annex 10 Vol IV

Contact us at:

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