MASS™ Military Airborne Surveillance System

TCAS solution for unique military requirements.

ACSS has developed an advanced, military-specific application based on our next generation commercial surveillance systems. The Military Airborne Surveillance System (MASS) is an innovative platform utilizing 'active' TCAS II surveillance and Automatic Dependent Surveillance-Broadcast (ADS-B) technologies to fulfill unique military requirements for formation flight and rendezvous operations within the Civil Airspace.

Available on the T³CAS hardware platform, it includes functions for the ACSS Cooperative Member functionality, a subset of MASS, for identification and alerting and RF power reduction. Formation members are identified and uniquely displayed. Normal TCAS II advisories are inhibited for formation members, which have a unique alert annunciation and threshold levels.

The use of ADS-B and adaptive power level interrogation techniques limits RF interference to enable formation flight within the civil ATC environment without restrictions, while providing an enhanced surveillance volume compared to TCAS II systems. The system includes cooperative member identification using Flight ID, Mode A or Mode 2 codes and features the ability to select an aircraft for display of aircraft-specific data.

The MASS includes the standard TCAS modes of operation as well as a Cooperative Flight Mode that can be selected to support operation in cooperative flight situations such as formation or rendezvous operations. When Cooperative Flight Mode is not selected, the system performs normally as a TCAS/ACAS II collision avoidance system. T³CAS with MASS is typically used with a Mode S/IFF transponder in addition to the internal transponder. T³CAS has been tested for interoperability to several industry models.

SAFETY AND UNIQUE FUNCTIONALITY

- Enhanced software version of T³CAS
- Enhanced surveillance volume
- Complete surveillance solution–TCAS, Mode S/IFF products and TAWS with RWS as Reactive Windshear System
- Supports up to 30 formation members
- Higher resolution ranges for close-in operations
- Designed to comply with DO-181E/260B to ATC guidelines
- Formation/rendezvous capabilities within civil airspace
- No platform, clustering or altitude restrictions
- Selected by Boeing for the 767 Global Tanker Transport Aircraft

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Specifications

MILITARY AIRBORNE SURVEILLANCE SYSTEM (MASS)

Physical Description		
	TCAS A/T	**XS9501 SI Mode S/IFF Transponder**
Width	4.90 inches (12.45 cm)	4.90 inches (12.45 cm)
Height	7.60 inches (19.30 cm)	7.60 inches (19.30 cm)
Depth	15.20 inches (38.61 cm)	15.20 inches (38.61 cm)
Weight	14.7 lbs. (6.67 kg)	11.5 lbs. (5.22 kg)
Power		
Requirements and Consumption	+28.0 VDC or 115 Vac	+28.0 VDC or 115 Vac
Environmental		
Temperature	Operating: -55° to +70°C (-67° to +158°F)	Operating: -55° to +70°C (-67° to +158°F)
Altitude	55,000 Ft.	55,000 Ft.
Cooling	No cooling required per ARINC 600	Per ARINC 600
Environment	ARINC DO-160E	ARINC DO-160C
Shock, Vibration	Military Standards	Military Standards
EMI	Military Standards	Military Standards

OPTIONAL CDTI DISPLAY

Physical Description	
Bezel Dimensions	**4.815 inches x 6.25 inches (12.23 cm x 15.875 cm)**
Image Size	5.1 inches (W) x 3.8 inches (H), 6.3 inches diagonal (12.95 cm x 9.65 cm x 16.02 cm diagonal)
Case Size	ARINC 708A
Weight	6.5 lbs. (2.95 kg)
Interfaces	
TCAS	ARINC 429 / 725
TAWS with RWS	ARINC 762 / 453
FMS	ARINC 702 (growth)
DME	ARINC 568 (growth)
INS	ARINC 561 (growth)
Weather Radar	ARINC708A, Collins WRX-700X, Honeywell RDR-4A / RDR-4B 55,000 Ft.

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