

ST02182CH

FAA Supplemental Type Certificate



Installation of Elementary and Enhanced Surveillance Mode-S Transponders on Boeing 747 Series Aircraft (FAA STC ST02182CH)

OVERVIEW

- » FAA STC ST02182CH.
- » European Aviation Safety Agency (EASA) STC 02873.

INTRODUCTION

STC ST02182CH enables installation of elementary or enhanced surveillance Mode-S transponders in accordance with Electronic Cable Specialists (ECS) Master Data List ECS-202128.

YOUR NEEDS

Using STC ST02182CH, the existing Mode-S transponders on your fleet of Boeing 747 aircraft can be upgraded to comply with Mode-S enhanced surveillance requirements.

YOUR BENEFITS

The enhanced Mode-S transponders will have the capability to transmit flight identification as part of the transponder interrogation reply. The enhanced transponders will also provide aircraft status and intent information, such as current heading, altitude, airspeed, selected altitude, etc. These new transponders will satisfy the data requirements of ICAO Document 7040/4, Regional Supplementary Procedures for SSR Mode-S enhanced surveillance in designated European airspace.

STC AIRCRAFT EFFECTIVITY

- » Boeing 747-100/-100B/-200B/-200C/-200F/-300/-SR/-SP/-400/-400D/-400F series aircraft.

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STC LIMITATIONS

- » Configuration 1: Collins Mode-S system previously installed per FAA approved method, FMS system previously installed (CMA-900).
- » Configuration 2: Honeywell Mode-S transponder system previously installed.
- » Configuration 3: ACSS Mode-S transponder system previously installed per FAA approved method. The flight identification compatible FMS must be previously installed.
- » Configuration 4: ACSS Mode-S transponder system previously installed per FAA approved method. The flight identification compatible FMS must be previously installed (CMA-900).
- » Configuration 5: Honeywell Mode-S transponder system previously installed per FAA approved method. The flight identification compatible FMS must be previously installed.

STC CONFIGURATIONS

- » Configuration 1: Dual Collins elementary Mode-S with flight identification from existing FMS (CMA-900). Applicable on 747-100/-100B/-200B/-200C/-300/-SR/-SP series aircraft.
- » Configuration 2: Honeywell elementary Mode-S with flight identification from new Control Panel. Applicable on 747-100/-100B/-200B/-200C/-300/-SR/-SP series aircraft.
- » Configuration 3: Dual ACSS enhanced Mode-S with flight identification from existing FMS. Applicable on 747-400/-400D/-400F series aircraft.
- » Configuration 4: Dual ACSS elementary Mode-S with flight identification from existing FMS (CMA-900). Applicable on 747-100/-100B/-200B/-200C/-300/-SR/-SP series aircraft.
- » Configuration 5: Honeywell enhanced Mode-S with flight identification from existing FMS. Applicable on 747-400/-400D/-400F series aircraft.

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STC CONFIGURATIONS

Configuration 1: Collins Mode-S Transponders with Flight Identification from FMS (CMA-900)

- » Existing Mode-S transponders will be removed and new Collins elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

Configuration 2: Honeywell Mode-S Transponders with Flight Identification from Gables Panel

- » Existing Mode-S transponders will be removed and new Honeywell elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The existing transponder control panel will be removed and a new Gables control panel will be installed. This new control panel provides the capability to allow entry of flight identification, as well as being used for selection of either the transponder 1 or transponder 2 for interrogation replies, selection of altitude reporting on or off, selection of the transponder code, and providing fail indication for the Mode-S transponders.

Configuration 3: ACSS Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new ACSS elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.

- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

Configuration 4: ACSS elementary Mode-S Transponders with Flight Identification from FMS (CMA-900)

- » Existing Mode-S transponders will be removed and new Honeywell elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.

- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

Configuration 5: Honeywell Enhanced Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new Honeywell elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located on the E3-2 and E3-3 shelves in the electronic bay will be used for installation of the elementary and enhanced surveillance Mode-S. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.

- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

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