

FAA STC ST02961CH | EASA STC 10041328

Upgrade Honeywell RDR-4B Weather Radar System with Honeywell RDR-4000 Weather Radar System on Boeing 737 Series Aircraft

OVERVIEW

- » FAA STC ST02961CH
- » European Aviation Safety Agency (EASA): STC10041328
- » Transport Canada Civil Aviation (TCCA) acceptance of FAA STC ST02961CH
- » Republic of Indonesia Ministry of Transportation: SA036

Installation of a single Honeywell RDR-4000 weather radar system (WXR) in accordance with Electronic Cable Specialists (ECS) master data list ECS-208688.

YOUR NEEDS

STC ST02961CH provides the means to upgrade RDR-4B WXR, which will result in more advanced system capabilities.

YOUR BENEFITS

Upgrading the RDR-4B WXR in accordance with STC ST02961CH, will provide the following benefits:

- » Radar antenna tilt control is now automatically controlled by the upgraded system
- » Instead of a typical view along the radar beam, the RDR-4000 stores a complete 3D picture in the system's memory.
- » Complete independent selections of range, gain, and mode by each flight crewmember
- » Internal database to remove ground clutter in weather modes
- » Improved ground map mode
- » Provides the flight crew the ability to extract horizontal plan view slices of reflectivity from the memory for improved storm assessment.

STC AIRCRAFT EFFECTIVITY

- » Boeing 737-600/-700/-700C/-800/-900/-900ER series aircraft

STC CONFIGURATIONS & LIMITATIONS

- » **Configuration 1:** Single Honeywell RDR-4000 WXR installation
- » **Configuration 2:** Single Honeywell RDR-4000 WXR software upgrade
 - The existing RDR-4B receiver/transmitter will be removed along with its' mounting tray and attached waveguide assembly. A new radar processor unit with mounting tray will be installed in its' place.
 - The existing RDR-4B antenna drive unit (with flat plate antenna) and attached waveguide assembly will be removed.
 - A new antenna drive unit (with flat plate antenna and radar receiver/transmitter module) will be installed in its' place, using existing bulkhead attachment points.
 - A new cover plate will be installed in place of the removed Waveguide feed through at STA 178 bulkhead.
 - A new radar control panel will be installed directly replacing the existing RDR-4B panel in the flight deck on the aft center console (P8 Panel) into existing quarter-turn" rail mounts.

STC Limitations: Must incorporate associated Boeing service bulletin to update display operating software

ELECTRICAL CHANGES

With the following exceptions, all of the existing RDR-4B WXR wiring is reused when installing the new RDR-4000 system:

- » New coax cables will be installed to replace the existing waveguide assemblies.
- » Existing radar antenna drive unit connector will be replaced to facilitate connecting to the new radar components. Unused existing wires shall be capped and stowed.
- » New ARINC 429 data bus wiring will be installed between the new radar processor and the FMS switching unit for FMS1/FMS2. The FMS data provides position information in Weather (WX), Predictive Windshear (PWS), and current flight path view in vertical profile mode.

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WXR Processor After Modification Comments:

- » Radar processor as installed on an aircraft with existing RDR-4000 weather radar
- » Processor shown not removed
- » Location is slightly aft of the forward pressure bulkhead



WXR After Modification Comments:

- » Waveguide cover plate as installed on aircraft with RDR-4000 radar system
- » Location is under unpressurized radome



WXR Antenna After Modification Comments:

- » Radar antenna assembly as installed on an aircraft with existing RDR-4000 weather radar
- » Location is under unpressurized radome



WXR Control Panel After Modification Comments:

- » Radar control panel as installed on an aircraft with RDR-4000 radar system
- » Radar and transponder control panels shown in new locations for aircraft standardization
- » No wiring modifications required
- » Location is P8 pedestal