FAA STC ST02529CH

Installation of XM Weather Receiver System & Data Port on Bombardier Learjet 31A Series Aircraft

OVERVIEW

» FAA STC ST02529CH

STC ST02529CH governs installation of a XM weather receiver and data port in accordance with Electronic Cable Specialists (ECS) master data list ECS-205541.

YOUR NEEDS

Enhance operational awareness by introducing weather data streaming capabilities to the flight crew.

YOUR BENEFITS

When used in concert with the XM weather receiver, the data port will enable the flight crew to gain access to satellite weather data, which may be used for electronic flight bag systems (EFB) or any off-the-shelf laptop computer that is equipped with an USB port.

STC AIRCRAFT EFFECTIVITY

» Bombardier Learjet 31A series aircraft

STC CONFIGURATIONS & LIMITATIONS

Configuration 1: XM Weather Receiver & Data Port Installation

» The XM weather receiver installation consists of a XM data receiver, XM/WX RS422 to USB data converter, a DC power converter, a circular data port connector, and a GPS/XM antenna. The XM weather receiver, XM weather data converter, and DC power converter are located in the pilot's sidewall. The circular XM weather data port connector is installed on the forward area of the copilot's sidewall panel. The GPS/XM antenna is located on the upper fuselage. Refer to Figure 1 for details.

» The XM weather data receiver receives streaming weather data transmitted from an XM Satellite Radio, Inc. satellite. The XM weather data port connector is installed to provide an access port for use by an EFB or any off-the-shelf laptop computer equipped with a USB port. The DC power converter supplies 16VDC power to the data port connector to provide power for a connected EFB or laptop computer.

» The XM weather system is protected by the following circuit breakers located on the E63 interior circuit breaker panel. The XM weather system is powered from the cabin power bus. Power will be removed from this system if normal load shedding procedures are implemented.

Label	Function	Rating	Bus
XM/WXR	XM Data Receiver Circuit Breaker	1 amp	Cabin Power Bus
DC CONV	DC Converter Circuit Breaker	5 amp	Cabin Power Bus

» The following electrical changes are made for configuration 1. See block diagram Figure 2.

» 28 VDC power and ground wiring will be installed between the aircraft and the XM data receiver and DC converter. Two 28VDC circuit breakers will be added to the aircraft E63 Interior circuit breaker panel assembly, a 1 circuit breaker amp for the XM data receiver and a 5 amp circuit breaker for the DC converter. Wires for regulated 16 VDC power will be installed between the DC converter and the circular disconnect to support connection to an EFB.

» RS422 wiring will be installed between the XM data receiver and the XM weather data port.

» The existing coax cable between the FMS and the existing GPS antenna will be disconnected from the existing GPS antenna and reconnected to the GPS port of the newly installed GPS/XM antenna. A new coax cable will be installed between the XM receiver and the XM weather port of the GPS/XM antenna.

STC Limitations:

- *Use of an EFB or laptop computer with the data port requires separate FAA approval.*
- *ARINC 743A GPS antenna structural provisions must be previously installed on the upper fuselage in accordance with FAA STC ST00312DE-D. Use of an EFB or laptop computer with the data port requires separate FAA approval.*
- *ARINC 743A GPS antenna structural provisions must be previously installed on the upper fuselage in accordance with FAA STC ST00312DE-D.*

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STC CONFIGURATIONS & LIMITATIONS CONT'D.

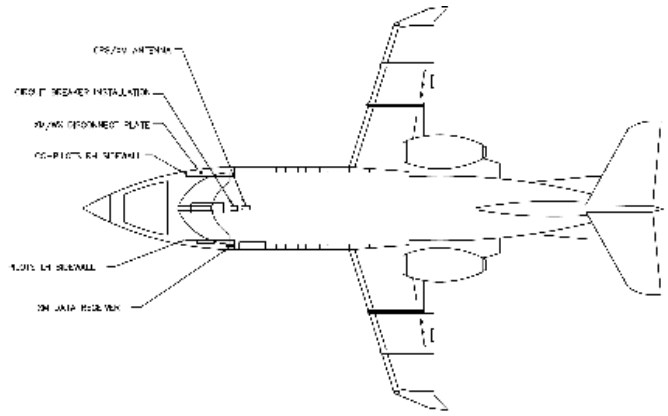

FIGURE 1 - INSTALLATION OVERVIEW

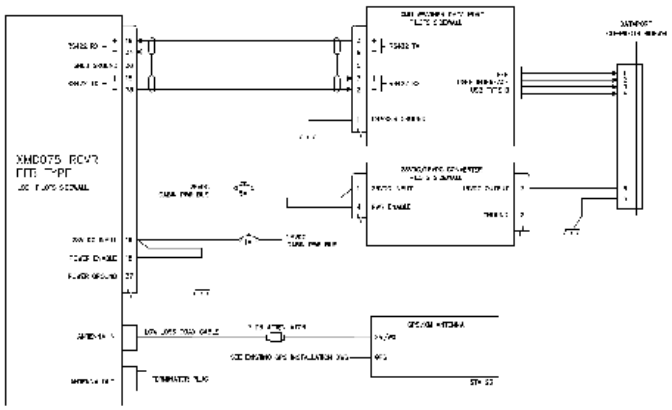

FIGURE 2 - SYSTEM BLOCK DIAGRAM

MECHANICAL CHANGES

- An XM data receiver, XM weather data port, and a DC converter will be installed behind the pilot's sidewall panel.
- A circular disconnect will be installed on the copilots sidewall.
- The existing GPS antenna will be removed from the upper fuselage and a combined GPS/XM antenna of similar size will be installed in its place.

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