

## FAA STC ST03007CH | EASA STC 10045157

### Installation of a CMC Dual Class 3 Electronic Flight Bag (EFB) System on Boeing 737 Series Aircraft

#### OVERVIEW

- » FAA STC ST03007CH
- » European Aviation Safety Agency (EASA) STC 10045157
- » Russian STC CT148-B737-700
- » Russian STC CT168-B737-600
- » Russian STC CT169-B737-800

*Governs the activation of a CMC Electronics Inc. Pilotview® Class 3 Electronic Flight Bag (EFB) system in accordance with Electronic Cable Specialists (ECS) master data list ECS-208300.*

#### YOUR NEEDS

Incorporation of STC ST03007CH will authorize activation of dual EFB systems.

#### YOUR BENEFITS

When combined with the previously installed provisions, the CMC Electronics Inc. Pilotview® Class 3 EFB system provides flight crews the ability to interact with electronic maps, charts, and manuals in lieu of accessing standard paper documentation. System installation will reduce materials costs and aircraft weight without compromising ergonomic concerns.

#### STC AIRCRAFT EFFECTIVITY

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

#### STC CONFIGURATIONS & LIMITATIONS

- » **Configuration 1:** Reserved
- » **Configuration 2:** Dual EFB system installation with existing electrical interfaces and ESMU/power converter mounting provisions without FDEVSS wiring provisions.

##### STC Limitations

- *Configuration 1: Reserved*
- *Configuration 2: Airframe EFB wiring interface, enhanced switching module unit (ESMU), and power converter mounting provisions installed per Boeing option number 4610B69324, "Electronic (EFB) – Class 2 – Install – Partial Provisions – Continental Airlines" or*

*per Boeing Catalog option number 4610C204K91, "Electronic (EFB) – CMC Class 2 – Installation by STC", must be installed prior to or in conjunction with this installation.*

#### PRODUCT DESCRIPTION

**Configuration 2:** Dual Class 3 EFB System Installation. Activation of wiring provisions installation, previously installed under a separate Boeing Company TC project, for dual Class 3 EFB system. The installed EFB systems will support Type A, Type B, and Type C airport moving map display (AMMD) software applications in the cockpit.

- » The CMC Electronics Inc. Pilotview® EFB is a Class 3 system. It is designed to be an open architecture system hosting Type A, Type B, and Type C AMMD, software applications. The installation is configured to support a "user friendly" pilot interface system refined from various airline focus groups.

**For this project, the CMC Electronics Inc. Pilotview® EFB system will consist of the following:**

- » **Electronic Display Unit (EDU):** A battery-powered Pentium class tablet computer. It contains a touch-sensitive active matrix liquid crystal display (AMLCD), surrounded by a set of software definable keys. The EDU also contains a central processing unit, random access memory, batteries, and mass storage for applications and data. The built-in user interfaces are a PCMCIA expansion slot and two USB sockets. There is also a dedicated interface plug that connects the EDU to the remote ESMU.
  - The EDU is powered by a 1.8 amp hour lithium ion battery pack. It can also operate from aircraft power, in which case, the EDU battery will recharge automatically.
  - The EDU does not have any operational software installed. The EDU will only have embedded firmware installed.
  - The EDU has two internal fans and requires no external cooling.

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### PRODUCT DESCRIPTION CONT'D.

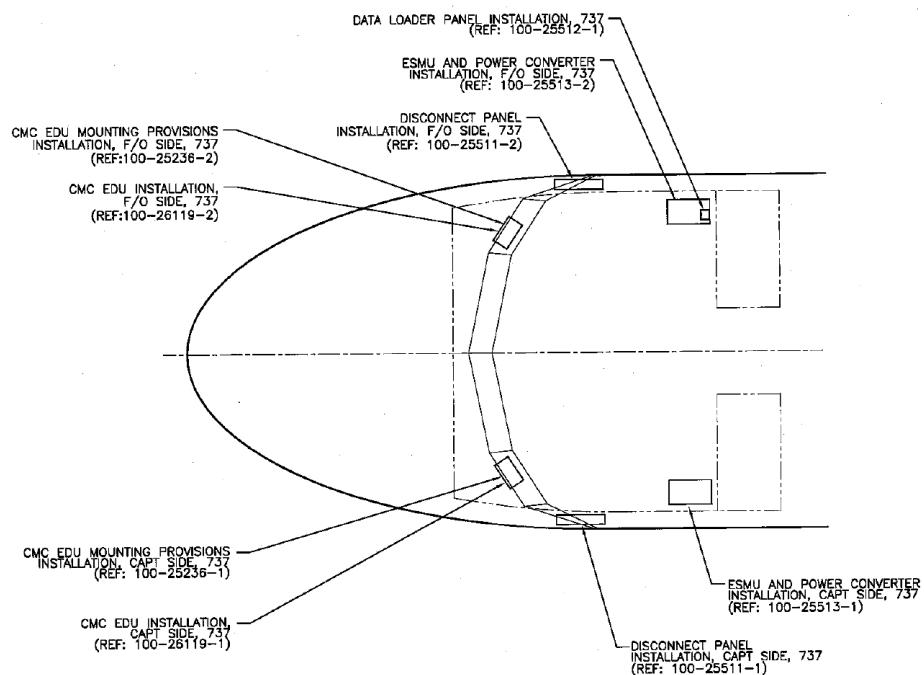
- » **EDU Mounting Bracket Assembly:** Secures the EDU to installed EFB mounting provisions and provides the electrical connections to the EDU.
- » **Enhanced Switching Module Unit (ESMU):** Provides aircraft 429, Ethernet and discrete signal processing and interface to the EDU. The ESMU accepts 28 VDC power from the power converter and supplies the EDU with a regulated 18.0 VDC output.
  - The ESMU does not have any operational software installed. The ESMU will only have embedded firmware installed.
- » **Power Converter:** Converts aircraft 115 VAC 400 Hz to 28 VDC to power the EFB system. The 28 VDC power is provided to the ESMU. The power converter does not have any operational software or embedded firmware installed. The EDUs will be mounted in the left and right sliding windows. The ESMUs and power converters will be installed to mounting provisions located in the captain's and first officer's flight bag stowage area.

### INSTALLATION OVERVIEW

The installed CMC dual EFB system consists of two electronic display units (EDUs), two enhanced Switching module units (ESMUs), two EDU mount assemblies (includes interface I/O cables), and two power converters. A general description of the installation follows and is illustrated in Figure 1.

- » Captain's sliding window - Install EDU, EDU mounting assembly & associated mounting provisions.
- » First officer's sliding window - Install EDU, EDU mounting assembly & associated mounting provisions.
- » Install captain's ESMU & power converter into existing mounting provisions.
- » Install first officer's ESMU & power converter into existing mounting provisions.
- » Connect wiring to existing Boeing disconnect bracket.

FIGURE 1:  
Installation Overview

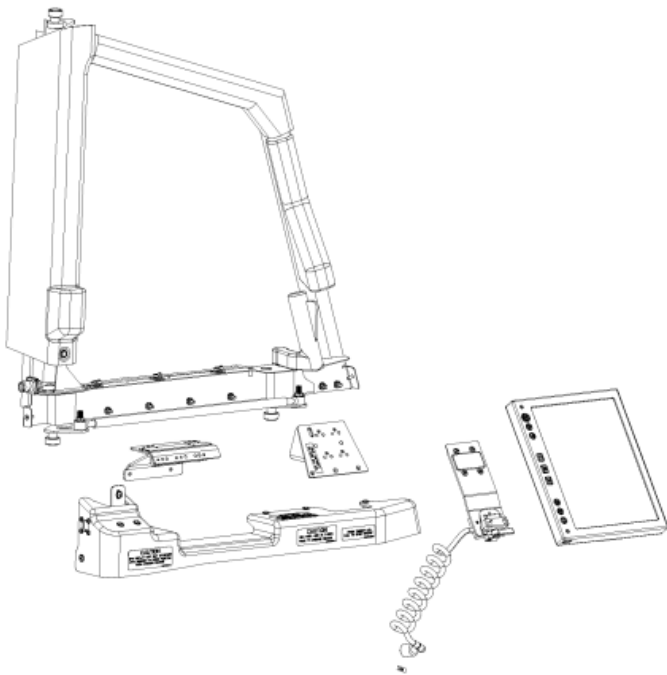


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### MECHANICAL CHANGES

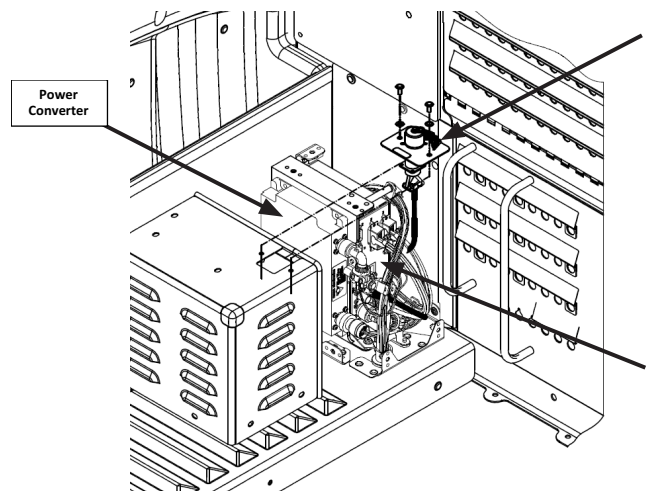
- » Modify the existing captain's sliding window by adding new window trim and mounting brackets under window trim that are attached to the window frame. The new window trim and mounting brackets are designed to hold an EDU mount assembly in a fixed location on the sliding window. The EDU then is docked in the EDU mount assembly. Refer to Figure 2 for details. Once installed, the EDU is not removable by flight crew; it is only removable by Maintenance using tools.
- » The modification to the existing first officer's sliding window will be a mirror image of the captain's sliding window.



**FIGURE 2:**  
Installed Window Trim, EDU Mounting Brackets & EDU

### MECHANICAL CHANGES CONT'D.

- » The ESMUs for the EFB systems will be installed onto Boeing mounting provisions in the left and right flight bag stowage areas (Figure 3).
- » The power converter will be installed in the left and right side consoles adjacent to each ESMU in the mounting provisions (Figure 3).



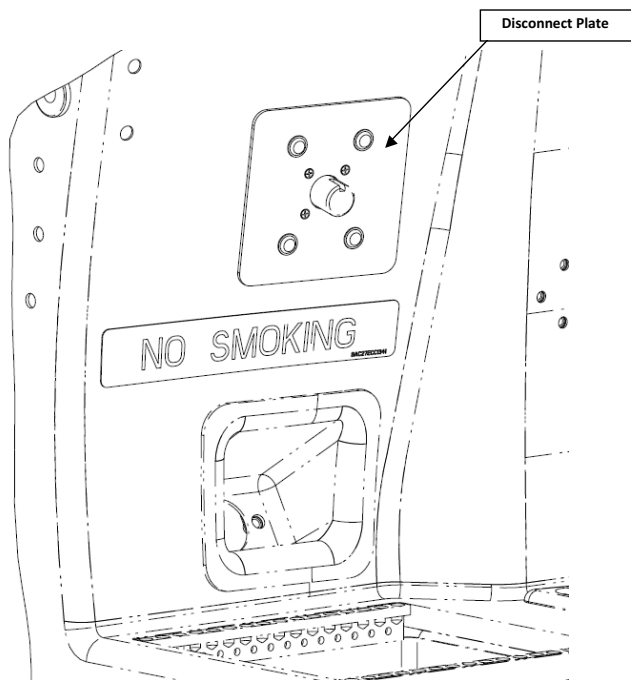
**FIGURE 3:**  
LRU Installation  
(Right side shown; left side is similar,  
without the data load port)

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#### MECHANICAL CHANGES CONT'D.

- » Disconnect plates will be installed in the left and right side console on Boeing mounting provisions. See Figure 4. The first officer's installation is a mirror image.



**FIGURE 4:**  
Disconnect Plate

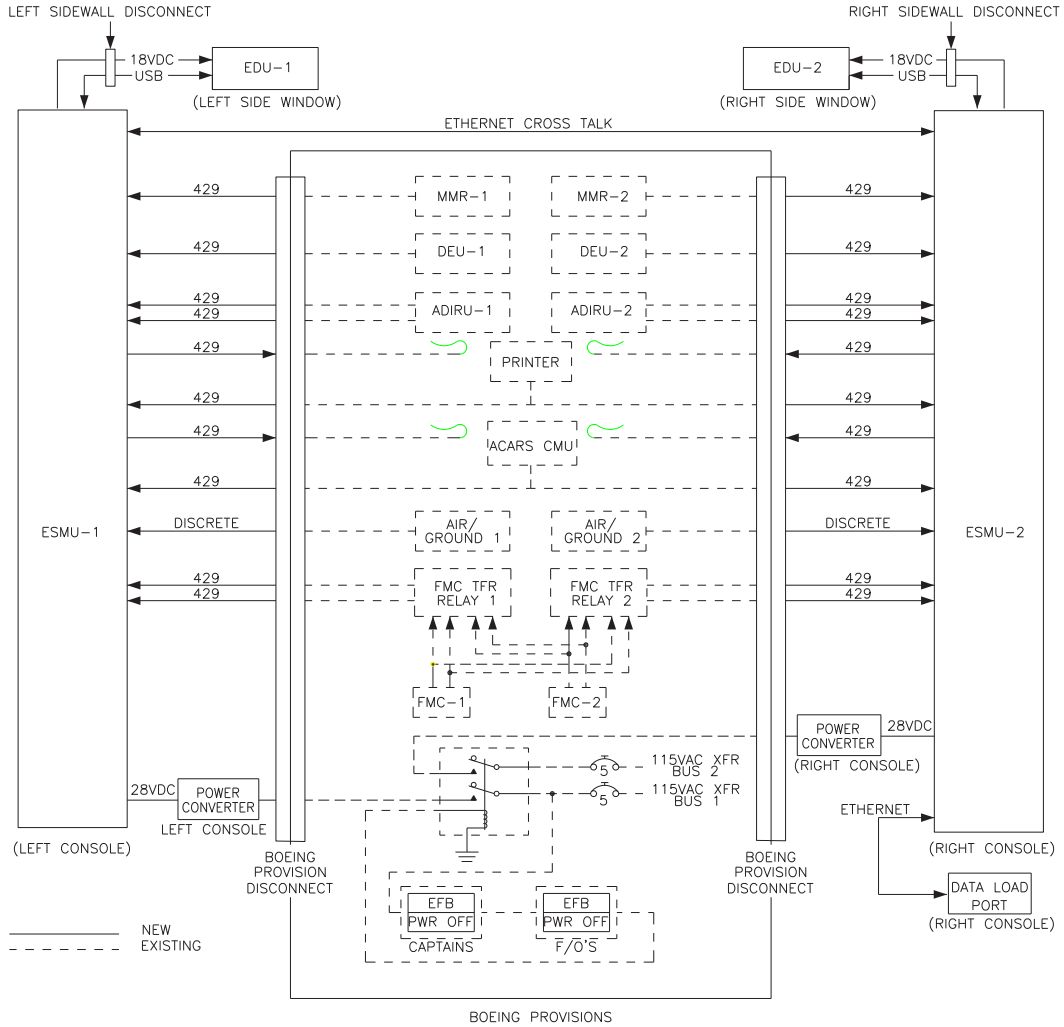
#### ELECTRICAL CHANGES

The following electrical changes are made for Configuration 2. See block diagram Figure 5.

- » The power converter 115 VAC input power wire will be routed from the power converters to the concurrently installed Boeing EFB power interface disconnect that is located under the left cabin floor. The 28 VDC output wiring of the power converter will be routed from the power converters to the adjacent ESMUs.
- » The ESMU outputs to the EDU sidewall disconnect wiring consist of 18 VDC power, ground, and USB wires. The wires will be routed from the respective ESMUs to the left and right sidewall disconnects.
- » ESMU-1 429 data bus inputs will be connected to the previously installed Boeing EFB interface disconnect that is located under the left cabin floor. This disconnect will provide interfaces to MMR-1, FMC-1, FMC-2, ADIRU-1, DEU 1, printer, and ACARS CMU. The existing printer and ACARS CMU 429 data bus wiring will be installed as provisions. In addition, an air/ground discrete wiring connection will be completed by wiring from each ESMU to the Boeing installed disconnect located under the left cabin floor.
- » ESMU-2 429 data bus inputs will be connected to the previously installed Boeing EFB interface disconnect that is located under the right cabin floor. This disconnect will provide interfaces to MMR-2, FMC-1, FMC-2, ADIRU-2, DEU 2, printer, and ACARS CMU. The existing printer and ACARS CMU 429 data bus wiring will be installed as provisions. In addition, an air/ground discrete wiring connection will be completed by wiring from each ESMU to the Boeing installed disconnect located under the left cabin floor.
- » Ethernet wiring will be routed from the left ESMU to the right ESMU. In addition Ethernet wiring will be routed from the ESMU-2 to the new data load port located on the right enclosure for the right ESMU.

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**FIGURE 5:**  
EFB System Block Diagram