Thompson Aerospace

PRODUCT BRIEF

CONNECTIVITY SERVER UNIT (CSUv2)

FEATURES

- **Processing:**
  - 2 independent Quad Core ARM Cortex-A9 processors
- **Memory/Storage:**
  - Up to 2 terabytes local storage
  - Unlimited cloud backup
- **Interface provisions to support any airplane:**
  - ARINC 429: 10 Rx and 5 Tx: ACARS, Avionics Bus, LRU health monitoring,ect.
  - ARINC 485: maintenance data
  - ARINC 717: DFDAU data collection
  - ARINC 629: Avionics bus
  - ARINC 825/CAN: sensors, actuators, etc
  - General purpose I/O: 8 input and 4 output, selectable as either 28V/Open or GND/Open
- **Communications:**
  - Iridium module
  - GNNS module
  - LTE/GSM module cellular
- **Expansion Provisions:**
  - 4 gigabit power over Ethernet (GPoE) ports to drive powered devices with additional capabilities
- **Security:**
  - Real time encryption capability RTCA DO-326 Compliant
  - FIPS 140-2 security level 3 compliant
  - Fully managed Ethernet switching in firmware (DO-254)
  - 802.1x Compliant

SUMMARY OF BENEFITS

- **Connectivity:**
  - Iridium for global inflight and ground coverage for aircraft position tracking when out of ADS-B coverage areas
  - Aircraft alerts customizable by airline
  - Airline operation center real time access to data
- **Ground Based Cellular Coverage:**
  - Large low cost data access to all stored data from aircraft to cloud after flight
  - Airline customizable for data upload
  - Supports two main LTE standards with auto configuration based on location
- **Airline Fleet Monitoring:**
  - Internal GNSS allows tracking of two independent sources for present position
  - Internal storage of all aspects of every flight
  - Internal accelerometer for inflight turbulence tracking
  - Internal voltage bus monitor for power monitoring and reporting
- **Inflight or Ground Data Exchange:**
  - Gate information
  - Flight plan change
  - Passenger manifest/preferences
  - Passenger inflight purchases
- **Cabin Services:**
  - Usage as a secure server for passenger access to content, moving map,information, with the addition of low cost Power over Ethernet Wireless Access Point
- **Maintenance Functioning:**
  - Storage of Manuals
  - Storage of Data for Augmented Reality maintenance instructions
  - Storage of the complete record for all aircraft maintenance activities, updated onboard and via cloud computing services.
- **Unit replaces:**
  - QAR
  - WGL (Wireless Ground Link)
  - FDAMS
  - AID (Aircraft Interface Device)
  - EFB docking station
  - Iridium transceiver
- **Airborne Network Backbone Supports:**
  - RFID
  - Security Camera System, Airplane Health Monitoring
  - Data concentration/distribution

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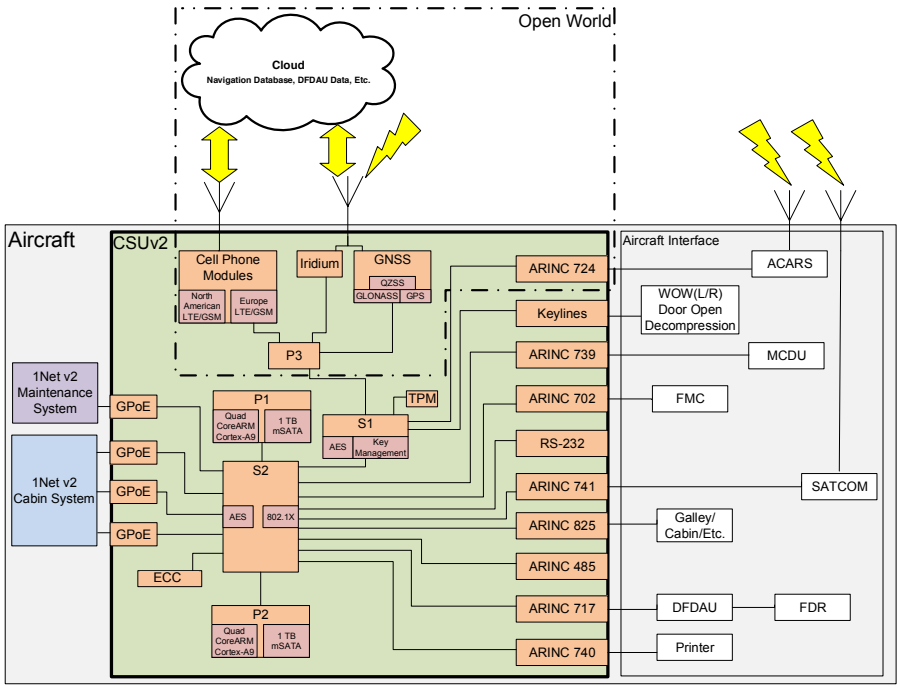

Product Overview

The CSUv2 serves as the cornerstone for an aircraft information system for the future, providing the processing, memory and connectivity to meet the requirements of the most demanding applications. The CSUv2 is ready to be your aircraft data management and up-load solution, including real-time tracking, maintenance, health monitoring, cabin services and more. The CSUv2 brings aircraft data into the 21st century, opening the door to cloud computing and big data for your fleet.

The CSUv2 communicates across virtually any avionics interface, including ARINC 429, 485, 629, 717, 825 and discretes; and can provide ARINC 834 communications across Ethernet. The CSUv2 can retrieve data from the DFDAU, from the Avionics Bus, from sensors/actuators, and distribute it to ACARS, a wireless access point, or to the cloud via SATCOM or gatelink. This allows data collection, concentration and processing onboard the aircraft.Allows the aircraft to upload to the cloud to capture and manage any parameter available on the aircraft.

The CSUv2 has four Gigabit 802.1at Power over Ethernet (PoE) ports to allow for expansion to meet any future requirements. The PoE ports can power a variety of Power Devices such as Ethernet Switches, Wireless Access Points (WAPs), Cameras, RFID systems, and Aircraft Network Adaptors (ANA), allowing an unlimited selection of inputs/outputs to be processed by the servers.

GSM/LTE: The LTE cellular function includes (2) radios that are programed based on country setting to provide LTE services in North America or the rest of the world. The radios are able to auto select lower band width channels if LTE service is not available i.e. GSM, GPRS, EDGE, UMTS, HSPA+. The cellular function provides another communication channel for system data communication.

The CSUv2 includes multi-mode GNSS (Global Navigation Satellite System) capability to provide independent position information at all times. The multi-mode chip can read GPS as well as other international standards.

The CSUv2 provides a full complement of advance security features and is compliant with RTCA DO-326. The system architecture provides for physical functional segregation between the two ARM Cortex - A9 processors, and firmware-based security engines to handle secure data transfers between the processors and with attached devices.

The CSUv2 provides an extended power holdup for core functions so that the system can send out a final data transmission in the event of total power loss.

The CSUv2 is a light weight, low power ARINC 600-compliant LRU that mounts easily in a 2 MCU slot in the avionics rack. In conjunction with the CSUv2, Thompson Aerospace offers Cloud services to process the aircraft data on a fleet basis, including trend analysis, analytics, real-time monitoring, etc.