



GE Aerospace

ADTE Mk-2

Advanced Data Transfer Equipment Mk-2

Mission proven, high-assurance data transfer system for the world's most advanced tactical fighters

GE Aerospace has over 40 years of experience in the design, integration, and manufacture of data transfer and storage systems that are fielded on a multitude of military platforms across the globe including the F-16, F-22, and F-35. GE is committed to providing the most reliable and innovative equipment on the market.

Equipment Overview

GE Aerospace's Advanced Data Transfer Equipment Mark 2 (ADTE-Mk2) is a mission proven, high-assurance system currently deployed on some of the world's most advanced tactical fighters. The primary function of the ADTE is to provide mass storage and file server functionality for the aircraft avionics subsystems. It is the primary repository for avionics Operational Flight Programs (OFPs), mission and theater data, prognostics and health data, as well as aircraft parametric data.

The ADTE-Mk2 features fast processing, increase storage capacity, Gigabit Ethernet interfaces while remaining backward compatible with existing installations. The systems is comprised of two Line Replaceable Units: a cockpit mounted receptacle, the Advanced Data Transfer Unit (ADTU), and a removable ruggedized memory, the Advanced Data Transfer Cartridge (ADTC). Each LRU features increased processing and storage capability. The convection cooled ADTU provides all aircraft interfaces and serves as the receptacle for the ADTC. The ADTC is provides memory management, file system management, and Built-in Test (BIT) functionality. The memory is partitioned into a battery-backed volatile mission memory device, and non-volatile mass memory card(s). The availability of mission memory allows the user to upload executable software for use by the aircraft during the mission, while the contents can be securely erased through a discrete on the ADTU, or the erase switch located on the ADTC.



Applications

The most basic application performed by the ADTS is that of data transfer and data loading. In this role, the ADTC is integrated with the mission planner via a Gigabit Ethernet Cartridge Interface Device (GigaCID). The GigaCID allows the ADTC to appear as a removable disk drive to the mission planning computer. After completion of mission planning, aircraft initialization data is loaded on the ADTC and the ADTC is carried to the aircraft where it is installed into the ADTU. When installed, the ADTC's information is sent to the aircraft's avionics, eliminating the need to manually enter data. During flight, data can be written to the ADTC for use in post-mission analysis. In addition to the standard applications traditionally associated with data transfer equipment, the ADTE allows the system integrator to fulfill several other memory intensive requirements. This is accomplished by hosting software, such as Auto-GCAS, on the processors in the ADTU and/or ADTC. Accordingly, new aircraft capabilities can be fielded without adding additional avionics.

Specifications

Features

App Hosting and Data Processing
VxWorks Operating System
Quad Core ARM A53 Processor
1 GB Double Data Rate RAM
Field Upgradeable
Secure Erase

Aircraft Interfaces

MIL-STD-1553
Digibus GAM-T101
Gigabit Ethernet
Erase Discrete
Ready Discrete

Mission Memory

32 Gbyte/s
AES256 Encryption
Erasable Access Key

Mass Memory

128 GBytes
Expandable to 256 GBytes
AES256 Encryption
Sanitization through the CID

MTBF

>19,000 hours (predicted)

MTTR

< 30 minutes

Built-in-Test (BIT)

Power-On Self-Test (POST)
Initiated (IBIT)
Continuous (CBIT)

Environments

-54° to 95° C Storage
-40° to 71° C Operating

ATDE SWAP

115 VAC @ 400 Hz < 45 VA
< 9.4 pounds
Receptacle (ADTU)

- 5.75" W x 4.49" H x 7.51" D

Cartridge (ADTC)

- 4.72" W x 1.62" H x 7.50" D

Environmental

Recognizing the need to be able to reliably operate in harsh environments, the ADTE is qualified to MIL-STD-461/462, MIL-STD-704, MIL-STD-810, and designed to perform over an extended temperature range through conduction and convection cooling. The ADTE implements internal BIT to autonomously detect and report a minimum of 95% of all functional failures providing complete autonomous end-to-end system checks, Fault Detection (FD), Fault Isolation (FI), and performance monitoring of the equipment.

