



Advanced Data Transfer System

Mk2



GE Aviation 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.

Overview

GE's Mark 2 Advanced Data Transfer System (ADTS-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 ADTS is to provide mass storage and file server functionality for 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.

ADTS-Mk2 is comprised of 2 Line Replaceable Units: Advanced Data Transfer Unit (ADTU) - a cockpit mounted receptacle, and Advanced Data Transfer Cartridge (ADTC) - a removable ruggedized memory module. ADTU provides all aircraft interfaces and serves as the receptacle for the ADTC, which is an embedded microprocessor-controlled subsystem that provides memory management, file system management, and Built-in Test (BIT) functionality. Memory is partitioned into a battery-backed volatile mission memory device and non-volatile mass memory card(s). The availability of mission memory allows users 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 ADTS is data transfer and loading. In this role, ADTC is integrated with the mission planner via a Gigabit Ethernet Cartridge Interface Device (GigaCID). This allows ADTC to appear as a removable disk drive to the mission planning computer. Mission data and aircraft initialization data is loaded on the ADTC and carried to the aircraft where it is installed into the ADTU. ADTC's information is sent to the aircraft's avionics, eliminating the need to manually enter data. In 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, ADTE allows the system integrator to fulfill several other memory intensive requirements. It can host 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.

Environmental

ADTE is designed to work in harsh environments and is qualified to MIL-STD-461/462, MIL-STD-704, MIL-STD-810, and designed to perform over an extended temperature range through conduction/convection cooling. ADTE implements internal built-in-test (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.

Specifications

General Features	Built-in-Test
App hosting and data processing	Power on self test (POST)
VxWorks O/S	Initiated (IBIT)
Field upgradable	Continuous (CBIT)
Secure Erase	
	Environmental
Interfaces	-54°C to 95°C non-operating
MIL-STD-1553	-40°C to 71°C operating
Digibus GAM-T101	
Gigabit Ethernet	SWaP
Erase Discrete	Advanced Data Transfer Equipment
Ready discrete	115 VAC @ 400 Hz <45 VA
	<9.4 lbs
Mission Memory	Advanced Data Transfer Unit (Receptacle)
32 GBytes	5.75"W x 4.49"H x 7.51"D
AES-256 encryption	Advanced Data Transfer Cartridge
Erasable Access Key	4.72"W x 1.62"H x 7.5"D

Mass Memory
128 GBytes
Expandable up to 256 GBytes
Erasable Access Key

Reliability
MTBF >19,000 hours (predicted)
MTTR <30 minutes



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