S-PLANE

X-ADT
Mission Computer

Features

Overview

- Airborne Data Terminal (ADT)
- High-performance x86 i5 mission computer with optional NVIDIA RTX GPUs
- Vast array of configurable I/O which interfaces with, manages and controls mission payloads (RADAR, EO/IR, SIGINT, AIS and Direction Finder)
- HD-SDI and CVBS video capture
- Secure and high-capacity onboard data storage
- Ethernet switching into a single unit
- Supports S-PLANE's mission software and third-party or custom containerised software
- LOSCOM and SATCOM link management

Applications

- Manned ISR/Mission Aircraft Systems
- Unmanned ISR Aircraft Systems
- Optionally Piloted ISR Aircraft Systems

Overview

The X-ADT is a rugged and reliable, all-in-one solution engineered to optimise airborne ISR operations. It forms part of S-PLANE's X-KIT family of equipment. This compact subsystem combines essential capabilities such as payload management and control, HD-SDI video stream capture, onboard storage, communications management, I/O concentration, encryption, video transcoding, and Ethernet switching within a single unit.

At the core of the X-ADT is a high-performance onboard computer designed for advanced mission operations. It features XMC expansion slots for GPUs, enabling image processing and AI capabilities. Qualified to RTCA DO-160, the X-ADT is built to thrive in the most demanding airborne environments.

The X-ADT is compatible with S-PLANE, customer-developed, and third-party containerised software applications, enabling a highly adaptable system for a wide range of mission profiles. When paired with S-PLANE's Paragon HMI mission software across aircraft and ground control stations, X-ADT further enhances operational value and helps maximise return on ISR sensor investments.

The X-ADT can be installed into both manned and unmanned aircraft systems, ensuring efficient and cost-effective operation of RADAR, EO/IR, AIS and SIGINT equipment. With access to high-definition payload data streams and optimising payload management and control, the X-ADT enhances mission performance while minimising operational complexity and costs.

X-ADT

Technical Specifications

Proven | Multi-function | High-performance | Rugged

INPUT/OUTPUT	
Software-configurable Multi-protocol Serial ports	7x
GPO/PWM	8x
GPI	8x
Ethernet	2x 1000BASE-T 6x 100BASE-TX
Audio input channels	2x
Audio output channels	2x
Digital video inputs	5x (build variant dependent)
Analogue Video Inputs	2x (build variant dependent)
MECHANICAL & ELECTRICAL	
Dimensions H x W x D	97.2 x 284 x 249 mm (incl. connectors)
Mass	4.5 kg (build variant dependent)
Input Voltage	10 VDC to 32.2 VDC
Power (typical)	100W (build variant dependent)
Processor	Intel i5-13600HRE, 2.7GHz, 12 Cores
Graphics Processing Units	NVIDIA RTX Ampere / Ada Lovelace / Blackwell Contact for alternatives
RAM	16 GB ECC RAM
Data Storage	64 GB application and operating system storage Optional 512 GB AES Encrypted, 640 GB or 1 TB bulk logging storage
Navigation	Integrated GNSS and IMU (both optional)
Cooling	Conduction (primary) and Convection (secondary)

ENVIRONMENTAL QUALIFICATION	
Operational Temperature	RTCA DO-160G, Section 4 -45°C to +70°C at the conduction interface
Storage Temperature	RTCA DO-160G [3], Section 4 -45°C to +70°C
Operational Shock	RTCA DO-160G [3], Section 7 Category B, 20 g/11 ms
Operational Vibration	RTCA DO-160G [3], Section 8

X-KIT Key Equipment

X-CUBE

- The X-CUBE is the core avionics unit of the X-KIT for UAS/OPS conversion
- Function: Flight Control Unit (FCU), Power Distribution Unit (PDU) and Input/Output (I/O) Concentrator
- Support SCP, DFR and TFR internal redundancy with dedicated voting
- Further supports dual X-CUBE external redundancy with failover architecture

X-ADT

- Airborne Data Terminal (ADT)
- Function: Mission Computer, I/O Concentrator, HD-SDI Video Encoder, Data Storage, Ethernet Switch
- Supports S-PLANE's mission software and third-party or custom containerised software
- Interfaces with and manages and controls mission payloads (RADAR, EO/IR, SIGINT, AIS and Direction Finder)

X-RPU

- Remote Piloting Unit (RPU)
- Function: Safety-critical Command & Control Computer, and I/O Concentrator
- Interfaces to Primary Flight Controls (PFC), GCC MFD, Hard I/O (buttons and switches with parallel redundancy) and to data links/tracker

TRACKER+

- Stand-alone GNSS-based antenna tracker for UHF, L-, S- and C-bands
- Function: Long-range Line of Sight Communication (LOSCom) between aircraft and Ground Control Stations (GCS)
- Mesh network enabled

GCC and Paragon

- Ground Control Console (GCC)
- Configured as a Remote Piloting Station, Payload Operating Station, or Engineering Station
- Function: HMI for Paragon, PFD with HUD, and MFD (touch display) for Remote Piloting

Equipment Chains & Products

	AIRBORNE CONTROL	GROUND CONTROL	COMMUNICATION	SIMULATION
NX-FCU	Automation & ISR Mission		Automation & ISR Mission	
X-CUBE	Automation		Automation	
X-ADT	ISR Mission		ISR Mission	
X-RPU		Automation		
GCC		Automation & ISR Mission		
Paragon	Automation & ISR Mission			
X-GDT		ISR Mission	Automation & ISR Mission	
TRACKER+			Automation & ISR Mission	
XSIM-HILS				Automation & ISR Mission
XSIM-Workbench				Automation & ISR Mission
XSIM-Video				Automation & ISR Mission

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