



Flight Data Recording and Monitoring System

Major Features

APIBOX

Description

- Solid-state digital Flight Data Recording and Monitoring System
- Designed for *General and Corporate Aviation*
- Small size and light weight (standard system 2,2kg)
- Modular Installation
- Recording of a very large number of *aircraft and flight parameters*
- Recording of *audio and video* signals
- Hot-bus connection to avoid manipulation
- Crash-Resistant storage of Flight Data ED155
- Analysis on the ground on a dedicated and user friendly 3D Software
- Cost effective



APIBOX – Components

Standard Components

- Power Supply Unit
- Data Retrieval Unit
- Sensor Interface Unit
- Memory and Data Processing Unit
- GPS Antenna

Optional Components – Depending on Interfaces available

- Engine Interface Unit
- **CAN/ARINC** Interface Unit
- 3D Gyrometers and Accelerometers
- GSM or/and Iridium Transceiver iTX (approx. 0,560kg)
- AHRS
- Underwater Locator Beacon



APIBOX – Recording Data

Overview

- More than 100 different parameters can be recorded (adapted to customer needs)
- Virtually no limitation to the number of recorded parameters
- Recording of *Analog* or/and modern *Glass Cockpit* inputs
- Adaptable Software to different inputs
- Data from *Piston* or *Turbine* engines (PT6; RR250; Lycoming, Thielert, AustroEngine, Snecma ...
- Airframe Data (3 Axis acceleration, Vibrations, etc.)
- Barometric Data (Airspeed, Pressure, Altitude etc.)
- GPS Data Trajectory (Latitude, Longitude, Altitude, GS, Track, Date, Roll/Pitch, etc.)
- Audio Recording (Audio Pilot, Co-pilot, ATC etc.)
- Miscellaneous (Event marker, position of controls etc.)
- Calculation of Cycles Flight Hours



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APIBOX – Recording Data - Examples

Engine:

Manifold pressure RPM, N1, N2 CHT / TRQ EGT / TOT Oil Temp. Oil Pressure Fuel Qty, Pressure, etc.

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Airframe:

X/Y/Z acceleration Trim position Warning lights of alarm panel: low level fuel, oil pressures, alternator OAT Deflection of Controls

Barometric:

Airspeed Altitude/Pressure ...

3D Trajectory:

Latitude Longitude Altitude Ground speed Track Date Time ...

Pilot/copilot: Audio pilot Audio copilot

Pilot marker Copilot marker

Standard System Inputs

- 10 Analog to digital inputs
 - 24 Discrete inputs
 - GPS input (NMEA or AVIATION Protocol)
 - FADEC input (JPI, Continental, SMA Engine...)

Options

- ARINC/CAN Interface
- Thermocouple/frequency-meter/counter
- 14V and 28V version
- For Flight Testing more Inputs possible

Additional Analog and Digital Input can be recorded, System adaptable to Customer Requirements

APIBOX - Summary

- As Flight Data Recording unit crash and fire resistant based on ED-155 Regulations
- As Voice Recorder up to 3 Audio Channels
- As HUMS System approved und fulfilling the EASA CAT.POL.H.305 Requirements for Helicopters
- As Debriefing Tool 3D Path, Replay etc.
 - Debriefing Software
 - Interface to Simulator
- As In-Flight Monitoring System with iTx (GSM/Iridium)
- As Flight Test Instrumentation Tool modular system
- Compliant with most Engine OEM for Data Acquisition rates
- As Maintenance Tool Autom. Calculation of FH's/Cycles and Transfer to Maintenance Software
- Interface to Maintenance Software possible



APIBOX – Analysis Software

Overview

- Comprehensive and user friendly software for Data Analysis
- Standard and Customized software versions
- Recorded Data are sole property of the customer
- 3D Visualization
- Flight Path and Flying Behavior Analysis
- Analysis with graphical visualization (add. possibility to export data)
- Data Management
- Ongoing improvement and updates available
- Implementation/Synchronization of several cameras possible



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APIBOX – Aircraft Operation Benefits – fixed-wing or rotary-wing

Overview

- APIBOX as post incident/accident analysis tool
- APIBOX as monitoring tool of pilot behavior and aircraft behavior
- APIBOX as development tool for Flight Test Department
- APIBOX as monitoring tool for aircraft usage
- APIBOX as support tool for Failure Analysis
- APIBOX as tracking tool (with optional GSM/Iridium unit)
- APIBOX as maintenance tool





APIBOX – Benefits

Overview

- Development Tool for Aircraft Behavior
- Development Tool for Engine Behavior
- Failure Analysis
- Optimization Aerodynamics Aircraft
- Full Range Analysis of Flight with additional instrumentation
- FH and Cycles calculation and transmission
- Analysis of Flight Modes
- Live-Tracking and Analysis (with optional Iridium Transceiver)
- Easy to Install
- Very Light Weight Unit
- Proven Design





APIBOX – Aircraft Types

The Flight Data Recording Unit can be used in almost all air vehicles:

- Helicopters
- Light Sport Aircraft
- Small Aircraft
- Commuter



APIBOX – Installations

The Flight Data Recording Unit already flying in (selection):

- Diamond DA40/42
- Grob Aircraft G 120A, G 120TP
- Pilatus PC6
- Cessna 172/182/206/207/208
- deHavilland Canada DHC6-300
- Airbus Helicopter AS350; AS365
- Socata TB 9/10/20/21/200 ; TBM700
- Dassault Falcon
- Piper PA28
- ...



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Thank you



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