

CANflight

Rotax® 912iS CANaerospace Interface

RS
AEROTECH



- Laptop-ready, Dual Core Processor Based Embedded Realtime Control System for Ground and Airborne Use, especially for the Rotax® 912iS aero engine
- Two isolated, fully independent Controller Area Network (ISO 11898), ARINC825 and CANaerospace protocol compliant interfaces
- μ SDHC card-based Flight Data Recording for the entire engine TBO
- IRIG-B Time Code Input for High Precision Data Synchronization
- Auto-negotiating 10/100/1000 BaseT Ethernet interface with CANaerospace over Ethernet (CoE) protocol and Application Programmer Interface (API)
- IEEE 802.11 Wireless LAN Option with CANaerospace over Wireless (CoW) protocol available
- Frontpanel Activity LEDs for CAN and Ethernet
- Power Supply using USB cable or EN2282 Aircraft Power (9-36VDC)
- Mechanical Dimensions 80mm x 47mm x 132mm, weight 320g
- XCT toolbox for Linux, MacOS and Windows
- Custom Software Options available on request

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Overview

CANflight is an embedded realtime control system for the use in airborne or ground-based aeronautical applications, especially for the Rotax® 912iS aero engine. CANflight units communicate under each other or with other systems through two fully independent, optically-isolated CANaerospace interfaces. Each module also contains a 10/100/1000 BaseT Ethernet interface for data exchange with remote host platforms.

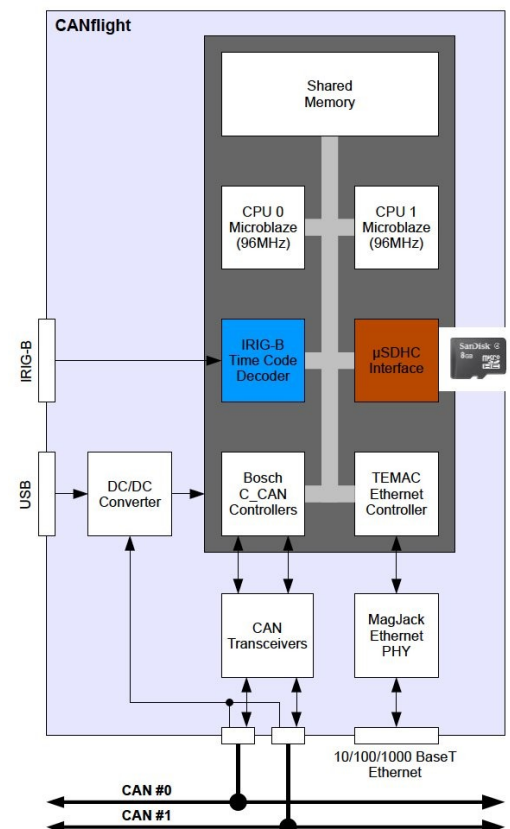
The CANflight hardware uses a Xilinx Spartan-3 FPGA with two independent Microblaze processors. The CAN 2.0B interfaces are implemented with licensed Bosch C_CAN controller IP cores to ensure compatibility with the Bosch CAN standard and to allow precise hardware timing and control over the transmission and reception of CANaerospace messages. The Xilinx FPGAs and the CANflight firmware provide local buffering and 60ns time stamp resolution for all CAN messages and implement CANaerospace specific protocol functions. High precision time synchronization of CAN messages is accomplished through an IRIG-B time code input providing 1µs resolution. All CAN channels work under sustained 100% bus load without dropping any messages. An integrated µSDHC interface is used for data acquisition storage, system configuration information and firmware upgrades.

System Architecture

CANflight is a powerful standalone computer system integrated into a rugged aluminum box which is powered from 9-36 VDC allowing it to run from standard 14V or 28V DC aircraft power buses according to the EN2282 specification. The power input lines are protected against transient overvoltage and electromagnetic interference. Alternatively, CANflight runs off a USB power connection for direct use with laptop computers. The total power consumption of a CANflight unit is 5W. The CAN and Ethernet interfaces are serviced by different processors so that all interfaces may be used at the same time without any loss of data. CANflight units may be connected to host computers using CANaerospace and the auto-negotiating 10/100/1000 BaseT Ethernet interface with CAN over Ethernet protocol.

The Wireless LAN (IEEE 802.11) option for CANflight provides an integrated DHCP server and a web-based configuration interface.

The µSDHC card slot accepts cards with sizes up to 128GBytes.



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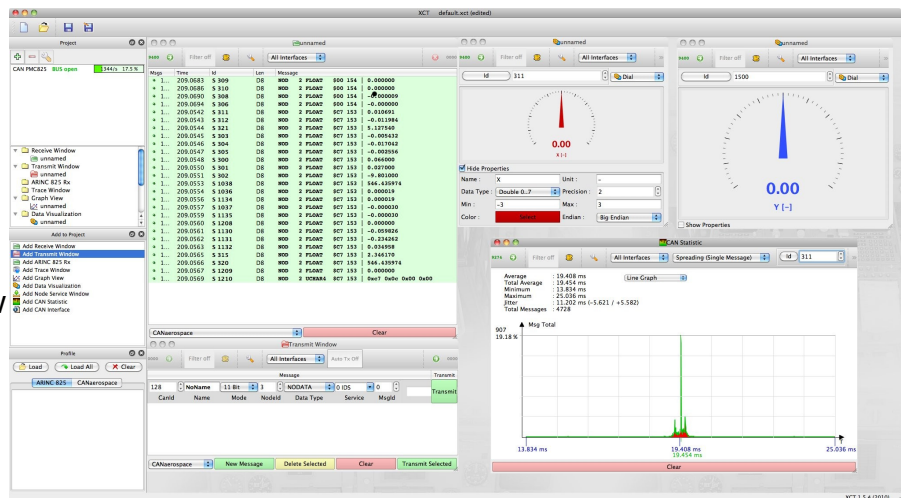


Software Support

CANflight units can work as either standalone systems or as intelligent nodes within simple or complex CANaerospace networks. The interface between CANflight and host computer applications via Ethernet/UPD/IP, either wired or wireless, is realized through a corresponding Application Programming Interface (API) for a variety of operating systems including Linux, Solaris, MacOS, Windows and VxWorks.

eXtended CAN Toolbox (XCT) Software

CANflight is delivered with the eXtended CAN Tool (XCT) software, a powerful CANaerospace network toolbox for Linux, MacOS and Windows XP/7. Among other features, XCT contains a Communication Profile reader and editor, realtime data visualization in raw and CANaerospace formats, network traffic/error statistics and an interface for CANaerospace Periodic Health Status Messages and Node Services. XCT provides all necessary functions for CANaerospace network compatibility verification, CANaerospace end system testing and CAN network analysis. XCT allows to trigger on CAN identifiers, provides realtime record and playback of CAN data and supports synthetic CANaerospace signal generation. XCT project configuration files allow to save and reload XCT configurations and exchange them with other XCT users.



Ordering Information

CANflight is available through the Independent Rotax Service Center. To locate the nearest dealer for you, please go to:

<http://rotaxsc.com>