

# FCC-442

FLIGHT CONTROL COMPUTER

RTCA DO-254  
CERTIFIABLE HARDWARE

RTCA DO-178C  
CERTIFIABLE BSP AND DRIVER SOFTWARE

DUAL REDUNDANT  
IO & PROCESSING INTERFACE





# FCC-442

## FLIGHT CONTROL COMPUTER

Main Responsibility of FCC-442 is to provide autopilot functionality to the air vehicle it is mounted. FCC-442 has all the interfaces which are required to control a rotary wing air vehicle and two powerful CPUs to control these interfaces.

FCC-442 consists of RTCA-DO-254 Level A certifiable hardware and RTCA DO-178C Level A certifiable BSP and driver software for Green Hills Integrity-178 TUMP and Wind River WxWorks 653 real-time operating systems

FCC-442 has two lanes which has identical IO functionality and dissimilar CPU and Operating Systems. Both lanes are functional during flight. Lanes either manage the autopilot functionality or monitor the other lane. Dissimilar CPU and RTOS architecture reduces to possibility of common mode failure based on CPU or RTOS.

Power isolated interfaces groups, Built-in-Test capabilities, dual redundant architecture, dissimilar CPUs and rugged designed hardware provides reliable and safe operation for FCC-442 during the flight.

### General Specifications

- RTCA DO-254 Certifiable Hardware
- RTCA DO-178C Certifiable Software
- BSP and Driver Software for Real-Time Operating Systems
- Built-In Test Capability
- To be used in OZGUN Turkish Light Utility Helicopter and other possible Rotary Wing Airborne Platforms
- Cooling Method: 28VDC Fan

### Technical Specifications

- PowerPC Computing Processors
- RTC/ETC/WDT
- Power Specifications
  - Input : MIL-STD-704A compatible 28VDC
  - Power hold-up for short power interrupts
  - Nominal Power Consumption : < 170W
- Software Specifications
  - Operating System 1: Integrity-178 TUMP RTOS
  - Operating System 2: WxWorks 653 RTOS

### Interfaces

- 84 x Discrete input, 38 x Discrete Output
- 8 x software configurable asynchronous /synchronous, half/full duplex, RS-422/RS-485 Interface (2400 - 10 Mbit)
- 4 x CAN 2.0 A&B compatible CAN Interface
- 24 x Rx and 14 x Tx ARINC 429 interface (12.5 Kbps - 100 Kbps)
- 2 x 10/100 Ethernet interface
- 2x 10/100/1000 Ethernet interface
- 8 x LVDT, 8 x Resolver, 4 x RPM, 12 x PWM etc. other analog interfaces related to possible avionic sensors
- AC and DC sensor excitation signals

### Qualifications

- MIL-STD-704F
- MIL-STD-810G / DO-160G
- MIL-STD-461F

### Physical Specifications

- Dimensions: 428 mm (H) x 156 mm (W) x 211 mm (D)
- Weight: <12 kg

