

ARINC825 IP Core for FPGAs



ARINC825

Avionics CAN Controller IP SI-825H

Compact, Robust, Reliable
Aerospace-Databus-IP-Cores

The SI-825H is a standalone Controller Area Network (CAN) controller FPGA IP core. The device provides a complete, integrated, cost-effective solution for avionics applications implementing the CAN 2.0B specification and can be configured to comply with both the ARINC 825 (General Standardization of CAN Bus Protocol for Airborne Use) and CAN Aerospace standards.

Key Features and Benefits

- Configurable to support ARINC825 and CAN Aerospace Standards
- Implements CAN version 2.0B with programmable bit rate up to 1Mbit/sec.
- ISO 11898-5 compliant
- Cyber Security protection against Denial of Service (DoS), Tampering and Spoofing attacks
- Serial Peripheral Interface (SPI) (20MHz)
- Small FPGA area utilization
- Standard, Extended and Remote frames supported
- 8 maskable identifier filters
- Filtering on ID and first two data bytes for both Standard and Extended Identifiers
- Loopback mode for self-test
- Monitor (Listen-only) and Low Power Sleep Modes with automatic wake-up possible
- 8-messages Transmit and Receive FIFOs
- Internal 16-bit free running counter for time tagging of transmitted or received messages
- Re-transmission disable capability
- Transmit Enable pin

Coupled with advanced cyber security capability, the SI-825H IP core provides a seamless and very efficient solution to secure the Avionics CAN bus communication without using cryptography. The following attack vectors can be detected and contained: Denial of Service (DoS), source impersonation (Invalidate a CAN message with an identifier that is assigned for transmission by local host) and Spoofing (The local host attempts to transmit a CAN message with an identifier that is not assigned).

More IP products from Sital

- MIL-STD-1553 IP Cores for BC/RT/MT Applications.
- MIL-STD-1553 Discrete Components Transceiver
- EBR1553 (10Mhz 1553)
- ARINC429 IP Core

Product Highlights:

- Compact Implementation
- Cyber Resilient
- Flexible Design
- Certification Ready
- Support any transceiver

Ordering Information:

- A825-SIT
- A825-SIT-CS
- A825-SIT-T
- A825-SIT-CS-T
- A825-SIT-CS-FPS
- A825-SIT-CS-FPS-T

Legend:

CS- secured CAN features

T- PassiveTDR

FPS – Finger Printing IC



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The SI-825H provides the optimum solution for applications where minimum host (MCU) overhead is required, filtering unwanted messages using a maskable identifier filter and storing up to 8 messages in the receive FIFO. A flexible interrupt scheme allows real time servicing of the FIFO by the host, if required.

The SI-825H IP core interface to the local host with a Serial Peripheral Interface (SPI).

Deliverables:

- VHDL Netlist for a target FPGA type and clock frequency
- Simulation and validation code
- User's Manual and Documentation
- DO-254 DAL A certification documents – **Optional**
- Device Drivers – **Optional**
- DO-178 – **Optional**

Applications:

- Automotive
- Aerospace
- Industrial

Contact Sital for Free Evaluation

About Sital Technology

Founded in 1993, Sital Technology is a leading provider of IP cores and products for Mil-Std-1553, ARINC429, ARINC825.

SITAL Technology's key quality resource is its creative, talented and professional staff. Our engineers are veterans of the Israeli Air Force, who served in the technical units of the F-16 avionics systems. They gained knowledge and experience with the MIL-STD-1553 standard from the bottom up, both as design engineers for MIL-STD-1553 components and as technicians working on the aircrafts.

Among our many customers you can find NASA, ESA, Thales, Orbital Science Corp., Elbit, Rafael, Israeli Aerospace Industries (IAI), Astronautics, Israeli Ministry of Defense, Elta, Honeywell, BAE Systems and many others.