



PLATFORM DATA HANDLING



RT Coupler CA5

MIL-STD-1553B

remote terminal coupler

The MIL-STD-1553B RT Coupler is an integrated and cost effective MIL-STD-1553B Remote Terminal Coupler subsystem implemented in hybrid technology qualified for space applications.

The MIL-STD-1553B RT Coupler performs the coupling between a single MIL-STD - 1553B bus interface and a user interface. It consists of one MIL-STD-1553B Single Transceiver fully compliant to MIL-STD-1553B standard and one MIL-STD-1553B Remote Terminal ASIC able to manage the MIL-STD-1553B dialogue in remote terminal mode only.

It can be connected on one hand to a single MIL-STD-1553B bus with an external isolation transformer and, on the other hand, to the user thanks to an interface composed of a 16 bits data bus, a 12 bits address bus and a control bus. Sub-system easy integration is achieved thanks to the opened user interface and optimised architecture. It is possible

to connect the MIL-STD-1553B RT Coupler to register, CAN or memory components without additional processing unit. Dedicated services are also provided in order to download the user application from protocol management tasks: words validity is automatically checked and only valid messages are transmitted to the application.

The MIL-STD-1553B RT Coupler low power consumption and radiation tolerance, better than 100 kRads (functional), are especially relevant for space applications. The MIL-STD-1553B RT Coupler is already space qualified on several programs like ARIANE 5, GOMOS, ASAR, MHS, STENTOR, COLOMBUS and International Space Station.

The MIL-STD-1553B RT Coupler is manufactured in hybrid technology and available in a standard flat-pack package in order to be easily integrated and to reduce the board.

Main Functions

- Fully compliant to MIL-STD-1553B standard
- Operates with standard centre tapped transformer
- Compatible with long stub or short stub coupling
- Words validity check
- Transmission of only valid messages to the application
- Management of the status word and of the BIT word

Management of a configuration PROM which characterises the terminal for each subaddress:

Legality / illegality

Word count associated

Selection of indirect addressing

Flip / flop buffering

User type (register, CAN, memory)

- Management of the user interface

Technical Specifications

Thick film hybrid

- Operating frequency: 10 MHz
- Power supply voltage: +5 V, +15 V
- Power consumption: stand-by: 260 mW
25% duty cycle: 1.2 W max.

- Temperature range: -30°C to +85°C (to guarantee a junction temperature below 110°C)

- Radiation tolerance: 30 kRads (parametric),
100 kRads (functional),
LU > 100 MeV/mg/cm²

- Packaging: 64 pins metallic flat-package
(43 x 30 x 4.5 mm)

- Mass: 25 g



AIRBUS
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MIL-STD-1553B RT Coupler Block diagram

