



# VALIDATION TEST SERVICE

## for MIL-STD-1553b units

Validation of MIL-STD-1553B remote terminal units according to AS4111 test plan covering electrical, protocol and noise rejection.

The Validation Test Plan (VTP) of MIL-STD-1553B AS4111 is intended for design verification of Remote Terminals (RT) compliant to MIL-STD-1553B with notice 2. Airbus DS has developed a VTP tester and procedures for validation of Airbus DS's 1553B own products: transceivers, asics, VHDL Intellectual Property (IP) and RT units. Today, Airbus DS offers its 1553B expertise for validation of 1553B products either at the customer's facilities or at Airbus DS's

Elancourt (France) site. The semi-automatic VTP tester is based on a PC equipped with a 1553B board running test software that can be adapted to RT registers set.

A connection box includes the required resistor/transformer set-up for validation of long stub RT. Electrical tests use an oscilloscope, a RMS voltmeter and a function generator. Protocol tests are managed by the test.

software. Noise rejection test is performed with a dedicated noise tester and a RMS voltmeter.

### Key Features

- A technical preparation meeting which specifies validation needs, Remote Terminal registers set, definition of test harnesses
- Adaptation of validation test sequences to customer's RT unit
- Test sequence run at Airbus DS' or customer's facilities. Cleanrooms are available at Airbus DS for flight units
- Delivery of the detailed test report
- On request, analysis of non-conformities

### Customer benefits

- LEO, MEO and GEO satellite

### Customers / Application

- Access to Airbus DS' 1553B design and validation expertise - a highly skilled team experienced in the intricacies of 1553B validation
- For fast fitting of procedures and VTP tester to customer setup
- Flexibility to perform hardware investigation if needed
- Short duration acceptance test for recurrent production unit

### Technical features

- Coverage of Validation Test Plan according to AS4111
  - 5.1.1 Output Characteristics
  - 5.1.2 Input Characteristics
    - 5.1.2.1 Input Waveform
    - 5.1.2.2 Common Mode Rejection
    - 5.1.2.3 Input Impedance
  - 5.2 Protocol Tests
    - 5.2.1 Required Terminal Mode Operation
    - 5.2.2 Optional Operation
  - 5.3 Noise Rejection Test

### Airbus DS Products' expertise

Development of 1553B interfaces, hybrids and asics since 1980 for LEO space infrastructures, Ariane 5, LEO and GEO satellites, probes.

Development of Bus Controller and Remote Terminal units.

Availability of validated 1553B VHDL IP



## VTP tester block diagram

### VTP tester definition

- Computer:  
Equipped with 1553B tester and simulation Card Running Validation Test Plan software
- Long stub connection box with four set-ups:  
General bus test  
Output noise test § 5.1.1.6  
Output isolation test § 5.1.1.7  
Common mode rejection test § 5.1.1.2
- Set of 1553B harnesses
- Measurement devices:  
True RMS Voltmeter  
Differential oscilloscope  
Function generator

