

AKS Offers an Automated Test Stand

Automated Test Stand is a test facility used to test the Airborne Systems. It automates the driving of different categories of signals by simulating different types of sensor and engine output simulation modules and with many interfaces such as ARINC 429, RS422, RS232 and CAN etc.

Note: The description given below is indicative. The solution offered will be tailored to customer requirements.

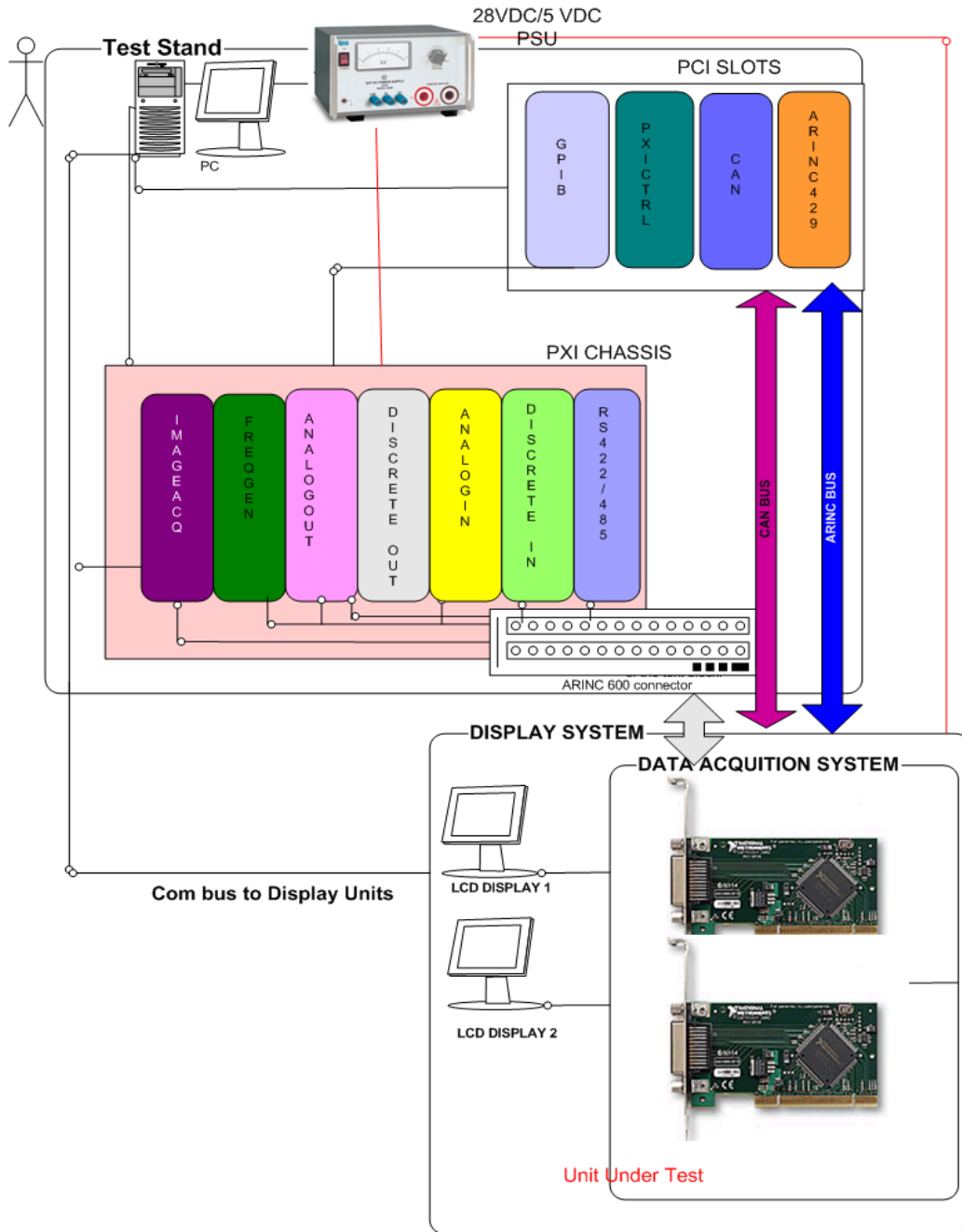


Figure 1: Automated Test facility components and interfaces

The Automated Test Stand (ATS) is a **cost-effective alternative** to manual system testing of Airborne Systems, such as Display Systems, FADEC, etc. The main functions of this facility are as follows:

1. Definition of Signal Characteristics and Channels in a master database
2. Creation of Test scripts and Test Procedures
3. Configuration of Test Stand
4. Execution of Test scripts and Test Procedures

Using AKS-designed ATS, test engineers can create test scripts using a visual interface.

Test scripts can have sequences of operations (with time delays and periodicity). Any number of waveforms and any kind of waveforms can be generated for special signal types. Inputs are automated, hence while executing the test procedure/script there is no manual intervention required.

To store the test scripts/procedures the facility uses a personal computer with database.

The automated Test facility is comprised of two major components:

- a) The PXI chassis, which hosts all the discrete and analog data acquisition cards, function generators and signal generators.
- b) The Personal Computer (PC) having multiple PCI slots that controls ARINC bus, and GPIB bus. The PC also holds the software that automates the entire test generation and execution procedure.

Hardware

The PXI chassis has cards belonging to different vendors, which can generate following types of signals:

- TTL /CMOS type
- Discrete logic generators like 28V/GND, 28V/OPEN, GND/OPEN etc
- Analog outputs
- RS 422/232 Tx and Rx channels
- The image acquisition and graphics card
- Function Generator cards
- Analog Input cards
- Discrete signal receivers

The PCI slots contains bus interface such as, CAN, ARINC and GPIB control cards. The GPIB control cards are required only in those cases where the test facility has to generate an analog signal in higher ranges of AC Voltage.

Software

The software allows the user to create new test cases, modify or update existing test cases / procedures and has the capability to automatically execute all selected Test Procedures.

In case, manual intervention is required while executing a Test Procedure, the software prompts the user to do so.

The software tools that are part of ATS such as ARINC analyzer and RS 422 data analyzer help the user to simulate and test different scenario.