CYIENT

COMMON AUTOMATIC TEST EQUIPMENT FOR AVIONICS APPLICATIONS

Rapid automation of time consuming verification and validation activities

Overview

Cyient's Automatic Test Equipment (ATE) solutions are designed to give your company a competitive advantage in verification & validation testing for complex avionics LRU's. Using our advanced test automation approach, avionics product developers can execute more tests with faster turnaround time, expand test coverage, and free up the testing workforce for more advanced certification artifacts that are required for safety of flight.

Our ATE is designed to perform functional tests on various line replaceable units (LRU) referred to as a Unit Under Test (UUT) and features the reconfiguration of IO interfaces as per functional specifications.

The Cyient Solution

By working with avionics OEMs from the early stages of product development, we provide in-depth diagnostics and help identify cost-effective strategies for rigorous testing and certification processes.

Our ATE solutions verify software and complex hardware implementations against their requirements using standardized test case and procedure templates. This automation is accomplished without scripting code, which allows engineers to develop, review, debug, and execute with optimal efficiency. Our tests can also be used with multiple versions of software.

Our ATE platforms are flexible and can be configured as per varying industry requirements. They help save significant time and resources in avionics product development. Test cases are reusable and can hence be leveraged through various approaches. We can provide support in the following areas:

- Real-time reporting of data for analysis. Test reports can be custom defined to project needs.
- Save time, resources, and money with our Automated Testing Equipment platforms.
- Signal detection for automated testing of complex hardware in a variety of systems.

Common ATE features:

Hardware:
- A standard 19-inch rack with a height of 32U
- Build an automated test system with mechanical, COTS modules, power, and safety infrastructure
- Nine-slot PXI express backplane with
  - 3U PXI express modules
  - Compact PCI express modules
  - Hybrid slot-compatible PXI /compact PCI modules
- High-performance Quad-Core PXI Express embedded controller with Windows 7/10 OS compatibility
- Over 300 reconfigurable signal lines
- 256-crosspoint Relay Matrix
- DC Outlets: 5 VDC, 28 VDC and 0-150 VDC variable
- AC Outlets: 115 VAC and 230 VAC, 50 Hz, 1Ø
- Analog Inputs: 16-bit, 2 MS/s, input range ±10 V, 32 Nos
- Analog Outputs: 16-bit, 2 MS/s, output range ±10 V, 4 Nos
- Digital Input/Output: DI sample clock frequency: 0 MHz to 10 MHz, 48 Nos
- Sink/Source Discrete Inputs/Outputs: ±30 VDC, 32 Nos
- PXI ARINC 429 interface module, 4 channel
- Software-selectable PXI CAN interface module, 2 channel
- Reconfigurable I/O for Digital/Discrete, Analog, Switch Matrix, ARINC-429, and CAN Bus
- Reconfigurable break-out BOX
- Front panel power and IO monitoring

Software:
- NI LabVIEW based test development software
- IoT compatible
- Smart data collection, data storage, and reporting
- Supports Wi-Fi remote access

Instruments:
- GPIB controllable 0-150 VDC, 0-30A power supply
- GPIB controllable digital storage oscilloscope 4CH 500 MHz 4 GSa/s
- GPIB controllable function/arbitrary waveform generator, 10 MHz

BENEFITS OF COMMON ATE TESTING

Reliable
Tests perform precisely the same operation each time they are run, thereby eliminating any scope for human error

Reusable
Tests can be reused on different versions of the software

Repeatable
Tests can be run several times in a row without human intervention

Self-Checking
Tests report their results and need no human interpretation

Consistent
Tests produce the same results consistently and are not affected by changes in the external environment

Efficient
Complete automation of testing activities across multiple platforms to ensure optimal efficiency

Independent
Each test can be configured to run on its own or in a suite with an arbitrary set of other tests, in any order
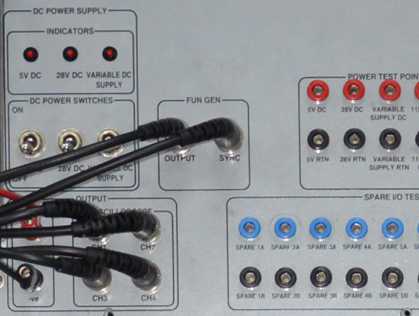
Maintainable
Tests are easy to understand, modify, and extend

Quicker Feedback
Automated tests enhance communication between coders and designers while helping to rectify potential glitches with a minimal timeframe leading to stronger efficiency of the development team

THE CYIENT EDGE

Cyient is expanding automated testing solutions into new industries while controlling cost and schedule. Cyient understands that both schedule and budget are at risk during the development lifecycle of a project. We can immediately put our expertise to work in order to help your team effectively plan and execute the right tasks, at the right time, and in the right order to ensure that all objectives are satisfied as per schedule. Cyient assures specific standards of performance, quality, safety, and efficiency are met to save our customers time and money.

About Cyient

Cyient (Estd: 1991, NSE: CYIENT) is a global engineering and technology solutions company. As a Design, Build, and Maintain partner, for leading organizations worldwide, we take solution ownership across the value chain to help clients focus on their core, innovate, and stay ahead of the curve. We leverage digital technologies, advanced analytics capabilities, and our domain knowledge and technical expertise, to solve complex business problems.

With over 15,000 employees in 20 countries, we partner with clients to operate as part of their extended team in ways that best suit their organization's culture and requirements. Our industry focus includes aerospace and defense, healthcare, telecommunications, rail transportation, semiconductor, geospatial, industrial, and energy.

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