UnitedDynamics
Aerospace & Defense

Technologies and Solutions yet to be imagined.

ELECTRONIC TEST EQUIPMENT

United Dynamics is well-qualified to engineer and produce specialized electronic test equipment for the aerospace and defense industry.

Nearly all of the electronic products we engineer, manufacture, repair, maintain, or overhaul require us to emulate the warfighter's operational environment to verify and validate that we have met customer contractual requirements. To do this, we design and integrate test systems comprised of commercial off-the-shelf and internally engineered equipment. Test instructions and expected results are documented in our internally developed acceptance test procedures.

In addition to electronic signal generation, some of our specialized products convert hydraulic, pneumatic, or mechanical inputs to an electrical signal. Our test equipment incorporates those necessary excitation inputs, with the necessary monitoring devices to verify the correct analog or digital outputs.

We are also well-qualified to engineer and produce test equipment for hydraulic and pneumatic applications, either as part of the verification of the units we produce, or as part of a contract to supply test equipment as the end item.

United Dynamics has a SECRET security clearance and safeguards the classified information of our customers' programs.

- ✓ Digital signal processing
- ✓ Analog signal processing
- ✓ RF amplification
- ✓ Frequency monitoring & measurement
- ✓ Data capture using LabVIEW
- ✓ Integration of COTS units
  - Digital Multimeters
  - Oscilloscopes
  - Signal Generators
  - Power Supplies
- ✓ Development of custom test units
- ✓ In-Circuit Test capabilities
- ✓ Integration of hydraulic, pneumatic, & mechanical inputs
- ✓ Conversion of inputs for monitoring
  - Temperature
  - Pressure
  - Flow rate
- ✓ Capability to capture real time data for calibration functions
- ✓ Circuit board design and manufacturing
- ✓ Electrical Engineers on staff

CASE STUDIES

RF AMPLICATION

United Dynamics engineers and manufactures a universal signal/ intercommunication amplifier for the KC-46, KC-135, and the aircraft they service. The amplifier is a switch that advances each time a specified input signal is received by either the aerial refueler or the receiving aircraft, or when power is removed. Signals are sent and received between the aircraft via induction coils that transform the electrical signal to a characteristic time voltage function. The unit also provides half-duplex voice intercommunication on a mutually non-interfering basis.

We engineered a test system for qualification and acceptance testing using LabVIEW, an in-house designed circuit board, and National Instruments cDAQ hardware. The test system monitored the unit under test, while enabling technicians to induce and capture transient activity.

United Dynamics has the capability to incorporate custom RF amplifiers into the test station for Communication, Navigation, Electronic Warfare, and other applications.

FREQUENCY MONITORING & MEASUREMENT

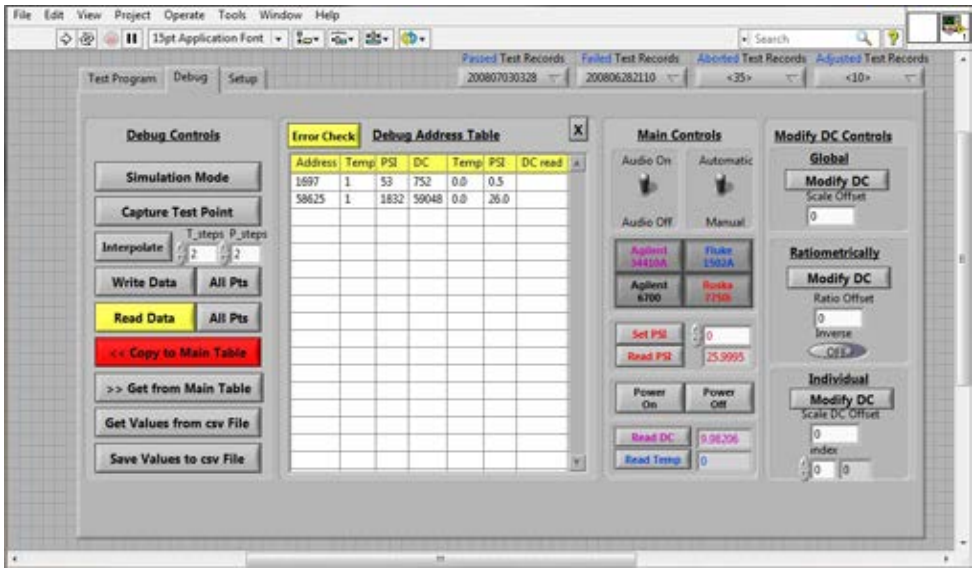
For our KC-135 Starter Control Units, we engineered a test station consisting of LabVIEW, NI cDAQ hardware, and a Signal Generator to provide a sine wave sweep from 850 to 950 Hz. The test station also integrates a Signal Amplifier for the AC Voltage.

The unit is monitored while the switching frequency is measured and recorded.

The test system is capable of testing 16 units at a time.

OTHER INPUTS TO ELECTRICAL OUTPUT

Our B-2 Cabin Pressure Sensor provides a VDC output that is ratiometric with its excitation voltage, and directly proportional to the sensed pressure. The unit under test is connected to the test system consisting of an air test data set, digital multimeters, a power supply, a chamber, and a digital thermometer. The voltage output is captured by LabVIEW while technicians can verify its relation to the supplied pressure and calibrate the unit's Field Programmable Gate Arrays in real-time.



United Dynamics' Electrical Engineers are proficient with Lab VIEW.

HUBZone Historically Underutilized Business Zone CERTIFIED

AS 9100 REV D INDEPENDENTLY CERTIFIED

ISO 9001 :2015 INDEPENDENTLY CERTIFIED

GOLD BOEING SUPPLIER

NAICS: 332510 332710 332721 332722 332911 332919 332991 332999 333415 333612 333613 333999 334418 334419 334513 334514 334519 335999 336411 336412 336419 339999 541330 541420 811310

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