



The Leader in Automated Test, Data Acquisition and Control Systems



# Bloomy Simulation Reference System

## ***Ready-to-use real-time simulation system – customizable for your application***

The Bloomy Simulation Reference System provides a hardware in-the-loop (HIL) test environment for dynamic, closed-loop testing of many aerospace and transportation control systems. The reference system integrates the computing, I/O, and software components needed for standalone use or to form the basis of a more complex test system.

The system is comprised of standard COTS platform components from National Instruments (NI), Bloomy, Virginia Panel, and others, and provides all of the critical simulation system elements in a standard rack enclosure.

For applications which require more highly-specialized test systems, the reference system provides a jump start, shortening schedules, reducing costs, and freeing your test engineering departments to focus on the differentiating technologies which make your product unique in the marketplace.

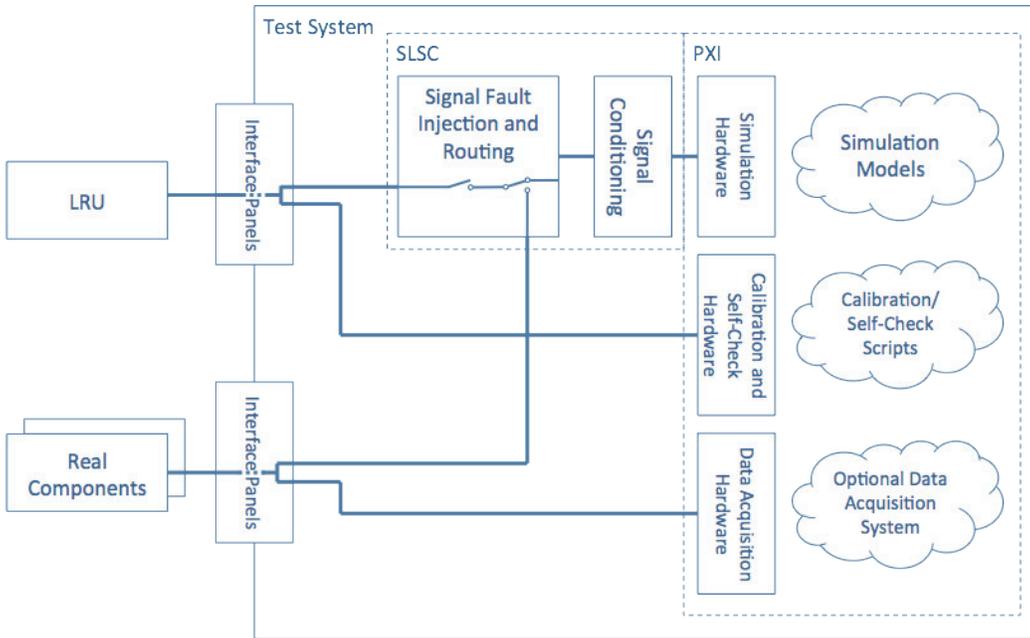
## **APPLICATIONS**

- FADEC/EEC/Flight Control HIL simulation and test
- Environmental control systems verification and validation
- Development, production, or maintenance testing
- “Fly the Box” test of customer return material
- Development of control laws prior to prototype availability
- Environmental Stress Screening (ESS)/ Highly Accelerated Life Testing (HALT)
- System Integration Labs (SIL)

## **FEATURES**

- Simulation environment for electronic control testing
- Analog I/O including LVDTs, RVDTs, resolvers, thermocouples, RTDs, strain gages
- Actuator and indicator loads including resistive lamps and inductive solenoids and torque motors
- Discrete switch signals including open/ground, open/Vcc, open/closed
- Simulation-controlled variable DC power supplies; optional 1Ø/3Ø AC supplies
- Available digital communications including ARINC-429, MIL-STD-1553B, FireWire, AFDX, RS-232/422/485

# SYSTEM BLOCK DIAGRAM



## SPECIFICATIONS

SIGNAL CONDITIONING AND COMMUNICATION I/O	
Interface Type	Channels
VDT/Resolver simulation (4W, 5W, 6W)**	8
Thermocouple simulation**	8
RTD simulation**	8
Thermistor simulation*	8
Strain Gauge simulation*	8
Loads (torque motors, solenoid, lamp, etc.)**	16 (8x <5W, 8x >5W)
Discretes (one-wire and two-wire)*	32
Differential analog outputs to UUT*	8
Potentiometer/variable resistor simulation	8
RS-422	2
ARINC-429	8
AFDX/ARINC-664	Optional
MIL-STD-1553B	Optional
IRIG B	1
Ethernet Test Bus	Optional
DC Power	2
AC Power	Optional
FAULT INSERTION	
*Open circuit fault included.	
Other fault conditions (short to ground, pin to pin short, etc.) optional for all signal types	
SELF-TEST	
*Self-test standard, calibration optional	
Loopback self-test optional for all other signal types	

COMPUTING RESOURCES	
Real-Time Simulation Host	PXle-based, RTOS, up to 8-Core Xeon
Instrumentation and System Management	PXle-based, Windows, up to 8-Core Xeon
SOFTWARE ENVIRONMENTS	
Real-time Framework	National Instruments VeriStand
Test Executive	National Instruments TestStand
Data Acquisition and Programming	National Instruments LabVIEW, C/C++
Data Management and Analysis	National Instruments DIAdem
Software Models	23 model types, including LabVIEW, Simulink, Matrix, C/C++, MapleSim
SYSTEM DIMENSIONS AND POWER	
System Chassis	1- or 2-bay 40U equipment racks
	1-bay: approx. 78"H (w/locking castors) x 23"W x 36"D
	2-bay: approx. 78"H (w/locking castors) x 46"W x 36"D
Weight	Configuration dependent
Power Requirements	Power requirements vary with selected AC and DC power supply options
Emergency Power Off	Standard
Uninterruptible Power Source	Standard for all computing resources
WARRANTY	
1-year warranty on all hardware components, optional extended warranties available	
3-year software service plan on all National Instruments software products	



Call 860-298-9925 or visit  
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