

# The ECU Test System (ECUTS)

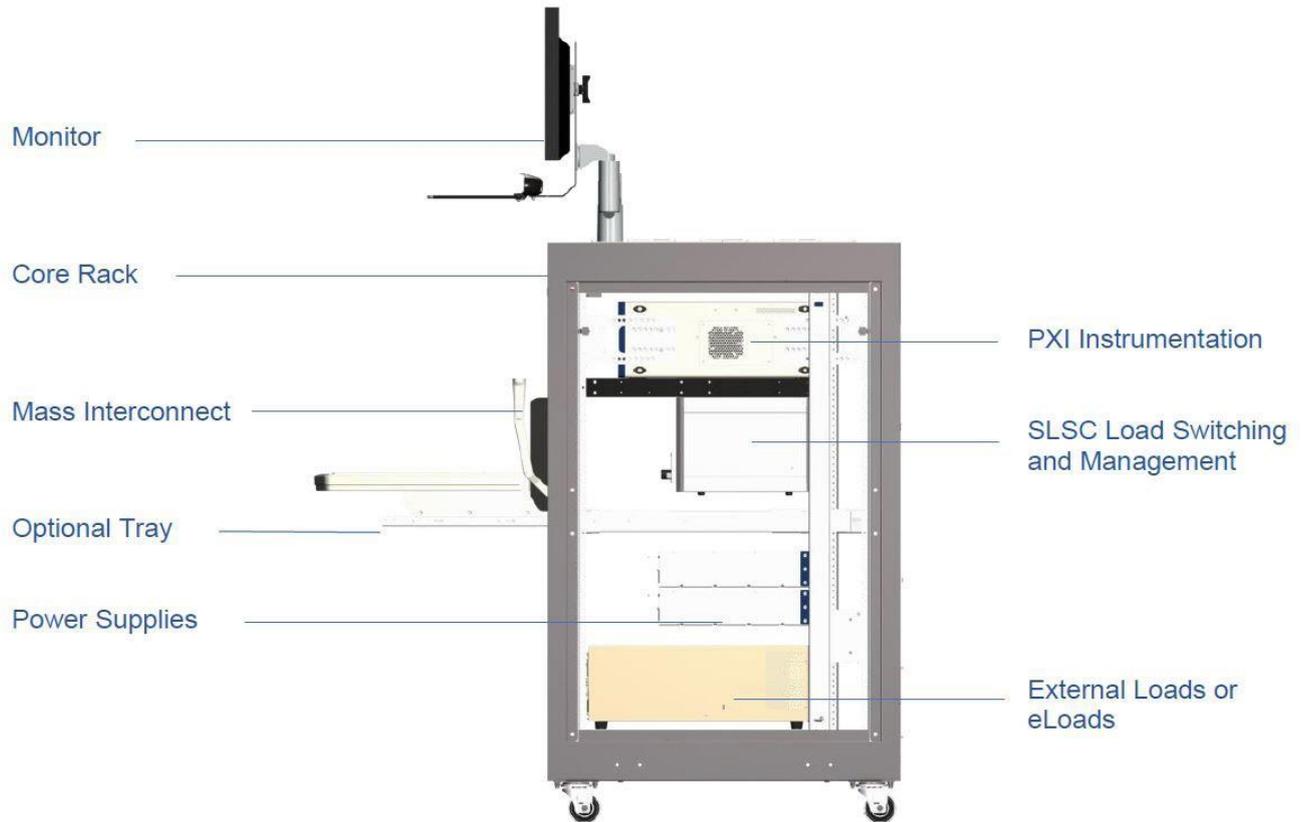
The ECU Test System (ECUTS) is a functional tester for end-of-line (EOL) test of automotive ECUs built on NI's adaptive, open technology. Our systems R&D engineers have integrated the following core components into this system.

- Core Rack: Safety, Display, Power
- Instrumentation
- Custom Cabling
- Mass Interconnect
- Loads and High-Power Switching
- Low-Power Switching

Standardizing on this tester can reduce capital and operational expenses through efficiency driven by asset and architecture reuse, streamlined global supply, and service programs. The ECUTS also reduces test time and floor space through parallel test powered by a best-in-class test executive and a portfolio of high quality I/O.



# ECU Test System Hardware



## Hardware Specifications

|                                      |   |
|--------------------------------------|---|
| <b>Core Rack</b>                     | ESD (IEC 61340-5-1), RAL 7035 gray paint 24 U (1358.9 mm height) Power Input: 200-240 V (1-Phase, 3.8 kW) PDU DC Output: + 12 V, + 24 V             |
| <b>Power Supply</b>                  | 200 W (20/36/60 V) and 400 W (20/36/60 V).  |
| <b>PXI Instrumentation</b>           | High performance PXIe-1084 chassis High throughput PXIe-8861 quad-core controller Configure up to 16 additional PXI instruments and I/O modules     |
| <b>Automotive Communications</b>     | CAN, LIN, RS232, GPIB   |
| <b>PXI Pin Switch</b>                | 2-wire, support up to four each 4x64, 8x32, or 16x16 matrix modules, to create matrices of 4x256, 8x128, or 16x64 respectively EMR, 60 V/2 A (60 W) |
| <b>Load Switching and Management</b> | 8 A, up to 96-ch with current measurement<br>30 A, up to 24-ch with current measurement   |
| <b>Loads</b>                         | Space for either external load or electronic load (eLoad) 100 W (60 V/20 A) 8-ch or 350 W (60 V/20 A) 4-ch  |
| <b>Mass Interconnect</b>             | Virginia Panel Corporation (VPC) 9025, 25 slots<br>Optional tray  |

# Mass Interconnect

Kriya dynamics partnered with the Virginia Panel Corporation (VPC) to provide a mass interconnect that enables rapid system changeover through a standardized approach and minimizes downtime and reduces maintenance with reliable long-term operation.



*Mass Interconnect Pin Out*

This mass interconnect receiver arrangement is standardized across all ECU Test Systems, which allows for easy pin testing with the Field Diagnostic Tester (FDT). The layout was designed to avoid cable crossovers with symmetry, keep cables as straight as possible, and leave blank spaces for future expansion or customization.

Both the VPC 9025 position modular mass interconnect and VPC 9025TR (tray option) are available with the ECUTS.

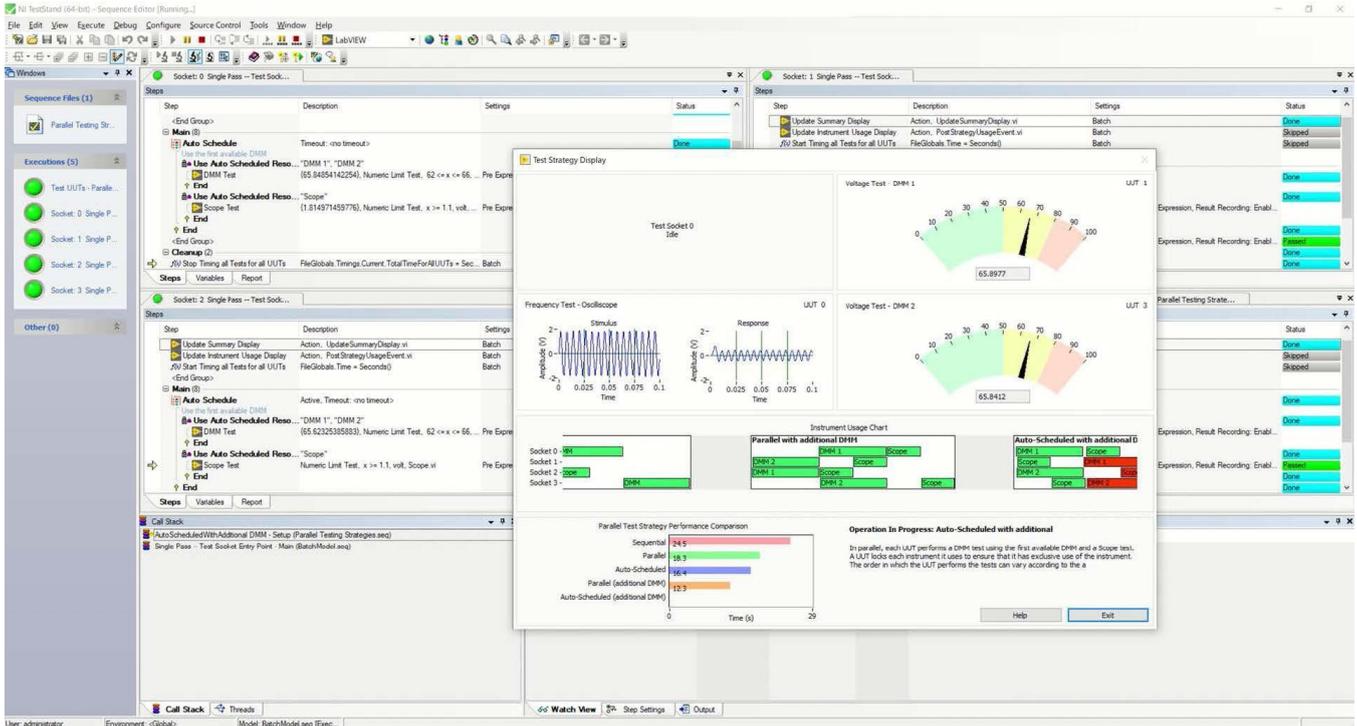
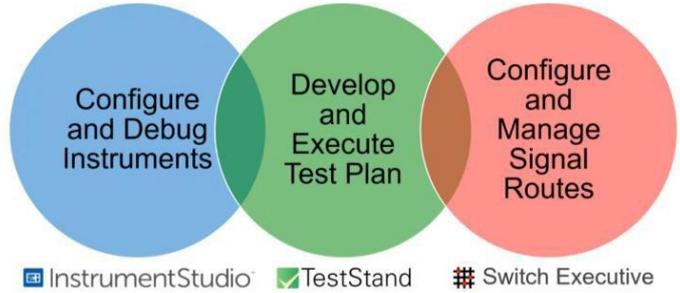


*VPC 9025 TR with Fixture and DUTs*

# ECU Test System Software

The ECU Test System (ECUTS) comes with the software you need to design, deploy, and manage test systems. It includes the following software by default and runs on the Windows 10 based PXI controller.

TestStand serves as the test executive to manage and execute test sequences (plans). InstrumentStudio™ application software provides a higher abstraction to configure and debug test steps, and Switch Executive helps manage signal routing.



Demo: Reducing Test Time With Parallel Device Test