Eclypse Mini M x ro ct Fa ily

Mini Mux: The mini switching system designed for embedded testing of high density circuits.

The Eclypse International Mini Mux product family of Control and Switch Modules and SDK provide compact, high density test circuit switching as a complement to the company's wiring analyzer products. The Mini Mux products give the user the ability to test complex assemblies with thousands of circuit paths for continuity and isolation while minimizing the test equipment complexity and footprint.

The Mini Mux system was developed as a solution for the footprint for testing avionics equipment chassis and back-plane assemblies. Minimizing the size of modularized switching components allowed the test circuit selection to be imbedded directly into the UUT as components of custom designed interfaces. These assemblies then replaced the internal pluggable assemblies. This approach reduced the interface to the analyzer from several thousand test cable conductors to less than twenty. In turn, the reduction in the test interface resulted in elimination of several analyzer expansion units.

To support the Mini Mux system, software was developed to allow the incorporation of the Mini Mux measurements into Eclypse's ELITE test executive, both as stand-alone tests and in conjunction with measurements through the analyzer's conventional switched matrix connections. A Software Developer's Kit is available which provides a platform for developing and testing test programs utilizing the Mini Mux system. As the Eclypse Mini Mux Switch and Control modules are intended for use as part of application specific interfaces, the SDK allows concurrent test program and interface development.

Features

- Each Control module supports up to 6 128-point Switch modules, with up to 511 Switch modules per TPS.
  -40C to 85C operating temperature range.
  Modules are pluggable with SMT COTS connectors. and include hardware for securing to PCB substrates.
  A Developer's Kit is available for evaluating and testing the Mini Mux modules and supporting test program development.

Contact Us To Learn More!

Benefits

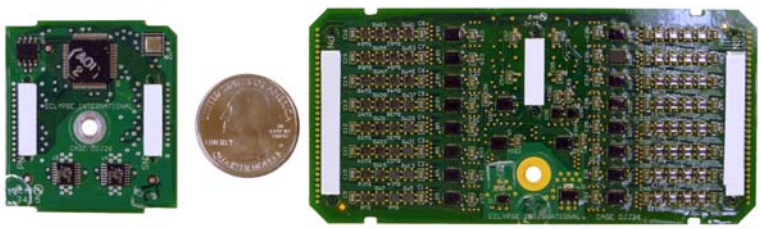
- Small form factor - Designed to support avionics LRU chassis testing by providing imbedded test circuit switching to minimize the test footprint.
  Can be incorporated into test interfaces for use in environmental and vibration testing.
  Directly compatible with the AWTS and newer Eclypse wiring analyzer products.
  Test programming supported through Eclypse ELITE test executive, allowing integration of both conventional and Mini Mux testing within a test program.

Typical Applications

- Testing of Line Replaceable Unit chassis and backplane assemblies.
  Testing of high density connectors and high number of test circuits.

Form Factor

- Mini Mux Control Module: 1.75 in. x 1.60 in.
  Mini Mux Switch Module: 1.95 in. x 4.05 in.
  Installed height relative to PCB substrate: .30 in., components only, mounting screw not included.
  Mounting: Single #4-40 screw, .14 in. high threaded standoffs provided for .063, .094, .125 substrates.



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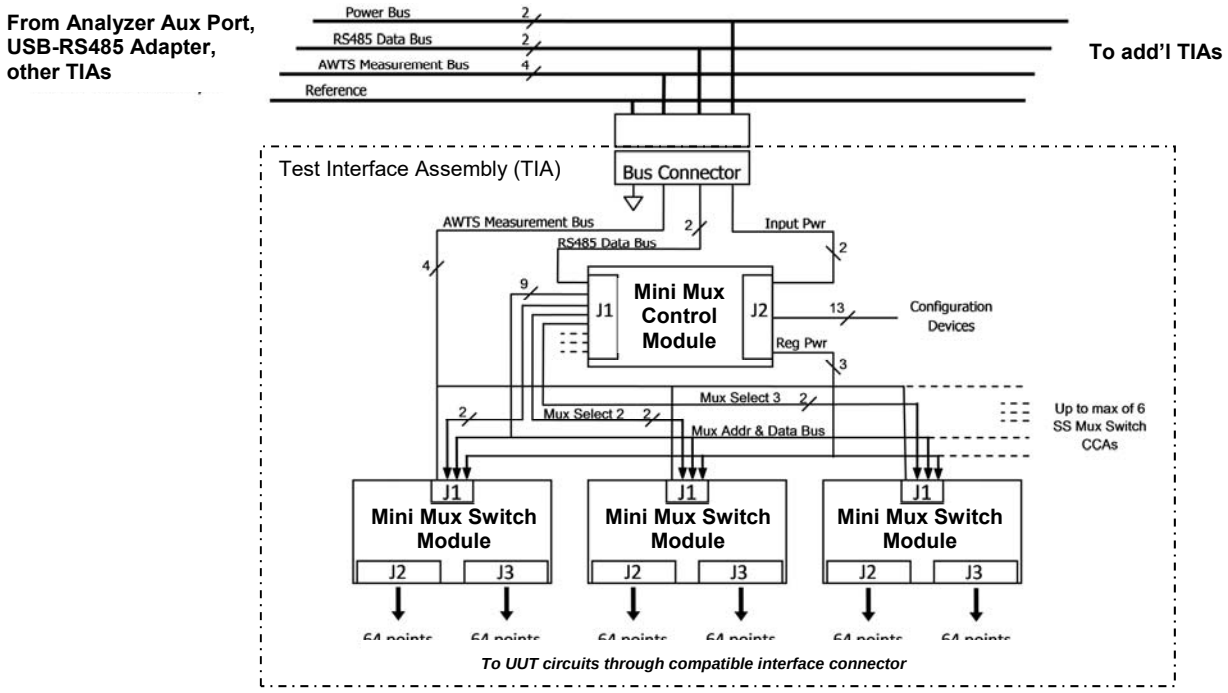
Eclypse Mini Mux Product Family

Functional Block Diagram

The block diagram below represents a Test Interface Assembly (TIA) and illustrates the interconnection between Mini Mux Switch and Control Modules and the Eclypse analyzer. The same configuration is reflected in the Evaluation and Test CCA provided in the Developer's Kit.

In the diagram, the Bus Connector provides the common connection to the analyzer and other TIAs used in a TPS. The Control Module decodes data provided over the RS485 bus from the analyzer CPU into control signals for the Switch Modules. The decode uses addressing and configuration information provided by local jumper set-tings. The Control Module also provides local digital and analog power supplies, with input power provided through the common Power Bus. The Control Module addressing and selection outputs are used by the Switch Modules to control an array of FET switches. The switches control the connection of 128 test points on each Switch Module to the common analyzer Measurement Bus. The Measurement Bus is then passed through the analyzer Aux Port to the internal measurement system, where resistance measurements are made under test program control.

The application of the TIA architecture shown is intended to be part of a package tailored to a UUT. The UUT will need to be analyzed to determine test requirements, including the number of TIAs required, connectorization, and the number and allocation of Switch Modules per TIA. These and other considerations will impact the TIA physical design, whether designed by the customer or by Eclypse as part of a TPS development.



Mini Mux Software Development Kit (SDK)

To support development, a Mini Mux Software Development Kit is available. The kit contains an Evaluation and Test (E&T) board - supporting 1 to 6 Mini Mux Switch Modules – which provides all the signal breakout required to breadboard and test interface electrical designs and test programs. Specifically configured as a reference design for a typical TIA, the board is a platform which can be used for concurrent software and interface development. The kit includes everything required to start development right out of the box - the E&T board, a single Switch Module and Control Module, cabling (including a USB-RS485 adapter), compact discs with drivers and tools, and a technical manual. If desired, multiple E&T boards can be daisy chained to mock up a developed system.

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