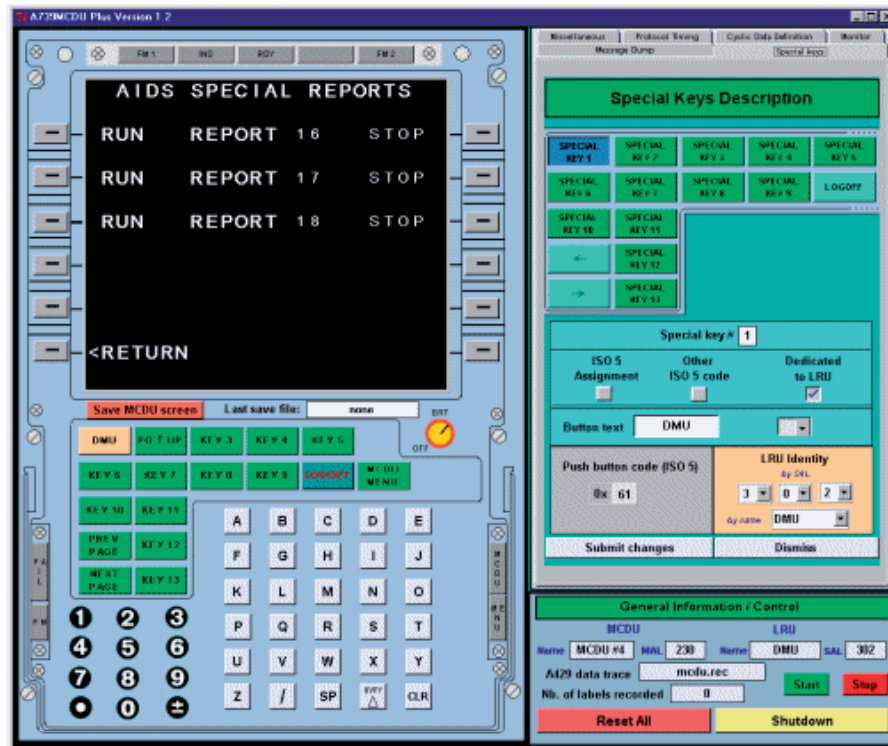




A739MCDU

Multi-Purpose Control & Display Unit Simulation



- Full MCDU simulation according to ARINC 739 specification
- Configurable key | keycode assignment
- Virtual MCDU and Analysis Mode
- Protocol error injection and detection



A739MCDU Multi-Purpose Control & Display Unit Simulation

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MCDU Simulation System

The A739MCDU ARINC 739 Multi-Purpose Control and Display Unit application program allows simulating the ARINC 739 MCDU interface with one LRU.

The program operates in conjunction with TechSAT's A429EPC PC AT-bus interface, A429PCI PCI bus interface, or A429PCC PCMCIA Type II PC-card, which is most suitable for mobile usage employing a notebook PC.

The A739MCDU simulation allocates one transmitter and two receivers of the A429EPC/PCC interface. The receivers Rx2 and Rx3 are free and can be used to trace the entire data exchanged between UUT (Unit under Test) and MCDU for troubleshooting purposes.

Functional Scope

The ARINC 739 MCDU simulation is an exact replica of a real MCDU with realistic colors and an ISO5-compliant font. The whole scope of MCDU operations and displays is implemented, including:

- > Automatic detection of connected LRU through the label 172
- > Full scratchpad functionality (data input via the MCDU keyboard and moving through Line Select keys)
- > Menu browsing supported by Previous page, Next page and MCDU Menu keys
- > 13 user-definable specific function keys (which can be assigned to LRUs)

The simulation also supports the recording of all transferred ARINC 429 data. The ARINC 429 DataView utility included in the simulation allows you to analyse and post-process the recorded ARINC 429 data.

Standard and Enhanced MCDU Simulation

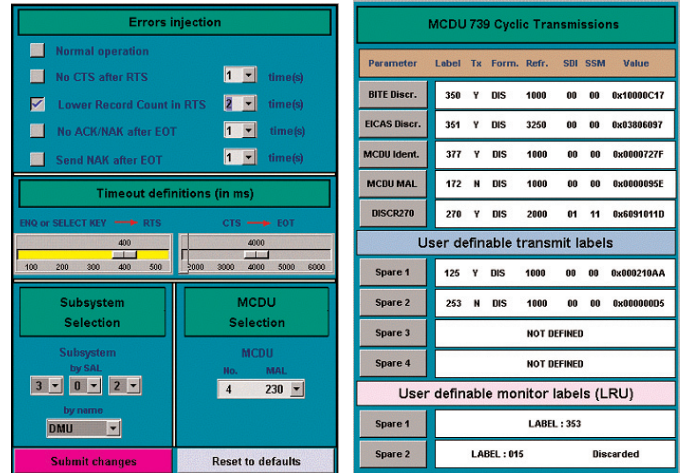
You can start the A739MCDU simulation in two modes, as

- > A739MCDU featuring a replica of a real MCDU with the features outlined above
- > A739MCDU Plus featuring the A739MCDU and additional control and display panes described below (see front page)

A739MCDU Plus Control and Display Panes

In addition to the MCDU pane comprised of keyboard and display, the A739MCDU Plus application provides a second pane on the right-hand side of the MCDU pane for analysis and control purposes.

The lower part of the window always displays the current MCDU and LRU identities as well as the data recording status. Additionally, the pane allows you to start and stop the recording file and reset or exit the simulation.



The upper part of the window displays the pane selected by clicking the associated tab on the top:

Miscellaneous – This pane provides controls to configure MCDU operation options, including protocol error injection definition of timeouts for responses expected from the LRU selection of MCDU system and LRU subsystem via their address labels.

Protocol Timing – This pane indicates the handshake response times of the MCDU and the LRU in milliseconds. There are also two block word counts used to monitor if message transmission and reception are congruent. A history navigation bar can be used to browse handshake information of up to 20 previously transferred messages. Protocol handshake monitoring can be frozen.

Message Dump – This pane is used to create a dump of a message transferred from the LRU (STX-EOT block). The data is displayed in binary and ARINC 739-compliant formats. A history bar (working in conjunction with the Protocol Timing pane) allows viewing the content of up to 20 previous messages.

Cyclic Data Definition – This pane is used to define up to 9 words sent periodically by the MCDU (including 4 words that can be defined freely), and 2 words sent by the LRU displayed in the Monitoring pane.

Monitoring – This pane displays the most recent updates of the cyclic data sent from the MCDU to the LRU and vice versa according to the settings in the Cyclic Data Definition pane. For each word its value, refresh rate and number of occurrences is indicated.

Special Keys Description – This pane is used to define the 13 special-purpose function keys on the MCDU keyboard. Each key can be assigned a code transmitted in the Button Push word when the key is pressed or dedicated to an LRU (i.e. pressing the key will request the LRU's first page).