

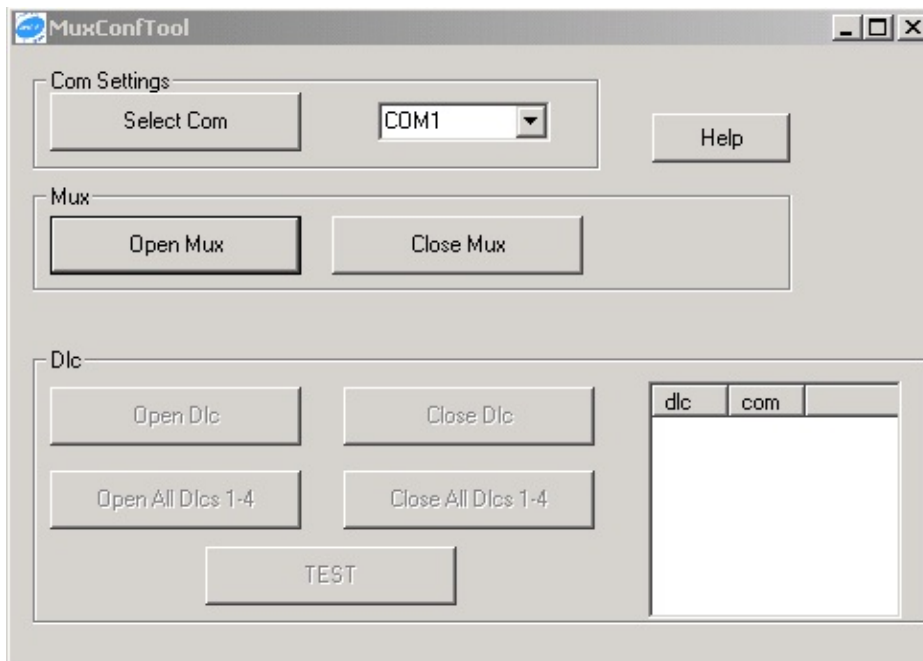


MuxConfTool

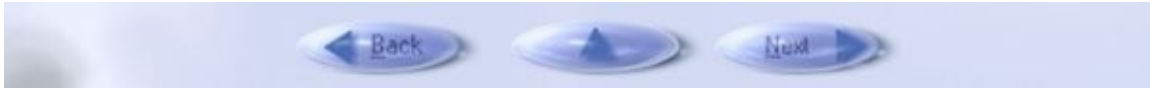


[MuxConfTool](#) allows the user to open virtual COM ports on a serial port by using MUX driver over the serial port driver.

The main dialog box has the options for User to start MUX driver and use it for opening [MUX](#), opening [DLC\(Data Link Connection\)](#), [closing MUX](#) and [closing DLC](#) etc. The main dialog box of MuxConfTool looks like :



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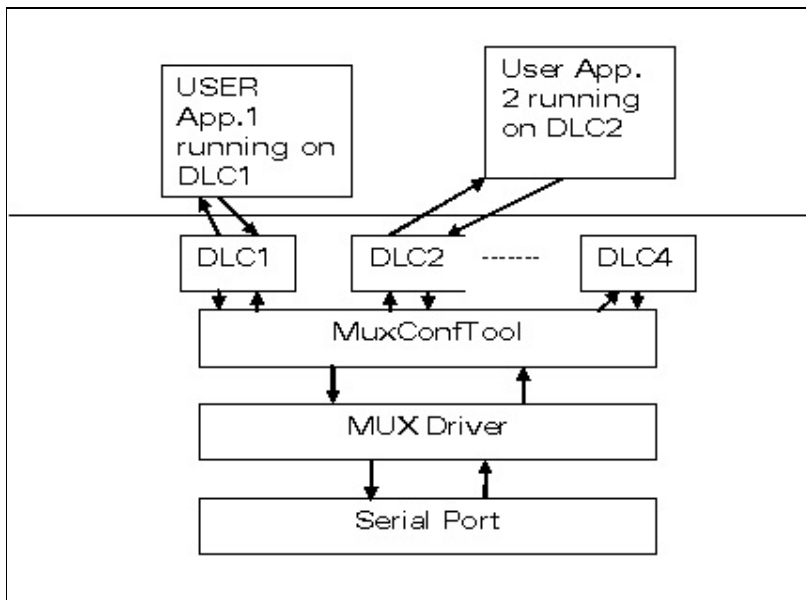




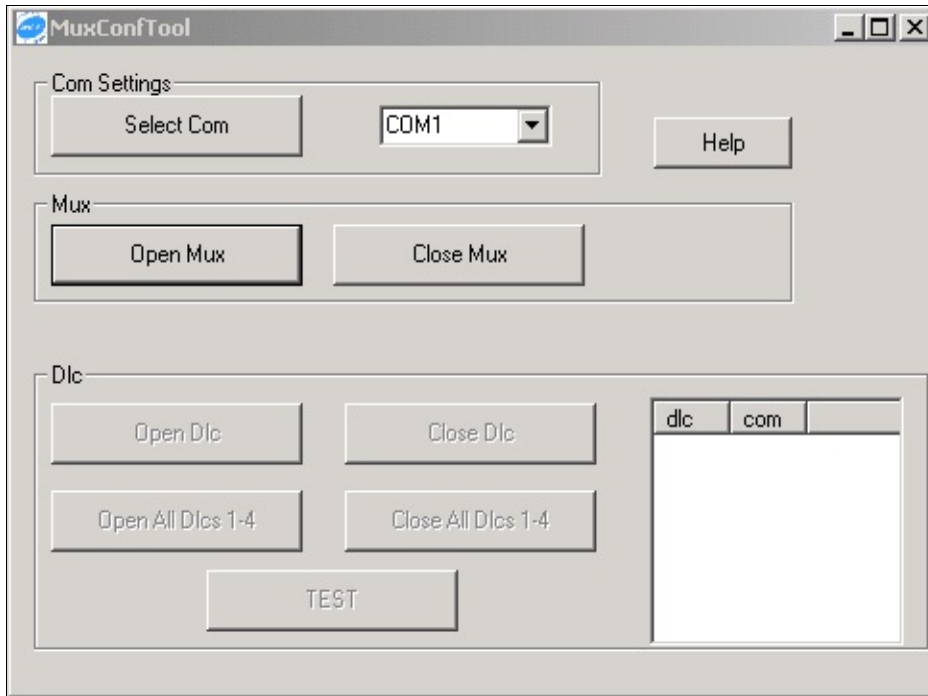
MuxConfTool

Overview

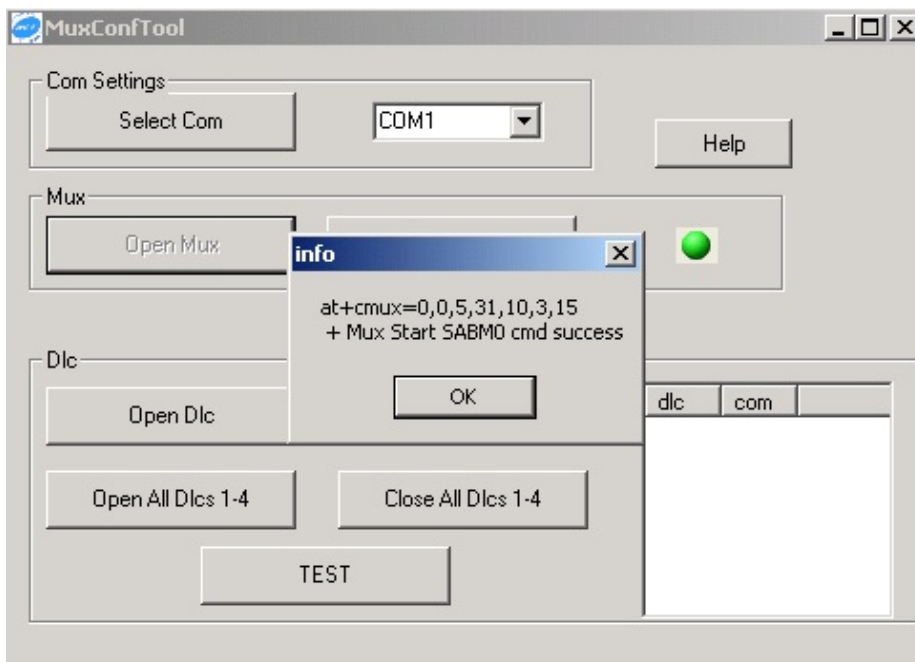
MuxConfTool is a utility used to open a maximum of four virtual COM ports over a serial port. These virtual COM ports work in the same manner as the serial port. MuxConfTool runs on the "MUX" driver which in turn uses the computer's serial communication ports. Diagram below shows the interaction between MUX, serial port and the application MuxConfTool.



MuxConfTool is a user friendly tool, User can configure the tool to open Mux at one of the serial ports available in the system. The picture below is the main dialogue of the MuxConfTool.

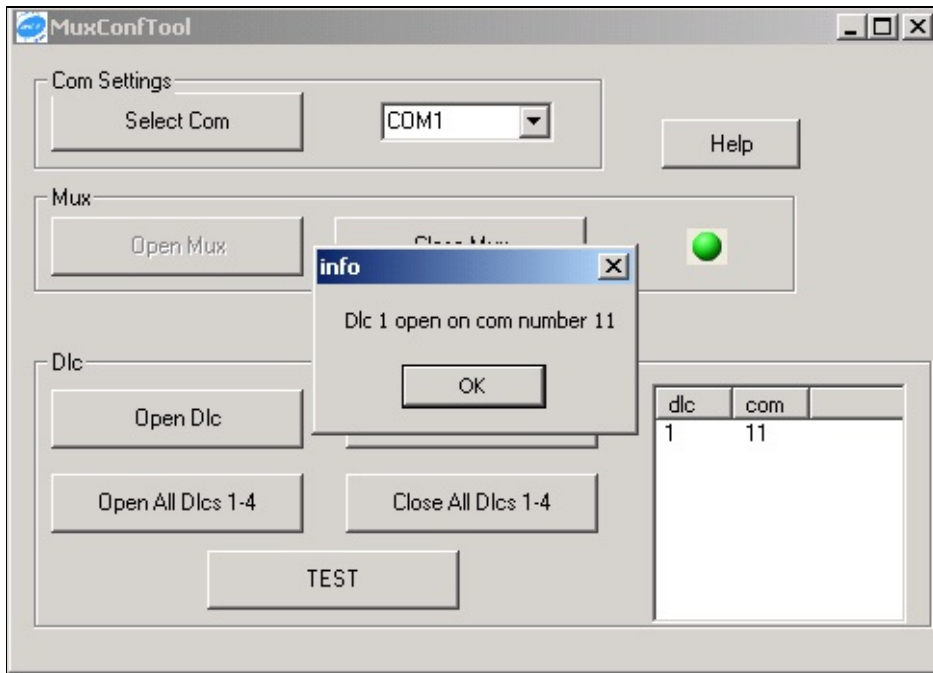


MuxConfTool shows all the available com port for the selection by user. After selecting the COM port user can open the MUX by pressing the button "[Open Mux](#)". Mux gets opened by showing the message below:



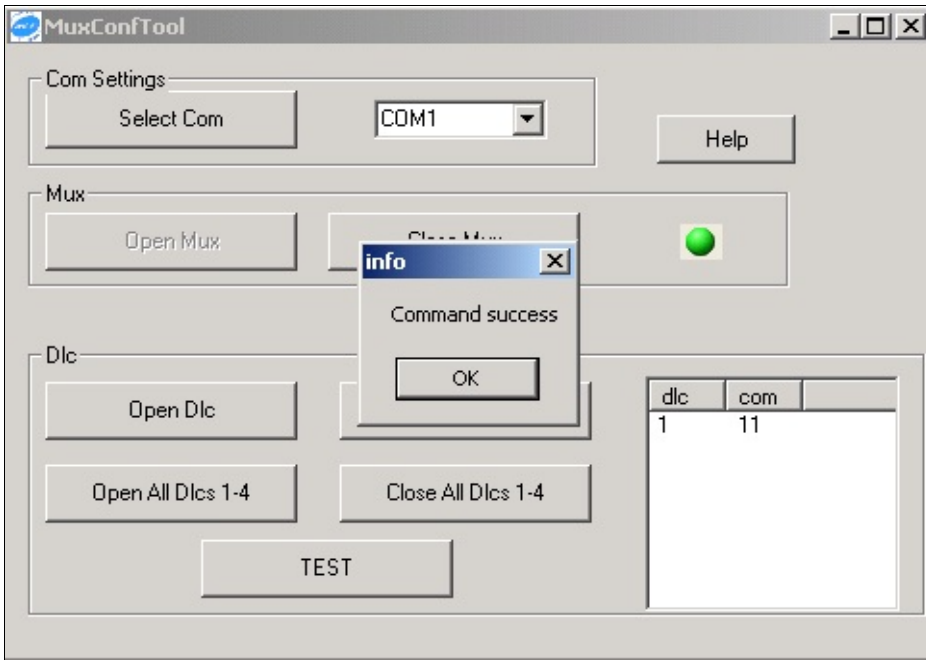
Next step is to open the DLC by pressing the button "[Open DLC](#)". Parameters for opening the DLC are to be provided in the dialog box **DLC Parameters**. Once the DLC gets opened, it gets shown in the list

box at the bottom right of the MuxConfTool main dialog with the COM port number over which it gets opened.



The buttons **OpenAllDics 1-4** will open all the DLCs at one click and **CloseALLDics 1-4** will close all the Opened DLCs at the time of click.

The button **TEST** when clicked sends MUX_TEST command to the driver, which sends the test frame to the receiver and checks whether the receiver is responding or not.





MUX Parameters

Opening MUX

For opening MUX, there are several parameters that the application MuxConfTool will send to MUX driver. The value for these parameters need to be specified in the [ini file](#) for the usage by the application. These parameters are explained as below:

- *Mode*: This provides the mode in which MUX is to open to communicate. Different modes available are basic, Advanced with Error Recovery and Advanced with Non Error Recovery Mode. These modes differ upon the basis of the structure of frames used for communication.
- *Port Speed*: This sets the speed of the port over which MUX is to be opened.
- *Maximum Frame Size*: Data is received or transmitted in form of frames. This parameter specifies the maximum size of the frame.
- *Acknowledgement Timer*: It provides the time for which the station(receiver or transmitter) waits for an event acknowledgement
- *Maximum Retransmissions*: This provides the maximum number for which a station should re-attempt for completion of an event which requires any response.
- *Response Timer*: This provides the maximum amount of time for which a station should wait before sending the command again in case the response does not come .
- *Wake up Timer*: This is the maximum time for which the transmitting station should wait for response or acknowledgement; before raising an error, in case none is received.
- *Window Size for ERM(Error Recovery Mode)*: This is the maximum number of Information frames that a DLC can have

unacknowledged.





DLC Parameters

Open DLC

For opening DLC, the DLC parameters dialog box is used to configure the parameters sent to MUX driver

A screenshot of a Windows-style dialog box titled 'Dlc Parameters'. The dialog box has a light gray background and a blue title bar with a close button (X) on the right. It contains several configuration fields, each with a label and a control element:

- DLCI: A dropdown menu showing the value '1'.
- Type Of Frame (IUH only): A dropdown menu showing the value 'IUH'.
- Convergence Layer (CL1 only): A dropdown menu showing the value '1'.
- Priority: A text input field containing the value '1'.
- Maximum Frame Size: A text input field containing the value '31'.
- Acknowledgement Timer (hundredths of a second): A text input field containing the value '10'.
- Maximum number of retransmissions: A text input field containing the value '3'.
- Window size for error recovery mode: A dropdown menu showing the value '1'.

At the bottom of the dialog box, there are two buttons: 'OK' and 'Cancel'.

The explanation of the DLC parameters are given below:

- *DLCi*: This takes the number of the DLC which is to be opened.
- *Type Of Frame*: This takes the type of the frames which are to be used for communication via the DLC. Different types of frames can

be used like SABM(Set Asynchronous Balanced Mode), DISC(DISConnect Mode), UI(Unnumbered Information Frame). All these frames are used for the communication between the stations.

- *Convergence Layer*: This takes the type of convergence layer, which is to be used for implementing the layer structure at the DLC for transmission the frames.
- *Priority*: It takes the priority of the DLC, for the data streams. Its value ranges from 0 to 63. Lower value means higher priority.
- *Maximum Frame Size*: Data is received or transmitted in form of frames. This parameter specifies the maximum size of the frame.
- *Acknowledgement Timer*: It provides the time for which the station(receiver or transmitter) waits for an event acknowledgement
- *Maximum Retransmissions*: This provides the maximum number for which a station should re-attempt for completion of an event which requires any response.
- *Window Size for ERM(Error Recovery Mode)*: This is the maximum number of Information frames that the particular DLC can have unacknowledged.

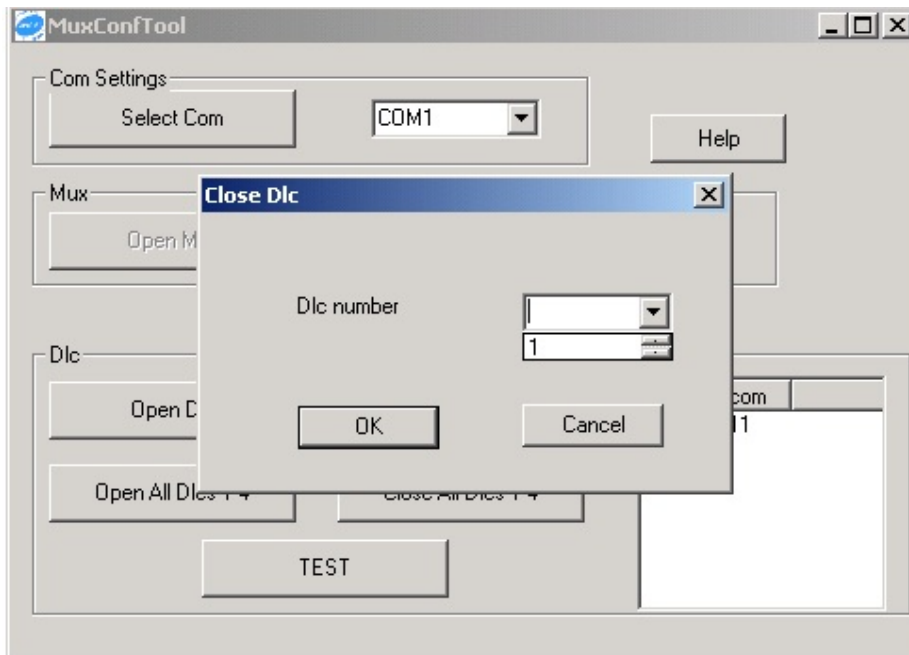




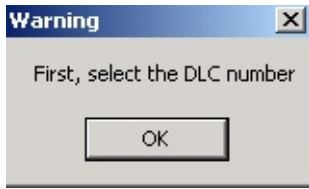
Close DLC

Closing a DLC

To close the DLC we need to click the button **Close DLC** which will prompt a dialog shown as below



Select the DLC number that you want to close and click upon OK. If no DLC number will be selected, error message shown below will be displayed.

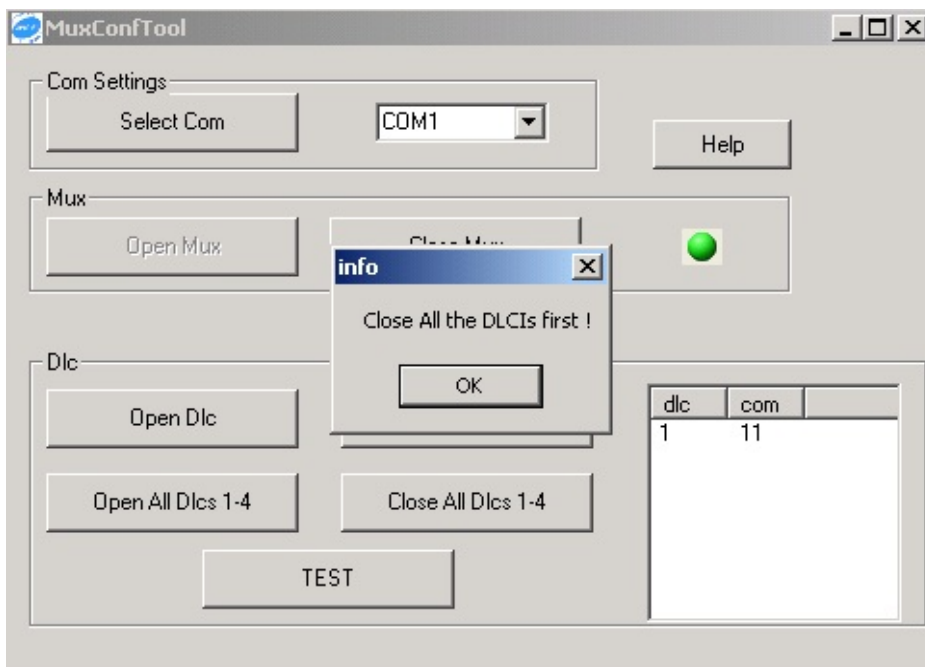




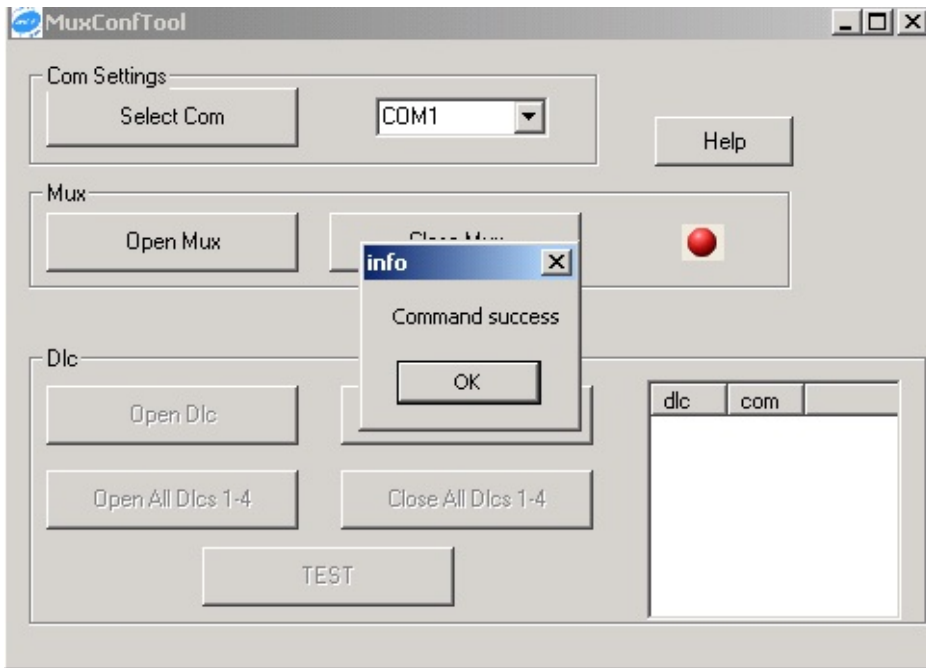
Close MUX

Closing MUX

To close MUX we need to click the button **Close MUX**. Mux will be closed in case no DLC is opened and getting used, if any DLC is opened or is not free, a message box like below will appear.



In case, all the DLCs are already closed or free, MUX will be closed with the following message appearing for the closure confirmation.





Configuration File

MUXConfTool.ini

When closing, MuxConfTool updates (or creates) a configuration file in which all the parameters used for opening MUX and for opening DLC are saved. This file is named MUXConfTool.ini and is saved in the current directory.

The parameters are saved in three sections. These three sections are:

- **MuxConfTool:** The keys/parameters present in this section are:
 - *ComPort:* The Com port used to open MuxConfTool.
 - *AllDlcsToBeOpened:* If the value for this is one, then all DLCs will be opened automatically when MuxConfTool is opened.

- **MUXParameters:** The keys/parameters present in this section are:
 - *Mode:* This provides the mode in which MUX is to open to communicate. Different modes available are basic, Advanced with Error Recovery and Advanced with Non Error Recovery Mode. These modes differ upon the basis of the structure of frames used for communication.
 - *Port Speed:* This sets the speed of the port over which MUX is to be opened.
 - *Maximum Frame Size:* Data is received or transmitted in form of frames. This parameter specifies the maximum size of the frame.
 - *Acknowledgement Timer:* It provides the time for which the station(receiver or transmitter) waits for an event acknowledgement.
 - *Maximum Retransmissions:* This provides the maximum number for which a station should re-attempt for completion of an event which requires any response.

- *Response Timer*: This provides the maximum amount of time for which a station should wait before sending the command again in case the response does not come.
 - *Wakeup Timer*: This is the maximum time for which the transmitting station should wait for response or acknowledgement; before raising an error, in case none is received.
 - *Window Size for ERM*: This is the maximum number of Information frames that a DLC can have unacknowledged.
- **DLCParameters**: The keys/parameters present in this section are:
 - *DLCI*: This takes the number of the DLC which is to be opened.
 - *Type of Frame*: This takes the type of the frames which are to be used for communication via the DLC. Different types of frames can be used like SABM(Set Asynchronous Balanced Mode), DISC(DISConnect Mode), UI (Unnumbered Information Frame). All these frames are used for the communication between the stations.
 - *Convergence Layer*: This takes the type of convergence layer, which is to be used for implying the layer structure at the DLC for transmission the frames.
 - *Priority*: It takes the priority of the DLC, for the data streams transmission. Its value ranges from 0 to 63. Lower value means higher priority.
 - *Maximum Frame Size*: Data is received or transmitted in form of frames. This parameter specifies the maximum size of the frame.
 - *Acknowledgement Timer*: It provides the time for which the station(receiver or transmitter) waits for an event acknowledgement
 - *Maximum Retransmissions*: This provides the maximum number for which a station should re-attempt for completion of an event which requires any response.
 - *Window Size for ERM*: This is the maximum number of Information frames that the particular DLC can have unacknowledged.
 - *DlcOneOnCom*: This is the COM number over which the DLC1 should be opened.
 - *DlcTwoOnCom*: This is the COM number over which the DLC2 should be opened.
 - *DlcThreeOnCom*: This is the COM number over which the

DLC3 should be opened.

- *DlcFourOnCom*: This is the COM number over which the DLC4 should be opened.

The MUXConfTool.ini is loaded by MuxConfTool on startup.





MuxConfTool Automation

Command Line

Introduction

MuxConfTool command line supports a series of options. Command line options are priority over configuration file parameters.

MuxConfTool options

-m <Start MUX>

If this option has been specified, the MUX will be opened before the User interface comes on the screen

-i <Ini File >

This switch is for specifying the ini file to be used for MuxConfTool. The path for the ini file is the argument for this switch, the ini file passed with this switch will be used for the operation of muxConfTool, otherwise the default ini will be used.

-a <All Dics to be opened >

This switch is for specifying whether all the DLCs should be opened when MUX will be started or not.

