

CANMATE APP User Manual



Introduction

This user manual describes the operation of CANMate App which is a free application supplied along with CANMate Hardware from DeepThoughts. This manual is applicable to Version 2.0 of CANMate App, which is currently the latest version.

CANMate App enables the user to interact with CAN network through CANMate hardware. Following are the capabilities of this application.

1. Opening and closing CANMate device
2. Displaying all the incoming messages
3. Transmitting messages to CAN network
4. Logging incoming messages for future analysis
5. Configuring CANMate baud rate
6. Setting CANMate mode
7. Firmware update of the CANMate hardware

Basic operations in CANMate App

Operation of CANMate App is controlled by buttons. Figure-1 shows the GUI of this application just after starting up.

It has two menu items and a large message display area. This display area shows the incoming and outgoing CAN Messages and error messages. They are displayed in different colours, blue for incoming messages, black for out going and red for error messages.

Below the display area lies the UI elements to enter CAN Message for transmission. Message ID (from 0 to 0x1FFFFFFF), Data Length Code (DLC from 0 to 8) and upto 8 data bytes can be entered in this area. Pressing send button will transmit the CAN Message in the attached CAN network if the device is in Normal mode. If the device is in Loopback mode, the transmitted messages will be internally transferred to the receive buffer.

Along with the transmit area, there is a settings area where Baud rate and CAN controller mode can be set and data logging can be enabled or disabled.

Settings : In the Settings area several settings can be adjusted and then press "Apply Settings" button and press OK in the dialog to confirm selection

Start Reception : This button enables receiving the incoming CAN Messages After pressing, this button will automatically change to "Stop Reception"

Update Firmware : This button is used to update the firmware Before opening the device, first press the button "Update Firmware", then a dialog will appear, press "Yes" to continue



Status bar shows the connection status, error status and current transmit and receive error counters of CANMate.

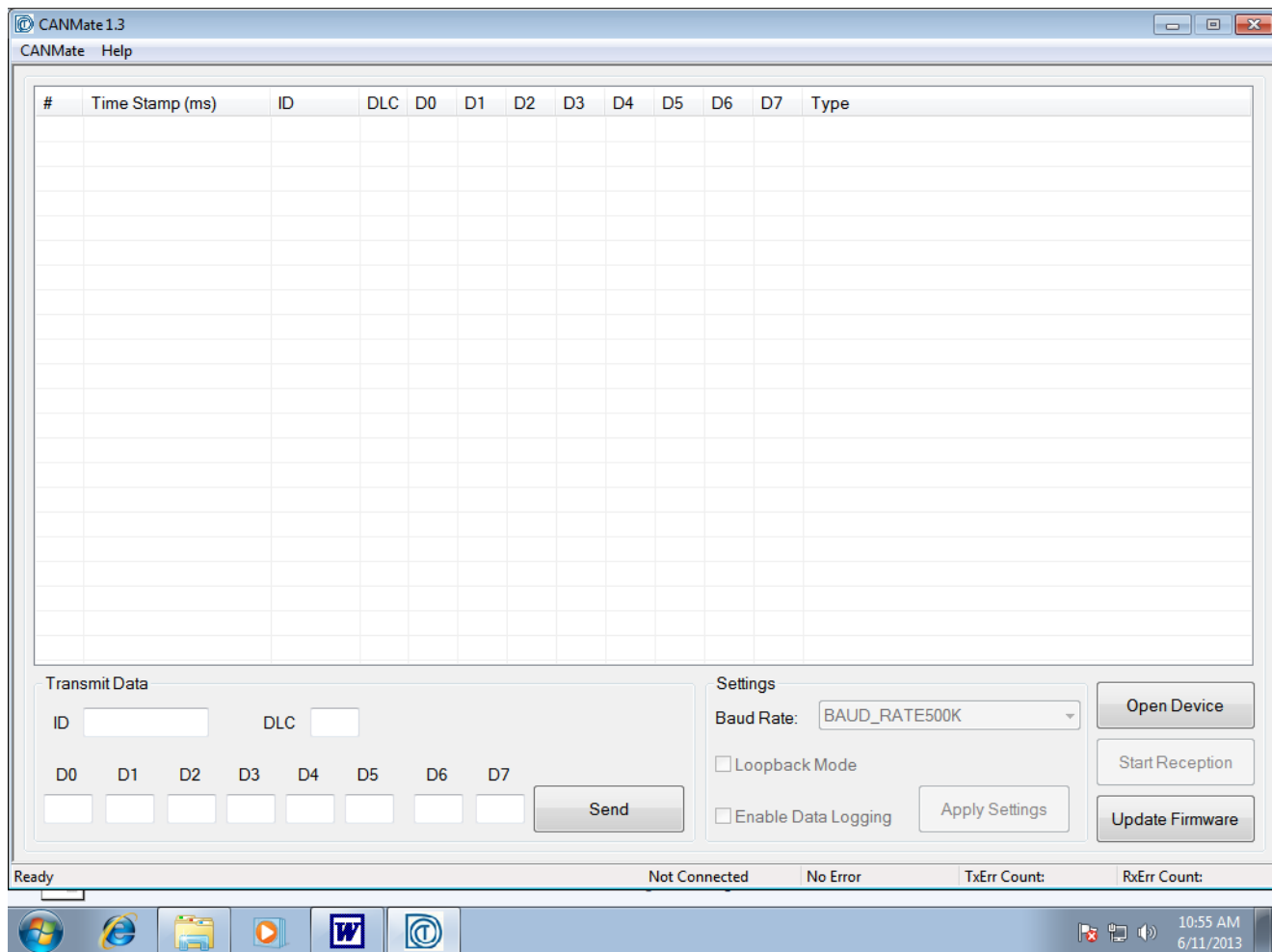


Fig 1 : CANMate App GUI

CANMate operations

Opening and Closing CANMate

Pressing “Open” button opens the CANMate device by turning on the CAN controller inside the Micro controller and this should be the first action taken by the user. No other functions will work if CANMate is not opened. Please note that only one CANMate is supported in this version. Green LED will be lit once the CANMate is opened.

After a successful Open operation, the button changes to “Close”. Pressing this button resets the device and shuts off the CAN controller. The device will be completely removed from the CAN network. Green LED goes



OFF. Normally this can be the last operation performed by the user before exiting the CANMate App. But in some rare error conditions where CAN errors persists Closing and Reopening the device would work and this button is a convenient alternative to pulling off the cable and re-plugging it. It is not mandatory to press "Close" button before exiting the CANMate App since the App will issue a Close command just before exiting.

Updating firmware

CANMate device has a built in Bootloader to facilitate firmware updates by the user. This is how it is done.

Before attempting to update the firmware, please make sure you have the required firmware HEX file.

Press Update firmware button. This will open the CANMate device and you should see the Green LED become lit. A message box with firmware version and warning will appear. Press Yes to continue.

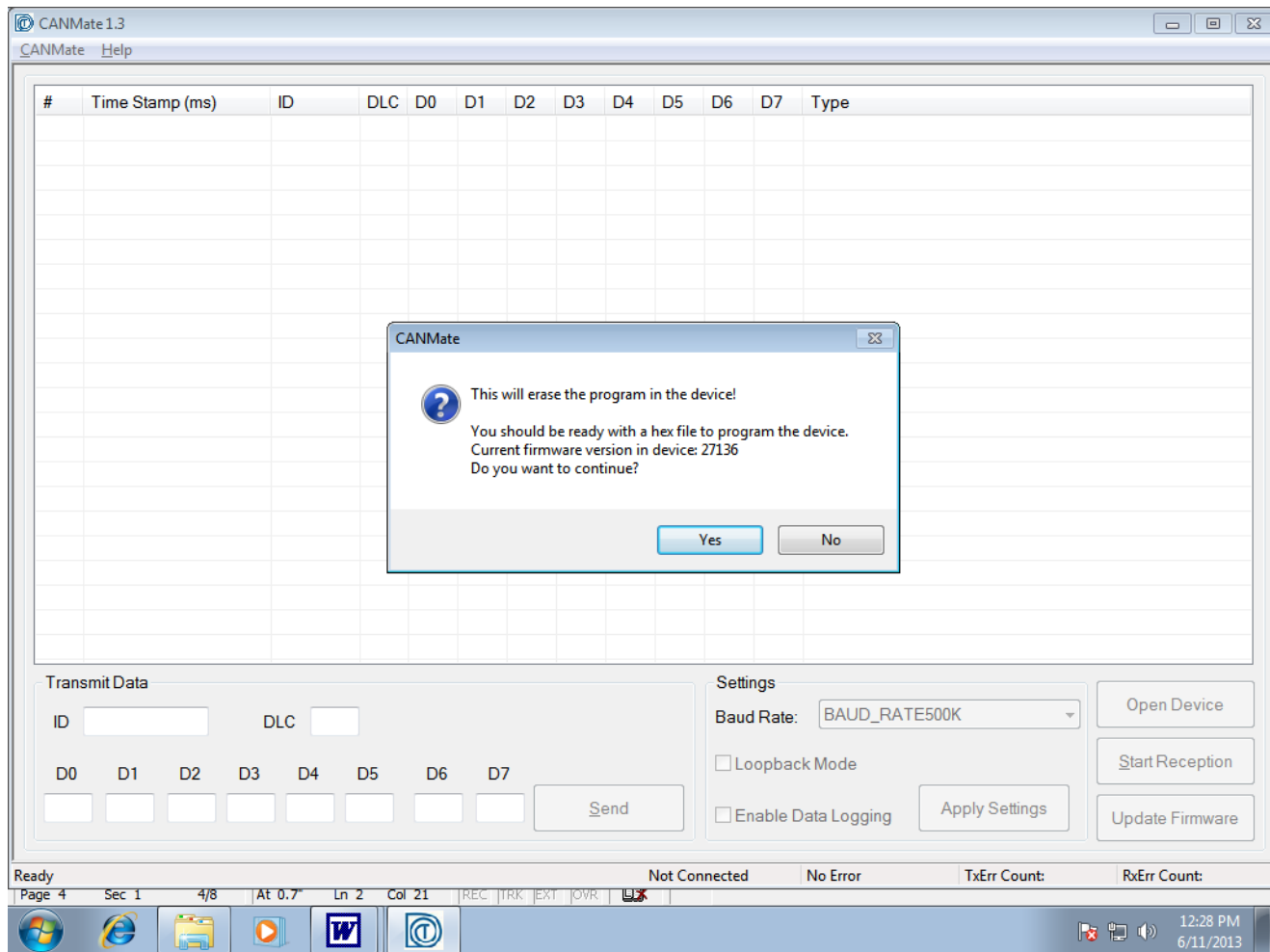


Fig 2:Update Firmware

CANMate App internally uses another program called BootloadCM.exe to update the firmware. This program will pop up another dialog and in that select Device port and Hex file. Then press Update. A progress bar



will appear showing the completion of update. Once finished it will prompt you to unplug and re-plug the device. Press OK and unplug and re-plug the device. Now the CANMate is updated with the new firmware.

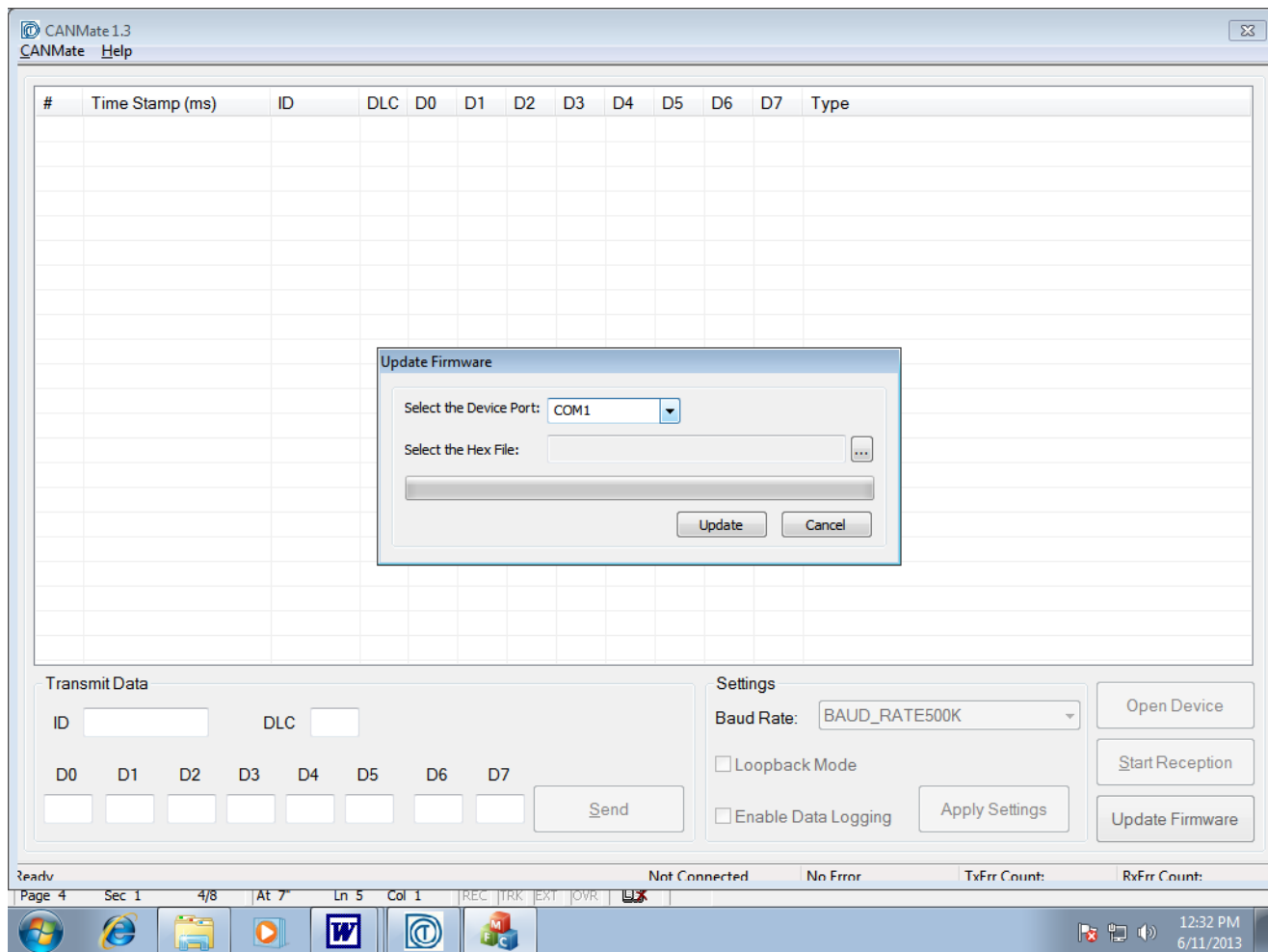


Fig 3: Selection of Device port and Hex file

Receiving incoming messages

For receiving incoming messages, "Open Device" button should be pressed first. Then the "Start Reception" button should be pressed. This button will change to "Stop Reception" Received messages will be shown in the display area. Received messages are shown in Blue color.

By pressing "Stop Reception", CANMate stops forwarding the incoming CAN Messages to the PC application and the scrolling display in the application stops. Press "Start Reception" to re-start the reception of incoming messages at any time.



Transmitting messages

For transmitting a CAN Message, first fill up the required fields in the “Transmit Data” area and then press “Send” button. CANMate should be opened before sending a message.

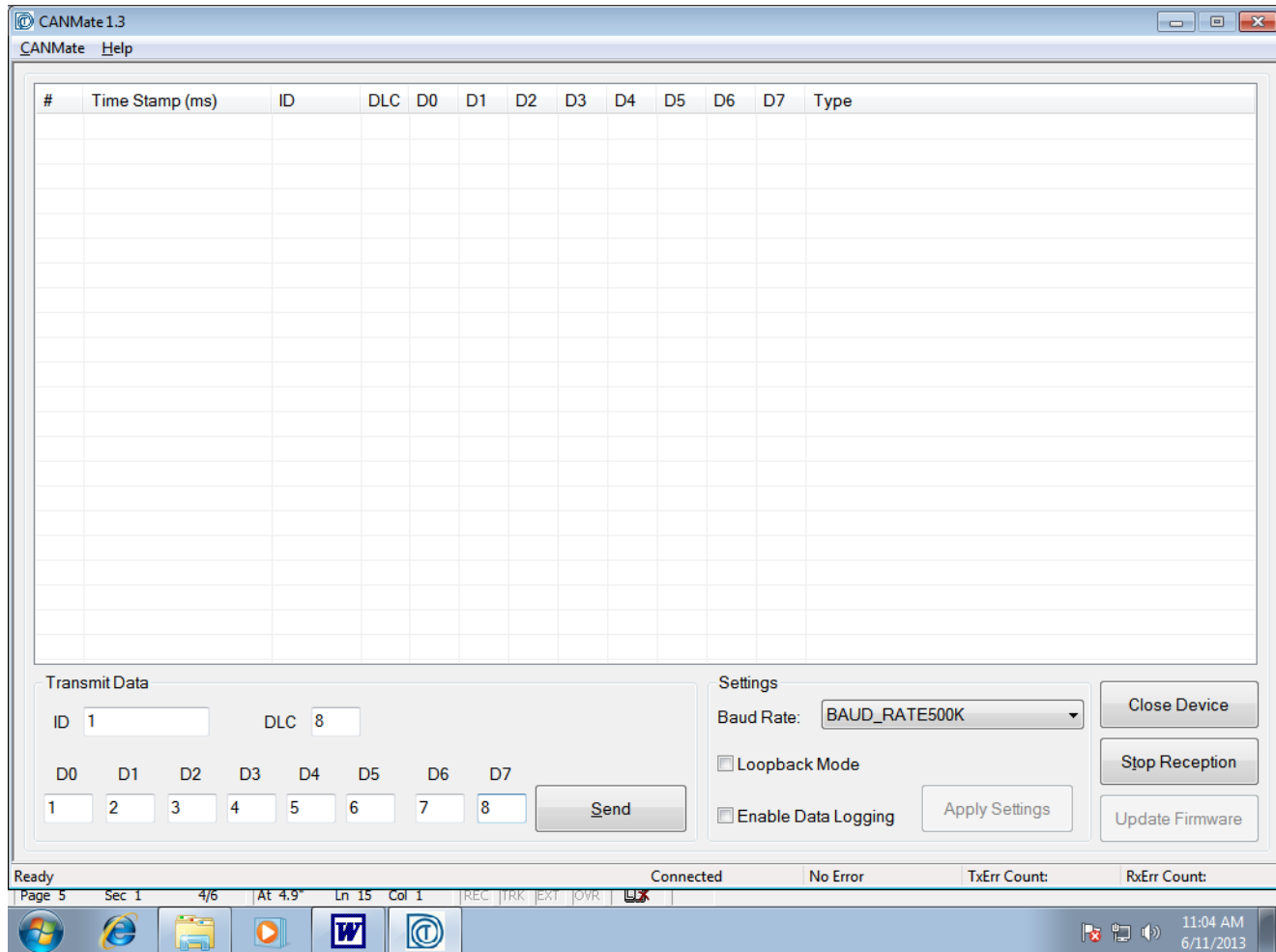


Fig 4 : Transmitting a message

Transmitted messages also appear in the display window in black color. Time stamp for the transmitted messages appear as 0, since only the received messages are time stamped.

Status display



Device status and error status are provided in the status bar. Transmit and Receive error counts are also provided here

CANMate settings

After CANMate is connected, you can adjust the following settings in the Settings area

1. Baud Rate

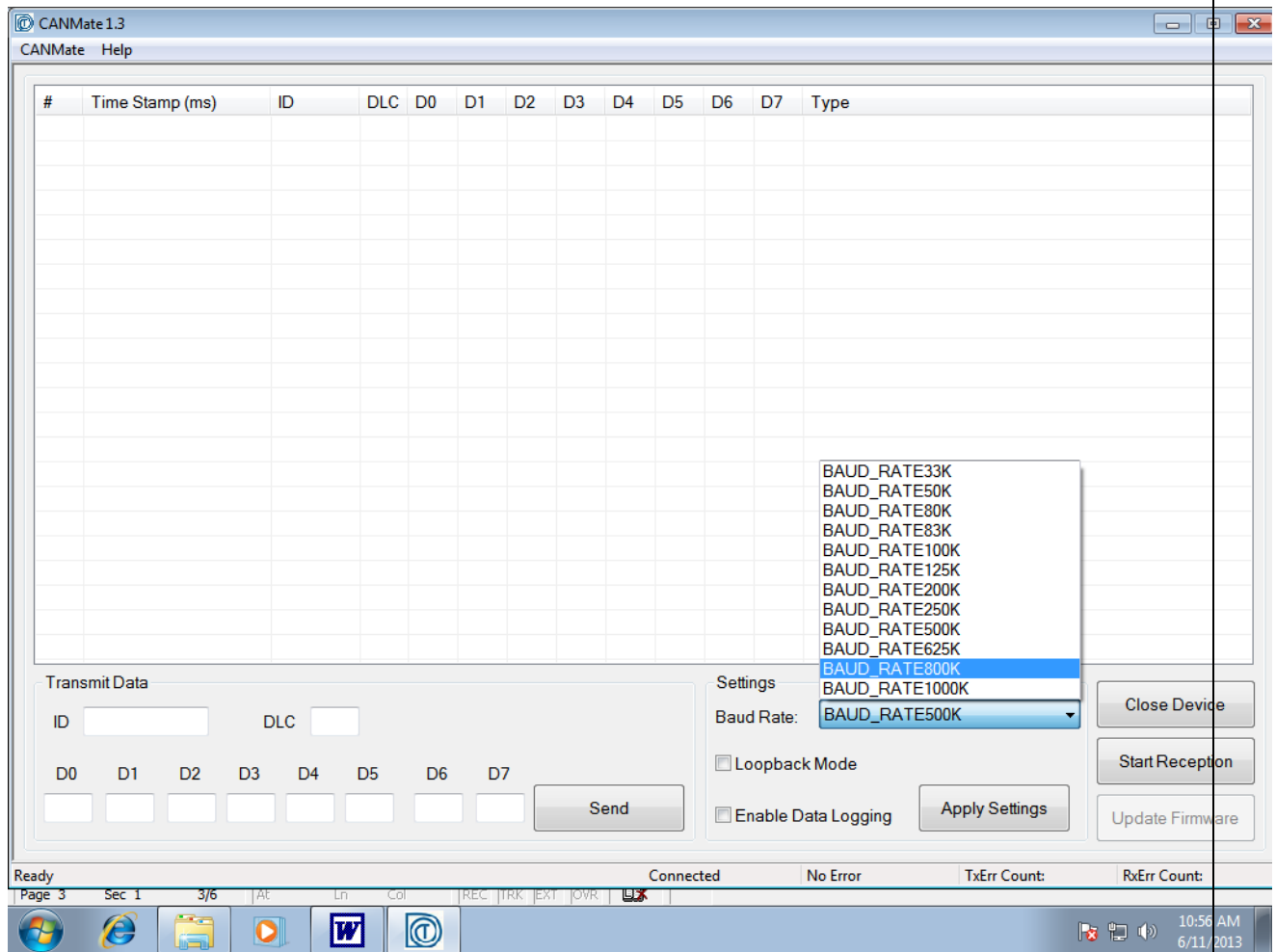


Fig 5: Baud Rate Setting

Default baud rate of CANMate is 500 Kbps. You can select any one of the 12 available baud rates using this dialog.

2. Loopback Mode

Default mode of CANMate is Normal mode. You can set the CANMate in Loopback Mode by checking the box and then press "Apply Settings" and press OK in the dialog to confirm selection



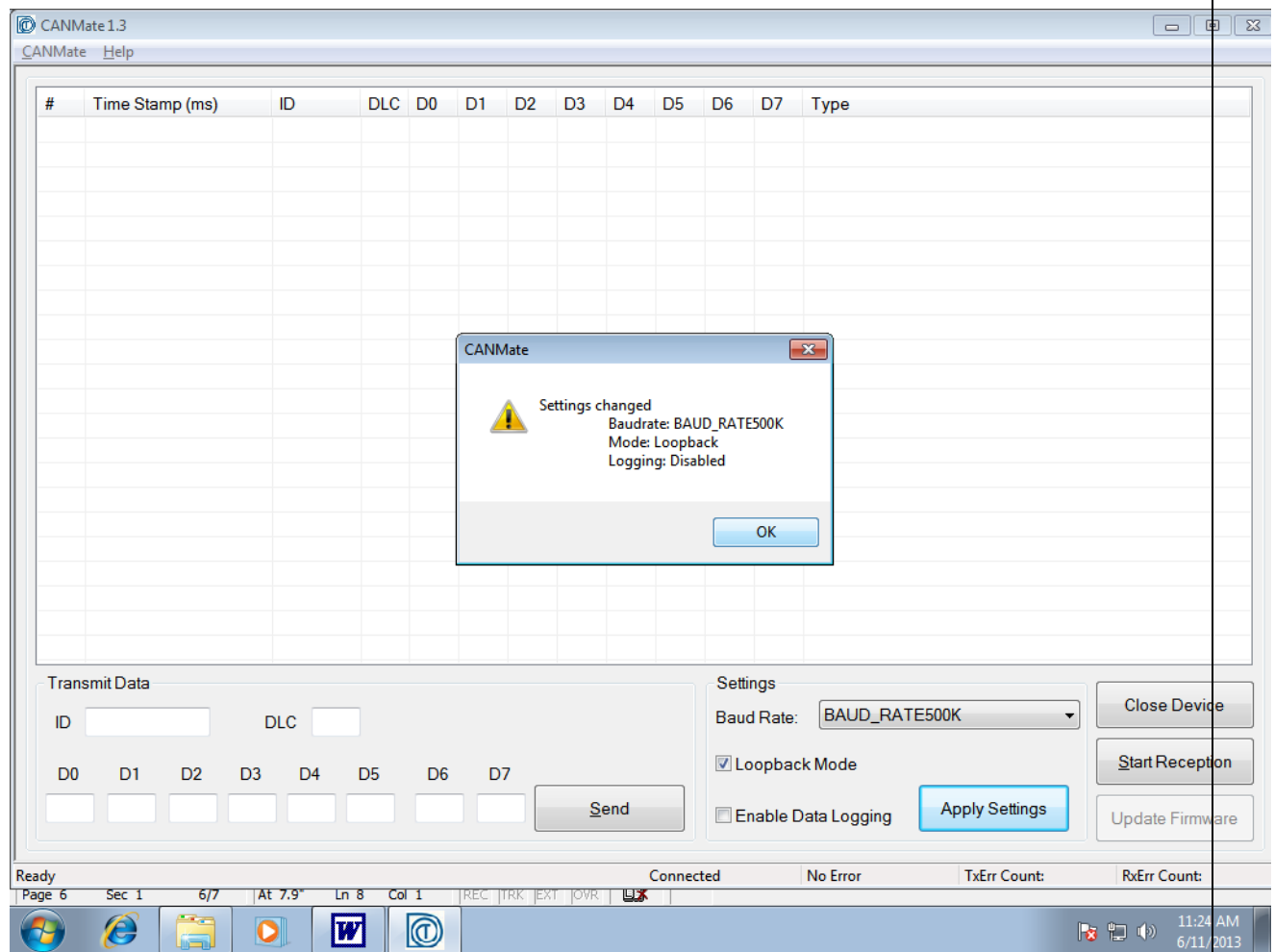


Fig 6:Setting to Loopback Mode

3. Enable/disable message logging

By default, the CANMate App will not log the incoming and outgoing messages. Logging can be enabled by checking the box. Press "Apply Settings" and press OK in the dialog to confirm selection. All the incoming and outgoing messages will be logged into "CanMateData.LOG" file which can be opened using any text editor.



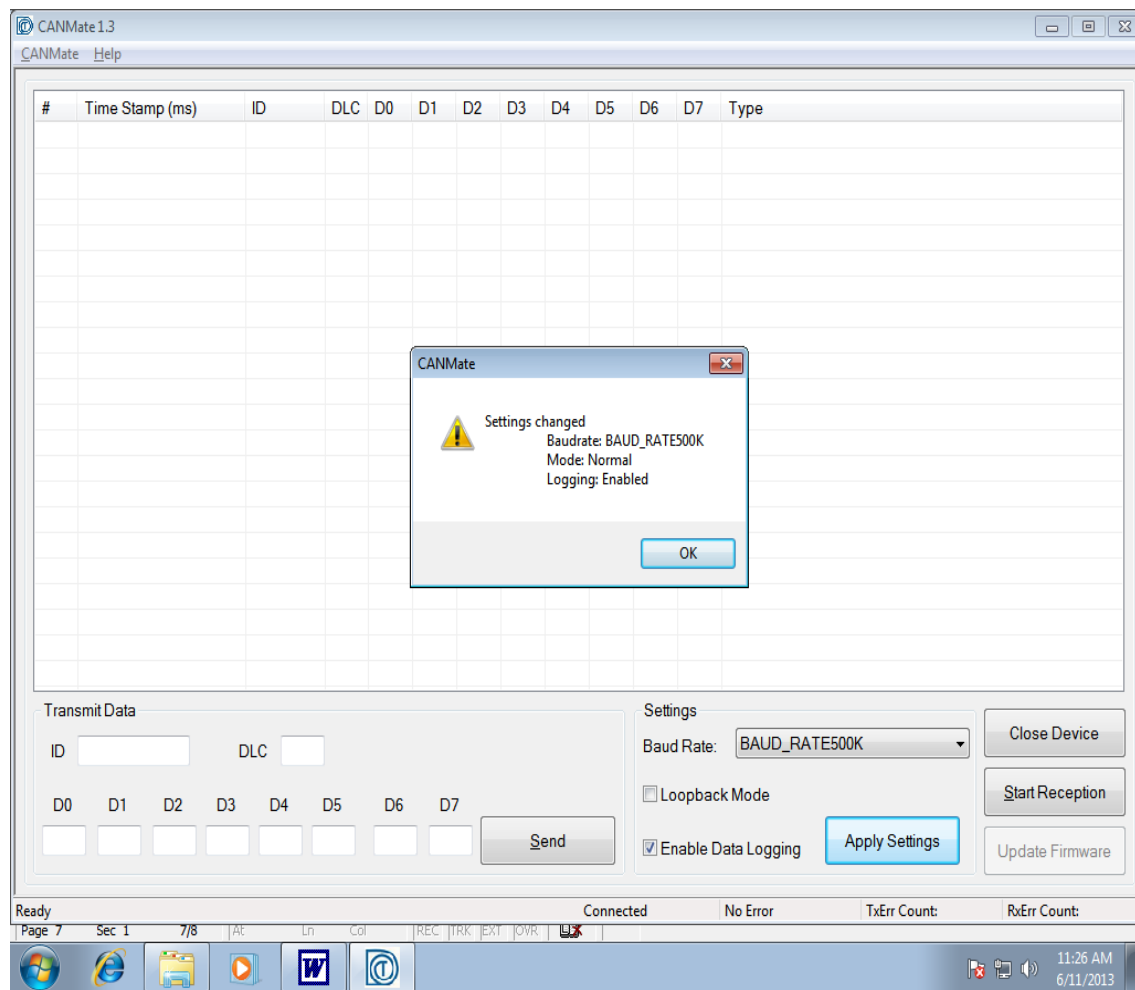


Fig 7:Enable Data Logging

Compatibility Note

CANMate APP V2.0 will operate only with the latest firmware which is version 2.0 currently. Hence it is required to update the device if you have an older firmware version.



