

DEEP THOUGHT
S Y S T E M S P V T . L T D

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 1.3 of CANMate App, which is currently the latest version for GNU/Linux. 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

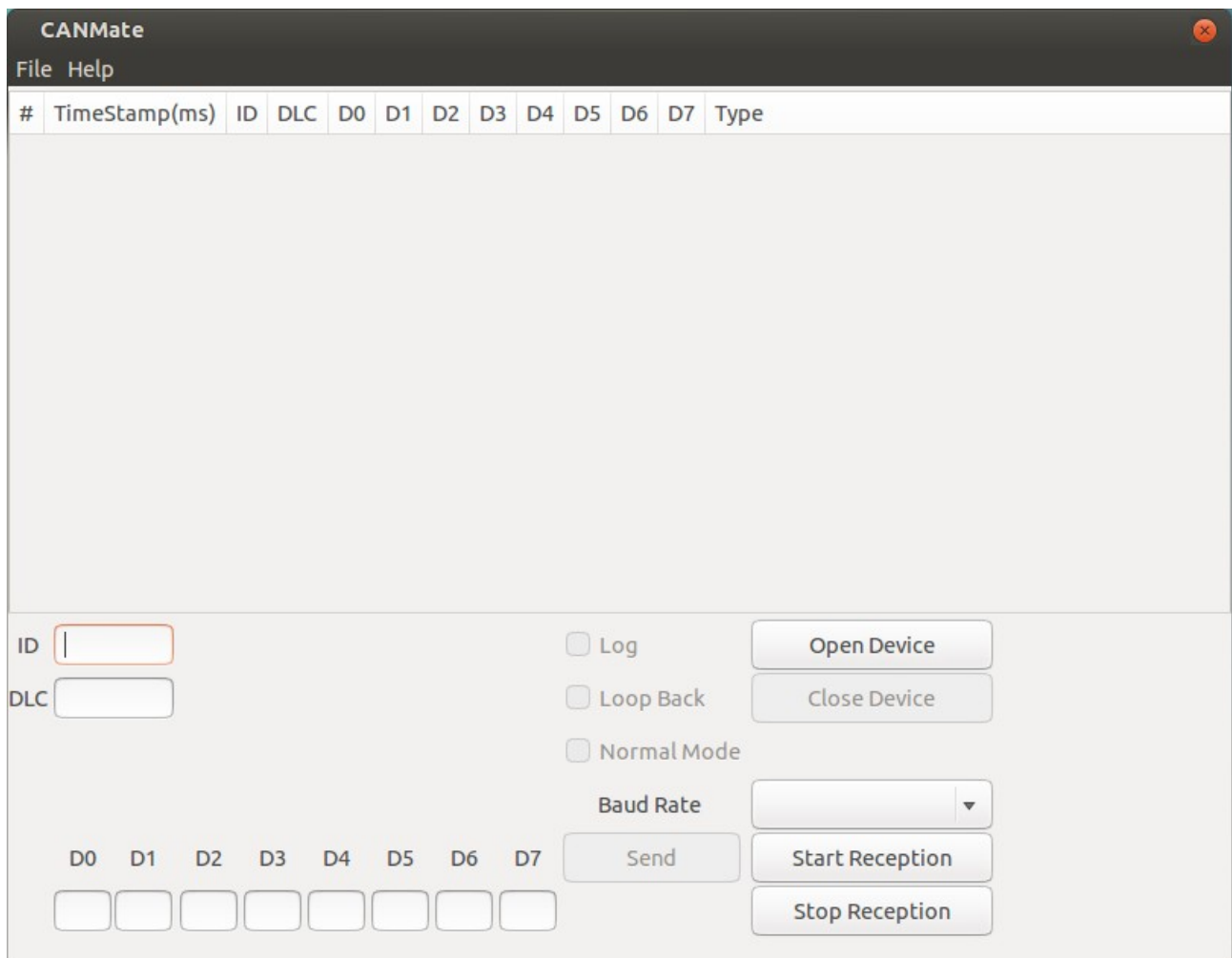


Figure : CANMate App

Supported Platforms

Operating System : Ubuntu 13.04
Kernel Version : 3.8
Dependency : GTK3

Install Instructions

Download the CANMatev1.3.deb file

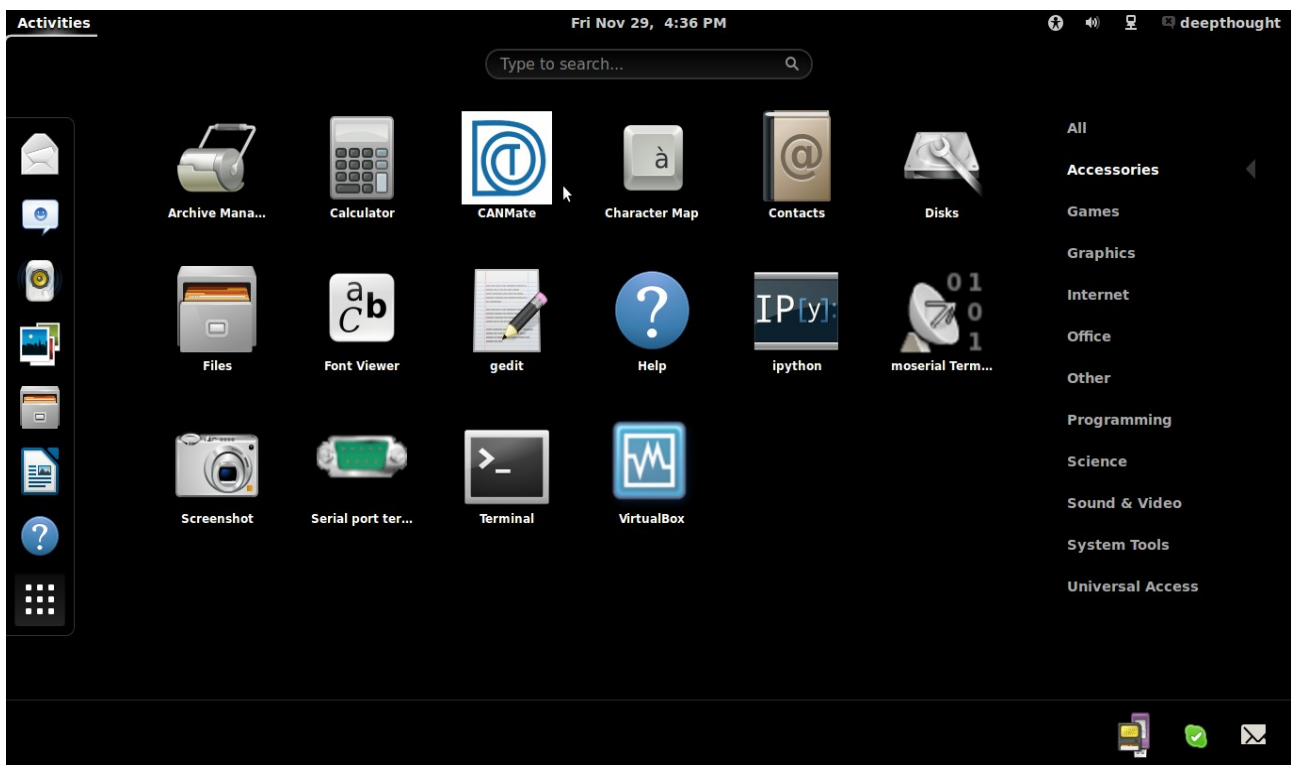
Install the deb file

`sudo dpkg -i CANMatev1.3.deb`

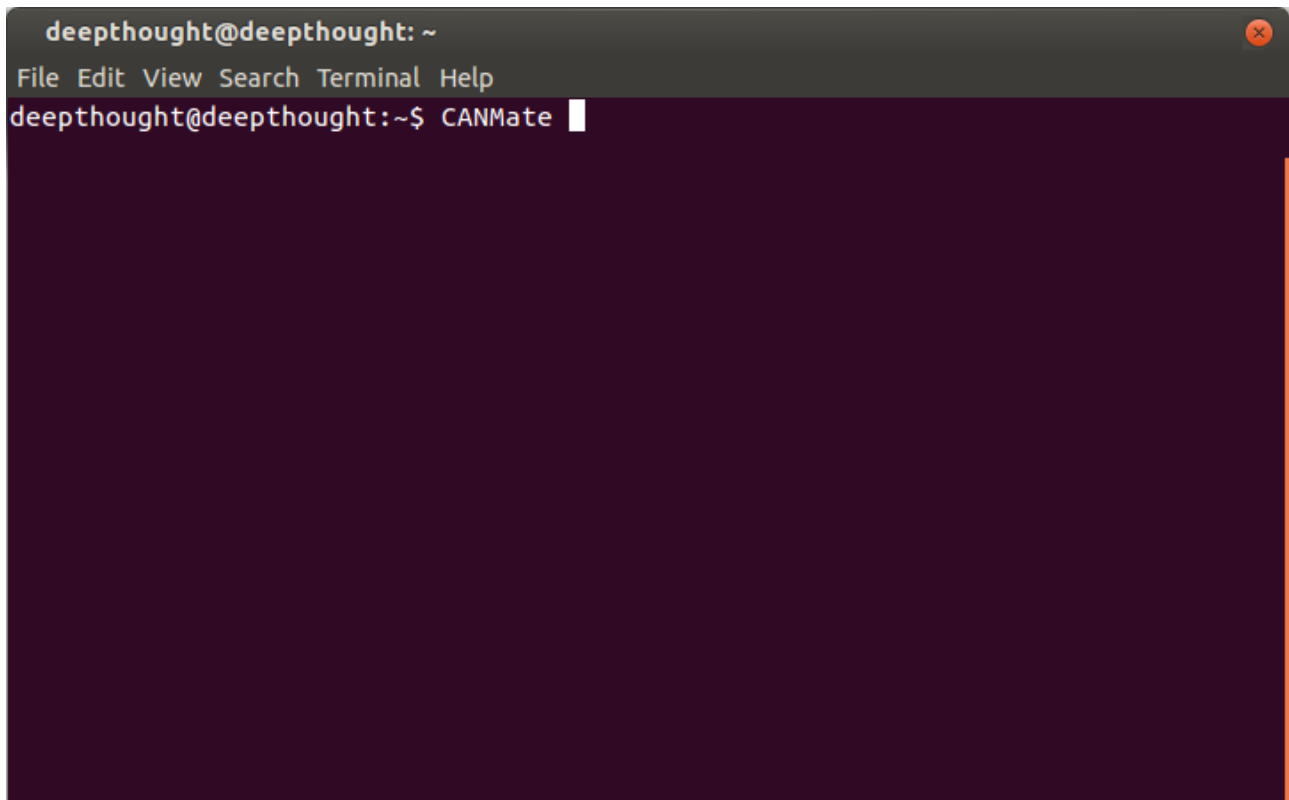
Issue the following commands

`sudo chown <username>:<username> /usr/lib/libCANMATE.so`
`sudo chown <username>:<username> /usr/bin/CANMate`
`sudo chown -R <username>:<username> /usr/share/CANMate`

The CANMate App is listed in Accessories menu or you can run it from terminal by issuing the command “CANMate “

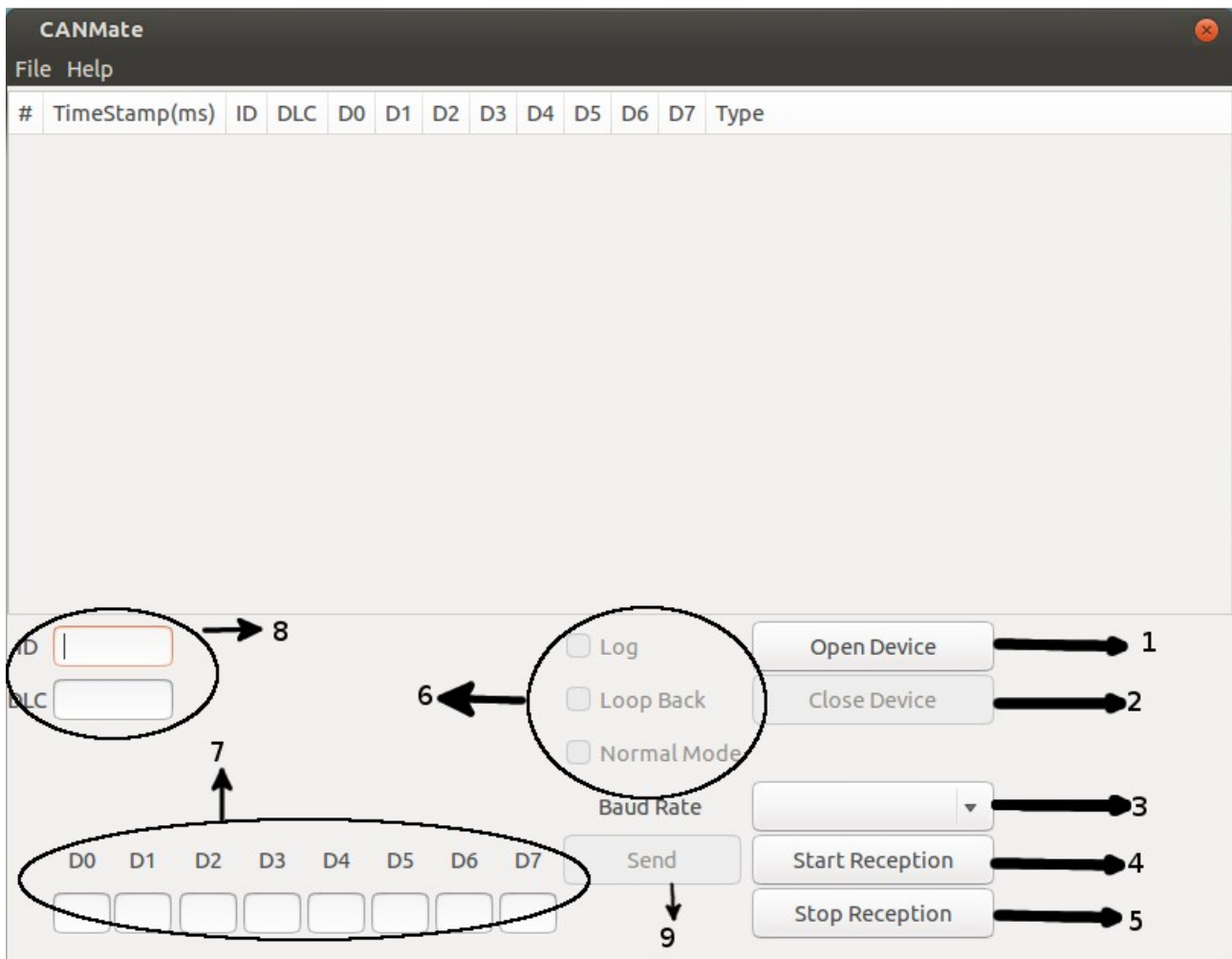


Running From Terminal

A screenshot of a Linux terminal window. The window has a dark gray title bar with the text 'deephought@deephought: ~' and a close button. Below the title bar is a menu bar with the options 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The main area of the terminal is dark purple. The prompt 'deephought@deephought:~\$' is visible, followed by the command 'CANMate' and a white cursor. The terminal window has an orange border on the right side.

```
deephought@deephought: ~  
File Edit View Search Terminal Help  
deephought@deephought:~$ CANMate
```

Basic operations in CANMate App



1. Open CANMate
2. Close CANMate
3. Set Baud rate
4. Start Reception
5. Stop reception
6. Modes and Logging
7. CAN Message area
8. ID and DLC
9. Send to CANMate

Operation of CANMate App is controlled by buttons. The above figure shows the GUI of this application just after starting up.

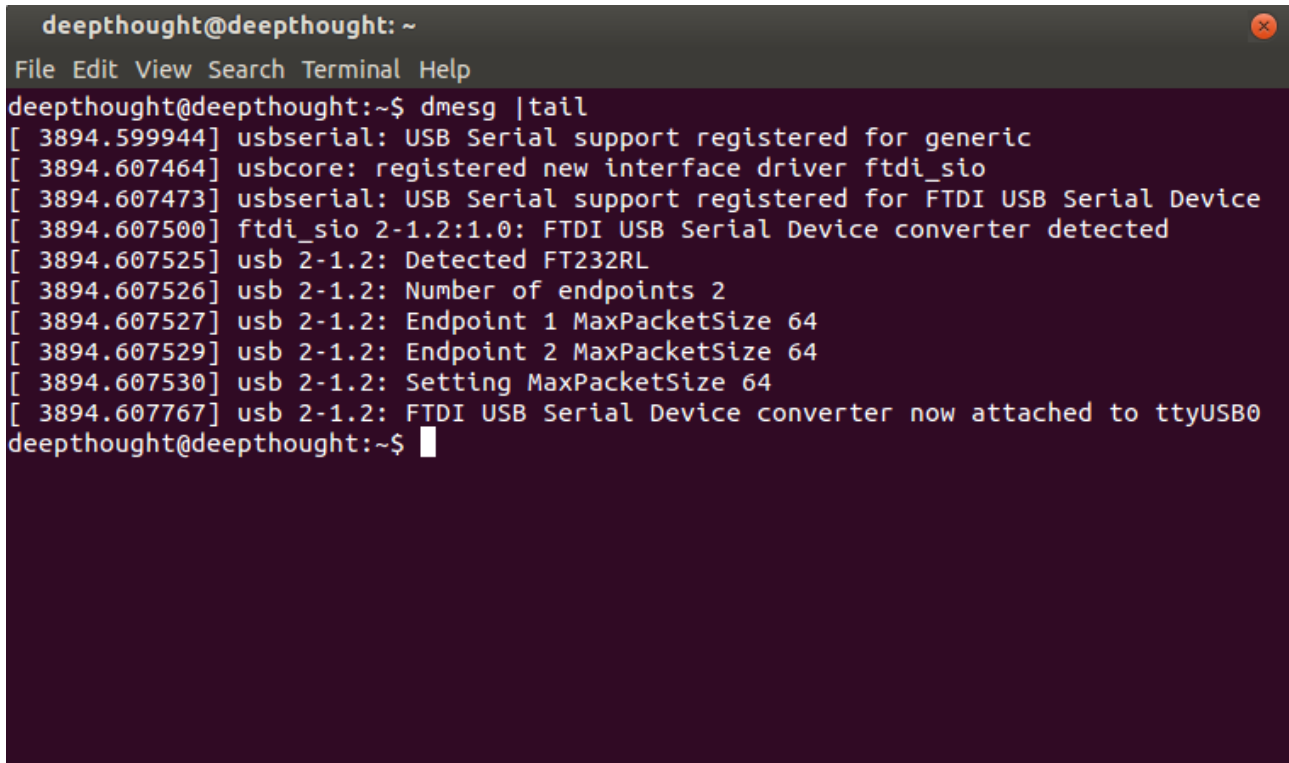
1. **Open Device** : Pressing “Open Device” button opens the CANMate device by turning on the CAN controller inside the Micro controller and this should be the first action taken by the user. No other functions will work if CANMate is not opened. Green LED will be lit once the CANMate is opened.
2. **Close Device** : 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 persist, 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.
3. **Baud rate** : You can select any one of the 12 available baud rates using this combo box. When you select a baud rate the Modes and Logging option gets enabled, by default it will be disabled.
4. **Start Reception** : For receiving CAN Messages the “Start Reception” button must be pressed. If this option is not enabled messages will not be received.
5. **Stop Reception** : 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.
6. **Modes and Logging** :
 1. **Logging** : By default, the CANMate App will not log the incoming and outgoing messages. Logging can be enabled by checking the “Log” checkbox. The received data will be exported to your desktop as csv file
 2. **Normal Mode** : You can set the CANMate in Normal Mode by checking the “Normal Mode” checkbox and see received CAN Messages if start reception is enabled. You can communicate with other CAN devices in this mode.
 3. **Loopback Mode** : You can set the CANMate in Loop Back Mode by checking the “Loop Back” checkbox and see the CAN Messages sent from CAN Message area.
7. **CAN Message area** : In Loopback Mode you can give your messages in this area from D0 to D7. You must enter a valid hex value here.
8. **ID and DLC** : Message ID (from 0 to 0x1FFFFFFF), Data Length Code (DLC from 0 to 8) and up to 8 data bytes can be entered in this area.
9. **Send Button** : Used to send the entered CAN Message .

**** [INSTALLATION NOTES](#) ****

When CANMate is not getting detected check for the following errors

- Is FTDI drivers installed ?

Plug CANMate to your linux system.Issue the command “dmesg | tail”



```
deepthought@deepthought: ~  
File Edit View Search Terminal Help  
deepthought@deepthought:~$ dmesg |tail  
[ 3894.599944] usbserial: USB Serial support registered for generic  
[ 3894.607464] usbcore: registered new interface driver ftdi_sio  
[ 3894.607473] usbserial: USB Serial support registered for FTDI USB Serial Device  
[ 3894.607500] ftdi_sio 2-1.2:1.0: FTDI USB Serial Device converter detected  
[ 3894.607525] usb 2-1.2: Detected FT232RL  
[ 3894.607526] usb 2-1.2: Number of endpoints 2  
[ 3894.607527] usb 2-1.2: Endpoint 1 MaxPacketSize 64  
[ 3894.607529] usb 2-1.2: Endpoint 2 MaxPacketSize 64  
[ 3894.607530] usb 2-1.2: Setting MaxPacketSize 64  
[ 3894.607767] usb 2-1.2: FTDI USB Serial Device converter now attached to ttyUSB0  
deepthought@deepthought:~$
```

If you are getting an output similar to the above screenshot then FTDI drivers are installed in your system, else install FTDI drivers by following the below link

<http://www.ftdichip.com/Drivers/D2XX.htm>

- Set permissions to access serial ports

In Linux serial ports are owned by 'root', and are in the group 'dialout'. By default the normal user is not part of dialout group. So add the user to dialout group. To add issue the below command in terminal

```
sudo adduser `whoami` dialout
```

Now reboot and use CANMate.