Getting Started
Kvaser Memorator /Memorator Professional as Datalogger

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2 Overview

Thank you for purchasing this Kvaser product. This Getting Started Guide describes how to use Kvaser Memorator Professional / Kvaser Memorator as data logger. Since the software is essentially the same for the devices, we will refer to them as just Kvaser Memorator.

2.1 Introduction

As data logger, Kvaser Memorator provides you with a simple way to collect data and store information on a flash disk, making it perfect for mobile applications where it is not possible to use a computer, e.g. mobile applications in laboratories, shorter or longer vehicle test routes, remote diagnosis of vehicles throughout the world, vehicle crash tests, etc. As soon as you have finished your measurement, you can transfer the data from the flash disk to a PC for analysis.

2.2 Technical Requirements

This is what you will need:

- Standard PC with a free USB 2.0 or USB 1.1 port

- Kvaser Memorator with a flash disk of MMC or SD type. Kvaser Memorator represents a professional diagnose tool, designed to connect to any CAN bus. A number of flash disks, with memory sizes up to 2GB, have been tested for use in conjunction with Kvaser Memorator. We strongly recommend that you use these flash disks only. Please visit www.kvaser.com/support for the complete list.

- USB Cable Type AB. The type 'A' connector is a flattened rectangle that plugs into downstream port sockets on the USB hub or USB host. The type 'B' connector, roughly square with two bevelled corners, plugs into upstream sockets on the Kvaser Memorator.

- Kvaser driver package. You have to install the Kvaser driver package before you connect your Kvaser Memorator to your computer the first time.

- Kvaser Memorator Professional Setup Tool /Kvaser Memorator Setup Tool. This computer software allows you to easily set up and download a configuration file to the flash disk, and transfer logged data from the flash disk to the PC.

3 Preparing

Before using your Kvaser Memorator, please install the software and hardware on your computer. For detailed installation instructions, please go to the Support Notes at http://www.kvaser.com. Or follow the brief instructions below.

Step 1 - You can install the drivers and computer software from the Kvaser CD or you can download the latest versions from www.kvaser.com/support. Make sure you have Administrator rights on your computer.

- If you insert the Kvaser CD into your CD-ROM drive, the "Kvaser CD" dialogue will pop up on the computer screen. Select "CAN drivers" in the "Kvaser CD" dialogue. A new window will open, with detailed installation instructions for the driver package. Select drivers depending on operating system. Run the installation program and follow the on-screen instructions. When the installation program is complete, go back to the "Kvaser CD" dialogue. In the dialogue, select "Kvaser Memorator Professional Setup Tool" or "Kvaser Memorator Setup Tool". Run the installation program for the setup tool and follow the on-screen instructions.

- If you download the software from www.kvaser.com, please save the installation packages on your hard drive and make a note on the location of the files. When downloads are complete, close the Internet browser and locate your files. Run the installation program for the driver package and follow the on-screen instructions. When the installation program is complete, locate and run the installation program for the setup tool and follow the on-screen instructions.

Step 2 - Insert the flash disk with the label down as shown in Figure 1.

Figure 1: Insert the flash disk.

Step 3 - Plug in the USB Type A connector into a USB host and the USB Type B connector into the Kvaser Memorator.

Step 4 - When you have plugged in the USB cable, the computer will detect the new hardware and the "Found new hardware wizard" dialogue will pop up on the computer screen (see Figure 2). Simply follow the on-screen instructions.

Figure 2: The "Found new hardware wizard" dialogue.

4 Connecting

This chapter describes how to connect your Kvaser Memorator to the setup tool on your computer.

Step 1 - Open the setup tool via "Start/Programs/Kvaser Memorator/Kvaser Memorator Professional Setup Tool" or "Start/Programs/Kvaser Memorator/Kvaser Memorator Setup Tool". To setup a communication link between the hardware and the computer software, simply click the "Connect" button as shown in Figure 3.
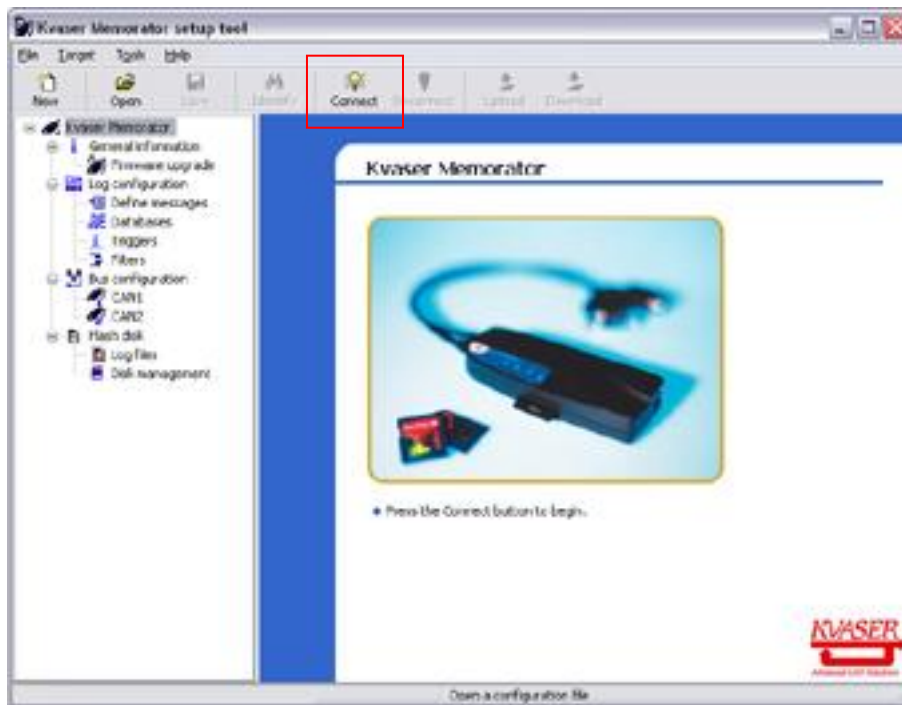

Figure 3: Press the Connect button to begin.

Step 2 – The "Select Device" dialogue will pop up on your computer screen, as shown in Figure 4. Select the Kvaser Memorator icon and press the "Next" button. In the next dialogue, press the "Finish" button. When the setup tool is connected to your Kvaser Memorator the four LEDs will blink slowly in a running light sequence.
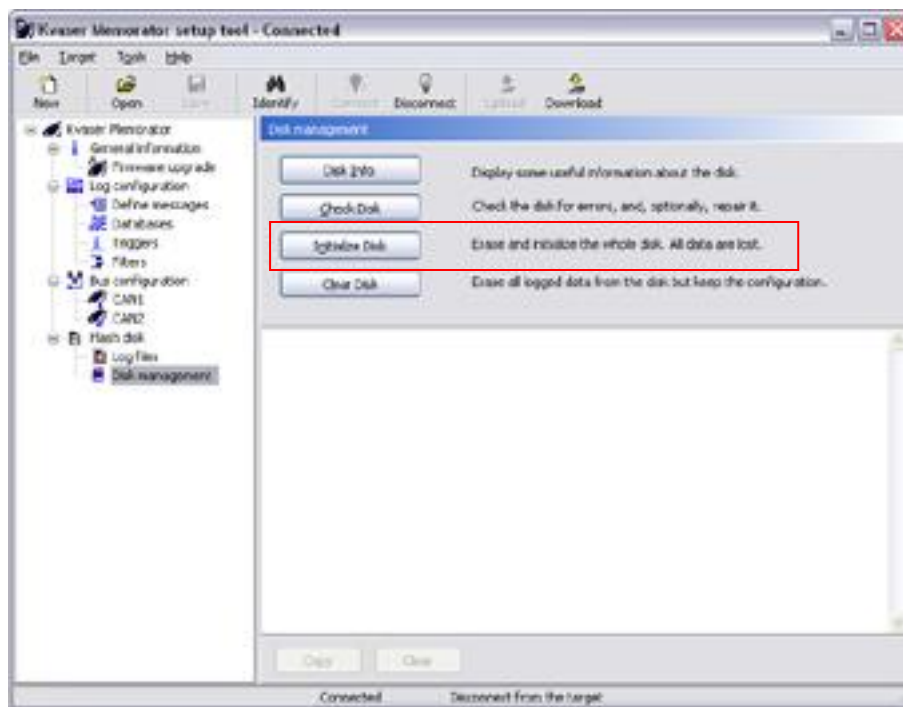

Figure 4: How to connect a Kvaser Memorator to the setup tool.

5   Configuring

This chapter describes how to create a "Log Everything" configuration file, and download it to your Kvaser Memorator, without using any database files, filters, triggers, etc.

Step 1 - You have to initialize the flash disk before using it the first time. Select "Disk Management" icon in the tree-structured windowed to the left. Press the "Initialize Disk" button (see Figure 5).

Figure 5: Press the "Initialize Disk" button.

Step 2 - Select "CAN1" in the tree-structured window, as shown in the figure below (see Figure 6). You are now able to set up the bit rate. The combo boxes offer a simple way to set the most common bit rates. You can also set up the bit rate using chip parameters. Please note that you must use the same bit rate as on the CAN bus network. Press F1 for Help.
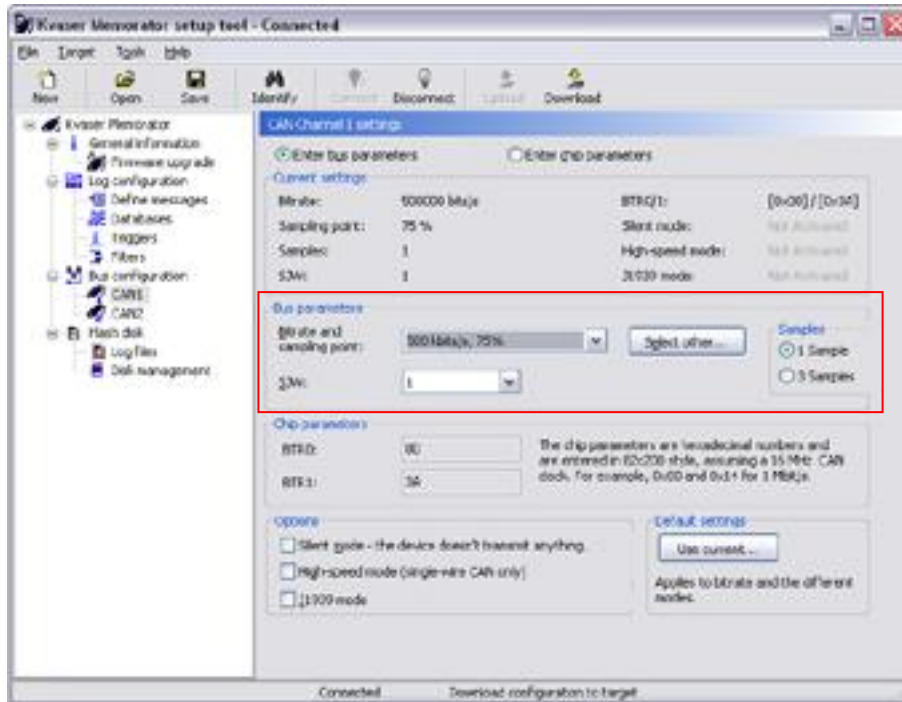
Figure 6: Set the bit rate.

Step 3 - Select "Log configuration" in the tree-structured window. Make sure that the "Log everything" box is checked (see Figure 7). This configuration option makes it possible to log everything that is transmitted over the bus.
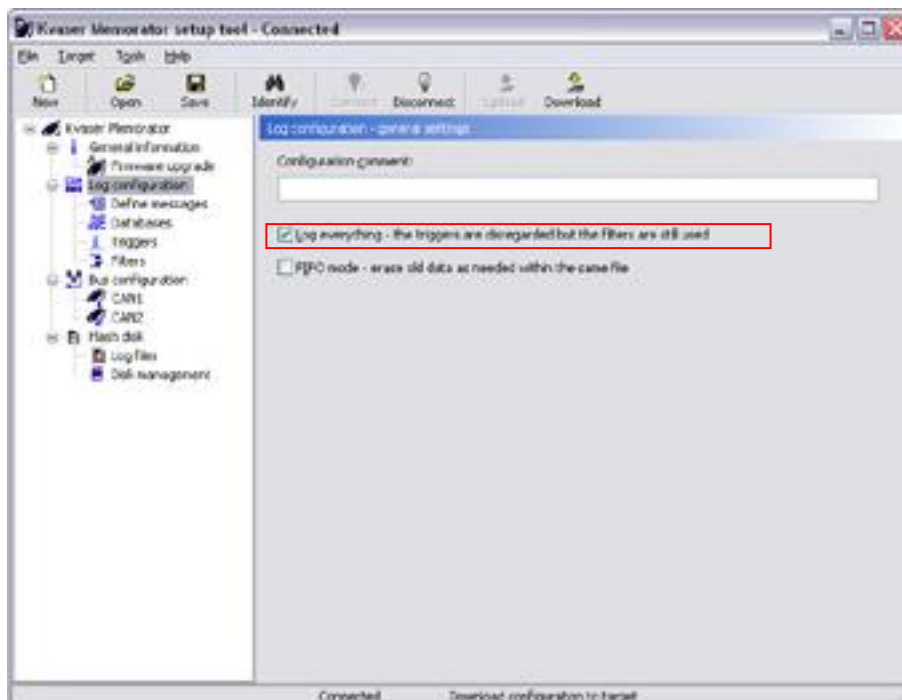

Figure 7: Check the "Log Everything" box.

Step 4 - Press the "Download" button in order to download the configuration to the flash disk (see figure 9). Then press the "Disconnect" button in the setup tool (see Figure 8). This will disconnect your Kvaser Memorator from the computer software. Remove the USB cable.
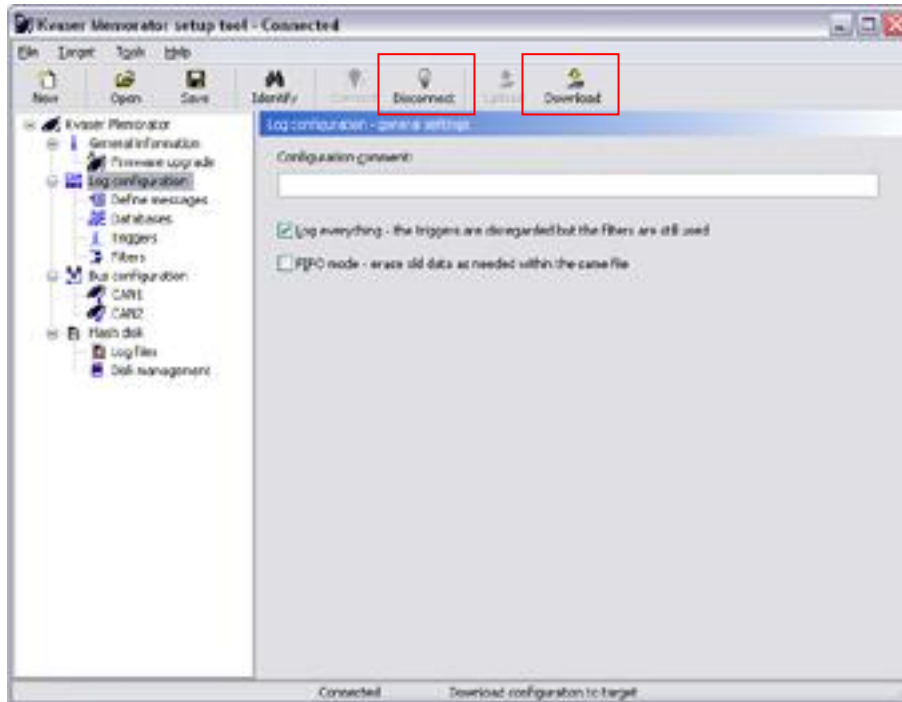
Figure 8: Download the configuration and disconnect the device.

6 Logging

This chapter describes how to log data from the CAN bus.

Step 1 - Connect the DSUB connector on CAN channel 1 to the CAN bus. It is marked with a "1" on the plastic housing. If you have to use a Kvaser OBD II Adapter Cable to connect to the CAN bus, please do so. The green "PWR" LED will start flashing when power is supplied on CAN channel 1. The Kvaser Memorator will be able to log CAN traffic instantly after power up. The yellow "CAN1" LED flashes once for each CAN message that it is sent over the CAN bus. The frequency of the flashes depends on the current busload. When you have finished your measurement, simply eject the DSUB connector.

6.1.1.1 Notes

"Why does not the green "PWR" LED flash at all?"
Make sure the CAN bus supplies your Kvaser Memorator with power. The Kvaser Memorator is power supplied from pin 9 on CAN channel 1. You can feed it with 8 – 40 Volt DC.

"Why does the red "ERROR" LED flash, what is wrong?"
You have a disk error or you are using wrong bit rate. Connect the Kvaser Memorator to the setup tool, perform a disk test, and verify your bit rate settings. Please note that occasional flashes indicates that Error Frames are sent on the CAN bus, and is not to be considered as hardware fault.
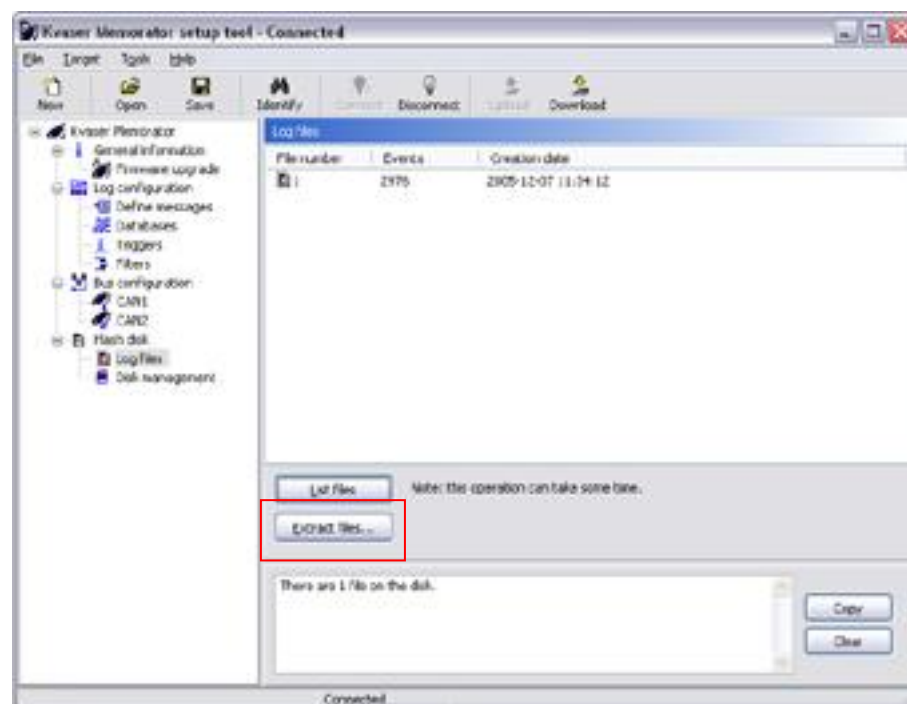
7   Transferring

This chapter describes how to transfer the logged data to your PC. The log file is converted into "CAN Frames in plain text format" which is a text-based format displaying CAN frames. Further on, there exists several different file formats.

Step 1 - Connect your Kvaser Memorator to the PC via the USB cable. Open the setup tool via "Start/Programs/Kvaser Memorator/Kvaser Memorator Professional Setup Tool" or "Start/Programs/Kvaser Memorator/Kvaser Memorator Setup Tool". Simply press the "Connect" button to setup a communication link between the hardware and the computer software.

Step 2 **- Select "Log files" in the tree-structured window and press the "List files" button. The log file is now listed in the "Log files" window.**

Step 3 **- Select the log file, with file number 1, and press the "Extract files" button, as shown in Figure 9. It is possible to convert more than one file in one conversion, simply select several log files. The "Extract and convert files" wizard will pop up on your computer screen. It will guide you systematically through the different stages for converting log files to readable file formats.**

Figure 9: Press the "Extract files…" button.

Step 4 - In the File Options page, you choose the file destination and a base name for the file you are about to create (see Figure 10). Additionally, you have to: add a file number to the base name, add time and date to the base name. It is also possible to merge all several log files into one single output file named base name. Press the "Next" button.
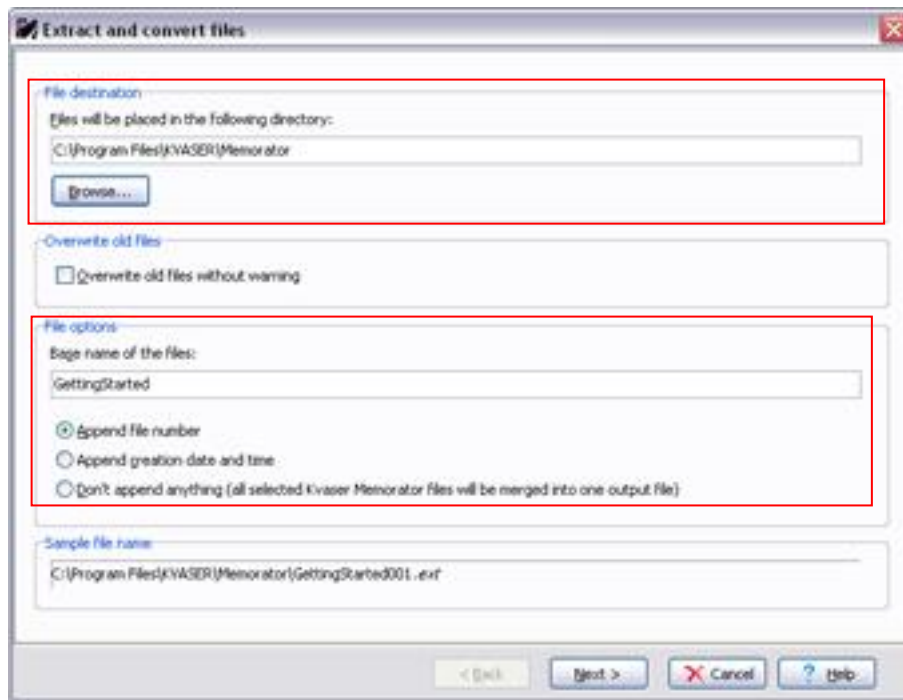
Figure 10: The File Options page.

Step 5 - In the Format Options page, select "CAN Frames in plain text format" (see Figure 11). Press the "Next" button.
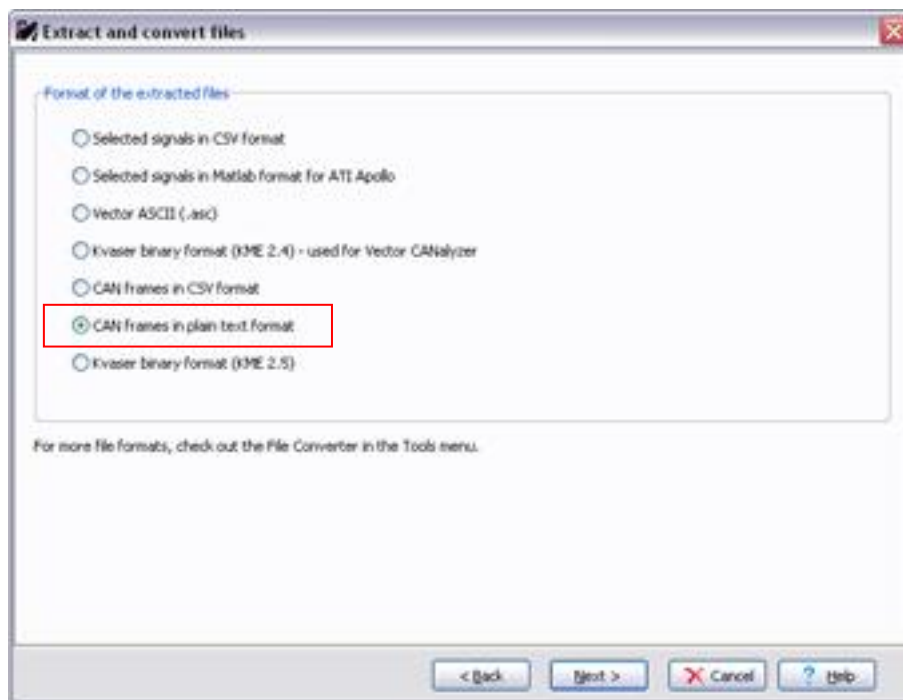

Figure 11: The Format Options page.

Step 6 - In the Other Options page, you can choose between some different options depending of which format you are converting to (see Figure 12). In this case you can for example choose: time stamp offset, CAN channels to extract from, etc. Press the "Help" button for detailed information about the options. Press the Finish button when you have made your choices.
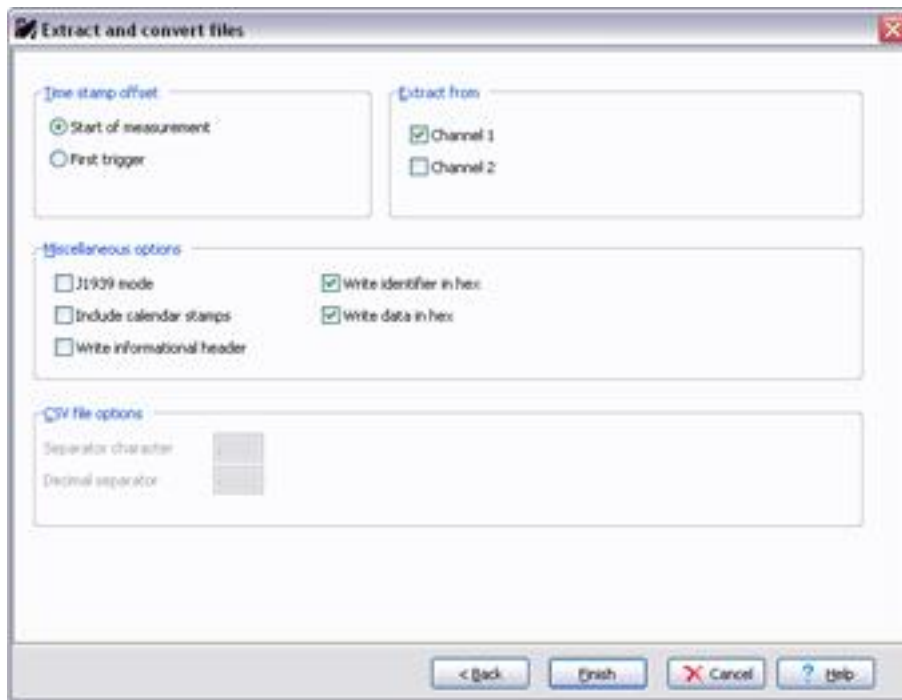
Figure 12: The Other Options page.

Step 7 - The log file is now being converted into a .txt file. Wait a few minutes for the conversion to finish (see Figure 13). Then locate your file on your hard drive. You may now analyse the data that you have successfully logged.
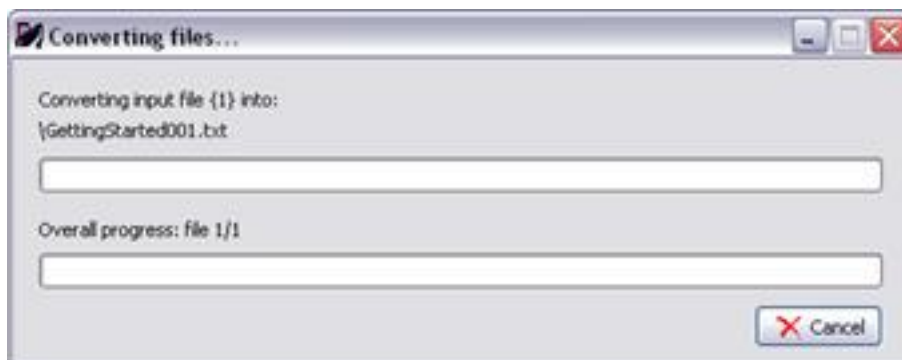

Figure 13: Converting files.

8   That's about it

If you want to learn more about your Kvaser Memorator, please read the Users guide. In addition, here are a few hints and tips.

Kvaser Memorator Setup Tool Help

Open the Kvaser Memorator Setup Tool Help via "Start/Programs/Kvaser Memorator/Documentation". This guide provides you with detailed information on how to use databases, trigger, filter and much more. Here you can also find other helpful documents.

Using Kvaser Memorator as a professional CAN bus interface.

The drivers allow you to use your Kvaser Memorator as a data logger as well as a PC interface for CAN. When you want to use it as a PC interface, simply connect the USB cable.

Kvaser Memorator Professional Setup Tool/**Kvaser Memorator Setup Tool**
Software updates and upgrade instructions can be found at http://www.kvaser.com/download/. To get your software version, open the setup tool and select Help | About in the menu.

Firmware updates
Firmware updates can be found at http://www.kvaser.com/download/. The setup tool includes the latest device firmware that was available at the time it was released. To upgrade the firmware to the version that is included with the setup tool, select "Firmware upgrade" in the setup tool, and press the "Update" button and follow the instructions.

Driver updates
Driver updates and upgrade instructions can be found at http://www.kvaser.com/download/.

9 Document revision history

Revision	Date	Changes
1	2006	Original revision
2	2006-11-13	Reviewed, new layout.