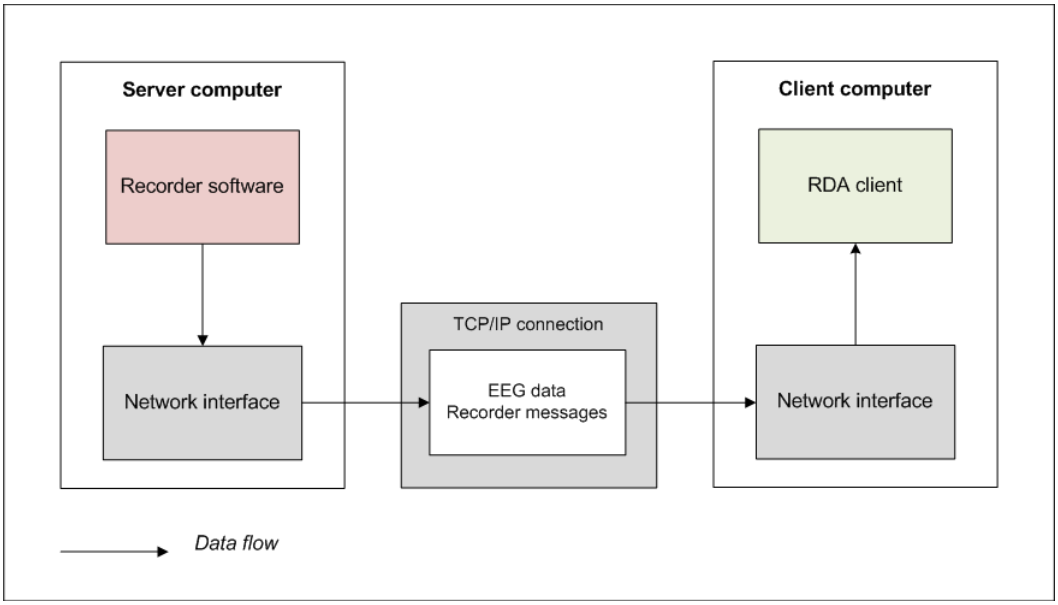
Getting Started with RDA Access

RDA client for MATLAB®

1 Overview

RDA (Remote Data Access) is the term given to remote access to the Recorder for transferring data from the Recorder to other programs located on the local computer or on computers in the network. In this process, the Recorder acts as the server, and the program receiving the data acts as a client. Multiple clients can be connected to the same server concurrently.

Figure 1. Overview of the interaction between client and server



2 What the RDA client for MATLAB® is used for

The RDA client *RDA.m* is used to receive data, including marker information, sent by the Recorder over the network and to output this data in the MATLAB® console. Additionally, the average power is calculated and output. The RDA client *RDAGUI.m* is used to receive data sent by the Recorder over the network and output one channel together with its Fourier transform. This represents an example of a MATLAB® program complete with interface and graphical output.

Please note that the RDA client for MATLAB® that we have provided is merely a sample application designed to be used as a programming template for your own application.

3 Prerequisites for use

- Programming language used: MATLAB® code
- Required software: MATLAB® as of Version 2009b, also the supplied MEX file *pnet.mexw64* or *pnet.mexw32* for MATLAB® 64-bit or 32-bit. The MEX files are contained in the package *tcp_udp_ip toolbox* from Peter Rydesäter et al. and licensed under the GPL license.
- If your server PC is based on a Windows 64 bit OS, make sure to have Microsoft Visual C++ 2010 Redistributable Package (X64) installed („*Control Panel › Programs › Programs and Features*“). This package can be downloaded from the Microsoft website (http://www.microsoft.com/en-us/download/details.aspx?id=14632).

4 Folders

- Folder containing the executable code file: *RDA* or *RDA_Matlab64*
- Source code folder: *RDA* or *RDA_Matlab64*

5 Using the client

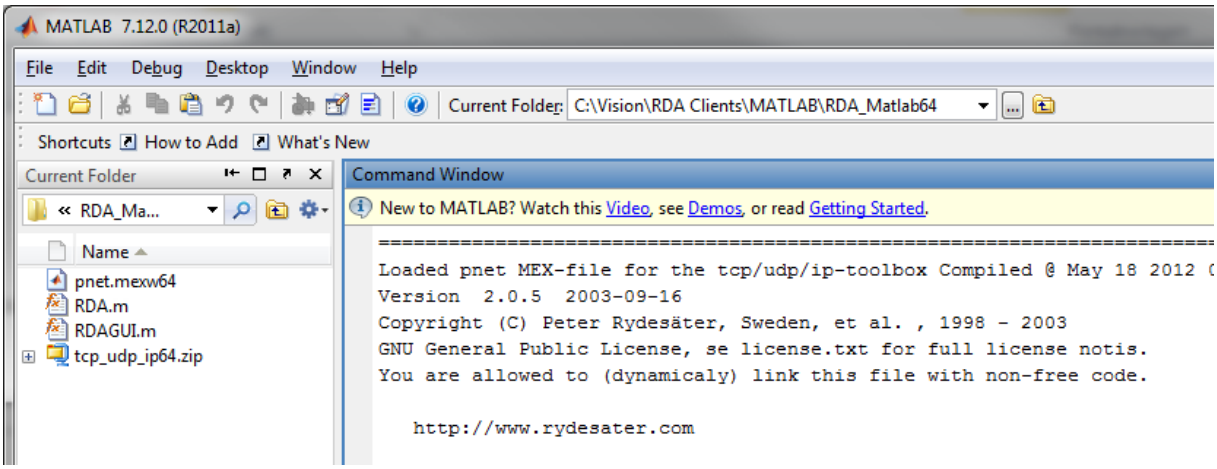
Start the Recorder on the server computer. Choose *Configuration › Preferences...* from the menu and select the *Remote Data Access* tab. Activate the RDA server in this tab.

Please note, that all MATLAB file extension (e.g. *.m) must be in lower case.

5.1 RDA.m

Start MATLAB® on the client computer. Set the working directory to the directory containing the RDA client (see Figure 2). Start the client using the command `RDA`.

Figure 2. MATLAB®, working directory



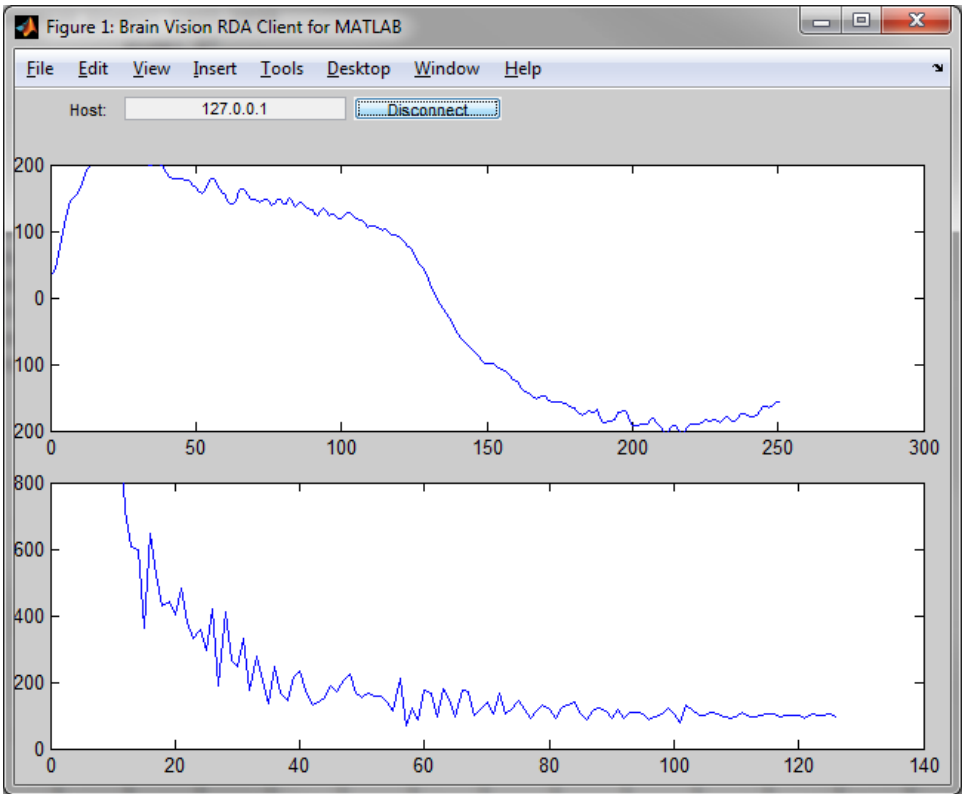
If you now switch the Recorder to monitoring mode, the data is displayed in MATLAB®.

5.2 RDAGUI.m

Start MATLAB® on the client computer. Set the working directory to the directory containing the RDA client. Start the client using the command `RDAGUI`.

If you now switch to monitoring mode in the Recorder and click *Connect* in the MATLAB® window, the data is displayed in the form of graphs in the window (see Figure 3).

Figure 3. Representation of EEG graphs



6 Additional information

You will find detailed information on configuring the server and the client and on the data format used in the User Manual for the Recorder.