EPhys Matlab Toolbox

Electrophysiology Experiment Software for TDT

Designed & Written by Daniel Stolzberg, Ph.D.

daniel.stolzberg@gmail.com

# Table of Contents

[Table of Contents 2](#_Toc344844906)

[Introduction 3](#_Toc344844907)

[Software Requirements & Installation 3](#_Toc344844908)

[Required software 3](#_Toc344844909)

[Obtaining and Setting Up SVN 3](#_Toc344844910)

[EPhys Control Panel (EPhysController) 5](#_Toc344844911)

[Protocol Design Utility (ProtocolDesign) 6](#_Toc344844912)

[Calibration Utility (CalibrationUtil) 7](#_Toc344844913)

[Tank Registration (TankReg) 8](#_Toc344844914)

# Introduction

The EPhys toolbox for Matlab integrates with Tucker-Davis Technologies (TDT) OpenEx software package and real-time processing hardware to facilitate the design and control of electrophysiology experiments. The toolbox includes a control panel which runs the experiment, a protocol design utility for generation parameters for an experiment, and a utility for the automated calibration of simple acoustic stimuli.

# Software Requirements & Installation

## Required software

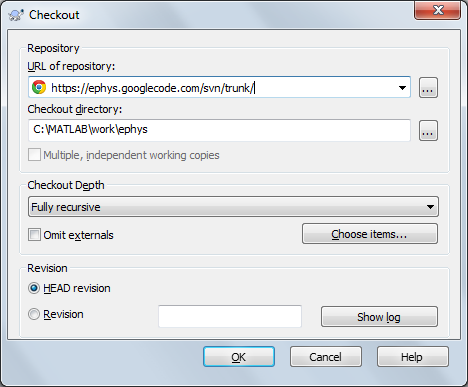
The EPhys toolbox was designed in Matlab version R2011a and higher. The EPhys toolbox does not require any additional toolboxes to function; however, EPhys uses the OpenDeveloper ActiveX controls which can be obtained from TDT. OpenDeveloper is designed to interface with electrophysiology data structures and the OpenEx software suite to run an experiment.

If installing Matlab for the first time, I find it best practice to install to a directory such as “C:\MATLAB\R2012b” and not to the default “Program Files” directory. Installing into the default “Program Files” directory may cause problems with permissions on Windows Vista and later.

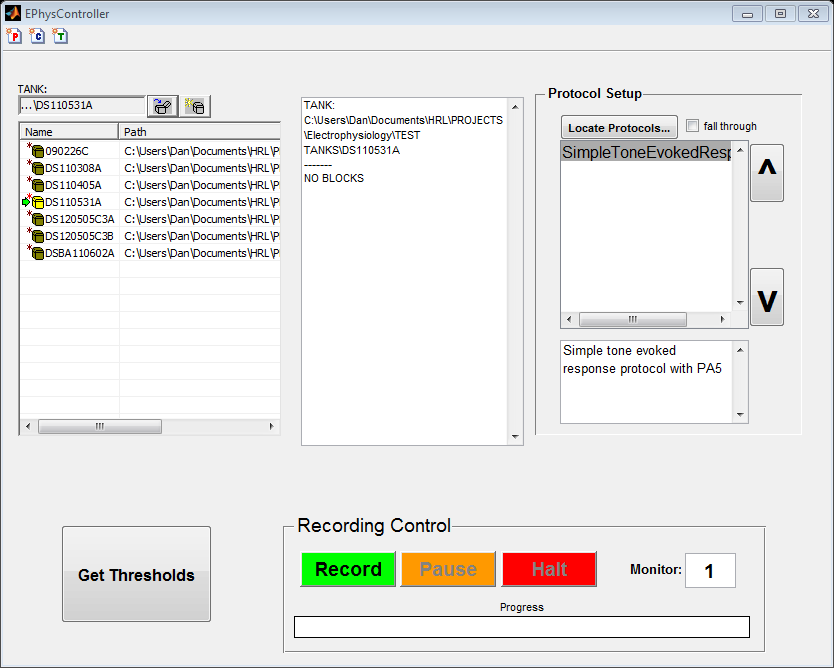
Currently, the EPhys toolbox is distributed using a software versioning (svn) system hosted by GoogleCode and additional software will be required to obtain the latest releases of the EPhys toolbox software (see next section).

## Obtaining and Setting Up SVN

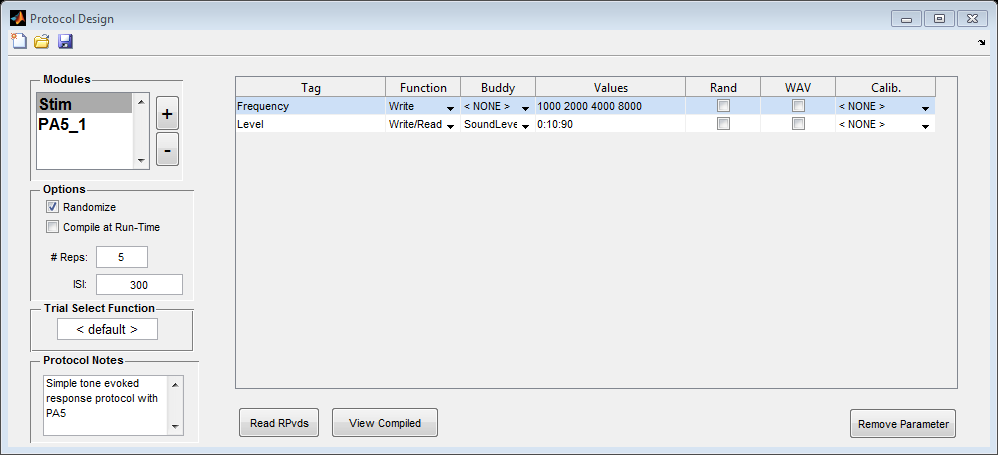
The software versioning system (svn) requires third-party software to be installed locally on the computer which will be used with the EPhys toolbox. TortoiseSVN is a free software package and can be downloaded here: <http://tortoisesvn.net/downloads.html>. Download and install the latest TortoiseSVN software version for your operating system (32-bit or 64-bit) using default options. Once installed, follow these steps to obtain the EPhys software:

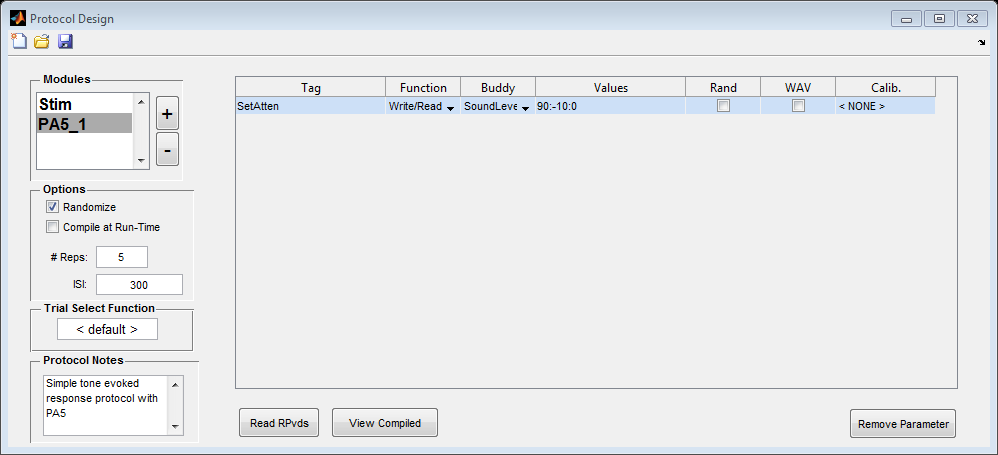
1. Create a new folder called “work” in the Matlab root directory such as “C:\MATLAB\work”
2. Open the work folder in a Windows Explorer, right-click in the white space to open a context menu, and click the “SVN Checkout…” menu item.
3. Enter the following information into the Checkout prompt and click OK.
   1. URL of repository: <https://ephys.googlecode.com/svn/trunk/>
   2. Checkout directory: C:\MATLAB\work\ephys
4. Enter the username and password (contact Dan if you don’t have this information
5. A dialog should appear as the EPhys software is downloaded.

# EPhys Control Panel (EPhysController)

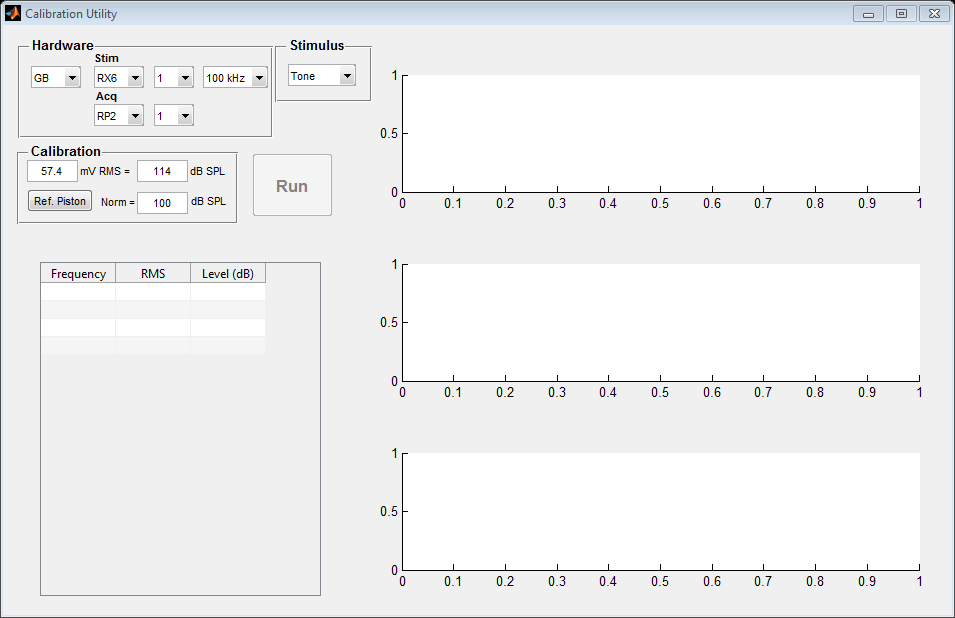


# Protocol Design Utility (ProtocolDesign)





# Calibration Utility (CalibrationUtil)



# Tank Registration (TankReg)

