
MDT for OSX Instructions

February 19, 2016

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Contents

[Introduction to MDT](#)

[Introduction to MDT for OSX](#)

[Usage](#)

[References and Bug reports](#)

Introduction to MDT

NeuroSky's **Mind Developer Tools** (hereafter abbreviated **MDT** or **Developer Tools**) are a set of software tools that make it easy to create innovative applications that respond to a user's brainwaves and mental state.

If you already have a NeuroSky headset (such as **MindWave Mobile**), you will be able to take full advantage of it with our Developer Tools. If you are trying out the Developer Tools before purchasing a headset, thank you for reviewing the toolset. However, please note the NeuroSky headset is needed while using the developer tools to develop your own app. Our headset is available on Amazon store. To your convenience, here's the direct link to it

http://www.amazon.com/NeuroSky-MindWave-Mobile-BrainWave-Starter/dp/B00B8BF4EM/ref=cm_cr_pr_product_top?ie=UTF8 .

If you have any questions, let us know at support@neurosky.com.

Introduction to MDT for OSX

For the purposes of this document, we will loosely use the terms “Mac” and “OSX” interchangeably throughout. The **MDT for OSX** includes: **ThinkGear Connector**, **Application Standards**, **Stream SDK for Mac**, **EEG Algorithm SDK for OSX** and **EULA**:

- **ThinkGear Connector** The ThinkGear Connector (TGC) is a software program - analogous to a socket server - that runs as a background process on your computer and is responsible for directing data from a NeuroSky ThinkGear-enabled headset from the serial port to an open network socket. It is available on both Windows and OSX. Any language or framework that contains a socket library should be able to communicate with the socket API. TGC is an ideal option for developers working in frameworks like Adobe Flash or web-based applications.
- **Application Standards** Document and Icon Images.
- **EULA** End User License Agreement.
- **Stream SDK for Mac:** is used to help connect your application to a NeuroSky headset via bluetooth, and receive data from headset. It contains the follows file:
 - lib
 - TGStreamMac.framework
 - Versions
 - A
 - Headers
 - TGSEEGPower.h
 - TGStreamDelegate.h
 - TGStreamEnum.h
 - TGStreamForMac.h
 - Resources
 - Info.plist
 - Current
 - Headers
 - Modules
 - Resources
 - TGStreamMac
 - README.txt
 - SampleProject

- TGStreamMacDemo
 - TGStreamMacDemo.xcodeproj
 - TGStreamMacDemoTests
- StreamSDKForMac.pdf

- **EEG Algorithm SDK for OSX** is used to analyze and further interpret EEG data from NeuroSky's headset or TGAM module. It includes Attention, Meditation and Eye Blink Detection. These three algorithms are free to use within your application. It contains the follows file:
 - Algo SDK Sample
 - AlgoSdk.framework
 - eeg_algorithm_sdk_for_osx_development_guide.pdf
 - README.txt

If you want more information about other EEG algorithms, please contact us at support@neurosky.com.

For details, please check within each package.

Usage

Each SDK includes a sample project and documents which teach you how to use them.

In order to make the integration progress for SDKs more smooth, please review the documents of SDKs. For example, review “**StreamSDKForMac.pdf**” to start with the Stream SDK. For EEG Algorithm SDK, please review “**eeg_algorithm_sdk_for_osx_development_guide.pdf**”.

“**TGC Installer.pkg**” is an independent package based on NeuroSky ThinkGear-enabled headset, please review all the documents of TGC to start.

“**Application Standards.pdf**” is very useful. It tells you how to use the icons to mark the status of connection in your project.

There is a code snippet which shows how to use these SDK together (This code snippet is from **EEG Algorithm SDK**'s sample project):

```
// Init TGStreamForMac Instance
streamMac=[TGStreamForMac sharedInstance];
streamMac.delegate=self;
[streamMac enableLog:NO];

// Init connection session
[streamMac startRecordRawData];

// Tear down session
[streamMac stopRecordRawData];

-(void) onDataReceived:(NSInteger)datatype data:(int)data obj:(NSObject *)obj {

    NSString *str_type = @"default";

    // distinguish different types of mind data here
    switch (datatype)
    {
        case MindDataType_CODE_POOR_SIGNAL:
            str_type = @"MindDataType_CODE_POOR_SIGNAL";
            break;
        case MindDataType_CODE_RAW:
            str_type = @"MindDataType_CODE_RAW";
            break;
        case MindDataType_CODE_ATTENTION:
            str_type = @"MindDataType_CODE_ATTENTION";
            break;
```

```

        case MindDataType_CODE_MEDITATION:
            str_type = @"MindDataType_CODE_MEDITATION";
            break;
        case MindDataType_CODE_EEGPOWER:
            str_type = @"MindDataType_CODE_EEGPOWER";
            break;
        default:
            break;
    }

    NSLog(@"%@:%d data:%d",str_type,(int)datatype,data);

    if (obj)// if obj exists, got EEGPower data here
    {
        TGSEEGPower *kEEGPower=(TGSEEGPower *)obj;
        NSString *TGSEEGPowerSrting=[NSString stringWithFormat:@" TGSEEGPower delta-- %d\n
        TGSEEGPower theta-- %d\n TGSEEGPower lowAlpha-- %d\n TGSEEGPower highAlpha-- %d\n
        TGSEEGPower lowBeta-- %d\n TGSEEGPower highAlpha-- %d\n TGSEEGPower lowGamma-- %d\n
        TGSEEGPower lowGamma-- %d\n ",
            kEEGPower.delta,
            kEEGPower.theta,
            kEEGPower.lowAlpha,
            kEEGPower.highAlpha,
            kEEGPower.lowBeta,
            kEEGPower.highAlpha,
            kEEGPower.lowGamma,
            kEEGPower.lowGamma];
        NSLog(@"%@@",TGSEEGPowerSrting);
    }
}

```

TGStreamForMac is used to get information returned by Stream SDK, and onDataReceived delegate function is used to receive data. You can pass the data to EEG SDK here.

References and Bug reports

You can get the latest developer information from here:

<http://developer.neurosky.com/>

Learn about NeuroSky's EEG Data Types here:

http://developer.neurosky.com/docs/doku.php?id=thinkgear_communications_protocol

You may find some additional useful information in the Knowledge Base:

<http://support.neurosky.com/kb>

If you find any bugs, please contact us at:

support@neurosky.com