Getting Started with

BioGraph Infiniti





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Product Name: BioGraph® Infiniti

REF

SA7900

Accessory to: Device Name Device Number

FlexComp Infiniti SA7550 MyOnyx SA9000 MyoTrac Infiniti (Not SA9800

available in Europe).

ProComp Infiniti SA7500 ProComp2 SA7400 ProComp5 Infiniti SA7525 TPS SA4500

EC REP

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Introduction

Overview

The purpose of this instruction manual is to provide you with essential information needed to be able to use your system effectively. It includes instructions for setting up your equipment, using the software to record open display and script sessions, as well as basic functions for reviewing and reporting upon session data.

This manual uses examples to illustrate how to record open display and script sessions, as well as functions for reviewing sessions. Screen captures were taken from sessions recorded using the ProComp Infiniti encoder and channel sets, display screens and sample data from the EEG Suite. What you see on your computer monitor will vary, depending on the encoder type and Application Suites that you are using.

Please refer to the on-line help manual for a more detailed description of all the functions and features of the program. To open on-line help, press the F1 function key, on your keyboard, from any window in the program. Because the on-line help manual is designed to provide contextual information, it should automatically open at the section that discusses the window from which the help was called.

Note: Important safety information about operating your hardware is provided in the hardware manuals for the specific encoders and devices you are using. Be sure to read this information.

System Requirements

Please refer to *IS7915 – BioGraph Infiniti PC System Requirements* for a detailed list of requirements for running BioGraph Infiniti 6.7.

Before You Begin

Ensure that BioGraph Infiniti 6.7 and at least one Application Suite have been installed on your computer.

If this is the first time that you have installed BioGraph Infiniti

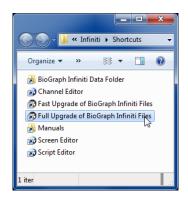
Confirm that your Application Suite is at least version 5.0.

If you must install a version 5.0 or earlier Application Suite, before you use it with BioGraph Infiniti 6.7, do the following:

- Open BioGraph Infiniti Docs & Editors on your computer desktop.
- Right click Full Upgrade of BioGraph Infiniti Files.
- Select Run as Administrator.

This will update the structure of the suite files.





If you are updating BioGraph Infiniti from a version earlier than 5.0

The process will modify the file structure of any previously installed version of an Application Suite (i.e., version 4.0 installed with BioGraph Infiniti 4.0). After you have updated BioGraph Infiniti to version 6.7, you should not install an Application Suite with a lower version number than 5.0.

If you need to install an older version of an Application Suite after installing BioGraph Infiniti 6.7, or if you have problems installing your Application Suites, check for a solution in the FAQ section of the Thought Technology website or contact our Technical Support (see page 35 for contact information).

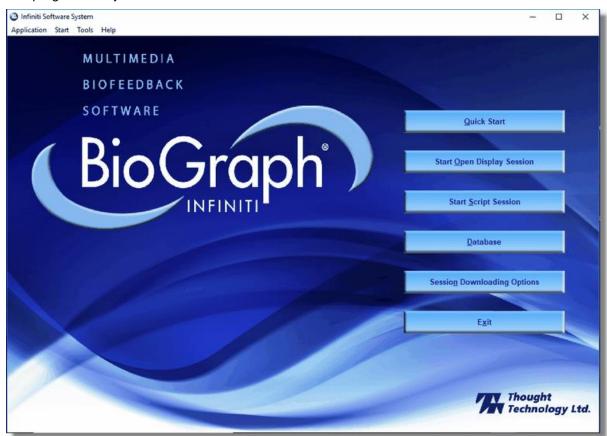
Connecting the Hardware

Refer to the hardware manual for the encoder for detailed instructions on setting up your encoder.

Starting BioGraph Infiniti

To start the software, double-click on the **BioGraph Infiniti** icon on the Desktop.

The program always starts in the Main Menu window.

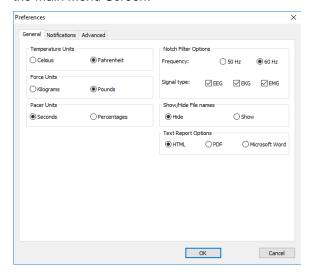


From the Main Menu you can record sessions, replay or review recorded sessions, maintain session and client information, or manage session data recorded on a Compact Flash memory card.

You can also set global settings that affect the performance of BioGraph Infiniti.

Setting Preferences

To manage global settings for your BioGraph Infiniti system, select **Preferences** from the **Tools** menu in the Main Menu Screen.



Note: Global settings remain in effect unless you change them.

In the **General** tab you can select values for the following global settings. These settings affect all channel sets.

Temperature, Force, and Frequency:

Default values for these settings are determined from your computer's Regional Settings at the time BioGraph Infiniti is run for the first time. If necessary, you can modify them; they are not automatically reset.

Notch Filter:

A notch filter removes the specific frequency caused by electrical interference from a raw signal. The signals that are susceptible to electrical interference are EEG, EKG and raw EMG. Notch filter settings affect all signals of the selected type and work with any channel set.

Text Report Options:

You can generate text reports in one of three different formats, **HTML**, **PDF**, or **Microsoft Word**. Select your preferred format here.

Note: Microsoft Word and Excel, a PDF reader, and a web browser **must** be installed on your system for these functions to work.

Show / Hide File Names:

Channel sets, screens, scripts, and favorites are identified by a **Description** and **File Name**. By default, BioGraph Infiniti displays only **Descriptions**. However, you have the option to display **File Names** if you prefer.

- Select Show to display file names in the BioGraph Infiniti interface.
- Select Hide to hide the file names.



Script list with file names hidden

Description	File Name	Duration	Activities	Channel Set Description	Category	Date Modified
PI 1 EEG baseline (post-training)	PI 1 activity EEG baseline - post-training.prt	00:02:10.000	1	PI EEG Suite 1 EEG	EEG Assessment	02/01/2007 3:49:33 PM
PI 1 EEG baseline (pre-training)	PI 1 activity EEG baseline - pre-training.prt	00:02:10.000	1	PI EEG Suite 1 EEG	EEG Assessment	02/01/2007 3:49:44 PM
PI 4 activity EEG baseline assessment - 1 monitor	PI 4 activity EEG baseline assessment - 1 mon.prt	00:00:00.000	4	PI EEG Suite 1 EEG	EEG Assessment	03/10/2012 3:44:39 PM
PI 4 activity EEG baseline assessment - 2 monitors	PI 4 activity EEG baseline assessment - 2 mon.prt	00:08:45.000	4	PI EEG Suite 1 EEG	EEG Assessment	30/08/2012 4:36:41 PM

Script list with file names displayed

The first time you run BioGraph Infiniti, it pops up a message explaining how to display file names.

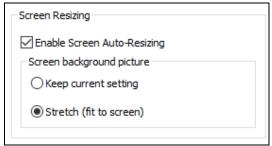
- Click Close to close the message pop-up.
 If you don't want to see this message each time you reopen the software, select the check box before you close it.
- Other system messages can be enabled or disabled from the **Notifications** tab of **Preferences**.

Screen Resizing

BioGraph Infiniti permits screens to be resized if they don't conform to the monitor configuration of your system. Resizing can be done automatically or manually, depending on a setting in the **Advanced** tab of **Preferences**.

 To enable automatic screen resizing, select the check box, and to disable it, clear the check box.



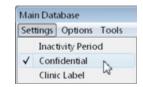


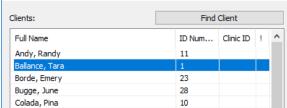
Detailed information about resizing screens is provided in the on-line help.

Enabling Confidential Setting

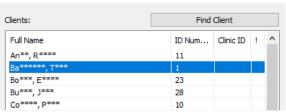
The Confidential setting helps protect clients' privacy by masking their names in the client database.

- Click **Database** to open the Main Database window.
- From the **Settings** menu, select **Confidential**. The check mark indicates that the setting is enabled.
- If you need to disable the **Confidential** setting, repeat these steps to remove the check mark.









With the Confidential setting enabled

- If you are using BioGraph Infiniti for the first time, see Entering Key Codes and Registering Your Encoder on page 9.
- For information about <u>Recording an Open Display Session</u>, go to page 14.
- For information about <u>Recording a Script Session</u>, go to page 17.
- Information about <u>Reviewing Sessions</u> begins on page 24.

Information about Favorites and Quick Starts is provided on page 33.

Downloading Sessions from MyOnyx

You can review the biofeedback sessions you have recorded with the MyOnyx app in BioGraph and use the analytical tools and options available for a session recorded in BioGraph . Review screens created for the MyOnyx Rehab Suite are available for this purpose. Refer to the MyOnyx Rehab Suite documentation for details.

Using a Compact Flash Card

You can use FlexComp Infiniti, ProComp5 Infiniti, ProComp Infiniti and MyoTrac Infiniti encoders to record sessions on a Compact Flash card for later download to the BioGraph Infiniti software. Before you can record to a Compact Flash card, the card must be formatted and prepared for use with your encoder.

Note: Infiniti encoders are delivered with a protective insert in the Compact Flash slot.

- To remove the insert, push the button next to the slot once to eject it. The card can then be inserted, as shown. To protect from incorrect insertion the card can be inserted into the device only one way. When inserted properly it is flush with the device rear.
- Use the same procedure to remove the card when it is no longer required and reinsert the protective insert.



Compact Flash slot on a MyoTrac Infiniti encoder

Formatting the Compact Flash

 First connect a Compact Flash reader to your computer and insert the card in it.

Readers come in different sizes and shapes. This picture shows a typical device.

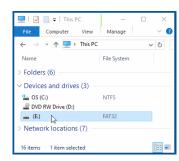
Depending on your version of Windows, do one of the following:

Open the Start menu.	Windows 7				
Open File Explorer .	Windows 8, Windows 10				

• Select Computer.

You will see a removable disk listed. This is your Compact Flash card. The drive letter will vary depending on your computer's configuration.





- Select the removable disk and right-click on it.
- From the right-click menu, select Format.
- In Format Removable Disk, select FAT from the File system menu, as shown.
- Select the Quick Format check box and then click Start.

This formats your Compact Flash card to the proper format.

• When formatting is finished, click **Close**.

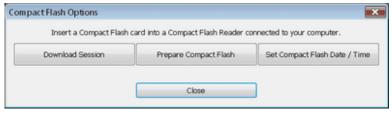


Preparing the Compact Flash for Use with your Encoder

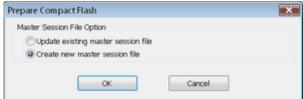
Use this procedure to prepare a FAT-formatted Compact Flash card for use with your ProComp Infiniti, ProComp5 Infiniti, FlexComp Infiniti or MyoTrac Infiniti encoder.

Note: If you have a MyoTrac Infiniti encoder, you can optionally prepare the card for recording sessions using the CF Report Generator Software (available on the MyoTrac Infiniti CD or from our website at www.thoughttechnology.com). See the Report Generator User Guide for more information.

- · Connect the Compact Flash reader to your computer and insert the formatted card in it.
- Open BioGraph Infiniti.
- In the Main Menu screen, do one of the following:
 - o Click Session Dowloading Options > Compact Flash Options.
 - From the Tools menu, select Session Dowloading Options > Compact Flash Options.
- In Compact Flash Options, click Prepare Compact Flash.



- In Prepare Compact Flash, select Create new master session file and click OK.
- At the warning prompt, click Yes.



• In the file browsing window, locate and select the removable disk that is your Compact Flash card. The drive letter will vary depending on your computer's configuration.

- In the **Save** browser window, do the following:
 - Ensure that Save as type is Master Files (*.msf).
 - o In File name, type Flash.msf.
 - o Click Save.
- At the confirmation prompt, click **OK**.

The system builds the master file on the card.



 At the acknowledgement prompt, click OK and then click Close to exit Compact Flash Options and return to the Main Menu screen.

Your Compact Flash card is now ready for use. This procedure needs to be done only once.

Note: Once it has been prepared for use with your encoder, the Compact Flash card cannot be used for other purposes (such as file storage).

Recording Sessions

Overview

With the BioGraph Infiniti software you can record two types of session: **Open Display** and **Script**. Open display sessions are generally used for biofeedback training, when flexibility is important and you need to be able to rapidly change session parameters depending on the client's reactions. Script sessions, on the other hand, are important for recording assessment or follow-up sessions, where a standardized and constant approach is more appropriate. While both open display and script sessions can be used for trend reports, script sessions generally generate more comparable sessions.

Follow these general steps to start recording a session. Detailed explanations are provided in later sections of this chapter.

- Click on Start Open Display Session (page 14) or Start Script Session (page 17).
- Select a Client file. This is done from the Client Database window.
- Select a previously recorded session and click **Start** or define a new session configuration. This is done from the **Start Session** window.
- To define a new session configuration, depending on the session type, select a channel set and up to 5 display screens or select a script. This is done from the Select Screens or the Script Database windows.
- Verify the sensor connections. This is done from the Hardware Configuration window.
- In the recording window, you can:
 - o From the **Options** menu: set open display statistics.
 - o From the **Edit** menu: modify channel set parameters.
 - o From the **Tools** menu: set automatic rejection parameters for reviewing the session (page 21).
 - From the Hardware menu: perform an impedance check on your sensors; zero EMG sensors; or check the battery level of your encoder (page 22).

First Time Run

The first time you record a session with BioGraph Infiniti, you are prompted to enter the key codes for your encoder. You are also prompted to enter these key codes if you uninstall and reinstall BioGraph Infiniti, or if this is the first time you are using a specific encoder with your existing installation.

Registering a TPS or MyOnyx Encoder

Before you can register a TPS or MyOnyx encoder in BioGraph, you must pair it to your PC. Details on how to do this are provided in the hardware and suite reference manuals for the device. It is important to read these manuals and to follow all warnings and cautions.

Registering a ProComp or MyoTrac Encoder

ProComp and MyoTrac encoders are connected to BioGraph physically, as described in the hardware manuals for these encoders. It is important to read these manuals and follow all warnings and cautions.

Note: If you purchased your encoder and software separately, you can find the key codes inside the cover of the BioGraph Infiniti manual. If you purchased them at the same time, you should find the key codes inside the battery compartment of the encoder **and** the front cover of the manual. If you can't find the key codes, contact Thought Technology Technical Support (see page 35 for contact information) with details of your purchase so that we can send you key codes for your system.

If you have upgraded to BioGraph Infiniti 6.7 from version 5.1 or earlier, you can no longer use the original key codes for your existing encoders. Your upgrade package should include new key codes for your encoders. If you are missing any key codes, contact Thought Technology or your dealer to receive new ones.

Entering Key Codes and Registering Your Encoder

For this procedure you will need the following:

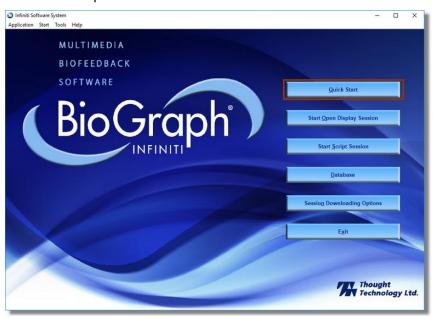
- One of the following encoders, ready-to-use: ProComp Infiniti, ProComp 5. ProComp 2, MyoTrac Infiniti, MyOnyx, MyoTrac 3, or TPS
 Refer to the hardware manual for the encoder for detailed instructions on setting up your encoder.
- At least one sensor
- Your Encoder Key Codes: These are associated with the serial number of the encoder.

Both sets of key codes are generated by Thought Technology and provided to you when you purchase your BioGraph Infiniti system.

The easiest way to register an encoder is to run one of the QuickStart Favorites. These are added to BioGraph during the installation program when you install BioGraph Infiniti 6.7.

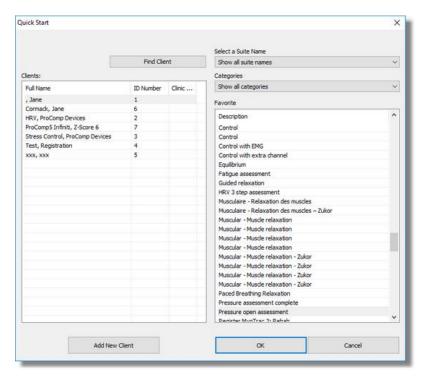
To register the encoder and enter the key codes:

- 1. Turn on the encoder.
- 2. Connect the sensors to the appropriate channels for the QuickStart Favorite you want to run. Details are provided in the manual for the application suite.
- 3. Ensure that the encoder is paired with the PC via Bluetooth or connected to the PC, as described in the hardware or reference manual for the encoder or the suite.
- 4. Launch BioGraph.

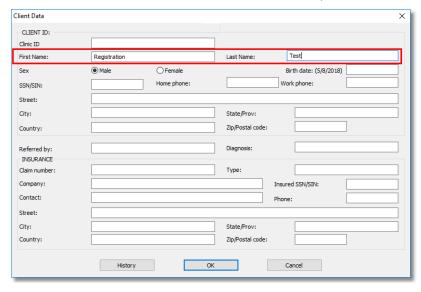


5. Click Quick Start.

The Quick Start window opens.

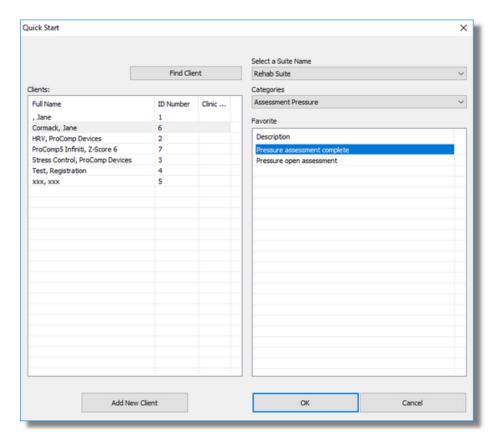


- 6. Do one of the following:
 - Select a client in the Clients list box if you have created client files and skip to step 7.
 - Click Add New Client and continue with the next step.



Note: You do not need to enter the names of a real person to register the encoder. You can enter anything in these fields.

7. Click **OK** to return to the **Quick Start** window.

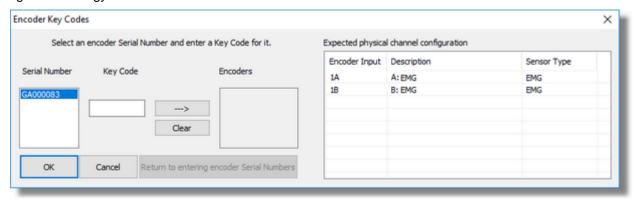


- 8. Select your application suite Select a Suite Name drop-down list.
- 9. Select the category for the suite from the Categories drop-down list.
- 10. Click **OK** on the Quick Start window.

The Encoder Key Codes window opens.

Entering Key Codes

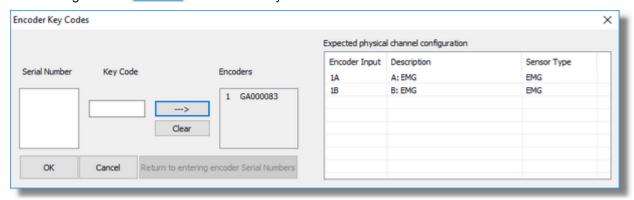
When the Encoder Key Codes window appears, you need to enter the key codes provided to you by Thought Technology.



The **Serial Number** text box is automatically populated.

The Expected physical channel configuration list box is populated from the selected Quick Start Favorite.

- 1. Enter the Thought Technology key code in the **Key Code** text box.
- Click the right arrow _____ to move the key code to the Encoders list box.



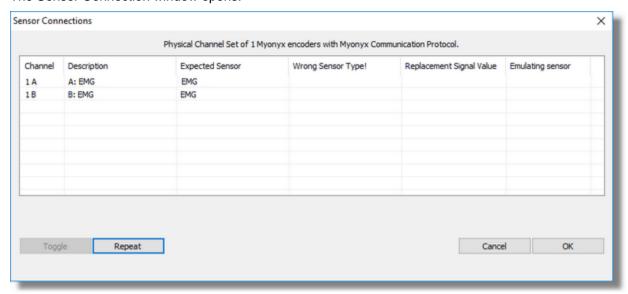
3. Click OK.

The Application Key Code window opens.



- 4. Enter the **Application Key Code**, provided by Thought Technology in the text box.
- 5. Click OK.

The Sensor Connection window opens.



This window displays the Channel Inputs for the encoder with a description and the name of the sensor that is expected.

6. Do one of the following:

If the cables for the sensors are not connected correctly, the **Sensor is not detected** message appears in the **Wrong Sensor Type** column, verify the sensor connections and click **Repeat**

This clears the **Sensor** is not detected message.

7. Click **OK** on the Sensor Connections window.

You can begin recording your session.

Suite Activation

Before you can use a protected suite, you must activate it. However, not all suites are protected. If you need to activate a suite, a message appears during installation.

To activate a protected suite:

- 1. Make sure that the BioGraph Infiniti application is closed.
- 2. Double-click on the **BioGraph Infiniti Docs & Editors** icon on your desktop. The Docs & Editors folder opens.
- 3. Double-click on the **20** 1st time activation of suite icon.

The User Activation App window opens.



4. Enter the **Activation key** for the encoder used to record the session.

Tip: Your Suite Activation Key Code is in the same place as your Encoder Key Code.

5. Click OK.

You can now start BioGraph Infiniti and use your new suite.

Recording Sessions in BioGraph

In BioGraph, you can record two types of sessions Open Display and Script sessions.

If you select Open Display, you can load up to five display screens at once and switch between screens during the session. Open display sessions are generally used for biofeedback training, when flexibility is important and the clinician needs to be able to rapidly change the session parameters, according to the client's reactions. Because they may show data reflecting many changes in physiology, you may not always want to save the data from an open display session after it has been recorded and reviewed.

Script sessions, on the other hand, are important for recording assessment or follow-up sessions, where a standardized and constant approach is more appropriate.

Whether you are recording an open display or a script session, data viewing and feedback options are defined by channel sets and display screens. A display screen is an arrangement of visual instruments (graphs, animations, etc.) that displays the channel set data in a variety of ways and provides feedback indications, visual or auditory, that are modulated by threshold conditions.

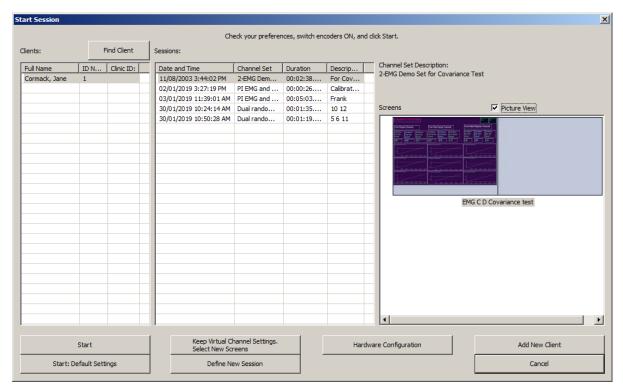
The screens that are available on your system depend on the Application Suite(s) that were installed on your system. Refer to your suite documentation for specific information about using these screens.

Starting a Recording

To start recording a session from the Main Menu screen, click the **Start Open Display Session** or **Start Script Session** button or select an option in the **Start Session** menu:

Recording an Open Display Session

To record an Open Display Session, launch BioGraph and click the **Start Open Display Session** button. Then, select a client file and set up the session parameters. Recording mode launches automatically and the **Start Session** window appears.



When the Start Session window appears, select a client account in the Clients column. In BioGraph, you cannot record a session without a client. The Sessions column lists the uncompressed open display sessions that were recorded for the selected client.

You can use the **Find Client** function to locate a client file. Detailed information about this function is provided in the online help.

Note: Even if you aren't going to save the session, you must select a client file.

Note: If the session list is empty, it doesn't mean that no sessions were recorded for that client, only that no open-display sessions were recorded for that client.

If you select a session, the Screens list shows you the channel set name and the screens that were used for that session.

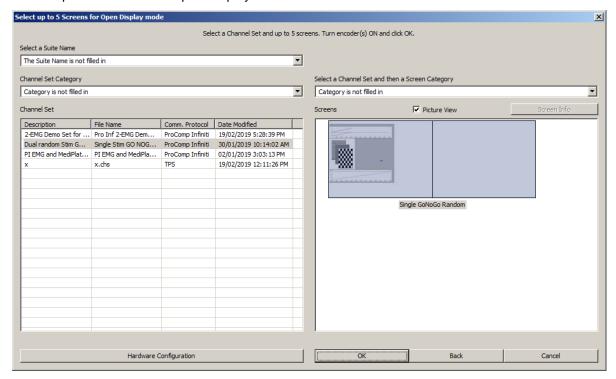
Select the Picture View option to see thumbnail images of the screens. Deselect this option to see a list.

Command Buttons

- Click Start to rapidly start a new session with the same client and channel set settings.
- Click **Start: Default Settings** to start a new session with the default channel set settings instead of the client settings.
- Click Keep Virtual Channel Settings. Select New Screens to keep the client's channel set settings but change the selected screens.
- Click **Define New Session** to define completely new session settings. Follow the directions in the next section.
- Click **Add New Client** to open the Client Data window and create a new client file. You need to enter at least a first and last name.

Defining a New Open Display Session

Select Up to 5 Screens for Open Display Mode



To define a new Open Display Session:

- Select the Suite from the drop-down list at the top left of the screen.
 The categories for the selected suite are displayed in the Channel Set list box on the left.
- To refine the list of categories, select a category from the Channel Set Category list box. The screens for the selected category are displayed on the right.
- To refine the list of screens, select a screen category from the drop-down list.
 If information on the selected screen is available, the **Screen Info** button is enabled. Click this button to view a description.
- Select up to 5 screens from the Screens list on the right. To select more than one screen, press the [Control] or [Shift] key as you click.

If you have not already done so, connect the sensors to your encoder. Then, click **Hardware Configuration** to verify the sensor configuration for the selected channel set.

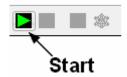
The Hardware Configuration window opens. It displays information about your channel set and encoder(s). A table displays the physical channels or encoder inputs, descriptions, and sensor type.

 Click Close to return to the session settings window. Make sure to turn your encoder ON and click OK to continue when you have selected the screens you want to use.

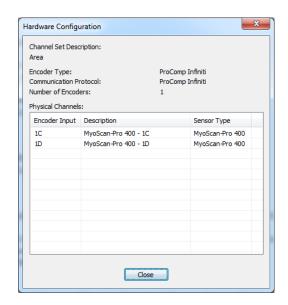
Note: If this is the first time you are using your system, at this point you will be asked to enter Key Codes (see Entering Key Codes on page).

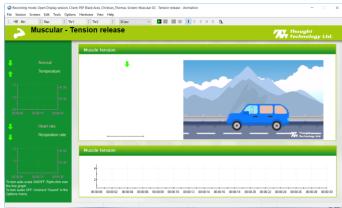
If there are no problems with your encoder setup or your sensor connections, you will enter the **Main Frame** window in recording mode.

To start recording, click the Start button.



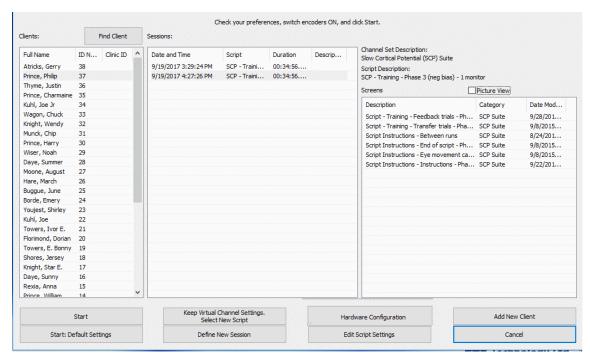
Instructions for <u>ending a recording session</u> are given on page 20.





Recording a Script Session

Click **Start Script Session**. This takes you through the process of selecting a client file and setting up the session parameters, and launches recording mode.



The Start Session window is similar to the one for defining open display sessions. You can select the client file for which the session will be recorded by clicking on a name in the leftmost column. When you click a client name, the list in the middle shows you all the uncompressed script sessions that were recorded for that client.

You can use the Find Client function to locate a client file. Detailed information about this function is provided in the on-line help.

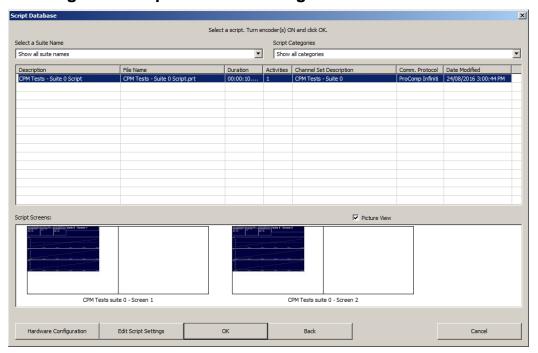
Note: If the session list is empty, it doesn't mean that no sessions were recorded for that client, only that no <u>script</u> sessions were recorded for that client.

If you select a session, the list on the right shows you the channel set and script names as well as all the screens that were used by the script.

Command Buttons

- Click Start to rapidly start a new session with the same client and script settings.
- Click Start: Default Settings to start a new session with the default channel set settings instead of the client settings.
- Click **Keep Virtual Channel Settings**. **Select New Script** to keep the client's channel set and settings but change the selected script.
- Click **Define New Session** to define completely new session settings.
- Click **Add New Client** to create a new client file. The minimum information you need to enter in the **Client Data** window is the person's first and last name.
- Click Edit Script Settings to modify script step durations and select different screens for selected steps.

Defining New Script Session Settings

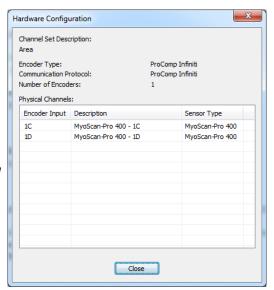


- Select the suite from the drop-down list at the top left of the window
- To refine the categories displayed for the suite, select a category from the Script Category list box.
- Select the script you want to use.
 - After the script is selected, the bottom section shows you the list of screens that are used by the script. Click the **Picture View** check box to see thumbnail images of the screens.
- If you have not already done so, at this point, you should connect sensors to your encoder. Click **Hardware Configuration** to verify the sensor configuration for the script you have selected.

A window opens, where you can see a table of encoder inputs, each with its corresponding sensor type, and a quick overview of the script's virtual channel structure.

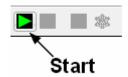
 Click Close to return to the session settings. Make sure to turn your encoder ON and click OK to continue when you have selected the script you want to use.

Note: If this is the first time you use your system, at this point you will be asked to enter Key Codes (see Entering Key Codes on page 11).

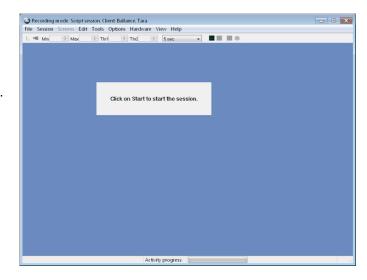


If there are no problems with your encoder setup or your sensor connections, you will enter the **Main Frame** window in recording mode.

To start recording, click the Start button.

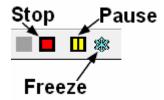


Instructions for <u>ending a recording session</u> follow.



Ending a Session

• To stop recording a session, click the **Stop** button.



When the stop button is clicked, the program asks if you want to save the recorded data.

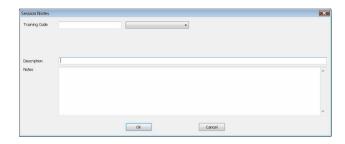
 You can choose to save the session in compressed format, but, unless you have very little hard drive space available or you won't need to review the saved sessions, we recommend that you always Save, which uses the non-compressed format.



Note: Compressed sessions can't be replayed, reviewed or trended until they are decompressed.

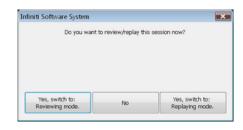
If you choose **Save** or **Save Compressed**, the **Session Notes** window opens so that you can enter, if you want, a treatment code, a session description and other relevant information.

Click **OK** to continue.



Next, you are asked if you would like to review the session right away.

- If you choose **Reviewing** mode or **Replaying** mode, the program opens the session in the selected mode.
- If you click No, the program asks if you want to record another session with the same settings.





- If you click No, the program reminds you to turn your encoder off.
- Click OK to return to the Main Menu Screen.



Other Recording Functions

Setting Review Mode Auto-Rejection Levels

You access **Review Mode Auto-Rejection Settings** from the **Tools** menu of the Main Frame Screen. It allows you to define the artifact rejection method you want to use when reviewing sessions. (For a more detailed explanation of <u>the need for artifact rejection</u>, see page 26.)

Depending on the signal types that your channel set includes and whether it includes the proper Boolean virtual channels, you can choose between **Boolean Rejection** or **Physical Channel Rejection**.

Select the **Reject automatically when switching to Review** check box to run the autorejection function automatically when you switch to review mode immediately after recording. This allows you to calculate fairly reliable statistics on the fly. You would use this function if you want the software to perform preliminary artifact rejection on the session data.

You can also perform manual artifact rejection on the data at a later time. Information about <u>manual artifact rejection</u> is found on page 27.







All other signal settings

The following example explains how to set an auto-rejection threshold for a physical channel. For an <u>example of auto-rejection using **Boolean Rejection**</u>, see page 26.

- In Rejection Type, select Physical Channel Rejection. All physical channels in the channel set will be listed.
- Select the physical channel where you want to set a rejection threshold and, in the **Rejection Threshold** text box, enter a value.
- For bipolar signal types, such as EEG, BioGraph Infiniti takes the absolute value of the rejection threshold. For other signal types, select **Above Threshold** or **Below Threshold**.
- Click **Set**. If you want to set a rejection threshold for another physical channel, repeat these steps.
- Select the Reject automatically when switching to Review check box, and then click OK.

Rejection performed on physical channels always uses the Channel Dependent setting.

After you finish recording, when you switch to review mode, the program scans the whole session and automatically places rejection segments over all the data segments that fit the definition. If you save the data without switching to review mode, when you do open the session for review at a later time, automatic rejection will be performed using the levels you set here.

Note: If you modify auto-rejection level or rejection segments during review, the system saves your modifications.

Checking the Battery Level of FlexComp and ProComp Infiniti Encoders

Before starting to record a session, you can verify the level of your encoder's batteries by selecting **Battery Level** in the **Hardware** menu of the Main Frame Screen.

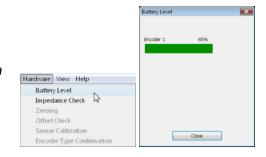
This opens the **Battery Level** window. If the battery level is green, the level is acceptable and you can click **Close** to continue.

Note: If the battery level is yellow, you can still record a short session, but if it is red, you should change

the batteries in your encoder.

Note: It is not necessary to check the battery level for

the MyoTrac Infiniti.



Troubleshooting the Start Sequence

If there are problems with your sensor connections, the program will report those, prior to accessing the recording screen. If, for example, you have sensors that are connected but are not required for this channel set, you will get a warning message.

You can remove the sensor or continue recording by clicking **Yes**. Keep in mind that no data is recorded for sensors that are not defined in the channel set.



Note: If there are sensor connection problems in addition to extra sensors, this information won't

the Sensor Connections window.

appear as a separate message. It will display in

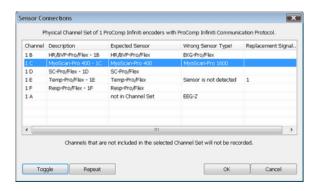
If you have connected wrong sensor types, you will see the **Sensor Connections** window. All the sensors that are expected will be listed in the **Expected Sensor** column. The **Wrong Sensor Type** column shows which sensor type was actually detected.

You can remove the wrong sensor or replace it with the right one. Click **Repeat** to check the sensor connections again until the system no longer detects a wrong sensor type. The program will not allow you to record a session with the wrong sensors.

Note: Click Toggle to switch between EEG-Z, EEG-Z3 and EEG-Pro/Flex sensors if you own an older EEG sensor.

You can also **Toggle** between MyoScan-Pro 1600, MyoScan-Pro 400 and MyoScan-Z, if your channel set includes these EMG sensors.

Toggle also lets you switch between the SC Pro/Flex and the Skin Conductivity V2 sensor.



Note: If the **Wrong Sensor Type** column is empty, the correct sensor has been connected.

If you do not connect all the sensors that are required for the selected channel set, the message "Sensor is not detected" appears in the **Wrong Sensor Type** column. When a sensor is not connected, the program replaces its signal value by a constant value of 1. It is possible to record a session with missing sensors, but you need to keep in mind that that the corresponding signal will be a flat line and that all calculations performed from that signal will not be reflecting real physiological changes.

Note: If you are using a ProComp+ or a ProComp 2, the sensor recognition function does not work and you have to verify the sensor types yourself.

Please refer to the on-line help for more information on troubleshooting sensor configuration errors.

Reviewing Sessions

Overview

The reviewing mode allows you to perform many important data processing functions that impact directly on your ability to produce valid session and trend reports. With biofeedback therapy, being able to demonstrate clinical effectiveness is most easily achieved by showing that the client is learning and that the effects of the training are being maintained from session to session.

The ability to show a learning curve on a trend report can be an invaluable tool for successful discussions with third-party payers. The Infiniti software's reporting abilities allow you to produce such tools, but it requires that you perform careful artifact rejection on all assessment sessions prior to generating your reports. Without artifact rejection, the statistical calculations may have little or no meaning.

Generally, when reviewing a session, the following tasks are performed:

- Selecting reviewing and reporting screens.
- Scrolling through the session data to identify areas of interest and placing event markers.
- Normalizing the data by performing artifact rejection.
- Calculating statistics and generating session reports.
- · Generating trend reports.

Client Database

To access the client database, launch BioGraph and select Database.

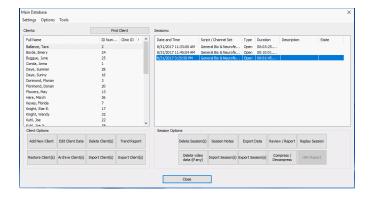
This opens the Main Database window.

 Select a client file by clicking on a client name in the list on the left.

You can use the **Find Client** function to locate a client file. Detailed information about this function is provided in the on-line help.

When a client file is selected, all the sessions that were recorded for that client are shown in the list on the right.

 When a session file is selected, click Review/Report or Replay Session.



Selecting Review Screens

This guide describes only the Review/Report functions.

When the **Review/Report** button is clicked, the **Review Session Confirmation screen** appears. The options available in it depend on whether you are reviewing an open display session or a script session.

When reviewing or replaying an open display session, you can click on **Select Channel Set** to load a channel set that is different from the one with which the session was recorded.

Note: Both channel sets must use the same encoder type and configuration of sensors and inputs. For example, if both channel sets send EEG signals on physical channels C and D to a ProComp Infiniti, you can use one to record the session and the other to review it.



Open Display Session

You will most often review a script session using the same script and channel set as those used to record it.

Note: You can click on **Select Script** to load a different script and channel set. This is not commonly done, because the new script must have an activity and step structure similar to the original script.



Script Session

The first time you select a session for reviewing, you have to select one or more review screens.

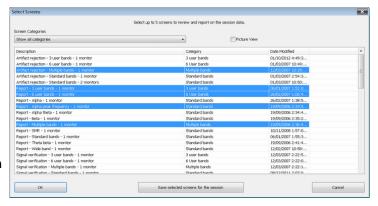
Click on Select Screens.

You can review a session with any of the display screens listed in **Select Screens** for the selected channel set.

To select a screen, click on it.

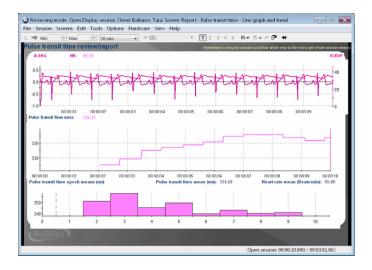
As with recording, you can load up to 5 screens for reviewing. To select more than one screen, press the **[Control]** or **[Shift]** key while clicking.

 Click OK to return to Review Session Confirmation.



• In Review Session Confirmation click OK to continue.

The session opens in Reviewing mode; you should see a screen similar to this.



Rejecting Artifacts

The main purpose of reviewing data is to reject artifacts and generate reliable statistics. Session statistics can only be as good as the data from which they are generated. If the recorded signal is of poor quality, the statistics will reveal more about the amount of noise affecting your recording than about any progress your client might be showing. Even with the best recording techniques, noise in the signal cannot be completely avoided. This is why artifact rejection is important.

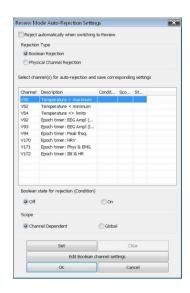
Artifact rejection can be performed **automatically** by the software, or <u>manually</u> by the <u>person reviewing</u> the data (see page 27). Once you have reviewed the session and placed artifact rejection segments where required, you can generate statistics and print a session report.

Automatically Rejecting Artifacts

You access **Review Mode Auto-Rejection Settings** from the **Tools** menu. It allows you to define the artifact rejection method you want to use when reviewing sessions. Depending on the signal types that your channel set includes and whether it includes the proper Boolean virtual channels, you can choose **Boolean Rejection** or **Physical Channel Rejection**.

In order for you to use **Boolean Rejection**, your channel set must include one or more Boolean virtual channels. These channels are used to define the conditions for rejecting sensor readings.

For information about <u>setting auto-rejection options in **Recording** mode, as well as an <u>example of setting an auto-rejection threshold for a physical channel</u>, see page 21.</u>



When you select **Boolean Rejection**, all Boolean channels in the channel set are listed. Select a channel that best defines the artifact condition you want to use. Then, you can define the Boolean state you want to use for the rejection. The output of a Boolean channel is either ON or OFF. If the condition is met, the output is ON, otherwise, it is OFF. By selecting the appropriate state, you reject either all data that fits the condition or all data that doesn't fit the condition. You can also choose to make the rejection segment specific to only the selected channel or applied to all channels.

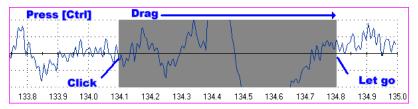
- In Rejection Type, select Boolean Rejection. All Boolean channels in the channel set will be listed.
- Select the Boolean channel to use for rejecting artifacts.
- If you want to modify the channel settings, click Edit Boolean channel settings and make your changes.
- In **Boolean state for rejection**, select **On** if the system should reject any signal that does meet the condition, and **Off** if it should reject any signal that does not meet the condition.
- In **Scope**, select **Global** if the system should place rejection segments on all channels, and **Channel Dependent** if it should place rejection segments on channels derived from the selected Boolean channel. (A derived channel is connected directly or through another channel to the specified source channel.)
- Click Set. If you want to set rejection conditions for another Boolean channel, repeat these steps.
- Click **OK** to run the auto-rejection function. The program warns you that any previously placed rejection segments will be deleted. To continue, click **Yes**.

The program scans the whole session and automatically places rejection segments over all the data segments that match the defined conditions.

Manually Rejecting Artifacts

To scroll through the recorded data, click and drag the scroll bar _____ on the button bar at the top of the screen. When you locate an artifact, you can place a rejection segment over it.

To manually place an artifact rejection segment over a section of noisy data on a single line graph, follow these steps.



- Select the line graph containing the segment to be rejected. (The selected graph will display a magenta border.)
- Press and hold the [Control] key.
- Place the cursor over one end of the segment to be rejected.
- Click and hold the left mouse button. (You can release the [Control] key at this point.)
- Drag the cursor across the segment to be rejected. The selected segment is highlighted in gray.
- At the end of the segment, release the mouse button.

Note: You can place artifact rejection segments only on single-line graph instruments. If you get an error message, you have to select a different screen for reviewing.

Managing Rejection Segments

You can review what was rejected and remove individual segments or all of them at once by right-clicking over a segment and selecting **Undo Rejection Segment** or **Undo All Rejection Segments**.

If you placed rejection segments globally but want to remove rejection segments from all but one channel, you have the option to **Convert Rejection Segment**. Select the line graph where you want to keep a rejection segment, position your cursor within the rejection segment that you want to keep, and click the right mouse button. Choose this option to remove the selected segment from all other channels without further confirmation.

If you want to remove all channel-specific rejection segments from a specific channel, you have the option to **Undo Channel Rejection Segments**. Position your cursor anywhere in the line graph for the channel, right-click, and select this option. It removes all channel-specific rejection segments while leaving all other rejection segments where they were defined. If you choose this option, you must confirm the action.

The program will save rejection settings with the session when you exit review mode.

Setting In/Out Markers

You can perform this function on single line and multiple line graphs. It allows you to define specific areas where you can perform statistical analysis.

- Place your cursor at a specific point on the graph, click the right mouse button, and select Set In Marker for Area.
- When **Event Marker Labels** opens, select or enter a name for the area and click **OK**. An **In** marker is placed on the graph.
- Place your cursor at a subsequent point on the graph, click the right mouse button again, and select **Set Out Marker for Area** to place an **Out** marker.

The two markers together indicate an area of the graph which is uniquely identified by the name you entered.

You can set as many In/Out areas as you want, but areas cannot overlap.

Setting Temporary Markers

You can use a specified Boolean channel to place temporary markers on the data. They are called "temporary" because the system maintains them only as long as the session is loaded. When the session is closed, they are erased.

In order for this option to be available, the channel set must contain Boolean channels. These include epoch timers, comparators, AND, OR, NOT, Periodic Impulse and Target Counter. Temporary markers are useful for finding the specific moment in a session when a given condition occurs (such as EMG 1 > EMG 2). When an Epoch Timer channel is selected, they can also identify the segments of data corresponding to the selected epoch period.

After temporary markers have been set, you can convert them to other types of event markers, such as **In/Out** marker pairs.



- To identify the Boolean channel and the condition that determines where the markers will be placed, select **Temporary Markers** from the **Tools** menu in the Main Frame Screen.
- Select the Boolean channel to use for setting temporary markers.
- If you want to modify the channel settings, click Edit Boolean channel settings and make your changes.
- In Condition, select the point where the temporary marker should be placed.
 Markers can be placed when the condition is Off, On, or Both. For On and Off, a single marker indicates when the condition occurs. For Both, a pair of markers indicate the points where the condition starts and ends.
- Optionally, enter values for Minimum interval between identical events and Minimum interval between opposite events.

The purpose of these intervals is to prevent minor signal variations from being treated as separate events, and to determine how many temporary markers will be placed on the graph. If intervals are too long, no markers will be placed. If they are too short, too many temporary markers will be placed.

• Click **OK** to place temporary markers on the graph.

Calculating Statistics

You have two options for calculating statistics.

The option to **Calculate statistics for the whole session** is always available. It calculates statistics for all data recorded during the session, with excluding data contained in artifact rejection segments.

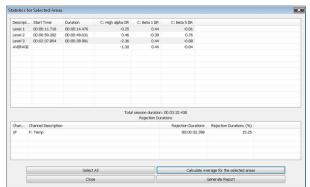
If you have set at least one **In/Out** area on a line graph, you can select the **Calculate statistics for the selected areas** option. This calculates statistics for the data contained within these areas.

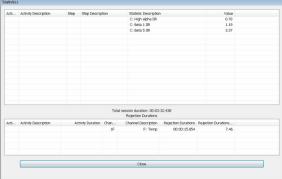
Launch BioGraph.

Open a session in Review mode.

- Click the Calculate Statistics button on the Recording screen tool bar.
- 1. Select a calculation option.

A message stating that the program is processing session data and then the **Statistics** window opens.





Calculate statistics for the selected areas

Calculate statistics for the whole session

If you selected **Calculate statistics for the selected areas**, you can select two or more areas and click **Calculate Average for the selected areas**.

To create an area statistics report, click **Generate Report** in this window. BioGraph Infiniti displays your report as a document in HTML, PDF, or Microsoft Word format, depending upon the setting in **Preferences**. The report can be saved or printed using the **Print** and **Save** functions of your software.

Note: When this window is open, the session report function in the Main Frame tool bar creates a report for the whole session.

• Click Close to close the window.

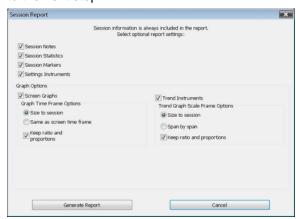
Generating Session Reports

Two types of session report may be available in review mode.

- **Text reports** are a standard feature of BioGraph Infiniti. A text report includes general information about the session as well as optional information that you select. This can include session notes, session statistics, session markers, details of settings instruments, and images of screen graphs and trend instruments. Text reports can be generated in HTML, PDF, or Microsoft Word format. They can be saved or printed using the **Print** and **Save** functions of your software.
- Excel reports must be predefined, generally as part of an Application Suite. They can also be customized for specific analytical uses. For script sessions Excel settings are defined in Script Editor, while for open display sessions they can be defined in BioGraph Infiniti. An Excel report imports the session statistics from a TXT file and, if designed to do so, subjects them to further analysis. If an Excel export file and an Excel workbook file have not previously been specified for the session, this option is not available.

To generate a session report, select the session from the database, click on **Review/Report**, select review screens, and then follow these steps:

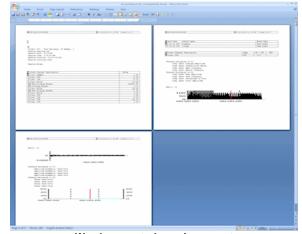
- If this is an open display session, from the **Options** menu select **Set Open Display Statistics** and choose the channels for which statistics should be calculated.
- If necessary, perform <u>artifact rejection</u> on the recorded data.
- Click Recalculate in the tool bar to recalculate the statistics.
- If you have loaded more than one screen, open the screen from which you want to generate the report. Different screens can generate different reports.
- Click the **Session Report** icon in the tool bar and select the type of report that you want to generate.
 - o If you select **Generate Excel Report**, Microsoft Excel opens and displays your report as a workbook. You can print or save the report using Excel's **Print** and **Save** functions.
 - If you select Generate Text Report, the Session Report window opens, and you must continue to the next step.



- Select report components by placing a check mark in the desired boxes.
- Click **Generate Report** to generate the report. BioGraph Infiniti displays your report as a document in HTML, PDF, or Microsoft Word format, depending upon the setting in **Preferences**. The report can be saved or printed using the **Print** and **Save** functions of your software.

Note: Microsoft Word and Excel, a PDF reader, and a web browser **must** be installed on your system for these functions to work.





Excel-generated session report

Word-generated session report

Generating Trend Reports

BioGraph Infiniti also allows you to create trend reports, which can compare statistics across different activities within a single session or across multiple sessions.

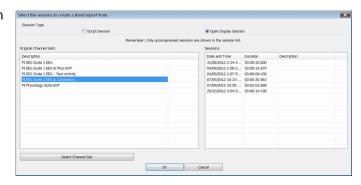
- To generate a trend report, go to the **Database** screen, select a client file and click on **Trend Report**.
- Select the type of session to be trended by clicking on the appropriate radio button at the top.

If you select **Script Session**, the table on the left lists the scripts used to record sessions for this client.

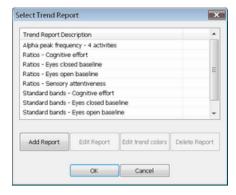
If you select **Open Display Session**, it lists channel sets.

Choose a session.

The table on the right displays all the sessions recorded with this script (or channel set).

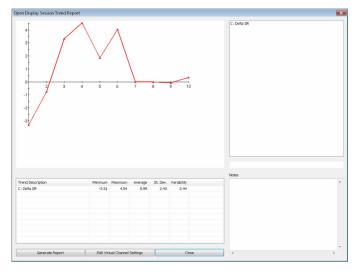


- Pressing the [Control] or [Shift] key, on your keyboard, select all the sessions you want to include in the trend report and click OK.
- If you selected **Open Display Sessions**, the **Set Statistics** window opens for you to select which statistics you want to trend.
- In Select Trend Report, choose a trend report and click OK.
 The system creates the trend report and displays it on your computer monitor.



 Click Generate Report to generate the report. BioGraph Infiniti displays your report as a document in HTML, PDF, or Microsoft Word format, depending upon the setting in Preferences. The report can be saved or printed using the Print and Save functions of your software.

Note: Microsoft Word and Excel, a PDF reader, and a web browser **must** be installed on your system for these functions to work.



For more information on generating trend reports, consult on-line help (F1).

Favorites and Quick Starts

Overview

A **Favorite** is a predefined session configuration that contains all the settings needed for recording, replaying, and reviewing a session. Depending on the session type (script or open display), these settings can include scripts, channel sets and screens, statistics for session reports, auto-rejection settings for review mode, and Excel data export options. Favorites are intended to simplify and standardize the process of recording and reviewing sessions. Most software suites can be entirely launched from the Quick Start Favorites, without having to navigate through Start Open Display Session and Start Scripted Session buttons. This section is at the end of the manual because it is nonetheless useful to know the control for open display and scripted sessions.

Favorites are not associated with a specific client file. You select a client name after you choose the Favorite. (This differs from the procedures described in **Recording Sessions** (page 14 – Open Display, and page 17 – Script), where you first select a client name and then define the session settings.)

Your Application Suite may include predefined Favorites, and you can define your own Favorites using the Favorites Editor in BioGraph Infiniti.

Starting a Session with a Favorite

To access the QuickStart Favorites"

- Launch BioGraph.
- Click Quick Start.

The Quick Start window opens.

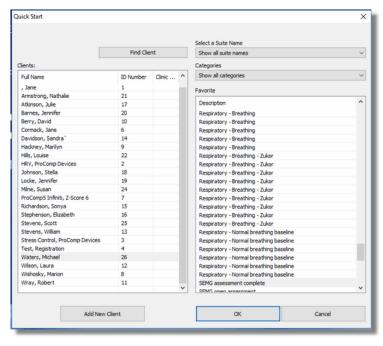
 Select a client in the Client s list box.

You can click **Find Client** to make it easier to search for and select a client. Further details about this function are provided in the online help.

- Select a suite from the Suite Name drop-down list to refine the search for a favorite.
- Select a category from the Category drop-down list.
- Ensure that the sensors are correctly connected, and your encoder is turned on.
- Click OK.

The recording screen opens





Recording and Reviewing with a Favorite

Recording

When you use a Favorite to start a session, Recording mode is no different from when you manually define session settings. All the same functions are available. You can check battery level, perform an impedance check, modify open display session statistics or auto-rejection settings, and so on.

Reviewing

- If you select Switch to Reviewing Mode when you finish recording a session with a Favorite, you
 don't select review screens. Instead, BioGraph Infiniti immediately loads the screens and channel set
 or script selected when the Favorite was defined and opens the Main Frame screen in Reviewing
 mode.
- If the session you select for review from the Main Database was recorded using a Favorite, its default review settings (channel set or script, screens, open display statistics) are those that were set in the Favorite.

In all other respects, Reviewing mode for a session recorded using a Favorite is no different from when you manually define session settings. You can generate a session report, modify open display session statistics or auto-rejection settings, and so on.

Reference

Contacting Thought Technology

Returning Equipment

Be sure to call for an authorization number (RA) before returning any equipment!

Send the unit(s) postage prepaid and insured, with proof of purchase to one of the addresses below.

If you are shipping from outside Canada or the USA to Canada, mark the package "Goods to be repaired – Made in Canada" to avoid unnecessary customs charges.

All customs and duties charges will be billed to you if incurred by sending the unit to the wrong address.

Provide a detailed description of the problem you are experiencing, and your telephone/fax number and email (see form on the next page of this manual).

In the USA, ship insured to:

Thought Technology Ltd. Cimetra LLC 8396 State Route 9 West Chazy, New York 12992, USA

In Canada and all other countries, contact your dealer or ship insured to:

Thought Technology Ltd. 5250 Ferrier, Suite 812, Montreal, Quebec H4P1L3 Canada

Technical Support

For technical support please refer to the Thought Technology Ltd. website at www.thoughttechnology.com for frequently asked questions. If your support issue is not covered please e-mail or telephone at the number below.

☎ (514) 489-8251 □ <u>techsupport@thoughttechnology.com</u>

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