MYONYX

App Manual

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The MyOnyx App Manual

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Product Name	MyOnyx System
Device Name	MyOnyx
Device No.	SA9000
Manual Number Revision	SA9009 (October 2019)

Contents

Overview

The MyOnyx app extends the capabilities of the MyOnyx device. As well as the electrostimulation (ES) available on the standalone MyOnyx device, it contains electromyography (EMG), and EMG-triggered stimulation (ETS) modalities. It provides remote control of the device, giving you greater flexibility over how and how much you interact with your patients.

The user-friendly interface provides immediate visual and audio feedback, making it easy for both you and your patients to understand and assess performance and progress in training sessions. You can review training sessions, manage patient portfolios, set up protocols, and analyze the data.

Minimum Requirements

- Android tablet, at least 7 inches in landscape view
- Android version 7, 8, or 9
- Bluetooth v 4.1
- Google account or Google Play Store account
- MyOnyx device SA9000

Storage

The following information is stored on the app.

- The first and last name of the patient and a Patient ID.
- Biofeedback program settings, session data stream, and markers set by the clinician.

Warnings and Precautions

Before using the MyOnyx app, read the *MyOnyx Hardware Manual* and the *MyOnyx Reference Manual.* To ensure safety, pay attention to the precautionary information and operating instructions.

Creating a Clinician Account

To log in and begin using the MyOnyx app, you need a clinician account.

To create an account

1. Launch the app by tapping the shortcut icon on the tablet.
2. Tap **Register** on the Clinician login page.
   The New Clinician page opens.
3. Enter a valid email address in the **Username** text box.
4. Enter and confirm a password.
5. Tap **Create and Login**.

Logging In

To log **in to your account**

1. Launch the app.
   The Clinician login page opens.
2. Enter your login data in the **Username** and **Password** fields.
3. Tap **Login**.

Tip: Tap **Remember Me** to skip the login process the next time you launch the app.

Recovering a Forgotten Password

To recover a forgotten password

1. Tap **Forgot password**.
2. Enter your email address when prompted.
3. Tap **Reset password.**

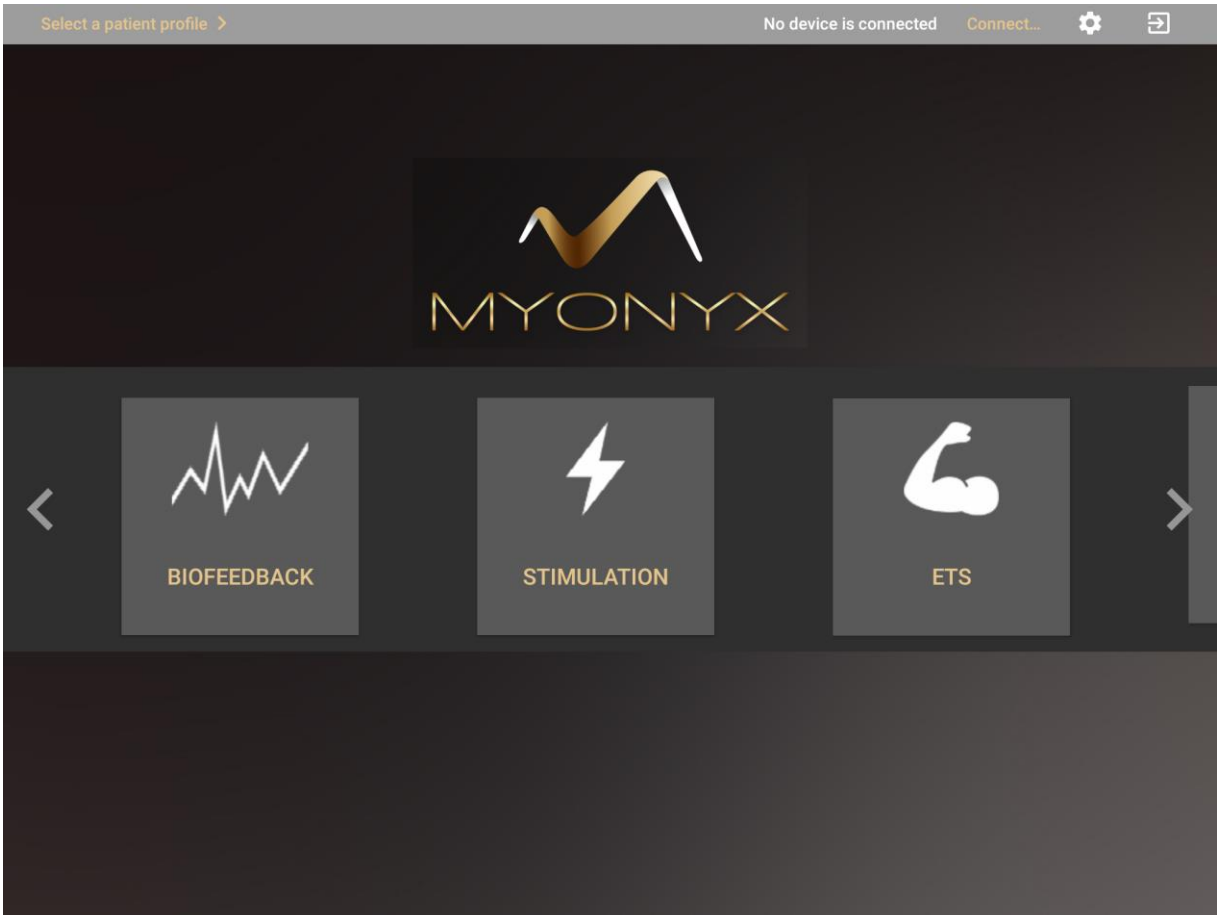
A temporary password will be sent to you by email.

Restoring Data

The Restore Data feature is used for importing data from one instance of the app to another on the same tablet or an a different one. See Backup on page 12.

The Home Screen

When you log in to the app, the Home screen is presented.



From the Home screen, you have access to all the modalities and all functionalities on the app:

- Connect or disconnect to or from a MyOnyx device.
- Select a patient profile.
- Select a modality: Biofeedback, Stimulation, or ETS.
- Switch the protocol.
- Review a recorded session and statistics.
- Access sessions saved on a connected device.
- Define the settings for the app.

The MyOnyx Status Bar

The status bar, at the top of the screens, displays the following information:

- **Patient Name** and **ID** of the currently selected patient
- **Selected Modality and Protocol.**
- **Serial Number** of the connected device
- **Battery status icon** showing the battery level of the connected device.

Connecting to the MyOnyx Device

The first step is to pair the device and tablet via Bluetooth. *Refer to the MyOnyx Reference Manual for details*.

Note: You can pair multiple MyOnyx devices to a tablet. However, you can connect only one MyOnyx device and app at a time.

To connect a device with the app

1. Turn on the MyOnyx, device.
2. Log in to the MyOnyx app.
3. Ensure the device and app are paired as described in the *MyOnyx Reference Manual*.
4. Tap **Connect** on the status bar of the app.
   If multiple devices are available, a list appears.
5. Select the device you want from the list.

   When it is connected, the ID of the device is shown on the status bar of the app.

Disconnecting the MyOnyx Device

To disconnect the device, tap **Disconnect** on the status bar of the app.

Note: If the Bluetooth connection is lost during a training session, the session pauses on the app but continues on the device.

Managing Patient Profiles

The Patient Profile contains the patient's first name, last name, a unique ID, and the recorded sessions saved for the patient.

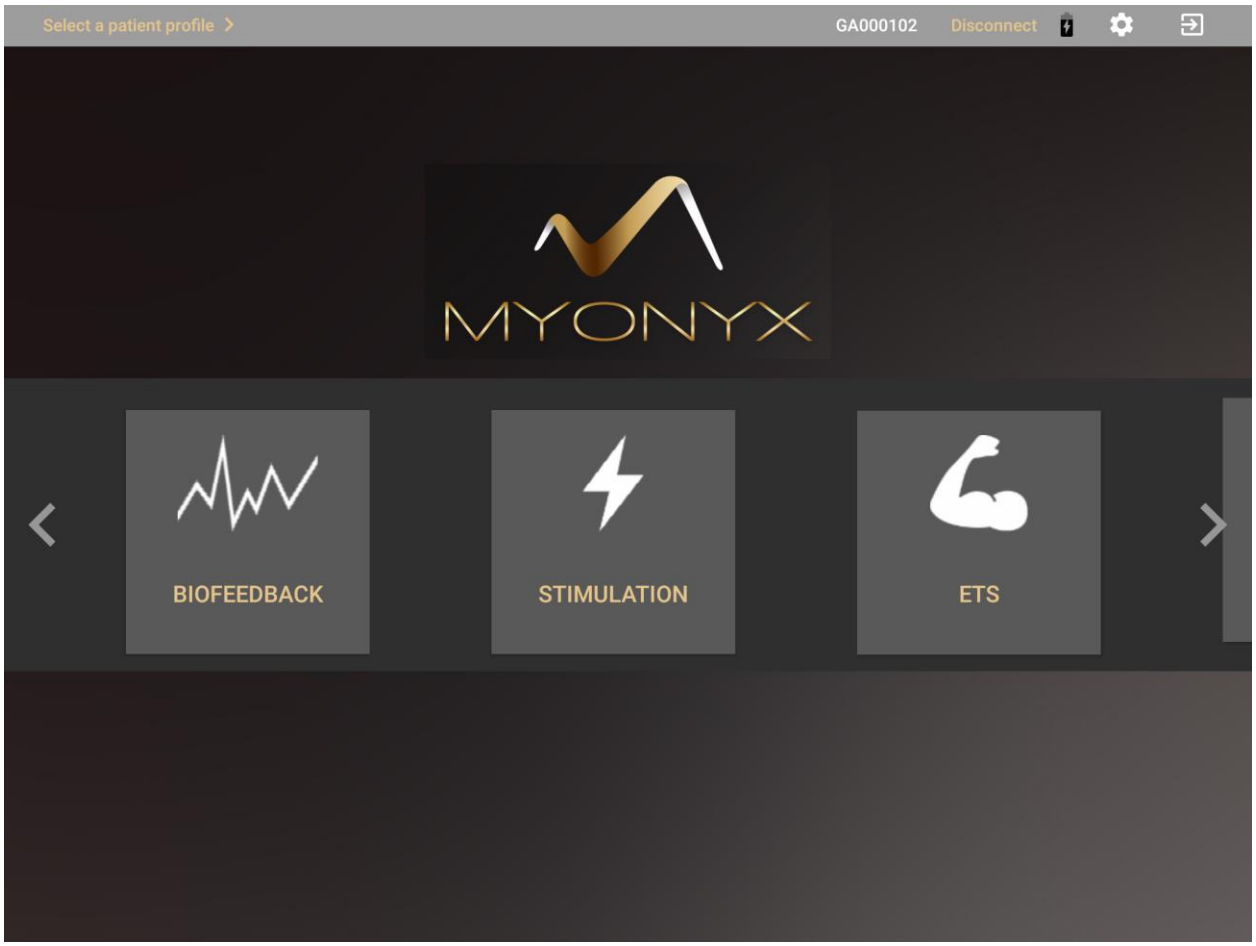
Note: You have access only to the patient profiles you create, not to those created by other clinicians.

Creating a New Patient Profile

To create a patient profile:

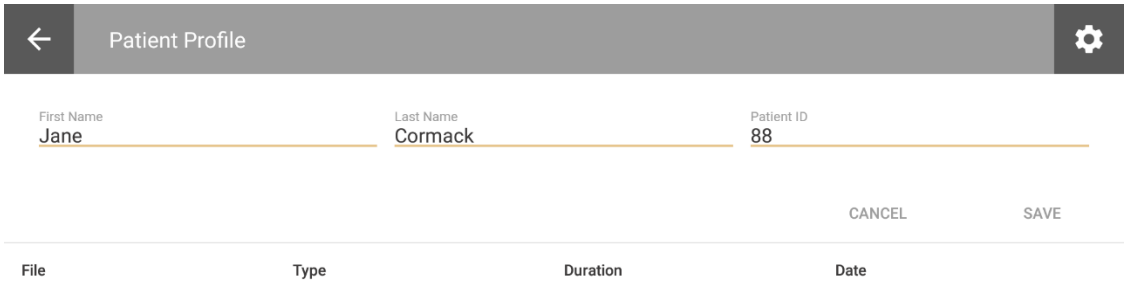
1. Log in to the MyOnyx app.

Note: You do not need to be connected to a device to manage patient profiles.



2. Tap **Select a Patient Profile** on the status bar at the top of the screen.

The Patient List appears.



3. Tap the plus sign (**+**) to create a new patient profile.

   A secondary screen opens.

4. Enter the patient's details in the **First Name**, **Last Name**, and **Patient ID** text boxes.
5. Tap **Save**.

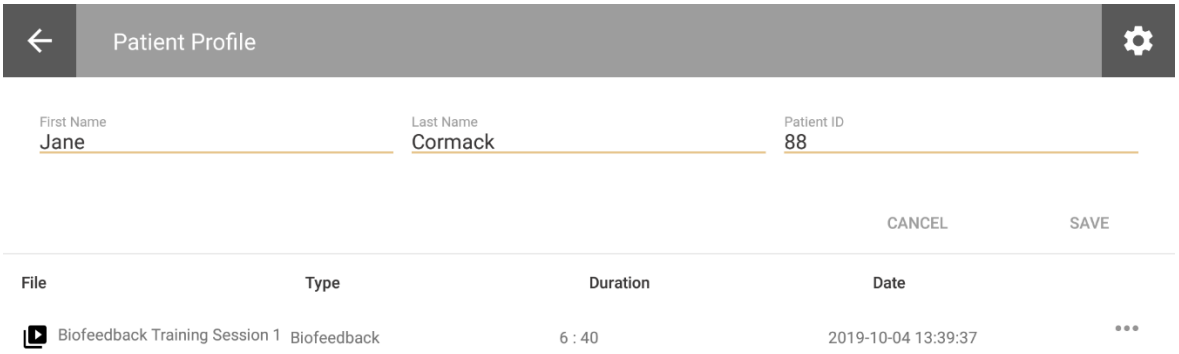
> **Note**: All fields are required. The ID must be unique.

Select the new profile to start a session or tap the plus sign (+) to create another profile.

Viewing the Patient List

To view the Patient List, tap **Select Patient** or tap the selected Patient Profile on the status bar at the top of the screen.

The Patient List contains all the patient profiles you have created. You cannot access the profiles created by other clinicians.



The training sessions are displayed by Session Name, Protocol, Duration, and Date and Time

Deleting a Patient Profile

To delete a patient's profile, including all saved sessions

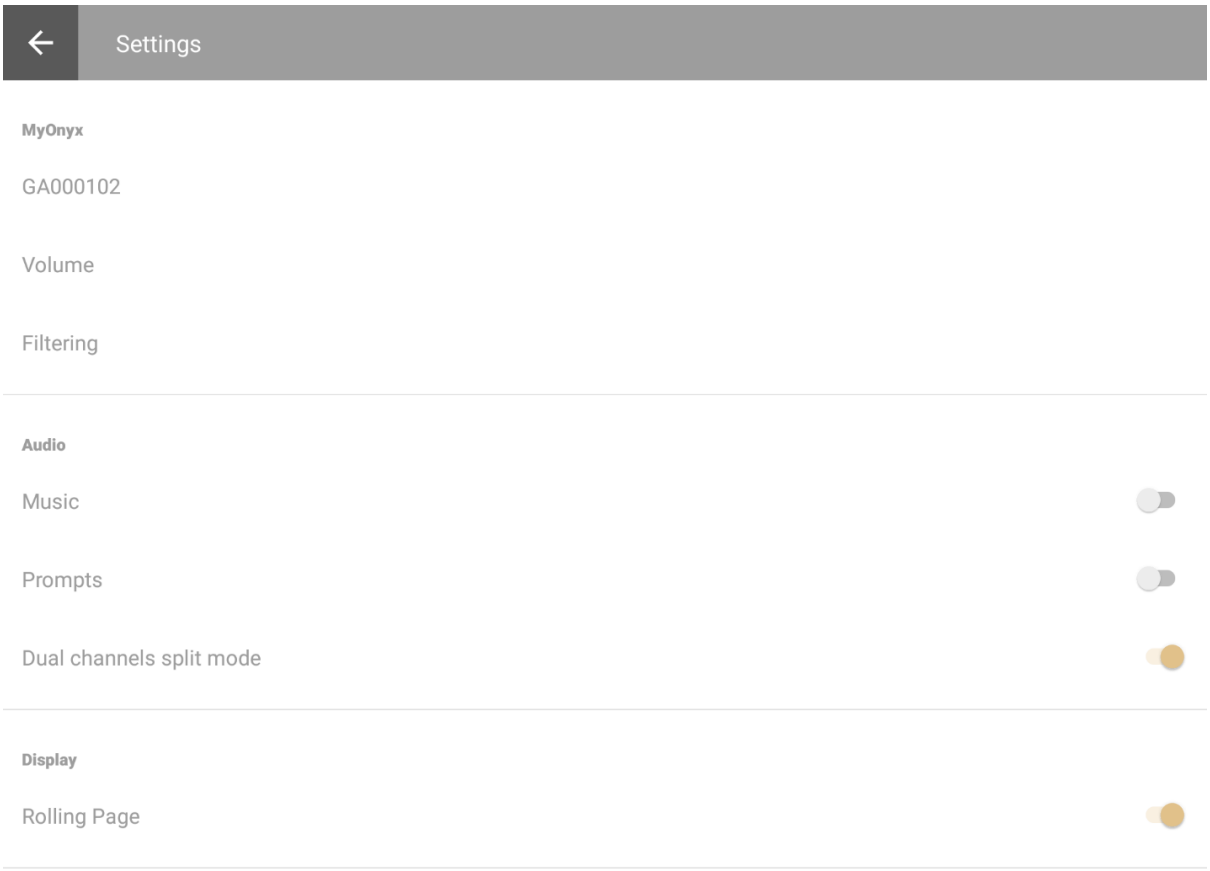
1. Open the Patient List and select the patient profile to remove.
2. Tap the ellipsis **(…)** beside the patient's name.

   Tap **Delete**.
   A confirmation message appears.
3. Tap **Yes** to continue.

Defining the MyOnyx App Settings

The settings are common to all clinicians using the app.

Tap the gear icon at the top right of the status bar to view or modify the settings.



Note: Settings are common to all clinicians using the app.

MyOnyx

Displays the Serial Number of the connected device or the message No device connected.

Tap in this field to connect a paired device or disconnect the currently connected device.

Volume

Tap **Volume** to adjust the volume on the MyOnyx device.

Tip: You can mute the audio on the device and control the volume with the physical buttons on the tablet.

Filtering

To enhance the signal, you can apply the following filters.

Notch Filtering

Set Notch filtering to 0, 50, or 60. This removes the electrical interference at the specific frequency on the EMG signal.

Harmonics Filtering

For better results in EMG sessions, especially at low signals, turn on Harmonics Filtering. If the charger is plugged into an outlet without a three-pin connection, try unplugging it during sessions.

Band Pass Filtering

By default, band pass filtering is enabled. This reduces interference from outside by restricting the bandwidth to a narrow range of 15Hz and 550Hz.

Audio

Music

The music setting applies to biofeedback sessions only. If it is enabled, sound plays from the app and is disabled on the device.

Sound indicates that the patient is in condition. It varies according to the dual channel split mode setting:

Dual channel split mode

If this setting is disabled, the app plays one sound if the condition is defined as being above the threshold and another if below. The same applies if you are using biofeedback on a single channel.

Turn on **Dual channel split mode** to play different sounds on each channel if you are using biofeedback on two channels.

Prompts

Turn the voice prompts on or off.

Display

Rolling Page

The Rolling Page setting applies to the Biofeedback line graph view only.

If it is disabled, the graph appears as a static page. When the timeline reaches the end, it jumps back to the beginning. Enable it if you prefer to see the page move continuously from left to right.

General

Backup

The purpose of the backup is to save all your data to a file that can be copied to another tablet, or another folder, and accessed from another instance of the MyOnyx app.

The following information is backed up:

- Your clinician username and password
- Your patient files, including patient names, IDs, and saved sessions.

To create a backup

1. Log in the MyOnyx app.
2. Tap **Settings** > **Backup**.

   The backup file is saved to the download folder on your tablet. You can share it via email or another application to copy it to another tablet.

To restore the data

> **Note**: When you install a new instance of the app, do not create a clinician account on the new app. When you restore the data, your login credentials will be restored with the other data. Nothing will be restored if you create an account on the new app.

1. Save the backup file to the download folder on the second tablet.

> **Note**: The filename and folder must be the same on both tablets.

2. Launch the MyOnyx app on the second tablet.
3. Tap **Restore Data**.

Once the data is restored, you have access to your clinician account, and your patient profiles, including saved sessions. However, you need to redefine your settings.

Help

Enable this setting to add the Help file to the app.

User Settings

Switch User

Select this option to change the current user. Select another user from the list.

Delete current user

Select this option to delete the currently logged-in user and all data associated with the user. A confirmation message is displayed.

Change password

Select this option to change the password of the currently logged in clinician.

Running Electrostimulation Sessions

The Electrostimulation (ES) modality provides remote control over the ES functionality on the device. It gives you all the information shown on the device with enhanced visualization. Both you and your patient can easily view the amplitude of the channels and the progress of the session.

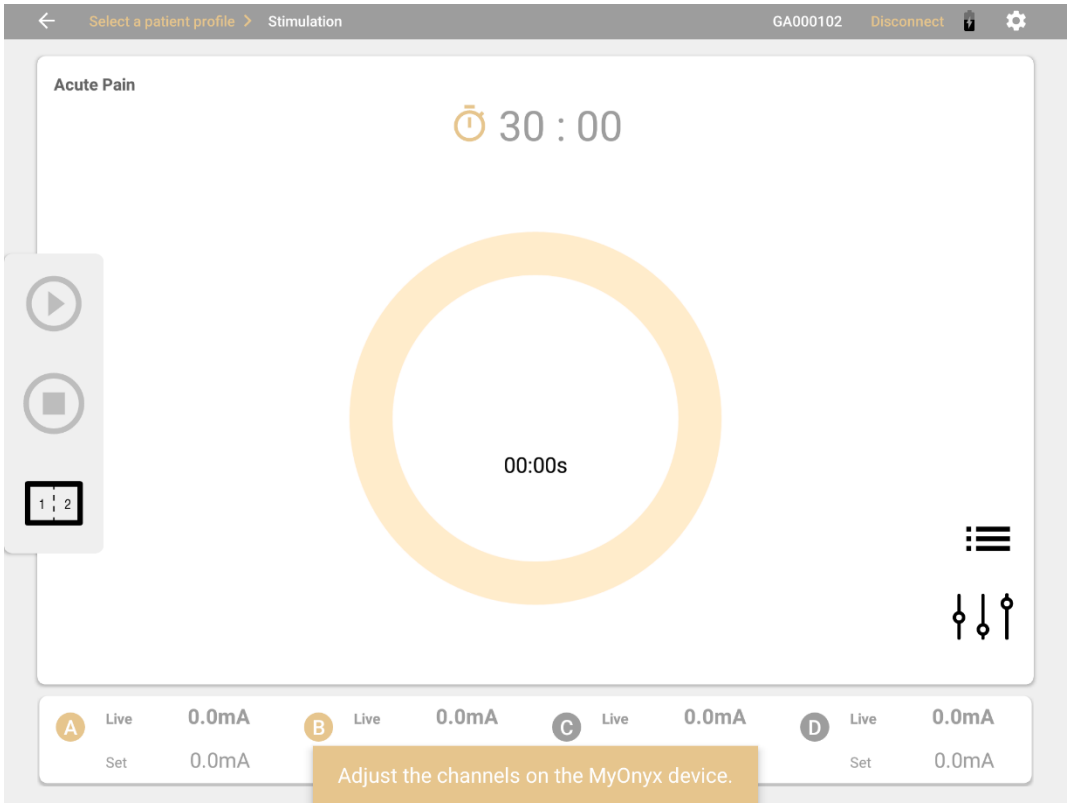
- Select up to four channels for ES.
- Run ES sessions with or without a patient.
- Perform sessions in single-exercise or dual-exercise mode.
- Select or modify the predefined programs or create your own.
- Perform live sessions only.
- Recording is not available for ES. There are no ES review screens.

Note: Before starting a session, refer to the *MyOnyx Hardware Manual* for all precautionary information and for instructions on connecting cables and placing electrodes and probes.

To begin an ES session:

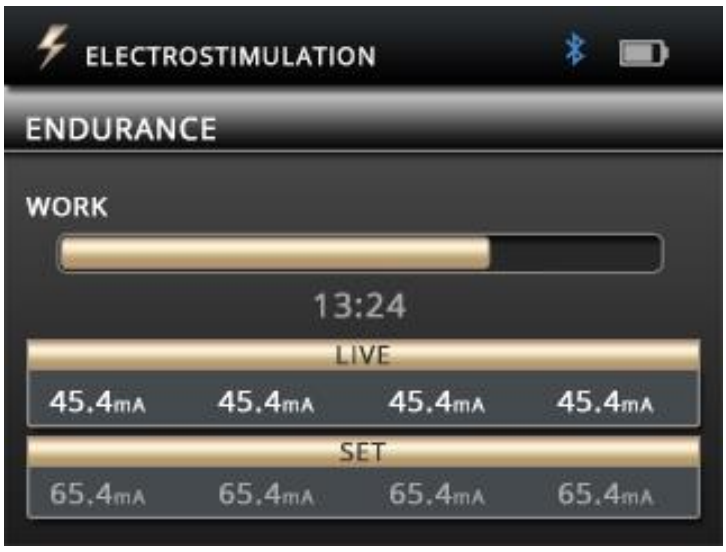
1. Connect the cables to the device and place the electrodes on the patient as required for the session and as described in the *MyOnyx Reference Manual.*
2. Tap **Stimulation** on the Home screen of the app.

   The ES screen appears.
3. If you are performing the session with a patient
   - Tap **Select Patient** on the status bar.
   - Select a patient profile for the session.



4. Tap the program selection menu and select a program.
   The four channels of the MyOnyx device are displayed at the bottom of the screen. The protocol is displayed at the top of the screen.

   The channel selection screen appears on the MyOnyx device.



5. Select the channels required for your session.
6. Adjust the amplitude on the device, as described in the *MyOnyx Reference Manual*.

   When the amplitude is adjusted, the device displays a message prompting you to start the session:

7. Press **OK** on MyOnyx device or tap the **Play** on the app to start the session.

   The MyOnyx device displays:

   - The **Set amplitude** on all active channels: This is the maximum intensity of ES that you want the MyOnyx to generate during the session work phase.
   - The **Live amplitude** on all active channels: This is the real-time level of the ES that is generated during the session. The Live value is at zero during the rest phase. It changes during the ramp-up/ramp-down times and due to amplitude modulation.
   - Total remaining session time
   - Current work or rest phase
   - Progression of the current phase

   During the session, the **Play** button on the app changes to **Pause**.

   The app displays:

   - The program selected.
   - **Time**: You can switch between the countdown timer to show the time remaining or the clock to show the elapsed time. You can also toggle between the two icons on the app before or during the session.
   - The Set amplitude and Live amplitude for all active channels.

     Beside each channel, the Set amplitude is displayed in gray. The Live amplitude is displayed in bigger, bold text.

     During the **Rest** phase, the Live amplitude is at zero (0). It increases during the work phase to the maximum defined as the Set amplitude.

Note: To pause the session, press **OK** on the device or press the Pause button on the app.

To stop the session, press the **On/Off** power button on the device or the **Stop** button on the app.

Default Electrostimulation Programs

The MyOnyx device is preconfigured with the following default ES programs. You can create new programs or modify existing ones with the MyOnyx app.

These programs are defined in the following tables by

- **Program Name**: The default name of the program.
- **Time**: The sum of all work and rest phases.
- **Cycles**: A cycle can include up to three phases: work, electrostimulation, and rest. The type of phase included, the length of each phase, and the number or times the cycle is repeated vary according to the parameters.
- **Work phase**: The period during which electrical stimulation is delivered.
- **Rest phase**: The period during which no electrical stimulation is delivered.
- **Patterns**: The default is Continuous, meaning electrostimulation is delivered continuously for the duration of the work phase.
- **Ramp Up**: The time the live amplitude takes to go from zero to the level of the set amplitude.
- **Ramp Down**: The time the live amplitude takes to go from the level of the set amplitude to zero.
- **Pulse Rate**: The frequency that pulses are generated, in Hertz (Hz).
- **Pulse Width**: The length of time the pulse remains at high voltage, in microseconds.

Program Name	**Time** (min and sec)	**Cycles**	**Work phase** (sec)	**Rest phase (sec)**	**Pattern**	**Ramp-up (sec)**	**Ramp-down (sec)**	**Pulse Rate (Hz)**	**Pulse Width (µs}**
Atrophy	21:40	100	5	8	Continuous	2	1	35	250
Circulation	5:00	60	3	2	Continuous	0	0	5	200
Endurance	30:00	200	6	3	Continuous	2	2	15	150
Strengthening Large muscle	29:10	050	15	20	Continuous	3	1	50	200
Strengthening Small muscle	20:50	50	10	15	Continuous	3	1	50	150

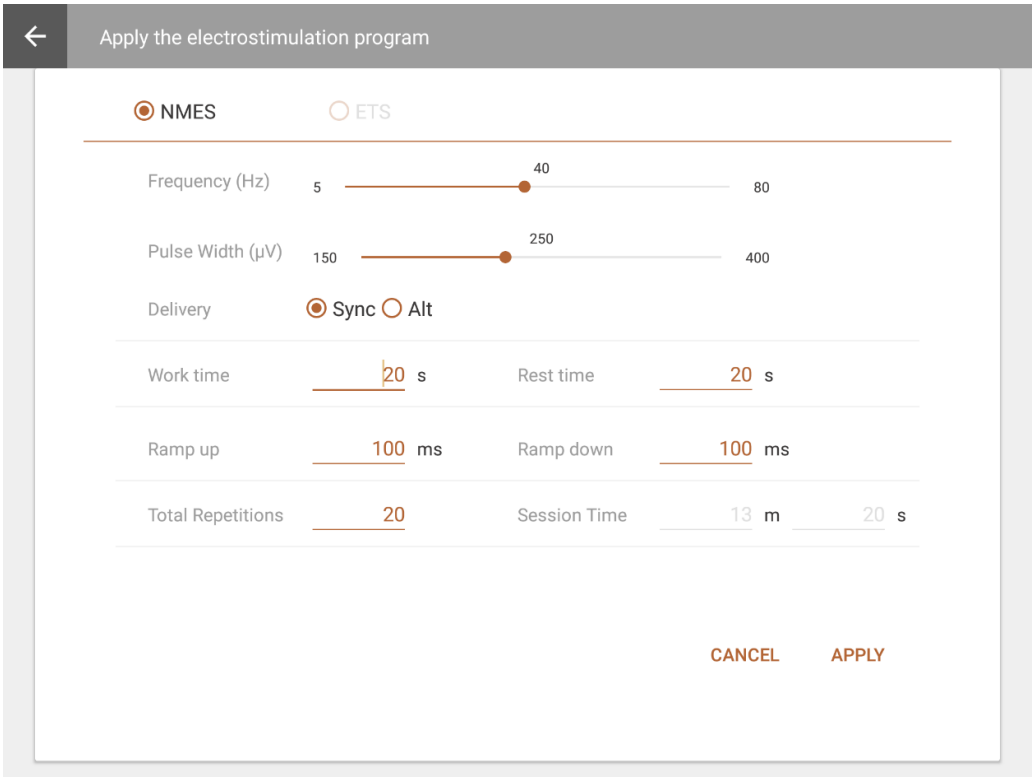
Program Name	Time (min and sec)	Cycles	Work phase (sec)	Rest phase (sec)	Pattern	Ramp-up (sec)	Ramp-down (sec)	Pulse Rate (Hz)	Pulse Width (µs}
Stress Incontinence	21:20	80	6	10	Continuous	2	1	45	200
Urge Incontinence	21:20	80	6	10	Continuous	2	1	15	200

Modifying the Default Programs

You can modify some default program parameters for your session,

To modify a program:

1. Tap the program selection icon on the Stimulation screen.
2. Select a program.
3. Tap the program configuration icon .
   The STIM Parameters screen opens.



You can make the following changes to the following fields, by overwriting the values in the text fields or moving the sliders left or right.:

Name	Value Range	Default Value
Frequency (Pulse Rate)	5 – 80 Hz	40 Hz
Pulse Width	[150 – 400 µs]	250 Us
Delivery	Synchronous or Alternating	Synchronous
Work Time	1- 7200 s	20 s
Rest Time	1-7200 s	10 s
Ramp Up	[0 – 10000 ms]	100 ms
Ramp Down	[0 – 10000 ms]	100 ms
Total Repetitions	1 – 999	20 s
Session Time	[2- 999*(7200s+7200s)]	300 s

Tap **Apply** to apply your changes to the current session.

Running Sessions in Dual Exercise Mode

In dual exercise mode, two programs are displayed side by side on both the app and on the device. Channels are grouped into pairs, Channels A and B for the program on the left and C and D for the program on the right.

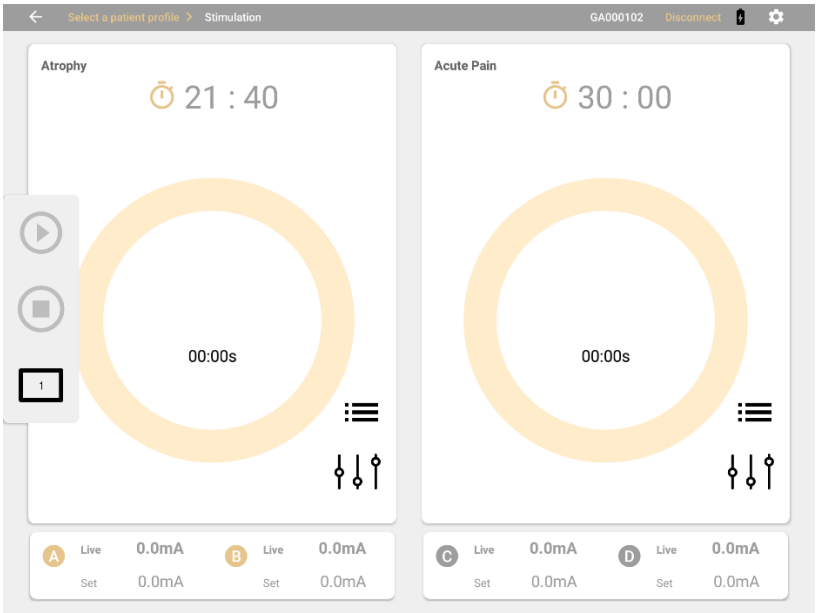
The two programs can have different modalities and different delivery types. As well, the number of cycles, the duration of the program, and the current session phase can be different.

To run a session in dual Electrostimulation mode:

1. Turn on the MyOnyx device and connect to the app.
2. Connect the cables to all four channels of the device.
3. Place electrostimulation electrodes on the patient, as described in the *MyOnyx Reference Manual.*

   Note: Make sure the electrodes are not touching each other.

4. Tap the **Split Screen** icon on the app.



The screen shows two programs side by side. Default programs are displayed if this is the first time you are running a session. Otherwise, the last-run program is selected for each group of channels.

5. Tap the **Protocol Selection icon** and select new programs if required.
6. Tap the configuration icon and make any modifications to the two programs.
7. Set the amplitude on the device.
8. Press **Play**.

The stimulation modality screen has the following features:

Feature	Description
Stopwatch or Time Remaining Counter	A stopwatch showing the time elapsed or a countdown timer is shown. Tap to toggle between these. In dual mode, an icon for each program is shown.

Feature	Description
Program Selection	Tap the **Program Selection** icon to select a program from the list. The last program run is automatically selected. For the first session, a default program is selected.
Program Editor	Tap the **Program Editor** to modify the selected program.
Split Screen Icon	Tap the **Split Screen** icon to toggle between single and dual exercise mode. **Note**: This button is not available when a program is in session.
Merge Screen Icon	If the screen is in dual exercise mode, tap the Merge screen icon to switch to single exercise mode. **Note**: This button is not available when a program is in session.
Play	The Play button is enabled when the amplitude adjustment is complete. Tap **Play** to start the session. During a session, the Play icon become a Pause icon
Active Phase	The active phase is displayed in the center of the screen: **Work**, **Rest**, **STIM**, **Complete**, or **Off**.

Feature	Description
Amplitude	The Live and Set amplitudes for all channels are shown at the bottom of the screen, as on the device. If the channel is inactive both the Live and Set amplitude are at zero (0).
Stop	Tap **Stop** to stop the session on the app and the device. **Session Over** is displayed on the app.

Running Biofeedback Sessions

Using the Biofeedback modality, you can add Electromyography (EMG) to your training and assessment sessions. Different views, including line graph, bar graph, animation, and pattern make it easy for your clients to understand the signal and visualize their progress.

- Switch between the four views: line graph, bar graph, animation, and pattern.
- Set static, automatic, or dynamic thresholds.
- Select predefined protocols for training and assessment sessions.
- Define your own protocols by adjusting the parameters.
- Save parameters and load them automatically when you open the modality.
- Record and save sessions for review.

Biofeedback Sessions

The biofeedback sessions comprise cycles of work and rest phases. In order to assess a muscle or group of muscles, the clinician places electrodes on the patient's skin above or in the area of the muscle group.

The clinician asks the patient to contract a group of muscles in the work phase and relax the same muscles in the rest phase, then, repeat the cycle. The number of cycles and the length of each phase is determined by the protocol configuration.

Standard and Alternating Biofeedback

Two types of biofeedback sessions are available, standard and alternating.

Standard Biofeedback can be performed on one or two channels. The session comprises cycles of Work and Rest phases. In the Work phase, the patient contracts the targeted muscles, then relaxes them during the Rest phase. The cycle repeats as many times as possible for the duration of the session.

Alternating or Reciprocal Biofeedback requires two channels, A and B. Electrodes are placed on opposing groups of muscles.

The session begins with a Work phase on Channel A and a Rest phase on Channel B. Then, it switches to a Rest phase on Channel A and a Work phase on Channel B. The patient contracts the muscles in one group and relaxes the other, then switches, working the muscles that were relaxed and relaxing the muscles that were just worked. For the entire session, the patient alternates back and forth working one set of muscles and then the other.

Note: You can use any of the views for Alternating biofeedback, except Pattern View.

Setting Conditions and Thresholds

Biofeedback can be performed using Channels A and/or B. You can define a threshold for each channel you are using. For each threshold, you can define a condition, asking the patient to stay either above or below the threshold for as long as possible during the work phase.

During the work phase of the session, the client tries to reach the threshold and stay in condition

The visualization of the signal on the line and bar graphs makes it easy for clients to assess their ability and progress in training sessions. You can add positive audio feedback when the client is successful. To do this, enable audio on the Settings page. See Defining the MyOnyx App Settings.

For biofeedback sessions, you can define Static or Dynamic thresholds.

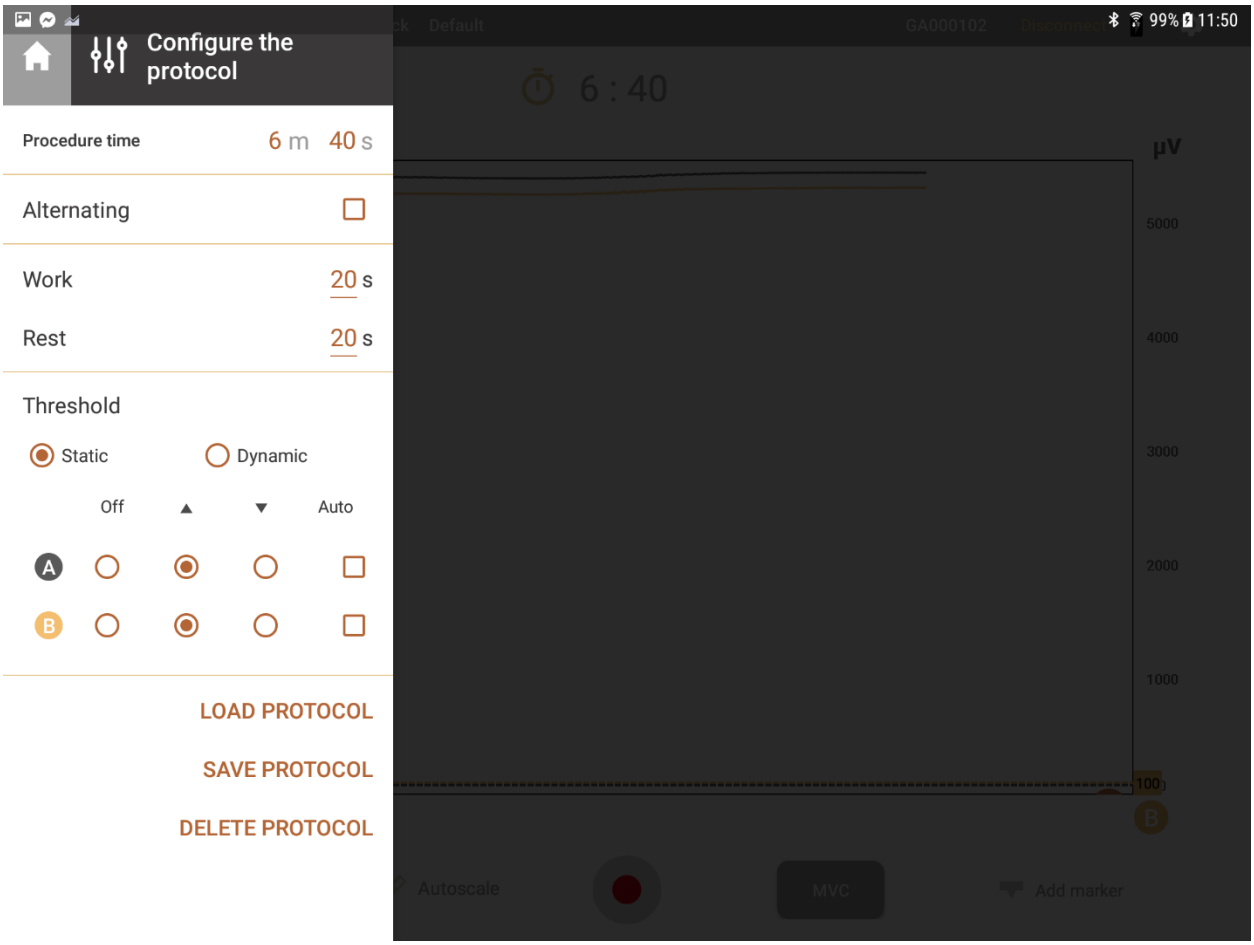
Static thresholds can be manual or dynamic. You can change the position of a manual threshold by selecting it on the screen and dragging and dropping it into place. You can do this at any time during the session. If the threshold is automatic, you can drag and drop it into place for the first cycle. For the subsequent cycles, it changes position automatically based on the contraction the patient holds during the work phase.

Dynamic thresholds shift position based on the time interval you set for it when you configured the protocol. The purpose of using dynamic thresholds is to challenge the patient.

Configuring a Biofeedback Protocol

Before configuring a protocol, connect the required cables to the MyOnyx device and place the electrodes on the patient, following the instructions in the *MyOnyx Reference Manual*.

Then, configure the parameters for a session as described in this session.



Biofeedback Configuration Parameters

Feature	Description
	Tap the **Open** icon to expand the sidebar menu.
	Tap the **Collapse** icon to close the sidebar menu.
	Tap the **Home** icon to return to the Home page. **Note:** This icon is not available while you are running a session.
Procedure Time	Enter the minutes (**m**) and seconds (**s**) the session will last.
Alternating	Alternating is available if both Channels A and B are configured.

Feature	Description
	Check **Alternating** to configure an Alternating biofeedback session. In this type of session, the cycle begins with a Work phase on Channel A and a Rest phase on Channel B. It then switches to a Rest phase on Channel A and a Work phase on Channel B. Then, a new cycle begins. Uncheck this option for **Standard** biofeedback. In this type of session, the cycle consists of a Work phase on all channels followed by a Rest phase on all channels.
Work and Rest Times	**Alternating**: Enter the seconds (**s**) in the **Work** phase. **Standard**: Enter the seconds (**s**) in the **Work** and **Rest** phases. **Pattern View:** Work, Rest, and Alternating parameters are disabled.
Thresholds	**Note**: The threshold must be set at 2,000 µV or below.
Threshold Type	Select **Static** to set the threshold manually. Then, drag and drop it into position, before starting the session. **Note**: In pattern view, you can adjust the threshold for channel B only. Select **Dynamic** to calculate a new threshold at the specified interval. The purpose is to challenge the patient's control.
Static Threshold	**A** or **B**: You can configure a threshold for each active channel in most views. In Pattern View, you can configure a threshold for Channel B only. **Off**: Select **Off** to remove the threshold for the channel. **Up/Down**: Select **Up** to set the condition above the threshold. Select **Down** to set it below. **Auto**: Select **Auto** to define the threshold automatically. Drag and drop it into position for the first cycle. The position for each new cycle will be based on the maximum contraction held in the Work phase.
Dynamic Threshold	**A** or **B**: You can configure a threshold for each active channel in most views. In Pattern View, you can configure a threshold for Channel B only. **Off**: Select **Off** to remove the threshold for the channel. **On**: Select **On** to display a threshold for the channel.

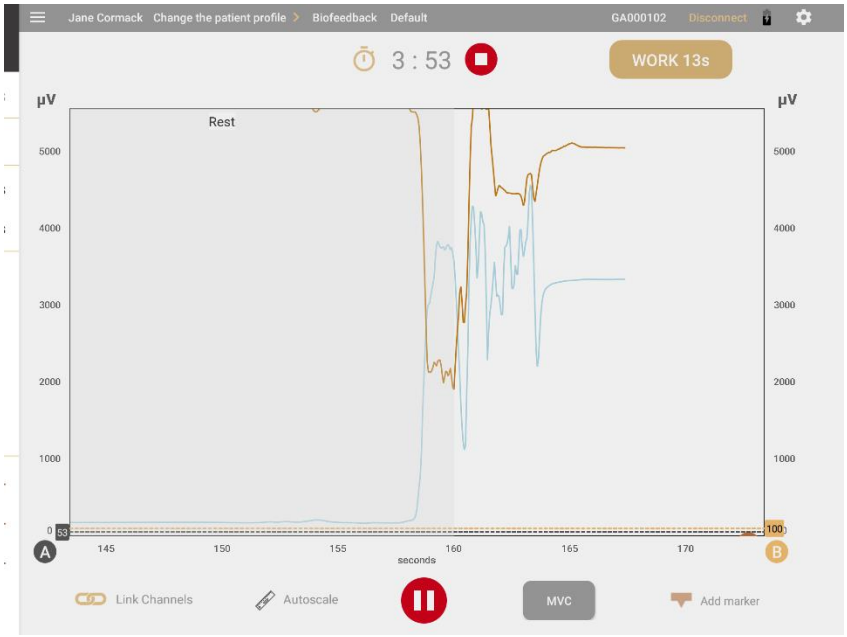
Feature	Description
	Interval: Enter the time that must elapse before calculating a new threshold value. **Range**: Enter the initial value of the threshold in microvolts (µV).
In Condition Audio Feedback	When the patient is close to the threshold, audio feedback is played. It varies according to the setting defined for the audio.
Load Protocol	Tap **Load protocol** to select a previously saved protocol from the list.
Save Protocol	Tap **Save** after defining the parameters for your protocol. Then, enter a name.
Delete Protocol	Tap **Delete** to remove a protocol from the list. A confirmation message is displayed.

Starting a Biofeedback Session

To run a biofeedback training session:

1. Turn on the MyOnyx device.
2. Set up the MyOnyx as described in the *MyOnyx Reference Manual*.
3. Launch the app and connect the device.
4. Tap **Biofeedback** on the Home screen of the app.

   The biofeedback screen appears.



5. Tap **Select a Patient Profile** on the status bar and select a profile.
6. To change the default protocol, tap the protocol on the status bar.

   Select a biofeedback protocol from the list of available protocols.
7. Review the biofeedback protocol if required.
8. Tap the **Play**/**Record** button .

   The device displays the following information:

   - Remaining session time
   - Total elapsed time
   - Status and progression of the current work or rest phase
   - uV and mmHhg levels for the current phase

   The biofeedback screen on the app varies according to the view selected.

Four views are available: line graph, bar graph, animation., and pattern. You can scroll left or right to switch to a different view before or during a session except for Pattern View.

Note: You can scroll to or from Pattern view only if a session is not running.

Common Biofeedback Screen Features

The following parameters are available on all views:

Feature	Description
Stop: (next to the countdown timer),	Tap **Stop** to stop the session. The Review screen is displayed.
Active Phase	The current Work or Rest phase is displayed in a text box.
Voice Prompt	A voice prompt indicates the beginning of each phase and give provides audio feedback when the patient reaches the threshold.
A and B Labels	Channels A and B are available for biofeedback. A label for each active channel is shown on the screen. Channel A changes from gray to blue when the patient is in condition, Channel B from gold to brown. Tap a label to show or hide the scale, signal, and threshold for the channel.
Thresholds	A static, automatic, or dynamic can be added for each active channel. An arrow indicates whether the condition is set above or below the channel, Tap on a threshold line to show the value. **For static thresholds** drag and drop the line into position. **For automatic thresholds**, position the threshold line for the first cycle. It adjusts automatically in subsequent cycles according to the contraction the patient can hold. The color of the threshold line changes when the patient is in condition.
Auto Scale	Turn on **Auto Scale** if you want the graph to be resized automatically when the signal changes so that it is always visible. **Note**: When auto scale is enabled, you cannot pan or zoom on a y axis manually. Turn off **Auto Scale** if you want to pan or zoom in or out of the graph manually.
Link	Link is available if both Channels A and B are used.

Feature	Description
	When Link is enabled, both channels are panned or zoomed in or out together. This can be done automatically or manually. **When Link is disabled**, each channel is panned or zoomed in or out independently.
Using Auto Scale and Link together	If **both Auto scale and Link are enabled**, both y axes are adjusted automatically and together when the signal changes. If **Auto scale is enabled and Link is disabled**, each y axis is adjusted automatically but separately when the signal changes. If **Auto scale is disabled and Link is enabled**, the graph is not automatically resized. Both y axes are adjusted together when you pan or zoom on the graph manually. If both **Auto scale and Link are disabled**, the graph is not automatically resized. When you pan or zoom on a y axis, the scale changes on that axis only. The two y axes are independent.
MVC	MVC is the amplitude of the maximum contraction the patient reaches and holds for any two-second period during the session. Tap **MVC** to calculate and display the MVC value.
Play /Pause	Tap **Play** to start a session. During a session, the Play button changes to a Pause button. Tap it to pause a session.
Add Marker	Tap **Add Marker** to mark a point for the graph for future reference. Your markers are visible in Line View and Review mode.

Line Graph View

The line graph shows the Live RMS signals in a colored line for each active channel.

x Axis

The **x axis** represents the timeline. By default, this is 0 – 30 seconds. Tap the **x scale** to switch to another timeline, between 5 and 200 seconds.

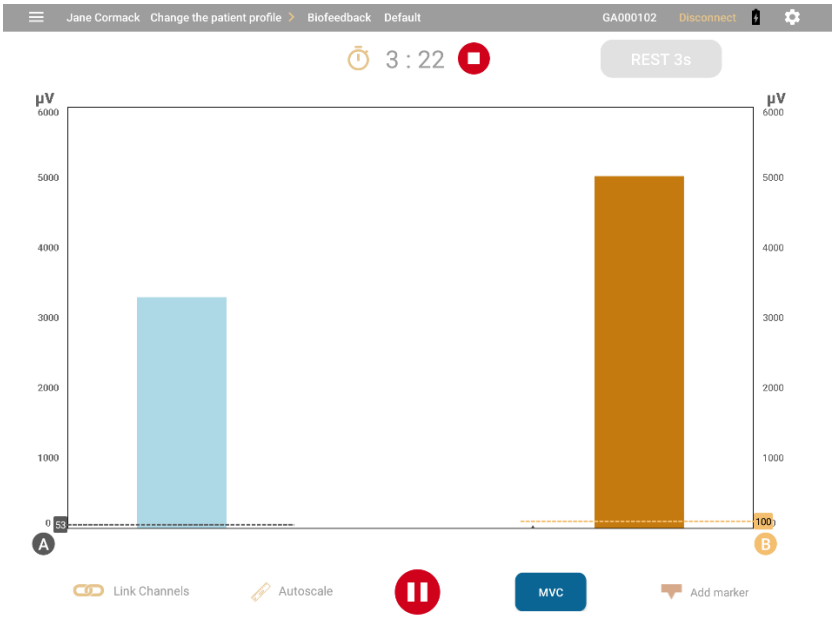
y Axes

A y axis is shown for the signal from each active channel, A and/or B, in microvolts (µv). The default scale is 0-100.

When you start the session, the RMS signal starts at 0.

Tip: Enable **Rolling Page** under Settings to see the page move continuously from left to right during the session. Otherwise, the page is static and the signal jumps back to the beginning when it reaches the end of the timeline.

Bar Graph View



The Bar Graph displays a bar for each active channel with a y axis in microvolts (µV) for EMG.

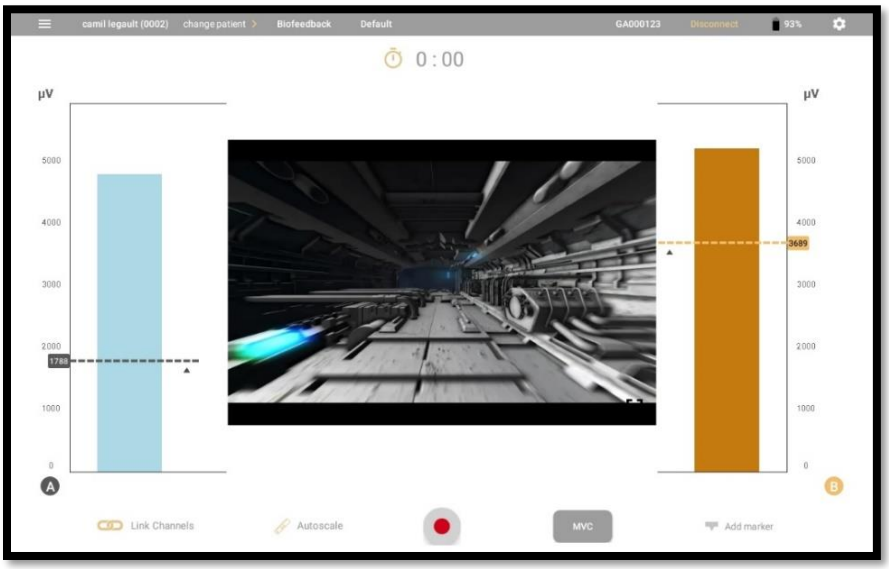
The default scale for both is 0-100.

The bars change color when the patient is in condition. Channel A changes from gray to blue when the patient is in condition, Channel B from gold to brown.

y Axes

A y axis is shown for the signal from each active channel in microvolts (µv). The default for both signals is 0-100.

Animation View

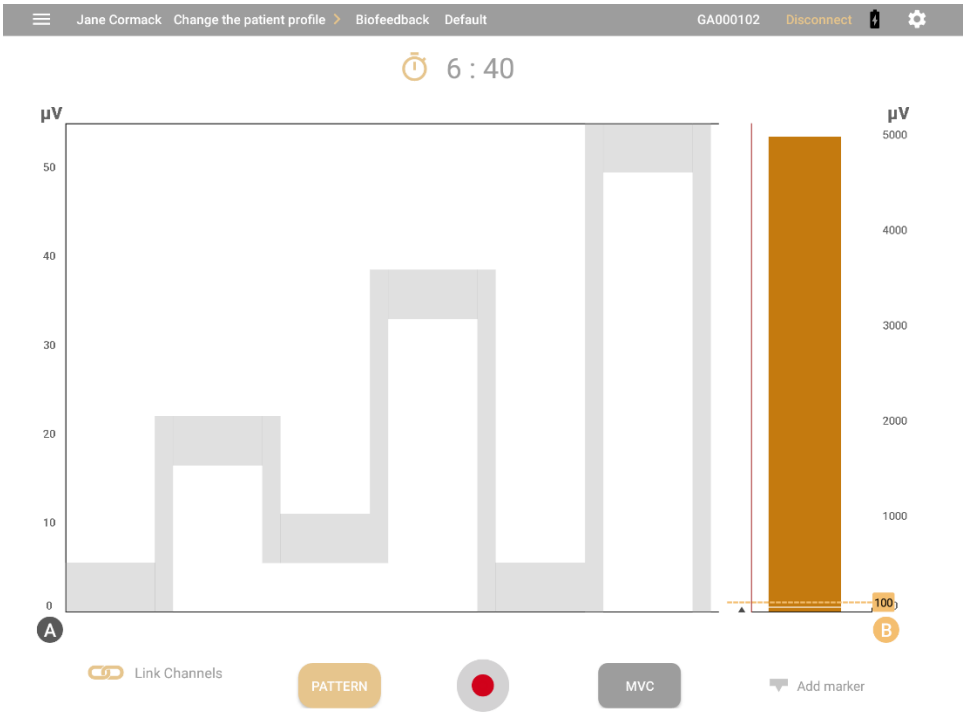


Animation View displays a bar graph for the active channels and an animation. When the patient is in condition, the animation plays.

Four videos are available. To **change the animation,** swipe the animation view up or down to change the animation.

Tap **Full Screen** to play the video in the entire screen. The active phase is displayed.

Pattern View



Pattern View displays a pattern for Channel A and a bar graph for Channel B. The patient tries to follow the pattern with the signal. You can change the pattern by tapping **Pattern**.

In Pattern View, the entire session consists of a single **Work** phase. There is no **Rest** phase.

Note: During a session, you cannot pan to or from Pattern View.

The x axis displays the timeline in seconds. This varies according to the pattern selected.

Channel B shows a bar graph with a y axis in microvolts (µV). The default scale is 0-100. The bar changes from gold to brown when the patient is in condition.

Running ETS Sessions

The ETS modality combines electromyography (EMG) to measure the electrical activity of a muscle and electrostimulation (ES) to stimulate it. In an EMG-Triggered Stimulation (ETS) session, the EMG signal is presented to the patient, in one of two different views, a line graph or a bar graph.

Sessions comprise cycles of work, rest, and electrostimulation (ES or STIM) phases.

During the work phase, the patient tries to reach a threshold and to keep the signal above it. If the patient is successful, ES is delivered to the muscle.

With the ETS modality, you can perform the following:

- Perform sessions using one channel or two channels in synchronous or alternating mode.
- Switch between the line graph and bar graph views.
- Set static, automatic, or dynamic thresholds.
- Select predefined protocols for training and assessment sessions.
- Define your own protocols by adjusting the parameters.
- Save parameters and load them automatically when you open the modality.
- Record and save sessions for review.

Synchronous and Alternating Sessions

As in biofeedback, you can run ETS sessions on channel A or B or on both channels.

Sessions run on two channels, or dual channels, can be synchronous or alternating. Sessions comprise cycles of work, rest, and electrostimulation (ES or STIM).

In synchronous sessions, both channels cycle through the applicable work, STIM, and rest phases, at the same time. Alternating sessions start with a work phase on Channel A followed by a STIM, and Rest phase if applicable. Then, Channel B runs through the cycle.

Finite and Infinite Work Phases

The phases depend on whether an infinite or finite work phase is selected for the program.

If the work phase is Finite, each cycle begins with a Work phase. If the patient is successful, it includes a STIM phase and ends with a Rest phase. If the patient is unsuccessful, there is no ES phase, only a Work and a Rest phase.

If the work phase is Infinite, the session consists of a single cycle. It starts with a Work phase. If the patient is successful, the ES phase begins and lasts to the end of the session, if unsuccessful, the entire session consists of a Work phase.

Setting Up an ETS Session

Before beginning an ETS session, review the information in the *MyOnyx Reference Manual*.

As in a biofeedback session, you place electrodes on the patient's kin above a muscle or set of muscles. Channel A and/or B can be used for ETS sessions.

Configuring the MyOnyx for an ETS Session

Before configuring an ETS session, connect the required drives and cables to the device and place the electrodes on the patient's skin as described in the *MyOnyx Reference Manual*.

- Use Channel A and / or B for ETS.
- Set the ES amplitude on the device.
- Use electrostimulation electrodes.
- Use the patient drive.

Configuring an ETS Session on the MyOnyx App

To configure a protocol for ETS:

1. Launch the MyOnyx app.
2. Tap **ETS**.

   The ETS screen appears.
3. Tap the side menu to configure a new protocol.
4. Define the parameters as described in the following table:

Feature	Description
	Tap the **Open** icon to expand the sidebar menu and configure an ETS protocol. At the end of the session, the current protocol is automatically saved. The fields are populated with the previously run protocol.
	Tap the **Collapse** icon to close the sidebar.
Home	Tap the **Home** icon to return to the Home page.
Procedure Time	For Infinite Work phase sessions, enter the number of minutes (**m**) and seconds (**s**) in the session.
Work Phase	Select **Finite** or **Infinite**.

Feature	Description	
	If you select **Finite**, you must set the **number of repetitions** and the length of the **Work**, **ES**, and **Rest phases**. The procedure time is disabled. The number of cycles in the session is based on the No. of Repetitions setting. If you select **Infinite**, you must define the **procedure time**. The session consists of a single cycle.	
Channel	This field is populated automatically with one of the following, based on the channel setup and the program selected. • None (if no cables are detected) • Channel A • Channel B • Dual Synchronous (Channels A and B work synchronously) • Dual Alternating (Channels A and B alternate)	
Phases	For Finite Work phase sessions, enter the duration of the Work, STIM, and Rest phases. This is disabled if the Work phase is Infinite.	
No. of Repetition	For Finite Work phase sessions, enter the number of times to repeat the cycle. This is disabled if the Work phase is Infinite.	
Program	Select an ES program for the session.	
Threshold	**A** or **B**	Define the threshold settings for each active channel. **Note**: The threshold must be set at 2,000 µV or below.
	Off	Select **Off** to disable the threshold for the channel.
	Up Arrow	The **Up** arrow is selected but disabled. In ETS, the condition is always above the threshold.
	Auto	The position of the automatic threshold is set as follows:

<table>
<tr><th>Feature</th><th colspan="2">Description</th></tr>
<tr><td></td><td></td><td>If Infinite Work phase is selected, the position of the threshold is set according to the position of the signal at 90 seconds.

If Finite Work phase is selected, the position of the threshold is set according to the position of the signal at the end of the first Work phase.

The position is based on the patient’s success in the previous work phase, as follows.

Trial — Threshold
Successful In first quarter — Increases 12.5%
Successful In second quarter — Increases by 5%
Successful In third quarter — No change
Successful In fourth quarter — Decreases by 5%
Unsuccessful — Decreases by 12.5%</td></tr>
<tr><td>Load protocol</td><td colspan="2">Tap Load protocol to select a protocol from the list.</td></tr>
<tr><td>Save protocol</td><td colspan="2">Tap Save after defining the parameters for your protocol. When the prompt appears, enter a name.</td></tr>
<tr><td>Delete protocol</td><td colspan="2">Tap Delete to remove a protocol from the list. A confirmation message is displayed.</td></tr>
</table>

Starting an ETS Training Session

Before starting an ETS session, review all precautionary information in the *MyOnyx Reference Manual*, as well as the instructions on connecting cables and placing electrodes.

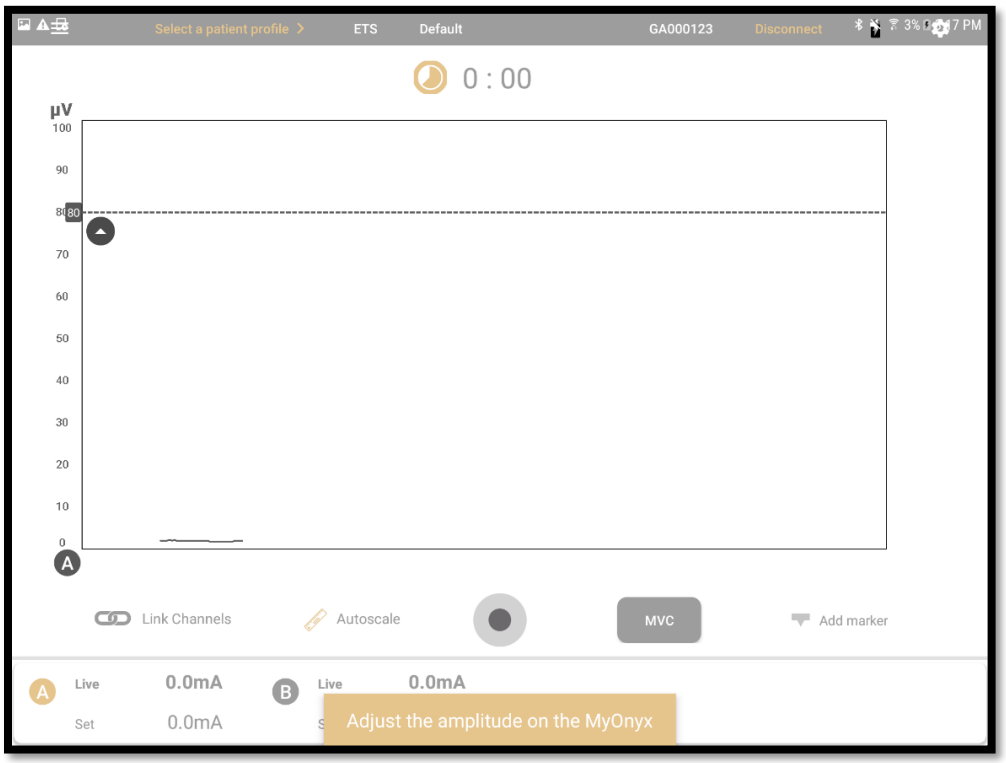
Notes: Use electrostimulation electrodes for ETS, not EMG electrodes. Using the wrong electrodes may cause discomfort, skin irritation, and burns if prolonged.

Use the patient drive to ensure that readings are accurate.

To start an ETS training session:

1. Turn on your MyOnyx device.
2. Connect the cables to the channels and place the electrodes on the patient as required for the session.
3. Launch the MyOnyx app and connect the device.
4. Tap **Select Patient** to select a patient profile for the session.
5. Tap **ETS** on the **Home** screen of the MyOnyx app.

   The ETS screen is displayed on the device and on the app.



   A message appears on the app asking you to set the amplitude on the device.

6. Review the protocol configuration and make any modifications required.
7. Adjust the amplitude, on the device. Follow the instruction in the *MyOnyx Reference Manual*.

When the amplitude is adjusted, the following message appears on the device.

Press OK to start the session.

---

8. Press **OK** on MyOnyx device or tap **Play** on the app.

   The following information is displayed on the MyOnyx device:

   - Active channels, A and/or B:
   - Time elapsed in the session
   - Active phase for each channel, Work, Rest, or STIM
   - EMG reading on each active channel during the Work and Rest phases. When ES is delivered the EMG Reading is 0 for the channel.
   - The current cycle and the total number of cycles, shown as Trail x of x
     In alternating mode, this information is shown for each channel.
   - Amplitude level during the Work and Rest phases, shown under STIM Live for the active channels. The amplitude is 0 during the Rest phases.
   - Set amplitude, shown under STIM LIVE during the Rest and Work phases.

   The following screen shot show how information is displayed in dual-channel synchronous sessions:

The information displayed on the MyOnyx app varies according to the view selected. You can switch views during the session by scrolling left or right.

Views

Two views are available: line graph and bar graph. Scroll left or right to toggle between them.

Common Features on the ETS Screens

The following parameters are available on both views:

Feature	Description
Stopwatch or Time Remaining Counter	A countdown timer or clock displays the time remaining or time elapsed. Tap the icon to switch between them before or during the session.
Stop:  (next to the countdown timer)	Tap **Stop** to stop the session. The Review screen is displayed. **Tip**: You can stop a session by pressing the power button on the MyOnyx device as well.
Active Phase	A text box displays the current phase, Work, Rest, or STIM.
Voice Prompt	If audio is enabled, a voice prompt indicates each phase, Work, STIM, Rest, or, for alternating ETS, Work A, STIM A, Rest A. Work B, STIM B Rest B.
A and B Labels	The A and B represent the channel or channels used in the session. Channel A and/or B can be used for ETS. Channel A changes from gray to blue when the patient is in condition, Channel B from gold to brown. Tap a label to show or hide the scale, signal, and threshold for the channel.
Thresholds	A threshold line is displayed on the graph for each active channel. It is dotted and colored to match the channel. Tap a threshold line to see the threshold value for the channel. An up arrow on each line indicates the condition is set above the threshold. This is always the case for ETS. Two threshold types are available: Static and Automatic. You can select or change the type before or during the session.
Auto Scale	When **Auto Scale** is enabled, the scale of the graph adjusts automatically so that the signal is always visible. **Note**: When auto scale is enabled, you cannot pan or zoom on a y axis manually.

Feature	Description
	Turn off Auto Scale to pan or zoom in or out of the graph manually.
Link	Link is available if both Channels A and B are used. **When Link is enabled**, both channels are panned or zoomed in or out together. **When Link is disabled**, each channel is panned or zoomed in or out independently.
Using Auto Scale and Link together	If **both Auto scale and Link are enabled**, both y axes are adjusted automatically when the signal changes. If **Auto scale is enabled and Link is disabled**, each y axis is adjusted automatically but separately when the signal changes. If both **Auto scale and Link are disabled**, you can pan or zoom in or out of each y axis separately. If **Auto scale is disabled and Link is enabled**, both y axes are adjusted when you pan or zoom on the graph manually.
MVC	MVC is the amplitude of the maximum contraction the patient reaches and holds for two seconds during the session. Tap **MVC** before or during the session to calculate the MVC and show the value on the graph. This is updated if the patient exceeds the value.
Play  **/** **Pause** 	Tap **Play** to start a session and begin recording. **Note**: After setting the amplitude on the MyOnyx, you need to press **OK** on the device and then tap **Play** on the app to start the session. The Play button changes to a Pause button during the session. Tap Pause to pause the session. A message is displayed on the app.
Add Marker	Tap **Add Marker** to mark a point for the graph for future reference. Your markers are visible in Line View and Review mode.

Feature	Description
Amplitude	The Live and Set amplitudes are shown for the Active channels, below the graph. • The **Set amplitude** on all active channels: This is the maximum intensity of ES that you want the MyOnyx to generate during the session work phase. • The **Live amplitude** on all active channels: This is the real-time level of the ES that is generated during the session. The Live value is at zero during the rest phase. It changes during the ramp-up/ramp-down times and due to amplitude modulation.

Line Graph View

The Line Graph View displays the following information:

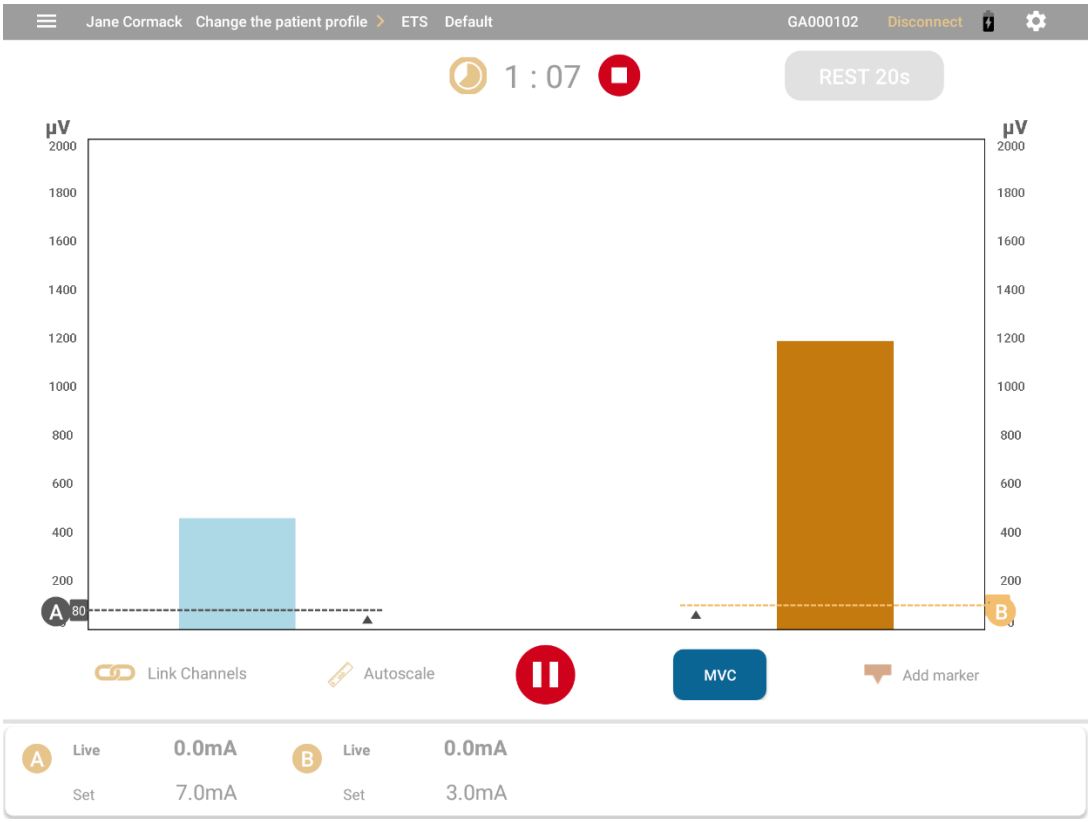
RMS Signal: The line graph displays a colored line for the RMS signal from each active channel. For Channel A, the line is gray when the signal is below the threshold. It changes to blue when the patient is in condition and the signal is above the threshold. Channel B is gold when the signal is below the threshold and brown when above.

x Axis: The **x axis** represents the timeline. By default, this is 0 – 30 seconds. Tap the **x scale** to switch to another timeline, between 5 and 200 seconds.

y Axes: A y axis is shown for the signal from each active channel, in microvolts (µv). The default scale is 0-100.

Phases: During the session, the phases are displayed in boxes, The Work phase in brown, Rest phase in light gray color and STIM phase in gold color. During the ES phase, a large rectangular box is shown in the center of the screen. A timer shows the time remaining in the phase.

Bar Graph View

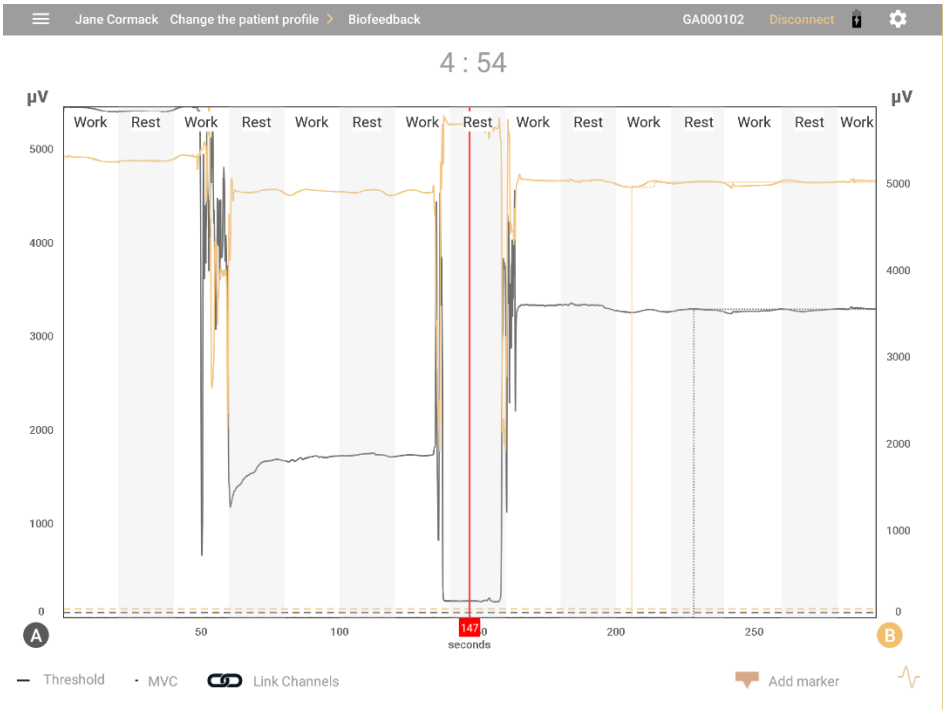


RMS Signal: In the bar graph view a colored bar is shown for the live RMS signal for each active channel. The bar for Channel A becomes dark gray when the patient is in condition. For Channel B, it becomes dark gold.

y axes: A y axis is shown for each active channel in microvolts (µV). The default scale is 0 to 100.

Reviewing Sessions

The Review screen is presented automatically at the end of biofeedback and ETS sessions.



It shows a line graph regardless of the view presented during the live session. You can pan left, right, up, and down to show more specific information.

The recorded RMS signals are represented as two different colored lines.

- Bold sections on a line indicate times the patient was in condition.
- If connection was lost during the session, a space filler is shown.
- The MVC value is shown.
- Threshold variation is shown as a dashed line with the corresponding legend added on the bottom of the screen.

Review Parameters

Feature	Description
	Tap the **Open** icon to expand the sidebar menu and define how you want to save and share the session.
	Tap the **Collapse** icon to close the sidebar.

Feature	Description	
Home	Tap the **Home** icon to return to the Home page.	
Save to Patient File	Tap this option and enter a name for the saved session if a patient was selected for the session. Otherwise, you must select a Patient File first.	
Generate Report	**Create preview**	This option is for the report only. It shows the following: • **Session data**, including the therapist email, Modality, Session date, Patient name, Session duration, and time of the session. • **Images of the session graph**, full screen and zoomed to the last user-selected value. • **Session parameters**, thresholds and work and rest times. • **Session Statistics**: See the following table.
	Save to pdf	By default, the session is saved to the **Downloads/MyOnyx** folder. Permission to save to this folder is granted when you install the app.
	Share	This option is enabled if you are previewing a report, not when reviewing a session. Tap **Share** to share the report via email or another application on the tablet.
	Print	This option is enabled if the session is saved. Tap **Print** to print the report via pdf.
Delete Session	Tap this option to delete the session. A confirmation message is displayed.	
Procedure Time	Displays the number of minutes (**m**) and seconds (**s**) in the session.	

Feature	Description
Work	Displays the length of the Work phase.
Rest	Displays the length of the Rest phase.
STIM	Displays the name of the electrostimulation program, for ETS sessions.
Threshold	Displays the threshold type. For biofeedback, it can be static, dynamic, or automatic. For ETS, it can be static or automatic.
Pattern	Displays the Pattern ID for biofeedback sessions recorded in Pattern View.

Statistics

Feature	Description
Channels	Statistics are provided for each EMG channel
Average Onset Time	Average time to reach the maximum contraction during the work phase
Average Release Time	Average time to reach the minimum contraction during the rest phase.
Average Work Threshold Time	Average time to reach the work-phase threshold, in ETS sessions only.
Minimum Value	The value of the minimum contraction held by the patient during the session.
Maximum Value	The value of the maximum contraction held by the patient during the session.
Work Mean	The average contraction variation in the work phases
Rest Mean	The average contraction variation in the rest phases

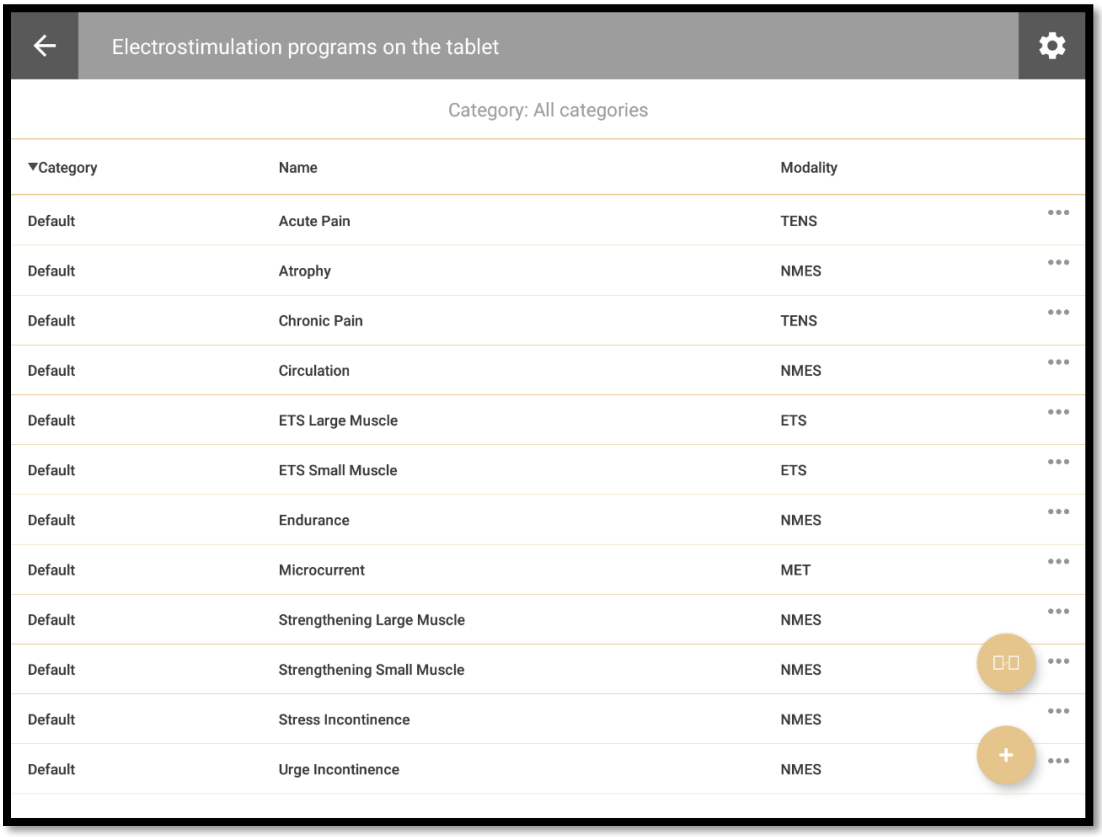
Feature	Description
Work Success Rate	In **Biofeedback**, the percentage of time the patient was in condition during the work phases of the session. In **ETS**, the number of successful trials compared to the total number of trials
Rest Success Rate	**In Biofeedback:** The percentage of the time the patient was not in condition during the Rest phases of the session. **In ETS:** The percentage of time the patient kept the EMG value below the threshold in the Rest phases.
Average Work Threshold Time	**Calculated for ETS only,** this is the average time to reach the condition.
Pattern Success Rate	Percentage of time the patient followed the pattern successfully.

ES and ETS Programs

The Programs screen provides access to the Electrostimulation (ES) and ETS programs saved on the app and on the device. Use this screen to

- View the default and custom programs saved on the app.
- Create a new custom program.
- Modify or delete a custom program.
- Transfer programs from the app to the device and from the device to the app.

To access this screen, tap **Programs** on the MyOnyx app Home screen app.



You can return to the Home page by tapping the back arrow or open the Settings page by tapping the icon at the top right. The ES and ETS programs saved on the app are displayed under three headings:

- **Category**: Default for the predefined programs or Custom for the user-defined programs.
- **Name**: The program name
- **Modality**. The type of ETS, NMES or ETS

Default Programs:

The MyOnyx device is preconfigured with the following default programs for NMES and ETS. You can create new programs or modify existing ones with the MyOnyx app.

These programs are defined in the following tables by

- **Program Name**: The default name of the program.
- **Total Time**: The sum of all work and rest phases.
- **Work Phase**: The period during which electrical stimulation is delivered.
- **Rest Phase**: The period during which no electrical stimulation is delivered.
- **Ramp Up**: The time the live amplitude increases from zero to the level of the set amplitude.
- **Ramp Down**: The time the live amplitude decreases from the level of the set amplitude to zero.
- **Pulse Rate (Frequency)**: The frequency that pulses are generated, in Hertz (Hz).
- **Pulse Width**: The length of time the pulse remains at high voltage, in microseconds.

Neuromuscular Electrostimulation (NMES) Programs

Typically used in physiotherapy for muscle rehabilitation, NMES is applied at an intensity high enough to induce motor contraction. The following default NMES programs are provided:

Program	Total Time (sec)	Reps	Work time (sec.)	Rest time (sec.)	Ramp-up (sec)	Ramp-down (sec)	Pulse Rate (Hz)	Pulse Width (µs)
Strengthening Small Muscle	1250	50	10	15	3	1	50	150
Strengthening Large Muscle	1750	50	15	20	3	1	50	200
Circulation	300	60	3	2	0	0	5	200
Atrophy	1300	100	5	8	2	1	35	250
Endurance	1800	200	6	3	2	2	15	150
Stress Incontinence	1280	80	6	10	2	1	45	200
Urge Incontinence	1280	80	6	10	2	1	15	200

EMG-triggered Stimulation (ETS) Programs

ETS combines electromyograph (EMG) and electrostimulation. During sessions, EMG signals are read from the patient and electrostimulation is delivered using NMES in Continuous delivery mode.

Note: ETS can be performed in computerized mode, with BioGraph, or remote mode with the MyOnyx app. It cannot be performed in standalone mode.

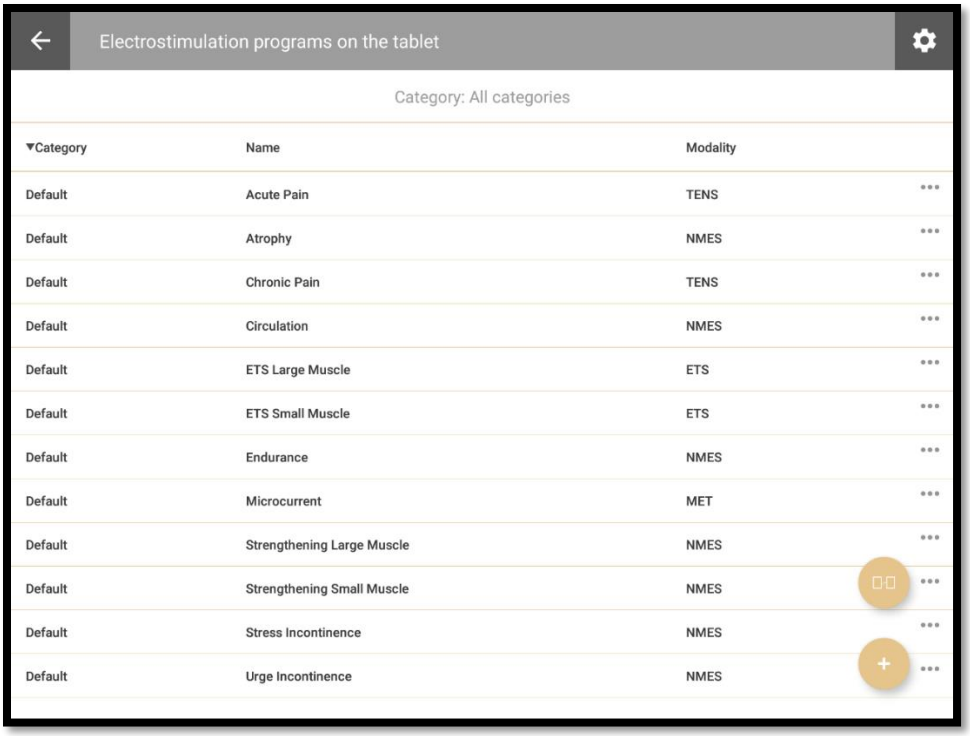
Program	Total Time (sec)	Reps	Work time (sec.)	Rest time (sec.)	Ramp-up (sec)	Ramp-down (sec)	Pulse Rate (Hz)	Pulse Width (µs)
ETS Large Muscle	200	50 (not used)	10 (not used)	15 (not used)	3	1	50	200
ETS Small Muscle	200	50 (not used)	10 (not used)	15 (not used)	3	1	50	150

Custom Programs

You can create, edit, or delete custom programs.

To create a program, tap the plus icon. It will be saved as a custom program.

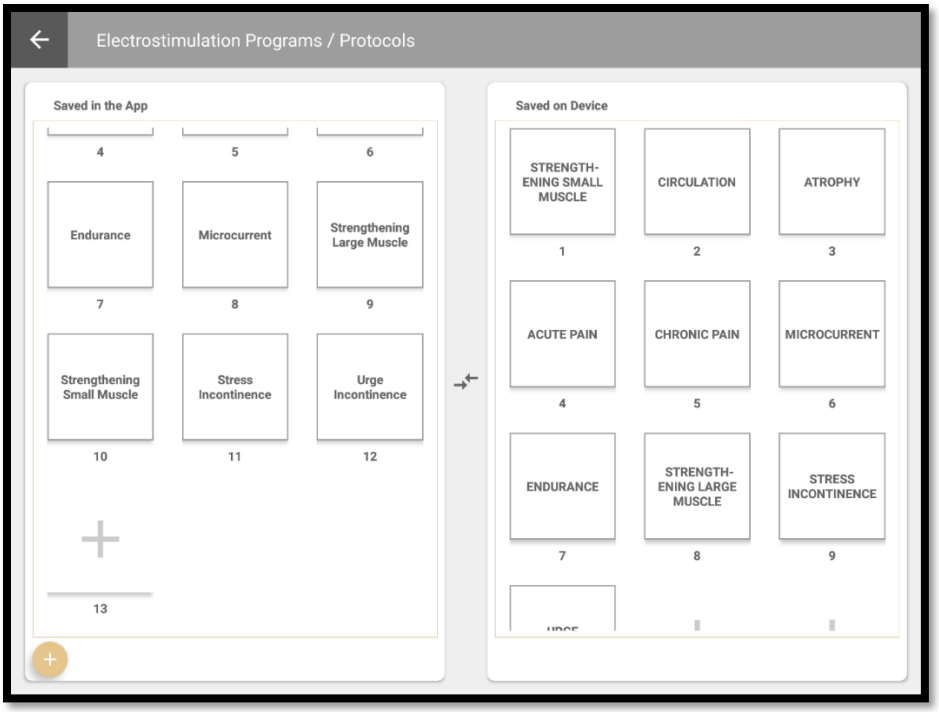
To view or modify a custom program, tap the ellipsis **(…)** beside a program name. Then, select **View**, **Edit**, or **Delete**.



Program Transfer: Tap the Program Transfer icon to transfer programs from the app to the device or from the device to the tablet.

Managing ES and ETS Programs

Tap the icon to manage the ES and ETS programs.



The Electrostimulation Programs/ Protocols screen displays the programs by category. From this screen, you can perform the following actions:

- View lists of the programs displayed on the app and on the device.
- Upload STIM programs to the device.
- Delete STIM programs from the device.

Viewing Programs

The left displays the programs saved on the app, while the right shows those saved on the device.

Note: A maximum of 20 programs can be saved on the device.

Transferring Programs

To transfer a program, select it and drag it from one side to the other, dropping it in an empty space. A confirmation screen is displayed.

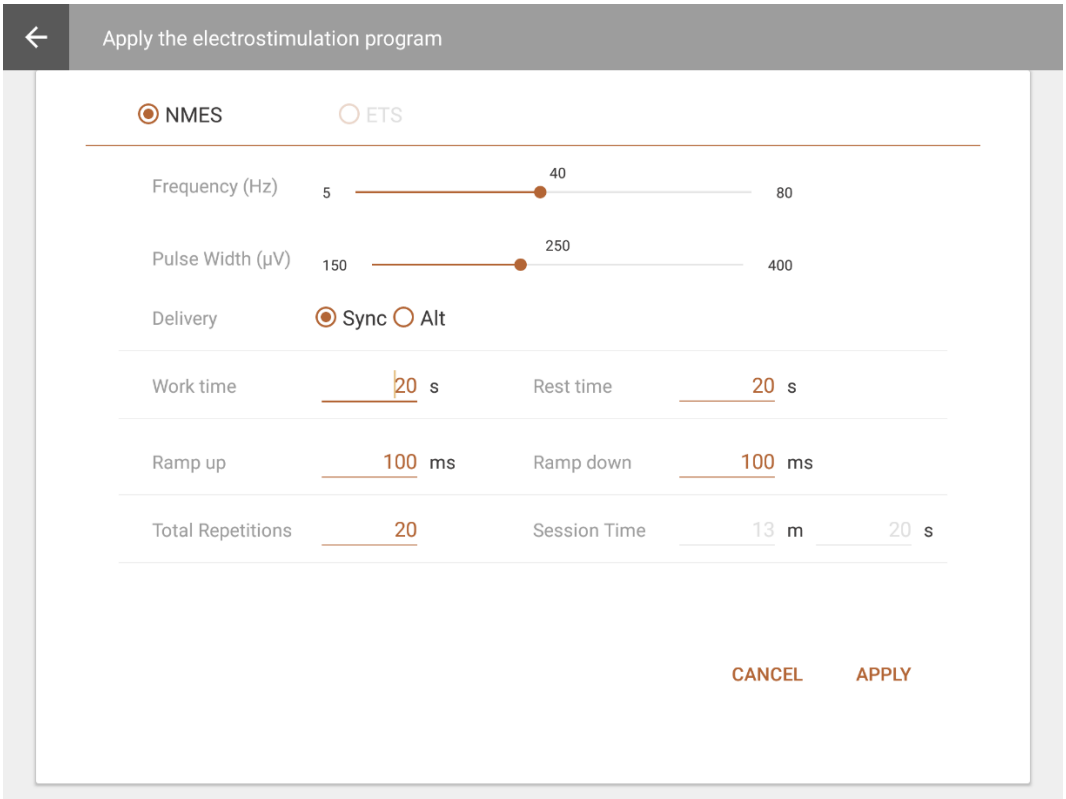
If the program already exists on the device, you can replace it.

Creating a Custom STIM Custom Program

For ES and ETS sessions, you can create NMES and ETS programs.

NMES Program

Tap the **+** icon on the Electrostimulation Program screen and select **NMES** on the STIM Parameters screen.



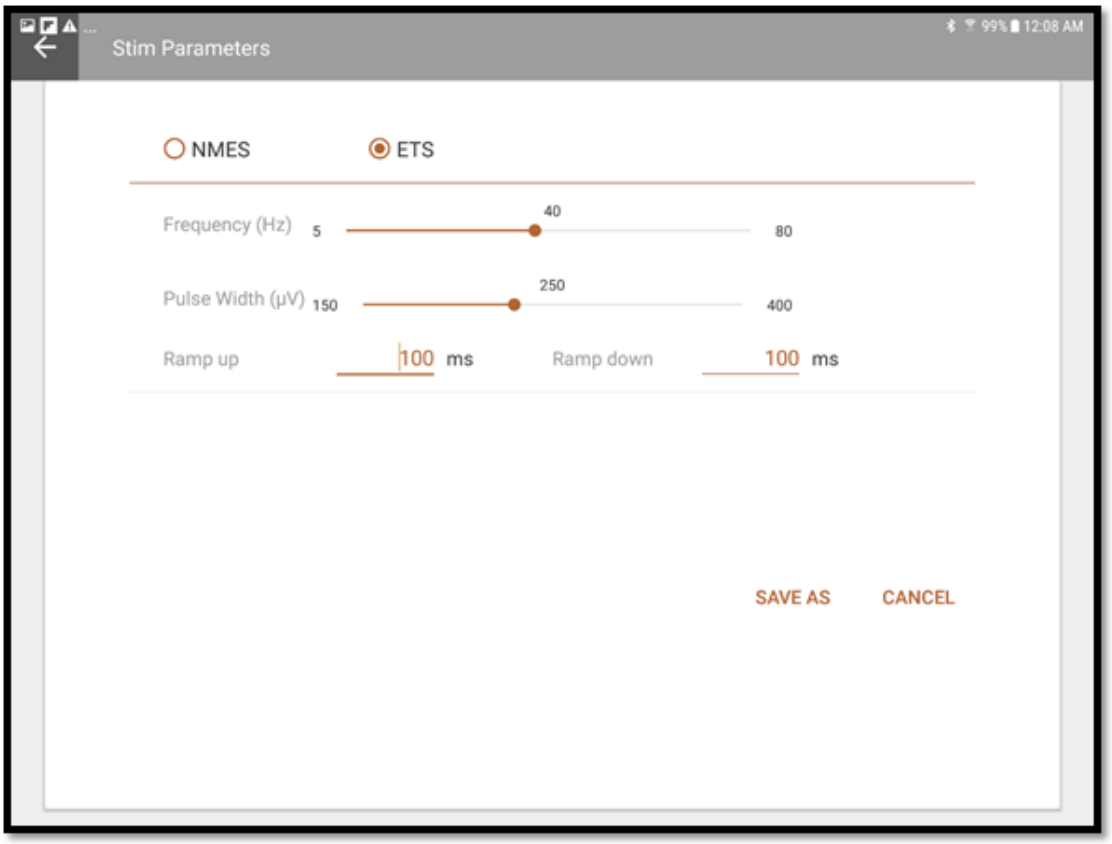
You can define the following parameters: Tap **SAVE AS** to save your program.

Name	Value Range	Default Value
Session Time	[2- 999*(7200s+7200s)]	13m 20 s
Total Repetitions	1 – 999	20 s
Work Time	1- 7200 s	20 s
Rest Time	1-7200 s	20 s
Ramp Up	[0 – 10000 ms]	100 ms

Name	Value Range	Default Value
Ramp Down	[0 – 10000 ms]	100 ms
Frequency (Pulse Rate)	[5 – 80 Hz]	40 Hz
Pulse Width	[150 – 400 µs]	250 Us
Delivery	Synchronous or Alternating	Synchronous
Modulation	Continuous	Continuous

ETS Program

Tap the **+** icon on the Electrostimulation Program screen and select **NMES** on the STIM Parameters screen.

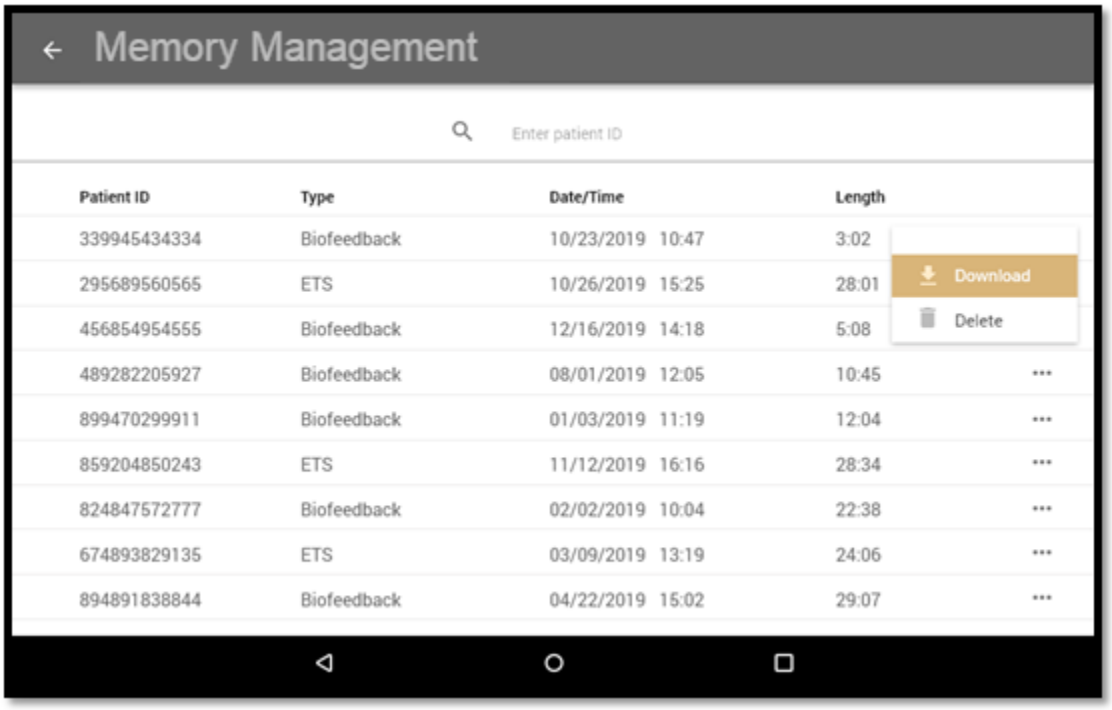


Name	Notes	Value Range	Default Value
Session Time	Hidden	1-7200 S	300 s

Name	Notes	Value Range	Default Value
Ramp Up	Required	[0 – 10000 ms]	100 ms
Ramp Down	Required	[0 – 10000 ms]	100 ms
Frequency (Pulse Rate)	Required	[5 – 80 Hz]	40 Hz
Pulse Width	Required	[150 – 400 µs]	250 Us

Memory Management

Tap **Memory Management** to access the sessions saved on the connected device. The button is disabled if no device is connected.



Sessions are listed by Patient ID; session type; date and time; and length.

You can perform the following actions:

Sort: Tap the column heading of any field to change how sessions are sorted. Note that on the length field, the sort is in ascending order only.

Review: Tap on a session to open the Review screen and review it.

Download or Delete: Tap the ellipsis **(…)** to download a session to the Patient List or delete it from the device.

Note: The download button is disabled if the session is already downloaded.

Tip: You can delete all sessions on the device using the MyOnyx settings. Refer to the MyOnyx Hardware Manual for details.

References

Troubleshooting

Refer to the MyOnyx Hardware or Reference Manual for troubleshooting details.

Contact Information

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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 call us.

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