v1.0.6

SMART SWIM

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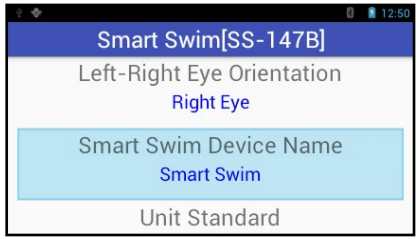
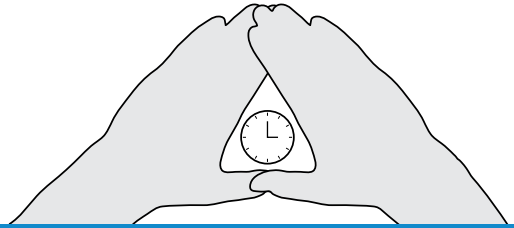
WHAT'S IN THE BOX

- Smart Swim™ (1x)
- Bungies (4@5 sizes)
- Battery pack (1x) (not waterproof)
- USB charge cable (1x)
- USB splitter cable (1x)
- Floats (6x)
- Grappling tool (1x)
- Case (1x)
- Reference Card (1x)
- Warrantee (1x)
- The Box (1x)

SELECTING YOUR DOMINANT EYE

1. Power on Smart Swim™
2. Scroll to “System Configure”
3. Open “System Configure” App
   - *The first time opening this app will require a system reboot
4. Select the “eye orientation” property
5. Use the **Select** button to select your dominant eye setting
   - See below for instructions on how to determine your dominant eye

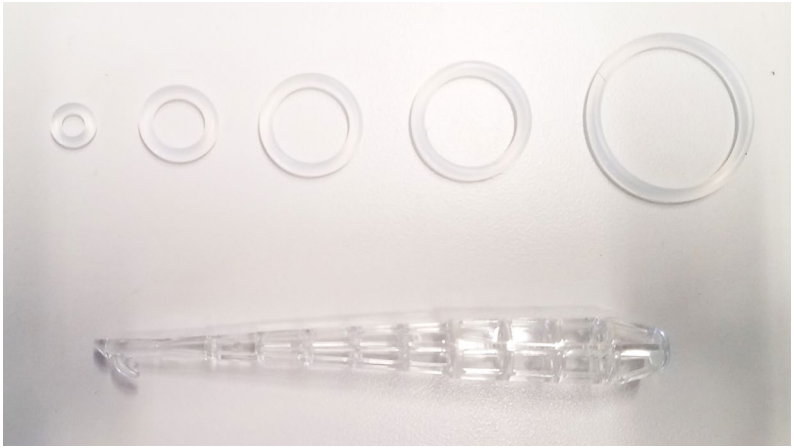




DETERMINE YOUR DOMINANT EYE

Extend your hands, placing them together to make a small triangle between your thumbs and knuckle. Keeping both eyes open, center a nearby object inside the triangle. Close each eye one at a time. Notice how the object moves out of view when one eye is closed? When the object remains in view, the open eye is your dominat eye.

ASSEMBLY OF SMART SWIM™



BUNGIE SIZE CHART:

EXTRA-SMALL(9MM), SMALL(14MM), MEDIUM(19MM), LARGE(23MM), EXTRA-LARGE(32MM)

Step 1:

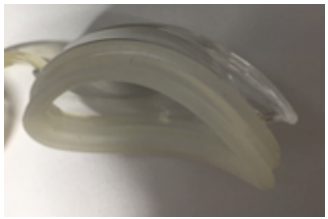
Remove strap and Adjustable Strap Retainer from the goggles.

RETAINER

RIGHT EYE HAVE A TYR LOGO
(LOOKING FROM THE FRONT)

Step 2:

Pull the 23mm O-Ring through the right hole of the goggle. Use the tip of the Grappling Tool to help push the O-ring through and use the Grappling Tool to grab it from the other end.



Step 3:

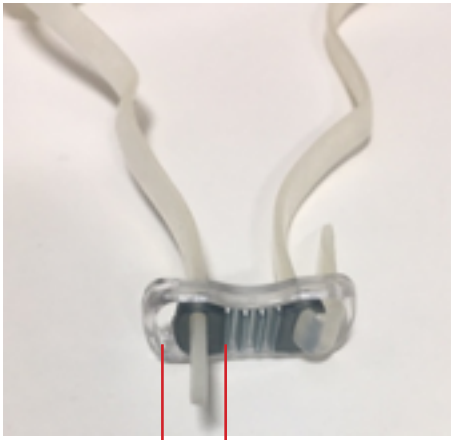
Pull the lower strap through three of the 23mm O-rings as shown and repeat with the upper strap.

Step 4:

Put inside strap through left goggle slot and pull it through.

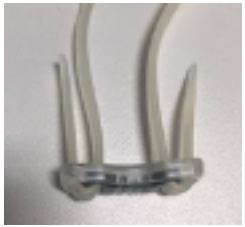
Step 5:

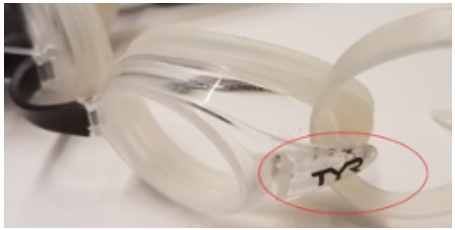
Put the end of the strap through the inner hole of the Adjustable Strap Retainer.



Step 6:

Put the end of the strap through the outer hole of the Adjustable Strap Retainer to secure it.

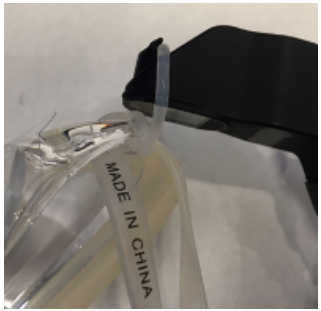




NOTE:
ENSURE THAT THE "TYR" LOGO IS FACING UPRIGHT. IF THE LOGO IS UPSIDE DOWN, THE GOGGLES MAY NOT WORK WELL.

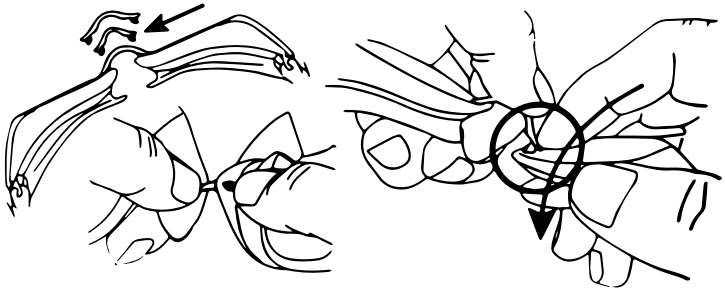
Step 7:

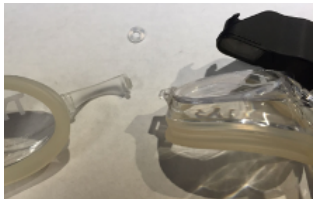
Grab the O-Ring loop on the right goggle slot and pull over eyepiece. Then, slide the O-ring to the second Hook of the Smart Swim Eyepiece.

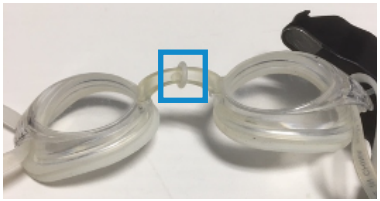


Step 8:

In the Goggle Guide, follow the instructions to disconnect the right side of the nose piece. Then, push the nosepiece through the 9mm O-ring and reassemble the goggles.

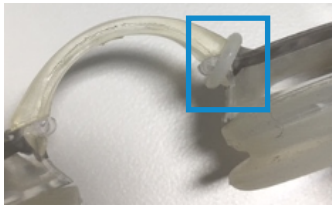


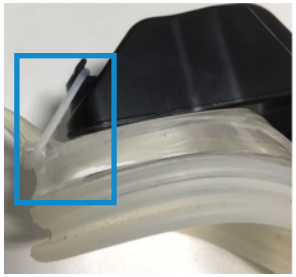




Step 9:

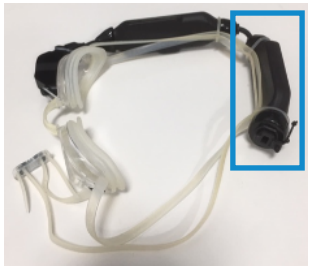
Slide the 9mm O-ring all the way to the right and over the bump. Then, pull the O-ring to the first hook of the Smart Swim Eyepiece.





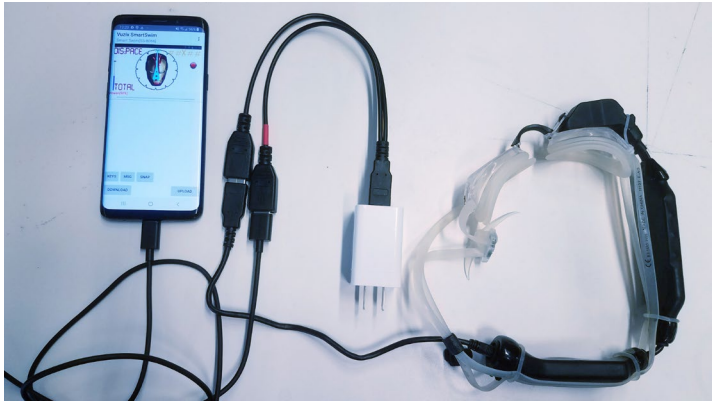
Step 10: Optional

Slide the upper strap over the battery and the lower strap under the battery to get the straps behind the battery.



CHARGING SMART SWIM™

Use the included Y-Splitter to share your charging source with your smart swim.



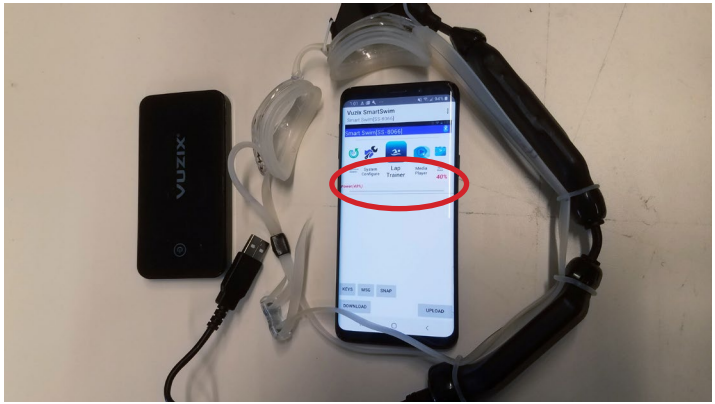
- Removes requirement of a laptop or desktop to charge your Smart Swim.
- Will require extra time to charge both systems depending on current rating of charger and charge rate of both devices.

Charge state can be determined by plugging in the battery pack and observing.

- Blue LEDs: Flashing (charging)
- Blue LEDs: Not Flashing (not charging)
- LEDs must be lit to ensure device is being charged
- LEDs Circled in red

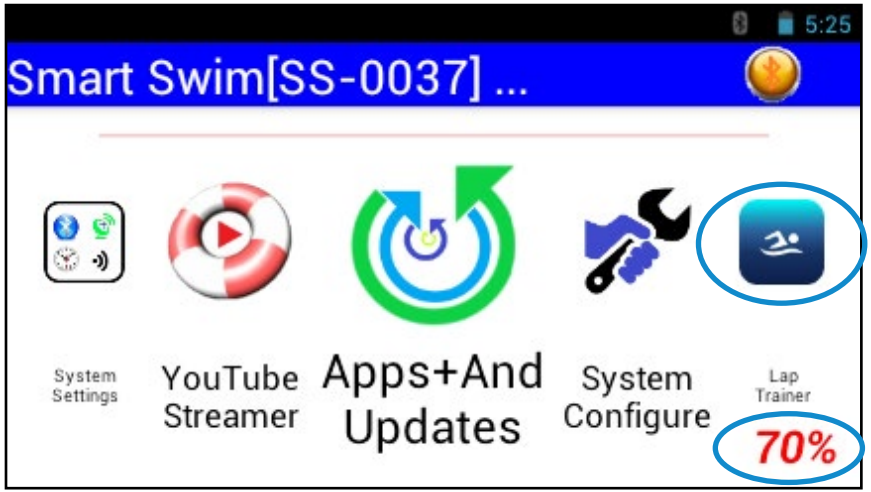
Using the phone pairing app, you will observe the power percent:

Green = Charging



Red = Not Charging

The carousel will indicate the charge state from the lower right corner.



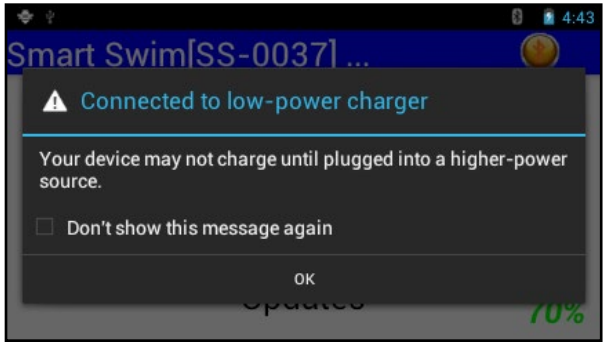
Green Percent = Charging

Red Percent = Not Charging

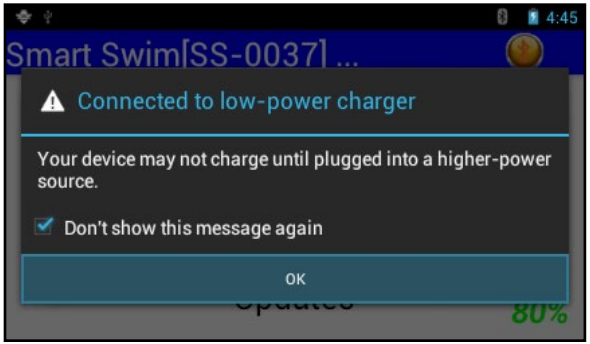
NOTE:
YOUR SMART SWIM REQUIRES 3+ HOURS TO FULLY CHARGE. 100% INDICATED ON THE CHARGE STATE WILL NOT BE ACCURATE WITHOUT 3+ HOURS OF CONTINUOUS CHARGING.

NOTE:
MAY TAKE LONGER IF CHARGE SOURCE IS SHARED WITH OTHER DEVICES.

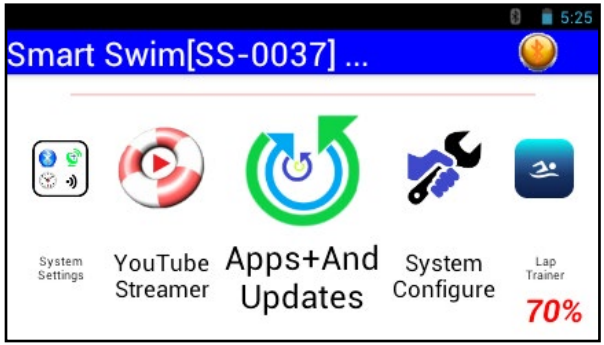
POWER ON SMART SWIM™



Power on Smart Swim™

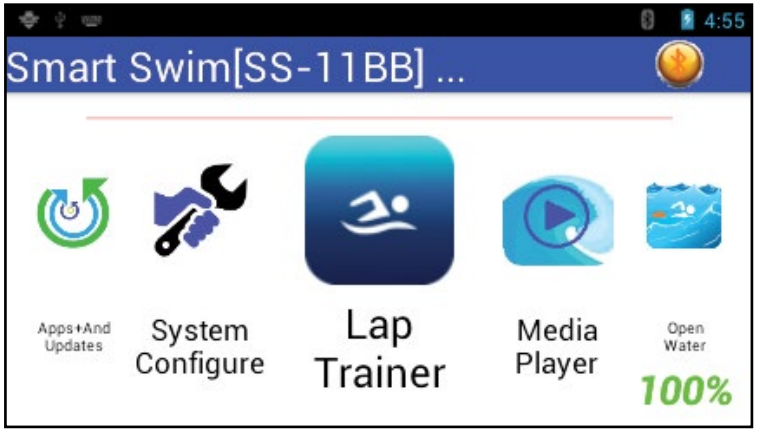


Power on Smart Swim™



Carousel is ready for navigation

APPLICATION OVERVIEW



THE SMART - CAROUSEL

System Configure

System Settings

Apps+And Updates

Lap Trainer

Open Water

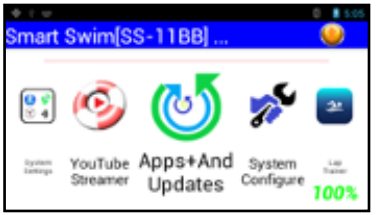
Media Player

YouTube Streamer

BUTTON INTERFACE

- SELECT = Select current item.
- BACK (Button A) = Move cursor down/right.
- FORWARD (Button B) = Move cursor up/left.
- POWER = Sleep or Power off system.
- Button Actions are application dependent.
- When keyboard is open, press and hold Button B to switch keyboard mode to numbers and back to letters.
- Press and hold Button A to go to the main carousel.

CAROUSEL OPERATIONS



- Scroll the icons left or right using button A or button B
  - Use the Select button to open the center icon/ application
- Display the Date and Time by triple pressing the up button
- A Progress Bar will update during data transfers
- The battery Power Charge State is indicated by the Percent value in the lower right corner of the display
- The smart carousel will remember your last active application and will execute that application upon startup
- Booting to Safe Mode is accomplished by continuously pressing and releasing the up or down button during the boot up process
- A Blue Tooth Connection can be established by the phone pairing app to connect and configure the Smart Swim™
- Several Blue Tooth Commands are available to enhance the configurability of your Smart Swim™ from your phone
- Press and hold Select to reset Bluetooth interface

Button Chart

(Single Press)

Button B: Scroll Icons Right

Button A: Scroll Icons Left

Select: Select/Open Application

(Double Press)

Button B: n/a

Button A: n/a

Select: n/a

(Triple Press)

Button B: Show Date-Time

Button A: n/a

Select: n/a

Theme-Settings

BackGroundColor, CountDownColor, HidePowerState

1. SYSTEM CONFIGURE

- Setup misc. non-Realtime settings
- Select dominant eye
- Create Smart Swim™ Device Name. (Format: “username” “[SS-####]”)
  - requires reboot
  - all user generated sessions will be stored in this location
  - all workout files will be in this folder
- Select Unit Standard (Yards, Meters, Laps, Miles, Kilometers)
  - Used by Lap Training app
  - Used by Open Water app
- Select Length of Pool (25, 50, 100) Sets length of pool for sessions
- Select Countdown Timer (3, 5, 10, 15) Provides delay to start of sessions
- Select Log Splits (Yes, No)
  - Removes splits from session files
  - Splits can be enabled or disable via pre-programmed workouts
- Select Split Interval Distance (25, 50, 100, 200, 500)
  - Sets split distance for lap training sessions
- Select Speed Display Format (Split Interval Time, MPH, KPH)
  - Split Interval Time…aka x.xx seconds in 100 yards.
- Select SPM – Calorie Display (Disabled, Swimming, Running-Paddling, calories Burned)
  - Disable do not show any SPM info
  - Swimming Use gyroscope to compute SPM
  - Running-Paddling Use Accelerometer to compute SPM
  - Calories burned only show calories no SPM will be display or computed

- Body Weight – Used in calorie computations
  - The current algorithm considers users weight, and weather the user is resting or actively moving, total active time vs total rest time.
- Compass Options (Performance=Use Gyroscope with acc and mags to determine heading (No filtering), Accuracy = Use only acc and mags to determine heading (highly filtered)
  - conserve power
- GPS Sensitivity (Low-Marathon Swim mode (GPS Readings will be extended of longer distance segments to determine metrics and waypoints), Medium-Swimming mode (GPS and Smart Course readings are held off longer to better determine motion and waypoints, High-Running mode (GPS motion and waypoints are very sensitive to short distance motion, may generate false readings if movement is at low speeds)
- Select GPS file Format (KML-Google Earth, GPX-Garmin Uploads)
  - Only one format will be saved during a session
  - Open Water app will generate a session file that mates with the GPS file created
  - Smart Courses will be saved with Raw GPS course maps
- GPS Show Tracks (Yes, No)
  - Will render a grid with distances from starting point.
  - Will render the current course tracks being received from GPS
  - Will render a pre-defined course map selected by user. See “GPS Course File” Below
- GPS Zoom Tracks (1x, 2x, 4x, 8x)
  - Provides a means of zooming into or out of the current rendered tracks
  - Can be changed in Realtime in the GPS open Water App using Buttons A and B

- GPS Course File (Undefined, “File Name”)
  - Allows the user to select a GPS Course mapping to overlay onto the current rendered tracks
- Display Clock Format (Digital, Analog)
  - Will use the currently selected analog clock from the Theme or the default system analog clock if not defined by the current theme
- Media Still image Time (Seconds) (5, 15, 30)
  - Media Player option to determine when to render the next picture if any exist
- Snapshot Period (Seconds) (Disabled, 3, 15, 30)
  - Provides a means of saving HUD snapshot images during a session
  - These images can be post processed
- Exist in the “\android\data\HUD Images” folder

- Display Theme (“filename”)
  - This option allows the user to change the appearance of the apps based on the theme file selected.
    Ex: Black on White background vs. White on Black background
  - Theme Settings can be used to disable portions of the HUD in any apps that support themes
  - All Themes are stored here: “\android\data\Themes”
  - All Analog Clock designs are stored here: “\android\data\Analogclocks”
- Restore System Defaults – Will restore all system default Theme settings and all configuration settings to their default states
  - May require a reboot

Button-Chart

(Single Press)

Button B: Scroll up settings

Button A: Scroll down settings

Select: Select to change setting

(Double Press)

Button B: n/a

Button A: n/a

Select: n/a

(Triple Press)

Button B: n/a

Button A: n/a

Select: n/a

*** Press and hold Select to exit app

Theme-Settings: n/a

- The first time the configuration App is executed the system will require a reboot
- Any time the device name is changed the system will require a reboot
- Restoring System Defaults May require a system reboot

2. SYSTEM SETTINGS

Access android operating system settings on Smart Swim™

- Blue Tooth
- Wi-Fi
- GPS location services
- Clock date and time
- System Brightness
- Application control
- License information
- Certification Logo Information

Button-Chart

(Single Press)

Button B: Scroll up settings.

Button A: Scroll down settings.

Select: Select to change setting.

(Double Press)

Button B: n/a

Button A: n/a

Select: n/a

(Triple Press)

Button B: n/a

Button A: n/a

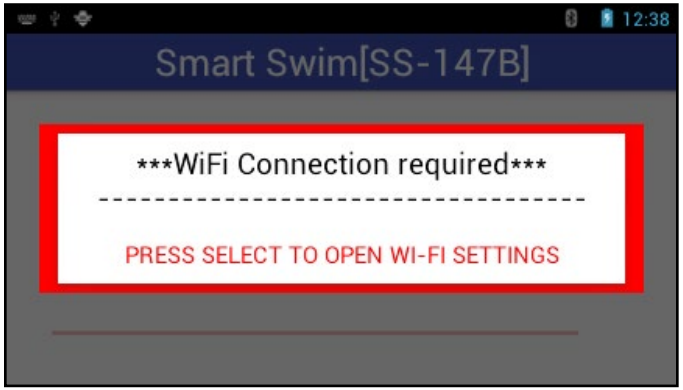
Select: n/a

*** Press and hold Select to exit app

Theme-Settings

BackGroundColor, StopWatchColor

3. APPS AND UPDATES



- Access available updates on Smart Swim™ Private Server
- Only displays new or updates that are available
- Requires Wi-Fi
- Will open Wi-Fi settings if not detected or configured
- Will be asked for confirmation prior to any update

Button-Chart

(Single Press)

Button B: Scroll up to previous App update

Button A: Scroll down to next App update

Select: Select App Update

(Double Press)

Button B: n/a

Button A: n/a

Select: n/a

(Triple Press)

Button B: n/a

Button A: n/a

Select: n/a

*** Press and hold Select to exit app

Theme-Settings

BackGroundColor, CountDownColor, StopWatchColor

4. LAP TRAINER

- Lap training tool for pool swimming sessions
- Shows stats on current speed and distance
- Shows pace clock
- Shows current pace
- Shows battery state
- Shows compass heading
- Shows swim state
- Shows date and time
- Shows calories burned in session files
- Saves Session with intervals and total distances
- Saves snapshot of final session time and distance.
- Session files saved are
- SS_Session_#_"Date+Time".txt – Defines workout achieved
- SS_Session_#_"Date+Time".png – Trophy file for completed session
- If lap training distance calculations are not properly in sync with your session you may need to recalibrate your sensors. See topic on Calibrate Smart Swim™ sensors.

Button-Chart

(Single Press)

Button B: Finish current set and show next workout-set.

Button A: Show previous workout set.

Select: Start/Re-Start and save current session.

(Double Press)

Button B: Finish current set, show current workout-set and restarts stopwatch/countdown timer.

Button A: Show current workout-set, resets countdown timer on preprogrammed workouts to provide more rest on the current set

Select: Finish current session and Load workout file

(Triple Press)

Button B: Show Date-Time.

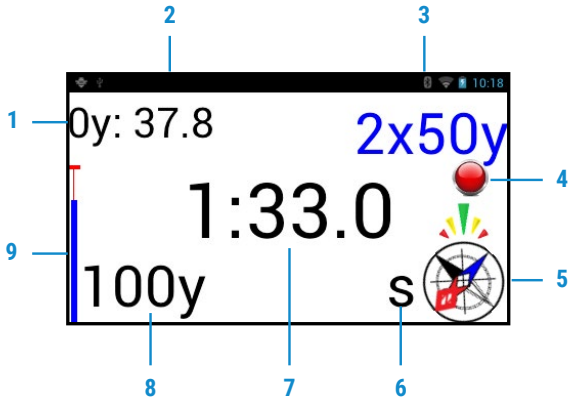
Button A: n/a

Select: n/a

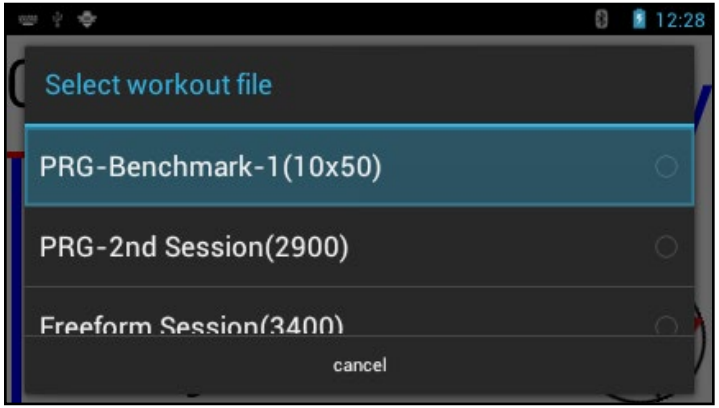
*** Press and hold Select to finish session and exit app

Theme-Settings

BackGroundColor, CountDownColor, StopWatchColor, StopWatchSize, HidePowerState, FontSelect, DistanceColor, DistanceSize, SetxIntervalColor, IntervalSize, TotalDistanceColor, TotalDistanceSize, AnalogScale, ClockHorizontal, ClockVertical, HideHeading, HideSwimState ClockName, AnalogColor, AnalogCountDownColor, AnalogSecondColor, AnalogMinuteColor, AnalogHourColor



1. Total Distance in current interval.
2. Pace for current interval.
   (Based on split distance setting)
3. Intervals accomplished at previous interval distance achieved.
4. Swim state: red = resting, green = swimming, yellow=backstroke.
5. Compass heading indicator and heading.
6. Strokes Per Minute or Calorie output or disabled.
7. Time since session started.
8. Total Distance in current session.
9. Battery power state.



Double press Select Button to open a workout file.

Workout/Session mode can be:

- Free form = no workouts, just swim.
- Loaded workout = scroll workout file with Button A or Button B Next/Previous set. Swim at athletes' pace.
- Preprogrammed workout = Once started computer will automate and walk users from start to finish of the workout/session loaded.

Preprogrammed instruction set:

All preprogrammed instructions start with the PRG= tag.

1. PRG=@Resting (resting set)
   - Ex: PRG=@Resting=0:00:30, next=7x500s 30 rest, with splits
   - This record will provide a 30 second rest period prior to starting the next set. The info to the right of the rest time “0:00:30” is displayed to the user for providing information about the next set.

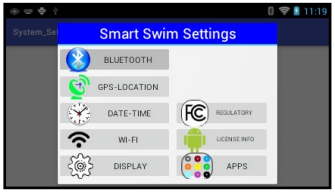
2. PRG=@Set (Defines a set for user to execute)
   - Ex: PRG=@Set=7x500, @rest=0:0:30, @splits=true
   - This record will begin a programmed 7x500’s with 30 seconds rest after each 500. Splits will be overridden and will be logged during this set.
   - PRG=@Set=100x100,@on=0:1:20,@onend=0:1:30,@blocks=10,@random=true
   - This record defines a Set of 100 x 100s On 1:20 seconds to 1:30 randomly generated in blocks of 10 segments.

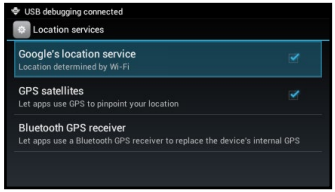
3. PRG=@Repeating=0:0:30,4xSets,4xtimes, set1=1x150(mix), set2=2x75s(IM), set3=4x50s(free), set4=6x25s repeat 4x.
   - PRG=@Set=2x150, @rest=0:0:15
   - PRG=@Set=2x75, @on=0:1:05
   - PRG=@Set=4x50, @on=0:0:45
   - PRG=@Set=6x25, @on=0:0:30
   - This record defines a group of 4 sets that are to be repeated 4 times. With information to the user about how each set is to be performed.

4. PRG=@Saving (Finishes the session and forces a save of all sets to the session file.)
   - Ex: PRG=@Saving, Congratulations=3500 yards
   - This record auto-saves the session and displays the text message “Congratulations=3500 yards” to the user.

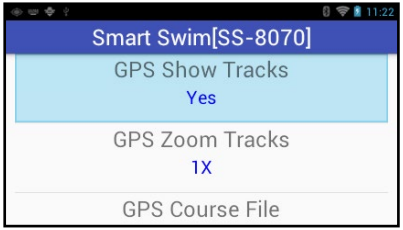
5. OPEN WATER

- Shows metrics on current speed and distance
- Shows pace clock
- Open Water training tool for GPS Open water sessions
- Be sure to enable GPS location services from the settings app





- Enable courses as overlay tracks with grid and current location tracking. See configuration tool “GPS Show Tracks”, “GPS Course File”



1. Shows current and average pace
2. Shows battery state
3. Shows compass heading
4. Shows swim/motion state
5. Shows date and time
6. Saves GPS as google earth or Garmin GPS formats
7. Shows calories burned in session files
8. Saves Session with intervals and total distances
9. Saves snapshot of final session time and distance
10. Session files saved are
    - SS_OW_Session_#_”Date+Time”.txt – Defines workout achieved
    - SS_OW_Session_#_”Date+Time”.png – Trophy file for completed session
    - SS_GPS_Smart_#_”Date+Time”.kml or gpx – Smart GPS file captured compatible with google earth and Garmin formats
    - SS_GPS_Full_#_”Date+Time”.kml or gpx – Raw GPS capture

Button-Chart

(Single Press)

Button B: Finish current set and show next workout-set. When Grid mode is enabled zoom in.

Button A: Show previous workout set. When grid mode is enabled zoom out.

Select: Start/Re-Start and save current session.

(Double Press)

Button B: Finish current set, show current workout-set and restarts stopwatch.

Button A: Show current workout-set.

Select: Finish current session and Load workout file.

(Triple Press)

Button B: Show Date-Time.

Button A: n/a

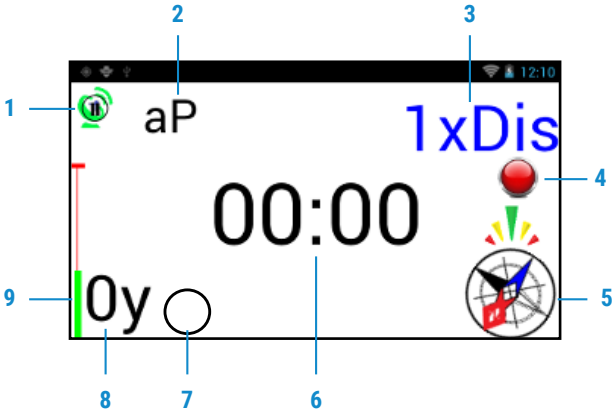
Select: n/a

*** Press and hold Select to finish session and exit app.

Theme-Settings

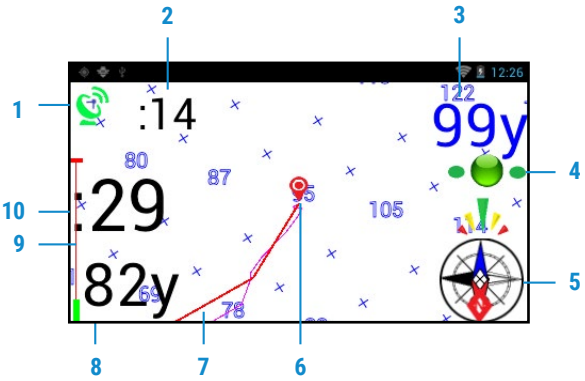
BackGroundColor, CountDownColor, StopWatchColor, StopWatchSize, HidePowerState, FontSelect, DistanceColor, DistanceSize, SetxIntervalColor, IntervalSize, TotalDistanceColor, TotalDistanceSize, AnalogScale, ClockHorizontal, ClockVertical, HideHeading, HideSwimState, GPSLineColor, GPSLineThickness, MapLineColor, MapLineThickness, SmartColor, SmartLineThickness, GridColor, ClockName, AnalogColor, AnalogCountDownColor, AnalogSecondColor, AnalogMinuteColor, AnalogHourColor

GPS Digital Mode



1. GPS Satellite connection status
   - Red = no satellites connected. (Must wait several minutes for first connection.)
   - Green with X = waiting for initial lock to settle (20+ seconds)
   - Green with Pause = waiting for user to press start.
   - Green = Receiving and recording GPS mapping data
2. Average Pace for session
3. Total Distance in current interval
4. Swim state: red = resting, green = swimming, yellow = backstroke
5. Compass heading indicator and heading
6. Time since session started
7. Instant pace from the last minute
   - (Not available in Grid mode or with SPM enabled)
   - Split distance will affect this setting
8. Total Distance in current session
9. Battery power state

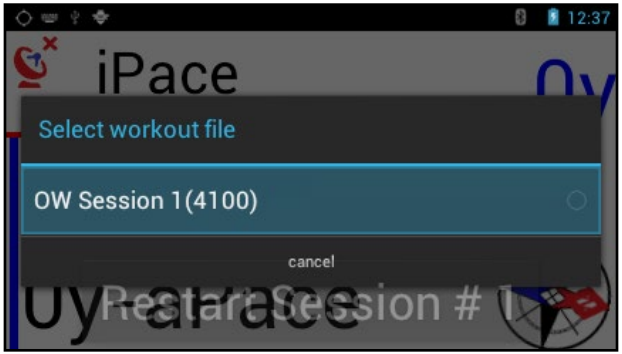
GPS Grid Mode



– Orientation of Grid is based on compass heading when not moving. Reverts to GPS heading when movement is detected. As you are progressing the Grid and your course will align itself with your direction of travel.

1. GPS Satellite connection status
   – Red = no satellites connected
   (Must wait several minutes for first connection)
   – Green with X = waiting for initial lock to settle
   (20+ seconds)
   – Green with Pause = waiting for user to press start
   – Green = Receiving and recording GPS mapping data
2. Average Pace for session
3. Total Distance in current interval
4. Swim state: red = resting, green = swimming, yellow=backstroke
5. Compass heading indicator and heading
6. Your Location, Grid indicates distances from Start of session
7. Red = Smart Course, Cyan = Raw Course, Green = Loaded Track to follow
8. Total Distance in current session
9. Battery power state
10. Time since session started

Workout Load Screen



Workout/Session mode can be:

- Free form = no workouts, just swim.
- Loaded workout = scroll workout file with Button A or Button B Next/Previous set. Swim at athletes' pace.

* No preprogrammed workouts available for Open Water mode

6. MEDIA PLAYER

- Renders local media content stored on swim.
- Supports blue tooth audio devices.
- Includes /music files.
- Includes /movies files.
- Includes /pictures files.
- Allows selection of current track.
- Shows swim state.
- Shows compass heading.
- Shows battery state.
- Shows date and time.
- Provides play/pause.
- Provides volume control.
- Provides blue tooth reset logic.
- Provides auto pause based on swim state.

Button-Chart

(Single Press)

Button B: If video is playing (Volume up) If video is paused (play next track)

Button A: If video is playing (Volume down) If video is paused (play previous track)

Select: Play/Pause

(Double Press)

Button B: If video is playing (Reset Bluetooth devices)

Button A: n/a

Select: Show Track Selection dialog

(Triple Press)

Button B: Show Date-Time

Button A: n/a

Select: n/a

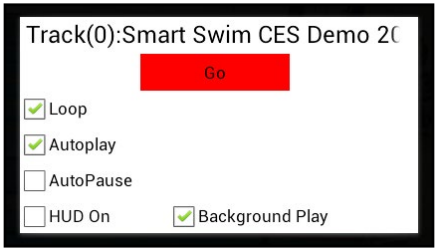
*** Press and hold Select to exit app

Theme-Settings

BackGroundColor, CountDownColor, StopWatchColor, HidePowerState, DistanceSize, TotalDistanceSize, AnalogScale, ClockHorizontal, ClockVertical, HideHeading, HideSwimState, ClockName, AnalogColor, AnalogCountDownColor, AnalogSecondColor, AnalogMinuteColor, AnalogHourColor

The Media player remembers last location and track

The Media player provides a dialog for controlling special features



Loop:	Loops on currently selected track
Autoplay:	Loops on All videos, audios and images
AutoPause:	Will pause current track when user is not swimming
HUD On:	Turn on all special HUD features
Background Play:	Will only playback audio/music tracks from the Music folder in the background while other apps are running The You Tube Streamer App will auto shut down the background play option. User must open the Media Play App to restart background play.

7. YOUTUBE STREAMER

- Requires Wi-Fi connection.
- Supports blue tooth audio devices.
- Renders you tube video content.
- Allows selection of searched video strings.
- Provides set of default search strings.
- Remembers all search strings.
- Shows Wi-Fi status.
- Shows battery state.
- Shows date and time.
- Provides play/pause.
- Provides volume control.
- Provides blue tooth reset logic.
- Saves video play state between sessions.

Button-Chart

(Single Press)

Button B: If video is playing (Volume up), If video is paused (play next track)

Button A: If video is playing (Volume down), If video is paused (play previous track)

Select: Play/Pause

(Double Press)

Button B: If video is playing (Reset Bluetooth devices)

Button A: n/a

Select: Show Track Selection dialog

(Triple Press)

Button B: Show Date-Time

Button A: n/a

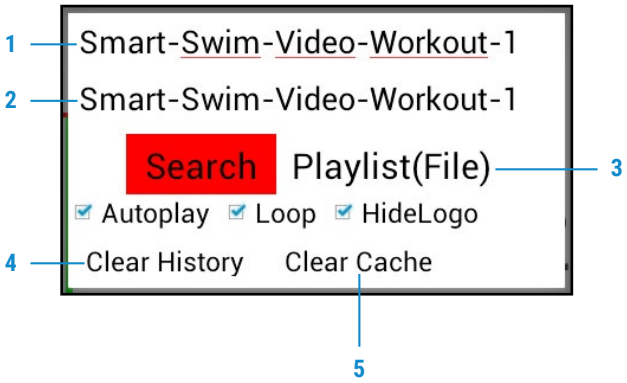
Select: n/a

*** Press and hold Select to exit app

Theme-Settings

BackGroundColor, CountDownColor, StopWatchColor, HidePowerState, DistanceSize, AnalogScale, ClockHorizontal, ClockVertical, ClockName, AnalogColor, AnalogCountDownColor, AnalogSecondColor, AnalogMinuteColor, AnalogHourColor

Open the search dialog by double clicking the select button



1. Enter a new search string.
   - Top edit box uses keyboard or pairing app to erase and type in a new search string.
2. Select a previously searched search string.
   - Using the drop-down list in the second search box.
3. Select your own uploaded playlist. Using the Playlist(File) option. You can upload playlists using the pairing app.
4. You can Clear the Search History fully and start with no search strings or you can Clear to system defined default search strings.
5. Here you can also clear the browser cache.
   - Warning: this will erase ALL prior search and login information.

When the search results are returned scroll down to the video of your choosing.

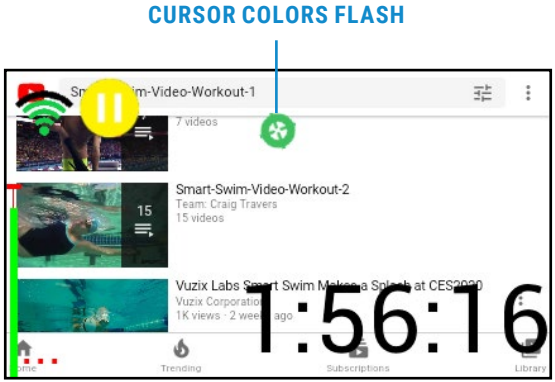
Button A = up/left by single or double clicking the button.

Button B = down/right by single or double clicking the button.

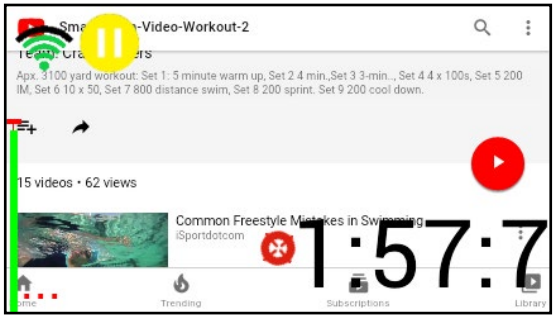
This will move the cursor appropriately. Move the cursor over the video of your choice, then press select. When the video first loads after a search you must then press select again to start the video playback process.

Example of video search and loading sequence.

Step 1: First search for results



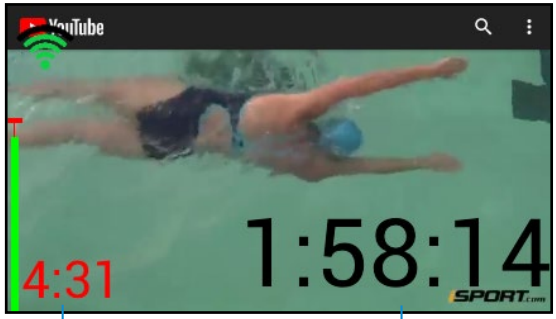
Step 2: Selecting a video may bring up another linked page



Step 3: Move cursor over video and select. Once selected the video will load.

Step 4: Press select again to start video playback. After this auto play and looping will continue playing videos.

Wi-Fi Signal Status: Green = ok, Yellow = disconnected, Red = Access required



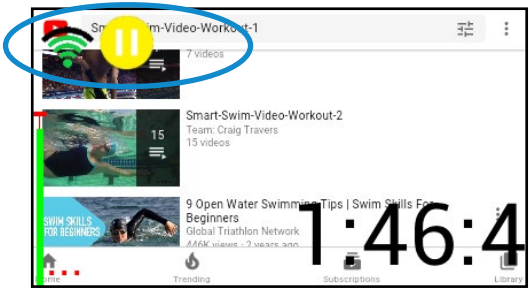
VIDEO COUNTDOWN TIMER **TOTAL SESSION TIME**

- There will be a 15 second delay time if Wi-Fi is lost during an access time. The App will reload and seek to the last position when wi-fi access was lost.
- Stopping at the end of video sequences will ensure the next sequence fully loads prior to any loss of network connection.
- Once the cache fills, there will be enough time for intermittent WIFI during continuous sessions.

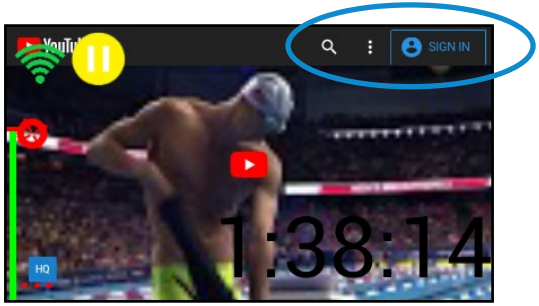
Steps to login to your YouTube Account

- Open Search dialog

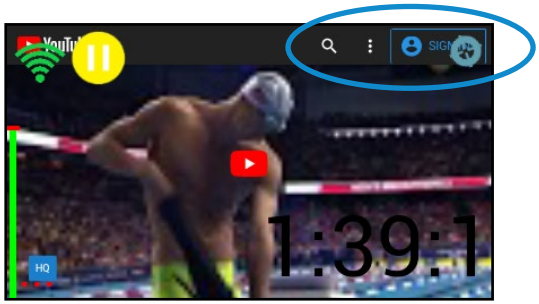
- Enable Show Logo option
- Perform a Video Search



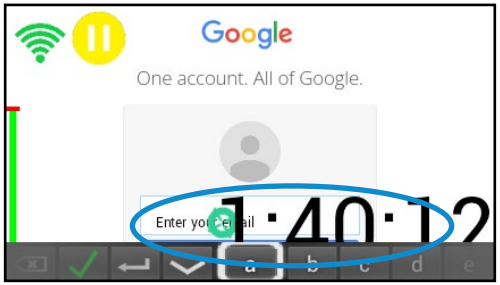
- Select a video to play



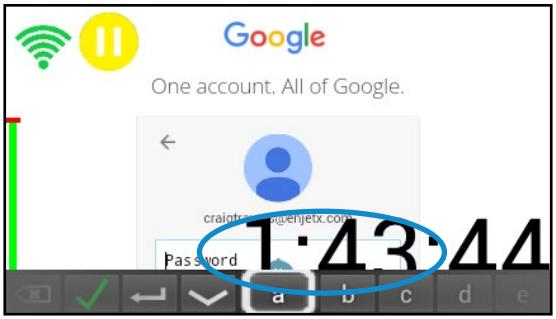
- Move the circular cursor up to the upper right blue login option



- Press select to open the login option



- Move the cursor over the email id and press Select to open the keyboard. (Use the paring app to assist in sending your email address to fill the email id box)
  - NOTE: You may need to dismiss the search dialog box using the back button after pressing select. (Press and hold Select to dismiss search dialog)
- Move cursor over sign in box and press select.



- Move the cursor over the password id and press Select to open the keyboard. (Use the paring app to assist in sending your password).
  - NOTE: You may need to dismiss the search dialog box using the back button after pressing select. (Press and hold Select to dismiss search dialog)
- Move cursor over sign in box and press select.
- You are now logged into your you tube account. The system will forever remember your login information. See clear Cache above.

8. STREAMER PLAYLIST FORMATS

Playlist for the You Tuber streamer app are simple text-based files with a version header record. The system currently supports 3 video string formats. See included playlist samples as a template to get you started.

Format 1:

StreamVideos(v)-1.0Smart Swim™ Streamer (v1.0.7)

https://youtu.be/-BjZmE2gtdo

https://youtu.be/IeDMnyQzS88

Format 2:

StreamVideos(v)-1.0Smart Swim™ Streamer (v1.0.7)

https://www.youtube.com/watch?v=luDxN1Pz6G8&list=PLw234Mpa3AvyqBKCIr6fQZa2EDrNiJvqv&index=2&t=0s

https://www.youtube.com/watch?v=hE5ohVhZWho&list=PLw234Mpa3AvyqBKCIr6fQZa2EDrNiJvqv&index=3&t=0s

https://www.youtube.com/watch?v=5N9KyCfBbEQ&list=PLw234Mpa3AvyqBKCIr6fQZa2EDrNiJvqv&index=4&t=0s

Format 3

StreamVideos(v)-1.0Smart Swim™ Streamer (v1.0.7)

https://m.youtube.com/watch?v=-BjZmE2gtdo

https://m.youtube.com/watch?v=IeDMnyQzS88

Use the following steps to retrieve a playlist template to build your own playlist:

- Open the Smart Swim Pairing App.
- Select the “Download” button.
- Select the “Stream Workouts” option.
- Select the “PLAY-MPSwims Gold.txt” playlist session.
- This will download and open a playlist in your text editor.
- Save this playlist as your personal playlist session file in the “Download” folder of your phone.
- Add your own playlists to this new playlist session file.
- Save your changes.
- Exit the editor, this will reopen the Smart Swim pairing app.
- Press the Upload button.
- Select the Stream Playlist option.
- Select your personal playlist from the listed playlist session files.

*You can now load this playlist from the youtube streamer app.

9. SPORT DV CAMERA

- Requires Wi-Fi connection
- Renders Sport DV Camera image
- allows image horizontal stabilization
- Allows Zoom to horizon line
- Allows configure of Wi-Fi credentials
- If no Wi-Fi is connected on startup app will open wi-fi settings
- If “SQ23_” or “SQ13_” Wi-Fi networks are not connected the app will wait for their connection to arrive
- If an alternate wi-fi network is connected a warning will be displayed. User must walk outside of range of “said” wi-fi at this point the Sport DV camera will connect and the APP will auto connect and render cameras image.
- Sport DV wi-fi must be configured under wi-fi settings. See settings app.

Button-Chart

(Single Press)

Button B: Zoom out on cameras image.

Button A: Zoom in on cameras image.

Select: Restart session time from 00:00.

(Double Press)

Button B: n/a (TBD)

Button A: Re-center Image correction to horizon line.

Select: Show User Camera Settings dialog.

(Triple Press)

Button B: Show Date-Time.

Button A: Restart and initialize Camera Stream.

Select: Show user credentials user-id and password dialog.

*** Press and hold Select to exit app.

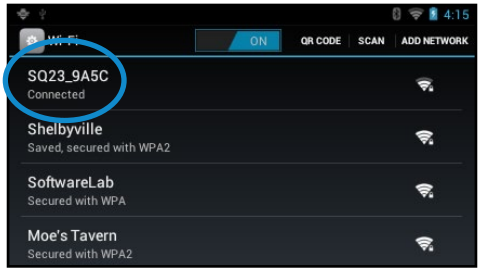
Theme-Settings

BackGroundColor, CountDownColor, StopWatchColor, FontSelect, HidePowerState, TotalDistanceSize, AnalogScale, ClockHorizontal, ClockVertical, HideHeading, HideSwimState, ClockName, AnalogColor, AnalogCountDownColor, AnalogSecondColor, AnalogMinuteColor, AnalogHourColor

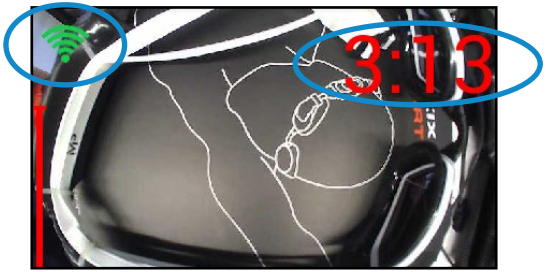
Turn on Sport DV Cameras Wi-Fi mode. Press power on and see red light.

Press and hold mode button and see green light flashing. Wi-fi is now on.

Camera is found and connected under Wi-Fi settings. Default password is “12345678”.



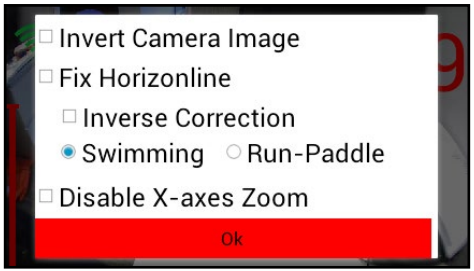
Run the Sport DV Camera App



Now you see the camera video feed with WIFI signal strength in the upper left corner. Time since camera session has started in upper right corner.

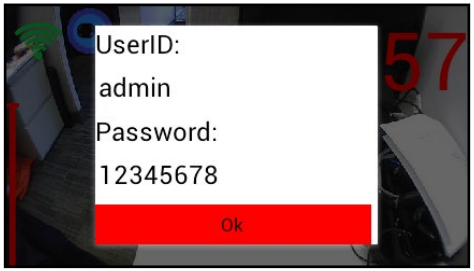
* Be sure to use the proper SD Card for the camera. If images and videos are being overwritten check for proper card format and type.
* There will be some noise levels in the audio feed of the camera. You may want to use noise reduction of -10 to -15 dBs to remove this noise.

(Double click Button B) Image correction and other camera details



- Invert the camera image provides for mounting in left vs right eye modes or mounting the camera remotely upside down.
- Fix Horizon line – is an experimental option to use if the user feels the need to keep the horizon line horizontal when head or body motion is rolling side to side.
- Inverse correction – provides for left vs right eye mounting, etc.
- Swimming vs Run-Paddle will determine if the user is facing down at feet or up at sky when swimming vs. looking straight ahead when running or paddling.
- Disable X-Axes Zoom. This is experimental and can be used to only zoom along the horizon line keeping the information in the image in the vertical axis. More details will help to spot objects in the distance.

(Double click Button A) Camera credentials dialog



If user has changed their camera login credentials for WIFI connection to the camera.

NAMING YOUR SMART SWIM™

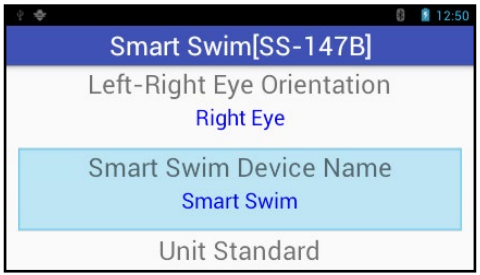
Power on Smart Swim™

Scroll to “System Configure”

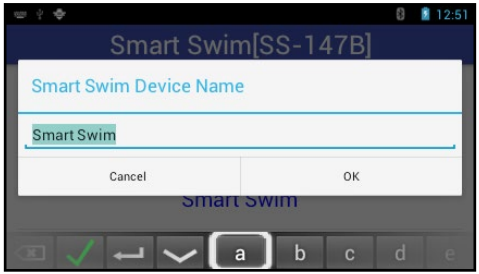
Open “System Configure” App

– Your first time opening the configuration application, your system will be rebooted. The configuration app will reload after the reboot is completed.

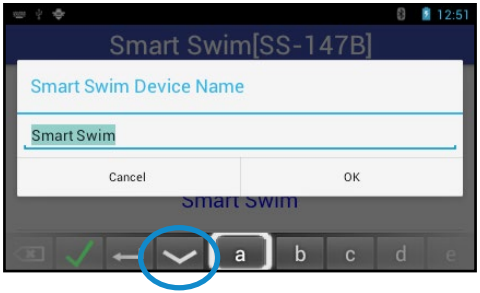
Select the “Smart Swim Device Name” property.



Use the soft keyboard to enter your unique “Smart Swim™” device name.



- Press and hold Button B to switch keyboard mode to numbers and back to letters.
- Scroll to letters using Button A and Button B. Press Select button to select the letter.
- When finished entering your unique system name scroll to the down character and select it to exit the software Keyboard.



- Press Select and the system should now reboot to complete your unique device name configuration change.
- All your saved session files will be stored in a folder by this name.
- Note: change your device name infrequently.

Getting Acclimated

- It may take you some time to get acclimated to wearing and using your Smart Swim™.
- Be aware of your surroundings.
- Start by only viewing the Smart Swim™ Display at random times during your sessions.
- Gradually you will get accustomed to viewing the Display more often during your sessions.
- Safety is paramount and keeping your self-awareness is always critical to a great experience with your Smart Swim™.
- Your first sessions should be more focused on the people and places in and around your environment.
- In time the experience will become more natural.

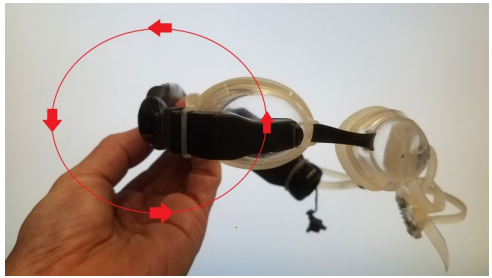
1. At times you may find your onboard sensors are not responding properly
2. Your lap training sessions are not keeping in step with you
3. Your compass heading is out of alignment
4. To re-calibrate your onboard sensors, perform the following:

– While at the environment you will be using your Smart Swim

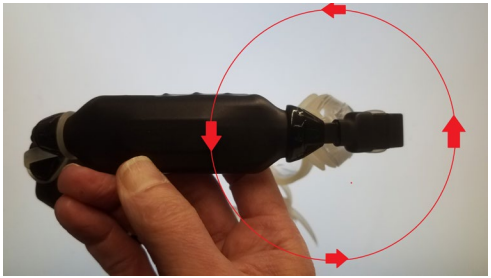
– Open the Lap Training application or the Open Water application

While holding your Smart Swim™ in front of you, level to the horizon line.

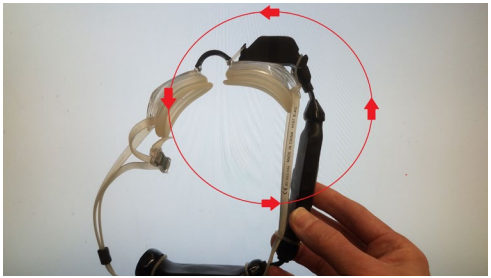
Step 1: rotate the system from your right to your left shoulder. Around a full circle in front of you. Slowly.



Step 2: rotate the system from the front to the back in a full circle, pitching up to the sky then down to your feet in a full circle. Slowly.



Step 3: rotate the system around the horizon line, in a full circle. Slowly.



Step 4: place the system on a flat surface and let it rest for up to 10 seconds.

Calibration completed.

This can be performed at any time.

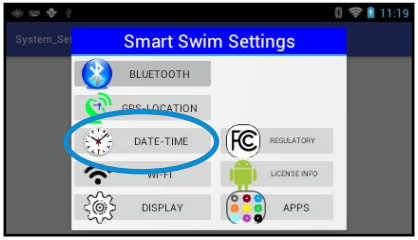
YOUR FIRST SWIM

1. You are now ready for your first swim.
2. With a pool close by the Lap Trainer will be your go to App.
   - Use the configuration app to set your pool distance and unit standard from the settings page.
   - Ex: Unit Standard = Yards.
   - Ex: Length of pool = 25.
3. On your first swim, just take it easy and keep it simple. Record your session to review when you complete the swim.
4. If it's the Open Water App you want. That too will do the job.
5. Just remember to be aware and get acclimated.
6. Let's Go!

NOTE:
ANTI-FOG, NEW GOGGLES YOU WON'T BE TOO CONCERNED FOR YOUR FIRST FEW SWIMS. AS TIME PROGRESSES YOU WILL WANT TO CONSIDER A SOLUTION.

DATE AND TIME SETTINGS

- If Wi-Fi is enabled date and time will be set when Wi-Fi connection is established
- If pairing with “Vuzix Smart Swim App” date and time will be set from the paired device based on paired devices date time
- If User requires proper time setting with no blue tooth or wi-fi connection the following must be performed

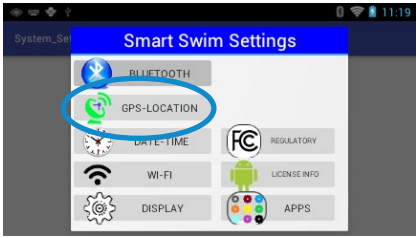


- Open DATE-TIME
- Select Set Date
- Press button A 3x
- Press button B 3x
- Press select and enter new month using soft keyboard
- Select down key icon when completed
- Press button A to highlight day of month
- Press select
- Enter new day of month using soft keyboard
- Press button A to highlight year
- Press select
- Enter new year using soft keyboard
- Press button A until “Set” is highlighted
- Press select to set the new date

- Open Set Time
- Press button A 3x
- Press button B 3x
- Press select and enter new hour using soft keyboard
- Select down key icon when completed
- Press button A to highlight minutes
- Press select
- Enter minutes using soft keyboard.
- Press button A to set AM or PM

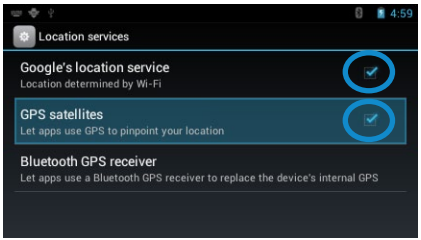
- Enter new day of month using soft keyboard
- Press button A until “Set” is highlighted

Enable GPS Settings



NOTE:
SATELLITE CONNECTIONS WILL TAKE AS MUCH AS 7 OR MORE MINUTES THE FIRST TIME YOU TURN ON YOUR GPS CONNECTION. CONNECTION TIME WILL BE MUCH SHORTER WITH SUCCESSIVE CONNECTIONS IN THE FUTURE. BE IN AN OUTSIDE OPEN SPACE FOR BEST RESULTS.

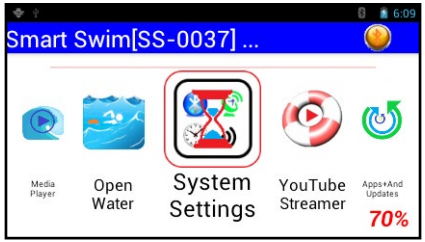
Check both GPS settings



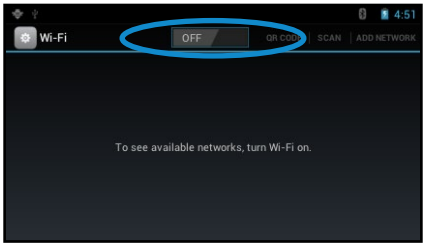
* Do not use in or around buildings in a city or enclosed spaces
* See the Open Water App for details on GPS connections

ENABLE WI-FI NETWORKS

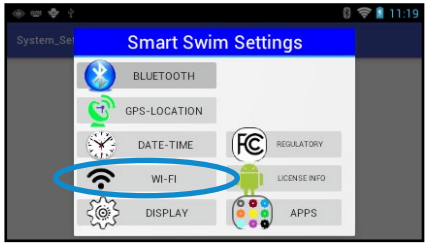
Scroll to And Open Settings



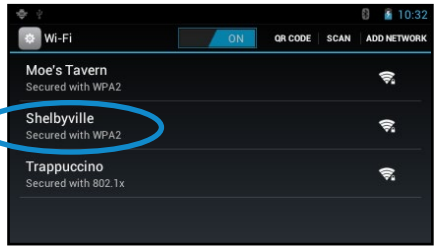
Turn on Wi-Fi



Select Wi-Fi option



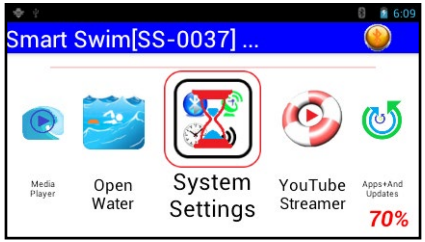
Verify Wi-Fi is detected



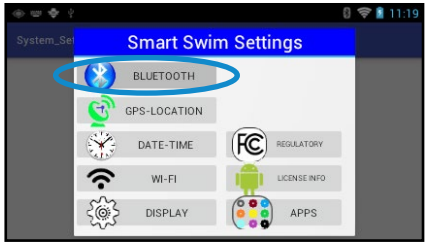
*If the Wi-Fi requires a password you can use the pairing app to assist in entering it.

PAIRING BLUETOOTH DEVICES

Scroll to And Open Settings

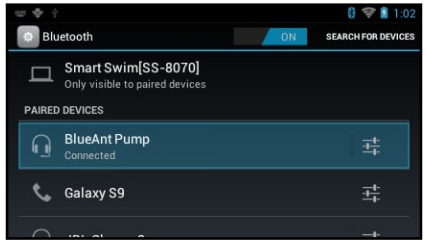


Select Blue Tooth

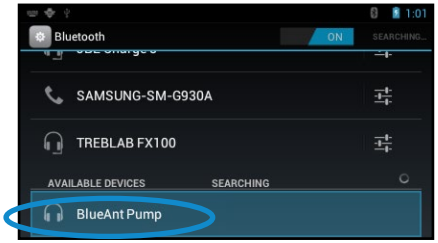


Turn on your blue tooth device

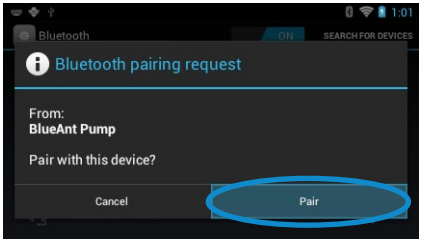
Select Scan from the blue tooth settings, Select “Visible to all nearby Bluetooth Devices” option



Verify your device is found

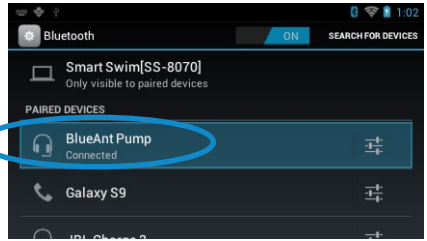


Scroll down with buttons to highlight and then select the device you want to pair with. Select the Pair button when visible.

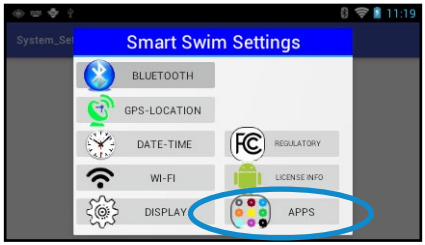


When pairing with your Phone you will want to change the visible state from “Not visible to other Bluetooth devices” to “Visible to all nearby devices”. Once a Scan for Bluetooth devices is started on your phone your Smart Swim should soon appear in the pairing list. See below on “Smart Swim™ Phone App“

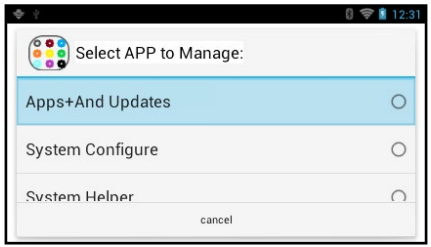
Your blue tooth device is now ready and paired.
The system will auto pair with the same device each time you reboot your Smart Swim. Simply power on your Bluetooth device before or after you power on your Smart Swim

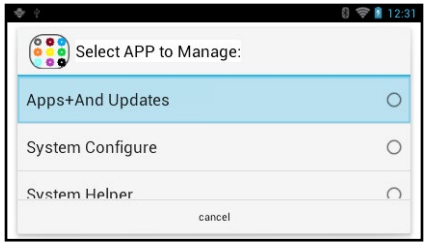


MANAGING INSTALLED APPLICATIONS



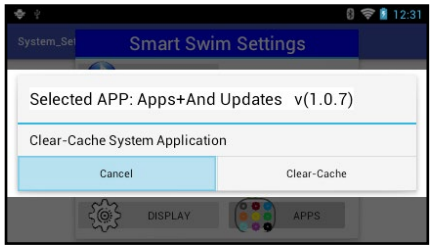
To clear an applications memory or to uninstall an application select this option. The following dialog will allow you to select the application you want to manage.



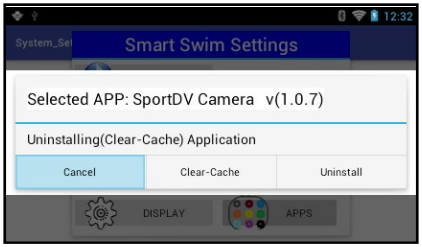


This dialog will then allow you to perform system maintenance on the selected application.

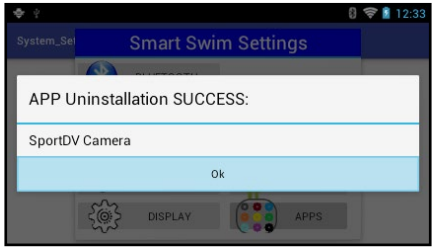
Selecting a System App:



Selecting a Non-System App:

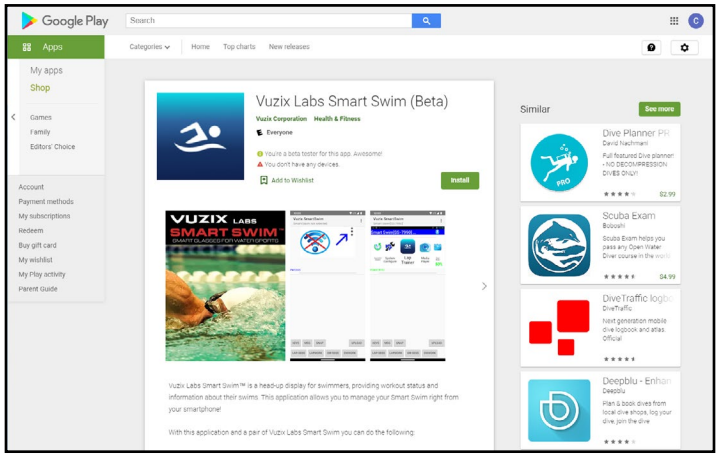


Results from Uninstalling an app:

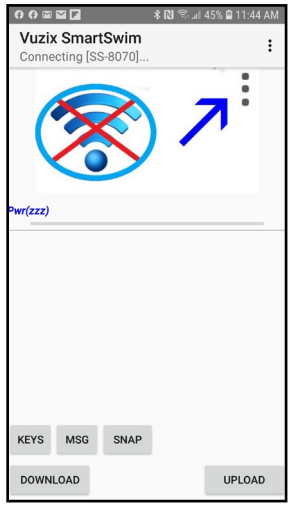


SMART SWIM™ PHONE APP

Using the pairing app will greatly enhance your interaction with smart swim. You can download and install the Vuzix Smart Swim Companion app from the google play store.



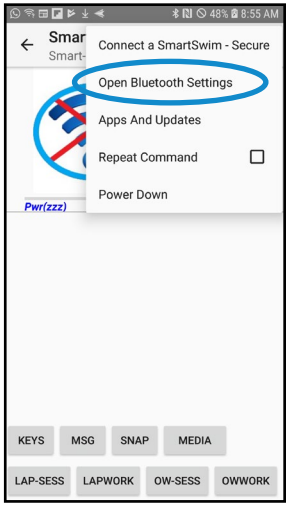
Once installed you will find the Vuzix Smart Swim App icon installed in your apps folder on your phone.



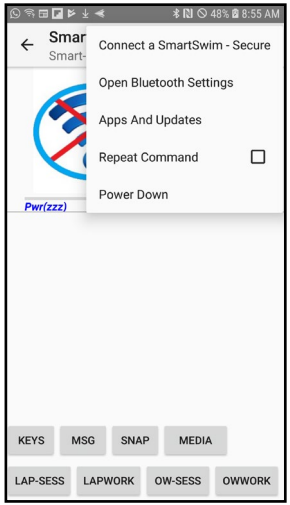
Smart Swim Main Menu Options:

To pair with a Smart Swim open your phones blue tooth settings. Select the menu options from the upper right. Follow the pairing guidelines above on pairing with devices to initially pair your Smart Swim with your Phone.

Once you have successfully paired with your Smart Swim from your phone Bluetooth settings go back to the Smart Swim pairing app on your phone. You will have access to the following commands.

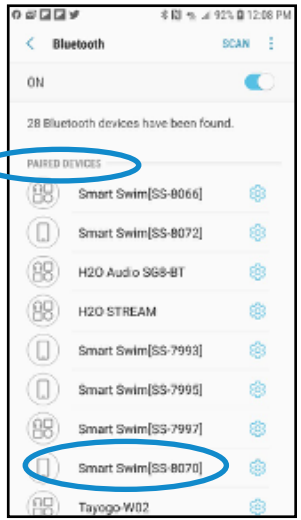


1. Connect a SmartSwim – Secure = Select a Smart Swim device you already have paired with for communications.
2. Open Bluetooth Settings = Open the Bluetooth settings on your phone.
3. Apps And Updates = login to the Vuzix private update server and check for updates.
4. Repeat Command = check this box to continuously execute either the “SNAP” or the “MSG” commands.
5. Power Down = Power down the Smart Swim you are connected to.
6. Manage Content = Provides a means of deleting content from your Smart Swim.

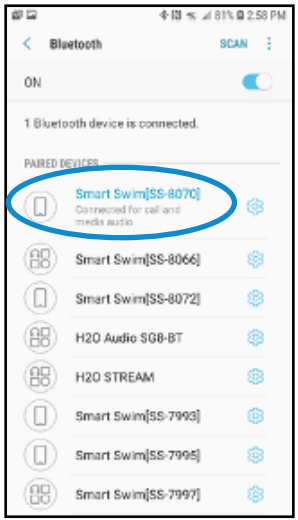


Your phone can be connected to a Smart Swim in either “call and media audio” or simply listed in the “Paired Devices” list. The “Vuzix Smart Swim App” will connect and operate in either mode.

“PAIRED ONLY”



“CALL AND MEDIA AUDIO”



The Pairing App is now connected and linked to your Smart Swim. You should see the display of your Smart Swim on the pairing apps front window.

The name of your connected Smart Swim will be displayed in the status bar. This will include the last 4 digits of the connected Smart Swims serial number.

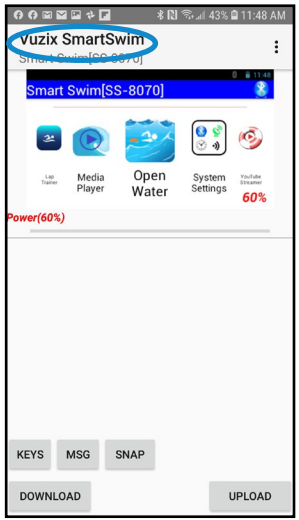
KEYS
Sends text entries to Smart Swim.

MSG
Sends text message to Smart Swim.

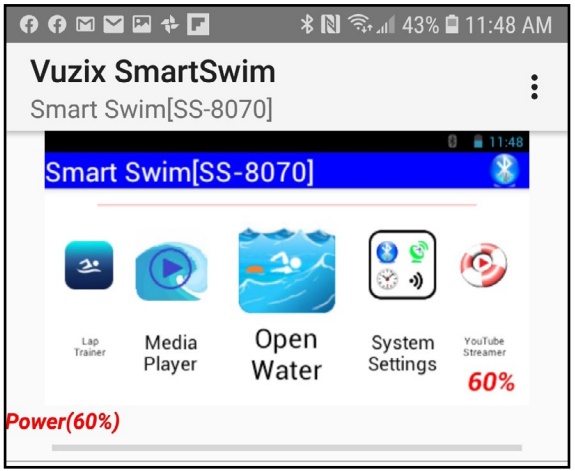
SNAP
Take a snapshot of what Smart Swim is currently displaying.

DOWNLOAD
Download content from Smart Swim.

UPLOAD
Upload content to Smart Swim.



Pairing Apps front control interface window.

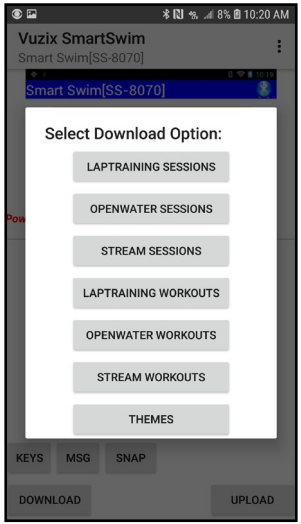


SNAP AREAS

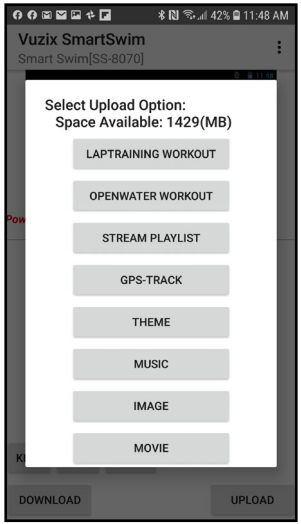
1. Tapping on the left side of the SNAP sends the Button A event.
   - Double Tap sends Double Button A
2. Swiping left from the center of SNAP will send the Button A event.
3. Tapping on the right side of the SNAP sends the Button B event.
   - Double Tap sends Double Button B
4. Swiping right from the center of SNAP will send the Button B event.
5. Tapping on the center of the SNAP sends the Select event.
   - Double Tap sends Double Select
6. Tap and hold on the very center of the SNAP sends a BACK event.
7. Power(60%) is message sent when power state changes or content transfers are executing. Power(60%) Green indicates System is in the charging state.

Selecting “DOWNLOAD” provides downloading content and sample workouts from your Smart Swim to your phone. This content can be saved or renamed for sharing, storing or uploading to your Smart Swim for another session.

Content downloaded from the above options will be stored at the following locations on your phone:



1. Lap Training
   …Internal…\SmartSwim\Smart Swim[SS-8070]\LapTrainingSessions
2. Open Water
   …Internal…\SmartSwim\Smart Swim[SS-8070]\OpenWaterSessions
3. Stream Sessions
   …Internal…\SmartSwim\Smart Swim[SS-8070]\StreamSessions
4. Lap Training Workouts
   …Internal…\SmartSwim\Smart Swim[SS-8070]\LapTrainingWorkouts
5. Open Water Workouts
   …Internal…\SmartSwim\Smart Swim[SS-8070]\OpenWaterWorkouts
6. Stream Workouts
   …Internal…\SmartSwim\Smart Swim[SS-8070]\StreamPlaylists
7. Themes
   …Internal…\SmartSwim\Android\data\SSConfig\Themes



Selecting “UPLOAD” provides uploading content from your phone to your Smart Swim.

Lap Training
Uploaded from either “Download” folder on phone or “Archive” vuzix private server.

Open Water
Uploaded from either “Download” folder on phone or “Archive” vuzix private server

Stream Playlist
Uploaded from “Download” folder on phone

GPS-Track
Uploaded from “Download” folder on phone

Theme
Uploaded from “Download” folder on phone

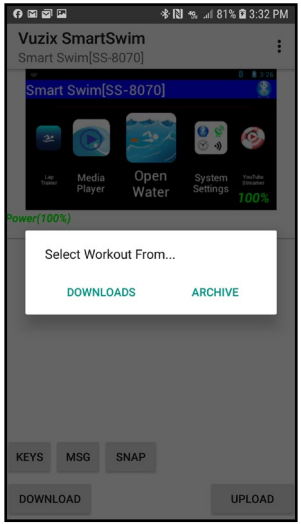
Music
uploaded from your phones “…\Music”

Image
uploaded from your phones “…\Pictures”

Movie
uploaded from your phones “…\Movie”

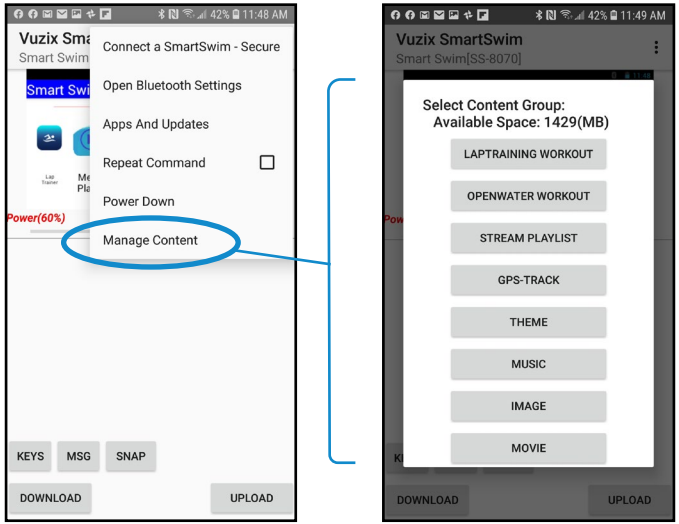
Selecting a workout to upload to your Smart Swim can be located on your Phones “Download” folder.

You can select a workout from the “Archive” Vuzix Private server. The following dialog is presented.



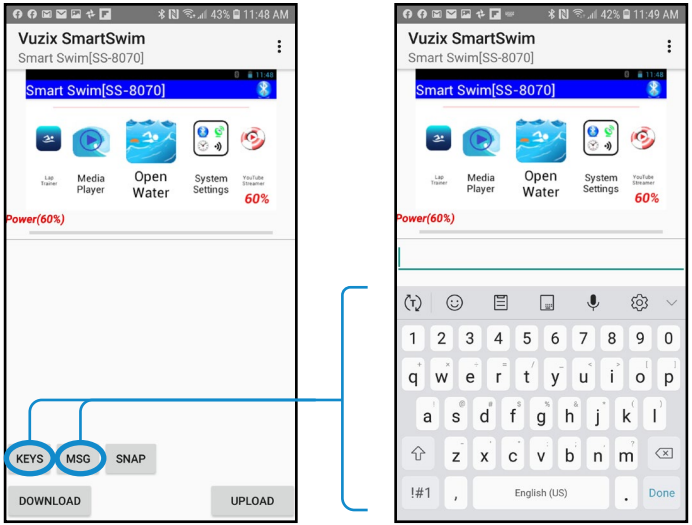
Using your phones “Download” folder will allow you to share workouts created from email sources or other web sources that offer Smart Swim compatible workouts. Simply download them to your phone’s “Download” folder. Then use the “Upload” option to load them into your Smart Swim.

Selecting “Manage Content” from the app’s menu, provides managing/deleting content from your Smart Swim.



Selecting “KEYS” button from the app’s main display, provides a means of sending login and text box entries to Smart Swim as keyboard events. The keyboard will open when selecting this function.

Selecting “MSG” button from the app’s main display, provides a means of sending a text message to Smart Swim. This message will appear over the current running activity in your Smart Swim. The keyboard will open when selecting this function.



SMART SWIM – THEME DESIGN

Themes can be created and modified by the user. You can design analog clock faces to include with your theme designs. Simply follow the proper file naming convention and save in your phones download folder to upload from the smart swim pairing app.

Ex: mytheme.txt includes the analog clock name of "ClockName=mytheme"

Will include the following analog clock files:

mytheme_dial.png

mytheme_countdownhand.png

mytheme_hourhand.png

mytheme_minutehand.png

mytheme_secondhand.png

Copy all 6 files to your download folder of your phone. Email them to your email account then download the attachments to your phones download folder. Then upload your theme "mytheme" to your smart swim from the smart swim pairing app.

All theme settings are type checked by the configuration tool and must be properly formatted.

Examples:

Colors must be "#12345678" 12=Transparency, 34=Red, 56=Green, 78=Blue they are hexadecimal 00 – FF (0 – 255) See example colors in theme file below.

Font sizes must be greater than 10 and less than 200.

If select font name is not available the system default font will be used.

Themes
"\Android\data\SSConfig\Themes"

AnalogClocks
"\Android\data\SSConfig\AnalogClocks"

*Theme files can be manually copied to your Smart Swim in the appropriate folders listed above.

Example theme file: “white_background”

```
// SSG-Theme Version(1.0)
// This theme is a white background
   with colored display and specific
   font selection
// Possible colors:
// BLACK =#FF000000
// DarKGRAY =#FF444444
// GRAY =#FF888888
// LightTGRAY =#FFCCCCCC
// WHITE =#FFFFFFFF
// RED =#FFFF0000
// GREEN =#FF00FF00
// BLUE =#FF0000FF
// YELLOW =#FFFFFF00
// CYAN =#FF00FFFF
// MAGENTA =#FFFF00FF
// TRANSPARENT =#00000000
// Possible Fonts:
// FontSelect =androidclock
// FontSelect =bungeeshaderegular
// FontSelect =digitaldreamfat “75%”
// FontSelect =gugiregular
// FontSelect =icelandregular “150%”
// FontSelect =kitchensinkgold
// FontSelect =liquidcrystalbold
// FontSelect =metromaestro
// FontSelect =spacemarine “50%”
// FontSelect =spacewham “90%”
// FontSelect =sportsball “65%”
// FontSelect =videodames
// FontSelect =vt323regular “140%”
//
// BackGroundColor = “color of
   background”
// DistanceColor = “color of primary
   distance fields
// DistanceSize = “set size of digits
   (10 - 200)”
// TotalDistanceColor= “color of total
   distance field
// TotalDistanceSize = “set size of
   digits (10 - 200)”
// IntervalColor = “color of interval
   field display
// IntervalSize = “set size of digits
   (10 - 200)”
// StopWatchColor = “color of
   stopwatch”
// StopWatchSize = “set size of digits
   (10 - 200)”
// CountDownColor = “color of
   countdown timers”
// HideHeading =true “Hide the
   compass heading and indicator”
// HideSwimState =true “Hide the
   swim state”
// HidePowerState =true “Hide the
   power state bar”
// MapLineColor =”Color of tracking
   line on GPS Map overlay”
// MapLineThickness =”Thickenss of
   tracking line on GPS Map overlay”
// GridColor =”Color of lines on grids”
// SmartColor =”Color of Smart
   Tracks or other Smart Indicators”
//
// ClockHorizontal = “x position of
   analog clock -1=app defined, 0 =
   left, 1=center, 2=right
// ClockVertical = “y position of
   analog clock -1=app defined, 0 =
   top, 1=center, 2=bottom
//
// Use ClockName to select a user
   loaded analog clock face.
// ClockName =clocknumbers
//
FontSelect =systemdefault
BackGroundColor =#FFFFFFFF
DistanceColor =#FF000000
DistanceSize =55
TotalDistanceColor=#FF000000
TotalDistanceSize =75
IntervalColor =#FF0000FF
IntervalSize =75
StopWatchColor =#FF000000
CountDownColor =#FFFF0000
StopWatchSize =100
HideHeading =false
HideSwimState =false
HidePowerState =false
HideWifiStatus =false
GridColor =#FF0000FF
GPSLineColor =#FFFF00FF
GPSLineThickness =1
SmartColor =#FFFF0000
SmartLineThickness=2
MapLineColor =#FF00FF00
MapLineThickness =3
AnalogClockColor =#FFFFFFFF
AnalogClockScale =90
AnalogHourColor
   =#FFFFFFFF
AnalogMinuteColor
   =#FFFFFFFF
AnalogSecondColor
   =#FFFFFFFF
AnalogCountDownColor
   =#FFFFFFFF
ClockHorizontal =-1
ClockVertical =-1
```

THEME TUTORIAL

1. Open the Pairing app and connect to your Smart Swim.
2. Press the “Download” Button.
3. Select the Themes Category.
4. Select the “master_clock_only.txt” theme.
   - This will download the theme into the “SmartSwim/Android/data/SSConfig/Themes” folder.
5. The “master_clock_only.txt” theme should now be opened in your default text editor.
6. Scroll Down to the “DistanceSize” property and change the value from a “2” to a “10”.
7. Scroll Down to the “TotalDistanceSize” property and change the value from a “2” to a “10”.
8. Scroll Down to the “IntervalSize” property and change the value from a “2” to a “10”.
9. Save the changes to the “master_clock_only.txt” theme.
10. Save or copy the “master_Clock_only.txt” theme to your phones “/Download” folder.
    - To upload any new themes or theme changes the theme must reside in the /Download folder.
    - Any changes made to the default system themes will be overwritten by a “reset default settings” action.
    - Any newly named themes will be untouched by any system changes.
11. Exit the text editor.
12. This will re-open and reconnect the Vuzix Smart Swim pairing app to your Smart Swim.
13. Press the “Upload” button.
14. Select the “Theme” option.
15. Select the “master_clock_only.txt” theme with your changes.
16. The theme changes should be uploaded and ready for you to select from the configuration App.

TECHNICAL SPECIFICATIONS

1. Wearable Computer
2. Android Operating System
3. Wi-Fi
4. Bluetooth
5. GPS Sensor
6. 9-Axis Motion Sensors
7. 4-Button User Interface
8. Vibrant Full Color Display
9. Micro USB
10. Built-In Battery (7+ hours, dependent on application)

Battery Life Chart

- (7 hours) Running just a clock
- (5+ hours) Running GPS in accuracy mode
- (3.5 hours) Running Lap Trainer
- (2+ hours) Running Wi-Fi streaming
- (2+ hours) Running Camera App

NOTE: Background audio play will reduce all estimated run times

TROUBLE SHOOTING

My Smart Swim is not fully charged.

- You must wait at least 3+ hours for a fully charged battery.
- If you are sharing charging your Smart Swim with another device, it may take longer.
- A reading of 100% does not mean Smart Swim is fully charged.

Audio is stuttering or has stopped.

- Reset the Bluetooth connection via the reset button based on the app you are using. See media player or you tube streamer.
- If the audio is playing in the background you will need to power off then power on your connected Bluetooth headphones.

My theme setting changes will not open.

- When changing your themes in the configuration app if the theme has errors you will be presented with an error dialog and the system will revert to the default system theme “white_background”.

Lap Training App is intermittently missing my lap transitions.

- Recalibrate your 9-axis sensors by following the calibration steps detailed above.
- Allowing the onboard sensors to heat up prior to any session will assist in maintaining stability and calibration during your session.
- Plug in your system to the battery pack. Power on your system and open the lap trainer or open water app. Leave the system in this state for a period of 1 hour. This will maintain its charge state and provide a very stable calibration state.

System reboots after opening configuration app.

- The first time the configuration app is opened your system will reboot.
- Any time you change the name of your device your system will reboot.

My theme setting changes have changed.

- Whenever the configuration app “restores system defaults” all the default system theme settings will be restored. You must provide a non-system theme name for your theme.

You must use the proper SD Card for the Sport DV camera. If images and videos are being overwritten check for proper card format and type.

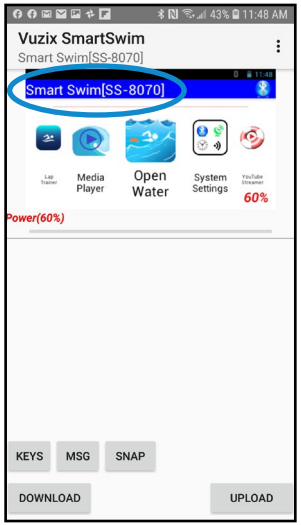
Recordings may contain some noise levels in the audio feed of the camera. You may want to use noise reduction of -10 to -15 dBs to remove this noise.

GPS is not connecting. do not use in or around buildings in a city or enclosed space. Go outside in an open space and wait for connection to satellites. 7+ minutes on the first connection.

After Zooming in or out with grid mode enable, the Open Water app is sluggish or non-responsive. Leave the zoom property to a default state prior to longer session.

My Smart Swim Device Name is not properly displayed in the paring apps main Window.

- If you change the device name in the configuration app. You may need to unpair and then re-pair your smart swim to ensure the new name is properly synced with the pairing app.
- If you rename your Smart Swim and the pairing app continues to use the previous name, content will not be properly uploaded or downloaded from your Smart Swim.



Learning More

Visit **www.vuzix.com/support/smartswim** for more information on the Smart Swim™
or contact **technical_support@vuzix.com** for additional information.

For more information on Smart Swim™
AND accessories, visit:
vuzix.com | vuzix.eu | vuzix.jp

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