

KEYWATCH Mobile for iPhone User Manual

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Contents

Contents	1
Introduction	2
Getting Started	5
Initial Setup	6
Settings and Configuration	7
hotMIC (Audio) Settings	8
hotCAM (Camera) Settings	10
geoTRACK (Location) Settings	13
KEYWATCH Settings	15
Using KEYWATCH	23
Using hotMIC	25
Using hotCAM and vidREC	26
Using geoTRACK	27
Arming a KEYWATCH Application for remoteTRIGGER and remoteSETTINGS	28
Downloading hotMIC, hotCAM, and geoTRACK Files to a Computer	29
Simulated Shutdown and Turn-On	31
Additional Information	33

Introduction

Congratulations on choosing the KEYWATCH Officer Safety system and its KEYWATCH for iPhone mobile application (app) software suite. This state-of-the-art software takes advantage of the flexibility and power of today's smartphones to provide audio, camera, tracking, and remote mobile device management capabilities to the law enforcement, public safety, security, and special military communities.

The KEYWATCH suite of apps has been designed to consensually monitor the location and safety of a user by enlisting a mobile device's microphone, cameras, and GPS to stream data from the device to the KEYWATCH ROC (Remote Operations Center) for remote, real-time monitoring by a health-and-safety monitoring team. The monitoring team can also (de)trigger the KEYWATCH apps on and off and adjust their settings using the remoteTRIGGER and remoteSETTINGS apps. Consensual users can activate each of these capabilities independently, and the data for each may be recorded to the mobile device's internal storage and/or streamed to the ROC for monitoring and recording.

The main features of the KEYWATCH suite of apps include:

Covert Capability

The user's mobile device looks and operates as a standard, unmodified mobile device while running the KEYWATCH software.

Simulated Shutdown and Turn-On

The KEYWATCH mobile device can appear to shutdown normally while continuing to run the KEYWATCH app(s). The mobile device will also appear to turn back on normally.

hotMIC Audio App

Captures audio picked up by the device's microphone to record high-quality audio to the mobile device's internal storage and/or stream the audio to the ROC for remote, real-time monitoring and/or recording.

hotCAM Photo App

Takes photos using the front and/or rear-facing camera(s) at user-configurable intervals and resolutions. These time-lapse photos can be stored to the mobile device's internal storage and/or streamed to the ROC for remote, real-time monitoring and/or recording.

vidREC Video App

Records video using the front or rear-facing camera at user-configurable resolution. Video is stored to the mobile device's internal storage (but not to the ROC). vidREC requires that the device be licensed for hotCAM.

geoTRACK Location App

Captures the mobile device's current GPS location at user-configurable time and/or distance intervals. The location can be stored on the mobile device and/or streamed to the ROC for remote, real-time monitoring using Google Maps® mapping and imagery and/or recording. Custom maps can be created using location data with third party mapping programs.

remoteTRIGGER App

Allows a ROC user to remotely activate or deactivate consensually armed hotMIC, hotCAM, vidREC, and/or geoTRACK app(s). remoteTRIGGER may not be available in all countries. Please contact your dealer for up-to-date information regarding availability.

remoteSETTINGS App

Allows a ROC user to remotely manage the settings on consensually armed hotMIC, hotCAM, vidREC, and/or geoTRACK apps. remoteSETTINGS requires that the device be licensed for remoteTRIGGER, and, like remoteTRIGGER, may not be available in all countries. Please contact your dealer for up-to-date information regarding availability.

Key Fob Remote Control

Allows a KEYWATCH mobile device user to remotely (de)trigger hotMIC and hotCAM, and send/receive distress signals to/from the ROC without directly accessing the mobile device. To learn more about the key fob and its operation, see Appendix A: Key Fob Operation.

Digital Signatures for Evidentiary Authentication

All recordings have digital signatures for evidentiary authentication. This includes all recorded hotMIC, hotCAM, vidREC, and geoTRACK data.

Using the KEYWATCH mobile app suite involves and benefits from the use of a KEYWATCH ROC that allows others to monitor the streamed audio, photo, and location data. For more details on the ROC and its operation, please refer to the KEYWATCH ROC Server User Guide.

iPhone Platform

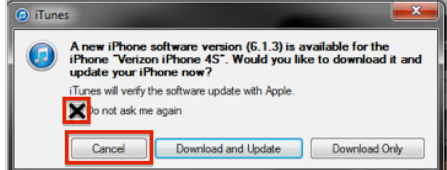
KEYWATCH was originally developed specifically for use on the Apple iPhone. The software is fully integrated into the phone's operating system software to provide a familiar look and feel for users experienced with the iPhone. This manual assumes that the user is familiar with basic iPhone operation.

For Apple iPhone documentation, please refer to <http://support.apple.com/manuals/iphone/>.

Apple iOS Software

KEYWATCH is periodically updated to work with new versions of the mobile device's operating system (OS) that has been reliably jailbroken. KEYWAVE Products or your local dealer will notify you when updates are available. However, users are advised not to upgrade the Apple iPhone iOS version without first confirming with KEYWAVE Products or your local dealer that KEYWATCH has an official supported release and that Apple is still allowing updates to that version. If the iOS is updated without first confirming that KEYWATCH is supported for that version, KEYWATCH will be removed by the update process and may be impossible to reinstall.

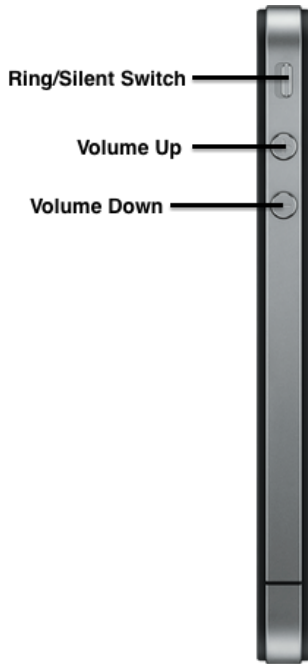
DO NOT ATTEMPT TO UPGRADE THE VERSION OF iOS ON YOUR DEVICE WITHOUT CONSULTING KEYWAVE OR YOUR LOCAL DEALER!

	<p>When plugging the iPhone into a computer with Apple iTunes running, a message similar to the one below may appear. Check the 'Do not ask again' box and always select 'Cancel' to prevent the iPhone iOS from updating.</p>
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	<p>If the iPhone prompts the user to install an Over-The-Air (OTA) update, a message similar to the one below may appear for Apple's newest iOS version. Always select 'Close' to prevent the iPhone iOS software from updating. Upgrading the mobile device's OS will remove the KEYWATCH software and the data, invalidating all or a portion of the customer's support contract. Recovery may require sending the mobile device to your local dealer or KEYWAVE Products for repair. A fee may be charged.</p>
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Getting Started

The following BUTTON nomenclature is used in this manual and may vary slightly between various phone models:



The following ICONS are referenced in this manual. Note that they are used in conjunction with the Special Access Mode (SAM) Code.

	Settings	This icon, used in conjunction with the SAM Code, launches KEYWATCH Settings (KW Settings).
	Voice Memos	This icon, used in conjunction with the SAM Code, (de)triggers hotMIC.
	Camera	This icon, used in conjunction with the SAM Code, (de)triggers hotCAM.
	Maps	This icon, used in conjunction with the SAM Code, (de)triggers geoTRACK.

Initial Setup

SIM Card and Voice/Data Plan

A voice and data plan is required in order for the KEYWATCH software to function. If the mobile device was not already pre-configured with a SIM card by your local dealer, please contact your local wireless service provider to purchase a SIM card and data plan. Refer to your mobile device's instruction manual for SIM card installation procedures.

Local Network Configurations

If you intend to use the mobile device over your organization's Wi-Fi network, contact your local IT staff to make sure that the network firewall is configured to:

- Allow bidirectional TCP/IP packets on ports 80, 443, 5060 and 5061
- Ports 10000 - 20000 must be set to allow triggering

Other Required Software

To directly transfer recorded audio, photo, and tracking data from KEYWATCH to a computer, the following programs can be downloaded from the Internet and installed on your computer.

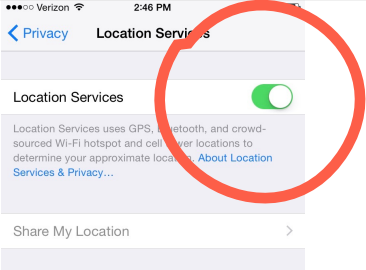
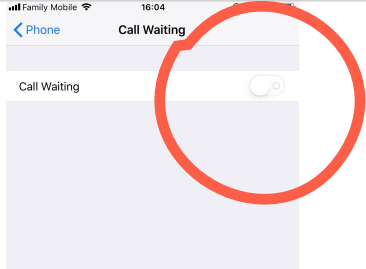
1. iTunes - Available at no charge from <http://www.apple.com/itunes/>
2. KEYWATCH extractor - You can download and install the Extractor here:
 - KEYWATCH ISO Extractor: https://repo.roclp.com/extractor/latest_iso
 - KEYWATCH Optical Extractor: https://repo.roclp.com/extractor/latest_optical

In order to view the transferred tracking data from KEYWATCH, a third party mapping program can be used.

Settings and Configuration

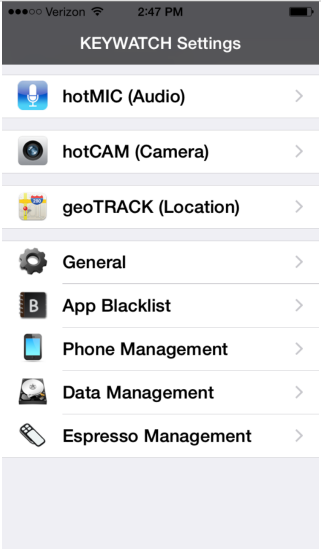
Before using your KEYWATCH mobile device, please ensure that your general iPhone Settings are correctly configured with location services on, and call waiting off, and that you can access KEYWATCH Settings (KW Settings).

Call Waiting and Location Services

	<p>In your iPhone Settings, verify that Location Services is enabled.</p> <p>On iOS 5 go to Settings > Location Services and toggle the switch to 'ON'.</p> <p>On iOS 7 go to Settings > Privacy > Location Services and toggle the switch to 'ON'.</p>
	<p>In your iPhone Settings, verify that Call Waiting is disabled. Go to Settings > Phone > Call Waiting and toggle the switch to 'OFF'. Some devices (e.g., on the Verizon network) may not have this setting.</p>

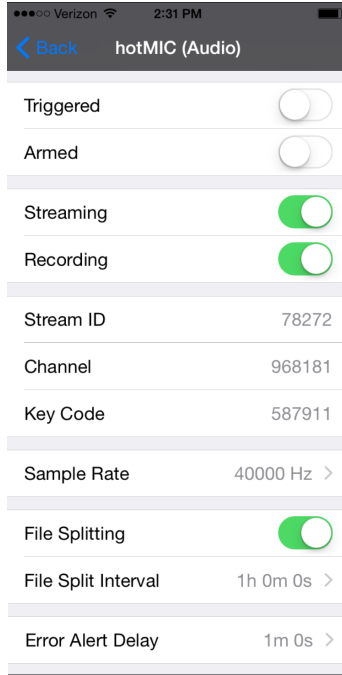
Accessing KW Settings

To access KW Settings, you will need to use your Special Access Mode (SAM) Code.

	<p>To access KW Settings, enter the SAM Code (default is <i>Volume Up, Volume Up, Volume Down, Volume Down, Lock/Power Button</i>) and touch the Settings icon. If your SAM code does not appear to work, please consult with your ROC Systems Administrator for assistance.</p> <p>From here, the hotMIC, hotCAM, vidREC, and geoTRACK apps can be accessed. The user can tap the mobile device's 'Home' button to exit KW Settings. Changes are automatically saved on exit.</p>
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hotMIC (Audio) Settings

When hotMIC is triggered, encrypted audio can be sent to the ROC where it may be monitored and/or recorded. Audio may also be recorded locally on the device.



Triggered	Activates the hotMIC app on the device after exiting KW Settings.
Armed	When hotMIC is armed, a ROC user can remotely trigger hotMIC from the ROC.
Streaming	Enables/disables hotMIC audio streaming over a data connection. If enabled, hotMIC streaming begins when a user triggers hotMIC. The audio is sent as a compressed, encrypted stream over the Internet to the KEYWATCH ROC, from where it can be monitored in real-time and/or recorded.
Recording	Enables/disables hotMIC audio recording to the mobile device's internal storage. If enabled, hotMIC recording begins when a user triggers hotMIC. The sample rate is user-configurable (see Sample Rate below for further information).

Stream ID (read-only)	The mobile device's streaming audio ID.
Channel (read-only)	The mobile device's streaming audio channel.
Key Code (read-only)	The mobile device's streaming audio password.
Sample Rate	<p>Selects the audio sample rate that will be used for the audio file that is stored to the mobile device's internal storage. Available values are 8 kHz (i.e. analog telephone quality), 16 kHz, 24 kHz, 32 kHz (i.e. FM radio quality), 40 kHz, and 44.1 kHz (i.e. CD quality). A higher sample rate captures higher pitched audio, but uses more of the available internal storage on the mobile device, and more battery power. 16 kHz is a recommended rate for normal use where the health and safety team needs to monitor the officer's speech and for general situational awareness.</p> <p>Also displays the 'Recording Time', which is the amount of recording time remaining that can be stored on the mobile device based on the selected sample rate and amount of internal storage available.</p>
File Splitting	Enables/disables segmentation of recorded hotMIC audio into multiple files, each containing a user-specified number of minutes of audio. File Splitting can be used for long hotMIC audio recordings to limit the size of the individual files. When file splitting is enabled, each file will have its own digital signature for evidentiary authentication. Smaller file sizes generally have fewer compatibility issues when being played on consumer-grade audio devices. If this setting is disabled, files are split every twelve hours.
File Split Interval	Selects the time interval into which audio files will be split if 'File Splitting' is enabled.
Error Alert Delay	<p>The amount of time before the device will retry audio streaming if the network connection becomes unavailable while hotMIC is triggered. Once this timeout expires, the user will be notified of the error.</p> <p><i>Note that streaming audio is NOT buffered for retransmission. However, if hotMIC Recording is enabled, loss of network connection will not affect the audio recorded to the device's internal storage.</i></p>

hotCAM (Camera) Settings

When hotCAM is triggered, photos can be sent over an encrypted channel to the KEYWATCH ROC at user-configurable time lapse intervals. Photos and video may also be recorded locally on the device.



Triggered	Activates the hotCAM application on the device after exiting KW Settings.
Armed	When hotCAM is armed, a ROC user can remotely trigger hotCAM from the ROC.
Image Streaming	Enables/disables hotCAM photo streaming over a data connection. If enabled, hotCAM streaming begins when a user triggers hotCAM. The photos are sent at user-configurable intervals to the ROC where they can be monitored in real-time and/or recorded.
Image Recording	Enables/disables hotCAM photo recording to the mobile device's internal storage. If enabled, hotCAM recording begins when a user triggers hotCAM on the mobile device. Photos captured by KEYWATCH are recorded to the mobile device's local memory but cannot be viewed through the iPhone Photos app.

Video Recording	Enables/disables vidREC video recording to the mobile device's internal storage. If enabled, vidREC recording begins when a user triggers hotCAM on the mobile device. vidREC recordings are stored with hotCAM photos and cannot be viewed through the iPhone Photos app. <i>Note: Only one camera (i.e., front or rear) can be active at a time for vidREC. If vidREC is enabled while both cameras are selected, the rear camera will be chosen by default.</i>
Camera Side	Enables/disables use of the front and/or rear camera for hotCAM. A photo will be taken by the selected camera at every 'Capture Interval'. If both cameras are enabled, then the hotCAM application will take 2 photos (one for each camera) at every 'Capture Interval'.
Front Resolution	Configures the resolution for the camera on the front of the phone. This resolution applies to both hotCAM images and vidREC recordings.
Rear Resolution	Configures the resolution for the camera on the rear of the phone. This resolution applies to both hotCAM images and vidREC recordings.
Image Quality	Configures photo compression. Lowest quality is when the slider is all the way to the left; highest quality is all the way to the right. Increasing the quality will also increase each photo's file size. This reduces the number of photos that can be stored on the device and increases the amount of time and/or bandwidth needed to stream each photo to the ROC. <i>Note: Use a lower quality setting for higher resolution images. The actual degradation of image quality is minimal for subjects close to the camera, and will ensure a higher streaming rate to the ROC server.</i>
Interval	Configures how often a hotCAM photo is captured while hotCAM is triggered. <i>Note: Some camera resolutions require a minimum 'Capture Interval'. If you set the Capture Interval so that it is shorter than this minimum, the KW Settings will default to the shortest possible interval.</i>
Geotag Images	Enables/disables embedding location information into the hotCAM photo data file. <i>Note: This feature will work only if BOTH hotCAM and geoTRACK are licensed for use on the device.</i>

Error Alert Delay	<p>The amount of time before the device will retry photo streaming if the network connection becomes unavailable while hotCAM is triggered. Once this timeout expires, the user will be notified of the error.</p> <p><i>Note that streaming photos ARE buffered for retransmission in the case of network unavailability. If the device is turned off or hotCAM is de-triggered while the network is unavailable, those buffered images will never be streamed to the ROC, but if hotCAM Recording is enabled, loss of network connection will not affect the photos recorded to the device's internal storage.</i></p>
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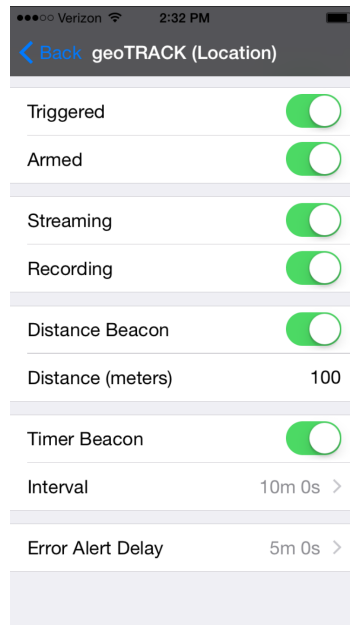
hotCAM Settings and Battery Life Considerations

Certain settings can significantly reduce battery life. For example, setting a short Interval for image capture or a high Image Quality when streaming requires greater power usage. Setting a longer image capture Interval and lower Image Quality can help optimize battery life and reduce the chance of transmission bottlenecks.

geoTRACK (Location) Settings

When geoTRACK is triggered, the device's current location is sent over an encrypted channel to the ROC, where it may be monitored or recorded. Location may also be recorded locally on the device.

Note: While we have found geolocation data determined by the iPhone to be generally dependable and correct within 100 meters indoors and even less outdoors, KEYWAVE cannot guarantee the reliability or accuracy of the geoTRACK data. Moreover, if the mobile device does not have a good GPS signal, the location will be less accurate.



Triggered	Activates the geoTRACK application on the device after exiting KW Settings.
Armed	When geoTRACK is armed, a ROC user can remotely trigger geoTRACK from the ROC.
Streaming	Enables/disables geoTRACK streaming over a data connection. If enabled, geoTRACK streaming begins when a user triggers geoTRACK. The geoTRACK beacons are sent at user-configurable time and distance intervals to the ROC where they can be monitored in real-time on a map and/or recorded. Custom maps can be created with third party mapping programs.

Recording	Enables/disables geoTRACK recording to the mobile device's internal storage. If enabled, recording begins when the user triggers geoTRACK on the mobile device.
Distance Beacon	Distance Beacon can be used by itself or in combination with Timer Beacon. The mobile device saves/streams a GPS beacon when its location has changed more than the value in the Distance field.
Distance (meters)	The minimum value is 5 meters as measured by the GPS and affected by the GPS accuracy. GPS accuracy can be affected substantially when indoors, so care should be taken when selecting low distance settings to avoid unnecessary battery depletion.
Timer Beacon	Timer Beacon can be used by itself or in combination with Distance Beacon. The mobile device saves/sends a GPS beacon based on the Interval setting.
Interval	The minimum timer Interval setting is 1 second, and the maximum setting is 23 hours, 59 minutes, and 59 seconds. Timer Interval messages can be used to regularly notify the ROC of a mobile device's location and status.
Error Alert Delay	The amount of time before the device will retry beacon streaming if the network connection becomes unavailable while geoTRACK is triggered. Once this timeout expires, the user will be notified of the error. <i>Note that streaming geoTRACK data IS buffered for retransmission in the case of network unavailability. If the device is turned off or geoTRACK is de-triggered while the network is unavailable, the buffered data will never be streamed to the ROC, but if geoTRACK Recording is enabled, loss of network connection will not affect the geoTRACK data recorded to the device's internal storage.</i>

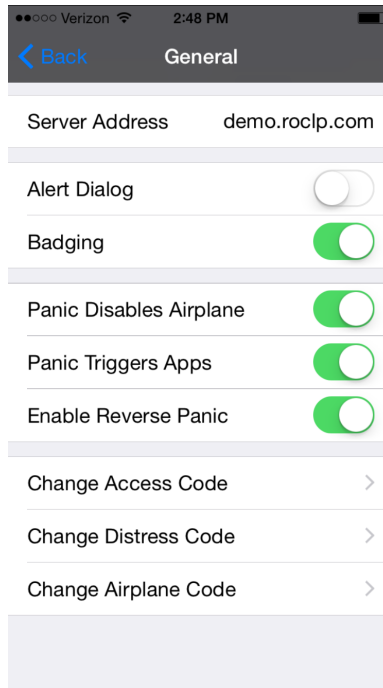
geoTRACK Settings and Battery Life Considerations

Certain settings can significantly reduce battery life. For example, setting a short Interval and/or Distance when streaming requires greater power usage for data transfer. Setting a longer Interval and/or Distance can help optimize battery life and reduce the chance of transmission bottlenecks.

KEYWATCH Settings

KW SETTINGS > General

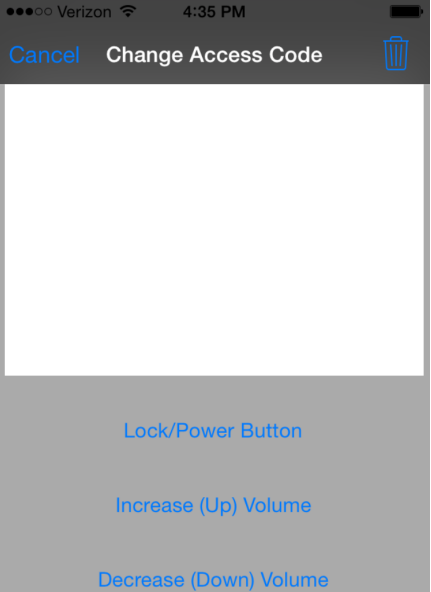
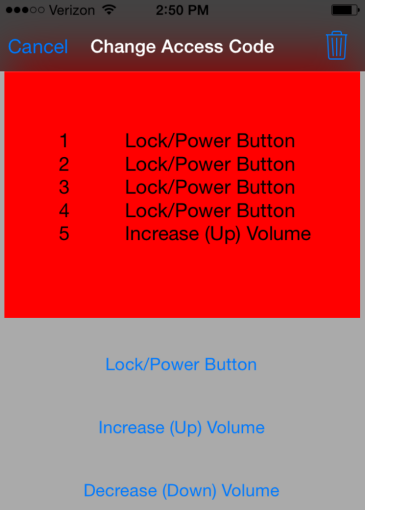
Under General, the user can configure the main KEYWATCH settings, including specifying the ROC server connected to the KEYWATCH mobile device, set notifications and badging to show when KEYWATCH apps are (de)triggered, determine distress functionality, and change Access, Distress, and Airplane codes.



Server Address	The domain name (e.g. demo.roclp.com) of the KEYWATCH ROC that will be used.
Alert Dialog	When enabled, an alert will pop up informing the user that a KEYWATCH app has been started, stopped, or that an error has occurred.
Badging	When enabled, a small red circle badge with a number will appear on the top-right corner of the icon associated with the KEYWATCH app while that app is triggered. A badge number '1' indicates normal operation. A number other than '1' indicates possible errors as described in the Status Codes section at the end of this document.

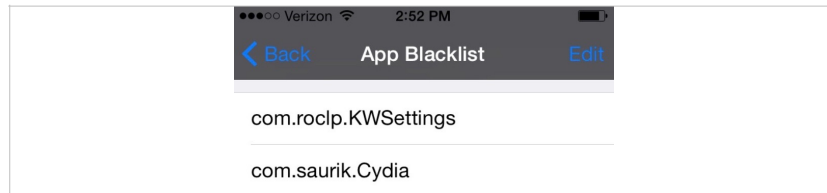
Panic Disables Airplane	When enabled, entering the panic code will disable airplane mode.
Panic Triggers Apps	When enabled, entering the panic code will trigger all licensed apps.
Enable Reverse Panic	<p>When enabled, a ROC user can send a distress signal to the KEYWATCH mobile device, which will vibrate subtly five times, or if the KEYWATCH device is connected via Bluetooth to a key fob, the fob will vibrate five times.</p> <p><i>Note: The KEYWATCH mobile device will not vibrate if hotMIC is triggered (but the key fob will).</i></p>
Change Access Code	The Access Code allows the user to access KW Settings, and to access the KEYWATCH apps. The default Special Access Mode (SAM) Code is: <i>Volume Up, Volume Up, Volume Down, Volume Down, Lock/Power Button</i> , but a user may assign a new custom SAM Code (see below).
Change Distress Code	The Distress Code sends a distress signal to the ROC Device page and also sends email or SMS messages to anyone who has activated notifications for this KEYWATCH mobile device. The default Distress Code is: <i>Volume Down, Volume Up, Lock/Power Button, Volume Up, Volume Down</i> , but a user may assign a new custom Distress Code (see below).
Change Airplane Code	The Airplane Code allows you to place the phone into Airplane Mode. The default Airplane Code is: <i>Lock/Power Button, Volume Up, Volume Down, Volume Up, Lock/Power Button</i> , but a user may assign a new custom Airplane Code (see below).

Changing SAM/Distress/Airplane Code

 <p>The screenshot shows a mobile application interface for changing an access code. At the top, there is a status bar with 'Verizon' and '4:35 PM'. Below that is a dark header with 'Cancel' in blue, 'Change Access Code' in white, and a trash can icon. The main area is white and empty. At the bottom, there is a grey bar with three blue text buttons: 'Lock/Power Button', 'Increase (Up) Volume', and 'Decrease (Down) Volume'.</p>	<p>The SAM, Distress, and Airplane Codes are each made up of the <i>Volume Up</i>, <i>Volume Down</i>, and <i>Lock/Power Button</i>. When customizing, they must:</p> <ul style="list-style-type: none"> • Contain 5-10 buttons actions • Use each of the 3 buttons at least once <p>The user must press the on-screen 'soft-key' buttons rather than the actual physical buttons they represent when entering the new Code.</p> <p>If you forget the new Code, you must contact your ROC Administrator to regain access to KW Settings to reset the Code.</p>
 <p>The screenshot shows the same 'Change Access Code' screen, but the main area is red. A list of five actions is shown: 1 Lock/Power Button, 2 Lock/Power Button, 3 Lock/Power Button, 4 Lock/Power Button, and 5 Increase (Up) Volume. The bottom grey bar with the three buttons is still visible.</p>	<p>The console window will turn red until a valid code sequence is entered (as seen in the screenshot on the left - <i>Vol Down</i> was not used in this invalid code sequence). Reset and start a new sequence by tapping the trashcan button on the top-right corner.</p> <p>Once a sequence that meets the minimum requirements is entered, the window will turn green. Tap the 'Save' button that appears on the top left. The new SAM Code is immediately saved.</p>

KW Settings > App Blacklist

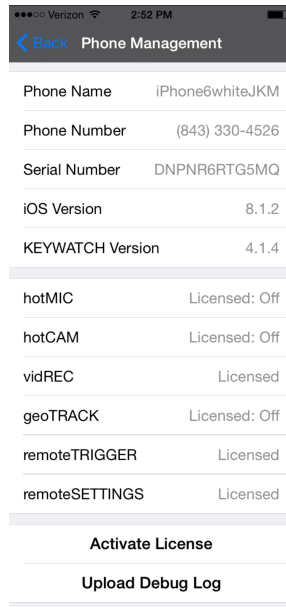
The App Blacklist screen specifies mobile apps that are not visible or accessible to normal users (i.e. jailbroken apps). To visual observation, the mobile device appears as if there is no KEYWATCH software installed.



A user may edit the App Blacklist to hide other sensitive apps they install in addition to the KEYWATCH app(s). Tap the 'Edit' button in the top-right corner of the page. Use the green '+' button to add items, and the red '-' button to remove them. Some items that are required for KEYWATCH to function correctly cannot be removed. When you exit out of KW Settings, the iPhone will respring to apply the changes.

KW Settings > Phone Management

Phone Management is used to view the KEYWATCH mobile device's information and license status, activate KEYWATCH apps, and upload debug logs to the ROC.

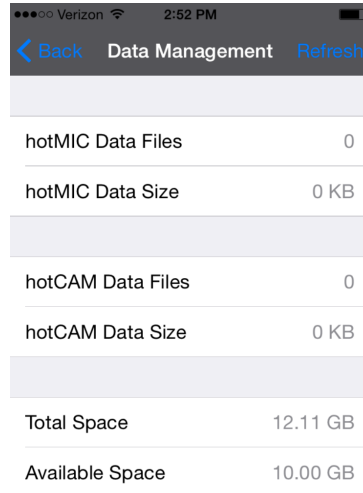


Phone Name	The name of the device that is configured by the user, i.e., through iTunes.
Phone Number	The phone number associated with the current SIM card in the device.
Serial Number	The factory number of the device assigned by the manufacturer.
iOS Version	The mobile device's operating system version.
KEYWATCH Version	KEYWATCH software version.
hotMIC, hotCAM, vidREC, geoTRACK	'Licensed' if the software license has been activated by its ROC, 'Unlicensed' if not. 'On' if that application is triggered, 'Off' if not.

<p>remoteTRIGGER, remoteSETTINGS</p>	<p>'Licensed' if the software license has been activated by its ROC, 'Unlicensed' if not. 'No RT number' means the feature is licensed, but a trigger number has not been set on the ROC server.</p>
<p>Activate License</p>	<p>Used to activate KEYWATCH app licenses. This connects the KEYWATCH mobile device to the configured ROC to assign valid licenses and pull down the latest settings for KEYWATCH apps.</p>
<p>Upload Debug Log</p>	<p>Sends debug information to the KEYWATCH ROC to help diagnose problems. If you experience an issue using KEYWATCH, our support team may request that you upload the debug log file to assist in tracking down the cause of the issue.</p>

KW Settings > Data Management

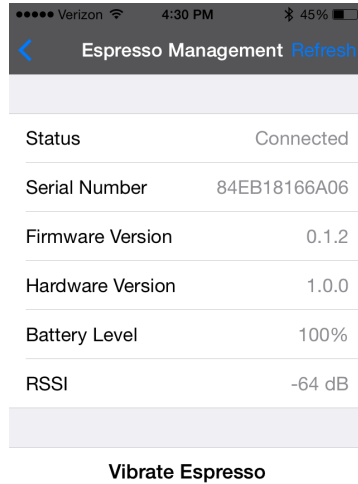
Data Management shows how many hotMIC audio recordings and hotCAM photos and videos are currently recorded on the device, the total storage space of the mobile device, and the total available space remaining for additional recordings. The user can tap the 'Refresh' button in the top-right corner to recalculate the space used by KEYWATCH apps.



hotMIC Data	
hotMIC Data Files	0
hotMIC Data Size	0 KB
hotCAM Data	
hotCAM Data Files	0
hotCAM Data Size	0 KB
Total Space	12.11 GB
Available Space	10.00 GB

KW Settings > Espresso Management

Espresso Management shows the KEYWATCH Espresso key fob's information and connection status. To learn more about the key fob and its operation, see Appendix A: Key Fob Operation.



Status	Whether a key fob is connected to the KEYWATCH phone.
Serial Number	The manufacturer serial number of the connected key fob.
Firmware Version	The firmware version of the connected key fob.
Hardware Version	The hardware version of the connected key fob.
Battery Level	The percentage of battery power remaining as reported by the connected key fob.
RSSI	Received signal strength indicator, a measurement of the signal strength being received from the connected key fob. If this number is greater than -50db, then the signal strength is perfect. An RSSI of -55db or so indicates high quality, -75db medium quality, -85db low quality, and anything less than -95db is unusable or indicates a loss of connection.
Vibrate Espresso	Vibrates the currently connected key fob, in order to verify connection, and identify which key fob is connected to the phone if multiple key fobs are present in the vicinity.

Using KEYWATCH

Special Access Mode (SAM)

Phones with KEYWATCH installed appear and behave as unmodified, off-the-shelf iPhones; access to KEYWATCH is provided by first activating the Special Access Mode (SAM) Code. When the mobile device is in SAM, touching certain standard Apple iOS icons will launch hidden KEYWATCH apps instead of launching the app normally associated with those icons.

Default SAM Code - Place the mobile device into SAM using the following sequence of button presses:

1. Volume Up
2. Volume Up
3. Volume Down
4. Volume Down
5. Lock/Power Button

The mobile device will vibrate briefly when it has been successfully placed into SAM. **Note that if the hotMIC software is already triggered, the device will not vibrate.** If the user does not initiate a SAM function within 20 seconds, the process times-out and the SAM Code must be re-entered. SAM may also be canceled if the user presses the Home button or launches an app that does not have an associated SAM function (e.g., tapping Calendar would terminate the SAM). The user may change the SAM Code for additional security and privacy. Changing the SAM Code is addressed in the Settings and Configuration - KW Settings > General Section of this User Guide.

License Activation and Registration with the KEYWATCH ROC

KEYWATCH app(s) are licensed to a particular mobile device and must be activated and registered with a KEYWATCH ROC prior to use. For most users, this process will have been completed before you receive the system.

This License Activation and registration process only needs to be performed:

1. When the mobile device is first paired to a KEYWATCH ROC
2. If the domain name of the KEYWATCH ROC changes
3. If KEYWATCH app(s) are upgraded or reinstalled

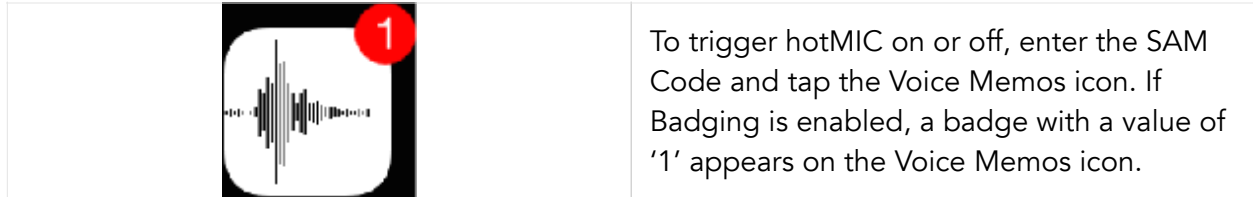
The license activation process confirms the software license(s) and registers the device with the ROC specified in KW Settings > General. To activate the KEYWATCH license(s), the user must

navigate to KW Settings > Phone Management, and tap 'Activate License'. The KEYWATCH app(s) inform the partnered ROC of their status. A ROC administrator then authorizes the license(s) and the ROC passes the activation keys back and resets any of the device's settings. The user must then navigate back to KW Settings > Phone Management, and tap 'Activate License' again.

When the license has been activated with the ROC server, an alert dialog window will pop up to confirm that the license has been successfully activated. The mobile device will respring when the user taps 'OK'.

Using hotMIC

hotMIC uses the built-in microphone to capture audio at the Sample Rate specified by the user (8 kHz - 44.1 kHz). Audio is recorded to the mobile device's local storage when 'Recording' is enabled. When 'Streaming' is enabled and a data connection is available, audio is streamed in real time (with an 8 kHz sample rate using dynamic range speech codecs) to the ROC where it can also be recorded. Audio is recorded with digital signatures for evidentiary authentication.




If the mobile device is used to make or receive a voice call or if an app that requires the microphone is launched, hotMIC will be disabled for the duration of the interrupting event and automatically re-launched after the event terminates. Audio during the interrupting event will not be streamed or recorded.

hotMIC will remain on until deactivated by the user even if the mobile device is put into Simulated Shutdown, unless the mobile device runs out of memory or there is a network connection issue.

Note: If the badge number is something other than '1', please refer to the [Status Codes](#) chart in the Additional Information Section of this User Guide.

Using hotCAM and vidREC

hotCAM uses the mobile device's built-in camera(s) to capture photographs and video at the Resolution, time Interval, and Image Quality configured by the device user or set remotely by the ROC. Photographs are recorded to the mobile device's local storage when 'Recording' is enabled. When 'Streaming' is enabled and a data connection is available, they are streamed in real-time to the ROC where they can also be recorded. Photographs are recorded in .JPG format and video is recorded in .MOV format with the MPEG-4 encoding. All photos and videos are recorded with digital signatures for evidentiary authentication.

	To trigger hotCAM on or off, enter the SAM Code and tap the Camera icon. If Badging is enabled, a badge with a value of '1' appears on the Camera icon.
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hotCAM photos are not viewable from the Apple Photos app. The user should not use the mobile device's normal Camera app while hotCAM is running.


hotCAM will remain on until deactivated by the user even if the mobile device is put into Simulated Shutdown, unless the mobile device runs out of memory or there is a network connection issue.

Note: If the badge number is something other than '1', please refer to the [Status Codes](#) chart in the Additional Information Section of this User Guide.

Using geoTRACK

geoTRACK uses the mobile device's built-in GPS to capture geolocation beacon points at the user-configured Timer and Distance Interval. Beacons are recorded to the mobile device's local storage when Recording is enabled. When Streaming is enabled and a data connection is available, beacons are streamed in real-time to the ROC, where they can also be recorded. Beacons are recorded in a text file with digital signatures for evidentiary authentication.

Note: While we have found geolocation data determined by the iPhone to be generally dependable and correct, KEYWAVE cannot guarantee the reliability or accuracy of the geoTRACK data. Moreover, if the mobile device does not have a good GPS signal, the location will be less accurate.

	<p>To trigger geoTRACK on and off, enter the SAM Code and tap the Maps icon. If Badging is enabled, a badge with a value of '1' appears on the Maps icon.</p>
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geoTRACK will remain triggered until deactivated by the user even if the mobile device is put into Simulated Shutdown, unless the mobile device runs out of memory or there is a network connection issue.

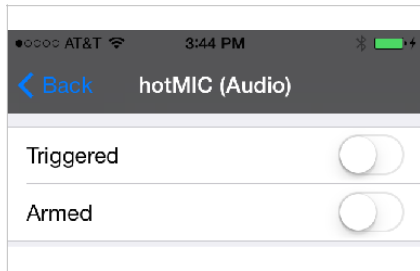
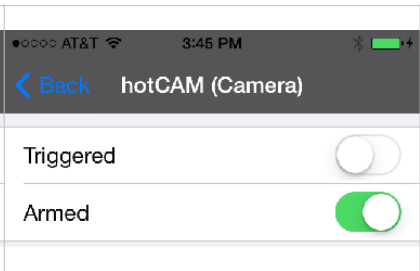
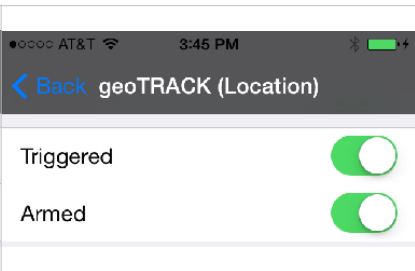
Note: If the badge number is something other than '1', please refer to the [Status Codes](#) chart in the Additional Information Section of this User Guide.

Arming a KEYWATCH Application for remoteTRIGGER and remoteSETTINGS

If you are not using the remoteTRIGGER or remoteSETTINGS features, you may skip this section.

Please note that the remoteTRIGGER and remoteSETTINGS functionality may not be available in all countries. Please also note that in order for the remoteSETTINGS app to work, remoteTRIGGER must also be licensed. Please contact your dealer for up-to-date information regarding availability in your area.

Using remoteTRIGGER, the monitoring team will be able to (de)trigger any KEYWATCH app from the ROC after it is consensually armed on the mobile device. To arm an application on the device, enter KW Settings > [hotMIC/hotCAM/geoTRACK] and switch the 'Armed' toggle switch to 'ON'.

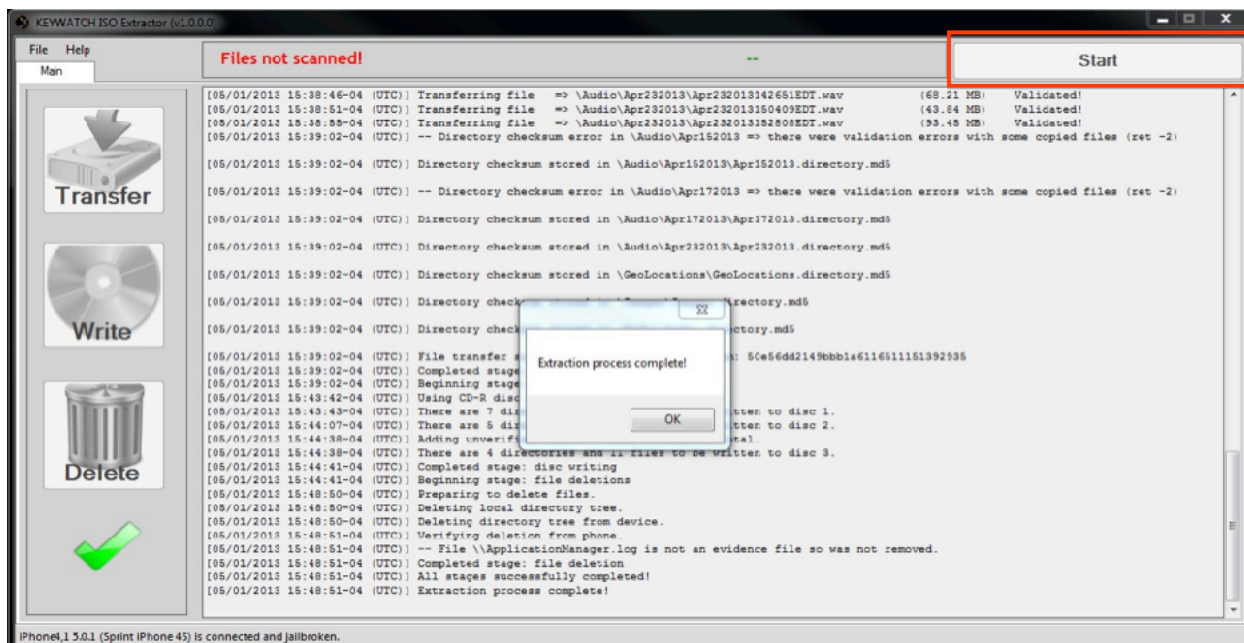
 <p>hotMIC (Audio)</p> <p>Triggered <input type="checkbox"/></p> <p>Armed <input type="checkbox"/></p>	 <p>hotCAM (Camera)</p> <p>Triggered <input type="checkbox"/></p> <p>Armed <input checked="" type="checkbox"/></p>	 <p>geoTRACK (Location)</p> <p>Triggered <input checked="" type="checkbox"/></p> <p>Armed <input checked="" type="checkbox"/></p>
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Using remoteSETTINGS, the monitoring team will also be able to adjust the settings (such as recording interval, quality, and streaming/local recording) of KEYWATCH apps from the ROC after each is consensually armed on the mobile device.

Downloading hotMIC, hotCAM, and geoTRACK Files to a Computer

KEYWATCH-Extractor is a proprietary program required to transfer recorded KEYWATCH audio, photo, and location files to a computer in a strict, evidentially correct manner. This program will copy files from the mobile device's file system in a secure, consistent, and verifiable manner for evidentiary purposes. This program is compatible with Microsoft Windows. Once the KEYWATCH Extractor is installed on a compatible computer, follow the procedure outlined below:

1. Make sure all KEYWATCH apps are deactivated. Connect the mobile device containing the KEYWATCH data files to a computer using the device's USB cable.
2. If iTunes launches on the computer and attempts to sync with the mobile device, slide the Cancel bar on the mobile device's home screen to cancel the sync. Close iTunes.
3. Launch the KEYWATCH Extractor ISO utility. Click the 'Start' button in the top-right corner to begin the download process. For more detailed instructions, please refer to the KEYWATCH Extractor ISO Quick Start Guide. The application installer and documentation can be found at http://repo.roclp.com/extractor/latest_iso.



Each KEYWATCH file should generate a text file with SHA-256 digital signatures for evidentiary authentication. The evidentiary file has the same base filename as the original, but with a 'sha256' extension. The evidentiary file should always be kept with the original file.

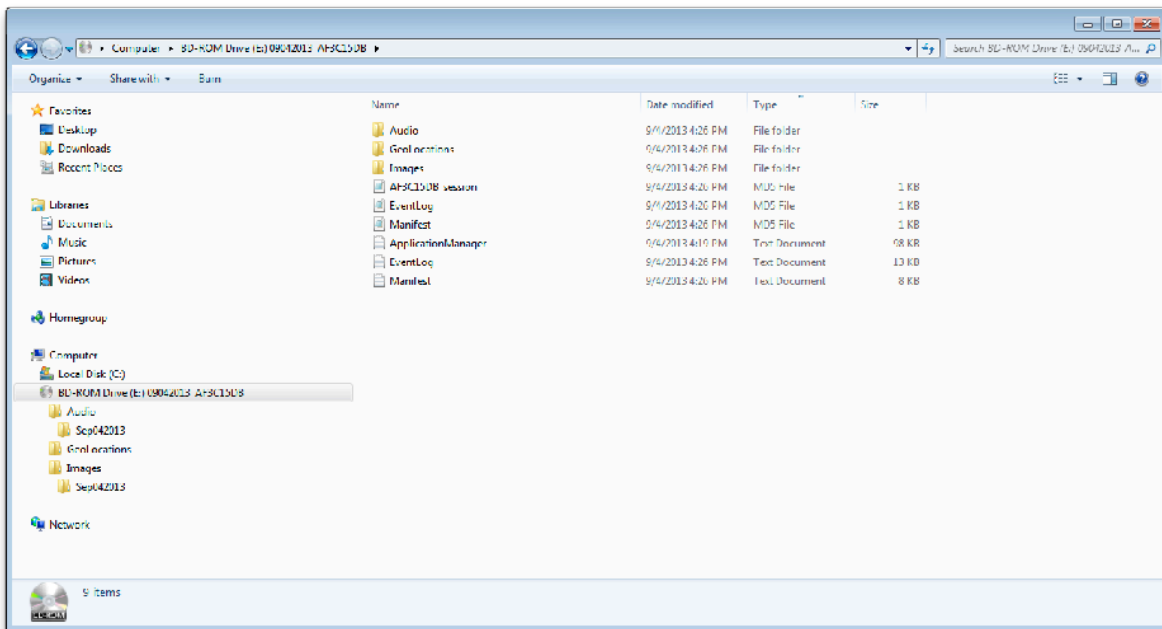
- Each hotMIC recording creates a .WAV file and its corresponding SHA-256 file.

- Each hotCAM photograph creates a .JPG file and its corresponding SHA-256 file. The photo filename consists of 'FRONT' or 'REAR' and the date and time that the photograph was created.
- Each geoTRACK beacon creates a .LOG text file containing all the beacons that are created in one day as well as its corresponding SHA-256 file.

The geoTRACK files contain all the beacons that are created in one day. Each beacon is shown as a line of information for each location including:

- Device UUID, Date/Time, Latitude, Longitude, Altitude, Horizontal Accuracy, Vertical Accuracy, Battery, Speed, Direction.

The files are downloaded into an ISO 9660 formatted file (.ISO format), which can be written directly to a recordable optical disc. These ISO files may also be browsed using third-party programs such as 7zip. Files for each feature are stored in sub-folders divided by day.



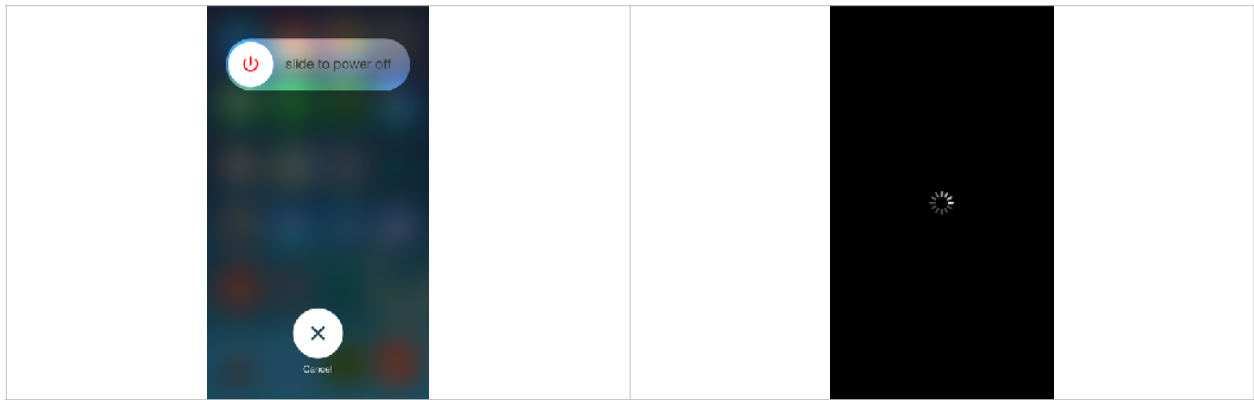
In addition, the following items are provided:

- A single digital authentication signature taken from the sum of all files copied off the mobile device. The name of the file includes a shortened version of this signature.
- A log of all events that occurred during the transfer process off the mobile device.
- A manifest of all files on the current ISO and all previous ISO files.
- A copy of the mobile device's event log.
- SHA-256 digital authentication signature for all of the files listed above.

Simulated Shutdown and Turn-On

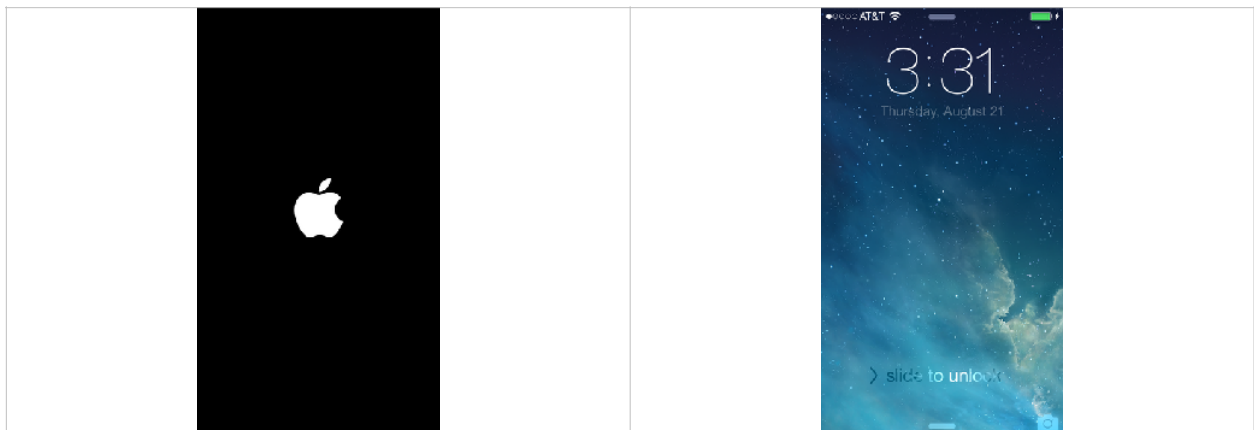
Simulated Shutdown

Simulated Shutdown allows the user to simulate a normal shutdown of the phone. Even though it appears to be off, hotMIC, hotCAM, and/or geoTRACK are still running. To initiate Simulated Shutdown, hold down the Lock/Power button until the 'slide to power off' screen appears. Slide the arrow and the phone will appear to shut down normally. Simulated Shutdown is designed to mimic an actual shutdown. The screen is off, sounds are disabled, and incoming calls are automatically sent to voicemail.



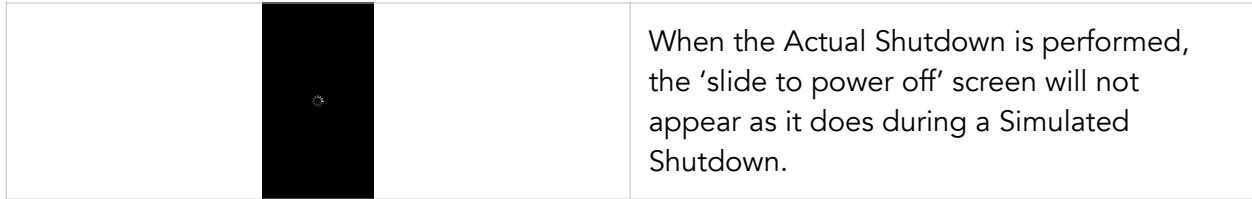
Simulated Turn-On

The mobile device will remain in Simulated Shutdown until Simulated Turn-On is initiated. To perform Simulated Turn-On, hold down the Lock/Power button until the Apple boot logo appears. Simulated Turn-On will last approximately 10-30 seconds, mimicking an actual power-up, and will finish by bringing up the 'slide to unlock' screen.



Actual Shutdown

To perform an actual shutdown, enter the SAM code, and then press and hold the Lock/Power button until the black screen with a rotating wheel appears. The mobile device will shutdown completely after several seconds.



Phone Locking Up

On rare occasions, the mobile device may become unresponsive to user input and button presses or may malfunction for unknown reasons. If this occurs, a hard-reboot is necessary and is performed by holding both the Lock/Power and Home buttons down at the same time for 10 seconds. This will force the mobile device to shut down and restart.

Additional Information

Known Conflicts with KEYWATCH on the iPhone

	<ol style="list-style-type: none">1. Any app that uses the Apple Camera may lock up when hotCAM takes a photo. We recommend not using the Camera for other purposes while using hotCAM. However, if the Camera app is restarted, it will work normally again, appearing like a glitch in that app, and does not reveal the KEYWATCH app.2. When a remoteTRIGGER or remoteSETTINGS event reaches the mobile device while an app is playing audio, the audio may stutter and possibly mute/unmute the app. It is recommended not to use apps playing audio during an operation. Regardless, this conflict appears like a glitch in that app and does not reveal the KEYWATCH app.3. The iPhone Timer app and possibly other alarm clock apps will ring on the iPhone even in Simulated Shutdown. Alarms or timers should NEVER be set for this reason.4. On CDMA phones, geoTRACK and hotCAM data may not be streamed during voice calls. During voice calls, the data is recorded and buffered for transmission once the call ends, assuming network conditions, device capacity, and other settings allow.
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Status Codes

KEYWATCH status codes will be shown as a red number badge on the top-right corner of the corresponding app icon on the Home screen if the user has enabled 'Badging' in KW Settings > General > Badging. No status codes will be displayed if this setting is disabled.

Badge Value	(Status Code) Meaning of Status Code
No badge	App is not currently triggered
1	App is triggered and working correctly
2	Process temporarily interrupted (occurs for hotMIC, for example, if the user makes/receives a voice call while hotMIC is running)
3	Transmit Error (e.g., no or impaired network connection)
4	Record Error (e.g., device out of memory)
5	Process Error (process crashed and requires user interaction)
6	Internal Error (process failed to gain access to a system resource - most likely indicates Location Services is disabled.)