

Cerberus Global Communication System

User's Guide



Table of Contents

1. Overview	3
2. Safety	4
3. Before You Start.....	5
4. Iridium Satellite Network	6
5. Getting Started.....	7
6. CerberLink	9
7. CerberTouch App	21
8. CerberLink API.....	29
9. CerberCenter.....	29
10. Technical Specifications	32
11. Warranty	33
12. Manufacturer.....	33
13. Notice.....	34
14. Revisions	35

1. Overview

The Cerberus global communication system is a patented communication and safety platform that provides you real-time, two-way global messaging capabilities. The Cerberus system includes CerberTouch, a smartphone application, CerberLink, a two-way Iridium® satellite messaging device and CerberCenter, a web server that monitors potential hazards based on a user's location and preference. When the user has cellular or Wi-Fi service, two-way communication is provided through the smartphone application that also provides tracking, and critical news and weather alerts. Once outside of Internet access, a separate device - CerberLink - connects the user's smartphone to the Iridium satellite network using Bluetooth® technology to assure continued two-way communication, alerts, and, if needed, emergency messaging. For the technically oriented Cerberus user, the CerberLink API is available for download. The API will allow you to write your own programs to interact with CerberLink on any platform of your choice.

*****Note: This user's guide assumes your CerberLink has firmware version 00.00.03.15 or greater installed. If your CerberLink has firmware 00.00.03.14 or lower installed, please contact Cerberus support (e-mail "support@cerbercenter.com" or call (571) 403-1084) for instructions on upgrading your CerberLink. To determine your CerberLink's firmware version, please do the following:**

1. Connect your phone to CerberLink via Bluetooth (see **sect. 5.4** for assistance)
2. Start the CerberTouch app
3. Go to Manage>CerberLink Settings
4. Look for the field named "Firmware version"

2. Safety

2.1. Electrical Safety

- Caution: To prevent injury do not disassemble the product. Do not allow metal to touch battery terminals. Do not expose to high temperature 158°F (70°C).
- User should not attempt to replace battery. Please return CerberLink to BriarTek for service.
- Caution: Use cable and provided chargers only, using third party cable or charger may cause damage to the device.
- Note: To prevent damage to unit, ensure device is dry and in a location where it cannot get wet before opening USB port.
- Always keep USB port covered when not in use.

2.2. FCC RF Exposure Compliance

CerberLink complies with FCC guidelines for safe levels of radio frequency (RF) exposure. CerberLink does not exceed standard limits for exposure to RF energy, measured as the Specific Absorption Rate (SAR). The highest SAR level measured from the CerberLink device was 1.288W/kg. The SAR limit for portable devices in the United States and Canada is 1.6W/kg averaged over 1 gram of tissue for the body or head. This value includes a substantial margin of safety to protect the public.

2.3. FCC and Industry Canada Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

2.4. EU Regulatory Conformance

BriarTek, Inc. hereby declares that this CerberLink device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The Declaration of Conformity made under Directive 1999/5/EC (HG nr.88/2003) is available for review by request. Please e-mail Cerberus support at support@cerbercenter.com or call at (571) 403-1084.

2.5. Medical Device Safety

To avoid interference with a pacemaker, always keep CerberLink more than 6 inches away. Consult the manufacturer of any other medical devices to determine how handheld wireless devices affect them.

3. Before You Start

3.1. Package Contents

3.1.1. Your CerberLink includes the following items

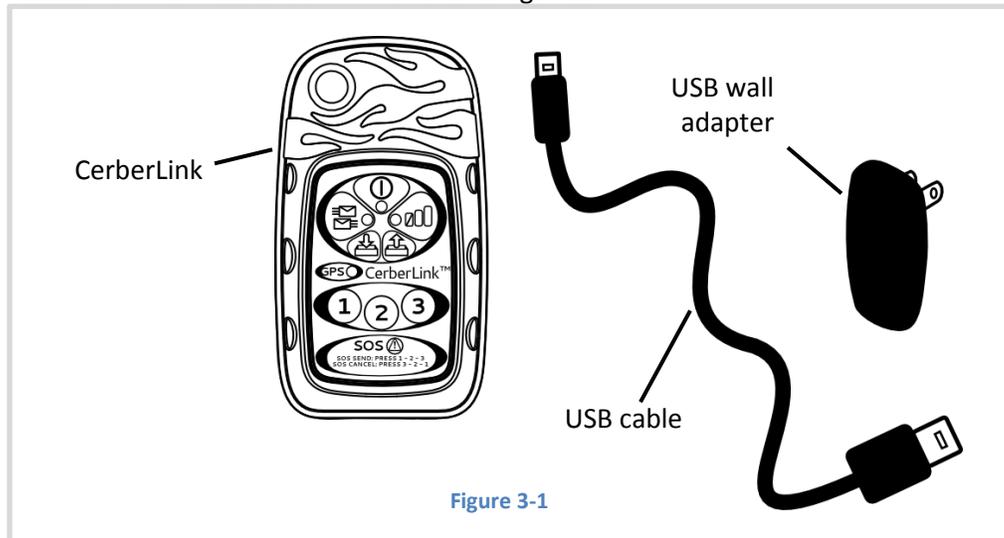


Figure 3-1

3.2. Optimal Orientation

Reception improves when device is oriented upright with clear view of the sky (Figure 3-2).

3.3. Battery

3.3.1. Type

- 3.7V, 2Ah lithium polymer battery

3.3.2. Certifications

- UL 1642 Certified, Ref# BBCV2.MH46844, model 605060
- UN 38.3 Certified, Report ID 24-UNR-1104004

3.3.3. Operation and Stowage

- Operating temperature: -20°C (-4°F) to +55°C (131°F)
- Stowage temperature: -30°C (-22°F) to +70°C (158°F)
- Charge temperature: 0°C (32°F) to +45°C (110°F)
- Max period between recharge: 2 months
- Lifetime: 2 – 3 years
 - Battery replaced at factory; contact BriarTek for service

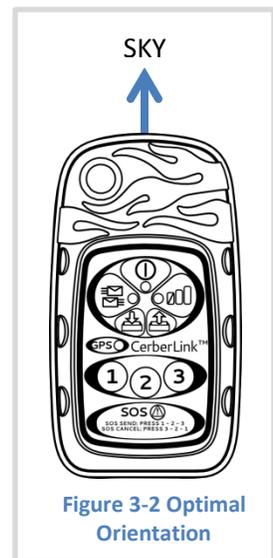


Figure 3-2 Optimal Orientation

3.4. Charging Instructions

- 3.4.1. Connect USB cable to USB wall adapter
- 3.4.2. Connect wall adapter to standard United States A/C outlet (110 VAC 60 Hz)
- 3.4.3. Remove CerberLink USB cover and connect CerberLink to USB cable to charge.
- 3.4.4. Power light will be amber while charging and will turn solid green when fully charged.

Note: CerberLink may be charged from a computer's USB port.

Note: See **sect. 6.2** for detailed description of power status light indicator.

4. Iridium Satellite Network

The Iridium satellite network consists of a constellation of 66 cross-linked low earth orbit (LEO) satellites that operate approximately 485 miles above the earth's surface. This robust network provides CerberLink users truly global coverage and very low latency messaging. Each satellite projects 48 spot beams on the earth's surface. The size of each spot beam is approximately 250 miles in diameter and a satellite's full 48-beam footprint is approximately 2,800 miles in diameter. All spot beams and satellite footprints overlap. The cross-linked or meshed network of satellites works in similar manner to that of a cellular network. That is, each satellite can hand off data communications from one spot beam to another and from one satellite to the next as they pass overhead of the user. Message traffic is relayed around the constellation until it is downlinked at the Iridium gateway and patched for transmission to CerberCenter which routes all CerberLink message traffic to its final destination.

5. Getting Started

5.1. Setup a Cerberus account

- Log on to cerberus.briartek.com and click "Login"
- Create your Cerberus username. Your username will be used as your Cerberus e-mail address (*username@cerbercenter.com*). CerberCenter will route all of your CerberLink message traffic with this e-mail address.
- Write down your 10-digit Cerberus ID – you will use this to activate your CerberLink through the CerberTouch app.

Activate your Cerberlink

Messages will not be delivered to your CerberLink until you activate it by entering the IMEI number:

IMEI Number: **SUBMIT**

Your Cerberus ID is: XXXXXXXXXX You'll use this to configure CerberTouch on your mobile device.

Your Cerberus email address is: XXXXX @cerbercenter.com. Your family and friends can use this address to send you messages that you'll receive on your Cerberlink.

Figure 5-1

- Go to the "My CerberLinks" tab of your CerberCenter web account. Enter the IMEI number of your CerberLink and press, "Submit" (see [Figure 5-1](#)). You can find the IMEI number on the back CerberLink label.
- Once you have activated your CerberLink from your CerberCenter account, your "My CerberLinks" page will display the following information ([Figure 5-2](#)):

IMEI Number	status	active date	return date	activated by
XXXXXXXXXXXXXX	Active	Dec 1, 2010	Dec 1, 2011	XXXXXX

DEACTIVATE

Figure 5-2

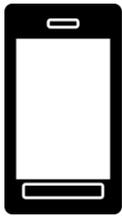
- You may own multiple CerberLinks, but you may only assign one CerberLink to your account at a time to use for satellite messaging.
- If you purchased several CerberLinks, you will see them listed on the "My CerberLinks" web page.
 - You can give your other CerberLinks to anyone with a CerberCenter account. For a person to activate a CerberLink that you own, he or she must login to CerberCenter and go to their "My CerberLinks" tab of their CerberCenter web account. Then, he or she should enter the IMEI number of the CerberLink you gave them. You, the owner of the CerberLink, will be listed as the device administrator on the user's "My CerberLinks" web page (see [Figure 5-3](#)). You will also need to reset your CerberLink to allow it to accept a new Cerberus user ID. Please see **sect. 6.14**, "Reset to Factory" defaults for additional information.
 - This would be useful for enterprise users, concessionaires or other small business applications.

IMEI Number	status	active date	return date	administered by
XXXXXXXXXXXXXX	Active	Dec 1, 2010	Jan 1, 2012	XXXXXX

DEACTIVATE

Figure 5-3

5.2. Install the CerberTouch app



The CerberTouch app allows you send messages and breadcrumbs via e-mail when not connected to a CerberLink by Bluetooth. Once connected to CerberLink by Bluetooth, CerberTouch allows you to send and receive messages, record & send breadcrumbs & tracks and receive location specific alerts by satellite, anywhere on the planet

The CerberTouch app is available for iOS devices (iPhone® and iPod® touch) and Android™ devices. You may download the CerberTouch app from the iTunes® Store or Google Play.

5.3. Familiarize yourself with CerberLink controls



CerberLink has several critical controls available directly on the device. **It is strongly advised that the user become familiar with CerberLink controls before activating the device. Once activated, this device is capable of transmitting distress messages and requesting emergency assistance.**

For more details, see **sect. 6** of this guide.

5.4. Start messaging with your CerberLink

- Ensure your CerberLink is fully charged, powered ON and is properly oriented (see **sect. 3.1**).
 - Note: While charging your device for the first time, you should try to charge CerberLink near a window so its GPS receiver can gather the ephemeris data for its new location.
- Pair CerberLink with your smart device via Bluetooth. This is accomplished in the settings menu of your smart device.
 - Note: If you are prompted for a PIN number, enter the last four digits of your IMEI number (found on back label of CerberLink).
- Connect to your CerberLink via Bluetooth
 - iPod and iPhone must connect through the Settings>General>Bluetooth menu. Select CLXXXX from the list of devices (XXXX = last 4 digits of your IMEI number found on back label of CerberLink)
 - For Android devices, open the CerberTouch app and a list of Bluetooth devices will appear. Select CLXXXX from the list of devices (XXXX = last 4 digits of your IMEI number found on back label of CerberLink).
- CerberTouch will prompt you to enter your 10-digit Cerberus user ID. Your Cerberus ID can be found by logging into CerberCenter and navigating to “My CerberLinks.” Enter your ID and press “Submit.” Once CerberLink accepts your Cerberus user ID, you are ready to message by satellite.
 - If you incorrectly entered your Cerberus user ID, you will need to perform a device reset on CerberLink so it will accept a new Cerberus user ID. Don't worry. This isn't hard. Please refer to **sect. 6.11** for instructions on how to do this.
- Take your CerberLink and smart device to an outdoor location with a clear view of the sky and send a test message.

6. CerberLink

6.1. Overview

CerberLink has a few critical controls available directly on the device. These allow you to power the device, perform a mailbox check, and send an automated distress message, among other things.

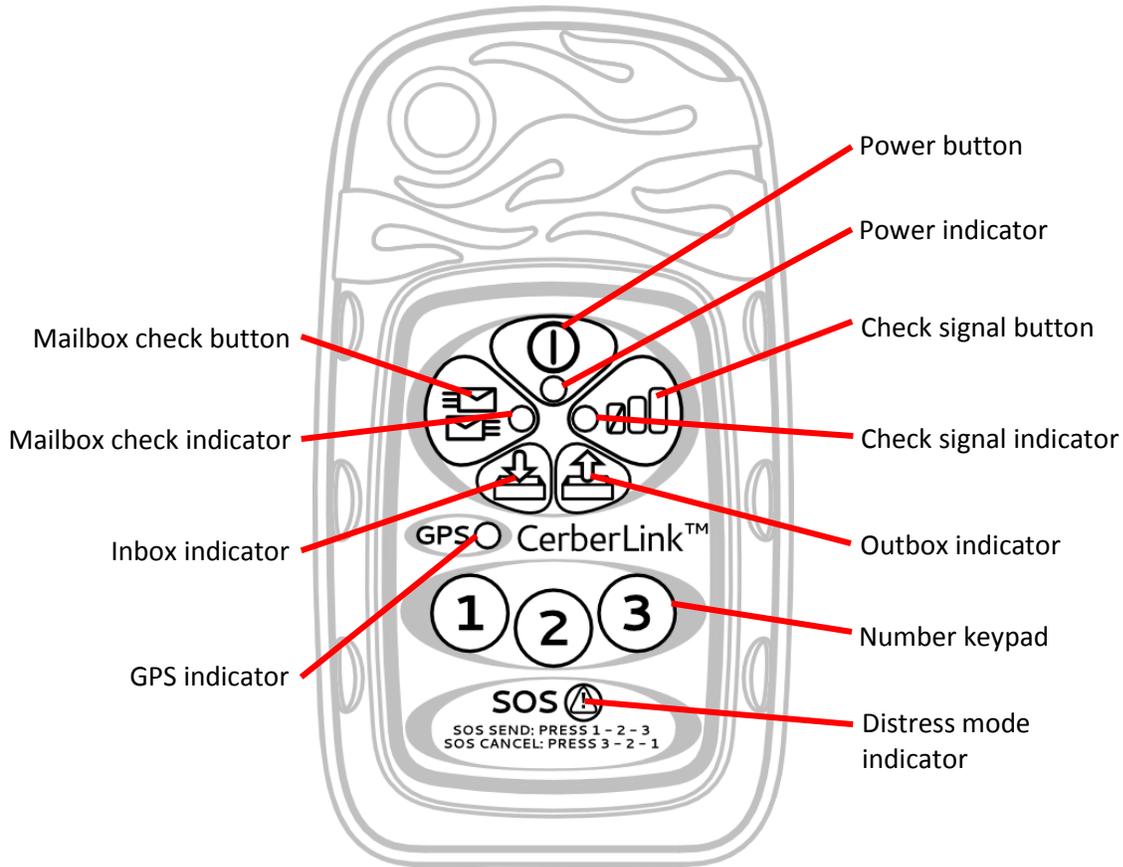


Figure 6-1 CerberLink Controls

6.2. Power button and indication



Power and charging states are shown below. To turn CerberLink ON or OFF, depress the power button for 3 seconds. CerberLink will go to SLEEP if you have not interacted with it for 2 minutes in order to preserve battery life. CerberLink will wake from sleep once you interact with it either through button pushes or via Bluetooth by using the CerberTouch app. To power CerberLink OFF, press and hold the power button for 3 seconds. If CerberLink is OFF and you plug it into its charger, it will remain OFF. The exception is if tracking mode is ON in which case CerberLink will turn ON and continue tracking. CerberLink will charge faster if you charge it while it is OFF.

			
		Status Light	What it means
 Disconnected from charger	Fast flashing green		Power is on, CerberLink is awake
	Slow flashing green		Power is on, CerberLink is asleep
	Flashing red		Power is on, battery is low
	LED off		Power is off
 Connected to charger	Status Light	What it means	
	Solid green		Battery fully charged
	Solid amber		Battery is charging
	Flashing red		Charging paused due to temperature or timing fault. Contact BriarTek support.

6.3. Enter Cerberus ID warning

Your CerberLink requires that you enter your 10-digit Cerberus ID before you can send and receive satellite messages. CerberCenter uses your 10-digit Cerberus ID to route your satellite message traffic. CerberLink will not send satellite messages until you enter your Cerberus 10-digit user ID. If you attempt to message with your CerberLink before you enter your Cerberus ID, the power, mailbox check and signal strength LEDs will turn red for 3s.

		
Status Light	What it means	
Solid red		Missing Cerberus ID

6.4. Signal strength button and indicator



Press the signal strength button to check for satellite signal strength. For best signal, find a clear view of the sky and orient the device upright. The status light stays OFF until a signal strength is calculated; this may take up to 1 minute. Signal strength is indicated as shown below. Iridium satellites pass overhead quickly; so short periods with no signal are common. Keep this in mind when using this feature.

Status Light		What it means
Flashing green		Searching for satellites
5s solid green		Signal strength OK
5s solid amber		Signal strength low
5s solid red		No signal

6.5. Mailbox check button and indicator



Press the mailbox check button to send and retrieve messages via satellite. A mailbox check will send any stored messages and/or tracks in CerberLink’s outbox and will save any newly received messages from the satellite network in its inbox. The progress of the mailbox check can be viewed on the status light. The mailbox check LED will flash rapidly until **all** messages have been transferred to/from CerberLink while it communicates with a satellite.

The signal strength indicator will display the real-time signal strength of the satellite constellation through the duration of a mailbox check.

Note: If CerberLink cannot make a satellite connection within 10 minutes the mailbox check will stop and messages will remain in the outbox until they are sent during the next mailbox check.

		
Status Light		What it means
Slow flashing green		Searching for satellites
Fast flashing green		Communicating with satellites
2.5s Solid green, then off		Successful mailbox check
2.5s Solid red, then off		Mailbox check failed due to low signal strength. Get a better view of the sky and try again.

		
Status Light		What it means
Solid green		Signal strength OK, CerberLink will attempt to transfer messages
Solid amber		Signal strength low, CerberLink will not initiate a message transfer. If messages are being transferred, CerberLink will continue with the message transfer
5s solid red		No signal, CerberLink will attempt to transfer messages.

6.6. Inbox / outbox indicators



These indicators show the status of the CerberLink inbox and outbox. Messages sent to CerberLink via the CerberTouch app appear in the outbox. New messages received via satellite will appear in the inbox. To read new messages residing in CerberLink's inbox, press the "Sync" button in the CerberTouch app. This will initiate a Bluetooth transfer of all new messages to the CerberTouch app. See **sect. 7.6**, Sync and Mailbox Check for additional information.

 Outbox		
Status Light		What it means
Slow flashing green		Messages in outbox
Off		No messages in outbox

 Inbox		
Status Light		What it means
Slow flashing green		Messages in inbox
Off		No messages in inbox

6.7. GPS indicator



The GPS indicator shows the status of CerberLink’s internal GPS. When the indicator is flashing green, CerberLink has adequate GPS signal. When the indicator slowly flashes red, CerberLink is unable to attain a strong enough signal to record position data.

If CerberLink is asleep and you want to drop a breadcrumb or send a check-in message using CerberLink’s keypad, first wake-up CerberLink by pressing any button on its keypad and give CerberLink a few seconds to obtain a GPS fix before starting a trio sequence (1-1-1 for check-in message or 2-2-2 for breadcrumb, for example).

If GPS location data is not available for an extended period, CerberLink will use Doppler location data available from the Iridium satellite network to geo-tag satellite messages. Any message using location data geo-tagged using Iridium’s coordinates will not be visible on your CerberCenter Activity page map, but is visible in your message history.

Note: To improve GPS signal, orient the device upright with a clear view of the sky.

Note: If you travel several hundred miles from your typical locale, it is important to give CerberLink up to 15-minutes to acquire new position data.

Note: Doppler location data is inherently less accurate than GPS.

GPS		
Status Light		What it means
Slow flashing green		GPS data available
Slow flashing red		GPS not available
Off		CerberLink sleeping

6.8. Distress sequence and indicator



USE DISTRESS MODE ONLY IN A REAL EMERGENCY!

You have two options to initiate distress mode with CerberLink:

1.) Directly from CerberLink by pressing **1-2-3** sequentially in separate keystrokes. The SOS distress indicator will turn solid red and CerberLink will start a 30-second countdown timer before sending a series of distress messages to CerberCenter. During the 30-second countdown, you can cancel distress mode by pressing **3-2-1** sequentially in separate keystrokes.

2.) When connected to CerberLink via Bluetooth with your smartphone, you may initiate distress mode through the CerberTouch app. When you activate distress mode using CerberTouch, the application drives the activation of distress mode in CerberLink. When you activate distress mode with CerberTouch, it starts a 30-second countdown. Once the 30-second countdown expires, CerberTouch

sends a command via Bluetooth to CerberLink to activate distress mode. The SOS distress indicator **will not** turn solid red for an additional 30-seconds before sending any distress messages. Instead, the SOS distress indicator will immediately flash red once it receives the distress command from CerberTouch. Please refer to **sect 7.5** for additional information on distress mode using CerberTouch.

Distress messages are immediately sent to a CerberCenter analyst and the emergency contacts designated by you in your Cerberus account profile on the CerberCenter website. While in distress mode, all distress messaging takes precedence over normal messaging. To review the status of a distress transmission, look at the mailbox check indicator (see **sect. 6.4**) and the inbox/outbox indicators (see **sect. 6.5**).

SOS 		
Status Light		What it means
Solid red		Distress mode 30s countdown (when activated with CerberLink keypad)
Fast flashing red		Distress mode ON
Slow flashing red		Cancellation request message in progress
Off		Distress mode OFF

CerberLink cannot send distress messages until you have entered your 10-digit Cerberus ID. If you attempt to send a distress message with your CerberLink before you enter your Cerberus ID, CerberLink will not send the distress message. Instead, the power, mailbox check and signal strength LEDs will turn red for 3s.

		
Status Light		What it means
Solid red		Missing Cerberus ID

6.9. Manual breadcrumb sequence and indicator

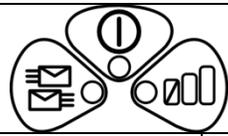


A breadcrumb is a single GPS coordinate and time stamp that can be viewed on the CerberCenter website or shared on your Public Activity page. You can send a breadcrumb directly from CerberLink using the keystroke **2-2-2** on the keypad. This will create a breadcrumb message containing the current location and will automatically perform a mailbox check.

If GPS is not available, the breadcrumb will fail and will not be created. See **sect. 6.7 “GPS Indicator”** for additional information. CerberLink will add a message to your inbox to indicate that it was not able to send a breadcrumb. This message is not delivered by satellite and is free of charge; it provided as information only.

To check the status of the breadcrumb being sent, monitor the mailbox check indicator. If the breadcrumb fails to send, it will remain in the outbox until CerberLink performs a successful mailbox check.

GPS		
Status Light		What it means
Slow flashing green		GPS data available
Slow flashing red		GPS not available

		
Status Light		What it means
Solid green		Manual breadcrumb successful
Solid red		Manual breadcrumb fail

6.10. Real-time tracking sequence



CerberLink supports real-time tracking initiated by the keypad. This applies to any CerberLink using **firmware version 3.08 or greater**. When real-time tracking is ON, CerberLink will attempt to record a GPS location for 2-minutes and will immediately send that location message by satellite. If, after 2-minutes, CerberLink fails to record the waypoint, CerberLink will add a message to your inbox to notify you of the missed track. If real-time tracking is ON and you cycle power to CerberLink, real-time tracking will still be active when CerberLink turns back ON. Each real-time tracking message counts as one message used on your Cerberus messaging plan.

- 3-1-2** initiates a real-time tracking interval of 10-minutes
- 3-1-3** initiates a real-time tracking interval of 20-minutes
- 3-2-2** initiates a real-time tracking interval of 1-hour
- 3-2-3** initiates a real-time tracking interval of 3-hours
- 3-1-1** turns real-time tracking OFF.

	
Status Light	What it means
Solid green	 Tracking interval accepted

6.11. Check-in message sequence

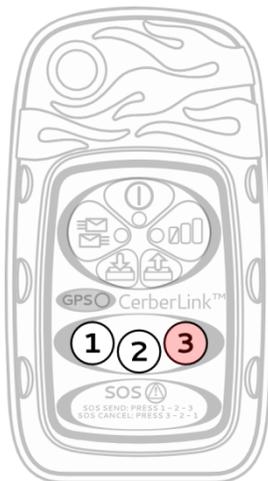


You can send a check-in message directly from CerberLink using the keystroke **1-1-1** on the number keypad. This will create a message containing a check-in statement, “CerberLink check-in”, and will automatically perform a mailbox check. CerberCenter will automatically forward your check-in message to contacts designated by you in your Cerberus account profile. Check-in messages can be delivered to your contacts by e-mail and/or SMS. CerberLink will send a check-in message even if it has not acquired a valid GPS fix. See **sect. 6.7 “GPS Indicator”** for additional information.

To check the status of the message being sent, monitor the mailbox check indicator. CerberLink will attempt to send the check-in message for 10-minutes. If the check-in message fails to send, it will remain in the CerberLink outbox until CerberLink performs a successful mailbox check.

	
Status Light	What it means
Solid green	 Check-in message accepted

6.12. System test sequence

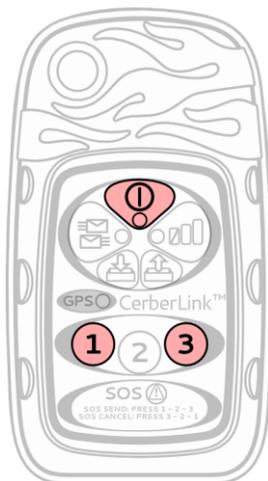


It is recommended that CerberLink be tested before it is deployed in the field.

To perform a system test, use the keystroke **3-3-3** on the number keypad. If the test passes, you will see the mailbox/power/signal strength indicators flash green for 5 seconds. If the test fails, you will see the same indicators flash red for 5 seconds. In the event of a failure, perform a signal strength check first (see **sect. 6.3**). If the signal is good and the system test still fails, cycle power to your CerberLink. Do this by depressing the power button for 3 seconds to turn CerberLink OFF and then depressing the power button for 3 more seconds to turn CerberLink ON. Repeat the system test. If the test continues to fail, contact Cerberus technical support for help.

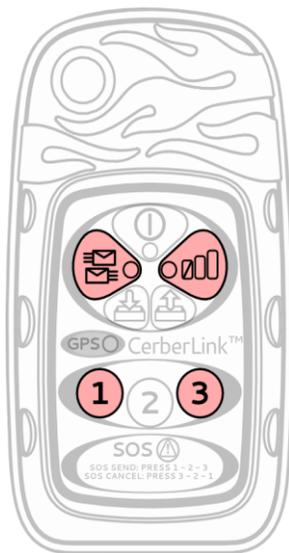
		What it means
Status Light		
Flashing green		System test pass
Flashing red		System test fail

6.13. Hard restart CerberLink



If CerberLink becomes unresponsive and does not respond to any user input using the CerberTouch app or CerberLink’s buttons, a hard restart may be required. To perform a hard restart, press the following three buttons for 5 seconds: **1, 3, power**. Next, press the power button for 3 seconds to restart CerberLink.

6.14. Reset to factory defaults / Reset Cerberus User ID



Resetting to factory defaults will delete the 10-digit Cerberus ID, all messages and any other stored information from CerberLink's memory including Bluetooth pairs.

Perform the following steps to reset CerberLink to factory defaults: Make sure CerberLink is ON and not in sleep mode (see **sect 6.2** for information on CerberLink power states). Press the following four buttons together and hold them for ten seconds: **1,3, mailbox check and signal strength**. After 10 seconds, CerberLink will turn OFF and then ON after several seconds.

If you need to enter a new Cerberus user ID, you must enter it into the CerberTouch app before you re-establish the Bluetooth connection between your smart device and CerberLink. Open the CerberTouch app and go to *Manage>User Settings*. In the "Enter user ID" field, enter a new 10-digit Cerberus user ID and press "Done" or "Submit." You may locate your Cerberus user ID on the "My CerberLinks" page when you are logged into CerberCenter. For more information on your Cerberus user ID, please refer to **sect 5** "Getting Started."

After performing the reset action on CerberLink (and optionally changing your Cerberus user ID), you must go to the Bluetooth settings of your phone and "un-pair" it with CerberLink. Then you need to re-establish the Bluetooth pair. Connect to CerberLink via Bluetooth, start the CerberTouch app and follow any additional instructions when prompted by CerberTouch.

*If you incorrectly entered your 10-digit Cerberus user ID, you will need to perform this device reset before CerberCenter can route your satellite messages.

7. CerberTouch App

7.1. Overview

The CerberTouch app extends the messaging capability of your smartphone to the entire globe when paired via Bluetooth with your CerberLink. CerberTouch includes the following features:



Messaging - Send and receive 160-character text messages to and from anyone, anywhere in the world using a CerberLink global messaging device. CerberTouch can also send messages using cellular or Wi-Fi Internet if available. Contacts can be inserted from your smartphone's address book. This includes sending messages to your Twitter feed or posting directly to your Facebook wall by satellite.



Breadcrumb - Save breadcrumbs (GPS coordinates) with the option to add text to create a public message. You may send your breadcrumb data over the satellite network or the Internet to CerberCenter. CerberCenter will post your breadcrumb data to Google Maps™ on your Activity page along with your coordinates and any public messages.



Tracking - Tracking allows users to set a time interval to record and send location-based messages. Tracking is similar to capturing a waypoint on a standard GPS unit, but CerberLink tracks can be shared in real-time for others to view on your Public Activity page. There are two tracking methods available: Easy Tracking and Advanced Tracking.



Distress mode / SOS – Signal for distress and participate in a dialog with a CerberCenter Analyst and emergency contacts designated by you from anywhere in the world.



Sync screen –The Sync screen gives you full control over how messages are saved, transferred wirelessly to CerberLink and sent via satellite.

Note—Depending on the smart device used being used with CerberLink, certain functionality described below may not be available.

7.2. Messaging

When you sign-up for a Cerberus account, CerberCenter will provide you an e-mail address based on the username you entered:

username@cerbercenter.com.

All CerberLink messages sent by you or to you will use this e-mail address.

The messaging interface follows standard smartphone convention with a few added features to control how messages are routed.



7.2.1. Draft and save messages

- Start a new conversation from the messages screen. Select the message recipient from your phone’s address book or type an address and draft your message.
- When you finish drafting your message, press the *Save* button.

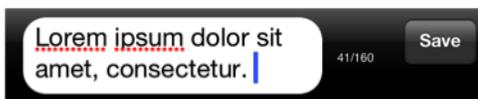


Figure 7-1

7.2.2.Sync messages

- Now CerberTouch will display the message in the conversation with a sync button next to it. The sync button lets you choose how and when to send your message.

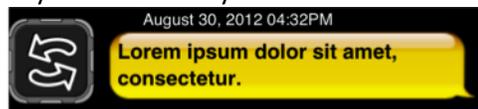


Figure 7-2

- When you press the sync button, you will have up to three options:

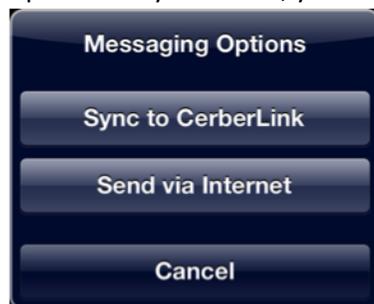


Figure 7-3

7.2.3.Sync to CerberLink

- If you press “Sync to CerberLink”, the message will be transferred to CerberLink’s outbox via Bluetooth. Once the message is in CerberLink’s outbox, a satellite session button is visible next to the message. Press this button to start a satellite session to send the message. If you do not press the satellite session button, the message will be saved in CerberLink’s outbox until you decide to send it at a time of your choice. When you start a satellite session, CerberLink will also retrieve any messages sent to your CerberLink.

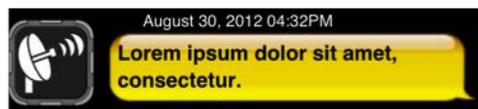


Figure 7-4

- Once a satellite session is active, the message will be marked as sent in CerberTouch.

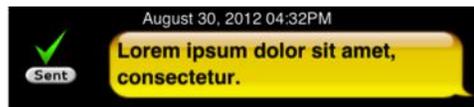


Figure 7-5

7.2.4. Send via Internet

- Send message via e-mail to the message recipient (if Internet is available). If "Send via Internet" is used, CerberTouch will utilize the smart phone's default e-mail client and send a geo-tagged message to CerberCenter as an attachment. CerberCenter will then add your message to your CerberCenter Activity page and forward it to the message's recipient. Please note that Internet messaging is outbound only.

7.2.5. Cancel

- Pressing the cancel button will save the message in your smartphone's memory and allow you to send it by satellite or Internet at a time of your choice. You can see if messages are saved to CerberTouch's Sync Queue by pressing the Sync button from CerberTouch's home screen. The "Unsent" field beneath the phone graphic lists any messages stored in the CerberTouch sync queue. See **sect. 7.6**, "Sync" for more information.



Figure 7-6: There are (2) new messages to transfer to CerberLink and send by satellite. There are (37) new messages to transfer to CerberLink and read in CerberTouch.

7.2.6. Responding to CerberLink messages

- When you send a satellite message to someone with your CerberLink, CerberCenter will automatically add the following statement to the top of your message: **"---- Please reply ABOVE THIS LINE to respond to this message ----"** When someone responds to your message, CerberCenter will remove all text including and below the **" ---- Please reply ABOVE THIS LINE to respond to this message ----"** text. This prevents the thread of a conversation from being included in the response to your satellite message in order to reduce message size and make satellite messages easier to read on CerberTouch.

7.2.7. Remove graphics, signatures and attachments from response messages

- Many people have their e-mail client add a signature line and/or graphics to the end of an e-mail message. This can clutter a satellite message and make it unnecessarily long. Users whose e-mail clients add a signature line to outbound e-mails can type "#@!" at the end their message being sent to a CerberLink. CerberCenter will recognize the "#@!" character set and remove any text, e-mail signature or graphic that comes after the special character set in an e-mail message.

7.3. Breadcrumb

bread-crum /'bred,kram/ n.

1: A small fragment of bread.

2: A Cerberus GPS coordinate that can be shared with others in real-time.

CerberTouch can send Breadcrumbs to CerberCenter at any time where they are displayed live and up to date on your Activity page and your public Activity page. For more information on sharing your public activity, please see **sect. 9.6**, "Public Activity page"



7.3.1. Individual Breadcrumb

After pressing the breadcrumb icon, CerberTouch will give you the option to add text to the breadcrumb to create a public message. If connected to CerberLink via Bluetooth, breadcrumbs will be stored on CerberLink and sent during your next mailbox check. Otherwise, breadcrumbs will be recorded using your smartphone's GPS and can be sent to CerberCenter if you have a cell or Wi-Fi Internet connection. If CerberLink's GPS cannot acquire a location after you have pressed the breadcrumb icon, then it will cancel the breadcrumb and add a message to your inbox to let you know that CerberLink could not record the breadcrumb.



Figure 7-7

7.3.2. Public messages (breadcrumb with text)

This option allows you to create a location-based message with text added to it. Public messages are visible to individuals with whom you have shared your public Activity page. Public messages are treated as standard messages and will be sent regardless of a valid GPS fix.

7.4. Tracking

When connected to CerberLink, you have two tracking options:

- Easy Tracking allows you to select a time interval for CerberLink to capture and then send a track point to CerberCenter.
- Advanced tracking allows you to select a time interval to capture multiple track points and then set an interval to send those captured tracks by satellite.

Standard tracking includes latitude, longitude and altitude data. Altitude data is only included if CerberLink has a 3-D fix. If CerberLink's GPS cannot acquire a location at a set interval, then it will skip that track and add a message to your inbox to let you know that CerberLink could not record the track. CerberLink always remembers the last tracking mode it was set to. That is, if Easy Tracking is ON and CerberLink's battery dies, then once you recharge it and turn it ON, CerberLink will continue to record and send tracks. Optional tracking plans are available for enterprise customers who wish to include such information as course over ground, speed over ground and CerberLink state of charge.



Figure 7-8

7.5. Distress Mode / SOS

CerberTouch has a dedicated distress messaging screen that is used to signal for help in emergency situations only. To send a distress message, press the SOS icon on the main CerberTouch screen and follow the instructions. After pressing the SOS send button, you have 30 seconds to cancel distress mode before CerberLink begins sending a series of distress messages to CerberCenter.



Once you draft a distress message and press "Send," CerberTouch immediately syncs your distress via Bluetooth to CerberLink. When CerberLink receives the transferred distress message, it starts a satellite session. Unlike standard messaging satellite sessions, CerberLink will not timeout when trying to send a distress message. That is, CerberLink will attempt to send the distress message until the satellite receives it. In addition to the distress text message you send, CerberLink also transmits emergency location data to CerberCenter at pre-defined intervals.

When CerberCenter receives a distress message, all designated emergency contacts listed in your CerberCenter profile "Contacts" list will receive all distress messages and location data sent by your CerberLink. Your contacts will receive these messages by SMS and/or e-mail.

Additionally, a CerberCenter analyst will monitor and respond to distress messaging as necessary.

Distress messaging can be viewed from the Distress messaging screen of the app. To cancel distress mode, send an SOS cancel request from the distress messaging screen. While in distress mode, all distress messaging takes precedence over normal messaging. If trouble exists in your location, CerberCenter analysts also have the ability to turn distress mode ON to warn you about an event. Distress mode may only be turned ON remotely if: 1. A CerberCenter analyst sends a distress message to you and 2. You initiate a satellite mailbox check so your CerberLink can receive the distress message.

7.6. Sync and Mailbox Check

Understanding the sync screen is very important. It is one of the unique features of the Cerberus system that provides you full control over how you manage your CerberLink's messages and, as a result, its battery life. When you draft new messages, they are saved in the CerberTouch app until you decide to "sync" them via Bluetooth to CerberLink's outbox or send them via Internet if it is available. Once a message has been "synced" to CerberLink, it is stored in CerberLink's outbox until you decide to send it via satellite. This "sync" then "send" philosophy gives you the ability to draft, sync and send messages when you want instead of unnecessarily draining the battery if you're under tree cover for instance. In addition to managing your messages, you can also view message status, satellite status and important CerberLink settings without accessing the "Manage" screen.



7.6.1. Sending and receiving satellite messages

Starting a satellite session will send all messages stored in CerberLink's outbox and tracks in its memory. A satellite session will also retrieve any messages people have sent to your CerberCenter account. Before you start a satellite session you can view the number of messages queued to be sent by looking beneath the image of the CerberLink under the heading "Unsent".



- To start a satellite session, press the "Mailbox check" button. You may view the status of the session by looking at the top left corner of the sync screen. Here you may see if the satellite session is active as well as view the real-time signal strength of the satellite network. CerberTouch will update the status every 20 seconds.
- Once all messages have been sent and/or downloaded from the Iridium gateway, CerberLink will stop the satellite session. If you have received new messages, you will see them in the "New" field beneath the image of CerberLink.



Figure 7-9

7.6.2. Message transfer between smartphone and CerberLink

Now it's time to sync your new messages that you just downloaded from the Iridium gateway to your phone so you can read them.

- Press the Bluetooth sync button to start the message sync process.
- CerberTouch will display a pop-up that provides information on the status of the message transfer.
- When CerberTouch has finished the message sync, you will notice that the "New" field beneath the image of a smartphone now lists your new messages that you can read on the messages screen.



If you have saved a message or several messages to CerberTouch's sync queue, you may also use the Bluetooth sync button to transfer messages wirelessly to CerberLink via Bluetooth. After you have synced your new messages to CerberLink, you have the option to send them now by pressing the "mailbox check" button or you can wait until later and send them at a time of your choice.



Figure 7-10

7.6.3. More info button

The "More info" button allows you to quickly view the status of your CerberLink without needing to access multiple "Manage" screens.



7.7. Manage

The manage menu contains status information and an interface to change settings for CerberTouch and CerberLink (if paired)



7.7.1. CerberLink Power Status (only applies if paired)

- Displays details on the status of CerberLink battery

7.7.2. User Settings

- Displays the current Cerberus user ID
- OPTION: Change or delete user ID

7.7.3. CerberLink Mailbox Settings (only applies if paired)

- Displays the number of messages in the CerberLink inbox and outbox, also indicates how much space is left in each box

- OPTION: Delete all messages from your outbox or inbox
- 7.7.4.CerberLink Info (only applies if paired)
- Displays CerberLink details including firmware ID, hardware ID, Iridium modem IMEI, current Cerberus ID, Bluetooth MAC, and device serial number
- 7.7.5.Satellite Settings (only applies if paired)
- Displays CerberLink mailbox check interval
 - OPTION: Auto-mailbox check. When turned on, CerberLink will automatically perform a mailbox check at a predefined interval.
- 7.7.6.Bluetooth Settings
- Displays the current Cerberus user ID, Bluetooth MAC address, and the number of Bluetooth pairs to the CerberLink.
 - OPTION: Clear pairings. This will clear all Bluetooth pairings to CerberLink.
- 7.7.7.Alerts
- Directs the user to the CerberCenter website to setup location specific alerts
- 7.7.8.Help
- Allow CerberTouch to display help pop-ups as you use the app
 - OPTION: Help pop-ups ON/OFF.

8. CerberLink API

8.1. Overview

CerberLink has an open Application Programming Interface (API). It is available for download at cerberus.briartek.com. The API will allow you to write your own programs to control your CerberLink. The API will give you the freedom, for example, to connect CerberLink to a sensor network to send alert messages or allow you write your own Linux program to control and message with your CerberLink. For API related questions please send e-mails to support@cerbercenter.com.

9. CerberCenter

9.1. Overview

CerberCenter is the backbone of the Cerberus global communication system. It routes your incoming and outgoing message traffic and CerberCenter's alerting feature automatically transmits critical weather, health, geopolitical and news alerts to your CerberLink. You decide which type of alerts, for which locations, specify delivery method (satellite, e-mail or text message) and the rest is automatic. In order to activate your CerberLink, you must open an account on the CerberCenter website at cerberus.briartek.com

9.2. Open your account

- 9.2.1. Navigate to the Cerberus website to open a basic Cerberus account that will allow you to manage alerts received by e-mail. If you have purchased or rented a CerberLink you will be required to enter CerberLink's IMEI number (located on the rear CerberLink label) to associate your CerberLink with your CerberCenter account.

9.3. Contacts

9.3.1. When you log into CerberCenter, click on the "Profile" tab and select "Contacts". On this page you may designate contacts to receive check-in and/or emergency messages by SMS and/or e-mail. Once you have assigned your contacts, CerberCenter will send an automated address verification message via SMS and/or e-mail to your contacts. CerberCenter **will not** route check-in and emergency messages to your designated contacts until your contacts have responded to the verification message. You may enter multiple contacts in your profile page such as family, friends, colleagues, third-party rescue services, etc...

Contacts can respond to check-in messages by e-mail only, not by SMS.

Contacts may respond to emergency messages by e-mail using your Cerberus e-mail address. Contacts cannot respond to emergency messages via SMS. If a contact receives an emergency message via SMS, CerberCenter will include your Cerberus e-mail address in the emergency SMS message so that your contact-s may respond to the emergency situation.

9.4. View messaging, tracks or breadcrumbs

9.4.1. All messages delivered by the satellite to CerberCenter contain GPS data or Iridium satellite location data. E-mail messages sent from the app have location data attached as well. All message traffic with location data may be viewed on your personal Google Maps page associated with your account. This map includes custom filters to view message traffic by date and message type. To share this map with others, please follow the instructions on the CerberCenter website. In the event that CerberLink cannot acquire your location due poor GPS satellite coverage, CerberCenter will use location data provided to it by Iridium. Location data provided by Iridium is not as accurate as GPS location data. As a result, CerberCenter does not display messages that use Iridium location data on your Activity page. CerberCenter also displays the date and time you sent a message from your CerberLink on your Activity page. CerberCenter displays all messages using Greenwich Mean Time (GMT)

9.5. Alerts

9.5.1. CerberCenter has a real-time, severe event alerting system that sends you weather and travel alerts via satellite or e-mail. In addition, CerberCenter offers users a customizable alerting mechanism that allows users to manage existing alerts in CerberCenter's alerts database or to define new alert sources and the criteria by which CerberCenter will deliver them to you.

9.5.2. Real-time alerts: CerberCenter will track your location and send you severe alerts by satellite and/or email. You'll receive alerts based on your current location, or the most recent location recorded within the last 24-hours. Automatic alerts include NOAA weather bulletins and State Department travel bulletins.

An example of real-time alerting is as follows: If you plan to hike in Kings Canyon National Park and you have turned real-time alerts ON, CerberCenter will track you during your trip. Kings Canyon National Park is in Fresno and Tulare Counties in California. As you message and breadcrumb during your hike, CerberCenter knows that you are in Fresno County, CA and will automatically subscribe you to receive NOAA's Fresno County severe weather alerts by satellite. As your hike progresses, you enter Tulare County, CA and you continue to send satellite messages and breadcrumbs. CerberCenter will now subscribe to receive NOAA's Tulare County severe weather alerts. If you don't send any satellite

messages over a 24-hr period, CerberCenter will unsubscribe you from any active auto-feed.

Standard alerting: Alerts are based on RSS feeds. When you set-up a standard alert, it is defined by category, weather for example, and location. Once you select the source of your alert, you can configure when and how you want to receive an alert from that source. First, you define a location and a distance from that location. For your location, you may enter a zip code, city, latitude/longitude, etc. CerberCenter will determine the center point of that location. Next you define a radius around that point. Lastly, you decide how you want to receive the alert, by satellite and/or e-mail and if want to receive severe alerts only or all alerts generated by that source. When you message with your CerberTouch app or by satellite using CerberLink and your current location is within your defined radius, CerberCenter will turn your alert ON and send the alert to you if it meets the criteria you defined. If you leave the location blank, then CerberCenter will always monitor that source for you and will send the alert to you when it meets your criteria. Or, you can create your own custom alert. Custom alerts allow you to use your own RSS sources and set-up the exact criteria for which you want to receive an alert. If there is an alert you would like added and need assistance finding the source, contact support@cerbercenter.com.

An example of standard alerting is as follows: You live in Baltimore, MD, but you own a boat that you keep in Miami, FL. You may set-up a custom alert to have CerberCenter send you severe weather alerts by e-mail whenever there is a bad storm approaching Miami, FL and you are within a 100-mile radius of Baltimore, MD. You may also remove the 100-mile radius around Baltimore and set-up CerberCenter to send you alerts via e-mail whenever there is bad weather in Miami. If a bad storm approaches your boat, you will know ahead of time and can ask the dock master to check on your boat after the storm.

Or, if you are hiking the Appalachian Trail and want to follow your favorite baseball team, you can add a baseball scores RSS feed of your favorite team to your list of alerts sources sent to you by satellite. When there is a new score, it will be sent to your CerberLink so you can follow your team's progress on the trail.

9.6. Public Activity page

9.6.1. CerberCenter allows you to create a Public Activity page that you can share with others.

The following messages are visible on your public activity page: Breadcrumbs, Public messages, Tracks and Check-in messages. **We do not share regular messages on your shared public activity page for privacy reasons.** When you create a Public Activity page, you are creating a hyperlink to a Google Maps page that contains your public messages filtered by date. If you do not select dates to constrain your public activity, then all of your future and past public messages will be visible with that hyperlink.

9.6.2. Creating a public link of your Activity page to share with others is easy. Log-in to CerberCenter and go to your Activity page. Beneath your map, click on the link that says, "Create a map you can share with friends." Follow the on-screen instructions.

10. Technical Specifications

10.1. Messaging

- Max number of messages per charge: 1000
 - Total number of messages sent per charge is dependent on usage conditions including clear view of Iridium and GPS satellite constellations, frequency of transmissions and frequency of Bluetooth communication.
- Mailboxes
 - Inbox: 4096 messages
 - Outbox: 128 messages
 - Distress Outbox: 128
- Tracking
 - 4096 breadcrumbs may be stored in CerberLink
- If messages older than 5-days have been not downloaded from the satellite link, all messages associated with that IMEI number will be deleted by the Iridium gateway.

10.2. Usage

- ON life: 5-21 days (device usage and satellite coverage will impact battery life)
 - 5-days: 20 messages/day plus 96 tracks/day; turn CerberLink OFF at night (8hrs)
 - 10-days: 10 messages/day plus 16 tracks/day; turn CerberLink OFF at night (8hrs)
 - 14-days: 10 messages/day plus 10 tracks/day; turn CerberLink OFF at night (8hrs)
 - 21-days: 10 messages/day plus 10 tracks/day; turn CerberLink OFF at night (14hrs)
- Max time between recharge: 60 days

10.3. Mechanical

- Dimensions: 4.74" x 2.64" x 1.27"
- Weight: 186 grams

10.4. Environmental

- Waterproof: 1 meter (IP67 compliant)
- Operating Temperature: -20°C (-4°F) to +55°C (131°F)
- Stowage temperature: -30°C (-22°F) to +70°C (158°F)
 - For optimal battery life, CerberLink should be stored at -20°C (-4°F) to +20°C (68°F) and 30 – 50% charge
- Charge temperature: 0°C (32°F) to +45°C (110°F)

10.5. Electrical

- Battery
 - 2000mAh Lithium Polymer
 - UL 1642 Certified, Ref# BBCV2.MH46844, model 605060
 - UN 38.3 Certified, Report ID 24-UNR-1104004
- Power Connector
 - USB Mini-B
- Charger Power Supply
 - 110AC to USB 1A power supply
- Iridium Transceiver
 - Frequency: 1616 – 1626 MHz
 - RF Power: 1.6W (Max)
 - Contains FCC ID: Q639602
- GPS Receiver
 - Frequency: 1575.42 MHz
 - Position accuracy

- 10 meters Autonomous
- 5 meters with SBAS
- Acquisition Time (maximums)
 - Hot Start (Open Sky): 2s
 - Hot Start (Indoor): 15s
 - Cold Start: 35s (new almanac data not required)
 - Cold Start: 15m (new almanac data required)
- Receiver sensitivity
 - Tracking: -159dBm
 - Cold Start: -145dBm
- Bluetooth Transceiver
 - Range: 20m
 - Bluetooth standard: Bluetooth 2.1 + EDR
 - Security: Simple Secure Pairing "Just Works"
 - Passkey: Last four digits of CerberLink's IMEI number (a passkey is only required when connecting to devices that are not Bluetooth 2.1 + EDR compliant) (IMEI number is displayed on back of CerberLink)
 - Contains FCC ID: QQQWT12

11. Warranty

BriarTek will provide a one-year warranty on CerberLink following the purchase date. If a component fails to function properly during its warranty period (one year), the manufacturer will proceed according to its warranty as follows:

BriarTek Inc. guarantees each product it distributes to be free from defective materials and workmanship and agrees to remedy any such defect, or to furnish a new or equal part in exchange (at its option) for a period of one year from the date the component is purchased. For an exchange of the product, please contact BriarTek at 703-548-7892 or on the web at cerberus.briartek.com and a customer service representative will provide the necessary instructions. Original receipt is required for all exchanges.

This warranty is void if:

- any component has been subject to misuse or improper installation by a non-BriarTek employee, or has been repaired or altered by a non-BriarTek employee.
- any component fails to function properly after being put into service due to something other than defective materials or workmanship, i.e. excessive temperature, humidity or shock while component is in storage.

12. Manufacturer

The Cerberus global communication system was designed, developed and manufactured in the United States of America by BriarTek, Inc.

13. Notice

- CerberLink, U.S. Patent 7,991,380.
- “Made for iPod,” “Made for iPhone,” and “Made for iPad” mean that an electronic accessory has been designed to connect specifically to iPod, iPhone, or iPad, respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod, iPhone, or iPad may affect wireless performance.
- iPhone, and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries.
- Android™ is a trademark of Google Inc.
- Iridium and the Iridium logo are registered trademarks and service marks of Iridium Communications Inc.
- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by BriarTek Inc. is under license. Other trademarks and trade names are those of their respective owners.
- Google and Google Maps are trademarks of Google, Inc.

©2012 BriarTek, Inc. All rights reserved. Reproduction in whole or part is not permitted without the express consent of BriarTek, Inc.

BriarTek does not accept liability for user's guide contents. Product improvements may change product specifications without notice. Visit cerberus.briartek.com to ensure you have the most recent version of the user's guide.

14. Revisions

Revision	Description	Date	Name
001	Draft release	07/15/11	AR/LC
002	Pre-production release	11/01/11	AR/LC
003	Production release	11/11/11	LC
004	Production revision	04/15/12	LC
005	Revision Added—CerberLink real-time tracking; CerberCenter check-in and distress pass through messaging & real-time alerts; Miscellaneous updates	05/08/12	LC
005.01	Revision Updated alerts text	05/25/12	LC
006.00	Revision Updated CerberLink, CerberTouch & CerberCenter operation	8/31/12	LC
006.01	Revision Minor corrections	10/03/12	LC
006.02	Revision Updated sect 6.14	04/02/12	LC
007	Revision Removed references to BlackBerry Updated section 5.4 Fixed poorly formatted figures in section 5 Simplified figure numbering in section 7 Added troubleshooting and support contact info to document footer Section 9.3.1 – changed “Contacts cannot respond to check-in messages by email or SMS” to “Contacts can respond to check-in messages by email only, not by SMS.”	5/20/13	AR