Cerberus Global Communication System

User's Guide

iridium CONNECTED™

BriarTek INCORPORATED

Table of Contents

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. CerberLink serves as a messaging hotspot as one CerberLink can accommodate up to four different users connected by Bluetooth with their smart device. These four users may interact and message with CerberLink all at the same time. Check the Cerberus website (cerberus.briartek.com) to discover new devices compatible with CerberLink and to download updated apps with enhanced functionality. 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.

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. 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

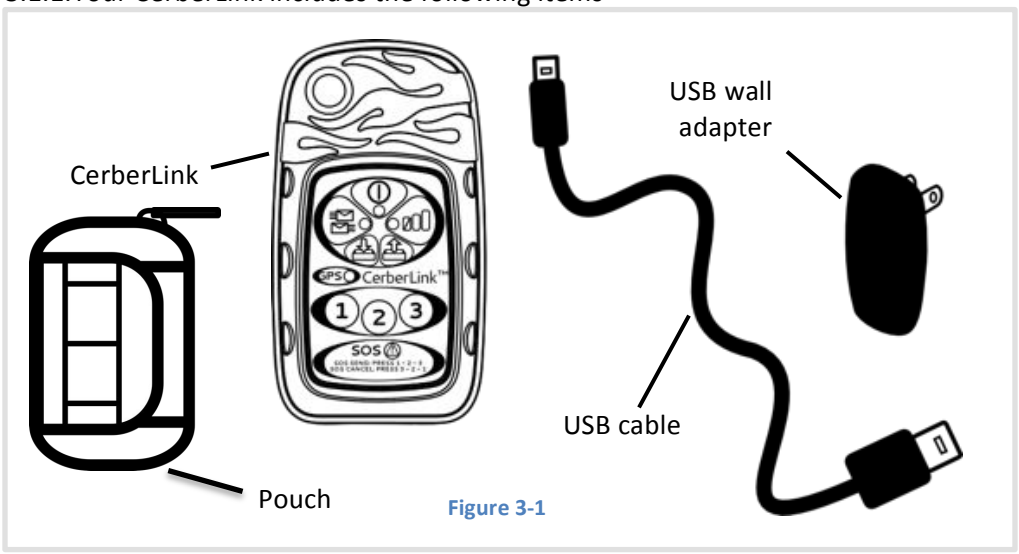


Figure 3-1

3.2. Optimal Orientation

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

Figure 3-2 Optimal Orientation

3.3. Battery

3.3.1. Type

- 3.7V, 2Ah Lithium Ion 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

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 blink green while charging and will turn solid green when fully charged.

Note: CerberLink may be charged from a computer's USB port, but this will increase charge time.

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

4. Iridium Satellite Network

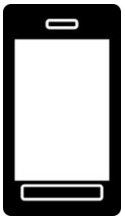
The Iridium satellite network consists of a constellation of 66 cross-linked low earth orbit (LEO) satellites that operate approximately 780 miles above the earth's surface. This robust network provides CerberLink users truly global coverage and very low latency messaging. Each satellite projects 48 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.

5.2. Install the CerberTouch app



The CerberTouch app allows you to send and receive text and e-mail messages, receive location specific alerts, and post GPS breadcrumbs using your smart device's Bluetooth radio.
For a list of supported devices and their app's, please visit: cerberus.briartek.com

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 signaling for distress and requesting emergency assistance.**

For more details, see Section 6 of this guide.

5.4. Activate your CerberLink device

- Your CerberLink will be delivered to you ready to message after a few quick steps.
- Ensure your CerberLink device is fully charged, powered ON and is properly oriented (see section 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 device).
- Connect to your CerberLink via Bluetooth
  - iPod® and iPhone® must connect through the Settings>General>Bluetooth menu
  - Android™ and Blackberry® devices will prompt you to connect upon app start-up
- CerberTouch will prompt you to enter your 10-digit Cerberus user ID. Once the CerberLink accepts the ID, you are ready to message by satellite.
- Take your CerberLink and smart device to an outdoor location with a clear view of the sky and send a test message.

For troubleshooting see cerberus.briartek.com or call Cerberus support line **703.548.7892**

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.

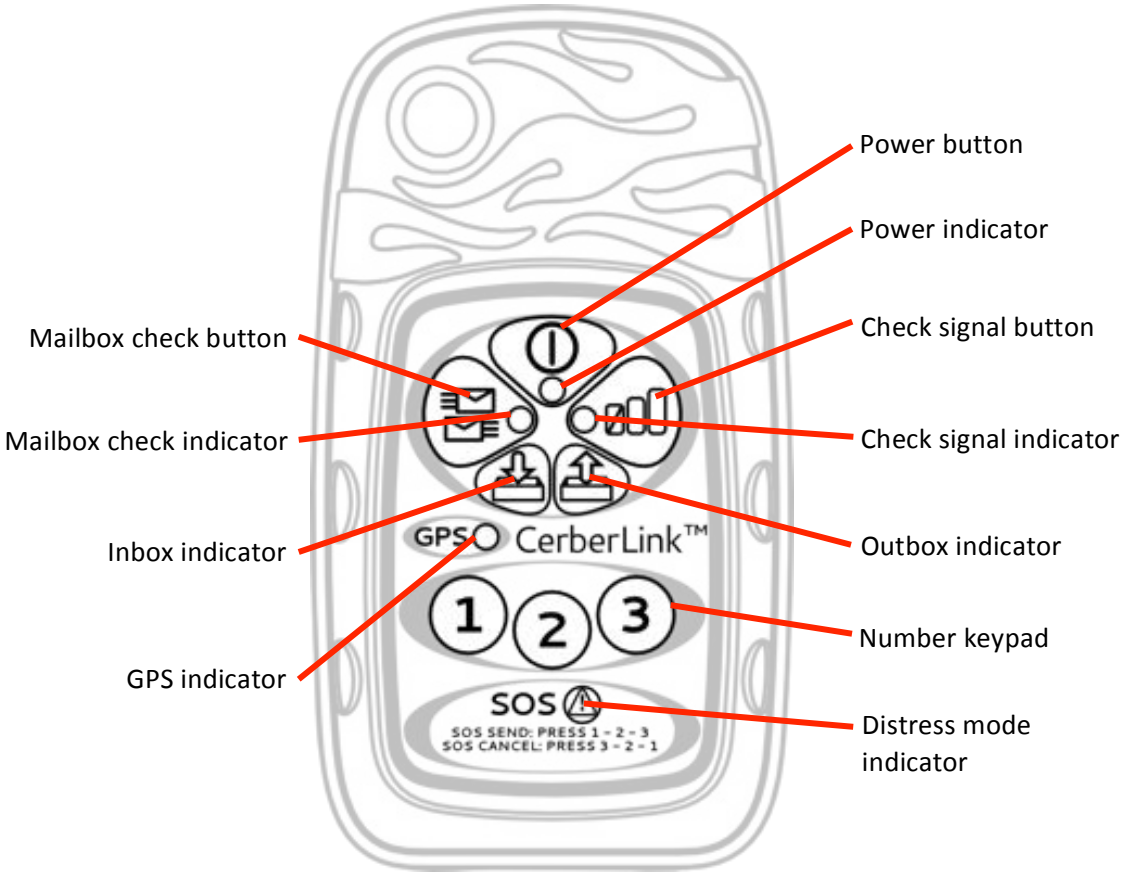


Figure 6-1 CerberLink Controls

6.2. Power button and indicator

Depress the power button for 2.5 seconds to turn the unit ON or OFF. The unit will automatically turn ON when connected to the charger. Power and battery state are indicated as shown below. To wake CerberLink from sleep, press the power button for 2.5s or wake via Bluetooth by using the CerberTouch app. Upon power up or wake from sleep, CerberLink will attempt to Bluetooth connect to the last smartphone used by each user if disconnected. To power CerberLink OFF while it is awake, press and hold power button for 2.5s. To power CerberLink OFF while it is asleep, press and hold power button for 2.5s to wake CerberLink, then press and hold power button for 2.5s to power OFF.


Disconnected from charger

Status Light	What it means
Fast flashing green	Power is on, CerberLink is awake
Slow flashing green	Power is on, CerberLink is asleep
Solid green	Power is on, CerberLink is waking up
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
Flashing green	Battery is still charging
Flashing red	Charging paused due to temperature or timing fault. Contact BriarTek support.

6.3. Signal strength button and indicator

Depress the signal strength button for 3 seconds to check satellite signal. 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.

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

6.4. Mailbox check button and indicator

Depress the mailbox check button for 3 seconds to initiate a mailbox check. A mailbox check will send out any messages stored in the CerberLink outbox and will store any newly received messages from the satellite network in the inbox. The progress of the mailbox check can be viewed on the status light. Each message sent/received constitutes one mailbox check. If more messages reside on the satellite gateway, the mailbox check LED will flash rapidly until **all** messages have been transferred to/from CerberLink. To cancel a mailbox check, press the mailbox check button twice during an active satellite session.

Note: If CerberLink cannot make a satellite connection within 20 minutes the mailbox check will fail and messages will remain in outbox.

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.

6.5. 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.

	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

6.6. GPS indicator

The GPS indicator shows the status of CerberLink's internal GPS. When the indicator is flashing green, CerberLink has an adequate view of the GPS satellite constellation. When the indicator slowly flashes red, CerberLink is unable to attain a strong enough signal to record GNSS data. 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.

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 ephemeris data to allow it to acquire new location position data. This is best accomplished by attaching CerberLink to its charger and near a window to accomplish this. If this is not possible, CerberLink will still acquire new ephemeris data, but it may take longer.

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

6.7. Distress sequence and indicator

USE DISTRESS MODE ONLY IN A REAL EMERGENCY!

The user can initiate distress mode directly from the CerberLink device by pressing **1-2-3** sequentially in separate keystrokes. This will start a 30 second countdown timer. During this time, the user has the ability to cancel distress mode by pressing **3-2-1** sequentially in separate keystrokes. After 30 seconds expires, CerberLink sends CerberCenter a distress message. Distress messages are immediately sent to a CerberCenter analyst. The analyst will forward your message to the emergency contacts designated by you in your Cerberus account on the CerberCenter website. While in SOS mode, all SOS messaging takes precedence over normal messaging. To review the status of an SOS 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**
Slow flashing red		Distress mode 30s countdown
Fast flashing red		Distress mode ON
Slow flashing red		Cancellation request message in progress
Off		Distress mode OFF

Manual breadcrumb sequence and indicator

The user can send a breadcrumb directly from CerberLink using the keystroke **2-2-2** on the number keypad. This will create a breadcrumb message containing the current location and will automatically perform a mailbox check.

If GPS is not available after 10 minutes, the breadcrumb will fail and will not be created. The GPS light will remain solid red for 5 seconds as a reminder that it is not available.

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 CerberLink outbox until a successful mailbox check is performed.

GPS		
Status Light		**What it means**
Slow flashing green		GPS data available
Slow flashing red		GPS not available
Solid red		Reminder that GPS not available

6.8. Check-in message sequence

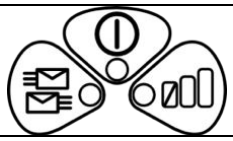
The user can send a check-in message directly from CerberLink using the keystroke **1-1-1** on the number keypad. This will create a message containing a check-in statement and will automatically perform a mailbox check. **When sending a check-in message using CerberLink's keypad, the check-in message will be sent to the device administrator's emergency points of contact only.**

To check the status of the message being sent, monitor the mailbox check indicator. CerberLink will attempt to send the check-in message for 20 minutes. If the check-in message fails to send, it will remain in the CerberLink outbox until a successful mailbox check is performed.

6.9. System test sequence

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

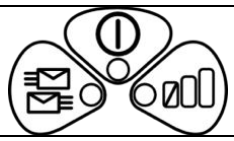
To perform a system test, use the keystroke **3-3-3** on the number keypad. To ensure quick feedback, make sure you perform the test in an open area with a clear view of the sky. If the test passes, you will see the mailbox/power/signal strength indicators flash green for 5 seconds. If the test fails, 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 5 seconds to turn CerberLink OFF and then depressing the power button for 5 more seconds to turn CerberLink ON. Repeat the system test. If the test continues to fail, contact Cerberus technical support for help.



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

6.10. 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 assist with the proper routing of your satellite message traffic. The following features of your CerberLink will not function until you enter this ID: **mailbox chec**k, **check-in messages** (1-1-1 on CerberLink's keypad), **breadcrumb messages** (2-2-2 on CerberLink's keypad), **distress messages** (1-2-3 on CerberLink's keypad). If you attempt to message with your CerberLink before you enter your Cerberus ID, the power, mailbox check and signal strength LEDs will flash red.



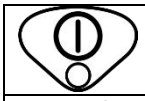
Status Light		What it means
Flashing red		Missing Cerberus ID

6.11. Reset to Factory Defaults

To reset CerberLink to factory defaults, press the following four buttons together and hold them for ten seconds: **1,3, mailbox check and signal strength**. All lights will blink simultaneously for 10 seconds to indicate that the unit has been reset. This will remove all paired users, all messages, and all other stored information from CerberLink's memory. You must now reactivate your device to start messaging with CerberLink again. Please refer to section 5, "Getting Started". If you incorrectly entered you Cerberus ID, you will need to perform this device reset.

6.12. 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 five seconds: **1, 3, power.** Next, press the power button for five seconds to restart CerberLink.



Status Light		What it means
Solid green		CerberLink is rebooting

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 device. Be sure to check the Cerberus website for updated apps that will enhance Cerberus functionality, heighten user experience and expand the list of compatible operating systems. CerberTouch includes the following functions:

Messaging - Simply 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 and receive messages using cellular or Wi-Fi Internet if available. Contacts can be inserted from your smartphone's address book. In addition to messaging with family, friends and colleagues, the Cerberus alerting system allows you to receive critical health, weather and news alerts, wherever you are, and tailored to your location. You do not need to have a CerberLink with you to receive alerts. All you need is a Cerberus account. You manage alerts through CerberCenter and you may define the rules through which CerberCenter sends your alerts. You may configure alerts to be received by satellite message, e-mail or text message.

Breadcrumb - Save breadcrumbs (GPS coordinates) with the option to add text. Set the auto-crumb function to leave a trail of breadcrumbs at desired intervals. You may send your breadcrumb data over the satellite network or the Internet to CerberCenter. CerberCenter will post your breadcrumb data to Google Maps™ along with your coordinates and any "text crumbs". This map can be shared with friends on a private website or posted publicly to allow others to get updates of your location and to view location specific comments. CerberCenter continuously updates your breadcrumb trail and provides functionality to integrate your trail to your favorite social media websites. Visit the Cerberus website for more details.

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 – The Sync screen gives the user full control of how messages are synchronized within the Cerberus system. When new messages are created, they are stored in the CerberTouch outbox. If cellular or Wi-Fi Internet is available, the user can send messages using that method. If Internet is not available, the user can sync messages with CerberLink, and use CerberLink to send and receive messages via satellite. A simple display updates the user on how many messages are in the inbox and outbox of CerberLink and CerberTouch.

Note—Depending on the smart device used being used with CerberLink, certain functionality described below may not be available. To review a current list of features available to each device specific app, please go to **cerberus.briartek.com**.

7.2. Messaging

When you sign-up for your Cerberus account, CerberCenter will provide 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 consists of two simple screens for viewing and sending text messages: messages screen and conversation screen. We have made an

effort to make the messaging interface appear as similar as possible to the messaging interface native to each smartphone platform.

1. Messages screen - List of past conversations sorted by date. A conversation consists of all messages to and from a single contact.
2. Conversation screen – List of past messages to and from a single contact along with a keypad and text box to send messages. For new messages, you will first insert a contact or an e-mail address into the "To" field.

7.2.1. Sending and syncing messages

- Start a new conversation from the messages screen. Select the message recipient from your phone's address book and draft your message.
- After you finish drafting your message, press the *Save* button; the message will immediately be displayed in your conversation list with a sync method button or a sync method pop-up next to it as shown in figure 7-1.

Figure 7-1 Sending a message with the sync button (Android & Blackberry, left and iPod & iPhone, right)

7.2.2. At this stage, you must choose the method to send your message:

- Send the message via e-mail to your CerberCenter activity page (if Internet is available).
- Transfer the message from your smartphone to CerberLink using Bluetooth. This will allow you to send your message by satellite to CerberCenter.
- Save the message to the Sync Queue of your smartphone. Messages saved to the Sync Queue allow you to transfer messages to CerberLink via Bluetooth at a time of your choosing. This is a good method to preserve CerberLink battery life since you do not need CerberLink to be ON when you draft a message or series of messages throughout the day.
- Send via Internet
  If "Send via Internet" is used, CerberTouch will utilize the smart phone's default e-mail app 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 on the message's recipient. Sent messages are indicated with a sent check icon next to them. Please note that Internet messaging is outbound only. The CerberTouch app cannot directly receive e-mail messages as CerberCenter routes all messages sent to your CerberCenter e-mail address to your CerberLink.

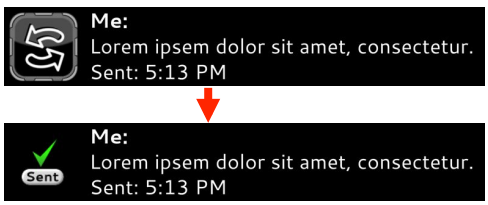


Figure 7-2 Sync via internet

- Transfer to CerberLink
  If "Transfer to CerberLink" is used, the message will be sent to CerberLink's outbox via Bluetooth. When the message is in CerberLink's outbox, a satellite sync button is shown next to the message. If desired, pressing the button can perform a satellite mailbox check that will initiate a mail session with the satellite network. Once a satellite session is active, the message will be marked as sent in the CerberTouch app.

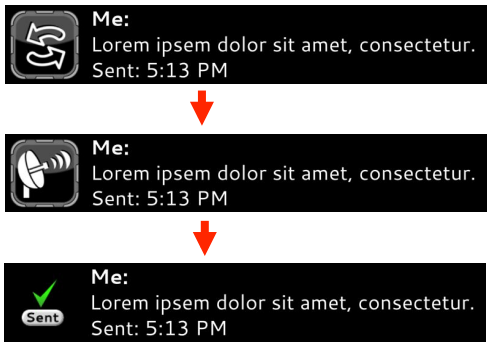


Figure 7-3 Sync via CerberLink

- Save to Queue
  If "Save to Queue" is used, the message will be saved in your smartphone's memory and will be sent at a time of your choice to CerberLink. You can see if messages are saved to CerberTouch's Sync Queue by viewing the Sync button from CerberTouch's home screen. See section 7.6, "Sync" for more information.

7.3. Breadcrumb

The CerberTouch app can be used to drop breadcrumbs (store GPS coordinates), leaving a record of the location of your CerberLink. Breadcrumbs sent to CerberCenter can be organized by date and viewed at CerberCenter using your personal Google Maps page. If using your smartphone's GPS, breadcrumbs will be stored in the phone's memory and can be sent via Internet or sync'd to CerberLink. You may also opt to save breadcrumbs in CerberLink's memory and sync them to CerberTouch. Once breadcrumbs are synced to CerberTouch, you may choose which breadcrumbs to send and the method of their delivery to CerberCenter (satellite or Internet). To optimize message payload and to reduce overall messaging costs to you, CerberLink will package up to three breadcrumbs in one outbound satellite message.

7.3.1. Breadcrumb Settings

- GPS Source – The CerberLink GPS chipset is the default source to gather GPS coordinates for breadcrumbs. Depending on smartphone model, you may choose to have the CerberTouch app use the smartphone's GPS as the source of GPS data.
- Auto-Breadcrumb – Breadcrumbs can be dropped and stored in CerberLink's memory automatically at a designated time interval. By default this feature is OFF.

- Send Breadcrumbs with Mailbox Check – CerberLink can be set to send breadcrumbs to CerberCenter when it performs a mailbox check. This feature is OFF by default.
    - If this feature is ON, all breadcrumbs stored in CerberLink's memory will sent by satellite to CerberCenter. Remember that three breadcrumbs fit in one satellite message.
    - If this feature is OFF, CerberLink will store all breadcrumbs in its memory. Up to 4096 breadcrumbs may be saved. If 4096 breadcrumbs are exceeded, then CerberLink will replace the oldest breadcrumbs with new ones. When this feature is OFF, you may sync all breadcrumbs in CerberLink's memory to the CerberTouch app. Once synced, you can approve or delete these breadcrumbs from the breadcrumb screen of your CerberTouch app. You may then send them to CerberCenter via satellite or Internet.
- Auto-Mailbox Check – CerberLink can be set to perform a mailbox check automatically at a designated time interval. If this feature is ON and it "Send Breadcrumbs with Mailbox Check" is ON, CerberLink will send any messages or accumulated breadcrumbs stored in CerberLink's memory to CerberCenter and will download any messages sent to your CerberLink. This feature is OFF by default.

7.3.2. Individual Breadcrumb

Individual breadcrumbs can be recorded at any time from the main breadcrumb screen by pressing the "Drop Breadcrumb" button. Breadcrumbs will be stored on the device whose GPS is recording tracking data (CerberLink or Smartphone). If CerberLink's GPS cannot acquire location data after 10 minutes, then it will cancel the breadcrumb. Please refer to Breadcrumb Settings (sect. 7.4.1.) for breadcrumb management.

7.3.3.Breadcrumb with text

This option allows a Breadcrumb to be stored with a 160 character message about the location. Breadcrumbs with text are treated as text messages and will be automatically sent regardless of the "Send Breadcrumbs with Mailbox Check" setting.

7.4. 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 page and follow the instructions. After pressing the SOS send button, you have 30 seconds to cancel before the message is sent to the satellite network.

After drafting and saving a message when CerberLink is in distress mode, the app immediately syncs all messages via Bluetooth to CerberLink. When CerberLink receives a message, it immediately initiates a satellite session and will attempt to send the message independent of the satellite constellation's signal quality and until the message is transferred to the satellite gateway. CerberLink will also transmit location data to CerberCenter at pre-defined intervals. CerberLink can also detect if your location has changed more than 100 meters while in SOS mode. If this occurs, CerberLink will transmit a change in location message to CerberCenter as well.

SOS messaging with a CerberCenter analyst is shared between all CerberLink users. When CerberCenter receives an SOS message, an analyst will forward it to the emergency contacts designated by you in your Cerberus account on the CerberCenter website. CerberCenter analysts also monitor distress messaging. Distress messaging can be viewed from the Distress messaging of the app. To cancel distress mode, send an SOS cancel request from the distress

messaging screen. While in SOS mode, all SOS messaging takes precedence over normal messaging.

7.5. Sync and Mailbox Check

From the sync screen the user can sync messages with CerberLink, and command CerberLink to perform a satellite mailbox check. Indicators display how many messages are stored in the inbox and outbox of CerberTouch and CerberLink respectively. If CerberLink is not paired via Bluetooth, the CerberLink sync and mailbox check options will not be available. The mailbox check icon tells CerberLink to initiate a satellite network session. This session will send any messages residing in CerberLink's memory to CerberCenter through the satellite network and will download any messages sent to you that reside on the satellite network's gateway.

Note: The CerberTouch app for iPod touch and iPhone devices does not have a dedicated sync screen, the sync commands can be found on the main screen of the app by pressing "CerberLink" or "CerberTouch" buttons.

7.6. Manage

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

7.6.1. CerberLink Power Status (only applies if paired)
- Displays details on the status of CerberLink battery

7.6.2. User Settings
- Displays the current Cerberus user ID
- OPTION: Change or delete user ID

7.6.3. 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

7.6.4. 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

7.6.5. Breadcrumb Settings
- Displays current GPS latitude, longitude, and altitude
- OPTION: Use CerberLink or phone GPS. This option lets you select which platform will record location data. This feature is not available on all smartphone apps.
- OPTION: Send breadcrumbs with every mailbox check. When turned ON, breadcrumbs synced with CerberLink will be sent via satellite with each mailbox check. If this is not turned on, any breadcrumbs recorded with CerberLink will be stored in CerberLink's memory. When breadcrumb storage is full and a new breadcrumb is added, the oldest breadcrumb will be deleted. Some smartphone platforms can transfer breadcrumb information from CerberLink to the CerberTouch app for review and approval before they are sent to CerberCenter by satellite or Internet.
- OPTION: Auto-breadcrumb. When turned ON, breadcrumbs will be stored in CerberLink's or the smartphone's memory at a user defined interval. See above, OPTION: User CerberLink or phone GPS for additional information.

7.6.6. Satellite Settings (only applies if paired)

- Displays Iridium network availability and signal strength
- OPTION: Auto-mailbox check. When turned on, CerberLink will automatically perform a mailbox check at a predefined interval.

7.6.7. 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. Option is only available to the administrator (user# 0).

7.6.8. Satellite Push Settings

- OPTION: Satellite message push notification. When activated, CerberLink keeps the satellite modem ON to listen for push notification. If a new message is sent to CerberLink it will automatically notify the user. The Iridium satellite network will send a push notification only once. If CerberLink does not have a clear a view of the sky during a ring event, then CerberLink will not be able to automatically transfer the message from the satellite network. **This setting will negatively impact CerberLink battery life.**

7.6.9. Alerts

- Directs the user to the CerberCenter website to setup location specific alerts

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 payment information in order to activate it. Messaging plan information is available on the Cerberus website.

9.3. Emergency contacts

9.3.1. The distress messaging engine used by CerberCenter allows you to designate one or more emergency points of contact in the event of an emergency. When CerberCenter receives a SOS message, an analyst will forward that message to all of your emergency points of contact. Emergency points of contact may be your husband or wife or you may establish a contract with a professional rescue organization that will monitor your emergency messaging traffic. Please be aware that CerberLink is designed to allow up to four users to message at the same time. If one user activates SOS mode, then every user's emergency points of contact will be notified of the event and all users' conversations with a CerberCenter analyst will be shared.

9.4. View messaging and breadcrumbs

9.4.1. All messages delivered by the satellite to CerberCenter contain GPS data. E-mail messages sent from the app may have location data attached to it at your choice. 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.

9.5. Alerts

9.5.1. CerberCenter has a user customizable alerting mechanism allows users to define new alert sources and manage existing alerts. Alerts are based on CerberCenter web crawls and RSS feeds. Alerts are defined by category, weather for example, and you rank keywords based on severity and location. Keyword ranking allows you to choose the final destination of the alert. For example, you choose to receive weather alerts based on a 50-mile radius of your existing location. You may set any National Weather Service *watches* that occur within your 50-mile radius to be texted to your phone. If there is a severe weather *warning* within your 50-mile radius of your location, you select to have that warning sent to your CerberLink *and* texted to your phone. You may choose RSS feeds from the CerberCenter database or enter your own RSS feed. For instance, if you are hiking the Appalachian Trail and want to follow your favorite baseball team, you can add baseball scores of your favorite team to your list of alerts sources. When there is a new score, it will be sent to your CerberLink so you can follow your team's progress on the trail. When you create a new alert, test it first by having CerberCenter send it to you by e-mail only. If you have created a custom alert, you can choose to share it with other CerberCenter users as well. If there is an alert you would like added and need assistance finding the source, contact support@cerbercenter.com.

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: 5-7 days (device usage will impact ON life)
- 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
    - Frequency: 2400 – 2483.5 MHz
    - 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: QOQWT12

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.
- BlackBerry®, RIM®, Research In Motion®, SureType® and related trademarks, names and logos are the property of Research In Motion Limited and are registered and/or used in the U.S. and countries around the world. Used under license from Research In Motion Limited.
- 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.

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