



Affirm™ Anklet User Guide

Beta 57 Quick Setup

Version **0.94**

This Document provides a how-to for initial setup of the Affirm™ Beta 31 Anklet



Federal Communications Commission statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications made to the Affirm™ Anklet device not expressly approved by TraceX

could void the user's authority to operate the equipment.

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.

Innovation, Science and Economic Development statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following conditions:

- ☐ This device may not cause interference.
- ☐ This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient un ou des émetteurs/récepteurs exempts de licence conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada. Le fonctionnement est soumis aux conditions suivantes :

- ☐ Cet appareil ne doit pas provoquer d'interférences.



☐ Cet appareil doit accepter toutes les interférences, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.



1 Introduction

Affirm™ is a patented device worn on the ankle developed by TraceX.

Our one-piece Transdermal Alcohol Monitoring and GPS tracking system performs continuous, real-time monitoring of alcohol consumption, non-invasively and reports illegal or inappropriate alcohol levels. These observations are used by our service providers' customers for rehabilitative and offender programs.

TraceX is currently in the final beta test stage of the Affirm system

1.1 Overview

This manual will be revised after the pre-production testing units are distributed and evaluated (Affirm™ Beta 57). At this time, our design is completed and except for minor adjustments.

Initial production units will only be provided to our service provider teaming partners.

1.2 Components

The following components are referenced herein:

- a) Bluetooth dongle – this provides Bluetooth functionality to computers. The Bluetooth dongle is plugged into any open USB port on a computer.
- b) CD for installing the Bluetooth communication software.
- c) Charger – The provided power supply is unique to our design, low profile magnetic plug combined with a high output and quality charger. The magnetic plug attaches to the anklet. Power supply is rated 9V 2A.
- d) Anklet strap – the Beta anklets come with straps that need to be cut to length and can be removed by cutting the strap, or pulling the clip out forcefully.
- e) Magnet – used to initiate Bluetooth communication not included

When Enrolling an Anklet for Offender deployment

1. Before deploying the Affirm Anklet (v-B57):
 - a. Charge the Anklet via supplied charger for 1.5 hours
 - b. Install Anklet Utility on your computer (see Figure 1)
 - c. On the Utility press Filter button and check what ports are available
 - d. Enable Anklet connection to the computer via Bluetooth
 - e. Press Filter and check what new port opened up and select it
 - f. Click Connect
2. Once Anklet is connected to computer:
 - a. From COMMANDS Tab press Clear log in the middle of the screen
 - b. Press Clear Tampering count and Clear Drinking count.
 - c. From COMMANDS Tab press Start Calibration
3. Attach the Anklet to Offender



4. The Anklet will accumulate data for the first 30 minutes (every minute) in order to establish baseline statistics. Thereafter it will take readings every 30 minutes.
5. Do not drink during Enrollment (note Enrollment is not enabled for Beta Testing).

Note: The Enrollment procedure will be integrated into customer's GUI Monitoring systems in full production.

When attaching an Anklet without Enrollment process.

Formal Enrollment and Calibration are not necessary for most testing purposes. The Affirm Anklet comes already Enrolled but is only associated with a Device ID and not paired with a Client as would be needed in an operational scenario.

1. Before deploying the Affirm Anklet (v-B57):
Charge the Anklet via supplied charger for 1.5 hours
2. Attach the Anklet
 - a. Take a section of Strap and cut one end with a razor or similar cutting implement.
 - i. For the current Beta level Straps, it is useful to make a clean cut at the fiber optic.
 - b. Fit that end with a set of attachment Clips (notice there is a top and bottom component)
 - c. Slide the strap with Clip assembly into one of the Strap Attachments on the Anklet – there will be a discernable “click” when seated properly.
 - d. Hold the Anklet against the ankle about where it will be worn just above the ankle bone.
 - e. Wrap the free end of the Strap around the ankle and do a rough cut (scissors work well) about where it would meet the Main Body of the Anklet Housing (not the Strap Attachment).
 - f. Without attaching an end Clip, wrap the strap around the ankle and fit it into the Strap Attachment to see how well it fits. The fit should be snug, but not so tight as to leave marks in the skin. Continue to make rough cuts until satisfied with the fit.
 - g. Once satisfied, take the Strap free end and again use a razor to make a clean cut very near where the last rough cut was made. Fasten a Clip assembly on the end.
 - h. Complete the attachment process by placing the Anklet on the ankle and bringing the Clip end around and insert into the remaining Strap Attachment on the Anklet. Again, a “click” will tell you it is seated properly.
 - i. Although it seems like a long process, once practiced it can be done in about a minute.



1.3 How to view your Anklet's data

Once the Anklet is attached, the data can be read via the TraceX Server (<http://charts.17a6c9.com>), and sign in using the appropriate Username and Password as provided. For the Beta anklets, the data is transmitted to the TraceX Server and displayed sequentially as it is received with Message Log Number. Once you log in you'll be able to see a list of your anklets and if you click on the details button for one of them you'll be given a view that displays the log data and drinking events of the anklet.

TraceX is developing an App that can be deployed on any Smart device, and allows for monitoring of Clients with a much simpler GUI than is seen when viewing the data on the server.

A screenshot of the TraceX Analysis login page. At the top, there is a blue header bar with the text "TraceX Analysis" on the left and "ALLed | signout" on the right. Below the header is a white login form with a thin grey border. Inside the form, there are two input fields: the first is labeled "username" and the second is labeled "password". Below these fields is a blue button with the text "LOGIN" in white capital letters.

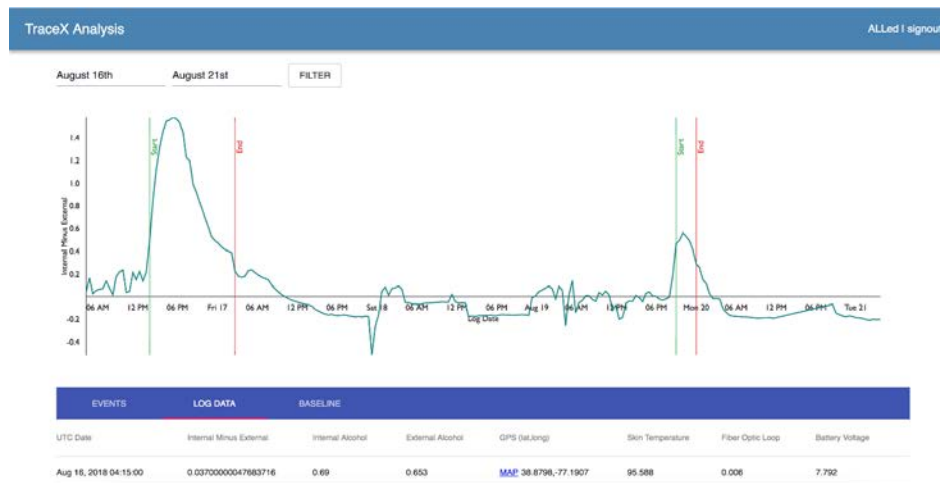
Login Page



List of your anklets after logging in

TraceX Analysis		
<input type="text" value="search for anklet..."/>		
Serial Number	Message Number	Details
TESTB32.00342	196	
UKB32.00335	93	
ANCLT_0000000001	272	
TESTB31.00342	191	
TESTB31.00341	274	
TESTB31.00340	469	
UKB31.00334	325	
TESTB31.00339	104	
UKB31.00333	10	
Rows per page: 9 1-9 of 120 < >		

Details page of an anklet





2 Anklet Communication Setup – Windows 10 is standard

2.1 Installing the Bluetooth Alcohol Device

2.1.1 Computer has Bluetooth already installed

If your computer already has Bluetooth, perform the following steps.

Left click on the Window Start Icon in the lower left corner of the tool bar and select Control Panel.

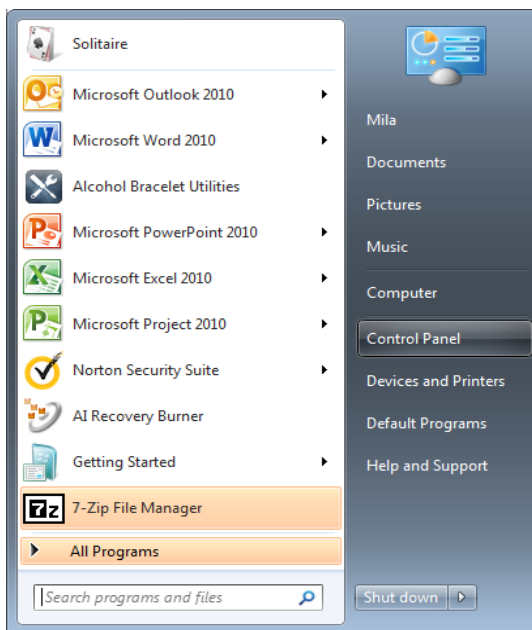


Figure 1: Windows Start Icon



This brings up the following window:

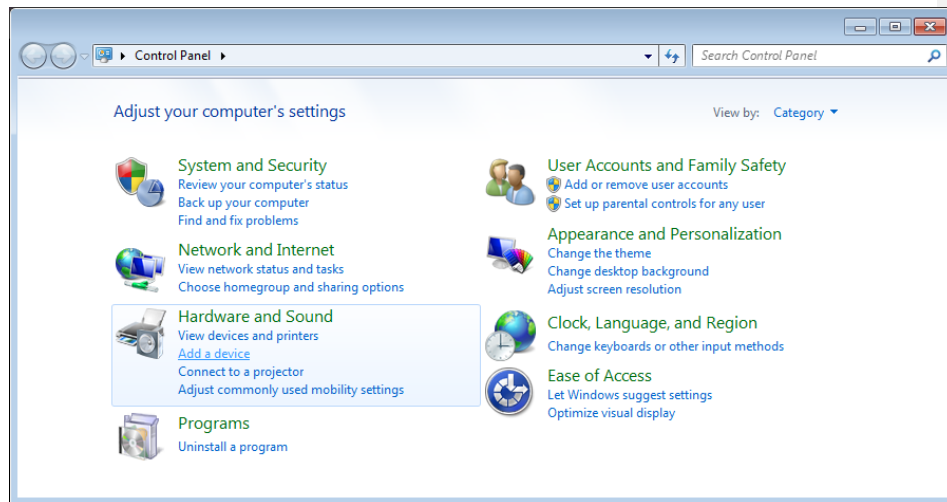


Figure 2: Windows Control Panel

Under Hardware and Sound, left click on **Add a device**

It may take several seconds but you should see the alcohol device image appear in the “Select a device to add to this computer” window frame.

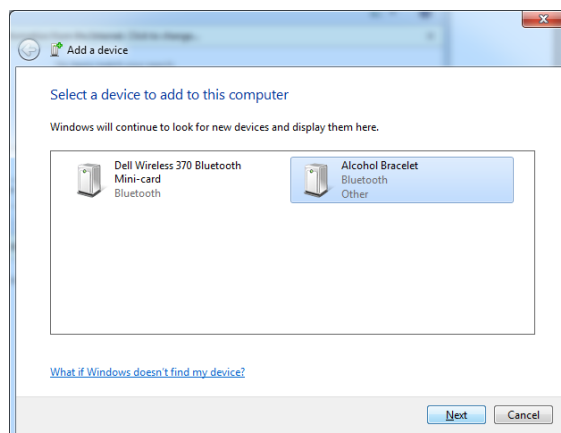


Figure 3: Add Device

Continue to Figure 12 in section 2.4



2.1.2 Installing the Bluetooth dongle and communication software

Plug the Bluetooth USB dongle into a computer. Make sure the dongle is installed correctly. Insert the accompanying CD. The CD should run automatically. If not, select the Bluetooth installation executable. If your antivirus software requires it, indicate that you have administrative privileges and execute the program. This will install the communication drivers for the dongle.

2.2 Connecting to the Alcohol Anklet Device


Once installed, you should see a Bluetooth Devices Icon , in the bottom right corner of the taskbar, where the date and time are displayed. However, if your system has multiple hidden icons, you may need to click on the “Show Hidden Icons” arrow (upwardly facing arrow) -



Figure 4: Windows Tool Bar right hand side

this brings up the following frame with the Bluetooth Devices Icon.



Figure 5: Show Hidden Icons

Right click on the Bluetooth Devices Icon and select **Show Bluetooth Devices**

Plug the power cord into the Anklet and the charging outlet. Plug the charging outlet into the wall. You will notice the LED indicator turn Green, the unit is charging and transmitting Bluetooth. A Blue solid LED light on the TOP side of the Anklet indicates that the device is ready to pair with the computer.



In the Show Bluetooth Devices box, in the top portion, press the button **Add a Device**

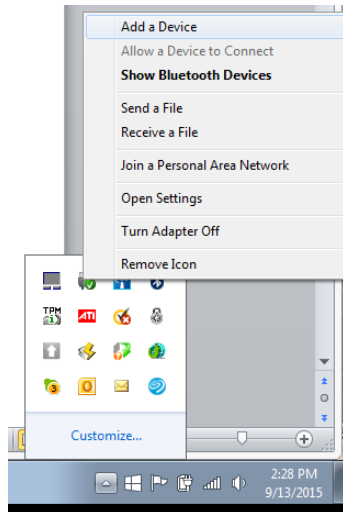


Figure 6: Add a Device selection within Show Hidden Icons

In a few seconds you should see Alcohol Anklet or HC-06 pop up.

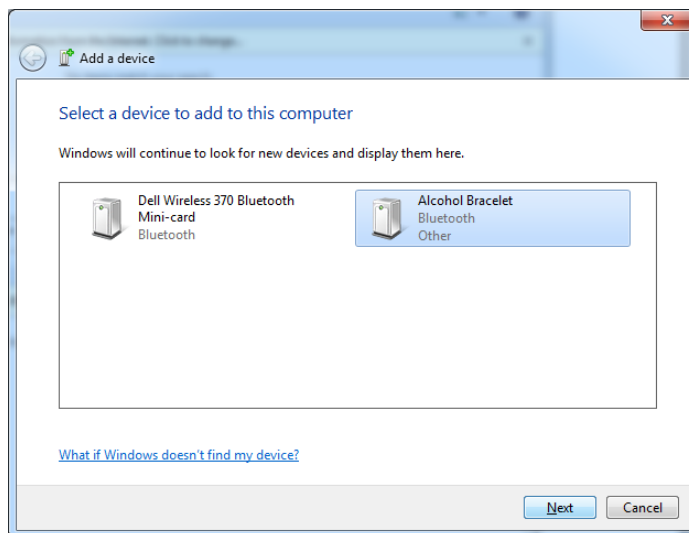


Figure 7: Control Panel Add a Device



Select it and press **Next**

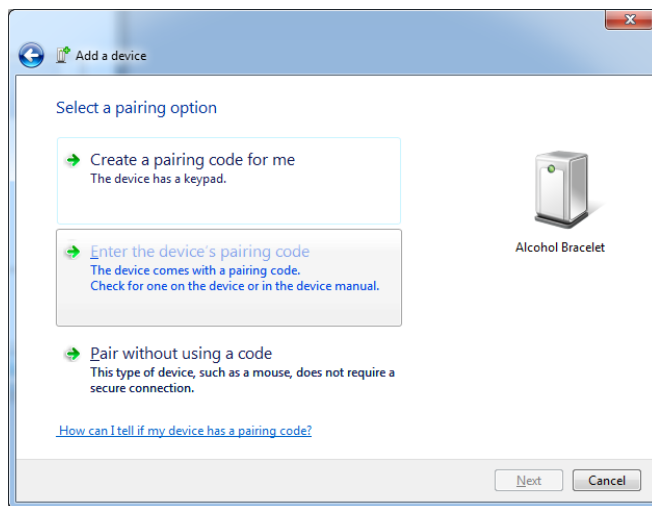


Figure 8: Enabling Bluetooth Pairing

Select Enter the **Device's Pairing Code**, the code is **1234**

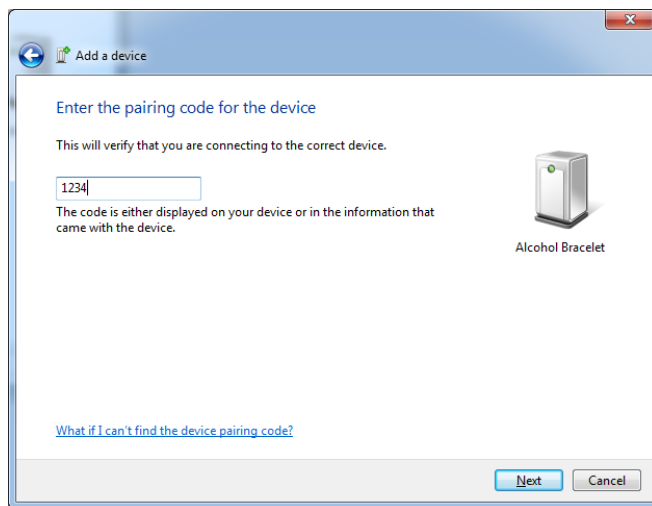


Figure 9: Entering Pairing number



The computer will now connect to the anklet through the Bluetooth dongle. Upon successful completion, a dialog box will pop up in the bottom right corner indicating device has been installed correctly.

2.3 Communication Port Identification

The computer automatically assigns a communication port number to the Bluetooth Device instance. Each Bluetooth Device instance is assigned a port number. If you delete an instance and recreate it, it may or may not have the same port number assigned. To utilize the Anklet's utility interface, you will need to know the number of the communication port to which you wish to connect.

Windows 10 Install

In the Bluetooth Devices, right click on the **Alcohol Anklet/HC-06** and select **Properties**.

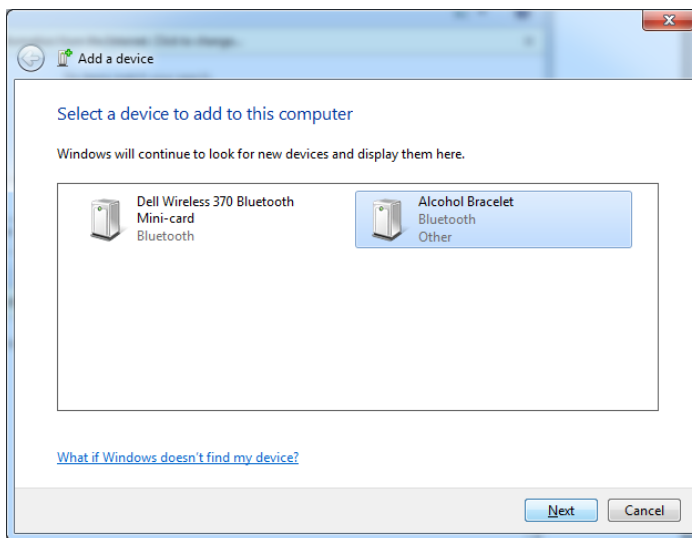


Figure 10: Right Click on Alcohol Anklet



Select the hardware tab.

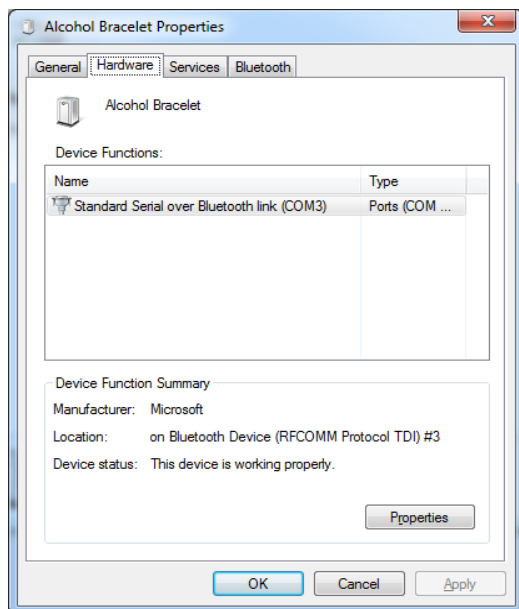


Figure 11: Hardware Tab under Alcohol Anklet Properties

Under device functions, you will see Standard Serial over Bluetooth (COM**) Where the ** is a number (usually odd). In the above figure, the communication port number is 3. Write down this number. We have an incoming port and an outgoing port; the output port is the one to select.

If it is higher than 15, a registry tweak is needed to clean COM ports, contact our Product Manager, Alex Antipov, through his cell 352-870-6603 or email him at aantipov@tracexinc.com

If communication is lost (no red light), you can either disconnect and reconnect the charger or use a magnet held over the area where the blue light was previously. When it is ready to connect, the light will again start flashing. As long as the Bluetooth instance has not been deleted, it will use the same communication port and you will not have to again pair the computer and the Anklet.



2.4 Utility Installation

Download the Anklet Utilities. **Direct Link:**

<https://drive.google.com/open?id=0B1Ybgmlew2CSODJncnc4TFZqRkU>

Depending on your security settings, direct download might not work. We will send you the files directly through email. In order to email the files, the file extension will not show exe else your email server may refuse to process the email. You will need to rename the file's extension to .exe before it can be executed.

You may need to disable your antivirus software prior to initiating execution of the utility. The executable will install two items:

- The utilities
- USB drivers.

Accept all defaults during installation of the utilities and drivers. Just keep pressing "Next."

At the end, there will be an option to launch Anklet Utilities

2.5 Utility Activation

In order to connect to the anklet, Bluetooth communication must be turned on. On the anklet this is indicated by Blue notification led or when device is charging. If not, either disconnect and reconnect the charger or use a magnet held over the area where the blue light was previously. Bluetooth is always on when the Charger is attached.

Launch the Anklet Utility. It will look like the following:

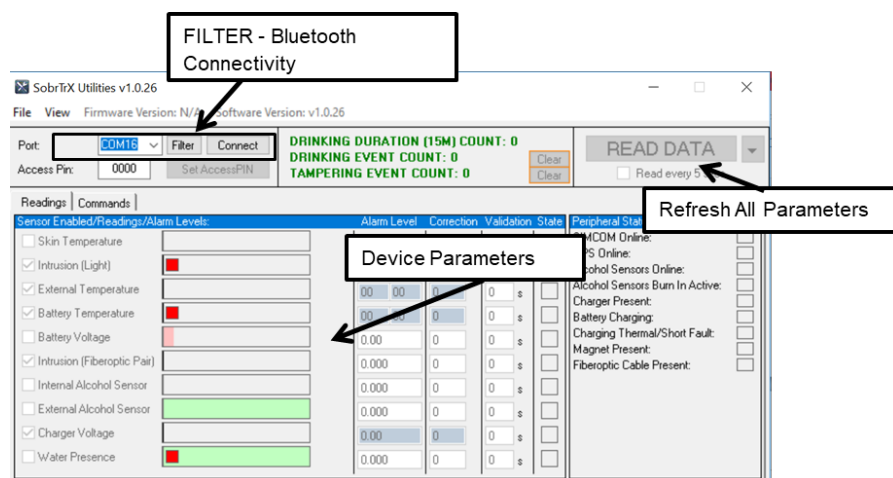
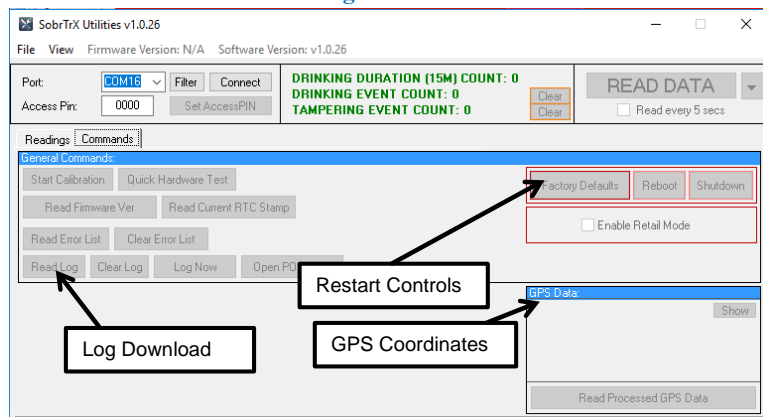




Figure 13: Commands Selected



LED Notifications:

Charging:

Battery Level: Red->Yellow->Green->Off (Full charge)

Discharging:

Battery Level: Green Blinking->Yellow Blinking-> Red Blinking->Red Blinking and Beeping

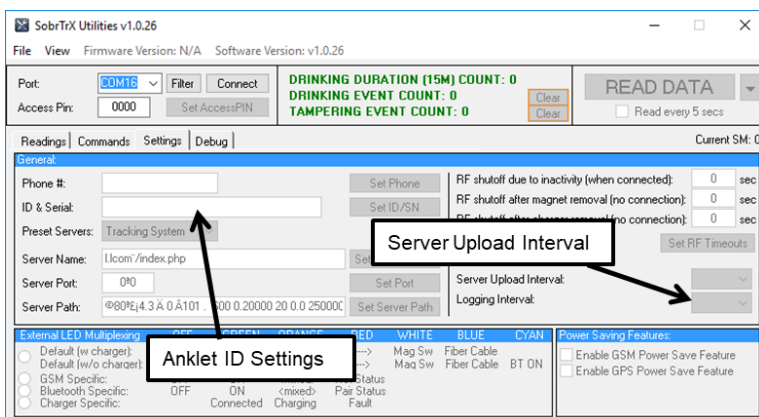
Solid Blue = Bluetooth On

Figure 14: LED Color Chart (from “Help”)

LED Color Chart	
Single shot pulses:	
On main power up	1x
On shutdown	10x
On defaults	3x
On strap plugin	2x
On charger plugin/out	1x
1 second repeating pulses:	
Battery fault (level)	1x
10 second repeating pulses:	
Battery level 74+	1x
Battery level 52+	1x
Battery level 25+	1x
Battery level < 25	2x
Solid states:	
Enrollment active	
Chargers present: charging 74+	
Chargers present: charging 52+	
Chargers present: charging 25+	
Bluetooth active	



Figure 15: Settings Selected



Launching the utility with anklet plugged in and Bluetooth active, will result in the utility searching for available communication ports. If the anklet isn't searching for a connection (i.e., no solid Blue light and Charger not present) when the utility is launched, you will need to activate the anklet's Bluetooth connection function as described in section 2.3 Communication Port Identification (see above).

Once LED indicator is blue or anklet is charging, in the upper left hand corner of the utility, press **Filter** button. This will search for available communication ports. This can take up to ten (10) seconds. Once the filter has been complete (as indicated in the Local Message log window on the top right hand side of the Utility screen), use the port dropdown list to select the communication port identified from the Alcohol Anklet Bluetooth Device's properties hardware tab (section 2.3). Sometimes the port doesn't always come up at first – repeat process as needed.

Once the appropriate COM port has been selected, press **Connect**. Things will get colorful and text will scroll in the two log windows on the right hand side of the Utility window. The Local Message Log window a line will say "Connected (COM xx)" where xx is the communication port number you are connected. The anklet is now under the control of the Utility.

Put the anklet on. The fitting of the anklet should follow these steps.

- Place either red or black clips (two sides mate) on one end of the strap with the small lever facing toward the skin.
- Insert that clip into one side of the anklet until it clicks.
- Perform a trial fitting by placing the anklet with the strap attached to one side, and wrapping the other end around the ankle and hold to a comfortable fit.
- Mark the place on the strap that lines up with the edge of the device.



- Cut the strap at the point marked and perform another trial fitting to make sure that the fit is correct.
- Make final adjustments, and then place another clip on the free end of the strap.
- Place the anklet on the ankle, and insert the new clip until it clicks.

Press **REBOOT**, in the top row center right of the Utility. The anklet will disconnect. Reconnect the anklet; select the appropriate COM port (will be the same communication port number as previously used) and press **Connect**. Alternatively, a magnet can be used to initiate the connection. The Magnet only resets the device.

Press **Start Calibration**, in bottom left frame of the Utility. This completes the setup process. It will take approximately 40 minutes for the alcohol sensors to perform their initial calibration. Press **Disconnect** in the top left to disconnect the utility from the anklet.

[illegible]

- Drinking
 - Hard Liquor (2 oz) (H)
 - Beer (16 oz) (B)
 - Wine (7 oz) (W)
- Wake Up (Up)
- Sleep (Slp)
- Shower (Shr)
- Battery Charge (BC)
- Battery Off Charge (BOC)
- Spoof (Spf)
- Cut Strap (Cut)
- Connect Strap (On



2.7 Log Retrieval

For Beta 57, single records of data are being transmitted every 30 minutes, a more rapid sampling is available (say every 15 minutes) after a potential drinking event is identified. These are programmable time sets and can be readily adjusted for individual customer requirements in Affirm Production units.

It may be useful to capture the individual Anklet logs for inspection or sending to TraceX for further analysis. Follow the process for reconnecting the utility to the anklet after performing a reboot as described in section 2.5 “Utility Activation”.

Press **Clear Messages**, right above Read All button in the lower right hand corner of the Utility Window.

Press **Read Log**, in bottom left frame of the Utility. You will see data fill both message windows.

With your mouse, click anywhere in the top message window (i.e., Local Messages). Press CTRL + A to select all data. Alternatively, you can also highlight it with your mouse. Then press CTRL + C to copy all data. Right click is not available.

Paste the log data into a Word file for later use.

3 Connecting to TraceX Server to view near-real time data

For the Beta anklets, the data is transmitted to the TraceX Server is displayed sequentially as it is received with Message Number. To view the data, connect to <http://charts.l7a6c9.com> and sign in using the appropriate Username and Password as provided.

4. TraceX Features

- Samples perspiration and external environment ~~at programmable intervals~~
- Single-unit device for added simplicity (no additional cell phones or home modems)
- No land-line required
- No external power required
- Uses cellular communications
- Data logger – Records data while no cell coverage
- Samples perspiration every 30 minutes; ~~up to one minute sampling after monitoring event~~
- Can call monitoring center or prescribed contact list
- Date and time stamps for reporting and analysis
- Active GPS tracking
- Optional exclusion/inclusion boundaries w/warning

Commented [GD1]:



- Instant communication with monitoring center to enable active intervention
- ~~One Press Emergency Panic button (optional)~~
- ~~26 32-~~ hour battery life: Easy set-up
- ~~Motion detection (optional)~~
- Water resistant
- Tamper-resistant with multiple sensors

Comfortable & Lightweight – reduces chafing

Huge functionality in a very small space. Here it is with a quarter for comparison.

5. Technical Data

Dimensions 3.5" x 1.5" x 1.0" / 87 x 40 x 25 mm

Weight 3.4 oz / 95 grams

Operating temperature 0°F to 130°F

Battery 8.4 VDC/2400mAh Li-ion

Standby time (typical) Up to 190 hours

Tracking time (typical) 36 Hours

GPS chipset Integrated

GPS antenna active built in

GSM quad-band chipset integrated

