SecurLOCK Equip

My Location Training Guide

Contents

Introduction

Card control functions can allow or deny transactions based on the location proximity of the subscriber device to the merchant where the POS (Point of Sale) is occurring. The subscriber can also set up alerts based on the same data.

Some transactions are denied from the subscriber's device at the merchant. This guide explains how My Location works, some of the common scenarios that can cause denials, and how to troubleshoot My Location issues.

The information in this guide, unless otherwise noted, applies to My Location Alerts.

This document is relevant up to card controls version 3.8.

Prerequisites

This guide assumes you:

- Can access the SecurLOCK™ Equip mConsole system.
- Understand mobile devices and device navigation.

My Location Basics

This card control requires access to the mobile device's Location Services. Devices vary on how and where to set Location Services. It is the subscriber's responsibility to navigate the proper Operating System menus to access and enable Location Services.

Generally, the setting resides in the subscriber device settings menu. Typically,

- For Apple devices, navigate to the Settings > Privacy section to find Location Services. The settings are also available from other areas of the Settings menu.
- For Android devices, navigate to Settings > Location Services.

The application relies on the device GPS for updates. Therefore, variations in cellular data signals or WIFI signal strength can affect the accuracy and usability of the location services.

My Location applies only to in-store purchases and does not apply to any transaction where a physical card transaction is not performed. These in-store transactions include payments that allow the user to hold a device to the POS machine (NFC payments via wallet) such as Apple Pay or Android Pay.

How does it work?

When a POS transaction occurs at a merchant, that merchant provides information in the transaction message.

Label	Value
Merchant Type	Restaurant
Merchant Name	PORT HOTEL RESTAURANT
Merchant City	PORT WASHINGT
Merchant State	Wisconsin
Merchant Postal Code	53074
Merchant Country	United States
MCC Code	5812
Merchant ID	432300:000434526364881
Terminal ID	00202695
Acquirer Country	United States

Table 1 - Merchant Data

My Location Status

You can see the POS transaction information from mConsole by selecting the transaction in question, and selecting the Merchant Details Tab. An example follows:

Figure 1 - mConsole Merchant Data

1. The system uses the data to calculate the physical location of the merchant as follows:

   – Merchant City

      – Merchant State

   – Merchant Postal Code

   – Merchant Country

2. The Equip database maintains the data from the United States Geological Survey (USGS) of geolocations for city, state, and zip code. Within this data is the mapping coordinates and radius for that location.

Figure 1 shows the merchant provided all the data fields. The system uses the data in the following order:

   1. Merchant Postal Code
   2. Merchant City
   3. Merchant State
   4. Merchant Country

3. The system looks up the Merchant Postal Code that returns the following data:

Label	Value
Postal Code	53074
Longitude	-87.88001
Latitude	43.40181
Param1	8046

Table 2 - Merchant Location

4. The system uses the coordinates to plot the location, and Param1 is the radius of the circle in meters **for the specific zip code of 53074. Other Param1 could be larger or smaller.** Note that the default radius for Param1 (Merchant radius) is 8046-meters. If the USGS radius is smaller the database will use the default.

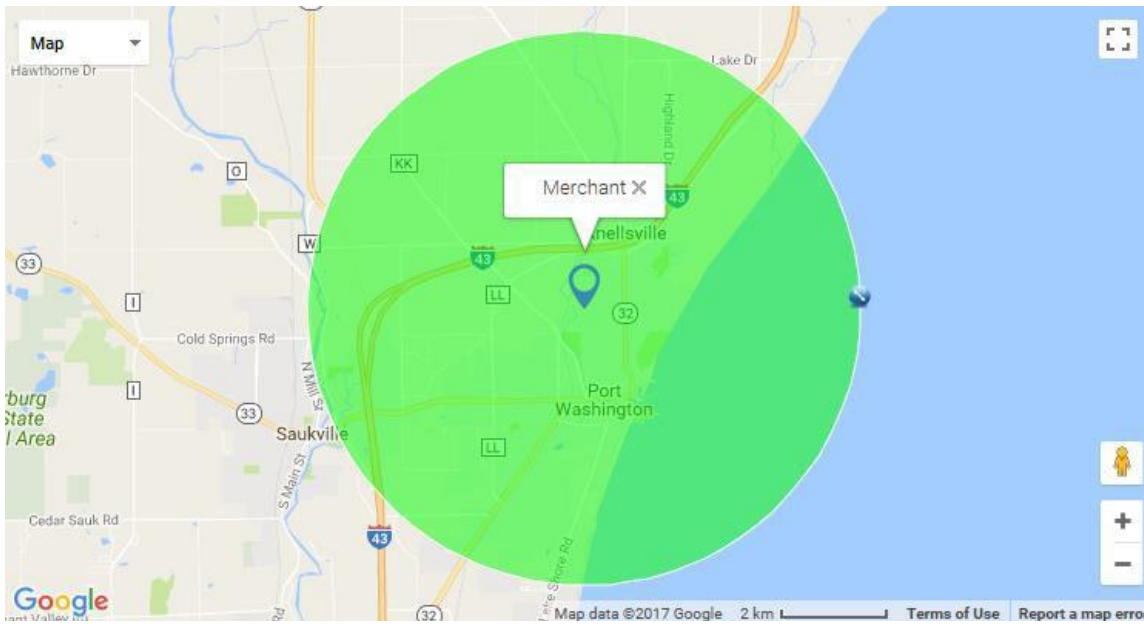   If this data is plotted on a map it returns the following results.

Figure 2 - Merchant Mapped

5. The map shows the center of the postal code with an 8046-meter radius in determining the My Location status.

Device Location

After My Location status is determined, the system locates the device:

1. The subscriber device must be set as the primary device.
2. Find the current location of the device in the transaction record in the Subscriber Details tab in the mConsole.

    The fields in that tab that contain the following information:

Label	Value
Subscriber Latitude	43.388545
Subscriber Longitude	-87.870674
Subscriber Location Accuracy	13000.0

Table 3 - Subscriber Coordinates

3. The Subscriber Location Accuracy field contains the radius in meters of the accuracy of the device. The database defaults to a 13000.00-meter radius.

4. The system uses the coordinates shown in Table 3, and the map shows the customer within the circle radius of the merchant. Therefore, the My Location control is approved.
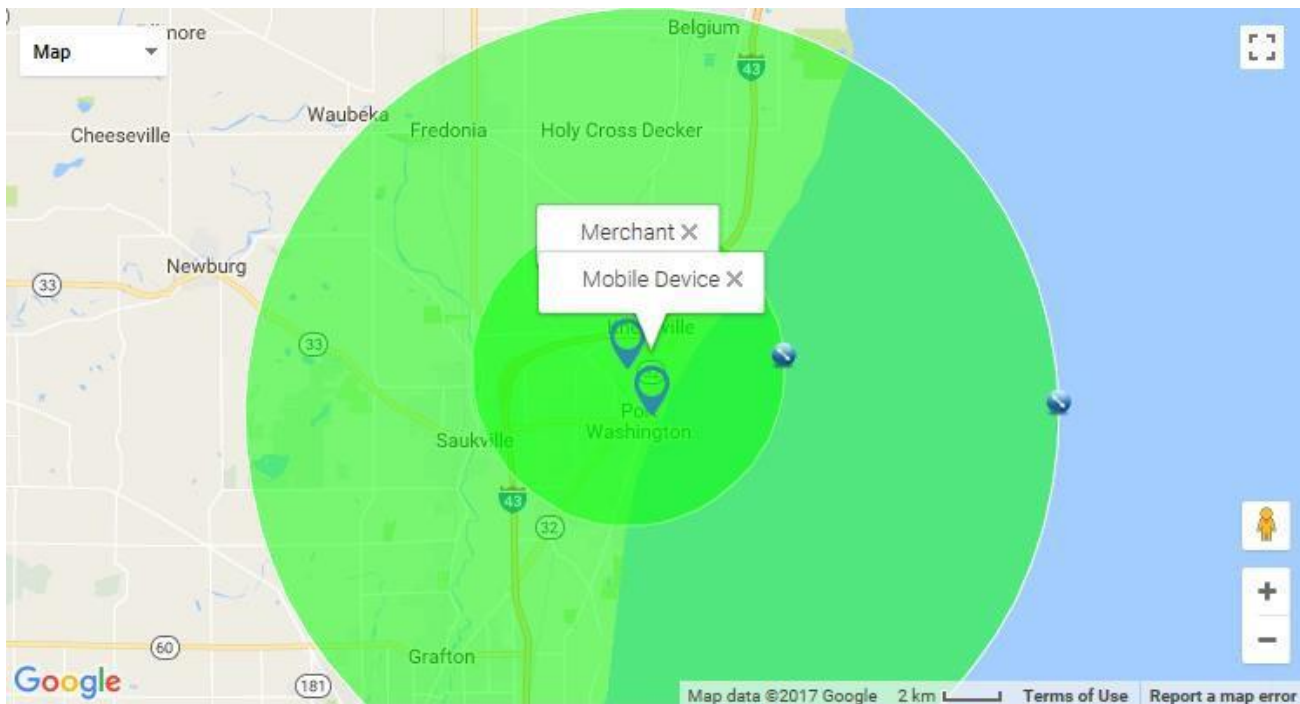

Figure 3 - In Range My Location

The subscriber device location does not update.

Let's assume the subscriber leaves home, but does not realize the device is powered off.

1. Therefore, the last coordinates captured in the system is the subscriber's home location.

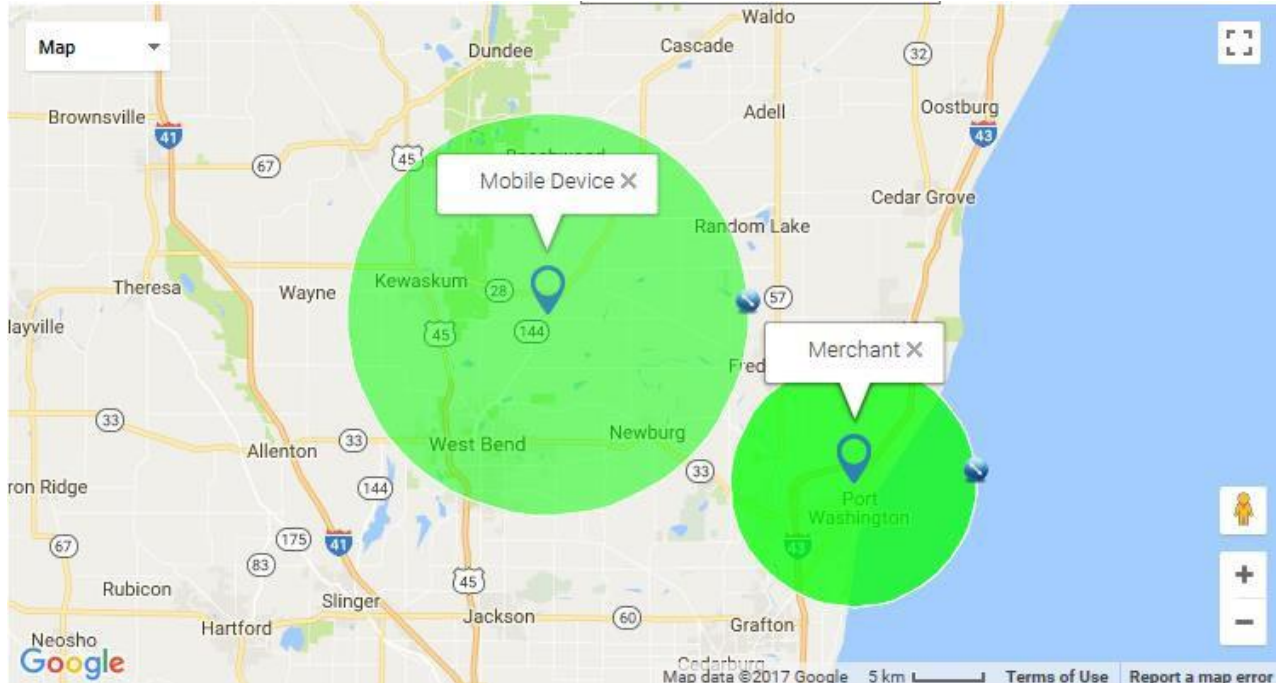| Label	Value
Subscriber Latitude	43.497280
Subscriber Longitude	-88.086408
Subscriber Location Accuracy	13000.0

Figure 4 - Out of Range My Location

2. The example map shows the circles do not intersect. The device is out of the merchant's range. Therefore, the My Location control is not approved and the transaction will be denied for the My Location controls (if enabled)

Common Scenarios for Invoking or Not Invoking My Location

Multiple scenarios can cause the My Location feature to *invoke* or *not invoke.* The most common scenarios follow:

Merchant details do not provide postal code

1. The system looks for data in the following order:

   1. Merchant Postal Code
   2. Merchant City
   3. Merchant State
   4. Merchant Country

2. If postal code is not provided, the system searches for city and state.

Label	Value
City	PORT WASHINGTON
Country ID	840
US State ID	55
Postal Code	
Longitude	-87.86667
Latitude	43.38333
Param1	2189

Table 5 - No Postal Code

3. When the database maps out these coordinates (changing Param1 to the default radius of 8046) the Merchant locations looks like the below. Note that the center moved closer to the water.
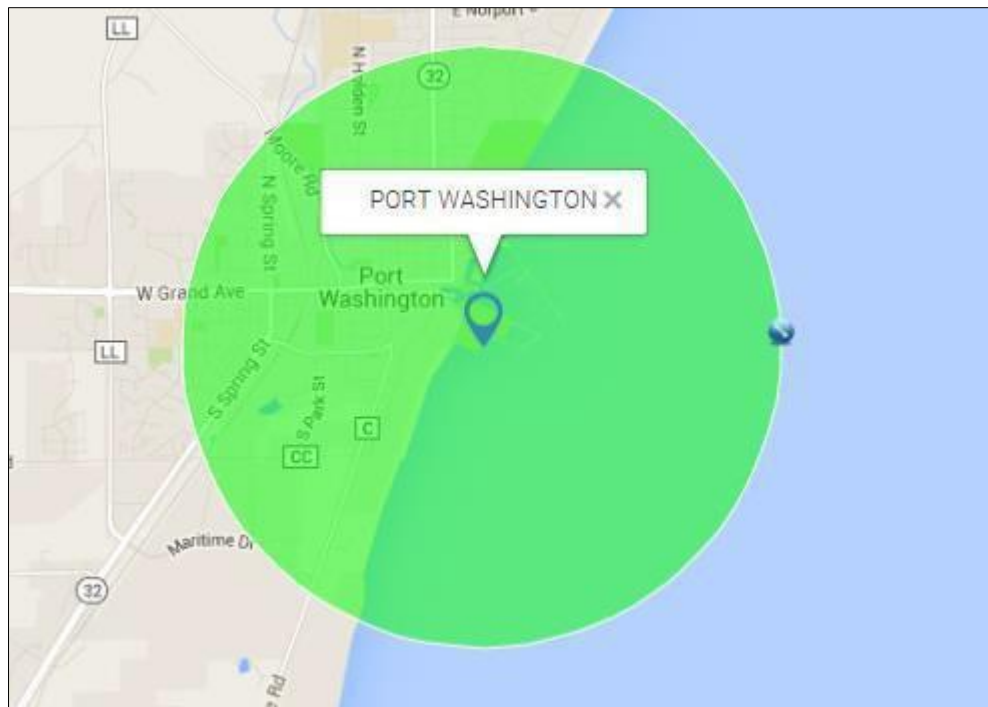

Figure 5 - Merchant No Postal Code

Merchant details provide only the State field

The system gets the coordinates of the state based on the data in the system obtained from the USGS data.

NOTE: In the following table, the Param1 value is 316,227.766 meters. This circle is supposed to encompass the entire state.

Label	Value
City	
Country ID	840
US State ID	55
Postal Code	
Longitude	-89.6385
Latitude	44.2563
Param1	316227.766

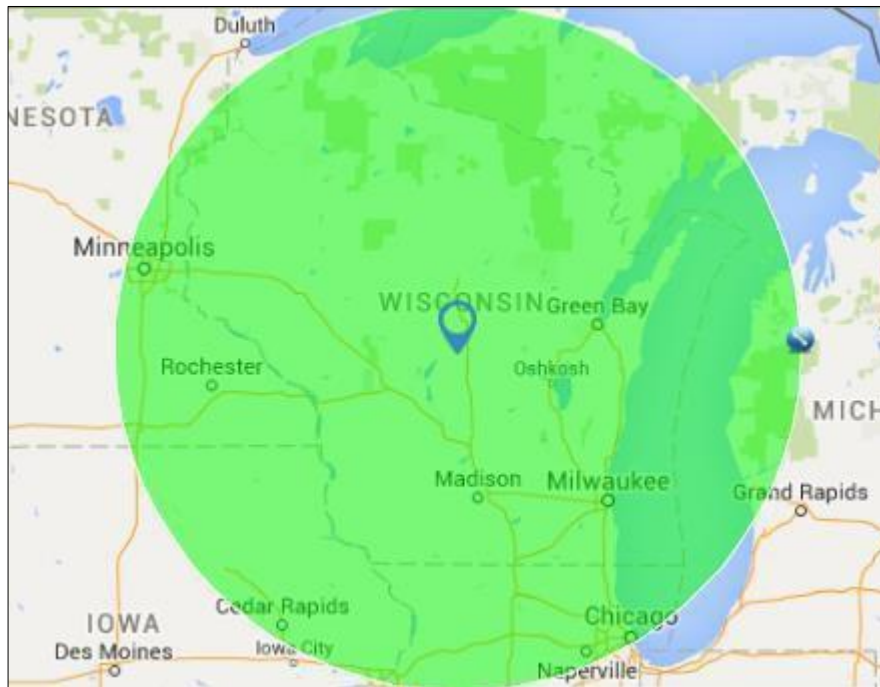*Table 6 - Merchant Location State ID Only*

Figure 6 - Location State Only Mapped

Subscriber does not power on the device for more than 2 hours

1. The system keeps track of the user's device based on the Geodata returned from the device GPS.

2. As the subscriber travels and crosses zip codes or switches cell towers, the application uses an algorithm to refresh the current location.
3. If the device is not powered up, updates are impossible on the system, and the last known location for up to 8 hours is used.

For example, a subscriber makes an in-store purchase, and the device has been turned off. If the last updated location is less than 8 hours old ("Stale Time"), My Location is invoked to determine if the transaction should be approved or denied for My Location.

If the subscriber's last location is outside the radius of the merchant locations, the transactions is denied.

If the last location update is greater than 8 hours old, it is considered a stale location and the My Location is not invoked which means a transaction may not be denied based on My Location.

The merchant data received by the system does not contain zip code, city, or state data

1. If the system does not invoke the My Location control.
2. The mConsole Transaction Details in the Alerts and Controls tab show the My Location as Not_Invoked as follows:

Alerts and Controls			
Controls Applied to Transaction	Status		
	On/Off		
	My Location		
	Transaction Type		
	Merchant Type		
	My Regions		
	Thresholds		
	International		
	ofw card state		
	Monthly Threshold		
	Weekly Threshold		
	Warning Alert		
Control Recommendation	Approved		
Recommendation Reason	Status	Not_Invoked	
	On/Off	Approved	
	My Location	Not_Invoked	
	Transaction Type	Approved	
	Merchant Type	Approved	
	My Regions	Not_Invoked	
	Thresholds	Approved	
	International	Not_Invoked	
	ofw card state	Approved	
	Monthly Threshold	Approved	
	Weekly Threshold	Approved	
	Warning Alert	Not_Invoked	
Transaction Alert Generated	Transaction Type, Merchant T...		
Valid	✓		

Figure 7 - Alert and Control Not Invoked

3. Anytime the system is unsure of My Location (i.e. Stale Time of 8-hours or more) , it is not used in the Approval or Denial process.

How to manually plot locations on a map.

There are several tools available to plot locations on a map manually. Plotting manually can be useful when a user asks why a transaction was declined/approved based on My Locations. Below are the tools that were used to provide the examples in this manual.

- o   To plot the location of the mobile device and merchant:
    - ▪   https://www.freemaptools.com/radius-around-point.htm
    - ▪   **Please note:** this is a free, web-based 3rd party service that FIS simply utilizes for troubleshooting. FIS is not responsible for anything on or associated with this website.
- o   Please see "USGS data for plotting a radius" with help in mapping a merchant location. These are the data that are in the Equip database.

To plot the mobile device, enter the Radius Distance in meters and the Latitude and Longitude on the site "Radius Around a Point."

Next open Map Options and enter in a label for that radius i.e. "Mobile Device."

Click Draw Radius (you will likely need to zoom in on the map).

Click on the pin in the center of the radius to add the label.

Example:

Label	Value
Subscriber Latitude	43.497280
Subscriber Longitude	-88.086408
Subscriber Location Accuracy	13000.0

Radius Around Point Map

Search For Location : [Search...]

Options

Radius Distance [13] km OR [8.08] miles OR [42650.92] feet OR [13000.00] meters

Input Point - do one of...

(1) Click on the map

(2) Place radius by location name : [   ]   [Draw Radius]

(3) Input Coordinates : Latitude [43.497280] and Longitude [-88.086408] (decimal)   [Draw Radius]

(4) Draw at your location   [Current Location]

▸ ⬇ **Colours and Line Thickness**

▾ ⬇ **Map Options**

[Zoom to Fit Map]   [Clear Last]   [Clear Map]

[Map Height : **Small - Medium - Large - Full Screen**]

☑ Show center marker?   ☑ Show resize grip?

Add label marker: Type text below then click on the marker for which the label should be attached:

[Mobile Device]

Next plot the location of the Merchant by using the USGS data for plotting a radius.

Using the same radius map replace the coordinates for the mobile device with the data for the merchant.

Change the label and click Draw Radius. Another circle appears on the map. Click on the pin in the center to add the label

 NOTE: Right click the center pin to remove the circle.

Example:

Label	Value
Postal Code	53074
Latitude	43.40181
Longitude	-87.88001
Param1	8046