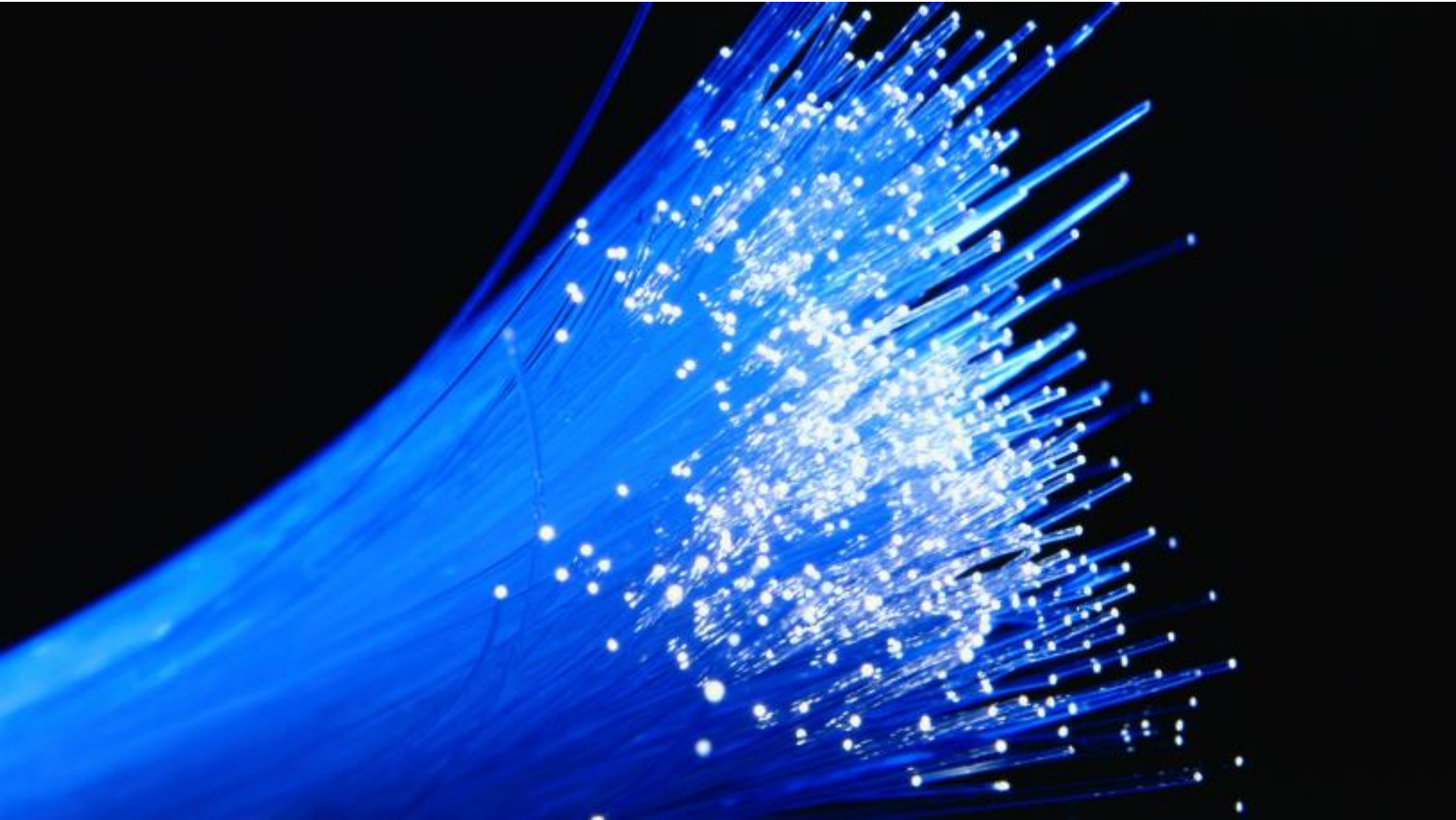


# **ctc technology & energy**

engineering & business consulting



## **Review of Verizon Coverage**

**Prepared for the City of Petaluma, California**

**December 2020**

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## 1 Executive Summary

Columbia Telecommunications Corporation (CTC) is an independent telecommunications consulting firm that has been retained by the City. CTC performed a technical review and analysis of Verizon’s communications and engineering materials, and performed tests to determine the overall functionality of the existing Verizon commercial wireless transmission facilities.

This report describes the information that we received from the City and documents our analysis and conclusions related to the data collected during the site visit in mid-November 2020. Our analysis is confined to the technical aspects of the existing Verizon service and includes:

1. An evaluation of the coverage and network maps submitted by the applicant to determine whether such existing and potential coverage projections can be confirmed
2. Network measurement data collected during multiple drive tests throughout the City of Petaluma, particularly in the southwestern quadrant of the City and in the vicinity of the proposed new macro site on top of the Petaluma Creamery building at 611 Western Avenue.

Accordingly, our conclusions are based on an evaluation of the technical characteristics of the existing Verizon network, the data collected, and best engineering design practices common to the wireless carriers and the hardware they deploy, based on Verizon’s existing FCC wireless licensed spectrum.

### 1.1 Overview of Analysis

This report documents CTC’s findings relative to Verizon’s existing 4G LTE network. In November 2020, CTC’s engineers performed the following tasks:

- Reviewed all pertinent materials submitted by Verizon, including:
  - Coverage maps (showing the target area and vicinity)
  - RF exposure level analysis in the vicinity of the proposed site
  - Photo simulations of the proposed new macro site at the Creamery
- Conducted a site visit to visually inspect the existing macro site, the proposed site at the Creamery and vicinity, and to verify the documentation provided in the applications is consistent with our observations.
- Conducted on-site drive tests to measure Verizon’s wireless signal strength to verify practical, real-world Verizon subscriber coverage (network connectivity) and capacity

(quantity of data throughput as a function of time) throughout the target area surrounding the proposed Creamery site.

- Conducted on-site speed tests to determine wireless signal capacity which simulates real-world Verizon subscriber experience with critical broadband applications. These tests measure signal capabilities in both an upload and download manner, addressing not only streaming audio and video consumption but two-way applications like video conferencing, large file transfers, Virtual Private Networking (VPN) for remote office connections, and gaming.

## 1.2 Findings

- The current Verizon network provides reliable in-vehicle coverage for traditional voice, text messaging and email services throughout the entire area of the testing we conducted.
- While no in-building testing was conducted, typically signal levels of at least an additional 10 dB of signal power level over the in-vehicle signal power level is required to provide the same level of service, performance and reliability in typical residential<sup>1</sup> buildings.
- Download/upload throughput data transmission rate measurements confirm that the download links operate at or near full utilization. During peak periods, the limitation in network capacity reduces download speed and functionality. The capacity limitations are typically most pronounced with high demand services such as video streaming, virtual learning and video meetings.
- Addition of the proposed Creamery site would essentially double the network capacity and increase signal levels to enhance in-building coverage within Petaluma.

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<sup>1</sup>Higher signal strengths for in-building coverage are required to compensate for losses in signal due to attenuation of wireless signal strength traveling throughout the building including walls, room partitions and foliage. For example, assuming reliable in-vehicle coverage is consistent with average minimum received signal power in the range of -95 to -90 dBm, then the corresponding target signal power design for in-building operation would correspond to power level of -85 to -80 dBm.

## 2 Brief Background on Cellular Antenna Issues

The following brief discussion presents a framework for understanding our analysis of Verizon’s application and our findings.

### 2.1 Wireless Coverage and Target Signal Levels

Wireless coverage for modern 4G technology broadband services is determined by a carrier’s RF signal amplitude and signal quality within a desired service area. Signals need to be at a minimum amplitude to override noise and, in many cases, interference from other wireless facilities. Signal levels also need to be maintained at a power level such that user devices are not constantly connecting and reconnecting (either because of a loss of signal or because an existing connection is overpowered by another wireless access point).

Handing off a user from one access site to another is part of the mechanics of dealing with users who are in motion—particularly in an urbanized area with multiple signal paths and tower sites. Further, modern 4G technologies as employed by Verizon and other carriers operate with sophisticated encoding technology that permits higher transmission speeds in areas where signal levels are higher than those required for minimum data rate transfers.

While the FCC has no technical standards for the services provided by commercial wireless carriers, the industry and equipment manufacturers have generally established target signal levels for various service environments. Typically referenced service environments include outdoor coverage, in-vehicle coverage, and in-building coverage.

For 4G technology, target levels are specified in terms of the ratio of decibels (dB) to milliwatts (mW) of signal power, with a reference level of 0 dBm being equal to 1 milliwatt of signal power. Modern cellular equipment is extremely sensitive and can operate at signal levels as low as -120 dBm RSRP.<sup>2</sup>

### 2.2 FCC Guidelines for Human Exposure to Radio Frequency Fields

The FCC’s guidelines for evaluating human exposure to RF signals were first established in 1985. The current guidelines were adopted in August 1997 in FCC OET Bulletin 65.<sup>3</sup> The guidelines are expressed in terms of Maximum Permissible Exposure (MPE) to electric and magnetic field strength and power density. The guidelines cover the frequency range of 300 kHz to 100 GHz. The guidelines cover two separate tiers of exposure:

1. **Occupational/controlled** exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have

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<sup>2</sup> Reference Signals Received Power, measured in dBm, indicates the power of an LTE cellular signal.

<sup>3</sup> “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields,” OET Bulletin 65, edition 97-01. <https://www.fcc.gov/general/oet-bulletins-line#65>

been made fully aware of the potential for exposure and can exercise control over their exposure.

2. **General population/uncontrolled** exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure.

Figure 1 is a plot of MPE as a function of RF.

Figure 1: FCC Limits for Maximum Permissible Exposure<sup>4</sup> (mW/cm<sup>2</sup>)

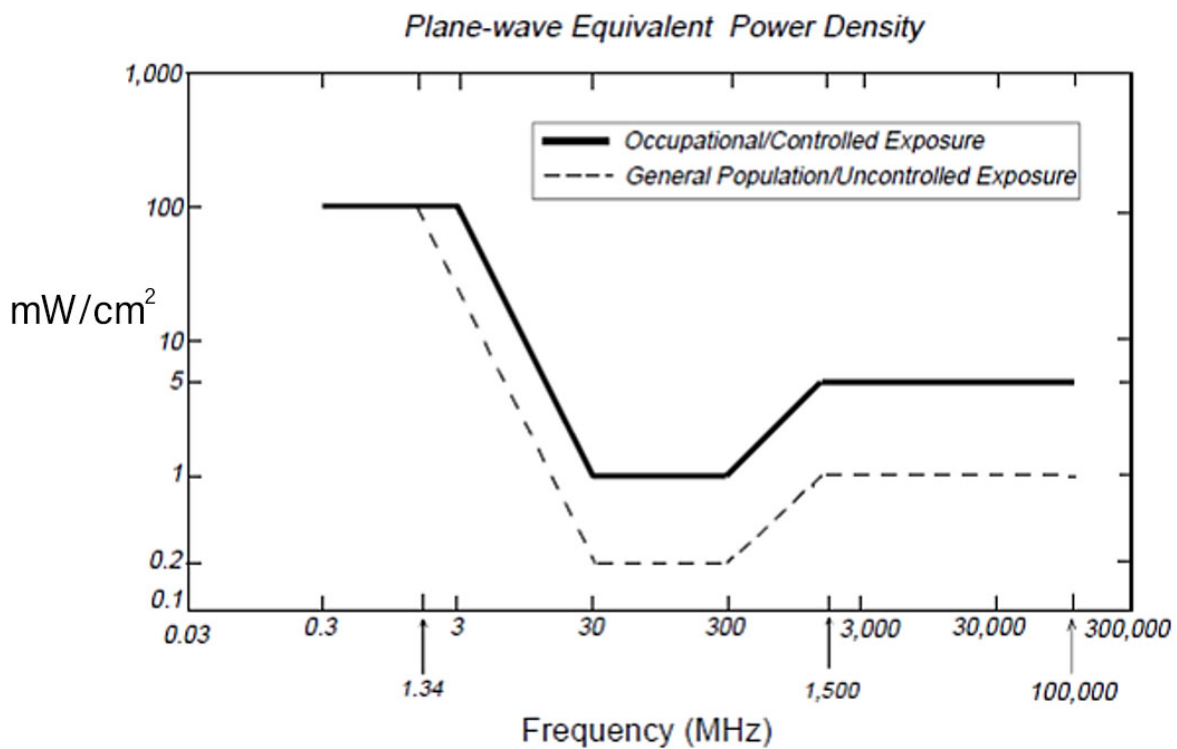


Figure 2 illustrates the areas where the greatest RF exposure is present—specifically, at or near the base of the antenna mounting structure and horizontally at an elevated location near the antenna.

<sup>4</sup> OET Bulletin 65 (pages 66-68)

Figure 2: Most Critical Areas for Consideration of RF Exposure



We have independently reviewed the proposed Verizon design and computed the RF emission exposure for all antennas using the proposed wireless bands and radio equipment. Based on our analysis, performed consistent with FCC guidelines, we find the site to be fully compliant with the current federal RF standards for uncontrolled public exposure in areas accessible to the public. It is assumed that suitable warning signage and access controlled consistent with FCC guidelines will be installed on the Creamery property as required.

### 3 Overview of Current and Planned Verizon Service in the City

Verizon Wireless currently provides commercial wireless service throughout the City with antennas mounted on buildings and towers. These traditional wireless facilities, which are designed to serve users in a 1- to 2-mile radius, are often referred to as “macro” sites.

Verizon Wireless delivers service in three wireless bands (Table 1). However, while Verizon and other commercial wireless carriers’ existing sites cover the City, many areas of the City receive service only in the lower-capacity 700 and 800 MHz bands. The substantially greater network bandwidth/capacity resources are found in the higher-frequency PCS and AWS bands.

**Table 1: Verizon Petaluma Wireless Spectrum**

Band	Licensed FCC Spectrum Service	Frequency	Bandwidth (MHz)
700	UHF low band	700 MHz	10
Cellular	Legacy voice cellular spectrum	800 MHz	12.5
PCS	Personal Communications Service (mid-band)	1900 MHz	40
AWS	Advanced Wireless Service (mid-band)	2100 MHz	30

#### 3.1 On-Site Field Tests

Over two days we measured the Verizon signals using an LG Android phone (to simulate an experience of a typical wireless customer) at 1,082 locations driving throughout principal roads in the southwest quadrant of the City of Petaluma. Additionally, we conducted multiple upload/download data throughput speed tests at 5 locations to obtain an overview picture of the data throughput speeds which can be anticipated by Verizon 4G users with the existing network.

Our signal intensity measurements confirm that Verizon’s existing network delivers a signal power level that is mostly adequate to support a high level of connectivity and service (i.e., the network provides adequate in-vehicle coverage).

This finding matches our experience in other communities in California where Verizon LTE sites that are not subjected to the demands of a large concurrent user base (i.e., user demand does not overload the network’s transmission capacity) consistently deliver reliable download speeds in the range of 30 Mbps to 40 Mbps and upload speeds ranging from 10 Mbps to 25 Mbps (i.e., performance typically achievable with the current generation of 4G LTE transmission equipment).<sup>5</sup> This is consistent with the FCC’s position established back in 2015 that set the

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<sup>5</sup> Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, Statement of Chairman Tom Wheeler Federal Communications Commission Washington, D.C. 20554, Released: February 4, 2015



benchmark for what is considered broadband speed at 25 Mbps for download and 3 Mbps for upload.

That said, the data transmission rates we measured for calibration, near Bob’s Beach facing the existing macro site downtown atop the Dairyman’s Feed and Supply performed in that range at the various times of our sampling over the two days. For example, our measurements there were at a best range of download speeds of 35-41 Mbps with upload speeds of 15-19 Mbps providing good throughput speeds and good latency times. Alternately, at other times when capacity is limited, the best download speeds were more like 17-25 Mbps and the upload speeds were more like 11-14 Mbps. This shows the real-world best-case scenarios for broadband throughput at these specific times, the experience for subscribers who are farther from the antennas would typically see lower throughputs.

**Table 2: Data Transmission Test Measurements near Bob’s Beach (*facing Existing Macro Site*)**  
3 Different Instances

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/18/2020 15:07	Lte	38.23786	-122.64091	29.27	16.31	27
11/18/2020 15:07	Lte	38.23786	-122.64091	29.42	15.98	28
11/18/2020 15:06	Lte	38.23786	-122.64091	31.54	17.07	28
11/18/2020 15:05	Lte	38.23786	-122.64091	35.35	15.23	26

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/17/2020 15:56	Lte	38.2378	-122.6409	31.79	17.39	27
11/17/2020 15:56	Lte	38.2378	-122.6409	25.4	14.38	26
11/17/2020 15:55	Lte	38.2378	-122.6409	21.35	15.6	26
11/17/2020 15:55	Lte	38.2378	-122.6409	37.33	15.68	28
11/17/2020 15:54	Lte	38.2378	-122.6409	41.56	14.83	25

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/17/2020 13:14	Lte	38.23788	-122.64119	26.69	11.84	26
11/17/2020 13:13	Lte	38.23788	-122.64119	29.88	16.34	27
11/17/2020 13:11	Lte	38.23788	-122.64119	21.42	19.49	22
11/17/2020 11:56	Lte	38.23642	-122.64282	17.47	12.24	24

At locations further from the existing macro site, the data throughput speeds were significantly lower in all but one spot, which was the closest to the existing site at 501 Petaluma Blvd. Those speed tests (see Table 3) showed download speeds around 30 Mbps and uploads around 21 Mbps with good latency.

**Table 3: 501 Petaluma Blvd**

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/17/2020 14:38	Lte	38.23992	-122.64365	29.48	20.72	24
11/17/2020 14:38	Lte	38.23992	-122.64365	30.52	21.51	26
11/17/2020 14:37	Lte	38.23992	-122.64365	31.65	21.66	21

In areas with higher traffic and density, there was a significant drop off in performance. At the location for the proposed Verizon macro site at the Creamery-- where download speeds were around 8 Mbps and upload speeds were around 15 Mbps (see Table 4) and at City Hall – where the download speeds never reached 5 Mbps and upload speeds were around 12 Mbps<sup>6</sup>, the Verizon network was still functional but clearly lacked capacity to properly serve their customers with speeds defined by the FCC as broadband (25 Mbps down/3 Mbps up).

**Table 4: Petaluma Creamery**

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/17/2020 13:49	Lte	38.2315	-122.64793	8.54	15.69	23
11/17/2020 13:48	Lte	38.2315	-122.64793	7.45	14.41	19

**Table 5: City Hall**

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/17/2020 14:14	Lte	38.23237	-122.64473	4.97	9.85	23
11/17/2020 14:14	Lte	38.23237	-122.64473	2.66	13.19	37
11/17/2020 14:13	Lte	38.23237	-122.64473	4.32	12.92	23

In a less dense, residential environment, the speed test point at 512 Howard Street showed a less severe drop in speed. Table 6 shows download speeds from 16-21 Mbps and upload speeds of around 13 Mbps.

**Table 6: 512 Howard Street**

<u>Date</u>	<u>ConnType</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Download</u>	<u>Upload</u>	<u>Latency</u>
11/17/2020 15:11	Lte	38.23799	-122.65114	15.7	14.07	26
11/17/2020 15:10	Lte	38.23799	-122.65114	21.6	12.66	27
11/17/2020 15:09	Lte	38.23799	-122.65114	16.05	13.86	27

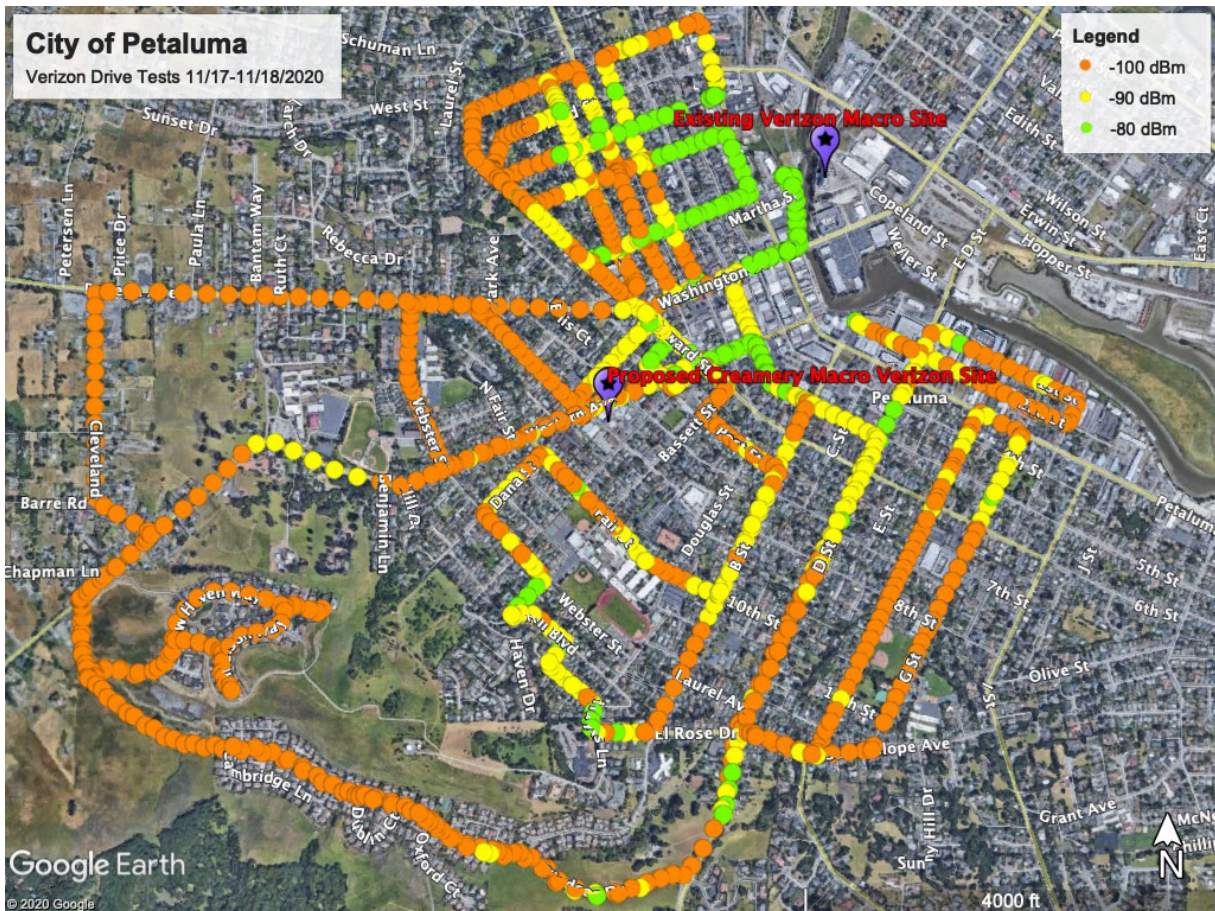
In addition to the on-site speed tests, we conducted drive test measurements of signal levels on primary roads in and near the proposed small cell deployment areas. Figure 3 (on the following page) is a map illustrating the signal levels we recorded. During the days in which testing was

<sup>6</sup> Since the mobile network is already designed to operate with substantially more download speed than upload speed, it is a clear indication of overloaded network capacity when the data throughput speeds are rated higher in the upload direction rather than the download direction.

conducted, we experienced no disconnects and no interruption in the connection to the 4G LTE network service.

The green spots indicate excellent signal of -80 dBm or better which corresponds to excellent in-building coverage<sup>7</sup>. The yellow locations show a signal of between -81 and -90 dBm indicating generally acceptable residential in-building coverage<sup>8</sup> and good in-vehicle coverage. The orange dots equate to a signal power level of -100 dBm or lower. Most devices will operate in a vehicle up to about -105 dBm and outside vehicles to -108 dBm. A majority of the orange locations in Figure 3 fall within the 100 to 105 dBm range with scattered lower signal levels recorded in the farther western test points, where the terrain begins to climb more quickly. Figure 4 (on the following page below) is the exhibit that Verizon provided to indicate their understanding of existing signal strength. The colors and signal levels are consistent from Figure 3 to Figure 4 for comparison purposes.

Figure 3: Drive Test Results for Petaluma

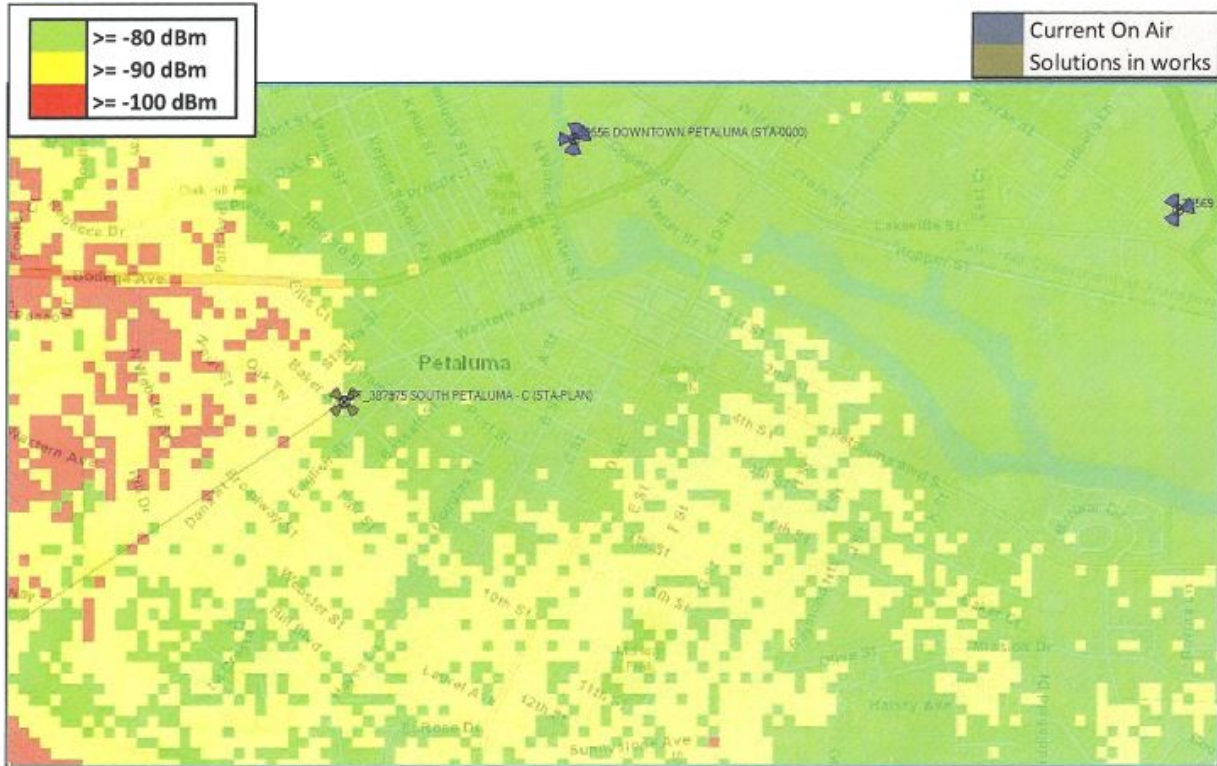


<sup>7</sup> “Effects of building materials and structures on radiowave propagation above about 100 MHz” International Telecommunications Union (ITU) , ITU-R P.2040 -1 , 2015 -Geneva Switzerland

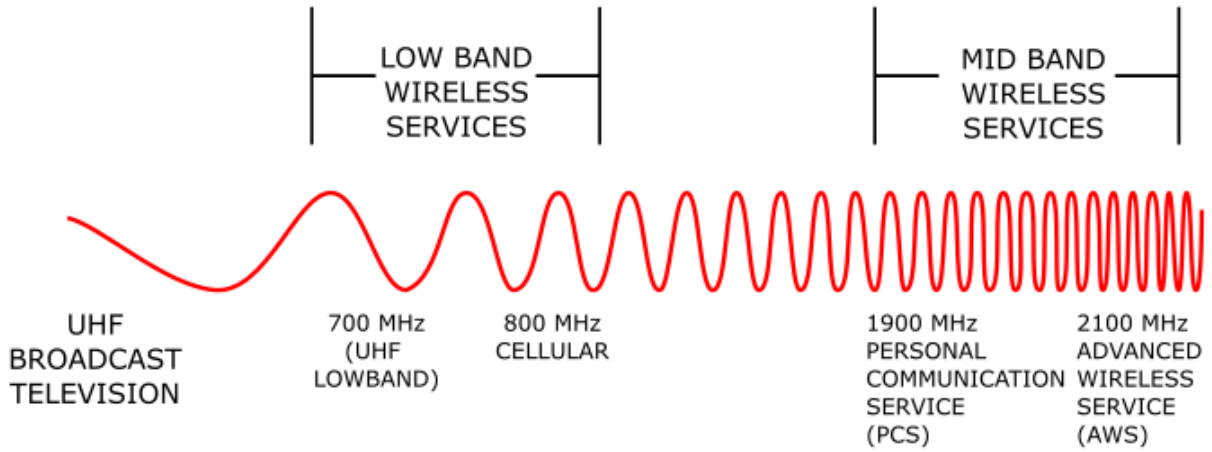
<sup>8</sup> Reliable coverage in at least 50% of the interior of the residence

Figure 4: Existing Verizon Coverage (provided by Verizon)

# Current Coverage

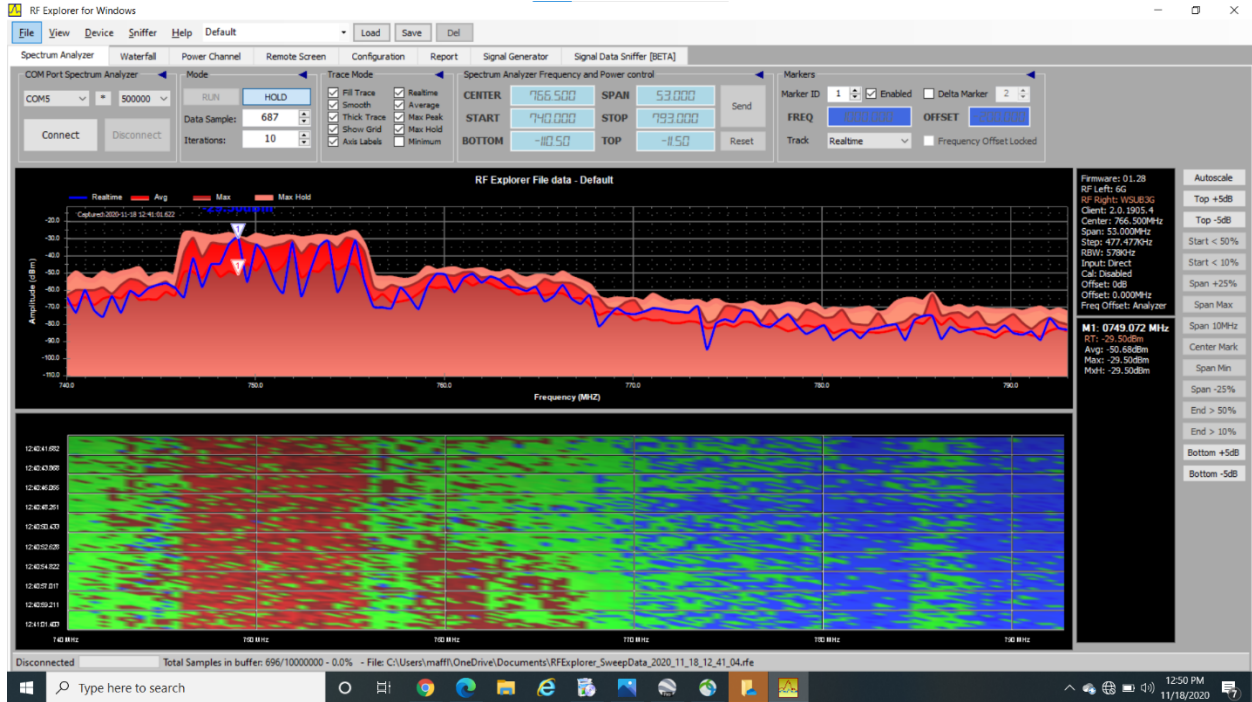


## Appendix A: Verizon Spectrum Chart

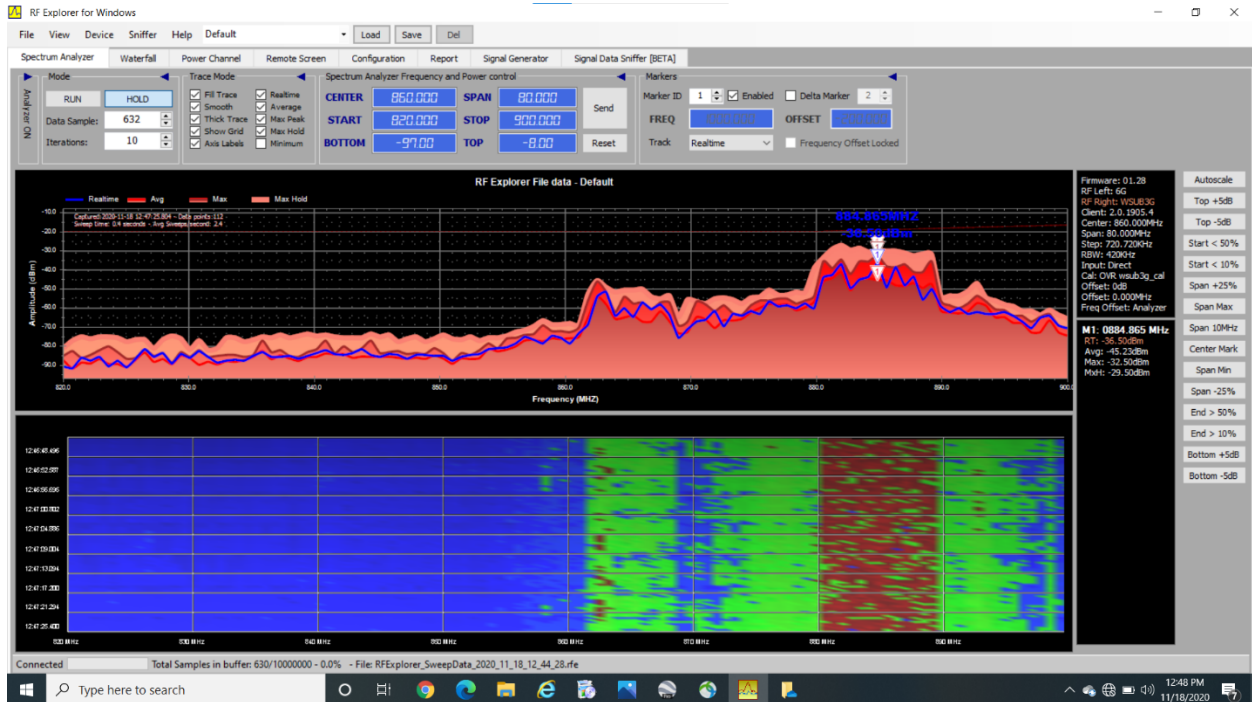


# Appendix B: Existing Macro Cell Conditions – Spectrum Analyzer Scans of Operating Bands

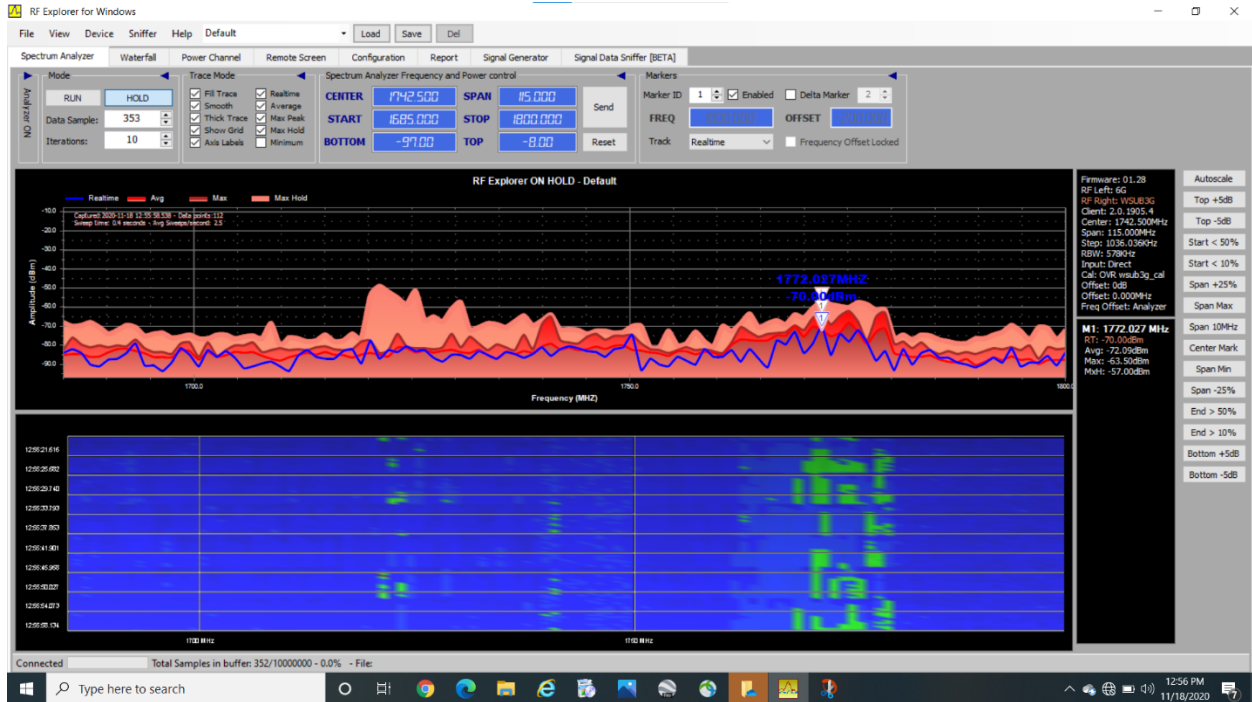
## 700 MHz Petaluma Verizon



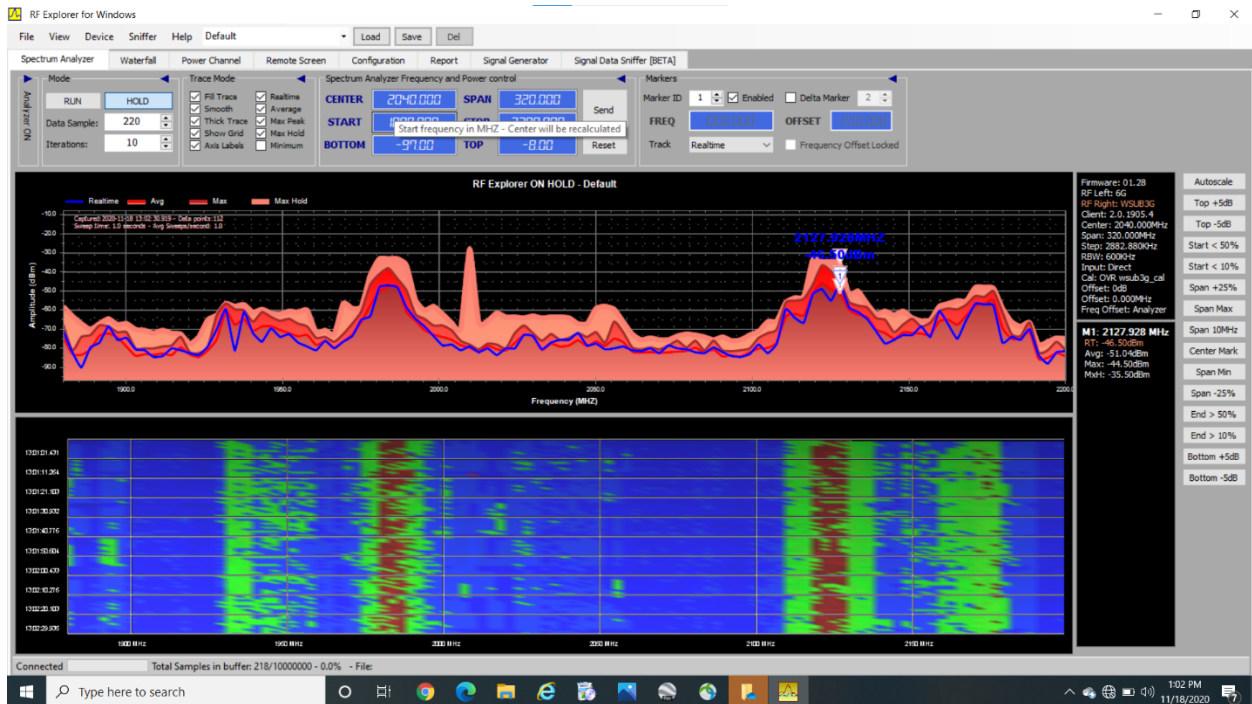
## 800 MHz Petaluma Verizon



### 1700 MHz Petaluma Verizon



### 1900 and 2100 MHz Petaluma Verizon

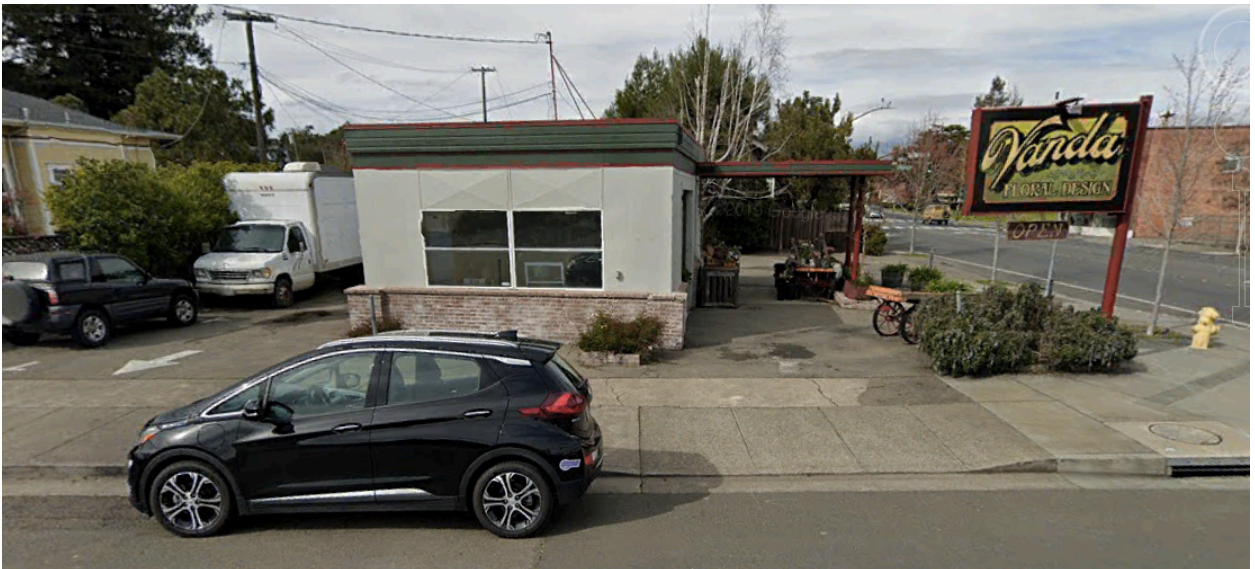


## Appendix C: Speed Test Sites

512 Howard Street



501 Petaluma Blvd





**Petaluma City Hall**



**Petaluma Creamery**



**Existing Macro at Dairyman’s Feed and Supply**



## Appendix D: Drive Test Data

Counter	Date:	Network type	dBm	Data state:	TP Location latitude	TP Location longitude	Tower Cell ID - short	Tower Cell ID - long
	Log date: 11/17/20							
	Log start: 13:28:39							
	Log interval: 5 seconds							
	Phone type: CDMA							
	Country code: us							
	Device ID: 355275084775104							
1	11/17/20 * 13:28:45	LTE	-63	Connected	38.23787781	-122.641127	65535	2147483647
2	11/17/20 * 13:28:50	LTE	-65	Connected	38.23787746	-122.641127	65535	2147483647
3	11/17/20 * 13:28:55	LTE	-64	Connected	38.23787732	-122.641127	65535	2147483647
4	11/17/20 * 13:29:0	LTE	-63	Connected	38.23786863	-122.641142	65535	2147483647
5	11/17/20 * 13:29:5	LTE	-60	Connected	38.23786485	-122.641175	65535	2147483647
6	11/17/20 * 13:29:10	LTE	-56	Connected	38.23777844	-122.641064	65535	2147483647
7	11/17/20 * 13:29:15	LTE	-62	Connected	38.23762283	-122.640952	65535	2147483647
8	11/17/20 * 13:29:20	LTE	-61	Connected	38.23741124	-122.640838	65535	2147483647
9	11/17/20 * 13:29:25	LTE	-70	Connected	38.23715574	-122.640757	65535	2147483647
10	11/17/20 * 13:29:30	LTE	-77	Connected	38.23690103	-122.640731	65535	2147483647
11	11/17/20 * 13:29:35	LTE	-70	Connected	38.2366322	-122.640708	65535	2147483647
12	11/17/20 * 13:29:40	LTE	-65	Connected	38.23636428	-122.640701	65535	2147483647
13	11/17/20 * 13:29:45	LTE	-64	Connected	38.23611564	-122.640665	65535	2147483647
14	11/17/20 * 13:29:50	LTE	-64	Connected	38.23600533	-122.640675	65535	2147483647
15	11/17/20 * 13:29:55	LTE	-66	Connected	38.23591572	-122.640886	65535	2147483647
16	11/17/20 * 13:30:0	LTE	-70	Connected	38.23582406	-122.64124	65535	2147483647
17	11/17/20 * 13:30:5	LTE	-68	Connected	38.23572864	-122.641576	65535	2147483647
18	11/17/20 * 13:30:10	LTE	-71	Connected	38.2356262	-122.641907	65535	2147483647
19	11/17/20 * 13:30:15	LTE	-76	Connected	38.23549706	-122.642302	65535	2147483647
20	11/17/20 * 13:30:20	LTE	-79	Connected	38.23532614	-122.642728	65535	2147483647
21	11/17/20 * 13:30:25	LTE	-81	Connected	38.23518042	-122.642961	65535	2147483647
22	11/17/20 * 13:30:31	LTE	-83	Connected	38.23498152	-122.642904	65535	2147483647
23	11/17/20 * 13:30:36	LTE	-81	Connected	38.23476342	-122.642807	65535	2147483647
24	11/17/20 * 13:30:41	LTE	-84	Connected	38.23455457	-122.642727	65535	2147483647
25	11/17/20 * 13:30:46	LTE	-84	Connected	38.23445455	-122.642671	65535	2147483647
26	11/17/20 * 13:30:51	LTE	-85	Connected	38.23429158	-122.642592	65535	2147483647
27	11/17/20 * 13:30:56	LTE	-86	Connected	38.23408542	-122.642475	65535	2147483647
28	11/17/20 * 13:31:1	LTE	-84	Connected	38.23385956	-122.642351	65535	2147483647
29	11/17/20 * 13:31:6	LTE	-83	Connected	38.23364859	-122.642233	65535	2147483647
30	11/17/20 * 13:31:11	LTE	-83	Connected	38.23357411	-122.642196	65535	2147483647
31	11/17/20 * 13:31:16	LTE	-82	Connected	38.23355027	-122.642184	65535	2147483647
32	11/17/20 * 13:31:21	LTE	-80	Connected	38.23338166	-122.642096	65535	2147483647
33	11/17/20 * 13:31:26	LTE	-83	Connected	38.23313839	-122.641968	65535	2147483647
34	11/17/20 * 13:31:31	LTE	-79	Connected	38.23289683	-122.641854	65535	2147483647
35	11/17/20 * 13:31:36	LTE	-75	Connected	38.23264787	-122.641711	65535	2147483647
36	11/17/20 * 13:31:41	LTE	-72	Connected	38.23238984	-122.641584	65535	2147483647
37	11/17/20 * 13:31:46	LTE	-79	Connected	38.2322263	-122.641336	65535	2147483647
38	11/17/20 * 13:31:51	LTE	-79	Connected	38.23212662	-122.641061	65535	2147483647
39	11/17/20 * 13:31:56	LTE	-81	Connected	38.23202358	-122.640759	65535	2147483647
40	11/17/20 * 13:32:1	LTE	-82	Connected	38.23190372	-122.640465	65535	2147483647
41	11/17/20 * 13:32:7	LTE	-84	Connected	38.23184102	-122.640315	65535	2147483647
42	11/17/20 * 13:32:12	LTE	-81	Connected	38.23177833	-122.640147	65535	2147483647

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43	11/17/20 * 13:32:17	LTE	-87	Connected	38.23164108	-122.639814	65535	2147483647
44	11/17/20 * 13:32:22	LTE	-81	Connected	38.23150939	-122.639442	65535	2147483647
45	11/17/20 * 13:32:27	LTE	-82	Connected	38.23136927	-122.639062	65535	2147483647
46	11/17/20 * 13:32:32	LTE	-84	Connected	38.23122329	-122.638692	65535	2147483647
47	11/17/20 * 13:32:37	LTE	-87	Connected	38.23104409	-122.638297	65535	2147483647
48	11/17/20 * 13:32:42	LTE	-85	Connected	38.23093666	-122.638022	65535	2147483647
49	11/17/20 * 13:32:47	LTE	-81	Connected	38.23085527	-122.637962	65535	2147483647
50	11/17/20 * 13:32:52	LTE	-87	Connected	38.23065720	-122.63807	65535	2147483647
51	11/17/20 * 13:32:57	LTE	-82	Connected	38.23039179	-122.638234	65535	2147483647
52	11/17/20 * 13:33:2	LTE	-82	Connected	38.23016976	-122.638352	65535	2147483647
53	11/17/20 * 13:33:7	LTE	-83	Connected	38.23017303	-122.638371	65535	2147483647
54	11/17/20 * 13:33:12	LTE	-82	Connected	38.23017328	-122.638392	65535	2147483647
55	11/17/20 * 13:33:17	LTE	-82	Connected	38.23017457	-122.638401	65535	2147483647
56	11/17/20 * 13:33:22	LTE	-84	Connected	38.23001352	-122.638514	65535	2147483647
57	11/17/20 * 13:33:27	LTE	-84	Connected	38.22969087	-122.638704	65535	2147483647
58	11/17/20 * 13:33:32	LTE	83	Connected	38.229381	122.638886	65535	2147483647
59	11/17/20 * 13:33:37	LTE	-83	Connected	38.22900889	-122.639128	65535	2147483647
60	11/17/20 * 13:33:42	LTE	-85	Connected	38.22866776	-122.639329	65535	2147483647
61	11/17/20 * 13:33:47	LTE	-84	Connected	38.22829685	-122.639535	65535	2147483647
62	11/17/20 * 13:33:53	LTE	-85	Connected	38.22795337	-122.639766	65535	2147483647
63	11/17/20 * 13:33:58	LTE	-91	Connected	38.227684	-122.639927	65535	2147483647
64	11/17/20 * 13:34:3	LTE	-94	Connected	38.22763906	-122.63996	65535	2147483647
65	11/17/20 * 13:34:8	LTE	-90	Connected	38.22740911	-122.640121	65535	2147483647
66	11/17/20 * 13:34:13	LTE	93	Connected	38.22706647	122.64032	65535	2147483647
67	11/17/20 * 13:34:18	LTE	-92	Connected	38.22668994	-122.640546	65535	2147483647
68	11/17/20 * 13:34:23	LTE	-94	Connected	38.22632223	-122.640792	65535	2147483647
69	11/17/20 * 13:34:28	LTE	-100	Connected	38.22595055	-122.641025	65535	2147483647
70	11/17/20 * 13:34:33	LTE	-94	Connected	38.22554628	-122.641247	65535	2147483647
71	11/17/20 * 13:34:38	LTE	-98	Connected	38.22516082	-122.641492	65535	2147483647
72	11/17/20 * 13:34:43	LTE	-97	Connected	38.22473597	-122.641714	65535	2147483647
73	11/17/20 * 13:34:48	LTE	-100	Connected	38.22435603	-122.641975	65535	2147483647
74	11/17/20 * 13:34:53	LTE	-90	Connected	38.22399689	-122.6422	65535	2147483647
75	11/17/20 * 13:34:58	LTE	-91	Connected	38.22364758	-122.642434	65535	2147483647
76	11/17/20 * 13:35:3	LTE	-97	Connected	38.22335129	-122.642626	65535	2147483647
77	11/17/20 * 13:35:8	LTE	-95	Connected	38.22328641	-122.642683	65535	2147483647
78	11/17/20 * 13:35:13	LTE	-92	Connected	38.22313097	-122.642755	65535	2147483647
79	11/17/20 * 13:35:18	LTE	-95	Connected	38.22274711	-122.642868	65535	2147483647
80	11/17/20 * 13:35:23	LTE	-95	Connected	38.22234087	-122.642932	65535	2147483647
81	11/17/20 * 13:35:28	LTE	-93	Connected	38.22192485	-122.643045	65535	2147483647
82	11/17/20 * 13:35:33	LTE	-85	Connected	38.22150019	-122.643119	65535	2147483647
83	11/17/20 * 13:35:39	LTE	-84	Connected	38.22106799	-122.643259	65535	2147483647
84	11/17/20 * 13:35:44	LTE	-93	Connected	38.22056325	-122.643552	65535	2147483647
85	11/17/20 * 13:35:49	LTE	-91	Connected	38.22004178	-122.643911	65535	2147483647
86	11/17/20 * 13:35:54	LTE	-97	Connected	38.21958167	-122.644286	65535	2147483647
87	11/17/20 * 13:35:59	LTE	-97	Connected	38.21933301	-122.644581	65535	2147483647
88	11/17/20 * 13:36:4	LTE	100	Connected	38.21935938	122.644925	65535	2147483647
89	11/17/20 * 13:36:9	LTE	-108	Connected	38.2192769	-122.645326	65535	2147483647
90	11/17/20 * 13:36:14	LTE	-98	Connected	38.21915828	-122.645794	65535	2147483647
91	11/17/20 * 13:36:19	LTE	-95	Connected	38.21902502	-122.646210	65535	2147483647
92	11/17/20 * 13:36:24	LTE	-96	Connected	38.2189293	-122.646892	65535	2147483647

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93	11/17/20 * 13:36:29	LTE	-86	Connected	38.21891843	-122.647534	65535	2147483647
94	11/17/20 * 13:36:34	LTE	-94	Connected	38.21904882	-122.648171	65535	2147483647
95	11/17/20 * 13:36:39	LTE	-100	Connected	38.21926513	-122.648757	65535	2147483647
96	11/17/20 * 13:36:44	LTE	-109	Connected	38.21958395	-122.649144	65535	2147483647
97	11/17/20 * 13:36:49	LTE	-110	Connected	38.21985716	-122.649663	65535	2147483647
98	11/17/20 * 13:36:54	LTE	-107	Connected	38.21998251	-122.650066	65535	2147483647
99	11/17/20 * 13:36:59	LTE	-108	Connected	38.21998198	-122.650265	65535	2147483647
100	11/17/20 * 13:37:4	LTE	-107	Connected	38.21999583	-122.650598	65535	2147483647
101	11/17/20 * 13:37:9	LTE	-100	Connected	38.22003581	-122.650782	65535	2147483647
102	11/17/20 * 13:37:14	LTE	-100	Connected	38.22007735	-122.650958	65535	2147483647
103	11/17/20 * 13:37:19	LTE	-98	Connected	38.22015455	-122.651364	65535	2147483647
104	11/17/20 * 13:37:25	LTE	-100	Connected	38.22023918	-122.651805	65535	2147483647
105	11/17/20 * 13:37:30	LTE	-101	Connected	38.22041295	-122.652249	65535	2147483647
106	11/17/20 * 13:37:35	LTE	-98	Connected	38.22061531	-122.652638	65535	2147483647
107	11/17/20 * 13:37:40	LTE	-101	Connected	38.22077466	-122.652857	65535	2147483647
108	11/17/20 * 13:37:45	LTE	-99	Connected	38.22091145	-122.653027	65535	2147483647
109	11/17/20 * 13:37:50	LTE	-105	Connected	38.22108423	-122.653394	65535	2147483647
110	11/17/20 * 13:37:55	LTE	-103	Connected	38.22125847	-122.653838	65535	2147483647
111	11/17/20 * 13:38:0	LTE	-103	Connected	38.22137556	-122.654305	65535	2147483647
112	11/17/20 * 13:38:5	LTE	-100	Connected	38.22148711	-122.654795	65535	2147483647
113	11/17/20 * 13:38:10	LTE	-98	Connected	38.22154983	-122.655178	65535	2147483647
114	11/17/20 * 13:38:15	LTE	-98	Connected	38.22158222	-122.655295	65535	2147483647
115	11/17/20 * 13:38:20	LTE	-98	Connected	38.22165654	-122.655721	65535	2147483647
116	11/17/20 * 13:38:25	LTE	-106	Connected	38.22183207	-122.656251	65535	2147483647
117	11/17/20 * 13:38:30	LTE	-106	Connected	38.22205719	-122.65675	65535	2147483647
118	11/17/20 * 13:38:35	LTE	-114	Connected	38.22228391	-122.657243	65535	2147483647
119	11/17/20 * 13:38:40	LTE	-115	Connected	38.22248578	-122.657732	65535	2147483647
120	11/17/20 * 13:38:45	LTE	-118	Connected	38.22267645	-122.658276	65535	2147483647
121	11/17/20 * 13:38:50	LTE	-118	Connected	38.22277809	-122.658851	65535	2147483647
122	11/17/20 * 13:38:55	LTE	-114	Connected	38.22281078	-122.659579	65535	2147483647
123	11/17/20 * 13:39:0	LTE	-110	Connected	38.22282694	-122.660216	65535	2147483647
124	11/17/20 * 13:39:5	LTE	-99	Connected	38.22286356	-122.66092	65535	2147483647
125	11/17/20 * 13:39:10	LTE	-99	Connected	38.22298145	-122.661603	65535	2147483647
126	11/17/20 * 13:39:16	LTE	-100	Connected	38.22325423	-122.662272	65535	2147483647
127	11/17/20 * 13:39:21	LTE	-106	Connected	38.22357782	-122.662929	65535	2147483647
128	11/17/20 * 13:39:26	LTE	-105	Connected	38.22391005	-122.663536	65535	2147483647
129	11/17/20 * 13:39:31	LTE	-105	Connected	38.22426944	-122.664036	65535	2147483647
130	11/17/20 * 13:39:36	LTE	-108	Connected	38.22456929	-122.664262	65535	2147483647
131	11/17/20 * 13:39:41	LTE	-113	Connected	38.22475352	-122.664367	65535	2147483647
132	11/17/20 * 13:39:46	LTE	-110	Connected	38.22495396	-122.664564	65535	2147483647
133	11/17/20 * 13:39:51	LTE	-109	Connected	38.22530567	-122.664676	65535	2147483647
134	11/17/20 * 13:39:56	LTE	-109	Connected	38.22576092	-122.664717	65535	2147483647
135	11/17/20 * 13:40:1	LTE	-95	Connected	38.22616943	-122.664675	65535	2147483647
136	11/17/20 * 13:40:6	LTE	-110	Connected	38.22647228	-122.664706	65535	2147483647
137	11/17/20 * 13:40:11	LTE	-104	Connected	38.22661843	-122.664738	65535	2147483647
138	11/17/20 * 13:40:16	LTE	-111	Connected	38.22683267	-122.664509	65535	2147483647
139	11/17/20 * 13:40:21	LTE	-109	Connected	38.22716079	-122.664057	65535	2147483647
140	11/17/20 * 13:40:26	LTE	-112	Connected	38.22748914	-122.663533	65535	2147483647
141	11/17/20 * 13:40:31	LTE	-113	Connected	38.22783964	-122.663027	65535	2147483647
142	11/17/20 * 13:40:36	LTE	-102	Connected	38.22822335	-122.662511	65535	2147483647

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143	11/17/20 * 13:40:41	LTE	-103	Connected	38.22858163	-122.661952	65535	2147483647
144	11/17/20 * 13:40:46	LTE	-99	Connected	38.22901058	-122.661308	65535	2147483647
145	11/17/20 * 13:40:51	LTE	-100	Connected	38.22934675	-122.660811	65535	2147483647
146	11/17/20 * 13:40:56	LTE	-91	Connected	38.22970318	-122.660302	65535	2147483647
147	11/17/20 * 13:41:1	LTE	-96	Connected	38.23006786	-122.659812	65535	2147483647
148	11/17/20 * 13:41:7	LTE	-97	Connected	38.2304645	-122.659346	65535	2147483647
149	11/17/20 * 13:41:12	LTE	-84	Connected	38.2307234	-122.658867	65535	2147483647
150	11/17/20 * 13:41:17	LTE	-87	Connected	38.23076364	-122.658252	65535	2147483647
151	11/17/20 * 13:41:22	LTE	-88	Connected	38.23054674	-122.657651	65535	2147483647
152	11/17/20 * 13:41:27	LTE	-85	Connected	38.23028572	-122.657002	65535	2147483647
153	11/17/20 * 13:41:32	LTE	-81	Connected	38.23004445	-122.6563	65535	2147483647
154	11/17/20 * 13:41:37	LTE	-84	Connected	38.22985886	-122.655543	65535	2147483647
155	11/17/20 * 13:41:42	LTE	-95	Connected	38.22971207	-122.654763	65535	2147483647
156	11/17/20 * 13:41:47	LTE	-98	Connected	38.22961642	-122.654092	65535	2147483647
157	11/17/20 * 13:41:52	LTE	-103	Connected	38.22975168	-122.653559	65535	2147483647
158	11/17/20 * 13:41:57	LTE	-92	Connected	38.22991059	-122.653065	65535	2147483647
159	11/17/20 * 13:42:2	LTE	-93	Connected	38.23001286	-122.652769	65535	2147483647
160	11/17/20 * 13:42:7	LTE	-95	Connected	38.23004727	-122.65265	65535	2147483647
161	11/17/20 * 13:42:12	LTE	-93	Connected	38.23016575	-122.652285	65535	2147483647
162	11/17/20 * 13:42:17	LTE	-86	Connected	38.23032421	-122.651795	65535	2147483647
163	11/17/20 * 13:42:22	LTE	-91	Connected	38.23048807	-122.651258	65535	2147483647
164	11/17/20 * 13:42:27	LTE	-91	Connected	38.23068377	-122.650641	65535	2147483647
165	11/17/20 * 13:42:32	LTE	-91	Connected	38.23084132	-122.650156	65535	2147483647
166	11/17/20 * 13:42:37	LTE	-90	Connected	38.23101475	-122.649692	65535	2147483647
167	11/17/20 * 13:42:42	LTE	-92	Connected	38.23115683	-122.649175	65535	2147483647
168	11/17/20 * 13:42:47	LTE	-91	Connected	38.23131043	-122.648666	65535	2147483647
169	11/17/20 * 13:42:52	LTE	-93	Connected	38.23149232	-122.648195	65535	2147483647
170	11/17/20 * 13:42:57	LTE	-92	Connected	38.23153838	-122.647978	65535	2147483647
171	11/17/20 * 13:43:2	LTE	-91	Connected	38.23153169	-122.647966	65535	2147483647
172	11/17/20 * 13:43:8	LTE	-92	Connected	38.23148817	-122.647971	65535	2147483647
173	11/17/20 * 13:43:13	LTE	-92	Connected	38.23148411	-122.647969	65535	2147483647
174	11/17/20 * 13:43:18	LTE	-95	Connected	38.23148464	-122.647959	65535	2147483647
175	11/17/20 * 13:43:23	LTE	-100	Connected	38.23149913	-122.647973	65535	2147483647
176	11/17/20 * 13:43:28	LTE	-98	Connected	38.23150717	-122.647975	65535	2147483647
177	11/17/20 * 13:43:33	LTE	-104	Connected	38.23150762	-122.647975	65535	2147483647
178	11/17/20 * 13:43:38	LTE	-100	Connected	38.2315078	-122.647974	65535	2147483647
179	11/17/20 * 13:43:43	LTE	-101	Connected	38.23150799	-122.647974	65535	2147483647
180	11/17/20 * 13:43:48	LTE	-101	Connected	38.23150812	-122.647974	65535	2147483647
181	11/17/20 * 13:43:53	LTE	-101	Connected	38.23150827	-122.647973	65535	2147483647

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Counter	Date:	Network type	dBm	Data state:	TP Location latitude	TP Location longitude	Tower Cell ID - short	Tower Cell ID - long
	Log date: 11/17/20							
	Log start: 13:52:6							
	Log interval: 5 seconds							
	Phone type: CDMA							
	Country code: us							
	Device ID: 355275084775104							
1	11/17/20 * 13:52:11	LTE	-83	Connected	38.2315307	-122.648012	65535	2147483647
2	11/17/20 * 13:52:16	LTE	-83	Connected	38.23154	-122.648018	65535	2147483647
3	11/17/20 * 13:52:21	LTE	-84	Connected	38.2315414	-122.648018	65535	2147483647
4	11/17/20 * 13:52:27	LTE	-84	Connected	38.2315832	-122.647919	65535	2147483647
5	11/17/20 * 13:52:32	LTE	-86	Connected	38.2317005	-122.647583	65535	2147483647
6	11/17/20 * 13:52:37	LTE	-88	Connected	38.2318157	-122.647171	65535	2147483647
7	11/17/20 * 13:52:42	LTE	-90	Connected	38.2319697	-122.64669	65535	2147483647
8	11/17/20 * 13:52:47	LTE	-94	Connected	38.2321273	-122.646222	65535	2147483647
9	11/17/20 * 13:52:52	LTE	-90	Connected	38.2322805	-122.645742	65535	2147483647
10	11/17/20 * 13:52:57	LTE	-85	Connected	38.2324237	-122.645272	65535	2147483647
11	11/17/20 * 13:53:2	LTE	-78	Connected	38.2325634	-122.644828	65535	2147483647
12	11/17/20 * 13:53:7	LTE	-78	Connected	38.2327222	-122.644392	65535	2147483647
13	11/17/20 * 13:53:12	LTE	-71	Connected	38.2327948	-122.644122	65535	2147483647
14	11/17/20 * 13:53:17	LTE	-70	Connected	38.2328511	-122.643968	65535	2147483647
15	11/17/20 * 13:53:22	LTE	-71	Connected	38.2329726	-122.643641	65535	2147483647
16	11/17/20 * 13:53:27	LTE	-71	Connected	38.2330613	-122.643332	65535	2147483647
17	11/17/20 * 13:53:32	LTE	-66	Connected	38.2331204	-122.643169	65535	2147483647
18	11/17/20 * 13:53:37	LTE	-65	Connected	38.2331123	-122.643143	65535	2147483647
19	11/17/20 * 13:53:42	LTE	-66	Connected	38.2331415	-122.643056	65535	2147483647
20	11/17/20 * 13:53:47	LTE	-61	Connected	38.2332354	-122.642784	65535	2147483647
21	11/17/20 * 13:53:52	LTE	-68	Connected	38.2333245	-122.642531	65535	2147483647
22	11/17/20 * 13:53:57	LTE	-71	Connected	38.2334143	-122.6423	65535	2147483647
23	11/17/20 * 13:54:2	LTE	-72	Connected	38.2334349	-122.642222	65535	2147483647
24	11/17/20 * 13:54:8	LTE	-68	Connected	38.2333403	-122.642069	65535	2147483647
25	11/17/20 * 13:54:13	LTE	-67	Connected	38.2331309	-122.641946	65535	2147483647
26	11/17/20 * 13:54:18	LTE	-75	Connected	38.23288	-122.641812	65535	2147483647
27	11/17/20 * 13:54:23	LTE	-69	Connected	38.2325978	-122.641685	65535	2147483647
28	11/17/20 * 13:54:28	LTE	-79	Connected	38.2323377	-122.641569	65535	2147483647
29	11/17/20 * 13:54:33	LTE	-88	Connected	38.2322204	-122.641319	65535	2147483647
30	11/17/20 * 13:54:38	LTE	-82	Connected	38.2321365	-122.641027	65535	2147483647
31	11/17/20 * 13:54:43	LTE	-86	Connected	38.2319917	-122.640715	65535	2147483647
32	11/17/20 * 13:54:48	LTE	-87	Connected	38.2318804	-122.640415	65535	2147483647
33	11/17/20 * 13:54:53	LTE	-91	Connected	38.2318211	-122.640336	65535	2147483647
34	11/17/20 * 13:54:58	LTE	-97	Connected	38.2316484	-122.640403	65535	2147483647
35	11/17/20 * 13:55:3	LTE	-97	Connected	38.231352	-122.640585	65535	2147483647
36	11/17/20 * 13:55:8	LTE	-93	Connected	38.231107	-122.640736	65535	2147483647
37	11/17/20 * 13:55:13	LTE	-92	Connected	38.2310288	-122.640783	65535	2147483647
38	11/17/20 * 13:55:18	LTE	-84	Connected	38.2308173	-122.640896	65535	2147483647
39	11/17/20 * 13:55:23	LTE	-86	Connected	38.2304978	-122.641076	65535	2147483647
40	11/17/20 * 13:55:28	LTE	-86	Connected	38.230153	-122.641298	65535	2147483647
41	11/17/20 * 13:55:33	LTE	-83	Connected	38.2297722	-122.641518	65535	2147483647
42	11/17/20 * 13:55:38	LTE	-81	Connected	38.2293821	-122.64176	65535	2147483647

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43	11/17/20 * 13:55:43	LTE	-85	Connected	38.2289949	-122.641992	65535	2147483647
44	11/17/20 * 13:55:48	LTE	-84	Connected	38.2285855	-122.642225	65535	2147483647
45	11/17/20 * 13:55:54	LTE	-83	Connected	38.2281761	-122.642441	65535	2147483647
46	11/17/20 * 13:55:59	LTE	-84	Connected	38.2277797	-122.642707	65535	2147483647
47	11/17/20 * 13:56:4	LTE	-84	Connected	38.2273896	-122.642959	65535	2147483647
48	11/17/20 * 13:56:9	LTE	-84	Connected	38.2270309	-122.643175	65535	2147483647
49	11/17/20 * 13:56:14	LTE	-84	Connected	38.2268094	-122.643312	65535	2147483647
50	11/17/20 * 13:56:19	LTE	-83	Connected	38.2267227	-122.643357	65535	2147483647
51	11/17/20 * 13:56:24	LTE	-87	Connected	38.2264582	-122.643507	65535	2147483647
52	11/17/20 * 13:56:29	LTE	-88	Connected	38.2261381	-122.64372	65535	2147483647
53	11/17/20 * 13:56:34	LTE	-96	Connected	38.2257649	-122.643942	65535	2147483647
54	11/17/20 * 13:56:39	LTE	-96	Connected	38.2254028	-122.644171	65535	2147483647
55	11/17/20 * 13:56:44	LTE	-98	Connected	38.2250157	-122.644385	65535	2147483647
56	11/17/20 * 13:56:49	LTE	-98	Connected	38.2246398	-122.644635	65535	2147483647
57	11/17/20 * 13:56:54	LTE	-98	Connected	38.2242565	-122.644896	65535	2147483647
58	11/17/20 * 13:56:59	LTE	-97	Connected	38.2237993	-122.64519	65535	2147483647
59	11/17/20 * 13:57:4	LTE	-96	Connected	38.2234361	-122.645419	65535	2147483647
60	11/17/20 * 13:57:9	LTE	-93	Connected	38.2232411	-122.645563	65535	2147483647
61	11/17/20 * 13:57:14	LTE	-94	Connected	38.2231647	-122.645627	65535	2147483647
62	11/17/20 * 13:57:19	LTE	-93	Connected	38.2231081	-122.645863	65535	2147483647
63	11/17/20 * 13:57:24	LTE	-82	Connected	38.2231107	-122.64616	65535	2147483647
64	11/17/20 * 13:57:29	LTE	-81	Connected	38.2231146	-122.646513	65535	2147483647
65	11/17/20 * 13:57:34	LTE	-80	Connected	38.223128	-122.646827	65535	2147483647
66	11/17/20 * 13:57:39	LTE	-93	Connected	38.2231201	-122.647182	65535	2147483647
67	11/17/20 * 13:57:44	LTE	-88	Connected	38.2231256	-122.647477	65535	2147483647
68	11/17/20 * 13:57:50	LTE	-79	Connected	38.2232572	-122.647671	65535	2147483647
69	11/17/20 * 13:57:55	LTE	-72	Connected	38.2234476	-122.647675	65535	2147483647
70	11/17/20 * 13:58:0	LTE	-71	Connected	38.2236731	-122.647599	65535	2147483647
71	11/17/20 * 13:58:5	LTE	-81	Connected	38.2238813	-122.647619	65535	2147483647
72	11/17/20 * 13:58:10	LTE	-91	Connected	38.2240219	-122.647796	65535	2147483647
73	11/17/20 * 13:58:15	LTE	-88	Connected	38.2241861	-122.64803	65535	2147483647
74	11/17/20 * 13:58:20	LTE	-86	Connected	38.2243536	-122.648308	65535	2147483647
75	11/17/20 * 13:58:25	LTE	-88	Connected	38.2245416	-122.648592	65535	2147483647
76	11/17/20 * 13:58:30	LTE	-87	Connected	38.2247137	-122.648828	65535	2147483647
77	11/17/20 * 13:58:35	LTE	-89	Connected	38.224844	-122.649032	65535	2147483647
78	11/17/20 * 13:58:40	LTE	-83	Connected	38.2249721	-122.649083	65535	2147483647
79	11/17/20 * 13:58:45	LTE	-85	Connected	38.2251453	-122.648875	65535	2147483647
80	11/17/20 * 13:58:50	LTE	-80	Connected	38.2253501	-122.648666	65535	2147483647
81	11/17/20 * 13:58:55	LTE	-83	Connected	38.2255073	-122.648567	65535	2147483647
82	11/17/20 * 13:59:0	LTE	-87	Connected	38.2256485	-122.648767	65535	2147483647
83	11/17/20 * 13:59:5	LTE	-89	Connected	38.2258368	-122.649039	65535	2147483647
84	11/17/20 * 13:59:10	LTE	-92	Connected	38.2260561	-122.649331	65535	2147483647
85	11/17/20 * 13:59:15	LTE	-88	Connected	38.2262304	-122.649634	65535	2147483647
86	11/17/20 * 13:59:20	LTE	-89	Connected	38.2262647	-122.650028	65535	2147483647
87	11/17/20 * 13:59:25	LTE	-82	Connected	38.2261707	-122.650275	65535	2147483647
88	11/17/20 * 13:59:30	LTE	-83	Connected	38.2262257	-122.650344	65535	2147483647
89	11/17/20 * 13:59:35	LTE	-74	Connected	38.2264446	-122.650127	65535	2147483647
90	11/17/20 * 13:59:40	LTE	-74	Connected	38.2266979	-122.64981	65535	2147483647
91	11/17/20 * 13:59:45	LTE	-75	Connected	38.2269445	-122.649522	65535	2147483647
92	11/17/20 * 13:59:51	LTE	-90	Connected	38.2270813	-122.649332	65535	2147483647



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93	11/17/20 * 13:59:56	LTE	-88	Connected	38.2271079	-122.649324	65535	2147483647
94	11/17/20 * 14:0:1	LTE	-93	Connected	38.227295	-122.649412	65535	2147483647
95	11/17/20 * 14:0:6	LTE	-90	Connected	38.2274555	-122.649593	65535	2147483647
96	11/17/20 * 14:0:11	LTE	-86	Connected	38.227624	-122.649785	65535	2147483647
97	11/17/20 * 14:0:16	LTE	-94	Connected	38.2277671	-122.649986	65535	2147483647
98	11/17/20 * 14:0:21	LTE	-93	Connected	38.2278026	-122.650013	65535	2147483647
99	11/17/20 * 14:0:26	LTE	-91	Connected	38.2279088	-122.650129	65535	2147483647
100	11/17/20 * 14:0:31	LTE	-89	Connected	38.2281363	-122.6504	65535	2147483647
101	11/17/20 * 14:0:36	LTE	-95	Connected	38.2284277	-122.650744	65535	2147483647
102	11/17/20 * 14:0:41	LTE	-91	Connected	38.2286566	-122.651059	65535	2147483647
103	11/17/20 * 14:0:46	LTE	-94	Connected	38.2288111	-122.651238	65535	2147483647
104	11/17/20 * 14:0:51	LTE	-93	Connected	38.228909	-122.651256	65535	2147483647
105	11/17/20 * 14:0:56	LTE	-82	Connected	38.2290932	-122.651062	65535	2147483647
106	11/17/20 * 14:1:1	LTE	-81	Connected	38.2293188	-122.650804	65535	2147483647
107	11/17/20 * 14:1:6	LTE	-82	Connected	38.2295399	-122.650527	65535	2147483647
108	11/17/20 * 14:1:11	LTE	-85	Connected	38.2297668	-122.650246	65535	2147483647
109	11/17/20 * 14:1:16	LTE	-94	Connected	38.2299925	-122.649953	65535	2147483647
110	11/17/20 * 14:1:21	LTE	-95	Connected	38.230204	-122.649683	65535	2147483647
111	11/17/20 * 14:1:26	LTE	-94	Connected	38.230388	-122.649434	65535	2147483647
112	11/17/20 * 14:1:31	LTE	-94	Connected	38.2304506	-122.64934	65535	2147483647
113	11/17/20 * 14:1:36	LTE	-90	Connected	38.2303934	-122.649197	65535	2147483647
114	11/17/20 * 14:1:42	LTE	-88	Connected	38.2302121	-122.648988	65535	2147483647
115	11/17/20 * 14:1:47	LTE	-92	Connected	38.2300205	-122.648752	65535	2147483647
116	11/17/20 * 14:1:52	LTE	-100	Connected	38.2298557	-122.648531	65535	2147483647
117	11/17/20 * 14:1:57	LTE	-94	Connected	38.2296695	-122.648281	65535	2147483647
118	11/17/20 * 14:2:2	LTE	-76	Connected	38.2295824	-122.648168	65535	2147483647
119	11/17/20 * 14:2:7	LTE	-83	Connected	38.2294381	-122.648014	65535	2147483647
120	11/17/20 * 14:2:12	LTE	-93	Connected	38.229224	-122.647755	65535	2147483647
121	11/17/20 * 14:2:17	LTE	-95	Connected	38.2289888	-122.647447	65535	2147483647
122	11/17/20 * 14:2:22	LTE	-91	Connected	38.2287692	-122.647165	65535	2147483647
123	11/17/20 * 14:2:27	LTE	-96	Connected	38.2285469	-122.646875	65535	2147483647
124	11/17/20 * 14:2:32	LTE	-89	Connected	38.2283319	-122.646615	65535	2147483647
125	11/17/20 * 14:2:37	LTE	-88	Connected	38.2281335	-122.646369	65535	2147483647
126	11/17/20 * 14:2:42	LTE	-88	Connected	38.2278457	-122.646109	65535	2147483647
127	11/17/20 * 14:2:47	LTE	-89	Connected	38.2276214	-122.645836	65535	2147483647
128	11/17/20 * 14:2:52	LTE	-92	Connected	38.2274813	-122.645474	65535	2147483647
129	11/17/20 * 14:2:57	LTE	-92	Connected	38.227335	-122.645153	65535	2147483647
130	11/17/20 * 14:3:2	LTE	-92	Connected	38.2272294	-122.64484	65535	2147483647
131	11/17/20 * 14:3:7	LTE	-93	Connected	38.2271144	-122.644524	65535	2147483647
132	11/17/20 * 14:3:12	LTE	-88	Connected	38.2269708	-122.644182	65535	2147483647
133	11/17/20 * 14:3:17	LTE	-88	Connected	38.2268418	-122.64377	65535	2147483647
134	11/17/20 * 14:3:22	LTE	-87	Connected	38.2267282	-122.643508	65535	2147483647
135	11/17/20 * 14:3:27	LTE	-87	Connected	38.22674	-122.643355	65535	2147483647
136	11/17/20 * 14:3:32	LTE	-89	Connected	38.2269645	-122.643199	65535	2147483647
137	11/17/20 * 14:3:37	LTE	-87	Connected	38.2272938	-122.642987	65535	2147483647
138	11/17/20 * 14:3:43	LTE	-91	Connected	38.2276847	-122.64275	65535	2147483647
139	11/17/20 * 14:3:48	LTE	-87	Connected	38.2280808	-122.64249	65535	2147483647
140	11/17/20 * 14:3:53	LTE	-85	Connected	38.2284814	-122.642253	65535	2147483647
141	11/17/20 * 14:3:58	LTE	-88	Connected	38.2288898	-122.642001	65535	2147483647
142	11/17/20 * 14:4:3	LTE	-88	Connected	38.2292755	-122.641757	65535	2147483647

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143	11/17/20 * 14:4:8	LTE	-91	Connected	38.2296524	-122.64152	65535	2147483647
144	11/17/20 * 14:4:13	LTE	-91	Connected	38.2299446	-122.641332	65535	2147483647
145	11/17/20 * 14:4:18	LTE	-91	Connected	38.2301208	-122.641456	65535	2147483647
146	11/17/20 * 14:4:23	LTE	-97	Connected	38.2302008	-122.641706	65535	2147483647
147	11/17/20 * 14:4:28	LTE	-90	Connected	38.2303065	-122.641939	65535	2147483647
148	11/17/20 * 14:4:33	LTE	-96	Connected	38.2304438	-122.64215	65535	2147483647
149	11/17/20 * 14:4:38	LTE	-88	Connected	38.2305752	-122.642396	65535	2147483647
150	11/17/20 * 14:4:43	LTE	-93	Connected	38.2307433	-122.642704	65535	2147483647
151	11/17/20 * 14:4:48	LTE	-91	Connected	38.2308851	-122.642934	65535	2147483647
152	11/17/20 * 14:4:53	LTE	-95	Connected	38.2310304	-122.643163	65535	2147483647
153	11/17/20 * 14:4:58	LTE	-94	Connected	38.2312018	-122.643401	65535	2147483647
154	11/17/20 * 14:5:3	LTE	-96	Connected	38.2313576	-122.643644	65535	2147483647
155	11/17/20 * 14:5:8	LTE	-95	Connected	38.231487	-122.643808	65535	2147483647
156	11/17/20 * 14:5:13	LTE	-95	Connected	38.2315614	-122.643812	65535	2147483647
157	11/17/20 * 14:5:18	LTE	-95	Connected	38.2317473	-122.643612	65535	2147483647
158	11/17/20 * 14:5:23	LTE	-92	Connected	38.2319772	-122.643345	65535	2147483647
159	11/17/20 * 14:5:28	LTE	-94	Connected	38.2321511	-122.643151	65535	2147483647
160	11/17/20 * 14:5:33	LTE	-87	Connected	38.2321787	-122.643118	65535	2147483647
161	11/17/20 * 14:5:39	LTE	-88	Connected	38.2322734	-122.643104	65535	2147483647
162	11/17/20 * 14:5:44	LTE	-87	Connected	38.2324544	-122.6433	65535	2147483647
163	11/17/20 * 14:5:49	LTE	-88	Connected	38.2326259	-122.643569	65535	2147483647
164	11/17/20 * 14:5:54	LTE	-91	Connected	38.232781	-122.643794	65535	2147483647
165	11/17/20 * 14:5:59	LTE	-87	Connected	38.2328047	-122.643863	65535	2147483647
166	11/17/20 * 14:6:4	LTE	-89	Connected	38.2328399	-122.643986	65535	2147483647
167	11/17/20 * 14:6:9	LTE	-94	Connected	38.232797	-122.644269	65535	2147483647
168	11/17/20 * 14:6:14	LTE	-85	Connected	38.2326049	-122.644431	65535	2147483647
169	11/17/20 * 14:6:19	LTE	-83	Connected	38.2324287	-122.644602	65535	2147483647
170	11/17/20 * 14:6:24	LTE	-87	Connected	38.2323763	-122.64475	65535	2147483647
171	11/17/20 * 14:6:29	LTE	-88	Connected	38.2323672	-122.644748	65535	2147483647
172	11/17/20 * 14:6:34	LTE	-88	Connected	38.2323666	-122.644739	65535	2147483647
173	11/17/20 * 14:6:39	LTE	-83	Connected	38.2323664	-122.644739	65535	2147483647
174	11/17/20 * 14:6:44	LTE	-83	Connected	38.2323663	-122.644739	65535	2147483647
175	11/17/20 * 14:6:49	LTE	-84	Connected	38.2323661	-122.644739	65535	2147483647
176	11/17/20 * 14:6:54	LTE	-83	Connected	38.2323661	-122.644739	65535	2147483647
177	11/17/20 * 14:6:59	LTE	-83	Connected	38.232366	-122.644739	65535	2147483647
178	11/17/20 * 14:7:4	LTE	-84	Connected	38.2323659	-122.644739	65535	2147483647
179	11/17/20 * 14:7:9	LTE	-84	Connected	38.2323659	-122.644739	65535	2147483647
180	11/17/20 * 14:7:14	LTE	-84	Connected	38.2323659	-122.644739	65535	2147483647
181	11/17/20 * 14:7:19	LTE	-84	Connected	38.2323659	-122.644739	65535	2147483647

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Counter	Date:	Network type	dBm	Data state:	TP Location latitude	TP Location longitude	Tower Cell ID - short	Tower Cell ID - long
	Log date: 11/17/20							
	Log start: 14:18:50							
	Log interval: 5 seconds							
	Phone type: CDMA							
	Country code: us							
	Device ID: 355275084775104							
1	11/17/20 * 14:18:55	LTE	-87	Connected	38.23236	-122.6447	65535	2147483647
2	11/17/20 * 14:19:0	LTE	-88	Connected	38.23236	-122.6447	65535	2147483647
3	11/17/20 * 14:19:6	LTE	-90	Connected	38.23236	-122.6447	65535	2147483647
4	11/17/20 * 14:19:11	LTE	-90	Connected	38.232286	-122.6448	65535	2147483647
5	11/17/20 * 14:19:16	LTE	-92	Connected	38.23224	-122.6449	65535	2147483647
6	11/17/20 * 14:19:21	LTE	-89	Connected	38.232368	-122.6451	65535	2147483647
7	11/17/20 * 14:19:26	LTE	-84	Connected	38.232413	-122.6451	65535	2147483647
8	11/17/20 * 14:19:31	LTE	-86	Connected	38.232436	-122.6454	65535	2147483647
9	11/17/20 * 14:19:36	LTE	-95	Connected	38.232333	-122.6457	65535	2147483647
10	11/17/20 * 14:19:41	LTE	-95	Connected	38.232191	-122.6462	65535	2147483647
11	11/17/20 * 14:19:46	LTE	-98	Connected	38.232008	-122.6468	65535	2147483647
12	11/17/20 * 14:19:51	LTE	-101	Connected	38.231851	-122.6473	65535	2147483647
13	11/17/20 * 14:19:56	LTE	-99	Connected	38.231714	-122.6477	65535	2147483647
14	11/17/20 * 14:20:1	LTE	-101	Connected	38.231659	-122.6478	65535	2147483647
15	11/17/20 * 14:20:6	LTE	-100	Connected	38.23153	-122.6482	65535	2147483647
16	11/17/20 * 14:20:11	LTE	-102	Connected	38.231367	-122.6488	65535	2147483647
17	11/17/20 * 14:20:16	LTE	-100	Connected	38.231188	-122.6493	65535	2147483647
18	11/17/20 * 14:20:21	LTE	-98	Connected	38.231006	-122.6498	65535	2147483647
19	11/17/20 * 14:20:26	LTE	-97	Connected	38.230853	-122.6503	65535	2147483647
20	11/17/20 * 14:20:31	LTE	-95	Connected	38.230672	-122.6508	65535	2147483647
21	11/17/20 * 14:20:36	LTE	-95	Connected	38.230499	-122.6514	65535	2147483647
22	11/17/20 * 14:20:41	LTE	-97	Connected	38.23032	-122.6519	65535	2147483647
23	11/17/20 * 14:20:47	LTE	-94	Connected	38.23018	-122.6524	65535	2147483647
24	11/17/20 * 14:20:52	LTE	-91	Connected	38.230145	-122.6526	65535	2147483647
25	11/17/20 * 14:20:57	LTE	-108	Connected	38.23026	-122.6527	65535	2147483647
26	11/17/20 * 14:21:2	LTE	-108	Connected	38.230494	-122.6528	65535	2147483647
27	11/17/20 * 14:21:7	LTE	-112	Connected	38.230738	-122.653	65535	2147483647
28	11/17/20 * 14:21:12	LTE	-115	Connected	38.230978	-122.6531	65535	2147483647
29	11/17/20 * 14:21:17	LTE	-109	Connected	38.231224	-122.6532	65535	2147483647
30	11/17/20 * 14:21:22	LTE	-108	Connected	38.231521	-122.6534	65535	2147483647
31	11/17/20 * 14:21:27	LTE	-106	Connected	38.231813	-122.6535	65535	2147483647
32	11/17/20 * 14:21:32	LTE	-107	Connected	38.23212	-122.6537	65535	2147483647
33	11/17/20 * 14:21:37	LTE	-103	Connected	38.23229	-122.6538	65535	2147483647
34	11/17/20 * 14:21:42	LTE	-103	Connected	38.232461	-122.6538	65535	2147483647
35	11/17/20 * 14:21:47	LTE	-105	Connected	38.232785	-122.6539	65535	2147483647
36	11/17/20 * 14:21:52	LTE	-104	Connected	38.233146	-122.6538	65535	2147483647
37	11/17/20 * 14:21:57	LTE	-97	Connected	38.233502	-122.6538	65535	2147483647
38	11/17/20 * 14:22:2	LTE	-109	Connected	38.233821	-122.6538	65535	2147483647

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39	11/17/20 * 14:22:7	LTE	-103	Connected	38.234125	-122.6538	65535	2147483647
40	11/17/20 * 14:22:12	LTE	-107	Connected	38.234399	-122.6537	65535	2147483647
41	11/17/20 * 14:22:17	LTE	-112	Connected	38.234449	-122.6535	65535	2147483647
42	11/17/20 * 14:22:22	LTE	-95	Connected	38.23443	-122.6531	65535	2147483647
43	11/17/20 * 14:22:27	LTE	-94	Connected	38.234424	-122.6526	65535	2147483647
44	11/17/20 * 14:22:33	LTE	-98	Connected	38.234408	-122.6521	65535	2147483647
45	11/17/20 * 14:22:38	LTE	-100	Connected	38.234371	-122.6516	65535	2147483647
46	11/17/20 * 14:22:43	LTE	-100	Connected	38.234221	-122.6514	65535	2147483647
47	11/17/20 * 14:22:48	LTE	-99	Connected	38.23407	-122.6512	65535	2147483647
48	11/17/20 * 14:22:53	LTE	-101	Connected	38.233878	-122.6509	65535	2147483647
49	11/17/20 * 14:22:58	LTE	-102	Connected	38.23367	-122.6507	65535	2147483647
50	11/17/20 * 14:23:3	LTE	-96	Connected	38.233468	-122.6504	65535	2147483647
51	11/17/20 * 14:23:8	LTE	-92	Connected	38.233253	-122.6501	65535	2147483647
52	11/17/20 * 14:23:13	LTE	-97	Connected	38.233029	-122.6499	65535	2147483647
53	11/17/20 * 14:23:18	LTE	-95	Connected	38.232834	-122.6496	65535	2147483647
54	11/17/20 * 14:23:23	LTE	-94	Connected	38.232627	-122.6493	65535	2147483647
55	11/17/20 * 14:23:28	LTE	-94	Connected	38.232385	-122.649	65535	2147483647
56	11/17/20 * 14:23:33	LTE	-97	Connected	38.232114	-122.6487	65535	2147483647
57	11/17/20 * 14:23:38	LTE	-92	Connected	38.231908	-122.6484	65535	2147483647
58	11/17/20 * 14:23:43	LTE	-94	Connected	38.231839	-122.6483	65535	2147483647
59	11/17/20 * 14:23:48	LTE	-98	Connected	38.231921	-122.6481	65535	2147483647
60	11/17/20 * 14:23:53	LTE	-94	Connected	38.232109	-122.6479	65535	2147483647
61	11/17/20 * 14:23:58	LTE	-90	Connected	38.232304	-122.6477	65535	2147483647
62	11/17/20 * 14:24:3	LTE	-87	Connected	38.232495	-122.6475	65535	2147483647
63	11/17/20 * 14:24:8	LTE	-88	Connected	38.232526	-122.6475	65535	2147483647
64	11/17/20 * 14:24:13	LTE	-87	Connected	38.232668	-122.6473	65535	2147483647
65	11/17/20 * 14:24:18	LTE	-85	Connected	38.232878	-122.647	65535	2147483647
66	11/17/20 * 14:24:23	LTE	-89	Connected	38.233109	-122.6467	65535	2147483647
67	11/17/20 * 14:24:28	LTE	-83	Connected	38.23332	-122.6465	65535	2147483647
68	11/17/20 * 14:24:34	LTE	-81	Connected	38.233421	-122.6464	65535	2147483647
69	11/17/20 * 14:24:39	LTE	-82	Connected	38.233623	-122.6461	65535	2147483647
70	11/17/20 * 14:24:44	LTE	-82	Connected	38.233817	-122.6459	65535	2147483647
71	11/17/20 * 14:24:49	LTE	-77	Connected	38.23394	-122.6457	65535	2147483647
72	11/17/20 * 14:24:54	LTE	-83	Connected	38.233931	-122.6455	65535	2147483647
73	11/17/20 * 14:24:59	LTE	-84	Connected	38.23374	-122.6453	65535	2147483647
74	11/17/20 * 14:25:4	LTE	-84	Connected	38.233541	-122.6449	65535	2147483647
75	11/17/20 * 14:25:9	LTE	-83	Connected	38.233328	-122.6446	65535	2147483647
76	11/17/20 * 14:25:14	LTE	-78	Connected	38.233133	-122.6443	65535	2147483647
77	11/17/20 * 14:25:19	LTE	-81	Connected	38.23298	-122.6441	65535	2147483647
78	11/17/20 * 14:25:24	LTE	-77	Connected	38.232985	-122.6441	65535	2147483647
79	11/17/20 * 14:25:29	LTE	-84	Connected	38.232844	-122.6442	65535	2147483647
80	11/17/20 * 14:25:34	LTE	-85	Connected	38.232741	-122.6446	65535	2147483647
81	11/17/20 * 14:25:39	LTE	-85	Connected	38.232607	-122.645	65535	2147483647
82	11/17/20 * 14:25:44	LTE	-87	Connected	38.232534	-122.6453	65535	2147483647
83	11/17/20 * 14:25:49	LTE	-90	Connected	38.232653	-122.6455	65535	2147483647
84	11/17/20 * 14:25:54	LTE	-90	Connected	38.232779	-122.6457	65535	2147483647
85	11/17/20 * 14:25:59	LTE	-87	Connected	38.232817	-122.6458	65535	2147483647

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86	11/17/20 * 14:26:4	LTE	-72	Connected	38.232951	-122.6457	65535	2147483647
87	11/17/20 * 14:26:9	LTE	-72	Connected	38.23318	-122.6454	65535	2147483647
88	11/17/20 * 14:26:14	LTE	-79	Connected	38.233404	-122.6451	65535	2147483647
89	11/17/20 * 14:26:19	LTE	-84	Connected	38.233498	-122.645	65535	2147483647
90	11/17/20 * 14:26:25	LTE	-81	Connected	38.23365	-122.6451	65535	2147483647
91	11/17/20 * 14:26:30	LTE	-87	Connected	38.233845	-122.6453	65535	2147483647
92	11/17/20 * 14:26:35	LTE	-84	Connected	38.234017	-122.6456	65535	2147483647
93	11/17/20 * 14:26:40	LTE	-85	Connected	38.234172	-122.6458	65535	2147483647
94	11/17/20 * 14:26:45	LTE	-82	Connected	38.234189	-122.6458	65535	2147483647
95	11/17/20 * 14:26:50	LTE	-86	Connected	38.234317	-122.6461	65535	2147483647
96	11/17/20 * 14:26:55	LTE	-87	Connected	38.234548	-122.6464	65535	2147483647
97	11/17/20 * 14:27:0	LTE	-94	Connected	38.234769	-122.6467	65535	2147483647
98	11/17/20 * 14:27:5	LTE	-94	Connected	38.235011	-122.647	65535	2147483647
99	11/17/20 * 14:27:10	LTE	-92	Connected	38.235281	-122.6474	65535	2147483647
100	11/17/20 * 14:27:15	LTE	-94	Connected	38.235527	-122.6477	65535	2147483647
101	11/17/20 * 14:27:20	LTE	-83	Connected	38.235572	-122.6477	65535	2147483647
102	11/17/20 * 14:27:25	LTE	-70	Connected	38.235645	-122.6476	65535	2147483647
103	11/17/20 * 14:27:30	LTE	-73	Connected	38.235724	-122.6473	65535	2147483647
104	11/17/20 * 14:27:35	LTE	-81	Connected	38.235844	-122.647	65535	2147483647
105	11/17/20 * 14:27:40	LTE	-79	Connected	38.235941	-122.6467	65535	2147483647
106	11/17/20 * 14:27:45	LTE	-85	Connected	38.236028	-122.6464	65535	2147483647
107	11/17/20 * 14:27:50	LTE	-88	Connected	38.23613	-122.6461	65535	2147483647
108	11/17/20 * 14:27:55	LTE	-76	Connected	38.236177	-122.646	65535	2147483647
109	11/17/20 * 14:28:0	LTE	-69	Connected	38.236253	-122.6458	65535	2147483647
110	11/17/20 * 14:28:5	LTE	-68	Connected	38.236346	-122.6455	65535	2147483647
111	11/17/20 * 14:28:10	LTE	-70	Connected	38.23643	-122.6452	65535	2147483647
112	11/17/20 * 14:28:15	LTE	-71	Connected	38.236471	-122.6452	65535	2147483647
113	11/17/20 * 14:28:21	LTE	-73	Connected	38.236521	-122.6449	65535	2147483647
114	11/17/20 * 14:28:26	LTE	-68	Connected	38.236624	-122.6446	65535	2147483647
115	11/17/20 * 14:28:31	LTE	-64	Connected	38.236701	-122.6443	65535	2147483647
116	11/17/20 * 14:28:36	LTE	-64	Connected	38.236751	-122.6442	65535	2147483647
117	11/17/20 * 14:28:41	LTE	-61	Connected	38.236799	-122.6441	65535	2147483647
118	11/17/20 * 14:28:46	LTE	-60	Connected	38.236899	-122.6437	65535	2147483647
119	11/17/20 * 14:28:51	LTE	-60	Connected	38.237003	-122.6434	65535	2147483647
120	11/17/20 * 14:28:56	LTE	-62	Connected	38.237044	-122.6433	65535	2147483647
121	11/17/20 * 14:29:1	LTE	-59	Connected	38.237102	-122.6432	65535	2147483647
122	11/17/20 * 14:29:6	LTE	-62	Connected	38.237185	-122.6429	65535	2147483647
123	11/17/20 * 14:29:11	LTE	-60	Connected	38.237263	-122.6426	65535	2147483647
124	11/17/20 * 14:29:16	LTE	-69	Connected	38.237329	-122.6424	65535	2147483647
125	11/17/20 * 14:29:21	LTE	-79	Connected	38.237394	-122.6423	65535	2147483647
126	11/17/20 * 14:29:26	LTE	-76	Connected	38.237628	-122.6424	65535	2147483647
127	11/17/20 * 14:29:31	LTE	-79	Connected	38.237961	-122.6425	65535	2147483647
128	11/17/20 * 14:29:36	LTE	-76	Connected	38.238279	-122.6427	65535	2147483647
129	11/17/20 * 14:29:41	LTE	-79	Connected	38.238614	-122.6429	65535	2147483647
130	11/17/20 * 14:29:46	LTE	-67	Connected	38.238915	-122.6431	65535	2147483647
131	11/17/20 * 14:29:51	LTE	-66	Connected	38.239005	-122.6433	65535	2147483647
132	11/17/20 * 14:29:56	LTE	-68	Connected	38.238907	-122.6436	65535	2147483647

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133	11/17/20 * 14:30:1	LTE	-74	Connected	38.238807	-122.6439	65535	2147483647
134	11/17/20 * 14:30:6	LTE	-76	Connected	38.238779	-122.644	65535	2147483647
135	11/17/20 * 14:30:12	LTE	-74	Connected	38.238676	-122.6443	65535	2147483647
136	11/17/20 * 14:30:17	LTE	-76	Connected	38.238543	-122.6447	65535	2147483647
137	11/17/20 * 14:30:22	LTE	-76	Connected	38.238448	-122.645	65535	2147483647
138	11/17/20 * 14:30:27	LTE	-80	Connected	38.238344	-122.6454	65535	2147483647
139	11/17/20 * 14:30:32	LTE	-88	Connected	38.238251	-122.6457	65535	2147483647
140	11/17/20 * 14:30:37	LTE	-91	Connected	38.238223	-122.6458	65535	2147483647
141	11/17/20 * 14:30:42	LTE	-89	Connected	38.238159	-122.6461	65535	2147483647
142	11/17/20 * 14:30:47	LTE	-99	Connected	38.238035	-122.6464	65535	2147483647
143	11/17/20 * 14:30:52	LTE	-93	Connected	38.237952	-122.6467	65535	2147483647
144	11/17/20 * 14:30:57	LTE	-93	Connected	38.237903	-122.6468	65535	2147483647
145	11/17/20 * 14:31:2	LTE	-92	Connected	38.237779	-122.6471	65535	2147483647
146	11/17/20 * 14:31:7	LTE	-94	Connected	38.237657	-122.6476	65535	2147483647
147	11/17/20 * 14:31:12	LTE	-85	Connected	38.237512	-122.648	65535	2147483647
148	11/17/20 * 14:31:17	LTE	-89	Connected	38.237395	-122.6485	65535	2147483647
149	11/17/20 * 14:31:22	LTE	-93	Connected	38.237257	-122.6488	65535	2147483647
150	11/17/20 * 14:31:27	LTE	-92	Connected	38.237143	-122.6492	65535	2147483647
151	11/17/20 * 14:31:32	LTE	-92	Connected	38.237058	-122.6495	65535	2147483647
152	11/17/20 * 14:31:37	LTE	-93	Connected	38.236987	-122.6497	65535	2147483647
153	11/17/20 * 14:31:42	LTE	-94	Connected	38.237026	-122.6498	65535	2147483647
154	11/17/20 * 14:31:47	LTE	-96	Connected	38.237207	-122.65	65535	2147483647
155	11/17/20 * 14:31:52	LTE	-98	Connected	38.237429	-122.6504	65535	2147483647
156	11/17/20 * 14:31:57	LTE	-105	Connected	38.237655	-122.6507	65535	2147483647
157	11/17/20 * 14:32:2	LTE	-105	Connected	38.237737	-122.6508	65535	2147483647
158	11/17/20 * 14:32:8	LTE	-106	Connected	38.237781	-122.6505	65535	2147483647
159	11/17/20 * 14:32:13	LTE	-102	Connected	38.237895	-122.6502	65535	2147483647
160	11/17/20 * 14:32:18	LTE	-96	Connected	38.238024	-122.6498	65535	2147483647
161	11/17/20 * 14:32:23	LTE	-102	Connected	38.238133	-122.6494	65535	2147483647
162	11/17/20 * 14:32:28	LTE	-91	Connected	38.238265	-122.649	65535	2147483647
163	11/17/20 * 14:32:33	LTE	-76	Connected	38.238354	-122.6487	65535	2147483647
164	11/17/20 * 14:32:38	LTE	-81	Connected	38.238439	-122.6484	65535	2147483647
165	11/17/20 * 14:32:43	LTE	-80	Connected	38.238501	-122.6483	65535	2147483647
166	11/17/20 * 14:32:48	LTE	-82	Connected	38.238579	-122.648	65535	2147483647
167	11/17/20 * 14:32:53	LTE	-81	Connected	38.23869	-122.6476	65535	2147483647
168	11/17/20 * 14:32:58	LTE	-77	Connected	38.238747	-122.6474	65535	2147483647
169	11/17/20 * 14:33:3	LTE	-81	Connected	38.238823	-122.6472	65535	2147483647
170	11/17/20 * 14:33:8	LTE	-77	Connected	38.238953	-122.6468	65535	2147483647
171	11/17/20 * 14:33:13	LTE	-73	Connected	38.239012	-122.6465	65535	2147483647
172	11/17/20 * 14:33:18	LTE	-78	Connected	38.239088	-122.6463	65535	2147483647
173	11/17/20 * 14:33:23	LTE	-78	Connected	38.239239	-122.6459	65535	2147483647
174	11/17/20 * 14:33:28	LTE	-77	Connected	38.239309	-122.6456	65535	2147483647
175	11/17/20 * 14:33:33	LTE	-72	Connected	38.239364	-122.6455	65535	2147483647
176	11/17/20 * 14:33:38	LTE	-60	Connected	38.239452	-122.6451	65535	2147483647
177	11/17/20 * 14:33:43	LTE	-75	Connected	38.239538	-122.6448	65535	2147483647
178	11/17/20 * 14:33:48	LTE	-75	Connected	38.239604	-122.6447	65535	2147483647

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Counter	Date:	Network type	dBm	Data state:	TP Location latitude	TP Location longitude	Tower Cell ID - short	Tower Cell ID - long
	Log date: 11/17/20							
	Log start: 14:42:53							
	Log interval: 5 seconds							
	Phone type: CDMA							
	Country code: us							
	Device ID: 355275084775104							
1	11/17/20 * 14:42:58	LTE	-75	Connected	38.23994297	-122.6436632	65535	2147483647
2	11/17/20 * 14:43:3	LTE	-72	Connected	38.23994623	-122.6436524	65535	2147483647
3	11/17/20 * 14:43:8	LTE	-74	Connected	38.2399868	-122.6435377	65535	2147483647
4	11/17/20 * 14:43:13	LTE	-73	Connected	38.24000384	-122.6434944	65535	2147483647
5	11/17/20 * 14:43:18	LTE	-71	Connected	38.24000962	-122.6434874	65535	2147483647
6	11/17/20 * 14:43:23	LTE	-75	Connected	38.24001087	-122.6434779	65535	2147483647
7	11/17/20 * 14:43:28	LTE	-68	Connected	38.24000802	-122.6434768	65535	2147483647
8	11/17/20 * 14:43:33	LTE	-71	Connected	38.24002782	-122.6434138	65535	2147483647
9	11/17/20 * 14:43:38	LTE	-85	Connected	38.24035406	-122.6434162	65535	2147483647
10	11/17/20 * 14:43:43	LTE	-86	Connected	38.24062031	-122.6435265	65535	2147483647
11	11/17/20 * 14:43:48	LTE	-89	Connected	38.24061718	-122.6435282	65535	2147483647
12	11/17/20 * 14:43:53	LTE	-87	Connected	38.24062015	-122.6435277	65535	2147483647
13	11/17/20 * 14:43:58	LTE	-88	Connected	38.24061933	-122.6435271	65535	2147483647
14	11/17/20 * 14:44:3	LTE	-89	Connected	38.2406193	-122.643527	65535	2147483647
15	11/17/20 * 14:44:8	LTE	-89	Connected	38.24061935	-122.643527	65535	2147483647
16	11/17/20 * 14:44:13	LTE	-89	Connected	38.24061922	-122.6435267	65535	2147483647
17	11/17/20 * 14:44:18	LTE	-89	Connected	38.24061906	-122.6435269	65535	2147483647
18	11/17/20 * 14:44:23	LTE	-88	Connected	38.24061893	-122.643527	65535	2147483647
19	11/17/20 * 14:44:29	LTE	-90	Connected	38.24064244	-122.6435303	65535	2147483647
20	11/17/20 * 14:44:34	LTE	-89	Connected	38.24094156	-122.6436179	65535	2147483647
21	11/17/20 * 14:44:39	LTE	-83	Connected	38.24143951	-122.6437719	65535	2147483647
22	11/17/20 * 14:44:44	LTE	-96	Connected	38.241868	-122.6439248	65535	2147483647
23	11/17/20 * 14:44:49	LTE	-96	Connected	38.24197721	-122.6440976	65535	2147483647
24	11/17/20 * 14:44:54	LTE	-95	Connected	38.24189587	-122.6443901	65535	2147483647
25	11/17/20 * 14:44:59	LTE	-89	Connected	38.24174962	-122.6447881	65535	2147483647
26	11/17/20 * 14:45:4	LTE	-92	Connected	38.24160014	-122.6452305	65535	2147483647
27	11/17/20 * 14:45:9	LTE	-94	Connected	38.24147657	-122.645626	65535	2147483647
28	11/17/20 * 14:45:14	LTE	-86	Connected	38.24134014	-122.6460345	65535	2147483647
29	11/17/20 * 14:45:19	LTE	-89	Connected	38.24124687	-122.6463093	65535	2147483647
30	11/17/20 * 14:45:24	LTE	-89	Connected	38.24122963	-122.6463596	65535	2147483647
31	11/17/20 * 14:45:29	LTE	-88	Connected	38.24114669	-122.6466531	65535	2147483647
32	11/17/20 * 14:45:34	LTE	-93	Connected	38.24103852	-122.6470276	65535	2147483647
33	11/17/20 * 14:45:39	LTE	-91	Connected	38.24094235	-122.6472587	65535	2147483647
34	11/17/20 * 14:45:44	LTE	-89	Connected	38.24070983	-122.6471881	65535	2147483647
35	11/17/20 * 14:45:49	LTE	-88	Connected	38.2403867	-122.6470255	65535	2147483647
36	11/17/20 * 14:45:54	LTE	-78	Connected	38.24006146	-122.6468582	65535	2147483647
37	11/17/20 * 14:45:59	LTE	-83	Connected	38.23973846	-122.6466909	65535	2147483647
38	11/17/20 * 14:46:4	LTE	-83	Connected	38.23939732	-122.6465294	65535	2147483647
39	11/17/20 * 14:46:9	LTE	-81	Connected	38.23905938	-122.6463583	65535	2147483647
40	11/17/20 * 14:46:14	LTE	-87	Connected	38.23872401	-122.6462005	65535	2147483647
41	11/17/20 * 14:46:20	LTE	-81	Connected	38.23837198	-122.6460224	65535	2147483647
42	11/17/20 * 14:46:25	LTE	-85	Connected	38.23821504	-122.6459735	65535	2147483647

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43	11/17/20 * 14:46:30	LTE	-84	Connected	38.23808197	-122.6459097	65535	2147483647
44	11/17/20 * 14:46:35	LTE	-97	Connected	38.23772398	-122.6457167	65535	2147483647
45	11/17/20 * 14:46:40	LTE	-97	Connected	38.23731178	-122.6455035	65535	2147483647
46	11/17/20 * 14:46:45	LTE	-87	Connected	38.23700773	-122.645338	65535	2147483647
47	11/17/20 * 14:46:50	LTE	-89	Connected	38.23669463	-122.6451523	65535	2147483647
48	11/17/20 * 14:46:55	LTE	-79	Connected	38.23663064	-122.645128	65535	2147483647
49	11/17/20 * 14:47:0	LTE	-85	Connected	38.23650177	-122.6450582	65535	2147483647
50	11/17/20 * 14:47:5	LTE	-86	Connected	38.23619329	-122.6448361	65535	2147483647
51	11/17/20 * 14:47:10	LTE	-97	Connected	38.23590981	-122.644629	65535	2147483647
52	11/17/20 * 14:47:15	LTE	-96	Connected	38.23564924	-122.6444688	65535	2147483647
53	11/17/20 * 14:47:20	LTE	-94	Connected	38.23532995	-122.6442395	65535	2147483647
54	11/17/20 * 14:47:25	LTE	-79	Connected	38.23506996	-122.6440664	65535	2147483647
55	11/17/20 * 14:47:30	LTE	-75	Connected	38.23497039	-122.6440483	65535	2147483647
56	11/17/20 * 14:47:35	LTE	-78	Connected	38.2349394	-122.6440687	65535	2147483647
57	11/17/20 * 14:47:40	LTE	-83	Connected	38.23481751	-122.6444011	65535	2147483647
58	11/17/20 * 14:47:45	LTE	-88	Connected	38.23470037	-122.6447773	65535	2147483647
59	11/17/20 * 14:47:50	LTE	-89	Connected	38.23479639	-122.6449513	65535	2147483647
60	11/17/20 * 14:47:55	LTE	-95	Connected	38.23504534	-122.6451208	65535	2147483647
61	11/17/20 * 14:48:0	LTE	-100	Connected	38.23532618	-122.6453216	65535	2147483647
62	11/17/20 * 14:48:5	LTE	-99	Connected	38.23562011	-122.6455242	65535	2147483647
63	11/17/20 * 14:48:10	LTE	-98	Connected	38.2358878	-122.6457046	65535	2147483647
64	11/17/20 * 14:48:15	LTE	-95	Connected	38.2361197	-122.6458513	65535	2147483647
65	11/17/20 * 14:48:20	LTE	-91	Connected	38.23615969	-122.6458863	65535	2147483647
66	11/17/20 * 14:48:25	LTE	-98	Connected	38.23639343	-122.6460472	65535	2147483647
67	11/17/20 * 14:48:30	LTE	-91	Connected	38.23670952	-122.6461952	65535	2147483647
68	11/17/20 * 14:48:35	LTE	-95	Connected	38.23701774	-122.6463252	65535	2147483647
69	11/17/20 * 14:48:40	LTE	-97	Connected	38.23736038	-122.6465044	65535	2147483647
70	11/17/20 * 14:48:45	LTE	-96	Connected	38.23768348	-122.6466623	65535	2147483647
71	11/17/20 * 14:48:50	LTE	-93	Connected	38.23778932	-122.646725	65535	2147483647
72	11/17/20 * 14:48:55	LTE	-93	Connected	38.2379551	-122.6467838	65535	2147483647
73	11/17/20 * 14:49:1	LTE	-92	Connected	38.23821179	-122.6469007	65535	2147483647
74	11/17/20 * 14:49:6	LTE	-88	Connected	38.23848993	-122.6470253	65535	2147483647
75	11/17/20 * 14:49:11	LTE	-92	Connected	38.23872459	-122.6471616	65535	2147483647
76	11/17/20 * 14:49:16	LTE	-86	Connected	38.23886518	-122.6472385	65535	2147483647
77	11/17/20 * 14:49:21	LTE	-78	Connected	38.23915563	-122.6473924	65535	2147483647
78	11/17/20 * 14:49:26	LTE	-84	Connected	38.23946786	-122.6475584	65535	2147483647
79	11/17/20 * 14:49:31	LTE	-86	Connected	38.23964863	-122.6476643	65535	2147483647
80	11/17/20 * 14:49:36	LTE	-85	Connected	38.23975898	-122.6477288	65535	2147483647
81	11/17/20 * 14:49:41	LTE	-84	Connected	38.24004015	-122.6478673	65535	2147483647
82	11/17/20 * 14:49:46	LTE	-94	Connected	38.24033517	-122.6480187	65535	2147483647
83	11/17/20 * 14:49:51	LTE	-92	Connected	38.24056538	-122.6481263	65535	2147483647
84	11/17/20 * 14:49:56	LTE	-91	Connected	38.24063523	-122.6482226	65535	2147483647
85	11/17/20 * 14:50:1	LTE	-93	Connected	38.24056137	-122.648551	65535	2147483647
86	11/17/20 * 14:50:6	LTE	-92	Connected	38.24046155	-122.6488432	65535	2147483647
87	11/17/20 * 14:50:11	LTE	-96	Connected	38.24035362	-122.6490589	65535	2147483647
88	11/17/20 * 14:50:16	LTE	-89	Connected	38.24017146	-122.6490241	65535	2147483647
89	11/17/20 * 14:50:21	LTE	-90	Connected	38.23995548	-122.6489168	65535	2147483647
90	11/17/20 * 14:50:26	LTE	-89	Connected	38.23974091	-122.6488001	65535	2147483647
91	11/17/20 * 14:50:31	LTE	-76	Connected	38.2395163	-122.6487043	65535	2147483647
92	11/17/20 * 14:50:36	LTE	-83	Connected	38.23932489	-122.6485771	65535	2147483647
93	11/17/20 * 14:50:41	LTE	-85	Connected	38.23910911	-122.6484605	65535	2147483647



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94	11/17/20 * 14:50:46	LTE	-88	Connected	38.23887779	-122.6483432	65535	2147483647
95	11/17/20 * 14:50:52	LTE	-86	Connected	38.23862896	-122.6482272	65535	2147483647
96	11/17/20 * 14:50:57	LTE	-84	Connected	38.23842578	-122.6481546	65535	2147483647
97	11/17/20 * 14:51:2	LTE	-81	Connected	38.23824081	-122.6480737	65535	2147483647
98	11/17/20 * 14:51:7	LTE	-88	Connected	38.2380047	-122.6479183	65535	2147483647
99	11/17/20 * 14:51:12	LTE	-93	Connected	38.23779333	-122.6478093	65535	2147483647
100	11/17/20 * 14:51:17	LTE	-88	Connected	38.2376963	-122.6477675	65535	2147483647
101	11/17/20 * 14:51:22	LTE	-85	Connected	38.2376139	-122.6477369	65535	2147483647
102	11/17/20 * 14:51:27	LTE	-88	Connected	38.23740773	-122.6476233	65535	2147483647
103	11/17/20 * 14:51:32	LTE	-91	Connected	38.23723153	-122.6475361	65535	2147483647
104	11/17/20 * 14:51:37	LTE	-88	Connected	38.23705091	-122.6474257	65535	2147483647
105	11/17/20 * 14:51:42	LTE	-95	Connected	38.23689178	-122.6473313	65535	2147483647
106	11/17/20 * 14:51:47	LTE	-97	Connected	38.23671484	-122.6472299	65535	2147483647
107	11/17/20 * 14:51:52	LTE	-95	Connected	38.23652842	-122.6471301	65535	2147483647
108	11/17/20 * 14:51:57	LTE	-94	Connected	38.236347	-122.6470481	65535	2147483647
109	11/17/20 * 14:52:2	LTE	-95	Connected	38.23616188	-122.6469788	65535	2147483647
110	11/17/20 * 14:52:7	LTE	-96	Connected	38.23600142	-122.6468848	65535	2147483647
111	11/17/20 * 14:52:12	LTE	-96	Connected	38.2359597	-122.6468564	65535	2147483647
112	11/17/20 * 14:52:17	LTE	-84	Connected	38.23585484	-122.6467655	65535	2147483647
113	11/17/20 * 14:52:22	LTE	-97	Connected	38.23564487	-122.6466169	65535	2147483647
114	11/17/20 * 14:52:27	LTE	-97	Connected	38.23540827	-122.6464472	65535	2147483647
115	11/17/20 * 14:52:32	LTE	-94	Connected	38.23521982	-122.6462976	65535	2147483647
116	11/17/20 * 14:52:37	LTE	-101	Connected	38.23503108	-122.6461677	65535	2147483647
117	11/17/20 * 14:52:43	LTE	-96	Connected	38.23491522	-122.6461248	65535	2147483647
118	11/17/20 * 14:52:48	LTE	-94	Connected	38.23483439	-122.6463181	65535	2147483647
119	11/17/20 * 14:52:53	LTE	-93	Connected	38.23478439	-122.6465242	65535	2147483647
120	11/17/20 * 14:52:58	LTE	-94	Connected	38.23475508	-122.6466924	65535	2147483647
121	11/17/20 * 14:53:3	LTE	-100	Connected	38.23492107	-122.6469174	65535	2147483647
122	11/17/20 * 14:53:8	LTE	-96	Connected	38.2351376	-122.6472202	65535	2147483647
123	11/17/20 * 14:53:13	LTE	-94	Connected	38.23534823	-122.6475283	65535	2147483647
124	11/17/20 * 14:53:18	LTE	-86	Connected	38.23550279	-122.6477335	65535	2147483647
125	11/17/20 * 14:53:23	LTE	-84	Connected	38.23557475	-122.6478377	65535	2147483647
126	11/17/20 * 14:53:28	LTE	-91	Connected	38.23574144	-122.6480969	65535	2147483647
127	11/17/20 * 14:53:33	LTE	-91	Connected	38.2359544	-122.6483526	65535	2147483647
128	11/17/20 * 14:53:38	LTE	-86	Connected	38.23611792	-122.6486	65535	2147483647
129	11/17/20 * 14:53:43	LTE	-88	Connected	38.23630744	-122.6488352	65535	2147483647
130	11/17/20 * 14:53:48	LTE	-83	Connected	38.23647536	-122.6490516	65535	2147483647
131	11/17/20 * 14:53:53	LTE	-86	Connected	38.23665321	-122.6492916	65535	2147483647
132	11/17/20 * 14:53:58	LTE	-87	Connected	38.23683044	-122.6495383	65535	2147483647
133	11/17/20 * 14:54:3	LTE	-86	Connected	38.23686564	-122.6495819	65535	2147483647
134	11/17/20 * 14:54:8	LTE	-88	Connected	38.23700243	-122.6497814	65535	2147483647
135	11/17/20 * 14:54:13	LTE	-90	Connected	38.23721662	-122.6500642	65535	2147483647
136	11/17/20 * 14:54:18	LTE	-94	Connected	38.23741443	-122.6503715	65535	2147483647
137	11/17/20 * 14:54:23	LTE	-102	Connected	38.23765191	-122.6506861	65535	2147483647
138	11/17/20 * 14:54:29	LTE	-104	Connected	38.23780344	-122.6509204	65535	2147483647
139	11/17/20 * 14:54:34	LTE	-102	Connected	38.23784493	-122.6509874	65535	2147483647
140	11/17/20 * 14:54:39	LTE	-101	Connected	38.23802534	-122.6512259	65535	2147483647
141	11/17/20 * 14:54:44	LTE	-91	Connected	38.23827571	-122.6515604	65535	2147483647
142	11/17/20 * 14:54:49	LTE	-100	Connected	38.23843587	-122.6516728	65535	2147483647
143	11/17/20 * 14:54:54	LTE	-99	Connected	38.23862522	-122.6516758	65535	2147483647
144	11/17/20 * 14:54:59	LTE	-105	Connected	38.23884531	-122.6516818	65535	2147483647

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145	11/17/20 * 14:55:4	LTE	-107	Connected	38.23911954	-122.6516618	65535	2147483647
146	11/17/20 * 14:55:9	LTE	-110	Connected	38.23936136	-122.6516765	65535	2147483647
147	11/17/20 * 14:55:14	LTE	-107	Connected	38.23951557	-122.6516955	65535	2147483647
148	11/17/20 * 14:55:19	LTE	-105	Connected	38.23958076	-122.6515546	65535	2147483647
149	11/17/20 * 14:55:24	LTE	-104	Connected	38.23967538	-122.6512439	65535	2147483647
150	11/17/20 * 14:55:29	LTE	-101	Connected	38.23978889	-122.6508964	65535	2147483647
151	11/17/20 * 14:55:34	LTE	-102	Connected	38.2398931	-122.6505576	65535	2147483647
152	11/17/20 * 14:55:39	LTE	-100	Connected	38.23996312	-122.6503075	65535	2147483647
153	11/17/20 * 14:55:44	LTE	-100	Connected	38.2400598	-122.6500352	65535	2147483647
154	11/17/20 * 14:55:49	LTE	-94	Connected	38.24016729	-122.6497062	65535	2147483647
155	11/17/20 * 14:55:54	LTE	-94	Connected	38.2402585	-122.6493842	65535	2147483647
156	11/17/20 * 14:55:59	LTE	-83	Connected	38.24029732	-122.6491453	65535	2147483647
157	11/17/20 * 14:56:4	LTE	-93	Connected	38.24012943	-122.6490457	65535	2147483647
158	11/17/20 * 14:56:9	LTE	-90	Connected	38.23988137	-122.6488914	65535	2147483647
159	11/17/20 * 14:56:14	LTE	-86	Connected	38.23961522	-122.6487439	65535	2147483647
160	11/17/20 * 14:56:19	LTE	-89	Connected	38.2394605	-122.6487671	65535	2147483647
161	11/17/20 * 14:56:25	LTE	-88	Connected	38.23933434	-122.649067	65535	2147483647
162	11/17/20 * 14:56:30	LTE	-89	Connected	38.23922532	-122.6494068	65535	2147483647
163	11/17/20 * 14:56:35	LTE	-94	Connected	38.23913602	-122.6497232	65535	2147483647
164	11/17/20 * 14:56:40	LTE	-100	Connected	38.23907677	-122.6498967	65535	2147483647
165	11/17/20 * 14:56:45	LTE	-98	Connected	38.23903432	-122.650065	65535	2147483647
166	11/17/20 * 14:56:50	LTE	-101	Connected	38.23895567	-122.6502995	65535	2147483647
167	11/17/20 * 14:56:55	LTE	-104	Connected	38.23889051	-122.6505055	65535	2147483647
168	11/17/20 * 14:57:0	LTE	-108	Connected	38.2388417	-122.6506296	65535	2147483647
169	11/17/20 * 14:57:5	LTE	-104	Connected	38.23864147	-122.6507165	65535	2147483647
170	11/17/20 * 14:57:10	LTE	-102	Connected	38.23848251	-122.6507818	65535	2147483647
171	11/17/20 * 14:57:15	LTE	-98	Connected	38.23831536	-122.6508444	65535	2147483647
172	11/17/20 * 14:57:20	LTE	-103	Connected	38.23815908	-122.6509255	65535	2147483647
173	11/17/20 * 14:57:25	LTE	-106	Connected	38.2380073	-122.6509897	65535	2147483647
174	11/17/20 * 14:57:30	LTE	-108	Connected	38.23796687	-122.6509991	65535	2147483647
175	11/17/20 * 14:57:35	LTE	-106	Connected	38.23796832	-122.6509938	65535	2147483647
176	11/17/20 * 14:57:40	LTE	-107	Connected	38.23796379	-122.6510029	65535	2147483647
177	11/17/20 * 14:57:45	LTE	-103	Connected	38.2379507	-122.6511042	65535	2147483647
178	11/17/20 * 14:57:50	LTE	-97	Connected	38.23799958	-122.6511489	65535	2147483647
179	11/17/20 * 14:57:55	LTE	-97	Connected	38.23799569	-122.6511458	65535	2147483647
180	11/17/20 * 14:58:0	LTE	-99	Connected	38.23799172	-122.6511403	65535	2147483647
181	11/17/20 * 14:58:5	LTE	-97	Connected	38.23799222	-122.6511379	65535	2147483647

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Counter	Date:	Network type	dBm	Data state:	TP Location latitude	TP Location longitude	Tower Cell ID - short	Tower Cell ID - long
	Log date: 11/18/20							
	Log start: 13:19:3							
	Log interval: 5 seconds							
	Phone type: CDMA							
	Country code: us							
	Device ID: 355275084775104							
1	11/18/20 * 13:19:8	LTE	-57	Connected	38.237864	-122.640885	65535	2147483647
2	11/18/20 * 13:19:13	LTE	-57	Connected	38.2378636	-122.640881	65535	2147483647
3	11/18/20 * 13:19:18	LTE	-60	Connected	38.2378486	-122.640818	65535	2147483647
4	11/18/20 * 13:19:23	LTE	-65	Connected	38.237747	-122.640787	65535	2147483647
5	11/18/20 * 13:19:28	LTE	-60	Connected	38.2376105	-122.640851	65535	2147483647
6	11/18/20 * 13:19:33	LTE	-64	Connected	38.2374277	-122.640765	65535	2147483647
7	11/18/20 * 13:19:38	LTE	-76	Connected	38.2371998	-122.640696	65535	2147483647
8	11/18/20 * 13:19:43	LTE	-73	Connected	38.2368581	-122.640677	65535	2147483647
9	11/18/20 * 13:19:48	LTE	-70	Connected	38.2365549	-122.640673	65535	2147483647
10	11/18/20 * 13:19:53	LTE	-70	Connected	38.2362657	-122.640649	65535	2147483647
11	11/18/20 * 13:19:58	LTE	-70	Connected	38.2360709	-122.640621	65535	2147483647
12	11/18/20 * 13:20:3	LTE	-70	Connected	38.236018	-122.640608	65535	2147483647
13	11/18/20 * 13:20:8	LTE	-69	Connected	38.2359355	-122.64077	65535	2147483647
14	11/18/20 * 13:20:13	LTE	-69	Connected	38.2358811	-122.640972	65535	2147483647
15	11/18/20 * 13:20:18	LTE	-66	Connected	38.2358653	-122.641005	65535	2147483647
16	11/18/20 * 13:20:24	LTE	-66	Connected	38.2358619	-122.641004	65535	2147483647
17	11/18/20 * 13:20:29	LTE	-66	Connected	38.2358594	-122.641003	65535	2147483647
18	11/18/20 * 13:20:34	LTE	-66	Connected	38.2358595	-122.641006	65535	2147483647
19	11/18/20 * 13:20:39	LTE	-66	Connected	38.2358587	-122.641011	65535	2147483647
20	11/18/20 * 13:20:44	LTE	-66	Connected	38.2358641	-122.641011	65535	2147483647
21	11/18/20 * 13:20:49	LTE	-66	Connected	38.2358692	-122.641009	65535	2147483647
22	11/18/20 * 13:20:54	LTE	-67	Connected	38.2358699	-122.64101	65535	2147483647
23	11/18/20 * 13:20:59	LTE	-66	Connected	38.23587	-122.64101	65535	2147483647
24	11/18/20 * 13:21:4	LTE	-68	Connected	38.23587	-122.64101	65535	2147483647
25	11/18/20 * 13:21:9	LTE	-66	Connected	38.2358692	-122.641007	65535	2147483647
26	11/18/20 * 13:21:14	LTE	-67	Connected	38.2358745	-122.640998	65535	2147483647
27	11/18/20 * 13:21:19	LTE	-66	Connected	38.2358734	-122.640992	65535	2147483647
28	11/18/20 * 13:21:24	LTE	-68	Connected	38.2358276	-122.641175	65535	2147483647
29	11/18/20 * 13:21:29	LTE	-75	Connected	38.2357002	-122.64158	65535	2147483647
30	11/18/20 * 13:21:34	LTE	-76	Connected	38.2356134	-122.641819	65535	2147483647
31	11/18/20 * 13:21:39	LTE	-75	Connected	38.2356029	-122.641853	65535	2147483647
32	11/18/20 * 13:21:44	LTE	-75	Connected	38.2355812	-122.641891	65535	2147483647
33	11/18/20 * 13:21:49	LTE	-77	Connected	38.2354566	-122.642228	65535	2147483647
34	11/18/20 * 13:21:54	LTE	-83	Connected	38.2352946	-122.642729	65535	2147483647
35	11/18/20 * 13:21:59	LTE	-86	Connected	38.2351299	-122.643209	65535	2147483647
36	11/18/20 * 13:22:4	LTE	-94	Connected	38.234954	-122.643721	65535	2147483647
37	11/18/20 * 13:22:8	LTE	-80	Connected	38.2347778	-122.64427	65535	2147483647
38	11/18/20 * 13:22:13	LTE	-92	Connected	38.234612	-122.644799	65535	2147483647
39	11/18/20 * 13:22:18	LTE	-91	Connected	38.2344427	-122.645341	65535	2147483647
40	11/18/20 * 13:22:23	LTE	-91	Connected	38.2343249	-122.645954	65535	2147483647

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41	11/18/20 * 13:22:28	LTE	-88	Connected	38.2342768	-122.646602	65535	2147483647
42	11/18/20 * 13:22:33	LTE	-97	Connected	38.2342884	-122.647309	65535	2147483647
43	11/18/20 * 13:22:38	LTE	-92	Connected	38.2342888	-122.648039	65535	2147483647
44	11/18/20 * 13:22:43	LTE	-104	Connected	38.2343196	-122.648775	65535	2147483647
45	11/18/20 * 13:22:48	LTE	-106	Connected	38.2343416	-122.649447	65535	2147483647
46	11/18/20 * 13:22:53	LTE	-105	Connected	38.2343558	-122.650123	65535	2147483647
47	11/18/20 * 13:22:58	LTE	-109	Connected	38.2343825	-122.650788	65535	2147483647
48	11/18/20 * 13:23:3	LTE	-109	Connected	38.2343987	-122.65142	65535	2147483647
49	11/18/20 * 13:23:8	LTE	-110	Connected	38.2344163	-122.652041	65535	2147483647
50	11/18/20 * 13:23:13	LTE	-107	Connected	38.2344401	-122.652651	65535	2147483647
51	11/18/20 * 13:23:18	LTE	-106	Connected	38.2344655	-122.653246	65535	2147483647
52	11/18/20 * 13:23:23	LTE	-110	Connected	38.2344945	-122.653889	65535	2147483647
53	11/18/20 * 13:23:28	LTE	-113	Connected	38.234517	-122.654542	65535	2147483647
54	11/18/20 * 13:23:33	LTE	-112	Connected	38.2345419	-122.655216	65535	2147483647
55	11/18/20 * 13:23:39	LTE	-110	Connected	38.234568	-122.65607	65535	2147483647
56	11/18/20 * 13:23:44	LTE	-112	Connected	38.2345814	-122.656801	65535	2147483647
57	11/18/20 * 13:23:49	LTE	-111	Connected	38.234607	-122.657514	65535	2147483647
58	11/18/20 * 13:23:54	LTE	-113	Connected	38.2346211	-122.65815	65535	2147483647
59	11/18/20 * 13:23:59	LTE	-112	Connected	38.2346412	-122.658626	65535	2147483647
60	11/18/20 * 13:24:4	LTE	-116	Connected	38.2346525	-122.659188	65535	2147483647
61	11/18/20 * 13:24:9	LTE	-109	Connected	38.2346676	-122.659861	65535	2147483647
62	11/18/20 * 13:24:14	LTE	-114	Connected	38.2346842	-122.660586	65535	2147483647
63	11/18/20 * 13:24:19	LTE	-110	Connected	38.2347125	-122.661375	65535	2147483647
64	11/18/20 * 13:24:24	LTE	-113	Connected	38.2347365	-122.662209	65535	2147483647
65	11/18/20 * 13:24:29	LTE	-115	Connected	38.2347457	-122.663102	65535	2147483647
66	11/18/20 * 13:24:34	LTE	-110	Connected	38.2347419	-122.663897	65535	2147483647
67	11/18/20 * 13:24:39	LTE	-104	Connected	38.2346852	-122.664323	65535	2147483647
68	11/18/20 * 13:24:44	LTE	-109	Connected	38.2343605	-122.66435	65535	2147483647
69	11/18/20 * 13:24:49	LTE	-107	Connected	38.2339229	-122.664346	65535	2147483647
70	11/18/20 * 13:24:54	LTE	-108	Connected	38.2334893	-122.66434	65535	2147483647
71	11/18/20 * 13:24:59	LTE	-110	Connected	38.2330661	-122.664332	65535	2147483647
72	11/18/20 * 13:25:4	LTE	-104	Connected	38.2326277	-122.664327	65535	2147483647
73	11/18/20 * 13:25:9	LTE	-106	Connected	38.23218	-122.664325	65535	2147483647
74	11/18/20 * 13:25:14	LTE	-102	Connected	38.2317182	-122.664338	65535	2147483647
75	11/18/20 * 13:25:19	LTE	-116	Connected	38.2312556	-122.664326	65535	2147483647
76	11/18/20 * 13:25:24	LTE	-117	Connected	38.2307642	-122.66432	65535	2147483647
77	11/18/20 * 13:25:29	LTE	-117	Connected	38.2302746	-122.664317	65535	2147483647
78	11/18/20 * 13:25:34	LTE	-115	Connected	38.2298024	-122.664312	65535	2147483647
79	11/18/20 * 13:25:40	LTE	-111	Connected	38.2292886	-122.66428	65535	2147483647
80	11/18/20 * 13:25:45	LTE	-110	Connected	38.2290843	-122.663979	65535	2147483647
81	11/18/20 * 13:25:50	LTE	-106	Connected	38.2288854	-122.663525	65535	2147483647
82	11/18/20 * 13:25:55	LTE	-109	Connected	38.2286433	-122.662954	65535	2147483647
83	11/18/20 * 13:26:0	LTE	-108	Connected	38.2284311	-122.662478	65535	2147483647
84	11/18/20 * 13:26:5	LTE	-107	Connected	38.2283443	-122.662385	65535	2147483647
85	11/18/20 * 13:26:10	LTE	-105	Connected	38.2281386	-122.662612	65535	2147483647
86	11/18/20 * 13:26:15	LTE	-108	Connected	38.2278164	-122.663102	65535	2147483647
87	11/18/20 * 13:26:20	LTE	-117	Connected	38.227487	-122.663591	65535	2147483647
88	11/18/20 * 13:26:25	LTE	-113	Connected	38.2272612	-122.663936	65535	2147483647
89	11/18/20 * 13:26:30	LTE	-114	Connected	38.2269362	-122.664405	65535	2147483647

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90	11/18/20 * 13:26:35	LTE	-110	Connected	38.2266836	-122.664742	65535	2147483647
91	11/18/20 * 13:26:40	LTE	-108	Connected	38.2266618	-122.664777	65535	2147483647
92	11/18/20 * 13:26:45	LTE	-111	Connected	38.2266497	-122.664789	65535	2147483647
93	11/18/20 * 13:26:50	LTE	-113	Connected	38.2264137	-122.664728	65535	2147483647
94	11/18/20 * 13:26:55	LTE	-106	Connected	38.2260557	-122.664746	65535	2147483647
95	11/18/20 * 13:27:0	LTE	-107	Connected	38.2256319	-122.664759	65535	2147483647
96	11/18/20 * 13:27:5	LTE	-112	Connected	38.2251945	-122.664687	65535	2147483647
97	11/18/20 * 13:27:10	LTE	-112	Connected	38.224825	-122.664543	65535	2147483647
98	11/18/20 * 13:27:15	LTE	-115	Connected	38.2245505	-122.664495	65535	2147483647
99	11/18/20 * 13:27:20	LTE	-113	Connected	38.2246119	-122.664242	65535	2147483647
100	11/18/20 * 13:27:25	LTE	-118	Connected	38.224796	-122.663927	65535	2147483647
101	11/18/20 * 13:27:30	LTE	-112	Connected	38.224778	-122.66345	65535	2147483647
102	11/18/20 * 13:27:35	LTE	-113	Connected	38.2246814	-122.662911	65535	2147483647
103	11/18/20 * 13:27:41	LTE	-115	Connected	38.2247839	-122.662271	65535	2147483647
104	11/18/20 * 13:27:46	LTE	-118	Connected	38.2249979	-122.661848	65535	2147483647
105	11/18/20 * 13:27:51	LTE	-119	Connected	38.2253106	-122.661596	65535	2147483647
106	11/18/20 * 13:27:56	LTE	-111	Connected	38.2255996	-122.661475	65535	2147483647
107	11/18/20 * 13:28:1	LTE	-119	Connected	38.2255996	-122.661171	65535	2147483647
108	11/18/20 * 13:28:6	LTE	-106	Connected	38.2255451	-122.660669	65535	2147483647
109	11/18/20 * 13:28:11	LTE	-106	Connected	38.2254399	-122.660215	65535	2147483647
110	11/18/20 * 13:28:16	LTE	-107	Connected	38.225337	-122.659959	65535	2147483647
111	11/18/20 * 13:28:21	LTE	-104	Connected	38.2252795	-122.659879	65535	2147483647
112	11/18/20 * 13:28:26	LTE	-102	Connected	38.2250653	-122.659905	65535	2147483647
113	11/18/20 * 13:28:31	LTE	-113	Connected	38.2247676	-122.659905	65535	2147483647
114	11/18/20 * 13:28:36	LTE	-110	Connected	38.2244692	-122.65976	65535	2147483647
115	11/18/20 * 13:28:41	LTE	-115	Connected	38.2243114	-122.659586	65535	2147483647
116	11/18/20 * 13:28:46	LTE	-104	Connected	38.224413	-122.659632	65535	2147483647
117	11/18/20 * 13:28:51	LTE	-109	Connected	38.2246534	-122.65983	65535	2147483647
118	11/18/20 * 13:28:56	LTE	-112	Connected	38.2250626	-122.65986	65535	2147483647
119	11/18/20 * 13:29:1	LTE	-105	Connected	38.2254528	-122.659636	65535	2147483647
120	11/18/20 * 13:29:6	LTE	-102	Connected	38.2257281	-122.659242	65535	2147483647
121	11/18/20 * 13:29:11	LTE	-109	Connected	38.2258173	-122.658737	65535	2147483647
122	11/18/20 * 13:29:16	LTE	-106	Connected	38.2258816	-122.658252	65535	2147483647
123	11/18/20 * 13:29:21	LTE	-110	Connected	38.2260557	-122.657948	65535	2147483647
124	11/18/20 * 13:29:26	LTE	-109	Connected	38.2263576	-122.657833	65535	2147483647
125	11/18/20 * 13:29:31	LTE	-105	Connected	38.2264657	-122.657805	65535	2147483647
126	11/18/20 * 13:29:36	LTE	-116	Connected	38.2265069	-122.657564	65535	2147483647
127	11/18/20 * 13:29:42	LTE	-99	Connected	38.2264011	-122.657016	65535	2147483647
128	11/18/20 * 13:29:47	LTE	-95	Connected	38.2263283	-122.656735	65535	2147483647
129	11/18/20 * 13:29:52	LTE	-94	Connected	38.2264196	-122.656592	65535	2147483647
130	11/18/20 * 13:29:57	LTE	-98	Connected	38.2264079	-122.656952	65535	2147483647
131	11/18/20 * 13:30:2	LTE	-104	Connected	38.2264979	-122.657452	65535	2147483647
132	11/18/20 * 13:30:7	LTE	-111	Connected	38.226524	-122.657974	65535	2147483647
133	11/18/20 * 13:30:12	LTE	-115	Connected	38.2266819	-122.658461	65535	2147483647
134	11/18/20 * 13:30:17	LTE	-121	Connected	38.226784	-122.659031	65535	2147483647
135	11/18/20 * 13:30:22	LTE	-110	Connected	38.2268706	-122.659623	65535	2147483647
136	11/18/20 * 13:30:27	LTE	-111	Connected	38.226867	-122.660198	65535	2147483647
137	11/18/20 * 13:30:32	LTE	-111	Connected	38.2267036	-122.660744	65535	2147483647
138	11/18/20 * 13:30:37	LTE	-99	Connected	38.2264105	-122.661159	65535	2147483647

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139	11/18/20 * 13:30:42	LTE	-113	Connected	38.2260511	-122.661444	65535	2147483647
140	11/18/20 * 13:30:47	LTE	-114	Connected	38.225649	-122.66155	65535	2147483647
141	11/18/20 * 13:30:52	LTE	-118	Connected	38.2252335	-122.661691	65535	2147483647
142	11/18/20 * 13:30:57	LTE	-117	Connected	38.2248725	-122.662096	65535	2147483647
143	11/18/20 * 13:31:2	LTE	-114	Connected	38.2247202	-122.662765	65535	2147483647
144	11/18/20 * 13:31:7	LTE	-114	Connected	38.2248165	-122.663398	65535	2147483647
145	11/18/20 * 13:31:12	LTE	-118	Connected	38.2248298	-122.663956	65535	2147483647
146	11/18/20 * 13:31:17	LTE	-116	Connected	38.2247453	-122.664333	65535	2147483647
147	11/18/20 * 13:31:22	LTE	-114	Connected	38.2245835	-122.664525	65535	2147483647
148	11/18/20 * 13:31:27	LTE	-111	Connected	38.2243904	-122.66423	65535	2147483647
149	11/18/20 * 13:31:32	LTE	-111	Connected	38.2240563	-122.663849	65535	2147483647
150	11/18/20 * 13:31:38	LTE	-106	Connected	38.2236708	-122.663174	65535	2147483647
151	11/18/20 * 13:31:43	LTE	-109	Connected	38.2233421	-122.662541	65535	2147483647
152	11/18/20 * 13:31:48	LTE	-108	Connected	38.2230346	-122.661902	65535	2147483647
153	11/18/20 * 13:31:53	LTE	-105	Connected	38.2228532	-122.661237	65535	2147483647
154	11/18/20 * 13:31:58	LTE	-109	Connected	38.2227659	-122.660572	65535	2147483647
155	11/18/20 * 13:32:3	LTE	-118	Connected	38.2227354	-122.659934	65535	2147483647
156	11/18/20 * 13:32:8	LTE	-115	Connected	38.2227056	-122.659293	65535	2147483647
157	11/18/20 * 13:32:13	LTE	-123	Connected	38.2226473	-122.658595	65535	2147483647
158	11/18/20 * 13:32:18	LTE	-123	Connected	38.2224687	-122.657878	65535	2147483647
159	11/18/20 * 13:32:23	LTE	-109	Connected	38.2221978	-122.65724	65535	2147483647
160	11/18/20 * 13:32:28	LTE	-107	Connected	38.2218907	-122.656581	65535	2147483647
161	11/18/20 * 13:32:33	LTE	-97	Connected	38.2216402	-122.6559	65535	2147483647
162	11/18/20 * 13:32:38	LTE	-96	Connected	38.2215496	-122.655476	65535	2147483647
163	11/18/20 * 13:32:43	LTE	-100	Connected	38.2215277	-122.655353	65535	2147483647
164	11/18/20 * 13:32:48	LTE	-100	Connected	38.2214454	-122.654906	65535	2147483647
165	11/18/20 * 13:32:53	LTE	-101	Connected	38.2213005	-122.654282	65535	2147483647
166	11/18/20 * 13:32:58	LTE	-100	Connected	38.2211365	-122.653661	65535	2147483647
167	11/18/20 * 13:33:3	LTE	-99	Connected	38.2209252	-122.653189	65535	2147483647
168	11/18/20 * 13:33:8	LTE	-95	Connected	38.2208496	-122.653066	65535	2147483647
169	11/18/20 * 13:33:13	LTE	-97	Connected	38.2206719	-122.652806	65535	2147483647
170	11/18/20 * 13:33:18	LTE	-101	Connected	38.2204007	-122.652353	65535	2147483647
171	11/18/20 * 13:33:23	LTE	-97	Connected	38.2201768	-122.651815	65535	2147483647
172	11/18/20 * 13:33:28	LTE	-85	Connected	38.2200262	-122.651258	65535	2147483647
173	11/18/20 * 13:33:33	LTE	-90	Connected	38.219982	-122.651035	65535	2147483647
174	11/18/20 * 13:33:39	LTE	-101	Connected	38.2199177	-122.650582	65535	2147483647
175	11/18/20 * 13:33:44	LTE	-107	Connected	38.2198368	-122.649901	65535	2147483647
176	11/18/20 * 13:33:49	LTE	-110	Connected	38.21958	-122.649297	65535	2147483647
177	11/18/20 * 13:33:54	LTE	-100	Connected	38.2192115	-122.648827	65535	2147483647
178	11/18/20 * 13:33:59	LTE	-84	Connected	38.2189813	-122.648215	65535	2147483647
179	11/18/20 * 13:34:4	LTE	-79	Connected	38.2188369	-122.647478	65535	2147483647
180	11/18/20 * 13:34:9	LTE	-92	Connected	38.2188953	-122.646746	65535	2147483647
181	11/18/20 * 13:34:14	LTE	-87	Connected	38.2190293	-122.646013	65535	2147483647

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Counter	Date:	Network type	dBm	Data state:	TP Location latitude	TP Location longitude	Tower Cell ID - short	Tower Cell ID - long
	Log date: 11/18/20							
	Log start: 13:36:37							
	Log interval: 5 seconds							
	Phone type: CDMA							
	Country code: us							
	Device ID: 355275084775104							
1	11/18/20 * 13:36:42	LTE	-90	Connected	38.22091212	-122.6432469	65535	2147483647
2	11/18/20 * 13:36:47	LTE	-78	Connected	38.22091235	-122.6432467	65535	2147483647
3	11/18/20 * 13:36:52	LTE	-77	Connected	38.22093904	-122.6432244	65535	2147483647
4	11/18/20 * 13:36:57	LTE	-76	Connected	38.22117976	-122.6431281	65535	2147483647
5	11/18/20 * 13:37:2	LTE	-78	Connected	38.22159133	-122.6430392	65535	2147483647
6	11/18/20 * 13:37:7	LTE	-80	Connected	38.22202762	-122.6429159	65535	2147483647
7	11/18/20 * 13:37:12	LTE	-86	Connected	38.22246587	-122.6428288	65535	2147483647
8	11/18/20 * 13:37:17	LTE	-88	Connected	38.22283789	-122.6427255	65535	2147483647
9	11/18/20 * 13:37:22	LTE	-89	Connected	38.22297746	-122.6427034	65535	2147483647
10	11/18/20 * 13:37:27	LTE	-90	Connected	38.22304077	-122.6425031	65535	2147483647
11	11/18/20 * 13:37:32	LTE	-95	Connected	38.22296372	-122.6421023	65535	2147483647
12	11/18/20 * 13:37:38	LTE	-98	Connected	38.22279	-122.6415015	65535	2147483647
13	11/18/20 * 13:37:43	LTE	-95	Connected	38.22264427	-122.6409777	65535	2147483647
14	11/18/20 * 13:37:48	LTE	-86	Connected	38.22254894	-122.6406185	65535	2147483647
15	11/18/20 * 13:37:53	LTE	-85	Connected	38.22250984	-122.6404783	65535	2147483647
16	11/18/20 * 13:37:58	LTE	-87	Connected	38.22245361	-122.6400514	65535	2147483647
17	11/18/20 * 13:38:3	LTE	-97	Connected	38.22249586	-122.6395273	65535	2147483647
18	11/18/20 * 13:38:8	LTE	-93	Connected	38.22254903	-122.638946	65535	2147483647
19	11/18/20 * 13:38:13	LTE	-94	Connected	38.22258568	-122.638442	65535	2147483647
20	11/18/20 * 13:38:18	LTE	-96	Connected	38.22259986	-122.63819	65535	2147483647
21	11/18/20 * 13:38:23	LTE	-97	Connected	38.22270971	-122.6381244	65535	2147483647
22	11/18/20 * 13:38:28	LTE	-140	Connected	38.22300583	-122.6379802	65535	2147483647
23	11/18/20 * 13:38:33	LTE	-91	Connected	38.22332902	-122.6377788	65535	2147483647
24	11/18/20 * 13:38:38	LTE	-92	Connected	38.2236517	-122.6375694	65535	2147483647
25	11/18/20 * 13:38:43	LTE	-93	Connected	38.22398572	-122.6373684	65535	2147483647
26	11/18/20 * 13:38:48	LTE	-93	Connected	38.22431104	-122.6371636	65535	2147483647
27	11/18/20 * 13:38:53	LTE	-94	Connected	38.22461778	-122.6369567	65535	2147483647
28	11/18/20 * 13:38:58	LTE	-91	Connected	38.22490476	-122.6368007	65535	2147483647
29	11/18/20 * 13:39:3	LTE	-97	Connected	38.22517171	-122.6366391	65535	2147483647
30	11/18/20 * 13:39:8	LTE	-96	Connected	38.22545841	-122.636476	65535	2147483647
31	11/18/20 * 13:39:13	LTE	-93	Connected	38.22575613	-122.6362703	65535	2147483647
32	11/18/20 * 13:39:18	LTE	-92	Connected	38.22589893	-122.6361915	65535	2147483647
33	11/18/20 * 13:39:23	LTE	-91	Connected	38.22603166	-122.6361097	65535	2147483647
34	11/18/20 * 13:39:28	LTE	-92	Connected	38.22634802	-122.6359115	65535	2147483647
35	11/18/20 * 13:39:33	LTE	-93	Connected	38.22673112	-122.6356711	65535	2147483647
36	11/18/20 * 13:39:38	LTE	-94	Connected	38.2270825	-122.6354432	65535	2147483647
37	11/18/20 * 13:39:44	LTE	-95	Connected	38.22743485	-122.6352312	65535	2147483647
38	11/18/20 * 13:39:49	LTE	-102	Connected	38.22784978	-122.6349733	65535	2147483647
39	11/18/20 * 13:39:54	LTE	-97	Connected	38.22817144	-122.6347616	65535	2147483647
40	11/18/20 * 13:39:59	LTE	-94	Connected	38.22839948	-122.6346142	65535	2147483647
41	11/18/20 * 13:40:4	LTE	-95	Connected	38.22844652	-122.6345908	65535	2147483647

Measurement point 22 for this run appears to be a metering anomaly that should be discarded

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42	11/18/20 * 13:40:9	LTE	-82	Connected	38.22869991	-122.6344455	65535	2147483647
43	11/18/20 * 13:40:14	LTE	-81	Connected	38.22905966	-122.6342261	65535	2147483647
44	11/18/20 * 13:40:19	LTE	-80	Connected	38.22931735	-122.6340617	65535	2147483647
45	11/18/20 * 13:40:24	LTE	-81	Connected	38.22943618	-122.6339873	65535	2147483647
46	11/18/20 * 13:40:29	LTE	-81	Connected	38.22976563	-122.633785	65535	2147483647
47	11/18/20 * 13:40:34	LTE	-81	Connected	38.23010328	-122.6335742	65535	2147483647
48	11/18/20 * 13:40:39	LTE	-81	Connected	38.23024299	-122.6334957	65535	2147483647
49	11/18/20 * 13:40:44	LTE	81	Connected	38.2304362	122.6333787	65535	2147483647
50	11/18/20 * 13:40:49	LTE	-83	Connected	38.23072491	-122.6332052	65535	2147483647
51	11/18/20 * 13:40:54	LTE	-95	Connected	38.230906	-122.6330924	65535	2147483647
52	11/18/20 * 13:40:59	LTE	-95	Connected	38.23094981	-122.6330619	65535	2147483647
53	11/18/20 * 13:41:4	LTE	-91	Connected	38.23109963	-122.6332634	65535	2147483647
54	11/18/20 * 13:41:9	LTE	-92	Connected	38.23127383	-122.6337304	65535	2147483647
55	11/18/20 * 13:41:14	LTE	-90	Connected	38.23147281	-122.6342356	65535	2147483647
56	11/18/20 * 13:41:19	LTE	-93	Connected	38.23155086	-122.6344434	65535	2147483647
57	11/18/20 * 13:41:24	LTE	-90	Connected	38.23143905	-122.6346017	65535	2147483647
58	11/18/20 * 13:41:29	LTE	-91	Connected	38.23122166	-122.6347427	65535	2147483647
59	11/18/20 * 13:41:34	LTE	-91	Connected	38.23101905	-122.6348683	65535	2147483647
60	11/18/20 * 13:41:39	LTE	-90	Connected	38.23092565	-122.6349264	65535	2147483647
61	11/18/20 * 13:41:45	LTE	-88	Connected	38.23065017	-122.635089	65535	2147483647
62	11/18/20 * 13:41:50	LTE	-92	Connected	38.23037843	-122.6352698	65535	2147483647
63	11/18/20 * 13:41:55	LTE	-93	Connected	38.2301309	-122.6354287	65535	2147483647
64	11/18/20 * 13:42:0	LTE	-92	Connected	38.23005248	-122.6354829	65535	2147483647
65	11/18/20 * 13:42:5	LTE	-90	Connected	38.22983232	-122.6356231	65535	2147483647
66	11/18/20 * 13:42:10	LTE	-99	Connected	38.2295717	-122.6357894	65535	2147483647
67	11/18/20 * 13:42:15	LTE	-93	Connected	38.2293086	-122.6359384	65535	2147483647
68	11/18/20 * 13:42:20	LTE	-93	Connected	38.22919184	-122.6360038	65535	2147483647
69	11/18/20 * 13:42:25	LTE	-88	Connected	38.22899516	-122.6361143	65535	2147483647
70	11/18/20 * 13:42:30	LTE	-91	Connected	38.22871564	-122.6363009	65535	2147483647
71	11/18/20 * 13:42:35	LTE	-96	Connected	38.22843838	-122.6364542	65535	2147483647
72	11/18/20 * 13:42:40	LTE	-94	Connected	38.22818759	-122.6366171	65535	2147483647
73	11/18/20 * 13:42:45	LTE	-96	Connected	38.22792686	-122.6367836	65535	2147483647
74	11/18/20 * 13:42:50	LTE	-93	Connected	38.22767162	-122.6369464	65535	2147483647
75	11/18/20 * 13:42:55	LTE	-95	Connected	38.22741835	-122.6370942	65535	2147483647
76	11/18/20 * 13:43:0	LTE	-100	Connected	38.22718675	-122.6372406	65535	2147483647
77	11/18/20 * 13:43:5	LTE	-97	Connected	38.22695359	-122.6373813	65535	2147483647
78	11/18/20 * 13:43:10	LTE	-99	Connected	38.22673863	-122.6375118	65535	2147483647
79	11/18/20 * 13:43:15	LTE	-93	Connected	38.22662895	-122.6375833	65535	2147483647
80	11/18/20 * 13:43:20	LTE	-96	Connected	38.22640301	-122.6377049	65535	2147483647
81	11/18/20 * 13:43:25	LTE	-97	Connected	38.22609532	-122.63789	65535	2147483647
82	11/18/20 * 13:43:30	LTE	-97	Connected	38.22582824	-122.6380554	65535	2147483647
83	11/18/20 * 13:43:35	LTE	-98	Connected	38.22554777	-122.6382251	65535	2147483647
84	11/18/20 * 13:43:40	LTE	-95	Connected	38.22524142	-122.6383986	65535	2147483647
85	11/18/20 * 13:43:45	LTE	-93	Connected	38.22495676	-122.6386	65535	2147483647
86	11/18/20 * 13:43:51	LTE	-94	Connected	38.22457345	-122.6388011	65535	2147483647
87	11/18/20 * 13:43:56	LTE	-100	Connected	38.22425314	-122.639024	65535	2147483647
88	11/18/20 * 13:44:1	LTE	-90	Connected	38.2239541	-122.6392248	65535	2147483647
89	11/18/20 * 13:44:6	LTE	-92	Connected	38.2236498	-122.6394193	65535	2147483647
90	11/18/20 * 13:44:11	LTE	-103	Connected	38.22335614	-122.6395896	65535	2147483647
91	11/18/20 * 13:44:16	LTE	-101	Connected	38.22312576	-122.63975	65535	2147483647



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92	11/18/20 * 13:44:21	LTE	-100	Connected	38.22289379	-122.6398737	65535	2147483647
93	11/18/20 * 13:44:26	LTE	-97	Connected	38.22266437	-122.6399956	65535	2147483647
94	11/18/20 * 13:44:31	LTE	-91	Connected	38.22254464	-122.6400514	65535	2147483647
95	11/18/20 * 13:44:36	LTE	-100	Connected	38.22249002	-122.6402101	65535	2147483647
96	11/18/20 * 13:44:41	LTE	-98	Connected	38.22252951	-122.6403692	65535	2147483647
97	11/18/20 * 13:44:46	LTE	-95	Connected	38.22259826	-122.6406399	65535	2147483647
98	11/18/20 * 13:44:51	LTE	-95	Connected	38.22274411	-122.6411277	65535	2147483647
99	11/18/20 * 13:44:56	LTE	-96	Connected	38.22289726	-122.6416693	65535	2147483647
100	11/18/20 * 13:45:1	LTE	-96	Connected	38.22301649	-122.6421302	65535	2147483647
101	11/18/20 * 13:45:6	LTE	-95	Connected	38.22305113	-122.6422758	65535	2147483647
102	11/18/20 * 13:45:11	LTE	-92	Connected	38.22307578	-122.6423894	65535	2147483647
103	11/18/20 * 13:45:16	LTE	-92	Connected	38.22317864	-122.642568	65535	2147483647
104	11/18/20 * 13:45:21	LTE	-91	Connected	38.22346832	-122.6424102	65535	2147483647
105	11/18/20 * 13:45:26	LTE	-97	Connected	38.22389774	-122.6421533	65535	2147483647
106	11/18/20 * 13:45:31	LTE	-101	Connected	38.22435114	-122.6418837	65535	2147483647
107	11/18/20 * 13:45:36	LTE	-93	Connected	38.22477859	-122.6416195	65535	2147483647
108	11/18/20 * 13:45:41	LTE	-94	Connected	38.22522705	-122.6413465	65535	2147483647
109	11/18/20 * 13:45:47	LTE	-93	Connected	38.22581333	-122.6409897	65535	2147483647
110	11/18/20 * 13:45:52	LTE	-96	Connected	38.2263066	-122.6406944	65535	2147483647
111	11/18/20 * 13:45:57	LTE	-90	Connected	38.22679342	-122.6403814	65535	2147483647
112	11/18/20 * 13:46:2	LTE	-97	Connected	38.22723593	-122.6401066	65535	2147483647
113	11/18/20 * 13:46:7	LTE	-98	Connected	38.22742296	-122.6399852	65535	2147483647
114	11/18/20 * 13:46:12	LTE	-89	Connected	38.22752114	-122.6399241	65535	2147483647
115	11/18/20 * 13:46:17	LTE	-89	Connected	38.22781736	-122.6397516	65535	2147483647
116	11/18/20 * 13:46:22	LTE	-87	Connected	38.22825843	-122.6394773	65535	2147483647
117	11/18/20 * 13:46:27	LTE	-78	Connected	38.22868877	-122.6392087	65535	2147483647
118	11/18/20 * 13:46:32	LTE	-83	Connected	38.22908711	-122.6389793	65535	2147483647
119	11/18/20 * 13:46:37	LTE	-85	Connected	38.22949697	-122.6387194	65535	2147483647
120	11/18/20 * 13:46:42	LTE	-87	Connected	38.22977943	-122.6385391	65535	2147483647
121	11/18/20 * 13:46:47	LTE	-84	Connected	38.23006087	-122.6383824	65535	2147483647
122	11/18/20 * 13:46:52	LTE	-84	Connected	38.23041011	-122.6381413	65535	2147483647
123	11/18/20 * 13:46:57	LTE	-76	Connected	38.2308166	-122.6379005	65535	2147483647
124	11/18/20 * 13:47:2	LTE	-80	Connected	38.23124069	-122.6376541	65535	2147483647
125	11/18/20 * 13:47:7	LTE	-75	Connected	38.23163855	-122.6374031	65535	2147483647
126	11/18/20 * 13:47:12	LTE	-86	Connected	38.23199727	-122.6371565	65535	2147483647
127	11/18/20 * 13:47:17	LTE	-91	Connected	38.23213282	-122.637066	65535	2147483647
128	11/18/20 * 13:47:22	LTE	-87	Connected	38.23211656	-122.6370733	65535	2147483647
129	11/18/20 * 13:47:27	LTE	-86	Connected	38.23211698	-122.6370749	65535	2147483647
130	11/18/20 * 13:47:32	LTE	-89	Connected	38.2321163	-122.637075	65535	2147483647
131	11/18/20 * 13:47:38	LTE	-85	Connected	38.23211063	-122.6370594	65535	2147483647
132	11/18/20 * 13:47:43	LTE	-92	Connected	38.23234513	-122.6369355	65535	2147483647
133	11/18/20 * 13:47:48	LTE	-90	Connected	38.23264417	-122.6367543	65535	2147483647
134	11/18/20 * 13:47:53	LTE	-90	Connected	38.23299272	-122.6365634	65535	2147483647
135	11/18/20 * 13:47:58	LTE	-87	Connected	38.23333365	-122.6363543	65535	2147483647
136	11/18/20 * 13:48:3	LTE	-94	Connected	38.23366501	-122.636136	65535	2147483647
137	11/18/20 * 13:48:8	LTE	-81	Connected	38.23369558	-122.6359109	65535	2147483647
138	11/18/20 * 13:48:13	LTE	-85	Connected	38.23355563	-122.635569	65535	2147483647
139	11/18/20 * 13:48:18	LTE	-80	Connected	38.23340289	-122.6351426	65535	2147483647
140	11/18/20 * 13:48:23	LTE	-91	Connected	38.23325409	-122.6347416	65535	2147483647
141	11/18/20 * 13:48:28	LTE	-96	Connected	38.23308942	-122.634318	65535	2147483647

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142	11/18/20 * 13:48:33	LTE	-93	Connected	38.23292847	-122.6338933	65535	2147483647
143	11/18/20 * 13:48:38	LTE	-93	Connected	38.23277136	-122.6334836	65535	2147483647
144	11/18/20 * 13:48:43	LTE	-97	Connected	38.2326052	-122.6330644	65535	2147483647
145	11/18/20 * 13:48:48	LTE	-97	Connected	38.23244939	-122.6326727	65535	2147483647
146	11/18/20 * 13:48:53	LTE	-90	Connected	38.23234599	-122.6324121	65535	2147483647
147	11/18/20 * 13:48:58	LTE	-87	Connected	38.23229362	-122.6322441	65535	2147483647
148	11/18/20 * 13:49:3	LTE	-92	Connected	38.23215989	-122.6318881	65535	2147483647
149	11/18/20 * 13:49:8	LTE	-92	Connected	38.23202707	-122.6315039	65535	2147483647
150	11/18/20 * 13:49:13	LTE	-99	Connected	38.23190752	-122.6312124	65535	2147483647
151	11/18/20 * 13:49:18	LTE	-99	Connected	38.23176094	-122.6311953	65535	2147483647
152	11/18/20 * 13:49:23	LTE	-104	Connected	38.23148844	-122.631347	65535	2147483647
153	11/18/20 * 13:49:28	LTE	-101	Connected	38.23130019	-122.6314622	65535	2147483647
154	11/18/20 * 13:49:33	LTE	-96	Connected	38.231284	-122.6316181	65535	2147483647
155	11/18/20 * 13:49:39	LTE	-97	Connected	38.23144871	-122.6320421	65535	2147483647
156	11/18/20 * 13:49:44	LTE	-93	Connected	38.23158125	-122.6324211	65535	2147483647
157	11/18/20 * 13:49:49	LTE	-94	Connected	38.23163079	-122.6325594	65535	2147483647
158	11/18/20 * 13:49:54	LTE	-94	Connected	38.23173112	-122.6328254	65535	2147483647
159	11/18/20 * 13:49:59	LTE	-95	Connected	38.23189237	-122.633233	65535	2147483647
160	11/18/20 * 13:50:4	LTE	-95	Connected	38.23206333	-122.6336405	65535	2147483647
161	11/18/20 * 13:50:9	LTE	-94	Connected	38.23219142	-122.6339525	65535	2147483647
162	11/18/20 * 13:50:14	LTE	-94	Connected	38.23224333	-122.6340927	65535	2147483647
163	11/18/20 * 13:50:19	LTE	-91	Connected	38.23237243	-122.6344564	65535	2147483647
164	11/18/20 * 13:50:24	LTE	-88	Connected	38.23252591	-122.6348455	65535	2147483647
165	11/18/20 * 13:50:29	LTE	-88	Connected	38.23265726	-122.63519	65535	2147483647
166	11/18/20 * 13:50:34	LTE	-92	Connected	38.23280939	-122.6355774	65535	2147483647
167	11/18/20 * 13:50:39	LTE	-89	Connected	38.23295264	-122.6359696	65535	2147483647
168	11/18/20 * 13:50:44	LTE	-89	Connected	38.2330778	-122.6362907	65535	2147483647
169	11/18/20 * 13:50:49	LTE	-92	Connected	38.23309775	-122.6363311	65535	2147483647
170	11/18/20 * 13:50:54	LTE	-93	Connected	38.23311591	-122.6363915	65535	2147483647
171	11/18/20 * 13:50:59	LTE	-91	Connected	38.23310923	-122.6363971	65535	2147483647
172	11/18/20 * 13:51:4	LTE	-92	Connected	38.23314892	-122.6365197	65535	2147483647
173	11/18/20 * 13:51:9	LTE	-92	Connected	38.23325487	-122.6368204	65535	2147483647
174	11/18/20 * 13:51:14	LTE	-92	Connected	38.23337496	-122.6371239	65535	2147483647
175	11/18/20 * 13:51:19	LTE	-88	Connected	38.23347925	-122.6374063	65535	2147483647
176	11/18/20 * 13:51:24	LTE	-94	Connected	38.23353255	-122.6375559	65535	2147483647
177	11/18/20 * 13:51:29	LTE	-93	Connected	38.23359697	-122.6377118	65535	2147483647
178	11/18/20 * 13:51:34	LTE	-93	Connected	38.23372152	-122.6380606	65535	2147483647
179	11/18/20 * 13:51:40	LTE	-86	Connected	38.23385756	-122.6384215	65535	2147483647
180	11/18/20 * 13:51:45	LTE	-83	Connected	38.23393609	-122.6385953	65535	2147483647
181	11/18/20 * 13:51:50	LTE	-70	Connected	38.23400037	-122.6386895	65535	2147483647

## **Appendix E: Field Software and Test Equipment**

**RF Spectrum Analysis was performed using RF Explorer Handheld Spectrum Analyzer using RF Explorer for Windows**

**LG Model K20 V using Android version 7.0**

**Ookla – Speedtest**

**Kaibits -- Network Signal Info Pro**