

**CALSPEED HOME MEASURING DEVICE
USER AGREEMENT**

CAREFULLY READ AND SIGN THIS USER AGREEMENT (“AGREEMENT”) BEFORE COMPLETING THE VOLUNTEER SURVEY. THE AFFIRMATIVE ACT OF USING THE DEVICE OR SUBMITTING THE CALSPEED VOLUNTEER SURVEY MEANS YOU ACCEPT THE DEVICE AND YOU AGREE TO BE BOUND BY THIS AGREEMENT. YOUR PARTICIPATION IS APPRECIATED.

This CalSPEED Home Broadband Study Agreement is by and between the STUDY SPONSORS (*the Geographical Information Center at CSU, Chico (GIC) 35 Main St, Chico, CA 95928, the California Public Utilities Commission, 505 Van Ness Ave, San Francisco, CA 94102, and the University of California at Monterey Bay, 100 Campus Center, Bld. 506, Seaside, CA 93955*) and the PARTICIPANT (you).

This Agreement is effective upon receipt of the CalSPEED Home Broadband Measuring Device (“DEVICE”) and continues in effect until the Device is returned to the STUDY SPONSORS.

1. DELIVERY OF THE DEVICE. GIC shall deliver the CalSPEED Home Broadband Measuring Device to the PARTICIPANT via the United States Postal Service (USPS) or other parcel carrier. The PARTICIPANT must retain the original packaging and use it to return the device as requested. The PARTICIPANT may be required to print and affix the return label to original packaging and bring to USPS for shipment.

2. CALSPEED STUDY. The STUDY SPONSORS have developed the CALSPEED Device and operating software and are engaging in this STUDY pursuant to contracts between the CPUC and GIC and between the CPUC and CSUMB. The STUDY involves the construction of measuring devices (CALSPEED DEVICE) to be distributed to volunteer broadband customers in the state who agree to connect the DEVICE to their broadband Internet service connection for a period of two weeks. The DEVICE periodically measures certain quality characteristics of Volunteer’s Internet service, including but not limited to broadband speeds. If the Volunteer consents, the DEVICE will also attempt to measure the same quality characteristics of Volunteer’s in-home Wi-Fi service. STUDY SPONSORS intend to use the data gathered in the STUDY to analyze the nature of fixed broadband services within the state, looking at various technologies, locations, time of day, other variables and issues such as promise versus performance, and the extent to which home Wi-Fi equipment limits the ability to achieve the broadband speeds being delivered by the Volunteer’s Internet Service Provider (ISP). Such analysis may be useful in informing the CPUC about broadband issues, including identifying areas eligible for broadband grants under programs it manages (the California Advanced Services Fund, or CASF), in assessing grantees’ compliance with state and federally funded broadband projects and helping to develop plans and strategies to eliminate the Digital Divide.

The CalSPEED DEVICE connects to your ISP’s network through an Ethernet port on your Internet modem or access point, or over your in-home Wi-Fi network, if you provide your password through the CalSPEED WiFi registration portal at www.calspeed.org/registration.html. The STUDY SPONSORS

will not use the DEVICE to access your computer or other devices connected to your network and will not access any information or files stored on your connected devices. The DEVICE is designed so that third parties will not be able to use it to access your network or any of your connected devices.

DATA COLLECTED. In order to measure Internet performance, quality and reliability, CalSPEED runs a series of tests periodically (e.g. every hour) and collects data on the latency, speed, and streaming capability of your Internet service provider. In addition, CalSPEED also runs a scan of the available Wi-Fi networks in your area to help us understand the types and capabilities of Wi-Fi routers in use today, and if you authorize us by providing your Wi-Fi SSID and password, CalSPEED will test your Internet access over your Wi-Fi network, in addition to your wired Ethernet connection. A list of data collected is listed at the end of this Agreement.

3. CONDITIONS OF USE

- The Device is made available to the PARTICIPANT free of charge for PARTICIPANT'S personal, non-commercial use. PARTICIPANT is only authorized to use the Device at the Home Address identified in the VOLUNTEER SURVEY for the length of the testing period. PARTICIPANT may not use the Device for any other purpose, and shall be solely liable to STUDY SPONSORS for damages caused by or arising from any material breach of these terms.
- PARTICIPANT agrees that he/she will not change Internet service or subscription plans during the study period, and agrees to keep the CalSPEED Home Broadband Measuring Device plugged in to their modem or router for the duration of the study period.
- PARTICIPANT can discontinue his/her participation in the STUDY at any time by disconnecting the DEVICE and returning it to GIC in its original packaging. Contact GIC for pre-paid return postage information.
- PARTICIPANT acknowledges that the terms of agreement with PARTICIPANT'S respective Internet provider will continue to apply when using the Device. Use of the Device can involve sending and receiving large amounts of data. Data usage will be greater in relation to network speed. As a result, PARTICIPANT may be charged by PARTICIPANT'S Internet provider for Internet traffic exceeding the Internet provider's monthly data allowance. PARTICIPANT accepts responsibility for any such charges that may arise and agrees that STUDY SPONSORS are not responsible for usage charges incurred from usage of the Device.
- Initially, the study is configured to test for two minutes/hour (one testing Wi-Fi connection, one testing Ethernet connection), although those parameters are subject to change without notice to PARTICIPANTS. PARTICIPANT understands and acknowledges that Internet speeds for other applications may slow down while the test is running.

- Notwithstanding anything else herein, STUDY SPONSORS may terminate the Study without notice. PARTICIPANTS agree to return the Device upon request of the STUDY SPONSORS.

4. **RETURN OF PRODUCT.** PARTICIPANT agrees to return the CalSPEED Home Broadband Measuring Device to GIC no later than FIVE (5) business days following the date such return is requested by STUDY SPONSORS and return label has been provided. STUDY SPONSORS will provide PARTICIPANT with a pre-paid return authorization to use with the original Device packaging.

5. **FEEDBACK.** During the term of this Agreement, PARTICIPANT may communicate to the GIC bugs, modifications, design changes or improvements of the Product (collectively “Feedback”), but Feedback is not required. Feedback is Proprietary Information of STUDY SPONSORS. PARTICIPANT agrees to and hereby assigns all of PARTICIPANT’s rights, title and interest in and to such Feedback to STUDY SPONSORS.

6. **AVAILABILITY.** The STUDY SPONSORS shall have no responsibility whatsoever for the unavailability of the Device, or any other communication system or hardware failure which may result in the Device not functioning properly.

7. **OWNERSHIP.** PARTICIPANT may not transfer the CalSPEED Home Broadband Measuring Device to anyone else. PARTICIPANT will not rent, sell, lease, pledge, encumber, allow any lien or otherwise transfer the CalSPEED Home Broadband Measuring Device or any part thereof or use either for the benefit of any third party. PARTICIPANT will not reverse assemble, reverse compile or reverse engineer the CalSPEED Home Broadband Measuring Device, or otherwise attempt to discover any CalSPEED Home Broadband Measuring Device source code or underlying Proprietary Information.

8. **RISK OF LOSS.** PARTICIPANT agrees to maintain the CalSPEED Home Broadband Measuring Device in an undamaged condition and operate the CalSPEED Home Broadband Measuring Device in the manner set forth in the Device documentation. PARTICIPANT will not remove or alter any legend or marks stating the CalSPEED Home Broadband Measuring Device is the property of GIC. The CalSPEED Home Broadband Measuring Device must be returned to GIC in the same condition as when the Product was delivered to PARTICIPANT with the exception of reasonable wear and tear.

9. **PRIVACY POLICY.** The Device collects and uploads to our servers a variety of information that facilitates the collection of data useful in the determination of broadband quality. The information we are collecting includes Service Set Identifiers (SSIDs), Basic Service Set Identifiers (BSSIDs), and GPS coordinates through these tests. Every test includes a Wi-Fi network scan to record all Wi-Fi networks detected by the device. No personally identifiable information or individual customer proprietary information (CPNI) is collected. For more information, see the complete CalSPEED Privacy Statement.

CONSENT TO DISCLOSURE OF LOCATION. Pursuant to this Agreement, Volunteer consents to the disclosure of the location of the Volunteer’s service, and to disclosure of the data collected as listed

in the table below. Such data will be considered “open source” data, which will be able to be accessed and used for researched by third parties. Unless required by law, the STUDY SPONSORS will not disclose any personally identifiable information you have provided us:

10. LIMITATION OF LIABILITY. STUDY SPONSORS SHALL NOT BE RESPONSIBLE OR LIABLE TO PARTICIPANT OR TO ANY THIRD PARTY WITH RESPECT TO THE CalSPEED Home Broadband Measuring Device OR ANY SUBJECT MATTER RELATED TO THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER THEORY: (1) FOR LOSS OR INACCURACY OF DATA OR COST OF PROCUREMENT OF SUBSTITUTE GOODS, SERVICES OR TECHNOLOGY; (2) STUDY SPONSORS SHALL NOT BE RESPONSIBLE FOR ANY CHARGES INCURRED THROUGH YOUR INTERNETINTERNET SERVICE PROVIDER (ISP) AS A RESULT OF INCREASED DATA USAGE. (3) FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO LOSS OF REVENUES AND LOSS OF PROFITS, EVEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES; OR (4) AGGREGATE LIABILITY ARISING OUT OF OR RELATING TO THIS AGREEMENT.

Column Name	Example(s)	Description
Date	1/25/2018	Date test was performed
Time	19:43:02	Time test was performed
AppVersion	v0.0.3	Version of the application installed on the box
Provider	Comcast, AT&T	Network provider
Operator	Comcast, AT&T	Network operator
Network	Ethernet, Wi-Fi	Network physical connection
Roaming	N/A	Phone
Wi-Fi_SSID	Starbucks Wi-Fi	Wi-Fi network name (Service Set Identifier)
LocSource	IP Address	Basis for determining location latitude and longitude coordinates
Latitude	37.323429	
Longitude	-122.036079	
DeviceType	Fixed Ethernet	Type of testing device
eRttMin / wRttMin	154.062	Minimum RTT (Round Trip Time) of packets to the East server / West server (in ms)
eRttMax / wRttMax	270.189	Maximum RTT (Round Trip Time) of packets to the East server / West server (in ms)
eRttAvg / wRttAvg	184.525	Average RTT (Round Trip Time) of packets to the East server / West server (in ms)
eRttLoss / wRttLoss	0	Packet loss rate (%) during the RTT test to the East server / West server
eRVal / wRVal	76.921607	Estimated "R" value for the East coast / West coast tests
eMOS / wMOS	3.9	Estimates Mean Opinion Score (MOS) for the East coast / West coast tests
wUDPJit / eUDPJit	14.606	Jitter for the first UDP measurement to the West server / East server (in ms). There are total four UDP jitter measurements to the West server and the East server, such as wUDPJit2, wUDPJit3, and wUDPJit4
wUDPLoss / eUDPLoss	0	UDP datagram loss rate for the first UDP measurement to the West / East server (in %). There are total four UDP data gram loss rates for each sever such as wUDPLoss2, wUDPLoss3, and wUDPLoss4. A value of "0.66" means 0.66%, not 66%
wUDPTime / eUDPTime	1	UDP test period for the first UDP measurement to the West / East server (either 1 sec or 5 sec). There are total four UDP measurements to the West server and the East server such as wUDPTime2, wUDPTime3, and wUDPTime4.
wTCPUp / eTCPUp	478	TCP upload speed to the West / East server at the first measurement, in kilobits per second . Technically, our tool has four threads to collect the TCP upload and download speed. So, the values in TCP upload and download fields are the addition of the four threads.
wTCPDown / eTCPDown	1156	TCP download speed to the West / East server at the first measurement, in kilobits per second . Technically, our tool has four threads to collect the TCP upload and download speed. So, the values in TCP upload and download fields are the addition of the four threads.
wUpStdDev / eUpStdDev	556.7762769	Standard deviation of the TCPUp1 (2) test done on the West / East server, in kilobits per second.
wUpMedian / eUpMedian	917	Median of the TCPUp1 (2) test done on the West / East server, in kilobits per second.
wDnStdDev / eDnStdDev	323	Standard deviation of the TCPDown1 (2) test done on the West / East server, in kilobits per second.
wDnMedian / eDnMedian	664	Median of the TCPDown1 (2) test done on the West / East server, in kilobits per second.
cUpMean	888	Mean of the two West and two East TCPUp values, in kilobits per second.
cUpStdDev	145	Standard deviation of the two West and two East TCPUp values, in kilobits per second.
cUpMean_1	743	Calculated field averaging the four TCP_Up values (west and east) and subtracting the average of four TCP_Up standard deviations from the averaged mean TCP_Up. In cases where the result is negative, the value was converted to zero. (in kbps).

cUpMean_2	221	Calculated field averaging the four TCP_Up values (west and east) and subtracting two times the average of four TCP_Up standard deviations from the averaged mean TCP_Up. In cases where the result is negative, the value was converted to zero. (in kbps).
cDnMean	2500	Mean of the two West and two East TCPDown values, in kilobits per second.
cDnStdDev	678	Standard deviation of the two West and two East TCPDown values, in kilobits per second.
cDnMean_1	1822	Calculated field averaging the four TCP_Down values (west and east) and subtracting the average of four TCP_Down standard deviations from the averaged mean TCP_Down. In cases where the result is negative, the value was converted to zero. (in kbps).
cDnMean_2	534	Calculated field averaging the four TCP_Down values (west and east) and subtracting two times the average of four TCP_Down standard deviations from the averaged mean TCP_Down. In cases where the result is negative, the value was converted to zero. (in kbps).
wDownLD, eDownLD	10	Number of downstream tests out of 20 to the west (east) coast server that qualify as "low definition," i.e. throughput for a 1-second test is below 0.7 Mbps
wDownSD, eDownSD	8	Number of downstream tests out of 20 to the west (east) coast server that qualify as "standard definition," i.e. throughput for a 1-second test is between < 2.5 Mbps and >= 0.7 Mbps
wDownHD, eDownHD	2	Number of downstream tests out of 20 to the west (east) coast server that qualify as "high definition," i.e. throughput for a 1-second test is greater than or equal to 2.5 Mbps
wDownVideo, eDownVideo	LD	Determination of downstream video quality (HD, SD, LD, or Error) based on HD: 19 or more HD's, SD: 19 or more SD's, LD: neither for west (east) coast server.
wUpLD, eUpLD	LD	Number of upstream tests out of 20 to the west (east) coast server that qualify as "low definition," i.e. throughput for a 1-second test is below 0.7 Mbps
wUpSD, eUpSD	1	Number of upstream tests out of 20 to the west (east) coast server that qualify as "standard definition," i.e. throughput for a 1-second test is between < 2.5 Mbps and >= 0.7 Mbps
wUpHD, eUpHD	19	Number of upstream tests out of 20 to the west (east) coast server that qualify as "high definition," i.e. throughput for a 1-second test is greater than or equal to 2.5 Mbps
wUpVideo, eUpVideo	HD	Determination of upstream video quality (HD, SD, LD, or Error) based on HD: 19 or more HD's, SD: 19 or more SD's, LD: neither for west (east) coast server.
wConference, eConference	HD	Determination of two-way video conference quality (HD, SD, LD, or Error) based on the Mean Opinion Score (MOS) and video quality to west (east) coast server
SigStrength	-105	Reference Signal Received Power (RSRP) signal strength measured by the mobile device in dBm.
SNR	85	Signal to noise ratio, measured by the device in dB. It compares the source signal strength and the noise level.
LAC	2147483647	Location Area Code. This is the area code that carriers use to determine locations. The values are also based on the radio signal used. In LTE, this is also called the Tracking Area Code, and in CDMA, this is called the Network ID
CID	11430658	Cell Tower Identification number. This is usually the closest cell tower to which the mobile device is connected.

Wi-Fi Network Scan – conducted every test to record all Wi-Fi networks detected by the Device

- BSSID: 94:b4:of:0c:61:d2
- SSID: CSUMB
- Type: 802.11ac. (could be 802.11g or 802.11n)
- Channel width: 80 MHz. (Could be 160 MHz, 80+80 MHz or 20 MHz for 802.11g and 20 or 40 MHz for 802.11n)
- Max data rate: 1,300 Mbps. See MCS index table
- RSSI: -48 dBm. (Will be in range of about -20 to -90 dBm)
- Frequency: 5745
- Cipher: CCMP (could be WEP or TKIP for old networks)
- Key: 802.11x. (could be PSK for residential rather than enterprise networks).