

AT&T MOBILE SERVICE LATENCY BY CELLULAR MARKET AREA

The table below sets forth data showing the ranges of actual latency for AT&T's mass market mobile broadband Internet access services, by transport technology and by Cellular Market Area ("CMA").

The range reported is from the 25th to the 75th percentile, which means that the 25th percentile lower bound is the value below which 25% of the test readings were, and the 75th percentile upper bound is the value below which 75% of the test readings were.

The reported information comes from data compiled by AT&T through drive testing between March 2016 and August 2016.

Data for CMAs with low population density (defined as less than 250 people per square mile) are aggregated per state and displayed in the lower section of the spreadsheet.

An entry of "I/D" signifies Insufficient Data to report reliable information. "I/D" entries for 4G and 3G technologies typically result from the fact that LTE coverage in the CMA/testing area precludes the use and testing of 4G and 3G service.

	LTE		HS+/4G			HSPA/3G	
	Latency (ms)		Latency (ms)			Latency (ms)	
CMA CODE AND NAME	25th Percentile	75th Percentile	25th Percentile	75th Percentile		25th Percentile	75th Percentile
001 - New York	48.8	58.9	231.2	290.7		138.8	148.9
002 - Los Angeles	43.7	52.1	197.0	912.1		107.8	398.0
003 - Chicago	54.7	60.0	108.6	131.6		111.3	169.1
004 - Philadelphia	50.6	63.4	234.6	289.5		I/D	I/D
005 - Detroit	68.3	76.0	261.2	314.7		I/D	I/D
006 - Boston	45.1	73.0	102.1	632.9		111.6	281.1
007 - San Francisco	42.3	48.8	200.1	797.6		I/D	I/D
008 - Washington	43.9	53.2	245.4	310.8		I/D	I/D
009 - Dallas	70.5	76.8	611.5	828.4		I/D	I/D
010 - Houston	71.0	76.0	562.9	714.9		552.2	828.7
011 - St. Louis	70.3	78.2	252.1	303.3		I/D	I/D
012 - Miami	66.8	73.8	551.1	783.2		114.2	261.6
013 - Pittsburgh	57.6	63.7	567.1	870.0		I/D	I/D
014 - Baltimore	45.6	54.2	238.9	291.9		I/D	I/D
015 - Minneapolis	71.7	79.9	252.1	302.1		I/D	I/D
016 - Cleveland	62.9	70.4	248.4	303.2		I/D	I/D
017 - Atlanta	51.2	56.4	535.6	764.2		396.0	815.3
018 - San Diego	44.7	49.8	485.5	795.3		I/D	I/D
019 - Denver - Boulder	97.0	106.7	274.7	325.9		I/D	I/D
020 - Seattle	68.8	80.2	251.7	303.6		I/D	I/D

021 - Milwaukee		54.0	58.7		113.0	1,299.5		I/D	I/D
022 - Tampa		67.0	73.5		550.5	860.5		I/D	I/D
023 - Cincinnati		68.3	77.4		261.1	314.1		I/D	I/D
024 - Kansas City		75.2	87.3		259.4	310.8		I/D	I/D
025 - Buffalo		53.5	57.5		114.7	1,190.3		I/D	I/D
026 - Phoenix		61.0	71.1		244.0	302.4		I/D	I/D
027 - San Jose		43.8	49.9		214.6	667.4		I/D	I/D
028 - Indianapolis		57.0	62.3		120.8	1,340.1		I/D	I/D
029 - New Orleans		84.7	91.1		566.9	1,158.1		I/D	I/D
030 - Portland		66.2	75.0		249.9	303.7		I/D	I/D
031 - Columbus		65.8	73.4		257.0	311.0		I/D	I/D
032 - Hartford		72.3	79.0		564.3	808.6		I/D	I/D
033 - San Antonio		72.9	78.0		552.2	927.5		524.9	803.4
034 - Rochester		54.1	60.3		107.9	133.0		I/D	I/D
035 - Sacramento		42.8	47.1		523.7	1,001.7		I/D	I/D
036 - Memphis		64.4	70.7		124.7	1,247.7		I/D	I/D
037 - Louisville		61.6	77.4		130.3	1,246.0		I/D	I/D
038 - Providence		72.6	77.5		563.8	776.2		I/D	I/D
040 - Dayton		71.8	85.4		266.1	315.9		I/D	I/D
041 - Birmingham		52.3	57.1		159.0	927.5		I/D	I/D
042 - Bridgeport		75.0	81.3		558.2	725.8		I/D	I/D
043 - Norfolk		39.3	48.5		576.4	1,285.1		I/D	I/D
044 - Albany		52.3	64.3		114.3	1,304.0		I/D	I/D
045 - Oklahoma City		75.6	82.2		131.9	1,297.7		I/D	I/D
046 - Nashville		57.1	62.4		138.3	1,345.5		I/D	I/D
047 - Greensboro		59.8	65.9		147.8	1,246.3		123.4	1,296.5
048 - Toledo		67.8	75.4		256.2	309.4		I/D	I/D
049 - New Haven		73.2	79.2		561.3	789.3		I/D	I/D
050 - Honolulu		94.6	105.5		157.5	1,090.6		I/D	I/D
051 - Jacksonville		70.3	97.9		141.2	734.2		I/D	I/D
052 - Akron		63.7	70.1		253.8	306.4		I/D	I/D
053 - Syracuse		53.0	62.3		114.2	1,087.3		I/D	I/D
054 - Gary - Hammond		55.0	63.0		122.5	1,340.1		I/D	I/D
055 - Worcester		76.7	83.1		550.4	783.2		I/D	I/D
056 - Northeast Pennsylvania		54.5	69.3		241.0	296.7		I/D	I/D
058 - Allentown		51.2	61.4		239.5	295.9		I/D	I/D
059 - Richmond		35.2	39.3		92.6	116.3		I/D	I/D
060 - Orlando		66.2	73.4		557.7	774.9		I/D	I/D
061 - Charlotte		53.9	58.3		544.0	1,001.1		528.8	1,019.7
062 - New Brunswick		49.6	59.0		234.5	292.6		I/D	I/D
063 - Springfield		77.5	85.3		542.7	737.1		I/D	I/D
064 - Grand Rapids		69.2	76.5		264.3	311.4		I/D	I/D
065 - Omaha		76.2	83.4		246.8	310.9		I/D	I/D

066 - Youngstown		68.6	79.1		261.6	316.8		I/D	I/D
067 - Greenville		66.3	76.2		178.5	1,178.3		I/D	I/D
068 - Flint		71.3	78.9		267.7	318.6		I/D	I/D
069 - Wilmington		48.5	65.1		241.4	298.1		I/D	I/D
070 - Long Branch		50.6	58.8		234.4	289.9		I/D	I/D
071 - Raleigh		60.5	69.0		111.6	136.5		I/D	I/D
072 - West Palm Beach		68.7	74.3		564.5	844.2		I/D	I/D
073 - Oxnard - Ventura		43.2	49.5		535.2	709.0		I/D	I/D
075 - Austin		74.6	80.4		571.5	954.4		I/D	I/D
076 - New Bedford		74.0	80.6		561.0	682.6		I/D	I/D
079 - Knoxville		56.8	65.7		129.3	1,377.0		I/D	I/D
080 - Baton Rouge		82.2	88.0		I/D	I/D		554.0	973.6
081 - El Paso		92.1	108.1		558.7	979.7		I/D	I/D
082 - Tacoma		63.4	70.5		248.4	296.9		I/D	I/D
084 - Harrisburg		71.8	82.9		245.5	309.2		119.0	I/D
087 - Canton		64.2	70.3		256.5	310.2		I/D	I/D
088 - Chattanooga		64.1	81.3		117.2	145.4		I/D	I/D
090 - Charleston		59.8	69.2		559.5	747.2		I/D	I/D
091 - San Juan - Caguas, PR		88.3	94.9		561.2	781.4		I/D	I/D
093 - Las Vegas		59.2	76.9		260.5	314.9		I/D	I/D
095 - Columbia		55.2	64.9		I/D	I/D		I/D	I/D
099 - York		70.6	82.5		255.0	312.3		I/D	I/D
102 - Des Moines		67.1	74.0		248.7	300.5		I/D	I/D
104 - Newport News		41.1	48.3		109.6	1,007.3		I/D	I/D
105 - Lancaster		58.3	75.0		240.3	293.7		I/D	I/D
107 - Stockton		46.0	52.8		523.5	870.4		I/D	I/D
108 - Augusta		53.3	57.8		135.9	747.1		I/D	I/D
109 - Spokane		69.9	76.5		253.7	304.2		I/D	I/D
111 - Vallejo - Fairfield - Napa		46.0	51.1		550.3	827.2		I/D	I/D
112 - Corpus Christi		82.5	91.5		237.0	705.9		I/D	I/D
113 - Madison		60.4	68.3		114.2	138.9		I/D	I/D
114 - Lakeland		69.2	76.0		572.2	873.3		I/D	I/D
116 - Lexington		71.4	80.1		541.2	746.6		I/D	I/D
117 - Colorado Springs		98.0	107.9		274.2	331.3		I/D	I/D
118 - Reading		51.9	65.6		247.0	296.0		I/D	I/D
120 - Huntsville		63.2	68.8		568.3	869.9		I/D	I/D
121 - Trenton		58.3	67.6		239.0	294.4		I/D	I/D
123 - Santa Rosa - Petaluma		46.4	52.0		548.3	753.2		I/D	I/D
127 - Pensacola		74.6	84.7		565.3	685.0		I/D	I/D
128 - Mcallen - Edinburg - Mission		80.1	85.5		535.6	834.6		I/D	I/D
129 - South Bend		82.8	91.5		270.7	322.2		I/D	I/D
130 - Erie		62.5	67.3		581.5	794.1		I/D	I/D

131 - Rockford		58.4	63.1		113.8	139.5		I/D	I/D
132 - Kalamazoo		71.3	78.2		270.1	319.5		I/D	I/D
133 - Manchester		49.2	53.4		103.1	128.2		I/D	I/D
134 - Atlantic City		50.3	60.4		235.2	289.4		I/D	I/D
136 - Lorain		63.4	69.9		245.8	301.3		I/D	I/D
137 - Melbourne		68.4	74.5		585.6	913.6		I/D	I/D
142 - Modesto		44.6	49.3		532.1	834.6		I/D	I/D
144 - Orange County		51.2	66.7		240.2	298.1		I/D	I/D
145 - Hamilton		71.2	81.7		264.4	315.9		I/D	I/D
146 - Daytona Beach		68.9	76.6		565.3	818.9		I/D	I/D
147 - Ponce, PR		91.8	96.2		I/D	I/D		I/D	I/D
149 - Fayetteville		63.6	71.8		111.5	241.3		I/D	I/D
151 - Poughkeepsie		56.1	66.7		112.3	143.4		I/D	I/D
152 - Portland		49.8	57.8		102.4	123.7		110.6	I/D
154 - New London		73.1	78.6		559.3	887.3		I/D	I/D
155 - Savannah		58.2	64.8		591.7	813.7		I/D	I/D
159 - Provo		65.1	77.7		263.4	315.1		I/D	I/D
161 - Lubbock		76.8	85.3		I/D	I/D		I/D	I/D
162 - Brownsville - Harlingen		80.5	88.6		564.7	907.6		I/D	I/D
163 - Springfield		78.3	86.5		265.2	311.5		I/D	I/D
164 - Fort Myers - Cape Coral		77.3	83.2		557.2	730.1		I/D	I/D
167 - Sarasota		79.6	91.0		201.1	713.7		I/D	I/D
169 - Mayaguez, PR		92.9	97.7		I/D	I/D		I/D	I/D
170 - Galveston		74.4	80.2		577.1	681.6		548.8	I/D
172 - Lincoln		77.3	85.1		257.8	307.1		I/D	I/D
174 - Lafayette		83.5	93.3		I/D	I/D		I/D	1,300.5
175 - Santa Cruz		48.1	55.5		529.2	690.5		I/D	I/D
182 - Fayetteville		81.3	90.4		576.2	1,308.4		I/D	I/D
186 - Green Bay		70.3	76.0		122.6	146.9		I/D	I/D
189 - Racine		55.7	60.4		114.5	1,338.9		I/D	I/D
190 - Boise City		72.6	81.0		270.2	320.6		I/D	I/D
193 - Benton Harbor		72.7	81.3		256.5	315.2		I/D	I/D
195 - Cedar Rapids		74.5	91.6		259.6	312.8		I/D	I/D
202 - Aricebo, Pr		95.8	101.6		I/D	I/D		I/D	I/D
204 - Aguadilla, PR		I/D	I/D		I/D	I/D		I/D	I/D
208 - Fort Pierce		71.3	76.5		556.9	697.7		I/D	I/D
211 - Bradenton		79.2	90.7		580.7	723.7		I/D	I/D
212 - Bremerton		63.7	71.9		253.6	301.4		I/D	I/D
217 - Anderson		61.2	69.7		120.6	1,335.2		I/D	I/D
218 - Wilmington		62.5	68.8		I/D	I/D		560.5	789.0
223 - Elkhart		80.1	88.3		272.0	320.1		I/D	I/D
227 - Anderson		69.1	77.7		560.2	1,250.4		I/D	I/D
228 - Vineland		53.6	70.3		243.6	293.3		I/D	I/D

234 - Athens		52.9	57.2		162.4	918.2		I/D	I/D
236 - Muncie		59.3	64.2		116.4	1,299.7		I/D	I/D
242 - Olympia		64.3	73.2		248.3	302.2		I/D	I/D
244 - Kenosha		55.8	61.7		127.5	1,350.9		I/D	I/D
247 - Lafayette		59.6	65.5		121.3	1,393.7		I/D	I/D
257 - Hagerstown		47.3	56.7		240.2	289.0		I/D	I/D
258 - Jacksonville		61.5	67.7		I/D	I/D		160.4	I/D
278 - Columbia		75.0	94.7		248.7	309.9		I/D	I/D
280 - Burlington		63.9	69.7		I/D	I/D		556.9	787.0
282 - Bloomington		59.8	65.9		121.2	1,364.4		I/D	I/D
287 - Bryan - College Station		72.8	79.2		I/D	I/D		I/D	I/D
301 - Lawrence		80.0	89.1		260.4	308.2		I/D	I/D
303 - Aurora		55.4	59.6		108.7	134.6		I/D	I/D
359 - DE 1 - Kent		50.6	77.4		241.5	299.7		I/D	I/D
363 - FL 4 - Citrus		73.2	83.7		580.5	783.6		I/D	I/D
469 - MD 3 - Frederick		46.9	57.6		239.9	294.7		I/D	I/D
471 - MA 2 - Barnstable		49.7	55.2		99.9	123.8		I/D	I/D
550 - NJ 1 - Hunterdon		53.8	62.0		237.9	289.9		I/D	I/D
551 - NJ 2 - Ocean		51.6	60.9		230.4	284.7		I/D	I/D
552 - NJ 3 - Sussex		55.4	62.7		237.8	297.4		I/D	I/D
579 - NC 15 - Cabarrus		54.7	59.9		534.7	1,283.2		I/D	I/D
623 - PA 12 - Lebanon		74.2	81.9		252.1	304.5		I/D	I/D
624 - RI 1 - Newport		74.4	80.3		583.8	765.5		I/D	I/D
633 - SC 9 - Lancaster		54.1	58.7		I/D	I/D		I/D	I/D
723 - PR 1 - Rincon		I/D	I/D		I/D	I/D		I/D	I/D
724 - PR 2 - Adjuntas		I/D	I/D		I/D	I/D		I/D	I/D
725 - PR 3 - Ciales		I/D	I/D		I/D	I/D		I/D	I/D
726 - PR 4 - Aibonito		91.3	97.6		I/D	I/D		I/D	I/D
727 - PR 5 - Ceiba		I/D	I/D		I/D	I/D		I/D	I/D
730 - Virgin Islands 1 - St. Thomas		I/D	I/D		I/D	I/D		I/D	I/D
731 - Virgin Islands 2 - St. Croix		92.6	99.9		I/D	I/D		I/D	I/D
STATE LEVEL AGGREGATION OF LOW POPULATION DENSITY CMAS		25th Percentile	75th Percentile		25th Percentile	75th Percentile		25th Percentile	75th Percentile

Alabama		57.7	75.0		245.2	745.7		I/D	I/D
Alaska		82.3	89.8		130.6	1,306.9		I/D	I/D
Arizona		66.8	102.7		253.3	312.0		166.2	207.3
Arkansas		83.1	91.8		157.5	1,342.3		I/D	I/D
California		45.1	56.7		112.7	726.0		114.0	339.5
Colorado		100.3	112.2		272.5	331.6		186.2	304.6
Connecticut		43.4	48.4		96.4	118.4		I/D	I/D
Florida		72.9	84.4		555.2	736.3		I/D	I/D
Georgia		55.0	70.4		114.0	602.2		125.0	744.9
Hawaii		98.2	109.8		179.9	1,158.7		I/D	I/D
Idaho		73.6	83.6		267.7	322.0		I/D	I/D
Illinois		63.9	84.7		124.5	283.5		I/D	I/D
Indiana		65.1	83.8		236.6	595.3		I/D	I/D
Iowa		74.6	88.4		254.1	309.1		I/D	I/D
Kansas		84.6	95.8		263.1	315.8		I/D	I/D
Kentucky		71.8	85.6		139.4	1,176.6		I/D	I/D
Louisiana		84.0	100.4		594.1	1,089.0		572.9	1,225.9
Maine		51.5	74.4		114.9	770.9		I/D	I/D
Maryland		50.1	63.4		244.7	293.1		I/D	I/D
Massachusetts		49.5	58.1		102.8	122.6		I/D	I/D
Michigan		76.6	92.5		270.4	322.1		I/D	I/D
Minnesota		75.6	88.0		258.0	311.1		I/D	I/D
Mississippi		64.1	72.9		158.8	734.7		I/D	I/D
Missouri		75.6	87.0		255.1	308.9		I/D	I/D
Montana		144.9	166.6		313.7	367.4		I/D	I/D
Nebraska		83.0	178.7		216.5	333.4		I/D	I/D
Nevada		49.1	53.2		553.6	683.2		I/D	I/D
New Hampshire		49.7	55.4		100.7	127.3		I/D	I/D
New Mexico		77.0	99.7		259.0	344.3		177.0	261.1
New York		57.0	69.6		118.7	697.9		I/D	I/D
North Carolina		60.6	70.6		128.4	800.5		572.3	856.1
North Dakota		98.3	119.4		272.8	329.6		I/D	I/D
Ohio		67.0	78.0		254.9	312.3		I/D	I/D
Oklahoma		74.6	85.1		135.2	1,340.4		I/D	I/D
Oregon		69.9	85.6		258.3	311.0		I/D	I/D
Pennsylvania		60.5	72.8		256.7	612.6		I/D	I/D
South Carolina		60.3	71.3		216.8	734.5		249.6	673.8
South Dakota		88.3	101.3		268.0	319.1		I/D	I/D
Tennessee		61.2	67.6		146.4	1,280.0		I/D	I/D
Texas		77.3	97.5		156.5	1,241.1		I/D	I/D
Utah		66.0	76.0		263.5	316.3		I/D	I/D
Vermont		50.5	56.8		101.0	126.3		I/D	I/D
Virginia		42.5	56.2		224.2	421.0		123.7	1,185.2

Washington		73.3	82.6		259.1	312.0		I/D	I/D
West Virginia		61.3	74.6		120.6	311.7		I/D	I/D
Wisconsin		63.3	79.9		135.6	313.1		I/D	I/D
Wyoming		162.5	175.2		319.4	374.2		I/D	I/D