

TABLE A TCP AND UDP BANDWIDTH MEASUREMENTS

	MacBook as client					
	TCP bandwidth (reported at client) (Mbps)	TCP bandwidth (reported at server) (Mbps)	UDP bandwidth (reported at client) (Mbps)	UDP bandwidth (reported at server) (Mbps)	UDP packet loss (reported at server) (%)	
Fast Ethernet (100 Mbps)	48.9 (35.8 to 57.4)	48.5 (34.1 to 58)	93.4 (86.4 to 95.5)	88.9 (85 to 92)	5 (1.7 to 8)	
GbE (1 Gbps)	116 (105 to 132)	115 (26.7 to 133)	461 (413 to 504)	259 (212 to 312)	43 (32 to 49)	
802.11a	9.8 (8.06 to 11.2)	9.71 (8.19 to 11.4)	13.6 (13.3 to 14)	13.4 (13.1 to 13.7)	1.8 (0.26 to 2.8)	
802.11b	4.5 (2.82 to 5.31)	4.45 (2.7 to 5.3)	7.15 (6.99 to 7.23)	7.12 (6.95 to 7.21)	0.28 (0 to 0.51)	
802.11g	5.94 (3.28 to 9.11)	5.77 (3.28 to 9.5)	30 (4.97 to 35.9)	29.3 (4.8 to 35.6)	2.5 (0.82 to 5.1)	
802.11n (Apple) (2.4 GHz)	31 (20.6 to 33.8)	30.8 (21.4 to 33.8)	59.7 (58.4 to 60.4)	57.6 (55.1 to 59)	3.5 (1.9 to 4.1)	
802.11n (Buffalo) (2.4 GHz)	1.61 (0.72 to 2.23)	1.56 (0.72 to 2.23)	78.8 (78.1 to 79.3)	75.1 (73.4 to 76.3)	4.7 (3.8 to 6.7)	
802.11n (Apple) (5 GHz)	32.3 (26.3 to 34.2)	32.1 (27.2 to 34.3)	50.3 (47.1 to 51.7)	48.9 (48.1 to 50.3)	2.9 (1.9 to 4.5)	
802.11n (Buffalo) (5 GHz)	4.05 (0.92 to 7.54)	4.02 (0.92 to 7.54)	71.4 (69.3 to 78.6)	68.3 (67.1 to 73.8)	4.4 (3 to 6.2)	
DS2 (no proto- col optimization) (closet)	0.97 (0.52 to 2.36)	0.94 (0.54 to 2.29)	95.5 (95.4 to 95.6)	19.2 (13.2 to 26.9)	79 (71 to 87)	
DS2 (no protocol optimization) (hut)	6.91 (2.82 to 10.5)	6.85 (2.53 to 10.4)	93.4 (90.4 to 95.5)	22.7 (20.6 to 24.7)	75 (74 to 77)	
DS2 (TCP-opti- mized) (closet)	4.89 (2.56 to 7.41)	4.84 (2.56 to 7.41)	94.2 (90.8 to 95.5)	22.8 (22.7 to 23.3)	75 (72 to 76)	
DS2 (TCP- optimized) (hut)	9.34 (8.26 to 9.83)	9.24 (8.16 to 9.83)	90.7 (86.1 to 95.5)	19.2 (19 to 19.7)	78 (74 to 80)	
DS2 (UDP- optimized) (closet)	2.88 (1.18 to 7.34)	2.85 (1.18 to 7.33)	95.3 (92.9 to 95.5)	18.4 (16.2 to 19.4)	80 (76 to 82)	
DS2 (UDP- optimized) (hut)	6.46 (4.85 to 8.45)	6.41 (4.8 to 8.52)	93.7 (90 to 95.5)	20.4 (19.5 to 20.8)	78 (74 to 80)	
HD-PLC (closet)	1.11 (0.46 to 1.9)	1.1 (0.46 to 1.9)	91.4 (86.7 to 95.5)	31.1 (30.8 to 32.7)	65 (63 to 67)	
HD-PLC (hut)	1.9 (0.85 to 6.42)	1.88 (0.85 to 6.42)	95.2 (92.8 to 95.5)	33 (32.7 to 34.7)	65 (64 to 66)	
HomePlug 1.0 (closet)	5.15 (4.26 to 5.44)	5.1 (4.28 to 5.42)	7.34 (6.88 to 7.86)	7.3 (6.84 to 7.83)	0.38 (0.17 to 0.77)	
HomePlug 1.0 (hut)	4.71 (4.13 to 5.31)	4.67 (4.13 to 5.37)	7.57 (6.94 to 8.14)	7.51 (6.89 to 7.81)	0.4 (0 to 0.9)	
HomePlug 1.0 Turbo (closet)	1.21 (0.52 to 3.8)	1.18 (0.52 to 3.74)	17.6 (16.8 to 19.9)	17.2 (16.3 to 19.4)	2 (1.1 to 2.6)	
HomePlug 1.0 Turbo (hut)	0.9 (0.33 to 3.67)	0.87 (0.33 to 3.6)	21.6 (17 to 24.5)	21.1 (16.7 to 23.7)	2.1 (1 to 3.1)	
HomePlug AV (closet)	2.05 (0.66 to 13)	2.03 (0.66 to 13)	69.4 (63.2 to 92.9)	63.5 (60.8 to 65.1)	3.3 (2.3 to 4.1)	
HomePlug AV (hut)	1.33 (0.59 to 3.34)	1.31 (0.6 to 3.28)	68.5 (62.1 to 91)	63.1 (59.8 to 64)	2.6 (1.2 to 4.6)	

	MacBook as server				
	TCP bandwidth (reported at client) (Mbps)	TCP bandwidth (reported at server) (Mbps)	UDP bandwidth (reported at client) (Mbps)	UDP bandwidth (reported at server) (Mbps)	UDP packet loss (reported at server) (%)
	0.34 (0.26 to 0.52)	0.33 (0.26 to 0.46)	88.7 (85.5 to 92.7)	88.9 (86.4 to 93.6)	0
	19.1 (7.86 to 45.9)	19.1 (8.13 to 45.9)	262 (246 to 270)	263 (251 to 269)	0.009 (0 to 0.047)
	16.6 (13.8 to 17.2)	16.4 (13.7 to 17.2)	92.7 (89.2 to 95.2)	28.2 (21.1 to 29.2)	69 (67 to 75)
	4.26 (3.8 to 4.46)	4.21 (3.71 to 4.46)	9.98 (9.85 to 10)	5.69 (5.54 to 5.87)	42 (29 to 45)
	18.2 (16.9 to 18.7)	18 (16.8 to 18.7)	90.9 (86.3 to 92.9)	28.4 (28.2 to 28.8)	69 (66 to 70)
	25.7 (20.8 to 26.9)	25.5 (21.5 to 26.9)	90.5 (85.4 to 93.1)	84.3 (67.9 to 90.1)	7.1 (0.98 to 22)
	8.1 (5.96 to 20.1)	8.02 (5.96 to 20.7)	253 (240 to 263)	154 (101 to 161)	39 (33 to 54)
	23.4 (6.03 to 29.2)	23.2 (6.06 to 29.2)	90.3 (87.2 to 91.7)	78 (75.3 to 80.2)	13 (7.4 to 17)
	6.52 (1.18 to 15.3)	6.46 (1.45 to 15.3)	257 (234 to 264)	148 (145 to 157)	41 (30 to 45)
	13.4 (11.9 to 14)	13.3 (12.2 to 14.1)	91.9 (88.9 to 93.3)	45.6 (38.8 to 47)	50 (48 to 53)
	13 (11.4 to 14.2)	12.8 (11.4 to 14.1)	93.2 (91.6 to 94.4)	37.5 (17.7 to 44)	59 (52 to 86)
	10.8 (10.2 to 11.1)	10.7 (10.2 to 11)	91.6 (89 to 93.4)	41.1 (37.6 to 50.9)	54 (45 to 59)
	10.1 (8.78 to 11)	9.96 (8.82 to 11)	92.4 (87.9 to 93.9)	32.4 (30.8 to 33.1)	65 (60 to 66)
	10 (7.86 to 10.6)	9.92 (7.86 to 10.6)	92.8 (88 to 94.5)	42.8 (41.6 to 43.5)	54 (49 to 55)
	8.62 (5.7 to 10.7)	8.54 (5.79 to 10.6)	92.4 (90.4 to 93.5)	37.8 (37.8 to 38.6)	58 (55 to 59)
	6.31 (5.31 to 8.59)	6.32 (3.95 to 8.31)	93.1 (91.1 to 95.7)	38.6 (38.8 to 40.6)	58 (56 to 59)
	4.39 (1.9 to 8.26)	4.35 (1.9 to 8.26)	92 (89.2 to 93.9)	46.4 (45.7 to 47)	50 (48 to 51)
	4.89 (3.87 to 5.24)	4.84 (3.77 to 5.29)	7.11 (5.7 to 7.87)	7.08 (5.53 to 7.83)	0.099 (0 to 1.5)
	4.59 (3.41 to 4.98)	4.54 (3.42 to 5.02)	7.01 (6.35 to 7.36)	6.97 (6.35 to 7.08)	0
	7.53 (5.44 to 8.26)	7.46 (5.44 to 8.31)	16.8 (13.7 to 18)	16.7 (13.7 to 17.9)	0
	9.84 (9.04 to 10.2)	9.74 (8.98 to 10.2)	26 (24.9 to 27)	26 (24.9 to 27)	0
	1.78 (0.52 to 3.67)	1.76 (0.52 to 3.67)	72.1 (67.2 to 89.3)	68.5 (65.9 to 69.8)	0
	3.77 (1.64 to 7.67)	3.73 (1.64 to 7.67)	66.3 (61.2 to 88.1)	63 (60.5 to 66.3)	0