

EXHIBIT 1

Program of Research and Experimentation

Applicant files this application to modify this experimental license to add additional testing locations to be used for pre-deployment testing in the 3.7 GHz band with various equipment manufacturer partners. Applicant requests this experimental authorization be extended to the proposed, listed locations to use the 3.7-3.8 GHz band on a temporary basis. Applicant's wireless affiliate was awarded licenses in this band in FCC Auction 107, and this experimental authorization will permit crucial testing activities to take place at additional locations for which data is needed.

Testing will occur indoors and outdoors, pursuant to the technical parameters outlined in the attached Form 442 and attached spreadsheet. Applicant has identified the nearest earth stations and will coordinate operations under the experimental authorization with those earth station operators to avoid potential disruption to their operations. Applicant will immediately cease transmissions if those operators experience interference. In addition, Applicant will cease operations upon notice by any Auction 107 winning bidder that they plan to initiate operations in the relevant area pursuant to their Auction 107 licenses in the relevant areas.

Site	Address	City	County	State	Structure Type	Directional Antennas? (Y/N)	Sector	Answer Below if "Yes" to Directional Antenna			Antenna extend seen above structure or ground? (Y/N)	Answer Below if "Yes" to Antenna Extend - Not Above Structure or Ground			Structural formation or existing man-made structures (e.g. hills, trees, water tanks, towers) that would shield antenna from aircraft.
								Width of beam at the half-power point (in degrees)	Orientation in horizontal plane (degrees from True North)	Orientation in vertical plane (degrees from horizontal)		Height above ground to antenna tip (in meters)	Elevation of ground at antenna landing area (in meters)	Distance to nearest aircraft landing area (in km)	
Collin, Dallas, Denton County, Texas Stations															
1	1580 West Northwest Highway	Dallas	Dallas	TX	Guyed	Y	A	55	8	0	Y	25.91	413.33	4.70	Trees, additional building
							B	55	128	0		18.59	308.53	0.51	
							C	55	248	0					
2	2030 Walnut Hill	Dallas	Dallas	TX	Monopole	Y	A	55	8	0	Y	21.94	423.79	3.64	Trees, additional building
							B	55	128	0					
							C	55	248	0					
3	6301 Calwell Boulevard	Irving	Dallas	TX	Rooftop	Y	A	55	0	0	Y	9.14	465.88	1.35	Trees, additional building
							B	55	0	0					
							C	55	248	0					
4	6750 North Veterans Boulevard	Irving	Dallas	TX	Rooftop	Y	B	55	128	0	Y	19.31	501.97	0.24	Trees, additional building
							C	55	248	0					
							A	55	8	0					
5	2146 Callemie Crossing	Dallas	Dallas	TX	Monopole	Y	B	55	128	0	Y	23.17	423.79	3.27	Trees, additional building
							C	55	248	0					
							A	55	8	0					
6	14197 A King Road	Little Elm	Denton	TX	Self Support	Y	B	55	128	0	Y	35.06	557.74	0.62	Trees, additional building
							C	55	248	0					
							A	55	8	0					
7	7528 North Veterans Boulevard	Irving	Dallas	TX	Skeletal Structure	Y	B	55	128	0	Y	18.59	308.53	0.51	Trees, additional building
							C	55	248	0					
							A	55	8	0					
8	5100 O Corner Road	Irving	Dallas	TX	Rooftop	Y	B	55	138	0	Y	21.03	423.79	4.03	Trees, additional building
							C	55	248	0					
							A	55	8	0					
9	1707 X Street	Dallas	Dallas	TX	Monopole	Y	B	55	128	0	Y	22.96	423.79	3.07	Trees, additional building
							C	55	248	0					
							A	55	60	0					
10	200 East Beltline Road	Coppell	Dallas	TX	Monopole	Y	B	55	130	0	Y	23.47	544.99	5.26	Trees, additional building
							C	55	300	0					
							A	55	3	0					
11	2220 Century Circle	Irving	Dallas	TX	Monopole	Y	B	55	128	0	Y	22.55	321.99	1.98	Trees, additional building
							C	55	248	0					
							A	55	8	0					

Site	Address	City	County	State	Structure Type	Directional Antenna? (Y/N)	Sector	Answer Below If "Yes" to Directional Antenna			Antenna extend > 9m above structure or ground? (Y/N)	Answer Below If "Yes" to Antenna Extend > 9M Above Structure or Ground			
								Width of beam at the half-power point (in degrees)	Orientation in horizontal plane (degrees from true North)	Orientation in vertical plane (degrees from horizontal)		Height above ground to antenna tip (in Meters)	Elevation of ground at antenna site (AMSLL) (meters)	Distance to nearest aircraft landing area (in km)	List natural formation or existing man-made structures (e.g. hills, trees, water tanks, towers) that would shield antennas from aircraft.
12	4150 North MackArthurBoulevard	Irving	Dallas	TX	Rooftop	Y	A	65	8	0	Y	33.71	157.99	3.15	Trees, additional building
							B	65	128	0		248			
							C	65	248	0					
13	1705 Peters Road	Irving	Dallas	TX	Self Support	Y	A	65	0	0	Y	23.04	148.99	3.67	Trees, additional building
							B	65	128	0		248			
							C	65	248	0					
14	839 Hedckerry Road	Coppell	Dallas	TX	Utility	Y	A	65	60	0	Y	23.87	165.99	2.94	Trees, additional building
							B	65	180	0		300			
							C	65	300	0					
15	3351 Cabell Drive	Irving	Dallas	TX	Utility	Y	A	65	13	0	Y	19.51	154.99	3.40	Trees, additional building
							B	65	138	0		248			
							C	65	248	0					
16	6306 North O'Connor	Irving	Dallas	TX	Utility	Y	A	65	0	0	Y	23.87	129.99	2.03	Trees, additional building
							B	65	110	0		220			
							C	65	220	0					
17	7650 Esters Boulevard	Irving	Dallas	TX	Stealth Pole	Y	A	65	8	0	Y	30.78	160.99	3.40	Trees, additional building
							B	65	128	0		248			
							C	65	248	0					
18	769 MacArthur Drive	Coppell	Dallas	TX	Utility	Y	A	65	8	0	Y	35.05	155.99	4.41	Trees, additional building
							B	65	128	0		248			
							C	65	248	0					
19	6363 North State Highway 161	Irving	Dallas	TX	Building	Y	A	65	8	0	Y	35.56	150.99	1.93	Trees, additional building
							B	65	128	0		248			
							C	65	248	0					
20	7631 North Beltline Road	Irving	Dallas	TX	Monopole	Y	A	65	0	0	Y	32	151.99	4.02	Trees, additional building
							B	65	120	0					
							C	65	240	0					

Collin, Dallas, Denton County, Texas Stations

Site	Address	City	County	State	Structure Type	Directional Antenna? (Y/N)	Sector	Answer Below if "Yes" to Directional Antenna			Antenna Extend stem above structure or ground? (Y/N)	Answer Below if "Yes" to Antenna Extend - stem above Structure or Ground			List natural formation or existing man-made structures (e.g. hills, trees, water tanks, towers) that would shield antenna from aircraft.
								Width of beam at the half-power point (in degrees)	Orientation in horizontal plane (degrees from true North)	Orientation in vertical plane (degrees from horizontal)		Height above ground to antenna tip (in Meters)	Elevation of ground & antenna site (MASL) (meters)	Distance to nearest aircraft landing area (in km)	
Collin, Dallas, Denton County, Texas Stations															
21	2005 North Britan Road	Irving	Dallas	TX	Monopole	Y	A	65	32	0	Y	29.96	157.99	1.57	Trees, additional building
							B	65	147	0					
							C	65	262	0					
22	1355 Wanger Drive	Coppell	Dallas	TX	Monopole	Y	A	65	8	0	Y	13.72	160.99	5.19	Trees, additional building
							B	65	133	0					
							C	65	248	0					
23	13998 Dynamo Drive	Coppell	Dallas	TX	Utility	Y	A	65	8	0	Y	32	157.99	2.60	Trees, additional building
							B	65	128	0					
							C	65	248	0					
24	2990 Regent Boulevard	Irving	Dallas	TX	Utility	Y	A	65	8	0	Y	33.53	155.99	3.08	Trees, additional building
							B	65	128	0					
							C	65	248	0					
25	1413 Walnut Hill Lane	Irving	Dallas	TX	Monopole	Y	A	65	8	0	Y	35.05	146.99	2.87	Trees, additional building
							B	65	133	0					
							C	65	248	0					
26	1231 Greenway Drive	Irving	Dallas	TX	Building	Y	A	65	8	0	Y	44.5	133.99	1.72	Trees, additional building
							B	65	128	0					
							C	65	248	0					
27	1501 Dair Street	Irving	Dallas	TX	Monopole	Y	A	65	8	0	Y	29.26	150.99	3.99	Trees, additional building
							B	65	128	0					
							C	65	248	0					
28	1031 West Roehle Road	Irving	Dallas	TX	Monopole	Y	A	65	8	0	Y	23.16	161.99	1.24	Trees, additional building
							B	65	133	0					
							C	65	248	0					
29	820 West Walnut Hill Lane	Irving	Dallas	TX	Roftop	Y	A	65	8	0	Y	18.99	141.99	2.04	Trees, additional building
							B	65	128	0					
							C	65	248	0					
30	4545 West John Carpenter Freeway	Irving	Dallas	TX	Roftop	Y	A	65	8	0	Y	21.33	160.99	3.46	Trees, additional building
							B	65	128	0					
							C	65	248	0					
31	108 Decker Drive	Irving	Dallas	TX	Building	Y	A	65	240	0	Y	48.77	141.99	3.72	Trees, additional building
							B	65	120	0					
							C	65	240	0					

Site	Address	City	County	State	Structure Type	Directional Antenna? (Y/N)	Sector	Answer below if "Yes" to Directional Antenna			Antenna Extend >9m above structure or ground? (Y/N)	Answer Below if "Yes" to Antenna Extend > 9M Above Structure or Ground			List natural formation or existing man-made structures (e.g. hills, trees, water tanks, towers) that would shield antenna from aircraft.
								Width of beam at the half-power point (in degrees)	Orientation in horizontal plane (degrees from true North)	Orientation in vertical plane (degrees from horizontal)		Height above ground to antenna tip (in Meters)	Elevation of ground at antenna site (AMSL) (meters)	Distance to nearest aircraft landing area (in km)	
1	9920 Pacific Heights Blvd	San Diego	San Diego	CA	Rooftop	Y	A	55	55	0	Y	5.46	21.18	5.5	Trees, additional building
							B	55	55	0					
							C	55	55	0					
2	9065 Scranton Road	San Diego	San Diego	CA	Rooftop	Y	A	55	0	0	Y	10.96	35.97	6.3	Trees, additional building
							B	55	90	0					
							C	55	220	0					
3	6925 Lusk Boulevard	San Diego	San Diego	CA	Rooftop	Y	A	55	30	0	Y	3.67	12.04	7.01	Trees, additional building
							B	55	150	0					
							C	55	220	0					
4	6555 Ferris Square	San Diego	San Diego	CA	Building	Y	A	55	60	0	Y	2.00	7.11	4.3	Trees, additional building
							B	55	200	0					
							C	55	320	0					
5	8970 Crestmar Point	San Diego	San Diego	CA	Building	Y	A	55	0	0	Y	4.61	15.12	3.18	Trees, additional building
							B	55	120	0					
							C	55	240	0					
6	6980 White Mesa Boulevard	San Diego	San Diego	CA	Rooftop	Y	A	55	80	0	Y	3.55	11.04	4.3	Trees, additional building
							B	55	215	0					
							C	55	315	0					
San Diego, California Stations															
1	13668 Quilo Rd	Saratoga	Santa Clara	CA	Utility	Y	B	55	250	0	Y	18.29	55.00	11.33	Trees, additional building
							A	55	60	0					
							B	55	300	0					
2	1848 LEHIGH STREET	Mountain View	Santa Clara	CA	Monopole	Y	A	55	180	0	Y	9.14	4	3.52	Trees, additional building
							B	55	20	0					
							C	55	250	0					
3	1190 SERRAJOA AVENUE	San Jose	Santa Clara	CA	Rooftop	Y	B	55	140	0	Y	13.26	57	7.63	Trees, additional building
							A	55	20	0					
							C	55	250	0					

Site	Address	City	County	State	Structure Type	Directional Antenna? (Y/N)	Sector	Answer Below if "Yes" to Directional Antenna			Antenna Extend m above structure or ground? (Y/N)	Answer Below if "Yes" to Antenna Extend > 6M Above Structure or Ground			List natural formation or existing man-made structures (e.g. hills, trees, water tanks, towers) that would shield antenna from aircraft.
								Width of beam at the half-power point (in degrees)	Orientation in horizontal plane (degrees from true North)	Orientation in vertical plane (degrees from horizontal)		Height above ground to antenna tip (in meters)	Elevation of antenna site (MGS) (meters)	Distance to nearest aircraft landing gate (in km)	
Macomb County, Michigan Stations															
1	12711 Eleven Mile Road	Roseville	Macomb	MI	Moropole	Y	A	65	0	0	Y	29.26	187.00	10.50	Trees, additional building
2	470 Church Road	Bloomfield Hills	Oakland	MI	Stealth Structure	Y	A	65	0	0	Y	33.52	243	5.4	Trees, additional building
							B	65	120	0					
							C	65	240	0					
3	21707 West 14 Mile Road	Beverly Hills	Oakland	MI	Moropole	Y	A	65	0	0	Y	40.31	223	6.2	Trees, additional building
							B	65	120	0					
							C	65	240	0					
4	15600 West 13 Mile	Beverly Hills	Oakland	MI	Moropole	Y	A	65	0	0	Y	25.38	220	4.4	Trees, additional building
							B	65	120	0					
							C	65	270	0					
5	6783 Telegraph Road	Bloomfield Hills	Oakland	MI	Moropole	Y	A	65	355	0	Y	29.04	251	8	Trees, additional building
							B	65	115	0					
							C	65	235	0					
6	16111 West 14 Mile Road	Beverly Hills	Oakland	MI	Water Tank	Y	A	65	0	0	Y	32.09	229	2.3	Trees, additional building
							B	65	120	0					
							C	65	240	0					
7	4200 Telegraph Road	Bloomfield Hills	Oakland	MI	Moropole	Y	A	65	115	0	Y	37.58	277	8.8	Trees, additional building
							B	65	245	0					
							C	65	0	0					
9	1586 South Cranbrook Road	Birmingham	Oakland	MI	Moropole	Y	A	65	120	0	Y	27.21	226	4.6	Trees, additional building
							B	65	230	0					
							C	65	0	0					
9	401 South Old Woodward Avenue	Birmingham	Oakland	MI	Rooftop	Y	A	65	0	0	Y	34.53	234	2	Trees, additional building
							B	65	120	0					
							C	65	240	0					
10	300 Strathmore	Birmingham	Oakland	MI	Moropole	Y	A	65	0	0	Y	31.48	234	3.5	Trees, additional building
							B	65	120	0					
							C	65	240	0					
11	2725 Samciet Drive	Royal Oak	Oakland	MI	Water Tank	Y	A	65	120	0	Y	36.56	214	1.2	Trees, additional building
							B	65	240	0					
							C	65	10	0					
12	1385 Kensington Road	Bloomfield Hills	Oakland	MI	Moropole	Y	A	65	120	0	Y	40.31	255	6.3	Trees, additional building
							B	65	130	0					
							C	65	250	0					