



05/31/2023

**City of Grand Rapids
Small and Micro Cell Wireless Facilities Sites
Radio Frequency (RF) Power Density Measurements for the Year 2023
Retest of 2020 Sites and 2023 New Sites**

Executive Summary:

Geotech, Inc. performed broadband power density measurements of existing small and micro cell sites to determine compliance or non-compliance with the existing requirements for the general public as set by the Federal Communications Commission (FCC) and other international agencies. As of May 19th, 2023, forty (40) sites were tested, and the measurements of the maximum power density were less than five (5) percent of the Maximum Permissible Exposure (MPE) limit as set by the FCC. Of the forty (40) active sites tested in 2023, twenty-one (21) were retested sites of 2020, and nineteen (19) were new active sites for 2023.

Objective:

Perform small and micro cell radio frequency testing to determine compliance or non-compliance of the Maximum Permissible Exposure (MPE) power densities with the applicable requirements as set by the Federal Communications Commission (FCC) and other international agencies.

Testing shall be performed for existing installations, and repeated every 3-years. New installation shall be tested on a yearly basis and repeated every 3-years.

Background Information:

1. Number of cell sites: As of this date, there are 360 existing and proposed sites.
2. Of the forty (40) active sites tested in 2023, twenty-one (21) were retested sites of 2020, and nineteen (19) were new active sites for 2023.
3. Several types of radio/antenna/pole installations have been installed and/or are proposed. The known radio frequencies of the small/micro cells range from 800 megahertz (MHz) to 6 gigahertz (GHz).
4. The following service providers have, or propose to have small/micro cells within the City limits: Verizon & AT&T (These sites are operated by ACD, Mobilitie, and Zayo).
5. The Federal Communications Commission (FCC) regulates and allocates the radio frequencies. The Institute of Electrical and Electronic Engineers (IEEE) has developed Standard 95.1; which was adopted by the FCC. Similar standards were developed by other agencies; which included the International Commission on Non-Ionizing Radiation

Protection (ICNIRP) and Canada Code 6. These standards define the limits for Maximum Permissible Exposure (MPE) Power Densities (in Watts/Meter Squared) as follows:

	<u>FCC</u> <u>(1.5-100GHz)</u>	<u>INCIRP</u> <u>(2-300GHz)</u>	<u>Canada</u> <u>(6-150GHz)</u>
Occupational	50	50	50
Non-Occupational (General Public)	10	10	10

6. Because the atmosphere is flooded with nearly unlimited radio transmissions from various sources, it may in some cases be difficult to distinguish between existing radiation levels and new small/micro cell radiation levels. Based on these factors, it was decided to perform broadband power density measurements to account for the frequencies ranging from 300KHz to 50GHz; which includes the operating frequencies for the small/micro cells. These measurements identify the existing power densities, and determine compliance or non-compliance with the FCC standards.
7. Ground level Safety: Radio frequency emissions from antennae used for cellular transmissions result in exposure levels on the ground that are typically below the safety limits which were adopted by the FCC based on the recommendations of expert organizations, and endorsed by agencies of the Federal Government responsible for health and safety.

Testing Procedures and Parameters:

1. Test Instrument: Narda NBM-550-S with FCC probe #EA5091.
2. Measurements were made at Six (6) feet above ground at distances of 10 feet, 50 feet and 100 feet away from the pole/cell base.
3. Measurements were broadband base and account for radio frequencies ranging from 300KHz to 50GHz.
4. Measurements recorded the maximum readings as a percentage of the Maximum Permissible Exposure (MPE) power densities for occupational permissible limit. These measurements were converted to non-occupational (general public) power densities, and were compared with its MPE limit. Note: the MPE for non-occupational (general public) permissible limit is lower by a factor of 5 in comparison with the occupational permissible limit.

Testing Results: Refer to:

1. Attachment #1 – Summary of Radio Frequency (RF) Power Density Testing - Non-Occupational (2023 New Sites)
2. Attachment #2- Radio Frequency (RF) Power Density Testing - Non- Occupational (2023 New Sites)
3. Attachment #3- Radio Frequency (RF) Power Density Testing - Occupational and Non-Occupational (2023 New Sites)



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4. Attachment #4- Summary of Radio Frequency (RF) Power Density Testing - Non-Occupational (2020 Tests Compared to 2023 Retests)

Conclusions:

The exposure of the general public to radio frequency power densities at six (6) feet above ground is less than five (5) percent of the Maximum Permissible Exposure set by the FCC.

Attachment #1- Summary of Radio Frequency (RF) Power Density Testing - Non- Occupational (2023 New Sites)

City of Grand Rapids/ Small and Micro Cell Radio Frequency (RF) PowerDensity Testing -Non- Occupational

				Results as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Non-Occupational Limits							
				Measurements at 6 feet above Ground							
Count	Small Cell	Approved Date	Address	Direction	Distance from Pole			Direction	Distance from Pole		
					10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.
1	Verizon	8/31/2021	1414 Jennette Ave. NW	South	0.1565	0	0.188	North	0.2525	0.376	0.141
2	Verizon	8/5/2020	1145 Turner Ave. NW	South	0.172	0.1265	0.235	North	0.4735	1.0415	0.379
3	Verizon	8/5/2020	630 Turner Ave. NW	South	0.2975	0.376	0.329	North	0.1575	0.221	0.141
4	Verizon	3/8/2021	1218 Fulton St. W	East	0.2975	0.282	0.235	West	0.2835	0.3445	0.141
5	Verizon	8/5/2020	901 Caulfield Ave. SW	South	0.329	0.4385	0.313	North	0.3445	0.3915	0.329
6	Verizon	8/5/2020	296 Eola St. SE	East	0.141	0.0785	0.094	West	0.0315	0.266	0.313
7	Verizon	4/5/2021	2221 Union Ave. SE	South	0.235	0.376	0.282	North	0.219	0.172	0.2505
8	Verizon	3/4/2021	1791 Jefferson Ave. SE	South	1.105	0.2525	0.0785	North	0.141	0.235	0.188
9	Verizon	3/8/2021	154 Elm St. SW	South	0.597	0.36	0.282	North	0.219	0.329	0.2035
10	Verizon	8/4/2021	500 Woodlawn St. SE	East	0.329	0.1255	0.094	West	0.2975	0.235	0.36
11	Verizon	8/5/2020	22 Highland St. SE	East	0.3305	0.376	0.3915	West	0.407	0.4395	0.376
12	Verizon	8/5/2020	445 Franklin St. SE	East	0.2035	0.235	0.1095	West	0.0785	0.3915	0.266
13	Verizon	8/5/2020	1002 Logan St. SE	East	0.235	0.2035	0.2035	West	0.172	0.1255	0.3915
14	Verizon	3/12/2021	530 Eastern Ave. SE	South	0.188	0.235	0.2975	North	0.266	0.219	0.2505
15	Verizon	3/8/2021	1890 Kalamazoo Ave SE	South	0.144	0.172	0.2035	North	0.282	0.313	0.282
16	Verizon	3/12/2021	238 Auburn Ave. SE	East	0.221	0.379	0.376	South	0.2975	0.282	0.473
17	Verizon	8/7/2020	1407 Sigsbee St. SE	East	0.0625	0.313	0.282	West	0.2525	0.2035	0.8995
18	Verizon	7/1/2021	515 Norwood Ave. SE	South	0.172	0.1255	0.1565	North	0.0155	0.0785	0.2505
19	Verizon	2/23/2021	1551 Seminole Rd. SE	East	0.158	0.425	0.4105	West	0.2035	0.0785	0.2035

Radio Frequency (RF) Power Density Testing - Non- Occupational										
Max					1.1050	0.4385	0.4105	0.4735	1.0415	0.8995
Min					0.0625	0.0000	0.0785	0.0155	0.0785	0.1410
Median					0.2210	0.2525	0.2350	0.2525	0.2660	0.2660
Average					0.2828	0.2568	0.2401	0.2313	0.3022	0.3073

Notes:

1. For a complete description of testing procedure, parameters and results- see Full Report
2. All values presented as a percentage of 10watt/mete squared for non-occupational maxium exposure
3. Directio refers to measurement parallel to street direction
4. Measurement at 6 feet above ground represents pedestrian height
5. Above measurements are for active sites as of 5-19-23

Attachment #2- Radio Frequency (RF) Power Density Testing - Non- Occupational (2023 New Sites)

City of Grand Rapids/ Small and Micro Cell Radio Frequency (RF) PowerDensity Testing -Non- Occupational

Count	Small Cell	Pole Owner	Site ID	Site Status	Approved Date	Address	Results as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Non-Occupational Limits								
							Measurements at 6 feet above Ground								
							Direction	Distance from Pole			Direction	Distance from Pole			
								10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.	
1	Verizon	Grand Rapids	40361	Installation Complete	8/31/2021	1414 Jennette Ave. NW	South	0.1565	0	0.188	North	0.2525	0.376	0.141	
2	Verizon	Grand Rapids	40355	Installation Complete	8/5/2020	1145 Turner Ave. NW	South	0.172	0.1265	0.235	North	0.4735	1.0415	0.379	
3	Verizon	CE	40334	Installation Complete	8/5/2020	630 Turner Ave. NW	South	0.2975	0.376	0.329	North	0.1575	0.221	0.141	
4	Verizon	Grand Rapids	40313	Installation Complete	3/8/2021	1218 Fulton St. W	East	0.2975	0.282	0.235	West	0.2835	0.3445	0.141	
5	Verizon	Verizon	40617	Installation Complete	8/5/2020	901 Caulfield Ave. SW	South	0.329	0.4385	0.313	North	0.3445	0.3915	0.329	
6	Verizon	Grand Rapids	40592	Installation Complete	8/5/2020	296 Eola St. SE	East	0.141	0.0785	0.094	West	0.0315	0.266	0.313	
7	Verizon	Grand Rapids	40564	Installation Complete	4/5/2021	2221 Union Ave. SE	South	0.235	0.376	0.282	North	0.219	0.172	0.2505	
8	Verizon	CE	40606	Installation Complete	3/4/2021	1791 Jefferson Ave. SE	South	1.105	0.2525	0.0785	North	0.141	0.235	0.188	
9	Verizon	Grand Rapids	40611	Installation Complete	3/8/2021	154 Elm St. SW	South	0.597	0.36	0.282	North	0.219	0.329	0.2035	
10	Verizon	Grand Rapids	40536	Installation Complete	8/4/2021	500 Woodlawn St. SE	East	0.329	0.1255	0.094	West	0.2975	0.235	0.36	
11	Verizon	Grand Rapids	40723	Installation Complete	8/5/2020	22 Highland St. SE	East	0.3305	0.376	0.3915	West	0.407	0.4395	0.376	
12	Verizon	CE	40713	Installation Complete	8/5/2020	445 Franklin St. SE	East	0.2035	0.235	0.1095	West	0.0785	0.3915	0.266	
13	Verizon	AT&T	40502	Installation Complete	8/5/2020	1002 Logan St. SE	East	0.235	0.2035	0.2035	West	0.172	0.1255	0.3915	
14	Verizon	AT&T	40504	Installation Complete	3/12/2021	530 Eastern Ave. SE	South	0.188	0.235	0.2975	North	0.266	0.219	0.2505	
15	Verizon	AT&T	40551	Installation Complete	3/8/2021	1890 Kalamazoo Ave SE	South	0.144	0.172	0.2035	North	0.282	0.313	0.282	
16	Verizon	Grand Rapids	40694	Installation Complete	3/12/2021	238 Auburn Ave. SE	East	0.221	0.379	0.376	South	0.2975	0.282	0.473	
17	Verizon	Grand Rapids	40442	Installation Complete	8/7/2020	1407 Sigsbee St. SE	East	0.0625	0.313	0.282	West	0.2525	0.2035	0.8995	
18	Verizon	Grand Rapids	40702	Installation Complete	7/1/2021	515 Norwood Ave. SE	South	0.172	0.1255	0.1565	North	0.0155	0.0785	0.2505	
19	Verizon	AT&T	40533	Installation Complete	2/23/2021	1551 Seminole Rd. SE	East	0.158	0.425	0.4105	West	0.2035	0.0785	0.2035	

Notes:

1. For a complete description of testing procedure, parameters and results- see Full Report
2. All values presented as a percentage of 10watt/mete squared for non-occupational maxium exposure
3. Directio refers to measurement parallel to street direction
4. Measurement at 6 feet above ground represents pedestrian height
5. Above measurements are for active sites as of 5-19-23

Attachment #3- Radio Frequency (RF) Power Density Testing - Occupational and Non-Occupational (2023 New Sites)

City of Grand Rapids/ Small and Micro Cell Radio Frequency (RF) PowerDensity Testing -Non- Occupational

Count	Small Cell	Pole Owner	Site ID	Site Status	Approved Date	Address	Results as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Occupational Limits									Results as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Non-Occupational Limits								
							Measurements at 6 feet above Ground									Measurements at 6 feet above Ground								
							Direction	Distance from Pole			Direction	Distance from Pole			Direction	Distance from Pole			Direction	Distance from Pole				
								10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.						
1	Verizon	Grand Rapids	40361	Installation Complete	8/31/2021	1414 Jennette Ave. NW	South	0.0313	0.0000	0.0376	North	0.0505	0.0752	0.0282	South	0.1565	0	0.188	North	0.2525	0.376	0.141		
2	Verizon	Grand Rapids	40355	Installation Complete	8/5/2020	1145 Turner Ave. NW	South	0.0344	0.0253	0.047	North	0.0947	0.2083	0.0758	South	0.172	0.1265	0.235	North	0.4735	1.0415	0.379		
3	Verizon	CE	40334	Installation Complete	8/5/2020	630 Turner Ave. NW	South	0.0595	0.0752	0.0658	North	0.0315	0.0442	0.0282	South	0.2975	0.376	0.329	North	0.1575	0.221	0.141		
4	Verizon	Grand Rapids	40313	Installation Complete	3/8/2021	1218 Fulton St. W	East	0.0595	0.0564	0.0470	West	0.0567	0.0689	0.0282	East	0.2975	0.282	0.235	West	0.2835	0.3445	0.141		
5	Verizon	Verizon	40617	Installation Complete	8/5/2020	901 Caulfield Ave. SW	South	0.0658	0.0877	0.0626	North	0.0689	0.0783	0.0658	South	0.329	0.4385	0.313	North	0.3445	0.3915	0.329		
6	Verizon	Grand Rapids	40592	Installation Complete	8/5/2020	296 Eola St. SE	East	0.0282	0.0157	0.0188	West	0.0063	0.0532	0.0626	East	0.141	0.0785	0.094	West	0.0315	0.266	0.313		
7	Verizon	Grand Rapids	40564	Installation Complete	4/5/2021	2221 Union Ave. SE	South	0.047	0.0752	0.0564	North	0.0438	0.0344	0.0501	South	0.235	0.376	0.282	North	0.219	0.172	0.2505		
8	Verizon	CE	40606	Installation Complete	3/4/2021	1791 Jefferson Ave. SE	South	0.221	0.0505	0.0157	North	0.0282	0.047	0.0376	South	1.105	0.2525	0.0785	North	0.141	0.235	0.188		
9	Verizon	Grand Rapids	40611	Installation Complete	3/8/2021	154 Elm St. SW	South	0.1194	0.072	0.0564	North	0.0438	0.0658	0.0407	South	0.597	0.36	0.282	North	0.219	0.329	0.2035		
10	Verizon	Grand Rapids	40536	Installation Complete	8/4/2021	500 Woodlawn St. SE	East	0.0658	0.0251	0.0188	West	0.0595	0.047	0.072	East	0.329	0.1255	0.094	West	0.2975	0.235	0.36		
11	Verizon	Grand Rapids	40723	Installation Complete	8/5/2020	22 Highland St. SE	East	0.0661	0.0752	0.0783	West	0.0814	0.0879	0.0752	East	0.3305	0.376	0.3915	West	0.407	0.4395	0.376		
12	Verizon	CE	40713	Installation Complete	8/5/2020	445 Franklin St. SE	East	0.0407	0.047	0.0219	West	0.0157	0.0783	0.0532	East	0.2035	0.235	0.1095	West	0.0785	0.3915	0.266		
13	Verizon	AT&T	40502	Installation Complete	8/5/2020	1002 Logan St. SE	East	0.047	0.0407	0.0407	West	0.0344	0.0251	0.0783	East	0.235	0.2035	0.2035	West	0.172	0.1255	0.3915		
14	Verizon	AT&T	40504	Installation Complete	3/12/2021	530 Eastern Ave. SE	South	0.0376	0.047	0.0595	North	0.0532	0.0438	0.0501	South	0.188	0.235	0.2975	North	0.266	0.219	0.2505		
15	Verizon	AT&T	40551	Installation Complete	3/8/2021	1890 Kalamazoo Ave SE	South	0.0288	0.0344	0.0407	North	0.0564	0.0626	0.0564	South	0.144	0.172	0.2035	North	0.282	0.313	0.282		
16	Verizon	Grand Rapids	40694	Installation Complete	3/12/2021	238 Auburn Ave. SE	East	0.0442	0.0758	0.0752	South	0.0595	0.0564	0.0946	East	0.221	0.379	0.376	South	0.2975	0.282	0.473		
17	Verizon	Grand Rapids	40442	Installation Complete	8/7/2020	1407 Sigsbee St. SE	East	0.0125	0.0626	0.0564	West	0.0505	0.0407	0.1799	East	0.0625	0.313	0.282	West	0.2525	0.2035	0.8995		
18	Verizon	Grand Rapids	40702	Installation Complete	7/1/2021	515 Norwood Ave. SE	South	0.0344	0.0251	0.0313	North	0.0031	0.0157	0.0501	South	0.172	0.1255	0.1565	North	0.0155	0.0785	0.2505		
19	Verizon	AT&T	40533	Installation Complete	2/23/2021	1551 Seminole Rd. SE	East	0.0316	0.085	0.0821	West	0.0407	0.0157	0.0407	East	0.158	0.425	0.4105	West	0.2035	0.0785	0.2035		
							Summary of Measurements above as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Occupational Limits and Non-Occupational Limits																	
							Max	0.5444	0.4942	0.4381	0.6770	0.5697	0.7064	2.7220	2.4710	2.1905	3.3850	2.8485	3.5320					
							Min	0.0119	0.0119	0.0119	0.0080	0.0199	0.0040	0.0595	0.0595	0.0595	0.0400	0.0995	0.0200					
							Median	0.1115	0.0935	0.1035	0.0796	0.0916	0.0897	0.5575	0.4675	0.5175	0.3980	0.4580	0.4485					
							Average	0.1764	0.1339	0.1356	0.1292	0.1283	0.1412	0.8819	0.6696	0.6779	0.6462	0.6416	0.7059					

Notes:
 1. For a complete description of testing procedure, parameters and results- see Full Report
 2. All values presented as a percentage of 10watt/mete squaredd for non-occupational maxium exposure
 3. Directo refers to measurement parallel to street direction
 4. Measurement at 6 feet above ground represents pedestrian height
 5. Above measurements are for active sites as of 5-19-23

Comparison of Maximum Permissible Limits (MPE) vs. Maximum Actual Measurements							
FCC Limits for MPE vs. Actual Measurements				Canada Limits for MPE vs. Actual Measurements			
Occupational Permissible Limit	5	mW/Cm2	W/M2	5	mW/Cm2	50	W/M2
General Public Permissible Limit	1	mW/Cm2	W/M2	1	mW/Cm2	10	W/M2
Max Measurement at 6 Feet Above Ground	0.7064	mW/Cm2	W/M2	0.7064	mW/Cm2	7.064	W/M2

Measurement Parameters			
Instrument: Narda NBM-550-S with FCC probe #EA5091			
Measurements made at 6 feet above ground at 10 feet, 50 feet and 100 feet from the pole/cell base			
Measurements are broadband base and account for radio frequencies ranging from 300KHz to 50GHz			
Maximum Permissible Exposure (MPE) Power Densities in Watts/Meter Squared			
	FCC (1.5-100GHz)		Canada (6-150GHz)
Occupational	50		50
General Public	10		10

Attachment #4- Summary of Radio Frequency (RF) Power Density Testing - Non- Occupational (2020 Test Compared to 2023 Retest)

City of Grand Rapids/ Small and Micro Cell Radio Frequency (RF) PowerDensity Testing -Non- Occupational

Count	Small Cell	Pole Owner	Site ID	Site Status	Approved Date	Address	Results as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Non-Occupational Limits (2020)						Results as Percentage (%) of Maximum Permissible Exposure (MPE) for FCC Non-Occupational Limits (2023)									
							Measurements at 6 feet above Ground						Measurements at 6 feet above Ground									
							Direction	Distance from Pole			Direction	Distance from Pole			Direction	Distance from Pole			Direction	Distance from Pole		
								10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.		10 ft.	50 ft.	100 ft.
1	Mobilitie	Grand Rapids	DE90XS1YQ-D	Installation Complete	2/21/2017	1610 Broadway Ave. NW	South	0.9825	0.237	0.745	North	0.3175	0.034	0.508	South	0.5365	0.0625	0.3155	North	0.1565	0.663	0.789
2	ACD	Grand Rapids	14311	Installation Complete	5/28/2019	1998 5/8 Division Ave. S	South	0.029	0.1445	0.289	North	0.1155	0.1735	0.1445	South	0.172	0.236	0.347	East	0.2975	0.503	0.548
3	ACD	Consumers	14301	Installation Complete	3/31/2017	1598 Division Ave. S	South	0.4045	0.4045	0.26	North	0.4045	0.26	0.289	South	0.5365	0.456	0.313	North	0.235	0.188	0.172
4	ACD	Grand Rapids	14304	Installation Complete	3/31/2017	599 5/8 Division Ave.	South	0.058	0.4045	0.1735	North	0.231	0.202	0.1155	South	1.515	0.2975	0.329	North	0.379	0.2035	0.423
5	ACD	Grand Rapids	14303	Installation Complete	5/24/2019	97 Logan St. SW	East	0.813	0.6775	1.355	West	0.4045	0.0865	0.4065	East	0.548	0.8625	1.1035	West	0.9785	0.4855	0.517
6	ACD	Grand Rapids	10008	Installation Complete	5/24/2019	307 5/5 Ionia Ave. SW	South	0.1735	0.1155	0.3755	North	1.344	0.1155	0.029	South	2.7465	0.141	0.2975	North	0.219	1.1995	1.3575
7	ACD	Grand Rapids	10014	Installation Complete	5/24/2019	235 Jefferson St. SE	South	0.289	0.4045	0.3465	North	0.745	0.14445	0.231	South	0.36	0.219	0.2505	North	0.376	0.3445	0.282
8	ACD	Grand Rapids	10015	Installation Complete	5/24/2019	173 5/8 Lafayette Ave. SE	South	0.3385	0.779	0.847	North	0.203	0.1735	0.493	South	0.442	0.1565	0.141	North	0.313	0.329	0.3445
9	ACD	Grand Rapids	10010	Installation Complete	5/24/2019	2 Cherry St. SE	East	0.1445	0.3175	0.6355	West	0.231	0.3465	0.26	East	0.1565	0.329	0.376	South	1.26	0.1875	0.2975
10	ACD	Grand Rapids	10012	Installation Complete	5/24/2019	25 Oakes St. SW	East	0.3525	0.334	0.4495	West	0.462	0.1445	0.202	East	0.36	0.3445	0.36	West	0.172	0.266	0.454
11	ACD	Grand Rapids	10039	Installation Complete	5/24/2019	125 5/8 Oakes St. SW	East	1.9645	0.813	0.4495	West	1.4015	2.202	1.863	East	0.7555	0.407	0.141	West	0.329	0.282	0.2975
12	ACD	Grand Rapids	10024	Installation Complete	5/29/2019	186 Monroe Ave. NW	South	0.029	0.231	0.1155	North	0.058	0.1445	0.0865	South	0.188	0.1095	0.663	North	0.158	0.221	0.1255
13	ACD	Grand Rapids	10021	Installation Complete	5/24/2019	13 5/8 Pearl St. NW	East	0.57	0.6435	1.2195	West	0.289	0.0865	0.3385	East	0.4385	0.2975	0.219	West	0.4735	0.266	0.219
14	ACD	Grand Rapids	10041	Installation Complete	5/28/2019	220 Cresent St. NE	East	0.305	0.4065	0.203	West	0.3175	0.26	0.3725	East	0.376	0.517	0.4385	West	0.219	0.376	0.2975
15	ACD	Grand Rapids	10034	Installation Complete	5/28/2019	4 Michigan St. NE	East	0.217	0.3755	0.3575	West	0.231	0.0865	0.26	East	0.094	0.2035	0.1255	West	0.2505	0.4385	0.329
16	ACD	Grand Rapids	10040	Installation Complete	5/30/2019	425 Lafayette Ave. NE	South	0.202	0.26	0.391	North	0.28	0.1155	0.0865	South	0.172	0.219	0.1255	North	0.094	0.1095	0.282
17	AT&T	Grand Rapids	GRRPD 022	Installation Complete	3/25/2019	329 Bridge St. NW	East	0.26	0.289	0.1445	West	0.3465	0.26	0.1735	East	0.36	0.3915	0.313	West	0.2975	0.3915	0.172
18	AT&T	Grand Rapids	GRRPD 016	Installation Complete	10/23/2018	1163 Wealthy St. SE	East	0.462	0.289	0.4335	West	0.202	0.231	0.5775	North	1.4205	0.4105	0.329	West	0.5195	1.499	1.6255
19	ACD	Grand Rapids	14352	Installation Complete	6/6/2019	1531 Lake Dr. SE	South	0.1735	0.3755	0.289	North	0.3175	0.289	0.3465	East	0.2035	0.3445	0.3445	North	1.7675	0.407	0.188
20	ACD	Grand Rapids	10057M	Installation Complete	11/8/2019	3702 Sparks Dr. SE	South	0.029	0.1155	0.4335	North	0.029	0.26	0.3465	East	0.266	0.282	0.266	West	0.2975	0.1565	0.282
21	ACD	Grand Rapids	10084	Installation Complete	11/8/2019	3982 Camelot Dr. SE	East	0.1445	0.1735	0.1445	West	0.3175	0.231	0.1155	East	0.282	0.172	0.284	West	1.0415	0.313	0.0315

Radio Frequency (RF) Power												
Max	1.9645	0.8130	1.3550	1.4015	2.2020	1.8630	2.7465	0.8625	1.1035	1.7675	1.4990	1.6255
Min	0.0290	0.1155	0.1155	0.0290	0.0340	0.0290	0.0940	0.0625	0.1255	0.0940	0.1095	0.0315
Median	0.2600	0.3340	0.3755	0.3175	0.1735	0.2600	0.3600	0.2975	0.3130	0.2975	0.3290	0.2975
Average	0.3782	0.3710	0.4599	0.3927	0.2784	0.3450	0.5680	0.3075	0.3372	0.4683	0.4205	0.4302