GUIDE

MAXIMUM ALLOWED PATH LOSS FOR G1

Get a better understanding of maximum allowed path loss for G1 to determine capacity and distances between base nodes (BN) and remote nodes (RN).

Maximum Allowed Path Loss for G1

Path loss, or path attenuation, is the reduction in power density of an electromagnetic wave as it propagates through space. It is a major component in the analysis and design of the link budget of a telecommunication system. This term is commonly used in wireless communications and signal propagation.

Shown below are tables that show the maximum allowable path loss for the Tarana G1 system in both 5 GHz and CBRS frequencies. This is used in the Google planner tool for Tarana partners. Specifications are subject to change without notice, and actual results may vary.

Network Profile 6

5GHZ

RN Ant Gain	21.9	dBi	
Fade Margin	3	dB	
Interference Margin	2	dB	
BN Transmit EIRP	36	dBm	
Network Profile 6	1.75:1	DL/UL Ratio	Up to 15 Km Radius

MCS Index	RN Input RSSI	Aggregate Capacity	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	784	249	143	499	285	123
15	-66.5	770	245	140	490	280	124
14	-67.4	743	237	135	473	270	125
13	-68.7	689	219	125	439	251	127
12	-70.4	635	202	116	404	231	128
11	-72.2	581	185	106	370	211	130
10	-73.9	527	168	96	335	192	132
9	-75.4	473	151	86	301	172	133
8	-76.9	419	133	76	267	152	135
7	-78.3	365	116	66	232	133	136
6	-79.7	311	99	57	198	113	138
5	-82.2	257	82	47	163	93	140
4	-83.8	203	65	37	129	74	142
3	-84.9	176	56	32	112	64	143
2	-85.8	149	47	27	95	54	144
1	-86.9	95	30	17	60	34	145

CBRS

RN Ant Gain	18.5	dBi	
Fade Margin	3	dB	
Interference Margin	0	dB	
BN Transmit Power	37	dBm/MHz	49.7 dBm EIRP
Network Profile 6	1.75:1	DL/UL Ratio	Up to 15 Km Radius

MCS Index	RN Input RSSI	Aggregate Capacity Per	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	784	249	143	499	285	133
15	-66.1	770	245	140	490	280	134
14	-67.1	743	237	135	473	270	135
13	-69.1	689	219	125	439	251	137
12	-70.1	635	202	116	404	231	138
11	-72.1	581	185	106	370	211	140
10	-74.1	527	168	96	335	192	142
9	-75.1	473	151	86	301	172	143
8	-77.1	419	133	76	267	152	145
7	-78.1	365	116	66	232	133	146
6	-81.1	311	99	57	198	113	149
5	-82.1	257	82	47	163	93	150
4	-84.1	203	65	37	129	74	152
3	-85.1	176	56	32	112	64	153
2	-86.1	149	47	27	95	54	154
1	-89.1	95	30	17	60	34	157

Network Profile 5

5GHZ

RN Ant Gain	21.9	dBi	
Fade Margin	3	dB	
Interference Margin	2	dB	
BN Transmit EIRP	36	dBm	
Network Profile 5	2.67:1	DL/UL Ratio	Up to 15 Km Radius

MCS Index	RN Input RSSI	Aggregate Capacity Per	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	784	285	107	570	214	123
15	-66.5	770	280	105	560	210	124
14	-67.4	743	270	101	541	203	125
13	-68.7	689	251	94	501	188	127
12	-70.4	635	231	87	462	173	128
11	-72.2	581	211	79	423	159	130
10	-73.9	527	192	72	383	144	132
9	-75.4	473	172	65	344	129	133
8	-76.9	419	152	57	305	114	135
7	-78.3	365	133	50	265	100	136
6	-79.7	311	113	42	226	85	138
5	-82.2	257	93	35	187	70	140
4	-83.8	203	74	28	147	55	142
3	-84.9	176	64	24	128	48	143
2	-85.8	149	54	20	108	41	144
1	-86.9	95	34	13	69	26	145

CBRS

RN Ant Gain	18.5	dBi	
Fade Margin	3	dB	
Interference Margin	0	dB	
BN Transmit Power	37	dBm/MHz	49.7 dBm EIRP
Network Profile 5	2.67:1	DL/UL Ratio	Up to 15 Km Radius

MCS Index	RN Input RSSI	Aggregate Capacity Per	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	784	285	107	570	214	133
15	-66.1	770	280	105	560	210	134
14	-67.1	743	270	101	541	203	135
13	-69.1	689	251	94	501	188	137
12	-70.1	635	231	87	462	173	138
11	-72.1	581	211	79	423	159	140
10	-74.1	527	192	72	383	144	142
9	-75.1	473	172	65	344	129	143
8	-77.1	419	152	57	305	114	145
7	-78.1	365	133	50	265	100	146
6	-81.1	311	113	42	226	85	149
5	-82.1	257	93	35	187	70	150
4	-84.1	203	74	28	147	55	152
3	-85.1	176	64	24	128	48	153
2	-86.1	149	54	20	108	41	154
1	-89.1	95	34	13	69	26	157

Network Profile 2

5GHZ

RN Ant Gain	21.9	dBi	
Fade Margin	3	dB	
Interference Margin	2	dB	
BN Transmit EIRP	**36**	**dBm**	
Network Profile 2	**4:1**	**DL/UL Ratio**	**Up to 30 Km Radius**

MCS Index	RN Input RSSI	Aggregate Capacity Per	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	713	285	71	570	143	123
15	-66.5	700	280	70	560	140	124
14	-67.4	676	270	68	541	135	125
13	-68.7	627	251	63	501	125	127
12	-70.4	578	231	58	462	116	128
11	-72.2	528	211	53	423	106	130
10	-73.9	479	192	48	383	96	132
9	-75.4	430	172	43	344	86	133
8	-76.9	381	152	38	305	76	135
7	-78.3	332	133	33	265	66	136
6	-79.7	283	113	28	226	57	138
5	-82.2	233	93	23	187	47	140
4	-83.8	184	74	18	147	37	142
3	-84.9	160	64	16	128	32	143
2	-85.8	135	54	14	108	27	144
1	-86.9	86	34	9	69	17	145

CBRS

RN Ant Gain	18.5	dBi	
Fade Margin	3	dB	
Interference Margin	0	dB	
BN Transmit Power	**37**	**dBm/MHz**	**49.7 dBm EIRP**
Network Profile 2	**4:1**	**DL/UL Ratio**	**Up to 30 Km Radius**

MCS Index	RN Input RSSI	Aggregate Capacity Per	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	713	285	71	570	143	133
15	-66.1	700	280	70	560	140	134
14	-67.1	676	270	68	541	135	135
13	-69.1	627	251	63	501	125	137
12	-70.1	578	231	58	462	116	138
11	-72.1	528	211	53	423	106	140
10	-74.1	479	192	48	383	96	142
9	-75.1	430	172	43	344	86	143
8	-77.1	381	152	38	305	76	145
7	-78.1	332	133	33	265	66	146
6	-81.1	283	113	28	226	57	149
5	-82.1	233	93	23	187	47	150
4	-84.1	184	74	18	147	37	152
3	-85.1	160	64	16	128	32	153
2	-86.1	135	54	14	108	27	154
1	-89.1	86	34	9	69	17	157

Network Profile 1

5GHZ

RN Ant Gain	21.9	dBi	
Fade Margin	3	dB	
Interference Margin	2	dB	
BN Transmit EIRP	**36**	**dBm**	
Network Profile 1	**4.5:1**	**DL/UL Ratio**	**Up to 15 Km Radius**

MCS Index	RN Input RSSI	Aggregate Capacity	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	784	321	71	641	143	123
15	-66.5	770	315	70	630	140	124
14	-67.4	743	304	68	608	135	125
13	-68.7	689	282	63	564	125	127
12	-70.4	635	260	58	520	116	128
11	-72.2	581	238	53	476	106	130
10	-73.9	527	216	48	431	96	132
9	-75.4	473	194	43	387	86	133
8	-76.9	419	171	38	343	76	135
7	-78.3	365	149	33	299	66	136
6	-79.7	311	127	28	254	57	138
5	-82.2	257	105	23	210	47	140
4	-83.8	203	83	18	166	37	142
3	-84.9	176	72	16	144	32	143
2	-85.8	149	61	14	122	27	144
1	-86.9	95	39	9	77	17	145

CBRS

RN Ant Gain	18.5	dBi	
Fade Margin	3	dB	
Interference Margin	0	dB	
BN Transmit Power	**37**	**dBm/MHz**	**49.7 dBm EIRP**
Network Profile 1	**4.5:1**	**DL/UL Ratio**	**Up to 15 Km Radius**

MCS Index	RN Input RSSI	Aggregate Capacity	Capacity 40MHz DL	Capacity 40MHz UL	Capacity 2x40MHz DL	Capacity 2x40MHz UL	Pathloss (dB)
16	-65.1	784	321	71	641	143	133
15	-66.1	770	315	70	630	140	134
14	-67.1	743	304	68	608	135	135
13	-69.1	689	282	63	564	125	137
12	-70.1	635	260	58	520	116	138
11	-72.1	581	238	53	476	106	140
10	-74.1	527	216	48	431	96	142
9	-75.1	473	194	43	387	86	143
8	-77.1	419	171	38	343	76	145
7	-78.1	365	149	33	299	66	146
6	-81.1	311	127	28	254	57	149
5	-82.1	257	105	23	210	47	150
4	-84.1	203	83	18	166	37	152
3	-85.1	176	72	16	144	32	153
2	-86.1	149	61	14	122	27	154
1	-89.1	95	39	9	77	17	157

Tarana's mission is to accelerate the deployment of fast, affordable internet access around the world. Through a decade of R&D and more than $400M of investment, the Tarana team has created a unique next-generation fixed wireless access (ngFWA) technology instantiated in its first commercial platform, Gigabit 1 (G1). It delivers a game-changing advance in broadband economics in both mainstream and underserved markets, using either licensed or unlicensed spectrum. G1 started production in mid-2021 and has been embraced by more than 200 operators in 21 countries and 45 states. Tarana is headquartered in Milpitas, California, with additional research and development in Pune, India.