

Exhibit A

(Ex Parte October 1, 2019 – ET NPRM 18-295)

Alleviating Roadblocks on the way to a Report and Order re Flexible Use Of Unlicensed Devices in the U-NII-5 and U-NII-7 Bands

Encina Communications Corp.

The Unlicensed Devices Shown Below are Available today from Amazon and Other Outlets.



However, Industry Urgently Needs an FCC Report and Order to Upgrade these Unlicensed Devices to Operate in the Licensed 6 GHz Bands.

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From the Filings in this Proceeding it Appears that the 3 Major Roadblocks on the way to a Report and Order Are:

1. **Public Safety Concerns** -- raised by fixed service operators.
2. **Cost** -- Concerns of equipment and component manufactures that AFC will make the Cost of Access Points Prohibitively Expensive.
3. **The Digital Divide** -- WISPs express concerns that low EIRP and height restrictions will hinder their ability to help close the Digital Divide, which is the Commission's #1 Strategic Goal.

The 3 Types of Proposals Submitted Under This Docket Are :

1. *Safe Area Coordination (SAC) Before AFC of Deployed Unlicensed Devices*
2. *AFC After Deployment of Unlicensed Devices*
3. *Random Deployment of Uncoordinated Unlicensed Devices*

Proposal Type 1: *SAC Before AFC*

Alleviates Roadblocks on the Way to a Report & Order Because:

- ✓ It achieves the degree of safety which is expected by fixed service operators because it uses the procedures of TSB10 and Part 101.103 of the Rules -- including a prior coordination notice and peer review -- before unlicensed devices are deployed.
- ✓ It incorporates very simple, very low-cost AFC using existing hardware and software.
- ✓ It allows unlicensed devices to be safely deployed indoors and outdoors without low EIRP and height requirements, making it possible for WISPs to use PtMP in the bands to help close the Digital Divide.

Proposal Type 2: *AFC After Deployment of Unlicensed Devices* Does Not Alleviate Roadblocks on the Way to a Report and Order Because:

- It does not achieve the degree of safety which is expected by fixed service operators because it does not use the procedures of TSB10 and Part 101.103 of the Rules -- including a prior coordination notice and peer review -- before unlicensed devices are deployed.
- It will have to incorporate a very complex, unproven and untested AFC. It will also need a new database of over 950 million devices, compared to the ULS database of only 50,000 licensed devices.
- The low outdoor EIRP and height restrictions will hinder WISPs' use of PtMP in the 6 GHz bands and hinder closing the Digital Divide.

Proposal Type 3: *Random Deployment of Uncoordinated Unlicensed Devices*

The reason given by RLAN proponents for not using AFC is that it will be too expensive.

The facts are that today over 90% of client devices have GPS, and SAC Before AFC only requires a very simple GPS. So adding GPS to APs does not materially change the cost.

The argument put forward by RLAN proponents is that only a small percentage of unlicensed devices will cause harmful interference.

We agree that there would be millions of locations where randomly deployed unlicensed devices will not cause harmful interference¹. However, there are millions of locations where randomly deployed unlicensed devices will cause catastrophic² interference as well as harmful interference.

1. The maximum interference is the level which lowers the fade margin by 1 dB.

2. The interference level which causes continuous errors.

Proposal Type 3: *Random Deployment of Uncoordinated Unlicensed Devices*

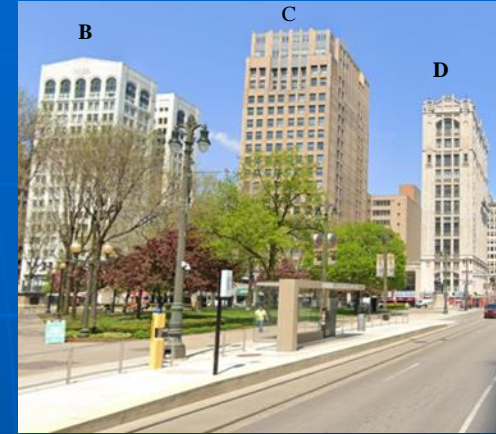
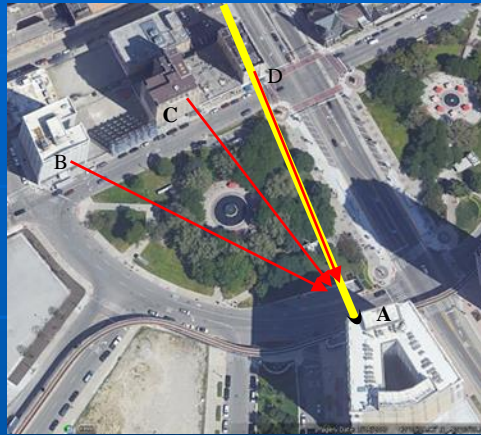
We assert that all arguments regarding the use of unlicensed devices in licensed bands must be based on industry accepted procedures and equipment data sheet information¹. If measured data is not available, then -- as public safety is at risk -- a worst-case scenario must be considered.

In the following examples we use Alcatel MDR 8606 radios, and Commscope VHLPX3-6W antennas. As building loss data at 6 GHz is not available for the vast majority of offices, we will use the scenario of unlicensed devices in offices with windows. It has been reported that window loss at 6 GHz can vary widely from 2 dB to 35 dB². Therefore in these examples we will use 2 dB.

1. Calculations are shown in the Appendix.

2. ECC's measured data for 6 GHz signal loss through high-rise building windows varied from 2 dB to 22 dB. iPosi in their NPRM 18-295 filing of August 12, 2019 show losses of 5 dB to 35 dB.

Random Deployment of Uncoordinated Unlicensed Devices Will Cause Catastrophic Interference – Example¹



Interfering Sites

Transmitted EIRP

Site B

30 dBm

Site C

30 dBm

Site D

30 dBm

Site E

30 dBm

Victim Sites

Site A Received Interference

-66 dBm

-46 dBm

-50 dBm

Site A Far End Received Interference

-79 dBm

Maximum Allowed Interference

-101 dBm

-101 dBm

-101 dBm

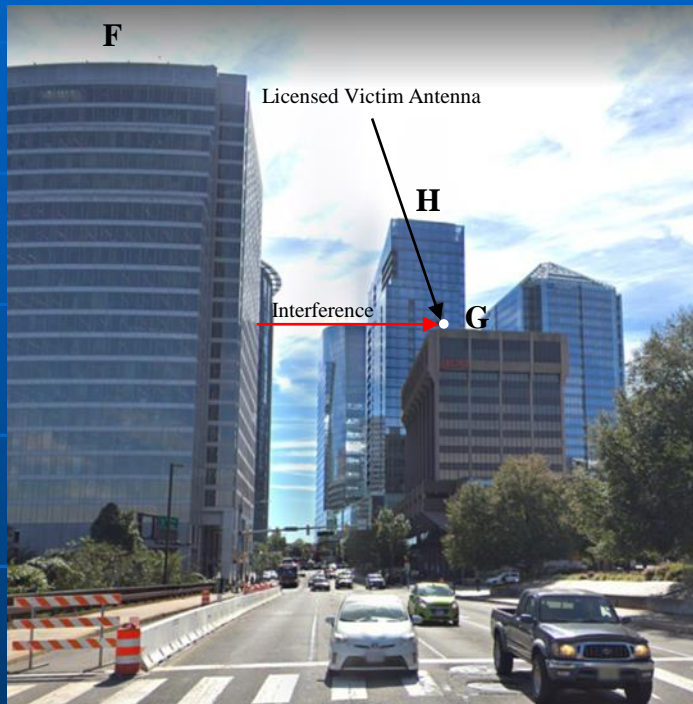
-101 dBm

Interference Results in Continuous Errors

1. See Appendix for calculations.

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Random Deployment of Uncoordinated Unlicensed Devices Will Cause Catastrophic Interference – Example¹



Interfering Sites

Transmitted EIRP

Site F

30 dBm

Site H

30 dBm

Victim Sites

Site G Received Interference

-73 dBm

Site G Far End Received Interference

-79 dBm

Maximum Allowed Interference

-101 dBm

-101 dBm

Interference Results in Continuous Errors

1. See Appendix for calculations.

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Conclusion

Because SAC Before AFC of Deployed Unlicensed Devices:

- ✓ Achieves the degree of safety expected by fixed service operators because it uses the procedures of TSB10 and Part 101.103 of the Rules -- including a prior coordination notice and peer review -- before unlicensed devices are deployed.
- ✓ Incorporates very simple, very low-cost AFC using existing hardware and software.
- ✓ Allows unlicensed devices to be safely deployed indoors and outdoors with an EIRP of 36 dBm and as high as the Licensed Reference Station (for example, a 300-meter building), making it possible for WISPs to use PtMP in the licensed bands to do what they do best -- help close the Digital Divide, the Commission's #1 Strategic Goal.

We believe SAC Before AFC opens the way to a Report and Order.

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The Unlicensed Devices Shown Below are Available today from Amazon and Other Outlets.



However, Industry Urgently Needs an FCC Report and Order to Upgrade these Unlicensed Devices to Operate in the Licensed 6 GHz Bands.

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Appendix

Path Availability Calculations

	A	B	C	D	E		
2		300920190					
3		Victim Path (Licensed)		Interfering Path (Unlicensed)			
4		Far End Site to Building A		Building B to A			
5							
6							
7		Modulation	64QAM				
8		Freq	GHz	6.1	GHz	6.1	
9		Tx Po	dBm	27	Tx Po	dBm	24
10		Tx Ant Gain ¹	dB	33	Tx Ant Gain ¹	dB	6
11		Path Length	Miles	25	Victim Path Length	Miles	0.114
12		LOS Path Loss	dB	140.3	LOS Path Loss	dB	93.4
13				Bldg Loss ⁴	dB	2	
14		Rx Ant Gain ¹	dB	33	Victim Rx Ant Gain	dB	33
15				Horiz Angle from Victim to Inter	Deg	48	
16				Vert Angle from Victim to Inter	Deg	0.3	
17				Atten	dB	34	
18				Effective Rx Ant Gain	dB	-1	
19		RSL	dBm	-47	Interference	dBm	-66
20							
21		Rx Sens (BER = 10 ⁻⁴) ²	dBm	-70			
22		Maximum Interference ³	dBm	-101			
23		Thermal FM	dB	23	Interference FM	dB	-6
24							
25							
26		Multipath Factors					
27		Inland Temperate		1			
28		Average Terrain		0.25			
29							
30		Thermal					
31		Path Unavailable Per Year		0.0003174			
32		Path Unavailable Hours Per Year		2.78			
33		Path Avail %		99.9683			
34		Path Hours Available		8757			
35		Interference					
36		Path Unavailable Per Year		1			
37		Path Unavailable Hours Per Year		8760.00			
38		Path Avail %		0.0000			
39		Path Hours Unavailable		0			
40		T • I					
41		Path Unavailable Per Year		1.0000000			
42		Path Unavailable Hours Per Year		8760.00			
43		Path Avail %		0.0000			
44		Path Hours Avail Per Year		0			
45							
46		Notes:					
47		1. Commscope VHLPX3-6W					
48		2. Alcatel MDR 8606					
49		3. The interference level that causes the fade margin to decrease by 1 dB.					
50		4. Bldg loss depends on multiple factors and could be from 2 dB to 40 dB. Because unknown, worse case chosen.					

	A	B	C	D	E		
2		300920190					
3		Victim Path (Licensed)		Interfering Path (Unlicensed)			
4		Far End Site to Building A		Building C to A			
5							
6							
7		Modulation	64QAM				
8		Freq	GHz	6.1	GHz	6.1	
9		Tx Po	dBm	27	Tx Po	dBm	24
10		Tx Ant Gain ¹	dB	33	Tx Ant Gain ¹	dB	6
11		Path Length	Miles	25	Victim Path Length	Miles	0.098
12		LOS Path Loss	dB	140.3	LOS Path Loss	dB	92.2
13				Bldg Loss ⁴	dB	2	
14		Rx Ant Gain ¹	dB	33	Victim Rx Ant Gain	dB	33
15				Horiz Angle from Victim to Inter	Deg	15	
16				Vert Angle from Victim to Inter	Deg	4.3	
17				Atten	dB	15	
18				Effective Rx Ant Gain	dB	18	
19		RSL	dBm	-47	Interference	dBm	-46
20							
21		Rx Sens (BER = 10 ⁻⁴) ²	dBm	-70			
22		Maximum Interference ³	dBm	-101			
23		Thermal FM	dB	23	Interference FM	dB	-26
24							
25							
26		Multipath Factors					
27		Inland Temperate		1			
28		Average Terrain		0.25			
29							
30		Thermal					
31		Path Unavailable Per Year		0.0003174			
32		Path Unavailable Hours Per Year		2.78			
33		Path Avail %		99.9683			
34		Path Hours Available		8757			
35		Interference					
36		Path Unavailable Per Year		1			
37		Path Unavailable Hours Per Year		8760.00			
38		Path Avail %		0.0000			
39		Path Hours Unavailable		0			
40		T + I					
41		Path Unavailable Per Year		1.0000000			
42		Path Unavailable Hours Per Year		8760.00			
43		Path Avail %		0.0000			
44		Path Hours Avail Per Year		0			
45							
46		Notes:					
47		1. Commscope VHLPX3-6W					
48		2. Alcatel MDR 8606					
49		3. The interference level that causes the fade margin to decrease by 1 dB.					
50		4. Bldg loss depends on multiple factors and could be from 2 dB to 40 dB. Because unknown, worse case chosen.					

	A	B	C	D	E		
2		300920190					
3		Victim Path (Licensed)		Interfering Path (Unlicensed)			
4		Far End Site to Building A		Building D to A			
5							
6							
7		Modulation	64QAM				
8		Freq	GHz	6.1	Freq	GHz	6.1
9		Tx Po	dBm	27	Tx Po	dBm	24
10		Tx Ant Gain ¹	dBi	33	Tx Ant Gain ¹	dBi	6
11		Path Length	Miles	25	Victim Path Length	Miles	0.091
12		LOS Path Loss	dB	140.3	LOS Path Loss	dB	91.5
13				Bldg Loss ⁴	dB	2	
14		Rx Ant Gain ¹	dBi	33	Victim Rx Ant Gain	dBi	33
15				Horiz Angle from Victim to Inter	Deg	0	
16				Vert Angle from Victim to Inter	Deg	10	
17				Atten	dB	20	
18				Effective Rx Ant Gain	dBi	13	
19		RSL	dBm	-47	Interference	dBm	-50
20							
21		Rx Sens (BER = 10 ⁻⁴) ²	dBm	-70			
22		Maximum Interference ³	dBm	-101			
23		Thermal FM	dB	23	Interference FM	dB	-22
24							
25							
26		Multipath Factors					
27		Inland Temperate	1				
28		Average Terrain	0.25				
29							
30		Thermal					
31		Path Unavailable Per Year	0.0003174				
32		Path Unavailable Hours Per Year	2.78				
33		Path Avail %	99.9683				
34		Path Hours Available	8757				
35		Interference					
36		Path Unavailable Per Year	1				
37		Path Unavailable Hours Per Year	8760.00				
38		Path Avail %	0.0000				
39		Path Hours Unavailable	0				
40		T + I					
41		Path Unavailable Per Year	1.0000000				
42		Path Unavailable Hours Per Year	8760.00				
43		Path Avail %	0.0000				
44		Path Hours Avail Per Year	0				
45							
46		Notes:					
47		1. Commscope VHLPX3-6W					
48		2. Alcatel MDR 8606					
49		3. The interference level that causes the fade margin to decrease by 1 dB.					
50		4. Bldg loss depends on multiple factors and could be from 2 dB to 40 dB. Because unknown, worse case chosen.					

	A	B	C	D	E		
2		300920190					
3		Victim Path (Licensed)		Interfering Path (Unlicensed)			
4		Far End Site to Building A		Building E to Far End Path A			
5							
6							
7		Modulation	64QAM				
8		Freq	GHz	6.1	Freq	GHz	6.1
9		Tx Po	dBm	27	Tx Po	dBm	24
10		Tx Ant Gain ¹	dBi	33	Tx Ant Gain ¹	dBi	6
11		Path Length	Miles	25	Victim Path Length	Miles	25.5
12		LOS Path Loss	dB	140.3	LOS Path Loss	dB	140.4
13				Bldg Loss ⁴	dB	2	
14		Rx Ant Gain ¹	dBi	33	Victim Rx Ant Gain	dBi	33
15				Horiz Angle from Victim to Inter	Deg	0	
16				Vert Angle from Victim to Inter	Deg	0	
17				Atten	dB	0	
18				Effective Rx Ant Gain	dBi	33	
19		RSL	dBm	-47	Interference	dBm	-79
20							
21		Rx Sens (BER = 10 ⁻⁴) ²	dBm	-70			
22		Maximum Interference ³	dBm	-101			
23		Thermal FM	dB	23	Interference FM	dB	7
24							
25							
26		Multipath Factors					
27		Inland Temperate	1				
28		Average Terrain	0.25				
29							
30		Thermal					
31		Path Unavailable Per Year	0.0003174				
32		Path Unavailable Hours Per Year	2.78				
33		Path Avail %	99.9683				
34		Path Hours Available	8757				
35		Interference					
36		Path Unavailable Per Year	0.0114243				
37		Path Unavailable Hours Per Year	100.08				
38		Path Avail %	98.8576				
39		Path Hours Unavailable	8660				
40		T + I					
41		Path Unavailable Per Year	0.0117417				
42		Path Unavailable Hours Per Year	102.86				
43		Path Avail %	98.8258				
44		Path Hours Avail Per Year	8657				
45							
46		Notes:					
47		1. Commscope VHLPX3-6V					
48		2. Alcatel MDR 8606					
49		3. The interference level that causes the fade margin to decrease by 1 dB.					
50		4. Bldg loss depends on multiple factors and could be from 2 dB to 40 dB. Because unknown, worse case chosen.					

	A	B	C	D	E
2		300920190			
3		Victim Path (Licensed)		Interfering Path (Unlicensed)	
4		Far End Site to Building A		Building F to G	
5					
6					
7		Modulation	64QAM		
8		Freq	GHz	Freq	GHz
9		Tx Po	dBm	Tx Po	dBm
10		Tx Ant Gain ¹	dB	Tx Ant Gain ¹	dB
11		Path Length	Miles	Victim Path Length	Miles
12		LOS Path Loss	dB	LOS Path Loss	dB
13				Bldg Loss ⁴	dB
14		Rx Ant Gain ¹	dB	Victim Rx Ant Gain	dB
15				Horiz Angle from Victim to Inter	Deg
16				Vert Angle from Victim to Inter	Deg
17				Atten	dB
18				Effective Rx Ant Gain	dB
19		RSL	dBm	Interference	dBm
20					
21		Rx Sens (BER = 10 ⁻⁴) ²	dBm		
22		Maximum Interference ³	dBm		
23		Thermal FM	dB	Interference FM	dB
24					
25					
26		Multipath Factors			
27		Inland Temperate	1		
28		Average Terrain	0.25		
29					
30		Thermal			
31		Path Unavailable Per Year	0.0003174		
32		Path Unavailable Hours Per Year	2.78		
33		Path Avail %	99.9683		
34		Path Hours Available	8757		
35		Interference			
36		Path Unavailable Per Year	0.05295679		
37		Path Unavailable Hours Per Year	463.90		
38		Path Avail %	94.7043		
39		Path Hours Unavailable	8296		
40		T • I			
41		Path Unavailable Per Year	0.0532742		
42		Path Unavailable Hours Per Year	466.68		
43		Path Avail %	94.6726		
44		Path Hours Avail Per Year	8293		
45					
46		Notes:			
47		1. Commscope VHLPX3-6W			
48		2. Alcatel MDR 8606			
49		3. The interference level that causes the fade margin to decrease by 1 dB.			
50		4. Bldg loss depends on multiple factors and could be from 2 dB to 40 dB. Because unknown, worse case chosen.			

	A	B	C	D	E
2		300920190			
3		Victim Path (Licensed)		Interfering Path (Unlicensed)	
4		Far End Site to Building A		Building H to Far End Path G	
5					
6					
7		Modulation	64QAM		
8		Freq	GHz	Freq	GHz
9		Tx Po	dBm	Tx Po	dBm
10		Tx Ant Gain ¹	dB	Tx Ant Gain ¹	dB
11		Path Length	Miles	Victim Path Length	Miles
12		LOS Path Loss	dB	LOS Path Loss	dB
13				Bldg Loss ⁴	dB
14		Rx Ant Gain ¹	dB	Victim Rx Ant Gain	dB
15				Horiz Angle from Victim to Inter	Deg
16				Vert Angle from Victim to Inter	Deg
17				Atten	dB
18				Effective Rx Ant Gain	dB
19		RSL	dBm	Interference	dBm
20					
21		Rx Sens (BER = 10 ⁻⁴) ²	dBm		
22		Maximum Interference ³	dBm		
23		Thermal FM	dB	Interference FM	dB
24					
25					
26		Multipath Factors			
27		Inland Temperate	1		
28		Average Terrain	0.25		
29					
30		Thermal			
31		Path Unavailable Per Year	0.0003174		
32		Path Unavailable Hours Per Year	2.78		
33		Path Avail %	99.9683		
34		Path Hours Available	8757		
35		Interference			
36		Path Unavailable Per Year	0.0114243		
37		Path Unavailable Hours Per Year	100.08		
38		Path Avail %	98.8576		
39		Path Hours Unavailable	8660		
40		T + I			
41		Path Unavailable Per Year	0.0117417		
42		Path Unavailable Hours Per Year	102.86		
43		Path Avail %	98.8258		
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46		Notes:			
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48		2. Alcatel MDR 8606			
49		3. The interference level that causes the fade margin to decrease by 1 dB.			
50		4. Bldg loss depends on multiple factors and could be from 2 dB to 40 dB. Because unknown, worse case chosen.			