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March 22, 2013

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

**Re: Notice of Oral Ex Parte Presentation
WT Docket No. 11-49**

Dear Ms. Dortch:

On March 20, 2013, representatives of the Wireless Internet Service Providers Association (“WISPA”) met with Commission staff to discuss technical issues in the above-referenced proceeding. Attending on behalf of WISPA were Jack Unger, Technical Consultant (by telephone) and the undersigned. Attending on behalf of the Commission were Julius Knapp, Chief of the Office of Engineering and Technology (“OET”), Geri Matise of OET and Paul Murray of the Wireless Telecommunications Bureau.

The purpose of the meeting was to discuss technical questions related to interference that Progeny LMS, LLC (“Progeny”) will cause to fixed wireless broadband systems operating in the 902-928 MHz band. In connection with the attached presentation, WISPA representatives answered questions about the joint test parameters and results that demonstrate “unacceptable levels of interference” to Part 15 operations. The meeting participants also discussed the recommendations WISPA has proposed to help mitigate Progeny’s unacceptable interference.

This letter is being filed electronically in the referenced docket pursuant to Section 1.1206 of the Commission’s Rules.

Please contact undersigned counsel if there are any questions concerning this matter.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Stephen E. Coran', with a long horizontal flourish extending to the right.

Stephen E. Coran

Enclosure

cc: Julius Knapp
Paul Murray
Geraldine Matise



Progeny's Unacceptable Interference to the 902-928 MHz Band

March 20, 2013

Why 900 MHz is Important

- The only unlicensed non-line-of-sight band.
- Existing Part 15 users have been successfully sharing the band for 20 years.
- Heavily used by WISPs in areas with trees, hills and other obstructions.

Joint Test Results

Throughput Reduction Percentages

Equipment	Test Set #	WISP Equipment Channel (MHz)	Progeny Frequency (MHz) Block(s)	% Throughput Reduction /w Progeny Network "ON"
Cambium Canopy M9000 AP and M9000 SMC (SM on hill; AP on valley floor; both horizontal polarization)	1 DL 1 UP	902-910 (Outside Progeny B and C Blocks)	919-921 (B-Block) 925-927 (C-Block)	AP to SM – 0.5% SM to AP – None Overall = 0.5%
	2 DL 2 UP	916-924 (Overlaps Progeny B Block)	919-921 (B-Block) 925-927 (C-Block)	AP to SM – 14.9% SM to AP – 8.3% Overall = 23.2%
	3 DL 3 UP	919-927 (Overlaps Progeny B and C Blocks)	919-921 (B-Block) 925-927 (C-Block)	AP to SM – 49% SM to AP – 13.2% Overall = 62.2%
Ubiquiti Rocket M900S AP and CPE (AP on hill; CPE on valley floor; dual H and V polarization)	4 DL 4 UP	902-912 (Outside Progeny B and C Blocks)	919-921 (B-Block) 925-927 (C-Block)	AP to CPE – (+) 2% CPE to AP – 2.3% Overall = 0.2%
	5 DL 5 UP	912-922 (Overlaps Progeny B Block)	919-921 (B-Block) 925-927 (C-Block)	AP to CPE – 47.9% CPE to AP – 41.5% Overall = 89.4%
	6 DL 6 UP	917-927 (Overlaps Progeny B and C Blocks)	919-921 (B-Block) 925-927 (C-Block)	AP to CPE – 2.5% CPE to AP – 17.6% Overall = 20.1%

No reduction

No reduction

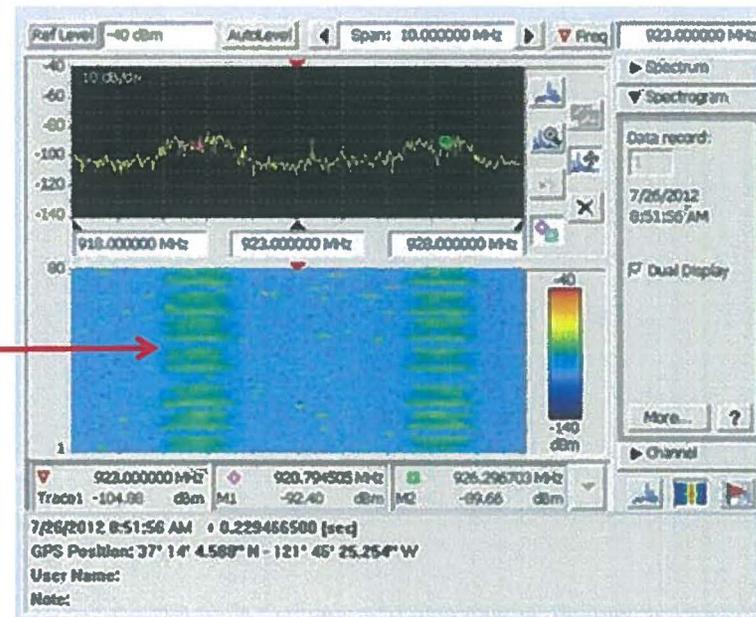
Progeny Interference Impacts

- The FCC should make its decision based on the technical record.
- The Progeny-WISPA joint testing demonstrated high levels of interference. The two most commonly deployed WISP equipment types will be unusable in 2/3 of the band.

	Usable		Unusable			
Cambium (8 MHz channels)	902	910		916	924	
					919	927
Ubiquiti (10 MHz channels)	902	912	912		922	
				917		927
Progeny (2 MHz channels)					919-921	925-927
MHz	902					928

Progeny's Transmissions

- Progeny **49.2 Watts** EIRP vs. **4 Watts** EIRP for Part 15 devices
- An **unlimited number** of Progeny high-site transmitters
- Progeny aggregate **duty cycle is 80 percent** (light green areas)
- Part 15 devices were not designed to operate with this level of interference



Progeny Interference Impacts

- A reduction by 50-60 percent (or more) in the amount of aggregate bandwidth that each access point can provide, *or*
- A reduction of 50-60 percent (or more) in the number of WISP customers who can be served by each access point, *and*
- A substantial increase in the latency of packet transmissions, making time-sensitive applications like voice and video unusable.

Progeny Technical Misstatements - 1

- **Throughput Loss Percentages** – Throughput reduction in either direction impacts both directions. Interpreted as an average of uni-directional losses (Progeny) **or** as channel-specific bi-directional aggregate losses (WISPA), the Progeny interference still causes unacceptable losses.
- **Interference Mitigation Claims** – Other than eliminating return path transmitters, Progeny has **zero** interference-mitigation features.
- **Duty Cycle Claims** – Progeny claims only a 10-to-20 percent duty cycle. Actual measured-on-air duty cycle on both Progeny channels is 80 percent minimum.
- **High Site Claims** - Contrary to its claim, Progeny's high sites will maximize interference, not minimize it.

Progeny Technical Misstatements - 2

- **Part 15 Devices “Continue Operating”** – Progeny’s claim that Part 15 devices will “Continue operating ... sending and receiving data” fails to acknowledge that throughput and reliability will be significantly reduced.
- **“WISPs Operate Only in Very Rural Areas”** – WISPs operate in all areas; rural, suburban and urban.
- **“Worst Case” Test Conditions** – Joint test results were not “worst case” because testing was possible at greater distances where the Progeny interference would have been even worse.
- **“No Reports of Interference”** – Progeny has presented NO EVIDENCE of ever conducting a public or private interference measurement and reporting program. Having no interference program will yield “no reports of interference.”

Conclusions

- Progeny has failed to meet its burden.
- Authorizing high-power commercial licensed operations in an unlicensed band populated by millions of low-power consumer, industrial and infrastructure devices would:
 - Degrade and devalue unlicensed spectrum and counter the benefits of spectrum sharing, *and*
 - Subject licensed users to a new generation of interference-tolerant unlicensed devices that could cause harmful interference.

WISPA's Recommendations

- Progeny must be denied authority for permanent operation to avoid repurposing unlicensed spectrum for exclusive licensed use. If the Commission does grant authorization, it should consider imposing the following technical conditions to help mitigate the unacceptable interference:
 - Limit the aggregate duty cycle to be no more than 25 percent in every market area.
 - Limit maximum peak power to 8 Watts EIRP.
 - Limit the number of Progeny beacon transmitters to no more than 10 in any one pre-defined urban area.