

**Before the  
Federal Communications Commission  
Washington, D.C. 20554  
In the Matter of**

**Amendment of Parts 2, 15, 80, 90, 97, and  
101 of the Commission's Rules Regarding  
Implementation of the Final Acts of the  
World Radiocommunication Conference  
(Geneva, 2012)(WRC-12), Other Allocation  
Issues, and Related Rule Updates**

**(ET Docket No. 15-99)**

**Reply to comments filed by the Utilities Telecommunications Council (UTC) on August 31, 2015 regarding the proposed amateur "630-meter" band (472-479 kHz)**

In its filing, the UTC recommends (Section II, page 6) against the amateur allocation at 472 - 479 kHz

"because there is simply not sufficient understanding of the potential for interference between Amateur operations and PLC systems."

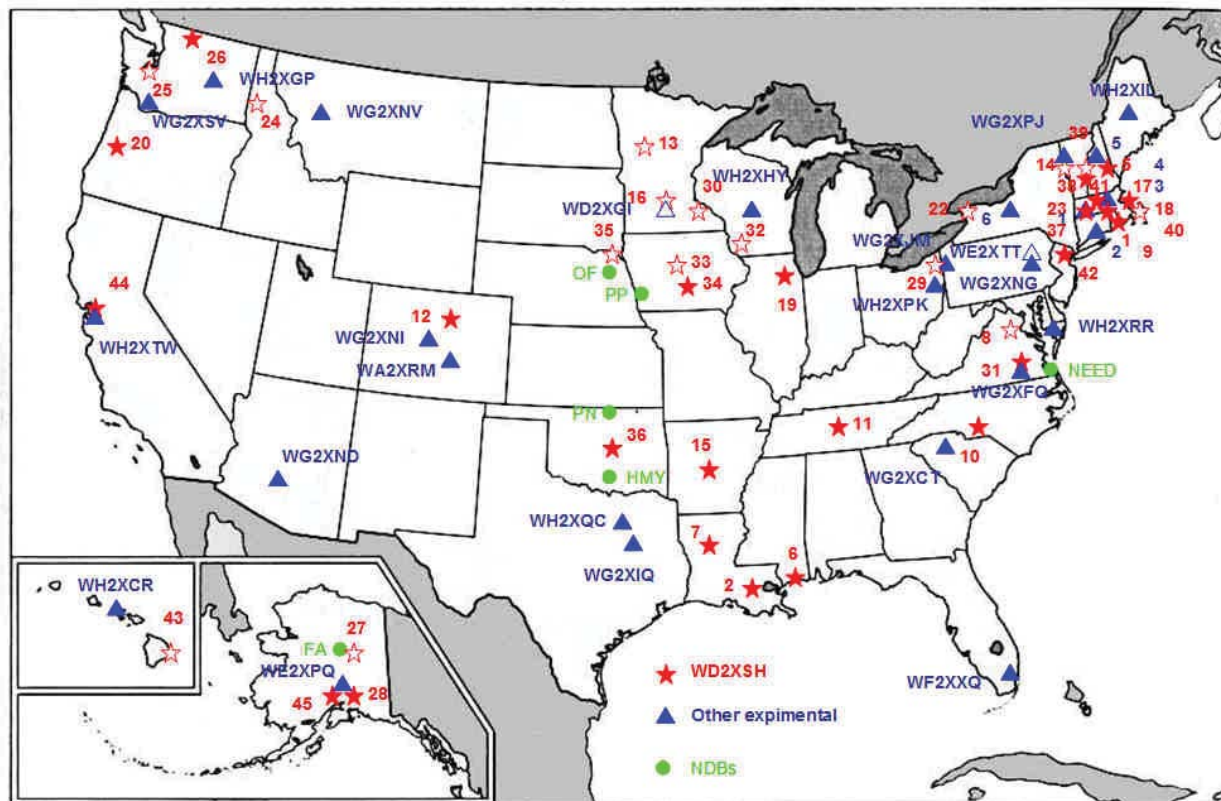
The results from the ARRL 500-kHz experiment provide more than ample data to show that such interference is very unlikely, as explained below.

I have been coordinator of the ARRL 500-kHz Experiment since its inception in 2004. The participants in this experiment have been transmitting on 600 and 630 meters since the WD2XSH license was issued in September 2006.

The following map shows the location of the 45 WD2XSH sites, as well as other amateur experimental stations operating on 630 meters. These experimental stations are located across the continental United States as well as Alaska and Hawaii.

WD2XSH stations are required to keep logs and to submit them monthly. Each quarter we tally the transmitting hours and other statistics. These are published in quarterly reports and posted on our web site [www.500kc.com](http://www.500kc.com), where they can be read by anyone who is interested. Appendix A provides a summary of hours by station. There have been no interference complaints from any source - PLC systems, other radio services, and broadcast reception. As of August 31, 2015, the two most important statistics are:

- **Total transmitting hours: 191,229**
- **Number of interference complaints: 0**



As noted in my technical note RN15-30 (filed as a comment on August 31, 2015), many of the experimental stations are located quite close to power-transmission lines (less than 1 km). In spite of this proximity, no cases of interference to PLC systems have been reported. This information is reproduced here as Appendix B for convenience.

My technical note RN15-30 also uses available data on the strength of radiated PLC signals to calculate the amount of amateur signal that would be picked-up by the power-transmission line, and then the resultant signal-to-interference ratio for the PLC system. In the worst case, a 1-W EIRP at a distance of 1 km produces a 41-dB S/I ratio at the PLC receiver. Even 5 W at a distance of 100 m produces an S/I of 14.3 dB, which should be adequate for any PLC modem. The PLC field-strength measurements were made by persons with no interest pro or con in amateur use of the spectrum, so there is no reason to suspect bias. Thus the results show clearly that amateurs operating with the proposed 5-W EIRP limit are very unlikely to cause any interference to PLC systems.

## Summary

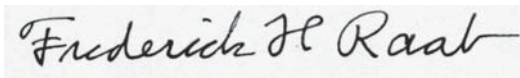
- WD2XSH and other 630-meter experimental stations are located in all parts of the USA.
- WD2XSH stations have logged 191,229 transmitting hours.
- Many are located quite close to power-transmission lines.
- There have been NO reports of interference to PLC systems or any other service.
- Calculations based upon PLC field-strength measurements show that amateurs operating with 5-W EIRP will not cause interference to the PLC systems.

Consequently, there is negligible concern for interference with PLC systems and amateur operation on the proposed 630-meter band should be approved.

## Disclaimer

I am filing these comments on my own behalf as an amateur-radio operator and an electronics engineer with over forty years of experience in radio communications. These comments do not necessarily reflect the opinion of the ARRL or any other organization or individual.

Respectfully submitted



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**APPENDIX A. WD2XSH STATISTICS**

STATION	CALL	LOC	HOURS
WD2XSH/1	W1NZR	RI	4
WD2XSH/2	W5TVW	MS	13
WD2XSH/5	KW1I	NH	111
WD2XSH/6	W5THT	MS	12268
WD2XSH/7	W5JGV	LA	28726
WD2XSH/8	N4ICK	VA	0
WD2XSH/9	W2ILA	RI	10
WD2XSH/10	W4DEX	NC	2390
WD2XSH/11	WS4S	TN	810
WD2XSH/12	AI8Z	CO	38609
WD2XSH/13	K0JO	MN	997
WD2XSH/14	W1FR	VT	755
WD2XSH/15	W5OR	AR	21471
WD2XSH/16	WE0H	MN	1357
WD2XSH/17	AA1A	MA	11802
WD2XSH/18	N1EA	MA	3959
WD2XSH/19	K9EUI	IL	1431
WD2XSH/20	N6LF	OR	4375
WD2XSH/21	W0RW	CO	652
WD2XSH/22	WB2FCN	NY	0
WD2XSH/23	K2ORS	MA	112
WD2XSH/26	W7WKR	WA	1306
WD2XSH/28	KL7Q	AK	72
WD2XSH/29	KN8AZN	OH	499
WD2XSH/31	WA1ZMS	VA	45965
WD2XSH/34	W0RPK	IA	153
WD2XSH/35	K0HW	NE	11
WD2XSH/36	W5GHZ	OK	1180
WD2XSH/37	W1XP	MA	7162
WD2XSH/38	KN1H	NH	2932
WD2XSH/41	W1HK	MA	19
WD2XSH/42	K2LRE	NJ	184
WD2XSH/44	AC6QV	CA	72
WD2XSH/45	KL7UW	AK	180
WD2XSH/46	N03M	PA	1612
TOTAL 08/31/15			191,229

**APPENDIX B. EXPERIMENTAL STATIONS NEAR POWER-TRANSMISSION LINES**

STATION	BAND	ERP, W	D, km	COMMENTS
WD2XDW	2200	3	1.6	138 kV
WD2XSH/6	630	15	1.6	Lines to Navy base
WD2XSH/12	630	1	0.4	Xcel Energy
WD2XSH/14	630	2	0.93	
WD2XSH/15	630	2	3.2	Major N-S line, Entergy
WD2XSH/16	630	1	0.30	
WD2XSH/19	630	0.25	0.61	
WD2XSH/23	630	5	0.27	PLC 196 kHz
WD2XGJ	2200	4		
WE2XEB/2				
WE2XGR/1				
WD2XSH/26	630	0.01	0.015	Comm. distrib., local grid
WD2XSH/31	630	20	0.77	128 kV CW
WG2XFQ	630	20	0.77	Full-carrier AM
WD2XSH/33	630	0	1.25	161 kV
WD2XSH/44 WA	630	0	0.61	
WD2XSH/45	630	1.7	1.44	100-ft poles
WE2XPQ Wasalia/Palmer	630	30	5.26	Multiple LF/MF PLCs
	2200	1		Interconnector
WE2XPQ Anchorage	2200	3	0.06	Buried
		2.1		Main generator Chugach
WG2XKA	630	5	2.0	Substation, hydro, solar
WG2XPJ	630	1	0.8	
WG2XSV UT	630	1	0.13	
WG2XSV WA	630	1	0.33	
WH2XGP	630	10	1.6	DoI Columbia Grand Coulee
			2.0	Pair, Grant County PUD
VE7BDQ	630	5	0.56	
	2200	0.2		