

# COMPREHENSIVE TECHNICAL EXHIBIT

## K257AZ, Richfield, UT

### DISCUSSION

Applicant seeks a Minor Modification to relocate FM Translator K257AZ, Richfield, UT with a change in ERP and CORAMSL.

Applicant seeks waiver of section 74.1204 with regard to 2<sup>nd</sup> adjacent FM Translator K255AD.

### LACK OF CONTOUR OVERLAP

The following study (**Figure 1**) reveals the lack of any contour overlap with authorized 1st, 2nd, 3rd adjacent and I.F. related facilities, excepting FM Translator K255AD, Rural Garfield, Etc., UT, FID # 23184 for which a 2<sup>nd</sup> adjacent waiver is being sought

Minor Modification to move K257AZ to new site												
Airfree Wireless, Inc.												
CH# 257D - 99.3 MHz, Pwr= 0.01 kW, HAAT= 456.2 M, COR= 2696 M												
Average Protected F(50-50)= 12.2 km												
Omni-directional												
DISPLAY DATES												
DATA 07-28-20												
SEARCH 07-28-20												
REFERENCE	CH#	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
38 38 00.9 N.	257D	K257AZ!	LIC D	UT	19.2	12.13	38 44 11.80	0.076	2008	2696	---	---
112 03 37.7 W.	Richfield				199.3	BLFT19820413II	112 00 51.70	15	Airfree Wireless, Inc.			
	255D	K255AD	LIC	UT	186.0	10.83	38 32 11.90	0.010	0.2	18.0	3.0	-7.4*
	Rural	Garfield, Etc			6.0	BLFT19920902TB	112 04 24.70	967	3430	Garfield County		
	256C1	KMGR	CP N	UT	4.7	122.62	39 43 58.00	100.000	97.9	66.2	7.9	26.7
	Nephi				184.7	BPH20161121AAE	111 56 37.40	297	2039	Sanpete County	Broadcastin	
	257D	K257AC	LIC D	UT	129.0	61.68	38 16 59.90	0.036	49.6	13.0	11.2	37.1
	Teasdale-Torrey				309.3	BLFT178	111 30 39.60	50	2522	Wayne County		
	259D	K259AR	LIC D	UT	327.8	30.49	38 51 55.80	0.076	0.1	11.3	13.7	18.9
	Fillmore, Etc.				147.7	BLFT20050225ABM	112 14 53.70	905	3128	Airfree Wireless, Inc.		
	257D	K257AG	LIC D	UT	207.6	79.46	37 59 58.90	0.078	10.2	3.1	54.3	32.4
	Panguitch				27.4	BLFT273	112 28 52.70	266	2496	Garfield County		
	254D	K254CT	LIC D	UT	18.1	80.46	39 19 16.80	0.250	1.1	37.6	62.7	42.5
	Gunnison				198.2	BLFT20161118ACC	111 46 13.70		2598	Sanpete County	Broadcastin	
	256A	KMGR	LIC	UT	4.7	122.61	39 43 57.80	0.640	38.2	25.1	67.6	64.7
	Nephi				184.7	BLH20160831AAJ	111 56 37.80	308	2050	Sanpete County	Broadcastin	
	260A	KPVO	CP N	UT	22.1	109.58	39 32 44.90	2.300	2.4	28.9	90.7	79.4
	Fountain Green				202.4	BPH20190807AAT	111 34 45.70	-54	1848	valleydale Broadcasting, L		
	258D	K258AA	LIC	UT	222.4	118.54	37 50 31.90	0.019	16.8	11.7	85.6	81.7
	Parowan				41.8	BLFT19940310TC	112 58 12.80	208	2067	Parowan City Corporation		
	254D	K254BX	LIC	UT	263.5	107.20	38 31 04.80	0.010	0.2	17.3	90.1	89.6
	Milford				82.7	BLFT20140714ABM	113 17 05.80	1195	2956	Iron County		
	258C	KJMY	LIC	UT	357.8	219.68	40 36 28.80	40.000	115.6	74.5	89.9	111.2
	Bountiful				177.7	BLH19880311KC	112 09 35.70	900	2611	Citicasters Licenses, Inc.		
	260A	KPVO	LIC	UT	17.6	115.97	39 37 36.80	0.100	0.7	5.6	98.6	106.0
	Fountain Green				197.9	BLH20150820CNF	111 38 59.70	-234	1835	valleydale Broadcasting, L		

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
 In & Out distances between contours are shown at closest points. Reference Zone= west Zone, Co to 3rd adjacent.  
 All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
 "\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

2<sup>nd</sup> adjacent waiver requested

Figure 1

## Waiver Request of Section 74.1204 and Showing of Compliance

### **With respect to K255AD:**

The proposed FM translator is located within the protected 60 dBu F(50,50) contour of 2<sup>nd</sup> adjacent channel FM Translator K255AD (see **Figure 1**), for which a 2<sup>nd</sup> adjacent waiver is requested.

The predicted F(50,50) field strength of K255AD at the proposed translator site is 65.14 dBu (free space equation). Using the Undesired-to-Desired method for calculating proposed interference, the proposed interfering contour with respect to K255AD is 105.14 dBu (65.14 + 40) (free space method employed). This interfering signal would, in the worst case, extend 123.04 meters from the proposed antenna.

The interference area described above is located at a remote mountaintop location. Any structures in the immediate area house communications equipment only, and have no regular human occupancy.

To further support this waiver request, an interference area represented by a circle having a radius of 125 meters from the proposed translator site has been plotted on a section of the Beaver, UT 7.5 min USGS Topographical Map (see **Figure 2**). In addition a plot of the interfering contour (105.14dBu F(50,10)) of the facility has been overlaid on a recent aerial photo, to account for any newer development in the area (see **Figure 3**).

Since no population inhabits the interference area, the Applicant respectfully requests waiver of the FM translator contour overlap requirements with respect to 2<sup>nd</sup> adjacent FM Translator K255AD as permitted in CFR Section 74.1204.

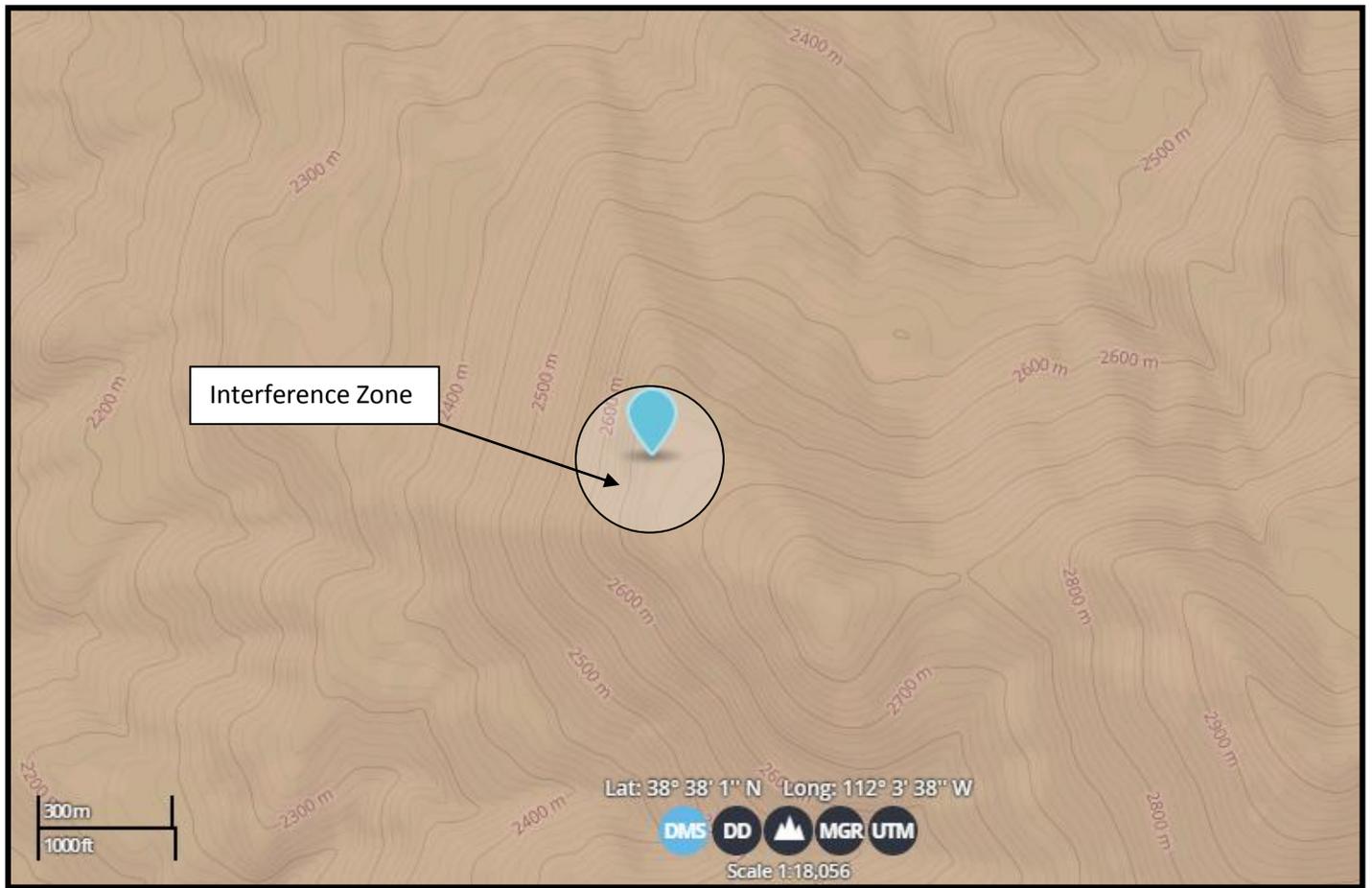


Figure 2



Figure 3

**OVERLAPPING 60 dBu CONTOUR MINOR MODIFICATION QUALIFICATION**

Figure 4 below demonstrates the overlapping 60 dBu contours of the licensed and proposed facilities.

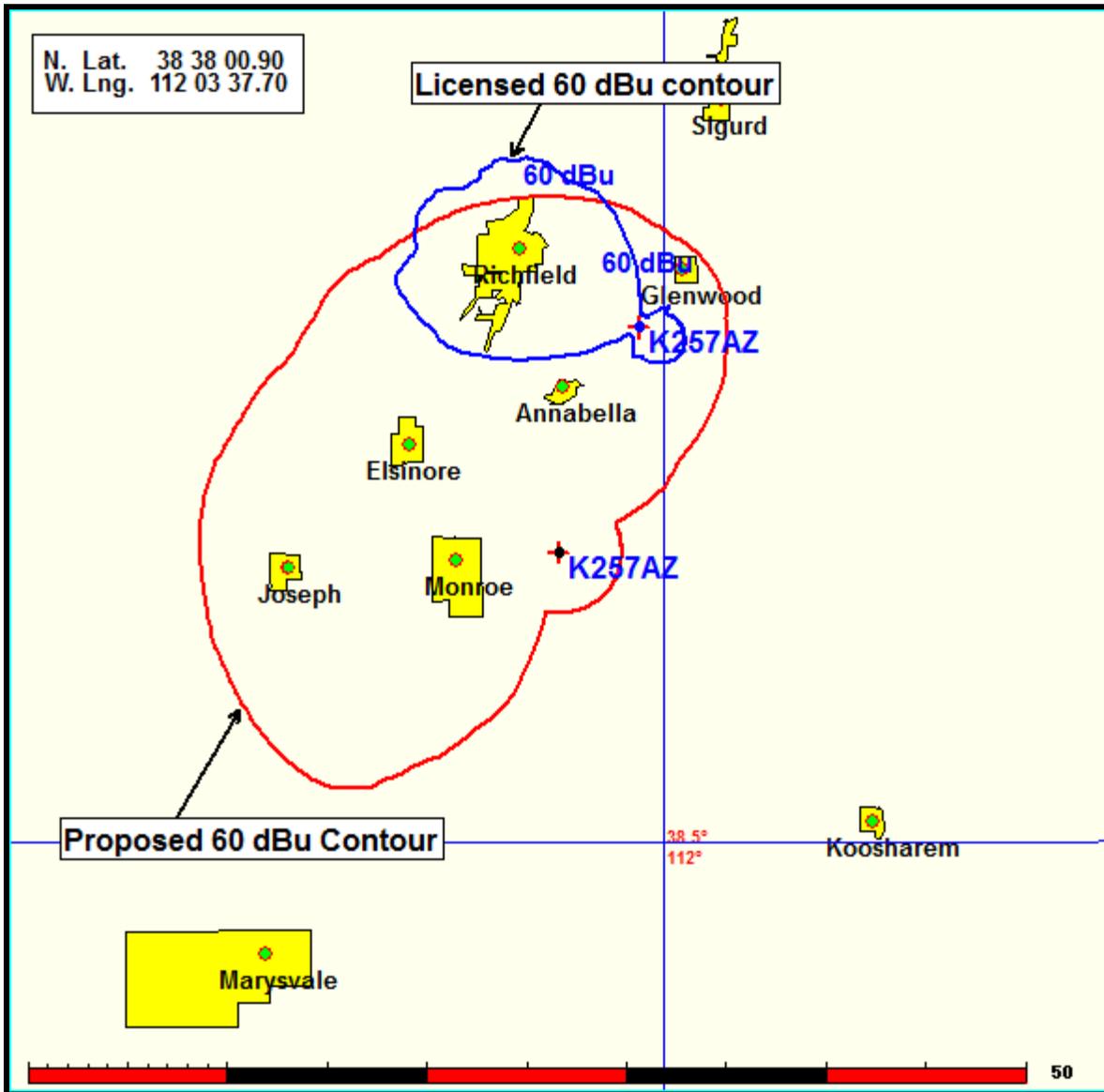


Figure 4

**ENVIRONMENTAL COMPLIANCE:**

The proposed facility (antenna) will be installed on an existing tower at the established Cove Mountain communications site. There will be no significant environmental impact as outlined in 47 CFR 1.1307. Access to the transmitting site will be restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down

of power if necessary, shall be taken to ensure that the human exposure to radiofrequency radiation will not exceed the FCC guidelines.

The proposed facility will operate with an ERP of less than 100 watts, and is thus categorically excluded from further Environmental Assessment (47 CFR [1.1307(b)(1)]).