

Request for Program Test Authority

Lowcountry 34 Media, LLC (“Lowcountry”), pursuant to Section 73.1620(a) of the Commission’s rules (47 C.F.R. § 731620(a)), hereby requests Program Test Authority for low power television station K14TK-D, Santa Maria, California (Facility ID No. 185683) (“K14TK-D”). K14TK-D’s construction permit authorization (LMS File No. 0000190015) contains the following condition:

During equipment tests, authorized by Section 73.1610 of the Commission’s Rules, the permittee shall take adequate measures to identify and substantially eliminate objectionable interference which may be caused to existing land mobile radio facilities in the 460 to 470 MHz band. Documentation that objectionable interference will not be caused to existing land mobile radio facilities shall be submitted along with the request for Program Test Authority. Program tests shall not be commenced under Section 73.1620(a) of the Commission’s Rules and may only be started after specific authority is granted by the Commission. An application for a license must be filed within 10 days after the start of program tests.

As demonstrated by the technical showing attached hereto, K14TK-D has now satisfied its construction permit authorization’s condition. Accordingly, Lowcountry now hereby requests Program Test Authority for K14TK-D.

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ENGINEERING REPORT

K14TK-D, Santa Maria, CA Channel 14 – LMR Protection

ENGINEERING STATEMENT REGARDING LAND MOBILE RADIO PROTECTION

This is a showing of protection to land mobile radio (“LMR”) facilities by the CP facility of K14TK-D (facility ID 185683), as required by a condition on the CP. Specifically, the following is a showing that “adequate measures to identify and substantially eliminate objectionable interference which may be caused to existing land mobile radio facilities in the 460 to 470 MHz band” have been made. This is supported by documentation that “objectionable interference will not be caused to existing land mobile radio facilities”. Such documentation is to be submitted along with the request for Program Test Authority

STUDY

The CP facility has a directional panel antenna aimed at 90 degrees True with a maximum ERP of only 200 watts. This analysis demonstrates that all LMR receive locations that are within a study distance of 40 kilometers from the K14TK-D transmitter site are predicted to receive a signal level from K14TK-D that is below the -126 dBm noise floor. (Note that this result is based on a free-space-loss {“FSL”} predicted LPTV station signal level and does not take into account additional attenuation that may result due to terrain obstruction.)

Detailed calculations were performed to those LMS receive points between 469 and 470 MHz that were located within 40 kilometers of the K14TK-D transmitter site. These results are in the attached Figure EE1 – a listing of all known LMR stations that meet the study requirement criteria and were identified from the FCC’s ULS database. (There is also a showing on Figure EE1 that LMR below 469 MHz do not warrant a detailed study and are adequately protected.) Due to the lower ERP of K14TK-D, the 40 kilometer distance is deemed appropriate as a study distance.

A second Dielectric 8-Pole Sharp-tuned mask filter (model UT8D7F-3K) has been installed in a cascaded manner with the full-service emission mask filter to cause a very sharp attenuation of the signal just beyond the lower channel-band edge of channel 14. Attached as Figure EE2 is a tabulation provided by Dielectric that represents the ADDED mask filter’s frequency response between 469 to 470 MHz. (It is noted that at 470.000 MHz, the lower channel-band edge, the attenuation is 21.17 dB. At 470.260 MHz, the

attenuation is 3.0 dB. This additional channel 14 lower channel-band edge signal roll-off is the unavoidable result of the added sharpness of the band-edge filtering requirement that is associated with this 8-pole filter.) Since this filtering is in addition to the full-service emission mask filtering, the minimum attenuation beyond the 470-MHz edge is 21.17 dB plus 47 dB (the minimum attenuation of a full-service emission mask as required by the FCC), a total attenuation value of 68.17 dB.

The several calculated fields of the Figure EE1 spreadsheet are as follows:

Ch14 LPTV ERP-dBm : The K14TK-D ERP in dBm has been calculated on the azimuth to the LPTV transmitter site from the authorized ERP and directional pattern.

Combined Post-Filter Attenuation dB : These values are determined by referencing Figure EE2 and adding 47 dB (to account for the cascaded two filters).

Adjustment Factor-dB : The total channel power within the 6 MHz DTV bandwidth is adjusted for an equivalent channel power within the 12.5 kHz channel bandwidth used by the LMR station. This adjustment factor ($10\text{LOG}\{6000/12.5\}$) is 26.8 dB.

Worst-case Power on LMR Freq in dBm : ERP – Filter attenuation – Adjustment Factor.

Free Space Loss-dB : Equals $20\text{LOG}(\text{Dist_km}) + 20\text{LOG}(\text{FrqMHz}) + 32.45 - (2*2.15)$.

Calculated Interf signal Power level-dBm : Worst-case Power – Free Space Loss.

CONCLUSION

As demonstrated above, the signal from K14TK-D is below the noise floor for all examined LMR stations of Figure EE1; therefore, all LMR stations of the FCC's database of LMR are considered protected. The licensee of K14TK-D commits to work with any existing LMR licensees in the 460 to 470 MHz band that may be impacted by the actual operation of K14TK-D to determine whether K14TK-D is causing an interference problem and to take any remedial steps required to resolve any reports of actual interference.

By: Darryl DeLawder, President

On June 30, 2022

FIGURE EE1 : LMR DETAILED STUDY FOR K14TK-D, SANTA MARIA, CA CHANNEL 14 AS AUTHORIZED AS OF JUNE 29, 2022

Call Sign	Note	Rec Site	L M R			Km-Dist from ch14 LPTV	Azimuth from ch14 LPTV	LMR Assigned Frq-MHz	(A)	(B)	(C)	(D)	(E)	(F)	(E - F) (NOTE 6)				
			(NOTE 3) LATITUDE	LONGITUDE					ch14 LPTV ERP-dBm	Added 8-pole Filter Attenuation dB (NOTE 4)	Combined Post-Filter Attenuation dB (B + 47) (NOTE 5)	Adjust-ment Factor-dB	Worst-case Power on LMR Freq in dBm (A-C-D)	Free Space Loss-dB	Calculated Interf signal Power level-dBm				
			Deg	Min	Sec	Deg	Min	Sec											
Max Study Dist Determination (NOTE 1)									1.4	N/A	469.99	53.01	21	68	26.8	-41.79	84.51433	-126.3043331	
Bottom LMS Freq to Study Determination (NOTE 2)									0.1	N/A	469.5	53.01	50	97	26.8	-70.79	61.58271	-132.3727119	
WQXR964 (MO)			1	35	1	40.1	120	33	7.6	10.2	327.7	469.925	30	30	77	26.8	-73.8	101.7626	-175.5625744
WQXI924 (MO)			1	35	6	25.1	120	31	1.2	10.2	352.6	469.981	23	21	68	26.8	-71.8	101.7636	-173.5636095
WPLT555 (MO)			1	34	58	12.9	120	34	4.6	7.3	287.9	469.375	40	47	94	26.8	-80.8	98.84686	-179.6468563
WQPF844 (MO)			1	34	59	9.9	120	25	25.6	6.3	87.5	469.2	52.9	55	102	26.8	-75.9	97.56397	-173.4639711
WNHT490 (MO)			1	34	57	11.9	120	26	52.6	4.1	85.2	469.975	52.82	25	72	26.8	-45.98	93.84717	-139.8271723
WQTY509 (MO)			1	34	56	45.9	120	25	50.6	5.6	94.7	469.075	52.81	59	106	26.8	-79.99	96.53861	-176.5286063
WRCE432 (MO)			1	34	57	3	120	26	3	5.3	89.3	469.525	53.01	49	96	26.8	-69.79	96.06869	-165.8586918
KNJE863 (MO)			1	34	57	43.9	120	30	22.6	1.8	316	469.625	30.4	48	95	26.8	-91.4	86.69047	-178.0904743
KNJE863 (FX)			0							0.1	N/A	469.625	53.01	48	95	26.8	-68.79	61.58502	-130.3750242
WRAK915 (MO)			1	34	55	9.8	120	26	21.3	5.9	125.4	469.3625	48.8	53	100	26.8	-78	96.99721	-174.997208
WRBR272 (MO)			1	34	56	10.2	120	27	23.8	3.6	115.8	469.525	50.6	49	96	26.8	-72.2	92.70922	-164.9092244
WQWC864 (FX)			0							0.1	N/A	469.0375	53.01	60	107	26.8	-80.79	61.57415	-142.3641513
KAP890 (FX)			0							0.1	N/A	469.75	53.01	48	95	26.8	-68.79	61.58734	-130.3773358
WQTA834 (FX)			0							0.1	N/A	469.6125	53.01	48	95	26.8	-68.79	61.58479	-130.374793
WNMN709 (FX)			0							0.1	N/A	469.35	53.01	53	100	26.8	-73.79	61.57994	-135.3699364

NOTES:

1. Maximum Study Distance Determination: 1.4 km is the determined level. 10.2 kilometers is used for a conservative study.
- 2 Bottom LMR frequency to Study Determination: This is 469.5 MHz.
3. This location is where the desired LMR signal is received. A zero refers to receive sites as using frequency.
4. This represents the lowest attenuation value below the LMR frequency for the LMR station of the added post-transmitter filter. See the Figure EE-2 tabulation. 21 dB is the value at 470 MHz.
5. The full-service emission mask PLUS the added 8-Pole cascaded filter attenuation.
6. The noise-floor is -126 dBm. Any value at or below -126 dBm represents adequate protection.

FIGURE EE2 DIELECTRIC 8-POLE MASK FILTER FREQUENCY RESPONSE ATTENUATION

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9/24/2018 (measurement date)

! Stimulus(Hz)	S21(dB)	! Stimulus(Hz)	S21(dB)	! Stimulus(Hz)	S21(dB)
46900000.00	-61.44	469215000.00	-56.64	469430000.00	-51.67
469005000.00	-61.51	469220000.00	-56.60	469435000.00	-51.61
469010000.00	-61.29	469225000.00	-56.28	469440000.00	-51.73
469015000.00	-61.30	469230000.00	-56.37	469445000.00	-51.62
469020000.00	-61.10	469235000.00	-55.99	469450000.00	-51.48
469025000.00	-60.93	469240000.00	-56.00	469455000.00	-51.28
469030000.00	-60.80	469245000.00	-55.76	469460000.00	-51.13
469035000.00	-60.63	469250000.00	-55.80	469465000.00	-51.09
469040000.00	-60.68	469255000.00	-55.68	469470000.00	-50.98
469045000.00	-60.38	469260000.00	-55.62	469475000.00	-51.04
469050000.00	-60.36	469265000.00	-55.41	469480000.00	-50.83
469055000.00	-60.20	469270000.00	-55.07	469485000.00	-50.65
469060000.00	-60.15	469275000.00	-55.32	469490000.00	-50.55
469065000.00	-59.86	469280000.00	-54.86	469495000.00	-50.67
469070000.00	-59.96	469285000.00	-54.92	469500000.00	-50.41
469075000.00	-59.66	469290000.00	-54.66	469505000.00	-50.34
469080000.00	-59.79	469295000.00	-54.75	469510000.00	-50.42
469085000.00	-59.62	469300000.00	-54.61	469515000.00	-50.33
469090000.00	-59.39	469305000.00	-54.66	469520000.00	-50.10
469095000.00	-59.41	469310000.00	-54.23	469525000.00	-50.05
469100000.00	-59.26	469315000.00	-54.33	469530000.00	-49.84
469105000.00	-59.14	469320000.00	-54.07	469535000.00	-49.95
469110000.00	-59.08	469325000.00	-53.92	469540000.00	-49.78
469115000.00	-58.92	469330000.00	-53.99	469545000.00	-49.70
469120000.00	-58.76	469335000.00	-53.83	469550000.00	-49.65
469125000.00	-58.57	469340000.00	-53.77	469555000.00	-49.51
469130000.00	-58.48	469345000.00	-53.56	469560000.00	-49.66
469135000.00	-58.47	469350000.00	-53.57	469565000.00	-49.38
469140000.00	-58.41	469355000.00	-53.53	469570000.00	-49.46
469145000.00	-58.33	469360000.00	-53.45	469575000.00	-49.29
469150000.00	-58.09	469365000.00	-53.09	469580000.00	-49.31
469155000.00	-57.83	469370000.00	-53.08	469585000.00	-49.26
469160000.00	-57.85	469375000.00	-52.84	469590000.00	-49.15
469165000.00	-57.69	469380000.00	-53.01	469595000.00	-49.03
469170000.00	-57.38	469385000.00	-52.72	469600000.00	-48.98
469175000.00	-57.39	469390000.00	-52.63	469605000.00	-49.01
469180000.00	-57.21	469395000.00	-52.66	469610000.00	-49.01
469185000.00	-57.52	469400000.00	-52.50	469615000.00	-48.92
469190000.00	-56.94	469405000.00	-52.41	469620000.00	-48.93
469195000.00	-56.99	469410000.00	-52.34	469625000.00	-48.86
469200000.00	-57.03	469415000.00	-52.12	469630000.00	-48.93
469205000.00	-56.68	469420000.00	-51.96	469635000.00	-48.85
469210000.00	-56.81	469425000.00	-52.03	469640000.00	-48.85

FIGURE EE2 DIELECTRIC 8-POLE MASK FILTER FREQUENCY RESPONSE ATTENUATION

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9/24/2018 (measurement date)

! Stimulus(Hz)	S21(dB)	! Stimulus(Hz)	S21(dB)
469645000.00	-48.72	469860000.00	-59.13
469650000.00	-48.72	469865000.00	-59.52
469655000.00	-48.94	469870000.00	-59.33
469660000.00	-48.64	469875000.00	-59.85
469665000.00	-48.78	469880000.00	-58.81
469670000.00	-48.75	469885000.00	-58.06
469675000.00	-48.66	469890000.00	-57.33
469680000.00	-48.86	469895000.00	-56.63
469685000.00	-48.84	469900000.00	-55.23
469690000.00	-48.85	469905000.00	-53.88
469695000.00	-49.11	469910000.00	-52.33
469700000.00	-48.94	469915000.00	-50.64
469705000.00	-49.17	469920000.00	-48.60
469710000.00	-48.96	469925000.00	-46.80
469715000.00	-49.28	469930000.00	-45.10
469720000.00	-49.37	469935000.00	-43.19
469725000.00	-49.38	469940000.00	-41.41
469730000.00	-49.53	469945000.00	-39.54
469735000.00	-49.56	469950000.00	-37.75
469740000.00	-49.91	469955000.00	-35.97
469745000.00	-49.92	469960000.00	-34.26
469750000.00	-50.11	469965000.00	-32.51
469755000.00	-50.33	469970000.00	-30.83
469760000.00	-50.63	469975000.00	-29.11
469765000.00	-50.70	469980000.00	-27.50
469770000.00	-50.98	469985000.00	-25.85
469775000.00	-51.19	469990000.00	-24.25
469780000.00	-51.41	469995000.00	-22.68
469785000.00	-51.89	470000000.00	-21.17
469790000.00	-52.15		
469795000.00	-52.49		
469800000.00	-52.77		
469805000.00	-53.30		
469810000.00	-53.84		
469815000.00	-54.33		
469820000.00	-55.01		
469825000.00	-55.41		
469830000.00	-55.95		
469835000.00	-56.80		
469840000.00	-57.35		
469845000.00	-57.83		
469850000.00	-58.68		
469855000.00	-58.82		

(Attenuation is more than 60 dB below 469 MHz)