



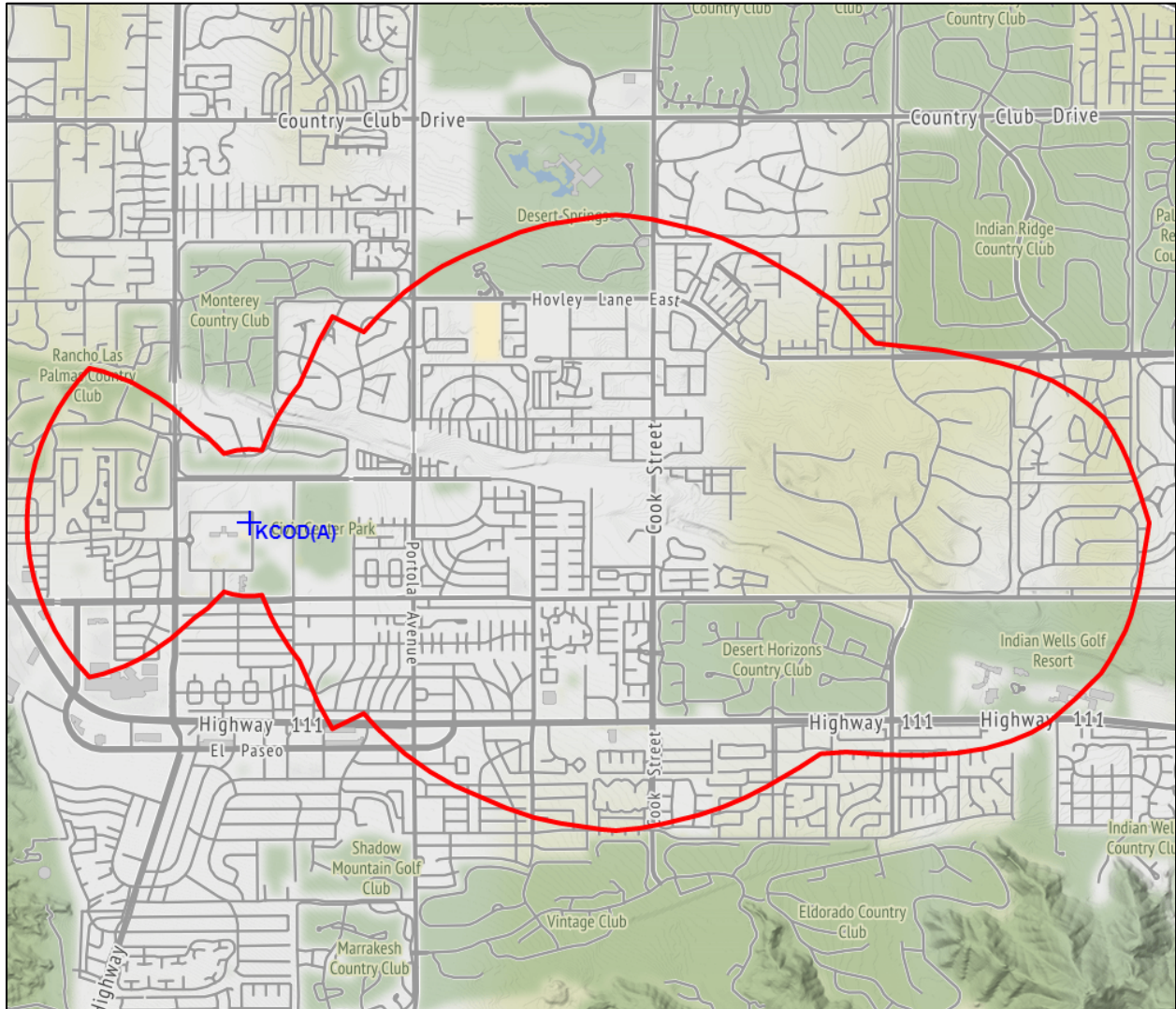
REC Networks
11541 Riverton Wharf Rd.
Mardela Springs, MD 21837
844.REC.LPFM/202.621.2355
recnet.com

New cross-service FM translator for **KCOD**

PALM DESERT, CA

**DESERT COMMUNITY COLLEGE DISTRICT
D/B/A COLLEGE OF THE DESERT**

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



PALM DESERT, CA – Channel 260D (99.9 MHz) ~ ERP 0.050 kW ~ Directional antenna
Elev: 58 meters ~ RCAGL: 14 meters ~ RCAMSL: 72 meters ~ HAAT: minus 235
Overall tower height: 58 meters – ASR: None (no airports within 5 miles)
NAD83 Latitude: 33° 44' 00.3" NL – Longitude: 116° 23' 08.8" WL
NAD27 Latitude: 33° 44' 00.3" NL – Longitude: 116° 23' 05.7" WL

Site: KCOD(FX)
 Coordinates: 33-44-00.3 N, 116-23-05.7 W
 Freq: 99.90000 MHz
 ERP: 50.00 W

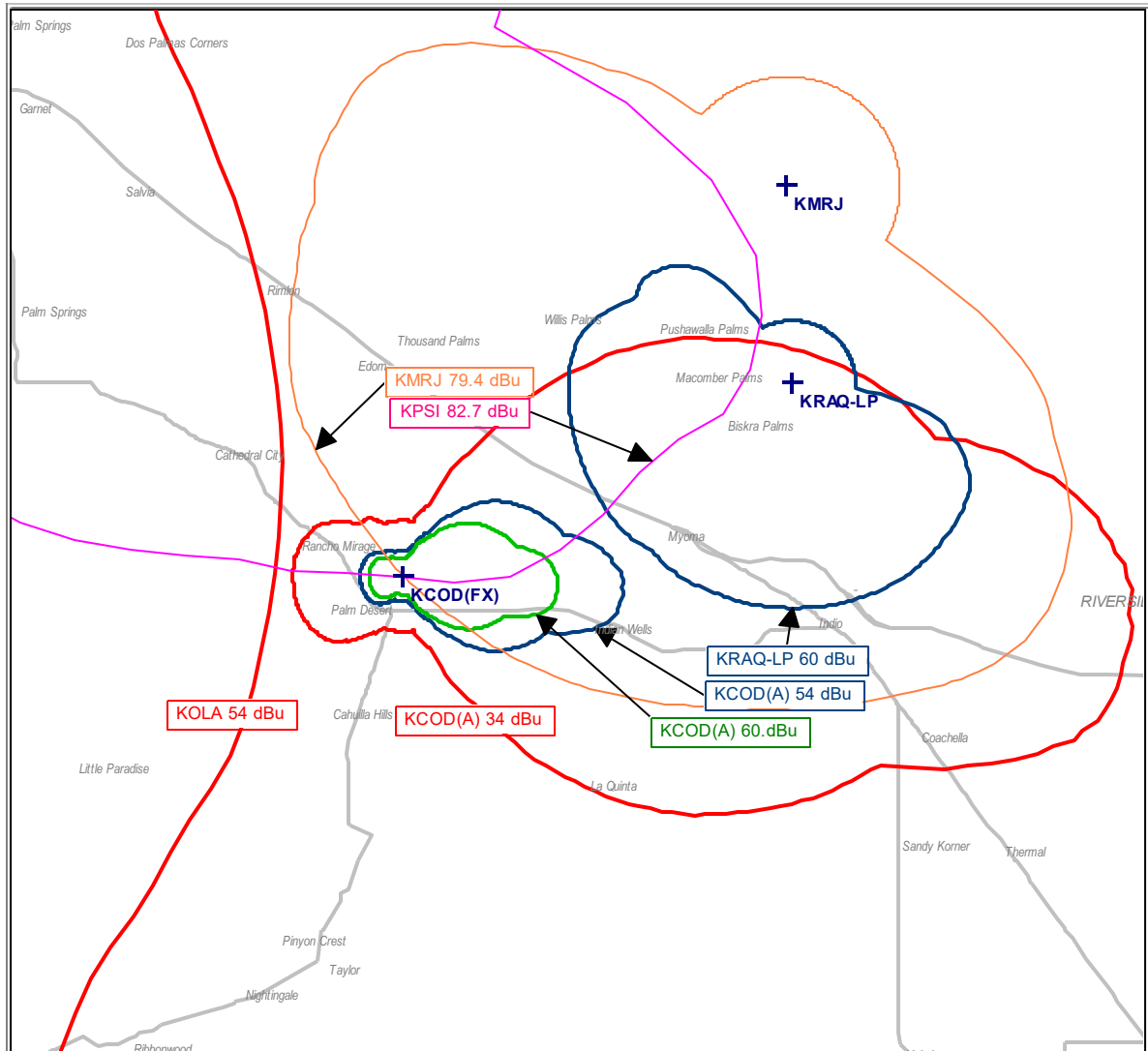
Bearing	ERP W	HAAT	DH	Distance	Lat	Lon
0	0.00	-49	1240	0.73	33.739947	-116.384917
5	0.00	-61	1210	0.73	33.739922	-116.384232
10	0.00	-68	1250	0.73	33.739847	-116.383553
15	0.01	-64	1250	0.88	33.741097	-116.382442
20	0.02	-64	1270	1.00	33.741843	-116.381228
25	0.14	-51	1280	1.44	33.745179	-116.378320
30	0.36	-44	1220	1.67	33.746448	-116.375868
35	1.39	-43	1340	1.99	33.748071	-116.372576
40	3.12	-40	1280	2.44	33.750214	-116.367964
45	6.48	-34	1340	2.86	33.751592	-116.363055
50	11.04	-31	1240	3.25	33.752186	-116.358009
55	15.51	-31	1210	3.54	33.751676	-116.353547
60	20.80	-15	1280	3.79	33.750465	-116.349392
65	26.79	3	1290	4.01	33.748665	-116.345574
70	33.62	19	1180	4.28	33.746563	-116.341452
75	39.16	30	1120	4.45	33.743772	-116.338402
80	45.12	38	1130	5.17	33.741486	-116.329803
85	47.53	44	1080	5.66	33.737838	-116.323942
90	50.00	46	1160	5.86	33.733400	-116.321571
95	47.53	48	800	5.90	33.728772	-116.321309
100	45.12	48	480	5.84	33.724286	-116.322763
105	39.16	45	490	5.47	33.720670	-116.327781
110	33.62	36	270	4.68	33.719017	-116.337381
115	26.79	21	69	4.01	33.718156	-116.345588
120	20.80	9	99	3.79	33.716358	-116.349406
125	15.51	6	89	3.54	33.715150	-116.353561
130	11.04	-20	119	3.25	33.714641	-116.358021
135	6.48	-68	129	2.86	33.715238	-116.363064
140	3.12	-113	219	2.44	33.716617	-116.367971
145	1.39	-145	420	1.99	33.718761	-116.372580
150	0.36	-219	350	1.67	33.720385	-116.375871
155	0.14	-277	1070	1.44	33.721654	-116.378322
160	0.02	-345	940	1.00	33.724990	-116.381229
165	0.01	-391	1430	0.88	33.725736	-116.382442
170	0.00	-457	1530	0.73	33.726986	-116.383553
175	0.00	-520	1320	0.73	33.726912	-116.384232
180	0.00	-504	1450	0.73	33.726887	-116.384917
185	0.00	-512	1270	0.73	33.726912	-116.385601
190	0.00	-550	1510	0.73	33.726986	-116.386280
195	0.00	-602	1220	0.73	33.727109	-116.386949
200	0.00	-660	1100	0.73	33.727280	-116.387602
205	0.01	-724	770	0.80	33.726920	-116.388559
210	0.01	-767	540	0.88	33.726531	-116.389697
215	0.02	-763	300	1.00	33.726071	-116.391101
220	0.03	-760	350	1.10	33.725830	-116.392570
225	0.04	-759	610	1.17	33.725975	-116.393864
230	0.06	-786	510	1.24	33.726224	-116.395222
235	0.06	-776	700	1.27	33.726859	-116.396176
240	0.07	-739	920	1.30	33.727588	-116.397055
245	0.08	-687	1030	1.31	33.728440	-116.397747
250	0.08	-603	1110	1.32	33.729355	-116.398331
255	0.08	-526	1010	1.32	33.730343	-116.398706
260	0.08	-487	1040	1.32	33.731354	-116.398976
265	0.08	-448	1240	1.32	33.732381	-116.399139
270	0.08	-384	1410	1.32	33.733416	-116.399193
275	0.08	-339	1730	1.32	33.734451	-116.399139
280	0.08	-307	1920	1.32	33.735478	-116.398976
285	0.08	-256	2380	1.31	33.736463	-116.398592
290	0.07	-206	2410	1.30	33.737403	-116.398089
295	0.06	-146	1550	1.27	33.738247	-116.397376
300	0.06	-78	1070	1.24	33.739011	-116.396569
305	0.04	-43	940	1.17	33.739452	-116.395283
310	0.03	-37	1390	1.10	33.739782	-116.394039
315	0.02	-32	1430	1.00	33.739757	-116.392542
320	0.01	-30	1250	0.88	33.739507	-116.391063
325	0.01	-28	1280	0.88	33.739930	-116.390401
330	0.01	-28	1430	0.88	33.740302	-116.389697
335	0.01	-30	1470	0.80	33.739914	-116.388560
340	0.00	-60	1180	0.73	33.739553	-116.387602
345	0.00	-84	1040	0.73	33.739724	-116.386949
350	0.00	-71	1020	0.73	33.739847	-116.386280
355	0.00	-65	1100	0.73	33.739922	-116.385601

R E C NETWORKS
CHANNEL REPORT

NAD27 LATITUDE: 33 - 44' 00.3" - LONGITUDE: 116 - 23' 05.7"
CHANNEL: 260 - CLASS: D

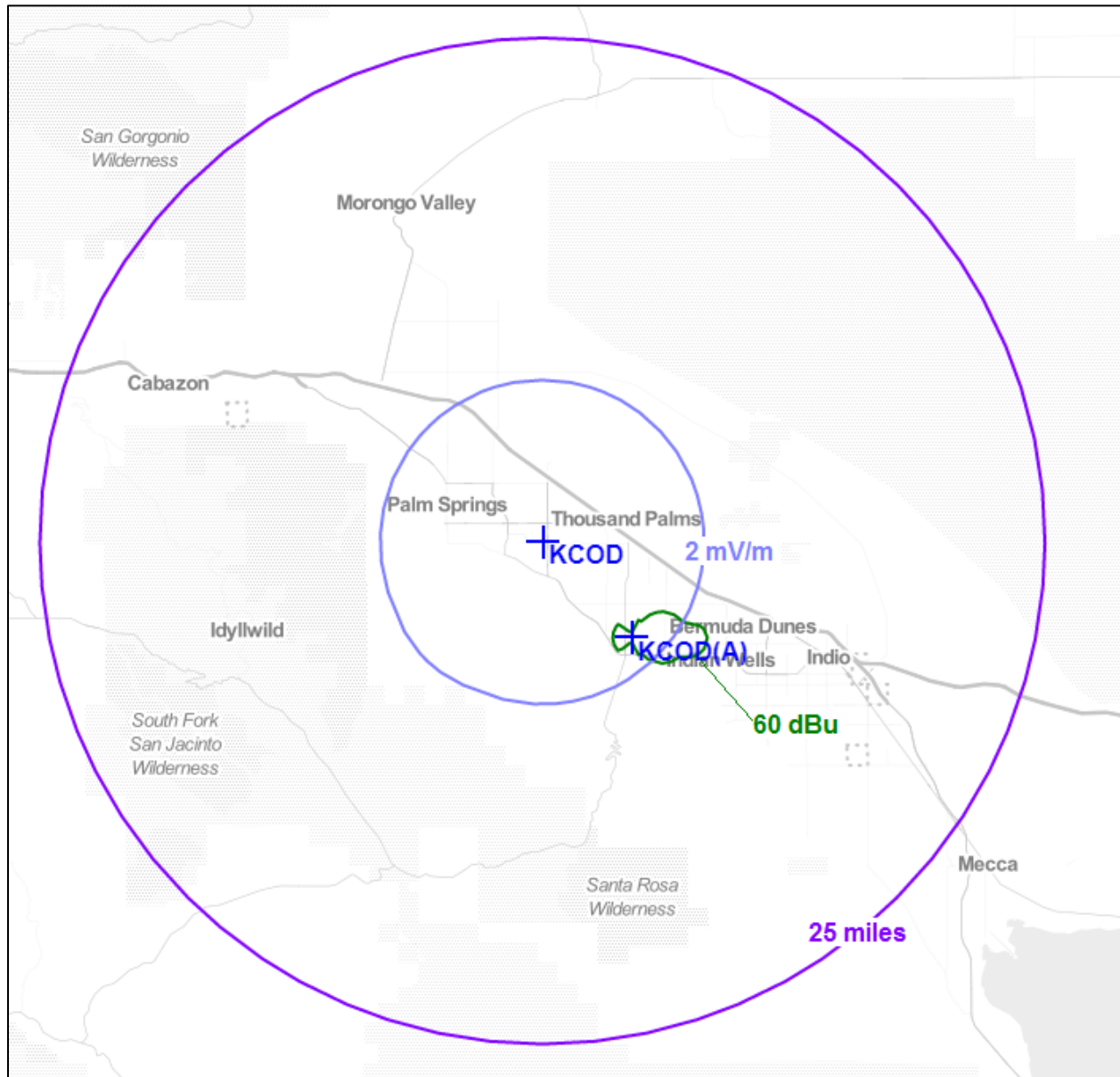
CHAN	FREQ	CALL	LOCATION	CLS	DIST	INTF	SERV	CLEAR	BEAR
206	89.1	KNSJ	DESCANSO	CA B1	93.4	IF	12.0	81.4	182.0
		: ACTIVIST SAN DIEGO							
206	89.1	KUOR-FM	REDLANDS	CA A	80.0	IF	10.0	70.0	310.0
		: UNIVERSITY OF REDLANDS							
206	89.1	KUOR-FM	REDLANDS	CA A	80.0	IF	10.0	70.0	310.0
		: UNIVERSITY OF REDLANDS							
207	89.3	KCRI	INDIO	CA B1	16.7	IF	12.0	4.7	63.0
		: SANTA MONICA COMMUNITY COLLEGE DISTRICT							
257	99.3	KMXX	IMPERIAL	CA A	121.2	0.1	28.3	92.8	139.0
		: ENTRAVISION HOLDINGS, LLC							
257	99.3	K257DV	TWENTY-NINE PALMS	CA D	55.0	0.2	6.1	48.7	46.0
		: ADVANCE MINISTRIES, INC. D/B/A NEW LIFE CHRISTIAN SCHOOL							
257	99.3	K257FV	SAN DIEGO	CA D	102.6	0.1	2.0	100.5	228.0
		: KEVIN J. YOUNGERS							
258	99.5	KMRJ	RANCHO MIRAGE	CA A	21.1	0.2	58.0	-37.1	44.0
		: R M BROADCASTING, LLC							
258	99.5	KXFB-LP	FALLBROOK	CA L1	83.6	0.1	4.6	78.9	241.0
		: THREE ANGELS GLOBAL NETWORKING, INC.							
259	99.7			C1	147.6	2.5	72.0	73.1	199.0
		: §73.207(b)(3) minimum 129 km (clear)							
259	99.7	XHTY-FM	TIJUANA	BN C1	147.6	2.5	72.0	73.1	199.0
		: ZZZ							
		: §73.207(b)(3) minimum 129 km (clear)							
260	99.9	KYMZ	SOMERTON	AZ C3	208.9	5.6	35.7	167.6	125.0
		: CAMPEÑINOS SIN FRONTERAS							
260	99.9	KOLA	SAN BERNARDINO	CA B	87.5	5.6	81.3	0.6	287.0
		: INLAND EMPIRE BROADCASTING CORP.							
261	100.1	KGBA-FM	HOLTVILLE	CA A	131.5	2.5	29.5	99.5	141.0
		: THE VOICE OF INTERNATIONAL CHRISTIAN EVANGELISM, INC.							
261	100.1	KGBA-FM	HOLTVILLE	CA A	132.2	2.5	29.5	100.2	141.0
		: THE VOICE OF INTERNATIONAL CHRISTIAN EVANGELISM, INC.							
261	100.1	KRAQ-LP	RANCHO MIRAGE	CA L1	16.7	2.5	6.0	8.2	63.0
		: CADENA RADIAL MISION Y VISION							
261	100.1	KPRI	JULIAN	CA A	67.2	3.0	23.3	40.9	198.0
		: EDUCATIONAL MEDIA FOUNDATION							
263	100.5	KPSI-FM	PALM SPRINGS	CA B1	23.6	1.0	76.9	-54.3	355.0
		: ALPHA MEDIA LICENSEE LLC							

KCOD(A) Interference Protection



0.050 kW ERP ~ 14m RCAGL ~ Katherin-Scala CL-FM ~ Rotation: 90

CROSS-SERVICE FILL-IN TRANSLATOR: KCOD(AM)



WAIVER OF §74.1204(a) REQUEST
SHORT-SPACED SECOND AND THIRD ADJACENT CHANNELS

KCOD(A)
Palm Desert, California
Channel 260D (99.9 MHz)

The proposed facility (“KCOD(A)”) is within the 60 dBu protected service contour of second-adjacent channel facility KMRJ, Rancho Mirage, California and within the 57 dBu protected service contour of third-adjacent channel facility KPSI-FM, Palm Springs, California.

KMRJ operates on Channel 258A and is located 21.1 kilometers from KCOD(A), operating 3kW at 682 meters HAAT towards KCOD(A). KMRJ places a 79.4 dBu service contour at KCOD(A).

KPSI-FM operates on Channel 263B1 and is located 23.6 kilometers from KCOD(A), operating 25 kW at 459 meters HAAT towards KCOD(A). KPSI-FM places an 82.7 dBu service contour at KCOD(A).

When evaluating multiple overlapping stations, we further evaluate the weaker of the two stations as the interfering contour towards the stronger station will fully encompass the one for the weaker station. In that case, it is KMRJ.

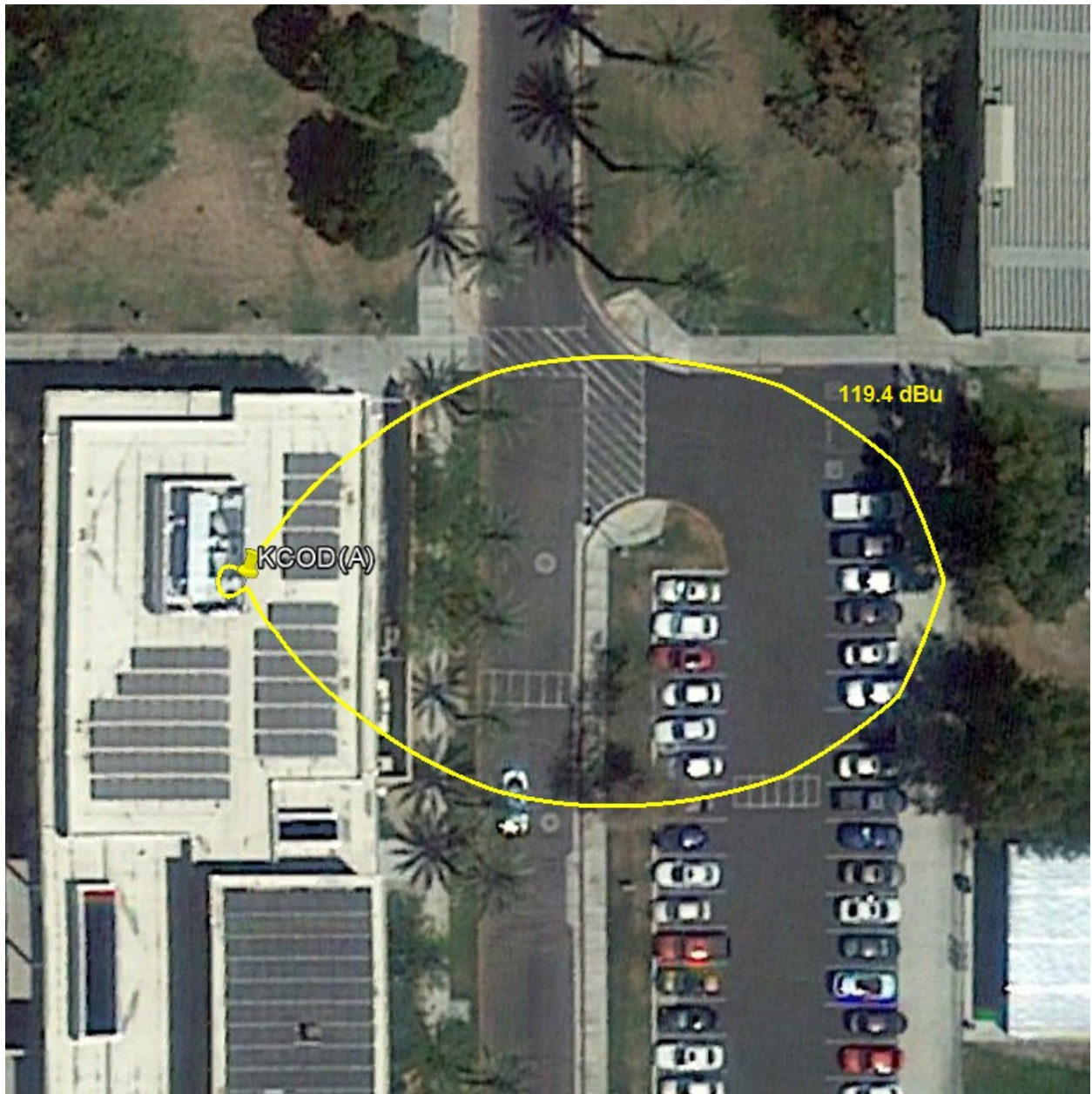
Using the U/D method¹, the proposed translator station is predicted to produce an undesired interference overlap in respect to KMRJ to the proposed translator station’s 119.4 dBu interfering contour (“overlap zone”). At 50 watts ERP, the overlap zone extends to 53 meters from the radiation center.

The antenna will be mounted on a pole on the roof of an academic building that is commonly-owned by the applicant. The applicant proposes to operate a single-bay Kathrein Scala CLFM yagi antenna rotated at 90 degrees azimuth. Based on a downward radiation pattern provided by the manufacturer, any interference towards KMRJ or KPSI-FM will reach no point lower than the ceiling of the upper floor of the building and will only reach ground level in a parking lot and a campus interior roadway due east of the building. There are no signed 4-lane highways or other occupied structures within the overlap zone. The backscatter of the beam (145 through 35 degrees azimuth) towards the west produces effective radiated powers that do not exceed one watt and therefore would not penetrate this or any adjacent buildings.

¹ - See *Living Way Ministries, Inc.* Memorandum Opinion and Order, 17 FCC Rcd 17054, 17056 (2002) at 5. *Recon denied* 23 FCC Rcd 15070 (2008).

Based on these findings, the proposed modified FM translator will not create any interference to listeners or potential listeners of KMRJ or KPSI-FM. The applicant is requesting a waiver of §74.1204(a) in respect to third-adjacent channel facility KMRJ, Rancho Mirage, California and KPSI-FM, Palm Springs, California.

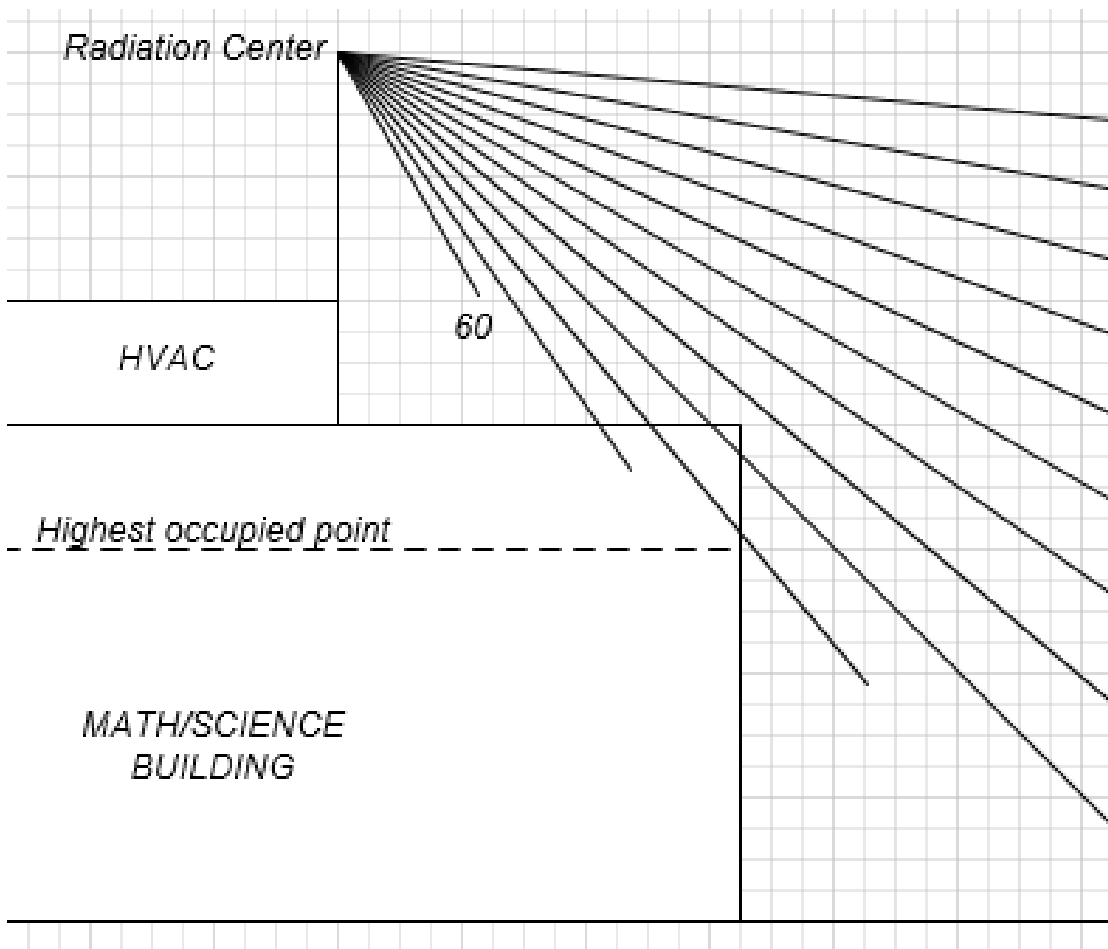
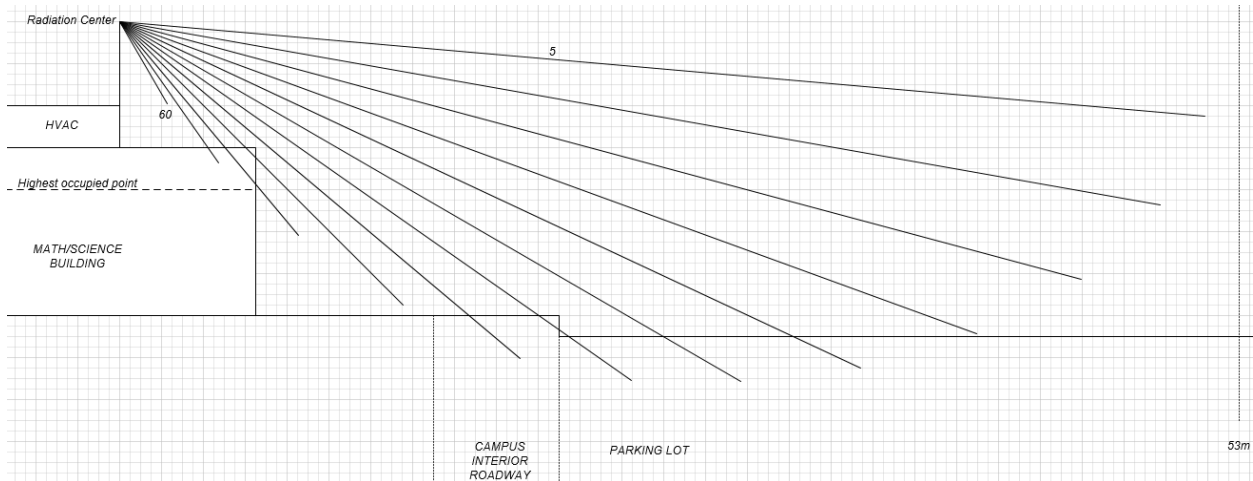
Prepared by
Michelle Bradley
REC Networks
July 20, 2017

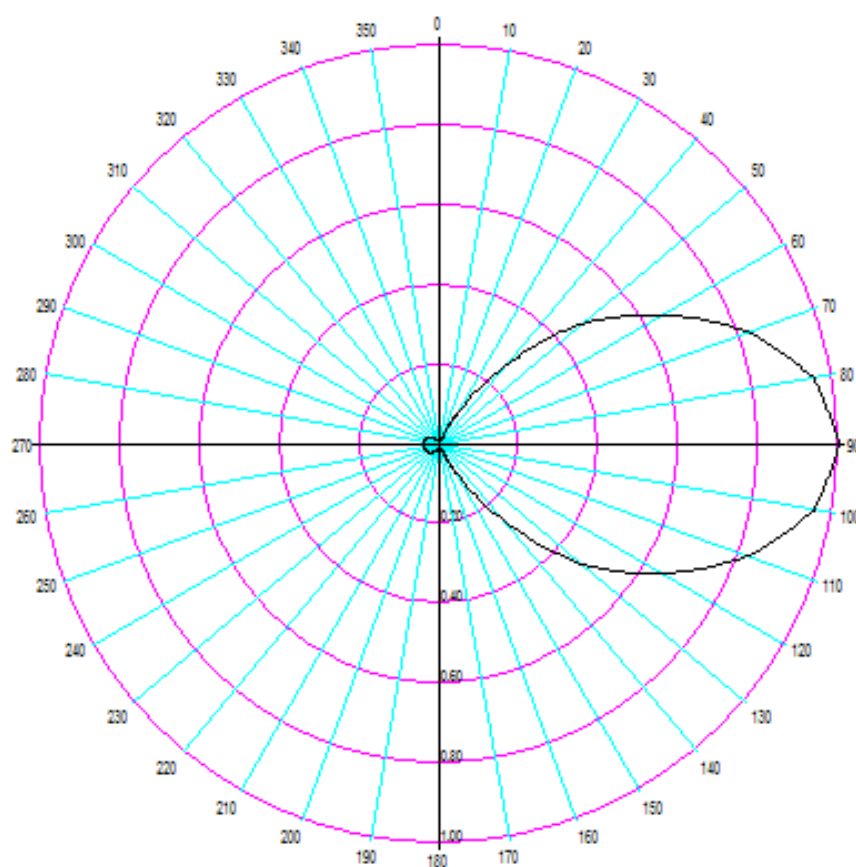


Proposed Power:				0.05 kW				
Antenna Height AGL:				14 m				
Interference Contour:				119.4 dBu				
Artificial RX Antenna Height:				10 m				
Antenna Type:				SCA CL-FM - 1 bay 0 wave spacing				
Angle Below Horizon	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant to Interference Contour	Distance from Ant to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant to Ground Level	Field Strength in dBu @ Ground Level
5	0.980	0.048	-13.19	52.08	45.89	120.50	160.63	109.62
10	0.950	0.045	-13.46	50.49	23.04	126.22	80.62	115.34
15	0.895	0.040	-13.97	47.57	15.45	129.16	54.09	118.28
20	0.820	0.034	-14.73	43.58	11.70	130.83	40.93	119.94
25	0.735	0.027	-15.68	39.06	9.46	131.71	33.13	120.83
30	0.645	0.021	-16.82	34.28	8.00	132.04	28.00	121.16
35	0.562	0.016	-18.02	29.87	6.97	132.04	24.41	121.15
40	0.470	0.011	-19.57	24.98	6.22	131.47	21.78	120.59
45	0.360	0.006	-21.88	19.13	5.66	129.98	19.80	119.10
50	0.250	0.003	-25.05	13.29	5.22	127.51	18.28	116.63
55	0.155	0.001	-29.20	8.24	4.88	123.94	17.09	113.06
60	0.085	0.000	-34.42	4.52	4.62	119.21	16.17	108.33
65	0.040	0.000	-40.97	2.13	4.41	113.06	15.45	102.17
70	0.020	0.000	-46.99	1.06	4.26	107.35	14.90	96.47
75	0.010	0.000	-53.01	0.53	4.14	101.57	14.49	90.69
80	0.010	0.000	-53.01	0.53	4.06	101.74	14.22	90.85
85	0.010	0.000	-53.01	0.53	4.02	101.84	14.05	90.95
90	0.010	0.000	-53.01	0.53	4.00	101.87	14.00	90.99

DEMONSTRATION OF LACK OF INTERFERENCE BASED ON DOWNWARD RADIATION

The following are the distances to the 119.4 dBu interfering contour along the -5 through -65 depression angles based on the specifications of the Katherin Scala CL-FM antenna.





Azim	Rcl.FS	ERP [W]	dBk	Azim	Rcl.FS	ERP [W]	dBk	Azim	Rcl.FS	ERP [W]	dBk	Azim	Rcl.FS	ERP [W]	dBk
0.0	0.010	0.005	-53.010	90.0	1.000	50.000	-13.010	180.0	0.010	0.005	-53.010	270.0	0.040	0.080	-40.969
5.0	0.010	0.005	-53.010	95.0	0.975	47.531	-13.230	185.0	0.010	0.005	-53.010	275.0	0.040	0.080	-40.969
10.0	0.010	0.005	-53.010	100.0	0.950	45.125	-13.456	190.0	0.010	0.005	-53.010	280.0	0.040	0.080	-40.969
15.0	0.015	0.011	-49.488	105.0	0.885	39.161	-14.071	195.0	0.010	0.005	-53.010	285.0	0.039	0.076	-41.189
20.0	0.020	0.020	-46.990	110.0	0.820	33.620	-14.734	200.0	0.010	0.005	-53.010	290.0	0.038	0.072	-41.415
25.0	0.052	0.135	-38.690	115.0	0.732	26.791	-15.720	205.0	0.012	0.007	-51.427	295.0	0.036	0.065	-41.884
30.0	0.085	0.361	-34.422	120.0	0.645	20.801	-16.819	210.0	0.015	0.011	-49.488	300.0	0.034	0.058	-42.381
35.0	0.167	1.394	-28.556	125.0	0.557	15.512	-18.093	215.0	0.020	0.020	-46.990	305.0	0.029	0.042	-43.762
40.0	0.250	3.125	-25.051	130.0	0.470	11.045	-19.568	220.0	0.025	0.031	-45.051	310.0	0.025	0.031	-45.051
45.0	0.360	6.480	-21.884	135.0	0.360	6.480	-21.884	225.0	0.029	0.042	-43.762	315.0	0.020	0.020	-46.990
50.0	0.470	11.045	-19.568	140.0	0.250	3.125	-25.051	230.0	0.034	0.058	-42.381	320.0	0.015	0.011	-49.488
55.0	0.557	15.512	-18.093	145.0	0.167	1.394	-28.556	235.0	0.036	0.065	-41.884	325.0	0.015	0.011	-49.488
60.0	0.645	20.801	-16.819	150.0	0.085	0.361	-34.422	240.0	0.038	0.072	-41.415	330.0	0.015	0.011	-49.488
65.0	0.732	26.791	-15.720	155.0	0.052	0.135	-38.690	245.0	0.039	0.076	-41.189	335.0	0.012	0.007	-51.427
70.0	0.820	33.620	-14.734	160.0	0.020	0.020	-46.990	250.0	0.040	0.080	-40.969	340.0	0.010	0.005	-53.010
75.0	0.885	39.161	-14.071	165.0	0.015	0.011	-49.488	255.0	0.040	0.080	-40.969	345.0	0.010	0.005	-53.010
80.0	0.950	45.125	-13.456	170.0	0.010	0.005	-53.010	260.0	0.040	0.080	-40.969	350.0	0.010	0.005	-53.010
85.0	0.975	47.531	-13.230	175.0	0.010	0.005	-53.010	265.0	0.040	0.080	-40.969	355.0	0.010	0.005	-53.010