

**Channel Study**

REFERENCE CH# 225D - 92.9 MHz, Pwr= 0.25 kW DA, HAAT= 233.5 M, COR= 504 M DISPLAY DATES  
 44 58 36.0 N. Average Protected F(50-50)= 20.0 km DATA 06-27-18  
 93 16 15.0 W. Standard Directional SEARCH 06-29-18

CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap	*OUT* in km)
223C Golden Valley	KQRS-FM	LIC	CN MN	51.7	14.69	45 03 30.0	100.000	10.4	73.9	-13.5*<	-60.1*<
				231.8	BLH19910814KB	93 07 27.0	315	593	Radio License Holdings Llc		
225D St. Paul	W225AP!	CP	C MN	0.0	0.00	44 58 36.0	0.099	52.5	16.1	-57.8	-35.0
				0.0	BPFT20170710AAY	93 16 15.0		504	Educational Media Foundati		
225D St. Paul	W225AP!	LIC	C MN	97.5	15.56	44 57 30.0	0.250	23.8	7.1	-27.9	-52.5
				277.6	BLFT20170707ABE	93 04 31.0		287	Educational Media Foundati		
227D Shoreview	W227BF	LIC	V MN	240.6	0.12	44 58 34.0	0.099	0.7	15.3	-14.8*<	-15.7*<
				60.6	BLFT20170724ABF	93 16 20.0		504	Educational Media Foundati		
225C3 St. Joseph	KKJM	LIC	CN MN	310.9	113.50	45 38 19.0	25.000	117.3	42.1	-8.1*<	55.9
				130.1	BLH19960510KA	94 22 23.0	100	448	Gabriel Media		
226D River Falls	W226CK	CP	C WI	101.1	49.93	44 53 19.0	0.250	21.7	14.4	8.7	6.6
				281.6	BNPFT20171201ACY	92 39 02.0		393	Hanten Broadcasting Co. In		
226C1 New Ulm	KATO-FM	LIC	CX MN	218.0	119.05	44 07 46.0	100.000	88.4	58.7	12.3	33.0
				37.3	BMLH20140612ACV	94 11 17.0	149	440	Minnesota Valley Broadcast		
225A Rochester	KFSI	LIC	CN MN	151.2	120.62	44 01 27.0	6.000	85.5	27.4	15.6	32.7
				331.7	BLED19810507AJ	92 32 36.0	97	443	Faith Sound, Inc.		
225A Elk Mound	WECL	LIC	CN WI	93.8	133.52	44 53 04.0	3.300	83.6	28.4	30.1	43.7
				275.0	BLH19920720KI	91 35 04.0	136	424	Mid-west Management, Inc.		
225A Lake Hallie	WECL	CP	NCX WI	95.8	144.99	44 49 47.0	5.800	87.1	28.9	38.0	54.9
				277.1	BPH20170303ABG	91 26 48.0	92	372	Mid-west Management, Inc.		
225C1 Duluth	WSCD-FM	LIC	C MN	23.5	220.41	46 47 20.0	70.000	163.8	69.3	43.4	107.1
				204.3	BMLED19940823KA	92 07 04.0	185	492	Minnesota Public Radio		
226L1 Amery	WPCA-LP	LIC	WI	62.2	82.35	45 19 02.0	0.050			53.2	47.1
				242.9	BLL20120523AAS	92 20 27.0	42	382	Dream Center, Inc.		

Terrain database is FCC NGDC 30 Sec, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
 Contour distances are on direct line to and from reference station. Reference Zone= West Zone, Co to 3rd adjacent.  
 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.  
 < = Contour Overlap

**Compliance with C.F.R. 74.1204**

The proposed FM Translator is located within the protected 60dBu contour of second adjacent channel station KQRS, channel 223C, Golden Valley, MN. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dBu between the two facilities must not exceed 40dBu.

The proposed ERP for W225AP.P:	250 watts
The proposed COR for W225AP.P:	245 meters
KQRS F(50/50) contour at proposed site:	94.0dBu
The F(50/10) contour of proposed W225AP.P:	134.0dBu

The predicted distance to the 134.0dbu interfering contour is 22 meters. The antenna array will be mounted on a building rooftop. Taking into account the vertical elevation pattern of the Scala CLFM dual antenna array, and a center of radiation of 4m above the rooftop, it has been determined that the interfering contour of 134.0dbu does not extend to any regularly occupied structures. As seen in exhibit 13-A1, the interfering contour extends 3.1m below the rooftop. This is well above any regularly occupied areas of this building as the top floors are mechanical rooms and elevator control and motor rooms.

Exhibit 13–A2 shows the building location on Google Earth. It has been determined that no other nearby buildings extend higher or are near enough to enter into the interfering aperture.

Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1  
74.1204(d) Showing  
W225AP  
St Paul, MN

ERP (kw): 0.25  
Height of Antenna above Roof (m): 4  
Translator's IX Contour: 134  
Antenna Type: Scala CL-V

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1.000	0.2500	22.1294	4.000
5	0.980	0.2401	21.6868	2.110
10	0.950	0.2256	21.0229	0.349
15	0.895	0.2003	19.8058	-1.126
20	0.820	0.1681	18.1461	-2.206
25	0.735	0.1351	16.2651	-2.874
30	0.645	0.1040	14.2735	-3.137
35	0.563	0.0791	12.4478	-3.140
40	0.470	0.0552	10.4008	-2.686
45	0.360	0.0324	7.9666	-1.633
50	0.250	0.0156	5.5324	-0.238
55	0.155	0.0060	3.4301	1.190
60	0.085	0.0018	1.8810	2.371
65	0.045	0.0005	0.9958	3.097
70	0.020	0.0001	0.4426	3.584
75	0.010	0.0000	0.2213	3.786
80	0.010	0.0000	0.2213	3.782
85	0.010	0.0000	0.2213	3.780
90	0.010	0.0000	0.2213	3.779

### **Compliance with C.F.R. 74.1204**

The proposed FM Translator is located within the protected 60dBu contour of second adjacent channel station W227BF, channel 227D, Shoreview, MN. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dBu between the two facilities must not exceed 40dBu.

The proposed ERP for W225AP.P:	250 watts
The proposed COR for W225AP.P:	245 meters
W227BF F(50/50) contour at proposed site:	114.9dBu
The F(50/10) contour of proposed W225AP.P:	154.9dBu

The predicted distance to the 154.9dbu interfering contour is 2 meters. The antenna array will be mounted on a building rooftop. Taking into account the vertical elevation pattern of the Scala CLFM dual antenna array, and a center of radiation of 4m above the rooftop, it has been determined that the interfering contour of 154.9dbu does not extend to any regularly occupied structures. As seen in exhibit 13-A1, the lowest interfering contour extends 3.4m above the rooftop. This is well above any regularly occupied areas of this building as the top floors are mechanical rooms and elevator control and motor rooms.

Exhibit 13–A2 shows the building location on Google Earth. It has been determined that no other nearby buildings extend higher or are near enough to enter into the interfering aperture.

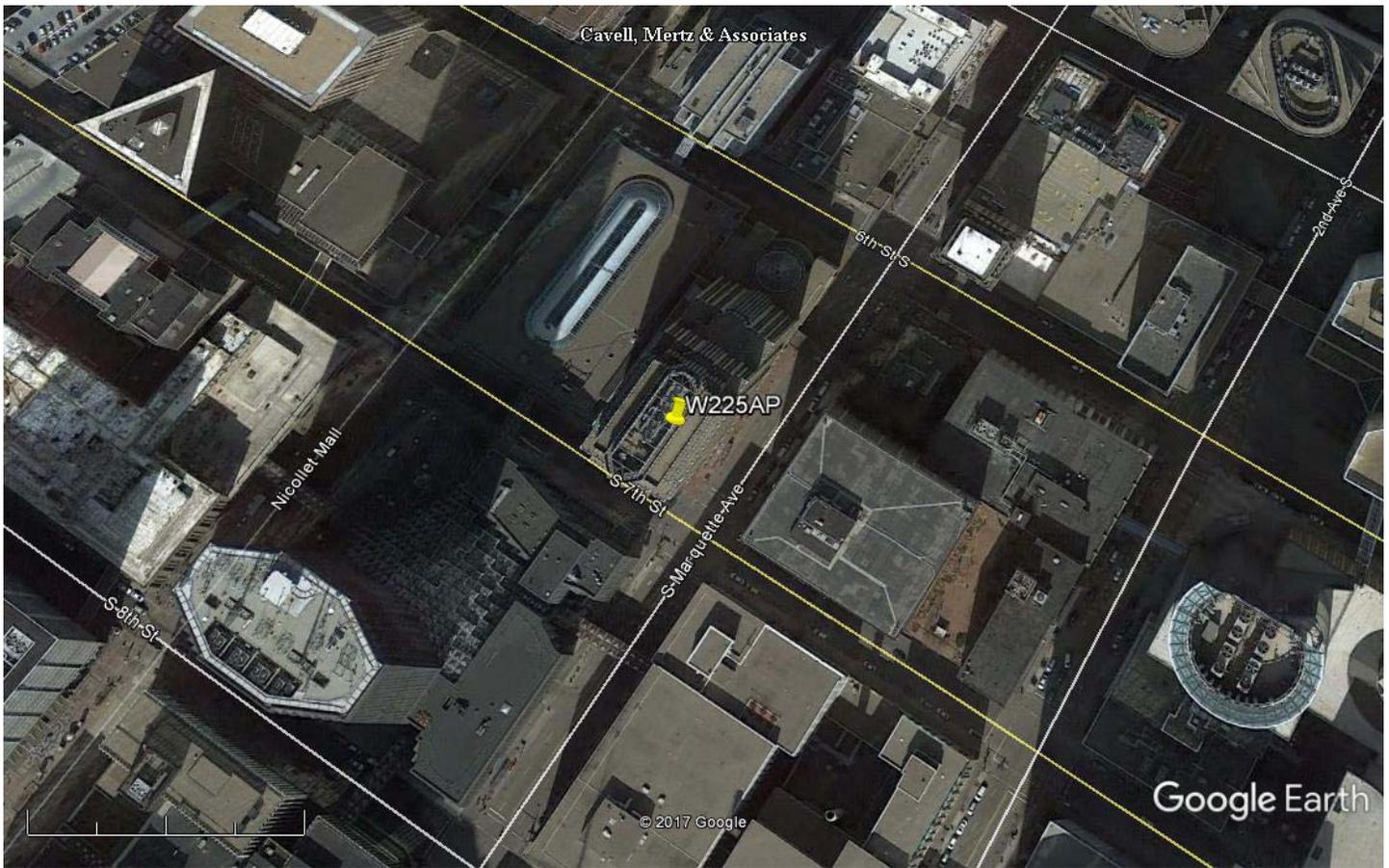
Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1  
 74.1204(d) Showing  
 W225AP  
 St Paul, MN

ERP (kw): 0.25  
 Height of Antenna above Roof (m): 4  
 Translator's IX Contour: 154.9  
 Antenna Type: Scala CL-V

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1.000	0.2500	1.9951	4.000
5	0.980	0.2401	1.9552	3.830
10	0.950	0.2256	1.8954	3.671
15	0.895	0.2003	1.7856	3.538
20	0.820	0.1681	1.6360	3.440
25	0.735	0.1351	1.4664	3.380
30	0.645	0.1040	1.2869	3.357
35	0.563	0.0791	1.1223	3.356
40	0.470	0.0552	0.9377	3.397
45	0.360	0.0324	0.7182	3.492
50	0.250	0.0156	0.4988	3.618
55	0.155	0.0060	0.3092	3.747
60	0.085	0.0018	0.1696	3.853
65	0.045	0.0005	0.0898	3.919
70	0.020	0.0001	0.0399	3.963
75	0.010	0.0000	0.0200	3.981
80	0.010	0.0000	0.0200	3.980
85	0.010	0.0000	0.0200	3.980
90	0.010	0.0000	0.0200	3.980

Exhibit 13-A2



Google Earth

feet  
meters



Yellow Pin Marker

NAD 27

44-58-36.0 N 93-16-15.0 W