

Channel Study

REFERENCE CH# 224D - 92.7 MHz, Pwr= 0.099 kW DA, HAAT= 279.1 M, COR= 543 M DISPLAY DATES
 41 22 58.0 N. Average Protected F(50-50)= 17.3 km DATA 04-11-13
 81 42 07.0 W. Standard Directional SEARCH 04-16-13

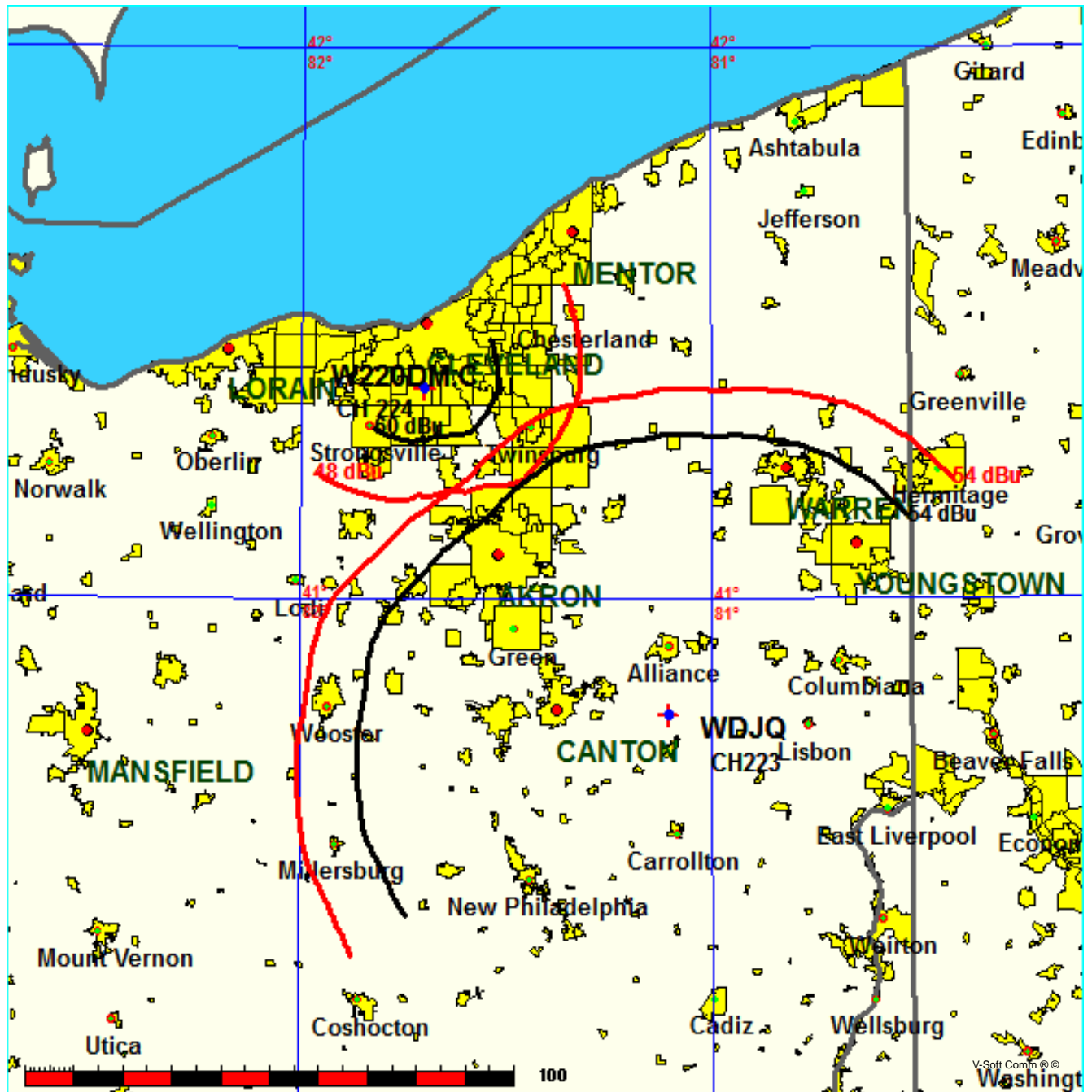
CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
224D Parma	W220DM	CP	DV OH	7.4 187.4	11.66 BPFT20120224AAQ	41 29 13.0 81 41 02.0	0.250	22.1 322	6.6 Educational Media Foundati	-29.6*	-56.1
226B Cleveland	WZAK	LIC	CN OH	149.8 329.8	13.14 BLH4273	41 16 50.0 81 37 22.0	27.500 189	5.4 490	61.7 Blue Chip Broadcasting Lic	-3.2<	-49.3*<
222B Cleveland Heights	WKRK-FM	LIC	DEN OH	69.3 249.5	18.82 BLH19891128KA	41 26 32.0 81 29 28.0	40.000 167	5.7 465	64.0 Cbs Radio Stations Inc.	-2.7<	-46.4*<
223B Alliance	WDJQ	LIC	DEX OH	142.7 323.1	82.62 BMLH20021205ABW	40 47 25.0 81 06 26.0	50.000 152	63.5 518	54.8 D. A. Peterson, Inc.	7.5	3.2
224B1 Leamington	CJSP	OPE	DEN ON	314.6 134.0	99.88 20070228CAN	42 00 35.0 82 33 45.0	4.000 145	46.7 324	20.3	34.9	4.8<
227B Youngstown	WNCD	LIC	CN OH	110.5 291.2	94.49 BLH19831024AC	41 04 50.0 80 38 54.0	50.000 85	5.0 413	57.9 Citicasters Licenses, Inc.	75.7	35.8
224A Bucyrus	WQEL	LIC	CX OH	236.7 55.9	124.25 BLH20060303AAO	40 45 49.0 82 56 00.0	3.000 93	71.9 402	21.7 Franklin Communications, I	38.8	57.5
225D Ashland	639418	APP	C OH	220.0 39.6	75.59 BNPFT20030317LZD	40 51 39.0 82 16 47.0	0.080 24	7.5 369	5.3 Kent State University	55.8	52.1
223B Toledo	WVKS	LIC	CN OH	276.6 95.4	158.92 BMLH19961008KA	41 31 55.0 83 35 37.0	50.000 146	78.9 340	65.8 Citicasters Licenses, Inc.	63.2	57.7
224A Lawrence Park	WEHP	LIC	DCX PA	57.4 238.5	155.37 BLH20121113ALW	42 07 25.0 80 07 02.0	6.000 3	77.9 254	21.7 The Erie Radio Company, Ll	60.9	79.9
221A Bellevue	WOHF	LIC	NCX OH	260.8 80.0	96.45 BLH20120913AAR	41 14 19.0 82 50 16.0	5.800 103	2.9 337	29.9 Bas Broadcasting, Inc.	77.9	66.0

Terrain database is 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= East 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 protected contour.
 < = Contour Overlap

FMCommander Single Allocation Study - 04-16-2013 - NGDC 30 SEC
W220DM.C's Overlaps (In= 7.49 km, Out= 3.17 km)

W220DM.C CH 224 D DA
Lat= 41 22 58.0, Lng= 81 42 07.0
0.099 kW 279.1 M HAAT, 543 M COR
Prot.= 60 dBu, Intef.= 48 dBu

WDJQ CH 223 B DA BMLH20021205ABW
Lat= 40 47 25.0, Lng= 81 06 26.0
50.0 kW 152 M HAAT, 518 M COR
Prot.= 54 dBu, Intef.= 54 dBu



WDJQ vs. W220DM.P

04-16-2013 Terrain Data: NGDC 30 SEC FMOver Analysis

WDJQ BMLH20021205ABW

W220DM. C

Channel = 223B
Max ERP = 50 kW
RCAMSL = 518 M
N. Lat. 40 47 25.0
W. Lng. 81 06 26.0
Protected
54 dBu

Channel = 224D
Max ERP = 0.099 kW
RCAMSL = 543 M
N. Lat. 41 22 58.0
W. Lng. 81 42 07.0
Interfering
48 dBu

Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Azi muth (degrees)	ERP (kW)	HAAT (m)	Di st (km)	Actual (dBu)	I X (km)
298.0	024.3602	0148.0	057.9	181.9	000.0284	0179.3	038.6	37.59	
299.0	023.7361	0147.4	057.6	180.8	000.0284	0181.7	037.9	38.06	
300.0	023.1200	0147.0	057.3	179.6	000.0283	0184.1	037.1	38.52	
301.0	022.7138	0146.9	057.1	178.6	000.0283	0185.3	036.4	38.95	
302.0	022.3112	0146.8	057.0	177.5	000.0283	0185.7	035.7	39.33	
303.0	021.9122	0146.9	056.8	176.3	000.0282	0185.7	034.9	39.70	
304.0	021.5168	0147.0	056.7	175.2	000.0282	0184.1	034.2	39.98	
305.0	021.1250	0147.2	056.5	173.9	000.0282	0182.4	033.6	40.25	
306.0	020.7368	0147.2	056.3	172.5	000.0282	0181.1	033.0	40.51	
307.0	020.3522	0147.0	056.1	171.1	000.0282	0179.7	032.4	40.75	
308.0	019.9712	0146.6	055.9	169.6	000.0282	0176.7	031.9	40.88	
309.0	019.5938	0146.0	055.7	167.9	000.0282	0175.5	031.5	41.05	
310.0	019.2200	0145.3	055.4	166.2	000.0282	0176.8	031.1	41.33	
311.0	019.0344	0144.7	055.2	164.6	000.0282	0180.2	030.7	41.72	
312.0	018.8498	0144.1	055.1	162.9	000.0283	0184.7	030.3	42.15	
313.0	018.6661	0143.4	054.9	161.1	000.0283	0189.5	030.0	42.55	
314.0	018.4832	0142.5	054.7	159.3	000.0284	0194.5	029.8	42.92	
315.0	018.3013	0141.7	054.5	157.5	000.0284	0199.3	029.5	43.26	
316.0	018.1202	0141.2	054.3	155.7	000.0285	0200.3	029.4	43.43	
317.0	017.9400	0141.2	054.2	153.8	000.0286	0200.0	029.1	43.56	
318.0	017.7608	0141.7	054.2	152.0	000.0287	0201.3	028.9	43.78	
319.0	017.5824	0142.6	054.2	150.2	000.0288	0204.3	028.7	44.07	
320.0	017.4050	0143.7	054.3	148.4	000.0289	0208.3	028.5	44.39	
321.0	017.4640	0144.8	054.5	146.5	000.0291	0213.0	028.2	44.80	
322.0	017.5232	0145.9	054.6	144.6	000.0293	0220.1	027.9	45.27	
323.0	017.5824	0146.9	054.8	142.6	000.0295	0232.4	027.7	45.88	
324.0	017.6418	0147.6	054.9	140.7	000.0297	0245.0	027.6	46.41	
325.0	017.7013	0148.1	055.0	138.7	000.0300	0256.3	027.6	46.82	
326.0	017.7608	0148.4	055.1	136.7	000.0303	0266.4	027.7	47.15	
327.0	017.8205	0148.7	055.2	134.7	000.0307	0275.0	027.8	47.40	
328.0	017.8802	0149.0	055.2	132.7	000.0311	0282.6	028.0	47.58	
329.0	017.9401	0149.2	055.3	130.8	000.0315	0286.5	028.2	47.62	
330.0	018.0000	0149.6	055.4	128.9	000.0320	0285.5	028.4	47.50	
331.0	018.1202	0150.4	055.5	127.0	000.0325	0284.0	028.6	47.39	
332.0	018.2408	0151.5	055.8	125.1	000.0331	0283.0	028.9	47.30	
333.0	018.3618	0152.6	055.9	123.2	000.0337	0283.1	029.2	47.20	
334.0	018.4832	0153.3	056.1	121.4	000.0342	0283.6	029.5	47.07	
335.0	018.6050	0153.7	056.2	119.7	000.0348	0283.9	030.0	46.89	
336.0	018.7272	0154.0	056.3	118.1	000.0355	0284.4	030.5	46.69	
337.0	018.8498	0154.0	056.4	116.6	000.0361	0284.9	031.1	46.47	
338.0	018.9728	0153.7	056.4	115.2	000.0367	0285.5	031.7	46.23	

Compliance with C.F.R. 74.1204

The proposed FM Translator is located within the protected 54dBu contour of second adjacent channel station WZAK, channel 226B, Cleveland, OH. 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 W220DM.P:	99 watts
The proposed COR for W220DM.P:	232 meters
WZAK F(50/50) contour at proposed site:	84.8dBu
The F(50/10) contour of proposed W220DM.P:	124.8dBu

The predicted distance to the 124.8dbu interfering contour is 40.2 meters. Taking into account the vertical elevation pattern of the Scala FMVMP single bay antenna and the height above ground of 232M, it has been determined that the interfering contour of 124.8dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 215.25M above ground.

As can be seen in Exhibit 13–A2, there are no regularly occupied structures at the base of the tower and there are no structures which are tall enough to enter the 215.25 meter 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
W220DM
Parma, OH

ERP (kw): 0.099
Height of Antenna above Ground (m): 232
Translator's IX Contour: 124.8
Antenna Type: Scala FMV-1

<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	0.0990	40.1622	232.000
5	0.995	0.0980	39.9534	228.518
10	0.982	0.0954	39.4272	225.154
15	0.956	0.0904	38.3790	222.067
20	0.918	0.0835	36.8810	219.386
25	0.867	0.0743	34.8046	217.291
30	0.803	0.0638	32.2342	215.883
35	0.727	0.0523	29.2019	215.250
40	0.645	0.0412	25.9006	215.351
45	0.558	0.0308	22.4145	216.151
50	0.472	0.0220	18.9365	217.494
55	0.388	0.0149	15.5829	219.235
60	0.315	0.0098	12.6511	221.044
65	0.240	0.0057	9.6389	223.264
70	0.176	0.0031	7.0766	225.350
75	0.119	0.0014	4.7753	227.387
80	0.067	0.0004	2.6869	229.354
85	0.019	0.0000	0.7751	231.228
90	0.025	0.0001	1.0201	230.980

Compliance with C.F.R. 74.1204

The proposed FM Translator is located within the protected 54dBu contour of second adjacent channel station WKRK-FM, channel 222B, Cleveland Heights, OH. 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 W220DM.P:	99 watts
The proposed COR for W220DM.P:	232 meters
WKRK F(50/50) contour at proposed site:	79.9dBu
The F(50/10) contour of proposed W220DM.P:	119.9dBu

The predicted distance to the 119.9dbu interfering contour is 70.6 meters. Taking into account the vertical elevation pattern of the Scala FMVMP single bay antenna and the height above ground of 232M, it has been determined that the interfering contour of 119.9dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 202.556M above ground.

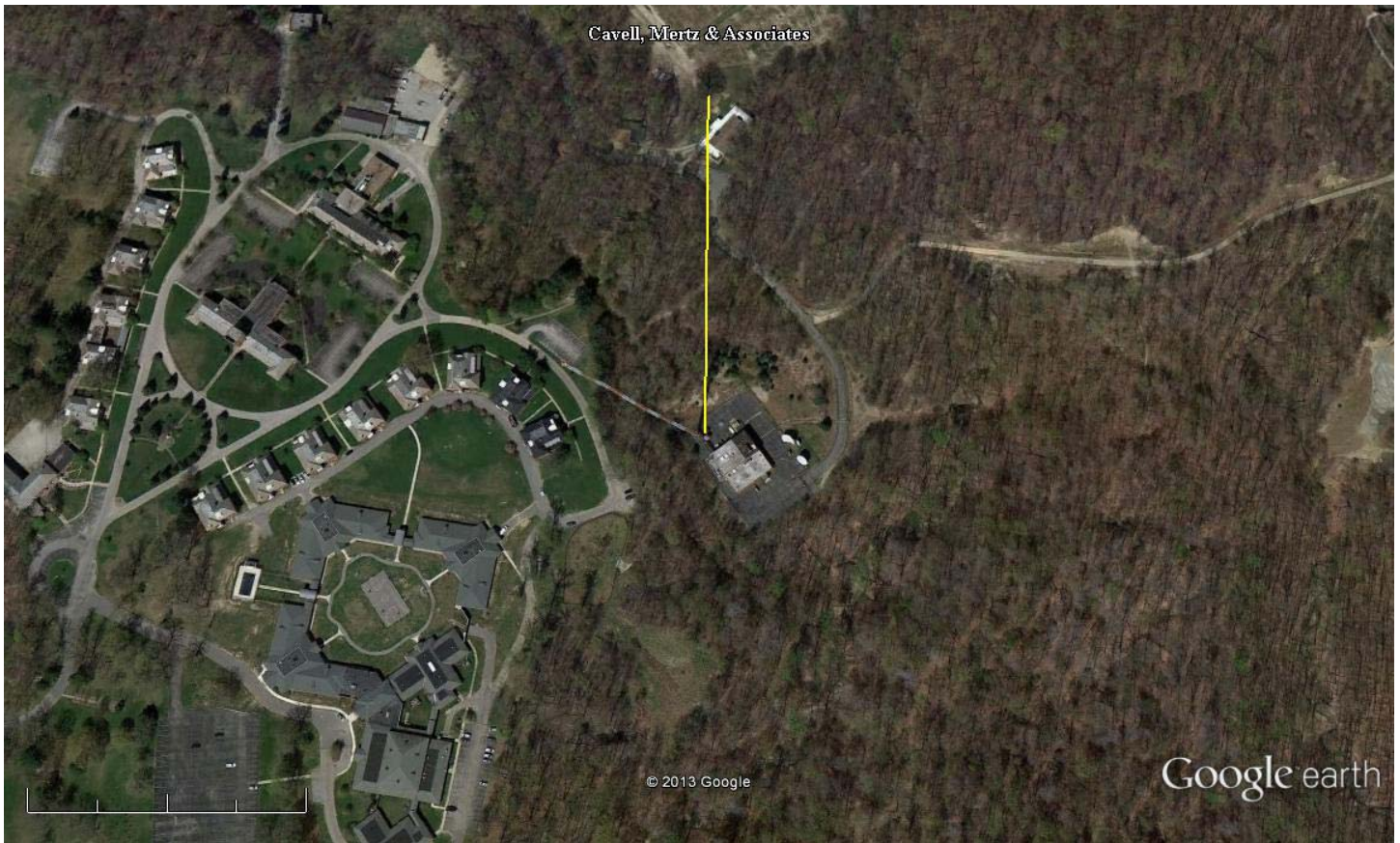
As can be seen in Exhibit 13–A2, there are no regularly occupied structures at the base of the tower and there are no structures which are tall enough to enter the 202.556 meter aperture.

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
W220DM
Parma, OH

ERP (kw): 0.099
Height of Antenna above Ground (m): 232
Translator's IX Contour: 119.9
Antenna Type: Scala FMV-1

<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	0.0990	70.6021	232.000
5	0.995	0.0980	70.2350	225.879
10	0.982	0.0954	69.3101	219.964
15	0.956	0.0904	67.4674	214.538
20	0.918	0.0835	64.8339	209.825
25	0.867	0.0743	61.1838	206.143
30	0.803	0.0638	56.6652	203.667
35	0.727	0.0523	51.3348	202.556
40	0.645	0.0412	45.5313	202.733
45	0.558	0.0308	39.4030	204.138
50	0.472	0.0220	33.2889	206.499
55	0.388	0.0149	27.3936	209.560
60	0.315	0.0098	22.2397	212.740
65	0.240	0.0057	16.9445	216.643
70	0.176	0.0031	12.4401	220.310
75	0.119	0.0014	8.3946	223.891
80	0.067	0.0004	4.7233	227.348
85	0.019	0.0000	1.3626	230.643
90	0.025	0.0001	1.7933	230.207



Google earth

feet 1000
meters 400



NAD27

41 22' 58" N

81 42' 07" W

Marker: 232M at zero degrees true north