

ENGINEERING STATEMENT
IN SUPPORT OF A MINOR CHANGE APPLICATION
(0000054708)
TO SPECIFY A NEW TV CHANNEL FOR
WCRD-LP, FREEPORT, ILLINOIS
CHANNEL 9 3 KW MAX DA 440 M AMSL

JANUARY 2019

This engineering statement has been prepared on behalf of FXM Broadcasting, L.L.C., licensee of low power TV station WCRD-LP, Freeport, Illinois and is in support of a minor change application for construction permit to specify Channel 9 for the station's Low Power TV operation. The application for a new digital TV Channel was filed during the Post-Incentive Auction Special Displacement Window.

At present station WCRD-LP, Facility ID Number 128366, (BLTTL-20050228ACY) operates on analog TV Channel 44 (650-656 MHz) with 35.5 kW ERP, 396.2 meters antenna height above mean sea level and a directional TV antenna. Since WCRD-LP's analog TV operation is on TV Channel 44 the station filed an application (0000054708) during the Post-Incentive Auction Special Displacement Window. The Commission has determined the proposed WCRD-LP's operation of TV Channel 33 is mutually exclusive with applications filed by WIDN-LD (0000059807) WDMW-LD (0000054588) (MX Group 56). WCRD-LP is amending its pending application (0000054708) to specify the station's TV operation on Channel 9. It is proposed to operate on Channel 9 with a maximum of 3 kW ERP using a directional TV antenna.

The following information provides pertinent data for the proposed WCRD-LP operation.

Name of the licensee:	FXM Broadcasting, L.L.C.
Station Location:	IL-Freeport
Channel:	9 (186-192 MHz)
Hours of Operation:	Unlimited

Transmitter:	Type Accepted	
Antenna Type:	Katheirn, 523358	
Antenna Coordinates (NAD83):	North Latitude:	41 deg 59 min 46.00 sec
	West Longitude:	89 deg 12 min 11.00 sec
Maximum effective radiated power (Average):	3 kW 4.77 dBk	
Elevation of the site above mean sea level:	248.4 meters	
Overall height of the tower above ground:	208.5 meters	
Height of radiation center above ground (meters):	191.6 meters	
Height of radiation center above mean sea level (meters):	440.0 meters	
Antenna Structure Registration:	1245471	

The proposed WCRD-LP facility complies with Section 73.1030 of the Commission's rules; therefore, notification to radio astronomy installations, radio receiving installations and FCC monitoring stations is not required.

INTERFERENCE

An interference study has been conducted according to the TV Study computer software for the proposed WCRD-LP operation on digital TV Channel 9. The TV Study indicates the proposed Channel 9 LPTV operation with 3 kW maximum ERP using a directional TV antenna would not cause interference to any TV, Class A TV or LPTV station or pending proposals. The TVSTUDY was conducted using 0.5 km cell size and 0.25 km terrain interval.

ENVIRONMENTAL PROTECTION ACT

Since WCRD-LP's proposed digital TV operation on Channel 9 would be located on an existing tower (ASR 1245471), the environmental concerns listed in Section 1.1307(a) of the Commission's rules are not pertinent; therefore, those issues have not been addressed.

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 3 kW and a radiation center of 191.6 meters above ground level, the proposed Channel 9 LPTV operation would have less than 1 microwatt per square centimeter ($\mu\text{W}/\text{cm}^2$) RF field at 2 meters above the base of tower assuming an antenna field factor of 0.5 in the downward direction.

The Commission's guidelines for Channel 9 are 1,000 $\mu\text{W}/\text{cm}^2$ for the occupational/controlled, and 200 $\mu\text{W}/\text{cm}^2$ for the general population/uncontrolled environment.

The above analysis indicates general public near the tower will not be exposed to RF fields exceeding the Commission's guidelines. With respect to work performed on the tower, WCRD-LP will establish procedures to ensure that workers are not exposed to RF fields above the Commission's guidelines, by reducing or turning off the power, as appropriate.

For the reasons stated above, it is believed this proposal complies with Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from environmental processing.

Study created: 2019.01.07 15:48:30

Study build station data: LMS TV 2019-01-03 (32)

Proposal: WCRD-LP D9+ LD APP CARTHAGE, IL
 File number: WCRD9-KAT523357-3K-05-025
 Facility ID: 128366
 Station data: User record
 Record ID: 143
 Country: U.S.

Build options:
 Protect records not on baseline channel

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number
WMVS	D8	DT	APP	MILWAUKEE, WI	
BLANK0000035791				162.1 km	
WMVS	D8	DT	LIC	MILWAUKEE, WI	
BLANK0000040294				162.1	
WAOW	D9	DT	APP	WAUSAU, WI	
BLANK0000035727				327.4	
WAOW	D9	DT	LIC	WAUSAU, WI	
BLCDT20120627ABL				327.4	
WAOE	D10	DT	APP	PEORIA, IL	
BLANK0000034688				82.4	

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D9+
 Mask: Stringent
 Latitude: 41 59 46.00 N (NAD83)
 Longitude: 89 12 11.00 W
 Height AMSL: 440.0 m
 HAAT: 0.0 m
 Peak ERP: 3.00 kW
 Antenna: KAT523357 0.0 deg
 Elev Pattn: Generic

48.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	3.00 kW	195.6 m	56.2 km
45.0	0.750	189.8	45.9
90.0	0.003	182.7	14.4
135.0	0.039	195.3	26.1
180.0	0.001	197.3	10.8
225.0	0.039	208.8	26.9

270.0	0.003	215.5	15.4
315.0	0.753	194.9	46.2

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 197 m

Distance to Canadian border: 499.8 km

Distance to Mexican border: 1743.5 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 74.7 degrees Distance: 275.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 266.7 degrees Distance: 1356.0 km

Study cell size: 0.50 km
Profile point spacing: 0.25 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

No IX check failures found.

WCRD CH. 9 Antenna Pattern

Pre-Rotation Antenna Pattern....

Azimuth (deg) Relative Field

0.0	1.0
10.0	0.9661
20.0	0.871
30.0	0.7328
40.0	0.5774
50.0	0.4246
60.0	0.2901
70.0	0.1786
80.0	0.0915
90.0	0.0344
100.0	0.0523
110.0	0.0904
120.0	0.1156
130.0	0.1218
140.0	0.106
150.0	0.0719
160.0	0.03
170.0	0.0068
180.0	0.0192
190.0	0.0068
200.0	0.03
210.0	0.0719
220.0	0.106
230.0	0.1218
240.0	0.1156
250.0	0.0904
260.0	0.0523
270.0	0.0344
280.0	0.0915
290.0	0.1786
300.0	0.2901
310.0	0.4246
320.0	0.5774
330.0	0.7328
340.0	0.871
350.0	0.9661

Rotation Angle = 0

