

NEW AUXILIARY FM ANTENNA
CUMULUS LICENSING LLC
KKEG (FM) RADIO STATION
CH 252C1 - 98.3 MHZ - 1.5 KW
BENTONVILLE, ARKANSAS
May 2017

EXHIBIT B

Radio Frequency Assessment

A study has been made to determine whether this proposal is in compliance with 47 C.F.R. §1.1307 of the Commission's rules and with OET Bulletin #65, dated August 1997 ("Bulletin"), regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby contributing stations, specifically the proposed KKEG¹ auxiliary antenna system and KEGW-LD², Fayetteville, Arkansas³ and utilizes the appropriate formulas contained in the OET Bulletin.⁴

The proposed KKEG auxiliary antenna system will be mounted with its center of radiation 91 meters (299 feet) above the ground at the existing tower location and will operate with an effective radiated power of 1.5 kilowatts in the horizontal and vertical planes

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- 1) Cumulus is also submitting applications for a new auxiliary antenna system for KKEG to be co-located on this same tower.
 - 2) KEGW-LD is located on an adjacent tower, but is considered co-located, less than 0.3 km distant.
 - 3) FM Translator Stations: K223CL, Fayetteville, Arkansas; K277AZ, Fayetteville, Arkansas; K237 GR, Johnson, Arkansas; K287AN, Fayetteville, Arkansas and K223CL, Fayetteville, Arkansas as well as FM Station KCYT, 244C3, Fayetteville, Arkansas and Television Facilities: KAJL-LD, Channel 16, Fayetteville, Arkansas; KFFS-CD, Channel 36, Fayetteville, Arkansas; KFLU-LD, Channel 20, Fort Smith, Arkansas; KJNM-LD, Channel 25, Fayetteville, Arkansas, K29KW-LD (construction permit), Channel 29, Fort Smith, Arkansas and KWNL-CD, Channel 31, Fayetteville, Arkansas are all located 320 km from this proposal on another tower (ASRN 1038000). Since the distance from the KKEG proposal is greater than 0.3 km these facilities are not considered in this Radio Frequency Assessment.
 - 4) The FMModel Program was used for all calculations for the FM station contributions. The EPA single bay dipole antenna was used unless otherwise noted.

(circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the WWWQ auxiliary antenna system will contribute 0.0076 mw/cm^2 .⁵ Based on exposure limitations for a controlled environment, 0.8% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 3.8% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The proposed KQSM-FM auxiliary antenna system will be mounted with its center of radiation 91 meters (299 feet) above the ground at the existing tower location and will operate with an effective radiated power of 0.6 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the tower, the height of an average person, the KQSM-FM auxiliary antenna system will contribute 0.003 mw/cm^2 .⁶ Based on exposure limitations for a controlled environment, 0.2% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 1.5% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The KEGW-LD Channel 30 antenna system is mounted on an adjacent tower with its center of radiation 87 meters (285 feet) above the ground and operates with an effective radiated power of 15 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiated field of 0.1. As such, the calculations of the WIRE-CA antenna are based on a power of 1.5 kilowatt (1,500 watts). At 2.0 meters above the ground at the base of the tower, the height of an average person, the KEGW-LD antenna system contributes 0.0003 mw/cm^2 . Based on exposure limitations for a controlled

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- 5) This level of field occurs at 24.0 meters out from the base of the tower and is considered worst case.
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environment of 1.89 mw/cm^2 , less than 0.1% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. Based on exposure limitations for uncontrolled environments of 0.38 mw/cm^2 , 0.1% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of the proposed KKEG auxiliary antenna, the proposed KQSM-FM auxiliary antenna and KEGW-LD, a total of 5.4% of the uncontrolled limit is reached 2.0 meters above the ground at the base of the tower. Since this level for uncontrolled environments is less than the 100% limit defined by the Commission, the proposed KQSM-FM auxiliary antenna system facility is believed to be in compliance with the radio frequency radiation exposure limits, as required by the Federal Communications Commission. Further, Cumulus will post warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, Cumulus will reduce the power of the facility or cease operation, in cooperation and coordination with other tower users, as necessary, to protect persons having access to the site, tower or antenna from radio frequency radiation in excess of FCC guidelines.

FM Model

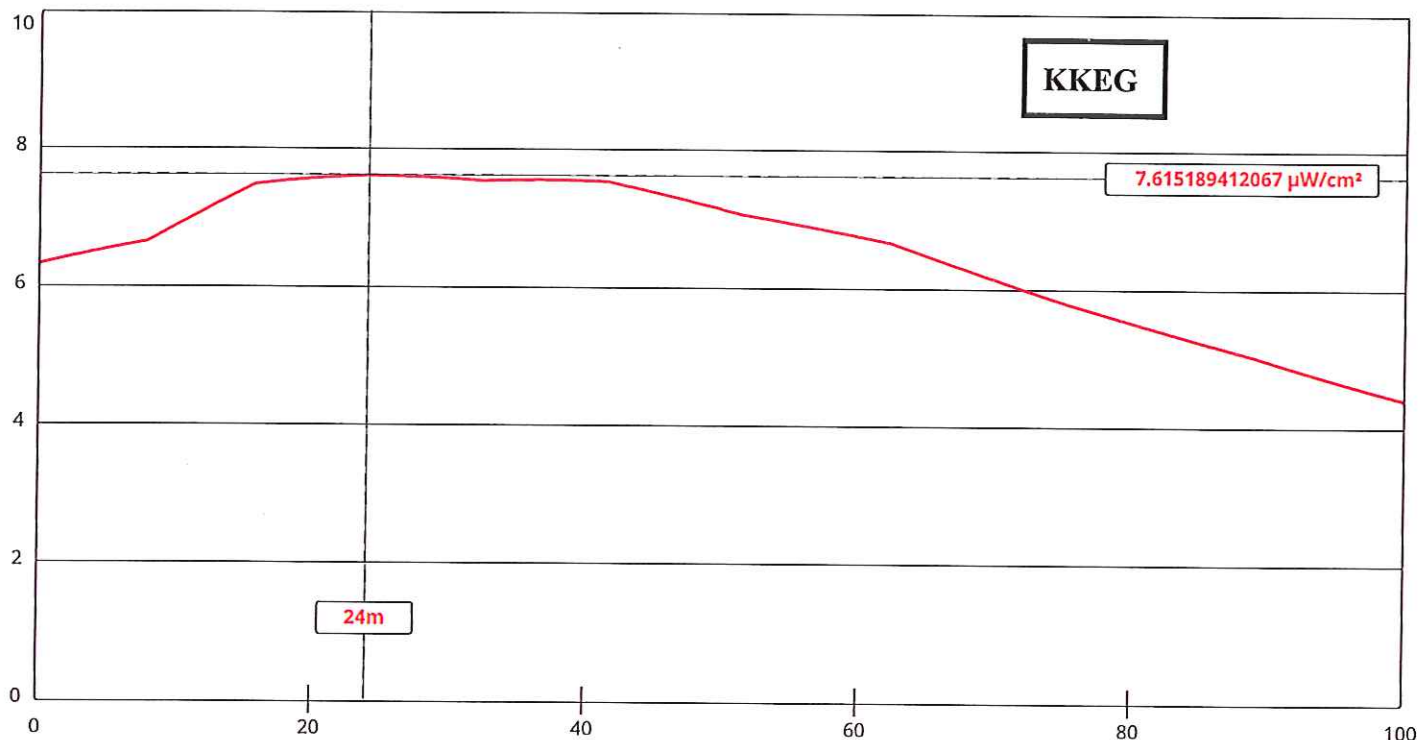
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The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntOFieldOp=0&ExtOFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Txt\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=hj-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionI&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL)

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Channel Selection	Channel 252 (98.3 MHz) ▼		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	<input type="text" value="91"/>	Distance (m)	<input type="text" value="100"/>
ERP-H (W)	<input type="text" value="1500"/>	ERP-V (W)	<input type="text" value="1500"/>
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Num of Points	<input type="text" value="500"/>	Apply	

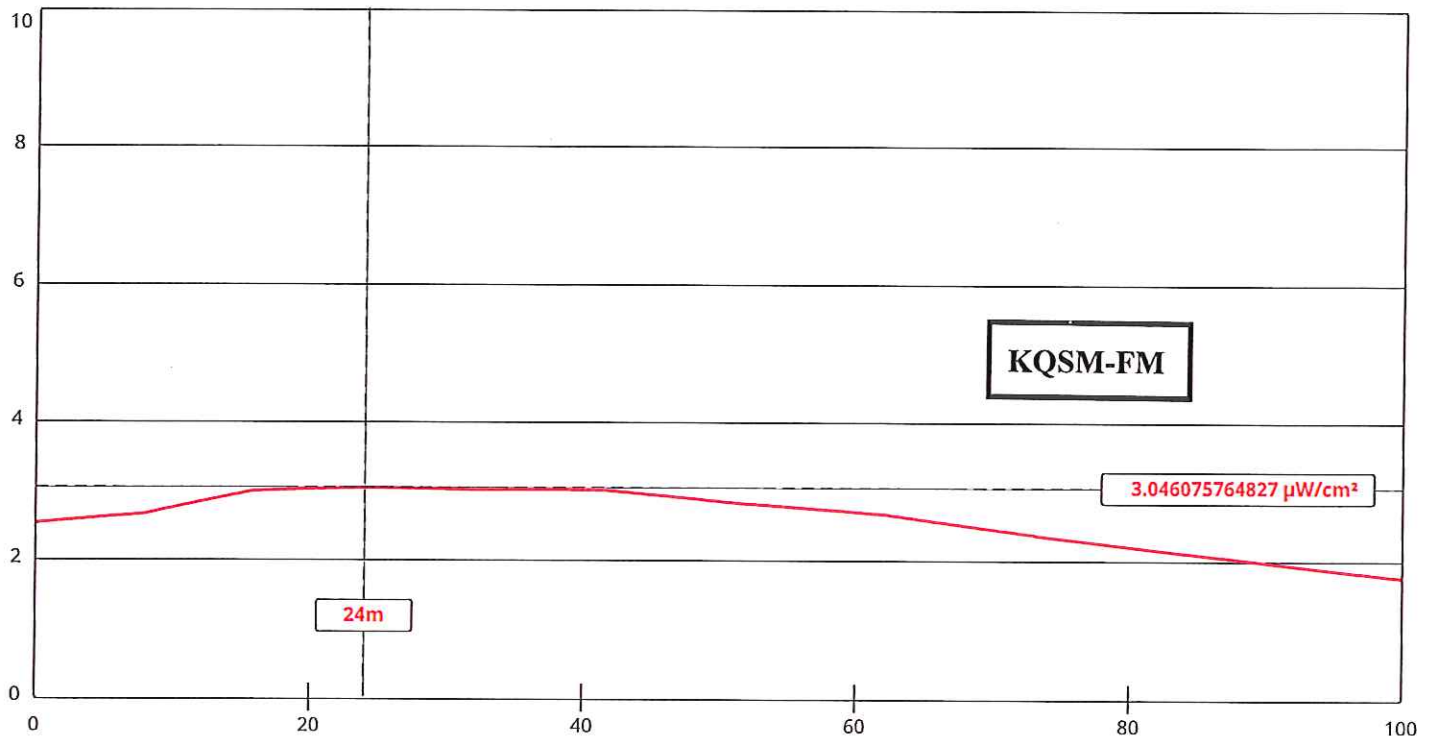
FM Model

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Channel Selection	Channel 221 (92.1 MHz) ▼		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	91	Distance (m)	100
ERP-H (W)	600	ERP-V (W)	600
Num of Elements	1	Element Spacing (λ)	1
Num of Points	500	Apply	