September 2014
FM Booster KAAZ-FM1
Park City, Utah Channel 294D
Allocation Study

The purpose of the instant application is to implement a channel change in the licensed booster facility KAAZ-FM1 at Park City, Utah. In order to accommodate changes at other communities, the Commission's Report and Order in MB Docket No. 05-243 ordered KAAZ-FM to change from Channel 293C to Channel 294C at Spanish Fork. This application specifies Channel 294D operation at the booster station's licensed transmitter site.

Separate applications are being filed to modify the KAAZ-FM main and auxiliary facilities to the station's new frequency.

The attached spacing study shows the spacing between the proposed booster site and the location of cochannel and adjacent channel stations and proposals, and demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation. Since KAAZ-FM1 operates with Class C2 equivalent technical parameters, this study was made with the Commission's Class C2 spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Commission's Rules.

It should be noted that while FM station KEGH Brigham City is currently licensed on Channel 295C1 (i.e. first-adjacent to the proposed operation), the Report and Order in MB Docket No. 05-243 (i.e. the same proceeding in which KAAZ-FM has been ordered to modify to Channel 294C), ordered KEGH to change to Channel 296C at Woodruff. KEGH holds a construction permit for that modification. Since KAAZ-FM and its booster will not be able to implement their channel changes until KEGH implements its own, the KEGH license should not be considered an impediment to grant of the instant application.

There are no spacing or contour protection requirements for an FM booster, to stations which are cochannel or on the second- and third-adjacent channels to the proposed operation. These are shown on the spacing study only for reference.

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SEARCH PARAMETERS FM Database Date: 140922

Channel: 294C2 106.7 MHz

Latitude: 40 51 20

Longitude: 111 28 48

Safety Zone: 50 km

Job Title: KAAZ-FM1 PARK CITY

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)		Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KMGR	RANDOLPH	240C	89.000			40-52-16	87.4	40.90	35
CP	UT	BPH-80409ACT	95.9	647.0		110-59-43		5.90	CLOSE
KBMG-FM1	BOUNTIFUL	291D	1.200		DA	40-50-05	266.1	32.76	0
LIC	UT	BLFTB-50316ABF	106.1	0.0		111-52-03		0.00	BOOST
KBMG-FM4	OGDEN	291D	0.500		DA	41-20-32	320.9	69.94	0
LIC	UT	BLFTB-50316ABA	106.1	0.0		112-00-30		0.00	BOOST
KBMG-FM3	PROVO	291D	0.600		DA	40-18-00	192.7	63.23	0
LIC	UT	BMLFTB-90416AMA	106.1	0.0		111-38-38		0.00	BOOST
KBMG-FM2	SALT LAKE CITY	291D	2.100		DA	40-48-29	261.4	34.96	0
LIC	UT	BLFTB-90416ALS	106.1	0.0		111-53-23		0.00	BOOST
KBMG	EVANSTON	291C	89.000			40-52-16	87.4	40.90	105
LIC	WY	BLH-40324AGC	106.1	647.0		110-59-43		-64.10	SHORT
K292DA	TABIONA, ETC.	292D	0.076		DA	40-21-41	133.1	80.20	0
LIC	UT	BLFT-880201TA	106.3	1001.0		110-47-20		0.00	TRANS
	EVANSTON	292C	0.000			40-52-16	87.4	40.90	105
RSV	WY	RM-11363	106.3	0.0		110-59-43		-64.10	SHORT
KAAZ-FM1	PARK CITY	293D	1.000		DA	40-51-20	0.0	0.00	0
LIC	UT	BLFTB-70920ACC	106.5	0.0		111-28-48		0.00	BOOST
KAAZaux	SPANISH FORK	293C	0.410			40-39-35	250.5	64.68	0
LIC	UT	BXLH-80409AAV	106.5	1020.0		112-12-05		0.00	AUX
KAAZ-FM	SPANISH FORK	293C	25.000			40-39-34	250.5	64.69	188
LIC	UT	BLH-21125AAT	106.5	1140.0		112-12-05		-123.31	SHORT
	SPANISH FORK	294C	0.000			40-39-34	250.5	64.69	249
RSV	UT	RM-11363	106.7	0.0		112-12-05		-184.31	SHORT
KMRZ-FM	SUPERIOR	294C1	7.000			41-25-28	71.4	207.04	224
LIC	WY	BLH-80801ARA	106.7	482.0		109-07-54		-16.96	SHORT

SEARCH PARAMETERS FM Database Date: 140922

Channel: 294C2 106.7 MHz
Latitude: 40 51 20
Longitude: 111 28 48
Safety Zone: 50 km
Job Title: KAAZ-FM1 PARK CITY

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)		Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KEGH	BRIGHAM CITY		295C1	5.200		41-47-03	328.9	120.83	158
LIC	UT	BLH-11018APA	106.9	660.0		112-13-55	SS	-37.17	SHORT
NOTE: TO CHANNEL 296C PER R&O IN DOCKET 05-243									
K295BW	NEPHI		295D	0.006		39-29-31	191.1	154.27	0
CP	UT	BNPFT-30327AMI	106.9	942.0		111-49-37		0.00	TRANS
KEGH-FM2	BOUNTIFUL		296D	2.200	DA	40-50-05	266.1	32.76	0
CP	UT	BNPFTB-31209XEB	107.1	0.0		111-52-03		0.00	BOOST
K296AF	HEBER		296D	0.012		40-33-36	179.3	32.82	0
LIC	UT	BLFT-89	107.1	878.0		111-28-32		0.00	TRANS
KEGH-FM1	OGDEN		296D	0.500	DA	41-20-32	320.9	69.94	0
CP	UT	BNPFTB-31209XDO	107.1	0.0		112-00-30		0.00	BOOST
KEGH-FM4	PROVO		296D	1.750	DA	40-14-56	190.4	68.49	0
CP	UT	BNPFTB-31209XFU	107.1	0.0		111-37-33		0.00	BOOST
KEGH-FM3	SALT LAKE CITY		296D	2.100	DA	40-48-27	261.3	34.97	0
CP	UT	BNPFTB-31209XFJ	107.1	0.0		111-53-23		0.00	BOOST
KEGH	WOODRUFF		296C	89.000		40-52-16	87.4	40.90	105
CP	UT	BPH-80328AAL	107.1	647.0		110-59-43		-64.10	SHORT

==== END OF FM SPACING STUDY FOR CHANNEL 294 ====

September 2014
FM Booster KAAZ-FM1
Park City, Utah Channel 294D
RF Exposure Study

Facilities Proposed

The proposed booster operation will be on Channel 294D (106.7 MHz) with an effective radiated power of 1 kilowatt. Operation is proposed with the existing Jampro JCPD-2/1(2), 2-level directional panel antenna that is currently used by KAAZ-FM1. The antenna, which is installed on a tower at the Lewis Peak Communications Site, is shared with several other FM booster stations.

The antenna support structure does not exceed 200 feet above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

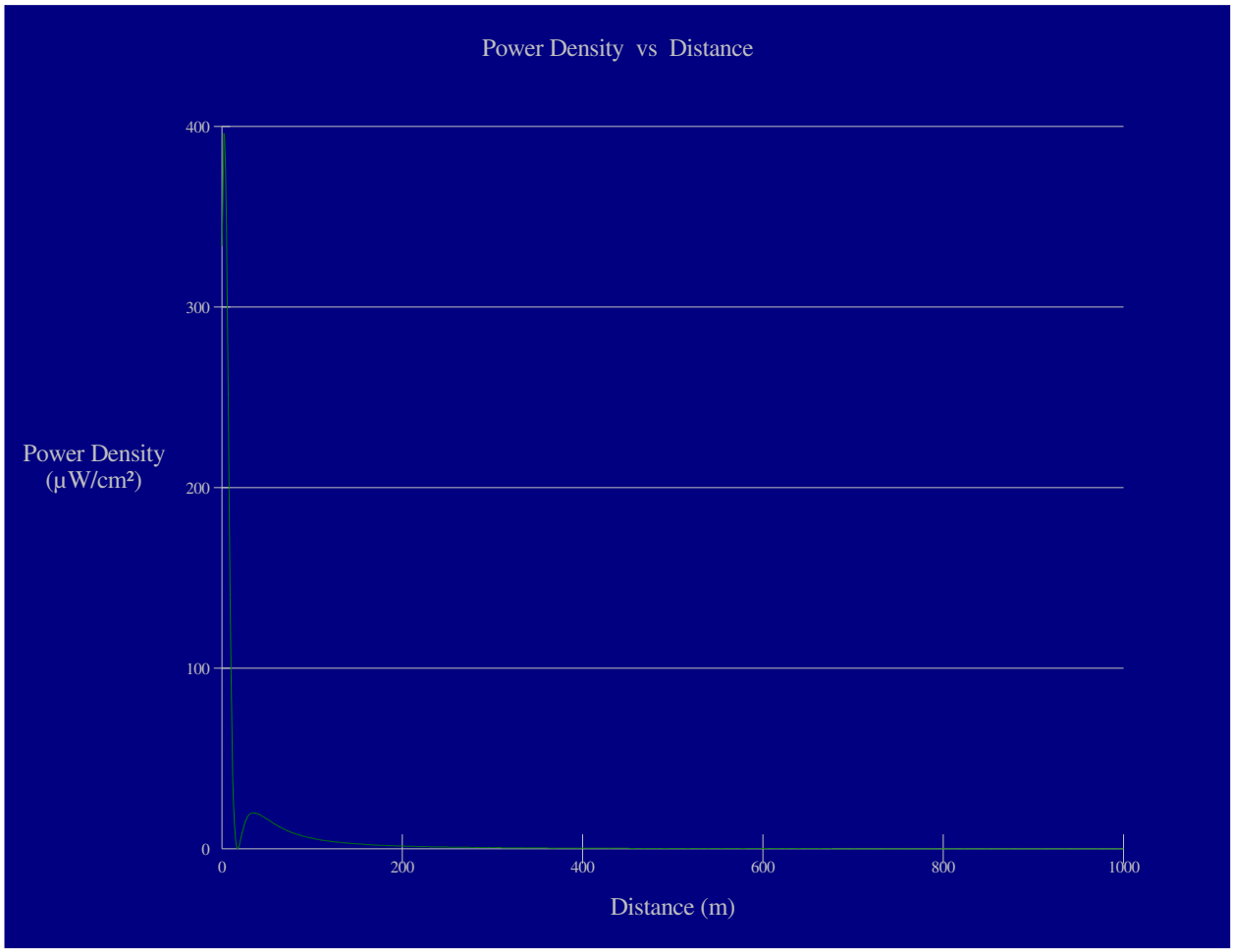
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

The Commission's FMModel software does not include an element model for a panel antenna. Therefore, calculations of the power density produced by the proposed antenna system assume

a Type 1 element pattern, which is the “worst case” element pattern for a “ring stub” antenna. Under this worst-case assumption, the highest calculated ground level power density from KAAZ-FM1 alone occurs at a distance of 2 meters from the base of the antenna support structure. At this point the power density is calculated to be 396.2 $\mu W/cm^2$, which is 39.6% of 1000 $\mu W/cm^2$ (the FCC standard for controlled environments).

Panel antennas are widely acknowledged to have vertical plane radiation patterns which result in lower ground-level power density values than use of the ring-stub element model would indicate. Furthermore, the modification proposed herein involves only a change in the station’s output channel, with no change in the transmitter site location, antenna height, antenna model, or ERP. Therefore there is not expected to be any resultant change in the ground-level power densities at the transmitter site.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.



Ground-Level RF Exposure **OET FMModel**

KAAZ-FM1 Park City

Antenna Type: Jampro JCPD-2/1(2) (“ring stub” element model assumed)
No. of Elements: 2
Element Spacing: 1.0 wavelength

Distance: 1000 meters
Horizontal ERP: 1000 W
Vertical ERP: 1000 W

Antenna Height: 12 meters AGL

Maximum Calculated Power Density is 396.2 µW/cm^2 at 2 meters from the antenna structure.