

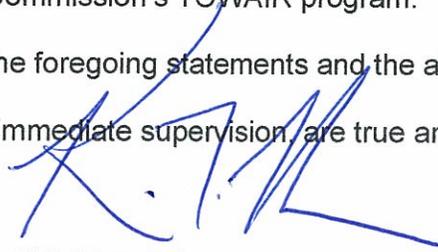
ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of KSAZ LICENSE, INC., licensee of television translator K55BW, Channel 55 on Madera Peak, Arizona, in support of this Application for Construction Permit to specify operation on Channel 22 from the corrected K55BW site. This proposal is being submitted in response to the Commission's reclamation of Channel 55 spectrum for future auction, thereby placing this translator in a displacement situation.

It is proposed to mount a Scala directional antenna at the 12-meter level of an existing 43-meter communications tower. Exhibit B is a map upon which the predicted service contours are plotted. It is important to note that the newly proposed 74 dBu contour encompasses a significant portion of that which obtains from the licensed K55BW facility. Operating parameters for the proposed facility are tabulated in Exhibit C. A contour overlap analysis and interference study are provided in Exhibit D, and a power density calculation follows as Exhibit E.

Because no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. Due to the diminutive height of the tower, and its proximity to the nearest airport, the structure does not require FCC registration. This conclusion is supported by the Commission's TOWAIR program.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.



KEVIN T. FISHER

September 2, 2008

**CONTOUR POPULATION**  
GRADE A (74 DBU) : 18,269  
GRADE B (64 DBU) : 19,762

**SMITH and FISHER**

Gila

GRADE B

GRADE A

Miami

Globe

K55BW

San Carlos

Peridot

Superior

Kearny

Scale 1:350,000



**EXHIBIT B**



## PROPOSED OPERATING PARAMETERS

PROPOSED K55BW  
CHANNEL 22 – MADERA PEAK, ARIZONA

Transmitter Power Output:	0.1 kw
Transmission Line Efficiency:	78.7%*
Antenna Power Gain – Toward Horizon:	12.5
Antenna Power Gain – Main Lobe:	12.5
Effective Radiated Power – Toward Horizon:	1.0 kw
Effective Radiated Power – Main Lobe:	1.0 kw
Transmitter Make and Model:	Type-accepted
Rated Output	100 watts
Transmission Line Make and Model:	Andrew LDF7-50A
Size and Type:	1-5/8" foam heliax
Length:	60 feet**
Antenna Make and Model:	Scala 2X2K723147
Orientation	45 degrees true
Beam Tilt	3.0 degrees
Radiation Center Above Ground:	12.2 meters
Radiation Center Above Mean Sea Level:	2035 meters

\*includes combiner loss

\*\*estimated

CONTOUR OVERLAP AND  
LONGLLEY-RICE INTERFERENCE STUDIES  
PROPOSED K55BW  
CHANNEL 22 - MADERA PEAK, ARIZONA

We conducted a computer analysis of the interference situation for the proposed facility, the results of which are shown in Exhibit D-2. The study is based on contour protection requirements of Sections 74.705, 74.706, and 74.707 of the FCC's Rules with respect to analog full-power, digital full-power, and low power television stations, respectively. It concludes that the facility proposed herein meets these requirements except to two stations: KNAZ-DT, Channel 22 in Flagstaff, Arizona; and, KPSN-LP, Channel 22 in Payson, Arizona.

We then conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to these facilities of concern. The software utilizes a 1-square kilometer cell size, calculates signal strength at 0.1 kilometer increments along each radial studied, and employs the 1990 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within the protected contour of the station under study where interference from another source (other than proposed K55BW) already is predicted to exist (also known as "masking"). The results of these studies are provided in Exhibit D-3. They conclude that the facility proposed herein causes no significant new interference to any of the potentially affected stations.

EXHIBIT D-1

As a result, waivers of Section 74.706 of the Commission's Rules with respect to interference to KNAZ-DT and Section 74.707 with regard to KPSN-LP are requested and believed to be justified based on the aforementioned Longley-Rice studies.



## INTERFERENCE SUMMARY

PROPOSED K55BW  
CHANNEL 22 - MADERA PEAK, ARIZONA

<u>Call Sign</u>	<u>Status</u>	<u>City, State</u>	<u>Ch.</u>	<u>Longley-Rice Service Population</u>	<u>Unmasked Interference From Proposed Facility</u>	<u>%</u>
*KNAZ-DT BMPCDT-20020603AAP	CP	Flagstaff, AZ	22	163,505	16	<0.1
*KPSN-LP BLTTL-19970522JI	Lic.	Payson, AZ	22	11,113	0	0

\*Study utilized 1.0-kilometer cell size and 0.1-kilometer increment spacing.

POWER DENSITY CALCULATION  
PROPOSED K55BW  
CHANNEL 22 – MADERA PEAK, ARIZONA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Madera Peak facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1.0 kw, an antenna radiation center 12.2 meters above ground, and the vertical pattern of the Scala antenna, maximum power density two meters above ground of  $0.0042 \text{ mw/cm}^2$  is calculated to occur 4 meters northeast of the base of the tower. Since this is only 1.2 percent of the  $0.35 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 22 (518-524 MHz), this proposal may be excluded from consideration with respect to public exposure to nonionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive nonionizing radiation.