

Technical Exhibit to support changes to K286AO License

This exhibit supports a form 2100/350 for very slight changes to K286AO. Two changes are explained and ongoing compliance is verified.

The K286AO antenna has been moved down four meters (within the “plus two/minus four meter” rule allowed by 74.1251 (ii) and (iii)). This change allows K286AO to share its feedline and antenna with new station K235CZ. Changes in coverage, allocation and RF levels are de minimus. A new license to cover is being filed for K235CZ.

The input station is changing from KPET(AM) to KHLK (FM) FID# 61581, Permission from the President of their licensee is included in this report.

By lowering the antenna four meters, and installing a combiner K235CZ and K286AO will share a line and antenna. The 600 watt transmitter has been operating at 406 watts. Power will be raised to overcome the 1.04db loss of the combiner.

As the K286AO changes did not require a CP, there was chance to add a shared station condition. Measurements were made to verify compliance with pertinent Parts of 74.1236 & 73.317. A combiner is used to let both translators share the height adjusted antenna. Spurious measurements have been made with an Anritsu 2712B spectrum analyzer. Unwanted FM products were in excess of 73 db down from unmodulated carriers. KPET (AM) was rechecked for spurs using a Chris Scott Loop antenna and the Anritsu spectrum analyzer.

The site is rural, located outside the south edge of Lamesa. The tower base is fenced and posted for 250 watt KPET (AM), 250 watt H&V K286AO and 250 watt H&V K235CZ. Adjoining land is used by a landfill, a sewer plant and dirt storage for a road crew.

Permission from Mr. Bruce Munsterman, President of Houston Christian Broadcasters to allow K286AO (FX) Lamesa, Texas to rebroadcast their KHLK (FM) FID# 61581

<<David,

Good to hear from you and yes, you may rebroadcast KHLK Brownfield! We whole heartedly give permission to do this.

We appreciate your helpfulness in extending the outreach of this station by retransmitting the programming onto 105.1FM, K286AO Lamesa in and around Lamesa. Let us know if there's anything you need to help with this effort.

If you need something on letterhead for your files, please let me know, otherwise this email will be sufficient for our purposes.

Thanks again and take care!

Bruce Munsterman
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"Keeping Him Close By"
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Pertinent Part of 74.1251

§ 74.1251 Technical and equipment modifications.

(a) No change, either mechanical or electrical, except as provided in part 2 of this chapter, may be made in FM translator or booster apparatus which has been certificated by the Commission without prior authority of the Commission.

(b) Formal application on FCC Form 349 is required of all permittees and licensees for any of the following changes:

(1) Replacement of the transmitter as a whole, except replacement with a transmitter of identical power rating which has been certificated by the FCC for use by FM translator or FM booster stations, or any change which could result in the electrical characteristics or performance of the station. Upon the installation or modification of the transmitting equipment for which prior FCC authority is not required under the provisions of this paragraph, the licensee shall place in the station records a certification that the new installation complies in all respects with the technical requirements of this part and the terms of the station authorization.

(2) A change in the transmitting antenna system, including the direction of radiation or directive antenna pattern.

(3) Any change in the overall height of the antenna structure except where notice to the Federal Aviation Administration is specifically not required under § 17.14 (b) of this chapter.

(4) Any change in the location of the translator or booster except a move within the same building or upon the same pole or tower.

(5) Any horizontal change in the location of the antenna structure which would (i) be in excess of 152.4 meters (500 feet), or (ii) would require notice to the Federal Aviation Administration pursuant to § 17.7 of the FCC's rules.

(6) Any change in the output frequency of a translator.

(7) Any increase of authorized effective radiated power. FM translator and booster stations may decrease ERP on a modification of license application provided that exhibits are included to demonstrate that the following requirements are met:

(i) The license application may not propose to eliminate the authorized horizontally polarized ERP, if a horizontally polarized ERP is currently authorized;

(ii) The installed height of the antenna radiation center is not increased by more than two meters nor decreased by more than four meters from the authorized height for the antenna radiation center; and

(iii) The station is not presently authorized with separate horizontal and vertical antennas mounted at different heights. Use of separate horizontal and vertical antennas requires a construction permit before implementation or changes.

K286AO is 4 meters lower than licensed, so that it can share an antenna with K235CZ. Antenna is a "Double Vee" design. It does not have separate H or V elements.

(8) Any change in area being served.

(c) Changes in the primary FM station being retransmitted must be submitted to the FCC in writing.

(d) Any application proposing a change in the height of the antenna structure or its location must also include the Antenna Structure Registration Number (FCC Form 854R) of the antenna structure upon which it proposes to locate its antenna. In the event the antenna structure does not have a Registration Number, either the antenna structure owner shall file FCC Form 854 ("Application for Antenna Structure Registration") in accordance with part 17 of this chapter or the applicant shall provide a detailed explanation why registration and clearance are not required.

[35 FR 15388 , Oct. 2, 1970, as amended at 45 FR 26068 , Apr. 17, 1980; 47 FR 24580 , June 7, 1982; 50 FR 3525 , Jan. 25, 1985; 50 FR 23710 , June 5, 1985; 55 FR 50698 , Dec. 10, 1990; 61 FR 4368 , Feb. 6, 1996; 63 FR 33879 , June 22, 1998; 63 FR 36606 , July 7, 1998; 65 FR 79780 , Dec. 20, 2000]

Emission Checks (Pertinent Parts of 74.1236 & 73.317)

§ [74.1236](#) Emission and bandwidth.

(a) The license of a station authorized under this subpart allows the transmission of either F3 or other types of frequency modulation (see § [2.201](#) of this chapter) upon a showing of need, as long as the emission complies with the following:

(1) For transmitter output powers no greater than 10 watts, paragraphs (b), (c), and (d) of this section apply.

(2) For transmitter output powers greater than 10 watts, § [73.317](#) (a), (b), (c), and (d) apply.

(b) Standard width FM channels will be assigned and the transmitting apparatus shall be operated so as to limit spurious emissions to the lowest practicable value. Any emissions including intermodulation products and radiofrequency harmonics which are not essential for the transmission of the desired aural information shall be considered to be spurious emissions.

(c) The power of emissions appearing outside the assigned channel shall be attenuated below the total power of the emission as follows:

Distance of emission from center frequency Minimum attenuation below unmodulated carrier
120 to 240 kHz 25 dB
Over 240 and up to 600 kHz 35 dB
Over 600 kHz 60 dB

(d) Greater attenuation than that specified in paragraph (c) of this section may be required if interference results outside the assigned channel.

[[35 FR 15388](#) , Oct. 2, 1970, as amended at [52 FR 31406](#) , Aug. 20, 1987; [55 FR 50698](#) , Dec. 10, 1990]

§ [73.317](#) FM transmission system requirements.

(a) FM broadcast stations employing transmitters authorized after January 1, 1960, must maintain the bandwidth occupied by their emissions in accordance with the specification detailed below. FM broadcast stations employing transmitters installed or type accepted before January 1, 1960, must achieve the highest degree of compliance with these specifications practicable with their existing equipment. In either case, should harmful interference to other authorized stations occur, the licensee shall correct the problem promptly or cease operation.

(b) Any emission appearing on a frequency removed from the carrier by between 120 kHz and 240 kHz inclusive must be attenuated at least 25 dB below the level of the unmodulated carrier. Compliance with this requirement will be deemed to show the occupied bandwidth to be 240 kHz or less.

(c) Any emission appearing on a frequency removed from the carrier by more than 240 kHz and up to and including 600 kHz must be attenuated at least 35 dB below the level of the unmodulated carrier.

(d) Any emission appearing on a frequency removed from the carrier by more than 600 kHz must be attenuated at least $43 + 10 \text{ Log}_{10}$ (Power, in watts) dB below the level of the unmodulated carrier, or 80 dB, whichever is the lesser attenuation.

(e) Preemphasis shall not be greater than the impedance-frequency characteristics of a series inductance resistance network having a time constant of 75 microseconds. (See upper curve of Figure 2 of § [73.333](#).)

[[51 FR 17028](#) , May 8, 1986]

Information in this exhibit was prepared by me. Most was from personal observation. Certain information came from publicly available databases and is believed accurate. Please call or e-mail if additional information is needed.

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