

TECHNICAL SUMMARY  
STA REQUEST  
LOW POWER DIGITAL STATION KVHF-LD  
FRESNO, CALIFORNIA  
CHANNEL 5 2.05 KW (ND)

1. The instant application is for an STA to operate KVHF-LD on in-core channel 5 at Fresno, California with a directional antenna maximum effective radiated power (ERP) of 2.05 kW using a Scala 2xCL-46/CV log-periodic directional antenna array with circular polarization and main lobe orientation of 214 degrees true. The antenna radiation center height will be 1402.5 m AMSL. There is no change in the overall structure height of the existing structure (no ASRN).

2. Eligibility/Pre-Transition Channel Availability: KVHF-LD received a 120 day letter from T-Mobile, which is attached to this application, indicating that the current KVHF-LD operation on channel 42 would likely interfere with its new 600 MHz band license. Therefore, pursuant to the FCC's Public Notice dated June 14, 2017 entitled *"Incentive Auction Task Force and Media Bureau Set Forth Tools Available to LPTV/Translator Stations Displaced Prior to the Special Displacement Window"* (DA 17-584, MB Docket No. 16-306, GN Docket No. 12-268), KVHF-LD is eligible to submit this STA to operate on channel 5, which is a currently available channel.

3. Interference Compliance: As indicated in the attached *TVStudy* analysis summary, KVHF-LD's proposed channel 5 STA operation meets the FCC's interference protection requirements with respect to all protected facilities based on both the pre- and post-transition allocation environments. A cell size of 1.0 km and a profile resolution of 0.1 km points/km were utilized for the *TVStudy* analysis.

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed antenna will be located 36.5 meters above ground level on the existing 41.1 meter supporting structure. The total digital ERP is 4.1 kW (circular polarization). A greater than expected vertical plane relative field value of 0.4 is presumed for the antenna's steep downward radiation (-60° to -90° elevation, see attached vertical plane relative field pattern). The calculated power density at a point 2 meters above

ground level is  $18.4 \text{ uW/cm}^2$  which is 9% of the FCC's recommended limit of  $200 \text{ uW/cm}^2$  for channel 5 for an uncontrolled environment. However, as this is a multi-user site, measurements will be made to substantiate compliance.

Access to the transmitting site shall be restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.