

KXDP-LD – 90 day STA status report to FCC

Syncom Media Group, Inc. (“Licensee”), licensee of LPTV station KXDP-LD, Denver, CO (Facility ID 67552), herein provides the written report requested in the July 16, 2021 letter from Barbara A. Kreisman (LMS File No. Call Sign File Number KXDP-LD 0000152265, relative to KXDP-LD’s operation with an ATSC 3.0 DTV signal on RF channel 6 (82-88 MHz), combined with an analog FM signal on 87.75 MHz radiating from the same antenna.¹

The above referenced letter requested the following information in the report:

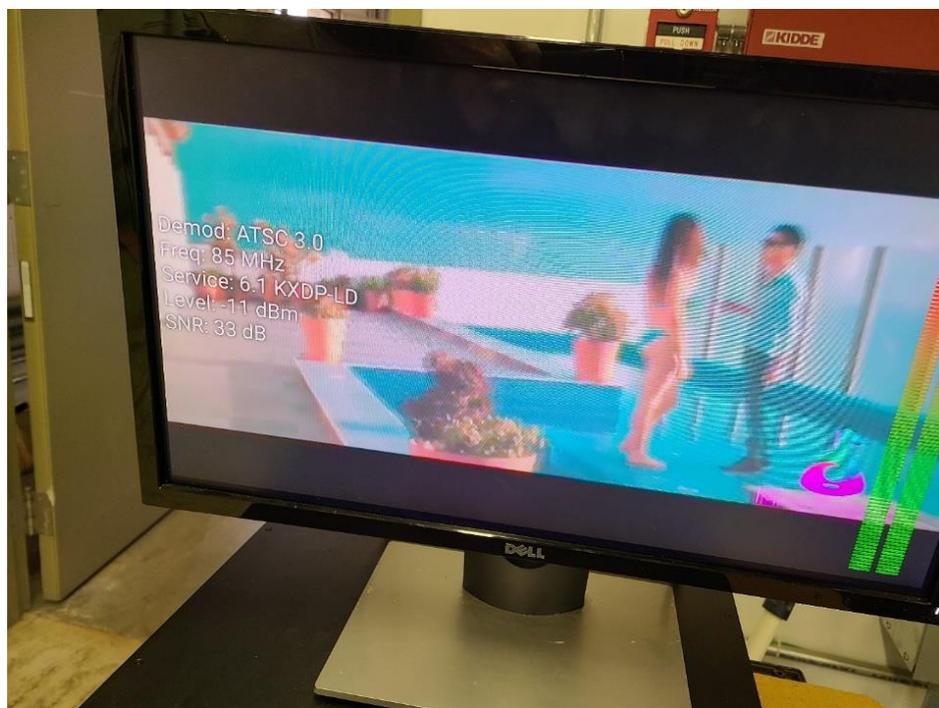
- Details of any reports of interference to other licensed users the station has received
- Details of any interference between KXDP-LD’s video and audio services that in any way limits the coverage of its video
- A demonstration that KXDP-LD’s audio and video coverage reach similar populations

The first item can be addressed immediately. As of the date of this report, KXDP-LD has not received any reports of interference between KXDP-LD’s video or audio services and any other licensed users.

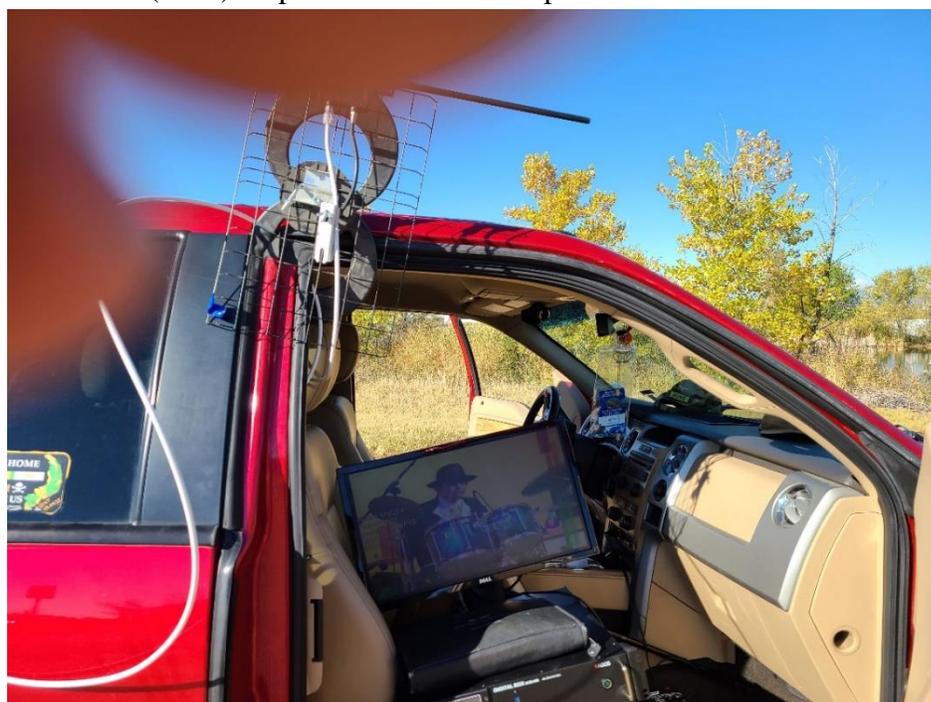
As of the date of this report, KXDP-LD has not received any reports of interference between KXDP-LD’s video and audio services.

To further address the second and third request, KXDP-LD performed a field test on Friday, October 15, 2021, to measure the actual reception in the field. The tests were performed using an Anywave/AGOS AG-DBUHD1000 Digital Box as the ATSC 3.0 receiver, which has a front panel display of the signal parameters, as well as having an HDMI output to allow video and audio to be viewed and heard on a standard TV set. A photo of this receiver is shown below.

¹ By email dated October 4, 2021, Shaun Maher of the Video Division of the FCC granted a one week extension of time to submit this report.



The receive antenna used is a Clear Stream 2V Antenna. Tests were made at the transmitter site, inside the building, very near the base of the tower, and then at six other sites in the area at varying distances from the transmitter tower. The receiver was located inside a Ford F150 pickup truck and measurements were made by stopping at the various locations, holding the receive antenna outside of the vehicle, and watching the display for best signal strength and signal to noise ratio (SNR). A photo of the test setup is shown below.





Eldorado Mountain KXDP antenna on right

<u>Location description</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>	<u>Distance from tower</u>	<u>Received signal level</u>	<u>Received SNR</u>	<u>Video displayed?</u>	<u>FM received</u>
Tower site - inside building	39-54-47.9	105-17-34.9	~50 feet	-11 dBm	32 dB	Yes	Yes

CO 119 & I 25 Longmont 80504	40-9-36 N	104-59-21 W	25 miles	-50 dBm	18 dB	Yes	Yes
CO 7 & I 25 Broomfield 80023	40-0-22 N	104-58-56 W	30 miles	-48 dBm	27 dB	Yes	Yes
Thornton Pkwy Thornton 80229	39-52-5 N	104 -9-10 W	30 miles	-45 dBm	25 dB	Yes	Yes
5676 Eudora St Commerce City 80222	39-47-56 N	104-55-56 W	35 miles	-53 dBm	15 dB	Yes	Yes
E. 26 th Ave Aurora 80011	39-45-16 N	104-48-53 W	35 miles	-60 dBm	11 dB	Yes	Yes

The transmit antenna is a Directional Antenna - Antenna Make/Model: Propagation System Inc three element circularly polarized Antenna PSIFML-3B-DA. The terrain around the Denver metropolitan area consists of rolling terrain varying in elevation. The direction of the receive sites from the transmit tower was varied greatly in elevation with mature trees and structures in the path.

The FM reception was simply monitored by tuning the vehicle radio to the 87.75 MHz signal of KXDP-LD's FM carrier, noting whether audio was received. There was no audible interference noted in any of the test locations.

The ATSC 3.0 signal parameters utilized in this instance were as follows:

FFT size – 8K

Guard interval – 5/1024

Modulation – 64 QAM

Reduced carrier - 4 (narrowest occupied bandwidth) Code
rate 7/15

CTI depth – 1024

FEC type – BCH + 64K LD

Changing of these transmission parameters would affect the coverage capabilities of the DTV signal – for example, changing to QPSK modulation would allow reception in a larger area, albeit with a reduction in data throughput capacity, while a higher order modulation (e.g., 4096 QAM) would have the opposite effects.

In conclusion, we are confident from our testing that we find no evidence that the addition of the FM analog signal in the channel 6 frequencies (82-88 MHz) causes interference that would limit the coverage of the DTV signal. In addition, in testing over a significant part of the overall coverage area, we find that the DTV and FM signals have similar coverage and reach similar populations. As noted, the parameters of the ATSC 3.0 DTV signal can be set to different values that could affect the DTV coverage positively or negatively. But in the typical example that KXDP has used, the coverage appears to be quite similar.