TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
LOW POWER DIGITAL STATION K28PO-D
LAKE HAVASU CITY, ARIZONA
CHANNEL 28 15 KW (DA)

1. Application Purpose: The instant application proposes to change the licensed K28PO-D directional antenna system from a Scala model 4DR-16S to a Kathrein model 4x1 750 0000049 E-pol panel array, increase the ERP from 2.34 kW (horizontal polarization) to 15 kW (elliptical polarization) and decrease the antenna height by 6 meters. No other changes are proposed.

2. Interference Compliance: As indicated in the attached *TVStudy* analysis summary, K28PO-D's proposed 15 kW operation meets the FCC's interference protection requirements with respect to all protected facilities. A cell size of 1.0 km and a profile resolution of 1.0 km points/km were utilized for the *TVStudy* analysis.

3. 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 DTV antenna will be located 16 meters above ground level. The total DTV ERP is 21.43 kW (15 kW H-pol, 6.43 kW V-pol). A greater than expected vertical plane relative field value of 0.15 is presumed for the antenna's 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 251.6 uW/cm^2 which is 67.8% of the FCC's recommended limit of 371.3 uW/cm^2 for channel 28 for an uncontrolled environment. Thus, it is believed that the proposed K28PO-D facility is in compliance with the FCC's requirements with regard to RF radiation exposure. However, if necessary, measurements will be made to substantiate compliance with the FCC's RF radiation exposure requirements.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a protocol shall be in effect in the event that workers or other authorized personnel enter the restricted area or climb the supporting structure to ensure that appropriate measures will be taken to assure worker safety with respect to RF energy exposure.

K28PO-D TVSTUDY INTERFERENCE ANALYSIS

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tvstudy v2.2.5 (4uoc83)
Database: localhost,  Study: k28po030,  Model: Longley-Rice
Start: 2023.07.06 12:18:28

Study created: 2023.07.06 12:18:28

Study build station data: LMS TV 2023-07-03

    Proposal: K28PO030 D28 LD APP LAKE HAVASU CITY, AZ
 File number: k28po030
 Facility ID: 43413
Station data: User record
   Record ID: 451
     Country: U.S.

Search options:
Non-U.S. records included

Stations potentially affected by proposal:
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IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	DK14JT	N14	TX	APP	JOSHUA TREE, ETC., CA	BLTVL19980330JH	156.8 km
No	K27DA-D	D27	LD	LIC	BIG SANDY VALLEY, AZ	BLDTT20130308AAI	71.9
No	K27NT-D	D27	LD	LIC	GOLDEN VALLEY, AZ	BLANK0000071725	70.9
No	KASW	D27	DD	LIC	PHOENIX, AZ	BLANK0000204930	255.3
No	KYPO-LD	D27	LD	LIC	TACNA, AZ	BLANK0000179279	114.1
No	KYPO-LD	N27	TX	LIC	TACNA, AZ	BLTTL20080818AAL	114.1
No	K27NR-D	D27	LD	LIC	TOPOCK, AZ	BLANK0000071723	48.2
No	KAZS	D27	DT	CP	YUMA, AZ	BLANK0000212367	177.3
No	KVER-CD	D27	DC	LIC	INDIO, CA	BLANK0000074955	206.5
No	KPVT-LD	D27	LD	LIC	LAS VEGAS, NV	BLANK0000010689	166.7
No	K28OA-D	D28	LD	LIC	COTTONWOOD, AZ	BLANK0000062884	206.3
No	K28CW-D	D28	LD	LIC	FLAGSTAFF, AZ	BLDTT20120731ACI	262.5
No	KGRY-LD	D28	LD	LIC	GILA RIVER INDIAN CO, AZ	BLANK0000157663	255.1
No	DKCOS-LP	N28-	TX	APP	PHOENIX, AZ	BLTTL19990325JD	279.9
No	K28QP-D	D28	LD	CP	SALOME, AZ	BNPDTL20100514AEQ	139.7
No	K28QO-D	D28	LD	CP	SENTINEL, AZ	BNPDTL20100510AAS	221.3
No	KUAS-TV	D28	DT	LIC	TUCSON, AZ	BLEDT20030115ABS	409.7
No	DK28FM	N28z	TX	APP	YUMA, AZ	BLTTL20001006AAL	214.4
No	KZKC-LD	D28	LD	LIC	BAKERSFIELD, CA	BLANK0000090130	395.8
No	KDBK-LD	D28	LD	LIC	BAKERSFIELD, CA	BLANK0000124037	395.8
No	KCET	D28	DT	LIC	LOS ANGELES, CA	BLANK0000193023	341.1
No	KESQ-TV	D28	DT	LIC	PALM SPRINGS, CA	BLANK0000078362	206.5
No	KMPH-TV	D28	DT	LIC	VISALIA, CA	BLANK0000200287	467.4
No	KVPX-LD	D28	LD	LIC	LAS VEGAS, NV	BLDTL20111006ACC	161.3
No	K28EU-D	D28	LD	LIC	LAUGHLIN, ETC., NV	BLDTT20120319ADY	79.3
No	K28CS-D	D28	LD	LIC	PAHRUMP, NV	BLDTT20120206ADH	230.3
No	K28IT-D	D28	LD	LIC	KANAB, UT	BLDTT20100610ACN	320.0
No	K28PE-D	D28	LD	LIC	KANARRAVILLE, ETC., UT	BLANK0000091250	337.4
No	K28EA-D	D28	LD	LIC	WASHINGTON, UT	BLDTT20110630AAO	287.0
No	K29LM-D	D29	LD	LIC	COTTONWOOD, ETC., AZ	BLANK0000062886	206.3
No	K29LO-D	D29	LD	LIC	KINGMAN, AZ	BLANK0000071727	68.1
No	K29FD-D	D29	LD	LIC	LAKE HAVASU CITY, AZ	BLDTT20130308ABP	0.0
No	KTAZ	D29	DT	LIC	PHOENIX, AZ	BLANK0000190913	255.4
No	K29GK-D	D29	LD	LIC	TWENTYNINE PALMS,ETC, CA	BLANK0000136621	156.8
No	K29GK-D	N29-	TX	LIC	TWENTYNINE PALMS,ETC, CA	BLTT20060119ADC	156.8
No	KVCW	D29	DD	LIC	LAS VEGAS, NV	BLANK0000159469	166.5
No	KVTE-LD	N35z	TX	LIC	LAS VEGAS, NV	BLTTL20040811AAP	161.2
No	XHAQ	D28	DT	LIC	MEXICALI, BN	BLANKBPFS20050721AFZ	244.1
No	XHJK	D28	DT	LIC	TIJUANA, BN	BLANKBPFS20091104ADT	339.9

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No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

    Channel: D28
       Mask: Full Service
   Latitude:  34 36  9.00 N (NAD83)
  Longitude: 114 22 16.00 W
Height AMSL: 402.0 m
       HAAT: 48.0 m
   Peak ERP: 2.34 kW
    Antenna: Kat_4x1_750_0000049_E 350.0 deg
Elev Pattrn: Generic
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K28PO-D TVSTUDY INTERFERENCE ANALYSIS

50.1 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.007 kW	29.8 m	5.2 km
45.0	0.006	-13.4	5.0
90.0	0.052	-304.1	8.5
135.0	1.34	-11.2	19.1
180.0	1.64	249.9	42.1
225.0	0.085	167.6	22.5
270.0	0.005	107.4	8.7
315.0	0.007	161.8	11.9

Distance to Canadian border: 1600.3 km

**Proposal is within coordination distance of Mexican border
Distance to Mexican border: 211.8 km

Conditions at FCC monitoring station: Douglas AZ
Bearing: 126.8 degrees Distance: 558.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 50.0 degrees Distance: 1011.3 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

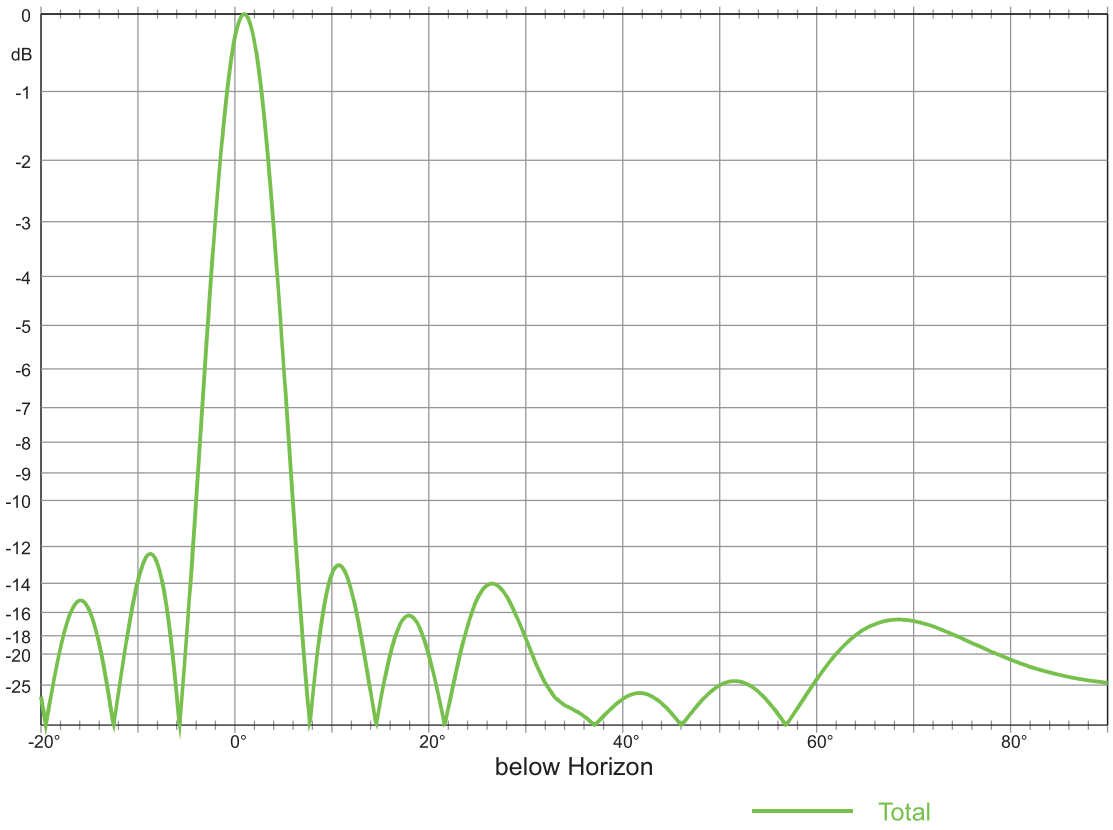
Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	K28PO030	D28	LD	APP	LAKE HAVASU CITY, AZ	k28po030	
Undesireds:	KYPO-LD	D27	LD	LIC	TACNA, AZ	BLANK0000179279	114.1 km
	K27NR-D	D27	LD	LIC	TOPOCK, AZ	BLANK0000071723	48.2
	K28EU-D	D28	LD	LIC	LAUGHLIN, ETC., NV	BLDTT20120319ADY	79.3

Service area		Terrain-limited		IX-free		Percent IX	
1204.7	55,907	1073.7	55,907	951.9	55,907	11.35	0.00

Undesired	Total IX		Unique IX		Prcnt Unique IX	
K27NR-D D27 LD LIC	2.0	0	1.0	0	0.09	0.00
K28EU-D D28 LD LIC	120.8	0	119.8	0	11.16	0.00

Elevation Pattern (cartesian-linear)



Subject to alternation

Antenna, Order No. 7500000049
Number of Bays: 4

Frequency:	557 MHz
Elevation Directivity:	9.66 dBd
Directivity:	17.35 dBd
Downtilt:	1°
Compensation:	13.19 %

No.	Vert. Distance [mm]	Power	Phase [°]
4	3450	1	40.2
3	2300	1	26.9
2	1150	1	13.4
1	0	1	0