

**TECHNICAL STATEMENT
NORTHSTAR PHOENIX LICENSE, LLC.
KPDF-CA 3.02 KW-DA 472 M HAAT CH. 22
PHOENIX, ARIZONA**

Northstar Phoenix License, LLC, the licensee of digital Class A television station KPDF-CA, Facility ID No. 73764, proposes construction of the KPDF-CA post-auction facility on Channel 22. Reassignment from Channel 41 to Channel 22 was specified in the *Channel Reassignment Public Notice* ("CRPN"), DA 17-314, released on April 13, 2017. The licensee seeks authority to operate KPDF-CA on the reassigned channel using a new directional antenna. Although the proposed antenna pattern will be similar to the licensed pattern, a slight decrease in the maximum effective radiated power (ERP) specified in the CRPN, from 3.36 kW to 3.02 kW, is requested to comply with the one percent expansion tolerance. The replacement antenna will be installed at a radiation center height of 829.3 meters above mean sea level (AMSL) and the resultant height above average terrain (HAAT) as calculated using the *TVStudy* analysis software is 472 meters.

As indicated above, the licensee proposes to replace the antenna that KPDF-CA currently employs in order to accommodate the channel reassignment. The new antenna will be an elliptically polarized directional Jampro Model JA/SS-16/D22 SEC. This new antenna will be designed to operate such that the horizontally polarized ERP will be 3.02 kW and the vertically polarized ERP will be 0.755 kW. The licensee was unable to match the relative field values associated with the present antenna due to the change in frequency, thus a similar pattern is being proposed. The vertically polarized component will not exceed the horizontally polarized component in any direction. The horizontal azimuth pattern for the new directional antenna is depicted in Figure 1.

There is no significant variance from the permissible contour coverage area as defined by the technical parameters specified in the CRPN and the proposed interference-free service population and area match the baseline by +98 percent.¹ The *TVStudy* summary report

¹ The technical parameters specified in the CRPN result in an interference-free coverage area of 3,820,390 people and 7,059.0 sq.km. The proposed interference-free coverage area amounts to 3,801,264 people and 6,882.8 sq.km.



provided in Figure 2 demonstrates that no interference beyond 0.5 percent will be caused to the technical parameters of any other station as specified in the CRPN and the permissible coverage area will not be extended by more than one percent in any direction.

This application is categorically excluded from environmental processing by 47 CFR § 1.1306. Specifically, the criteria outlined in 47 CFR § 1.1307(a) for certain types of facilities that may significantly affect the environment do not apply since the specified replacement antenna will be co-located on an existing non-registered broadcast tower and the proposed facility will comply with the rules in 47 CFR § 1.1307(b) concerning human exposure to radio-frequency (RF) energy. The licensee seeks authority to operate a television broadcast antenna in full compliance with the RF exposure guidelines as described in greater detail below. The following technical specifications are proposed:

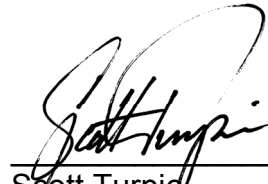
Frequency :	518 - 524 MHz (UHF Channel 22)
Effective Radiated Power:	3.02 kW
Antenna Type:	JAM JA/SS-16/D22 SEC
Antenna Polarization:	Elliptical
Antenna Height:	21.3 meters AGL
Location coordinates:	33-20-00.07 N, 112-03-47.43 (NAD83)
Site elevation:	808 meters AMSL
Overall tower height:	53 meters AGL

Using the methodology for predicting power density levels for television broadcast antennas outlined in *FCC OET Bulletin No. 65, Edition 97-01*, (OET-65), the proposed facility is calculated to produce a maximum power density of $3.39 \mu\text{W}/\text{cm}^2$ at points 2 meters above ground (approximate human head height). This exposure level was determined using 10 percent antenna relative field, which is considered to be a typical value for UHF antennas. The maximum exposure limits applicable to Channel 22, as determined in accordance with 47 CFR § 1.1310 for uncontrolled and controlled situations, are $345 \mu\text{W}/\text{cm}^2$ and $1,727 \mu\text{W}/\text{cm}^2$ respectively. Because the maximum exposure level determined for the proposed facility is not more than 5% of those guidelines and considering that the existing tower is located on an isolated mountaintop where both natural and fabricated barriers are used to control access and suitable warning signs are posted, no further showing of compliance is necessary. Accordingly, this application complies with the RF exposure limits and is categorically excluded from environmental processing by 47 CFR § 1.1306.



Steps to limit exposure to persons authorized to access the transmitter site will be consistent with the appropriate recommendations in OET-65. All maintenance and other related work to be performed at elevations higher than 2 meters above ground will be coordinated to prevent exposure to RF fields in excess of the controlled limit. Such preventative steps shall include reducing power or shutting down the facility.

Respectfully submitted,

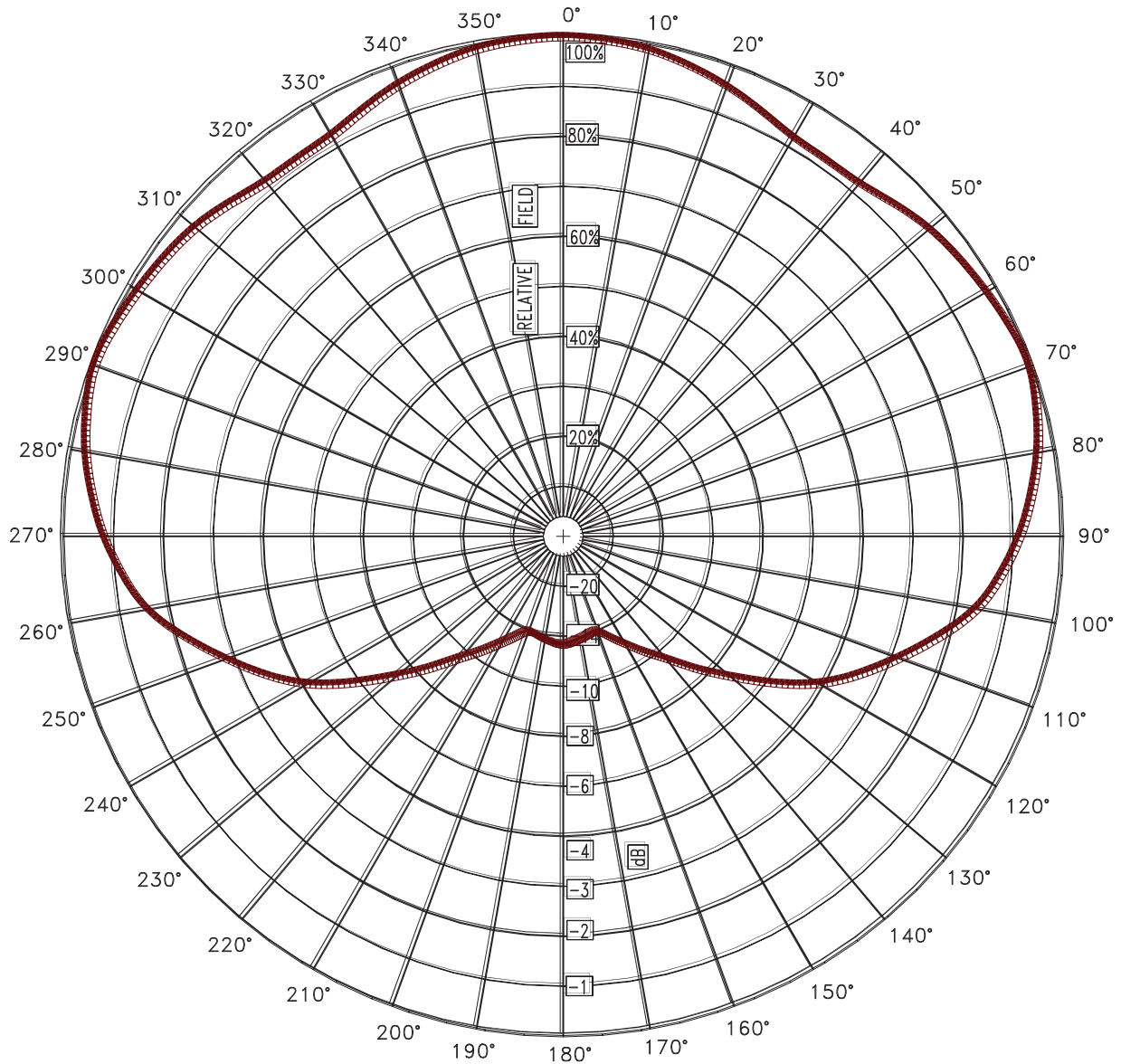


Scott Turpie
Technical Consultant
Lohnes & Culver LLC
P.O. Box 881
Silver Spring, MD 20918-0881
Ph. 301-776-4488

July 10, 2017



FIGURE 1



Values in Relative Field

Customer: Azteca Stations Group
Channel: 22
Pattern: Cardioid

Model: JA/SS-16/D22
Description: UHF Slot Antenna
Notes: Elliptically Polarized



FIGURE 1

Azimuth Pattern Tabulation

<u>AZIMUTH</u>	<u>FIELD</u>	<u>dB</u>
0	1.00	0.00
10	0.99	-0.09
20	0.96	-0.35
30	0.92	-0.72
40	0.92	-0.72
50	0.96	-0.35
60	0.98	-0.18
70	1.00	0.00
80	0.97	-0.26
90	0.92	-0.72
100	0.85	-1.41
110	0.72	-2.85
120	0.60	-4.44
130	0.44	-7.13
140	0.32	-9.90
150	0.25	-12.04
160	0.20	-13.98
170	0.21	-13.56
180	0.22	-13.15
190	0.21	-13.56
200	0.20	-13.98
210	0.25	-12.04
220	0.32	-9.90
230	0.44	-7.13
240	0.60	-4.44
250	0.72	-2.85
260	0.85	-1.41
270	0.92	-0.72
280	0.97	-0.26
290	1.00	0.00
300	0.98	-0.18
310	0.96	-0.35
320	0.92	-0.72
330	0.92	-0.72
340	0.96	-0.35
350	0.99	-0.09

Customer: Azteca Stations Group
Channel: 22
Pattern: Cardioid

Model: JA/SS-16/D22
Description: UHF Slot Antenna
Notes: Elliptically Polarized

FIGURE 2

Analysis Summary

TVSTUDY, VERSION 2.2.2.

Study created: 2017.07.10 09:11:45

Study build station data: LMS TV 2017-06-25 (3)

Proposal: KPDF-CA D22 DC APP PHOENIX, AZ
Facility ID: 73764
Station data: User record
Record ID: 146
Country: U. S.

Non-U.S. records included

All records on or after 2017-04-13 excluded

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KWBA-TV	D21	DT	BL	SIERRA VISTA, AZ	DTVBL35095	211.2 km
KNAZ-TV	D22	DT	LIC	FLAGSTAFF, AZ	BLCDT20091210AAC	188.8
KVYE	D22	DT	LIC	EL CENTRO, CA	BLCDT20070604ABN	259.1
KSNV	D22	DT	LIC	LAS VEGAS, NV	BLCDT20090220ABX	400.9
KVOA	D23	DT	LIC	TUCSON, AZ	BLCDT20071113AJK	162.0
XHSFE	D22	DT	BL	SAN FELIPE, BN	DTVBL704642	366.2
XHAPS	D22	DT	BL	AGUA PRIETA, SO	DTVBL704813	326.9
XHPDT	D22	DT	BL	PUERTO PENASCO, SO	DTVBL704868	265.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D22
Mask: Stringent
Latitude: 33 20 0.07 N (NAD83)
Longitude: 112 3 47.43 W
Height AMSL: 829.7 m
HAAT: 0.0 m
Peak ERP: 3.02 kW
Antenna: JAM JA/SS-16/D22 SEC 30.0 deg

49.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	2.56 kW	490.3 m	55.4 km
45.0	2.87	452.3	54.8
90.0	2.90	446.7	54.6
135.0	1.86	472.6	52.8
180.0	0.189	485.6	39.3
225.0	0.127	490.5	37.0
270.0	1.09	434.6	48.3
315.0	2.93	503.4	56.6

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 472 m

Proposal service area is within baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 1741.2 km

**Proposal is within coordination distance of Mexican border

Distance to Mexican border: 176.0 km

Conditions at FCC monitoring station: Douglas AZ

Bearing: 131.4 degrees Distance: 304.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 36.8 degrees Distance: 967.2 km

Study cell size: 2.00 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%

No IX check failures found.