

King City, CA

AUCTION 109 LONG FORM APPLICATION

This technical report has been developed in support of an application for the King City, CA Auction 109 channel 275A allocation. A non-adjacent, same class move to channel 284A is proposed. §73.3573 permits same class, non-adjacent channel changes as minor as does the *Rural Radio Public Notice DA-07-1671* Example 4. Furthermore, Commission staff has confirmed that use of same class, non-adjacent minor changes applies in the context of an Auction 109 Long Form Application.

The following exhibits are provided for the form 301 application:

- E-1 284A Spacing Study
- E-2 284A Overlap Study
- E-3 284A Fully-Spaced Reference Spacing Study
- E-4 284A Fully-Spaced 70 dBu Contour
- E-5 284A Reference Topographic Map
- E-6 TOWAIR Determination
- E-7 70 dBu Contour Coverage Plot
- E-8 FMModel RF evaluation

Allocation Analysis:

A channel study is included as E-1 and shows the New 284A facility will be short-spaced to KSTT-FM 283B and KHTN(FM) 284B. As a result, §73.215 processing is elected with respect to these facilities. An overlap study (exhibit E-2) demonstrates clearance for the new 284A facility. A fully-spaced reference site is proposed at:

36-15-23.9 N and 121-15-07.2 W.

A channel study, 70 dBu plot and topographic map are provided as E-3, E-4 and E-5.

The New 284A facility is proposed at an existing 24 meter tower at:

36-12-24.9 N 121-08-19.4 NAD 83.

A TOWAIR determination (exhibit E-6) shows the tower does not require registration.

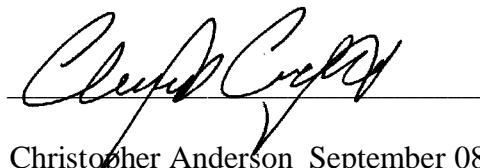
The proposed 284A facility will use a Nicom BKG77 two bay, 0.85 wavelength-spaced, non-directional antenna mounted at 18.3 meters AGL, 109.7 meters AMSL and operate at 150 watts ERP. The facility will place a 70 dBu contour over 100% of the King City, CA population and 97% of the area (see E-7) complying with the 80% rule for applications.

RF Exposure Calculation:

The RF contribution was calculated using FMModel. The resulting RF is calculated to be $4.23 \mu\text{W}/\text{cm}^2$ at a distance of 7.6 meters from the base of the tower, (see E-8) which is below 5% of the $200 \mu\text{W}/\text{cm}^2$ maximum permissible for general public exposure, allowing its exclusion from consideration.

Conclusion:

It is concluded that the long form application for the NEW 284A facility complies with all Commission rules and policies.



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E-1 New 275A Mod. 284A Spacing Study

| | | | |
|-------------------------------------|------------------------------|-----------|-----------------|
| REFERENCE | | CLASS = A | DISPLAY DATES |
| 36 12 24.90 N. | | | DATA 09-01-21 |
| 121 08 19.40 W. | Current Spacings to 3rd Adj. | | SEARCH 09-01-21 |
| ----- Channel 284 - 104.7 MHz ----- | | | |

| Call | Channel | Location | | Azi | Dist | FCC | Margin |
|---------|------------|---------------|----|-------|--------|-------|-----------|
| KSTT-FM | LIC 283B | Atascadero | CA | 155.1 | 103.46 | 112.5 | -9.0 |
| KHTN | LIC-Z 284B | Planada | CA | 33.4 | 177.25 | 177.5 | -0.25 (1) |
| KEXA | LIC 230B1 | King City | CA | 340.0 | 20.44 | 11.5 | 8.9 |
| KHIP | LIC-N 282A | Gonzales | CA | 326.5 | 61.56 | 30.5 | 31.1 |
| KOCN | LIC 286A | Pacific Grove | CA | 303.6 | 69.82 | 30.5 | 39.3 |
| KCJZ | LIC 287A | Cambria | CA | 174.8 | 76.04 | 30.5 | 45.5 |

All separation margins include rounding.

(1) The New channel 284A facility will be designated 73.215(c).

E-2 New 284A Overlap Study

| | | |
|-----------------|--|-----------------|
| REFERENCE | CH# 284A - 104.7 MHz, Pwr= 0.15 kW, HAAT= 30.0 M, COR= 109.7 M | DISPLAY DATES |
| 36 12 24.90 N. | Average Protected F(50-50)= 6.24 km | DATA 09-01-21 |
| 121 08 19.40 W. | 73.215 Omni-directional | SEARCH 09-01-21 |

| CH CI TY | CALL | TYPE ANT STATE | AZI -- | DIST FILE # | LAT LNG | PWR(kW) HAAT(M) | INT(km) COR(M) | PRO(km) LI CENSEE | *IN* (Overl ap | *OUT* in km) |
|-------------------------|----------|-------------------|------------------|----------------------------|-------------------------------|--------------------|-------------------|--------------------------------------|-------------------|-----------------|
| 230B1 King Ci ty | KEXA« | LIC _CN CA | 340. 0 160. 0 | 20. 44 BLH19871223KC | 36 22 47. 80 121 13 00. 70 | 5. 400 214 | 107. 5 458 | 42. 4 Inspir ation Media Network, | 11. 5R | 8. 9M |
| 282A Gonzal es | KHIP« | LIC _CN CA | 326. 5 146. 3 | 61. 56 BMLH19980709KB | 36 40 05. 80 121 31 12. 70 | 2. 600 155 | 3. 0 435 | 39. 1 Smg-Monterey, LLC | 30. 5R | 31. 1M |
| 284B Pl anada | KHTN | LIC _CN CA | 33. 4 214. 1 | 177. 34 BMLH20160707AAD | 37 31 59. 80 120 01 51. 60 | 1. 950 634 | 134. 8 1334 | 72. 2 Smg-Merced, LLC | 36. 3 | 75. 1 |
| 283B Atascadero | KSTT-FM^ | LIC _CN CA | 155. 1 335. 3 | 103. 59 BLH20021017AAU | 35 21 39. 90 120 39 24. 60 | 50. 000 150 | 58. 6 488 | 46. 2 Agm Cal i forni a, Inc. | 38. 7 | 44. 9 |
| 286A Paci fi c Grove | KOCN« | LIC _CN CA | 303. 6 123. 2 | 69. 82 BLH19950801KD | 36 33 08. 80 121 47 20. 80 | 1. 800 183 | 1. 6 416 | 11. 7 I hm Li censes, LLC | 30. 5R | 39. 3M |
| 287A Cambria | KCJZ« | LIC _CN CA | 174. 8 354. 8 | 76. 04 BLH20140620AAD | 35 31 27. 90 121 03 42. 70 | 6. 000 52 | 1. 6 280 | 15. 8 Adelman Investments, LLC | 30. 5R | 45. 5M |

Terrain database is FCC 30 meter , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference zone= - Zone 1A, Co to 3rd adjacent.
 All separation margins (if shown) include rounding.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, __= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "***affixed to 'IN' or 'OUT' values = site inside restricted contour.
 < = Station meets FCC minimum distance spacing for its class.
 < = Contour Overlap
 ^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements

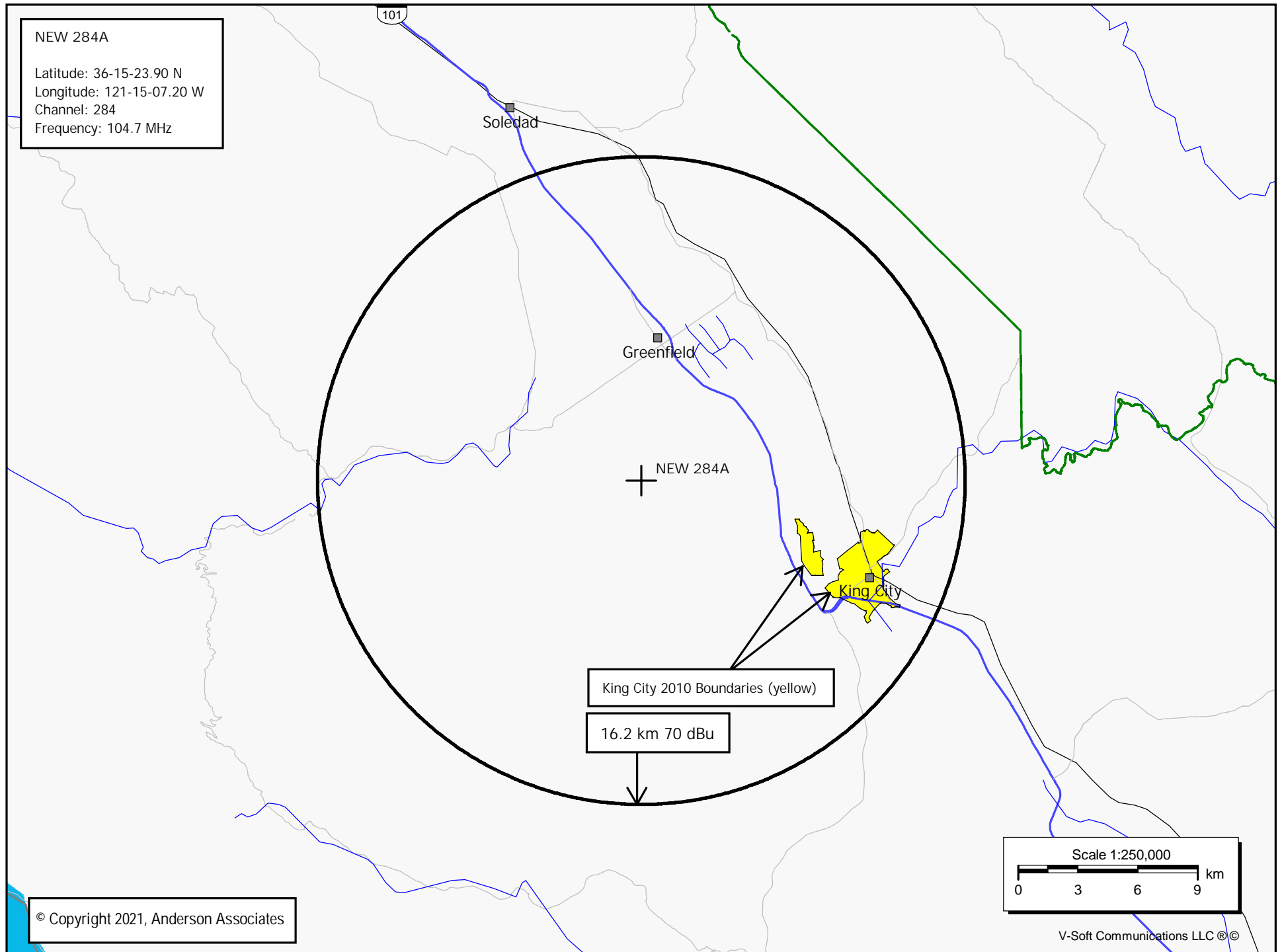
E-3 New 275A Mod. 284A Fully-Spaced Reference

| | | | |
|-------------------------------------|------------------------------|--|-----------------|
| REFERENCE | | | DISPLAY DATES |
| 36 15 23.90 N. | CLASS = A | | DATA 09-01-21 |
| 121 15 07.20 W. | Current Spacings to 3rd Adj. | | SEARCH 09-01-21 |
| ----- Channel 284 - 104.7 MHz ----- | | | |

| Call | Channel | Location | | Azi | Dist | FCC | Margin |
|---------|------------|---------------|----|-------|--------|-------|--------|
| KSTT-FM | LIC 283B | Atascadero | CA | 151.5 | 112.99 | 112.5 | 0.49 |
| KHTN | LIC-Z 284B | Planada | CA | 37.0 | 178.65 | 177.5 | 1.2 |
| KEXA | LIC 230B1 | King City | CA | 12.9 | 14.04 | 11.5 | 2.5 |
| KHIP | LIC-N 282A | Gonzales | CA | 332.4 | 51.61 | 30.5 | 21.1 |
| KOCN | LIC 286A | Pacific Grove | CA | 304.5 | 58.29 | 30.5 | 27.8 |

All separation margins include rounding.

E-4 NEW 284A Reference Point Circular 16.2 km 70 dBu



-121°15.5'

-121°15'

E-5 New 284A Fully-Spaced Reference Topographic Map

36°15.5'

36°15.5'

36-15-23.9 N
121-15-07.2W



-121°15.5'

-121°15'

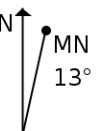
Mercator Projection
NAD27 Conus
USNG Zone 10SFF



0.1 0.2 0.3 0.4 0.5 0.6 0.7 km

0.1 0.2 0.3 0.4 mi

Scale 1:5927 1 inch = 494 feet



TOWAIR Determination Results

A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

PASS SLOPE(100:1)NO FAA REQ - 2835.0 Meters (9301.06 Feet)away & below slope by 25.0 Meters (82.0199 Feet)

| Type | C/R | Latitude | Longitude | Name | Address | Lowest Elevation (m) | Runway Length (m) |
|------|-----|--------------|---------------|--------------|------------------------|----------------------|-------------------|
| AIRP | R | 36-13-57.00N | 121-07-37.00W | MESA DEL REY | MONTEREY KING CITY, CA | 112.7 | 1365.2 |

Your Specifications

NAD83 Coordinates

| | |
|-----------|------------------|
| Latitude | 36-12-24.9 north |
| Longitude | 121-08-19.4 west |

Measurements (Meters)

| | |
|--------------------------------|------|
| Overall Structure Height (AGL) | 24 |
| Support Structure Height (AGL) | 0 |
| Site Elevation (AMSL) | 91.4 |

Structure Type

GTOWER - Guyed Structure Used for Communication Purposes

Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

E-7 NEW 284A 70 dBu

NEW

Latitude: 36-12-24.90 N
Longitude: 121-08-19.40 W
ERP: 0.15 kW
Channel: 284
Frequency: 104.7 MHz
AMSL Height: 109.74 m
Elevation: 91.44 m
Horiz. Pattern: Omni

Overlap Area Type: NEW (284): 70.00 dBu - King City, CA

Population Database: 2010 US Census

Total Population: 12,693

Overlap Area: 10.02 sq. km (Area determined using 0.015 km cells)

| Area Description | Total Population | Total Area [sq. km] | Percent Population | Percent Area |
|----------------------|------------------|---------------------|--------------------|--------------|
| King City, CA-70 dBu | 12,693 | 10.33 | 100.0 % | 97.0 % |

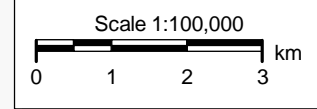
King City 2010 Boundaries

King City

NEW

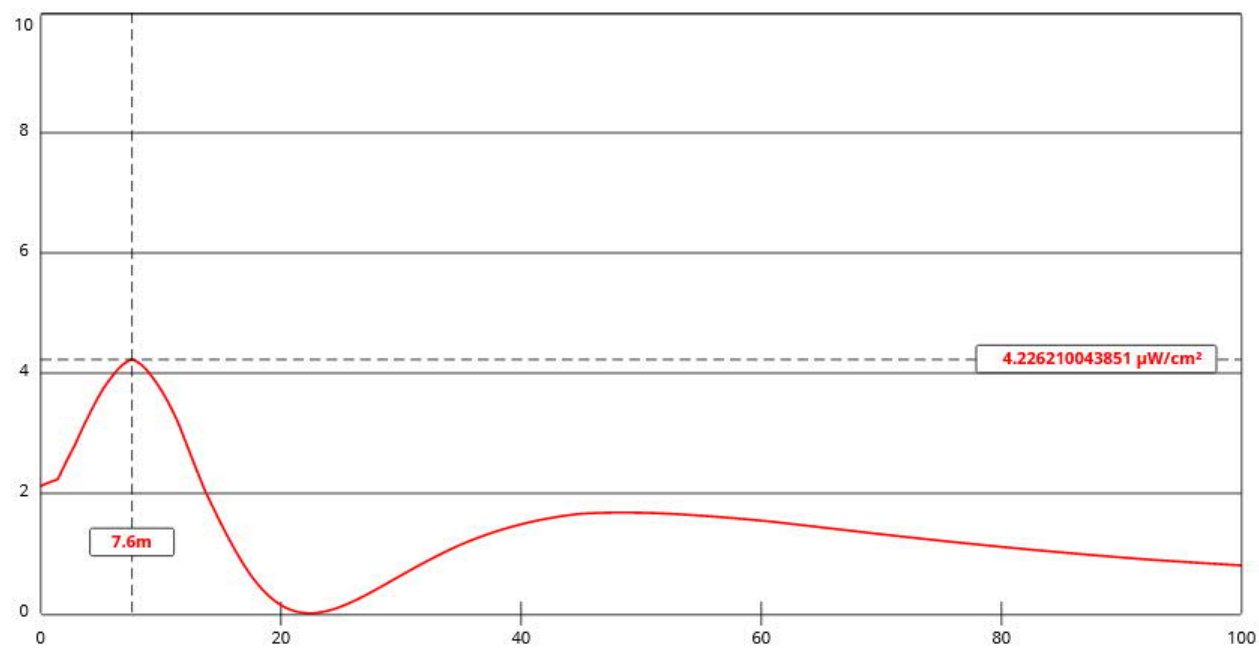
70 dBu Encompasses
100% of the King City 2010 population
and 97% of the area complying
with the 80% rule.

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Exhibit E-8 FMModel Output



| | | | |
|-------------------|-----------------------------------|---------------------|-----------------------------------|
| Channel Selection | Channel 284 (104.7 MHz) ▾ | | |
| Antenna Type + | EPA Type 2: Opposed V Dipole ▾ | | |
| Height (m) | <input type="text" value="18.3"/> | Distance (m) | <input type="text" value="100"/> |
| ERP-H (W) | <input type="text" value="150"/> | ERP-V (W) | <input type="text" value="150"/> |
| Num of Elements | <input type="text" value="2"/> | Element Spacing (λ) | <input type="text" value="0.85"/> |
| Num of Points | <input type="text" value="500"/> | | |