

# DTV Adjacent Channel

According to the new FCC rule 74.706 (d)(2)

Subpart G--Low Power TV, TV Translator, and TV Booster Stations

Sec. 74.706 Digital TV (DTV) station protection.

(d) A low power TV, TV translator or TV booster station application will not be accepted if the ratio in dB of its field strength to that of the DTV station (L/D ratio) fails to meet the following:

(2) + 48 dB for adjacent channel operations at:

(i) The DTV noise-limited perimeter if a low power TV, TV translator or TV booster station is located outside that perimeter.

(ii) At all points within the DTV noise-limited area if a low power TV or TV translator is located within the DTV noise-limited perimeter, as demonstrated by the applicant.

Please find attached a study which shows your signal does not exceed a ratio of desired to undesired that exceeds the required +48 db within the DTV noise-limited perimeter, therefore, the proposed station complies with the FCC rule and does not cause harmful interference to KCRA DTV Channel 35.

Contour At A Bearing of 000 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 38.32  | 38.82  | 39.82  | 40.82  | 41.82  | 46.82  | 51.82  |
| Bearing-Deg          | 1.45   | 1.43   | 1.40   | 1.36   | 1.33   | 1.19   | 1.07   |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.62 | 461.61 | 461.61 | 461.60 | 461.60 | 461.57 | 461.55 |
| Field Strength       | 86.41  | 86.04  | 85.32  | 84.61  | 83.92  | 80.69  | 77.01  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.45   | 2.59   | 1.73   | 1.30   | 1.04   | .52    | .35    |
| ERP-dBk              | -30.80 | -29.84 | -29.22 | -29.11 | -29.04 | -29.03 | -29.03 |
| HAAT-m               | 90.53  | 90.53  | 90.53  | 90.53  | 90.53  | 90.53  | 90.53  |
| Field Strength       | 72.60  | 66.32  | 60.72  | 56.21  | 52.63  | 40.64  | 33.61  |
| Difference           | -13.81 | -19.72 | -24.60 | -28.40 | -31.29 | -40.05 | -43.40 |

Contour At A Bearing of 030 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 38.15  | 38.59  | 39.48  | 40.38  | 41.28  | 45.86  | 50.51  |
| Bearing-Deg          | 2.58   | 2.92   | 3.58   | 4.21   | 4.81   | 7.46   | 9.63   |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.80 | 461.85 | 461.96 | 462.06 | 462.16 | 462.59 | 462.94 |
| Field Strength       | 86.55  | 86.22  | 85.57  | 84.93  | 84.30  | 81.31  | 78.06  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.28   | 2.46   | 1.64   | 1.23   | .99    | .49    | .33    |
| ERP-dBk              | 6.70   | 7.56   | 8.08   | 8.19   | 8.25   | 8.25   | 8.25   |
| HAAT-m               | 85.96  | 85.96  | 85.96  | 85.96  | 85.96  | 85.96  | 85.96  |
| Field Strength       | 110.10 | 103.47 | 97.66  | 93.11  | 89.49  | 77.47  | 70.44  |
| Difference           | 23.55  | 17.25  | 12.09  | 8.18   | 5.19   | -3.84  | -7.62  |

Contour At A Bearing of 060 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 37.63  | 37.91  | 38.47  | 39.06  | 39.66  | 42.90  | 46.45  |
| Bearing-Deg          | 3.45   | 4.08   | 5.31   | 6.51   | 7.66   | 12.94  | 17.45  |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.94 | 462.04 | 462.24 | 462.43 | 462.62 | 461.98 | 460.43 |
| Field Strength       | 86.94  | 86.74  | 86.32  | 85.89  | 85.45  | 83.20  | 80.89  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.12   | 2.34   | 1.56   | 1.17   | .94    | .47    | .31    |
| ERP-dBk              | 15.63  | 16.41  | 16.84  | 16.94  | 16.99  | 16.99  | 16.99  |
| HAAT-m               | 81.79  | 81.79  | 81.79  | 81.79  | 81.79  | 81.79  | 81.79  |
| Field Strength       | 119.03 | 112.07 | 106.08 | 101.48 | 97.82  | 85.78  | 78.75  |
| Difference           | 32.09  | 25.33  | 19.76  | 15.59  | 12.37  | 2.58   | -2.14  |

Contour At A Bearing of 090 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 36.89  | 36.93  | 37.02  | 37.14  | 37.29  | 38.40  | 40.11  |
| Bearing-Deg          | 3.83   | 4.61   | 6.15   | 7.68   | 9.20   | 16.56  | 23.41  |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 462.00 | 462.13 | 462.38 | 462.62 | 462.87 | 460.73 | 458.83 |
| Field Strength       | 87.51  | 87.48  | 87.42  | 87.33  | 87.22  | 86.33  | 85.05  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.08   | 2.31   | 1.54   | 1.15   | .92    | .46    | .31    |
| ERP-dBk              | 6.95   | 7.71   | 8.11   | 8.21   | 8.25   | 8.25   | 8.25   |
| HAAT-m               | 80.60  | 80.60  | 80.60  | 80.60  | 80.60  | 80.60  | 80.60  |
| Field Strength       | 110.35 | 103.29 | 97.25  | 92.63  | 88.96  | 76.91  | 69.89  |
| Difference           | 22.84  | 15.81  | 9.83   | 5.30   | 1.74   | -9.42  | -15.16 |

Contour At A Bearing of 120 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 36.13  | 35.91  | 35.49  | 35.09  | 34.71  | 33.23  | 32.45  |
| Bearing-Deg          | 3.60   | 4.31   | 5.76   | 7.25   | 8.77   | 16.82  | 25.43  |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.96 | 462.08 | 462.31 | 462.55 | 462.80 | 460.65 | 458.40 |
| Field Strength       | 88.10  | 88.28  | 88.62  | 88.95  | 89.26  | 90.47  | 91.09  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.46   | 2.60   | 1.73   | 1.30   | 1.04   | .52    | .35    |
| ERP-dBk              | -30.95 | -29.99 | -29.36 | -29.25 | -29.18 | -29.17 | -29.17 |
| HAAT-m               | 90.67  | 90.67  | 90.67  | 90.67  | 90.67  | 90.67  | 90.67  |
| Field Strength       | 72.45  | 66.19  | 60.59  | 56.08  | 52.50  | 40.51  | 33.48  |
| Difference           | -15.65 | -22.09 | -28.03 | -32.87 | -36.76 | -49.96 | -57.61 |

Contour At A Bearing of 150 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 35.55  | 35.13  | 34.30  | 33.48  | 32.66  | 28.77  | 25.28  |
| Bearing-Deg          | 2.77   | 3.21   | 4.12   | 5.08   | 6.09   | 11.96  | 19.55  |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.83 | 461.90 | 462.05 | 462.20 | 462.37 | 462.32 | 459.70 |
| Field Strength       | 88.56  | 88.90  | 89.59  | 90.29  | 90.99  | 93.66  | 96.20  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.60   | 2.70   | 1.80   | 1.35   | 1.08   | .54    | .36    |
| ERP-dBk              | -30.84 | -29.80 | -29.09 | -28.97 | -28.90 | -28.88 | -28.88 |
| HAAT-m               | 94.41  | 94.41  | 94.41  | 94.41  | 94.41  | 94.41  | 94.41  |
| Field Strength       | 72.55  | 66.58  | 61.14  | 56.67  | 53.12  | 41.15  | 34.12  |
| Difference           | -16.01 | -22.32 | -28.45 | -33.62 | -37.87 | -52.51 | -62.08 |

Contour At A Bearing of 180 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 35.32  | 34.82  | 33.82  | 32.82  | 31.82  | 26.83  | 21.83  |
| Bearing-Deg          | 1.57   | 1.60   | 1.64   | 1.69   | 1.75   | 2.07   | 2.55   |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.64 | 461.64 | 461.65 | 461.65 | 461.66 | 461.72 | 461.79 |
| Field Strength       | 88.74  | 89.15  | 89.98  | 90.84  | 91.63  | 95.05  | 99.18  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.68   | 2.76   | 1.84   | 1.38   | 1.11   | .55    | .37    |
| ERP-dBk              | -31.09 | -30.00 | -29.25 | -29.13 | -29.06 | -29.03 | -29.03 |
| HAAT-m               | 96.43  | 96.43  | 96.43  | 96.43  | 96.43  | 96.43  | 96.43  |
| Field Strength       | 72.30  | 66.48  | 61.12  | 56.68  | 53.14  | 41.18  | 34.16  |
| Difference           | -16.44 | -22.67 | -28.86 | -34.16 | -38.49 | -53.87 | -65.02 |

Contour At A Bearing of 210 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 35.51  | 35.08  | 34.21  | 33.36  | 32.51  | 28.43  | 24.69  |
| Bearing-Deg          | .36    | 359.95 | 359.12 | 358.24 | 357.31 | 351.87 | 344.69 |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.44 | 461.39 | 461.49 | 461.61 | 461.73 | 462.43 | 462.82 |
| Field Strength       | 88.59  | 88.94  | 89.65  | 90.38  | 91.11  | 93.90  | 96.73  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.80   | 2.85   | 1.90   | 1.43   | 1.14   | .57    | .38    |
| ERP-dBk              | -29.92 | -28.76 | -27.93 | -27.81 | -27.73 | -27.70 | -27.70 |
| HAAT-m               | 99.50  | 99.50  | 99.50  | 99.50  | 99.50  | 99.50  | 99.50  |
| Field Strength       | 73.48  | 67.89  | 62.66  | 58.25  | 54.72  | 42.79  | 35.76  |
| Difference           | -15.11 | -21.05 | -26.99 | -32.13 | -36.39 | -51.11 | -60.97 |

Contour At A Bearing of 240 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 36.06  | 35.82  | 35.35  | 34.90  | 34.47  | 32.72  | 31.67  |
| Bearing-Deg          | 359.48 | 358.79 | 357.37 | 355.91 | 354.42 | 346.44 | 337.74 |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.45 | 461.54 | 461.72 | 461.91 | 462.10 | 462.77 | 462.96 |
| Field Strength       | 88.15  | 88.34  | 88.73  | 89.09  | 89.45  | 90.95  | 91.75  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.84   | 2.88   | 1.92   | 1.44   | 1.15   | .58    | .39    |
| ERP-dBk              | -25.29 | -24.10 | -23.25 | -23.12 | -23.05 | -23.01 | -23.01 |
| HAAT-m               | 100.76 | 100.76 | 100.76 | 100.76 | 100.76 | 100.76 | 100.76 |
| Field Strength       | 78.11  | 72.61  | 67.43  | 63.03  | 59.51  | 47.59  | 40.56  |
| Difference           | -10.04 | -15.73 | -21.30 | -26.06 | -29.94 | -43.36 | -51.19 |

Contour At A Bearing of 270 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 36.81  | 36.82  | 36.86  | 36.93  | 37.03  | 37.89  | 39.38  |
| Bearing-Deg          | 359.18 | 358.40 | 356.85 | 355.31 | 353.77 | 346.25 | 339.18 |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.49 | 461.59 | 461.79 | 461.99 | 462.18 | 462.78 | 462.95 |
| Field Strength       | 87.56  | 87.55  | 87.53  | 87.48  | 87.41  | 86.76  | 85.67  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.81   | 2.86   | 1.91   | 1.43   | 1.14   | .57    | .38    |
| ERP-dBk              | -29.68 | -28.52 | -27.69 | -27.56 | -27.48 | -27.45 | -27.45 |
| HAAT-m               | 99.80  | 99.80  | 99.80  | 99.80  | 99.80  | 99.80  | 99.80  |
| Field Strength       | 73.72  | 68.14  | 62.93  | 58.52  | 54.99  | 43.06  | 36.04  |
| Difference           | -13.84 | -19.41 | -24.60 | -28.96 | -32.42 | -43.70 | -49.63 |

Contour At A Bearing of 300 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 37.56  | 37.82  | 38.34  | 38.89  | 39.45  | 42.51  | 45.90  |
| Bearing-Deg          | 359.50 | 358.85 | 357.58 | 356.33 | 355.13 | 349.61 | 344.86 |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.44 | 461.53 | 461.69 | 461.85 | 462.01 | 462.68 | 462.81 |
| Field Strength       | 86.98  | 86.79  | 86.40  | 86.00  | 85.59  | 83.48  | 81.29  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.76   | 2.83   | 1.88   | 1.41   | 1.13   | .57    | .38    |
| ERP-dBk              | -31.06 | -29.92 | -29.12 | -28.99 | -28.92 | -28.88 | -28.88 |
| HAAT-m               | 98.69  | 98.69  | 98.69  | 98.69  | 98.69  | 98.69  | 98.69  |
| Field Strength       | 72.34  | 66.68  | 61.42  | 57.00  | 53.47  | 41.53  | 34.50  |
| Difference           | -14.64 | -20.11 | -24.98 | -29.00 | -32.12 | -41.95 | -46.79 |

Contour At A Bearing of 330 Degrees From Proposed Station

|                      |        |        |        |        |        |        |        |
|----------------------|--------|--------|--------|--------|--------|--------|--------|
| KCRA -DT Distance-Km | 38.11  | 38.54  | 39.41  | 40.29  | 41.17  | 45.65  | 50.22  |
| Bearing-Deg          | .33    | 359.96 | 359.23 | 358.54 | 357.88 | 354.95 | 352.55 |
| ERP-dBk              | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  | 30.00  |
| HAAT-m               | 461.43 | 461.39 | 461.48 | 461.57 | 461.65 | 462.03 | 462.34 |
| Field Strength       | 86.57  | 86.25  | 85.61  | 84.99  | 84.37  | 81.43  | 78.27  |
| Proposed Distance-Km | 1.50   | 2.00   | 3.00   | 4.00   | 5.00   | 10.00  | 15.00  |
| Tilt (Deg)           | 3.62   | 2.72   | 1.81   | 1.36   | 1.09   | .54    | .36    |
| ERP-dBk              | -30.87 | -29.82 | -29.10 | -28.98 | -28.91 | -28.88 | -28.88 |
| HAAT-m               | 94.93  | 94.93  | 94.93  | 94.93  | 94.93  | 94.93  | 94.93  |
| Field Strength       | 72.53  | 66.59  | 61.17  | 56.71  | 53.16  | 41.19  | 34.17  |
| Difference           | -14.04 | -19.66 | -24.44 | -28.28 | -31.21 | -40.24 | -44.10 |