Application for Minor Change
Station KRBG(FM) Umbarger, Texas
FCC Facility ID 93643

# TECHNICAL EXHIBITS

This technical exhibit is prepared on behalf of Grace Community Church of Amarillo, Licensee of Station KRBG (FM) Umbarger, Texas. This instant application requests a one-step on-channel upgrade of the facility from Class C3 to Class C1at the current licensed location and height, with an increase in Effective Radiated Power from 9.5kw to 100.0kw with the addition of a directional antenna. The station will continue service to the community of Umbarger, Texas.

## COMMUNITY COVERAGE

In compliance with section 73.515, the proposed facility provides a contour in excess of 80 dBu (50,50) coverage of the entirety of the community of license. See attached map demonstrating compliance.

## CONTOUR OVERLAP REQUIREMENTS

The attached maps of contours and channel study depict the proposed allocation situation with respect to all pertinent co-channel and adjacent channel facilities. All facilities have been depicted utilizing either the maximum ERP or directional pattern data as on file with the commission. AAT data for the proposed facility was derived from the FCC's 30 second database, Comstudy.

The Proposed Tower is ASR 1263307 and the tower is owned by the licensee. The Proposed circular polarized Directional FM antenna is to replace the current 8-bay PSI model with one of the same dimensions. The proposed Effective Radiated Power is 100 kw, (H & V).

There is no prohibited overlap created as a result of this proposal to any existing or proposed facility in the current allocation picture with the exception of 2nd adjacent facilities KJRT (FM) Channel 202C3, Amarillo Texas; and KXLV (FM) Channel 206C2 , Amarillo Texas. The Proposed KRBG (FM) 100dBu (50,10) contour is fully outside the protected 60dBu (50,50) contours of both stations, so the interference to KRBG (FM) is received only.

The proposed KRBG (FM) 60dBu (50,50) Contour fully encompasses the licensed KJRT (FM) 100dBu (50,10) Contour; and the proposed KRBG (FM) 60dBu (50,50) Contour partially encompasses the licensed KXLV (FM) 100dBu (50,10) Contour. See the attached close view map detailing this overlap. The applicant herein respectfully requests a limited waiver of Section 73.509 of the Rules to allow the Station to receive otherwise prohibited overlap from second-adjacent channel NCE FM stations KJRT (FM) and KXLV (FM). Such a waiver, allowing an NCE station to receive—not cause—overlap from second- or third adjacent channel stations, is commonly known as a "Raleigh Waiver".

The population and area of the relevant station contours are as follows:

| Station | Contour | Area | Census 2010 Population |
|---|---|---|---|
| KRBG Licensed | 60dBu (50,50) | 3,486.6 sq km | 41,153 |
| KRBG Proposed | 60dBu (50,50) | 8,557.8 sq km | 240,870 |
| KJRT Licensed | 100dBu (50,10) | 24.1 sq km | 1,367 |
| KXLV Licensed | 100dBu (50,10) | 66.9 sq km | 5,626 |

The total gain in 60dBu population for KRBG (FM) is **585.3 %.** The Licensed KJRT (FM) 100 dBu (50,10) contour comprises 0.57 % of the population and 0.88 % of the area of the Proposed KRBG (FM) 60dBu (50,50) contour; and the Licensed KXLV (FM) 100 dBu (50,10) contour comprises 2.33 % of the population and 0.78 % of the area of the Proposed KRBG (FM) 60dBu (50,50) contour.

In light of the significant gain in population coverage for KRBG (FM), the applicant respectfully requests a "Raleigh Waiver" of Section 73.509 to permit the acceptance of this received overlap. The applicant believes that this "Raleigh Wavier" request serves the public interest and helps to promote affordable non-commercial educational broadcasting.

TELEVISION CHANNEL 6 PROTECTION

Section 73.525 of the commission's rules and regulations has been studied and it is believed that the proposed facility will provide full protection to Channel 6 Television as outlined in the rule section.

There is no channel 6 TV facility considered as there are no full service TV 6 facility located within 235 km of the proposed Ch 204-C1 operation [73.525(A)(1)].

ENVIRONMENTAL PROTECTION

This environmental statement is limited to the study of potential rfr radiation from the proposed facility.

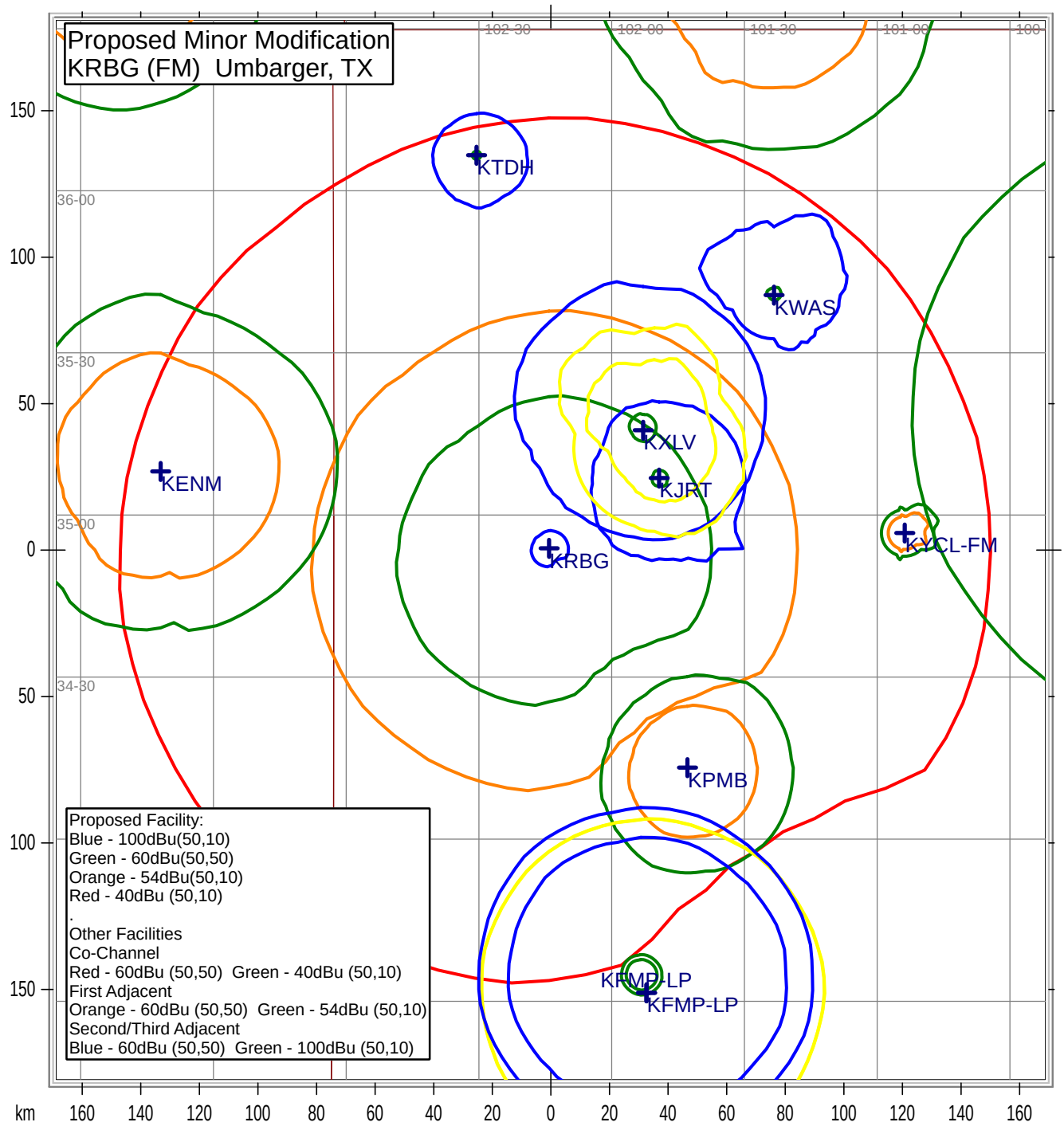
RF radiation from the proposed facility has been reviewed in accordance with the 'Radio Frequency Protection Guides', adopted by the Commission in OET Bulletin No. 65, Edition 97-01. RF radiation from the proposed facility will not have a significant environmental impact. The Applicant has used the 'RF Worksheets' to make this determination.

The applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

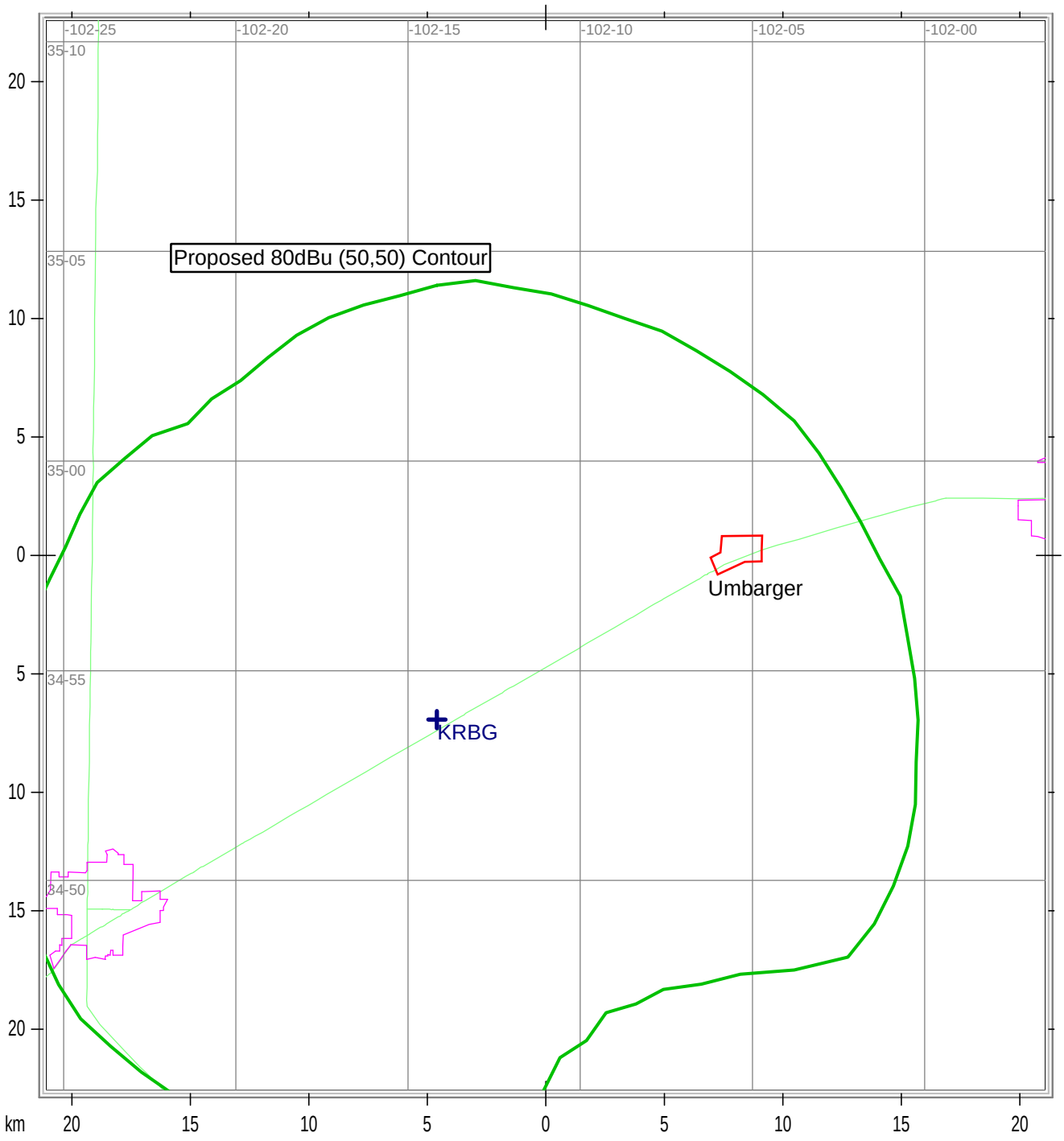
Respectfully,

Jim Turvaville, Owner
Turbo Tech Services
Certified Radio Engineer - Consultant

Attachments:
-Map of Interfering Contours
-Community Coverage Contour Showing
-Channel Study Analysis
-Close-In of Adjacent Channel Overlap
-Directional Antenna Values

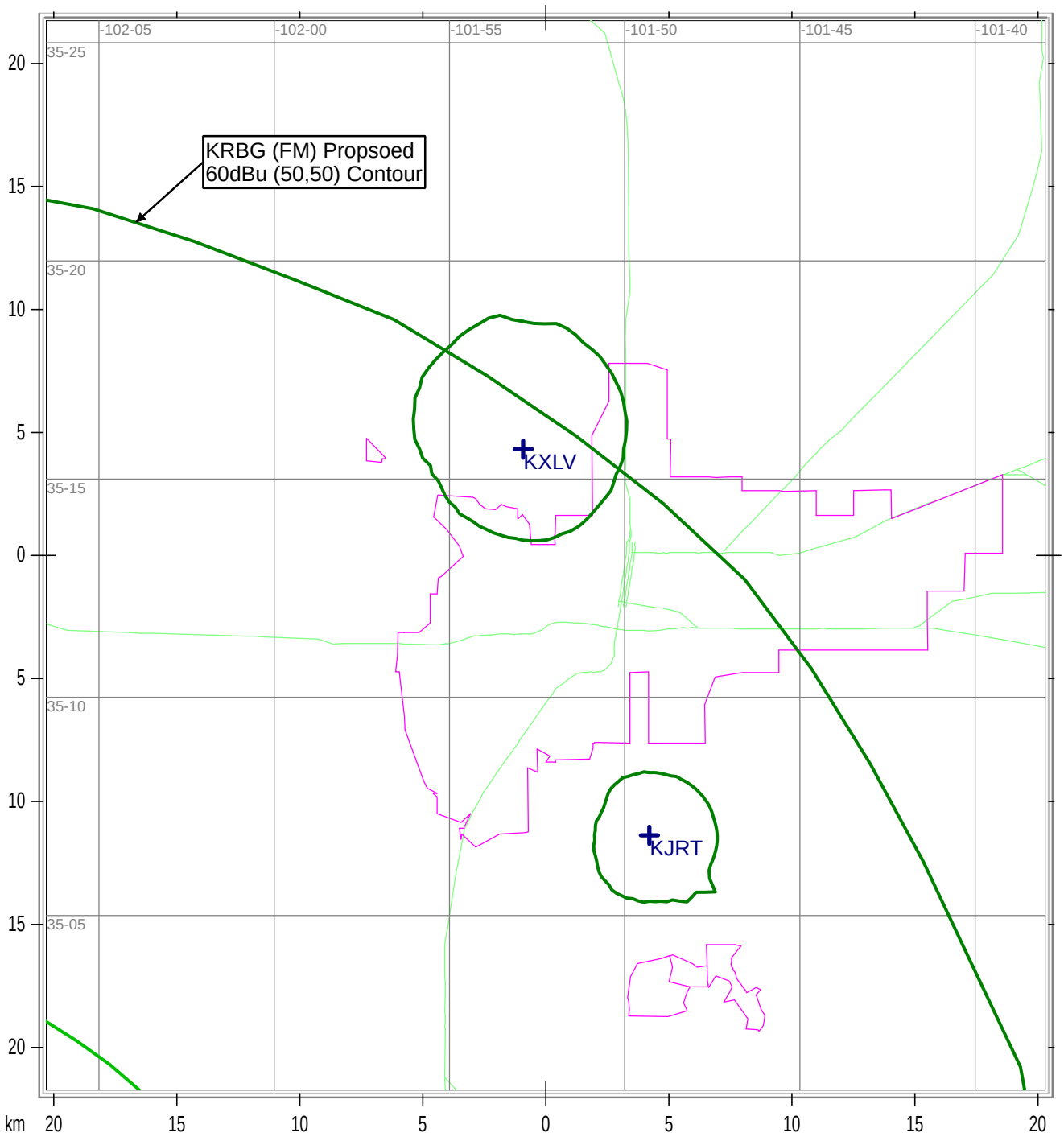


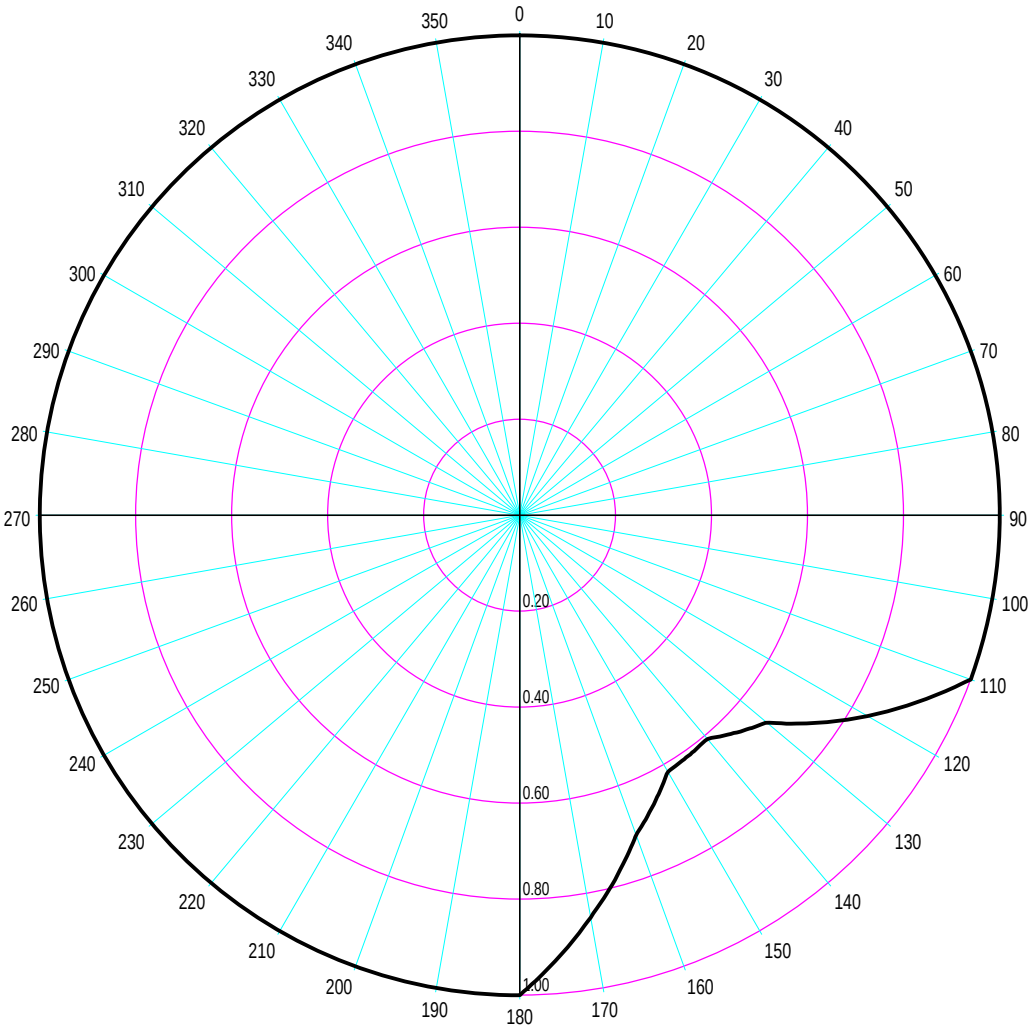

State Borders  Lat/Lon Grid


-102-25
-102-20
-102-15
-102-10
-102-05
-102-00
35-10
35-05
35-00
34-55
34-50
Proposed 80dBu (50,50) Contour
Umbarger
KRBG
20
15
10
5
0
5
10
15
20
km
State Borders
City Borders
Highways
Lat/Lon Grid

ComStudy 2.2
Search of channel 204
(88.7 MHz Class C1)
at
34-53-50.2 N, 102-14-09.7 W.

| CALL | CITY | ST | CHN | CL | DIST | SEP | BRNG | CLEARANCE |
|---|---|---|---|---|---|---|---|---|
| KXLV | AMARILLO | TX | 206 | C2 | 51.74 | 79.00 | 38.4 | -10.18 dB |
| Overlap Waiver Requested in Narrative | | | | | | | | |
| KJRT | AMARILLO | TX | 202 | C3 | 44.82 | 76.00 | 57.3 | -6.14 dB |
| Overlap Waiver Requested in Narrative | | | | | | | | |
| KFMP-LP | LUBBOCK | TX | 6 | TV | 155.81 | 0.00 | 167.4 | 0.0 |
| K06QA | ODESSA | TX | 6 | TV | 311.79 | 0.00 | 180.9 | 0.0 |
| KBEX-LP | AMARILLO | TX | 6 | TV | 51.16 | 0.00 | 44.7 | 0.0 |
| KPMB | PLAINVIEW | TX | 203 | A | 89.00 | 133.00 | 147.5 | 0.20 dB |
| KBEX-LP | AMARILLO | TX | 6 | TV | 49.94 | 0.00 | 46.3 | 0.0 |
| KFMP-LP | LUBBOCK | TX | 6 | TV | 155.81 | 0.00 | 167.4 | 0.0 |
| KENM | TUCUMCARI | NM | 205 | C3 | 136.05 | 144.00 | 281.6 | 4.08 dB |
| KYCL-FM | CLARENDON | TX | 205 | A | 122.52 | 133.00 | 87.2 | 7.53 dB |
| KSYE | CARTER | OK | 204 | C2 | 243.41 | 224.00 | 76.7 | 8.83 dB |
| KNGM | GUYMON | OK | 205 | C3 | 208.92 | 144.00 | 19.1 | 17.88 dB |
| KXNM | ENCINO | NM | 204 | C3 | 316.81 | 211.00 | 266.6 | 21.97 dB |
| KWAS | BORGER | TX | 201 | A | 115.97 | 75.00 | 41.3 | 23.52 dB |
| KENU | DES MOINES | NM | 203 | C3 | 249.52 | 144.00 | 324.1 | 26.55 dB |
| KTDH | DALHART | TX | 207 | A | 136.78 | 75.00 | 349.7 | 28.74 dB |
| KVED | VERNON | TX | 203 | A | 260.78 | 133.00 | 105.1 | 29.16 dB |
| KTTZ-FM | LUBBOCK | TX | 206 | C1 | 149.32 | 82.00 | 167.7 | 30.00 dB |
| KTXT-FM | LUBBOCK | TX | 201 | C2 | 149.32 | 79.00 | 167.7 | 31.06 dB |
| KVMG | RATON | NM | 205 | A | 307.92 | 133.00 | 319.8 | 36.64 dB |


-102-05
-102-00
-101-55
-101-50
-101-45
-101-40
35-25
35-20
35-15
35-10
35-05
KRBG (FM) Propsoed
60dBu (50,50) Contour
KXLV
KJRT
20
15
10
5
0
5
10
15
20
km
State Borders
City Borders
Highways
Lat/Lon Grid




| Azim | Rel.FS | ERP [kW] | dBk |
|---|---|---|---|
| 0.0 | 1.000 | 100.000 | 20.000 |
| 5.0 | 1.000 | 100.000 | 20.000 |
| 10.0 | 1.000 | 100.000 | 20.000 |
| 15.0 | 1.000 | 100.000 | 20.000 |
| 20.0 | 1.000 | 100.000 | 20.000 |
| 25.0 | 1.000 | 100.000 | 20.000 |
| 30.0 | 1.000 | 100.000 | 20.000 |
| 35.0 | 1.000 | 100.000 | 20.000 |
| 40.0 | 1.000 | 100.000 | 20.000 |
| 45.0 | 1.000 | 100.000 | 20.000 |
| 50.0 | 1.000 | 100.000 | 20.000 |
| 55.0 | 1.000 | 100.000 | 20.000 |
| 60.0 | 1.000 | 100.000 | 20.000 |
| 65.0 | 1.000 | 100.000 | 20.000 |
| 70.0 | 1.000 | 100.000 | 20.000 |
| 75.0 | 1.000 | 100.000 | 20.000 |
| 80.0 | 1.000 | 100.000 | 20.000 |
| 85.0 | 1.000 | 100.000 | 20.000 |

| Azim | Rel.FS | ERP [kW] | dBk |
|---|---|---|---|
| 90.0 | 1.000 | 100.000 | 20.000 |
| 95.0 | 1.000 | 100.000 | 20.000 |
| 100.0 | 1.000 | 100.000 | 20.000 |
| 105.0 | 1.000 | 100.000 | 20.000 |
| 110.0 | 1.000 | 100.000 | 20.000 |
| 115.0 | 0.918 | 84.272 | 19.257 |
| 120.0 | 0.837 | 70.057 | 18.455 |
| 125.0 | 0.754 | 56.852 | 17.547 |
| 130.0 | 0.672 | 45.158 | 16.547 |
| 135.0 | 0.640 | 40.960 | 16.124 |
| 140.0 | 0.608 | 36.966 | 15.678 |
| 145.0 | 0.612 | 37.454 | 15.735 |
| 150.0 | 0.617 | 38.069 | 15.806 |
| 155.0 | 0.663 | 43.957 | 16.430 |
| 160.0 | 0.709 | 50.268 | 17.013 |
| 165.0 | 0.780 | 60.840 | 17.842 |
| 170.0 | 0.851 | 72.420 | 18.599 |
| 175.0 | 0.925 | 85.563 | 19.323 |

| Azim | Rel.FS | ERP [kW] | dBk |
|---|---|---|---|
| 180.0 | 1.000 | 100.000 | 20.000 |
| 185.0 | 1.000 | 100.000 | 20.000 |
| 190.0 | 1.000 | 100.000 | 20.000 |
| 195.0 | 1.000 | 100.000 | 20.000 |
| 200.0 | 1.000 | 100.000 | 20.000 |
| 205.0 | 1.000 | 100.000 | 20.000 |
| 210.0 | 1.000 | 100.000 | 20.000 |
| 215.0 | 1.000 | 100.000 | 20.000 |
| 220.0 | 1.000 | 100.000 | 20.000 |
| 225.0 | 1.000 | 100.000 | 20.000 |
| 230.0 | 1.000 | 100.000 | 20.000 |
| 235.0 | 1.000 | 100.000 | 20.000 |
| 240.0 | 1.000 | 100.000 | 20.000 |
| 245.0 | 1.000 | 100.000 | 20.000 |
| 250.0 | 1.000 | 100.000 | 20.000 |
| 255.0 | 1.000 | 100.000 | 20.000 |
| 260.0 | 1.000 | 100.000 | 20.000 |
| 265.0 | 1.000 | 100.000 | 20.000 |

| Azim | Rel.FS | ERP [kW] | dBk |
|---|---|---|---|
| 270.0 | 1.000 | 100.000 | 20.000 |
| 275.0 | 1.000 | 100.000 | 20.000 |
| 280.0 | 1.000 | 100.000 | 20.000 |
| 285.0 | 1.000 | 100.000 | 20.000 |
| 290.0 | 1.000 | 100.000 | 20.000 |
| 295.0 | 1.000 | 100.000 | 20.000 |
| 300.0 | 1.000 | 100.000 | 20.000 |
| 305.0 | 1.000 | 100.000 | 20.000 |
| 310.0 | 1.000 | 100.000 | 20.000 |
| 315.0 | 1.000 | 100.000 | 20.000 |
| 320.0 | 1.000 | 100.000 | 20.000 |
| 325.0 | 1.000 | 100.000 | 20.000 |
| 330.0 | 1.000 | 100.000 | 20.000 |
| 335.0 | 1.000 | 100.000 | 20.000 |
| 340.0 | 1.000 | 100.000 | 20.000 |
| 345.0 | 1.000 | 100.000 | 20.000 |
| 350.0 | 1.000 | 100.000 | 20.000 |
| 355.0 | 1.000 | 100.000 | 20.000 |