



March 26, 2015

Engineering Statement

We have been asked by the University of Kansas (KU) to prepare an engineering statement regarding their short form applications for translators to serve Manhattan, Kansas. This analysis shows that with the voluntary withdrawal of the KU of translator short forms for channels 226, 227 and 228, KU translators could operate on channels 224 and 229, and a translator to be operated by Great Plains Christian Radio, Inc. (GP) could broadcast in the same area of Manhattan, Kansas on channel 227 without causing mutual interference.

The reader will find studies, attached to this statement, that show that the KU translator proposals, BNPFT-20030317KRO for channel 224 and BNPFT-20030331KVF for channel 229 can co-exist with the GP proposal, BNPFT-20030311AGF, for channel 227.

Attachment #1 contains a series of U/D analyses, using a common, omni-directional, single bay antenna. The tables show the distance and height above ground of the interference contour of all three proposals. This contour never touches the ground. The attachment also contains a satellite map of the KU and GP transmission sites. Both sites are located in rural areas with no tall buildings.

These studies show that the KU proposals cause no interference to the GP proposal and the GP proposal does not cause interference to the KU proposals, therefore with the withdrawal of the remaining UK short forms as expressed above, all three short form translator applications are grantable.

Doug Vernier

634363 Manhattan - CH 224, KS - University of Kansas BNPFT-20030317KRO
74.1204(d) Showing
Translator Maximum Licensed ERP = 0.25
Translator Antenna Height AG = 80 Meters
634363 Antenna Model = SHPX1F

634035 - Protected Station's Contour = 80.5663 dBu - BNPFT-20030311AGF, CH 227
Translator's full Interference contour 120.5663

Review Azimuth = 170.8 Degrees True
Relative Field on the horizon at Review Azimuth = 1.000
Translator/LPFM ERP on the horizon at Review Azimuth = 0.25 kw
Distance between stations = 2.3 km
Protected Station= 634035, .17 kw, 399 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.2500	103.9094	103.9094	080.000
05.00	0.993	1.0	0.2465	103.1821	102.7894	071.007
10.00	0.974	1.0	0.2372	101.2078	099.6702	062.425
15.00	0.941	1.0	0.2214	097.7788	094.4471	054.693
20.00	0.897	1.0	0.2012	093.2068	087.5857	048.121
25.00	0.843	1.0	0.1777	087.5957	079.3886	042.980
30.00	0.78	1.0	0.1521	081.0494	070.1908	039.475
35.00	0.709	1.0	0.1257	073.6718	060.3484	037.744
40.00	0.633	1.0	0.1002	065.7747	050.3863	037.721
45.00	0.554	1.0	0.0767	057.5658	040.7052	039.295
50.00	0.473	1.0	0.0559	049.1492	031.5925	042.350
55.00	0.394	1.0	0.0388	040.9403	023.4824	046.464
60.00	0.317	1.0	0.0251	032.9393	016.4696	051.474
65.00	0.245	1.0	0.0150	025.4578	010.7589	056.927
70.00	0.181	1.0	0.0082	018.8076	006.4326	062.327
75.00	0.124	1.0	0.0038	012.8848	003.3348	067.554
80.00	0.077	1.0	0.0015	008.0010	001.3894	072.121
85.00	0.041	1.0	0.0004	004.2603	000.3713	075.756
90.00	0.016	1.0	0.0001	001.6626	000.0000	078.337

634410 Manhattan - CH 229, KS BNPFT-20030317KVF - University of Kansas
74.1204(d) Showing
Translator Maximum Licensed ERP = 0.25
Translator Antenna Height AG = 80 Meters
634410 Antenna Model = SHPX1F

634035 - Protected Station's Contour = 80.5663 dBu - BNPFT-20030311AGF, CH 227
Translator's full Interference contour 120.5663

Review Azimuth = 170.8 Degrees True
Relative Field on the horizon at Review Azimuth = 1.000
Translator ERP on the horizon at Review Azimuth = 0.25 kw
Distance between stations = 2.3 km
Protected Station= 634035, .17 kw, 399 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.2500	103.9094	103.9094	080.000
05.00	0.993	1.0	0.2465	103.1821	102.7894	071.007
10.00	0.974	1.0	0.2372	101.2078	099.6702	062.425
15.00	0.941	1.0	0.2214	097.7788	094.4471	054.693
20.00	0.897	1.0	0.2012	093.2068	087.5857	048.121
25.00	0.843	1.0	0.1777	087.5957	079.3886	042.980
30.00	0.78	1.0	0.1521	081.0494	070.1908	039.475
35.00	0.709	1.0	0.1257	073.6718	060.3484	037.744
40.00	0.633	1.0	0.1002	065.7747	050.3863	037.721
45.00	0.554	1.0	0.0767	057.5658	040.7052	039.295
50.00	0.473	1.0	0.0559	049.1492	031.5925	042.350
55.00	0.394	1.0	0.0388	040.9403	023.4824	046.464
60.00	0.317	1.0	0.0251	032.9393	016.4696	051.474
65.00	0.245	1.0	0.0150	025.4578	010.7589	056.927
70.00	0.181	1.0	0.0082	018.8076	006.4326	062.327
75.00	0.124	1.0	0.0038	012.8848	003.3348	067.554
80.00	0.077	1.0	0.0015	008.0010	001.3894	072.121
85.00	0.041	1.0	0.0004	004.2603	000.3713	075.756
90.00	0.016	1.0	0.0001	001.6626	000.0000	078.337

University of Kansas – Satellite View – Proposed translator stations



634035 Manhattan - CH 227, KS - BNPFT-20030311AGF
Great Plains Christian Radio
74.1204(d) Showing
Translator Maximum Licensed ERP = 0.17
Translator Antenna Height AG = 76 Meters
634035 Antenna Model = SHPX1F

Protected Station's Contour = 89.18623 dBu (634363-BNPFT-20030317KRO, Channel 224)
Translator's full Interference contour 129.18623

Review Azimuth = 350.8 Degrees True
Relative Field on the horizon at Review Azimuth = 1.000
Channel 224 Translator ERP on the horizon at Review Azimuth = 0.17 kw
Distance between stations = 2.3 km
Protected Station= 634410, .25 kw, 431 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.1700	031.7624	031.7624	076.000
05.00	0.993	1.0	0.1676	031.5400	031.4200	073.251
10.00	0.974	1.0	0.1613	030.9366	030.4666	070.628
15.00	0.941	1.0	0.1505	029.8884	028.8700	068.264
20.00	0.897	1.0	0.1368	028.4909	026.7726	066.256
25.00	0.843	1.0	0.1208	026.7757	024.2670	064.684
30.00	0.78	1.0	0.1034	024.7747	021.4555	063.613
35.00	0.709	1.0	0.0855	022.5195	018.4469	063.083
40.00	0.633	1.0	0.0681	020.1056	015.4018	063.076
45.00	0.554	1.0	0.0522	017.5964	012.4425	063.557
50.00	0.473	1.0	0.0380	015.0236	009.6570	064.491
55.00	0.394	1.0	0.0264	012.5144	007.1780	065.749
60.00	0.317	1.0	0.0171	010.0687	005.0343	067.280
65.00	0.245	1.0	0.0102	007.7818	003.2887	068.947
70.00	0.181	1.0	0.0056	005.7490	001.9663	070.598
75.00	0.124	1.0	0.0026	003.9385	001.0194	072.196
80.00	0.077	1.0	0.0010	002.4457	000.4247	073.591
85.00	0.041	1.0	0.0003	001.3023	000.1135	074.703
90.00	0.016	1.0	0.0000	000.5082	000.0000	075.492

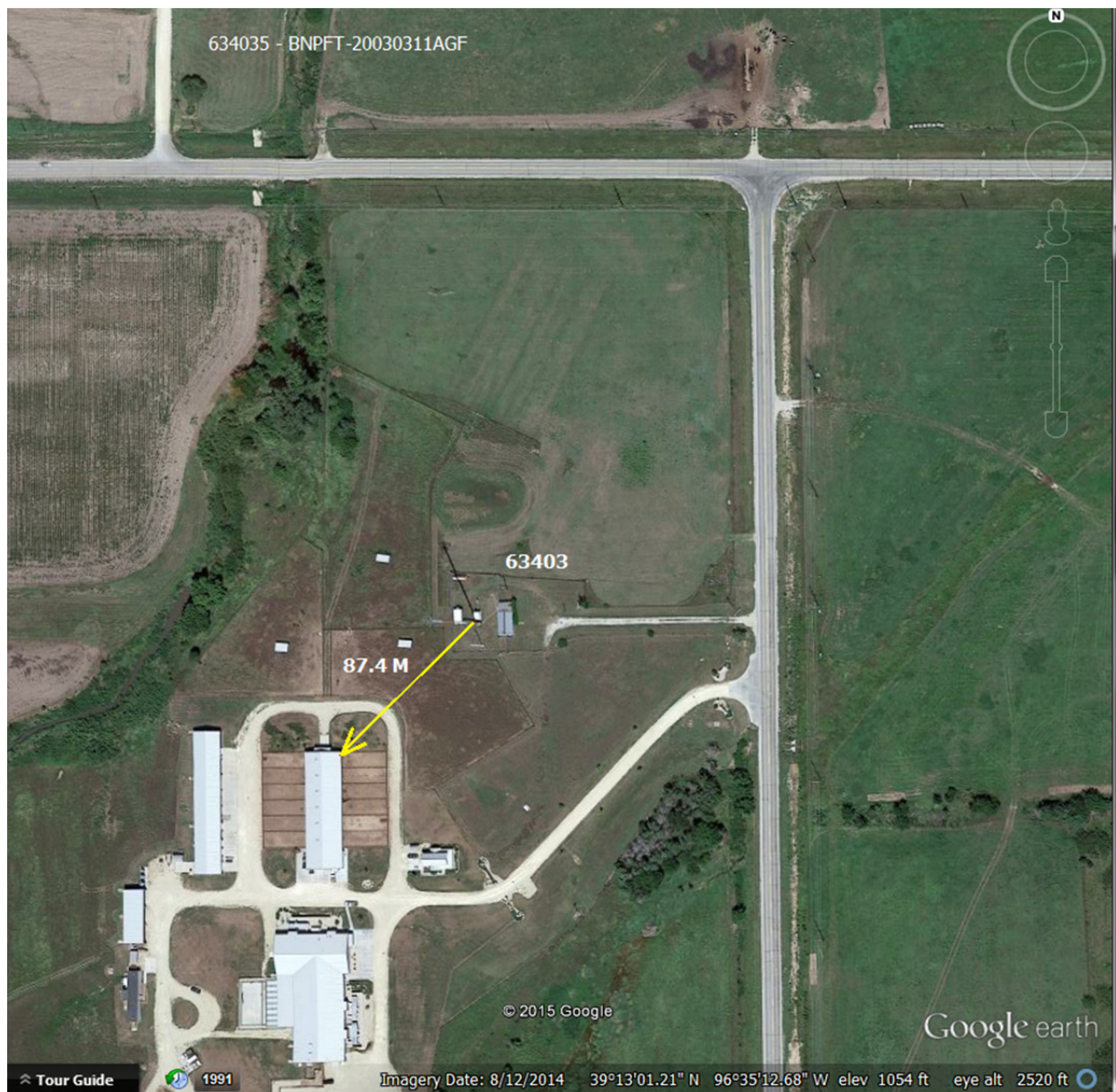
634035 Manhattan - CH 227, KS - BNPFT-20030311AGF
Great Plains Christian Radio
74.1204(d) Showing
Translator Maximum Licensed ERP = 0.17
Translator Antenna Height AG = 76 Meters
634035 Antenna Model = SHPX1F

Protected Station's Contour = 89.18623 dBu (634410-BNPFT-20030317KVF, Channel 229)
Translator's full Interference contour 129.18623

Review Azimuth = 350.8 Degrees True
Relative Field on the horizon at Review Azimuth = 1.000
Channel 224 Translator ERP on the horizon at Review Azimuth = 0.17 kw
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05.00	0.993	1.0	0.1676	031.5400	031.4200	073.251
10.00	0.974	1.0	0.1613	030.9366	030.4666	070.628
15.00	0.941	1.0	0.1505	029.8884	028.8700	068.264
20.00	0.897	1.0	0.1368	028.4909	026.7726	066.256
25.00	0.843	1.0	0.1208	026.7757	024.2670	064.684
30.00	0.78	1.0	0.1034	024.7747	021.4555	063.613
35.00	0.709	1.0	0.0855	022.5195	018.4469	063.083
40.00	0.633	1.0	0.0681	020.1056	015.4018	063.076
45.00	0.554	1.0	0.0522	017.5964	012.4425	063.557
50.00	0.473	1.0	0.0380	015.0236	009.6570	064.491
55.00	0.394	1.0	0.0264	012.5144	007.1780	065.749
60.00	0.317	1.0	0.0171	010.0687	005.0343	067.280
65.00	0.245	1.0	0.0102	007.7818	003.2887	068.947
70.00	0.181	1.0	0.0056	005.7490	001.9663	070.598
75.00	0.124	1.0	0.0026	003.9385	001.0194	072.196
80.00	0.077	1.0	0.0010	002.4457	000.4247	073.591
85.00	0.041	1.0	0.0003	001.3023	000.1135	074.703
90.00	0.016	1.0	0.0000	000.5082	000.0000	075.492

Great Plains Christian Radio, Inc. Satellite View



Declaration:

I, Douglas L. Vernier, declare that I have received training as an engineer from the University of Michigan School of Engineering. That, I have received degrees from the University in the field of Broadcast Telecommunications. That, I have been active in broadcast consulting for over 40 years;

That, I have held a Federal Communications Commission First Class Radiotelephone License continually since 1964. In 1985, this license was reissued by the Commission as a lifetime General Radiotelephone license no. PG-16-16464;

That, I am certified as a Life-Time Professional Broadcast Engineer (#50258) by the Society of Broadcast Engineers, Indianapolis, Indiana.

That, my qualifications are a matter of record with the Federal Communications Commission;

That, I have been retained by the University of Kansas to prepare the engineering showings appended hereto:

That, I have prepared these broadcast engineering showings, the technical information contained in same and the facts stated within are true of my knowledge;

That, under penalty of perjury, I declare that the foregoing is correct.

A handwritten signature in blue ink, appearing to read "Doug Vernier", with a large, stylized initial "D" and a horizontal line extending to the right.

Douglas L. Vernier

Executed on March 26, 2015