

**MINOR LICENSE MODIFICATION APPLICATION
K256CT, Denver, CO**

TECHNICAL STATEMENT

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This technical statement and attached exhibits were prepared on behalf of the Boulder Community Broadcast Association, Inc. ("BCBA"), licensee of FM translator K256CT, Denver, CO Facility ID 155203. This application seeks to make a minor modification to K256CT's licensed frequency to its IF, channel 203 (53 channels), relocate to a new tower site 21km from the currently licensed site, and modify the directional pattern. The primary station for K256CT will remain KGNU (AM), 1390kHz, Fac ID #31349. Both K256CT and KGNU (AM) are designated noncommercial.

Facilities Proposed

Location (NAD83)	39° 44' 37" N Latitude, 104° 59' 20" W Longitude
Channel	203D (88.5MHz)
Tower Overall AGL Height-	249.9m
Tower ASR (Attached Exhibit D)	1063701 (Building)
Proposed Antenna	Dual Scala CL-FM ¼ wave offset
Antenna AGL Height-	244m
Site AMSL Height-	1,594m
COR AMSL Height	1,838m
ERP	0.25 kW DIRECTIONAL (Exhibit A)

Interference Study

ComStudy 2.2 search of channel 203 (88.5 MHz Class D) at 39-44-37.0 N, 104-59-20.0 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
KVOD	LAKEWOOD	CO 201 C3	21.23	0.00	266.8	-19.79 dB Exhibit C
K205FV	PLAINVIEW	CO 205 D	21.32	0.00	266.9	-2.59 dB Exhibit C
KGNU-FM	BOULDER	CO 203 C2	40.19	0.00	10.7	0.41 dB Exhibit B
KGNU-FM	BOULDER	CO 203 A	31.07	0.00	332.9	0.36 dB Exhibit B
KCME	MANITOU SPRINGS	CO 204 C1	111.47	0.00	174.3	1.98 dB Exhibit B
K202EQ	LAKE GEORGE	CO 202 D	89.30	0.00	210.5	17.60 dB
KRFC	FORT COLLINS	CO 205 C2	91.72	0.00	3.8	20.79 dB
KFFR	WINTER PARK	CO 202 C3	74.90	0.00	293.4	24.98 dB
NCE-MXG-46	FRASER	CO 206 C3	74.87	0.00	293.4	26.62 dB
K203AT	WESTCLIFFE, ETC.	CO 203 D	189.68	0.00	185.2	27.92 dB
KTPL	PUEBLO	CO 202 C1	199.73	0.00	180.3	31.14 dB

LMS as of 8-29-23

COMPLIANCE, 74.1201(g), 74.1233(a)(1), 74.1204(a) and 74.1204(d)

Exhibit B demonstrates compliance with 74.1204(a). There are no impermissible contour overlaps to any other facilities.

The KGNU (AM) transmitter is only 9.7km from the proposed K256CT translator. The 60dBu contour of the proposed K256CT on 203D will be completely contained within the 2mV contour of KGNU (AM), is within 25 miles of the transmitter site, and is thus compliant with 74.1201(g).

Exhibit C demonstrates that the proposed facility will protect stations KVOD (201C3) and K205FV (205D) signals. There will be no location at ground level that receives a signal from the proposed 203D translator greater than 20dB above the signal from KVOD or K205FV. The proposed facility will thus be compliant with 74.1204(d).

As demonstrated in Exhibit B, the proposed K256CT 60dBu contour will overlap a portion of the licensed facility and is thus compliant with 74.1233(a)(1).

Environmental Exhibit

The proposed K256CT facility as proposed will utilize a directional antenna located on an existing ASR-registered building, (ASR 1063701). The RF density at rooftop level near the tower was calculated using an EPA type 2 antenna at 250 watts horizontal and vertical, 6m above the roof of the building and 244m above the ground. Using the FCC program “FM Model¹”, it was calculated that the proposed antenna contributes approximately 139 μ W/cm² or 70 % of the total allowable 200 μ W/cm² at rooftop level 1.8m from the base of the mounting

¹ <https://www.fcc.gov/general/fm-model>

pole on the roof. The proposed antenna contributes approximately $0.03\mu\text{W}/\text{cm}^2$ or 0.015 % of the total allowable $200\mu\text{W}/\text{cm}^2$ at ground level.

The proposed facility will be operating on a rooftop with numerous other broadcasters and RF sources. The building has a strict RF compliance program that requires the reduction of power or shut down of any antenna on the roof when service personnel are present. There is no public access to the roof area. Because of the rooftop policies of the building and the fact that the maximum RF at ground level is expected to be well under 5% of the maximum level allowed, it is believed that the proposed facility is compliant under §1.1307(b)(3) and is excluded from further environmental review under §1.1306 of the FCC rules and regulations.

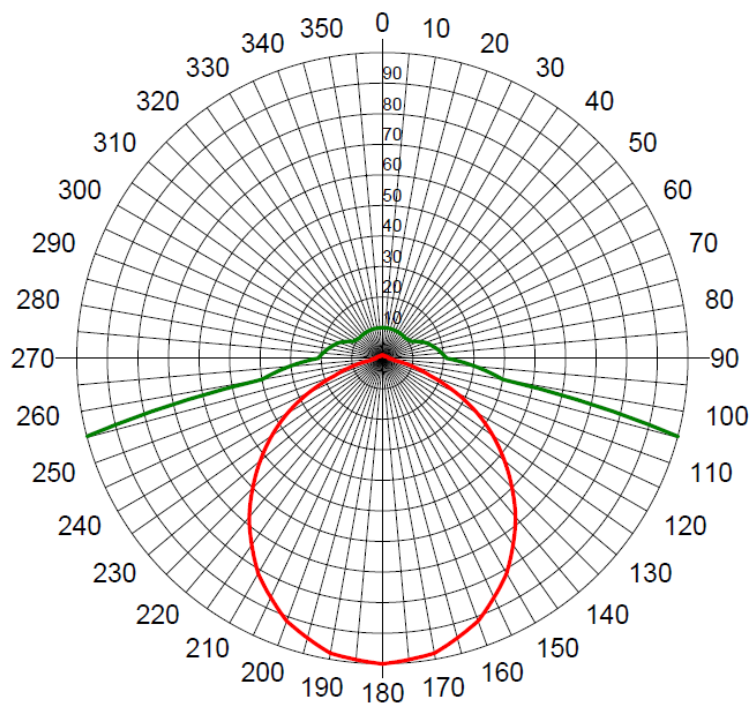
Respectfully Submitted

A handwritten signature in cursive script, appearing to read "Bert Goldman", written in dark ink.

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EXHIBIT A: Custom Dual Log-Periodic Antenna

K256CT on 203D Antenna Pattern



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	0.010	-46.02	0.000	-40.00	180	1.000	-6.02	0.250	0.00
10	0.010	-46.02	0.000	-40.00	190	0.980	-6.20	0.240	-0.18
20	0.010	-46.02	0.000	-40.00	200	0.915	-6.79	0.209	-0.77
30	0.010	-46.02	0.000	-40.00	210	0.813	-7.82	0.165	-1.80
40	0.010	-46.02	0.000	-40.00	220	0.678	-9.40	0.115	-3.38
50	0.010	-46.02	0.000	-40.00	230	0.522	-11.67	0.068	-5.65
60	0.011	-45.19	0.000	-39.17	240	0.360	-14.89	0.032	-8.87
70	0.015	-42.50	0.000	-36.48	250	0.165	-21.67	0.007	-15.65
80	0.018	-40.92	0.000	-34.89	260	0.040	-33.98	0.000	-27.96
90	0.021	-39.58	0.000	-33.56	270	0.021	-39.58	0.000	-33.56
100	0.040	-33.98	0.000	-27.96	280	0.018	-40.92	0.000	-34.89
110	0.165	-21.67	0.007	-15.65	290	0.015	-42.50	0.000	-36.48
120	0.360	-14.89	0.032	-8.87	300	0.011	-45.19	0.000	-39.17
130	0.522	-11.67	0.068	-5.65	310	0.010	-46.02	0.000	-40.00
140	0.678	-9.40	0.115	-3.38	320	0.010	-46.02	0.000	-40.00
150	0.813	-7.82	0.165	-1.80	330	0.010	-46.02	0.000	-40.00
160	0.915	-6.79	0.209	-0.77	340	0.010	-46.02	0.000	-40.00
170	0.980	-6.20	0.240	-0.18	350	0.010	-46.02	0.000	-40.00

Rotation Angle = 0

EXHIBIT B- 74.1201(a), 74.1201(g), 74.1233(a)(1) Compliance

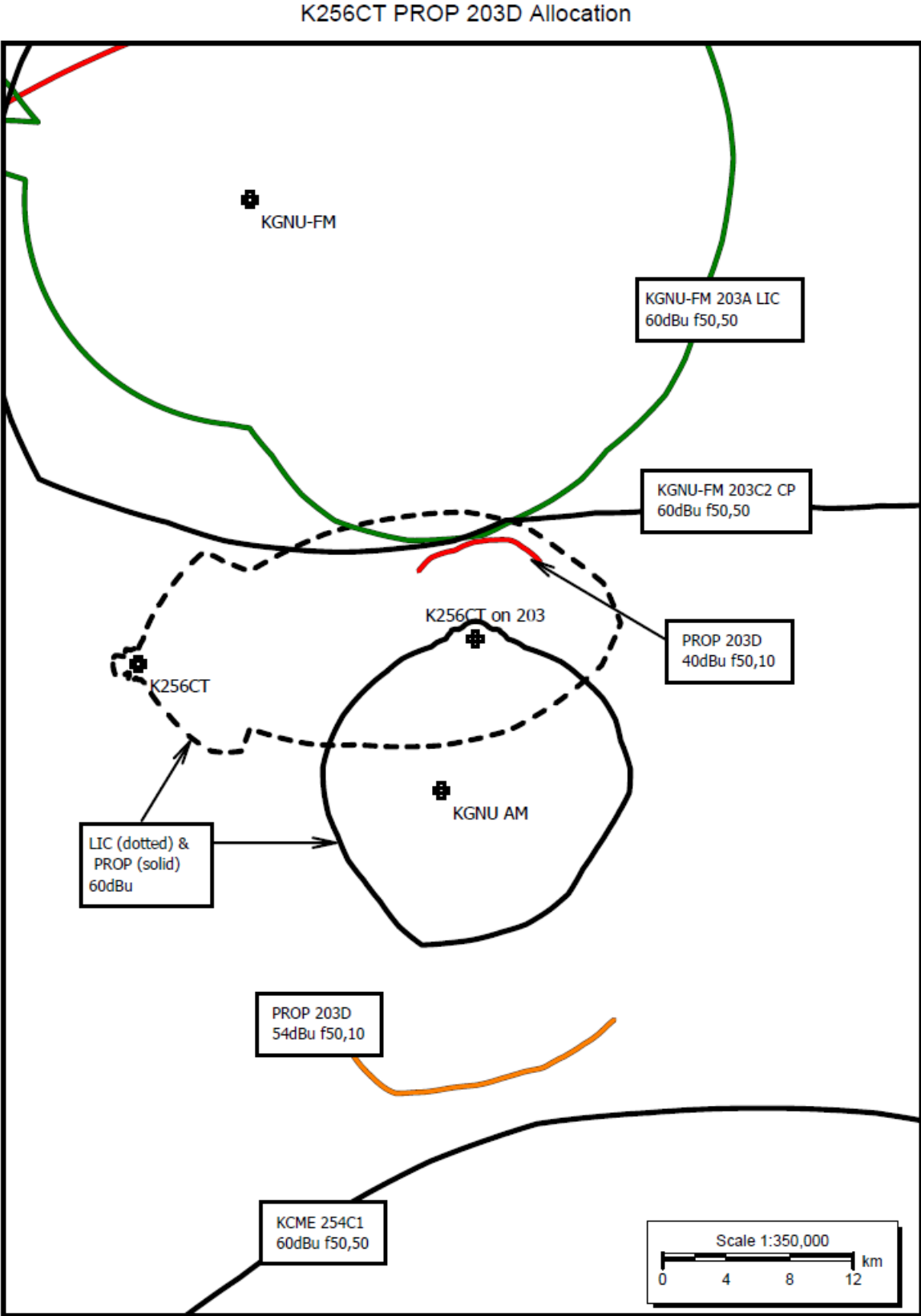


EXHIBIT C- 74.1204D Compliance to K205FV

K256CT Denver , CO, Showing Protection to K205FV , Channel: 205

Geographic Coordinates: N. 394437 W. 1045920

74.1204(d) Study - Using NED 03 SEC Terrain Database

Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 203

Translator or LPFM Antenna Height AG = 244 meters

K256CT Antenna Azimuth Model = Vertical Model Name = 2-CL-FM V STACK OPT94 WL SPC

Protected Station's Contour = 62.20859 dBu

Translator's or LPFM's full Interference contour 102.20859

Review Azimuth = 0 Degrees True

Horizontal Relative Field at Review Azimuth = 1.000

Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW

Distance between stations = 21.3 km

Protected Station= K205FV, .099 kW, 2249 M meters COR AMSL

Depression Angle From Degree (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	860.0833	860.0833	244.000
05.00	0.914	1.0	0.2088	786.1161	783.1247	175.485
10.00	0.828	1.0	0.1714	712.1490	701.3298	120.337
15.00	0.632	1.0	0.0999	543.5726	525.0508	103.313
20.00	0.436	1.0	0.0475	374.9963	352.3813	115.744
25.00	0.249	1.0	0.0154	213.7307	193.7058	153.674
30.00	0.061	1.0	0.0009	052.4651	045.4361	217.767
35.00	0.063	1.0	0.0010	053.7552	044.0337	213.167
40.00	0.15	1.0	0.0056	129.0125	098.8293	161.072
45.00	0.178	1.0	0.0079	153.0948	108.2544	135.746
50.00	0.159	1.0	0.0063	136.7532	087.9033	139.241
55.00	0.116	1.0	0.0034	099.7697	057.2255	162.273
60.00	0.071	1.0	0.0013	061.0659	030.5330	191.115
65.00	0.045	1.0	0.0005	038.7037	016.3569	208.922
70.00	0.019	1.0	0.0001	016.3416	005.5892	228.644
75.00	0.015	1.0	0.0001	012.4712	003.2278	231.954
80.00	0.01	1.0	0.0000	008.6008	001.4935	235.530
85.00	0.01	1.0	0.0000	008.6008	000.7496	235.432
90.00	0.01	1.0	0.0000	008.6008	000.0000	235.399

EXHIBIT C- 74.1204D Compliance to KVOD

K256CT Denver , CO, Showing Protection to KVOD , Channel: 201
 Geographic Coordinates: N. 394437 W. 1045920
 74.1204(d) Study - Using NED 03 SEC Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 203
 Translator or LPFM Antenna Height AG = 244 meters
 K256CT Antenna Azimuth Model = Vertical Model Name = 2-CL-FM V STACK OPT94 WL SPC

Protected Station's Contour = 79.45317 dBu
 Translator's or LPFM's full Interference contour 119.45317

Review Azimuth = 0 Degrees True
 Horizontal Relative Field at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW
 Distance between stations = 21.2 km
 Protected Station= KVOD, 4.4 kW, 2275 M meters COR AMSL

Depression Angle From Degree (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	118.1168	118.1168	244.000
05.00	0.914	1.0	0.2088	107.9587	107.5479	234.591
10.00	0.828	1.0	0.1714	097.8007	096.3149	227.017
15.00	0.632	1.0	0.0999	074.6498	072.1062	224.679
20.00	0.436	1.0	0.0475	051.4989	048.3931	226.386
25.00	0.249	1.0	0.0154	029.3520	026.6020	231.595
30.00	0.061	1.0	0.0009	007.2051	006.2398	240.397
35.00	0.063	1.0	0.0010	007.3823	006.0472	239.766
40.00	0.15	1.0	0.0056	017.7175	013.5724	232.611
45.00	0.178	1.0	0.0079	021.0248	014.8668	229.133
50.00	0.159	1.0	0.0063	018.7806	012.0719	229.613
55.00	0.116	1.0	0.0034	013.7015	007.8589	232.776
60.00	0.071	1.0	0.0013	008.3863	004.1931	236.737
65.00	0.045	1.0	0.0005	005.3153	002.2463	239.183
70.00	0.019	1.0	0.0001	002.2442	000.7676	241.891
75.00	0.015	1.0	0.0001	001.7127	000.4433	242.346
80.00	0.01	1.0	0.0000	001.1812	000.2051	242.837
85.00	0.01	1.0	0.0000	001.1812	000.1029	242.823
90.00	0.01	1.0	0.0000	001.1812	000.0000	242.819