

CITY OF LICENSE
CALL LETTERS
FACILITY ID
PREPARED FOR
VERSION
JOB

West Haven, OR
K296FT
158590
Metro East Community Media
1.0
121019

CONSOLIDATED

ENGINEERING EXHIBIT

FCC Form 2100, Schedule 349

BROWN BROADCAST SERVICES
INCORPORATED

Michael D. Brown

3740 S.W. Comus St.

Portland, Oregon 97219-7418

503-245-6065

**ENGINEERING STATEMENT
APPLICATION FOR A MINOR MODIFICATION OF
K296FT, WEST HAVEN, OR
Metro East Community Media**

SUMMARY

The applicant seeks a minor modification of licensed translator K296FT. The following changes are proposed:

1. change of primary station to KXRY, Portland, OR, necessitating (2)
2. change in status to a non-fill-in translator, necessitating (3)
3. reduction in ERP to comply with §74.1235(b)(2)
4. rotate existing directional antenna 10dg
5. minor correction to antenna height AGL
6. change to direct over-the-air reception

The antenna location will remain unchanged.

The directional pattern is based on data supplied by the manufacturer, for this specific frequency. This antenna is not an “off-the-shelf” FCC standard pattern.

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Exhibit E-1

K296FT, West Haven, OR

Proposed vs Licensed 60dBu Contours

Brown Broadcast Services, Inc.
 Job: K296FT 2021.fmj
 Master Database: 2021_Aug_06.fmd
 Lat: N45:29:20 Lon: W122:41:44 NAD-83
 Scale: 1:200000
 Channel: 296 Class: DX

rfInvestigator Version 3.8.16
 by rfSoftware, Inc.
 Date: 8/13/2021 9:09:29 AM
 Key:

- City Grade
- Protected
- Co-Channel
- 1st Adj
- 2nd/3rd Adj

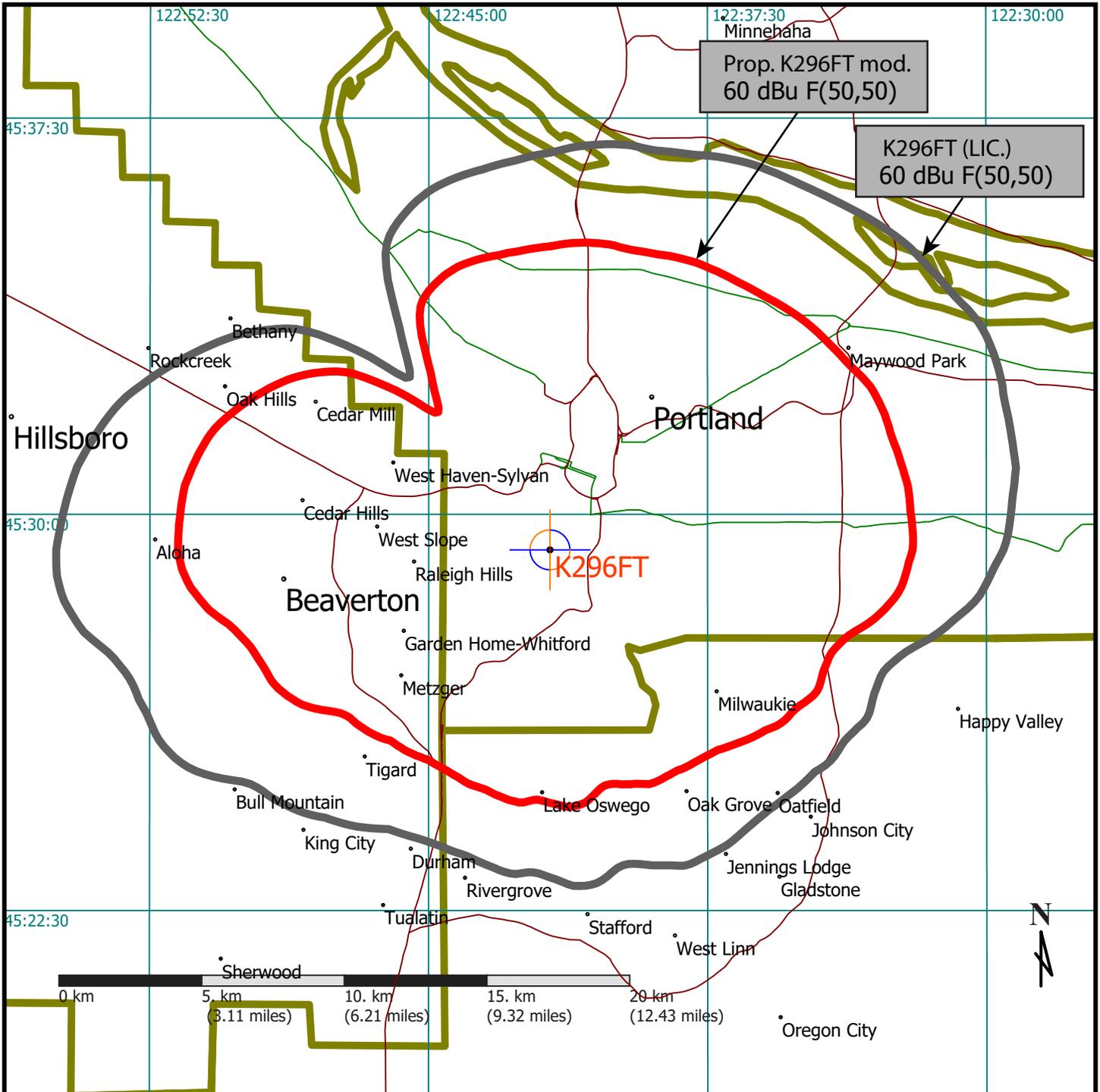


EXHIBIT E-2 OVERLAP REQUIREMENTS

CONTOUR PROTECTION

This application meets all requirements of 47 CFR §74.1204 regarding interference protection to other stations and authorizations.

K296FT Prop. Mod to 34w ERP Metroeast Community Media													
CH# 296D - 107.1 MHz, Pwr= 0.034 kW DA, HAAT= 265.7 M, COR= 352.3 M													
										Average Protected F(50-50)= 12.9 km		Standard Directional	
										DISPLAY DATES			
										DATA 08-11-21			
										SEARCH 08-11-21			
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kW)	INT(km)	PRO(km)	*OUT*			
CITY	STATE			<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)			
294C	KLTH	LIC	CN	315.2	4.26	45 30 57.40	100.000	12.6	87.1	-83.1*			
Lake Oswego	OR			135.1	BLH20100416AAO	122 44 03.40	502	594	Ihm Licenses, LLC				
298C0	KXJM	LIC	CN	315.3	4.27	45 30 57.80	71.000	11.4	83.6	-79.7*			
Banks	OR			135.3	BLH20091013ABB	122 44 03.20	502	594	Ihm Licenses, LLC				
296D	K296FT!	LIC	DCN	0.0	0.00	45 29 19.40	0.099		---Reference---				
West Haven	OR			0.0	BLFT20190417AAR	122 41 44.30		354	Metroeast Community Media				
296C1	KLVU	LIC	NCN	175.4	112.17	44 28 58.40	10.000	151.1	66.2	14.6			
Sweet Home	OR			355.5	BLED20151029AHG	122 34 58.30	725	1249	Educational Media Foundati				
296C3	KRQT	LIC	NCN	341.9	99.41	46 20 17.30	0.800	97.4	35.6	28.4			
Castle Rock	WA			161.7	BLH20081216AAF	123 05 49.40	523	809	Bicoastal Media Licenses I				
296D	KRQT-FM1	LIC	DCN	345.5	74.21	46 08 05.40	2.000	23.8	7.1	32.0			
Longview	WA			165.4	BLFTB20001018ACF	122 56 10.40		21	Bicoastal Media Licenses I				
296D	K296GO	LIC	CN	87.4	85.65	45 31 08.40	0.140	20.4	6.1	37.1			
Parkdale	OR			268.1	BLFT20170103ABM	121 35 50.20	-316	546	Radio Tierra				

Terrain database is FCC NGDC 30 Sec, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
 In & out distances between contours are shown at closest points. Reference Zone= West Zone, Co to 3rd adjacent.
 All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 Incoming contour overlap is ignored.
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour. Protection to these stations is shown by the ratio method.

As shown above, and by Exhibit E-3, there are no co-channel contour-overlap issues.

There are no first-adjacent stations within range. With a proposed ERP of under 100 watts, there are no I.F. spacing requirements.

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Contour protection to 2nd adjacent stations KLTH, Lake Oswego, OR and KXJM, Banks, OR is provided using the ratio method. The F(50/50) contour of KLTH is 113.2dBu at the proposed translator site. For KXJM, the contour is 111.7dBu. Using the appropriate U/D ratio of 40dB, the corresponding “worst-case” interfering contour of the proposed translator is therefore 151.7dBu. At 34 watts peak ERP, this contour would extend to a distance of 1 meter from the antenna. The antenna is proposed to be at 42 meters above the ground, therefore no interference will occur in populated areas.

This translator is in the Canadian zone. The proposed 34 dBu F(50,10) contour does not extend onto Canadian soil.

COMPLIANCE WITH §74.1235 ERP LIMITS

BEARING	DIRECTIONAL ANTENNA relative field	ANTENNA HAAT (m)	MAX ERP (W) §74.1235(b)(2)	PROPOSED ERP (W)
0	0.605	296.0	28	12.44
30	0.675	302.5	28	15.49
60	0.876	282.2	34	26.09
90	0.961	268.6	34	31.40
120	0.624	277.9	34	13.24
150	0.449	284.7	34	6.85
180	0.512	242.6	41	8.91
210	0.445	262.7	34	6.73
240	0.624	274.7	34	13.24
270	0.981	278.2	34	32.72
280	1.000	271.6	34	34.00
300	0.910	226.9	41	28.16
330	0.686	192.0	75	16.00

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DIRECTIONAL ANTENNA PATTERN

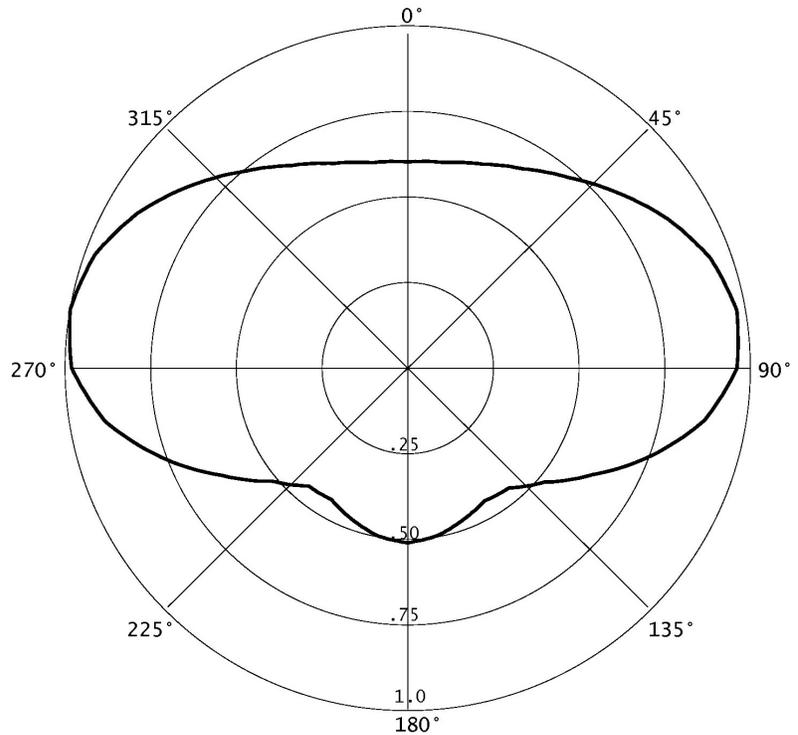
K296FT

08-12-2021

RMS(V)= .719

Graph is Relative Field

Azi	Field	dBk	kw
000	0.605	-19.050	0.012
010	0.613	-18.936	0.013
020	0.637	-18.602	0.014
030	0.675	-18.099	0.015
040	0.730	-17.419	0.018
050	0.800	-16.623	0.022
060	0.876	-15.835	0.026
070	0.941	-15.213	0.030
080	0.975	-14.905	0.032
090	0.961	-15.031	0.031
100	0.880	-15.796	0.026
110	0.754	-17.138	0.019
120	0.624	-18.782	0.013
130	0.520	-20.365	0.009
140	0.459	-21.449	0.007
150	0.449	-21.640	0.007
160	0.473	-21.188	0.008
170	0.499	-20.723	0.008
180	0.512	-20.500	0.009
190	0.500	-20.706	0.009
200	0.473	-21.188	0.008
210	0.445	-21.718	0.007
220	0.451	-21.602	0.007
230	0.516	-20.432	0.009
240	0.628	-18.726	0.013
250	0.765	-17.012	0.020
260	0.897	-15.629	0.027
270	0.981	-14.852	0.033
280	1.000	-14.685	0.034
290	0.972	-14.932	0.032
300	0.910	-15.504	0.028
310	0.831	-16.293	0.023
320	0.752	-17.161	0.019
330	0.686	-17.959	0.016
340	0.639	-18.575	0.014
350	0.612	-18.950	0.013



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Exhibit E-3 Co-Channel Contour Protection

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Master Database: 2021_Aug_06.fmd
Lat: N45:29:20 Lon: W122:41:44 NAD-83
Scale: 1:1250000
Channel: 296 Class: DX

rfInvestigator Version 3.8.16
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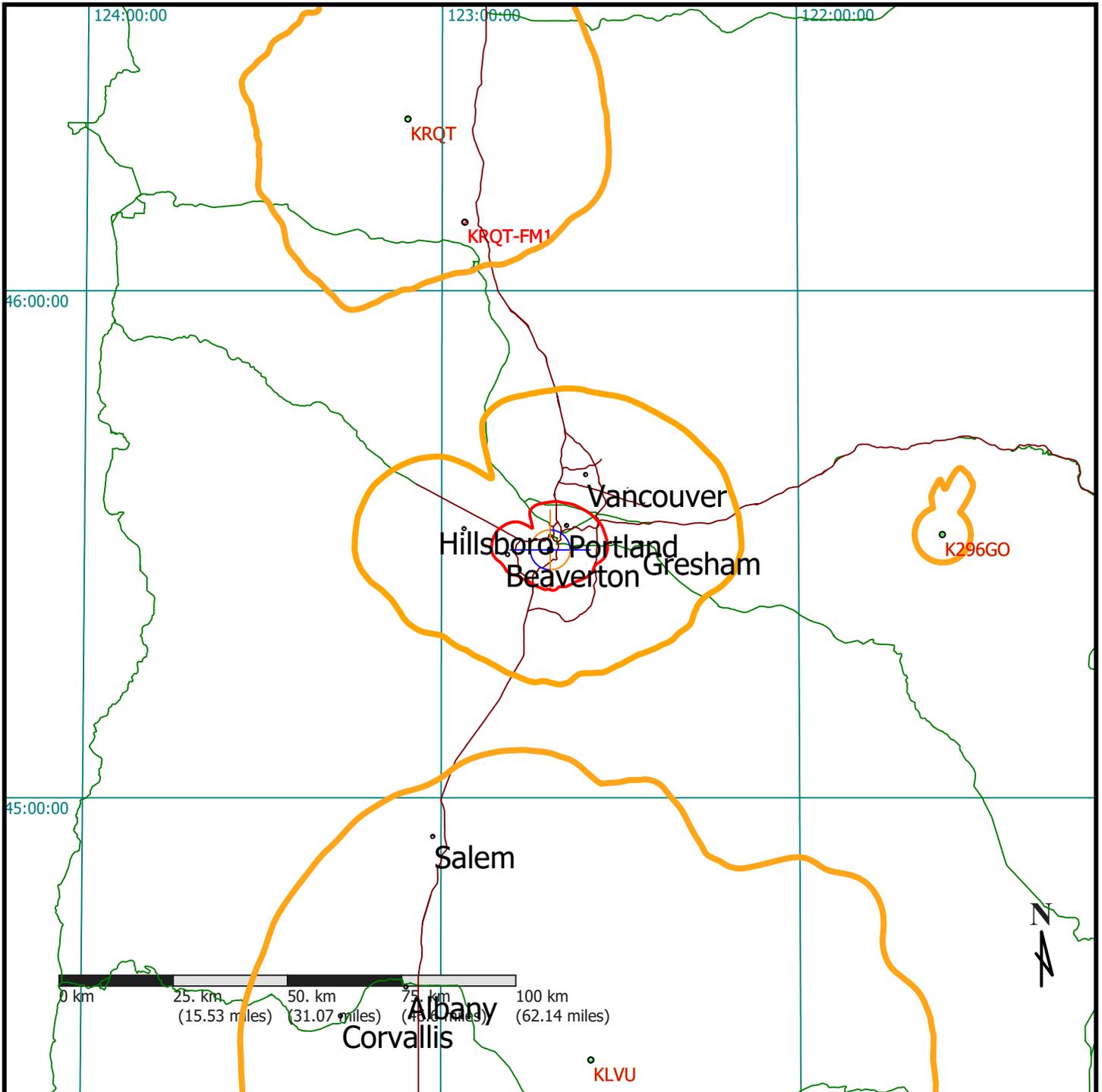


EXHIBIT E-4

ENVIRONMENTAL PROTECTION ACT / NIER ANALYSIS

The applicant proposes an antenna on an existing 189 meter registered tower. The proposed center of radiation is 42m AGL. A one-bay Bext TFC2K-D circularly-polarized antenna is proposed. Calculations were made using FM Model for Windows, online version, using the appropriate “EPA Type 2: Opposed V Dipole” setting. FM Model predicted a peak ground-level exposure of $0.39\mu\text{W}/\text{cm}^2$, at 41 meters from the tower. This represents 0.2% of the Maximum Permissible Exposure (MPE) of $200\mu\text{W}/\text{cm}^2$ for uncontrolled environments.

Public access to the tower is restricted by fencing and locked access doors. The site is posted with appropriate RF exposure warning signs. If tower climbing by authorized personnel becomes necessary, transmitter power will be reduced or operation will cease, as necessary, so as to not exceed the RF exposure limits.

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