

ENGINEERING STATEMENT  
SUPPORTING REQUEST FOR WAIVER  
TELEVISION STATION KGHB-CD  
(FACILITY ID NO. 24515)  
PUEBLO, ETC., COLORADO  
CHANNEL 21

Background

This statement was prepared on behalf of Entravision Communications Corporation, licensee of KGHB-CD, Pueblo, Etc., CO, in support of a request for waiver of the FCC's Phase Assignment, Testing Period, and Phase Completion Date for television station KGHB-CD in the Colorado Springs-Pueblo DMA\*. KGHB-CD is licensed for operation on RF Channel 27 with a maximum effective radiated power (ERP) of 15 kW and an antenna height above mean sea level (AMSL) of 1649 m.†

As a result of the FCC's Incentive Auction repack process, the KGHB-CD facility was reassigned to RF Channel 21. KGHB-CD now holds a construction permit for operation on Channel 21 with a maximum directional ERP of 15 kW and an antenna height AMSL of 1648.6 m.‡ An FCC engineering database summary sheet for the KGHB-CD construction permit facility is attached hereto for reference. The KGHB-CD construction permit facility is the subject early transition facility.

In coordination with the wireless carrier T-Mobile, Entravision Communications Corporation seeks a waiver of the FCC's Phase Assignment, Testing Period, and Phase Completion Date to allow KGHB-CD to make the transition to Channel 21 earlier than its given phase transition date. Specifically, the target date for KGHB-CD to begin operations on Channel 21 is June 21, 2019. This will facilitate the early deployment of new 600 MHz band wireless broadband services.

This statement demonstrates that the KGHB-CD facility can transition to Channel 21 before its assigned phase date without any disruption to the FCC's transition plans. Specifically, it is demonstrated that the operation of KGHB-CD on Channel 21

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\* Nielsen Designated Market Area abbreviated as DMA.

† See FCC File No. BLDTA-20120817AAY.

‡ See FCC File No. 0000034455.

will have no adverse interference consequences, either caused or received, under the current allocation environment.

#### Assigned Phase

KGHB-CD is assigned to transition Phase 8, with a testing begin date of January 18, 2020. This is based on the latest FCC Phase Assignment spreadsheet dated October 5, 2018.

#### Linked Station Sets and Linked Station Neighbor Stations

An inspection of the latest FCC Linked Station Set (LSS) and Linked Station Neighbor (LSN) spreadsheet databases indicates that the KGHB-CD facility is part of two LSS/LSN cases. Specifically, there are two KGHB-CD downstream dependencies with the following:

- KKTU, Colorado Springs, CO (Facility ID 35037) (Ch. 49 → 26)
- KVSU-DT, Pueblo, CO (Facility ID 166331) (Ch. 48 → 27)

These are based on the latest LSS and LSN spreadsheets available from the FCC, both dated July 27, 2018.

Because these cases are downstream from the KGHB-CD facility, there is no interference impediment for KGHB-CD making an early transition. Furthermore, by doing an early transition, KGHB-CD will eliminate the two LSS/LSN cases with KKTU and KVSU-DT, which will simplify the Incentive Auction transition process.

#### Interference Caused Analysis Under Current Allocation Environment

An interference analysis was conducted for the KGHB-CD Channel 21 facility utilizing the latest version<sup>§</sup> of the FCC's *TVStudy* coverage and interference analysis prediction software. The report of the results is attached hereto entitled 'Interference Caused Analysis for KGHB-CD Channel 21 Construction Permit Facility Under Current Allocation Environment.'

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<sup>§</sup> *TVStudy* Version 2.2.5

The results of the analysis indicate that the proposal meets the 0.5% permissible interference level with respect to interference caused to all other full-service and Class A television stations.

#### Interference Received Analysis Under Current Allocation Environment

An interference analysis specifically for the ‘received case’ of interference was conducted for the KGHB-CD Channel 21 early transition facility utilizing the FCC’s *TVStudy* prediction software. The report of the results is attached hereto entitled ‘Interference Received Analysis for KGHB-CD Channel 21 Construction Permit Facility Under Current Allocation Environment.’ The purpose of this study is to evaluate all current environment records in the received interference analysis.

The results of the analysis indicate that there are no cases of incoming (received) interference exceeding the permissible 0.5% interference level to the KGHB-CD Channel 21 early transition facility.

#### Effects on Linked Station Sets

It has been determined that the early transition of the KGHB-CD facility to Channel 21 in advance of its phase transition date will not create any pairwise interference cases or new linked station sets.

In addition, by doing an early transition, KGHB-CD will eliminate the two downstream LSS/LSN cases with KKTU and KVSU-DT, which will simplify the Incentive Auction transition process.

#### Conclusion

It is concluded that the early transition of the KGHB-CD facility on Channel 21 as described herein, will not result in any interference caused or received cases that would

result in the creation of any new linked station sets or dependencies established in the Incentive Auction repack process. Furthermore, by doing an early transition, KGHB-CD will eliminate two downstream dependencies with stations KKTU and KVSU-DT, which will simplify the Incentive Auction transition process.



Louis R. du Treil, Jr., P.E.

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3135 Southgate Circle  
Sarasota, Florida 34239

October 11, 2018

# TV Inquiry

## KGHB-CD EARLY TRANSITION FACILITY

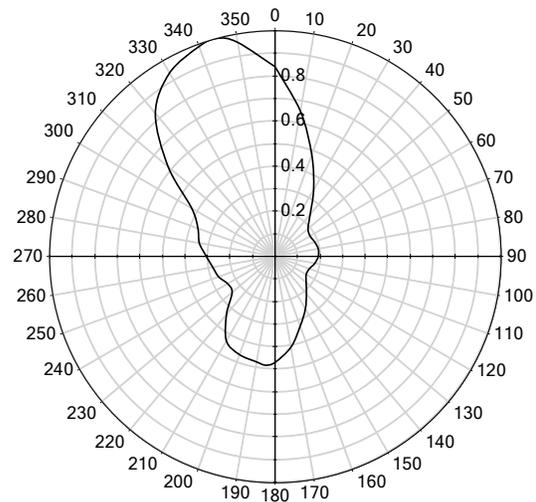
du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



**Callsign:** KGHB-CD    **Service:** DC    **Status:** CP MOD    **App. Status:** GRANT    **Border Code:**    **Rec. Type:** C  
**Channel:** 21    **Offset:** Z    **Zone:**    **Docket Number:**    **DTV Type:** POSTTRAN  
**Fac. ID:** 24515    **Assoc. ID:**    **Application File No.:** BLANK-0000034455    **DT Emission Mask:** T  
**City:** PUEBLO, ETC.    **State:** CO    **Country:** US    **CP Expiration Date:**  
**Party Name:** ENTRAVISION HOLDINGS, LLC    **Last Change Date:** 12/6/2017

<b>Latitude (NAD 83):</b> 038-22-21.4	<b>Height AGL (m):</b> 24	<b>Polarization:</b> E
<b>Longitude (NAD 83):</b> 104-33-39.9	<b>Overall Height AGL (m):</b> 96	<b>Electrical Tilt (°):</b> 1
<b>RCAMSL (m):</b> 1648.6	<b>ERP (kW):</b> 15	<b>Mechanical Tilt (°):</b>
<b>Site Elevation AMSL (m):</b> 1624.6	<b>Maximum ERP (kW):</b>	<b>Mechanical Tilt Azimuth (°):</b>
<b>HAAT (m):</b>	<b>Maximum ERP (dBk):</b> 11.8	<b>Degrees True (°):</b>
<b>Maximum HAAT (m):</b>	<b>Maximum ERP at any Angle (kW):</b>	<b>Antenna Make:</b>
		<b>Antenna Model:</b>

**Antenna Type:** D    **Antenna ID:** 1002321    **Rotation (°):** 0  
 0° 0.840    90° 0.192    180° 0.470    270° 0.305    185° 0.484  
 10° 0.652    100° 0.179    190° 0.475    280° 0.341    345° 1.000  
 20° 0.477    110° 0.162    200° 0.463    290° 0.364  
 30° 0.342    120° 0.160    210° 0.432    300° 0.427  
 40° 0.242    130° 0.180    220° 0.335    310° 0.619  
 50° 0.191    140° 0.217    230° 0.249    320° 0.826  
 60° 0.180    150° 0.269    240° 0.243    330° 0.937  
 70° 0.187    160° 0.328    250° 0.266    340° 0.989  
 80° 0.195    170° 0.408    260° 0.280    350° 0.964



**Standard Pattern:**

**Antenna Make:** DIE  
**Antenna Model:** TLP-8 SP/VP-R

**Last Change Date:**

**Note:** Rotation or tilt is not applied to the pattern shown

<b>Type:</b> TOWER	<b>ASRN:</b> 1237865	<b>FAA Study No.:</b> 2003-ANM-490-OE	<b>Structure Height (m):</b> 91.4
<b>Latitude (NAD 27):</b> 038-22-21.4	<b>Date Received:</b> 04/16/2003		<b>Structure Height (ft):</b> 299.9
<b>Longitude (NAD 27):</b> 104-33-38	<b>Date Entered:</b> 04/16/2003		<b>Ground Elevation (m):</b> 1624.6
<b>Latitude (NAD 83):</b> 38-22-21.4	<b>Date Issued:</b> 03/04/2003		<b>Ground Elevation (ft):</b> 5330.1
<b>Longitude (NAD 83):</b> 104-33-39.9	<b>Date Constructed:</b> 01/01/1982		<b>Overall Height AGL (m):</b> 96.0
	<b>Date Dismantled:</b>		<b>Overall Height AGL (ft):</b> 315.0
<b>Struct. Address:</b>			<b>Overall Height AMSL (m):</b> 1720.6
NW 1/4 NE 1/4 Section 28, Township 19 S, Range 64			<b>Overall Height AMSL (ft):</b> 5645.0
Pueblo CO			

**Entity Name:** Pueblo Tall Tower Company

# INTERFERENCE CAUSED ANALYSIS FOR KGHB-CD CHANNEL 21 CONSTRUCTION PERMIT FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

tvstudy v2.2.5 (4uoc83)

Database: localhost, Study: kg hb21e2, Model: Longley-Rice

Study build station data: LMS TV 2018-10-11

Proposal: KGHB21E2 D21z DC CP PUEBLO, ETC., CO  
 File number: kg hb21e2  
 Facility ID: 24515  
 Station data: User record  
 Record ID: 3282  
 Country: U.S.

**Build options:**

Protect pre-transition records not on baseline channel

Protect LPTV records from Class A

**Search options:**

All post-transition APP, CP, and baseline records excluded

**Stations potentially affected by proposal:**

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K19DY	N19	TX	LIC	CANON CITY, CO	BLTT20001027AAF	51.8 km
Yes	KXTU-LD	D20	LD	LIC	COLORADO SPRINGS, CO	BLDTL20120127AGP	49.0
No	K20KE-D	D20	LD	LIC	FORT MORGAN, CO	BLDTL20150115AAB	206.4
No	K42EA-D	D20	LD	CP	LAMAR, CO	BLANK0000052168	175.2
No	K20JG-D	D20	LD	LIC	SALIDA, ETC., CO	BLDTT20101004ACB	126.5
No	K47FT-D	D21	LD	CP	ANTON, CO	BLANK0000054462	195.3
No	K21HF-D	D21	LD	LIC	ASPEN, CO	BLDTT20121119AHA	218.7
No	K46FM-D	D21	LD	CP	BAYFIELD, CO	BLANK0000053897	288.9
No	K21ML-D	D21	LD	CP	BURLINGTON, CO	BNPDTL20100514AFQ	210.7
No	K21LC-D	D21	LD	LIC	CORTEZ, CO	BLDTT20140102ATL	333.5
No	KDEO-LD	D21	LD	CP	DENVER, CO	BLANK0000049532	162.1
No	KFCT	D21	DT	LIC	FORT COLLINS, CO	BLCDT20070920ACM	253.2
No	K21FF-D	D21	LD	LIC	HOLYOKE, CO	BLDTT20110502ABE	303.6
No	K21JK-D	D21	LD	CP	MONTROSE, CO	BLANK0000058503	317.7
No	K21JK-D	D21	LD	LIC	MONTROSE, CO	BLDTL20081107AEK	317.0
No	K21EF-D	D21	LD	LIC	PITKIN, CO	BLDTT20101129AMG	172.9
No	K21MM-D	D21	LD	CP	COLBY, KS	BNPDTL20100514AGI	330.8
No	KDCK	D21	DT	LIC	DODGE CITY, KS	BLEDT20030423ABG	388.1
No	K44FN-D	D21	LD	CP	MCCOOK/CULBERTSON, NE	BLANK0000053233	379.0
No	KYNM-CD	D21	DC	LIC	ALBUQUERQUE, NM	BLANK0000001606	389.2
No	K42CH-D	D21	LD	CP	CAPULIN, ETC., NM	BLANK0000053995	194.9
No	K46KV-D	D21	LD	CP	FARMINGTON, NM	BLANK0000052018	372.5
No	K21FD-D	D21	LD	LIC	TAOS, ETC., NM	BLDTT20091113ABQ	236.0
No	K38FP-D	D21	LD	CP	TUCUMCARI, NM	BLANK0000053142	367.8
No	K42CF-D	D21	LD	CP	GRUVER, TX	BLANK0000053124	367.2
No	K48MN-D	D22	LD	APP	BOULDER, CO	BLANK0000054558	185.2
Yes	KXRM-TV	D22	DT	LIC	COLORADO SPRINGS, CO	BLCDT20030702ABE	49.0
No	K22JM-D	D22	LD	LIC	GUNNISON, CO	BLDTL20121119AOW	204.7
No	KZCS-LP	N23z	TX	LIC	COLORADO SPRINGS, CO	BLTTL20021218AAJ	49.0
No	KSPK-LD	N28-	TX	LIC	WALSENBURG, CO	BLTTL20050315AGL	85.9
No	K28GE-D	N28+	TX	LIC	WOODLAND PARK, CO	BLTTL19991203AAV	81.3

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

**Record parameters as studied:**

Channel: D21z

Mask: Stringent

Latitude: 38 22 21.40 N (NAD83)

Longitude: 104 33 39.90 W

Height AMSL: 1648.6 m

HAAT: 0.0 m

Peak ERP: 15.0 kW

Antenna: DIE-TLP-8 SP/VP-R (ID 1002321) 0.0 deg

Elev Pattn: Generic

Elec Tilt: 1.00

49.5 dBu contour:

# INTERFERENCE CAUSED ANALYSIS FOR KGHB-CD CHANNEL 21 CONSTRUCTION PERMIT FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

Azimuth	ERP	HAAT	Distance
0.0 deg	10.6 kW	79.9 m	40.1 km
45.0	0.703	96.6	28.7
90.0	0.553	147.5	31.5
135.0	0.591	185.4	34.0
180.0	3.31	187.2	43.1
225.0	1.28	170.9	37.2
270.0	1.40	119.1	34.4
315.0	7.83	95.3	40.7

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m    Computed HAAT: 135 m

Distance to Canadian border: 1181.1 km

Distance to Mexican border: 753.8 km

Conditions at FCC monitoring station: Grand Island NE  
Bearing: 59.7 degrees    Distance: 596.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 343.1 degrees    Distance: 203.0 km  
ERP: 14.9 kW    Field strength: 2.1 dBu, 0.0 mV/m

No land mobile station failures found

Study cell size: 1.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

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Interference to BLDTL20120127AGP LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance			
	KXTU-LD	D20	LD	LIC	COLORADO SPRINGS, CO	BLDTL20120127AGP				
Undesireds:	KGHB21E2	D21z	DC	CP	PUEBLO, ETC., CO	kghb21e2	49.0 km			
	K19DY	D19	LD	CP	CANON CITY, CO	BDFCDTT20100111AEX	43.9			
	K45KB-D	D19	LD	CP	LAKE GEORGE, CO	BLANK0000052545	32.3			
	K48NK-D	D20	LD	LIC	CORTEZ, ETC, CO	BLANK0000060677	325.9			
	K20KE-D	D20	LD	LIC	FORT MORGAN, CO	BLDTL20150115AAB	172.1			
	K20JW-D	D20	LD	CP	JACKS CABIN, CO	BPDTT20150123AHB	169.0			
	K20JG-D	D20	LD	LIC	SALIDA, ETC., CO	BLDTT20101004ACB	105.2			
	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX					
	7685.9	786,492	6841.2	774,082	6810.3	772,990	6728.9	770,041	1.19	0.38
Undesired			Total IX	Unique IX, before	Unique IX, after					
KGHB21E2	D21z	DC	CP	81.4	2,949	81.4	2,949			
K19DY	D19	LD	CP	5.0	582	5.0	582			
K45KB-D	D19	LD	CP	10.9	451	8.0	451			
K20KE-D	D20	LD	LIC	8.0	0	7.0	0			
K20JG-D	D20	LD	LIC	10.0	59	8.0	59			

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Interference to BLDTL20120127AGP LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KXTU-LD	D20	LD	LIC	COLORADO SPRINGS, CO	BLDTL20120127AGP	
Undesireds:	KGHB21E2	D21z	DC	CP	PUEBLO, ETC., CO	kghb21e2	49.0 km
	K45KB-D	D19	LD	CP	LAKE GEORGE, CO	BLANK0000052545	32.3
	K48NK-D	D20	LD	LIC	CORTEZ, ETC, CO	BLANK0000060677	325.9
	K20KE-D	D20	LD	LIC	FORT MORGAN, CO	BLDTL20150115AAB	172.1
	K20JW-D	D20	LD	CP	JACKS CABIN, CO	BPDTT20150123AHB	169.0
	K20JG-D	D20	LD	LIC	SALIDA, ETC., CO	BLDTT20101004ACB	105.2

# INTERFERENCE CAUSED ANALYSIS FOR KGHB-CD CHANNEL 21 CONSTRUCTION PERMIT FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

Service area	Terrain-limited	IX-free, before		IX-free, after		Percent New IX
7685.9 786,492	6841.2 774,082	6815.3	773,572	6733.9	770,623	1.19 <b>0.38</b>
<b>Undesired</b>	<b>Total IX</b>	<b>Unique IX, before</b>		<b>Unique IX, after</b>		
KGHB21E2 D21z DC CP	81.4 2,949	8.0	451	8.0	2,949	
K45KB-D D19 LD CP	10.9 451	8.0	451	8.0	451	
K20KE-D D20 LD LIC	8.0 0	7.0	0	7.0	0	
K20JG-D D20 LD LIC	10.0 59	8.0	59	8.0	59	

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Interference to BLCDT20030702ABE LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KXRM-TV	D22	DT	LIC	COLORADO SPRINGS, CO	BLCDT20030702ABE	
<b>Undesireds:</b>	KGHB21E2	D21z	DC	CP	PUEBLO, ETC., CO	kghb21e2	49.0 km
	KCDO-TV	D23	DT	LIC	STERLING, CO	BLCDT20100127ADD	163.7

Service area	Terrain-limited	IX-free, before		IX-free, after		Percent New IX
24995.1 1,840,511	22689.5 1,515,187	21955.7	1,509,907	21861.2	1,509,432	0.43 <b>0.03</b>
<b>Undesired</b>	<b>Total IX</b>	<b>Unique IX, before</b>		<b>Unique IX, after</b>		
KGHB21E2 D21z DC CP	94.5 475	94.5	475	94.5	475	
KCDO-TV D23 DT LIC	733.8 5,280	733.8	5,280	733.8	5,280	

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# INTERFERENCE RECEIVED ANALYSIS FOR KGHB-CD CHANNEL 21 CONSTRUCTION PERMIT FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT

tvstudy v2.2.5 (4uoc83)

Database: localhost  
 Station Data: LMS TV 2018-10-11  
 Study: LMS181011  
 Model: Longley-Rice  
 Scenario: kghb21e2r

Desired station	Service area		Terrain-limited		Interference-free	
Undesired station	Total interference		Unique interference			
KGHB21E2 D21z DC CP PUEBLO, ETC., CO	4167.9	195,331	4040.4	195,200	4000.9	195,047
KXRM-TV D22 DT LIC COLORADO SPRINGS, CO	39.5	153	39.5		153 (0.08%)	
KFCT D21 DT LIC FORT COLLINS, CO	0.0	0	0.0		0	