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DIGITAL LPTV FACILITY - KNXT-LD

FCC FACILITY ID: 16944

BAKERSFIELD, CALIFORNIA

FEBRUARY 2024

ADDENDUM
TO
ENGINEERING NARRATIVE STATEMENT
IN SUPPORT OF A WAIVER REQUEST OF THE
MINOR CHANGE DISTANCE LIMITATION

Addendum Summary:

KNXT-LD seeks a waiver request of 47 CFR §74.787(a)(4) and (b)(1)(3) to modify its station license to be utilized in a Channel Sharing Agreement (“CSA”) with the transmission facilities of KIFR-DT, facility ID: 16950.

This addendum provides additional information concerning the availability of other stations to serve as the “host” station to KNXT-LD and addresses questions raised in the FCC Video Division email¹ of February 23, 2024 from Associate Division Chief, Mark Colombo.

Addendum Engineering Statement:

The underlying engineering statement used estimates of video stream bitrates (MBPS) based on the maximum values for the video resolutions stated as a worst-case demonstration. The bitrates were extracted from the only known (to this writer) publicly available data and used nationwide averages for video resolutions. This method was thought to be a reasonable use of the data in the waiver statement.²

As noted in the engineering statement - in cases where the total transport stream (TS) exceeded the ATSC 1.0 capacity of 19.4 MBPS then that value was used for the total TS MBPS value, as the facility obviously was using statistical multiplexing (“statmux”) to adjust individual stream bitrates to remain within the ATSC 1.0 standard for the number of streams in use.

The reliance on video stream bitrate data from “www.rabbitears.info” is acknowledged as an unofficial source, and is based on the collection of public observations (where available) of the individual stations and the associated data streams. It is further acknowledged that the data may

¹ Email correspondence from Mark Colombo (Mark.Colombo@fcc.gov), dated 2/23/2024 to Gregg Skall (and others), Re: KNXT Channel Sharing Application.

² See Constant bitrates tabulation at:
<https://www.rabbitears.info/oddsandends.php?request=avgbr&vbr=N>

be stale or otherwise superseded. However, it is the best-known source available for estimates of MBPS in use by individual stations, and is a recognized (if unofficial) valuable resource to the broadcast community. The data concerning verified and current transport stream bitrates does not appear in any officially recognized database known to this writer, nor could it be defined as an absolute value – as it is highly dependent on the video content at any one moment in time. Thus, the use of an “average” value was used in our analysis.

In response to the concerns of the bureau, an effort was launched to obtain real-time data. At direction of this office, the applicant representative observed the transport streams of each of the stations of concern (as suggested in Mr. Colombo’s email) and presents the data as collected in the attached Table 1 to this addendum.

The details of the measurement locations and equipment used during the collection process are detailed on the table provided by the applicant. Measurements were made by Mr. Thomas Driggers Chief Technology Officer at Vita Broadcasting. Mr. Driggers has over 40-years experience in the operation and maintenance of television broadcast stations and is well qualified to make the necessary measurements. Additionally, as an RF consultant for a number of stations within the region, he has personal knowledge of the equipment in use at a number of the stations studied. Measurements data collection occurred over a three day period, from February 23-25, 2024.

To respond to these concerns a list of all stations in the Bakersfield channel lineup that could theoretically serve as a shared host stations was prepared together with their observed bitrates. A message was sent to each possible station to determine their interest in channel sharing with KNXT-LD. If no response was received, KNXT-LD presumed lack of interest. Responses are noted on the attached table and on the tabulations presented below. Based on the list of facilities, KIFR-DT remains the sole potential channel sharer for KNXT-LD.

Summary of Observed Transport Stream by Facility
Sorted By Distance

CALL SIGN	DIST. FROM KNXT- LD (MI)	MATHEMATICAL STREAM TOTAL AS OBSERVED (MBPS)	STATMUX LIMITS TO 19.7 MBPS	NOTES AND LICENSE COMMENTS IF AVAILABLE
KJOU-LD	0.00	NOT OBSERVED - LICENSEE STATES HAS PLANNED USE FOR ALL OF TRANSPORT STREAM		
KJOI-LD	0.00	4.4600	YES	LICENSEE HAS ADVISED NOT INTERESTED
K08PT	0.00	NOT ON AIR - NO SIGNAL OBSERVED		
KBFK-LP	0.06	19.3670	YES	8 STREAMS OBSERVED
KCBT-LD	0.06	17.4310	LIKELY	4 STREAMS OBSERVED
KBTF-CD	0.06	19.0370	YES	3 STREAMS OBSERVED
KABE-CD	0.06	7.0400	YES	1 STREAM OBSERVED LICENSEE STATES NOT AVAILABLE FOR USE
KUVI-DT	0.06	18.9180	YES	5 STREAMS OBSERVED

K18HD-LD	0.06	17.5010	LIKELY	4 STREAMS OBSERVED
KTLD-CD	0.06	17.1150	YES	7 STREAMS OBSERVED
KKEY-LP	0.06	16.9140	NO	1 STREAM OBSERVED, CHANNEL 13.1
KGET-TV	0.06	19.1230	LIKELY	4 STREAMS OBSERVED
K04SB-LD	0.06	NOT ON AIR - NO SIGNAL OBSERVED		
KDBK-LD (H)	8.33	26.8900*	YES	4 STREAMS SHARES WITH KZKC-LD (G)
KERO-TV	8.33	26.4920*	YES	7 STREAMS OBSERVED
KEBK-LD	8.33	4.5340	NOT LIKELY	1 STREAM ONLY CHANNEL 47.1 - LICENSEE DOES NOT RESPOND
KZKC-LD (G)	8.33	26.8900*	YES	4 STREAMS SHARES WITH KDBK-LD (H)
KBAK-TV	8.51	21.9206*	YES	4 STREAMS OBSERVED
KBFX-CD	8.51	22.1260*	YES	4 STREAMS OBSERVED
KBBV-CD	8.51	9.6450	NO	3 STREAMS OBSERVED
KXBF-LD	10.56	17.5590	NO	6 STREAMS OBSERVED
KTBV-LD	47.91	OUT OF MARKET NOT OBSERVED (LOS ANGELES)		
KTFF-DT	58.91	NOT ON AIR - NO SIGNAL OBSERVED		
KIFR-DT	58.91	8.2800	YES	4 STREAMS OBSERVED

Summary Table Notes:

Data was extracted from the table included in this addendum.

* Mathematical observed stream value MBPS totals may exceed the ATSC 1.0 standard, but are limited to 19.4 MBPS by statistical multiplexing ("statmux") at any point in time. The aggregate total thus never exceeds the 19.7 MBPS standard. individual streams are routinely over provisioned in a "statmux" system to allow for maximum bandwidth utilization. Stations that have implemented the use of StatMux provisioning of their datastream(s) is based on the applicants local engineer's knowledge of the equipment in use at the respective facilities, or based on observation of the data and the number of streams in use and the data provisioning values.

Evaluation of Possible CSA Partners from Summary Table Above

CALL SIGN	OBSERVED MBPS	CSA MBPS REQUIRED	EXCESS MBPS	NOTES
KJOU-LD	NOT OBSERVED - LICENSEE STATES HAS PLANNED USE FOR ALL OF TRANSPORT STREAM-NO INTEREST			
KJOI-LD	4.460	9.700	5.24	LICENSEE HAS ADVISED NOT INTERESTED
KABE-CD	7.040	9.700	2.66	LICENSEE STATES FACILITY NOT AVAILABLE FOR CSA
KEBK-LD	4.540	9.700	5.16	LICENSEE DOES NOT RESPOND
KBBV-CD	9.645	9.700	0.055	AWAITING RESPONSE - BASED ON LOCAL KNOWLEDGE STATION IS UNABLE TO TECHNICALLY ACCOMMODATE KNXT-LD WITHOUT EQUIPMENT UPGRADES TO ITS SYSTEMS.
KIFR-DT	8.280	9.700	1.42	PROPOSED CSA HOST FACILITY

KNXT-LD CSA Requirements - Approximate MBPS

CALL SIGN	DISPLAY CHANNEL	NETWORK	HD OR SD	APPROXIMATE MBPS	STAT MUX IN USE
KNXT-LD	53.1	My Network	HD	8.100	YES
	53.2	MeTV or H & I	SD	1.546	YES
APPROXIMATE TOTAL MBPS (VARIES WITH CONTENT)				9.646	YES

KIFR-DT CSA Requirements - Approximate MBPS

CALL SIGN	DISPLAY CHANNEL	NETWORK	HD OR SD	APPROXIMATE MBPS	STAT MUX IN USE
KIFR-DT	49.1	Vision Latina	HD	4.920	YES
	49.2	ESNE	SD	1.120	YES
	49.3	GEB	SD	1.120	YES
	49.4	Classic Arts Showcase	SD	1.120	YES
APPROXIMATE TOTAL MBPS (VARIES WITH CONTENT)				8.280	YES

PROPOSED CSA MBPS KNXT-LD + KIFR-DT

CALL SIGN	DISPLAY CHANNEL	APPROXIMATE MBPS	STAT MUX IN USE
KNXT-LD (G)	53...	9.646	YES
KIFR-DT (H)	49...	8.280	YES
APPROXIMATE TOTAL MBPS (VARIES WITH CONTENT)		17.926	YES

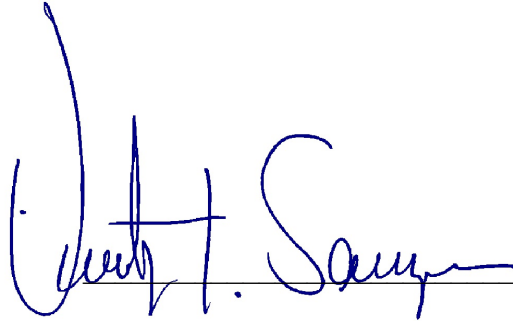
Based on the data collected via direct observation of the individual stations transport streams - KIFR-DT remains the only station with the readily available excess transport stream capacity to do so, and a grant of the waiver request is in the public interest as detailed in the full waiver request filing.

Engineering (Engineer's) Certification:

I, Timothy Z. Sawyer, dba T Z Sawyer Technical Consultants, do hereby attest that I have prepared or caused to prepare this engineering addendum statement and its supporting figures, tabulations, or exhibits and that I believe the information provided by me and within this statement of support of a waiver request by KNXT-LD to be true and correct.

Respectfully submitted,

February 27, 2024

A handwritten signature in blue ink, appearing to read 'Timothy Z. Sawyer', is written over a horizontal line.

Timothy Z. Sawyer, Consulting Engineer

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TABLE 1

Bakersfield Channel Lineup

Call Sign	RF Channel	Virtual Channel	Network	HD or SD	As Read Mb/s Provisioned	Statistical Multiplexer Presence***
KNXT-LD*	6	53.1	My Network	HD	8.4100	Yes
		53.2	MeTV	SD	2.3100	Yes
		53.3	ThisTV (going off air in all markets)	SD	2.2400	Yes
		53.4	theGrio (going off air in all markets)	SD	1.5860	Yes
		53.5	Heroes & Icons	SD	2.0460	Yes
		53.6	Start TV	SD	1.5460	Yes
		53.8	TCT	SD	1.6560	Yes
		Proposed Sharee Station at current programming (to be reduced to 9.7mb/s)			19.7940	
KJOU-LD**	32	12.1		??		Not likely
		Licensee states has planned use for all of transport stream			0.0000	
KJOI-LD**	32	32.1	Daystar Espanol	SD	1.5720	Yes
		32.2	Daystar Espanol	SD	1.6610	Yes
		32.3	Mana	SD	1.2270	Yes
		Total Provisioned			4.4600	
		Total with KNXT			14.1600	
K08PT-D**	8	24.1	3ABN	SD		Non Likely
		24.2	3ABN Proclaim	SD		Non Likely
		24.3	3ABN Dare to Dream	SD		Non Likely
		24.4	3ABN Latino	SD		Non Likely
		24.5	3ABN Radio	SD		Non Likely
		24.6	3ABN Radio Latino	SD		Non Likely
		24.7	Radio 74	SD		Non Likely
		No Reception. No measurable signal at Adelaide MT nor in field			0.0000	
KBFK-LP*	36	34.1	Movies!	SD	4.4570	Yes
		34.2	One America Plus	SD	3.0300	Yes
		34.3	HSN	SD	2.3700	Yes
		34.4	SBN	SD	2.4000	Yes
		34.5	Antenna TV	SD	1.6800	Yes
		34.6	BUZZR	SD	2.4600	Yes
		34.7	COZI TV	SD	1.6400	Yes
		34.8	Shop LC	SD	1.3300	Yes
		Total Provisioned			19.3670	
		Total with KNXT			29.0670	
KCBT-LD**	34	34.1	Estrella TV	HD	11.6350	Likely
		34.2	Spanish Religious	SD	1.9580	Likely
		34.3	QVC	SD	1.3410	Likely
		34.4	Ventana TV	SD	2.4970	Likely
		Total Provisioned			17.4310	
		Total with KNXT			27.1310	
KBTF-CD*	31	31.1	UniMas	HD	12.1790	Yes
		31.2	getTV	SD	3.3940	Yes
		31.3	ION Mystery	SD	3.4640	Yes
		Total Provisioned			19.0370	
		Total with KNXT			28.7370	
KABE-CD*	35	39.1	Univision	HD	7.0400	Yes
		Total Provisioned			7.0400	
		Licensee states unavailable for use			16.7400	
KUVI-DT*	26	45.1	Quest	SD	1.6800	Yes
		45.2	Univision	HD	8.1640	Yes
		45.3	UniMas	HD	6.2660	Yes
		45.4	CourtTV	SD	1.5440	Yes
		45.5	Shop LC	SD	1.2640	Yes
		Total Provisioned			18.9180	
		Total with KNXT			28.6180	

K18HD-D*	18	18.1	PBS	HD	11.4570	Likely
		18.2	PBS Kids	SD	2.1100	Likely
		18.3	Create	SD	1.9870	Likely
		18.4	World Channel	SD	1.9470	Likely
		Total Provisioned			17.5010	
Total with KNXT			27.2010			
KTLD-CD*	15	8.1	3ABN	SD	2.6950	Yes
		8.2	Shop LC	SD	2.4750	Yes
		8.3	LX	SD	2.4750	Yes
		8.4	Oxygen	SD	2.3750	Yes
		8.5	The365	SD	2.3650	Yes
		8.6	Outlaw	SD	2.3650	Yes
		8.7	Infomercials	SD	2.3650	Yes
Total Provisioned			17.1150			
Total with KNXT			26.8150			
KKEY-LP*	13	13.1	Telemundo	HD	16.9140	Not likely
Total Provisioned			16.9140			
Total with KNXT			26.6140			
KGET-TV*	25	17.1	NBC	HD	9.1920	Likely
		14.2	CW+	HD	5.9770	Likely
		14.3	Telemundo	SD	1.9870	Likely
		14.4	Laff	SD	1.9670	Likely
		Total Provisioned			19.1230	
Total with KNXT			28.8230			
K04SB-D**	4	46.1	PBS	HD		Likely
		46.2	Create	SD		Likely
		46.3	NHK World	SD		Likely
		No Reception. No measurable signal at Adelaide MT nor in field			0.0000	
KDBK-LD (H) / KZKC-LD (G)**	28	28.1	ABC	HD	9.7970	Yes
		28.2	Court TV	HD	4.1980	Yes
		41.1	CornerstoneTV	SD	3.3970	Yes
		41.2	JTV	HD	9.4980	Yes
		Total Provisioned			26.8900	
		Channel Share Agreement in place			Total with KNXT	36.5900
KERO-TV**	10	23.1	ABC	HD	10.8960	Yes
		23.2	Court TV	HD	3.0970	Yes
		23.3	Grit	SD	2.8960	Yes
		23.4	ION	SD	2.7970	Yes
		23.5	Bounce	SD	3.0920	Yes
		23.6	Scripps News	SD	2.0960	Yes
		23.7	HSN	SD	1.6180	Yes
		Total Provisioned			26.4920	
Total with KNXT			36.1920			
KEBK-LD**	27	47.1	Infomercials	SD	4.5340	Not Likely
		Total Provisioned			4.5340	
Licensee does not respond			Total with KNXT	14.2340		
KBAK-TV**	33	29.1	CBS	HD	10.7960	Yes
		29.3	Fox 58	SD	5.7590	Yes
		29.4	Charge	SD	2.7236	Yes
		29.5	Dabl	SD	2.6420	Yes
		Total Provisioned			21.9206	
Total with KNXT			31.6206			
KBFX-CD**	29	29.2	TBD	SD	1.8970	Yes
		58.1	FOX	HD	11.6000	Yes
		58.2	Comet TV	SD	4.6970	Yes
		58.3	The Nest	SD	3.9320	Yes
		Total Provisioned			22.1260	
Total with KNXT			31.8260			
KBBV-CD**	19	19.1	TeleXitos	SD	0.8180	No
		19.2	Color bars- planned use	SD	0.2930	No
		19.3	Color bars- planned use	HD	8.5340	No

		Licensee equipment not able to support the addition of KNXT			Total Provisioned	9.6450
					Total with KNXT	19.3450
KXBF-LD**	14	14.1	SonLife	SD	2.3380	No
		14.2	Infomercials	Infomercials	2.3380	No
		14.3	NTD News	SD	2.3380	No
		14.4	Silent	SD	0.7510	No
		14.5	Defy	SD	4.8970	No
		14.6	ION	SD	4.8970	No
	Total Provisioned				17.5590	
		Total with KNXT			27.2590	
KTBV-LD Los Angeles	27	12.1	Open	SD		Likely
		12.2	3ABN Dare to Dream	SD		Likely
		12.3	IBN Television	SD		Likely
		12.4	3ABN	SD		Likely
		12.5	AI Karma TV	SD		Likely
		12.6	CNL	SD		Likely
	Not verified- Station does not cover the market				0.0000	
KTFF-DT**	23	61.1	UniMas	HD		Likely
		61.2	Univision	HD		Likely
		61.3	Quest	SD		Likely
	No Reception. No measurable signal at Adelaide MT nor in field				0.0000	
KIFR-DT**	22	49.1	Vision Latina	HD	4.9200	Yes
		49.2	ESNE	SD	1.1200	Yes
		49.3	GEB	SD	1.1200	Yes
		49.4	Classic Arts Showcase	SD	1.1200	Yes
	Total Provisioned				8.2800	
		Total with KNXT			17.9800	

Channel line up and bitrates provisioned for each station verified by Thomas Driggers, RF Consulting Engineers via live, in-market readings.

* Verified February 23, 2024, using a Hauppauge TV tuner installed in a Windows PC at the Mt Adelaide site and using TS Reader Pro to analyze the streams. The bit rates measured are for Video and Audio PIDS only.

** Verified February 24-25, 2024, at 7941 East Brundage Lane, Bakersfield, CA using a Rhode Schwarz Spectrum analyzer model FHS3 with an ASI output into a Dektec DTU-225 with Stream Express.

***Assumptions based on knowledge of Licensee and/or equipment

KEY:	Not Viable for CSA	Allocation is At or Under ATSC Standards
	Viable for CSA and Rejected	Allocation is Over ATSC 1.0 Standards
	Viable for CSA and Accepted	

Channel Lineup with Proposed CSA

Call sign	RF Channel	Display Channel	Network	HD or SD	Approximate Mb/s	Stat mux presence
KIFR	22	49.1	Vision Latina	HD	4.9200	Yes
		49.2	ESNE	SD	1.1200	Yes
		49.3	GEB	SD	1.1200	Yes
		49.4	Classic Arts Showcase	SD	1.1200	Yes
KNXT	22	53.1	My Network	HD	8.4100	Yes
		53.2	MeTV or H&I	SD	1.2400	Yes
						17.9300

Using a statistical multiplexer (stat mux) allows for overprovisioning while maintaining the overall bit rate within ATSC specifications