

ENGINEERING STATEMENT
SUPPORTING REQUEST FOR WAIVER
TELEVISION STATION WDSI-TV
(FACILITY ID NO. 71353)
CHATTANOOGA, TENNESSEE
CHANNEL 14

Background

This statement was prepared on behalf of New Age Media of Tennessee Licensee, LLC, licensee of WDSI-TV, Chattanooga, TN, in support of a request for waiver of the FCC's Phase Assignment, Testing Period, and Phase Completion Date for television station WDSI-TV in the Chattanooga DMA^{*}. WDSI-TV is licensed for operation on RF Channel 40 with a maximum directional effective radiated power (ERP) of 84 kW and an antenna height above average terrain (HAAT) of 350 m.[†]

As a result of the FCC's Incentive Auction repack process, the WDSI-TV facility was reassigned to RF Channel 14. WDSI-TV holds a construction permit (C.P.) for operation on Channel 14 with a maximum directional ERP of 120 kW and an antenna HAAT of 306 m.[‡] An FCC engineering database summary sheet for the WDSI-TV C.P. facility is attached hereto for reference. This is the WDSI-TV early transition facility, which is the subject of the instant request.

In coordination with the wireless carrier T-Mobile, New Age Media of Tennessee Licensee, LLC seeks a waiver of the FCC's Phase Assignment, Testing Period, and Phase Completion Date to allow WDSI-TV to make the transition to Channel 14 earlier than its given phase transition date. Specifically, the target date for WDSI-TV to begin operations on Channel 14 is September 1, 2018. This will facilitate the early deployment of new 600 MHz band wireless broadband services.

This statement demonstrates that WDSI-TV C.P. facility can transition to Channel 14 before its assigned phase date without any disruption to the FCC's transition plans. Specifically, it is demonstrated that the operation of WDSI-TV on Channel 14 as

^{*} Nielsen Designated Market Area abbreviated as DMA.

[†] See FCC File No. BLCDDT-20051011ABS.

[‡] See FCC File No. 0000034898.

authorized in its C.P. will have no adverse interference consequences, either caused or received, under the current allocation environment.

Assigned Phase

WDSI-TV was assigned to transition Phase 5, with a testing begin date of August 3, 2019. This is based on the latest FCC Phase Assignment spreadsheet dated May 9, 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 WDSI-TV facility is not part of any LSSs or LSNs. These are based on the latest LSS and LSN spreadsheets available from the FCC, both dated May 9, 2018.

Interference Caused Analysis Under Current Allocation Environment

An interference analysis was conducted for the WDSI-TV Channel 14 C.P. facility utilizing the latest version[§] of the FCC's *TVStudy* coverage and interference analysis prediction software. The report of the results is attached hereto entitled 'Interference Caused Analysis for WDSI-TV Channel 14 C.P. Facility Under Current Allocation Environment.'

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 with the exception of one station. As indicated in the analysis results, station WHDF, Florence, AL (Channel 14) will be subject to predicted interference of 1.64%. However, this interference level is within the FCC's temporary interference protection level of 2% that is applicable during the Incentive Auction repack.

It is noted that the *TVStudy* interference analysis is based on a higher resolution terrain profile point spacing of 0.1 km. Therefore, a higher resolution terrain profile point spacing of 0.1 km is requested for this analysis.

[§] *TVStudy* Version 2.2.5

Interference Received Analysis Under Current Allocation Environment

An interference analysis specifically for the ‘received case’ of interference was conducted for the WDSI-TV Channel 14 early transition facility utilizing the FCC’s *TVStudy* prediction software. The report of the results is attached hereto entitled ‘Interference Received Analysis for WDSI-TV Channel 14 C.P. 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 WDSI-TV Channel 14 early transition facility with the exception of one case. As indicated in the analysis, there is predicted pairwise interference received to the WDSI-TV facility of 1.79% from station WHDF, Florence, AL (Ch. 14). However, this interference level is within the FCC’s temporary interference protection level of 2% that is applicable during the Incentive Auction repack.

As was done for the caused analysis, the *TVStudy* interference analysis is based on a higher resolution terrain profile point spacing of 0.1 km. Therefore, a higher resolution terrain profile point spacing of 0.1 km is requested for this analysis.

Effects on Linked Station Sets

It has been determined that the early transition of the WDSI-TV facility to Channel 14 in advance of its phase transition date will not create any pairwise interference cases or new linked station sets.

Conclusion

It is concluded that the early transition of the WDSI-TV facility on Channel 14 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.

A handwritten signature in black ink, appearing to read "Louis R. du Treil, Jr.", with a stylized flourish at the end.

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

du Treil, Lundin & Rackley, Inc.
3135 Southgate Circle
Sarasota, Florida 34239

May 18, 2018

TV Inquiry

WDSI-TV EARLY TRANSITION FACILITY

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



Callsign: WDSI-TV **Service:** DT **Status:** CP MOD **App. Status:** GRANT **Border Code:** **Rec. Type:** C
Channel: 14 **Offset:** **Zone:** 2 **Docket Number:** **DTV Type:** POSTTRAN
Fac. ID: 71353 **Assoc. ID:** **Application File No.:** BLANK-0000034898 **DT Emission Mask:**
City: CHATTANOOGA **State:** TN **Country:** US **CP Expiration Date:**
Party Name: NEW AGE MEDIA OF TENNESSEE LICENSE, LLC **Last Change Date:** 2/12/2018

Latitude (NAD 83): 35-09-38.7 **Height AGL (m):** 57 **Polarization:** E
Longitude (NAD 83): 085-19-05.8 **Overall Height AGL (m):** 81.1 **Electrical Tilt (°):** 0.5
ERP (kW): 120 **Mechanical Tilt (°):**
Maximum ERP (kW): **Mechanical Tilt Azimuth (°):**
RCMSL (m): 691 **Maximum ERP (dBk):** 20.8 **Degrees True (°):**
Site Elevation AMSL (m): 634 **Maximum ERP at any Angle (kW):** **Antenna Make:**
HAAT (m): 306 **Antenna Model:**
Maximum HAAT (m):

Antenna Type: D **Antenna ID:** 1002567 **Rotation (°):** 0

0°	0.711	90°	0.987	180°	0.921	270°	0.533	145°	1.000
10°	0.786	100°	0.976	190°	0.883	280°	0.610	253°	0.430
20°	0.840	110°	0.971	200°	0.842	290°	0.640	327°	0.428
30°	0.882	120°	0.976	210°	0.788	300°	0.609		
40°	0.920	130°	0.988	220°	0.713	310°	0.531		
50°	0.956	140°	0.998	230°	0.612	320°	0.450		
60°	0.984	150°	0.998	240°	0.504	330°	0.433		
70°	0.998	160°	0.984	250°	0.435	340°	0.503		
80°	0.998	170°	0.956	260°	0.452	350°	0.611		

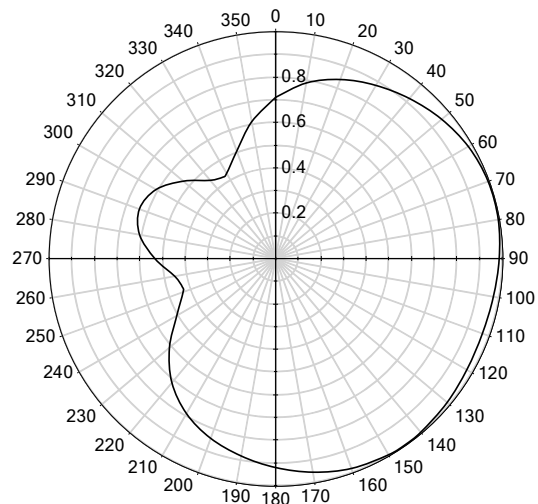
Standard Pattern:

Antenna Make: DIE

Antenna Model: TFU-24WB/VP-R C160

Last Change Date:

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



Type: TOWER	ASRN: 1235360	FAA Study No.: 2009-ASO-5197-OE	Structure Height (m): 67.0
Latitude (NAD 27): 035-09-38.4	Date Received: 01/12/2017	Structure Height (ft): 219.8	
Longitude (NAD 27): 085-19-05.9	Date Entered: 01/12/2017	Ground Elevation (m): 634.0	
Latitude (NAD 83): 35-09-38.7	Date Issued: 01/12/2017	Ground Elevation (ft): 2080.1	
Longitude (NAD 83): 085-19-05.8	Date Constructed: 12/02/2009	Overall Height AGL (m): 81.1	
	Date Dismantled:	Overall Height AGL (ft): 266.1	
Struct. Address:		Overall Height AMSL (m): 715.1	
TAFT HIGHWAY NEAR ANDERSON PARK		Overall Height AMSL (ft): 2346.1	
WALDEN	TN		
Entity Name: WTVC Licensee, LLC			

INTERFERENCE CAUSED ANALYSIS FOR WDSI-TV CHANNEL 14 C.P. FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT (2 KM CELL SIZE / 0.1 KM TERRAIN PROFILE POINT SPACING)

tvstudy v2.2.5 (4uoc83)

Database: localhost, Study: wdsi14e3, Model: Longley-Rice

Study build station data: LMS TV 2018-05-18

Proposal: WDSI14E3 D14 DT CP CHATTANOOGA, TN
File number: wdsi14e3
Facility ID: 71353
Station data: User record
Record ID: 2790
Country: U.S.
Zone: II

Build options:

Protect pre-transition records not on baseline channel

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
Yes	WHDF	D14	DT	LIC	FLORENCE, AL	BLCDT20051206AAB	166.3 km
No	WTIU	D14	DT	LIC	BLOOMINGTON, IN	BLEDT20030925AVS	454.6
Yes	WKSO-TV	D14	DT	LIC	SOMERSET, KY	BMLEDT20120608AAL	227.4
No	WMYA-TV	D14	DT	LIC	ANDERSON, SC	BLCDT20080714AFN	283.6
No	WZTV	D15	DT	LIC	NASHVILLE, TN	BLCDT20050309ACM	181.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D14

Latitude: 35 9 38.70 N (NAD83)

Longitude: 85 19 5.80 W

Height AMSL: 691.0 m

HAAT: 306.0 m

Peak ERP: 120 kW

Antenna: DIELECTRIC-TFU-24WB/VP-R C160 (ID 1002567) 0.0 deg

Elev Pattn: Generic

Elec Tilt: 0.50

38.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	60.7 kW	144.0 m	66.5 km
45.0	106	262.2	78.2
90.0	117	451.6	95.1
135.0	118	467.9	96.3
180.0	102	462.0	94.7
225.0	52.7	246.3	73.4
270.0	34.1	199.9	67.8
315.0	28.9	168.6	64.8

Database HAAT does not agree with computed HAAT

Database HAAT: 306 m Computed HAAT: 300 m

Distance to Canadian border: 759.7 km

Distance to Mexican border: 1506.5 km

Conditions at FCC monitoring station: Powder Springs GA

Bearing: 159.2 degrees Distance: 154.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 293.4 degrees Distance: 1832.1 km

INTERFERENCE CAUSED ANALYSIS FOR WDSI-TV CHANNEL 14 C.P. FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT (2 KM CELL SIZE / 0.1 KM TERRAIN PROFILE POINT SPACING)

No land mobile station failures found

Study cell size: 2.00 km

Profile point spacing: 0.10 km (Higher resolution terrain profile point spacing is requested.)

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

Maximum new IX to LPTV: 2.00%

Interference to BLCDT20051206AAB LIC scenario 1
**IX: 1.64% interference caused

This is compliant with the 2% temporary interference protection level applicable during the Incentive Auction repack.

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WHDF	D14	DT	LIC	FLORENCE, AL	BLCDT20051206AAB	
Undesireds:	WDSI14E3	D14	DT	CP	CHATTANOOGA, TN	wdsi14e3	166.3 km
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	31908.7	1,266,286	30469.3	1,221,216	30469.3	1,201,216	1.44 1.64
Undesired				Total IX	Unique IX, before	Unique IX, after	
WDSI14E3	D14	DT	CP	439.3	20,000	439.3	20,000

Interference to BMLED20120608AAL LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WKSO-TV	D14	DT	LIC	SOMERSET, KY	BMLED20120608AAL	
Undesireds:	WDSI14E3	D14	DT	CP	CHATTANOOGA, TN	wdsi14e3	227.4 km
	WHDF	D14	DT	LIC	FLORENCE, AL	BLCDT20051206AAB	317.8
	WTIU	D14	DT	LIC	BLOOMINGTON, IN	BMLED20030925AVS	263.6
	WCMH-TV	D14	DT	LIC	COLUMBUS, OH	BLCDT20050823AAD	348.5
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	22162.2	586,871	21700.4	574,597	21644.7	570,462	21596.9 568,707 0.22 0.31
Undesired				Total IX	Unique IX, before	Unique IX, after	
WDSI14E3	D14	DT	CP	55.7	1,784	47.8	1,755
WHDF	D14	DT	LIC	4.0	29	0.0	0
WTIU	D14	DT	LIC	23.9	505	19.9	505
WCMH-TV	D14	DT	LIC	31.8	3,601	27.8	3,601

INTERFERENCE RECEIVED ANALYSIS FOR WDSI-TV CHANNEL 14 C.P. FACILITY UNDER CURRENT ALLOCATION ENVIRONMENT (2 KM CELL SIZE / 0.1 KM TERRAIN PROFILE POINT SPACING)

tvstudy v2.2.5 (4uoc83)

Database: localhost
Station Data: LMS TV 2018-05-03
Study: LMS180503
Model: Longley-Rice
Scenario: wdsi14e3r

Desired station	Service area		Terrain-limited		Interference-free	
Undesired station	Total interference		Unique interference			
WDSI-TV D14 DT CP CHATTANOOGA, TN	20481.7	1,100,302	18178.0	1,038,666	17104.8	1,019,092
WHDF D14 DT LIC FLORENCE, AL	1033.2	18,669	984.8	18,550	(1.79%)	
WKSO-TV D14 DT LIC SOMERSET, KY	80.5	987	32.1	868	(0.08%)	
WMYA-TV D14 DT LIC ANDERSON, SC	7.9	37	7.9	37	(0.00%)	

Note: Based on 2 km cell size with 0.1 km terrain profile point spacing.