

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Dominion Broadcasting, Inc.) MB Docket No. 20-_____
) RM- _____
Petition for Rulemaking to Amend the DTV)
Table of Allotments for)
Station WLMB, Toledo, OH (Facility ID 17076))
)

PETITION FOR RULEMAKING

Dominion Broadcasting, Inc. (“Dominion”), the licensee of television station WLMB, Toledo, Ohio (“WLMB”), hereby petitions the Commission to commence a rulemaking pursuant to Section 1.401 of the Commission’s rules¹ to amend the digital television Table of Allotments by allotting Channel 35 to Toledo, Ohio for WLMB in lieu of Channel 5.² Moving from a VHF to a UHF channel would significantly improve reception of WLMB’s over-the-air signal by viewers in the Toledo market.

The proposed channel substitution would serve the public interest by addressing the ongoing reception complaints WLMB has received from viewers, allowing WLMB to better compete for viewers with the other television stations in the market³ and enabling WLMB to better serve the Toledo community by substantially improving access to its award-winning and family oriented educational, spiritual, news and other programming. In addition, the proposed substitution will make it possible to deliver ATSC 3.0 services to viewers who are traveling in a vehicle carrying (or equipped with) ATSC 3.0 reception equipment, such as a cell phone, smart

¹ 47 C.F.R. § 1.401.

² 47 C.F.R. § 73.622(i).

³ WLMB is the only “low-V” television station in the Toledo market.

<https://www.stationindex.com/tv/markets/toledo>.

pad, or TV.

Background

WLMB, is licensed to Toledo, Ohio broadcasting on VHF Channel 5. Since at least 2010, the Commission has recognized that “VHF channels have certain characteristics that have posed challenges for their use in providing digital television service,” including “propagation characteristics of these channels [that] allow undesired signals and noise to be receivable at relatively farther distances,” the tendency of “nearby electrical devices . . . to emit noise in this band that can cause interference,” and the fact that “reception of VHF signals requires physically larger antennas that are generally not well suited to the mobile applications expected under flexible use, relative to UHF channels.”⁴

The Commission further noted that independent studies by a private engineering firm and the Commission’s own staff both found “large variability in the performance (especially intrinsic gain) of indoor antennas available to consumers, with most antennas receiving fairly well at UHF and the substantial majority not so well to very poor at high-VHF” and that it is expected “that the reception capabilities of an indoor antenna at low-VHF will generally to be less than at high-VHF.”⁵ The Commission continues to recognize that, although VHF reception issues are not universal, “environmental noise blockages affecting [VHF] signal strength and reception exist” and “[vary] widely from service area to service area.”⁶

⁴ Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF, NPRM, 25 FCC Rcd 16498, 16511 ¶ 42 (2010) (“VHF Improvements NPRM”).

⁵ Id. at 16512 ¶ 44. See also Amendment of Parts 73 and 74 of the Commission’s Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations, Second R&O, 25 FCC Rcd 10732, 10750 ¶ 37 (2011) (“As a result of the full power digital television transition, some full power stations on VHF channels have experienced reception problems and such problems have not been alleviated even by allowing these stations to operate with the maximum power permitted under the full power television rules.”).

⁶ Assessment and Collection of Regulatory Fees for Fiscal Year 2020, MD Docket No. 20-105, FCC 20-64, at ¶ 52 (rel. May 13, 2020).

These findings aptly describe WLMB's experience. Since WLMB transitioned to digital only operations on channel 5 in 2008 as part of the digital television transition, it has regularly received complaints from viewers unable to receive the station's over-the-air signal.⁷ Numerous examples are provided at Exhibit A, but comments such as *"I used to get it with an antenna, then all of the sudden it wasn't there anymore. Then, I tried the instructions to point the antenna and it didn't do anything. I get every other local channel and their extra channels, just no WLMB"* are typical.⁸ For many years, WLMB has had information on its website instructing viewers (or want-to-be viewers) how to receive or better receive its signal over-the-air,⁹ but as the comment above captures, even that information is often to no avail. The comments from viewers are not anecdotal. They have continued unabated in the 12 years since WLMB transitioned to digital-only operations on channel 5. The station has been forced to constantly scramble to retain viewers with a variety of methods, some costly.

These propagation problems and the inevitable inability to receive WLMB's VHF signal on mobile devices for technical reasons¹⁰ put WLMB at a distinct competitive disadvantage to the other stations broadcasting in the Toledo market. WLMB's coverage area population count, predicated on unobstructed reception by an outdoor antenna at 30 feet, bears little relation to the reality of a shrinking number of viewers that can actually reliably receive WLMB's over-the-air

⁷ See Exhibit A, "Statement By Dr. Jamey Schmitz, President & CEO of WLMB-TV 40 TOLEDO" and its attachment detailing comments from station viewers.

⁸ Id.

⁹ <https://www.wlmb.com/antenna-over-the-air/> and <https://www.wlmb.com/help/>

¹⁰ See Dru Sefton, "Prompted by auction sales, moves to low VHF bring both challenges and advantages," Current, <https://current.org/2017/04/prompted-by-auction-sales-moves-to-low-vhf-bring-both-challenges-and-advantages/>; See also National Association of Broadcasters, Next Generation Television (ATSC 3.0) Station Transition Guide, at 8 (April 2019), https://nabpilot.org/wp-content/uploads/2019/04/NAB-ATSC-3.0-Guide_Final.pdf ("Performance of VHF channels 7 through 13 is better than low-band VHF, but the longer wavelength of VHF reduces the chances of successful reception for many portable use cases, due to utilization of built-in antennas in these devices," while "[d]ue to the short wavelengths and resulting reception advantages in this part of the TV spectrum, UHF is suitable for all anticipated ATSC 3.0 service models.").

signal. In the end, the public loses because it has one less viewing choice, and a valuable independent broadcast television station offering family friendly programming alternatives is slowly sidelined because of the technical characteristics of its assigned channel.

The Proposed Channel Substitution Would Improve Service to Local Viewers

Today, over-the-air coverage is increasingly important as more American households cut the cord on traditional cable and satellite services.¹¹ These households are choosing to rely on free local broadcast signals, often in combination with some online streaming services.

According to Nielsen, nationwide “[t]he percent of homes without traditional cable (wired or satellite) that receive local broadcast stations on a TV set via some form of digital antenna has increased 48%” between May 2010 and May 2018, rising from 11 million such homes (representing 9 percent of TV homes) to 16 million such homes (representing 14 percent of TV homes).¹² About 6.6 million of these homes do not subscribe to any online streaming services, thus relying entirely on over-the-air broadcasts for video service.¹³

The ongoing COVID-19 pandemic, which has driven a dramatic surge in viewership of local and national broadcast television newscasts, only underscores the key role free, over-the-air broadcast TV coverage plays in making crucial information broadly accessible to communities.¹⁴

¹¹ Jon Lafayette, “Cord-Cutting Hit Record Levels in First Quarter,” *Broadcasting + Cable*, <https://www.broadcastingcable.com/news/cord-cutting-hit-record-levels-in-first-quarter> (May 8, 2020); Aaron Pressman, “Cord cutting is speeding up as the coronavirus pandemic squeezes consumers,” *Fortune*, <https://fortune.com/2020/05/05/cord-cutting-coronavirus-cable-satellite-tv-comcast-verizon-charter-altice-att-dish/> (May 5, 2020). Purchasing an over-the-air antenna able to receive high or low VHF signals is a separate challenge, further limiting reception of VHF channels even by cord-cutting consumers.

¹² The Nielsen Company (US), LLC, *The Nielsen Local Watch Report: The Evolving Over-the-Air Home*, at 4 (2019), available at <https://www.nielsen.com/us/en/insights/report/2019/nielsen-local-watch-report-the-evolving-ota-home/>

¹³ *Id.* at 5.

¹⁴ See Ted Johnson, “As Viewers Flock Back To Evening Newscasts During Coronavirus Crisis, ‘World News Tonight’ Reaches Ratings Milestone,” *Deadline*, <https://deadline.com/2020/05/abc-world-news->

These significant trends underscore the need for WLMB to have a signal that can be reliably received by the public. The station’s engineering exhibit, attached hereto as Exhibit B (the “Engineering Statement”), confirms that with WLMB’s proposed parameters, including a 375 kW ERP, Channel 35 can be substituted for Channel 5 at Toledo, Ohio, in compliance with the Commission’s rules. The study shows that the proposed facility would continue to provide a principal community contour completely covering WLMB’s community of license and would not cause impermissible interference to any station.

The Engineering Statement also confirms that WLMB’s Channel 35 contour would be fully contained within the station’s existing Channel 5 contour and would continue to reach a substantial majority of the population within the station’s current service area, including fully covering the City of Toledo. While an analysis using the Commission’s *TVStudy* tool indicates that WLMB’s move from Channel 5 to Channel 35 would create a predicted interference-free population loss of 735,018 persons, the majority of that population is located in the densely populated Detroit metropolitan area, which is outside of the Toledo, Ohio DMA.

Furthermore, when terrain limitations and other over-the-air television services are taken into account, nearly all viewers predicted to lose access to WLMB’s signal would continue to be “well served,” meaning they would continue to have access to at least five full power or Class A television signals.¹⁵ Only 388 people – 0.017 percent of the licensed service area population and

[tonight-david-muir- ratings-coronavirus-1202926423/](#) (May 5, 2020); “Comscore figures reveal surging levels of Coronavirus TV coverage driven by diverse audience,” Comscore, <https://www.comscore.com/Insights/Press- Releases/2020/4/ Surging-levels-of-Coronavirus-local-TV-coverage> (April 7, 2020); Stephen Battaglio, “A hunger for information is driving TV news to peak levels,” Los Angeles Times, <https://www.latimes.com/entertainment- arts/business/story/2020-03-25/ tv-news-audiences-are-surging-thanks-to-coronavirus-pandemic> (March 25, 2020). 22 Nielsen OTA Report at 18 (showing percentage of OTA homes in Local People Meter (“LPM”) markets); id. at 25 (identifying LPM markets as the top 25 DMAs).

¹⁵ See Third Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television, NPRM, 22 FCC Rcd 9478, 9493 ¶ 38 (2007) (“The Commission is generally most concerned

0.025 percent of the proposed service area population – are predicted to live in portions of a very small new loss area that would not otherwise be well-served,¹⁶ and even those viewers would not lose access to their only over-the-air television service, as they continue to receive three full power or Class A signals.¹⁷ Moreover, the Commission will approve the modification if it is “supported by a strong showing of countervailing public interest,” such as offsetting service gains.¹⁸

Here, given the persistent feedback WLMB has received about reception issues within the station’s core coverage area, any nominal population loss in outlying areas of the station’s contour would be more than outweighed by the substantial improvement in the station’s actual over-the-air reception within its community of license and in other core portions of its service area. The proposed move to Channel 35 therefore would serve the public interest by giving Toledo-area residents greater, more reliable access to WLMB’s free over-the air signal, with few if any viewers losing access to robust over-the-air service.

where there is a loss of an area's only network or NCE TV service, or where the loss results in an area becoming less than well served, i.e., served by fewer than five full-power over-the-air signals.”) (footnotes and citations omitted) (“Third DTV Review NPRM”). Although Class A stations operate under low power technical rules, they have the same primary status and public service obligations as full power stations, and their signals thus should be counted like those of full power stations when determining if an area is well served. See 47 C.F.R. §§ 73.6001, 73.6026. Notably, no white or gray areas are created by the proposed move of WLMB to channel 35.

¹⁶ Two other small underserved areas shown in the engineering statement are pre-existing, and would exist irrespective of the channel on which WLMB operates.

¹⁷ See Engineering Statement, Map 2.

¹⁸ Third DTV Review NPRM, 22 FCC Rcd at 9493 ¶ 38 & n.70.

Conclusion

Allowing a substitution of UHF channel 35 in place of WLMB's VHF channel 5 will have immediate public interest benefits by ensuring reliable reception of WLMB's programming and helping to preserve an important independent broadcast voice in the Toledo, Ohio market.

Respectfully Submitted

DOMINION BROADCASTING, INC.

_____/s/_____
Joseph C. Chautin, III, Esq.
Mark A. Balkin, Esq.
Hardy, Carey, Chautin & Balkin, LLP
1080 West Causeway Approach
Mandeville, LA 70471
(985) 629-0777

Dated: November 27, 2020

Its Counsel

Exhibit A

**Statement Of Dr. Jamey Schmitz,
President & CEO of WLMB-TV 40 TOLEDO**

As the President & CEO of WLMB-TV 40 it was my honor to oversee the construction and sign-on of WLMB-TV 40 TOLEDO on October 19, 1998. I also oversaw the construction of WLMB-TV 40's digital transmission on Low-VHF 5 which was signed on the air on January 4, 2005. When the FCC assigned WLMB channel 5, I was pleased because our UHF channel 40 covered a population of about 1.5 million people. The pattern for channel 5 said that our pattern would cover about 2.3 million people. As a commercial licensee, but a non-profit organization, WLMB raises much of our revenue through a Fall and Spring Telethon. It is during these periods that we survey the people that financially support that station. In Summary, our donors responded to the question, "How do you watch, WLMB-TV 40, by antenna, cable, or satellite? In later years we added, "Or internet" to the list of options. From our original sign-on date through the Fall Telethon we concluded 2 weeks ago the answers have remained consistent with one notable exception. In 2008 when WLMB turned off our analog channel 40 and was only broadcasting on Lo-VHF the people who watched WLMB through antenna dropped from about 12% to about 2%. Cable remained around 70% and Satellite TV (Dish & DirectTV) remained around 15%, but this category has dropped as well a few points for each category. We also picked up viewership on Over The Top Applications like ROKU and Amazon Fire, but this was less than 1% of respondents. But none of these other platforms are broadcasting platforms and the loss of viewers when we went from an analog UHF 40 to a LOW-VHF 5 has not helped us to serve the public interest well, especially those who live in our City of License and in our FCC Designated Market Area.

In the period where WLMB was required to broadcast both our analog UHF 40 and our Low-VHF 5 we immediately realized that people could not receive our Lo-VHF signal reliably, or in most cases, at all. To mitigate the viewership loss from when we went from UHF to LO-VHF we posted on our website then and to this day, information on how to receive WLMB's TV signal (see attachment of our web posting). When we had channel 40, we never posted information about how to receive our broadcast signal because it was no a pervasive issue. Occasionally we would receive a call about the lack of a reliable UHF signal and we would verbally walk the individual caller over some tips for receiving our broadcast signal. In direct contrast, when we turned off analog UHF 40 and were only broadcasting on digital VHF 5 we began to receive a deluge of phone calls and emails about how people could no longer receive our signal at worst and at best, the signal was spotty. We did not keep track of every call, as we never anticipated that the possibility would ever exist for WLMB to possibly move back to the UHF band. But as the President & CEO for 25 years of WLMB-TV 40, I travel throughout the DMA and my experience is that since the analog transmission ceased in 2008, the number of people who have personally told me that they used to receive WLMB but can't anymore, is at least 120 people (that would be one complaint a month) but probably closer to 240 people who live within the TOLEDO DMA that have taken the time out of their schedule to ask me why they can no longer watch WLMB. So, you can see it's a common theme. WLMB's Station is about 14 miles from the transmitter site. When we had UHF 40 we could relatively easily pull in a reliable signal to watch. At WLMB's station, after we switched to Low-VHF we had to purchase an antenna that was precisely cut for channel 5 and to reliably receive the signal just 14 miles away from the transmitter, we have to mount the antenna outside. If its inside, the signal is

unreliable as it breaks up often.

Since this petition is due, I asked the WLMB Staff on November 23, 2020 to survey people that they know who they have heard about reception issues of WLMB. Attached is a list of those complaints. Each example listed is a donor to WLMB-TV and we took their statements as close to verbatim as possible. Some of the complaints demonstrate that our donor does not understand why they cannot easily view WLMB's Low-VHF TV signal, but all of the complaints speak to the fact that their experience with viewing WLMB has been diminished for one reason or another due to the transition from channel 40UHF to Low-VHF 5. But the bottom line summary of all of these comments that we have collected is that WLMB would be able to serve the public interest of the people living within our City of License, Toledo, Ohio, and throughout our FCC Designated Market Area (DMA) better and more easily with a UHF DTV Allotment than with our current Low-VHF allotment.

WLMB also has a strong desire to utilize the FCC broadcast standard for ATSC 3.0. And while a Low-VHF assignment can utilize many of the aspects of this new standard, it is commonly known and accepted industry wide that LO-VHF band will not be able to participate in vehicle applications because of the simple physics of LOW-VHF. Moving from a LOW-VHF channel to a UHF channel will allow WLMB-TV to participate in vehicle applications for broadcasting.

Of the 7 Full Power FCC Licensed TV stations with the City Of License of Toledo, Ohio and the Toledo, DMA, WLMB is the only TV station with a Low-VHF channel assignment, which is, in WLMB's opinion, the most difficult broadcast signal in the DMA to receive. We believe we can serve the public interest by moving from our Low-VHF assignment to a UHF assignment should this petition be granted.

Sincerely,

_____/s/_____
Dr. Jamey Schmitz, D.D.
President & CEO
WLMB-TV 40 TOLEDO
DOMINION BROADCASTING, INC.

Complaints

We used to watch by antenna. It would often cut out, but it was better than nothing. When WLMB went to digital we lost WLMB completely. We tried a \$50 antenna that hung on the wall, but still no WLMB, just the other local channels would scan. Now we watch WLMB online.

Ben & Virginia Bossa
Perrysburg, Ohio
Wood County

We have a problem with Channel 40, either the station won't come in or the picture breaks up through the whole program. It is especially frustrating on Sundays when we try to watch David Jeremiah and Calvary Church. Picture and sound breaks up. Often we get the station in the garage but not in the house.

Jim & Charyle Kuebler
Toledo, Ohio
Lucas County

We used to get WLMB, but not all of the time. We didn't have a strong signal. We would get the other local channels most of the time. We now watch through WLMB's app.

David & Jamie Ford
Toledo, Ohio
Lucas County

We got channel 40 when we lived in Swanton, Ohio, but it wasn't always clear. Now in Oregon, Ohio we don't get WLMB at all.

Harold & Judy Tripp
Oregon, Ohio
Lucas County

I used to get WLMB with cable. Having cable wasn't a necessity for me so I got rid of it. I bought an antenna, but I took it back because I still couldn't get WLMB.

Dawn Miller
Perrysburg, Ohio
Wood County

I only watch WLMB on Roku. We have rabbit ears and cannot get WLMB at all. We can get some of the other stations, but not WLMB anymore.

Annette & Phil
Perrysburg, Ohio
Wood County

With analog there were more channels on our TV. When it switched to digital I was expecting more channels and for them to be clearer, but that is not what happened. We got less channels and they were worse.

Dusty Pauken
Morenci, Michigan
Lenawee County

We can get the other local stations, but when our TV scans it does not pick up WLMB. So now in order to watch WLMB we go online.

Ken & Pam Schad
Perrysburg, Ohio
Wood County

We get pretty good reception of WLMB most of the time. When a bad storm hits sometimes we lose WLMB and it will be right in the middle of our program. We have a big outdoor antenna TV tower.

Gene & Sandiland Langschied
Brooklynn, Michigan
Jackson County

When we watched WLMB by antenna, bad weather would interfere with our viewing, or the station was knocked out completely.

Georgia Burling
Toledo, Ohio
Lucas County

I used to get it with antenna, then all of the sudden it wasn't there anymore. Then, I tried the instructions to point the antenna and it didn't do anything. Now I watch online. I get every other local channel and their extra channels, just no WLMB. I watch WLMB through the link on Facebook.

Eleni Hatzinikolis
Toledo, Ohio
Lucas County

We cannot get WLMB on our TV. We do not have cable, so we watch WLMB online.

Sharralynn Cook
Toledo, Ohio
Lucas County

We have an antenna that we hang on the wall in our bedroom. We cannot get WLMB but we can get the other local stations. We watch WLMB by DirectTV in the living room.

Rita Daniels
Toledo, Ohio
Lucas County

Three years ago I didn't have cable and could not get WLMB at all with my antenna, and I'm within 2.5 miles of the station. Now I have Buckeye cable in my building so I can watch WLMB.

Cheryl Kiger
Toledo, Ohio
Lucas County

We get the other local channels with our antenna, but not WLMB.

Cathy Bossa
Perrysburg, Ohio
Wood County

When I lived out in Swanton, OH I couldn't receive WLMB. I could receive all of the other local channels; we tried adjusting the antenna but nothing worked.

Jared Smith
Lucas County

We used to be able to watch WLMB until about a year ago. We are no longer able to view WLMB using our antennae.

James Taylor
Perrysburg, Ohio
Wood County

We used to be able to watch WLMB using our antennae and now we can't. It's been at least a year since we have been able to tune in.

Paul Calhoon
Toledo, Ohio
Lucas County

We used to watch WLMB using our antenna, but have lost our channel about 6 months ago. Our friends across Rt 66 still are able to watch WLMB, but we can't.

Jeanene Corsaut
Defiance, Ohio
Defiance County

We used to watch TV by antenna and could get sometimes channel 11, but could never get WLMB. It was very frustrating so we now have DirectTV and can watch WLMB.

Scott & Julie Reinhart
Holland, Ohio
Lucas County

“Since you changed to digital, we can never get your signal”

Mark & Jean Magrum,
Northwood, Ohio
Wood County

“We used to love to watch WLMB, but we can't get it now.”

Larry & Carol Moritz
Millbury, Ohio
Wood County

“I have not been able to receive WLMB since we moved into the city back in 2017”

Jeff Millslagle
Toledo, Ohio
Lucas County

Larry and Kathy Darr used to get it before digital but now they can't even after trying 3 antennas.

Toledo, Ohio
Lucas County

We used to get WLMB on cable because it could not be picked up by our antennae in Bettsville, OH. We moved out of the area and cancelled cable so we couldn't get it anymore. We returned to the area in Pemberville and though we have bought several antennas trying to get WLMB we have been unsuccessful. We would love to get it because online just isn't very good.

Marty and Misty Smith
Pemberville, Ohio
Wood County

Exhibit B

APPLICATION FOR CHANNEL SUBSTITUTION

**WLMB(TV) – TOLEDO, OHIO
FACILITY ID: 17076**

DOMINION BROADCASTING, INC.

NOVEMBER 2020

© 2020 JEREMY RUCK & ASSOCIATES, INC.

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

11.25.2020

APPLICATION FOR CHANNEL SUBSTITUTION

The following engineering statement and attached exhibits have been prepared for **Dominion Broadcasting, Inc.** ("Dominion"), licensee of digital television station WLMB(TV) at Toledo, Ohio, and are in support of their application for a channel substitution.¹ The current license for WLMB(TV) is under FCC File No. BLCDT-20050201AAF. This application seeks to change the authorization for the facility from the current licensed VHF channel to a UHF channel. In addition to the change in channel, other related technical parameters associated with the facility would also change.

The licensed facility is authorized to operate on television channel 5 with a maximum effective radiated power of 10 kW at a center of radiation of 380 meters above mean sea level utilizing a directional antenna. The proposed facility would operate on television channel 35 with a maximum effective radiated power of 375 kW at a center of radiation of 397.5 meters above mean sea level, 169.7 meters above average terrain, utilizing a non-directional antenna. The proposed maximum effective radiated power and center of radiation elevation above average terrain comply with the limitations imposed under Section 73.622 of the Commission's Rules.

The contour map in Exhibit E-1 demonstrates that the proposed technical parameters would comply with the city of license coverage requirements under Section 73.625 of the Commission's Rules. This map illustrates the predicted 48 dBu F(50,90) and 41 dBu F(50,90) service contours, and as is demonstrated, the entire community of Toledo is contained within the 48 dBu contour. These contours were generated using the standard methodology, and a sample of the Commission's 30-meter terrain database.

¹ The Facility ID for WLMB(TV) at Toledo, Ohio is 17976.

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

Use of the proposed channel of operation at the specified technical parameters would comply with the interference protection criteria imposed by the Commission. Exhibit E-2 is the *TVStudy* output based on the proposed technical parameters. This study, which was created at a cell size of 2.0 km and profile spacing of 1.0 km, demonstrates that the permissible interference limits to other facilities would not be exceeded by the proposed technical parameters.

Exhibit E-3 is the *TVStudy* output for the licensed WLMB technical parameters on channel 5. This study, in conjunction with the study in Exhibit E-2, demonstrates that the interference-free population within the proposed channel 35 service area is 1,581,818 persons, whereas the population for the licensed technical parameters is 2,316,836 persons. These numbers are, of course, based on the Commission's standard metrics for determining the interference-free population within the calculated service area. Thus, these two studies together indicate a loss of population of 735,018 persons, the majority of which are located in the densely populated Detroit metropolitan area, which is outside of the Toledo, OH DMA.

Exhibit E-4 is a map that examines the proposed changes to the facility relative to white, gray, and underserved areas. Due to the location of the facility relative to the Detroit, Toledo, Fort Wayne, and other DMAs, no existing or proposed white or gray areas have been identified. A white area is an area that is predicted to receive no over-the-air (OTA) signals, while a gray area is an area that is predicted to receive one OTA signal.

Three underserved areas have been identified, however. Two of these areas, which are indicated by the yellow shading, are pre-existing. That is, these areas are not a result of the

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

proposed change in the technical parameters of WLMB, including the channel, but rather exist irrespective of the channel on which WLMB would operate. The third area, which is at the south end of the licensed 28 dBu F(50,90) service contour is a new area that would be created. This area is comprised of 30.1 square kilometers with a resident population of 388 persons by the 2010 Census data. Thus, the population within the new loss area is 0.017 percent of the population within the licensed service area, and 0.025 percent of the population within the population of the proposed service area. It is therefore respectfully submitted that the newly created loss area is insignificant.

Many OTA viewers within the region, especially within the community of license, Toledo, Ohio, utilize indoor antennas. It is well documented both historically, and empirically in the case of WLMB, that digital VHF reception is substandard and problematic when compared to UHF reception. It is respectfully submitted that the proposed change in the channel of operation would serve the public interest, as it would authorize operation on a channel that is capable of providing improved OTA reception.

The antenna proposed for use by the facility is non-directional. Elliptical polarization with a 30% ratio in the vertical is proposed for use by WLMB on channel 35. Exhibit E-5 provides a tabulation and plot of the antenna pattern in the vertical plane. This exhibit was generated through the online Dielectric *DASP* utility.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The technical parameters proposed by WLMB would utilize an existing structure that is registered with the Commission. The antenna for use on channel 35

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

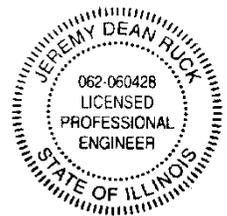
11.25.2020

4

would be placed above the current channel 5 antenna. This arrangement would not require any modifications to the site, thus the already existing environmental impact from the site would not be increased.

Additionally, the proposed facility would not result in human exposure to radiofrequency radiation in excess of the applicable safety standards. The only broadcast facility that utilizes this tower is WLMB. Assuming a downward worst-case relative field of 0.3, the calculated power density at 2 meters above ground level utilizing the equations in Appendix A of *OET Bulletin 65* is $38.3 \mu\text{W}/\text{cm}^2$. This value complies with the upper limit for the uncontrolled environment of the applicable safety standards.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2021

Jeremy D. Ruck, PE
November 25, 2020

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

11.25.2020

5

WLMB-D.X
 BLCDT-20050201AAF
 Latitude: 41-44-41 N
 Longitude: 084-01-06 W
 ERP: 375.00 kW
 Channel: 35
 Frequency: 599.0 MHz
 AMSL Height: 397.5 m
 Horiz. Pattern: Omni
 Vert. Pattern: Yes
 Elec Tilt: 0.5
 Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

- Proposed 48 dBu F(50,90) Service Contour
- Proposed 41 dBu F(50,90) Service Contour
- Toledo, Ohio City Limits
- Licensed 28 dBu F(50,90) Service Contour

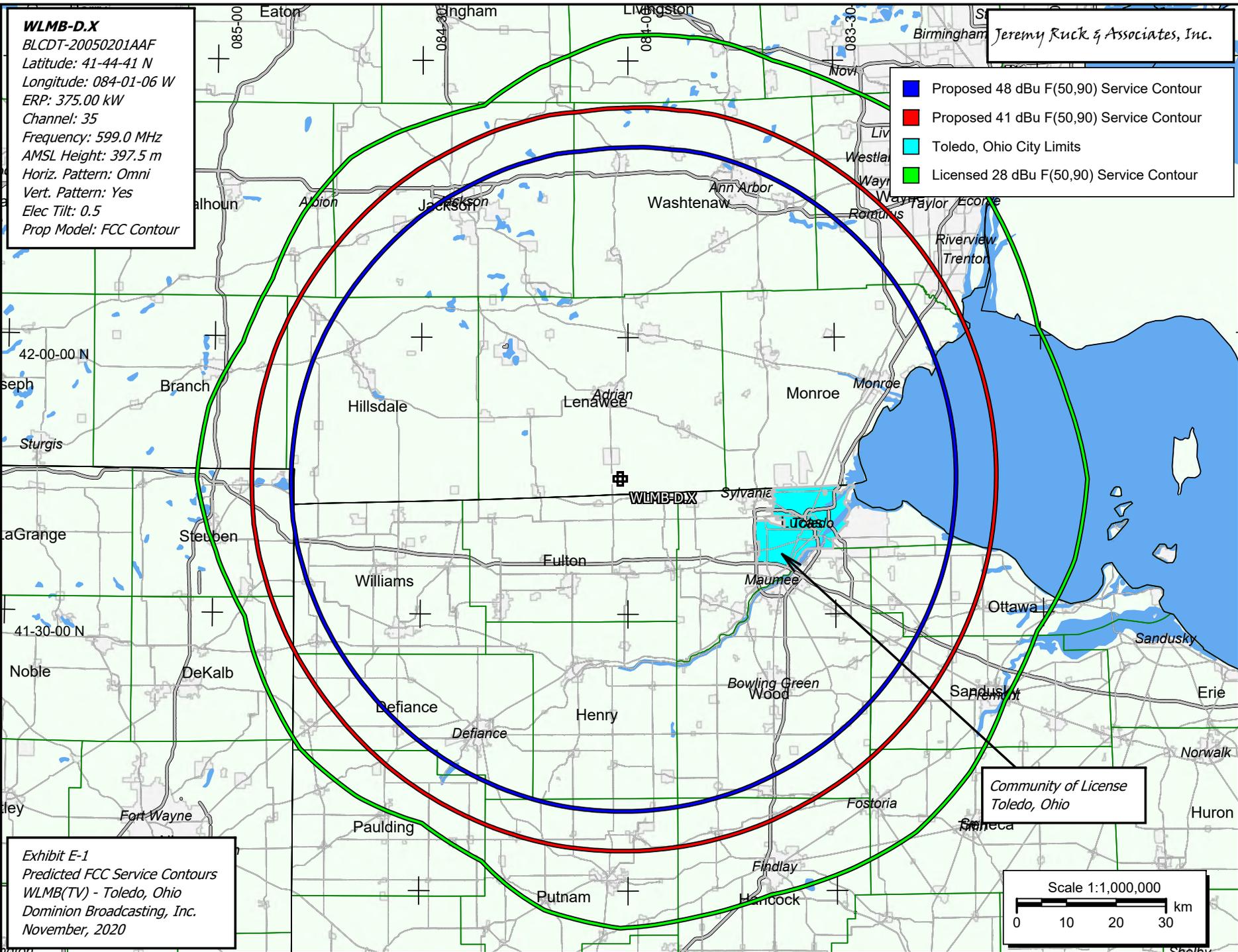


Exhibit E-1
 Predicted FCC Service Contours
 WLMB(TV) - Toledo, Ohio
 Dominion Broadcasting, Inc.
 November, 2020

Community of License
 Toledo, Ohio

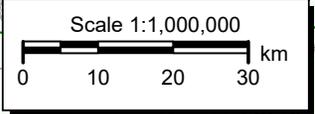


Exhibit E-2 - TVStudy Interference Study – Proposed WLMB

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: WLMB CH 35 375 kW ERP COR 397.5 m AMSL ND 2-1, Model: Longley-Rice
Start: 2020.11.23 17:07:48

Study created: 2020.11.23 17:07:48

Study build station data: LMS TV 2020-11-23

Proposal: WLMB D35 DT APP TOLEDO, OH
File number: WLMB - Proposed
Facility ID: 17076
Station data: User record
Record ID: 257
Country: U.S.
Zone: I

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WISE-TV	D34	DT	LIC	FORT WAYNE, IN	BLANK0000064330	120.6 km
Yes	WKBD-TV	D34	DT	LIC	DETROIT, MI	BLANK0000074932	100.7
No	WKEF	D34	DT	LIC	DAYTON, OH	BLANK0000113880	225.4
No	WGBO-DT	D35	DT	LIC	JOLIET, IL	BLANK0000124507	299.1
No	WTWO	D35	DT	LIC	TERRE HAUTE, IN	BLANK0000086897	398.2
No	WKLE	D35	DT	LIC	LEXINGTON, KY	BLANK0000087400	430.5
No	WOLP-CD	D35	DC	LIC	GRAND RAPIDS, MI	BLANK0000086899	161.4
Yes	WPBN-TV	D35	DT	LIC	TRAVERSE CITY, MI	BLANK0000087956	344.5
Yes	WVIZ	D35	DT	LIC	Cleveland, OH	BLANK0000082429	197.8
Yes	WPTD	D35	DT	LIC	DAYTON, OH	BLANK0000087301	225.8
No	WJAC-TV	D35	DT	LIC	JOHNSTOWN, PA	BLANK0000080232	448.8
No	WTAP-TV	D35	DT	LIC	PARKERSBURG, WV	BLANK0000105709	337.3
No	WHME-TV	D36	DT	LIC	SOUTH BEND, IN	BLANK0000087036	178.6
No	WAQP	D36	DT	LIC	SAGINAW, MI	BLANK0000096188	164.2
No	WQHS-DT	D36	DT	LIC	CLEVELAND, OH	BLANK0000079885	196.8
No	WRGT-TV	D36	DT	LIC	DAYTON, OH	BLANK0000113865	225.4
Yes	WMNT-CD	D36	DC	LIC	TOLEDO, OH	BLANK0000067041	41.7
No	CHCJ-DT	D35	DT	LIC	HAMILTON, ON	BLANKCANADA174	378.8
Yes	CIIT-DT-29D35		DT	LIC	SARNIAOIL SPRINGS, ON	BLANKCANADA217	187.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D35
Latitude: 41 44 41.00 N (NAD83)
Longitude: 84 1 6.00 W
Height AMSL: 397.5 m
HAAT: 169.7 m
Peak ERP: 375 kW
Antenna: Omnidirectional
Elev Patrn: Generic
Elec Tilt: 0.50

40.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	375 kW	165.8 m	75.1 km
45.0	375	184.5	76.6
90.0	375	179.3	76.2
135.0	375	176.0	76.0
180.0	375	169.1	75.4
225.0	375	161.6	74.8
270.0	375	161.1	74.8
315.0	375	160.4	74.7

**Proposal is within coordination distance of Canadian border

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

11.23.2020

1

Exhibit E-2 - TVStudy Interference Study – Proposed WLMB

Distance to Canadian border: 79.1 km

Distance to Mexican border: 2049.4 km

Conditions at FCC monitoring station: Allegan MI
 Bearing: 301.6 degrees Distance: 186.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 271.4 degrees Distance: 1784.6 km

Study cell size: 2.00 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%

Interference to BLANK0000074932 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance			
	WKBD-TV	D34	DT	LIC	DETROIT, MI	BLANK0000074932				
Undesireds:	WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	100.7 km			
	WKAR-TV	D33	DT	LIC	EAST LANSING, MI	BLANK0000054990	93.3			
	WISE-TV	D34	DT	LIC	FORT WAYNE, IN	BLANK0000064330	218.3			
	WCMV	D34	DT	LIC	CADILLAC, MI	BLANK0000087365	288.7			
	WKEF	D34	DT	LIC	DAYTON, OH	BLANK0000113880	316.7			
	CIII-DT-29D35	DT	LIC		SARNIAOIL SPRINGS, ON	BLANKCANADA217	97.4			
	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
	16043.7	5,065,617	16031.7	5,065,350	15908.6	5,057,559	15659.9	5,040,949	1.56	0.33
	4705.4	424,177	4705.4	424,177	4705.4	424,177	4705.4	424,177	0.00	0.00 (in
	Canada)									

Undesired	Total IX	Unique IX, before	Unique IX, after
WLMB D35 DT APP	256.7	16,873	248.7
WKAR-TV D33 DT LIC	76.0	3,358	68.0
WISE-TV D34 DT LIC	44.0	796	32.0
WCMV D34 DT LIC	4.0	155	4.0
WKEF D34 DT LIC	4.0	55	0.0
CIII-DT-29 D35 DT LIC	7.2	3,639	7.2

Interference to BLANK0000087956 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance			
	WPBN-TV	D35	DT	LIC	TRAVERSE CITY, MI	BLANK0000087956				
Undesireds:	WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	344.5 km			
	WGBO-DT	D35	DT	LIC	JOLIET, IL	BLANK0000124507	378.0			
	WOLP-CD	D35	DC	LIC	GRAND RAPIDS, MI	BLANK0000086899	231.8			
	WLUC-TV	D35	DT	CP	MARQUETTE, MI	BLANK0000036029	279.3			
	WAQP	D36	DT	LIC	SAGINAW, MI	BLANK0000096188	188.1			
	CIII-DT-29D35	DT	LIC		SARNIAOIL SPRINGS, ON	BLANKCANADA217	324.0			
	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
	30270.4	442,005	29386.1	430,953	29178.1	423,854	29170.1	423,847	0.03	0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WLMB D35 DT APP	76.2	2,197	8.0
WGBO-DT D35 DT LIC	20.0	84	8.0
WOLP-CD D35 DC LIC	52.2	1,884	24.1
WLUC-TV D35 DT CP	8.0	8	8.0
WAQP D36 DT LIC	32.2	828	8.0
CIII-DT-29 D35 DT LIC	143.9	5,063	123.8

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
 221 S. 1st Avenue
 Canton, IL 61520
 Tel: 309.647.1200
 Fax: 855.332.9537
 jeremyruck.com

Exhibit E-2 - TVStudy Interference Study – Proposed WLMB

Interference to BLANK0000087956 LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPBN-TV	D35	DT	LIC	TRAVERSE CITY, MI	BLANK0000087956	
Undesireds:	WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	344.5 km
	WGBO-DT	D35	DT	LIC	JOLIET, IL	BLANK0000124507	378.0
	WOLP-CD	D35	DC	LIC	GRAND RAPIDS, MI	BLANK0000086899	231.8
	WAQP	D36	DT	LIC	SAGINAW, MI	BLANK0000096188	188.1
	CIII-DT-29D35	DT	LIC		SARNIAOIL SPRINGS, ON	BLANKCANADA217	324.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
30270.4	442,005	29386.1	430,953	29186.1
		423,862	29178.1	423,855
				0.03 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WLMB D35 DT APP	76.2	2,197	8.0 7
WGBO-DT D35 DT LIC	20.0	84	8.0 28
WOLP-CD D35 DC LIC	52.2	1,884	24.1 1,418
WAQP D36 DT LIC	32.2	828	8.0 298
CIII-DT-29 D35 DT LIC	143.9	5,063	123.8 4,761
			99.8 4,482

Interference to BLANK0000082429 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVIZ	D35	DT	LIC	Cleveland, OH	BLANK0000082429	
Undesireds:	WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	197.8 km
	WPTD	D35	DT	LIC	DAYTON, OH	BLANK0000087301	284.6
	WJAC-TV	D35	DT	LIC	JOHNSTOWN, PA	BLANK0000080232	253.9
	WTAP-TV	D35	DT	LIC	PARKERSBURG, WV	BLANK0000105709	226.6
	WQHS-DT	D36	DT	LIC	CLEVELAND, OH	BLANK0000079885	1.1
	CHCJ-DT	D35	DT	LIC	HAMILTON, ON	BLANKCANADA174	254.4
	CIII-DT-29D35	DT	LIC		SARNIAOIL SPRINGS, ON	BLANKCANADA217	153.7

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
19601.4	3,695,223	19445.1	3,689,173	19156.7
927.6	0	927.6	0	927.6
				0
				0.00 0.00 (in

Undesired	Total IX	Unique IX, before	Unique IX, after
WLMB D35 DT APP	273.8	33,958	157.5 17,764
WPTD D35 DT LIC	23.9	1,458	0.0 0
WJAC-TV D35 DT LIC	76.4	17,467	28.2 2,199
WTAP-TV D35 DT LIC	111.8	21,612	27.9 1,875
WQHS-DT D36 DT LIC	88.1	23,731	84.1 23,522
CHCJ-DT D35 DT LIC	16.1	577	0.0 0
CIII-DT-29 D35 DT LIC	132.2	18,458	40.1 3,095
			8.0 360

Interference to BLANK0000087301 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPTD	D35	DT	LIC	DAYTON, OH	BLANK0000087301	
Undesireds:	WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	225.8 km
	WKEF	D34	DT	LIC	DAYTON, OH	BLANK0000113880	0.6
	WTWO	D35	DT	LIC	TERRE HAUTE, IN	BLANK0000086897	274.7
	WKLE	D35	DT	LIC	LEXINGTON, KY	BLANK0000087400	204.8
	WVIZ	D35	DT	LIC	Cleveland, OH	BLANK0000082429	284.6
	WTAP-TV	D35	DT	LIC	PARKERSBURG, WV	BLANK0000105709	233.8
	WRGT-TV	D36	DT	LIC	DAYTON, OH	BLANK0000113865	0.6

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
25491.2	3,423,417	25327.5	3,411,727	24875.8
		3,373,682	24619.0	3,368,085
				1.03 0.17

Undesired	Total IX	Unique IX, before	Unique IX, after
WLMB D35 DT APP	333.0	6,750	256.7 5,597
WKEF D34 DT LIC	88.0	20,167	64.0 14,269

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

Exhibit E-2 - TVStudy Interference Study – Proposed WLMB

WTWO D35 DT LIC	59.9	3,286	47.9	2,049	31.8	1,901
WKLE D35 DT LIC	19.9	3,441	12.0	2,629	12.0	2,629
WVIZ D35 DT LIC	52.2	672	16.1	253	8.0	118
WTAP-TV D35 DT LIC	275.8	12,054	231.7	10,996	215.6	10,662
WRGT-TV D36 DT LIC	32.1	6,123	8.0	225	4.0	54

Interference to BLANK0000067041 LIC scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance			
Desired: WMNT-CD	D36	DC	LIC	TOLEDO, OH	BLANK0000067041				
Undesireds: WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	41.7 km			
WQHS-DT	D36	DT	LIC	CLEVELAND, OH	BLANK0000079885	155.2			
Service area	Terrain-limited		IX-free, before		IX-free, after		Percent New IX		
5770.9	750,099	5770.9	750,099	5746.7	750,015	5682.4	749,179	1.12	0.11
Undesired	Total IX		Unique IX, before		Unique IX, after				
WLMB D35 DT APP	64.3	836			64.3	836			
WQHS-DT D36 DT LIC	24.2	84	24.2	84	24.2	84			

Interference to BLANKCANADA217 LIC scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance				
Desired: CIII-DT-29D35	D35	DT	LIC	SARNIAOIL SPRINGS, ON	BLANKCANADA217					
Undesireds: WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed	187.2 km				
WVIZ	D35	DT	LIC	Cleveland, OH	BLANK0000082429	153.7				
CHCJ-DT	D35	DT	LIC	HAMILTON, ON	BLANKCANADA174	196.0				
Service area	Terrain-limited		IX-free, before		IX-free, after		Percent New IX			
3868.4	640,891	3868.4	640,891	3868.4	640,891	3868.4	640,891	0.00	0.00	(in U.S.)
11934.6	337,899	11926.6	337,899	11055.7	334,839	11023.9	333,939	0.29	0.27	
Undesired	Total IX		Unique IX, before		Unique IX, after					
WLMB D35 DT APP	39.8	900			31.8	900				
WVIZ D35 DT LIC	858.8	3,060	858.8	3,060	858.8	3,060				
CHCJ-DT D35 DT LIC	12.0	0	12.0	0	4.0	0				

Interference to proposal scenario 1
5.00% interference received

Call	Chan	Svc	Status	City, State	File Number	Distance	
Desired: WLMB	D35	DT	APP	TOLEDO, OH	WLMB - Proposed		
Undesireds: WISE-TV	D34	DT	LIC	FORT WAYNE, IN	BLANK0000064330	120.6 km	
WKBD-TV	D34	DT	LIC	DETROIT, MI	BLANK0000074932	100.7	
WOLP-CD	D35	DC	LIC	GRAND RAPIDS, MI	BLANK0000086899	161.4	
WPBN-TV	D35	DT	LIC	TRAVERSE CITY, MI	BLANK0000087956	344.5	
WVIZ	D35	DT	LIC	Cleveland, OH	BLANK0000082429	197.8	
WPTD	D35	DT	LIC	DAYTON, OH	BLANK0000087301	225.8	
WMNT-CD	D36	DC	LIC	TOLEDO, OH	BLANK0000067041	41.7	
CIII-DT-29D35	DT	LIC		SARNIAOIL SPRINGS, ON	BLANKCANADA217	187.2	
Service area	Terrain-limited		IX-free		Percent IX		
17870.9	1,668,529	17838.9	1,664,989	16842.2	1,581,818	5.59	5.00
Undesired	Total IX		Unique IX		Prct Unique IX		
WISE-TV D34 DT LIC	4.1	22	0.0	0	0.00	0.00	
WKBD-TV D34 DT LIC	67.8	44,279	59.8	41,509	0.34	2.49	
WOLP-CD D35 DC LIC	256.2	7,037	172.1	5,273	0.96	0.32	
WPBN-TV D35 DT LIC	23.9	632	0.0	0	0.00	0.00	
WVIZ D35 DT LIC	152.6	2,952	44.1	640	0.25	0.04	
WPTD D35 DT LIC	67.9	1,738	31.9	732	0.18	0.04	
WMNT-CD D36 DC LIC	584.7	30,232	544.3	29,281	3.05	1.76	
CIII-DT-29 D35 DT LIC	40.0	3,633	0.0	0	0.00	0.00	

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

11.23.2020

Exhibit E-3 - TVStudy Interference Study – Licensed WLMB

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: WLMB Licensed BLCDT20050201AAF, Model: Longley-Rice
Start: 2020.11.23 17:17:32

Study created: 2020.11.23 17:17:32

Study build station data: LMS TV 2020-11-23

Proposal: WLMB D5 DT LIC TOLEDO, OH
File number: BLCDT20050201AAF
Facility ID: 17076
Station data: User record
Record ID: 258
Country: U.S.
Zone: I

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	WGVB	D5	DT	LIC	KALAMAZOO, MI	BLEDT20060703ABQ	149.0 km
No	WNYB	D5	DT	LIC	Buffalo, NY	BLANK0000080668	401.7
No	WIWN	D5	DT	APP	FOND DU LAC, WI	BLANK0000036131	352.4
No	WIWN	D5	DT	LIC	FOND DU LAC, WI	BLCDT20120817ABF	352.4
No	WDTV	D5	DT	APP	WESTON, WV	BLANK0000036129	412.5
No	WDTV	D5	DT	LIC	WESTON, WV	BLCDT20090612AJX	412.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D5
Latitude: 41 44 41.00 N (NAD83)
Longitude: 84 1 6.00 W
Height AMSL: 380.0 m
HAAT: 155.0 m
Peak ERP: 10.0 kW
Antenna: DIE-THA-S4SP-2M/8H-1-R (ID 43356) 0.0 deg
Elev Pattn: Generic

28.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	6.37 kW	148.3 m	88.7 km
45.0	8.49	167.0	93.2
90.0	9.88	161.8	93.8
135.0	8.31	158.5	92.0
180.0	7.19	151.6	90.1
225.0	3.43	144.1	83.5
270.0	4.24	143.6	85.0
315.0	3.55	142.9	83.6

Database HAAT does not agree with computed HAAT
Database HAAT: 155 m Computed HAAT: 152 m

**Proposal is within coordination distance of Canadian border
Distance to Canadian border: 79.1 km

Distance to Mexican border: 2049.4 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 301.6 degrees Distance: 186.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 271.4 degrees Distance: 1784.6 km

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

11.23.2020

Exhibit E-3 - TVStudy Interference Study – Licensed WLMB

Study cell size: 2.00 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%

Interference to BLEDT20060703ABQ LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance			
Desired:	WGVK	D5	DT	LIC	KALAMAZOO, MI	BLEDT20060703ABQ				
Undesireds:	WLMB	D5	DT	BL	TOLEDO, OH	DTVBL17076	149.0 km			
	WLMB	D5	DT	LIC	TOLEDO, OH	BLCDDT20050201AAF	149.0			
	WIWN	D5	DT	APP	FOND DU LAC, WI	BLANK0000036131	203.5			
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX			
	28214.3	2,439,225	28170.3	2,437,526	25672.7	2,313,223	25664.7	2,313,320	0.03	-0.00
Undesired			Total IX		Unique IX, before	Unique IX, after				
WLMB D5 DT BL		2141.5	115,524		2065.4	112,970				
WLMB D5 DT LIC		2153.5	115,427			2073.4	112,873			
WIWN D5 DT APP		432.3	11,333		356.2	8,779	352.2	8,779		

Interference to BLEDT20060703ABQ LIC scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance			
Desired:	WGVK	D5	DT	LIC	KALAMAZOO, MI	BLEDT20060703ABQ				
Undesireds:	WLMB	D5	DT	BL	TOLEDO, OH	DTVBL17076	149.0 km			
	WLMB	D5	DT	LIC	TOLEDO, OH	BLCDDT20050201AAF	149.0			
	WIWN	D5	DT	LIC	FOND DU LAC, WI	BLCDDT20120817ABF	203.5			
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX			
	28214.3	2,439,225	28170.3	2,437,526	25996.8	2,322,002	25984.8	2,322,099	0.05	-0.00
Undesired			Total IX		Unique IX, before	Unique IX, after				
WLMB D5 DT BL		2141.5	115,524		2121.5	115,467				
WLMB D5 DT LIC		2153.5	115,427			2133.5	115,370			
WIWN D5 DT LIC		52.0	57		32.0	0	32.0	0		

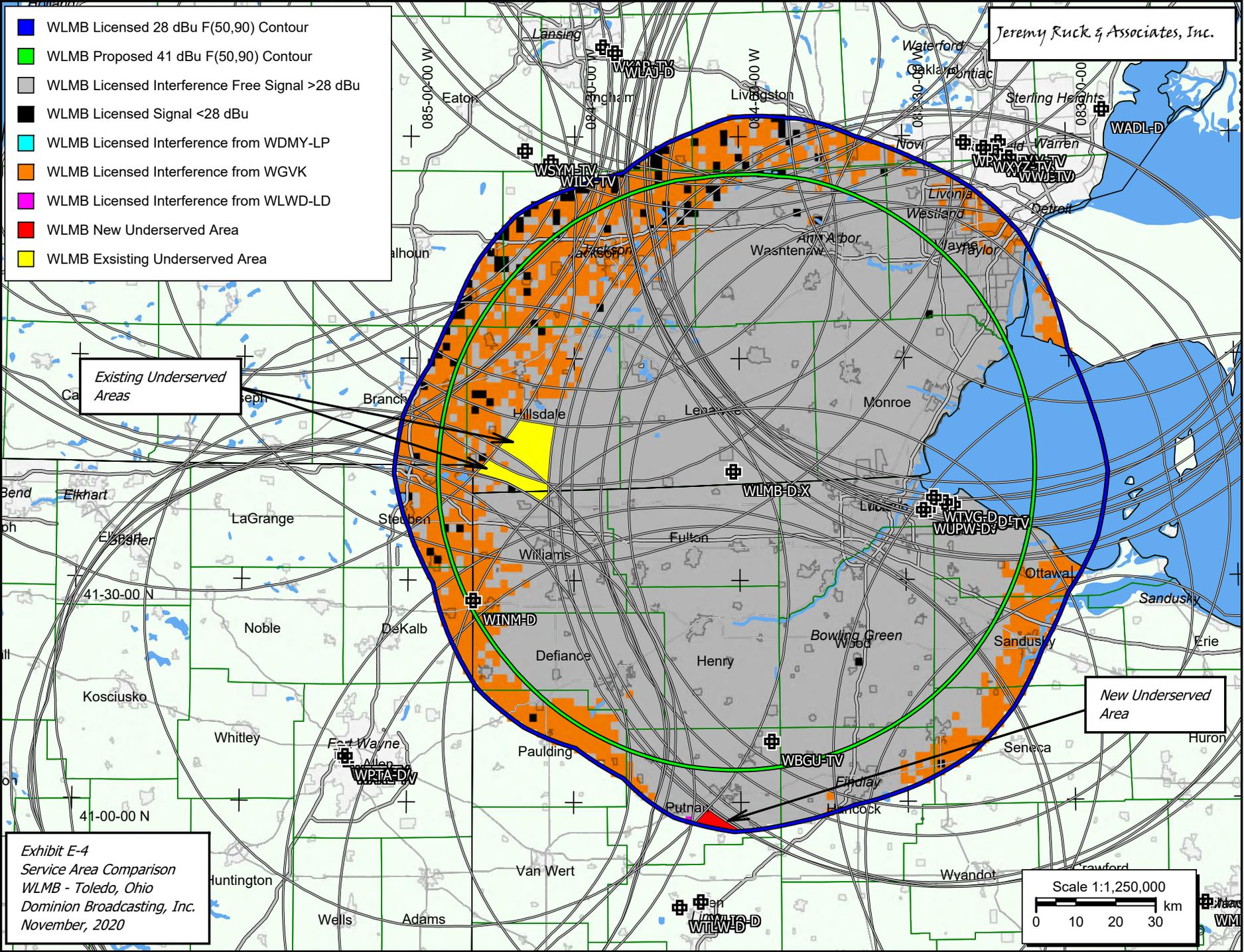
Interference to proposal scenario 1 15.67% interference received

	Call	Chan	Svc	Status	City, State	File Number	Distance	
Desired:	WLMB	D5	DT	LIC	TOLEDO, OH	BLCDDT20050201AAF		
Undesireds:	WGVK	D5	DT	LIC	KALAMAZOO, MI	BLEDT20060703ABQ	149.0 km	
	WIWN	D5	DT	APP	FOND DU LAC, WI	BLANK0000036131	352.4	
	Service area		Terrain-limited		IX-free	Percent IX		
	23363.4	2,754,484	23275.2	2,747,490	18265.1	2,316,836	21.53	15.67
	436.8	19,394	436.8	19,394	164.2	17,858	62.42	7.92 (in Canada)
Undesired			Total IX		Unique IX	Prcnt Unique IX		
WGVK D5 DT LIC		5010.1	430,654		5010.1	430,654	21.53	15.67
WGVK D5 DT LIC		272.6	1,536		272.6	1,536	62.42	7.92 (in Canada)

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
 221 S. 1st Avenue
 Canton, IL 61520

Tel: 309.647.1200
 Fax: 855.332.9537
 jeremyruck.com



Jeremy Ruck & Associates, Inc.

Existing Underserved Areas

New Underserved Area

Exhibit E-4
Service Area Comparison
WLMB - Toledo, Ohio
Dominion Broadcasting, Inc.
November, 2020

Horizontal Polarization AZIMUTH PATTERN

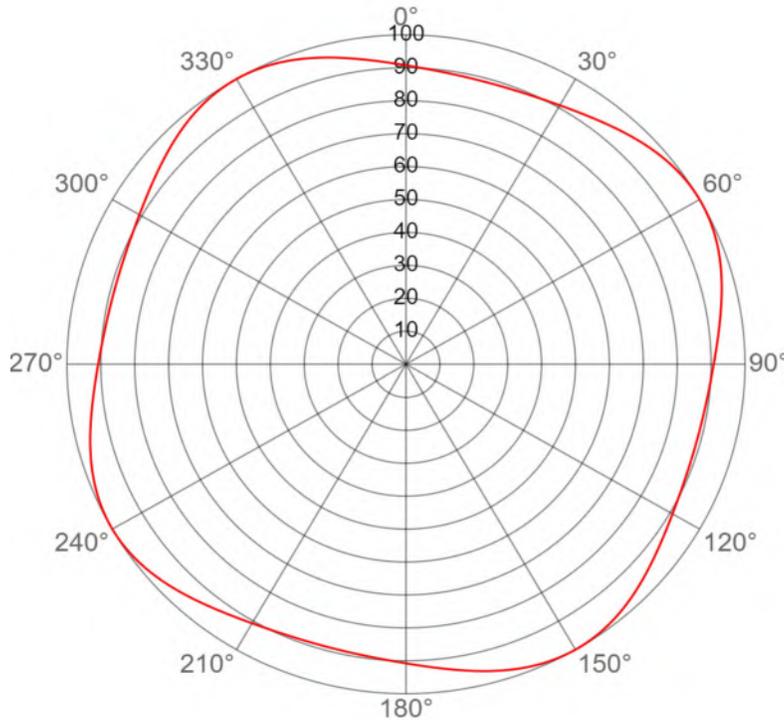
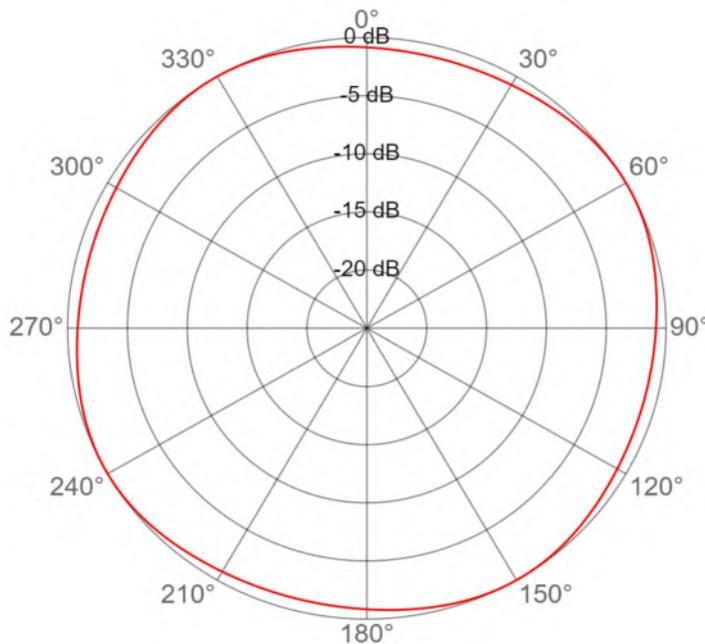


Exhibit No. **E-5**
 Date **25 Nov 2020**
 Call Letters **WLMB**
 Channel **35**
 Antenna Type **TFU-22DSC O4A**
 Location **Toledo, Ohio**
 Customer **Dominion Broadcasting, Inc.**

Gain **1.1 (0.41 dB)**
Calculated
 Drawing # **TFU-O4**

Deg	Value																		
0	0.908	36	0.927	72	0.976	108	0.889	144	0.993	180	0.908	216	0.927	252	0.976	288	0.889	324	0.993
1	0.905	37	0.931	73	0.972	109	0.890	145	0.995	181	0.905	217	0.931	253	0.972	289	0.890	325	0.995
2	0.903	38	0.935	74	0.968	110	0.891	146	0.997	182	0.903	218	0.935	254	0.968	290	0.891	326	0.997
3	0.901	39	0.939	75	0.964	111	0.892	147	0.998	183	0.901	219	0.939	255	0.964	291	0.892	327	0.998
4	0.899	40	0.943	76	0.960	112	0.893	148	0.999	184	0.899	220	0.943	256	0.960	292	0.893	328	0.999
5	0.897	41	0.947	77	0.956	113	0.894	149	1.000	185	0.897	221	0.947	257	0.956	293	0.894	329	1.000
6	0.895	42	0.951	78	0.951	114	0.895	150	1.000	186	0.895	222	0.951	258	0.951	294	0.895	330	1.000
7	0.894	43	0.956	79	0.947	115	0.897	151	1.000	187	0.894	223	0.956	259	0.947	295	0.897	331	1.000
8	0.893	44	0.960	80	0.943	116	0.899	152	0.999	188	0.893	224	0.960	260	0.943	296	0.899	332	0.999
9	0.892	45	0.964	81	0.939	117	0.901	153	0.998	189	0.892	225	0.964	261	0.939	297	0.901	333	0.998
10	0.891	46	0.968	82	0.935	118	0.903	154	0.997	190	0.891	226	0.968	262	0.935	298	0.903	334	0.997
11	0.890	47	0.972	83	0.931	119	0.905	155	0.995	191	0.890	227	0.972	263	0.931	299	0.905	335	0.995
12	0.889	48	0.976	84	0.927	120	0.908	156	0.993	192	0.889	228	0.976	264	0.927	300	0.908	336	0.993
13	0.889	49	0.979	85	0.924	121	0.911	157	0.991	193	0.889	229	0.979	265	0.924	301	0.911	337	0.991
14	0.889	50	0.983	86	0.920	122	0.914	158	0.989	194	0.889	230	0.983	266	0.920	302	0.914	338	0.989
15	0.889	51	0.986	87	0.917	123	0.917	159	0.986	195	0.889	231	0.986	267	0.917	303	0.917	339	0.986
16	0.889	52	0.989	88	0.914	124	0.920	160	0.983	196	0.889	232	0.989	268	0.914	304	0.920	340	0.983
17	0.889	53	0.991	89	0.911	125	0.924	161	0.979	197	0.889	233	0.991	269	0.911	305	0.924	341	0.979
18	0.889	54	0.993	90	0.908	126	0.927	162	0.976	198	0.889	234	0.993	270	0.908	306	0.927	342	0.976
19	0.890	55	0.995	91	0.905	127	0.931	163	0.972	199	0.890	235	0.995	271	0.905	307	0.931	343	0.972
20	0.891	56	0.997	92	0.903	128	0.935	164	0.968	200	0.891	236	0.997	272	0.903	308	0.935	344	0.968
21	0.892	57	0.998	93	0.901	129	0.939	165	0.964	201	0.892	237	0.998	273	0.901	309	0.939	345	0.964
22	0.893	58	0.999	94	0.899	130	0.943	166	0.960	202	0.893	238	0.999	274	0.899	310	0.943	346	0.960
23	0.894	59	1.000	95	0.897	131	0.947	167	0.956	203	0.894	239	1.000	275	0.897	311	0.947	347	0.956
24	0.895	60	1.000	96	0.895	132	0.951	168	0.951	204	0.895	240	1.000	276	0.895	312	0.951	348	0.951
25	0.897	61	1.000	97	0.894	133	0.956	169	0.947	205	0.897	241	1.000	277	0.894	313	0.956	349	0.947
26	0.899	62	0.999	98	0.893	134	0.960	170	0.943	206	0.899	242	0.999	278	0.893	314	0.960	350	0.943
27	0.901	63	0.998	99	0.892	135	0.964	171	0.939	207	0.901	243	0.998	279	0.892	315	0.964	351	0.939
28	0.903	64	0.997	100	0.891	136	0.968	172	0.935	208	0.903	244	0.997	280	0.891	316	0.968	352	0.935
29	0.905	65	0.995	101	0.890	137	0.972	173	0.931	209	0.905	245	0.995	281	0.890	317	0.972	353	0.931
30	0.908	66	0.993	102	0.889	138	0.976	174	0.927	210	0.908	246	0.993	282	0.889	318	0.976	354	0.927
31	0.911	67	0.991	103	0.889	139	0.979	175	0.924	211	0.911	247	0.991	283	0.889	319	0.979	355	0.924
32	0.914	68	0.989	104	0.889	140	0.983	176	0.920	212	0.914	248	0.989	284	0.889	320	0.983	356	0.920
33	0.917	69	0.986	105	0.889	141	0.986	177	0.917	213	0.917	249	0.986	285	0.889	321	0.986	357	0.917
34	0.920	70	0.983	106	0.889	142	0.989	178	0.914	214	0.920	250	0.983	286	0.889	322	0.989	358	0.914
35	0.924	71	0.979	107	0.889	143	0.991	179	0.911	215	0.924	251	0.979	287	0.889	323	0.991	359	0.911

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.



Horizontal Polarization AZIMUTH PATTERN (dB)

Exhibit No. **E-5**
 Date **25 Nov 2020**
 Call Letters **WLMB**
 Channel **35**
 Antenna Type **TFU-22DSC O4A**
 Location **Toledo, Ohio**
 Customer **Dominion Broadcasting, Inc.**

Gain **1.1 (0.41 dB)**
Calculated
 Drawing # **TFU-O4**

Deg	dB																		
0	-0.840	36	-0.656	72	-0.215	108	-1.018	144	-0.057	180	-0.840	216	-0.656	252	-0.215	288	-1.018	324	-0.057
1	-0.865	37	-0.620	73	-0.248	109	-1.013	145	-0.040	181	-0.865	217	-0.620	253	-0.248	289	-1.013	325	-0.040
2	-0.888	38	-0.584	74	-0.283	110	-1.006	146	-0.026	182	-0.888	218	-0.584	254	-0.283	290	-1.006	326	-0.026
3	-0.909	39	-0.546	75	-0.319	111	-0.997	147	-0.015	183	-0.909	219	-0.546	255	-0.319	291	-0.997	327	-0.015
4	-0.929	40	-0.508	76	-0.356	112	-0.987	148	-0.006	184	-0.929	220	-0.508	256	-0.356	292	-0.987	328	-0.006
5	-0.946	41	-0.470	77	-0.394	113	-0.975	149	-0.002	185	-0.946	221	-0.470	257	-0.394	293	-0.975	329	-0.002
6	-0.961	42	-0.432	78	-0.432	114	-0.961	150	-0.000	186	-0.961	222	-0.432	258	-0.432	294	-0.961	330	0.000
7	-0.975	43	-0.394	79	-0.470	115	-0.946	151	-0.002	187	-0.975	223	-0.394	259	-0.470	295	-0.946	331	-0.002
8	-0.987	44	-0.356	80	-0.508	116	-0.929	152	-0.006	188	-0.987	224	-0.356	260	-0.508	296	-0.929	332	-0.006
9	-0.997	45	-0.319	81	-0.546	117	-0.909	153	-0.015	189	-0.997	225	-0.319	261	-0.546	297	-0.909	333	-0.015
10	-1.006	46	-0.283	82	-0.584	118	-0.888	154	-0.026	190	-1.006	226	-0.283	262	-0.584	298	-0.888	334	-0.026
11	-1.013	47	-0.248	83	-0.620	119	-0.865	155	-0.040	191	-1.013	227	-0.248	263	-0.620	299	-0.865	335	-0.040
12	-1.018	48	-0.215	84	-0.656	120	-0.840	156	-0.057	192	-1.018	228	-0.215	264	-0.656	300	-0.840	336	-0.057
13	-1.022	49	-0.183	85	-0.690	121	-0.814	157	-0.077	193	-1.022	229	-0.183	265	-0.690	301	-0.814	337	-0.077
14	-1.024	50	-0.153	86	-0.724	122	-0.785	158	-0.100	194	-1.024	230	-0.153	266	-0.724	302	-0.785	338	-0.100
15	-1.025	51	-0.126	87	-0.755	123	-0.755	159	-0.126	195	-1.025	231	-0.126	267	-0.755	303	-0.755	339	-0.126
16	-1.024	52	-0.100	88	-0.785	124	-0.724	160	-0.153	196	-1.024	232	-0.100	268	-0.785	304	-0.724	340	-0.153
17	-1.022	53	-0.077	89	-0.814	125	-0.690	161	-0.183	197	-1.022	233	-0.077	269	-0.814	305	-0.690	341	-0.183
18	-1.018	54	-0.057	90	-0.840	126	-0.656	162	-0.215	198	-1.018	234	-0.057	270	-0.840	306	-0.656	342	-0.215
19	-1.013	55	-0.040	91	-0.865	127	-0.620	163	-0.248	199	-1.013	235	-0.040	271	-0.865	307	-0.620	343	-0.248
20	-1.006	56	-0.026	92	-0.888	128	-0.584	164	-0.283	200	-1.006	236	-0.026	272	-0.888	308	-0.584	344	-0.283
21	-0.997	57	-0.015	93	-0.909	129	-0.546	165	-0.319	201	-0.997	237	-0.015	273	-0.909	309	-0.546	345	-0.319
22	-0.987	58	-0.007	94	-0.929	130	-0.508	166	-0.356	202	-0.987	238	-0.007	274	-0.929	310	-0.508	346	-0.356
23	-0.975	59	-0.002	95	-0.946	131	-0.470	167	-0.394	203	-0.975	239	-0.002	275	-0.946	311	-0.470	347	-0.394
24	-0.961	60	-0.000	96	-0.961	132	-0.432	168	-0.432	204	-0.961	240	-0.000	276	-0.961	312	-0.432	348	-0.432
25	-0.946	61	-0.002	97	-0.975	133	-0.394	169	-0.470	205	-0.946	241	-0.002	277	-0.975	313	-0.394	349	-0.470
26	-0.929	62	-0.006	98	-0.987	134	-0.356	170	-0.508	206	-0.929	242	-0.006	278	-0.987	314	-0.356	350	-0.508
27	-0.909	63	-0.015	99	-0.997	135	-0.319	171	-0.546	207	-0.909	243	-0.015	279	-0.997	315	-0.319	351	-0.546
28	-0.888	64	-0.026	100	-1.006	136	-0.283	172	-0.584	208	-0.888	244	-0.026	280	-1.006	316	-0.283	352	-0.584
29	-0.865	65	-0.040	101	-1.013	137	-0.248	173	-0.620	209	-0.865	245	-0.040	281	-1.013	317	-0.248	353	-0.620
30	-0.840	66	-0.057	102	-1.018	138	-0.215	174	-0.656	210	-0.840	246	-0.057	282	-1.018	318	-0.215	354	-0.656
31	-0.814	67	-0.077	103	-1.022	139	-0.183	175	-0.690	211	-0.814	247	-0.077	283	-1.022	319	-0.183	355	-0.690
32	-0.785	68	-0.100	104	-1.024	140	-0.153	176	-0.724	212	-0.785	248	-0.100	284	-1.024	320	-0.153	356	-0.724
33	-0.755	69	-0.126	105	-1.025	141	-0.126	177	-0.755	213	-0.755	249	-0.126	285	-1.025	321	-0.126	357	-0.755
34	-0.724	70	-0.153	106	-1.024	142	-0.100	178	-0.785	214	-0.724	250	-0.153	286	-1.024	322	-0.100	358	-0.785
35	-0.690	71	-0.183	107	-1.022	143	-0.077	179	-0.814	215	-0.690	251	-0.183	287	-1.022	323	-0.077	359	-0.814

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

Vertical Polarization AZIMUTH PATTERN

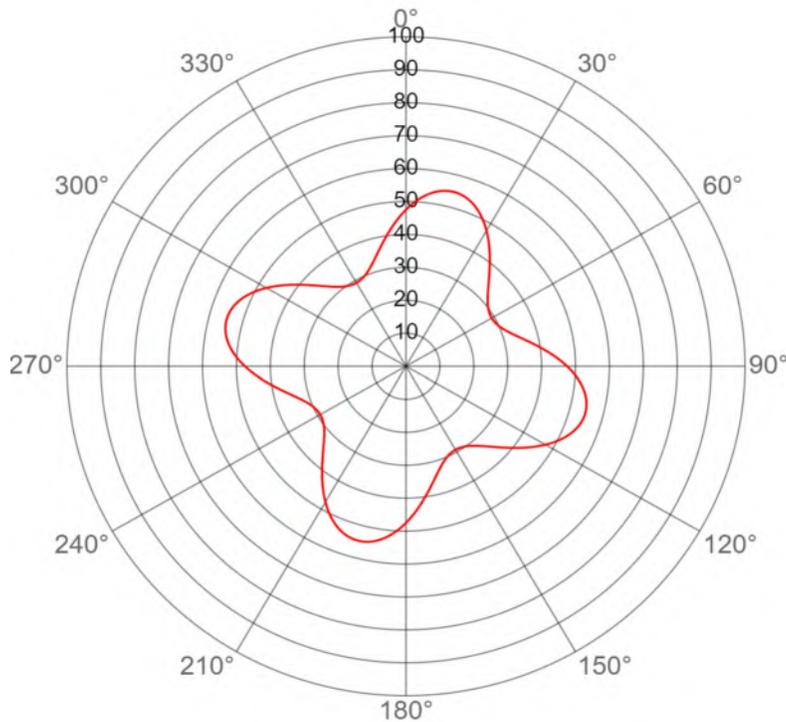


Exhibit No. **E-5**
 Date **25 Nov 2020**
 Call Letters **WLMB**
 Channel **35**
 Antenna Type **TFU-22DSC O4A**
 Location **Toledo, Ohio**
 Customer **Dominion Broadcasting, Inc.**

Gain **1.1 (0.41 dB)**
Calculated
 Drawing # **TFU-O4**

Deg	Value																		
0	0.475	36	0.420	72	0.325	108	0.544	144	0.300	180	0.475	216	0.420	252	0.325	288	0.544	324	0.300
1	0.484	37	0.411	73	0.331	109	0.542	145	0.298	181	0.484	217	0.411	253	0.331	289	0.542	325	0.298
2	0.492	38	0.402	74	0.337	110	0.539	146	0.296	182	0.492	218	0.402	254	0.337	290	0.539	326	0.296
3	0.499	39	0.393	75	0.344	111	0.535	147	0.294	183	0.499	219	0.393	255	0.344	291	0.535	327	0.294
4	0.507	40	0.384	76	0.351	112	0.530	148	0.293	184	0.507	220	0.384	256	0.351	292	0.530	328	0.293
5	0.513	41	0.375	77	0.359	113	0.525	149	0.292	185	0.513	221	0.375	257	0.359	293	0.525	329	0.292
6	0.520	42	0.367	78	0.367	114	0.520	150	0.292	186	0.520	222	0.367	258	0.367	294	0.520	330	0.292
7	0.525	43	0.359	79	0.375	115	0.513	151	0.292	187	0.525	223	0.359	259	0.375	295	0.513	331	0.292
8	0.530	44	0.351	80	0.384	116	0.507	152	0.293	188	0.530	224	0.351	260	0.384	296	0.507	332	0.293
9	0.535	45	0.344	81	0.393	117	0.499	153	0.294	189	0.535	225	0.344	261	0.393	297	0.499	333	0.294
10	0.539	46	0.337	82	0.402	118	0.492	154	0.296	190	0.539	226	0.337	262	0.402	298	0.492	334	0.296
11	0.542	47	0.331	83	0.411	119	0.484	155	0.298	191	0.542	227	0.331	263	0.411	299	0.484	335	0.298
12	0.544	48	0.325	84	0.420	120	0.475	156	0.300	192	0.544	228	0.325	264	0.420	300	0.475	336	0.300
13	0.546	49	0.319	85	0.430	121	0.466	157	0.303	193	0.546	229	0.319	265	0.430	301	0.466	337	0.303
14	0.547	50	0.315	86	0.439	122	0.457	158	0.306	194	0.547	230	0.315	266	0.439	302	0.457	338	0.306
15	0.548	51	0.310	87	0.448	123	0.448	159	0.310	195	0.548	231	0.310	267	0.448	303	0.448	339	0.310
16	0.547	52	0.306	88	0.457	124	0.439	160	0.315	196	0.547	232	0.306	268	0.457	304	0.439	340	0.315
17	0.546	53	0.303	89	0.466	125	0.430	161	0.319	197	0.546	233	0.303	269	0.466	305	0.430	341	0.319
18	0.544	54	0.300	90	0.475	126	0.420	162	0.325	198	0.544	234	0.300	270	0.475	306	0.420	342	0.325
19	0.542	55	0.298	91	0.484	127	0.411	163	0.331	199	0.542	235	0.298	271	0.484	307	0.411	343	0.331
20	0.539	56	0.296	92	0.492	128	0.402	164	0.337	200	0.539	236	0.296	272	0.492	308	0.402	344	0.337
21	0.535	57	0.294	93	0.499	129	0.393	165	0.344	201	0.535	237	0.294	273	0.499	309	0.393	345	0.344
22	0.530	58	0.293	94	0.507	130	0.384	166	0.351	202	0.530	238	0.293	274	0.507	310	0.384	346	0.351
23	0.525	59	0.292	95	0.513	131	0.375	167	0.359	203	0.525	239	0.292	275	0.513	311	0.375	347	0.359
24	0.520	60	0.292	96	0.520	132	0.367	168	0.367	204	0.520	240	0.292	276	0.520	312	0.367	348	0.367
25	0.513	61	0.292	97	0.525	133	0.359	169	0.375	205	0.513	241	0.292	277	0.525	313	0.359	349	0.375
26	0.507	62	0.293	98	0.530	134	0.351	170	0.384	206	0.507	242	0.293	278	0.530	314	0.351	350	0.384
27	0.499	63	0.294	99	0.535	135	0.344	171	0.393	207	0.499	243	0.294	279	0.535	315	0.344	351	0.393
28	0.492	64	0.296	100	0.539	136	0.337	172	0.402	208	0.492	244	0.296	280	0.539	316	0.337	352	0.402
29	0.484	65	0.298	101	0.542	137	0.331	173	0.411	209	0.484	245	0.298	281	0.542	317	0.331	353	0.411
30	0.475	66	0.300	102	0.544	138	0.325	174	0.420	210	0.475	246	0.300	282	0.544	318	0.325	354	0.420
31	0.466	67	0.303	103	0.546	139	0.319	175	0.430	211	0.466	247	0.303	283	0.546	319	0.319	355	0.430
32	0.457	68	0.306	104	0.547	140	0.315	176	0.439	212	0.457	248	0.306	284	0.547	320	0.315	356	0.439
33	0.448	69	0.310	105	0.548	141	0.310	177	0.448	213	0.448	249	0.310	285	0.548	321	0.310	357	0.448
34	0.439	70	0.315	106	0.547	142	0.306	178	0.457	214	0.439	250	0.315	286	0.547	322	0.306	358	0.457
35	0.430	71	0.319	107	0.546	143	0.303	179	0.466	215	0.430	251	0.319	287	0.546	323	0.303	359	0.466

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

Vertical Polarization AZIMUTH PATTERN (dB)

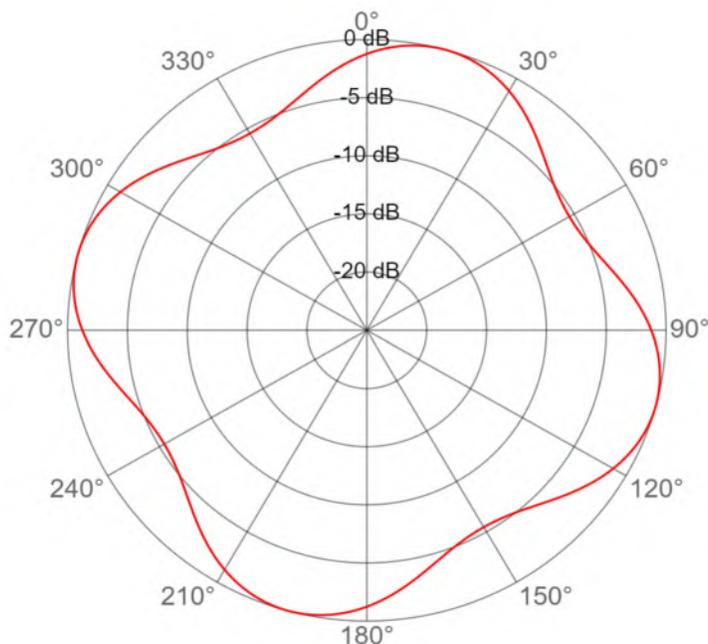


Exhibit No. **E-5**
 Date **25 Nov 2020**
 Call Letters **WLMB**
 Channel **35**
 Antenna Type **TFU-22DSC O4A**
 Location **Toledo, Ohio**
 Customer **Dominion Broadcasting, Inc.**

Gain **1.1 (0.41 dB)**
Calculated
 Drawing # **TFU-O4**

Deg	dB																		
0	38.765	36	37.700	72	35.462	108	39.949	144	34.770	180	38.765	216	37.700	252	35.462	288	39.949	324	34.770
1	38.918	37	37.505	73	35.618	109	39.909	145	34.699	181	38.918	217	37.505	253	35.618	289	39.909	325	34.699
2	39.062	38	37.307	74	35.783	110	39.858	146	34.641	182	39.062	218	37.307	254	35.783	290	39.858	326	34.641
3	39.197	39	37.108	75	35.956	111	39.795	147	34.595	183	39.197	219	37.108	255	35.956	291	39.795	327	34.595
4	39.323	40	36.909	76	36.137	112	39.722	148	34.563	184	39.323	220	36.909	256	36.137	292	39.722	328	34.563
5	39.438	41	36.711	77	36.324	113	39.638	149	34.544	185	39.438	221	36.711	257	36.324	293	39.638	329	34.544
6	39.543	42	36.516	78	36.516	114	39.543	150	34.538	186	39.543	222	36.516	258	36.516	294	39.543	330	34.538
7	39.638	43	36.324	79	36.712	115	39.438	151	34.544	187	39.638	223	36.324	259	36.712	295	39.438	331	34.544
8	39.722	44	36.137	80	36.910	116	39.322	152	34.563	188	39.722	224	36.137	260	36.910	296	39.322	332	34.563
9	39.796	45	35.956	81	37.109	117	39.197	153	34.596	189	39.796	225	35.956	261	37.109	297	39.197	333	34.596
10	39.858	46	35.782	82	37.308	118	39.062	154	34.641	190	39.858	226	35.782	262	37.308	298	39.062	334	34.641
11	39.909	47	35.617	83	37.505	119	38.918	155	34.699	191	39.909	227	35.617	263	37.505	299	38.918	335	34.699
12	39.949	48	35.462	84	37.700	120	38.765	156	34.770	192	39.949	228	35.462	264	37.700	300	38.765	336	34.770
13	39.977	49	35.317	85	37.892	121	38.604	157	34.855	193	39.977	229	35.317	265	37.892	301	38.604	337	34.855
14	39.994	50	35.183	86	38.079	122	38.435	158	34.952	194	39.994	230	35.183	266	38.079	302	38.435	338	34.952
15	40.000	51	35.061	87	38.261	123	38.260	159	35.061	195	40.000	231	35.061	267	38.261	303	38.260	339	35.061
16	39.994	52	34.951	88	38.436	124	38.078	160	35.183	196	39.994	232	34.951	268	38.436	304	38.078	340	35.183
17	39.977	53	34.854	89	38.605	125	37.891	161	35.317	197	39.977	233	34.854	269	38.605	305	37.891	341	35.317
18	39.949	54	34.770	90	38.765	126	37.700	162	35.462	198	39.949	234	34.770	270	38.765	306	37.700	342	35.462
19	39.909	55	34.699	91	38.918	127	37.505	163	35.618	199	39.909	235	34.699	271	38.918	307	37.505	343	35.618
20	39.858	56	34.641	92	39.062	128	37.307	164	35.783	200	39.858	236	34.641	272	39.062	308	37.307	344	35.783
21	39.795	57	34.595	93	39.197	129	37.108	165	35.956	201	39.795	237	34.595	273	39.197	309	37.108	345	35.956
22	39.722	58	34.563	94	39.323	130	36.909	166	36.137	202	39.722	238	34.563	274	39.323	310	36.909	346	36.137
23	39.638	59	34.544	95	39.438	131	36.711	167	36.324	203	39.638	239	34.544	275	39.438	311	36.711	347	36.324
24	39.543	60	34.538	96	39.543	132	36.516	168	36.516	204	39.543	240	34.538	276	39.543	312	36.516	348	36.516
25	39.438	61	34.544	97	39.638	133	36.324	169	36.712	205	39.438	241	34.544	277	39.638	313	36.324	349	36.712
26	39.322	62	34.563	98	39.722	134	36.137	170	36.910	206	39.322	242	34.563	278	39.722	314	36.137	350	36.910
27	39.197	63	34.596	99	39.796	135	35.956	171	37.109	207	39.197	243	34.596	279	39.796	315	35.956	351	37.109
28	39.062	64	34.641	100	39.858	136	35.782	172	37.308	208	39.062	244	34.641	280	39.858	316	35.782	352	37.308
29	38.918	65	34.699	101	39.909	137	35.617	173	37.505	209	38.918	245	34.699	281	39.909	317	35.617	353	37.505
30	38.765	66	34.770	102	39.949	138	35.462	174	37.700	210	38.765	246	34.770	282	39.949	318	35.462	354	37.700
31	38.604	67	34.855	103	39.977	139	35.317	175	37.892	211	38.604	247	34.855	283	39.977	319	35.317	355	37.892
32	38.435	68	34.952	104	39.994	140	35.183	176	38.079	212	38.435	248	34.952	284	39.994	320	35.183	356	38.079
33	38.260	69	35.061	105	40.000	141	35.061	177	38.261	213	38.260	249	35.061	285	40.000	321	35.061	357	38.261
34	38.078	70	35.183	106	39.994	142	34.951	178	38.436	214	38.078	250	35.183	286	39.994	322	34.951	358	38.436
35	37.891	71	35.317	107	39.977	143	34.854	179	38.605	215	37.891	251	35.317	287	39.977	323	34.854	359	38.605

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

ELEVATION PATTERN

Exhibit No. **E-5**
 Date **25 Nov 2020**
 Call Letters **WLMB**
 Channel **35**
 Antenna Type **TFU-22DSC O4A**
 Location **Toledo, Ohio**
 Customer **Dominion Broadcasting, Inc.**

Future fill is available!

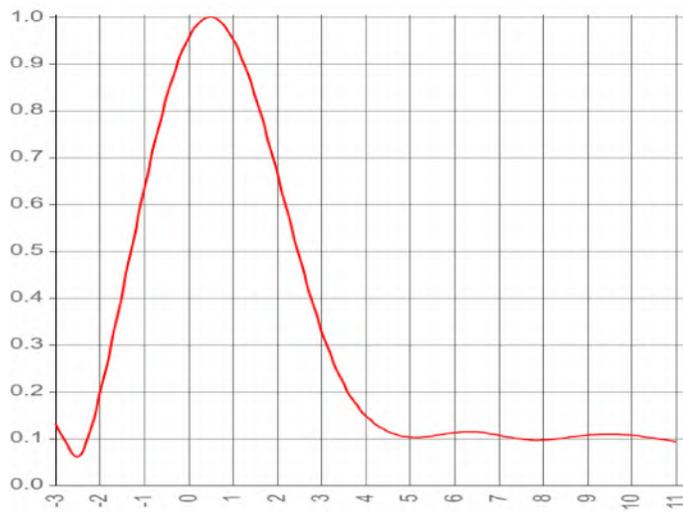
RMS Gain at Main Lobe **18.5 (12.67 dB)**

Beam Tilt **0.5 Degrees**

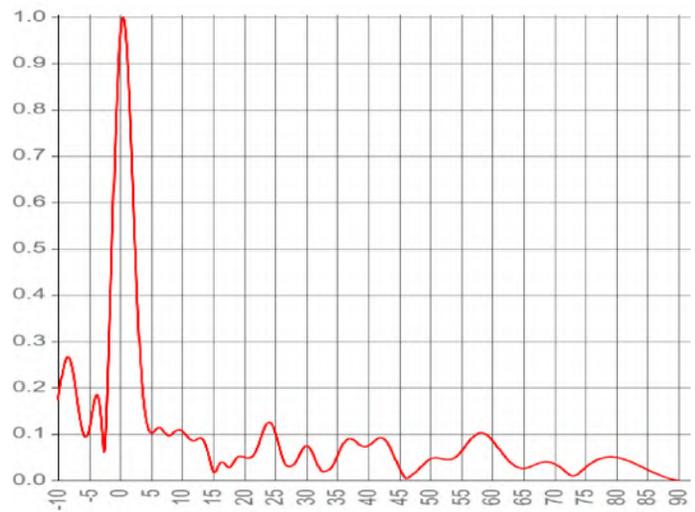
RMS Gain at Horizontal **16.9 (12.27 dB)**

Drawing # **22Q185050**

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field								
-10	0.173	10	0.107	30	0.074	50	0.046	70	0.036
-9	0.250	11	0.093	31	0.061	51	0.049	71	0.028
-8	0.259	12	0.086	32	0.030	52	0.046	72	0.017
-7	0.185	13	0.092	33	0.019	53	0.045	73	0.010
-6	0.108	14	0.069	34	0.027	54	0.050	74	0.016
-5	0.109	15	0.021	35	0.051	55	0.062	75	0.028
-4	0.178	16	0.035	36	0.079	56	0.080	76	0.037
-3	0.132	17	0.034	37	0.090	57	0.095	77	0.045
-2	0.191	18	0.032	38	0.084	58	0.103	78	0.049
-1	0.630	19	0.050	39	0.074	59	0.099	79	0.051
0	0.955	20	0.050	40	0.075	60	0.087	80	0.050
1	0.955	21	0.049	41	0.085	61	0.070	81	0.046
2	0.669	22	0.065	42	0.092	62	0.052	82	0.042
3	0.332	23	0.102	43	0.084	63	0.038	83	0.036
4	0.148	24	0.125	44	0.058	64	0.029	84	0.030
5	0.103	25	0.104	45	0.027	65	0.026	85	0.023
6	0.112	26	0.057	46	0.005	66	0.029	86	0.017
7	0.107	27	0.031	47	0.011	67	0.034	87	0.011
8	0.097	28	0.035	48	0.022	68	0.039	88	0.006
9	0.107	29	0.057	49	0.036	69	0.040	89	0.002

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

System Summary

Exhibit No.	E-5
Date	25 Nov 2020
Call Letters	WLMB
Channel	35
Antenna Type	TFU-22DSC O4A
Location	Toledo, Ohio
Customer	Dominion Broadcasting, Inc.

Antenna

	Hpol	Vpol
ERP:	375.0 kW (25.74 dBk)	112.5 kW (20.51 dBk)
RMS Gain*:	14.2 (11.53 dB)	4.3 (6.30 dB)

Antenna Input Power:

26.4 kW

Transmission Line

Type:	Transmission Line		
Size:	6-1/8" 75 ohm		
Impedance:	75 ohm		
Length:	500 ft (152.4 m)	Attenuation:	0.6 dB
		Efficiency:	87.13 %

Transmitter Output

30.2 kW (14.81 dBk)

* Gain is with respect to half wave dipole.

Mechanicals

Exhibit No.	E-5
Date	25 Nov 2020
Call Letters	WLMB
Channel	35
Antenna Type	TFU-22DSC O4A
Location	Toledo, Ohio
Customer	Dominion Broadcasting, Inc.

Preliminary Specifications

Side Mounted

Mechanical Specification without ice TIA-222-G

Basic Wind Speed	90 mph
Structure Class	II
Exposure Category	C
Topography Category	1

Mechanical Specifications

Height less Lightning Protector	(H2)	41.4 ft (12.6 m)
Center of Radiation	(H3)	20.7 ft (6.3 m)

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.