

**Gray Television Licensee, LLC
W21DB-D, Meridian, MS**

W21DB-D, Meridian, Mississippi (Facility ID 185229) hereby requests Special Temporary Authority to operate W21DB-D at a temporary location. See attached 2017 Engineering Statement.

**Engineering Statement
Special Temporary Authority**
prepared for
Gray Television Licensee, LLC
W21DB-D Meridian, MS
Facility ID 185229
Ch. 21 (digital) 0.005 kW

Gray Television Licensee, LLC (“Gray”) is the licensee of Low Power Television station W21DB-D, Channel 21, Facility ID 185229, Meridian, MS (BLDTL-20140429ASW). W21DB-D has been silent since August 8, 2016 (file# 0000013499). This statement supports *Gray*’s request for Special Temporary Authority (“STA”) to operate W21DB-D at a temporary location.

The W21DB-D license was assigned to *Gray* pursuant to file number BAPDTL-20160811AAB, as consummated on September 26, 2016 after the facility went silent. *Gray* does not have access to the licensed site. The STA sought herein by *Gray* seeks to operate W21DB-D at a temporary location in order to resume operation prior to the 12 month anniversary of the date of going silent.

As proposed herein, W21DB-D will be sited at the studio location associated *Gray*’s nearby full power station WTOK-TV (Facility ID 4686, Meridian MS), located 4.4 km (2.7 miles) from the licensed W21DB-D site. The proposed W21DB-D STA facility will utilize a directional transmitting antenna to be attached to a mast atop the WTOK-TV studio building. The structure does not require an FCC Antenna Structure Registration number since the mast’s overall height does not extend more than 6.1 meters above the building’s overall height above ground.

The proposed W21DB-D facility will operate with a directional antenna at 0.005 kW effective radiated power. A plot of the directional antenna’s azimuthal pattern is supplied in Figure 1. Figure 2 shows that the 51 dB μ coverage contour of the proposed STA facility does not extend beyond that of the licensed facility.

Engineering Statement Gray Television Licensee, LLC

W21DB-D Meridian, MS
(page 2 of 3)



Interference study per OET Bulletin 69¹ shows that the proposal complies with the FCC's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

Human Exposure to Radiofrequency Electromagnetic Field

The proposed STA operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 100 percent antenna relative field in downward elevations, the calculated signal density near the building at two meters above ground level attributable to the proposed facility is $0.8 \mu\text{W}/\text{cm}^2$, which is 0.2 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. Access to the building's rooftop will be restricted. The W21DB-D STA facility will reduce power or cease operation as necessary to protect persons having access to the rooftop, mast, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. RF exposure warning signs will be posted at rooftop access points. Environmental matters covered by this exhibit are limited to the evaluation of exposure to RF electromagnetic field.

¹FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 1 km cell size, and 1 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.

Engineering Statement
Gray Television Licensee, LLC

W21DB-D Meridian, MS
(page 3 of 3)



List of Attachments

| | |
|----------|------------------------------------|
| Figure 1 | Antenna Azimuthal Pattern |
| Figure 2 | Coverage Contour Comparison |
| Table 1 | OET Bulletin 69 Interference Study |

Chesapeake RF Consultants, LLC

| | |
|-----------------------|--------------------|
| Joseph M. Davis, P.E. | July 28, 2017 |
| 207 Old Dominion Road | Yorktown, VA 23692 |

703-650-9600

**Azimuth Pattern - Relative Field
(True North)**



Figure 1
STA Antenna Azimuthal Pattern
W21DB-D Meridian, MS
Facility ID 185229
Ch. 21 (digital) 0.005 kW

prepared for
Gray Television Licensee, LLC

July, 2017



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 2
Coverage Contour Comparison
W21DB-D Meridian, MS
Facility ID 185229
Ch. 21 (digital) 0.005 kW

prepared for
Gray Television Licensee, LLC

July, 2017

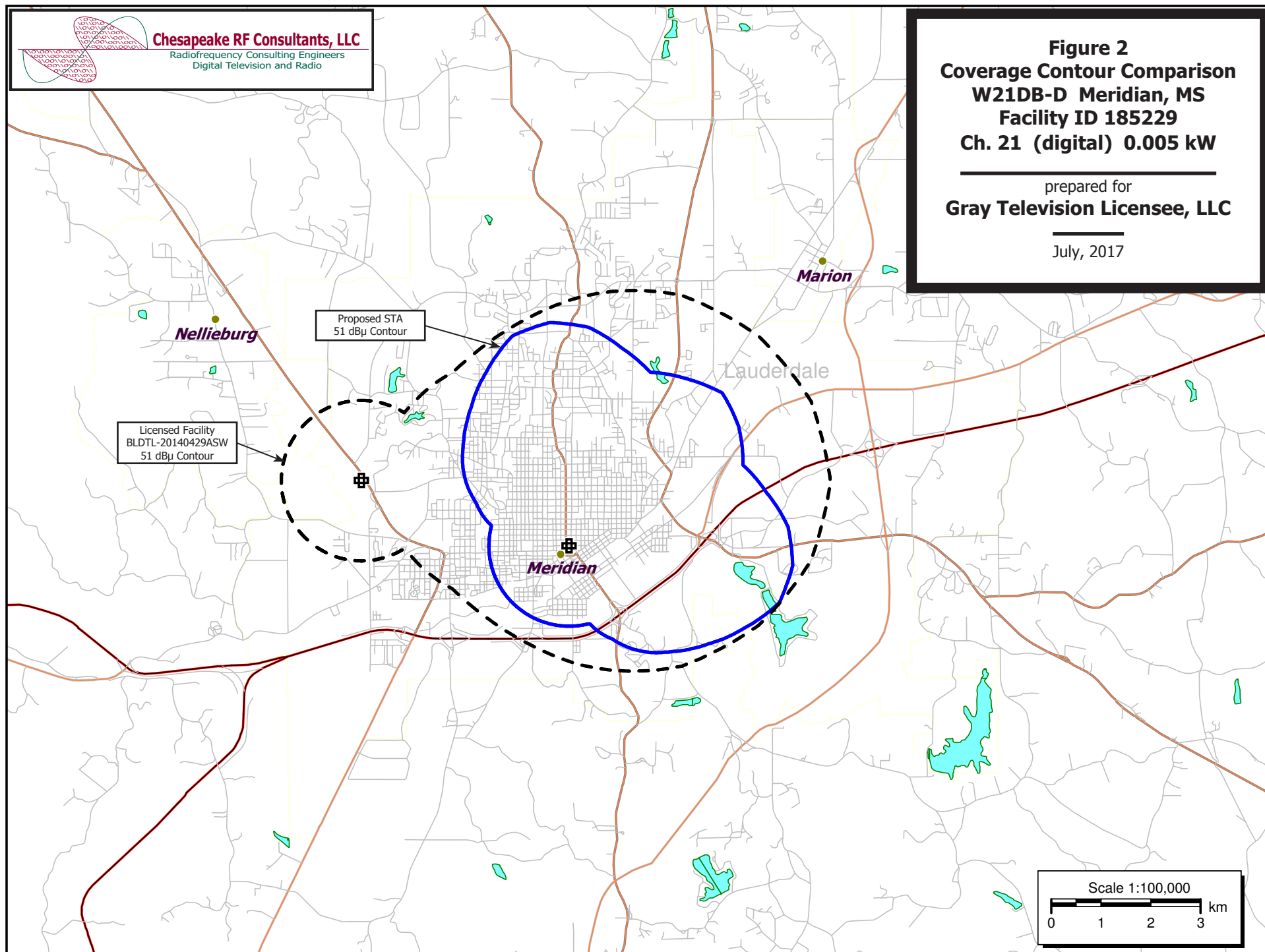
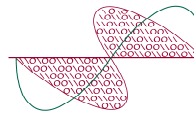


Table 1 W21DB-D OET Bulletin 69 Interference Study
(page 1 of 3 – No IX check failures found, condensed to show first scenarios only)



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

tvstudy v2.2.2
Database: localhost, Study: W21DB-D 0.005KW, Model: Longley-Rice
Start: 2017.07.27 15:05:22

Study created: 2017.07.27 15:05:09

Study build station data: LMS TV 2017-07-25 LMSTV

Proposal: W21DB-D D21 LD STA MERIDIAN, MS
File number: W21DB-D 0.005KW
Facility ID: 185229
Station data: User record
Record ID: 869
Country: U.S.

Stations potentially affected:

| Call | Chan | Svc | Status | City, State | File Number | Distance |
|---------|------|-----|--------|-----------------|--------------------|----------|
| WABM | D20 | DT | CP | BIRMINGHAM, AL | BLANK0000025680 | 216.1 km |
| W20DE-D | D20 | LD | LIC | BIRMINGHAM, AL | BLDTL20120222AAL | 211.2 |
| WABM | D20 | DT | BL | BIRMINGHAM, AL | DTVBL16820 | 216.1 |
| WKRQ-TV | D20 | DT | CP | MOBILE, AL | BLANK0000027663 | 203.8 |
| WMPV-TV | D20 | DT | LIC | MOBILE, AL | BLCDT20100420AAK | 220.9 |
| WKRQ-TV | D20 | DT | BL | MOBILE, AL | DTVBL73187 | 203.8 |
| WCOV-TV | D20 | DT | LIC | MONTGOMERY, AL | BLCDT20090312AAO | 242.9 |
| NEW | D20 | LD | APP | COLUMBUS, MS | BNPDTL20100507ACM | 134.6 |
| WMPN-TV | D20 | DT | LIC | JACKSON, MS | BLDT20080807AAP | 161.3 |
| WDHN | D21 | DT | LIC | DOTHAN, AL | BLCDT20090303ACR | 343.7 |
| WTO | D21 | DT | APP | HOMEWOOD, AL | BLANK0000027400 | 216.1 |
| WTO | D21 | DT | BL | HOMEWOOD, AL | DTVBL74138 | 216.1 |
| WHDK-LD | D21 | LD | APP | MONTGOMERY, AL | BLANK0000013951 | 201.9 |
| WHDK-LD | D21 | LD | LIC | MONTGOMERY, AL | BLANK0000013461 | 200.3 |
| WHDK-LD | D21 | LD | CP | MONTGOMERY, AL | BLANK0000013566 | 201.9 |
| W21DM-D | D21 | LD | LIC | TUSCALOOSA, AL | BLANK0000013996 | 181.0 |
| W21DM-D | D21 | LD | APP | TUSCALOOSA, AL | BLANK0000018939 | 216.1 |
| WPBA | D21 | DT | LIC | ATLANTA, GA | BLDT20041013ABK | 435.2 |
| WCGZ-LD | D21 | LD | CP | Columbus, GA | BLANK0000009477 | 325.0 |
| WCGZ-LD | D21 | LD | LIC | Columbus, GA | BLDTL20140226AGJ | 329.2 |
| K02QB | D21 | LD | CP | ALEXANDRIA, LA | BDISDTL20090824AGJ | 376.8 |
| WBRL-CD | D21 | DC | LIC | BATON ROUGE, LA | BLDTA20100908AAP | 333.3 |
| WHNO | D21 | DT | LIC | NEW ORLEANS, LA | BLCDT20050413AAK | 299.5 |
| WAPT | D21 | DT | LIC | JACKSON, MS | BLCDT20081126ALZ | 149.9 |
| WJKT | D21 | DT | APP | JACKSON, TN | BLANK0000027712 | 382.5 |
| WJKT | D21 | DT | BL | JACKSON, TN | DTVBL68519 | 382.4 |
| WDNM-LD | D21 | LD | LIC | MEMPHIS, TN | BLDTL20110105ABL | 324.5 |
| WFIQ | D22 | DT | LIC | FLORENCE, AL | BLDT20060718ACG | 260.2 |
| WCOV-TV | D22 | DT | CP | MONTGOMERY, AL | BLANK0000025355 | 242.9 |
| WCOV-TV | D22 | DT | BL | MONTGOMERY, AL | DTVBL73642 | 242.9 |
| WBMM | D22 | DT | LIC | TUSKEGEE, AL | BLCDT20090428ABH | 261.4 |
| WHLT | D22 | DT | APP | HATTIESBURG, MS | BLANK0000002705 | 118.1 |
| WHLT | D22 | DT | LIC | HATTIESBURG, MS | BLCDT20091216AAL | 118.0 |
| W22EP-D | D22 | LD | CP | STARKVILLE, MS | BNPDTL20100512AIH | 120.6 |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D21
Mask: Simple
Latitude: 32 21 56.50 N (NAD83)
Longitude: 88 42 6.60 W
Height AMSL: 123.2 m
HAAT: 0.0 m
Peak ERP: 0.005 kW
Antenna: KAT_723147_1X2 45.0 deg

49.5 dBu contour:

| Azimuth | ERP | HAAT | Distance |
|---------|----------|---------|----------|
| 0.0 deg | 0.005 kW | -12.1 m | 4.9 km |
| 45.0 | 0.004 | 2.2 | 4.8 |
| 90.0 | 0.005 | -22.8 | 4.9 |
| 135.0 | 0.000 | -12.0 | 3.3 |
| 180.0 | 0.000 | -28.8 | 4.3 |
| 225.0 | 0.000 | 14.7 | 3.7 |
| 270.0 | 0.000 | 2.3 | 4.3 |
| 315.0 | 0.000 | 19.7 | 3.3 |

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: -5 m

Distance to Canadian border: 1164.0 km

Distance to Mexican border: 1067.6 km

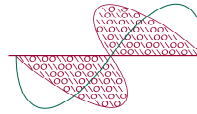
Conditions at FCC monitoring station: Powder Springs GA
Bearing: 64.7 degrees Distance: 405.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 304.9 degrees Distance: 1709.5 km

No land mobile station failures found

Table 1 W21DB-D OET Bulletin 69 Interference Study
(page 2 of 3 – No IX check failures found, condensed to show first scenarios only)



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

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

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

Interference to BLANK0000025680 CP, scenario 1
Proposal causes no interference.

Interference to BLDLTL20120222AAL LIC, scenario 1
Proposal causes no interference.

Interference to DTVBL16820 BL, scenario 1
Proposal causes no interference.

Interference to BLANK0000027663 CP, scenario 1
Proposal causes no interference.

Interference to BLCDT20100420AAK LIC, scenario 1
Proposal causes no interference.

Interference to DTVBL73187 BL, scenario 1
Proposal causes no interference.

Interference to BLCDT20090312AAO LIC, scenario 1
Proposal causes no interference.

Interference to BLCDT20090303ACR LIC, scenario 1
Proposal causes no interference.

Interference to BLANK0000027400 APP, scenario 1
Proposal causes no interference.

Interference to DTVBL74138 BL, scenario 1
Proposal causes no interference.

Interference to BLANK0000013951 APP, scenario 1
Proposal causes no interference.

Interference to BLANK0000013461 LIC, scenario 1
Proposal causes no interference.

Interference to BLANK0000013566 CP, scenario 1
Proposal causes no interference.

Interference to BLANK0000013996 LIC, scenario 1
Proposal causes no interference.

Interference to BLANK0000018939 APP, scenario 1
Proposal causes no interference.

Interference to BLEDT20041013ABK LIC, scenario 1
Proposal causes no interference.

Interference to BLANK0000009477 CP, scenario 1
Proposal causes no interference.

Interference to BLDLTL20140226AGJ LIC, scenario 1
Proposal causes no interference.

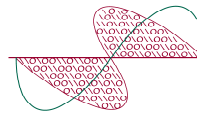
Interference to BDISDTL20090824AGJ CP, scenario 1
Proposal causes no interference.

Interference to BLDTA20100908AAP LIC, scenario 1
Proposal causes no interference.

Interference to BLCDT20050413AAK LIC, scenario 1
Proposal causes no interference.

Interference to BLCDT20081126ALZ LIC, scenario 1

Table 1 W21DB-D OET Bulletin 69 Interference Study
 (page 3 of 3 – No IX check failures found, condensed to show first scenarios only)



Chesapeake RF Consultants, LLC
 Radiofrequency Consulting Engineers
 Digital Television and Radio

Proposal causes no interference.

 Interference to BLANK0000027712 APP, scenario 1
 Proposal causes no interference.

 Interference to DTVBL68519 BL, scenario 1
 Proposal causes no interference.

 Interference to BLDTL20110105ABL LIC, scenario 1
 Proposal causes no interference.

 Interference to BLANK0000025355 CP, scenario 1
 Proposal causes no interference.

 Interference to DTVBL73642 BL, scenario 1
 Proposal causes no interference.

 Interference to BLCDT20090428ABH LIC, scenario 1
 Proposal causes no interference.

 Interference to BLANK0000002705 APP, scenario 1
 Proposal causes no interference.

 Interference to BLCDT20091216AAL LIC, scenario 1
 Proposal causes no interference.

 Interference to BNPDTL20100512AIH CP, scenario 1
 Proposal causes no interference.

 Interference to proposal, scenario 1

| | | | | | | | |
|--------------|-----------------|-----------------|-----------|---------------|-----------------------------|--------------------------------|----------|
| Desired: | Call W21DB-D | Chan D21 | Svc LD | Status STA | City, State MERIDIAN, MS | File Number W21DB-D 0.005KW | Distance |
| Undesireds: | WTTO | D21 | DT | APP | HOMEWOOD, AL | BLANK0000027400 | 216.1 km |
| | WHNO | D21 | DT | LIC | NEW ORLEANS, LA | BLCDT20050413AAK | 299.5 |
| | WAPT | D21 | DT | LIC | JACKSON, MS | BLCDT20081126ALZ | 149.9 |
| Service area | | Terrain-limited | | IX-free | | Percent IX | |
| 41.2 | 23,043 | 41.2 | 23,043 | 39.2 | 23,016 | 4.88 | 0.12 |
| Undesired | | | | Total IX | Unique IX | Prcnt Unique IX | |
| WTTO | D21 | DT | APP | 1.0 | 0 | 2.44 | 0.00 |
| WAPT | D21 | DT | LIC | 1.0 | 27 | 2.44 | 0.12 |