

ENGINEERING STATEMENT IN SUPPORT OF  
APPLICATION TO MODIFY LICENSED LPTV FACILITY  
WDUM-LD CH 16 FACILITY ID 19586  
SPRINGVILLE, PENNSYLVANIA  
JULY 19, 2017

This statement has been prepared in support of a minor change application which proposes a change in the orientation of the WDUM-LD DA pattern from 175 degrees to 155 degrees. Two specific aspects of the application are addressed in this statement:

1. LM license protection for facilities operating on CH 15 and CH 16.
2. Pattern protection for AM Station WNWR 1540 kHz in Philadelphia, PA.

A fresh TVStudy was run on July 17<sup>th</sup> using the LMS July 16, 2017 database. The study show the following interference cases to LM:

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**Proposal fails contour check to land mobile station: New York NY ch. 15
**Proposal fails distance check to land mobile station: LANCASTER PA WQNI284 ch. 15, 84.8 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQNI284 ch. 15, 95.8 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQNI284 ch. 15, 66.9 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQNI284 ch. 15, 78.0 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQNI286 ch. 15, 106.5 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQNI287 ch. 15, 91.0 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB478 ch. 15, 108.5 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB478 ch. 15, 99.6 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB478 ch. 15, 117.4 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB478 ch. 15, 79.8 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB478 ch. 15, 99.0 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB480 ch. 15, 90.7 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB480 ch. 15, 86.9 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB480 ch. 15, 95.8 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB480 ch. 15, 119.8 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB480 ch. 15, 66.9 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB483 ch. 15, 99.7 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB483 ch. 15, 95.4 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB483 ch. 15, 89.3 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB483 ch. 15, 106.5 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB483 ch. 15, 90.9 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB483 ch. 15, 92.3 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB485 ch. 15, 85.7 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB485 ch. 15, 73.5 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB485 ch. 15, 94.6 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB485 ch. 15, 73.6 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQRB485 ch. 15, 70.0 km
**Proposal fails distance check to land mobile station: LANCASTER PA WQVS780 ch. 15, 85.9 km
**Proposal fails distance check to land mobile station: MIDDLESEX NJ WQMI704 ch. 16, 94.7 km
**Proposal fails distance check to land mobile station: MIDDLESEX NJ WQMI704 ch. 16, 97.8 km
**Proposal fails distance check to land mobile station: MIDDLESEX NJ WQMI704 ch. 16, 103.7 km
**Proposal fails distance check to land mobile station: MIDDLESEX NJ WQMI704 ch. 16, 99.8 km
**Proposal fails distance check to land mobile station: MONMOUTH NJ WQGU308 ch. 15, 81.0 km
**Proposal fails distance check to land mobile station: OCEAN NJ WIL552 ch. 15, 90.4 km
**Proposal fails distance check to land mobile station: OCEAN NJ WIL552 ch. 15, 83.7 km
**Proposal fails distance check to land mobile station: OCEAN NJ WIL552 ch. 15, 89.0 km
**Proposal fails distance check to land mobile station: OCEAN NJ WIL552 ch. 15, 64.2 km
**Proposal fails distance check to land mobile station: OCEAN NJ WIL552 ch. 15, 91.7 km
**Proposal fails distance check to land mobile station: OCEAN NJ WPXC650 ch. 15, 88.9 km
**Proposal fails distance check to land mobile station: OCEAN NJ WPXC650 ch. 15, 72.3 km
**Proposal fails distance check to land mobile station: OCEAN NJ WPXC650 ch. 15, 75.5 km
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The TVStudy software reports three types of LM check failures:

1. New York CH 15 contour check failure. It is noted that operation with the currently licensed CH 16 facilities was first specified in BDISDTL-20130618AAJ and that the license application was granted on September 21, 2015 under file number 0000004382. Thus, operation on CH 15 appears to be grandfathered. Figure 1 attached depicts the licensed and proposed WDUM-LD 76 dBu F(50,10) interfering contours with respect to the 130 kilometer (80.7 mile) CH 15 protected radius. T-Band base stations are located within 50 miles of the urban center coordinates and mobile stations operate within a 30 mile radius of the base stations i.e. the 130 kilometer protected radius. On April 26, 2012 the FCC froze licensing of new and expanded PS T-band systems in the expectation of reallocating current T-Band Spectrum by February 22, 2021.

For many years it has been seen that first adjacent channel wireless facilities in the 450-470 MHz band can be protected by low power DTV stations employing proper mask filtering. If necessary a waiver of 74.709 of the Rules is requested to allow a slight relocation of the WDUM-LD 76 dBu with respect to the outer edge of the ch 15 130 kilometer protected radius. This request is believed reasonable in light of the fact that there have been no interference complaints to date.

2. Lancaster, PA CH 15 distance check failure. Protection will be enhanced by the proposed pattern change as seen on Figure 1. If necessary a waiver of 74.709 of the Rules is requested to allow a slight relocation of the WDUM-LD 76 dBu with respect to the Lancaster CH 15 allocation. All of the Lancaster CH 15 sites are a substantial distance from the WDUM-LD site, no interference has occurred since WDUM-LD has operated on CH 16 and the adjacent channel protection described in 1. Above is available if interference should be encountered. This request is believed reasonable because there have been no interference complaints to date.
3. New York CH 16 distance check failure. Figure 2 depicts the CH 16 protection and it is believed that this has not changed since WDUM-LD was first licensed on CH 16. We do not know what triggers the CH 16 distance error. The WDUM-LD 52 dBu co-ch contour is well within the CH 17 Philadelphia preclusion radius. It appears that the program is considering the preclusion radius but not the location of the 52 dBu contour? Regardless of what creates the error it is believed that the change in pattern orientation does not impact existing compliance with 74.709.

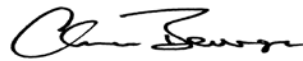
Pattern protection for AM Station WNWR 1540 kHz in Philadelphia, PA.

FCC Rule Section 1.3002 states the following, “ (d) A significant modification of a tower in the immediate vicinity of an AM station is defined as follows: (1) any change that would alter the tower’s physical height by 5 electrical degrees or more at the AM frequency; or (2) the addition or replacement of one or more antennas or transmission lines on a tower that has been detuned

or base-insulated. The WDUM-LD antenna and transmission line are existing attachments to a TV tower structure. The only change proposed is a slight rotation change of the antenna. This would have no impact on the AM station in an MoM model and does not fall within the definition of significant modification. Based on this fact notification to WNWR is not required as clearly stated in 1.30004(a) and the applicant believes that it has satisfied all FCC requirements with regard to protection of the WNWR radiation pattern.

## **CONCLUSION**

The foregoing was prepared on behalf of Mako Communications, LLC by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.

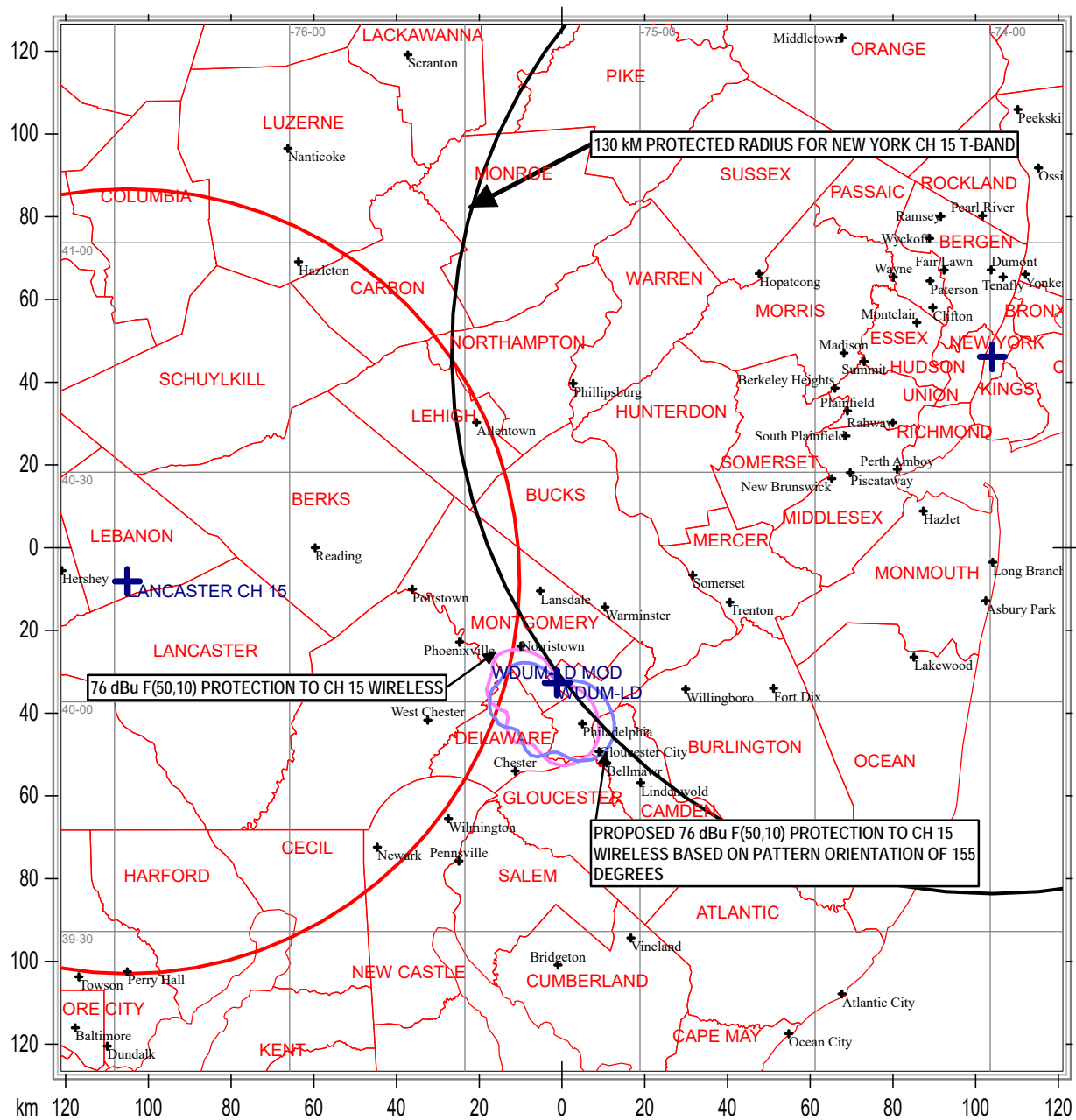


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Clarence M. Beverage  
*for* Communications Technologies, Inc.  
Marlton, New Jersey

July 19, 2017

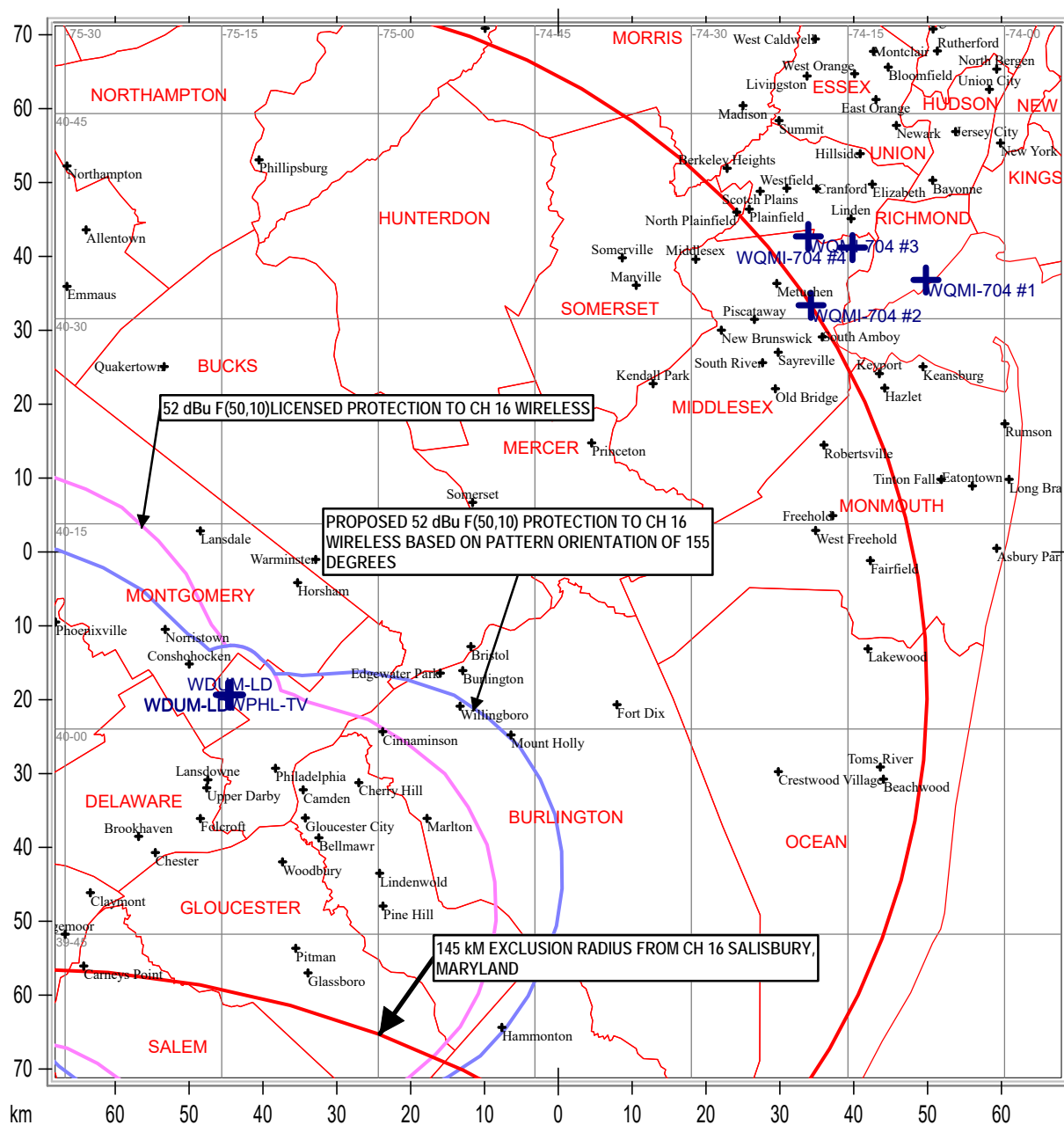
## WDUM-LD LICENSED AND PROPOSED CH 16 SPRINGVILLE, NJ



Communications Technologies, Inc. Marlton, New Jersey

County Borders      Lat/Lon Grid

## WDUM-LD LICENSED AND PROPOSED CH 16 SPRINGVILLE, NJ



Communications Technologies, Inc. Marlton, New Jersey