



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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VIA ELECTRONIC MAIL

June 8, 2021

Anne Marie Zsamba
Project Manager – Site Acquisition
Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
Annemarie.zsamba@crowncastle.com

RE: **EM-AT&T-155-210503** - AT&T notice of intent to modify an existing telecommunications facility located at 29 South Main Street, West Hartford, Connecticut.

Dear Ms. Zsamba:

The Connecticut Siting Council (Council) is in receipt of your correspondence of June 7, 2021 submitted in response to the Council's May 26, 2021 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

s/Melanie A. Bachman

Melanie A. Bachman
Executive Director

MAB/laf

June 7, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **EM-AT&T-155-210503** – AT&T notice of intent to modify an existing telecommunications facility located at
29 South Main Street, West Hartford, Connecticut

Dear Ms. Bachman:

I am in receipt of your notice of incomplete correspondence dated May 26, 2021 for the above noted exempt modification filing. In response, please see the enclosed letter authored by Michael Fischer, P.E., Principal RF Compliance Engineer from SiteSafe, which addresses the Council's reasons for marking this exempt modification application incomplete.

In light of the fact that AT&T's antenna radiation pattern is known as shown on the enclosed letter, we would ask that the Council utilize the relative field factor for a more realistic prediction as is permitted by the FCC's OET Bulletin 65. Upon your review and consideration of same, please advise if the above-mentioned exempt modification filing has been deemed complete. Thank you.

Sincerely,



Anne Marie Zsamba
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8618 Westwood Center Drive, Suite 315
Vienna, VA 22182

June 4, 2021

Anne Marie Zsamba
Project Manager – Site Acquisition
Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

Re: Response to CSC Incomplete Letter for Proposed AT&T Mobility, LLC Modifications
Site Name: West Hartford Parking Garage
Site Address: 27-31 S. Main Street, West Hartford, CT 06110

To whom it may concern:

This correspondence addresses the Connecticut Siting Council (CSC) letter regarding the site compliance report prepared by Sitesafe dated 11/19/2020 for the proposed AT&T Mobility, LLC modifications at above referenced site. Site Safe, LLC is a leader in the evaluation of such deployments for compliance with the Federal Communications Commission (FCC) rules and regulations regarding Radio Frequency Electromagnetic Fields (RF-EME).

Sitesafe performed a predictive theoretical exposure analysis to determine the upper-limit RF exposure levels from the existing/proposed AT&T Mobility, LLC facility. The results of the analysis were compiled in the site compliance report dated 11/19/2020. Based on the evaluation, it was determined that the top level of the parking garage would be in compliance with the FCC General Public maximum permissible exposure (MPE) limits by a substantial margin.

The letter from the CSC dated 5/26/2021 stated the following:

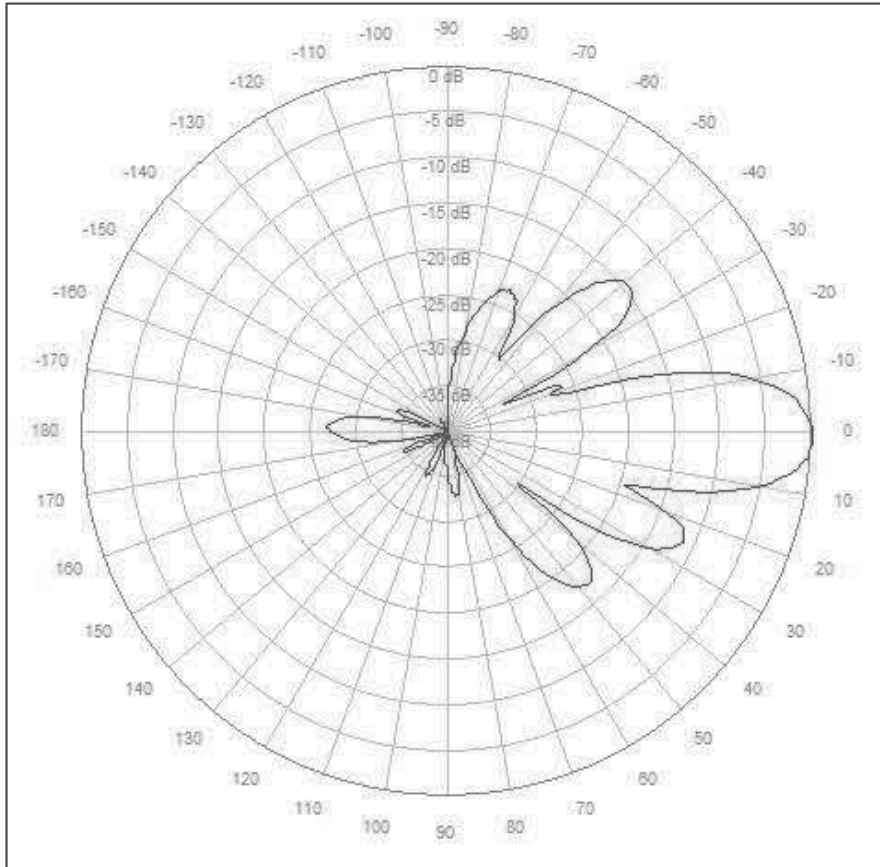
Council staff calculated the power density for the proposed modification using the Federal Communications Commission (FCC) OET Bulletin 65 predictive methods and accounted for the -10 dB off beam pattern adjustment and a 6-foot tall person at the top level of the parking garage at the base of the tower and results indicate that the requested modification, as proposed, would produce radio frequency emissions with a %MPE of 135.2% for AT&T's antennas and a cumulative %MPE of 163.7%. This exceeds the FCC's allowable General Public/Uncontrolled MPE limit of 100%.

The Sitesafe predictive software modeling tool and the CSC calculations utilize the same methodologies as prescribed in OET Bulletin 65 for calculating RF exposure. Our prediction software is an industry accepted modeling tool which is used to generate reports for wireless licensees nationwide, including AT&T Mobility, LLC. There are differences in the results for a number of reasons. The CSC calculations are not using specific antenna pattern data but rather a 10 dB reduction from the main beam calculation. The CSC calculations also combine the exposure from all antennas on an AT&T sector into a single point in space 6' above the parking garage top level unlike our software tool which is calculating exposure at all points in space and spatially averaging the results within a 6' span with respect to the top level of the garage. Additionally, our tool has been optimized with measurement data to more closely resemble real life results.

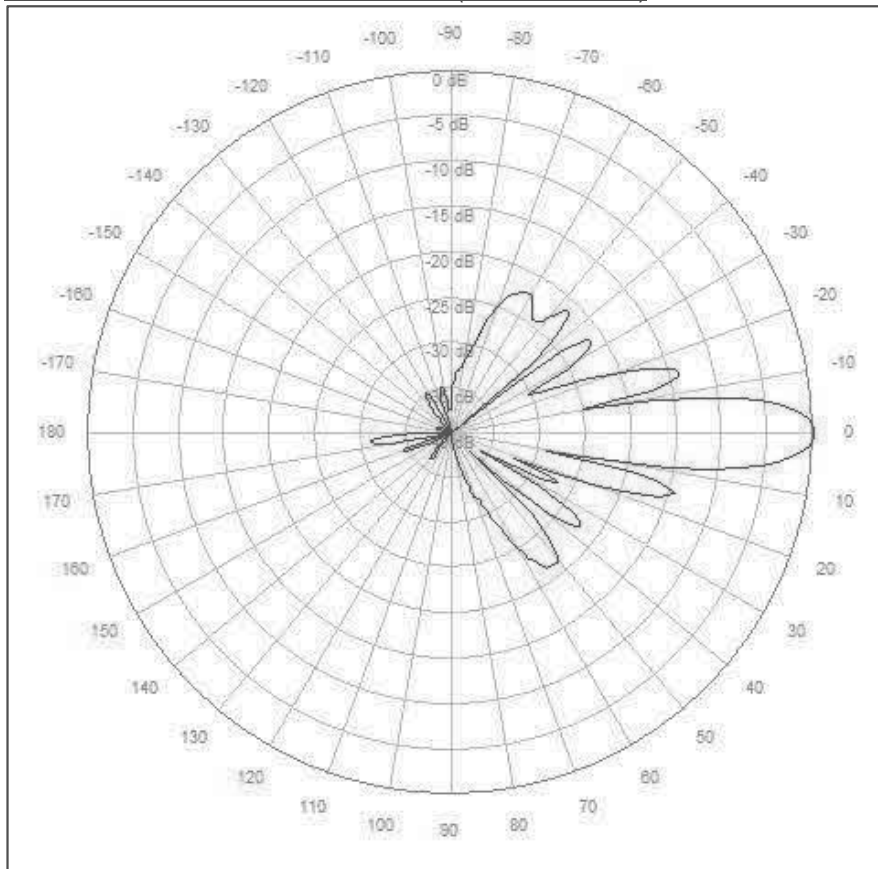
Typical panel antennas in use by AT&T Mobility, LLC employ an off-beam reduction much greater than 10 dB, particularly directly below the antennas in the vertical plane. The CSC standards state: "...it is permissible to use a relative field factor if information about an antenna's radiation pattern is

known...such a factor may result in a more realistic prediction." As mentioned previously, our software tool accounts for actual horizontal and vertical antenna pattern data as the manufacturer provided patterns have been uploaded into our tool and are used in performing predictive calculations. The proposed AT&T Mobility, LLC antenna configuration at this site includes three different antenna models and various frequency bands. I have inserted below images of the vertical antenna patterns for each antenna model and the associated frequency band. These correspond to the antenna inventory as shown in Section 6 of our site compliance report (the antenna configuration on each sector is the same).

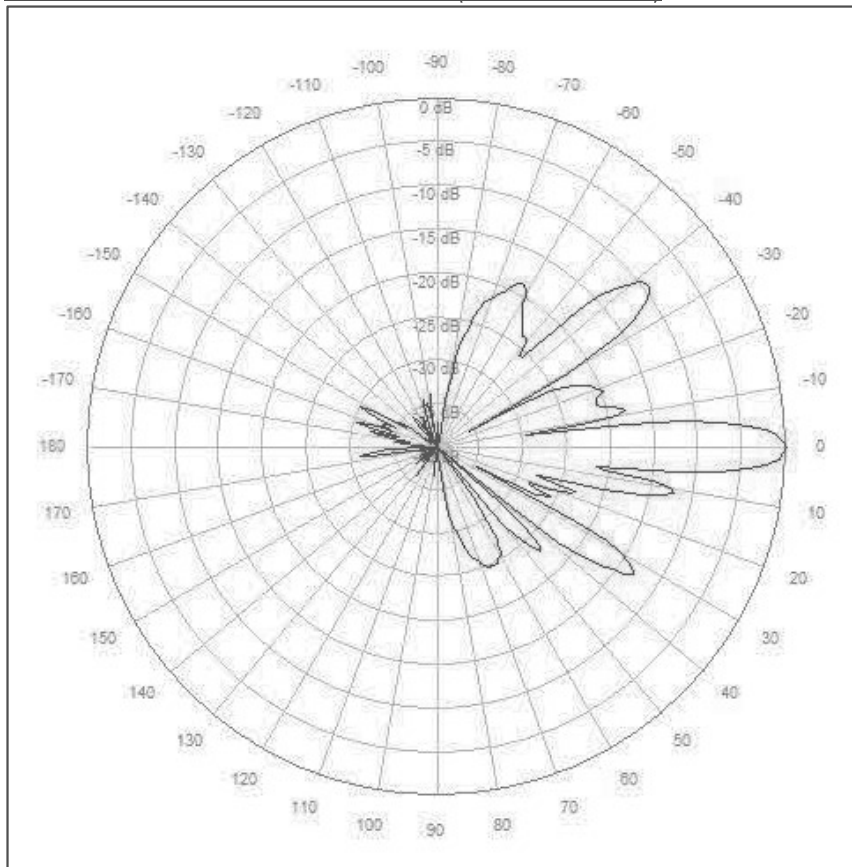
Powerwave 7770 (850 MHz – UMTS)



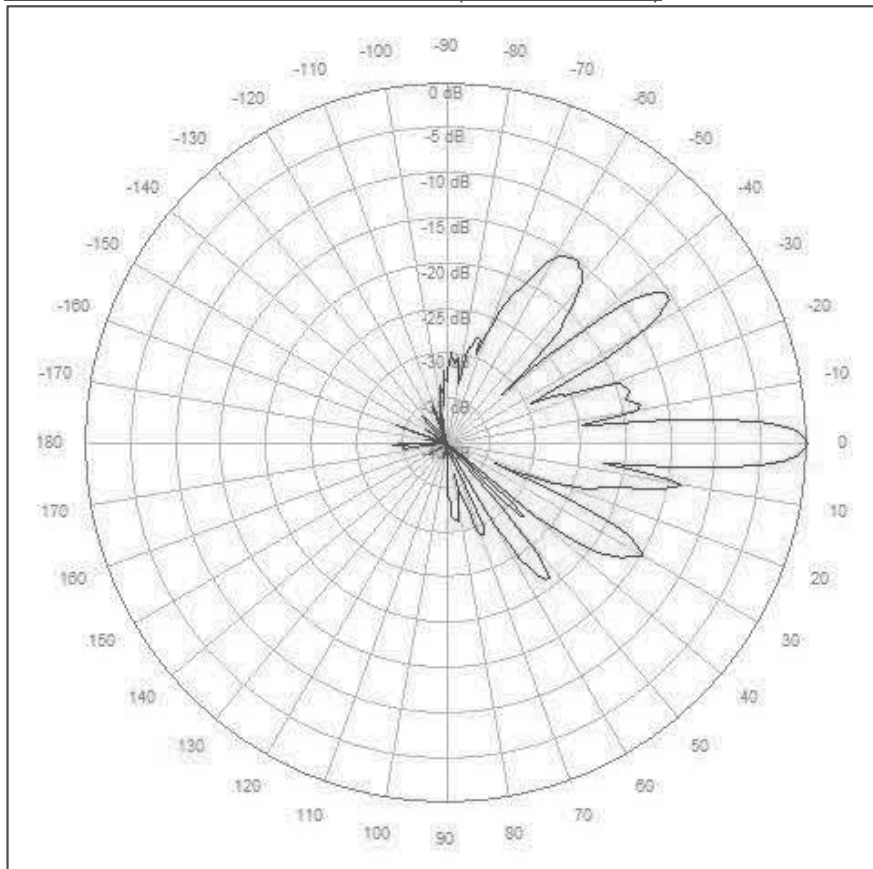
CCI Antennas TPA-65R-LCUUUU-H8 (737 MHz – LTE)



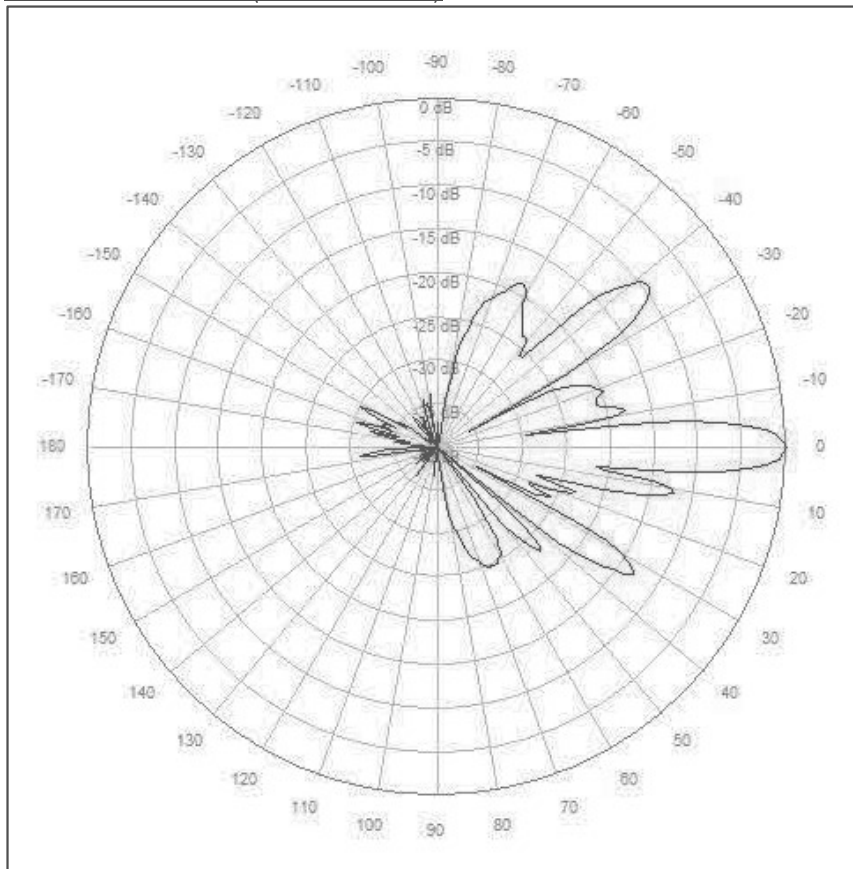
CCI Antennas TPA-65R-LCUUUU-H8 (2100 MHz – LTE)



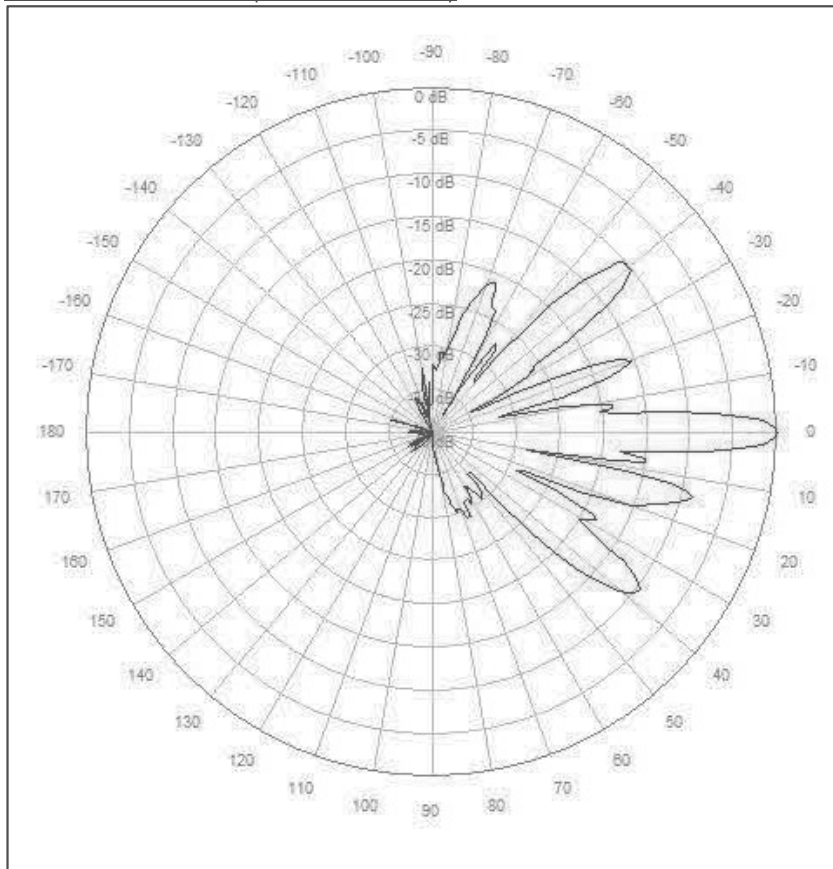
CCI Antennas TPA-65R-LCUUUU-H8 (2300 MHz – LTE)



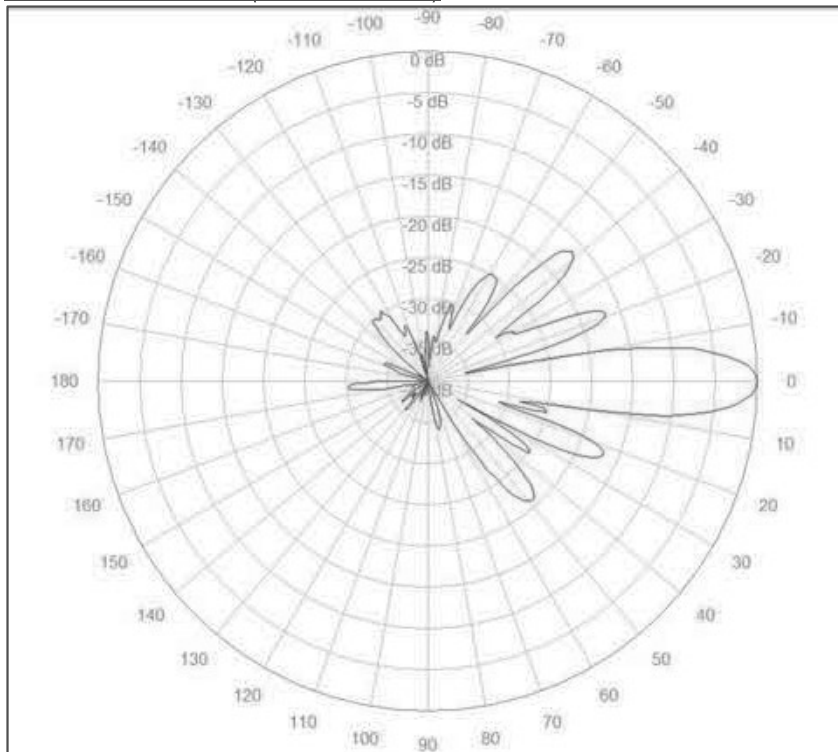
CCI DMP65R-BU8D (763 MHz – LTE)



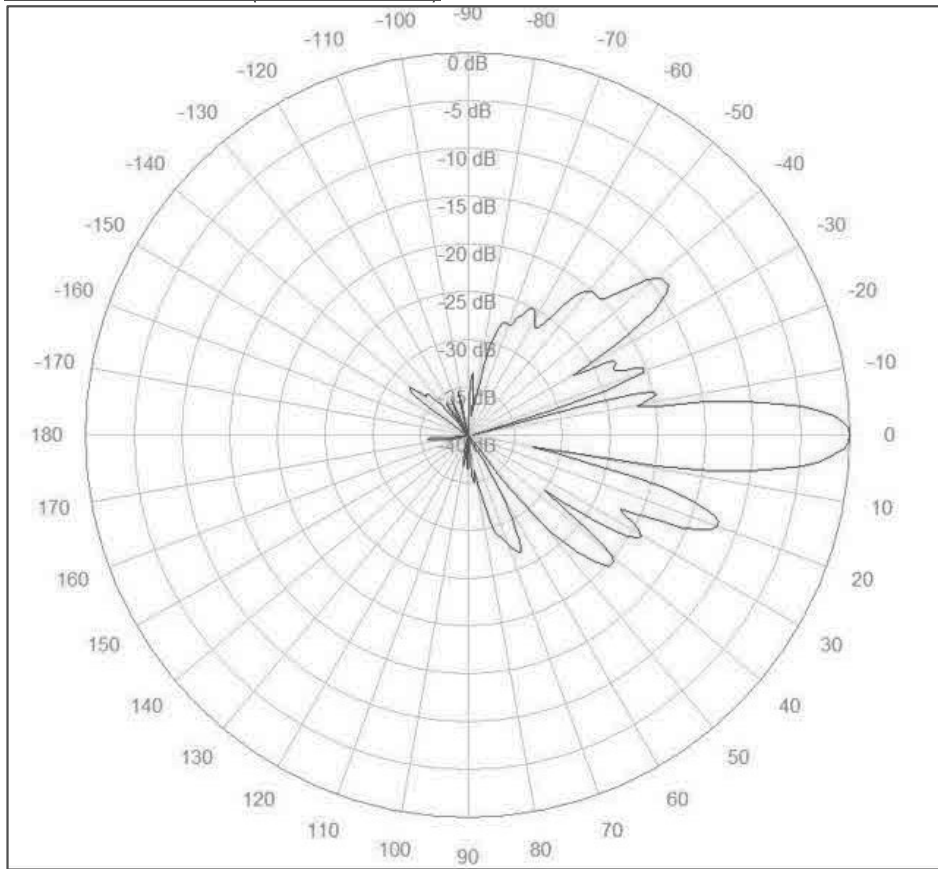
CCI DMP65R-BU8D (1900 MHz – LTE)



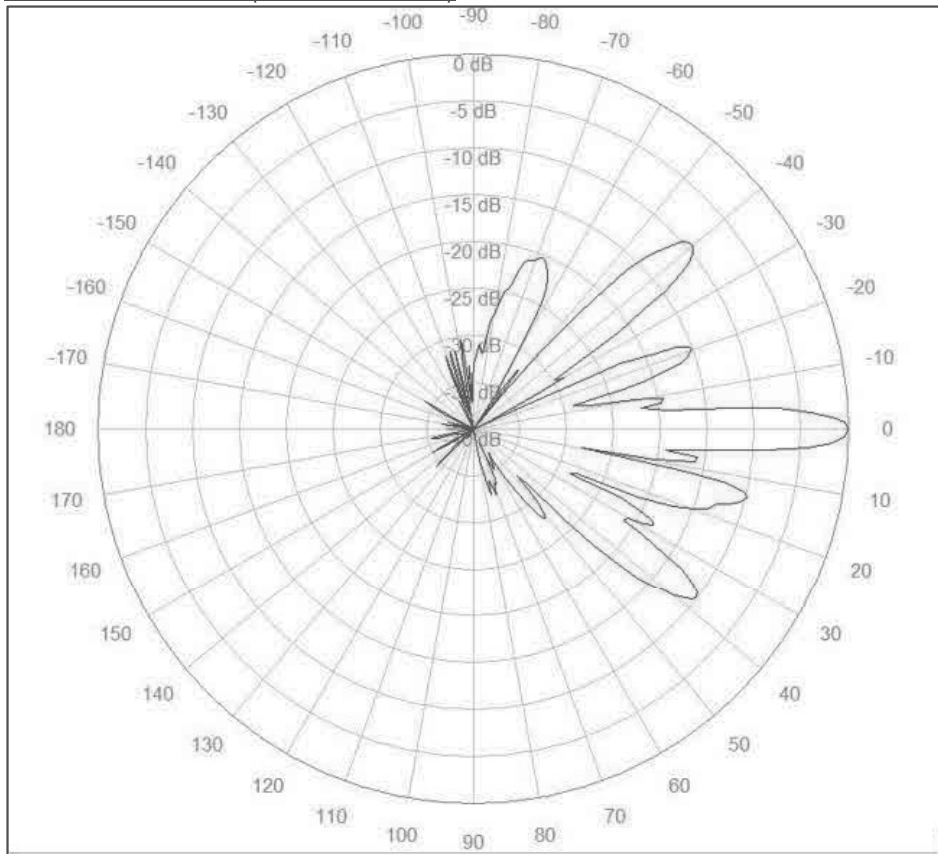
CCI OPA65R-BU8D (722 MHz – LTE)



CCI OPA65R-BU8D (850 MHz – LTE)



CCI OPA65R-BU8D (1900 MHz – LTE)



As shown on the vertical antenna pattern plots above, moving inward from the outermost concentric circle represents a reduction of 5 dB. Directly below the antennas, which would be the closest point to the antennas when standing on the top level of the garage, is a minimum of 25-30 dB reduction when compared to the main beam. This would equate to a reduction of approximately 300-1000 times below the calculated main beam exposure. Compared to the CSC calculations which used a 10 dB reduction (which is only a factor of 10), utilizing the actual antenna pattern data significantly reduces the predictive exposure calculations. The CSC calculated main beam exposure for AT&T Mobility, LLC was 1,352% and then a 10 dB reduction was applied, which gave the 135.2% General Public MPE result. Applying a conservative 25 dB reduction to the same calculation would give a result of 4.3% General Public MPE. Keep in mind that the CSC calculation was done in an overly conservative manner, but regardless, the result is still substantially below the FCC allowable limit when using this more realistic reduction factor.

There are other lobes below the main beam for these antennas which may have less reduction relative to the reduction directly below the antennas; however, in the direction of these lobes, the distance used in the OET 65 far-field calculations would be greater, which would then offset the lower reduction factor. Thus, when incorporating the actual antenna pattern data into the calculations, at any location on the top level of the garage, the predictive exposure results would be compliant with the FCC General Public MPE limit.

Lastly, I have personally performed RF exposure measurements at hundreds of similar sites over the past 18 years. Using calibrated instruments accepted throughout the industry, I have never seen any measurements come close to approaching the General Public MPE limit with antennas mounted in an elevated manner similar to the AT&T Mobility, LLC antennas at this site. I would expect similar results if measurements were performed at this site.

If you have further questions regarding this site report, please do not hesitate to contact me at mfischer@sitesafe.com.

Sincerely,

Michael Fischer, P.E.
Principal RF Compliance Engineer
Site Safe, LLC



Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Connecticut License Number 33928
Expires January 31, 2022

Signed 04 June 2021