TCET-750-01 Wireless Infrastructure and Policy

NIER Analysis Project Report

Author: Prajwal Venkateswaran

Date: 12/14/2016

|  |  |
| --- | --- |
| Total Hatchplate Power(watts) | 90 |
| Coax loss dB | 1.5 |
| Antenna Centerline above ground(m) (includes height of building and equipment enclosure) | 19 |
| Antenna Mechanical Downtilt | 2 |
| Antenna Model Number | Amphenol-BXA-70063-6CF-EDIN-8-750MHz |

|  |  |
| --- | --- |
| **Distance(meters)** | **Power Density -mW/sq.cm** |
| 0 | 0.000000 |
| 10 | 0.00000 |
| 20 | 0.003189 |
| 30 | 1.256e-5 |
| 40 | 0.0002212 |

|  |  |  |
| --- | --- | --- |
| ACL = | 19 | m |
| Ground Elevation at Target = | 13 | m |
| Hatchplate P = | 90 | W |
| Total Coax Loss = | 1.5 | dB |
| Target ground d = | 30 | m |
| Antenna Mechanical Downtilt (+ value) = | 2 | degrees |
| Physical Depression Angle to Target (+ value) = | -7.5946 | degrees |
| Gtx (dBi) = | 36.2064 | dBi |
| P ant = | 63.7151 | W |
| LOS distance to target, R = | 30.2655 | m |
| EIRP = | 2306.894 | W |
| Power Density = | 0.200411 | mW/sq.cm |

1)For purposes of NIER human exposure, which FCC-OET Bulletin 65 thresholds apply to this site and why do they apply?

Ans-1 The FCC-OET Bulletin 65 thresholds that apply to this site are 1.Limits for Occupational/Controlled Exposure and 2. Limits for General Population/Uncontrolled Exposure

2.) From your analysis of the power density,does this site pass FCC-OET Bulletin 65 threshold requirements on the top of the bulding?What is the threshold value to which you are comparing your results?Discuss the situation and reference the Bulletin 65 tables and calculated values needed to support your conclusion.Fully explain what is required to pass/fail and then explain from your analysis data why or why not the site passes?

Antenna frequency is 750MHz

The limits for Occupational/Controlled Exposure prescribe the maximum permissible exposure can be f/300.

calculation

f/300=750M/300=2.500 miliW/sq.cm

The limits for General Population/Uncontrolled Exposure, prescribe the maximum permissible exposure can be f/1500.

calculation

f/1500=750M/1500=0.5000 miliW/sq.cm

This site passes FCC-OET Bulletin 65 threshold requirements as Maximum Power Density (0.062233 miliW/sq.cm) of the antenna is less than the permissible threshold values.

3.) Whether or not the site passes FCC OET Bulleting 65 requirements, discuss three practical actions (other than reducing transmitter power) that can help prevent people from being exposed to NIER fields a site that fails.

1.One of the main practical actions is to increase the tower height.

2.We can change the angle dip angle to prevent peak values of radiation

3. Here we change the location of the site of the tower to prevent people from being exposed.