

Exhibit C – Analysis of Non-Ionizing Radiation

Analysis for the GX60NX terminal.

The analysis and calculations performed in this Annex comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01.

Bulletin No. 65 and the FCC R&O 96-326 specifies two Maximum Permissible Exposure (MPE) limits that are dependent on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. These are described below:

- General Population/Uncontrolled environment MPE limit is 1 mW/cm^2 . The General Population / Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less.
- Occupational/Controlled environment MPE limit is 5 mW/cm^2 . The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less.

The analysis provided in this report determined the power flux density levels of the earth station in the 1) far-field, 2) near-field, 3) transition region, 4) region between the feed and main reflector surface, 5) at the main reflector surface, and 6) between the antenna edge and the ground.

Calculations for GX60NX terminal

Input Parameter	Value	Units
Antenna Diameter	0.65	m
Antenna Transmit Gain	43.4	dBi
Transmit Frequency	30000	MHz
Antenna Feed Flange Diameter	4.95	cm
Power Input to the Antenna	10	Watts

Calculated Parameter	Value	Units
Antenna Surface Area	0.3318	m^2
Area of Antenna Flange	19.2437	cm^2
Antenna Efficiency	0.5247	real
Gain Factor	21877.6162	real
Wavelength	0.0100	m

Calculated Parameter	Value	Units
Near-Field Distance	10.5625	m
Distance to Far-Field	25.35	m
Distance of Transition Range	10.5625	m

Calculated Parameter	Value	Units
Power Density in the Near Field	6.3249	mW/cm ²
Power Density in the Far Field	2.7092	mW/cm ²
Power Density in the Transition Region	6.3249	mW/cm ²
Power Density at the Feed Flange	2078.6076	mW/cm ²
Power Density at Main Reflector	12.0547	mW/cm ²
Power Density between Reflector and Ground	3.0137	mW/cm ²

Section A.2 – Summary of Results

Region	Distance (m)	Calculated Power Density (mW/cm ²)	Limit Controlled Environment ≤ 5 mW/cm ²	Limit Uncontrolled Environment ≤ 1 mW/cm ²
Safe Range for Uncontrolled	≥ 50	1.0	meets limit	meets limit
Safe Range for Controlled	≥ 15	5.0	meets limit	meets limit
Near Field	10.56	6.32	exceeds limit	exceeds limit
Far Field	25.35	2.71	meets limit	exceeds limit
Transition Region	10.56-25.35	6.32	exceeds limit	exceeds limit
Feed Flange	N/A	2079	exceeds limit	exceeds limit
Main Reflector	N/A	12.05	meets limit	exceeds limit

The terminal proposed in this application are for commercial and government uses and intended to be operated by professional personnel on maritime vessels. Accordingly, a presumption of a controlled environment is warranted. As summarized in the above table, the terminals meet the FCC's MPE levels for controlled or uncontrolled environments until separation distances of 15 m and 50 m respectively. However, given that the antenna will not operate below elevation angles of 5 degrees, its mounting location on masts well above deck level, and that the terminal will be pointed upward toward the satellite, persons on the vessel are highly unlikely to be exposed to the main beam of the antenna. Therefore, the levels of power density will be significantly reduced from those calculated.

As with any directional antenna the maximum level of non-ionizing radiation is in the main beam of the antenna that is pointed to the satellite, therefore the levels of power density will be significantly reduced from those calculated. In addition, the antenna will be enclosed within a radome during operation. Therefore, the feed flange and main reflector, where the levels are highest, will not be physically accessible. When maintenance of the antenna is required, the trained technicians will turn off the transmit power before removing the radome and performing maintenance activities. Training of personnel with access to the antenna will include consideration of the operation mode of the antenna and information on how to prevent radiation exposure, including disabling the communications system.

In conclusion, the results show that the GX60NX terminal, in a controlled environment, and under the proper mitigation procedures, meet the guidelines specified in § 1.1310 of the Regulations.