

Assessment Entity: Garmin International Inc.
1200 E. 151st Street
Olathe, KS 66062 USA

Device Description: 5W AIS Transceiver

Device Model(s): AIS 800

RF Exposure Environment: General Public/ Non-Aware User

Standards applied: EU Council Recommendation 1999/ 519/ EC
IEC 62311: 2008
Industry Canada RSS-102
FCC OET Bulletin 65

Device Description:

The AIS 800 is a marine AIS transceiver that transmits on the VHF Marine Channels of 156.025MHz and 162.025MHz. The output power is 5W. The transceiver connects to a VHF Marine antenna through a cable and connector. The installer has a variety of VHF marine antennas to choose from, but the antenna gain varies from a typical value of 3dBi up to a maximum of 10dBi. The antenna is typically mounted more than 2m away from the general public.

Reference Levels:

Frequency Range	Power Density Limit	Reference
10-400 MHz	2 W/m ²	1999/519/EC, Table 2
48-300 MHz	1.291 W/m ²	RSS-102
30-300 MHz	0.2 mW/cm ²	OET Bulletin 65

Data for Calculations:

AIS 800	
Frequency range	156-163 MHz
Maximum Conducted Output Power	37.09 dBm/5.11W
Maximum antenna gain	10 dBi
Typical antenna gain	6 dBi

RF Exposure Power Density Calculation

$$S = (P \cdot G) / (4\pi \cdot R^2)$$

$$R = \text{square root} [(P \cdot G) / (4\pi \cdot S)]$$

Where:

S= Power Density (W/m²)

P= power input to the antenna (W)

G= maximum power gain of the antenna relative to an isotropic radiator (unitless)

R= distance to the center of radiation of the antenna (meters)

Compliance statement:

Using a maximum gain antenna, the calculated distance to meet the maximum power density of 2W/m² (0.2 mW/cm²) required by Europe and the FCC is 1.4m, and the maximum power density of 1.291 W/m² required for Canada is 1.8m.

The antenna would typically be mounted >2m away from the general public. The power density at 2m is 1.02 W/m² (0.102 mW/cm²)