Thrane & Thrane

Calculations of the safety distance due to the Rf emission from the VHF dipole antenna connected to the Sailor RT5020 VHF transmitter

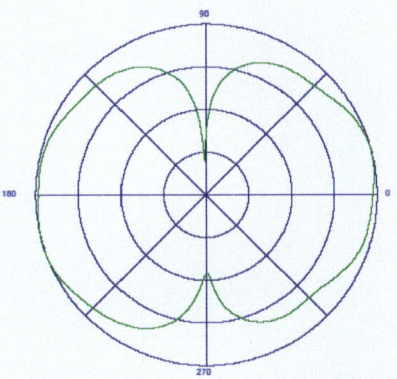
FCC ID: TCORT5020

According to the FCC rules described in OET Bulletin 65, edition 97-01 and in "A local Government Official's Guide to Transmitting antenna RF Emission safety: Rules, Procedures and Practical Guidance". The limits for Occupational/Controlled Maximum Permissible Exposure (MEP) is stated to 1.0 mW/cm²

This value is basis for the calculation of the safety distance to the VHF antenna under all conditions.

Technical data.

Maximum output Rf power	25 W
Antenna gain	3 dB equals 2 times
Antenna pattern	Omni-directional, half wave dipole
Gain correction factor relative to isotropic	1.64
Frequency	150 MHz to 165 MHz
Modulation	Phase modulation



Vertical radiation diagram

Radiating surface area of the isotropic radiating antenna: $S = 4 \pi r^2$

r = safety distance to the antenna

Formula: $r = \sqrt{\frac{\text{Power x Antenna gain}}{\text{Surface x Rf limit}}} = \sqrt{\frac{25000 \text{ x } 2 \text{ x } 1.64}{4 \text{ x } \pi \text{ x } 1.0}} = 0.81\text{m}$

The safety distance is therefore stated as **3 feet** equals 0.92m > 0.81m

HH
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