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I apologize for any confusion that I may have created. In the previous submittal for RF Exposure Information I included pages 44 and 45 from the operators manual. These pages represent Advisory Circular 20-68B and, as such, the example given in step 4 was for a generic airborne weather radar whose parameters were chosen by the author of the Advisory.

This word document contains the requested revisions to the RF Exposure Information for the Receiver Transmitter RT-1501A. This information is now based upon the FCC's requirement of 1 mW/cm^2 . Revisions to the warning and MPEL statement reflect this new lower limit. A new page has been added between the warning (page 46) and the MPEL statement (formerly page 47) using the 1 mW/cm^2 limit and appendix 1 formulas with RDR-1500B specific parameters.



Radiation

WARNING

This instrument generates microwave radiation.
DO NOT OPERATE UNTIL YOU HAVE READ
AND CAREFULLY FOLLOWED ALL SAFETY
PRECAUTIONS AND INSTRUCTIONS IN
THE OPERATING AND SERVICE MANUALS.

IMPROPER USE OR EXPOSURE MAY CAUSE
SERIOUS BODILY INJURY

CAUTION

1. MAINTAIN PRESCRIBED SAFE DISTANCE WHEN STANDING IN FRONT OF RADIATING ANTENNA.
2. NEVER EXPOSE EYES OR ANY PART OF THE BODY TO AN UNTERMINATED WAVE GUIDE.

1 mW/cm² Safe Distance Determination

The following calculations establish a minimum safe distance from the antenna for personnel near an operating RDR-1500B. The minimum safe distance is based upon the FCC's exposure limit at 9.3-9.5 GHz for general population / uncontrolled environments. This limit is 1 mW/cm².

a. The following data is for an RDR-1500B airborne weather radar.

Antenna Diameter: 39 inches (0.99 meters)

Transmitter Frequency: 9375 MHz

Wave Length: 0.032 meters

Pulse Length: 2.35 microseconds (search)

Pulse Repetition: 200 Hz

Peak Power: 10 kilowatts

Average Power: 4.7 watts (Peak*Pulse Length*Pulse Repetition)

Antenna Gain: 1259 (31db)

b. Calculations.

(1) Distance (R_i) to the near field/far field intersection.

$$R_i = \frac{1259 * .032}{8 * \pi}$$

$$R_i = 1.6 \text{ meters (5.3 feet)}$$

(2) Distance (R_s) to 1 mw/cm² safe limit.

$$R_s = \sqrt{\frac{1259 * 4.7}{40 * \pi * 1}}$$

$$R_s = 6.9 \text{ meters (22.5 feet)}$$

(3) Safe Distance Determination.

The distance (R_s) is greater than (R_i), therefore, the minimum safe distance is 6.9 meters (22.5 feet).

MAXIMUM PERMISSIBLE EXPOSURE LEVEL (MPEL)

In order to avoid the envelope in which the radiation level exceeds the U.S. Government standard of 1 mW per square centimeter, all personnel should remain beyond the distance indicated in the illustration below. The distance to the MPEL boundary is calculated upon the basis of the largest antenna available with the RDR-1500B system, rated output power of the transmitter and in the non-rotating or boresight position of the antenna (see 1 mW/cm² Safe Distance Determination calculations above). With a scanning beam, the power density at the MPEL boundary is significantly reduced.

