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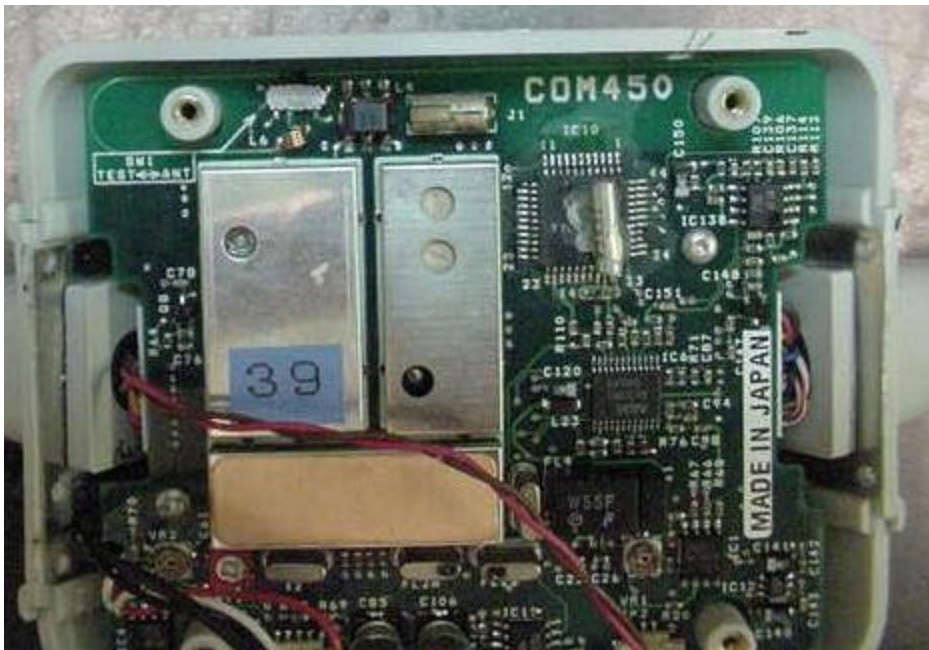
Subject: FCC Application for COM400CC, FCC ID: BYM400CC

Judy,

This is in reply to the questions on the COM400CC transceiver (FCC ID BYM400CC) submitted by Joe Dichoso of the FCC Application Processing Branch, in FCC correspondence reference number 18315 of 8 March 2001.

Question 1 was: Supply information on the antenna. Where it is located and how close it is to the user.

Reply: The antenna is a quarter wave monopole antenna with approximately 0 dB gain. Physically it is a copper trace on the transceiver printed circuit board (PCB). The photo below shows the antenna.



The transceiver printed circuit assembly itself is called the COM450. The antenna trace starts under Switch 1 near L4 (the copper inductor). This is near the tip of the white arrow in the upper left portion of the photo. It goes to the left of the photo, curves upward in a semicircle, and goes back to the right near the top edge of the board.

Question 2 was: Why is it one inch from the user when under such operating conditions?

Reply: The antenna is in a fixed position within the transceiver, being a trace on the PCB. The BYM400CC is called a “Collarcom” which means that it is a communications device worn around the collar as shown in the photo below.



In the photo the rear plastic cover is removed from the COM400CC so the transceiver PCB is visible. Since the PCB is at the top of the case, which is 1 inch thick, and the case stands off a short distance from the users collar (about one quarter inch), the antenna is about one inch (conservative estimate) from the user. There are no multiple configurations or actions the user can take to vary this distance. When the COM400CC is being used, the antenna is always one inch from the user. The operating manual describes normal wearing and use of the COM400CC Collarcom, and there is really nothing the user could do that could get the antenna placed closer than one inch from themselves.

Compliance with requirement for RF exposure to humans.

Maximum output power of the COM400CC is 50 mW (milliwatts)

Surface area of sphere at one inch (2.54 cm) from the user is 81.07 square cm.

Therefore power density at max transmit power is $50/81.07 = .61$ mW per square cm.

This complies with Table 1 of the FCC Office of Engineering and Technology (OET) Bulletin 56 Entitled FCC limits for Maximum Permissible Exposure under Part (A) Limits for Occupational/ Controlled Exposure.

The Frequency of the COM400CC is 468 MHz, so the Table 1 part A limit is $f/300$ or 1.56 mW per square cm. The unit under very worst case is .61 mW per square cm.

Two further points could be made to demonstrate compliance. First, the table allows six minute time averaging, and it is estimated that significantly less than half of any six minutes would be in the transmit mode. Second, the COM400CC is usually used at lower power settings than the 50mW, although it is capable of that level. It is selectable to 1, 10, or 50 mW.

Since the unit complies with OET Bulletin 56 table 1A limits for power density, at 468 MHz, under maximum power at 100% duty cycle we feel that the unit complies with FCC limits for Maximum Permissible Exposure (MPE).