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02/21/2012

To whom it may concern:

This is to request that part number 300-1070, FCC ID: KE3-3001070, be granted a Class II Permissive Change. The following changes were incorporated into the new 300-1070 transmitter design submitted for certification approval.

1. Antenna changes.
The initial design utilized 4 circular antenna coils to transmit an electromagnetic field in all directions. Two coils for the X and Y axis were positioned to radiate horizontally, 90 degrees from each other. The third and fourth coils for the Z axis were arranged in a Helmholtz configuration positioned to radiate in the vertical axis.

The new antenna design utilizes three coils to perform the same function as the old 4 antenna design. The X and Y coils are positioned to radiate horizontally, 90 degrees from each other as before. The Z axis coil was changed to a single coil arranged to radiate in a vertical axis.

All other functions and operational characteristics and power levels remain the same as the original design.

2. Printed Circuit Board Changes.
The original PCB design located components in areas that were susceptible to heating problems which could detrimentally affect the long term operation of the transmitter. The PCB in the new design was changed to relocate heat sensitive parts and to allow the use of larger size, higher power parts. The size of L2, L3 and L4 was increase to accommodate higher current levels without overheating. The voltage rating of C32, C38 and C44 was increased to 250V to improve the reliability of the parts. Capacitor C45 was changed from a 10nF to a 22nF part to accommodate the use of the

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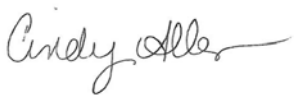
single Z axis antenna coil. In addition, a new capacitor type with a higher voltage rating of 1800V was used for C33, C39, and C45 to improve the reliability of the parts. The physical PCB mounting location of all of the above mentioned inductors and capacitors was changed to improve the heat flow characteristics and improve reliability.

3. Miscellaneous Changes.

Both the old and new designs utilize PWM outputs to drive each of the antenna coil tank circuits. The PWM is designed to operate at a duty cycle of less than 50%. Both the new and old designs contain the same circuit for monitoring the PWM output and provide an audible alarm if the PWM output stays at a sustained 50% duty cycle. However, the new transmitter design also includes additional circuitry to disable the PWM and all transmission outputs when the monitor circuit detects a sustained 50% duty cycle. The transmitter power must be cycled off and on to restart the PWM output. Alternatively, the alarm button located on the top of the transmitter may be pushed to restart the PWM.



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