



Date: Aug 28, 2007

To: **FEDERAL COMMUNICATIONS COMMISSION**
7435 Oakland Mills Road
Columbia, MD 21046
U.S.A.

Subject: **Exhibit 12, Operational description**

Applicant: Aearo Company, Indianapolis, IN 46268-0940
Product: Transceiver/2-way radio
Model: Peltor PowerCom plus II
FCC ID: NUV MT534720

The device is a hearing protection with a built in 2-way fm radio transceiver, operating in the UHF band. It is intended to be used in a noisy environment where 2-way communication is required.

All parts of the transceiver circuits are contained within the hearing protection cups. The unit is controlled by the user through a voice-menu system.

The transceiver operating frequencies, and the voice user interface is highly configurable through a pc support software.

The radio receiver part is a conventional FM dual-conversion superhetrodyne design. The front-end and band select filters are two dual-stage digitally tuned LC filters. The first IF frequency is 21.4Mhz and second IF frequency is 455kHz. The received signal is demodulated through a conventional ceramic discriminator.

The main oscillator is a wide band PLL synthesized VCO design, covering all of the required TX and RX frequencies within a single band. The VCO is time-shared between RX and TX.

The radio transmitter part is an on-frequency synthesized, 2-point modulated design. The transmit audio signal is applied to both VCO and PLL reference frequency oscillator, for full baseband bandwidth operation.

The transmit and receive audio is processed in a dsp-based baseband IC that provide audio filtering and limiting, as well as coded-squelch operating.

All functions of the unit are controlled by a central, single chip, flash based microcontroller.

The unit is powered by two standard Alkaline cells, or a specially designed NiMH battery pack.

Specification:

Peltor Article numbers	MT53H7A4720
	MT53H7B4720
	MT53H7P3E4720
General spec	
Point	Value
Channel capacity	30
Weight(without batteries)	14oz/400g
Battery life LOW power 5/5/90	36 hours
Battery life HI power 5/5/90	30 hours
FCC description	NUVMT534720
Approvals/ratings	R&TTE(CE), FCC, IC
Transmitter spec	
Frequency range	450-470MHz
Channel spacing	12.5/25 kHz
Channel raster	6.25/12.5/25 kHz
Freq stability	+/- 2ppm
Power	19 dBm ERP
Antenna gain	- 5dB typical
Modulation Limiting 12.5kHz	+/- 2.5kHz
Modulation Limiting 25kHz	+/- 5kHz
FM Hum & Noise 12.5kHz	-34 dB
FM Hum & Noise 25kHz	-40 dB
Radiated emissions <1GHz	< 0.25uW
Radiated emissions, 1-4GHz	< 1uW
Adjacent channel power, 12.5kHz	-60dBc
Adjacent channel power, 25kHz	-70dBc
Audio response 300-3000 Hz	+/- 2dB
Audio distortion	3%
FM modulation	16K0F3E , 11K0F3E
Receiver spec	
Frequency range	450-470MHz
Channel spacing	12.5/25kHz
Channel raster	6.25/12.5/25 kHz
Freq stability	+/- 1ppm
Sensitivity (12dB SINAD)	-122dBm typical
Intermodulation	70dB
Adjacent channel selectivity 12.5kHz	60dB
Adjacent channel selectivity 25kHz	70dB
Spurious rejection	70dB
Rated audio	Headphone 10mW
Audio distortion	3%
Hum and noise 12.5kHz	-34dB
Hum and noise 25kHz	-40dB
Radiated spurious emission <1GHz	< 2nW
Radiated spurious emission 1-4GHz	< 20nW