FCC RF EXPOSURE EXHIBIT - JUSTIFICATION FOR SAR EVALUATION EXCLUSION

Applicant Name:	Garmin International Inc.
Applicant Address:	1200, East 151st Street, Olathe, Kansas 66062 USA
Device Description:	Handheld MURS VHF Transceiver
Transmit Frequency:	151.82, 151.88, 151.94, 154.57, 154.60 MHz
Modulation Type:	GFSK
Antenna Type(s):	Detachable Whip
Device Model:	011-02842-00
FCC IDENTIFIER:	IPH-01996
FCC Rule Part(s):	95 Subpart J
FCC KDB Inquiry:	Yes
RF Exposure KDB Applied:	447498 D01v04, Section 1) c)
RF Exposure Environment:	Uncontrolled / General Population

Device Operational Description & Duty Cycle Analysis

The 011-02842-00 is a dog tracking and dog training device that is also capable of communicating with other 011-02842-00 handhelds. There are a number of different transmissions that the 011-02842-00 uses to perform several different tasks. The 011-02842-00 communication scheme is TDMA based on a communication "window" of 125ms. There are 20 windows per every 2.5 seconds. Each window contains a sub-window for a short transmission of about 40ms (generally from handheld to dog device) or a long transmission of about 70ms (generally from dog device to handheld, but can be from handheld to handheld).

The highest duty cycle transmission mechanism is when the 011-02842-00 is sending a continuous stimulation command to the dog device. This requires the 011-02842-00 to send a stimulation command with a duration of 38ms every 125ms. The 011-02842-00 will continue to transmit as long as the stimulation button is being pressed, but will time out after 8 seconds. After 8 seconds transmission will stop, but can be restarted by releasing the stimulation button and pressing it again. There will be at least one 125ms gap between the transmission timeout and when a new 8 second transmission could occur.

The 011-02842-00 handheld can also be configured to periodically send out its position, as frequently as every 2.5 seconds. This transmission takes 70ms. This transmission can occur while the 011-02842-00 is sending a continuous stim command every 125ms, which is where we get our worst case duty cycle calculation for a 2500 ms period: (70 + 38*20)/2500 = 33.2%.

In typical use cases, a hunter should only find it necessary to send a continuous stimulation command very rarely while using the product. Using the continuous stim command for the entire 8 second period should be even more rare. In most use cases, the continuous stim commandwould only be sent for several seconds out of every hour, or even less frequently.

The periodic transmission of position (70ms out of 2.5s max) will be disabled by default, and users will be recommended to choose a less frequent update rate (such as 70ms out of every 30s) to preserve battery life if they should choose to enable it.

The handheld will also be capable of sending short commands to the dog device (~40ms). These can be used to either initiate stimulation momentarily, or to reconfigure the unit. These will also occur very infrequently in typical use, likely no more than several times per hour.

Source-Based Time-Averaged Output Power Caculations

Manufacturer's Maximum Rated Output Power:	2 Watts
Maximum Source-Based Time-Averaged Duty Cycle:	33.2% (user initiated transmission) 2.8% (periodic transmission not intitiated by user)
Max. Source-Based Time-Averaged Output Power:	0.664 Watts (user initiated transmission) 0.056 Watts (periodic transmission not intitiated by user)

Compliance Statement

Based on the maximum source-based time-averaged duty cycle and output power of the device, as described in this document, RF exposure compliance is demonstrated for the Garmin International 011-02842-00 MURS Transceiver without routine SAR measurements under FCC Rule Part 2.1093 and in accordance with the requirements of the FCC KDB Inquiry.

RF Exposure Exhibit Revision History

REVISION NO.	DESCRIPTION	IMPLEMENTED BY	RELEASE DATE
1.0	1st Release	Jon Hughes	June 26, 2012
1.1	2nd Release 1. Revised Model Listing	Jon Hughes	July 05, 2012
1.2	**3rd Release** 1. Removed FCC KDB Inquiry #	Jon Hughes	**July 12, 2012**