

## RESPONSE TO FCC INQUIRY OF DECEMBER 5, 2007

FCC ID TWYIPJR1000, EA777734

### QUERY

1. It appears that the hopping scheme does not use all the channels equally. The reduced power channels are being used (hopped on) 8 times more than the full power channels. Please explain.

### RESPONSE:

Please see the timing diagram on page 4 of the Theory of Operation. You are correct that the reduced-power channels are hopped on eight times more often than the full power channels, in this configuration. But each of the hops on a reduced-power channel is only 1/8 the duration of each hop on a full power channel. At the end of a complete cycle, every one of the 50 channels has been occupied for the same total duration.

Section 15.247(a)(1) reads, in part: "Each frequency must be used equally on the average by each transmitter." This requirement is satisfied.

Section 15.247(a)(1)(i) reads, in part: "[T]he average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period[.]" This requirement is also satisfied.

### QUERY

2. Since the device is not effectively transmitting on some of the channels that it is hopping to, we don't consider it to be using those channels, and thus should not be included in the count towards the minimum number of channels. Please justify the number of hopping channels used.

### RESPONSE:

The system hops on 50 channels, as the rules require, but operates at lower power on some. This complies with the rules, which do **not** require equal power on all 50 channels.

### IMPORTANT NOTE

The system uses reduced power on some channels solely to avoid interfering with certain other Part 15 devices at the customer's site. The use of staggered timing, as discussed in the first response above, is solely to ease the impact on performance caused by the reduced-power channels.

As explained above, the device complies in full with all relevant language of Section 15.247.

The use of reduced-power channels does not improve performance, reduce cost, or otherwise confer an improper competitive advantage. We ask the Commission to recognize Impinj's efforts to be a "good citizen of the spectrum" while remaining compliant with the Commission's Rules.