

November 7, 2001

**Email cover letter from Mr. Steve Maddy of Spectralink
for Duty Cycle Clarification**

Jim,

The attached document gives the justification for our worst case duty cycle number for the FCC. The final number in this document is 17.04% rather than the 7.85% number given in our last response. Upon review I found that the 7.85% number was based on our current system that uses a 24kb/sec audio coding rate. In the future we will have the need to accommodate rates up to 64kb/sec so I recalculated the worst case duty cycle for this rate. This explanation should probably be included in your response to the FCC so that they now where the discrepancy comes from. This still gives an average power that is well below the 25mW limit.

Let me know if you need any further information and please copy me on anything you send to the FCC.

Thanks,

Steven L. Maddy

Duty Cycle Clarification Response

11/07/01
SpectraLink Corp.
Steven L. Maddy

Transmit Duty Cycle for IYGPTB800

This device is used in a voice system where the audio is digitized and broken into packets for transmission in a TDD / TDMA system. The worst case duty cycle will occur for the lowest data rate of 1Mb/sec. The worst case duty cycle will also occur for the shortest audio packet length which is 20msec.

After a data packet is received the unit will first send out a short acknowledgement. The acknowledgement packet length is only dependant on the data rate and for 1Mb/sec will be 304usec. This will be followed by the transmit data packet. The length of the transmit data packet is dependant on the audio coding rate, the audio packet length and the data rate. The worst case audio coding rate will be 64kb/sec. This gives a transmit packet length of 2080usec. This is then followed by a probe request pack that is 720usec in length. The response to the probe request is then acknowledged with another 304usec transmit packet.

The total transmit on time is found by adding up all of these transmit packet times: $304 + 2080 + 720 + 304$ to give a total of $3408\mu\text{sec}$ out of 20msec . This gives a duty cycle of 17.04% . For the highest power output rating of 100mW the time averaged transmit power output will be 17.04mW .

The following drawing shows the general sequence of transmitter on events for worst case operation. The drawing is **NOT** to scale.

