Washington Laboratories, LTD

7560 Lindbergh Drive Gaithersburg, MD 20879
301 216 1500 fax: 301 417-9069

August 17, 2007

William Graff
AmericanTCB
6731 Whittier Avenue, Suite C110
McLean, VA 22101

Re:	FCC ID: NM5-MB-49-HP
Applicant:	YDI Wireless
731 Confirmation Number:	TC814284
Date of Original Email:	08/15/2007

Dear Mr. Graff,

In reference to your email of August 16, 2007, we provide the following response.

First, we appreciate the opportunity to revisit this application and clear up any questions the FCC or ATCB has regarding this application. We strive to improve our understanding and reporting of these devices, which, we find, is a learning experience for all involved.

We have read Ms. Hawkins' letter and have found some inconsistencies in our original application which bear correction.

First, there are no channel bandwidth limitations in 90.1215.(a), only power limits; however the section references 90.1213 of the Rules, which calls out a maximum CHANNEL bandwidth of 20 MHz.

The system does use a maximum of 20 MHz channel bandwidth. The error occurs in the statement of the necessary bandwidth and subsequent reporting the emissions designator.

This correspondence seeks to clear this matter and provide updated information for this application.

The emission designator used the wrong Bn. We simply used the OBW for the Bn, which was an incorrect assumption. We measured the OBW at 20.32MHz. This, however, does not accurately describe the necessary bandwidth for this OFDM signal.

From Appendix J of the May 2006 revision of the NTIA Redbook, we find the calculation for Bn to be as follows:

http://www.ntia.doc.gov/osmhome/redbook/J.pdf

Necessary bandwidth for OFDM Modulation is:

		Bn=16 MHz	
Combination Modulation			
Quadrature Amplitude Modulation (QAM)	$B_n = \frac{2RK}{\log_2 S}$ $K \leq 0.81$ (99% bandwidth, $Bn = 1.62R/\log_2 S$)	64 QAM is used to send 135 Mbps; R=135x106 bps; S=64; Roll-off=1; K=0.81 Bn=36.45 MHz	36M45D1D
Orthogonal Frequency Division Multiplexing (OFDM)	Bn = (NS + 16.25)CS NS >16	OFDM is used to send 20 Mbps. Guard time is 0.8 is. 48 sub-carriers are used, each spaced 250 kHz apart. 16-QAM is used with rate ½ coding. Bn= (48 +16.25)0.25 = 16.1 MHz	16M1D1DEF

The MB-49 system was configured for the above state (20Mbps with OFDM Modulation). Hence, the Bn is calculated as follows:

Bn = (NS + 16.25)CS

where,

NS = Number of Subcarriers
CS = Separation in frequency between adjacent sub-carriers or carriers of a multi-carrier modulation.

Bn = (48 + 16.25) X 0.25 = 16.1 MHz

The necessary bandwith is 16.1 MHz (as the conditions exactly match the guidance in the NTIA Redbook). In an attempt to rectify this situation, we request that the FCC be provided this information and we seek guidance on this matter so we can properly inform the applicant of any impact on their Equipment Authorization.

Thank you for your attention and kind regards,

Sincerely,

Michael Violette, PE
President