

Washington Laboratories

7590 Lindbergh Drive
Gaithersburg, MD 20879

29 July 2002

Tim Johnson
AmericanTCB
6731 Whittier Avenue
Suite C110
McLean, VA 22101

RE: Mine Safety Appliances Co., Instrument Division
FCC ID: P9R-10031511

Following is a response to your comments regarding the above-referenced FCC ID. We have re-typed your comments and supplied the requested information in the form of a response or an addendum to the application.

After a review of the submitted information, I have a few comments on the above referenced Application.

- 1) The block diagram should show the frequency of all oscillators in the device (CFR 2.1033(a)(5)).

A. The client has provided this information: "Only the transmitter has a discrete external oscillator ... we use the microcontroller's internal 4 MHz oscillator for the receiver." A new block diagram has been provided. Please see exhibit "Revised Block Diagram.pdf".

- 2) The users manual does not appear to contain the information specified by 15.21. Please comment.

A. The manuals have been revised to include the required warning statement. Please see exhibits "Revised Installation Manual.pdf" and "Revised Operations Manual.pdf".

- 3) FYI, This application for certification will only cover the transmitter portion of the system.

A. Acknowledged.

- 4) Please justify the use of 60 dB for correction of the limit from 300m to 1m. The typical correction of 40 dB per decade is normally applied unless specific measurements are made to justify using a different correction factor (see 15.31(f)(2)). FYI, $40 \log(300/1) = 99.0$ dB which will only yield better readings. Also, calculating a correction factor based on 2 points in your data at 1 and 3 meter at 0.0267 MHz yields a correction factor of 46.3 dB per decade.

A. Apparently, we made an error in calculating the correction factor from 300 to 1m. As you say, the correction factor is based on a 40 dB decrease in level from 300 to 3m. The test report has been amended, and correct limits should be as shown in the corrected data tables. Please see exhibit "Revised Test Report.pdf".

- 5) The limits are either peak or averaged depending on the frequency as specified in 15.209. Please explain whether the measured emissions are peak or average.

A. Emissions were measured as peak emissions, which is worst-case.

- 6) The EUT contains a 4 MHz oscillator according to the schematic. Please provide information that ensures compliance with the requirements of 15.33(a)(4) and 15.209(f)

A. FCC Verification testing has been performed on the unit. The device complies with the Class B limits.

Sincerely,

Michael Violette, P.E.