Nov. 06, 2002

To: Steve Dayhoff
FCC Equipment Authorization Branch

From: David Redman
Sensors & Software Inc.

Re: FCC ID QJQ-NOGGIN500
Applicant: Sensors & Software Inc.
Correspondence Reference Number: 24285
731 Confirmation Number: EA845822

1. All references to use on ceilings and walls as deleted from the manual and the Warning is added on Page C2 of the Users Manual.

2. The device was rotated in all directions to determine the maximum emissions direction.

3. The references to gain are on page 45 and 60 and are referring to a multiplication factor that is applied to voltages measured on the receiving antenna. This has no affect on the transmitter pulse which cannot be varied in amplitude or strength. This factor is only used to improve the presentation of the received data on the DVL display screen.

   The QP measurement at the peak of the fundamental lobe at 487 MHz was measured and recorded in the revised test report.

5. The test data above 1 GHz provided in the test report were measured using Log Periodic Antenna of Sensors and Software. These results were verified again at Ultratech Engineering Labs using a Horn Antenna. The results were found to comply with both Log Periodic tested by Sensors and Software and Horn Antenna tested by Ultratech Engineering Labs Inc.

6. The device does not pulse a CW signal. The pulse applied to the antenna is a short monopulse (width 2 ns at 10% points). A plot of the pulse can be seen on page 5 of in the ***Technical Description*** in Operation Description folder. The theoretical center frequency of the pulse is 500 MHz.

7. The 10 dB BW was re-measured with the EUT placed on the 20" thick sand in Peak Detector mode with the EUT rotated in 360 degree and the antenna moved form 1 to 4 meters for determining the maximum 10 dB BW. The result was recorded in the revised test report with the test method. Please note the new 10 dB BW measurement showed the 10 dB BW of 589.3 MHz and the Emission Designation is changed to 589M3N0N.

8. The antennas are shielded on five sides as described in the document ***NOGGIN 500 Technical Description*** on page 3. The shield can also be seen in the internal photos of the ***Noggin500.***

   Pg 3 in document: “Shields around each antenna minimize the amount of energy that escapes into the air and damping within the shield structure minimizes the amount of energy that is reflected from the shield into the ground.”