Feedback Subsystem - Audio Logic Test

The purpose of this test is to verify the operation of the logic portion of the feedback display circuit in order to ensure proper activation of buzzers under various input conditions.

Start Date: 4/1/08 **Finish Date:** 4/1/08

Engineer set-up experiment: Jonathan Bawas

Equipment Needed:

1. Power Supply
2. Multimeter
3. Bead boarded Circuit / PCB Circuit

Results:

See schematic for logic inputs. Each input was driven to either a logic high (5V) or a logic low (0V or GND).

Audio Logic Circuit - Truth Table					
Red(1)	Red(2)	Yellow(1)	Yellow(2)	Slow Buzzer	Fast Buzzer
0	0	0	0	Off	Off
0	0	0	1	On	Off
0	0	1	0	On	Off
0	0	1	1	Off	Off
0	1	0	0	Off	Off
0	1	0	1	Off	On
0	1	1	0	Off	On
0	1	1	1	Off	Off
1	0	0	0	Off	Off
1	0	0	1	Off	On
1	0	1	0	Off	On
1	0	1	1	Off	Off
1	1	0	0	Off	Off
1	1	0	1	On	Off
1	1	1	0	On	Off
1	1	1	1	Off	Off

Conclusion:

The results show that the slow buzzer is on only during on when both red LED inputs are either high or low. However, because it is not possible to have both the red inputs high at the same time, the only condition in which the slow buzzer will be active is when either of the yellow inputs go high, with both of the red inputs low. Thus the slow buzzer activates as designed.

For the fast buzzer, the only conditions are listed as active are when one of the yellow inputs are high, and one of the red inputs are high. This generates four conditions in which the fast buzzer is active. The fast buzzer operates as intended.