Recording Technology II

Lab #1 - Console Calibration

## Part 1: Taking Readings

1. Power up the studio. Double check the console to make sure it has been properly neutralized. If not, fix what has been left.
2. Locate the Oscillator section to the right of the control room section. Depress the 1k switch and turn the Oscillator Level Knob to the CAL position. Depress the test switch. This injects oscillator signal into all points on the board.
3. Set all busses to unity gain. You should now see level in the VU meters.
4. Grab the VOLT OHM METER and set it to AC VOLTS (2V range). Connect the banana to TT cable to the meter’s VΩ & COM terminals.
5. Insert the patch cable end of the meter to the BUS OUT patch point for channel 1. Adjust the OSCILLATOR LEVEL knob until the meter reads 1.2 VOLTS. Check if the VU meter is showing 0db. Mark down the voltage and VU reading in the data sheet. By setting the oscillator level you have defined the standard rating for all points on the console. These will be your reference values.
   1. Note: From this point out, do not re-adjust the OSCILLATOR LEVEL. If you do, it throws off your known standard.
6. Arm track 1 on the MTR. Mark down the VU meter reading in the data sheet.
7. Insert the meter into the TAPE OUT for channel 1 on the patchbay. Mark down the voltage in the data sheet.
8. Select Tape in the Mix section of the channel strip and mark down the Volatge and VU reading of the track buss in the data sheet.
9. WARNING! Make sure that no assign switches are depressed during this process. Why is this dangerous?
10. Switch channel 1’s input to LINE IN and insert the meter into the PATCH OUT for that channel. Mark down the voltage and the reading on the input LED meter in the data sheet.
11. Check that the EQ section is bypassed then switch the EQ on. Note the voltage with the EQ on.
12. Repeat steps 5-9 for channels 1-8. Do not re-adjust the oscillator level during the repeat.
13. If you have time during the lab, repeat steps 10-11 for all channels above 8.
14. Turn in your data sheet at the end of the lab.

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## Part 2: Calibrating the Console

WARNING! The potentiometers for calibrating the console and it’s meters are very delicate. When adjusting them, please exercise the utmost care and never force anything. If it does not appear to work, take a step back and try again. If something is not moving, it is likely not the calibration pot and could be an integrated circuit nearby. Accidentally knocking something like this out of place could cause a fried circuit or a fire.

1. In this lab we will not be calibrating the meter bridge as that requires disassembling the console to access the required potentiometers. You will be required to verify them for accuracy.
2. Power up the studio.
3. Turn on the oscillator and set it to 1khz. Depress test and set all busses to unity. Turn the OSC up until the VU meters read 0-VU.
4. Hook up the meter to the patch test cable. Set it to AC VOLTS (2 V range).
5. Insert the patch cable into the Buss out for Channel 1. Adjust the OUT CAL pot in the EQ section of channel 1 until the Volt Ohm meter reads 1.2V.
6. Select input on the MTR and insert the patch cable into the TAPE OUT for channel 1.
7. On the MTR, there are two metal buttons on either side of a pair of tracks. Carefully press these and gently slide the tracks chassis open.
8. Look for the RECORD circuit board for track 1. On that circuit board, locate the IN CAL potentiometer. Adjust that pot until the Volt Ohm meter reads 1.2V.
9. Check the VU meter for track 1 on the tape machine. If it does not read 0-VU, adjust it using the white square potentiometer on the main circuit board for that track.
10. Verify that both BUSS OUT and TAPE OUT are reading at 1.2V and that both VU meters are reading at 0-VU.
11. Set channel 1 on the console to Monitor - Tape mode. Locate the LINE CAL pot and adjust it so the VU meter reads the same for both BUSS and TAPE.
12. Activate LINE IN on channel 1 and adjust the CAL pot in the LED meter section so that the input meter reads at 0-db.
13. Repeat steps 5-12 for channels 2-8. If you have time, repeat step 12 for all channels above 8.