Calibrating the AMPEX ATR-100 Input-Output Modules

5-29. ALIGNMENT AND ADJUSTMENTS The following paragraphs contain information regarding the Input/Output Assembly adjustment. **The Input/Output Assembly should be calibrated prior to the alignment of the basic recorder/reproducer.** It is usually necessary to perform or verify I/O calibration no more than once per year.

5-30. Input/Output Assembly Adjustment Procedures for adjusting offset null, input and out-put operating level, and level meter calibration are given below. Instructions for setting the operating input and output level to +4 dBm are given, but other values may be selected by the user. Input levels can be from +30 to -5 dBm in the variable mode or +20 dBm to -1 dBm in the preset mode. Output levels can be from +12 dBm to -25 dBm in the variable mode or from +20 dBm to -1 dBm in the preset mode.

Important: THE INTERFACE INPUT AND OUTPUT OPERATING LEVEL TO AND FROM THE RECORDER /REPRODUCER SHOULD BE SET TO -5 dBm (440mv rms) REGARDLESS OF THE LEVELS SELECTED FOR THE INPUT/OUTPUT ASSEMBLY LINE INPUT AND LINE OUTPUT.

Two methods for adjusting the input and output levels are presented in the manual. Method 1, is the method presented here for use with only an I/O extender (to enable access to internal I/O TP's & adjustments) This method requires a jumper/clip lead, standard test equipment and interconnect cables. You will need:

A. Variable output audio oscillator with known or calibrated output levels
B. DC voltmeter
C. True RMS AC voltmeter

Caution: DO NOT REMOVE OR INSERT AN INPUT/OUTPUT MODULE OR ATR-100 PWA WITH POWER ON. TO DO SO MAY CAUSE DAMAGE TO COMPONENTS. Refer to Figures 5-9 and 5-10 (page 3) **and proceed as follows:**

5-31. Offset Null Adjustments. Perform these steps on each input/output module if repairs have been made or components have been changed on the input/output assembly which may affect circuit operation. (recommended)

1. With power removed, adjust the meter mechanical “zero”. adjustment control for mechanical zero (meter at left-hand dial position).

2. Remove input/output module from input/ output mainframe and place module on the extender board. Insert extender board into mainframe. **Always make sure the extender is fully inserted.**

3. Remove fuse F1 (refer to Figure 5-10).

4. Set peak/vu switch S3 to desired operating position (peak or vu reading on vu/peak meter).

5. Disconnect signal input so that there is no signal being fed to input/output assembly.

6. Apply power and adjust metering amplifier offset null potentiometer R32 (Figure 5-10) for zero indication (same as step 1) on the level meter.

7. Connect a DC voltmeter to TP6 and ground. (Refer to Figure 5-10.)

8. Set RECORD MANUAL/PRESET switch to MANUAL position.

9. Adjust line input amplifier offset null potentiometer R55 for zero change in voltage at TP6 while rotating RECORD potentiometer through its range.

10. Connect DC voltmeter to TP2 and ground. (Refer to Figure 5-10.)

11. Adjust line output amplifier offset null potentiometer R40 (Figure 5-10) for 0 ±30 mV at TP2. Remove DC voltmeter.

12. Remove power and re-install fuse F1.

5-32. Record Level Adjustment (Method 1). Proceed as follows:

1. Connect an audio oscillator to the line input connector. Set oscillator frequency to 1.0 kHz and adjust oscillator output level to +4 dBm (or other operating level selected by the user).

2. Connect ac voltmeter to TP6 and ground (Figure 5-10).

3. Set RECORD MANUAL/PRESET switch to PRESET position.

4. Adjust record preset potentiometer R2 (Figure 5-9) for -5 dBm (440mv rms) level at TP6.

5. Connect ac voltmeter to line output connector and terminate line output with 600 ohms, or place place termination switch (back of the I/O overbridge) in the terminate position.

6. Select input monitoring for channel being aligned.

7. Adjust record calibrate potentiometer R3 (Figure 5-9) for +4-dBm level on the ac voltmeter (or other line output operating level selected by the user).

8. Remove power and set peak/vu meter switch S3 (Figure 5-10) to desired operating position, peak or VU. Re-apply power.

9. Select input monitoring for channel being aligned.

10. Adjust meter calibration potentiometer R21 (Figure 5-10) for indication of -6 dB (meter switch S3 in PEAK position) or 0 VU (meter switch S3 in VU position).

5-33. Reproduce Level Adjustment (Method 1). Proceed as follows:

1. Remove power and remove all audio PWA‘s from the recorder /reproducer electronics assembly.

2. Connect a jumper from TP5 to TP6 (Figure 5-1 0)

3. Connect an audio oscillator to the line input connector. Set frequency to 1.0 kHz and output level to +4 dBm (or other operating level selected by the user).

4. Set REPRODUCE MANUAL/PRESET switch to PRESET position.

5. Connect ac voltmeter to line output connector and terminate line output with 600 ohms or place termination switch (back of the I/O overbridge) in the terminate position.

6. Apply power and adjust reproduce preset potentiometer R1 (Figure 5-9) for +4-dBm level on the AC voltmeter (or other line operating level selected by the user).

7. Repeat the Record Level Adjustment (Method 1) and Reproduce Level Adjustment (Method 1) procedures for the other audio channels.

8. With power off, remove input/output module and extender board from input/output mainframe. Remove jumper connected from TP5 to TP6, Reinstall input/output module into mainframe.

9. Reinstall ail audio PWA‘s into the recorder/reproducer electronics assembly.

Figure 5-9. Input/Output Module Adjustment Control Locations

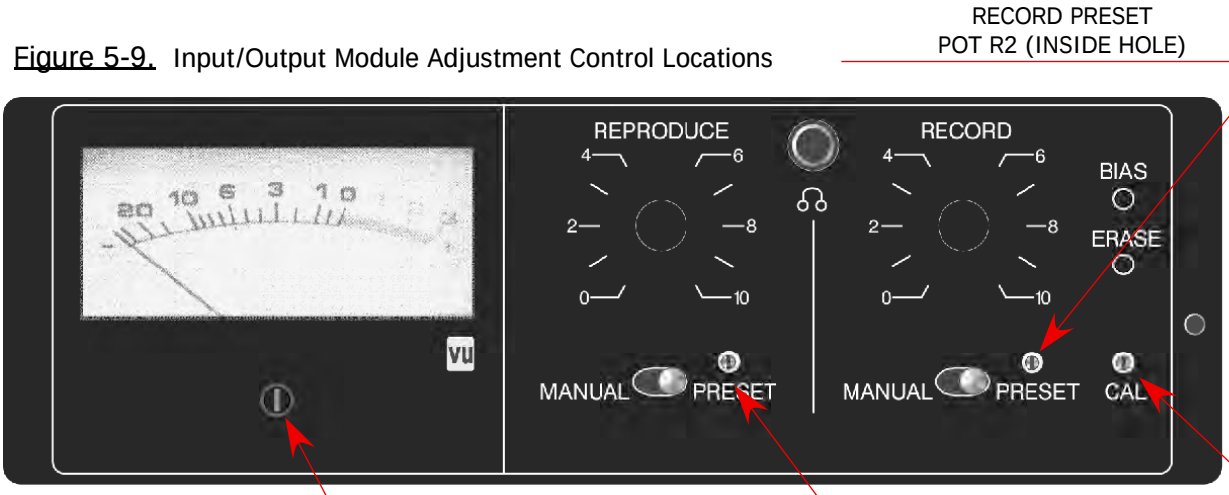

Figure 5-10