

## INTRODUCTION

Trilithic's **CT-2** and **CT-3** "channel tag" devices require periodic calibration. This ensures proper operation with Trilithic's signal leakage detectors which use tagged signals. Some leaks may not be detected if the CT-2 or CT-3 is miscalibrated.

The CT-2 and CT-3 "tag" the signal used for leakage testing by adding one or two sub-audible modulations. The lower frequency modulation (about 3 Hz) is used with Trilithic's **Searcher Plus** and is not critical. However, the higher frequency modulation gives the **Super Plus**, **Tricorder** and **Search Lite** leakage detectors their high sensitivity and immunity to "false alarms".

This higher tagging modulation can be set to any frequency between 10 and 20 Hz. The chosen frequency must closely match that of the leakage detector or leaks will not be detected properly. You should test the higher tagging frequency of the CT-2 and CT-3 at least once a year to ensure proper operation.

There are two ways to verify and adjust the modulation frequency. You can send the device to Trilithic or you can make the adjustment at the installation site. For additional information, refer to the CT-2 or CT-3's *OPERATION MANUAL* which came with the unit.

## EQUIPMENT REQUIRED

If you decide to adjust the modulation frequency, you will need the following:

- Frequency Counter which can measure frequencies in the 10 to 20 Hz range with a resolution of 0.01 Hz.

**NOTE:** A Frequency Counter with a high input impedance ( $\geq 1$  Meg Ohm) is recommended. However, you may also use a Frequency Counter with a 50 Ohm input provided that you use a 1x probe that has an internal series resistance of 0.5 to 10 K Ohms and a sensitivity of  $-30$  dBm or greater.

- Philips screw driver

## PROCEDURE

Use the following procedure to make the calibration adjustments:

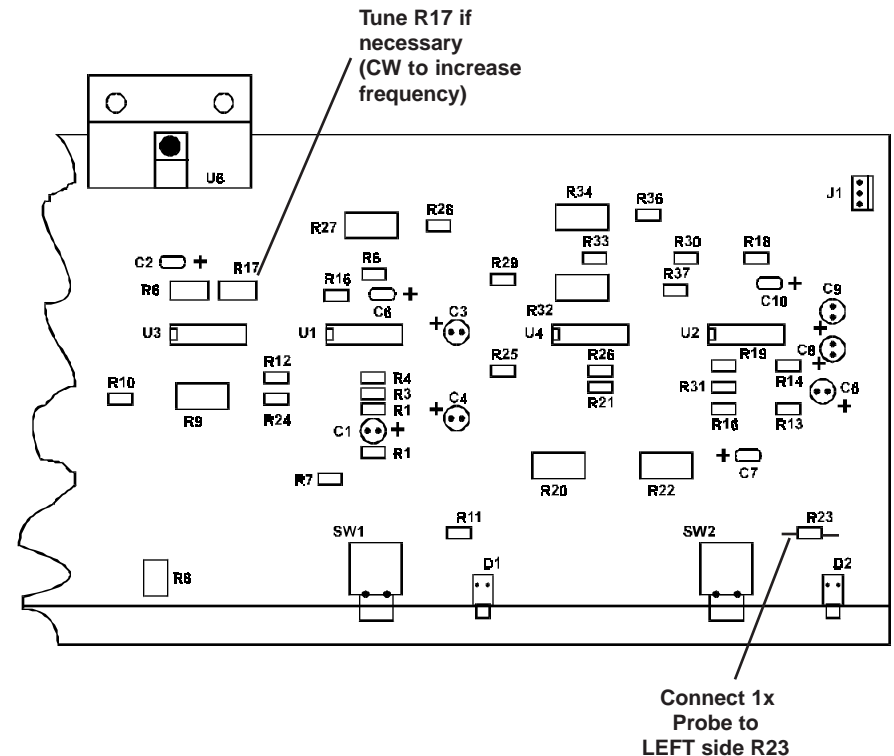
1. Remove the nine (9) screws which secure the CT-2/CT-3's top cover. Remove the cover.

2. Connect the power cord and turn the CT-2/CT-3's power ON.

**NOTE:** Allow the unit to warm up for at least five minutes before proceeding with the modulation frequency adjustment.

**CAUTION:** Use proper care when working with active electronics or exposed line voltage.

3. Turn ON the high frequency switch (10 to 20 Hz).
4. Using a 1x probe, connect the Frequency Counter to the LEFT end of R23. The Frequency Counter should indicate the proper modulation frequency within a tolerance of  $\pm 0.05$  Hz.
5. If necessary, tune R17 (the high frequency adjustment control) in small increments until the Frequency Counter indicates the proper frequency  $\pm 0.05$  Hz. (Turn *clockwise* to increase the frequency.)



CT-2/CT-3 Main PCB Section

6. Disconnect the Frequency Counter. Turn the CT-2/CT-3's power OFF and disconnect the power cord.
7. Replace the top cover and install the cover screws.

That's all there is to it. Your CT-2 or CT-3's modulation frequency should now be calibrated correctly.



## ***MODULATION FREQUENCY ADJUSTMENT***

## **REFERENCE GUIDE**