

MODULE 52**OW-43 2-WIRE/4-WIRE RECEIVE AUDIO FAULT ISOLATION****OBJECTIVE**

Given TO 31S1-2TSC60-12, isolate 2-wire/4-wire receive audio faults IAW Table 5-6.

PREREQUISITES

1. Must complete QTP Modules 1, 8, and 47 thru 51.
2. Must be able to operate the HP-204C Audio Oscillator.

INFORMATION

In this module we'll discuss how to isolate STU 2-wire/4-wire receive audio faults. This is accomplished using a test which measures the audio loss through the receive circuits of the STU by injecting a known signal level into the 4-wire receive input and measuring the output level at the 2-wire/4-wire output connection.

Figure 52-1 illustrates the test setup for this test. You will be using the dB meter on the front panel of the Monitor/Switching Panel, 1A14. There are two input jacks to this meter. Both jacks are on the right side of jackfield 1A4. One is labeled dB Meter 600-Ohm and the other is labeled Bridge. The 600-Ohm jack has a 600-ohm terminating resistor in parallel with it. The Bridge jack allows dB measurements without any load added.

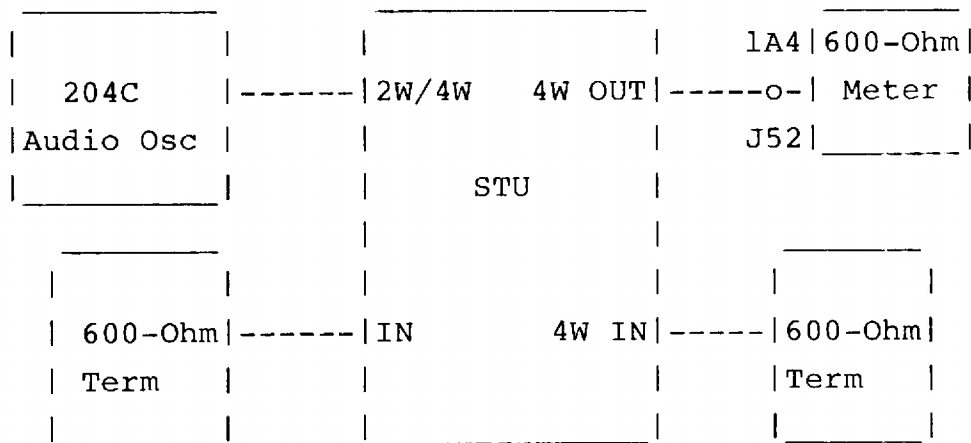


Figure 52-1. Receive Audio Test Setup

Look at Figure 31 in your Diagrams booklet. The receive audio signal is transformer-coupled to the emitter follower circuit. The VF signaling mode should have no affect on this audio path. If it does, the chances are that something in the VF signaling circuit is loading things down.

From the emitter follower the signal is applied to the hybrid network. Look at Figure 29 in your Diagrams booklet. In the 2-wire configuration, shown in the top-right illustration, the hybrid network acts as the 2-wire to 4-wire converter we discussed in Module 47. In the 4-wire configuration, shown in the bottom-right illustration, the windings of the transformers are connected so the receive audio signal is simply transformer-coupled in the same manner as the input transformer. Once again, the configuration should have no effect on the level of the signal.

During the test you will be setting the STU in its various configurations to verify there is no appreciable affect on the audio signal level. There should be

approximately 2dB of loss in the receive signal path for all configurations.

Read over the procedures in Table 5-6 of the -12 TO. Once you have read and understood the procedures proceed to the additional instructions.

ADDITIONAL INSTRUCTIONS

Answer the review questions and check your answers with the confirmation key. Review the material in the module for any questions you missed. Next, ask your trainer for the KEP questions. After your trainer checks your answers and reviews the questions missed with you, go on to the performance procedures.

REVIEW QUESTIONS

1. Why should you use the 600-Ohm jack instead of the Bridge jack?
2. What should be the receive signal loss through the STU?
3. Setting the VF Signaling switch to 1600 rather than FM should have what affect on your measurementments?
4. Setting the Line Signaling switch to 2W rather than 4W should have what affect on your measurements?

PERFORMANCE PROCEDURES

Have your trainer demonstrate performance of the 2-wire/4-wire receive audio performance test. Then practice performing this test under the supervision of your trainer until you feel confident. Your trainer will annotate your training records when he/she feels you are proficient.