



TECHNICAL NOTE TN-769

Channel Audio Switch Modifications for the T1550 LTU, T1511 CCM, and T1711 CMM

23 August 2005

Applicability

This Technical Note is relevant to all T1550 LTUs, T1511 CCMs, and T1711 CMMs in systems where the "Pressel Message Gates Receiver Audio", line testing, or call interception features are required.

1. Introduction

This technical note describes how to modify the T1550 LTU, T1511 CCM and T1711 CMM to support the line testing, call interception, and pressel message gating features. These features are described below:

1. Line testing

A loop-back of attenuated intersite audio (-20 dB) is used to verify the integrity of the intersite audio line. This feature applies when the channel is in the idle or local call states. This feature is **disabled** by default on the T1711 CMM and T1511 CCM.

2. Call interception (discrete listening)

Locally received audio is passed to the intersite line to allow call monitoring at the node while the channel is in the local call state.

3. Pressel message gates receiver audio

When the radio's PTT is pressed, the audio state switches to the normal state for the call type (local or intersite). When the PTT is released, the channel audio state reverts temporarily back to idle. This feature is used to mute undesirable channel noise while radios are not transmitting.

Important: If any of the modifications in this document are made on a channel containing modem software **Q1711MOD v4.04 or earlier**, the intersite/local DIP-switch must be set to intersite. If the channel is used as a local channel only (ie, it does not have an intersite audio line), then the channel must be configured from the NMT to inhibit intersite calls. This requirement does not apply to modem software Q1711MOD v4.04 and later.

Note: If the call interception feature is enabled, line testing is disabled. This is because the call interception feature sends locally received audio to the intersite line, whereas line testing sends received intersite audio to the intersite line. The two features are mutually exclusive.

In the case of the T1511 CCM and T1711 CMM, where the call interception feature is enabled (hard-wired) by default, a modification may be made to disable the call interception feature to allow line testing.

2. T1550 LTU Modifications (PCB 220-01265-0x)

Line testing

If link 3 exists, connect pins 2 and 3 for a loop-back of the intersite line with -20dB of attenuation. This is the factory default setting.

If link 3 does not exist, the line testing feature will already be hard-wired on the PCB to give a loop-back of the intersite line with -20dB of attenuation.

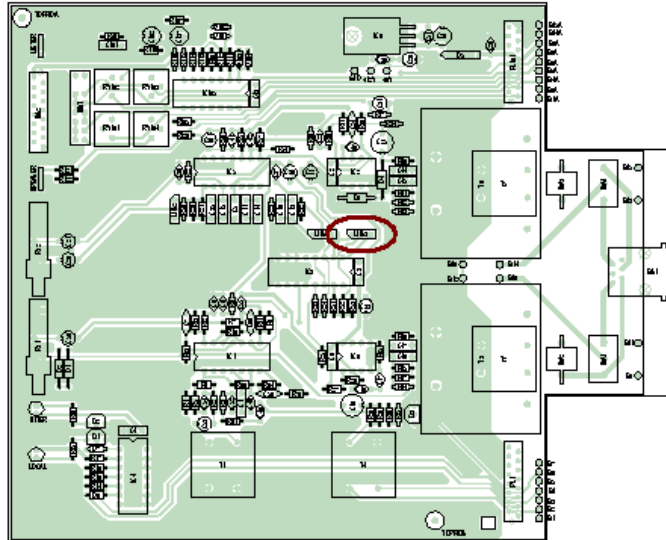


Figure 1: Location of Link 3 on the T1550 LTU

Call interception

If link 3 exists, connect pins 1 and 2 to enable call interception.

If link 3 does not exist, carefully lift IC3 pin 5 off its pad, and join (lifted) pin 5 to pin 4 with enamel coated wire.

Pressel gating of audio

The following procedure describes the modification to enable the 'pressel gates received audio' feature. Refer to Figure 2 below while performing this modification.

Components / tools required:

- 20 mm of enamel coated wire, 0.5 mm thick.
- Soldering iron + solder, side cut pliers

Procedure:

1. Carefully lift IC3 pin 12 from its pad.
2. Join (lifted) pin 12 to pin 15 with enamel coated wire.

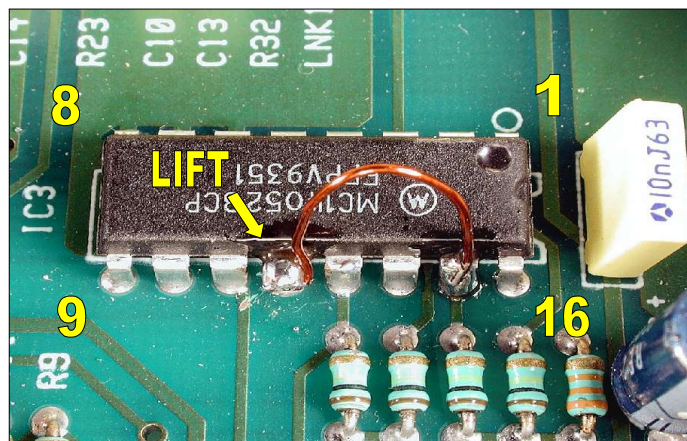


Figure 2: T1550 LTU pressel gating modification completed

3. T1511 CCM Modifications (PCB 220-01431-0x)

If line testing is required, the call interception feature will be disabled. Perform the following modification to enable line testing.

Procedure:

1. Carefully lift IC306 pin 5 from its pad.
2. Join (lifted) pin 5 to pin 1 with enamel coated wire.
3. Connect LNK304, pins 2 and 3 (to give a -20dB intersite loop-back).

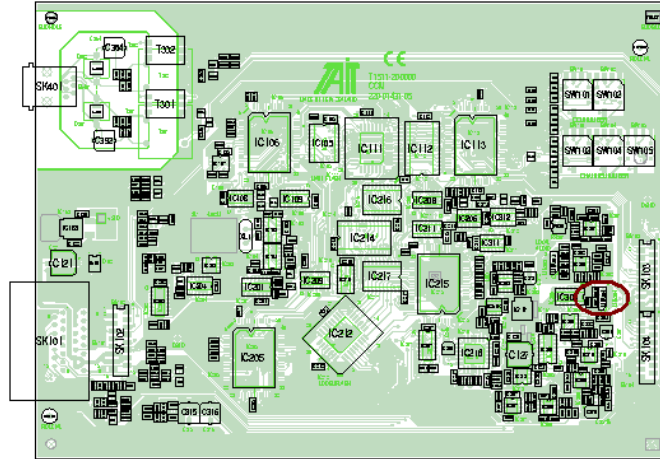


Figure 3: Location of LNK304 on the T1511 CCM

Call interception

The call interception feature is already enabled (hard-wired) on the PCB unless the line testing modification has been performed (above).

Pressel gating of audio

The following procedure describes the modification to enable the 'pressel gates received audio' feature. Refer to Figure 4 below while performing this modification.

Components / tools required:

- 20 mm of enamel coated wire, 0.5 mm thick.
- Soldering iron + solder, side cut pliers

Procedure:

1. Carefully lift IC306 pin 12 from its pad.
2. Join (lifted) pin 12 to pin 15 with enamel coated wire.

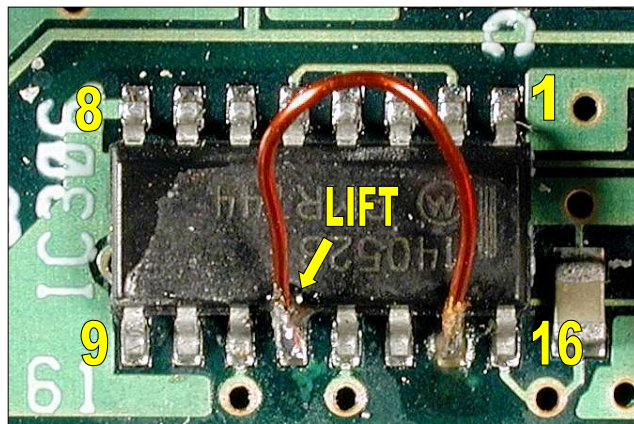


Figure 4: T1511 CCM pressel gating modification completed

4. 4. T1711 CMM Modifications (up to 220-01614-05)

Line testing

If line testing is required, the call interception feature will be disabled. Perform the following modification to enable line testing.

Procedure:

1. Implement Technical Note TN-751 first (this will give -20dB loop-back).
2. Carefully lift IC302 pin 2 from its pad.
3. Join (lifted) pin 2 to pin 4 with enamel coated wire.

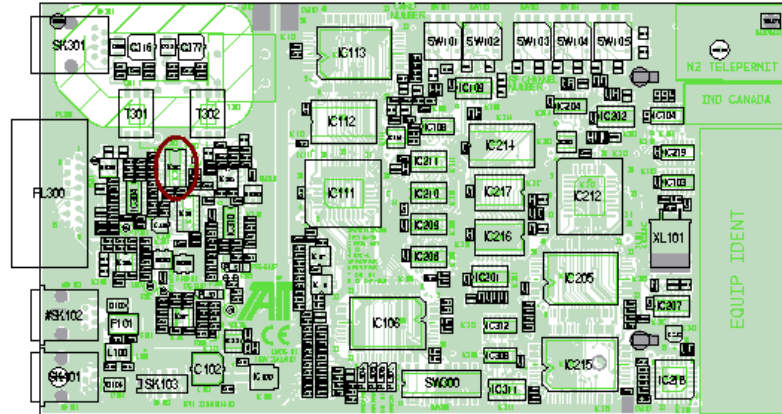


Figure 5: Location of IC302 on the T1711 CMM

Call interception

The call interception feature is already enabled (hard-wired) on the PCB unless the line testing modification has been performed (above).

Pressel gating of audio

The following procedure describes the modification to enable the 'pressel gates received audio' feature. Refer to Figure 6 below for this modification.

Components / tools required:

- 20 mm of enamel coated wire, 0.5 mm thick.
- Soldering iron + solder, side cut pliers

Procedure:

1. Join pins 11 and 14 of IC302 with enamel coated wire.

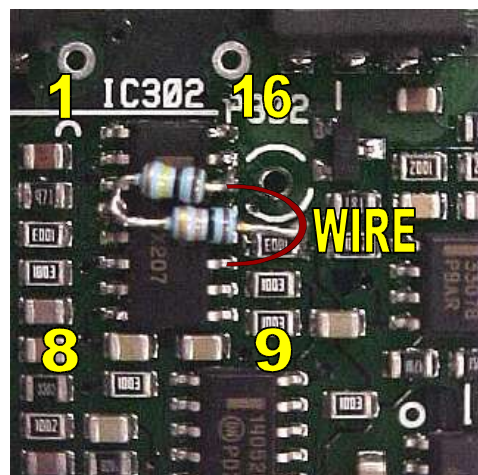


Figure 6: T1711 CMM pressel gating modification

5. Issuing Authority

Name and Position of Issuing Officer

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