



Installing Tait Line Despatcher Terminals

1 November 2000

This technical note describes how to connect one or more LDTs to a Tait trunked radio network and to configure the LDTs and the network so that they work together.

LDT

The LDT consists of a PC with a number of installed cards and a headset or handset with an accompanying amplifier.

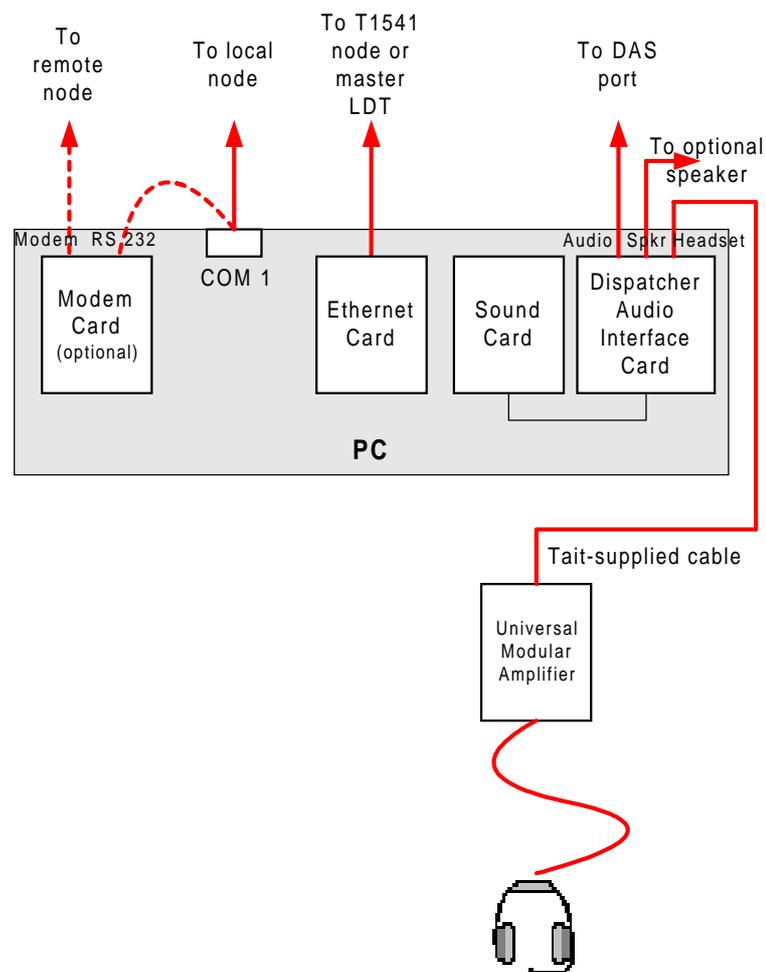


Figure 1 LDT Block Diagram

System Design

LDTs with T1541-based Networks

Each LDT has an audio connection to a port in the digital audio switch (DAS) and a control connection to the node using TCP/IP over Ethernet. The number of LDTs that a node can have is in practice limited only by the conferencing capability of the DAS. From the node's perspective, each LDT is a radio with an audio connection into a particular DAS port. One LDT must be configured as a server that maintains talk group information for all the LDTs. If the LDTs are remotely located, they must be connected to the node via routers. [Figure 2](#) shows a typical system configuration.

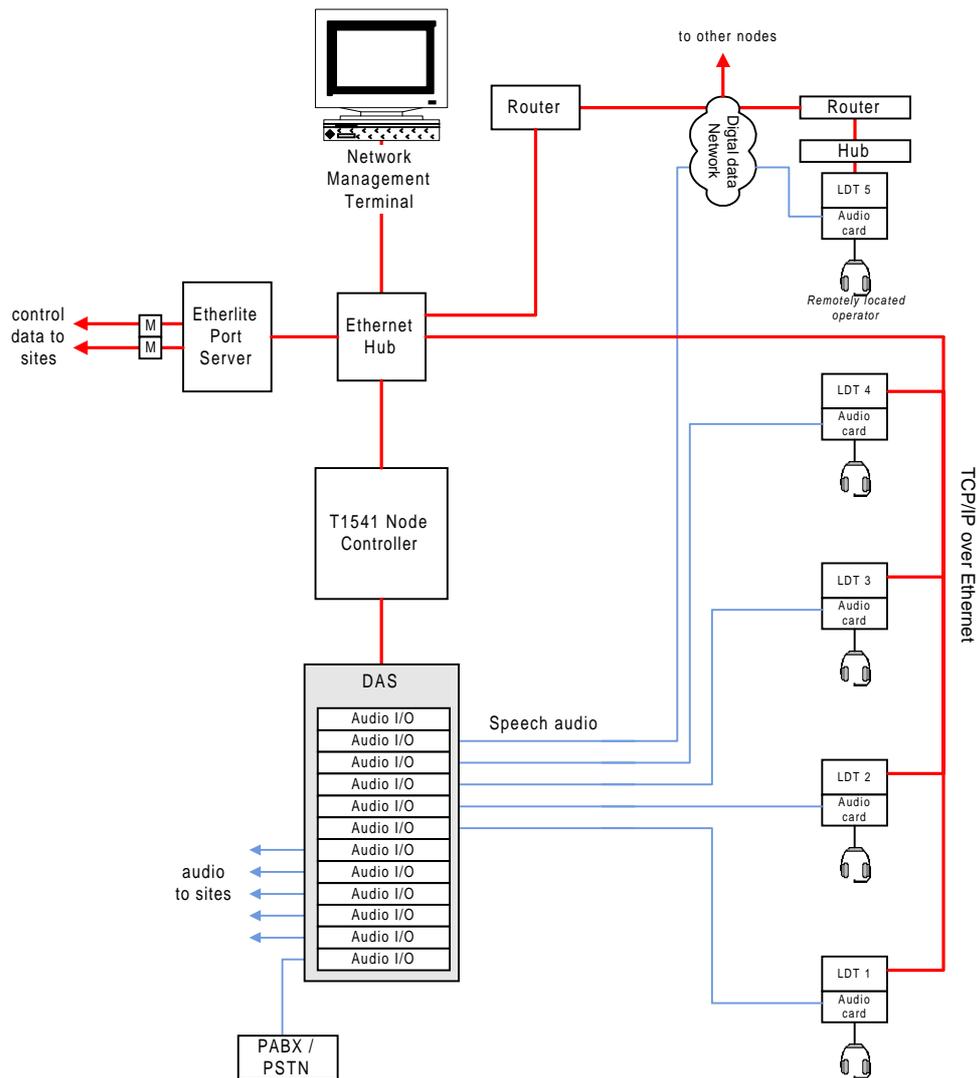


Figure 2 LDTs in a T1541-based Network

LDTs with Other Networks

When LDTs are part of a T1530, T1540, or T1730 network, they can be master or slave LDTs. Master LDTs are connected to a site port at the node via a serial interface. Slave LDTs are connected to their master using TCP/IP over Ethernet. From the node's perspective, each LDT is a virtual radio and the master LDT is a virtual site as well. The number of master LDTs that a node can have is limited by the number of sites that the node can support. [Figure 3](#) shows an example configuration with two master LDTs, one of which has three slave LDTs connected to it.

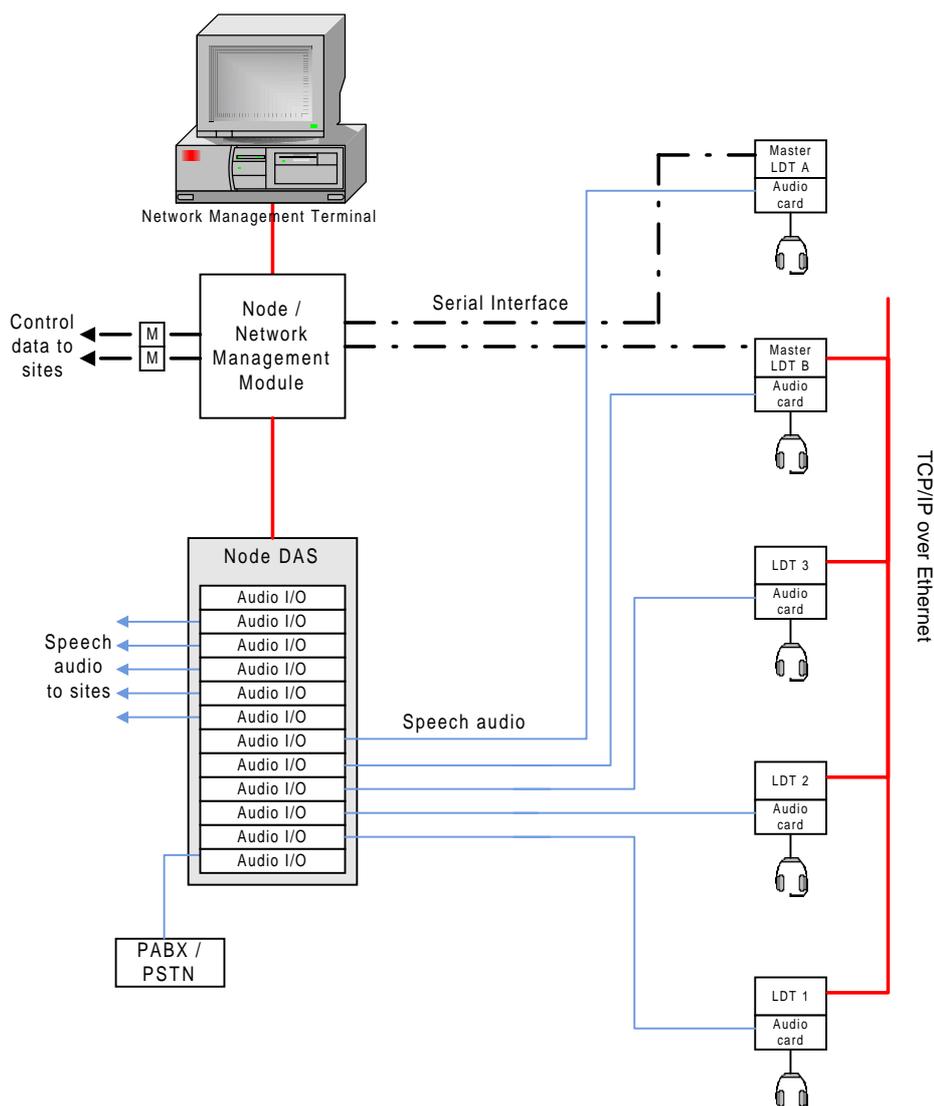


Figure 3 LDTs in a Network Based on the T1730, T1540, or T1530

Connecting up an LDT

1. Connect the cable from the LDT operator's headset or handset to the headset jack on the near side of the amplifier.
2. Using the supplied Tait cable, connect the headset jack on the far side of the amplifier to the RJ22 socket in the audio mixer card. (Pins 2 and 3 are for the microphone, 1 and 4 are for the speaker).
3. Optionally connect a mono external speaker to the 3.5 mm jack socket in the audio mixer card.
4. If the LDT is to function as a master LDT that will be remotely linked to a node that is not a T1541 node, it should contain a Tait T1556-02-0100 Modem card, connected to COM 1 on the PC. Connect the modem card's RJ 45 socket to a leased line to the node or Etherlite port server.
5. If the LDT is to function as part of a T1541 network, connect its Ethernet card to the hub that the node is connected to.
6. Connect the audio mixer card's RJ 45 socket (if necessary via leased line) to a suitable DAS port at the node.

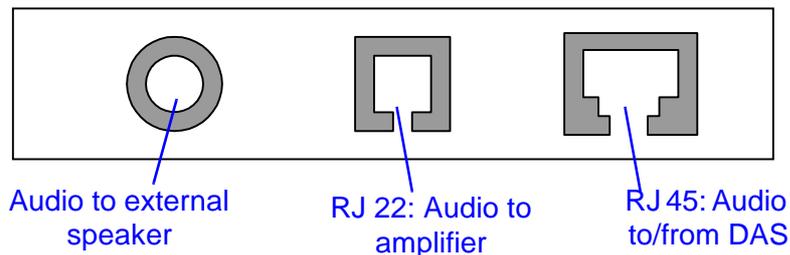


Figure 4 Audio Interface Card Card Connections

Note There are NO external connections to the sound card.

These connections are summarised in [Table 1](#):

Table 1: LDT connections

Connection	Type	Pinouts
From audio mixer card to the DAS port	RJ45	4-5 Audio in from DAS port 3-6 Audio out to DAS port
From audio mixer card to Plantronics amplifier.	RJ22	2-3 Microphone 1-4 Speaker
From Plantronics amplifier to Operator's headset or handset		
From audio mixer card to optional external speaker (mono)	3.5 mm coaxial socket	
From Ethernet card to master LDT or to hub that node is connected to	RJ45 twisted pair cable	
From master LDT to node or Etherlite port server	COM port	

Configuring the LDT

Run the LDT software and select File > Configuration. Enter the following:

1. The IP address or hostname of the node/master LDT.
2. Select the MPT numbering scheme that will be used.
3. Select the type of network that the LDT is connected to.
4. Enter the MPT number of the LDT.
5. If the LDT is the master LDT, select the Site Emulation tab and enter the required information.

For more details, see the LDT Operations Manual.

Configuring the Network for Dispatcher Operation

Before dispatcher equipment can work on a trunked radio network, the node that the dispatcher equipment is connected to must be configured for dispatcher operation.

T1540 Network

Normally, no changes are needed to the node configuration files. However, you do need to use the NMT to tell the node about its master and slave LDTs, which are virtual sites and radios. The master LDT is automatically assigned a site number when you connect it to the Etherlite port server. (Node controllers have configuration files that assign a site number to each port on the port server.) When you configured the master LDT, you selected CCM numbers for each slave LDT and for the master LDT itself.

Providing the node controller with DAS port information

For each LDT, do the following:

1. Ascertain the hexadecimal number of the port that the LDT is connected to (see the DAS section of the Support manual if you need help)
2. In the NMT, open the Audio Port Configuration window for the port with that hexadecimal number.
3. In this window, assign the Port Type 'Site' to the port.
4. In the Connected to Site # field, specify the site number of the Master LDT (if the LDT is a slave LDT, it is part of the master LDT 'virtual site').
5. In the Connected to Channel # field, enter the CCM number that you selected for the LDT in the master LDT's Configuration window (Site Emulation tab). This is the CCM number alongside the Ident (radio number) for the LDT.
6. Select Set in the menu bar to confirm your changes and send them to the node.

Providing validation information for LDTs

In the NMT, configure validation information for each LDT. To do this, you follow the same procedure as for any radio number. (The MPT number of the LDT is defined in the Configuration window.)

Generally, you will not restrict the call types that the LDT is allowed to make.

T1530 Network

The site number of the master LDT is defined by the socket you connect it to in the RNC bin (normally Site 9). The EPROM settings in the RNC's ISC processor need to be altered so that the T1530 node knows which 'CCM' is connected to which audio I/O card port in the node DAS. See the Regional Node Controller Service Manual for more information.

Editing the Intersite card table

6. Make a list of the hexadecimal numbers of each DAS port that is connected to an LDT.
7. Enter a 0 beside the lowest number, a 1 beside the next number, and so on. (These numbers will be the numbers of the DAS ports that the LDTs are connected to, minus 1. They are the equivalent of the CCM numbers in the intersite card table, which go from 0 to 23, not from 1 to 24.)
8. In the Intersite card table, find the column for site 9 (the site that the master LDT is connected to).
9. Enter the hexadecimal addresses into that column. The address with a 0 beside it goes into the cell for CCM 0, the address with a 1 beside it goes into the cell for CCM 1 and so on.
10. Save your changes and burn the EPROM with the new settings. Install it into the RNC.

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6 October 2000		Initial release
1 November 2000		Connection information expanded. LDT block diagram added. References to Plantronics amplifier added.