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LNT 505 Installation and Commissioning Manual

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1 Legal notes

1.1 Trademarks

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2 Introduction

About this chapter

This chapter describes the requirements to run the LNT 505 software.

2.1 Requirements for LNT 505

LNT 505 may be installed on a personal computer where the following requirements are fulfilled:

- A CD-ROM drive installed.
- Microsoft Windows NT Workstation version 4.0 installed.
- Approximately 40 MB of available hard disk space.

Note

The operator should note that only the MISCLONP device driver for PCLTA board is shipped with this version of the product, thus the PCLTA board must be purchased separately.

3 Installing LNT 505 software

About this chapter

This chapter discusses the installation procedure of LNT 505.

3.1 Overview

The LNT 505 installation is performed using a installation executable (LNT505_111.EXE). This application is referred to as the *LNT 505 Installation* hereafterin.

3.2 Supported delivery medias

Currently this product is available only on CD-ROM.

3.3 Considerations on LNT 505 installations

3.3.1 About the files shipped with the product

The product is considered to be comprised of private and public files.

The private files are the files that are installed under the destination directory specified at install time plus the files that are created and managed under this directory at run-time.

The public files are the files that are installed under the Windows directory of the target system.

| File name | Destination Directory |
|--------------|----------------------------|
| CMDIALOG.VBX | Windows system directory |
| GRAPH.VBX | Windows system directory |
| GRID.VBX | Windows system directory |
| SPIN.VBX | Windows system directory |
| VBDB300.DLL | Windows system directory |
| THREED.VBX | Windows system directory |
| VBRUN300.DLL | Windows system directory |
| MSAJT110.DLL | Windows system directory |
| MSAES110.DLL | Windows system directory |
| NETTOOLS.INI | Windows directory |
| LDV.DLL | Windows system32 directory |

Table 1. Public files

These files may very likely be used also by other applications installed onto the target system.

As a precaution, any file, except a file listed in Table 2, is transferred onto the target system only if:

1. The file does not previously exist on the target system.
2. The file already exists on the target system and the date and time stamp of the existing file is same or older compared with the file that is subject to install.

Provided, that the file NETTOOLS.INI exists when installing the product, the settings configured by the operator are always kept enforced, otherwise a number of default settings are applied.

Note

The information presented above should be considered when suspecting possible conflicts with other installed software on the target system either at product's install time or run-time.

| File name | Destination Directory |
|--------------|--|
| LNTRUN.MDB | %destination directory%\NETDB |
| 2.INI | %destination directory%\ NETDB\DEVICES |
| 3.INI | %destination directory%\ NETDB\DEVICES |
| 4.INI | %destination directory%\ NETDB\DEVICES |
| 5.INI | %destination directory%\ NETDB\DEVICES |
| 6.INI | %destination directory%\ NETDB\DEVICES |
| 7.INI | %destination directory%\ NETDB\DEVICES |
| 8.INI | %destination directory%\ NETDB\DEVICES |
| 9.INI | %destination directory%\ NETDB\DEVICES |
| 10.INI | %destination directory%\ NETDB\DEVICES |
| CI57X.BMP | %destination directory%\BITMAPS |
| EMPTY.BMP | %destination directory%\BITMAPS |
| GEN.BMP | %destination directory%\BITMAPS |
| LSG.BMP | %destination directory%\BITMAPS |
| MCU1_16C.BMP | %destination directory%\BITMAPS |
| MCU2_16C.BMP | %destination directory%\BITMAPS |
| PCLTA.BMP | %destination directory%\BITMAPS |
| RE_16.BMP | %destination directory%\BITMAPS |
| REB500.BMP | %destination directory%\BITMAPS |
| REF54_.BMP | %destination directory%\BITMAPS |
| RER111.BMP | %destination directory%\BITMAPS |
| ROUTER.BMP | %destination directory%\BITMAPS |
| SLCM.BMP | %destination directory%\BITMAPS |
| SLTA.BMP | %destination directory%\BITMAPS |
| CI57XGEN.XIF | %destination directory%\TEMPLATES\XIF |

Table 2. Lon Network Tool database and the devices definition files

Any file listed in Table 2, is transferred onto the target system only if:

1. The file does not previously exist on the target system.

¹ %destination directory% = the destination directory specified at install time.

This implies that in case of re-installing or upgrading the product, no loss of produced data occurs.

3.3.2 Product's Current Version

The term Current Version refers to the most recent installation of the LNT 505 on a given computer. The information is maintained in the system registry of the operating system and is brought up-to-date during the installation of the product. This imposes that a given computer may contain several installations of LNT 505 each having an unique destination directory but only the most recent installation being visible to the product's installation whenever one is performed.

3.3.3 Upgrading the product

It is recommended that the newer versions of the product are installed as an upgrade i.e. overwriting the old version to reduce the number of installed versions of the product. However, this is not forced in any way and the operator is free to choose whichever destination directory found suitable.

3.3.4 Re-installing the product

Term re-installation refers to a situation where an installation is run twice with the same destination directory specified at both times.

Re-installation may come in question, if part of the product (at file level) obviously has become corrupted or is missing.

3.3.5 Restoring older versions of the product

Currently, it is supported to install an older version onto a system already containing a newer version of the product, provided that the destination directories differ. Otherwise, the operator is notified with a message and the installation is not allowed to proceed with the specified settings.

Whenever restoring an older version of the product the operator should consider the issues discussed in paragraph 3.3.1.

3.3.6 Applications running at LNT 505 install-time

As always when installing software onto a system it is recommended to shut down unnecessary running processes. LNT 505 Installation notifies if a number of processes, that may be affected by the installation, are running when the Installation is starting.

3.4 LNT 505 Installation

The LNT 505 Installation is comprised of a series of dialogs referred to as the *Installation Wizard* hereafterin.

The necessary data for installation is gathered on the Installation Wizard dialogs and the operator may move back and forth between the Installation Wizard dialogs to verify that the data set for the installation is correct. On the last dialog of the Installation Wizard the operator starts transferring the LNT 505 software onto the target system.

3.4.1 Installation Wizard dialogs

The following paragraphs discuss the LNT 505 Installation on per-dialog basis.

The Welcome dialog



Figure 1. The Welcome dialog

This dialog welcomes the operator to the LNT 505 Installation. The caption of the dialog displays the title of the installation denoting the version of the product.

The operator is offered to move either to the next (*button Ok*) dialog of the Installation Wizard or to abort the installation (*button Cancel*).

The Select dialog

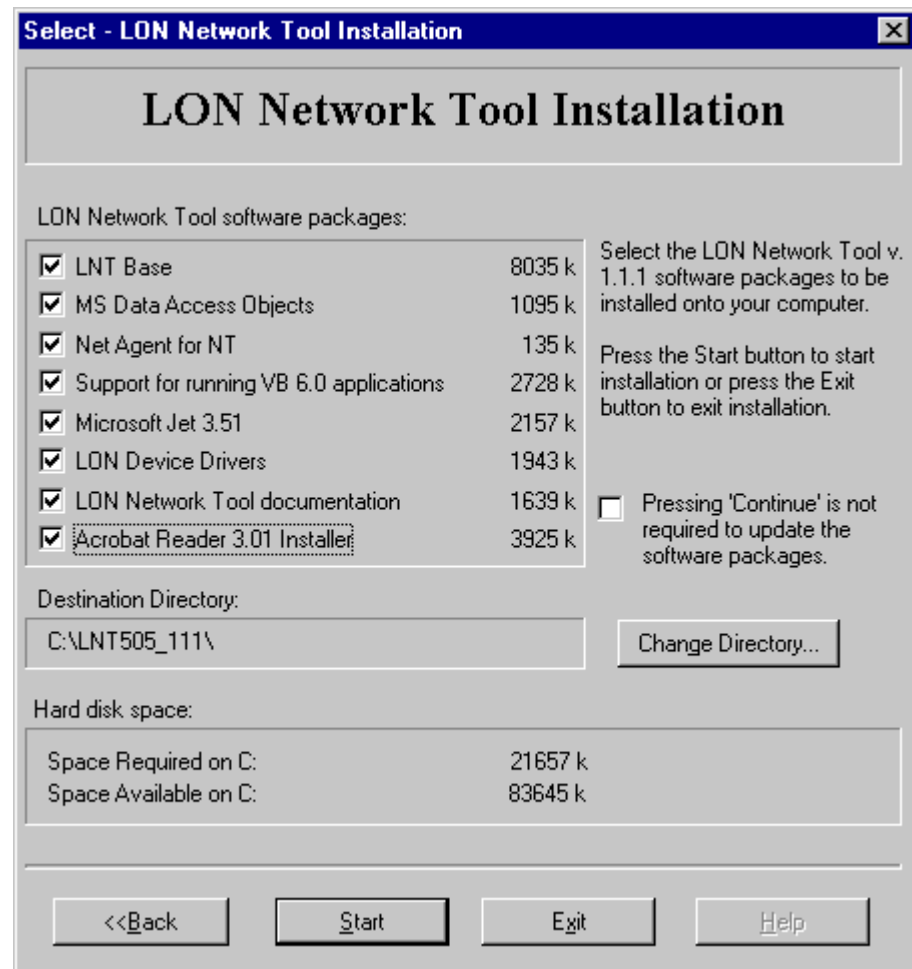


Figure 2. The Select dialog

This dialog provides the following options:

- To select from the available software items the ones to be transferred to the target computer.
- To select the destination directory for the product. This subject is discussed in more detail below.

The amount of the required disk space and the amount of available disk space on the drive, where the selected destination directory path resides, are shown on the lower section of the dialog.

The operator is offered to move either to the next (*button Next>>*) or to the previous (*button <<Back*) dialog of the Installation Wizard, or to abort the installation (*button Exit*).

Note

At least one software item must always be specified before advancing to the next dialog, otherwise the operator is notified with a warning.

The Select Destination Directory dialog

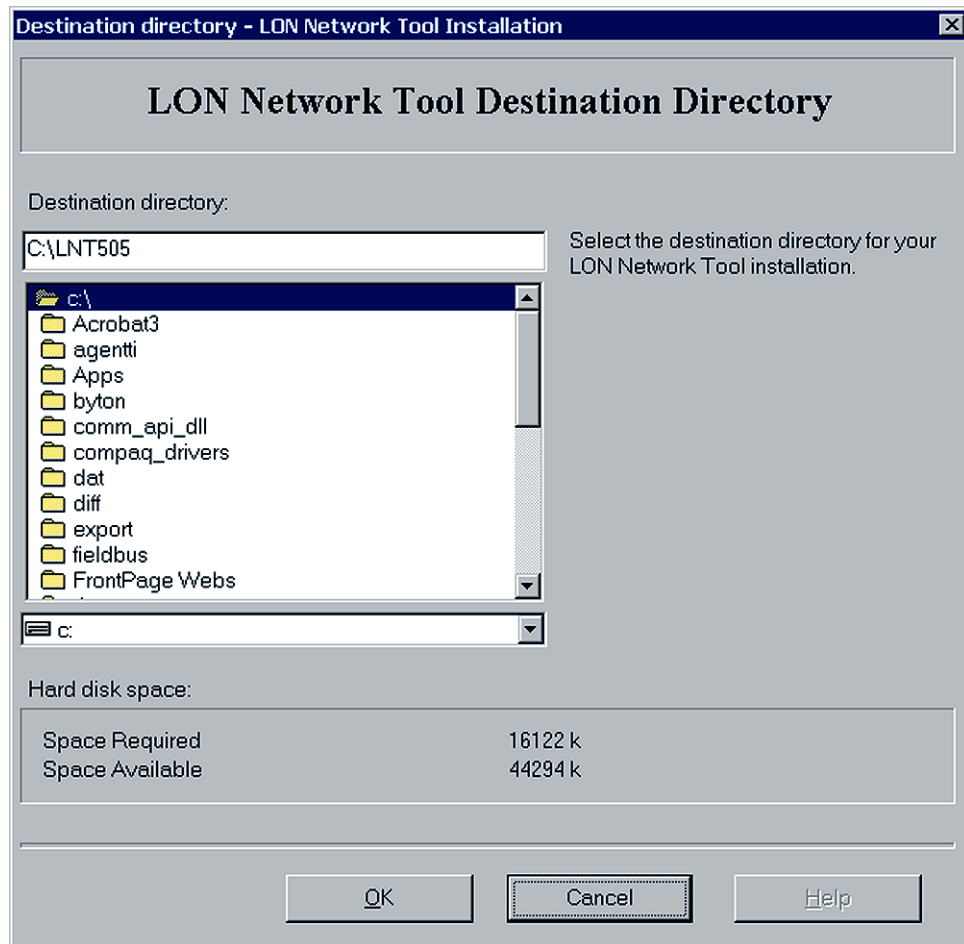


Figure 3. The Select Destination Directory dialog

This dialog allows the operator to specify a destination directory for the product. The dialog is invoked through the Select dialog (*button* Change Directory).

The amount of the required disk space and the amount of available disk space on the drive, where the selected destination directory path resides, are shown on the lower section of the dialog.

The currently selected path is shown under the label *Destination Directory*.

The destination directory may be specified by directly typing the appropriate path into the control displaying the currently selected path or by selecting from the drive and the directory lists the appropriate directory on any available drive or by combining these operations appropriately.

Note

When specifying the destination directory it should be noted, that the length of the destination directory path is restricted to a total of 34 characters. If the length exceeds this limit a warning is displayed and the directory should be re-specified.

The operator is offered to accept the destination directory (*button A*cept), or to keep the destination directory that was selected at the time of entering this dialog (*button C*ancel) or to abort the installation (*button E*xit).

The System Information dialogs

The System Information dialogs may appear during the LNT 505 Installation depending on the previously installed versions of the product on the target system. These dialogs provide information about the Current Version of the product.

The System Information dialog - when re-installing



Figure 4. System Information dialog when re-installing

This dialog appears when the specified destination directory contains the same version of the product.

The operator is offered to move to the next (*button N*ext>>) dialog of the Installation Wizard, or to abort the installation (*button E*xit).

The Installing dialog

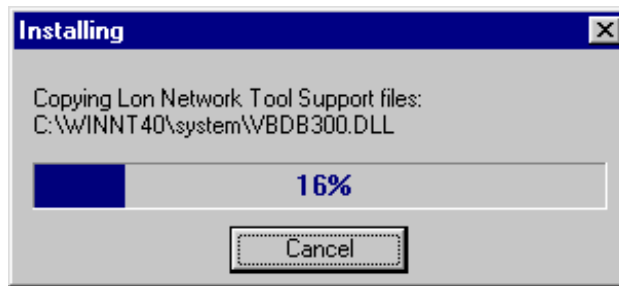


Figure 5. The Installing dialog

This dialog remains visible until all the selected software items has been transferred onto the target system.

The operator is offered to abort the installation (*button* Cancel).

In case the abort is requested the operator will be prompted to confirm whether the installation should be aborted or continued.

The Installation Completed dialog

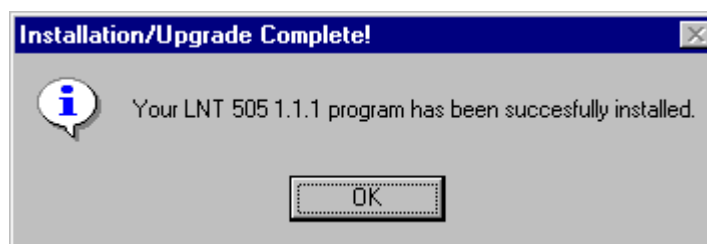


Figure 6. The Installation Completed dialog

This is the last dialog displayed by the product's installation notifying that it has successfully come to its end. In addition, information on the icon entries added or updated by the installation is provided to the operator.

The operator is offered to end the installation (*button* Finish).

3.4.1.1

Icon entries added during the installation

The installation adds icon entries into a shell folder according to the installed software items. These icon entries are shown in the Figure 3-13. These entries provide the entry point for using the installed LNT 505 software.

The folder is named as 'LNT 505 1.1.1' and is accessible through the Programs menu item of the operating system's Start Menu.

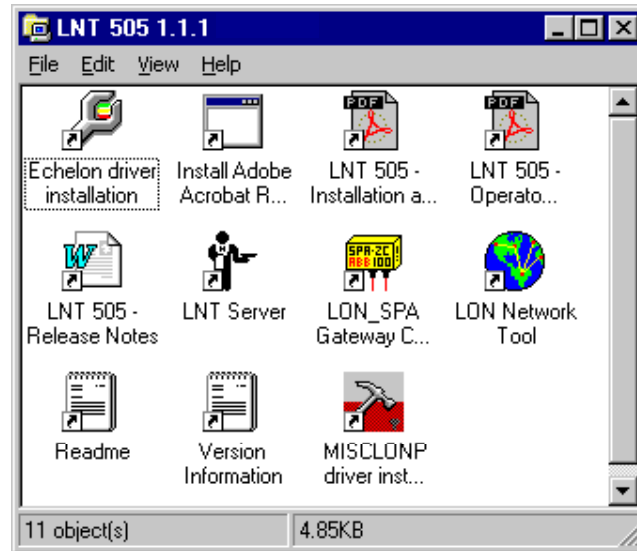


Figure 7 Icon entries added by installation

3.5 Uninstalling LNT 505

Support for uninstalling LNT 505 is not implemented.

4 Commissioning LNT 505

About this chapter

This chapter discusses commissioning the installed LNT 505 software.

4.1 Commissioning procedure

Table 3 lists the commissioning procedures for operating systems equipped with various LonWorks boards.

| Operating System | Board Type | Commissioning Procedure |
|------------------|------------|--|
| Windows NT | PCLTA | <ol style="list-style-type: none"> 1. The PCLTA board is installed onto the computer. This is explained in paragraph 4.2. 2. The PCLTA board device driver is installed and configured. This is explained in paragraph 4.2.3. 3. The Lon NETAgent settings are configured. This is discussed in paragraph 0 (Lon NETAgent communications software) 4. The PCLTA board Neuron Chip is configured. This is explained in paragraph 4.2.4.4 (Using the Net Interface Tool) |

Table 3. LNT 505 Commissioning procedures

4.2 Installing and configuring a PCLTA board

About this chapter

This chapter describes the installation and configuration procedures of a PCLTA board.

4.2.1.1 PCLTA board overview

A PCLTA board may have one or two channels, thus allowing the connection of one or two transceivers, as shown in *Figure 8*. Each of the transceivers will be a NET line connected to a star coupler of a LON.

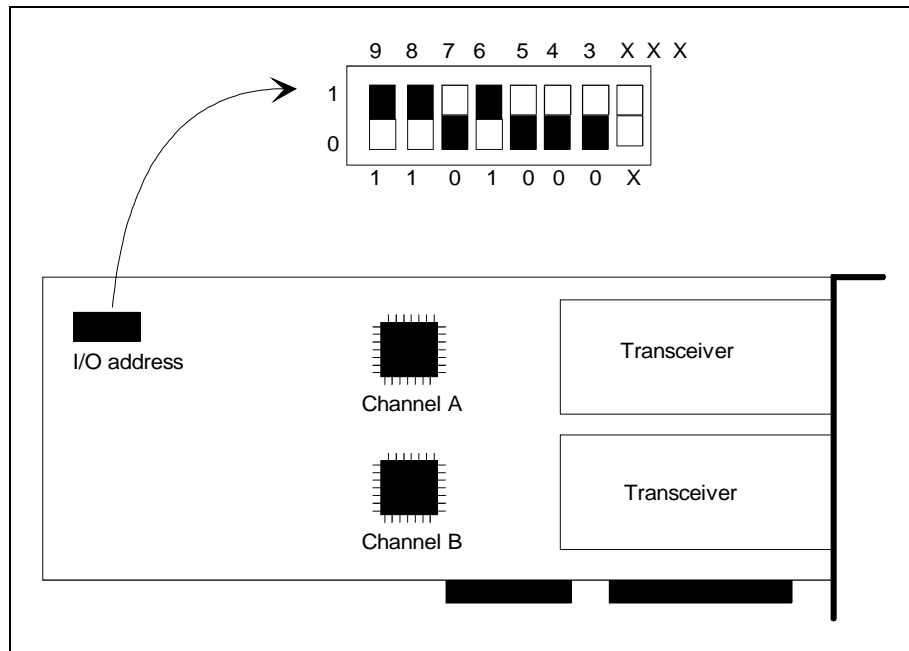


Figure 8. A PCLTA board

The use of the LON boards requires the installation and configuration of a MicroSCADA (MiSCLONP) device driver. During the device driver configuration, each transceiver is given a device number. By default, the NET line numbers of the transceivers will be the device number plus 1.

During the driver installation, the operator is requested the I/O base addresses of the boards. These addresses must coincide with the addresses set physically on the boards.

4.2.2 Installing a PCLTA board

To install a PCLTA board:

- 1 The operator selects an I/O base address for the PCLTA board and sets it on the board as described in the PCLTA manual, Table 4 may also be referred to. The operator can select any free I/O address where the next 7 addresses are also free. The driver installation tool suggests 340 as default value which is also the setting on the board at delivery (the setting shown in *Figure 8.*) Other possible values are 300, 308, 310, 318 ... 370 and 378 hex. The operator should note down the selected I/O address, e.g. in Table 4. This will be needed during the driver configuration.

If other transceivers than RER107, are used, the operator will probably have to configure the board for the transceivers. For more information on subject, the operator should refer to the *PCLTA and transceiver* documentation.

| Board No. | I/O Address | Channel | Device No = n | Device Name = LONPn | NET Line = n + 1 |
|-----------|-------------|---------|---------------------|---------------------------|------------------------|
| 1 | | A | | | |
| | | B | | | |
| 2 | | A | | | |
| | | B | | | |

Table 4. The LON board information needed during system configuration

Note

In Table 4 the device names are needed only if the operator wishes to redefine the NET line numbering.

4.2.3 Installing and configuring PCLTA board device driver

4.2.3.1 Overview

The PCLTA board device driver (MiSCLONP) is installed using a special configuration tool - LONSETUP.EXE.

Its icon entry, titled MiSCLONP PCLTA Driver Installation, is in the shell folder created by the LNT 505 Installation.



Figure 9. Icon entry for the PCLTA device driver configuration tool in the LNT 505 shell folder

4.2.3.2 Configuring the PCLTA board device driver

Once the configuration tool starts the dialog shown in Figure 10 appears:

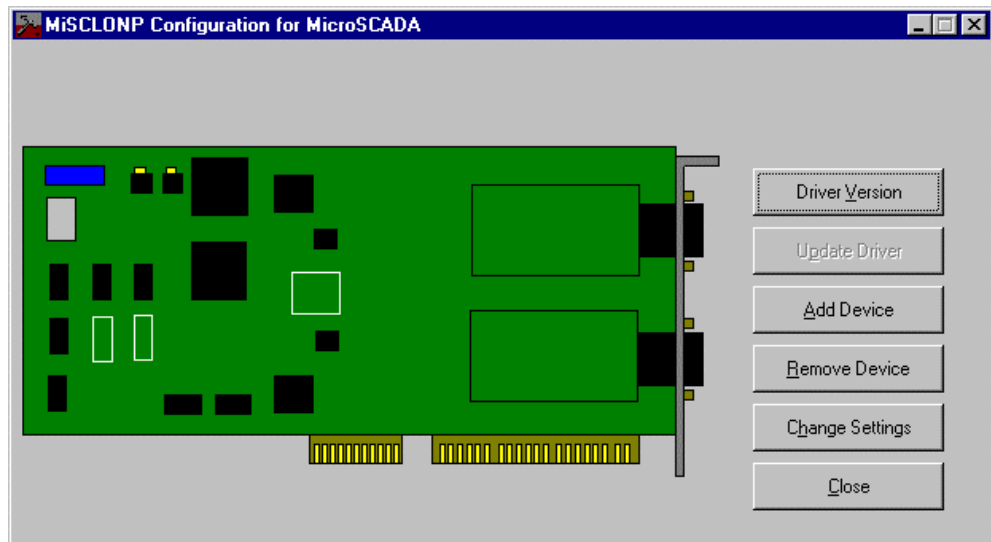


Figure 10. Starting the device driver configuration

- 2 Select Add Device to bring up the dialog shown in Figure 11:

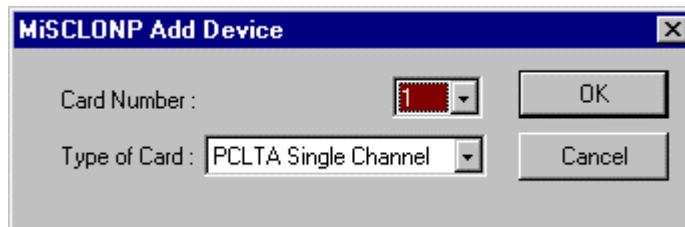


Figure 11. Add Device dialog

- 3 Enter the following data:

| | |
|--------------|---|
| Card Number | The number of the card. It is recommended to set the first card as card number 0, the second card as card number 1 and so on. |
| Type of Card | The type of the card. The following card types are supported: PCLTA Single Channel and PCLTA Dual Channel cards. |

- 4 Click OK.

The dialog shown in Figure 12 appears. In this dialog each of the channels of the board are specified.

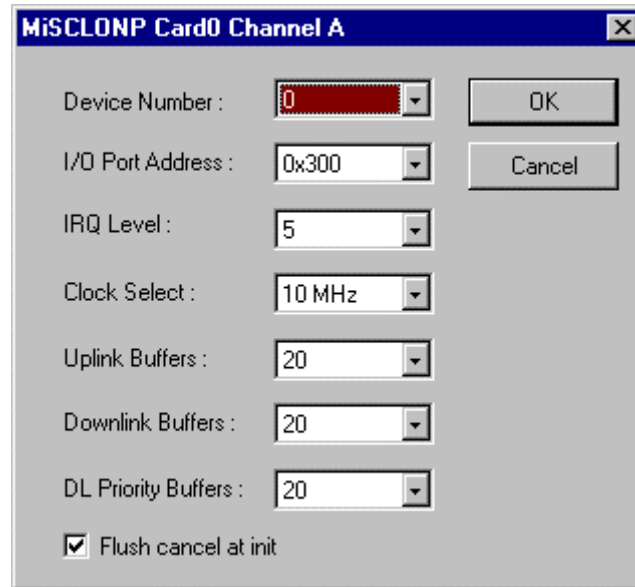


Figure 12. The configuration of the channels

5 Enter the following data for each of the channels on the board:

| | |
|----------------------|---|
| Device Number | The device number. Each channel is seen as a device with a device number. It is recommended to set channel A on card 0 as device 0 and channel B as device 1. Then use numbers 2 and 3 for the two channels on card 1. In this way, channel A on card 0 will be NET line number 1 by default, and the others will be NET line numbers 2, 3 and 4. |
| I/O Port Address | The I/O base address of the board. This must be the same as the address set physically on the board. If a board has two channels, channel B is automatically given an I/O base address which is 4 + the address of channel A. |
| IRQ Level | The interrupt level used by the channel. This must be unique among all devices in the computer. Allowed values are 5, 9, 10, 11, 12, and 15. The operator can check which of them are free in the Windows NT Diagnostics tool, Resources. |
| Clock Select | The Neuron clock rate for the channel. The default value, 10 MHz., can be used. |
| Uplink Buffers | The number of uplink buffers used by the channel. The default value, 20, can be used. |
| Downlink Buffers | The number of downlink buffers used by the channel. The default value, 20, can be used. |
| DL Priority Buffers | The number of downlink priority buffers used by the channel. The default value, 20, can be used. |
| Flush cancel at init | If this option is checked (default), the device driver will issue the niFLUSH_CANCEL command to the network interface after reset. This means that the network interface is reset into NORMAL state and can participate in network transactions. If no niFLUSH_CANCEL command is issued, |

the network interface remains in a FLUSH state where it ignores all incoming messages and prevents all outgoing messages.

- 6 Click OK and define the next channel on the board in the same way, and then the next board.

When all boards and channels have been configured, test the driver and configure automatic start-up of the driver as described in section *Configuring the PCLTA board device driver* to start-up automatically

4.2.3.3

Configuring the PCLTA board device driver to start-up automatically

Once the device driver has been installed, a MicroSCADA Device Driver Notification dialog will appear at next system start-up as shown in Figure 13.

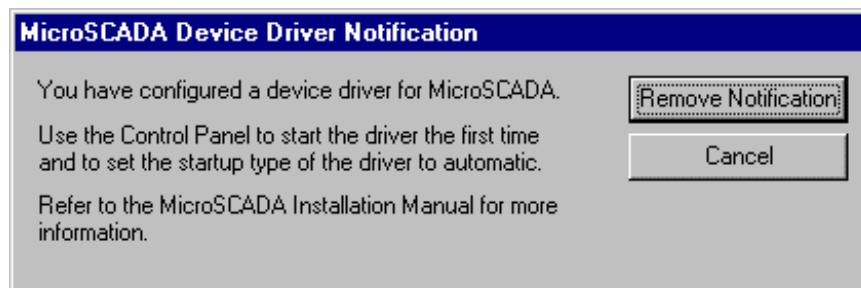


Figure 13. The MicroSCADA Device Driver Notification dialog

Note

It should be noted, that the reference to the MicroSCADA Installation Manual, on the dialog, is not valid in context of LNT 505 and should be discarded.

- 1 Click the button labelled Remove Notification so this dialog will not appear at future system start-ups.

The PCLTA device driver should be configured to automatically start at system start-up. This is done through the Windows NT Control Panel applet, titled Devices, see Figure 14.

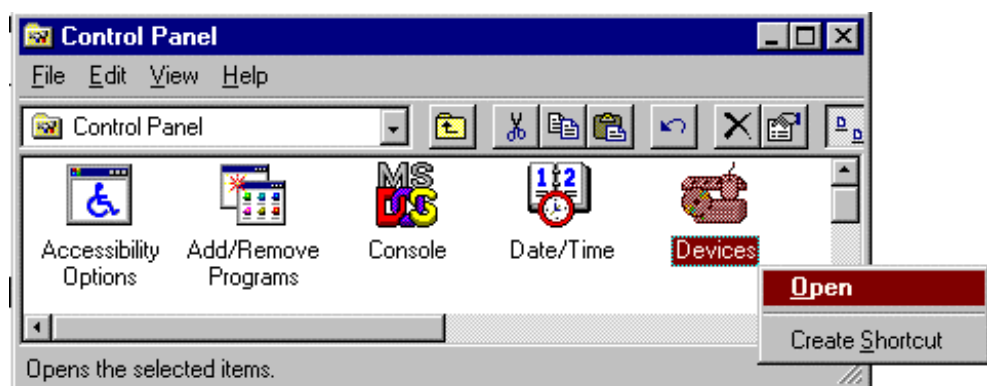


Figure 14. Starting the Windows NT Devices applet

- Once the Devices applet is running, select the device titled MiSCLONP from the device list, see Figure 15.

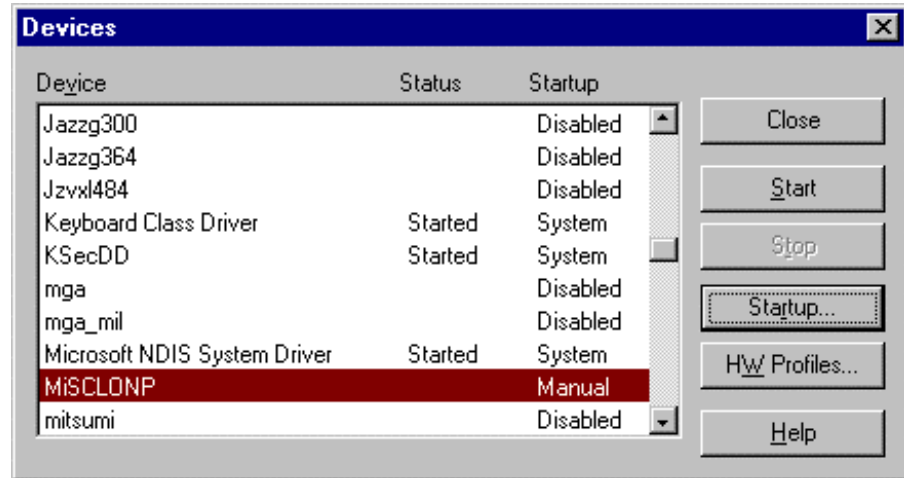


Figure 15. MiSCLONP device

Note

Provided that the MiSCLONP device driver name can not be found on the device list, the driver installation has not been successful and must be redone.

- Click the button labelled Startup to enter the Device dialog shown in Figure 16 and select the option titled Automatic.

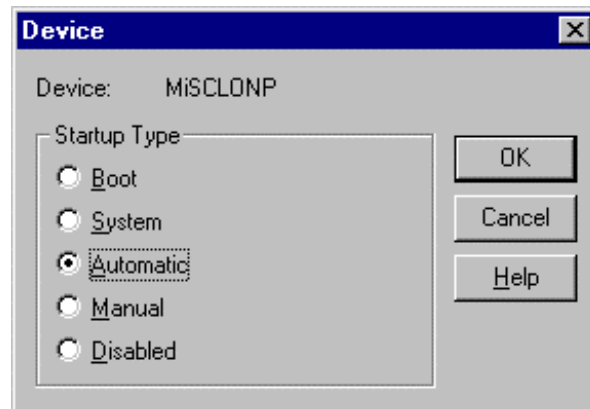


Figure 16. MiSCLONP device start-up settings

- Click OK to dismiss the dialog with changes accepted.

At next system start-up the MiSCLONP device is automatically started and you can now either reboot the system or directly attempt to start the MiSCLONP device by clicking the button labelled Start on the Devices dialog, shown in Figure 15, whereafter the device driver should be fully working.

4.2.4 Configuring the PCLTA board Neuron Chip

4.2.4.1 Overview

The Neuron Chip on the PCLTA board must be configured initially after installation of the PCLTA board and re-configured when the Chip's communication ability has been lost due to a newly installed transceiver module, such as RER107.

The functionality for configuring the PCLTA Neuron Chip is integrated into the LNT 505 and is referred to as the *Net Interface Tool* hereafterin.

The following Neuron Chip values are modified by the Net Interface Tool.

- comm_type
- comm_pin_dir
- comm_clock
- input_clock

When working with the RER107 module the *comm_type* value is typically zero, which causes the PCLTA board not being able to communicate. This value can be changed through the Net Interface Tool. Usually the other values are correct.

4.2.4.2 Requirements

The following requirements must be fulfilled in order to successfully run the Net Interface Tool.

Lon NETAgent communications software

The Net Interface Tool requires a software called Lon NETAgent, which is part of the LNT 505, to be installed.

To be able to locate the Lon NETAgent executable file (NETAGENT.EXE) the Net Interface Tool reads the file NETTOOLS.INI (in the system Windows directory) for the following information:

```
[NETAGENT]  
DIR=<Lon NETAgent path>
```

For example, provided that Lon NETAgent has been installed to directory C:\LNT505\NETAGENT the path setting should be as follows:

```
[NETAGENT]  
DIR= C:\LNT505\NETAGENT
```

Note

This path setting is automatically set by the LNT 505 Installation.

The Lon NETAgent must also be correctly configured. For detailed information on subject, the operator should refer to the paragraph *Tools Menu | NETAgent | Configure* of the *LNT 505 Operator's Manual*.

Note

Provided that the Lon NETAgent is not correctly configured the Net Interface Tool may not be able to communicate with the Neuron Chip and incorrect values cannot be changed.

PCLTA board device driver

The Net Interface Tool requires also that the PCLTA board device driver (MiSCLONP) for the PCLTA board is installed and working properly. For detailed information on subject, the operator should refer to the paragraph 17 (Installing and configuring PCLTA board device driver).

4.2.4.3

Launching the Net Interface Tool

The Net Interface Tool is accessible both through the LNT Server and Lon Network Tool menus as shown in the following 2 figures.

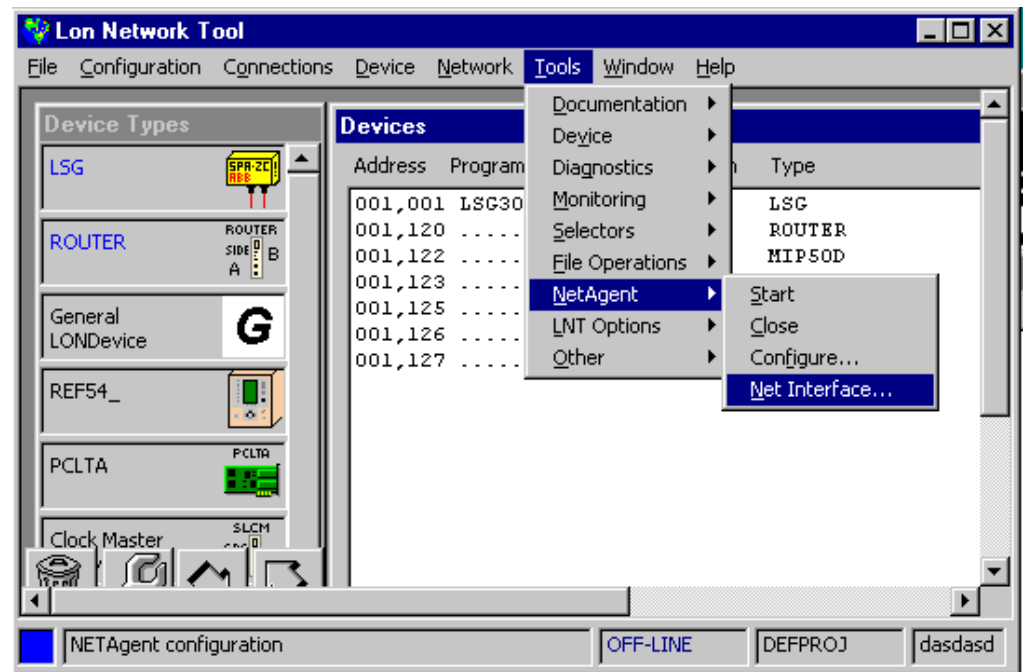


Figure 17. Starting Net Interface Tool through Lon Network Tool

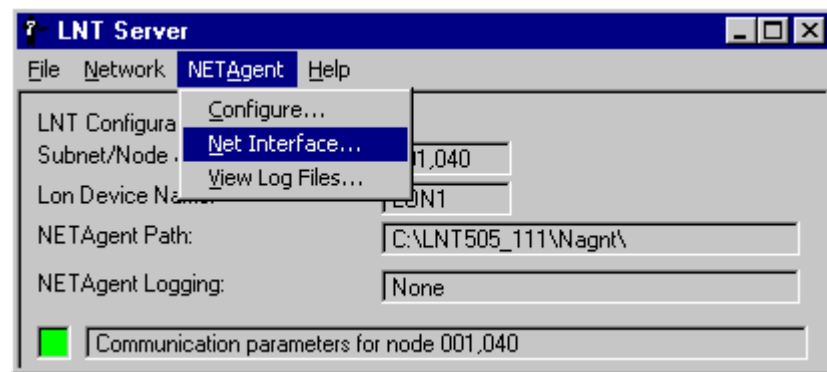


Figure 18. Starting Net Interface Tool through LNT Server

4.2.4.4 Using the Net Interface Tool

Once the Net Interface Tool has started the dialog shown in Figure 19 appears:

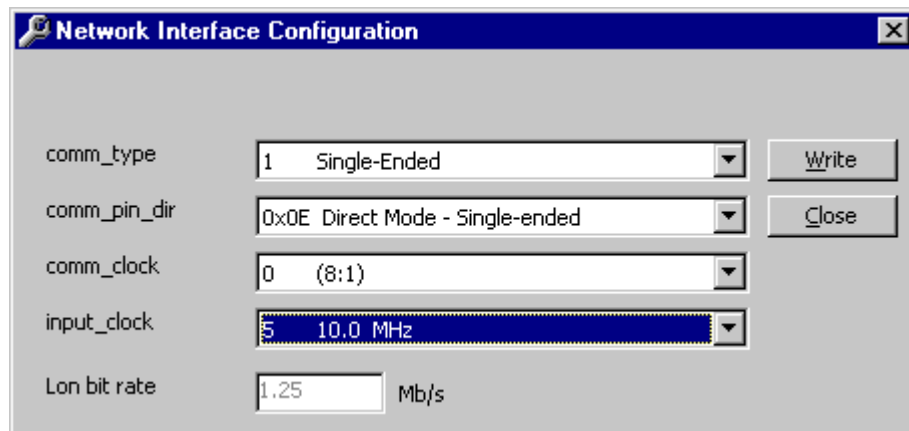


Figure 19. Net Interface Tool dialog

Here the desired *comm_type*, *comm_pin_dir*, *comm_clock* and *comm_input* can be manually selected.

The SUBNET and NODE values for the Lon NETAgent communications software are shown on the upper section of the dialog. Also the bit rate derived from the clock (labelled *Lon Bit Rate*) values is shown in read-only mode.

The selected settings are enforced to the Neuron Chip by pressing the button Write. A successful write operation ends with the message shown in Figure 20.



Figure 20. Notification after a write operation to the Neuron Chip

Once the Neuron Chip has been configured the Net Interface Tool is closed by pressing the button Close, shown in Figure 19.

Note

It should be noticed that whenever the Neuron Chip has been configured using the Net Interface Tool, the Lon NETAgent communications software should be re-started in order to bring the Neuron into the application-on-line state, otherwise its state remains applicationless resulting in incorrect functionality.



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