

# RCDS PROTOCOL

**Protocol Driver V3.0**

User Manual



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# *Contents*

<b><i>Chapter 1: Configuring the RCDS Protocol Driver</i></b>	<b><i>1</i></b>
<b><i>Setting the scan ranges</i></b>	<b><i>2</i></b>
<b><i>The detection of new units</i></b>	<b><i>4</i></b>
<i>Detecting new units</i>	<i>4</i>
<b><i>Assigning new units</i></b>	<b><i>5</i></b>
<i>Assigning new units</i>	<i>5</i>
<b><i>Replacing defective units</i></b>	<b><i>7</i></b>
<i>Replacing defective units</i>	<i>7</i>
<b><i>Chapter 2: The RCDS Protocol Driver settings</i></b>	<b><i>9</i></b>
<b><i>The Settings tab</i></b>	<b><i>10</i></b>
<i>The RCDS Protocol Driver settings</i>	<i>10</i>
<b><i>The Polling Sequence tab</i></b>	<b><i>12</i></b>
<i>The Polling Sequence</i>	<i>12</i>
<b><i>The Test function</i></b>	<b><i>13</i></b>
<i>Performing the Test function</i>	<i>13</i>



# *Configuring the RCDS Protocol Driver*

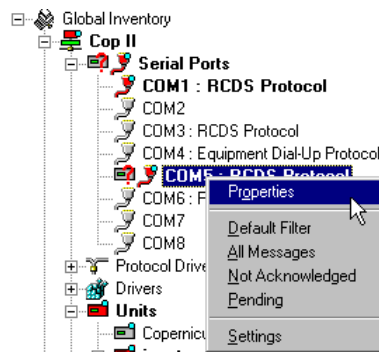
<b><i>Setting the scan ranges</i></b>	<b>2</b>
<b><i>The detection of new units</i></b>	<b>4</b>
<i>Detecting new units</i>	4
<b><i>Assigning new units</i></b>	<b>5</b>
<i>Assigning new units</i>	5
<b><i>Replacing defective units</i></b>	<b>7</b>
<i>Replacing defective units</i>	7

## Setting the scan ranges

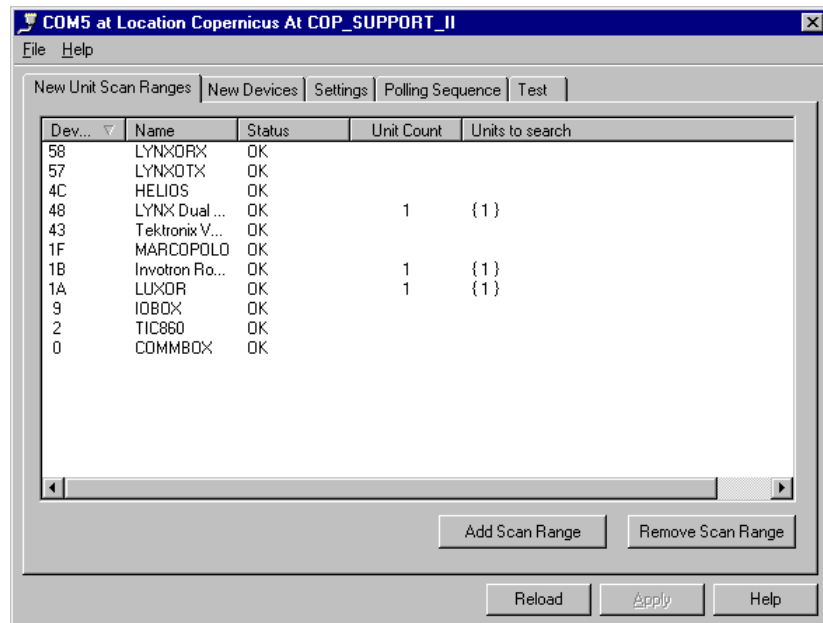
**New Unit Scan Ranges** For each serial port used for communication with RCDS compatible devices, you have to define scan ranges. Each device has a Remote Address that is unique for its device type. The COPERNICUS only polls and scans for devices that have an address within the scan range.

**To add Scan Ranges** To add scan ranges, you can proceed as follows:

1. **Right-click the COM port and click Properties.**



The RCDS Protocol Driver User Interface is displayed.

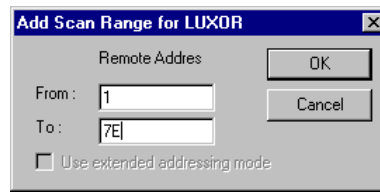


The device types of all devices of which the RCDS driver is installed are listed.

2. **Select a device for which to add a scan range.**
3. **Click Add Scan Range.**

The Add Scan Range For... dialog is displayed.





**4. Enter the Remote Addresses in the From and To boxes in hexadecimal format.**

The range is 1 to 7E. To add a single remote address, type an address in the From box and leave the To box blank.

**5. Click OK.**

To add multiple scan ranges for the same device type, e.g. from 1 to A and from 1E to 2F, click Add Scan Range again.

**6. Click Apply to activate the scan ranges.**

**Some important notes**

- A COPERNICUS will not be able to detect units with a remote address equal to zero. In addition, all remote addresses of devices of the same device type should be different when connected to the same serial port. Identical addresses will in this case lead to communication problems.
- For device types that show Automatic in the Units to search column, you do not have to enter a scan range first. With the Automatic Address Assignment procedure, these devices receive an address from the COPERNICUS (see the User's Manuals of these devices). Then they react as normal new units. Check the addresses of these devices in the units responding window to define a scan range afterwards that includes only the actually connected devices.
- Only create scan ranges for the devices that are actually connected to the serial ports. If e.g. there are five PULSARS connected to a serial port, only include these five addresses in the scan range for the PULSAR device type. This will allow the COPERNICUS to poll only these devices, improving the polling speed. If you want to add an additional PULSAR with address 6 afterwards, add this address to the scan range as well.

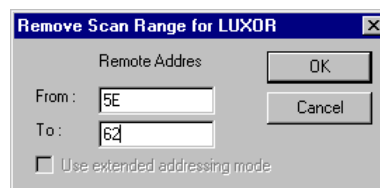
**To remove scan ranges**

To remove scan ranges you can proceed as follows:

**1. Select a device type in the RCDS Protocol Driver User Interface.**

**2. Click Remove Scan Range.**

The Remove Scan Range For...dialog is displayed.



**3. Enter the From and To fields.**

**4. To remove a single address, only type an address in the From box and leave the To box blank.**

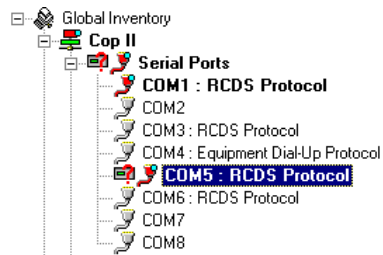
**5. Click OK.**

## ◆ *The detection of new units*

### ◆ *Detecting new units*

#### **About new units**

If the COPERNICUS detects an RCDS compatible device on one of its serial ports it has never detected before, a new unit symbol appears next to the serial port in the Copernicus Explorer.



**Caution!** In order to detect a device, the device address must be in the address range specified in the New Unit Scan Ranges for the Serial Port.

A new unit can be either:

- a brand new unit
- a spare unit replacing a defective one

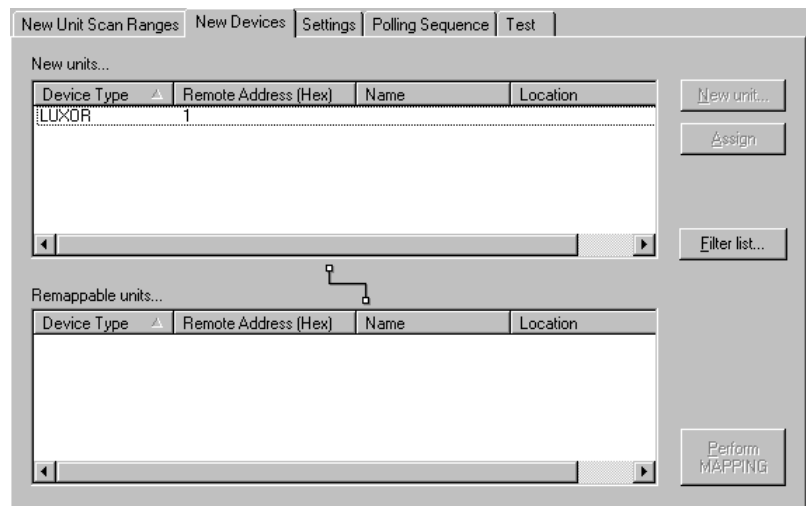
In the last two cases, you can reassign it to the unit that is still known but no longer found by the COPERNICUS. This restores the original unit configuration, [see Replacing defective units, p. 7.](#)

## ◆ *Assigning new units*

### ◆ *Assigning new units*

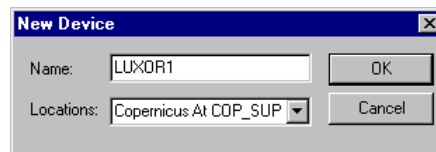
**To assign new units** To assign new units you can proceed as follows:

1. **Right-click the serial port with the new unit in the Copernicus Explorer.**
2. **Click Properties.**
3. **Click the New Devices tab.**



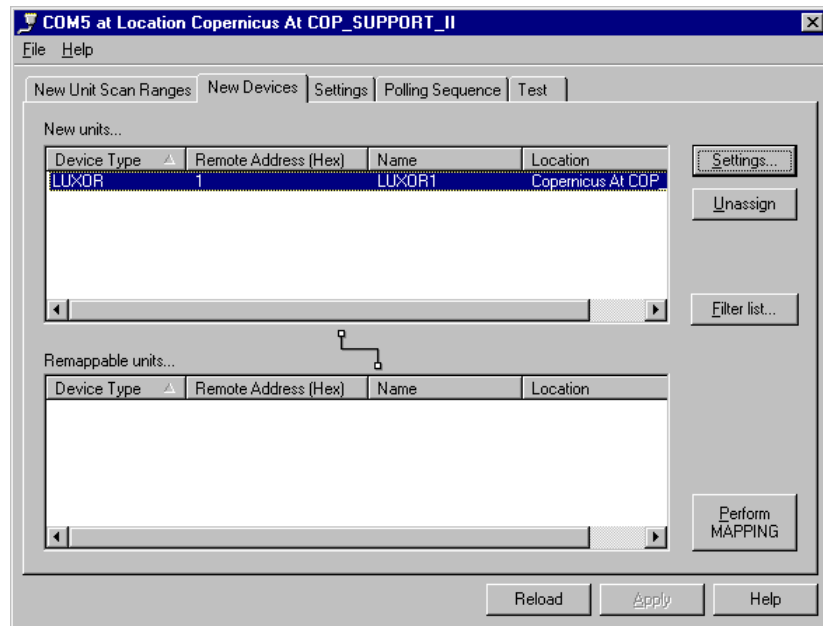
4. **Under New Units select the device.**
5. **Click New Unit....**

The New Device dialog is displayed.



6. **Enter the name that will be used in the Copernicus Explorer.**
7. **In the Locations field select a location.**
8. **Click OK to confirm or click Cancel to discard.**

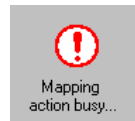
The name is displayed in the New Units box.



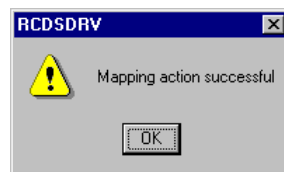
You can either click Settings now or Unassign. If you click Settings, the New Device dialog is displayed again. You can change the name and the location again for example when you have made a mistake. When you click Unassign, the name and the location of the device disappears from the New Units box.

**9. Click Perform MAPPING.**

The Mapping Action Busy message pops up on the New Devices tab.



When the mapping is successful, a message is displayed.



**10. Click OK.**

**11. Repeat steps 4 till 10 for each new unit if there is more than one new device.**

The Copernicus Explorer is refreshed and the units appear as active under the Units node.



# ◆ Replacing defective units

## ◆ Replacing defective units

### **to replace defective units**

Suppose that you have disconnected a defective device from the COPERNICUS. The COPERNICUS still polls this device but receives no answers anymore. A red line across the device in the Copernicus Explorer indicates that it is no longer responding.



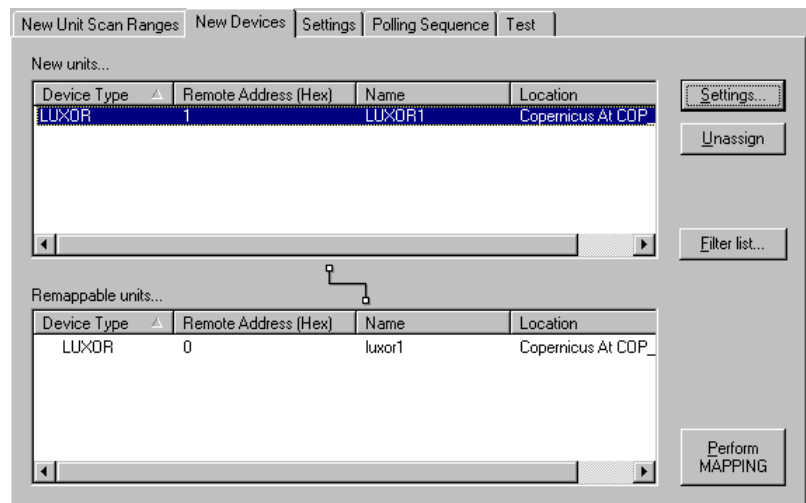
To replace defective units, you can proceed as follows:

#### **1. Connect the spare unit to a COPERNICUS serial port.**

**Caution!** Take care the remote address of the spare unit is set correctly. It does not need to be identical to that of the defective unit, but it has to be unique for the specific device type. It must be within the Serial port's Scan Range too. The unit will appear as a new unit in front of the Serial Ports icon. Right-click the serial port and click Properties.

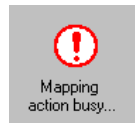
#### **2. Click the New Devices tab and click the new device in the New Devices list.**

#### **3. In the Remappable Devices list, all inactive devices of the same type as the selected new device are listed.**

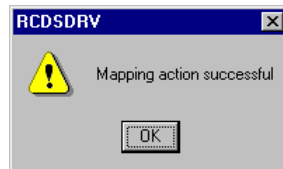


4. In the Remappable Units list, click the device you want to replace with the new device.
5. Click Assign.
6. Click Yes.
7. Repeat steps 1 to 7 for each device you want to remap.
8. To unassign a new device, select it in the New Units list and click Unassign.
9. When you have reassigned the defective devices, click Perform MAPPING.

The COM port dialog displays a "Mapping action busy..." message:



When mapping is successful a message is displayed.



10. Click OK.

# *The RCDS Protocol Driver settings*

<b><i>The Settings tab</i></b>	<b>10</b>
<i>The RCDS Protocol Driver settings</i>	10
<b><i>The Polling Sequence tab</i></b>	<b>12</b>
<i>The Polling Sequence</i>	12
<b><i>The Test function</i></b>	<b>13</b>
<i>Performing the Test function</i>	13

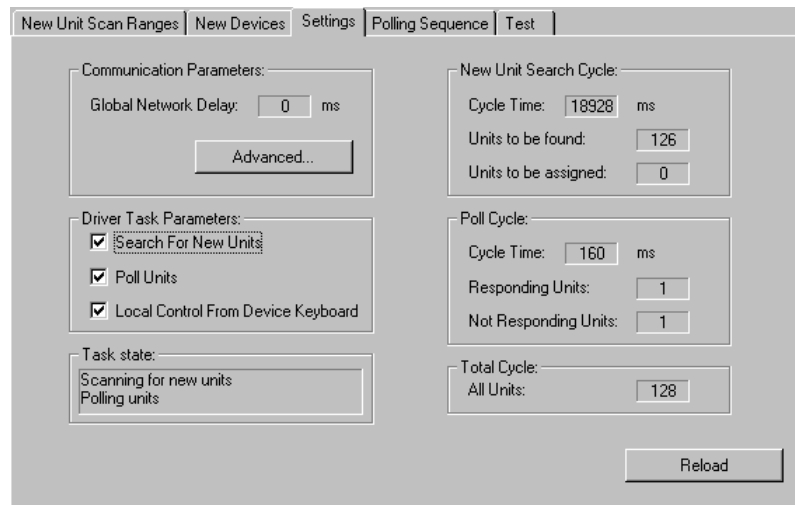
## ◆ The Settings tab

### ◆ The RCDS Protocol Driver settings

#### To view the settings tab

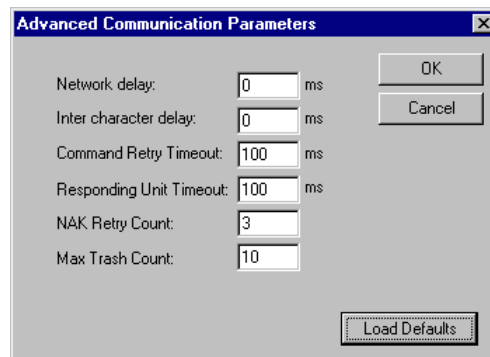
To view the settings tab proceed as follows:

- On the RCDS Protocol Driver dialog click the Settings tab. The Settings tab is displayed.



#### About the Communication parameters

- The Global Network Delay specifies the delay in the communication between the COPERNICUS and the devices connected to this serial port. If the devices are directly connected to the COPERNICUS, this delay may be 0 ms.
- If communication with the remote units is not working properly, you can increase the Global Network Delay in the Advanced Communication Parameters dialog. You just click the Advanced button and the dialog is displayed.



- Caution!** Except for the global Network Delay, all parameters are to be left unchanged! These are RCDS specific parameters and changing them could cause communication problems.



**About the Driver Task Parameters**

- **Search For New Units** : To be left selected for normal operation. Deselect this check box to stop the serial port from searching for new units.
- **Poll Units** : To be left selected for normal operation. Deselect this check box to stop the polling of units on this serial port.
- **Local Control From Device Keyboard** : Some devices can be set to local control and back to remote control via their keyboard. If this check box is selected, local control is allowed. Currently, only some drivers support this functionality.
- **The Task State** shows the state of the task.

**About the New Unit Search Cycle**

- **Cycle Time** : Shows how long it takes this serial port to check all scan ranges for new devices.
- **Units to be found** : Shows the number of units in the scan range that are not yet found.
- **Units to be assigned** : Shows the number of newfound units that are not yet assigned.

**About the Poll Cycle**

- **Cycle Time** : Shows how long it takes this serial port to poll all known devices.
- **Responding Units** : Shows the number of responding units.
- **Not Responding Units** : Shows the number of not responding units.

**About the Total cycle**

- **All Units** : Shows the total number of devices that are searched for, newfound, polled, or not responding.

## ◆ The Polling Sequence tab




### ◆ The Polling Sequence

**To view the polling sequence**

Click the Polling Sequence tab on the RCDS Protocol Driver main dialog.

Order Nr	Typename	Name	Remote Add...	Retry Count	Polling Count
1	Invotron Ro...	invotron	1	0	90
2	LUXDR	LUXDR1	1	0	90

All units that are polled by COPENICUS are listed here in the order they are polled. The status of these units is indicated by the device icon:

-  Responding Unit
-  Not Responding Unit
-  New Unit

The Retry Count column allows verifying anomalies in the polling cycle.

Click Reload on the Polling Sequence page to refresh this window.

Click Reset Counters to reset the Polling Count.

## ◆ *The Test function*

### ◆ *Performing the Test function*

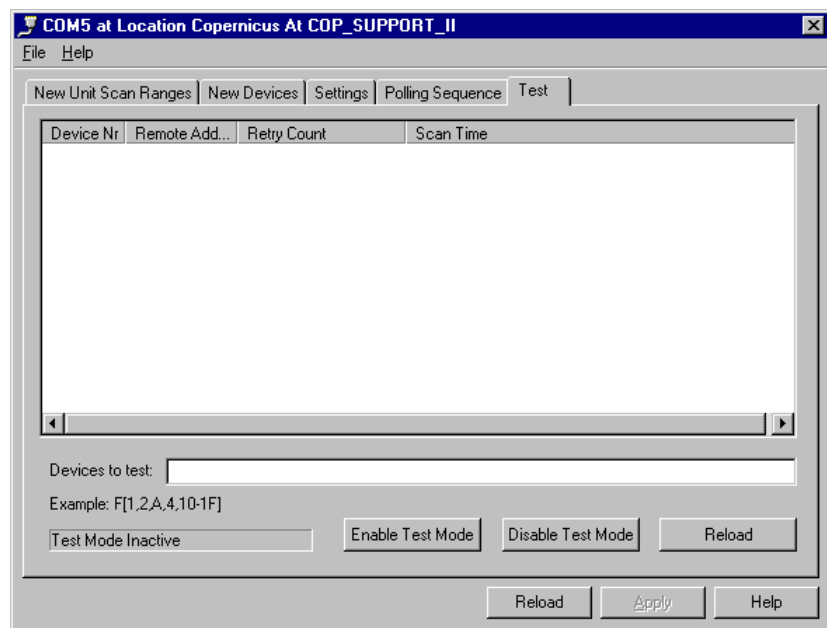
#### ***About the Test tab***

The test page is designed to test the communication to specific devices in a given order. It is a useful tool when working with LM 860 Line Monitors with cable modems in the network. In normal situations, the test mode is inactive. Activating the test mode means that you overrule all other settings of the serial port and interrupt the normal polling cycle of the serial port to explicitly poll one or a few devices.

#### ***To perform a test***

To perform a test you can proceed as follows:

##### **1. Click the Test tab.**

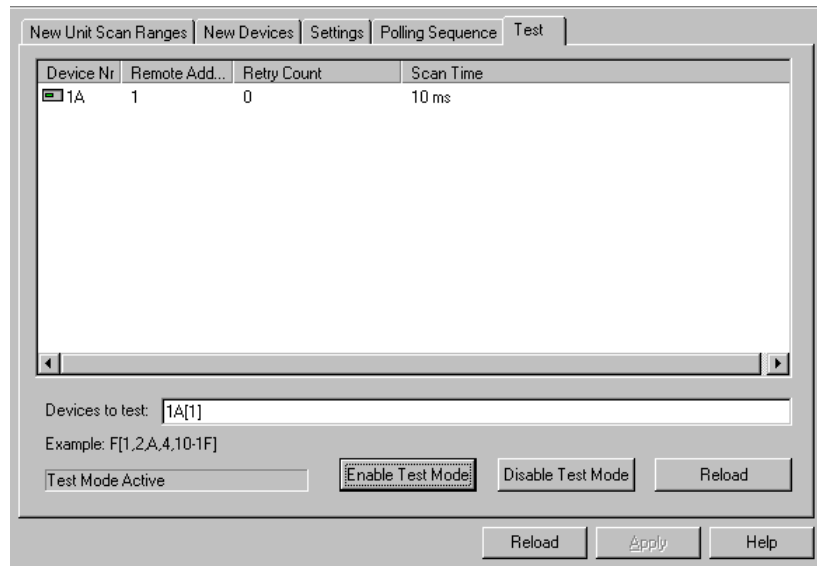


##### **2. Enter the device(s) in the Devices to test box.**

You need to know the device number and the remote address of the units you want to poll. The device number can be found on the New Unit Scan Range tab (e.g. for an LM 860, the device number is F).

##### **3. Click Apply.**

The device entered is displayed.



**4. Click Enable Test Mode.**

You will always get a critical alarm, because a serial port in Test Mode is regarded as a critical situation.



**5. Click OK.**

Once the test mode is enabled, the red bar across the unit(s) will disappear if there are no communication problems.

**6. Click Disable Test Mode when finished testing.**

The Copernicus will restart the polling of all the devices.







