



Valueweigh
7XXSoftware

Operating Instructions for the Cardinal 7XX Indicator

7XX Direct PC Link

(From version 1.3)

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1. Introduction

All systems based on 7XX series indicators are working with data files. Any data information stored in the 7XX indicator is stored on a disk storage called RAM disk. This is separate part of the memory of the 7XX indicator and is not connected with the memory where custom application is stored. There are two types of the 7XX memory configuration: 1 Mb and 4 Mb. The 1 Mb version shares about 128 Kb for the Ram disk files to be stored. The 4 Mb version shares about 1,500 Kb for the Ram disk files to be stored. Due to the format type of The RAM disk it is possible to store from 16 up to 256 files on the RAM disk.

Very often 7XX users create own data information and store that in indicator on the RAM disk. It may happen long time and data files may have hundreds or even thousands of the record stored. It is important to have possibility to back up the information from the 7XX indicator and if it was occasionally deleted on the 7XX indicator quickly to load it back to the indicator.

Sometimes system is duplicated on more than one indicator on the plant. Indicators work separately but use the same custom software and the same data files. It is logically when all databases are entered on the first local indicator just to transfer all data to each other indicator instead re-enter all information again. This method tremendously saves time for operator and money for company as well.

In case the memory upgrade of the 7XX indicator all data files stored on the RAM disk became lost. This happens because during memory upgrade memory chips are physically unplugged and became replaced with other chips. There is no way to save stored data in the 7XX indicator as only to copy those to the some media and copy back into the new upgraded memory.

In case system maintenance when technical engineer needs to swap indicators it is always a question how all data files might be quickly copied into new indicator to continue work for customer.

7XX Direct PC Link helps to solve all this situations very easy.

7XX Direct PC Link is utility, which allows sharing files between PC and 7XX series indicators. Package has two modules: PC software and 7XX loadable module. Module for indicator may be integrated in future in any

custom software application for 7XX series indicators. It is very small and will not affect on whole application size.

2. Hardware supported

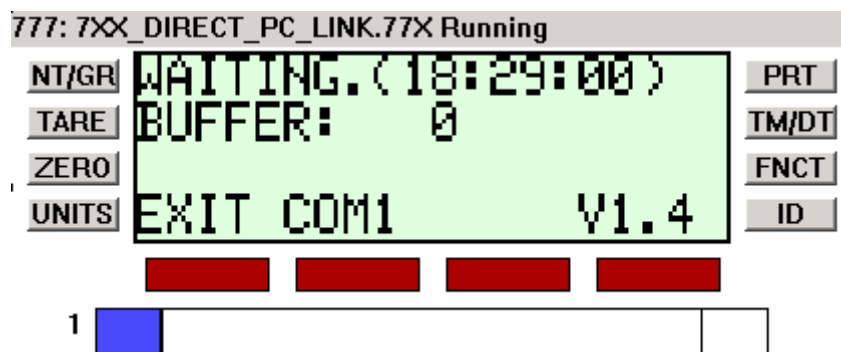
2.1. Main screen of 7XX software

Screen of 7XX module shows present time, incoming buffer load meter and software version number. 'Exit' button will finish working of 7XX direct link module.

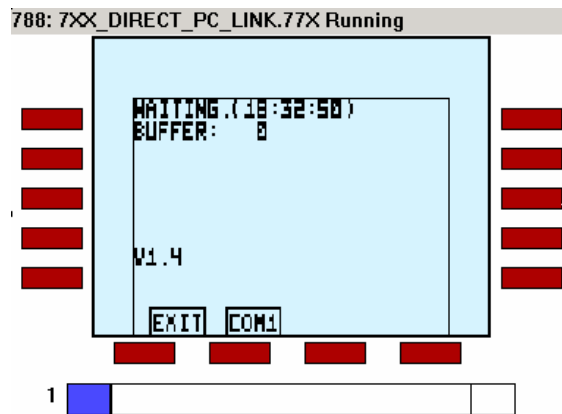
2.2. 7XX Direct Link module loaded in 778



2.3. 7XX Direct Link module loaded in 777



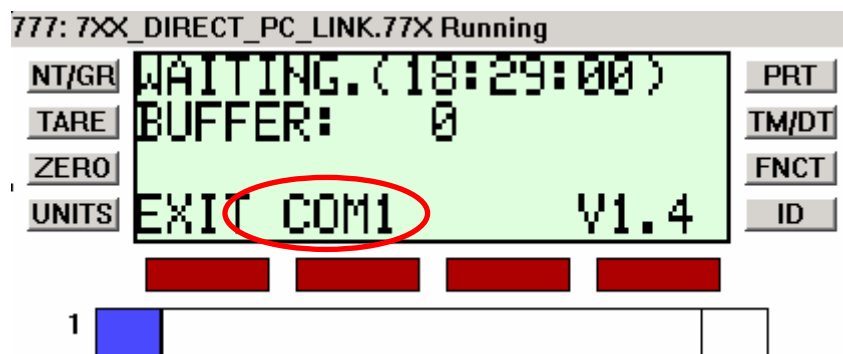
2.4. 7XX Direct Link module loaded in 788



As possible to see 7XX module may be loaded into any type of 7XX hardware such as 778, 777 and 788. For simplify 777 layout will be used in all next examples of this manual.

3. Type of connection of 7XX module

It is possible to select type of output connection on the 7XX indicator:



3.1. Serial connection support

Software supports internal serial connection based on COM1 or COM2 of 7XX indicator.

It uses optimal serial settings for both ports. Settings are fixed and match with PC serial settings.

3.2. Internal network device support

Software supports network connection, if network card is installed in the indicator. Option 'NIC1' will be available in a list of the ports and should be selected in this case. Software will automatically found internal network card and will provide additional option in the list of ports.

3.3. External network device support

7XX module also may support external network device, for example Nport Express converter. In case external network is preferred for connection, select according com port of the indicator where device/converter is connected to (COM1 or COM2).

3.4. Explanation of communication

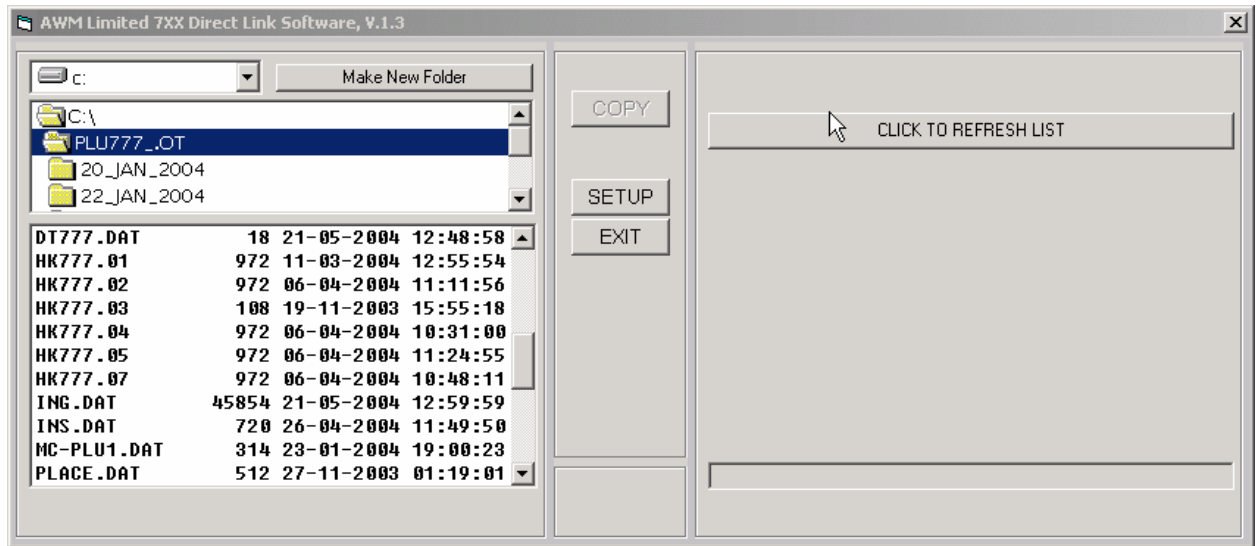
7XX direct link software uses maximum serial port speed to send and receive data packets, checks each incoming packet for integrity and errors and uses maximum size of internal serial buffer of 7XX to send and receive data packets. When receive of the packet is successful 7XX sends back confirmation signal for the PC to send next packet to the indicator. This bidirectional transfer method organizes quickest transfer rate between two devices as target always informs the source as quick as possible when it is ready for the next portion of the data. This excludes possible timeouts during send and receives the data. However, when PC sends some request signal to the 7XX there is about 15 seconds check for indicator to reply. If reply time is bigger then connection is considered as not possible with according message. See **troubleshooting** part of this manual for suggestion. It might be that indicator didn't get a signal from PC by some reasons.

4. PC software

PC software controls all operations regarding download or upload data files. It is possible in future to use remote control from PC to automatically call this block in indicator when it is already build in custom software. Also, when all operations done, then PC may send another signal for 7XX software to return indicator to the main screen of the custom application. It gives flexibility for PC operator to make all file

operations from the PC instead to walk to the indicator, which may be located on some distance.

This is a main screen of PC software:

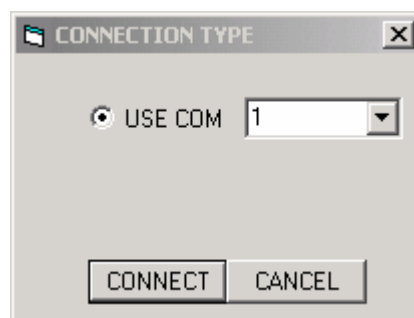


From the left side of the screen is located a list of PC files which are found in last opened folder.

It is needed to use list of PC disk drives first to locate needed disk (may be 'C' or 'D' or 'E' or etc). When PC disk drive is selected next is to select needed folder on that disk. List of folder should be used for this. Current example shows drive 'C' and containing of folder PLU777_OT.

4.1. First connect to 7XX indicator

First thing is to make a connection to 7XX. Click on 'SETUP' button and open new form with program settings:



Select appropriate COM port of PC (source) and be sure that cable is connected to com port of 7XX indicator (target). Be sure that cable is

connected to the 7XX com port which is selected at the moment on the main screen of the 7XX software running in indicator.

When all connection details sorted as described before, click on **'CONNECT'**. On the left bottom side of the main screen it'll be possible to see a message: **'COM X connected'** where X is a number of PC comport currently selected in program settings.

Click on big button **'CLICK TO REFRESH LIST'** and wait a little. If 7XX indicator has a lot of files and the RAM disk special progress bar will be shown during loading a file list table.

4.2. 7XX file list table (right side of main screen of PC software)

777 RAM DISK, 5 FILES FOUND				
CLICK TO REFRESH LIST				
BTC777BA.DAT	204	09-07-2004	17:38:56	
PLU.DAT	114700	06-07-2004	18:41:18	
PLU777.DAT	243	08-07-2004	12:49:28	
SUPP.DAT	68	09-07-2004	18:12:44	
SUPP777.DAT	34	08-07-2004	12:49:38	

Items selected: 1 Free space: 4608 bytes

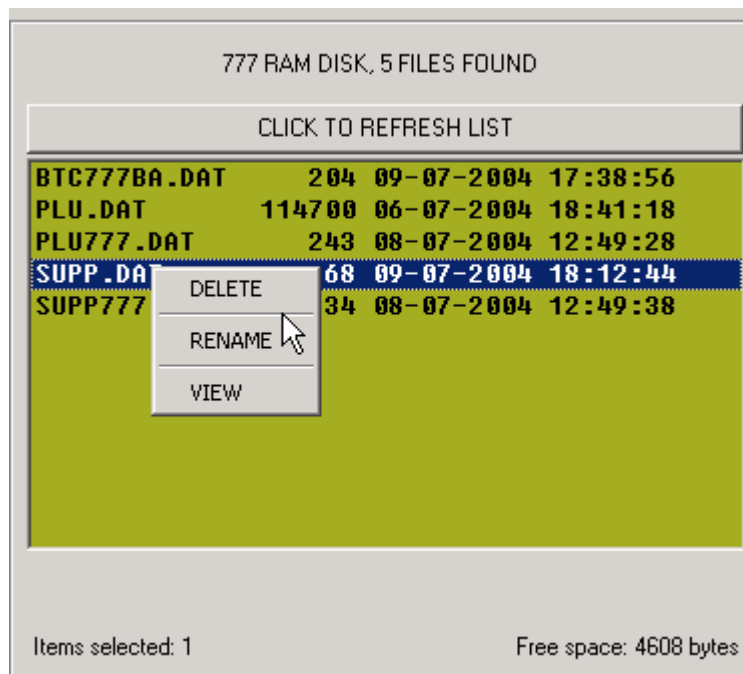
File list table has next items: file name, file extension, file size, file date and file time. File date and file time show last time period when file was updated on the RAM disk. Current picture for example shows next information for selected file: file name=PLU, file extension=DAT, file size=114700 bytes (characters), file date: 07-06-2004, file time: 18:41:18. Bottom left corner shows amount of files selected from the list. Bottom right corner shows amount of free space left on the 7XX RAM disk at the moment.

4.2.1. Selection of the files

Any file in any list (7XX or PC) may be marked as selected just by single mouse click. Use shift if you want to select more than one file in a list or just hold down left mouse button when moving a mouse down or up. List will scroll and it'll continue to mark files as selected. If you want to mark individual files in the list press and hold ctrl key. Each click of left mouse button will select or deselect file in the list.

4.2.2. Service menu of 7XX file list table

If you'll right click on 7XX file list table when it's not empty then service menu will appear:

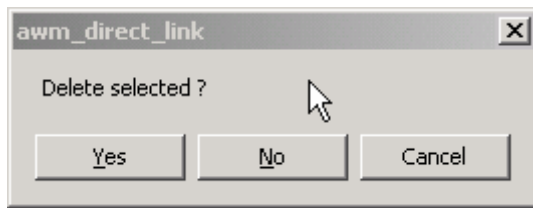


Next options may be used with file located on the 7XX RAM disk: **delete**, **rename** and **view**.

4.3. Delete file or group of the files on 7XX RAM disk

It is possible to delete only one file instead clear all RAM disk of 7XX as it was before. It is important to remember that when 7XX RAM disk is formatted it erases all data stored on the RAM disk. In some cases it is very useful operation when for example RAM disk is full of data but user already entered a lot of own custom information as for example materials

or customers. In this case one output data file may be copied on a PC and deleted from 7XX and it'll not affect on all other data if we would format 7XX RAM disk.



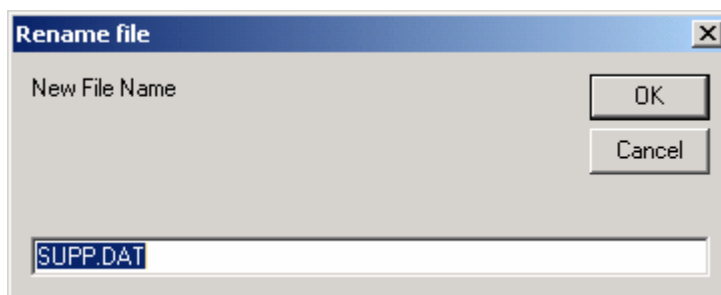
When '**delete**' option is selected before deleting files final prompt will be shown.

When '**delete**' command executed there is no way to restore deleted files from 7XX RAM disk. Please use with care.


'**Delete**' and '**copy**' commands may work with group of files previously selected. There is a possibility to automatically select all files in a list. Use Ctrl-A key press on your keyboard to select all files in the file list table.

4.4. Rename file on 7XX RAM disk

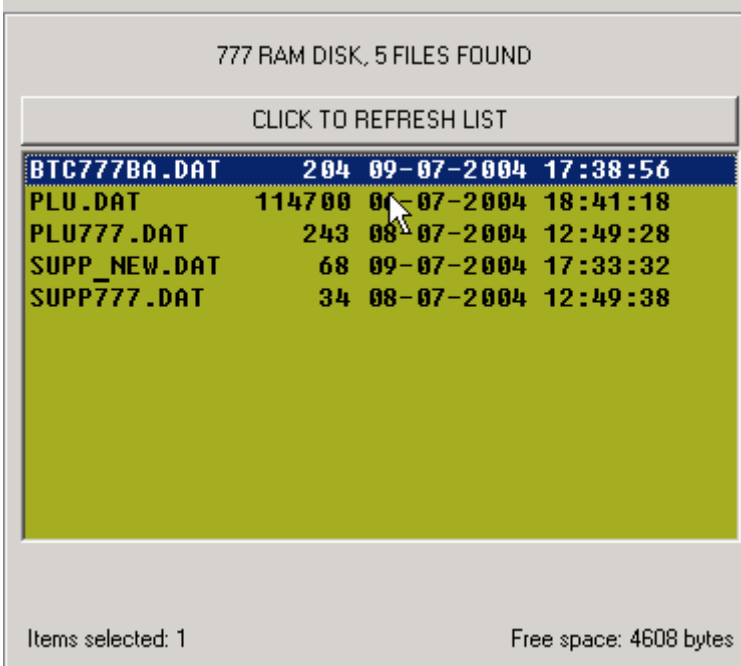
Sometimes it is needed just to rename file on a 7XX RAM disk instead copy it to PC, rename and copy back to the indicator. It may be easily done with '**rename**' option. Select file to be renamed. If group of files selected then selection will be rejected and focused on the cursor of the file list table. It'll be file of file list table, which was selected when right button of the mouse was pressed.



Please be sure that you rename correct and needed file. Current selection in a prompt shows file name which will be renamed. File format **MUST** be like:
NNNNNNNN.EEE,
where N-is a name (1-8 characters),
E is file extension (1-3 characters).

	<p>It is not possible to use the same file name or any other file name which already exists in the file list table of 7XX RAM disk. This operation will be rejected.</p>
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As the result of correct operation file name will be renamed and file list table of 7XX RAM disk will be updated with new file list table details:

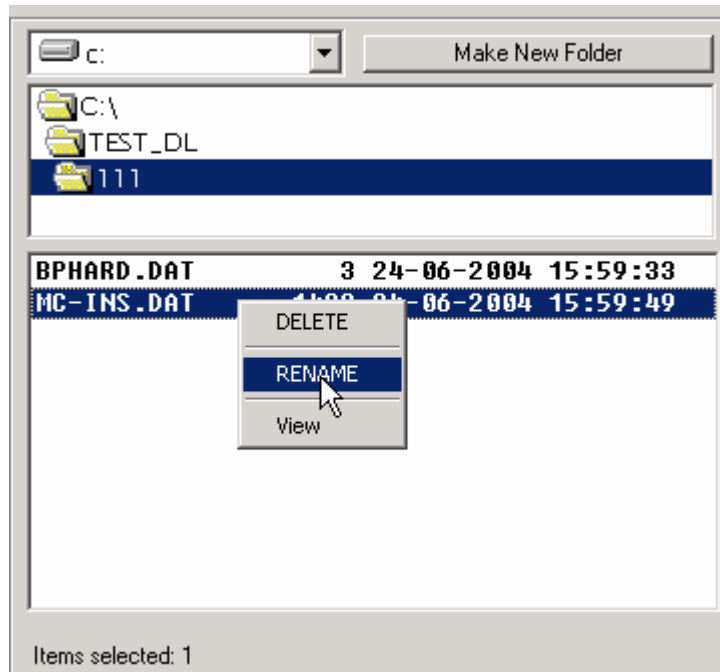


777 RAM DISK, 5 FILES FOUND			
CLICK TO REFRESH LIST			
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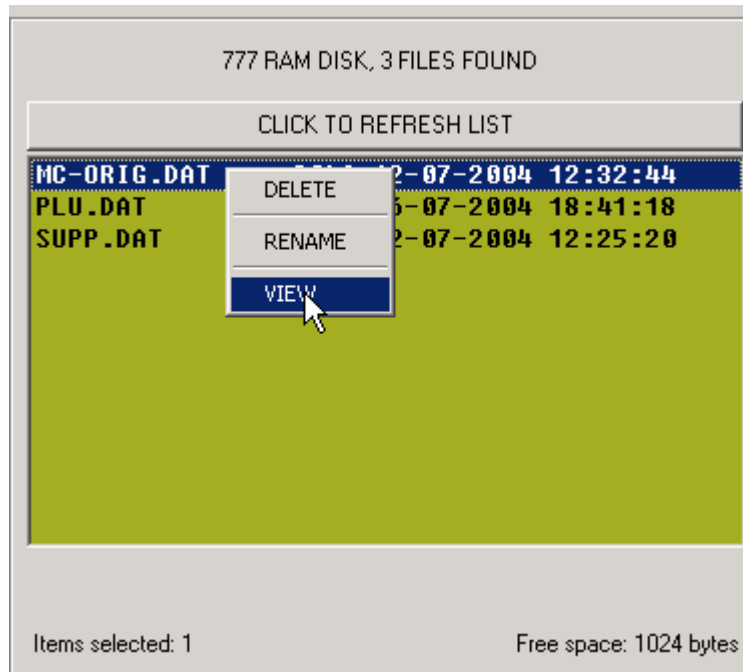
Note that after rename operation file date and file time will be updated automatically to the moment of rename operation on the 7XX indicator.

4.5. Rename file on PC

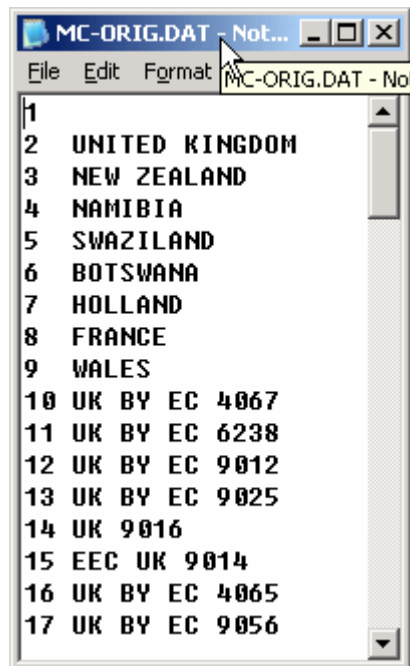


In the same way as it was described for 7XX file may be renamed on PC. Please use the same file name format for PC when rename files as for 7XX. Long file names, which are available in MS Windows are not supported by this software as they are not supported in 7XX indicator. Note that all other commands described before such as **'delete'** and **'view'** are also available on the PC list of files and working in the same way as described for 7XX. Right click on PC file list to call PC service menu.

4.6. View file on 7XX RAM disk



Select file from 7XX file list table to view. Right click on it to get service menu. Select option 'view'. In a mean time windows notepad will be opened with containing of currently selected file.



Close notepad window by usual click on 'X' in a window corner to continue to work with direct link software.

5. Troubleshooting

Read this chapter if you have some unexpected problem with the system.

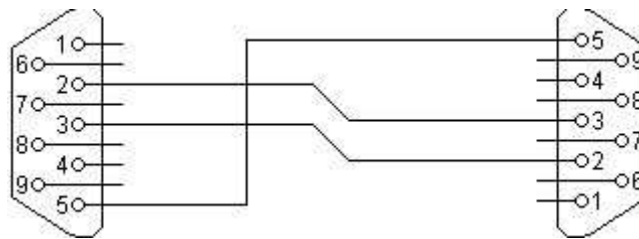
5.1. No connection

Message '**Read timeout**' appears after any operation.

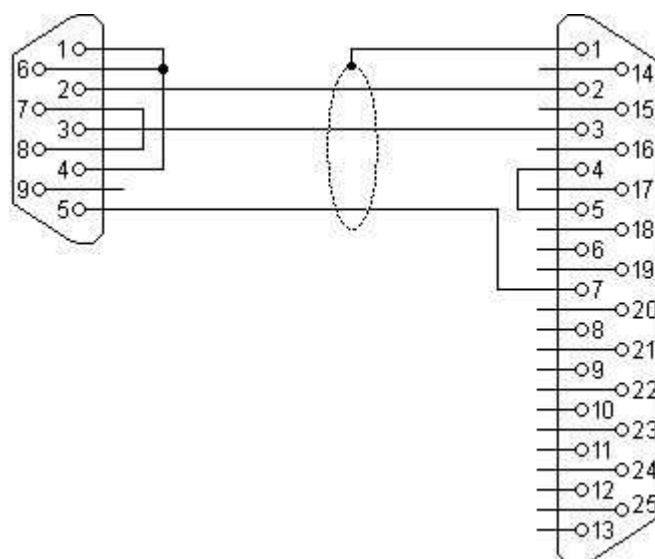
Reason is that there is no connection established between PC and 7XX indicator.

5.1.1. Check your cable

Please use cable, which usually is used for download applications from PC to 7XX. Usually it is 9 pin female connectors from both sides of hardware. However some PC com ports may have 25 pin connector.



Download cable 9 pin female 7XX to 9 pin female PC



Download cable 9 pin female 7XX to 25 pin female PC

5.2. Wrong port selected from PC side

Please look '**First connect to 7XX indicator**' section of this manual.

5.3. Wrong port selected from 7XX side

Please look '**Type of connection of 7XX module**' section of this manual.

In some cases there is a chance that hardware port from PC or 7XX is physically damaged.

Please be sure that port physically working before solving a problem in the direct link software.

The easiest way to check both port is to load software into 7XX indicator from PC via download cable.



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