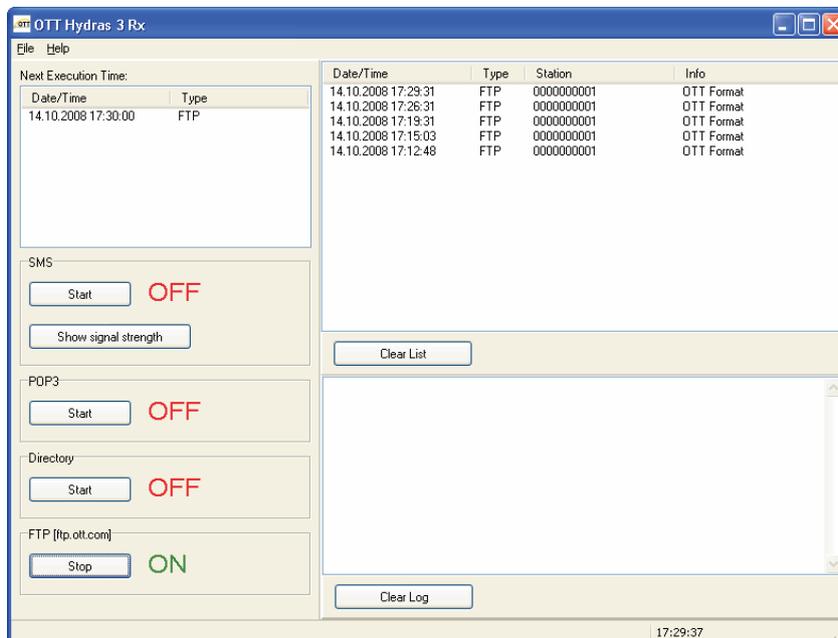




Operating instructions

Communication Software

OTT Hydras 3 Rx



English

We reserve the right to make technical changes and improvements without notice.

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2 Field of application

The OTT Hydras 3 Rx software is used to receive measurement data sent from the ITC intelligent topcap as SMS and for receiving measurement data sent by LogoSens or DuoSens dataloggers using GPRS.

When sending by GPRS, on the logger side the FTP (File Transfer Protocol) and SMTP (Simple Mail Transfer Protocol) protocols are available. On the Hydras 3 Rx side, the data are likewise received using FTP or POP3 (Post Office Protocol) or received directly from a file directory.

Reception of the data messages is carried out with cyclical polling of a GSM module (for SMS reception) or an FTP, POP3 or file server.

The data received are then decoded and saved in a configurable directory as a text file, from where they can be imported into external applications (e.g. with AutoImport to Hydras 3).

The .MIS format of the Hydras 3 AutoImport and the ZRXP format from WISKI are available as file export formats.

Optionally the messages received can be forwarded directly on an RS232 interface to a SODA system from Kisters AG. In this way, data can be channeled to a local network environment without the FTP or POP3 server, where the data initially arrive, having a direct network connection with the local network where the data are to be processed. For security reasons, some authorities require that no FTP/POP3 servers with a connection to the local network be operated.

3 Installation of Hydras 3 Rx

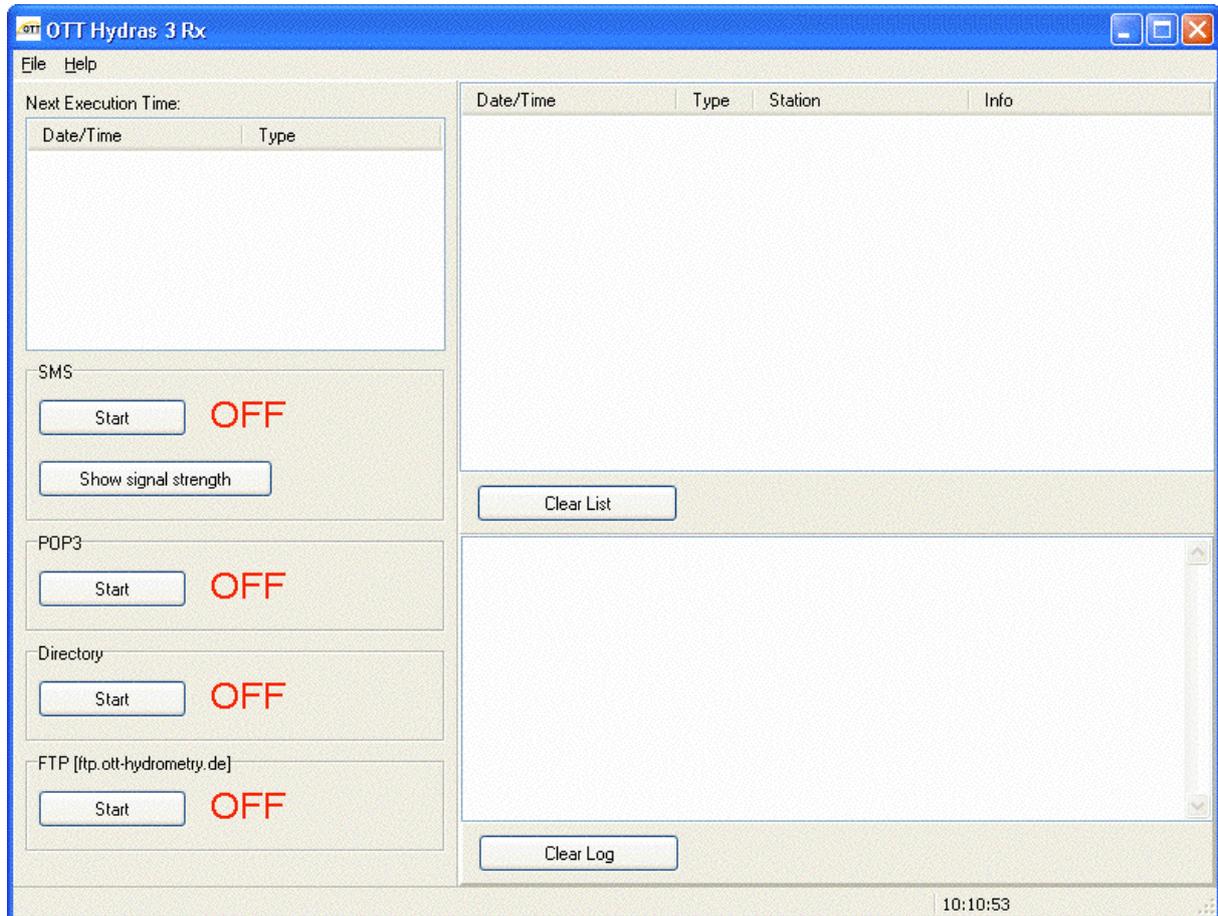
To install Hydras 3 Rx, the Setup.exe file has to be started. This file can be found in the Software/ English (or Deutsch, Espanol, Francais) sub-directory on the installation CD.

During the installation, the target path for the installation must be given.

The path C:\Programme\OTT\Hydras 3 Rx is pre-set.

4 Initial start of Hydras 3 Rx

When Hydras 3 Rx is started for the first time after installation, the following user interface is displayed:



In the upper left corner, there is a list sorted by time with existing queries of GSM modules, FTP and POP3 as well as file servers. This list is initially empty for the first start.

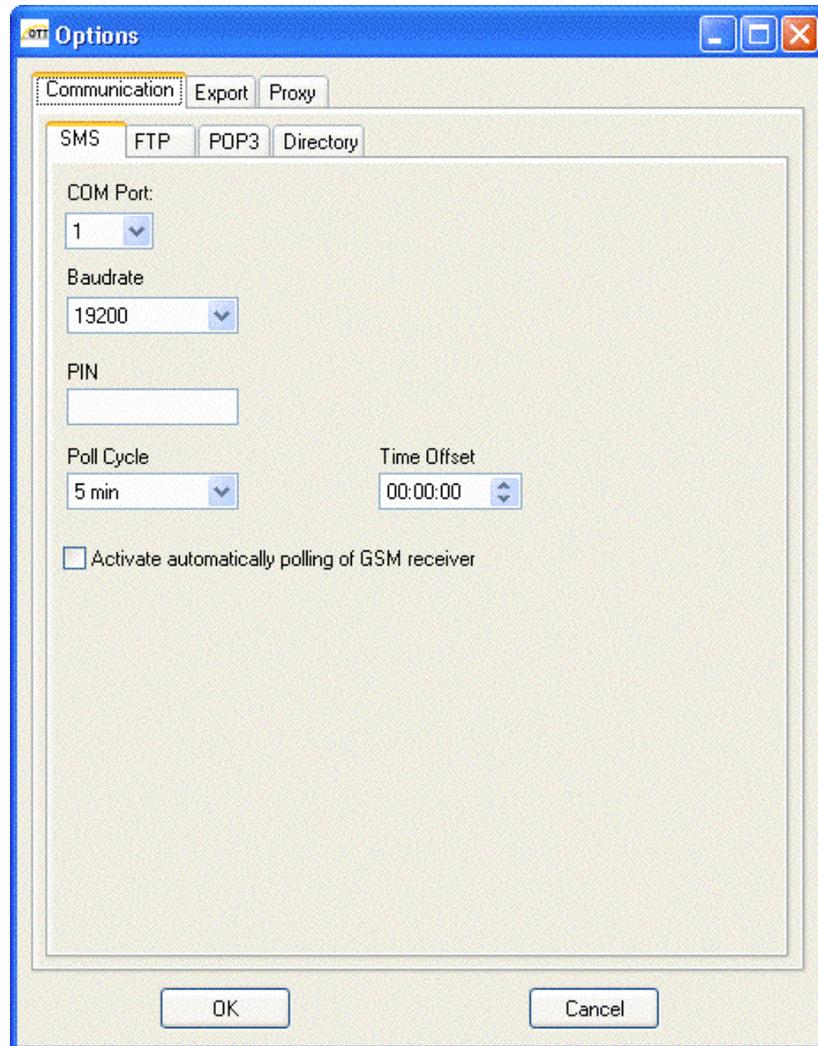
Below this list, for each kind of poll (SMS, FTP, POP3, directory) there is a control panel. Within this control panel, there is a "Start" button with which polling can be activated. As soon as polling has been activated, the label on the button changes to "Stop". By clicking on the "Stop" button, the respective polling is deactivated.

Before polling can be activated, the relevant options must first be configured. This is carried out in the options dialog, which is displayed within the menu point "File | Options".

5 Configuring SMS polling

To configure polling for a GSM module for receiving SMS messages, the options dialog must be displayed using the menu point "File | Options".

The options dialog appears as shown below:



There are two parts to the configuration of polling: the communication settings and the export settings.

5.1 Communication settings

For communication with the GSM module, the following settings have to be made:

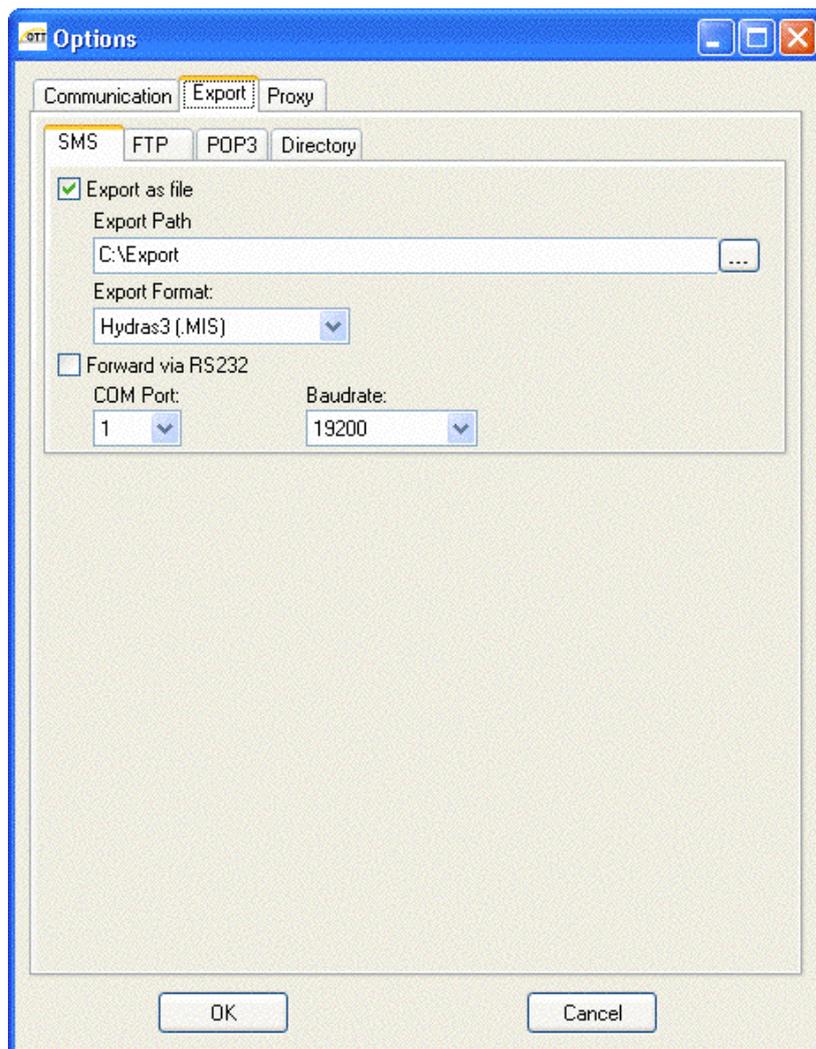
- ▶ COM port where the GSM module is connected.
- ▶ Baudrate for communicating with the GSM module.
- ▶ Optional entry of a PIN code if the SIM card in the GSM module requires a PIN code.

- ▶ Poll Cycle: The interval for checking whether there are SMS data messages on the GSM module.
- ▶ Time offset to 00:00 for when the cyclical polling of the GSM module should occur.

Receiving SMS messages at the start of the Hydras 3 Rx is automatically activated with the option "Activate automatically polling of POP3 server on program start" without the need to explicitly click on the "Start" button.

5.2 Export settings

Switch to the "Export" tab to configure the export settings. The dialog for the export settings appears as shown below:



The following settings have to be made for the export of data received:

- ▶ Specification of whether incoming data messages are to be exported as a text file and whether they are to be forwarded to SODA via the RS232 interface

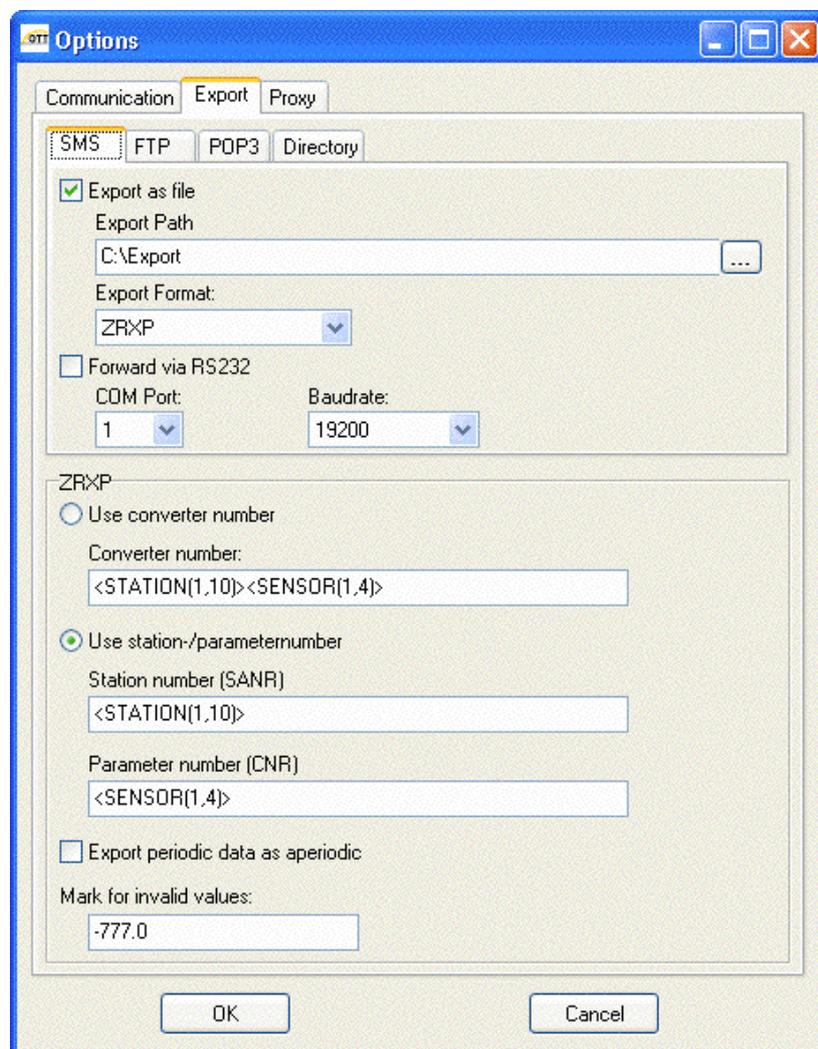
For export as a file, the following information must also be given:

- ▶ Export path where the data received should be saved as a text file.
- ▶ Format for saving the data. The formats .MIS for the Hydras 3 AutoImport and ZRXP for transferring to Kisters WISKI are available.

For transferring via RS232, the following information must be given:

- ▶ COM Port
- ▶ Baudrate for data transmission

When selecting the export format ZRXP, additional fields for the detailed configuration of the ZRXP export appear (see below):



The software supports export to the ZRXP 2.2 format, with the possibility of specifying master data in the header either with a converter number or with station and parameter numbers.

For the universal definition of the converter number and station/parameter numbers, a template is available for each where you can enter the so-called 'tags', which can then be evaluated at the time of the export and the result entered in the relevant number.

The following tags are available:

▶ <station(start,number)>

Characters are entered from the 10-digit OTT station number from the position start, number

▶ <sensor(start,number)>

Characters are entered from the 4-digit OTT sensor number from the position start, number

▶ <interval('min',digits)>

The sensor interval in minutes (also 'sec' for seconds or 'hour' for hours) with the number of digits is output.

With these tags, it is possible to create the converter number and station/parameter number from the elements of the OTT station and sensor numbers and the interval (for periodic sensors).

If the template '<station(6,10)><sensor(3,4)>' is used, for example, at the time of the export of sensor 0000005617/0010 the following output is created:

0561710

i.e. the last 5 positions of the station number followed by the last 2 positions of the sensor number. All characters outside the tags remain unchanged.

If you want to use completely different numbers for the ZRXP export that cannot be generated from the OTT station/sensor numbers, the <Lookup(xxx)> tag is available. This tag takes the value in xxx and looks in the external text file 'ZRXP_Lookup.txt' to see whether there is a line in the form 'xxx=yyy'. If this is the case, the lookup tag is replaced with the content yyy. Otherwise it remains xxx.

The file ZRXP_Lookup.txt is an ordinary text file that you can create with any text editor and it must be saved in the application directory.

For example, if you want to write a template for the converter number, where the 10-digit station number is to be replaced with an allocated number in ZRXP_Lookup.txt, the template looks like this:

```
<Lookup(<Station(1,10)>>
```

In the Lookup.txt file, the following line could be found, for example:

```
0000005617=12345
```

Thus, for an export from station 0000005617, the number 12345 would be used as the converter number. Using the lookup tag, the sensor number can of course also be implemented.

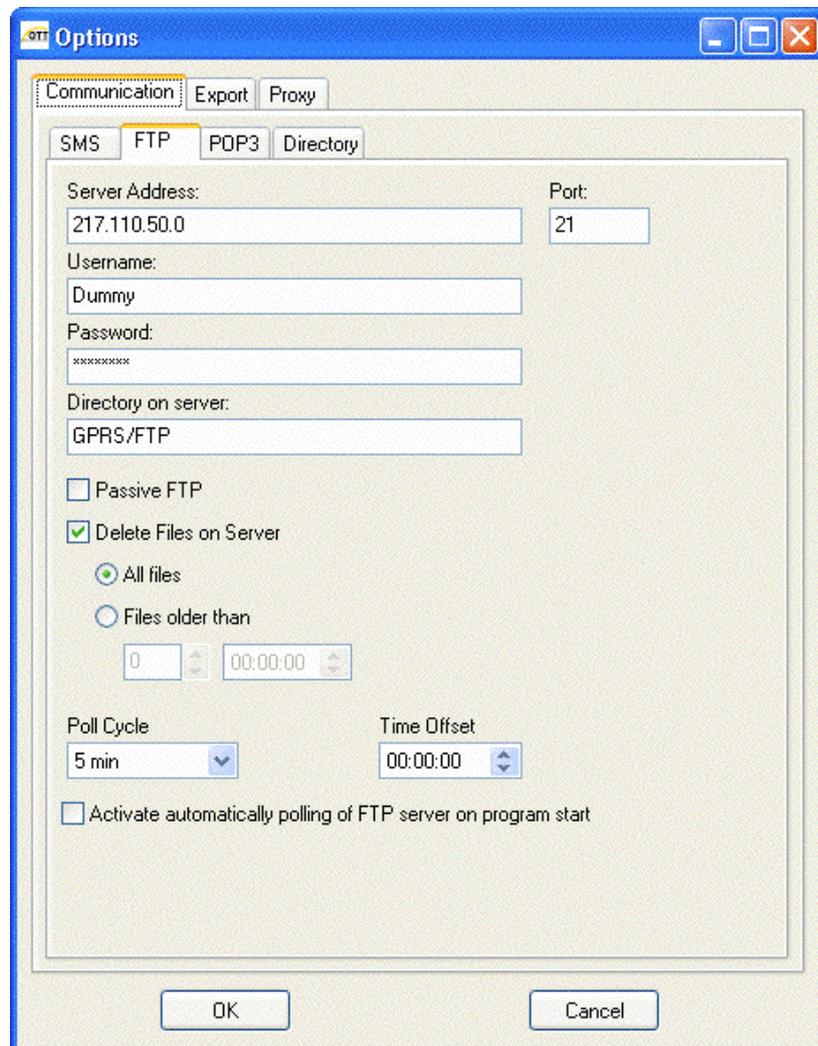
Furthermore, for the ZRXP export it can also be determined whether periodic data should be exported as aperiodic data, which is important if the receiver of the data is only configured for aperiodic data.

Finally, it is possible to specify the mark for defective values/ranges.

6 Configuring FTP server polling

To configure polling for an FTP server, the options dialog must be displayed using the menu point "File | Options" and the "FTP" tab selected.

The options dialog appears as shown below:



There are two parts to the configuration of polling: the communication settings and the export settings.

6.1 Communication settings

For communication with the FTP server, the following settings have to be made:

- ▶ IP address of the FTP server (either numeric or symbolic)
- ▶ Port where the FTP server accepts polling (standard 21)
- ▶ User name for access to the FTP server
- ▶ Corresponding password
- ▶ Directory on the server (starting from the main directory)
- ▶ Poll Cycle: The interval at which to check whether there are new files on the FTP server.
- ▶ Time offset to 00:00 for when the cyclical polling of the FTP server should occur.
- ▶ Using the 'Passive FTP' option, communication with the FTP server is in passive mode (for details see comment below)
- ▶ Option whether and, if yes, when the files on the server are deleted after downloading. (for details see comment below)

Polling the FTP server at the start of the Hydras 3 Rx is automatically activated with the option "Activate automatically polling of FTP server on program start" without the need to explicitly click on the "Start" button.

Comment on port for FTP server:

As standard, an FTP server listens on port 21 for incoming traffic. If a port scan is used from outside the network to determine which ports are open in order to attack them, the well-known standard ports are naturally discovered immediately.

If the port of an FTP server is moved to an unprivileged port in the range between 49152 and 65535, the likelihood that the FTP server will be discovered from the outside is significantly reduced.

It is important that the port is changed at 3 points:

- 1) in Hydras 3 Rx in the FTP options
- 2) in the FTP server
- 3) in the LogoSens/DuoSens in the FTP settings

Comment on passive mode for FTP server:

In principle, an FTP file transfer requires 2 ports: a control port (default 21), where the client and server exchange control information, and a data port, where the actual files are transferred to.

Data transfer using FTP can be in active or passive mode, with most servers supporting both types, but always supporting the active mode.

In active mode, the client informs the server at the beginning on which data port the files are to be transferred. The server then connects to this port on the client.

In passive mode, the server informs the client at the beginning which data port the server listens on. The client then connects to the appropriate data port on the server.

In principle, the passive mode is sensible for polling the FTP server if the Hydras 3 Rx is behind a firewall, as generally the connection from server to client (as in the active mode) is blocked by the firewall.

Active and passive FTP can also be set in the LogoSens and DuoSens, with the setting being independent from the setting in the Hydras 3 Rx in principle, as long as the FTP server supports both modes.

Comment on deleting the files on the server:

If the option to delete the files on the server is activated, whether all files on the server are deleted or only those older than a specified age can be set. If all files is activated, all files on the FTP server are deleted automatically immediately after downloading. This option is sensible if only one Hydras 3 Rx collects the files from the server.

If the data on the server is to be distributed to several Hydras 3 Rx, the option "Files older than..." must be activated. With this option, the number of days, hours, minutes and seconds the files have to have been on the server before they are deleted after downloading can be entered. In this way, several Hydras 3 Rx (or other applications) can download the data before they are deleted by a Hydras 3 Rx. Hydras 3 Rx notes internally for each station when the most current file was collected so that the files are not downloaded multiple times.

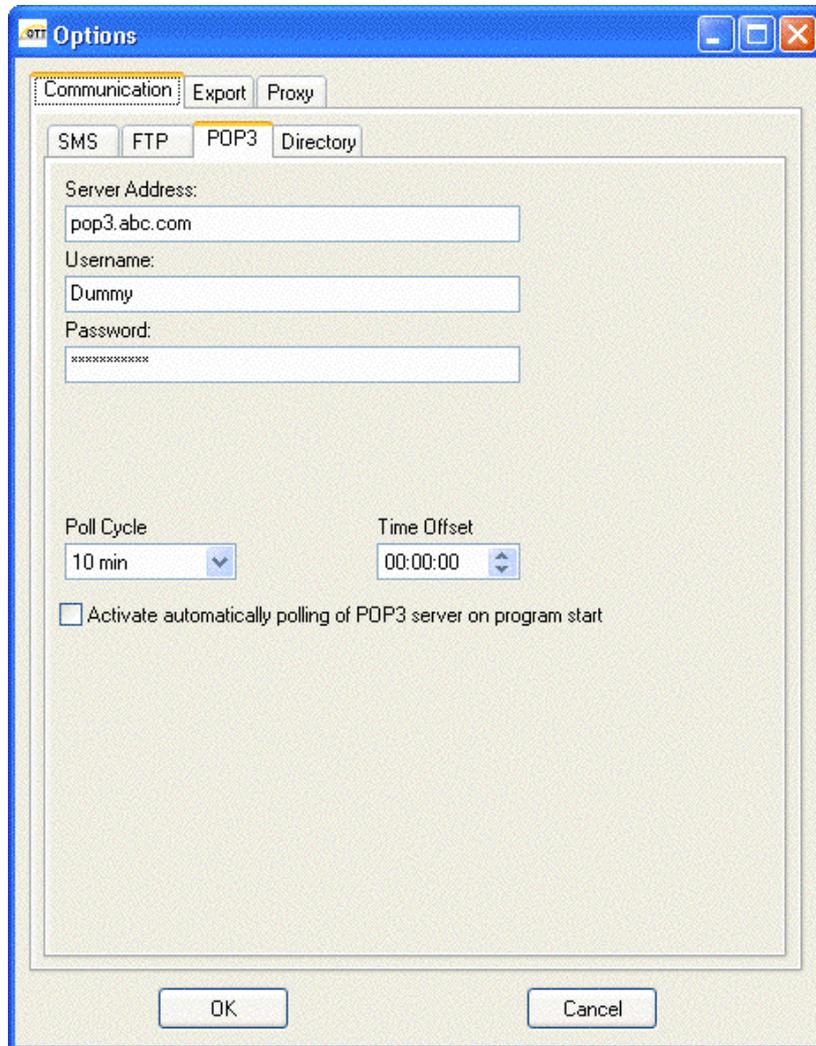
6.2 Export settings

Switch to the "Export" tab to configure the export settings and then select the "FTP" sub-tab. The dialog for the export settings corresponds to the one for the export of SMS messages.

7 Configuring POP3 server polling

To configure polling for a POP3 server, the options dialog must be displayed using the menu point "File | Options" and the "POP3" tab selected.

The options dialog appears as shown below:



There are two parts to the configuration of polling: the communication settings and the export settings.

7.1 Communication settings

For communicating with the POP3 server, the following settings have to be made:

- ▶ IP address of the POP3 server (either numeric or symbolic)
- ▶ User name for access to the POP3 server
- ▶ Corresponding password
- ▶ Directory on the server (starting from the main directory)

- ▶ Poll Cycle: The interval at which to check whether there are new files on the POP3 server.
- ▶ Time offset to 00:00 for when the cyclical polling of the POP3 server should occur.

Polling the POP3 server at the start of the Hydras 3 Rx is automatically activated with the option "Activate automatically polling of POP3 server on program start" without the need to explicitly click on the "Start" button.

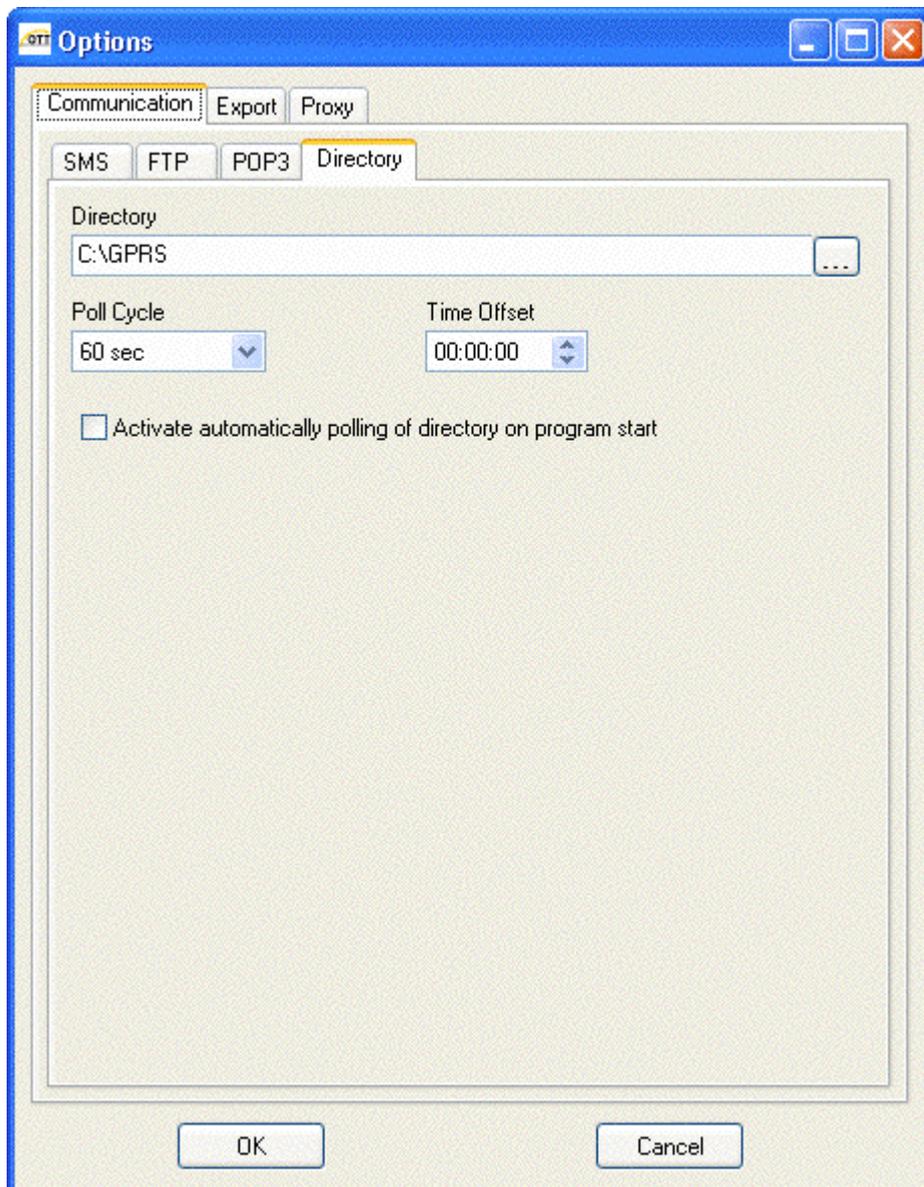
7.2 Export settings

Switch to the "Export" tab to configure the export settings and then select the "POP3" sub-tab. The dialog for the export settings corresponds to the one for the export of SMS messages.

8 Configuring directory polling

To configure polling for a file directory, the options dialog must be displayed using the menu point "File | Options" and the "Directory" tab selected.

The options dialog appears as shown below:



There are two parts to the configuration of polling: the communication settings and the export settings.

8.1 Communication settings

For polling a directory, the following settings have to be made:

- ▶ Directory path (can be local or on a file server)
- ▶ Poll Cycle: The interval at which to check whether there are new files in the directory.
- ▶ Time offset to 00:00 for when the cyclical polling of the directory should occur.

Polling of the directory at the start of the Hydras 3 Rx is automatically activated with the option "Activate automatically polling of directory on program start" without the need to explicitly click on the "Start" button.

8.2 Export settings

Switch to the "Export" tab to configure the export settings and then select the "Directory" sub-tab. The dialog for the export settings corresponds to the one for the export of SMS messages.

Comment:

If data are transmitted to an FTP server using GPRS and if Hydras 3 Rx is running on the same server as the FTP server or in the same local network, instead of the FTP server, the directory of the FTP server where the files are received can be polled directly. In this case, directory polling rather than FTP polling is set up.

9 Using a proxy

Hydras 3 Rx supports the use of a proxy server for data transfer via FTP and POP3. A proxy server is used as an intermediary between the client application (Hydras 3 Rx) and the server (FTP, POP3), which can control the data transfer by, for example, only allowing access to specific target servers, or only for specific users, etc.

Hydras 3 Rx supports the SOCKS protocol for SOCKS proxy servers (FTP and POP3) and an FTP proxy only for FTP transfers.

9.1 SOCKS proxy

A SOCKS proxy server can, in principle, be used for any IP protocols. In the case of the Hydras 3 Rx, these are FTP and POP3.

To configure the Hydras 3 Rx for the use of a SOCKS proxy, the "Proxy" page in the options dialog must be selected.

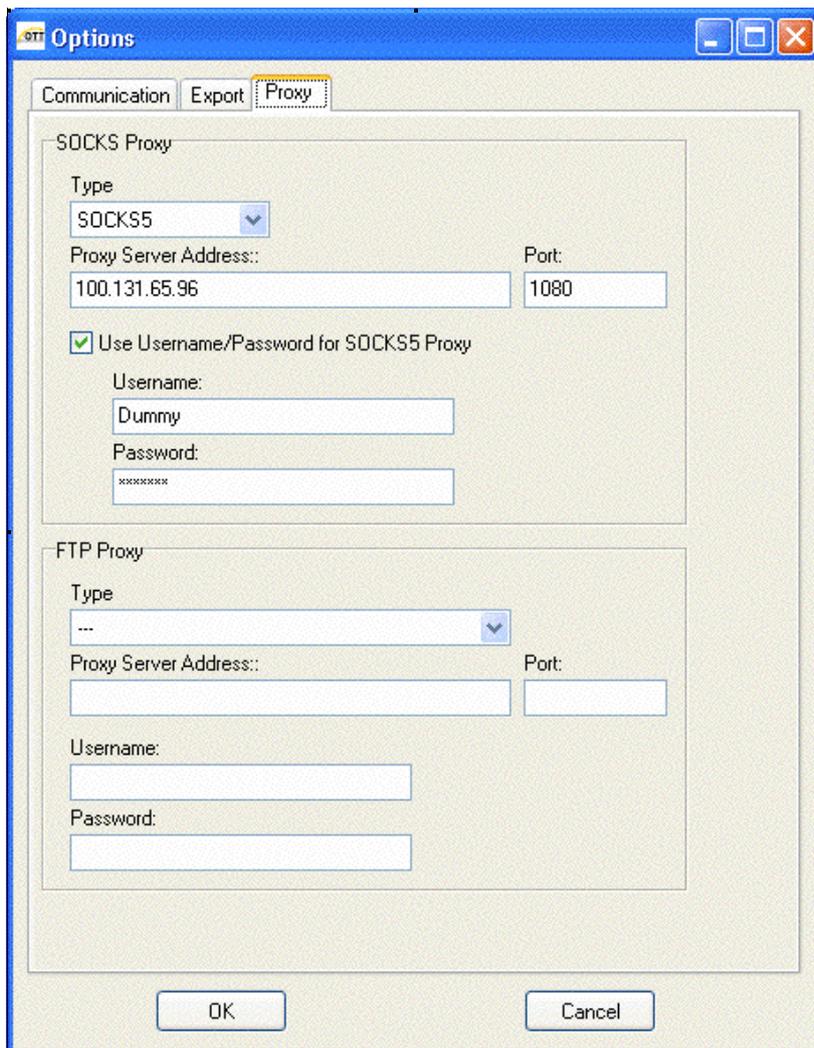
In the SOCKS proxy area the type of proxy server can now be selected. The following protocol types are available:

- ▶ SOCKS4
- ▶ SOCKS4a
- ▶ SOCKS5

SOCKS5 represents the most modern version, which, in contrast to the older versions, also allows the possibility of authentication on the proxy server (see below).

In addition to the type, the address of the server and the port where the server listens have to be entered.

If authentication is carried out with a SOCKS5 server, the "User name/Password for SOCKS5 Proxy" option must be activated. In this case, the user name and password must then be entered.



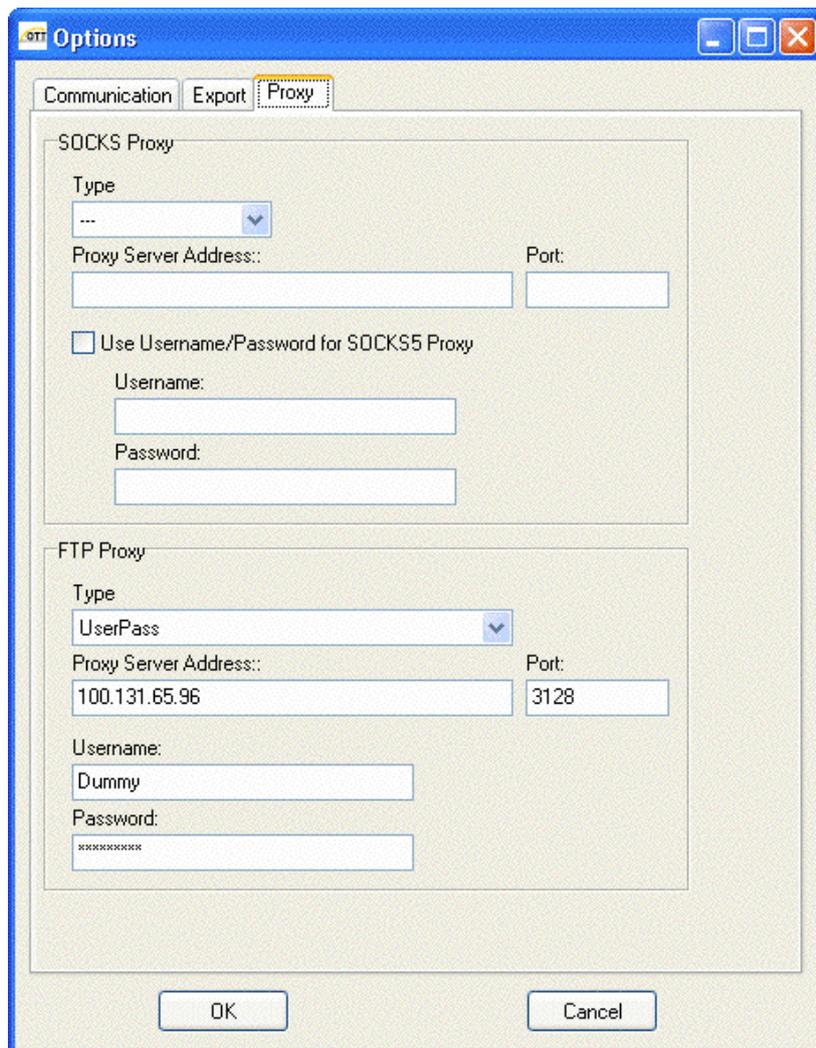
To deactivate the use of a SOCKS proxy in Hydras 3 Rx again, the type must be set to "---".

9.2 FTP proxy

For FTP transfers, the use of an FTP proxy can be configured in Hydras 3 Rx. This is done in the options dialog on the "Proxy" page.

The following configurations must be set up for access via FTP proxy:

- ▶ Type of proxy (for details see further below)
- ▶ Address of the proxy server
- ▶ Port where the server listens for traffic
- ▶ User name and password for authentication



The following proxy protocol types are supported:

Type	Explanation
UserSite	Sends command "USER user@hostname"
Site	Sends command "SITE hostname" (with login)
Open	Sends command "OPEN hostname" (with login)
UserPass	Sends command "USER user@proxyuser@hostname" and then "PASS password@proxypassword"
Transparent	Sends command "USER proxyuser" and "PASS proxypassword" and then "USER user" and "PASS password"
UserHostFirewall	Sends command "USER user@hostname proxyuser"
NovellBorder	Novell Border Manager proxy

To deactivate the use of an FTP proxy in Hydras 3 Rx again, the type must be set to "---".

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