# OH Network Receiver ver. 3.2.4.4 User Manual 

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## Typical system configuration



A typical system installation can include:

- Automation Software
- OH Network Receiver(s)
- An intrusion or security panel with the IP transmitter, and the GPRS transmitter
- Download or Management application like DL900, Titan, ATS8500 downloader or Alliance 8300

For a more detailed description of the fully redundant reporting, see "Fully redundant reporting system over IP and GPRS with substitution functionality" on page 8.
The described system is compatible with following products:

- CSX75 Panel Range (CS7050(N) TCP/IP gateway)
- CSX75 Panel Range (CS9104/9204 Video Verification Module)
- CSX75 Panel Range (CS7002(N) GSM/GPRS module)
- ATS MASTER Panel range (ATS1806/1809)
- ATS Advanced (with TDA74xx GRPS/IP modules or ATS7310 GSM/GPRS module)
- ATS Advanced IP
- NetworX Panel Range (NX-590(N)E TCP/IP gateway)
- NetworX Panel Range (NX-9104/9204 Video Verification Module)
- NetworX Panel Range (NX-7002(N) GSM/GPRS module)
- Simon Panel Range (60-938)

The following protocols are compatible.
Note: For the highest level of security, use the latest protocol version supported after verification with the alarm central station.

- CSX75 Panel Range (CS7050(N)) Contact ID, SIA or XSIA
- CSX75 Panel Range (CS9104/9204) Contact ID, SIA or XSIA
- CSX75 Panel Range (CS7002(N)) Contact ID, SIA or XSIA
- ATS MASTER Panel range (ATS1806/1809)
- ATS Advanced (IP, TDA74xx, ATS7310)
- NetworX Panel Range (NX-590(N)E)

Contact ID, SIA or XSIA
Contact ID, SIA or XSIA
Contact ID, SIA or XSIA

- NetworX Panel Range (NX-9104/9204)
- CSX75 Panel Range (NX-7002(N))
- Simon Panel Range (60-938)

Contact ID, SIA or XSIA
Contact ID, SIA or XSIA
Contact ID, SIA or XSIA
The OH Network Receiver can output to the alarm monitoring software via an RS232 port or Ethernet (IP)

- Either the OH2000 protocol or Sur-gard MLR protocol can be used to communicate over an RS232 port.
- Only the OH2000 protocol can be used to communicate to the Automation software over Ethernet (IP).

Alarms and arm/disarm (open/close) events are sent over the network using TCP/IP protocol to the OH Network Receiver and on to the Automation software.
All events sent from the Panel to the OH Network Receiver are Triple-DES encrypted. The Triple-DES encryption used is NIST certified (Certificate No. 206) and can be viewed on NIST official WEB site, http://csrc.nist.gov/cryptval/des/tripledesval.html.
In the ATS1806/1809 version 04.06.14 and later there are 3 different methods of protocols which can be used which are all supported in OH NETREC V2.0 and later.

In the Advisor Advanced, Advisor Advanced-IP supports the 2 latest protocol versions (V1.9.3 and V2) which are all supported in OH NETREC V2.0 and later.

The TDA74xx in combination with ATS MASTER or Advisor Advanced supports the 2 latest protocol versions (V1.9.3 and V2) which are all supported in OH NETREC V2.0 and later.

Always use the latest protocol versions.
The DL900 or UDX75 software can be used to configure the NX/CSX75 panels This includes adding/removing user codes, and arming/disarming the panel. This
is done over the network using TCP/IP protocol. All communication between the Panel and the downloader are Triple-DES encrypted. The Triple-DES encryption used is NIST certified (Certificate No. 206) and can be viewed on NIST official WEB site, http://csrc.nist.gov/cryptval/des/tripledesval.html.

## Recommended settings for the system installation

The minimum requirements for the software are:

- 2-core processor, 2.6 GHz
- 2 GB RAM
- Windows XP, Windows Vista, Windows 2008 Server, Windows 7

During the OH Network Receiver installation process, you can select the correct system version - 32-bit or 64-bit. Note, that selecting the 64-bit version also limits the installation to the Automation over IP-only.


Note: We do not support Virtual Servers.
OH Network Receiver can be installed as a Windows application (default) or Windows service. If you want to install OH Network Receiver as a Windows service, select the "Install OH Network Receiver as a service" checkbox during the installation process.


Note: If you install OH Network Receiver as a Windows service, it can be configured using the web interface (see "OH Network Receiver web interface" on page 40). After first login to the web server, you must change a default administrator password to finish the installation process.
Note: You cannot run two instances of the OH Network Receiver at a time (e.g., you cannot run OH Network Receiver windows service and OH Network Receiver standalone application at the same time).

The application is oriented to make use of multi-core processors, so it is recommended to have the most powerful hardware available for this purpose.
Dependency between the number of panels, polling and line-cut timeouts is the subject of the particular installation. General rule is to set the line-cut timeout to a value at least 3 times larger than the polling interval.
There are two ways to connect OHNetRec with Automation software - RS232 and the IP connection. There are the following bottlenecks in case of both connections:

RS232 is able to receive not more than about 6 messages per second including heartbeats, so the system should be designed the way which will guarantee not to exceed this value for a long time period. This is the bandwidth limitation and doesn't depend on the receiver hardware.

IP connection is much more efficient and it's only limited by PC or server hardware.

Performance sample:
Intel Xeon CPU E5-2620@2,4 Ghz (2 processors) 16 GB ram 64-Bit Win7 (RAM speed $12000 \mathrm{MB} / \mathrm{s}$ ) (drive speed $134 \mathrm{MB} / \mathrm{s}$ ). Local area network. Standard Ethernet network card. No latency from automation.

Average performance with 10000 accounts registered:
700 SIA encrypted message received, forwarded and acknowledged to automation per second,
or
3000 heartbeats received and acknowledged to panel per second.

Recommended relation of a supervision window and the number of panels per receiver is in the table below:

| Supervision Time | Number of panels |  |
| :--- | :--- | :--- |
|  | IP | RS232 |
| 1 min | 600 | 200 |
| 5 min | 1000 | 400 |
| 10 min | 1000 | 800 |
| 30 min | 1000 | 1000 |

Note that distribution on ports should be balanced.
Note: If using an IP connection, Windows firewall must be configured to allow communication through used ports configured in the Setup | Network ports.

Note: When OH Net-Rec is used as a Windows service it must be installed and run by a user with Windows administrator rights.

## Fully redundant reporting system over IP and GPRS with substitution functionality

When setting up a fully redundant connection to the central station it is necessary to use two different mediums and also report to two different receivers.

Example: (also, see schematic on page 4)
First, set up the Central station 1 for IP reporting with the account code, for example, 123456, and then set up the Central station 2 for GPRS with the same account code.

CS1 will report to IP address of OH1, CS2 will report to IP address of OH2.
In the monitoring centre, pollings on IP will be received on OH 1, and pollings on GPRS will be received on OH 2 . This means that in case of a cable cut or a network outage, either on a customer site or on a central station site, the backup
path will still be fully operational. In case the GPRS connection is gone, the IP connection will still be on.

In the OH you will need to setup the R and L override. For OH 1 this will be the receiver 1 and for OH 2 this will be the receiver 2.

By doing this, the automation software will combine all signals coming from one account code (in this case 123456), and can distinguish from which receiver an alarm is coming and subsequently also see on which path a line trouble has occurred.

In case somebody reports to the same central station with the same account code, a substitution message will be shown "AA000" and also the IP address of the sender will be stored in the active panel list.

## Starting the OH Network Receiver

When the application is installed as a service, it starts automatically after running the operating system.
To start the OH Network Receiver manually, click the Windows Start button and select Programs | UTC F\&S | OH Network Receiver.
Your window may contain different text depending on the options selected.


When the OH Network Receiver starts, it checks for a valid license. If no license exists, the OH Network Receiver starts in demo mode and the window displays OH Lite [Demo Mode] in the title bar. In demo mode, the OH Network Receiver accepts a maximum of 10 accounts. If you want to delete accounts, you can remove them via the Panel Lists dialog box.
To register your copy of the OH NetRec, select Help | Upgrade and follow the instructions.

## OH Network Receiver window interface

## OH Network Receiver window

The OH Network Receiver window includes panes for incoming events and for processed events.


- The Incoming Events Monitor pane is used for information messages and to display incoming alarms and panel disconnect and reconnect messages.
- The Processed Events Monitor pane displays events which have been successfully processed by the OH Network Receiver, e.g. processed alarms.
- Incoming events displayed in the Incoming Events Monitor pane, which are not successfully processed, do not appear in the Processed Events Monitor pane.
- Depending on whether the Automation Present flag is selected in the Set-up | Automation Setup menu, the events from the Incoming Events Monitor must be acknowledged by the Automation software. For test purposes and standalone operations, this flag can be disabled. When Automation software is connected, Automation Present flag must be selected.

The format of the alarms begins with the date and time of the event followed by the message received from an alarm panel. Alarm panel messages may contain the date and time of the event when it occurred at the panel, account information, and an event ID code.

## Menu bar

The menu bar contains the File, Activities, Setup, Users and Help menus.

- File | Exit opens the Exit window. Clicking Yes closes the OH Network Receiver.

- The Activities | Active Panels List menu item opens the Panels List window.
- The Setup menu configures the OH Network Receiver.
- The Users menu allows to display the Users List window, as well as to add, edit and delete users.
- The Help menu provides information about the OH Network Receiver.


## Active Panels List

Selecting Activities | Active panels list opens the Panels List window.
In case of a default installation, the following window opens:

| A Active Panels List |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| The list of active panels |  |  | Search | Search in column: Account |  |  |  | Last HB time | Last EV time | Commands |
| Port 1 |  |  | Port | 3 Port 4 | Port 6 |  |  |  |  |  |
| Panel identifier |  | Account | IP address | Reporting time | Inactivity time | Extra info |  |  |  |  |
| R0001L0001 | 001111 | 001111 | \|127.0.0.1 | 2017-01-17 15:52:51 | \|00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001112 | 001112 | 127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001113 | 001113 | 127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001114 | 001114 | /127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001115 | 001115 | 127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001116 | 001116 | 127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001117 | 001117 | 1127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
| R0001L0001 | 001118 | 001118 | \|127.0.0.1 | 2017-01-17 15:52:51 | 00:00:33 |  |  | 2017-01-17 15:52:51 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Refresh | Remove |  | Close |  |  |  |

If the Show More Panel Info setting is set to No then the window displayed is slightly different (it does not contain the Commands column):


For more information, see "Configuring the OH Network Receiver using the window interface" on page 18.

The Panels List window displays a list of the alarm panels which are actively polling (reporting to) the OH Network Receiver. Polling is used to identify alarm panels which exist in the field and to detect when those panels fail.

- Panel Identifier - a unique identifier composed of Receiver, Line and Account numbers. B means that it is a backup path for the current account.
- Account - account number
- IP Address - Internet address of the alarm panel
- Reporting time - time the panel last reported to the receiver.
- Inactivity time - time from the last activity (HB or EV).
- Extra info - additional information displayed in case of substitution detection (described later)
- Last HB time - time of the last heartbeat message
- Last EV time - time of the last event message
- Search - allows finding a registered panel in all tabs using a part of an account code or any other available column.

Each line / panel in the active panel list is based on the panel identifier and the account code.

The IP Address does not have to be unique. This allows modules to report using DHCP.

## Example

R0001L0001 account code 000239 IP Address 3.228.245.239 is created in the Panels List window.

Due to changes in the DHCP lease, the IP address of this panel is changed, and the panel is given a new IP address from a DHCP server.

The next time a polling from the same panel comes in, the line in the Panels List window changes to

R0001L0001 account code 000239 IP Address 3.228.245.255
It is still considered to be the same panel reporting to the OH Network Receiver.

- To update a list, click on Refresh. This updates the date and time of last report.
- To remove a panel, select its row in the display, and then click Remove.

Note: If the panel is still actively polling, clicking Refresh restores it to the display. Remove is intended to remove panel(s) from the display which are no longer part of the system.

- When panels are no longer reporting, an ' $R$ ' is displayed behind their entry in the active panel list and the whole line is highlighted in red. Also, if the port is working in a dual path mode, and a connection to one of the panels in the pair is lost, rows for both panels are marked in yellow. Each time a panel polls, a timer starts. When this timer value is greater than the value in the Line Cut Timeout window, a message LT079 (SIA) is sent to the Automation software, to indicate a line fault. When a panel polls the OH Receiver again, the ' $R$ ' disappears, and an LR079 (SIA) message is sent to the Automation Software.
In case of dual path configuration, LT079 and LR079 messages will be generated from a primary path and LT080 and LR080 messages will be generated from a backup path. After a critical failure (all paths unavailable) the additional YS079 event is sent to automation. After a critical restore the YK079 message is generated. YS079 and YK079 messages are generated only if "FTC Report" option is enabled.
- Depending on the format of the last message (SIA or CID) from the specific account, the message sent to the Automation software, will be either LT079 (SIA) or 1356 (CID) for a line fault, and LR079 (SIA) or 3356 (CID) for a line fault restore.


## SIA - CID mapping:

LT079 - CID message E356 Zone 079
LT080 - CID message E356 Zone 080
YS079 - CID message E354 Zone 079

LR079 - CID message R356 Zone 079
LR080 - CID message R356 Zone 080
YK079 - CID message R354 Zone 079

RX079 - CID message E602 Zone 079

## Active Panels List - context menu options

On the Active Panels List there is an additional context menu for panel operation.


The options available in the menu are:

- Select all - allows to select all panels in the list.
- Copy to clipboard - copies the selected panels to the system clipboard. The text can be pasted in other applications (e.g. Notepad).
- Save as MS Excel spreadsheet... - opens the Save window to type a file name and then saves the list of selected panels to the MS Excel spreadsheet.
- Calculate availability - opens Availability Calculation Window and shows Weekly Availability for selected panels and Yearly Availability for the system.
- Remove panel(s) - removes selected panels.


## Polling to the Alarm Monitoring Software

## Normal operation

The normal operation is that that OH Network receiver polls the Alarm Monitoring Software at configurable intervals. The polling message is called the "heartbeat".

## Disconnected Network Cable

Whenever the network cable (RJ45) of the OH Network receiver is disconnected, the OH Network receiver will stop polling the Alarm Monitoring Software, and will start sampling the network port every 10 seconds to detect if the network cable is reconnected. A popup window will be showed on the OH Network Receiver for guidance.
When the RJ45 is disconnected and a panel is no longer reporting, a -D will be added instead of an R. No Linefault (SIA or CID) will be sent to the Alarm

Monitoring Software. This -D will allow the operator to identify the panels that lost polling due to the disconnected network cable. And the fact of stopping the polling towards the Alarm Monitoring Software will generate an alarm for the operators.

Whenever the network cable is reconnected, a recovery period will start. The Recovery time can be configured in the application properties file in the OH program directory. This will give the panels the time to recover their polling messages. During this recovery time, the polling to the Alarm Monitoring Software will be started. For all panels that report again, the -D will be removed.

After the recovery time, the active panel list will be checked, and all panels which still have a -D will be exchanged for a -R and a Linefault (CID or CID) will be generated.

## Substitution detection

With the Enhanced protocol version 1.9.4 or higher, a new substitution detection mechanism has been introduced. It is intended to detect situations where an attempt is being made to impersonate a known account and alarm transmitter with the same account and an alternative alarm transmitter. The OH Network Receiver transmits the following messages to the automation software.

- Using SIA and XSIA: AA

```
30.04.12 14:26:40 Y043013 14:26:40 001111 b.b.b AA000 ri01 N |
30
```

- Using CID: 369
30.04.12 14:32:11 C043013 14:32:11 1111 bbbb 1 \&5

In case of substitution, the Extra info column in the Active Panels List shows additional details:

```
S [001111 IP=/155.245.21.117]
```

The above data shows that the substitution occurred where the account number is 001111 and the substituting transmitter IP address is 155.245.21.117. This situation should be verified by the Installer to confirm that the proper account code and alarm transmitter is configured on the customer's side. If this is confirmed, the line showing the substituted account must be manually removed from the Active Panels List to allow the account to start reporting again.

## Notes:

For substitution to be detected, the OH Network Receiver has to be in version 1.9.4, V2, V3 or later and the alarm transmitter has to be configured to use V1.9.4, V2 or later. An alarm transmitter that is configured to support substitution detection but is changed to an earlier protocol version (V1.9.3, Enhanced or Standard) will also activate a substitution event.

The substitution is not detected when the IP address of the transmitter changes. This is important i.e. in case of the networks, where the IP address changes periodically.

## Disk Space Monitor

Disk Space Monitor watches and warns about getting low disk space. The low disk space threshold is adjustable in the OH Network Receiver settings, which says below what value (in megabytes) the warning message should be displayed. By default the value is 100 MB . When the disk space becomes less than this value, the warning message is displayed in the main window area.

## ATS8550 OH callback functionality

The ATS8550 and ATS8500 software can connect to ATS Advanced panels using a callback performed via the OH Network Receiver.
To do this, the ATS8550 sends a message via TCP/IP to the OH Network Receiver with a callback request (using port 9996) to a specific panel (the panel is addressed using the Area Account Code).

If OH has this panel on its list then during the panel heartbeat massage this request is sent to the panel.
Panel gets it and tries to connects to the ATS8550 using the PC callback setting stored in its configuration.

For example, the message AC CR R0001L0001 123456 contains the following information:

AC CR - callback command for the OH Network Receiver
R0001 - receiver number
L0001 - receiver line
123456 - Area Account code

## Configuring the OH Network Receiver using the window interface

## File menu



## Login

Select File | Login to open the Login window to log in to the OH Network Receiver.


Login: This field sets a user name of the user account existing in the OH Network Receiver configuration.

- Default user: admin

Password: This field sets a password of the user account existing in the OH Network Receiver configuration.

- Default password: admin

Note: After 3 attempts with an incorrect password, the application will be blocked for at least 300 seconds.

Note: It is not possible to complete the OH Network Receiver installation without changing the administrator password first.

## Logout

Select File | Logout to log out the currently logged user from the OH Network Receiver.


## Activities menu

This menu contains a single option, Active panels list, opening the list of active panels.

## Setup menu

The Setup menu opens a drop-down list of configuration menu items.


## Serial Ports

The OH Network Receiver can communicate with a Central Station (Automation) via a serial port.

Select Setup | Serial Ports to open the Serial Ports Setup dialog box to define the serial port configuration.


- Port Name: This displays a list of the available serial ports, COM1, COM2, etc. Select the port which is connected to the Central Station. As of version 1.8.3, serial ports above COM2 are allowed. For all prior versions only COM1 \& COM2 are allowed.
- Baud Rate: This displays the serial port data rate options. The higher the baud rate, the faster the communication occurs. The baud rate should
normally be set to its maximum value and should be lowered only if communication problems occur.
- Flow Control In: This defines the type of flow control, if any, used when receiving messages from the Central Station. Flow control is used to prevent the sender of data, in this case the Central Station, from over running the receiver of the data, the OH Network Receiver. If data is sent faster than the receiver can receive it, it will be lost. The choices are None, Xon/Xoff, and RTS/CTS.
- Select RTS/CTS if both PCs support hardware flow control.
- Select Xon/Xoff if either PC does not support hardware flow control but both support software flow control.
- Select None if either the OH Network Receiver PC or the Central Station PC does not support flow control of either type.

Note: Most PCs today support hardware flow control and RTS/CTS should be used when possible. Microsoft Windows operating systems frequently offer a Device Manager which is accessible from the Control Panel - Systems window. The Device Manager displays the serial port properties and port settings, which contain the flow control and other options supported by the PC and operating system.

- Flow Control Out: This defines the type of flow control, if any, used when sending messages to the Central Station. Flow control is used to prevent the sender of data, in this case the OH Network Receiver, from over running the receiver of the data, the Central Station. See Flow Control In above for information about setting this field. Normally, Flow Control In and Flow Control Out are set to the same value.
- Set the Data Bits field to 8 bits.
- Set the Stop Bits field to 1 bit.
- Set the Parity field to None.

Click the Apply button to save the serial port configuration.
Click the Open Port button to enable the port. If, when opening the port, an error message is displayed that the port is in use, select another port (do not forget to move the cable to the correct port) or end the application which has the port open.

Click the Close Port button to disable the port.

## Network ports

Select Setup | Network ports to open the Network ports setup window. This defines the port that alarm panels connect to when reporting alarms or polling the OH Network Receiver. The network port must be configured in the same way on the panel and the OH Network Receiver.


There are 6 different alarm ports available, which are linked to 6 different supervision windows. By using alarm ports and supervision windows, it is possible to provide different service levels for alarm monitoring. Typically, the ADSL and Cable Modem configuration can report supervision messages every 10 seconds or every 20 seconds. This could be used, for example, on Supervision Port [1] with Supervision Window [1]. Panels connecting via GPRS, where the supervision/polling messages are typically every 4 hours, can connect via Supervision Port [2] and Supervision Window [2]. In total, 6 different network ports and supervision windows can be used.

For each supervision port, a flag exists to enable or disable backup port for Dual Path mode.

The functionality of the Dual Path option is the following:
Each supervision port has a backup supervision port. Setup window defines number of this port. When the panel is configured to work in Dual Path, Primary Path connects to, for example, Port[1] when reporting alarms or polling the OH Network Receiver. Backup Path connects to Backup Port[1]. After a successful connection of Primary Path, Backup Path has 180 s to connect to the OH Network Receiver. If this time expires, and polling message from a backup path arrive the OH Network Receiver will add a new record containing a backup path to an active panel list and send a substitution alarm to the automation software.

When a Dual Path flag on a Network Ports is set to false, the OH Network Receiver deletes all collected information about the Backup Path for all panels from active panel lists reporting on this port.

For each supervision port, a flag exists to enable or disable this alarm port for GPRS communication. The functionality for GPRS enabled and disabled is the following:
Each time an alarm message is being sent, the alarm transmitter builds up the IP communication with the OH Alarm Receiver. After the alarm message has been sent, the IP sockets are closed by the alarm transmitter. This means that for every new alarm, there is additional IP communication overhead. However for GSM/GPRS communication (GPRS Enabled = Selected), this principle is different: after the alarm transmission, the communication path needs to stay open. The purpose is to reduce bandwidth as GSM/GPRS communication is more expensive and paid per amount of data.

## Receiver type

Select Setup | Receiver Type to open the Receiver Type Selection window, below. This sets the OH Network Receiver type.


Choose either OH 2000 or Surgard MRL2-DG.

## Automation

Note: Only one automation equipment can be connected to the OH Network Receiver at a time.

Select Setup | Automation to open the Automation Setup dialog box. This defines the OH Network Receiver Central Station (Automation) interface.


- Automation Present: If checked the OH Network Receiver sends alarms and other messages to a Central Station (Automation).
- Over IP: If checked, OH Network Receiver sends messages over IP (Ethernet) rather than the serial port.
- Over Serial: If checked, OH Network Receiver sends messages over the serial port.
- Automation timeout (15-999 seconds): This sets a time interval which the OH Network Receiver uses to poll the Central Station (Automation). It the poll is not successful, there is a broken connection
- Acknowledge timeout (1-60 seconds): This is a time which OH waits for the Central Station (Automation) to acknowledge a received message.
- Automation HB Period (1-500 seconds): It can be used to change frequency of heartbeat messages send to automation. Default is 8 s .
- Messages buffer size: This is a number which indicates what should be a size of buffer for messages, which should be forwarded to Automation software and OH wasn't able to do it because of connection problem. After the Automation connection restores, OH will send buffered messages successively.


## Video

Select Setup | Video to open the Video Setup dialog box, which configures the OH Network Receiver video function.

The video functionality is compatible with

- the CS9104 or NX-9104 modules with VVMIQ functionality,
- the ATS1238 modules for ATS Advanced systems.

All the video clips or picture files are stored either in the local program directory, where the OH Network Receiver was installed, or in a configurable directory. By clicking on the button Path for video clips, it is possible to configure the location where the video clips will be stored.

Note: As the OH Network Receiver does not have any backup capability, and the database is completely dynamic, it is good practice to store the video clips on a Network Drive.


Video Enabled: This determines whether the OH Network Receiver receives video clips or JPG pictures from alarm panels. The video clips are stored in the format described below. There are two formats possible. The files are in . asf or .jpg format which can be opened by a standard video viewer like Windows Media Player.

```
S_RRRR_LLLL_CCCCCC_PPPP_ZZZZ_NNN_MMDDYYHHMMSS.ASF
or
S_RRRR_LLLL_CCCCCC_PPPP_ZZZZ_NNN_MMDDYYHHMMSS.JPG
where:
```

    \(S \quad\) Header Format (Byte [13] of Section)
    RRRR The Receiver Number, 4 -digits
    LLLL The Line Number, 4 -digits
    cCCCCC The Account Number
    PPPP Partition Number
    ZZZZ Zone Number
    NNN Clip Number
    MM Month
    DD Day
    YY Year
    HH Hours (between 01 and 23)
    MM Minutes (between 00 and 59)
    SS Seconds (between 00 and 59)
    
## Example

Video Alarm: Y101513 11:10:31 0003EE 0007 BR009 ri01 N|
VID:2_0001_0001_000001_0001_0003_0_020706025425.asf

SIA Event Format: Ymmddyy hh:nn:ss aaaaaa llll eeeee ripp $N$ | VID:VIDEO-FILE-NAME ckE

Where:

- Y indicates a SIA format message
- mm is the month
- dd is the day
- yy is the year
- hh is the hour
- nn is the minute
- $s s$ is the second
- aaaaaa is a 3 to 6 digit account number
- llll is the line number
- eeeee is the SIA event code
- ri indicates a partition number is to follow
- pp is a 2 digit partition number
- N indicates new
- | is the "|" character
- VID: is the "VID:" string
- VIDEO-FILE-NAME: file name used to save image
- ck is the 2 character message checksum computed as described above.
- E is an EOT character ( 04 h )

If a clip is reported from VVMIQ then the first letter of the file name can be ' 0 ', ' 1 ' or ' 2 ', and the extension is 'asf'.
Video File Name: 2_0001_0001_000001_0001_0003_0_020706025425.asf

When a picture from PIRCAM is reported to OH , the first letter of the file name is always ' 3 ' and the extension is 'jpg', for example,
3_0001_0001_000001_0001_0003_0_020706025425.jpg.

The events received from ATS Advanced system contain reference to associated set of still pictures in JPG format. The average size of single picture is 8 kB for

QVGA and 25kB for VGA resolution. Pictures (usually 3) associated with one alarm event are following regular text event.
BA034 Zone 34 - Regular Text Event
BA034 Zone 34 VID: 3_0001_0001_000001_0001_0034_0_011113143734.jpg
BA034 Zone 34 VID: 3_0001_0001_000001_0001_0034_1_011113143734.jpg
BA034 Zone 34 VID: 3_0001_0001_000001_0001_0034_2_011113143734.jpg
The association between the alarm event and the picture filename can be told by (highlighted in yellow) zone number.

Video Port: This defines the port that alarm panels connect to when sending video. This should always be set to 9995, or should be set to the same value:

- on both the VVMIQ module and receiver,
- on both the ATS Advanced panel and receiver.

Path for video clips: A primary path for downloaded video clips.

Backup path for clips: If a primary path for downloaded video clips is unavailable, video clips will be stored in a backup path.

## Linecut timeouts

Select Setup | Linecut timeouts to open the Linecut timeouts dialog box which defines the timeout periods used to detect a broken connection to a polling alarm panel.


This value should be the polling time programmed in the alarm panels which report to the OH Network Receiver. It must be greater than the alarm panel reporting interval. Two to three times the reporting interval should be enough.

## Printer

Select Setup | Printer to open the Printer setup dialog box which configures the OH Network Receiver printer.


Print Events Enabled: If this is checked, and a printer is selected, the OH Network Receiver sends events, for example, alarms, to the selected printer when they are received. Print Events Enabled cannot be selected if the Printer field displays no printer.

Lines Per Page: This sets the number of lines per page in the printer output.
Printer: This is a drop down list of printers set up on the computer, including local and network printers. Printers can be added by using the Control Panel on the PC and selecting Settings | Printers | Add Printer.
The Lines Per Page value and the selected Printer are also used by the Print function of the Web Interface Event Log Window.

## R\&L override



These options override Receiver number and Line number for all the incoming messages.

## Webserver Config

Select Setup | Webserver Config to open the Webserver Configuration dialog box. It defines the OH Network Receiver Web Server port number.


Webserver Active: Allows for configuring OH through the website. Default: true.

## System inactivity

Select Setup | System inactivity to open the System Inactivity dialog box. This defines system inactivity time period after a successful login. After that period, the OH Network Receiver logs out.


## Disk space monitor

Select Setup | Disk space monitor to open the Disk space monitor configuration dialog box. It defines below what value (in megabytes) of the free disk space the warning message should be displayed.


## More panel info

Select Setup | More panel info to open the More panel info dialog box. It defines if the Commands column in the activity panel list will be presented or not.


## GPRS timeout

Select Setup | GPRS timeout to open the GPRS timeout dialog box. This option prevents the OH to close the connection straight after receiving a message. The OH waits for a transmitter to send more data for a given number of seconds.


## Backup port registration

Select Setup | Backup port registration to open the Backup port registration dialog box. In case of using Dual Path after the first heartbeat received from the primary path there is a limited amount of time for the first heartbeat from the backup path.


Backup port registration timeout: This parameter determines how long OH will wait for a first HB from the backup path. Default is 180 s .

## Substitution alarms

Select Setup | Substitution alarms to open the Time between substitution alarms dialog box.


Minimum time between substitution alarms: OH will generate a substitution alarm after each HB or event received from a substituted panel. This parameter allows reducing amount of alarm messages generated to automation.
Default is 900 s .

## Diagnostics

Select Setup | Diagnostics to open the Diagnostics settings dialog box.


Diagnostic mode: If enabled then additional diagnostic information will be stored in the log $\log . t x t$ file. It sets the TRACE option in the logger.conf file. When enabled it consumes additional resources, so it is recommended to use it only when needed. Default is Disabled.

Diagnostic mode timeout (h): After enabling diagnostic mode, set this parameter to non-zero value if you want the application to disable diagnostic mode automatically after a determined amount of hours. Set this parameter to zero if you want to enable diagnostic mode permanently. Default is 0 .
Error threshold: The OH Network Receiver application will shut down after the amount of critical errors (database not available, cannot write into hard drive, etc) determined in this parameter. To disable this option set value to zero.
Default is 10.

## Other settings

Select Setup | Other settings to open the Other settings dialog box.


Event can register panel on active panel list: This option can be used for panels that do not support heartbeats. If the panel will be generated by an event no LT and LR (failed to communicate and restore) events will be sent to automation. Default: true.

NACK encrypted: A lack of acknowledgement message will be encrypted and sent to automation after receiving a "not recognized" message from a panel. Encryption can be disabled due to a backward compatibility. Default: true.
Load settings from app.properties file at startup: This option can be used to load settings from an unencrypted file during the OH startup. The file must be placed in the OH main directory. Default: false.

FTC Report: If disabled then YS079 and YK079 (Fail to communicate and restore SIA codes) messages will be not send to automation system (see page 14).

## Users menu



## Users list

Select Users | Users List to open the Users List window. This window displays a list of all users created in the OH Network Receiver configuration.


## Add User

Select Users | Add User to open the Add User window to add a new user to the OH Network Receiver configuration.


User Name: This field sets a user name for the new user.
Password: This field sets a password for the new user. The password cannot be shorter than 4 characters and there is no possibility to set the same password for more than one user in the system.
Access Level: This option defines an access level for the new user.
The OH Network Receiver defines 4 access levels:

- Level 1(unlogged user) gives access to OH Network Receiver indication.
- Level 2 gives access to the operational status, commissioning functions and read-only OH Network Receiver settings.
- Level 3 gives access to changes in the OH Network Receiver configuration, including setting changes, user management and active panel management.
- Level 4 gives access for the installer, and is authorized by a user with an access level 3.

Expiration time: This option defines an expiration time for the new user; it is available only for the access level 4.

## Edit User

Select Users | Edit User to open the Edit User window to edit the user of the OH Network Receiver.


User Name: This field sets the user to be edited.
Password: This field sets a new password for the selected user. The password cannot be shorter than 4 characters and there is no possibility to set the same password for more than one user. Blank field means that the password will not be changed.

Access Level: This option defines an access level for the selected user (see the description above).
Expiration time: This option defines an expiration time for the selected user; it is available only for the access level 4.

## Delete User

Select Users | Delete User to open the Delete User window to delete a user from the OH Network Receiver configuration.


User: This field sets the user to be deleted.

## Help menu

## Help - Upgrade

Note: You must be logged as a user with access level 4 to use the upgrade function.

Select Help | Upgrade to convert the OH Network Receiver software from demo mode to a full working version.
Starting from the Version 3.2.2.2, there are 4 different sizes of a database available: 100 accounts, 500 accounts, 1000 accounts and 10000 accounts.

The System Code is linked to the first network card in the PC that the OH Network Receiver software is running on. This is the code that needs to be provided, together with the MAC address of the PC and the Max Accounts, in order to obtain the Cipher Code. The Cipher Code (or Unlock Code) can be obtained via the Local Sales Office or via the Order Processor. This happens after the order has been placed for the corresponding size of receiver. Unlocking the number of accounts is done by copying and pasting the Cipher Code and clicking on the Submit button.


Help - About
Select Help | About to get information about the OH Network Receiver.


Use the version number shown here when asking questions on, or reporting problems about, the OH Network Receiver to UTC Fire \& Security personnel.

## Availability calculation

The OH network Receiver can calculate availability of a single panel, a group of panels, and for the system.

Select at least one panel on the active panel list, click the right mouse button and select Calculate availability.


Account: This drop-down list displays the account selected for the availability calculation. Select the account number for which you would like to see the availability calculation.

Weekly availability: This shows a weekly calculation for the selected account.

Yearly availability: This shows a yearly availability for the system.
Note: The availability calculation meets the EN50136 standard requirements.

## Event recording

A logging function is provided for the purpose of providing an audit trail and a problem resolution. Event log is stored in an OH Network Receiver subfolder in multiple files, in a separate file for each month. The following naming convention is used:

## events YYYYMM.log

where YYYY is the year and MM is the month of stored events. Event log files are stored in the log subfolder under OH Network Receiver's main directory, e.g., C:IOH-NetworkReceiverl/ogl.
The application is using operating system time for recording the event date and time. Operating system date and time should be periodically synchronized with one of Internet Time Servers. All messages from ATS and some additional events from OH Network Receiver are recorded in the event log as listed below:

| Event type | User identificat ion | Example message recorded in EventsYYYYMM.Iog | Example action |
| :---: | :---: | :---: | :---: |
| Messages from ATS | n/a | 2016-09-05 15:22:53.172 0101002F"SIADCS"0009R0001L0001 <br> [\#124578\|NBA008] | An alarm generated on ATS |
| AE interface(s) failure and restore | n/a | 06-09-16 13:31:38 Automation is not responding. Check link and timeouts values. | Automation disconnected |
| Transmission network Interface(s) failure and restore | n/a | 05-09-16 15:27:00 Y090516 15:27:00 124578 0001 LT079 ri01 N ${ }^{2} \quad-2$ | ATS disconnected from network |
| Changes to the configuration of the RCT | Mandatory | 05-09-16 15:38:43 systemInactivityTime was changed by admin | Changing configuration in OH |
|  |  | 05-09-16 15:41:55 System correctly closed |  |
|  |  | 2016-09-05 15:41:55 Starting OH application... | Close OH, Start |
| Power-up or reset | Mandatory | 05-09-16 15:42:43 User admin log in. | $\mathrm{OH}, \mathrm{Log} \mathrm{in}$. |
| Access to the RCT | Mandatory | 05-09-16 15:42:43 User admin log in. | Logging in OH . |
| Changes to users and/or user rights | Mandatory | 05-09-16 15:51:04 User admin2 was updated by admin | Changed admin2 rights in OH |

Note: It is recommended to secure at least 20 GB of disk space for log recording. Disk Space Monitor is included in the application and it will warn if free hard disk space is lower than desired space (see "Disk Space Monitor" on page 17).

Important: Event logs will be stored on a disk for 3 years. Log entries older than 3 years will be automatically deleted.

## DoS attacks

A DoS attack on one transmission network interface of the OH receiver does not adversely affect the operation of the RCT or the operation of any other OH RCT transmission network interface.

## OH Network Receiver web interface

The OH Network Receiver has its own web server included. The Web server starts working after the OH Network Receiver installation process is finished.
The OH Network Receiver web interface includes menus with the same functionality as the Network Receiver window interface.

The link to access the menus is:

- from the computer where the OH Network Receiver is installed:
https://localhost:port
- from other computers: https://IP_address:port
port: Port number set up in the OH Network Receiver configuration.
IP_address: IP address of the computer where the OH Network Receiver is installed.

Note: Communication with the web interface is encrypted with the TLS 1.2 SSL standard.

## OH webserver interface

When the connection to the webserver is established the home page opens:

## OH Network Receiver

Web Interface Version 3.2.4.2 NetRec-Lite


[^0]To log in to the OH Network Receiver select Login, enter your user name and password and press Submit.

## interlogix

Home Login About

## $\mathbf{O H}$ Network Receiver



Submit

Home

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Note: After three invalid logging attempts the error message will be displayed and the Login screen will get blocked for 90 seconds.


## interlogix

Home Login About

## $\mathbf{O H}$ Network Receiver



After logging in, the following screen displays:

## interlogix

Home Setup Users Logout Active Panels Events About

## Welcome to

OH Network Receiver
You need to configure your OH Receiver's network parameters before it can operate correctly on your network.

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Content and menu options available on every tab correspond to the menu options in the OH application. See the equivalent application menu descriptions for additional information.

- Home
- Setup - see "Setup menu" on page 20


## interlogix

Home Setup Users Logout Active Panels Events About

## OH Network Receiver

Setup page

Serial Port Settings
Network Settings
Receiver Type Settings
Automation Settings
Video Settings
Line Cut Settings
Sound Settings
Printer Settings
R\&L Override Settings
Webserver Config
System Inactivity


Disk Space Monitor
More Panel Info
Gprs Timeout
Backup port registration
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- Users - see "Users menu" on page 33


## $\mathbf{O H}$ Network Receiver

Users page

Users List
Add User
Edit User
Delete User


- Logout - see "Logout" on page 18
- Active Panels - see "Activities menu" on page 19



## interlogix

Home Setup Users Logout Active Panels Events About

## $\mathbf{O H}$ Network Receiver

Supervision Windows

Active Panels on Supervision Window \#1 Active Panels on Supervision Window \#2 Active Panels on Supervision Window \#3 Active Panels on Supervision Window \#4 Active Panels on Supervision Window \#5 Active Panels on Supervision Window \#6

Active Panels on All Supervision Windows.


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- Events - see "OH Network Receiver window" on page 11

-••••••••••••
OH Network Receiver
Event Log


```
241 2018-06-15 15:23:48-User admin log into web server
240 2018-06-15 15:23:39-User admin log out.
239 2018-06-15 15:22:11-User admin log out from web server
238 2018-06-15 15:21:47-User admin log into web server
237 2018-06-15 15:19:43-User admin log into web server
236 2018-06-15 15:19:42-User admin log into web server
235 2018-06-15 15:18:37-WebServerPort was changed by admin
234 2018-06-15 15:18:23-User admin log in.
233 2018-06-15 15:17:19-User admin log into web server
232 2018-06-15 15:17:14-User admin log out from web server
231 2018-06-15 15:17:11-User admin log into web server
230 2018-06-15 15:16:50-Automation is not responding. Check link and timeouts values.
229 2018-06-15 15:16:43-User admin log out from web server
228 2018-06-15 15:16:32-User admin log into web server
227 2018-06-15 15:16:18-OH Receiver startup
```

- About - see "Help - About" on page 37


## OH Network Receiver

Web Interface Version 3.2.4.2 NetRec-Lite

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## Events window

The webserver Events window is slightly different than the application window, and includes additional view and navigation options.

## interlogix

## OH Network Receiver

## Event Log

Reverse Order First Last Close

Print To Browser
All
Max Displayed $\ll$ Previous Next $\gg \quad$ Go To Event $\square$

```
241 2018-06-15 15:23:48-User admin log into web server
240 2018-06-15 15:23:39-User admin log out.
239 2018-06-15 15:22:11-User admin log out from web server
238 2018-06-15 15:21:47-User admin log into web server
237 2018-06-15 15:19:43-User admin log into web server
236 2018-06-15 15:19:42-User admin log into web server
235 2018-06-15 15:18:37-WebServerPort was changed by admin
234 2018-06-15 15:18:23-User admin log in.
233 2018-06-15 15:17:19-User admin log into web server
232 2018-06-15 15:17:14-User admin log out from web server
231 2018-06-15 15:17:11-User admin log into web server
230 2018-06-15 15:16:50-Automation is not responding. Check link and timeouts values.
229 2018-06-15 15:16:43-User admin log out from web server
228 2018-06-15 15:16:32-User admin log into web server
227 2018-06-15 15:16:18-OH Receiver startup
```

For example, you can sort and filter displayed events:

## interlogix

-•••••••••••
OH Network Receiver
Event Log


## Upgrading the OH Network Receiver

## Before the 3.2.1 version

In order to complete the update, the OH Network Receiver must be stopped. This applies both to the standard installation and the OH service installation.
During the upgrade all files are overwritten (including configuration files). It means that all settings will be defaulted after the upgrade, and the Active Panels List will be cleared. To prevent losing the configuration and the panel list, the appropriate files (app.properties and ohdb.script respectively) need to be backed up after the OH is stopped, and before installing the new version.

The app.properties file from version 2.5.5 is compatible with version 3.1.1. The only difference are the optional NoSpaceAlarmThreshInMB=100 setting and the AutomationHBPeriod $=8$ setting, both added in the 3.1 .0 version. They can be set up after the upgrade.

In order to upgrade the OH Network Receiver software to the 3.1.1 version, follow these steps:

1. Stop the OH Network Receiver application.
2. Backup the app.properties and ohdb.script files, present in the OH Network Receiver home folder (for example, C:IOH-NetworkReceiverlapp.properties, C:IOH-NetworkReceiverldatalohdb.script)
3. Run the OH Network Receiver 3.1.1 installer.
4. When the installation is complete, copy the files backed up in the step 2 to the appropriate directories.

### 3.2.1 version

Since the 3.2.1 version, all settings of the OH Network Receiver are kept in a database and the old app.properties file will be removed during the upgrade process. To upgrade the OH Network Receiver, install the new version in the same location as the current version. During the upgrade all settings from the app.properties file will be imported to a database and the Active Panels List will be cleared. After the upgrade, the app.properties file will be deleted.

### 3.2.2-3.2.4.2 version

Important: For versions 3.2.2-3.2.4.2, always uninstall a previous version of the OH Network Receiver before installing a newer version. After uninstallation make sure that all files from the OH Network Receiver directory (e.g. $\mathrm{C}: \mathrm{IOH}-$ NetworkReceiver) are removed.

### 3.2.4.4 version and greater

Since the 3.2.4.4 version, the application migrates data from a previous database structure to the new one, so there is no need to uninstall the previous version of the OH Network Receiver.

In order to upgrade the OH Network Receiver software, follow these steps:

1. Stop the OH Network Receiver application.
2. Install a new version in the same location as the old one (for example, $\mathrm{C}: \mathrm{IOH}$ NetworkReceiver).
3. Run the new application and log into it with the same login and password as used for the old version of the application.
4. In the installation folder (for example, $\mathrm{C}: \mid \mathrm{IOH}-\mathrm{NetworkReceiverldata)} \mathrm{there} \mathrm{are}$ files and folders with names containing the "ohdb.bak" string. These files and folders are a backup of the old database and should be removed after verifying that all data is migrated without an error.
5. To load data from "app.properties" file (versions 3.1 and lower) set Load settings from app.properties file at startup option to true and after a restart of the OH Network Receiver set it again to false (data should be migrated on application start).

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