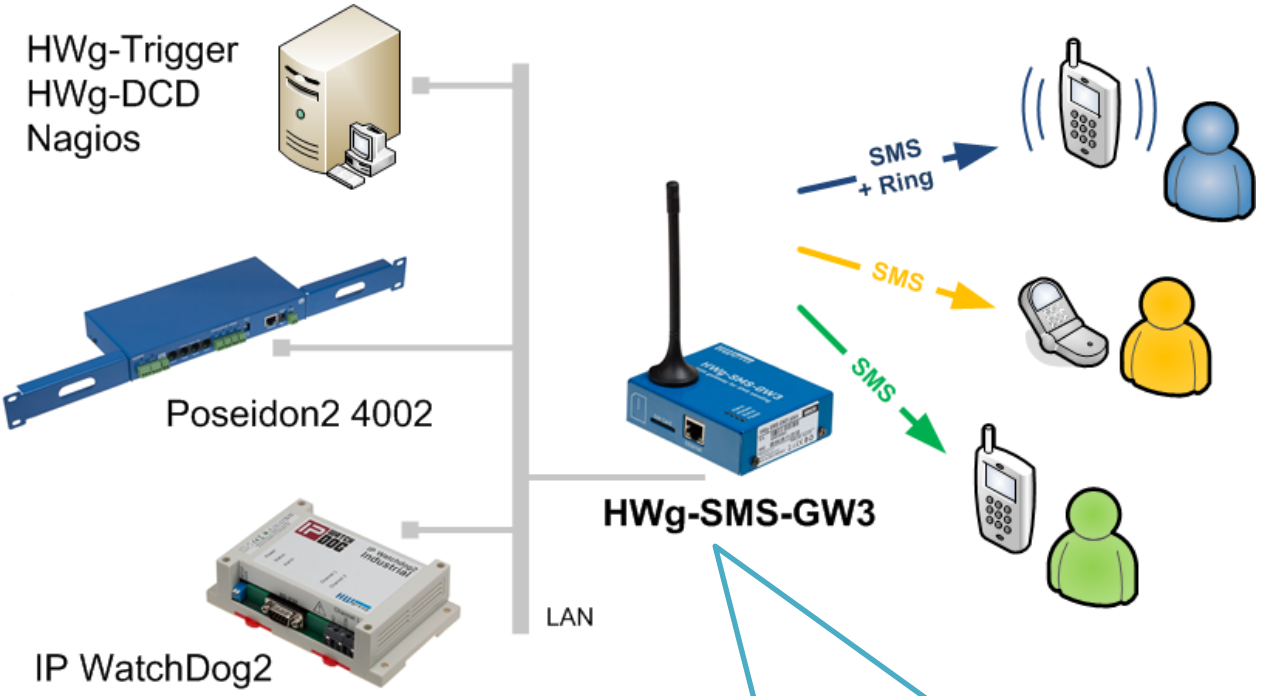
HWg-SMS-GW3

An SMS gateway for HW group products

Recommended connection

HWg-SMS-GW allows sending of alarm SMS messages from any number of connected HW group devices via a single GSM modem with netGSM.



1) Insert a SIM card (with disabled PIN security).

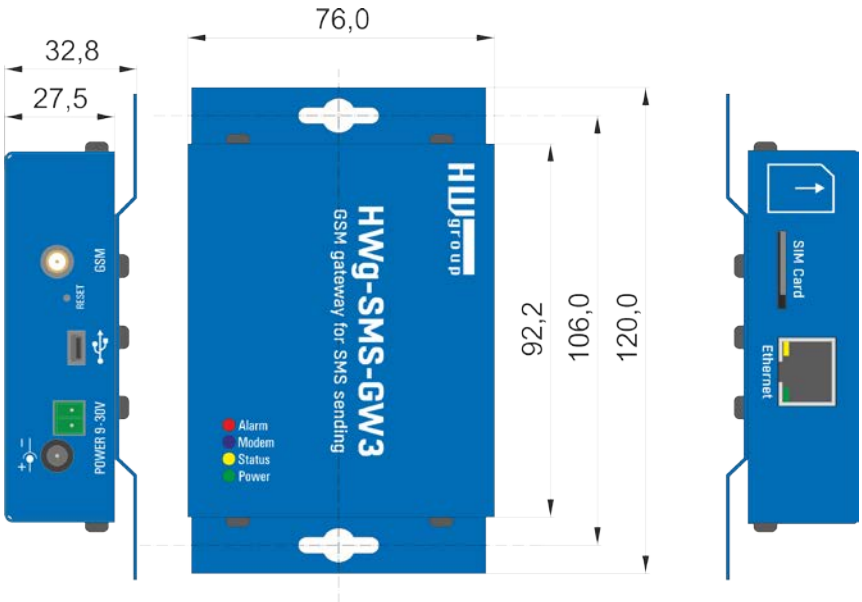
2) Lanch HWg Config and get the assigned IP address (DHCP)

4) Enter IP address of the unit HWg-SMS-GW + port (80 in default)

5) Enter 2x phone number of an SMS messages recipient and try sending a test SMS.

Technical parameters

ETHERNET	
Interface	RJ45 (10BASE-T) – 10 Mbps or 10/100 Mbps network compatible
Supported protocols	IP: ARP, TCP/IP (http, NTP), UDP/IP (SNMP), netGSM
SNMP compatibility	Ver:1.00 compatible, some parts of the ver 2.0 implemented
GSM	
Interface	Quad-Band 850/ 900/ 1800/ 1900 MHz, Compliant to GSM phase 2/2+ – Class 4 (2 W @850/ 900 MHz) – Class 1 (1 W @ 1800/1900MHz)
Antenna connector	SMA male
POWER input	
Port	POWER 9-30V DC
Type	Main device power input (typically 400 mA + external devices)
Connector	Jack (barrel, inner 2.5 mm outer 6.3 mm) & Terminal block (parallel connection)
LED Status indicators	
POWER	Green - power OK
Modem	Blue – Activity on GPRS
Status	Yellow – blinking if device is OK
Alarm	Red – Error on device
LINK & Activity	Yellow - Ethernet connectivity
Physical parameters	
Temperature range	Operating: -10 to 65 °C / Storage: -25 to 85 °C
MTBF	> 90 000 hours
Dimensions / Weight	92 x 76 x 28 [mm] / 300g
EMC	FCC Part 15, Class B, CE - EN 55022, EN 55024, EN 61000



Restarting into the default settings (LOAD TO DEFAULTS)

- **Restarting into the default settings via HWg Config**
  Right-click the MAC address of the device in HWg Config. Within the first 60 seconds after powering up the device the factory settings can be restored through HWg Config.
- **Hardware restarting into the default settings**
  Disconnect the power supply, press the **Reset** button and at the same time reconnect the power adapter and wait for 10 seconds. The default settings will be restored.

First start

Connecting the cables

- Note down the MAC address of the device, printed on the side of the unit.
- Set DIP switches to **DIP1=Off**, **DIP2=Off**.
- Connect HWg-SMS-GW to the Ethernet network.
- Plug the power adapter and connect it to a connector on the device.
- Green **POWER** LED will light up.
- If the connection to Ethernet network is working, **LINK** LED will light up (orange light on RJ45 connector) and it then flashes during the data transmission (Activity signalisation).

Connectors

- **Power** Connect the power adapter (9-30V)
- **USB** A connector for service purposes
- **Ethernet** Network/data connector
- **GSM SIM** A SIM card socket.
- **GSM** An SMA connector for connecting an external antenna
- **Reset** Reset button for restoring the factory default settings – more on page 3

LED indication

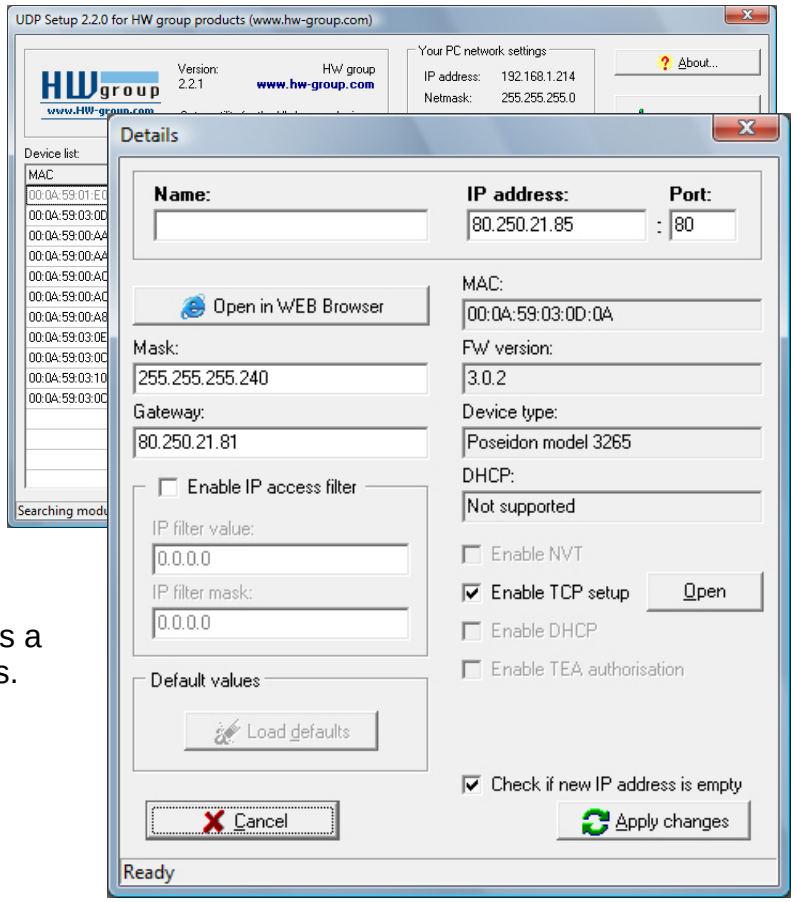
- **Power (green)** – Power supply connected
- **Status (yellow)** – Flashes slowly if the device is working correctly
- **Alarm (red)** – Device /Modemu error. Lights up if out of signal, flashes in case of SIM card errors (incorrect PIN entered, etc.)
- **Modem (blue)** – Flashes during SMS sending
- **Link Activity (yellow LED on the Eth. connector)** – Flashes during network activity
- **Link OK (green LED on the Eth. connector)** – Light on when connected to Ethernet

IP address settings - HWg Config

HWg Config application - main directory on the attached CD (Windows / Linux version).

The software can be downloaded from www.HW-group.com
Software -> HWg Config.

- Start HWg-Config by clicking on its icon – software will automatically search for connected devices.
- Search for the devices by clicking the Find Devices icon (Start search).



HWg Config searches for devices in your LAN. Clicking on a MAC address of the device opens a window with basic network parameters settings.

Network parameters of the device

- Enable DHCP

or

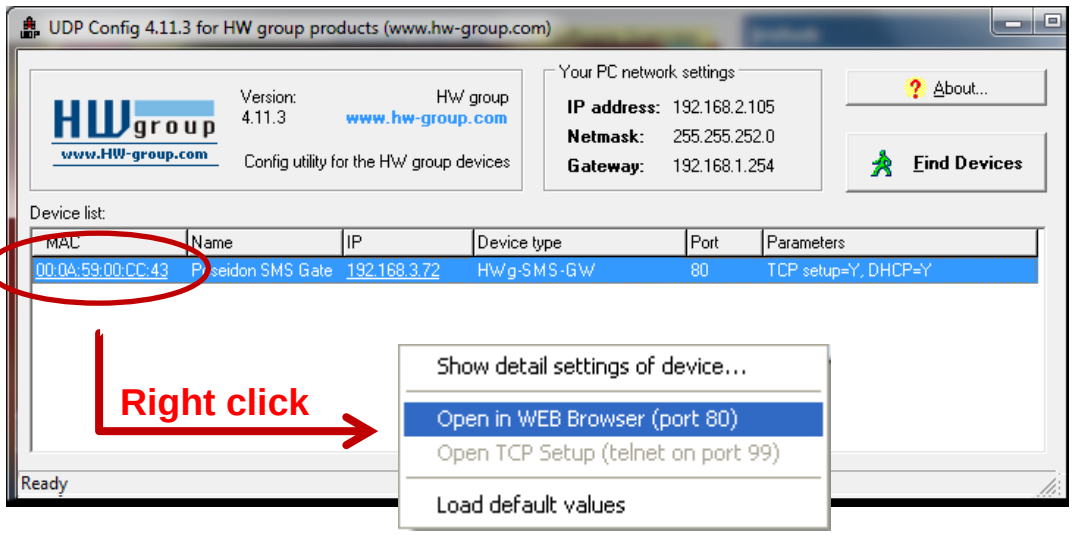
- Set IP address / HTTP port (80),
- Set the mask of your network.
- Gateway IP address for the local network,

Save the settings with **Apply Changes** button

Open the WEB setup of the device

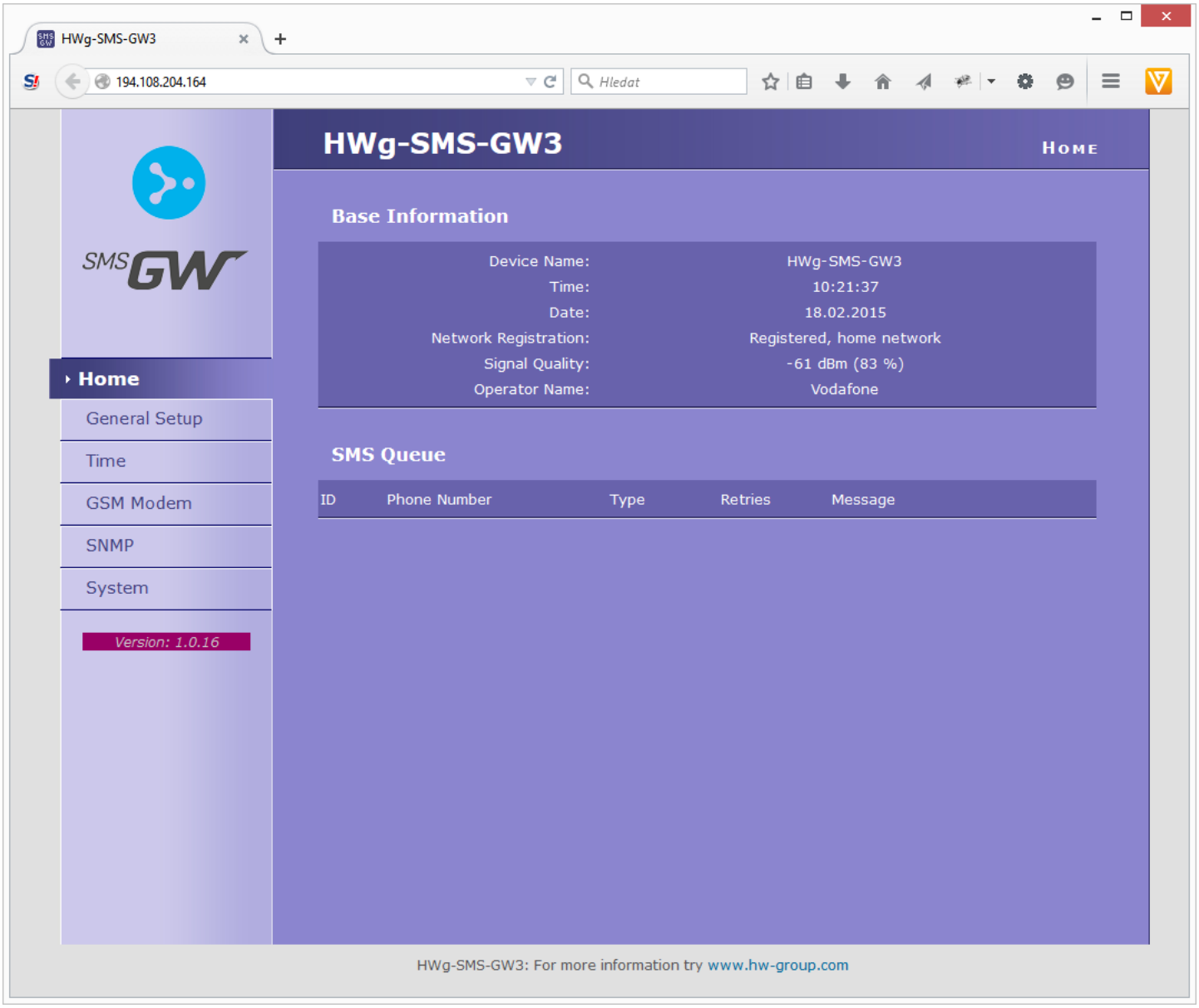
Enter IP address of the device directly into an internet browser.

Or open the web setup via HWg-Config>> Click the underlined IP address, or through the context menu (as shown on the picture).



WEB interface

Home



Basic Information section

- *Device name* – User-defined name. This can be set on the *General Setup* tab
- *Time* **–** Unit time – settings can be changed on the *Time* tab. Correct time is usually obtained from an online server
- Date – Unit date – settings can be changed on the *Time* tab. Correct date is usually obtained from an online server
- *Network registration* – Information on registration of the unit to an operator's GSM network
- *Signal Quality* – GSM signal level. This information can be used for resolving network problems
- *Operator Name* – Name of the operator to which the GSM modem is connected

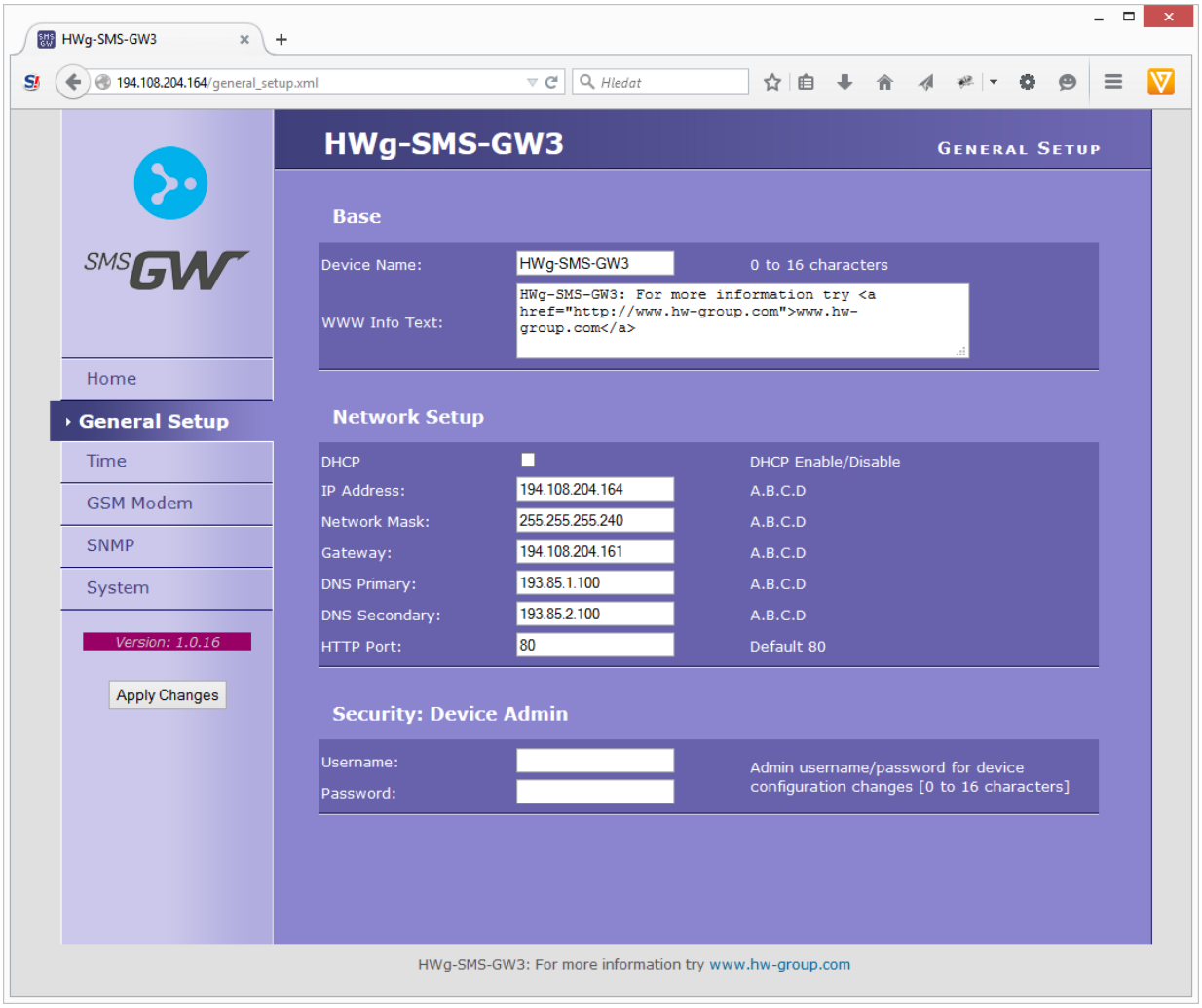
SMS Queue Info

- *Pending Message / Capacity* – A number of pending messages / queue capacity
- *Message Sent* – Amount of sent messages (since the last power-up)
- *Messages Dropped* – Amount of dropped messages (since the last power-up)

SMS Queue

An overview of messages queued for sending

General Setup



Base section

- *Device Name* – Custom-selected name (HWg-SMS-GW3) – helps to distinguish between different HWg-SMS-GW3s in one network.
  Device name can be up to 16 characters long.
- *WWW Info Text* – text of a footer in WWW interface – useful for example for entering data centre administrator's contact details.

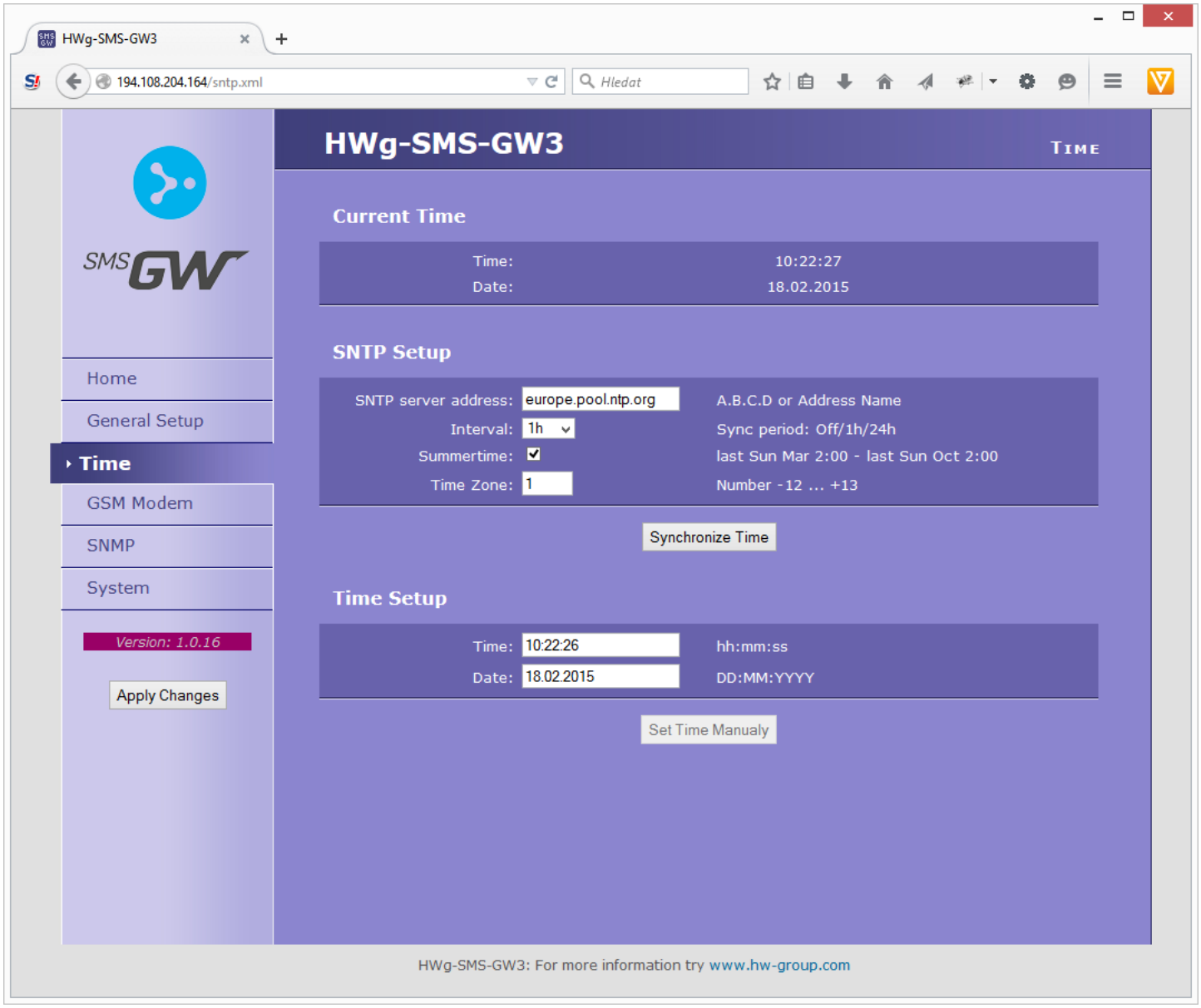
Network section

- *DHCP* – enables automatic setting of an IP address by a DHCP server, if available – enabling and disabling this function depends on actual requirements of the network users and administrators.
- *IP Address* – IP address of the HWg-SMS-GW3 – assigned by the network administrator.
- *Network Mask* – assigned by the network administrator.
- *Gateway* – IP address of a default gateway– assigned by the network administrator.
- *DNS Primary* / *DNS Secondary*– IP address of a DNS server – assigned by the network administrator.
- *HTTP Port* – port number where the built-in WWW server listens – changing the port number is necessary for example if more devices are accessible from outside the network through a router. Please consult any changes in this setting with your network administrator. Port set to 80 in default.

Security section Device Admin

- *Username* / *Password* – login details used for accessing HWg-SMS-GW3 settings.

Time



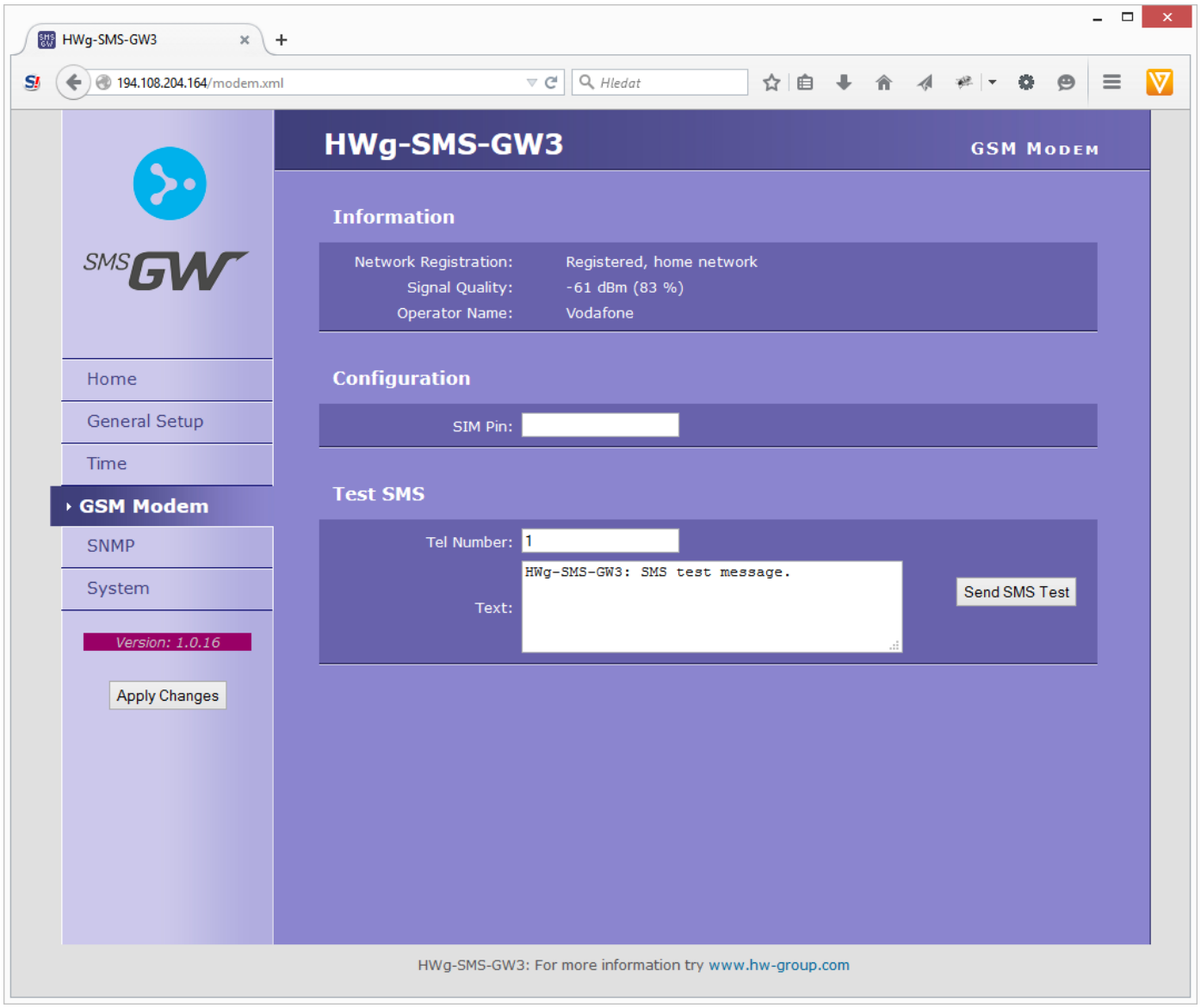
SNTP Setup section

- *SNTP Server* – IP address or a domain address of a time server – in default *time.nist.gov*.
- *Interval* – interval of a time synchronisation with a server.
- *Summertime* – allows DST switching - required for correct logging of the measured values and events.
  Necessary for correct data logging.
- *Time Zone* – sets the time zone where the HWg-SMS-GW3 is located – used for setting the correct system time. Necessary for correct data logging.
- *Synchronise Time* is used for an immediate synchronisation with a time server. Can be also used to test the entered settings.

Time Setup section

Time Setup section allows you to enter actual time and date manually, in case you cannot use the synchronisation with a time server. This information is erased after loosing the power supply.

GSM Modem



Information section

- *Network registration* – Information on registration of the unit to an operator's GSM network
- *Signal Quality* – GSM signal level. This information can be used for resolving network problems
- *Operator Name* – Name of the operator to which the GSM modem is connected
- *SMS Center Number* - information obtained from the SIM card. Used for verifying the communication with the SMS centre

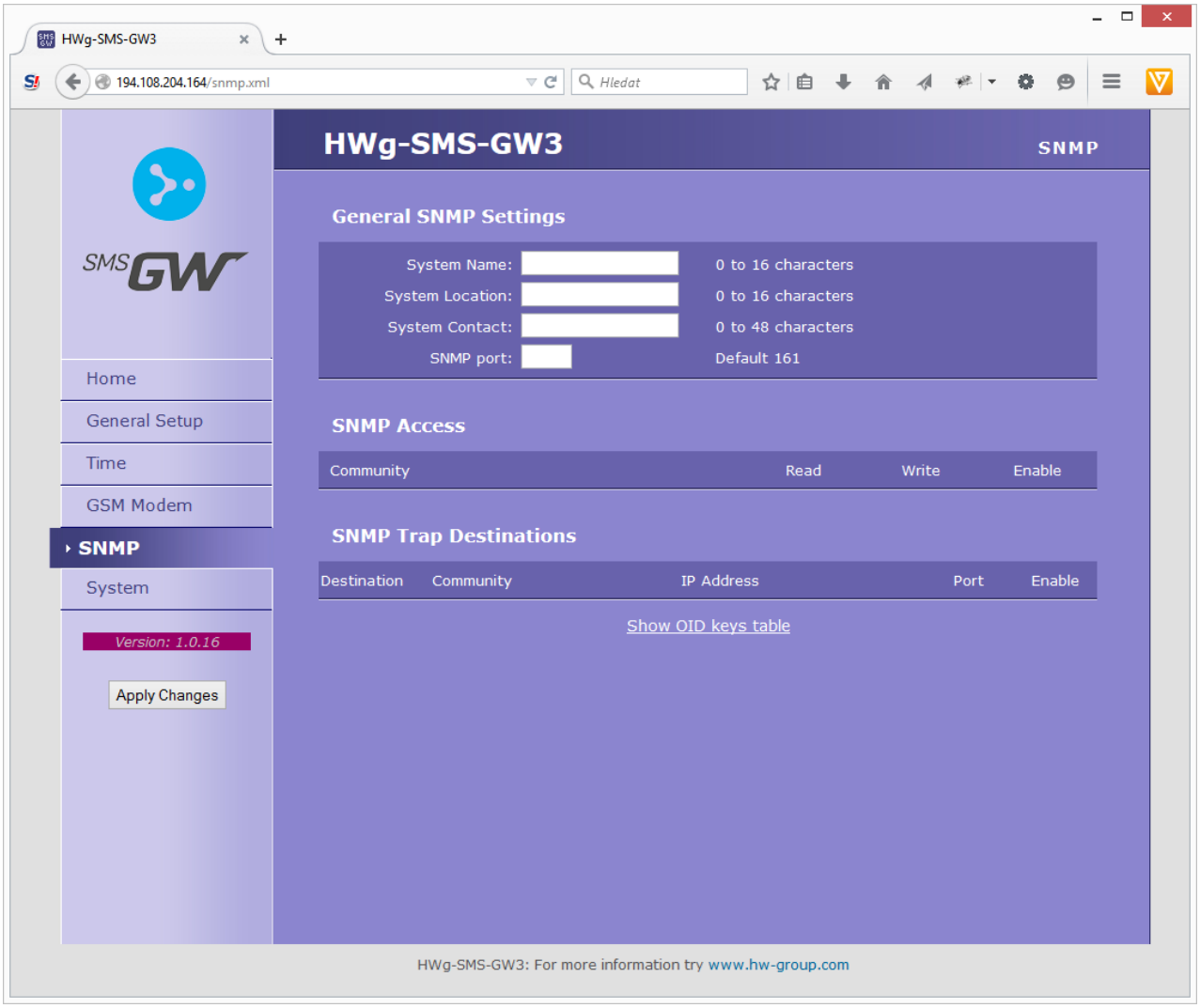
Configuration section

- *SIM PIN* – In case the SIM card is protected by a PIN code, enter the code here

Test SMS section

- *Tel Number* – recipients phone number for test SMS sending
- *Text* – content of the test SMS
- *Send SMS Test* - Verifies the functionality and sends a test SMS to the selected phone number.

SNMP



General SNMP Settings

- *System Name* – Device name, corresponds with the device name set on the General setup tab
- *System Location* – System location, for instance „IT room, 2nd floor.“
- *System Contact* – System administrator contact details, for instance his Email address
- *SNMP port* - Port settings for communication with SNMP protocol **[161]**.

SNMP Access

Defines authorisation and user group names for work with a Poseidon device.

- *Community* - Text name of the group, to which the rights are assigned to (**Public** and **Private** in default)
- *Read* – assigns to a community the rights to read the variables over SNMP
- *Write* – assigns to a community the rights to write into the variables over SNMP
- *Enable* – enables or disables a certain group

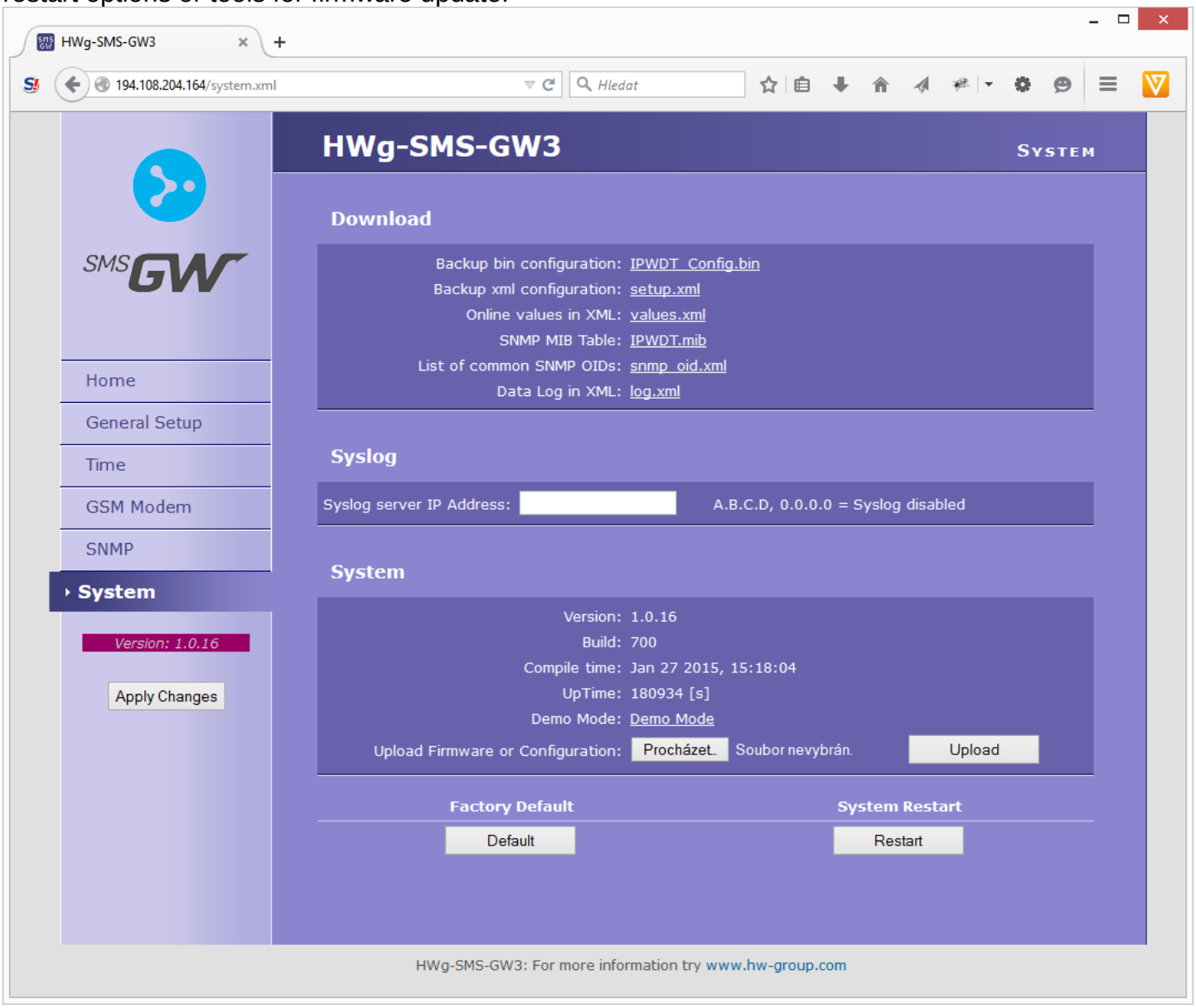
SNMP Trap Destination

Defines target destinations for SNMP Traps.

- *Community* – Text name of a group of the sent SNMP Trap
- *IP address* – Target address for SNMP Traps.
- *Port* – Target port for SNMP Traps.
- *Enable* – Enables SNMP Trap sending to this destination.

System

System tab offers access to main system details such as uptime and firmware version. It also offers restart options or tools for firmware update.



Download section

- *Backup configuration* – by clicking the link you can save the actual HWg-SMS-GW3 configuration and later restore this configuration.
- *Backup XML configuration* – by clicking the link you can save the actual HWg-SMS-GW3 configuration and later restore this configuration.
- *Online values in XML* – Current SMS queue in XML format

- SNMP MIB Table – SNMP MIB file – address of a MIB file, containing definition of SNMP variables.
- List of common SNMP OIDs – a list of the most frequently used OIDs from the MIB chart.
- *Data Log in XML* – A list of the most recently sent messages in XML format

Syslog section

- *Syslog server IP Address* – Address of the Syslog server

System section

- *Version* – Firmware version. Diagnostic information for troubleshooting.
- *Compile time* – Firmware compilation time. Diagnostic information for troubleshooting.
- *Build* - assembly Diagnostic information for troubleshooting.
- *UpTime* – Uptime since last power-on or reset of the device. Diagnostic information for troubleshooting.
- *Demo mode* – activated demo mode disables changes in configuration of your device. Visitors can freely browse all pages of the WWW interface in this mode but they cannot make any changes. The device can be then made available on a public network without any risk of problems with settings.
- *Upload Firmware or Configuration* – allows users to upload new firmware or a configuration file. Uploaded configuration may not be compatible in case the difference between firmware releases is too large.

Factory Default section

Restores the factory default settings. The default IP address is 192.168.10.20 and both login and password are not set.

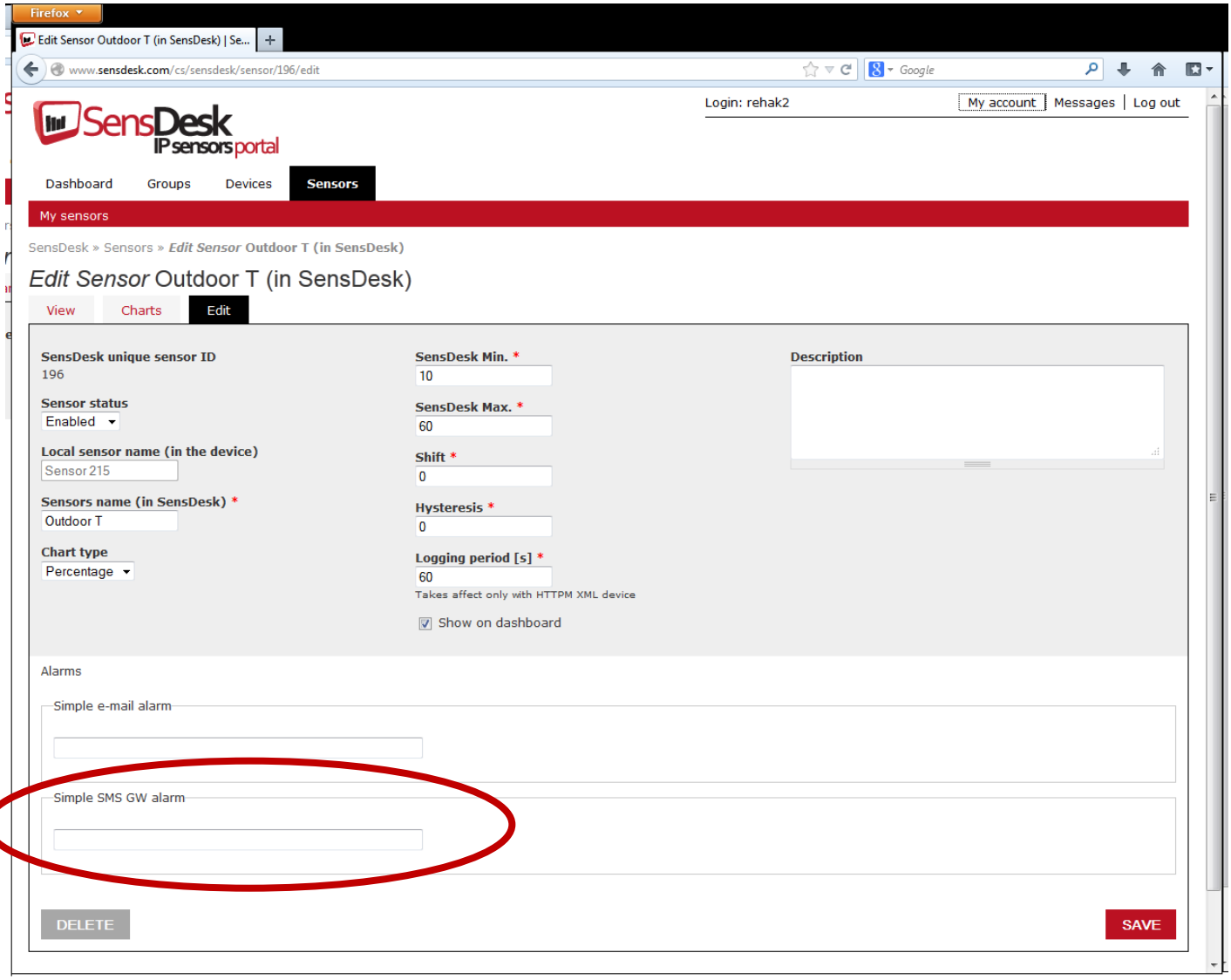
System Restart section

Resets the device.

Using SensDesk.com service

SensDesk.com service is an online portal for HW group IP sensors monitoring.
SensDesk.com can send Email notifications in case an alarm is detected. HWg-SMS-GW can be used for sending SMS notifications.

1) Set IP address of your HWg-SMS-GW in the account settings.
   SensDesk.com: My Account >> Edit
2) Set the recipient phone number for each single sensor, for sending alarm SMS messages from SensDesk.com. SensDesk.com: Sensors >> Edit

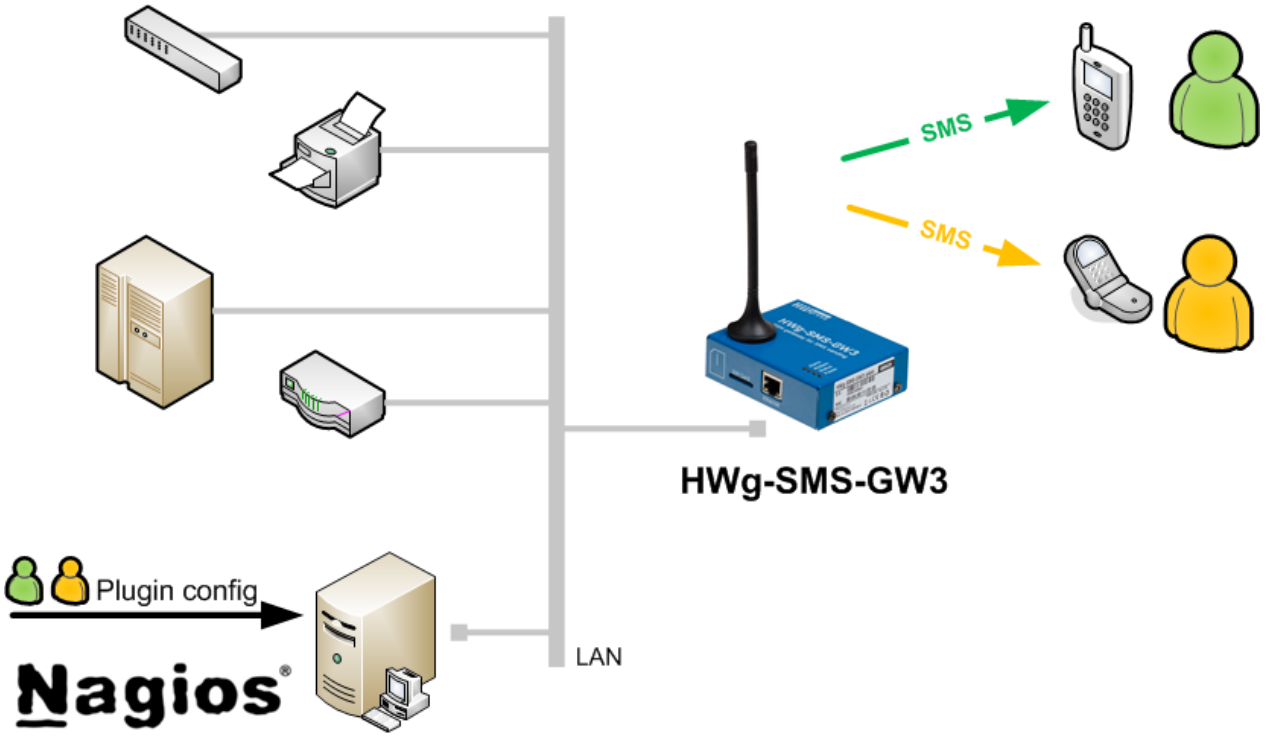


Note:
HWg-SMS-GW must be accessible on a public IP address in order to send SMS alarms from your SensDesk.com account.

Using SMS gateway with Nagios

Sending notifications from Nagios using SMS gateway HWg-SMS-GW.

A plug-in for HWg-SMS-GW, created in cooperation with Netways, allows sendong SMS messages from Nagios system.



Nagios plug-in notify-poseidon-sms.pl takes notifications about changes on the monitored devices and transfers them via HTTP protocol to HWg-SMS-GW, which then sends an SMS message.

Installation

The following steps are based on standard Ubuntu server installation process Some folders or commands can vary due to different Linux distribution used.

2.1) Download the notify-poseidon-sms.pl plug-in from https://www.netways.org/projects/plugins/files do adresáře /usr/lib/nagios and set the setup rights.

```
nagios-server:~# cd /usr/lib/nagios
nagios-server:~# wget https://www.netways.org/attachments/download/262/notify-poseidon-sms.pl
nagios-server:~# chmod a+x notify-poseidon-sms.pl
```

2.2) Send a test SMS to verify the functions of the plug-in and HWg-SMS-GW. Parametr -H specifies an IP addresuś of the HWg-SMS-GW device designated for sending the SMS messages. Enter the recipients phone number for receiving the message using the -D parameter.

```
nagios-server:~# cd /usr/lib/nagios
nagios-server:~# ./notify-poseidon-sms.pl -M "Test message" -H 192.168.1.1 -D +420777888999
```

In case the plug-in start fails and an error message shows Can't locate LWP.pm, it is necessary to install a Perl module LWP for HTTP protocol support. This can be done on Ubuntu or Debian by a command:

```
nagios-server:~# apt-get install libio-all-lwp-perl
```

Nagios settings

Document recommended for basic Nagios setup:
http://www.hw-group.com/support/an38/index_cz.html

3.1) A support for sending SMS messages with the notify-poseidon-sms.pl plug-in can be added by creating a file **/etc/nagios3/notify-poseidon-sms.cfg**:

```
define command {
    command_name notify-host-by-sms
    command_line /usr/bin/perl /usr/lib/nagios/notify-poseidon-sms.pl -H 192.168.1.1 -D
$CONTACTPAGER$ -M "$HOSTALIAS$ $HOSTOUTPUT$"
}

define command {
    command_name notify-service-by-sms
    command_line /usr/bin/perl /usr/lib/nagios/notify-poseidon-sms.pl -H 192.168.1.1 -D
$CONTACTPAGER$ -M "$HOSTALIAS$ $SERVICEOUTPUT$"
}
```

Note: The whole command_line definition text has to be in one line in order to work correctly.

Note, do not forget to change the -H parameter to an actual IP address (eventually to a DNS name) of your HWg-SMS-GW device.

SMS text is assembled by the -M parameter. A list of supported variables (macros) can be found on http://nagios.sourceforge.net/docs/3_0/macrolist.html

3.2) Define contacts and contact groups for SMS messaging in a file **/etc/nagios3/conf.d/contacts_nagios.cfg**.

```
define contact {
        contact_name                    peter-gsm
        alias                           Peters GSM phone
        service_notification_period     24x7
        host_notification_period        24x7
        service_notification_options    w,u,c,r
        host_notification_options       d,r
        service_notification_commands   notify-service-by-sms
        host_notification_commands      notify-host-by-sms
        pager                           +420777888999
}

define contactgroup {
        contactgroup_name       sms
        alias                   Notifications via SMS
        members                 peter-gsm
}
```

Note: In case you want to send notifications to multiple phone numbers, create a contact for every phone number and enter each contact into a memebers parameters in a contactgroup (divided with ,).

In case you are using a standard Nagios configuration and want to add SMS sending for all devices and services, do not create a contactgroup and add only *peter-gsm* to the *admins* group. The setup is then complete and the notifications will be sent also via SMS after restarting the Nagios service (points 3 and 4).

```
define contactgroup {
        contactgroup_name       admins
        alias                   Nagios Administrators
        members                 root,peter-gsm
}
```

3.3) Adding SMS notification options to selected sevices and services can be done in their definition, by adding a contact_groups parameter, for example:

```
define host {
        use                     generic-host
        host_name               localhost
        alias                   localhost
        address                 127.0.0.1
        contact_groups          admins,sms
}

define service {
        use                     generic-service
        host_name               localhost
        service_description     Disk Space
        check_command           check_all_disks!20%!10%
        contact_groups          admins,sms
}
```

Note: Contacts are usually defined in the device's or service's templates, adding contact_groups parameters will rewrite the pre-set template. This example is based in a standard settings of an admins contact group, which uses e-mails for sending notifications. Only SMS messages will be sent after adding "contact_groups sms" parameter.

3.4) A restart of Nagios needed to activate the changes.

```
nagios-server:~# service nagios3 restart
```

Using the product with your application

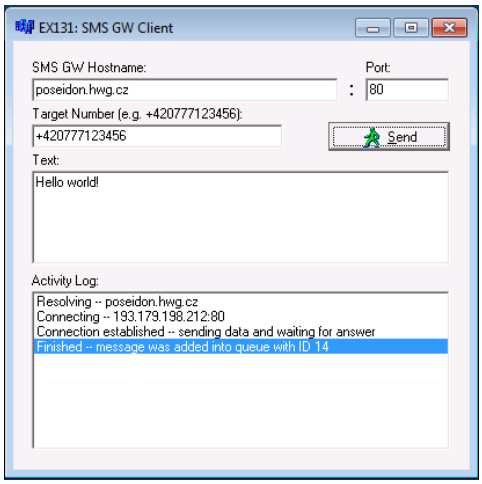
HWg-SMS-GW communicates over LAN via a **netGSM** protocol built on HTTP.

In case you want to use this product with your application, use the **HWg-SDK** (Software Development Kit). The SDK kit cotnains commented examples of the source codes for various programming languages.

Eventually please contact HW group regarding the netGSM protocol documentation.

www.HW-group.com

EX131: SMS GW Client (Borland C++ Builder)

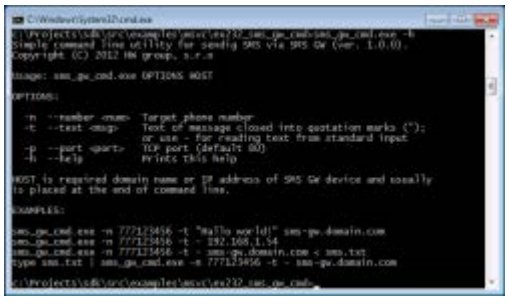


- **Supported devices:** Poseidon 2250, Poseidon 4002, SMS-GW-GW
- **Project file:** sms_gw.bpr
- **Win EXE version:** sms_gw.exe
- **Screenshot:** EX31_screen.png
- **Used:** TSession class of library C++ SDK Classes

Some HWg devices can send SMS via a connected GSM modem. In this case, the device works as a SOAP Web Service and this example demonstrates how to make a simple client with a graphical user interface. Written in Borland C++ Builder using the HWg SDK.

- Easy to use with simply GUI
- Sends SMS via remote GSM modem

EX232: SMS GW Client CMD (Microsoft Visual C++)



- **Supported devices:** Poseidon 2250, Poseidon 4002, HWg-SMS-GW
- **Project file:** sms_gw_cmd.bpr
- **Win EXE version:** sms_gw.exe
- **Screenshot:** EX32_screen.png
- **Used:** TSession class of library C++ SDK Classes

Some HWg devices can send SMS via a connected GSM modem. In this case, the device works as a SOAP Web Service and this example demonstrates how to make simple client with a command-line user interface. Written in Borland C++ Builder using the HWg SDK.

- Sends SMS via remote GSM modem
- This is a command-line tool, it can be used in BAT scripts
- Message text is entered as a command-line parameter or read from the standard input