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This manual describes how to use the Email-2-SMS (e-2-s) Gateway.

Generally, the e-2-s gateway is able to convert Emails to SMS.

There are 2 working modes, which are able to work simultaneously:

• Email-Server mode

In this working mode, the e-2-s gateway acts like an email-server. The e-2-s gateway can be contacted from any email-client and get emails from the client. After getting the email, the e-2-s gateway evaluates the email-subject or/and the email-body and processes that information to create SMS, according to the user-specific configuration (details see points 4 and 5).

• Email-Client mode

In this working mode, the e-2-s gateway collects emails from an existing mailbox (for example mailbox on MS Exchange server) via POP3 or POP3-SSL in definable intervals. After collecting the email, the e-2-s gateway evaluates the email-subject or/and the emailbody and processes that information to create SMS, according to the user-specific configuration (details see points 4 and 5).

Additionally the e-2-s gateway is able to convert SMS to Email.

It is also possible to send Heart-Beat SMS, to regularly monitor the e-2-s gateway itself, the sim-card and the provider.

It is possible to send Multipart-SMS with the e-2-s gateway.

The e-mail-subject and the email-body can be used for the analyses. The only requirement for using the email-body is, that the e-mail body needs to be in plain text, otherwise the e-2-s gateway is not able to analyse the text in the e-mail body.



1. Quick start

- Insert the SIM-card by pushing the black button (to the right of the sim-slot 1).
- Connect the delivered antenna to port "ANT".
- Connect the power-supply to port "PWR".
- Connect your PC via Ethernet cable on port "ETH0".
- Change the network settings on your PC to 192.168.1.2 (255.255.255.0).
- The e-2-s gateway can be configured via WEB browser. The web interface can be accessed via the following access parameters:

Address: http://192.168.1.1

Username: root

Password: root (in gateway models purchased as from January 2020 the

default password is: "P<last 8 digits of the serial number>h"

- Immediately change the default password after the first login, due to security reasons!
 You can do that in the menu "Administration" → "Change Password".
- Enter the PIN of the SIM-card (in the e-2-s gateway menu "Configuration" → "Mobile WAN" → "PIN"). If the PIN is disabled, leave the field empty.
- If necessary, change the IP-address of the e-2-s gateway according to your local network (in the e-2-s gateway menu "Configuration" → "Lan" → "Primary").
- Choose the right pre-configuration for your use-case in the menu "Administration" ->
 "Change Profile":
 - o Profile: Standard (default)

e-2-s gateway works via LAN, without 2G/3G/4G mobile-data-connection. The e-2-s gateway connects to the POP3 mailbox via the Ethernet/LAN.

Profile: Alternative 1

e-2-s gateway works via 2G/3G/4G mobile-connection, without LAN. The e-2-s gateway connects to the POP3 mailbox via the Mobile Connection of your SIM card. Attention, data-traffic of your SIM card must be activated.

Profile: Alternative 2

Not in use.

Profile: Alternative 3

Not in use.



2. Global Settings

To configure the converting-settings of the e-2-s gateway, please use the webinterface under "Customization" → "User Modules" → "Email To SMS Gateway".

IMPORTANT: Special characters like ü, €, &, and so on, will be deleted from every input field in the web interface after pressing the "Apply" button. This is a restriction of current firmware version of e-2-s gateway. But special characters in the email subject can be read by the e-2-s gateway and also sending of SMS with special characters is supported (UTF-8 character set).

The e-2-s gateway is able to send about 20 SMS per Minute. This value depends on some other circumstances as well (telco-provider, time for getting emails, ...).

2.1 General Settings

	General Settings
Enable Module	

<u>Enable Module:</u> The e-2-s gateway functionality will be enabled if the checkbox is checked.

2.2 Email to SMS: Email Server Mode

Settings for the e-2-s gateway to act like an email-server.

The e-2-s gateway can be contacted from any email-client via SMTP protocol and get emails from the client. After getting the email, the e-2-s gateway evaluates the email-subject or/and the email-body and processes that information to create SMS.

	Email to SMS: Email Server Mode
Enable Server Mode	
Email Server Port	25
Debug Enabled	
	In Email Server Mode the Email-to-SMS-Gateway acts like an SMTP server at the given port. Email subjects will get sent to the given number in the address. Address needs to be in the form of number@ip/domain (eg: +4367612345678@e2s.at or +4367612345678@192.168.1.1).

Enable Server Mode: The Email-Server functionality will be enabled if the checkbox is

checked. We recommend using the Email-Server-Mode in your internal network only. Using Email-Server-Mode on a public IP-network requires the activation of the Email-2-SMS Gateway

firewall.

Email Server Port: The IP-port, on which the e-2-s gateway listens for incoming

SMTP-connections from email-clients.

Email Server Debug Enabled: If enabled, more detailed information can be found in the system-

log of the e-2-s gateway ("Status" → "System Log"). Enable this feature only in case of communication problems with the email-

client.

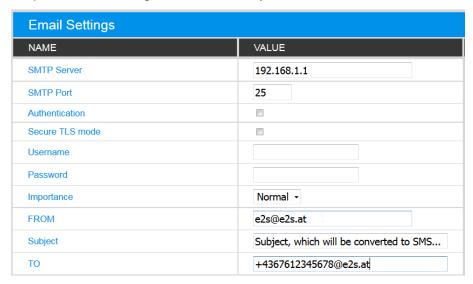


The email-address-recipient in your email-client needs to be in the following format: recipient-number@ip/domain

For example:

<u>+43676123456@e2s.at</u> +4367612345678@192.168.1.1

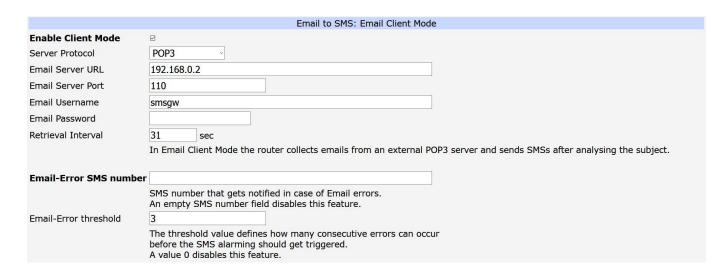
Example SMTP-configuration from any email-client:



2.3 Email to SMS: Email Client Mode

Settings for the email account, where e-2-s gateway gets emails from.

In this working mode, the e-2-s gateway collects emails from an existing mailbox (for example mailbox on MS Exchange server) via POP3 or POP3-SSL in definable intervals. After collecting the email, the e-2-s gateway evaluates the email-subject or/and the email-body and processes that information to create SMS.





Enable Client Mode: The Email-Client functionality will be enabled if the checkbox is

checked.

If disabled, no emails will be collected from the mailbox.

Server Protocol: Defines the protocol of the connection to your email server:

POP3: unsecured plain text connection

POP3-SSL: ssl secured connection

<u>Email Server URL:</u> The URL of your email server.

<u>Email Server Port:</u> The Port of your email server.

<u>Email Username:</u> The username to log into the email server.

Email Password: The password to log into the email server.

To initially set or change the password, type a new password in the input field. The password will not be visible in the input field after

saving with "Apply" button.

Retrieval Interval: Polling interval for the POP3 Mailbox, to define how often the emails

will be collected.

Important: If you use a huge amount of emails together with a lot of recipients, you have to set a higher interval. The minimum interval is

30 seconds.

Email-Error SMS number: This phone-number gets notified via SMS, in case of problems with

getting the emails from the email-server. If this field is empty, the

feature will be disabled.

<u>Email-Error threshold:</u> This value defines how many email-errors need to occur, before the

SMS alarming will be triggered. Value "0" disables the feature.



2.4 Sender Settings

The e-2-s gateway is able to analyse the email-subject and the email-body.

Email-body only works, if the email-body is in plain text format, otherwise the e-2-s gateway can't analyse the text.

In these settings you can define, if you want to use the email-subject or the email-body for analysis. Also the maximum SMS length can be defined.

Sender Settings

Decide whether to scan email subject and/or email body.

Use email subject
Use email body

Max individual SMS (Multipart)

Maximum individual SMS parts of a multipart SMS (between 1 and 9).
Each individual part can be up to 140 chars (depending on encoding)

<u>Use email subject:</u> Activate this checkbox, if you want to analyse the email

subject

<u>Use email body:</u> Activate this checkbox, if you want to analyse the email body

Max individual SMS (Multipart): The value for the maximum parts of the Multipart SMS. The

value must be between 1 and 9. Each single SMS-part has a maximum of 140 characters. So the maximum length of a

multipart-SMS is 1260 characters!

Attention: Multipart uses multiple SMS! Keep in mind, when

calculating the sim-contract and the SMS cost!

2.5 Security Settings

Security Settings		
ken will be validated otherwise no SMS will get send. Value 0 disables this feature.		
(1		

Auth Token:

There can be a security token (4 numbers) within the email-subject, which will be checked by the e-2-s gateway. If this token is not present in the email-subject, the SMS will not be sent. If the field "Auth Token" is empty or set it to 0, the feature is deactivated and the e-2-s gateway will not check for a token in the email-subject. If the token is active (4 digits) then the feature works in both alarming modes (rule-based and keyword-based).



2.6 Heartbeat SMS Settings

The e-2-s gateway is able to send periodic SMS (heartbeat SMS) to one recipient number, to check that the device is still powered up and working correctly.

	Heartbeat SMS Setting		
Heartbeat Interval	weekly		
Hour of Day	8 Hours. [0-23]		
Minute of Hour	39 Minutes. [0-59]		
Day of Week	2 Day [1-7, Sunday = 1]		
Mobile Number	+4367612345678		
SMS Text	MS Text All OK! The email2sms gateway is up and running		
If enabled a heartbeat SMS gets sent in the specified interval.			

Heartbeat Interval: It is possible to send heartbeat SMS periodically:

daily

weekly

monthly

<u>Hour of Day & Minute of Hour:</u> Define the time for receiving heartbeat SMS.

<u>Day of Week / Month:</u> Define the day-of-week / day-of-month for receiving heartbeat

SMS.

Mobile Number: Define the recipient number for heartbeat SMS.

SMS Text: Define the text for heartbeat SMS.

System-Time of e2s:

The current system-time of e-2-s gateway can be seen under "Status" \rightarrow "General" \rightarrow "System Information" \rightarrow "Time".

The e-2-s gateway can synchronize its own system-time with external NTP-servers, which can be configured under "Configuration" \rightarrow "Services" \rightarrow "NTP" \rightarrow "Synchronize clock with NTP server". Automatic switching for Daylight-Saving-Time is implemented in the e-2-s gateway.



2.7 Email Settings

The e-2-s gateway can not only get emails, but also send emails for the following 3 reasons:

- Send alarm email, if the e-2-s gateway was not able to send out one of the SMS
- Send log-file email with the historic SMS-sending activities
- Convert SMS to email

	Email Settings
SMS-Error email	recipient@domain.com
	Email address that gets notified in case of an SMS error. An empty field disables this feature.
Log destination email	recipient@domain.com
	Email address that the log files should get sent to. An empty field disables this feature.
SMTP Configuration	Configure Email SMTP Server General Email (SMTP) configuration is necessary for sending out log/error emails

SMS-Error email:

Email address, where the information about failure in SMS sending will be sent to. The e-2-s gateway will try 3 times to send the SMS. If the third try also fails, e-2-s gateway will send an email to the predefined Email address (defined in the field "SMS-Error email"). Leave the field empty to deactivate the feature.

Note: If the used SMS-receive-telephone-number is wrong, the e-2-s gateway is not able to detect this situation and so there will no SMS-Error-email be sent. The e-2-s gateway is only able to detect problems in the communication with the telco-provider!

Log destination email:

Email address, where the history log files should be sent to.

The history-log-file will be created automatically and it stores every SMS-activity which will be done by the e-2-s gateway.

The file will be sent automatically, if it reaches 60 kilobytes in size. The file will reside in the gateway (/var/data/email2sms/history.log) until it reaches the file size limit – then it will be sent to the given email address. Leave the field empty to deactivate the feature (in this case, the log file resides on the e-2-s gateways file system and will get reset when the file reaches 60 kilobytes in size).

SMTP Configuration:

To be able to send out emails, you need to configure a SMTP-Server. By using the link "Configure Email SMTP Server" you will be redirected to the page for entering the SMTP-Server information.



Converting incoming SMS to Email:

	SMS to Email Mode
Enable SMS to Email Mode	
SMS to Email	recipient@domain.com
	Email address that should receive message texts of incoming SMSs. An empty field disables this feature.
Dynamic recipient parsing	
	If this field is enabled the SMS text will be scanned for an email address. This email address will then get the SMS text mailed.

SMS to Email: Email address, where the information about incoming SMS will be

sent to. The email contains the full content of the SMS and the sender-mobile-number (within the email-subject and the email-

body). Leave the field empty to deactivate the feature. Special characters like ü, €, &, and so on, are currently not

supported by the feature "SMS to Email".

<u>Dynamic recipient parsing:</u> If this checkbox is enabled, the SMS text will be scanned for

an email address (word containing the "@" sign). If a valid

email address will be found within the SMS, the email will be sent to this email-address too. Write the sign "@" into the field "SMS to

Email", if you want to use dynamic recipient parsing only.

3. Recipients

In the recipients tab you can create your own telephone book. These telephone book entries can be used in both alarming methods (Rule Based Alarming & Keyword Based Alarming). It is possible to store up to 200 entries in the telephone book.

3.1 Recipient Directory

		Recipients		
Recipient 1	Name	John Smith	Phone Number	+436712341373
Recipient 2	Name	Max Mustermann	Phone Number	06643312954
Recipient 3	Name	Chuck Norris	Phone Number	+436645512366
Recipient 199	Name		Phone Number	
Recipient 200	Name		Phone Number	
Apply				

Recipients: Enter the name and the phone-number of the different SMS recipients.

Format of the number: +4366412345678 or 066412345678.



4. Rule Based Alarming

Rule-Based-Alarming is recommended for alarming to single or only a few telephone numbers. In this method the telephone-number of the recipient and also the SMS-text can be a part of the email subject. For Rule-Based-Alarming it is necessary to be able to create your own email subject. If your system can only send predefined emails, it's recommended to use Keyword-Based-Alarming (see point 5).

4.1 Rule Based Alarming

		Rule Based Alarming
Enable Rule Based Alarming	V	

Enable Rule Based Alarming:

The Rule-Based-Alarming functionality will be enabled if the

checkbox is checked.

If disabled, the email-subjects of incoming emails will not be checked against the rules of Rule-based-alarming (see point 4.4.).

4.2 Recipient Settings

			Recipient Settings
Recipient 1	Herbert Huber x	default 🗹	
Recipient 2	Hermann Maier x	default 🗹	
Recipient 3	Chuck Norris x	default 🖺	
Recipient 9)	x default 🗆	
Recipient 10	(x default 🗆	

Recipient: The recipient, to which a SMS will be sent if the rule matches. The recipient can

be deleted by pressing the |x| Button next to the input field.

<u>default:</u> Marks the current recipient as default recipient. There can be more than one default recipients at the same time. The default recipient will be chosen, if there is

no recipient defined in the email subject.

4.3 Text Settings

		Text Settings
Text 1	Predefined Default Text	default ●
Text 2		default ⊚
Text 10		default ◎

<u>Text:</u> The predefined SMS texts 1-10, which can be used for the rules (T1 - T10).

<u>default:</u> Marks the current text as default text. The default text will be chosen, if there is no

text defined in the email subject. There can only one default text at the same time.



4.4 Email Subject Definition

The email subject defines the recipient and the text of the SMS.

There are 2 working-methods of the Rule-Based-Alarming: static and dynamic

In the static mode you can define recipients that are pre-configured (see 4.2) by inserting R(number, ...) where number refers to a configured recipient.

You can define a text which is configured in the settings (see 4.3) by its number Tnumber. If you don't include any recipient definition in the email subject then the SMS will be sent to all configured default recipients.

If you don't include any text definition in the email subject then the SMS will contain the configured default text.

In the dynamic mode you can use a text TDtext and a recipient RD(phonenumber) in your email-subject that doesn't have to be configured in the settings. Both methods are working parallel and can be used together.

Marker Definition	Name	Description	Required yes if not 0	
A nnnn	Auth Token	nnnn 4 digits		
R(n[,n]*)	Recipient List	n[,n]* 1 or more of the configured recipients (1-10)	no	
Tn	Text number	n number of configuredSMS text	no	
RD (<i>n</i>)	Dynamic Recipient Input	n a single phone number	no	
TDx*	Dynamic Text input	x* text characters of the SMS text (max 150 chars)	no	

Legend:

[] ... optional

4.5 Valid email subject examples:

static:

A1234_R(1,2)_T1 send text 1 to recipients 1 and 2 if auth token is 1234
A1234_R(4)_T5 send text 5 to recipient 4 if auth token is 1234
A1234_R(1,2) send default text to recipient 1 and 2 if auth token is 1234
P(1,2) send default text to recipient 1 and 2 if auth token is 0

send default text to recipient 1 and 2 if auth token is 0
A 1234, T3 send text 3 to default recipients if auth token is 1234

• A1234 send default text to default recipients if auth token is 1234

any send default text to default recipients if auth token is 0

dynamic:

• A1234_RD(+43123456)_TDhello world send "hello world "to +43123456 if auth token is 1234

• ANY RD(+43123456) TDhello world send "hello world" to +43123456 if auth token is 0

static & dynamic:

• ANY R(1) TDhello world send "hello world "to recipient 1 if auth token is 0

^{* ...} repeat



5. Keyword Based Alarming

Keyword-Based-Alarming is recommended for alarming to a group of telephone numbers. In this method it is only necessary to find a match between a keyword in the email subject and the predefined keyword in the group settings. For the Keyword-Based-Alarming it's NOT necessary to define your own email subject. You only need to know one keyword from your email subject.

5.1 Group Based Settings

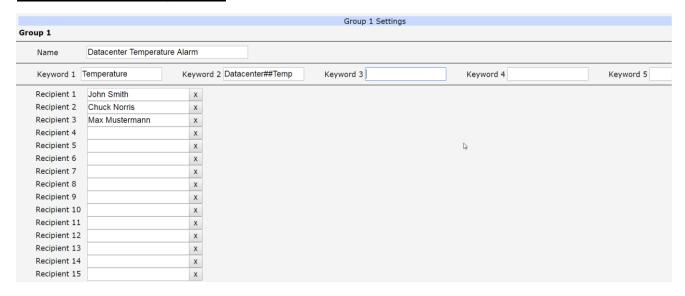


Enable Keyword Based Alarming:

The Keyword-Based-Alarming functionality will be enabled if the checkbox is checked.

If disabled, the email-subjects of incoming emails will not be checked against the keywords, which are defined in the groups of Keyword-based-alarming (see point 5.2.).

5.2 Group Settings 1-20



It is possible to define 5 keywords for each of the 20 groups. If the email-subject contains one of these keywords, the subject (its first 160 characters) will be sent as SMS to the recipients of this particular group. If the auth token is configured as a 4 digit number then the auth token must part of the email. If the auth token is configured as 0, only the keyword has to match.



Name: The name of the group, which will be shown at the overview on the left side of

the webinterface.

It does not have any effect on the functionality.

<u>Keyword 1-5:</u> The keyword that needs to be in the email-subject. The keyword is *case*

sensitive! Due to fact, that it is not possible to enter special characters on the webinterface of email-2-sms gateway, it is necessary to use ## as wildcard for 1 or more characters! So, it is also possible to separate 2 words by ## in one

keyword.

If you want to convert all incoming emails (without any keyword-checking) into

SMS, then you can use only ## as the keyword.

If all keywords are empty, the group is deactivated and no SMS will be sent.

Recipient 1-15: The recipient that will receive the SMS. The recipient can be selected from the

global recipient-list-window, which appears when you click into the recipient-field. The recipient can be deleted by pressing the |x| Button next to the input

field.



6. Binary-Input Alarming

Binary-Input-Alarming can only be used if your e2s-hardware is equipped with digital inputs (different hardware models are available).

The alarm will be sent out, if there is a change on the Binary-Input (dry-contact).

For example flame detectors or door-contacts which are connected to the Binary Input.

6.1 Binary Input Alarm Settings

	Binary Input Alarming Mode		
Enable Binary Alarming Mode	\square		
Alarm message text	Hallo Herr %s, Achtung - Brandalarm!		
Hour of cleanup	Message text that will be sent to the binary recipients. You can include the macro '%s' in the alarm text which will be replaced by the recipient name. 22 hour of day		
·	The hour of the day at which the recipients should get cleaned up (1-24). '0' or empty disables the cleanup.		

Enable Binary Alarming Mode: Set this checkbox, to enable the functionality of this alarming

mode.

Alarm message text: Message text which will be sent to the recipients. The macro

"%s" can be uses within the text, to replace the macro by the

name of the recipient.

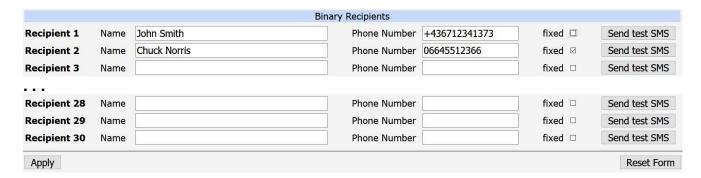
Hour of cleanup: It is possible to delete the recipients (which are set under

"Binary Input Alarm Recipients") automatically every day. The field requires a number from 1 to 24, which stands for the amount of hours after which the recipients will be cleaned up.

"0" or an empty field will disable the cleanup function.



6.2 Binary Input Alarm Recipients



It is possible to enter up to 30 SMS recipients for the binary input alarming feature.

You can type in the name of the recipient and the phone number.

The option "fixed" saves the recipient from being deleted automatically every day at the "hour cleanup".

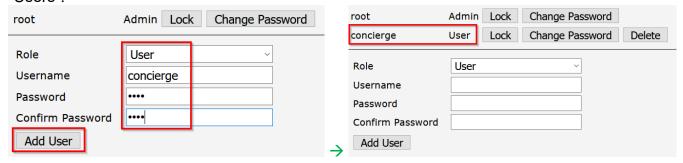
It is possible to send test-SMS to every single recipient individually.

6.3. Binary Input Alarming: separate Login

The feature "Binary-Input Alarming" was implemented for alarming deaf people via SMS in case of fire in a building. For this application, the concierge of the building should only be able to maintain the alarm-recipients, but not do any other settings on the e2s.

To reach this goal, it's possible to have a separate Log-In for the concierge.

First you have to add a new separate user in the gateway settings under "Administration" → "Users":



The concierge can reach the separate Log-In page via following link:

https://192.168.1.1/module/email2sms/alarming_index.cgi



The concierce user only has access to settings, which are related to "Binary-Input Alarms".



7. Backup/Restore Database

After finishing the configuration of your e-2-s gateway, it would make sense to back up the settings and keep it for later usage.

The database file contains all settings besides the "Global Settings".

7.1 Backup Database

Is it possible to download the database file at the menu "Status" → "Backup Database".



7.2 Backup Global Settings

The global settings can be backuped by using the main-menu at "Administration" → "Backup Configuration".



7.3 Restore Database & Global Settings

Restoring the database file can be done at the menu "Status" → "Restore Database". After clicking the "Restore Database" menu item, you are able to click the "Choose File" button and choose a database file, which was saved in former days.

By pressing apply you replace the current database file with the just uploaded file!



The global settings can be restored by using the main-menu at "Administration" → "Backup Configuration" → "Restore Configuration".



8. SIM card switching - failure safety

Switch to other SIM card when connection fails

For reasons of high availability and redundancy, you can use both SIM slots of the gateways. If one SIM card loses registration to cellular network, the second SIM card gets active. Therefore you have to enable the feature "Switch to other SIM card when connection fails" in "Configuration" -> "Mobile WAN":

I might make sense for yo	ur application to think	k about switching b	back to the default	SIM card
after a certain timeout.		_		

$oxed{oxed}$ Switch to default SIM card after timeout					
Initial Timeout	600	min			
Subsequent Timeout *	60	min			
Additive Constant *	5	min			

<u>Initial Timeout:</u> Time that the router waits before the first attempt to switch back to the

default SIM card (from 1 to 10000 minutes).

Subsequent Timeout: Time that the router waits after an unsuccessful attempt to switch back

to the default SIM card (from 1 to 10000 minutes).

Additive Constant: Time that the router waits for any further attempts to revert to the

default SIM card. This time is the sum of the time specified in the

"Subsequent Timeout" and the time specified in this parameter (from 1

to 10000 minutes).



9. Additional interfaces for sending SMS

Besides the functionality of converting emails to SMS, there are some other possibilities to trigger the sending of SMS.

The following interfaces are provided:

9.1 SMS via Webinterface

For testing purpose (to try if your SIM card is able to send SMS) it is the best to use the Web-GUI of e-2-s gateway.

This can be done at the main-menu under "Administration" → "Send SMS".



9.2 SMS via Telnet- or SSH-session

It is possible to use a simple command inside a Telnet- or SSH-Session for sending SMS. A description can be downloaded here:

http://download.bellequip.at/Anleitung_SMS_over_IP_Telnet.pdf

9.3 SMS via HTTP API

It is possible to use http-get command for sending SMS. A description of the http-API can be downloaded here: http://download.bellequip.at/HTTP API ab Firmware 5.3.1.pdf

9.4 SMS via AT-commands over TCP-session

It is possible to use AT-commands over TCP-session for sending SMS. A description can be found here:

http://download.bellequip.at/SMS AT commands over TCP session.pdf

A very similar way is to use AT-commands over virtual COM interface: http://download.bellequip.at/SMS_AT_commands_over_TCP_session_virtual_COM.pdf

Download this documentation as PDF: http://download.bellequip.at/Manual E2S-Gateway 06.2020.pdf