

lextend – manual (v4.8-0)

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Index

1	What is lextend.....	3
2	Hardware versions and application examples	3
2.1	lextend D-NET.....	4
2.2	lextend D-I6	5
3	Features, calls and procedures.....	6
3.1	Calls or procedures to all speakers or a group of speakers.....	6
3.1.1	Procedures.....	6
3.1.2	Calls	7
3.2	Multi-Zone application examples.....	10
4	Installation.....	12
4.1	Wiring lextend D-NET	12
4.2	Wiring lextend D-I6	13
5	Setup and configuration.....	13
5.1	IP, user name and password settings.....	14
5.2	Software update.....	16
5.3	Log	17
5.4	External IOs	17
5.5	lextend manual.....	18
5.6	Sonos gateway.....	19
5.7	Factory reset.....	21
6	Sonos Gateway UDP Protocol	23
6.1	Sonos Gateway procedures.....	23
6.2	Sonos gateway per zone(s) calls.....	25
6.3	Sonos gateway all zone calls	28
6.4	Sending UDP packets to lextend – Example Loxone Miniserver.....	31
6.4.1	Basic configuration	31
6.4.2	Advanced configuration	33
7	Dimensions.....	35
8	Technical specifications.....	36

1 What is lextend

Lextend is a generic automation gateway for Sonos¹. With lextend you can use your Sonos System for much more than listening to playlists or radio stations. Lextend interacts with the Sonos speakers and makes a doorbell, a security alarm system, a commercial announcement system out of your Sonos infrastructure. Depending on the hardware version of lextend, the features can be triggered by sending UDP packets and AC/DC impulses in the range from 6 to 230 volts to lextend. Due to its generic UDP API and wide voltage range physical interfaces, lextend can be controlled by any system. UDP capable network devices, light switches, clock relays, security alarm systems, door opening systems, motion detectors and so on.

2 Hardware versions and application examples

Lextend comes in two hardware versions. The D-NET has an Ethernet interface and can be controlled by its UDP API. The D-I6 has, like the D-NET, the UDP API, but is also equipped with six physical input interfaces which detect AC and DC impulses from 6 to 230V. To these input interfaces, Sonos calls or procedures can be assigned with lextend's web interface.

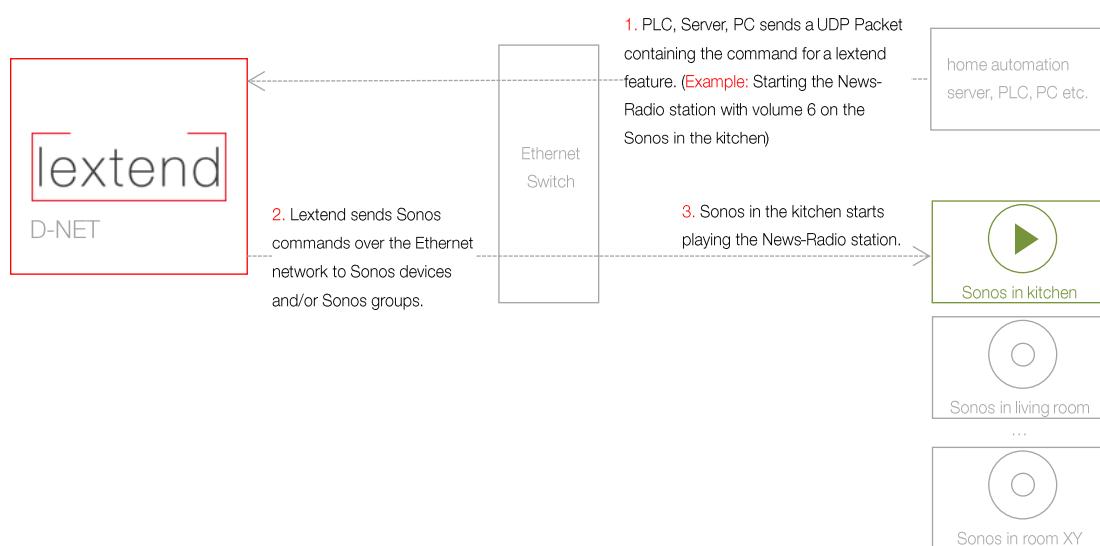
Both the D-I6 and D-NET have the same software installed and provide the same set of features.

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2.1 lextend D-NET



Image 1: lextend D-NET Appliance



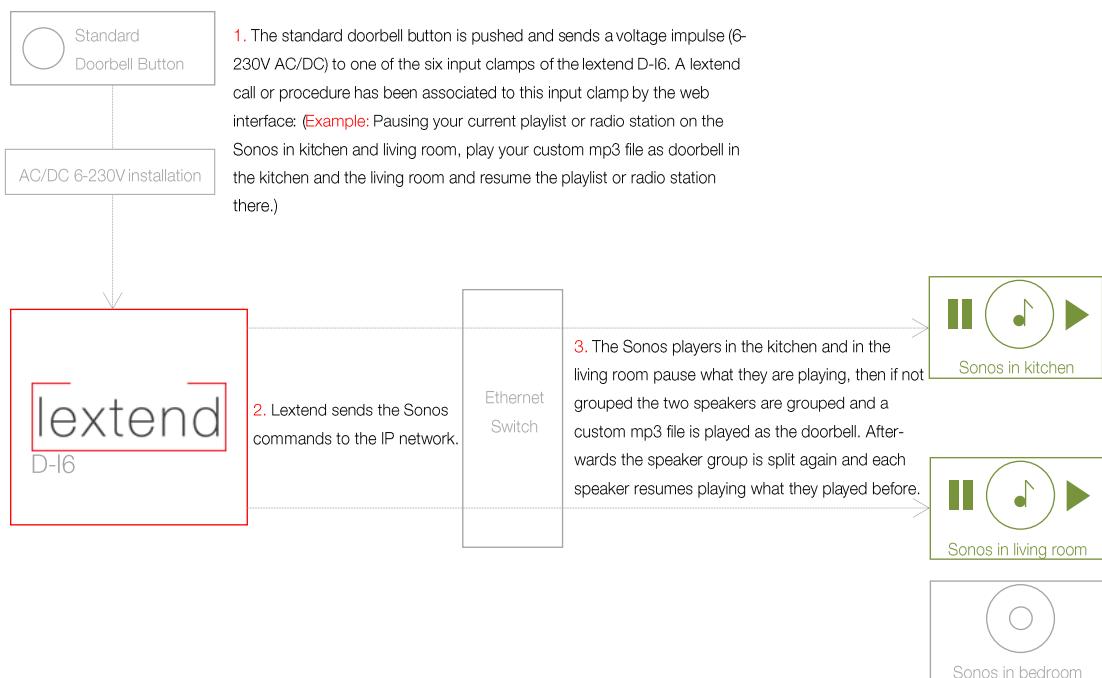
Setup 1: Starting a specific radio station with a certain volume with a UDP packet

The lextend D-NET setup above shows a PCL starting the News-Radio station with volume 6 on the Sonos in the kitchen by sending a UDP packet to lextend.

2.2 Ixtend D-I6



Image 2: Ixtend D-I6 Appliance



Setup 2: Zone dependent doorbell with Ixtend D-I6 and standard doorbell button

In the lextend D-I6 setup shown above, an impulse from a standard doorbell button will pause the current playlist or radio station on the Sonos in the kitchen and living room (not in the bedroom), if the two speakers are not grouped, they are grouped, play a custom mp3 file as doorbell in the kitchen and the living room and resume the playlist or radio station there.

3 Features, calls and procedures

As soon as lextend is plugged in the same IP network as the Sonos devices, lextend discovers them with all their details.

Once discovered, lextend interacts with the Sonos devices. For this, lextend has two groups of features - calls and procedures.

The calls are features like stop, play, volume up, volume down, next or previous track of a playlist.

The procedures are a group of calls like stopping the currently played track or radio station, playing a custom sound and resuming the previously played track or radio station again.

Both, the calls and the procedures can be applied to all speakers or only specific groups of speakers.

3.1 Calls or procedures to all speakers or a group of speakers

An advantage of Sonos is its multi-room capability and the ability to setup groups of speakers for specific zones. For example five Sonos speakers in the living room are grouped with the Sonos App. This leads to the desired result that all speakers in the living room can be started at same the time and with one click, and most important, the group guarantees that the sound is played in sync among the speakers.

With lextend, all calls and procedures can be applied to all speakers in the network or to specific groups of speakers.

To apply calls and features on specific Sonos groups, lextend gets the names of the Sonos devices set by the Sonos App.

3.1.1 Procedures

The following section describes the procedures implemented in lextend with its zone specific

behavior.

1. **Procedure doorbell:** If the doorbell procedure is triggered, all Sonos speakers which contain “-DB” in the speaker name, set with the Sonos App, will play a custom .mp3 file one time as the doorbell. Also all speakers which are grouped with a “-DB” speaker play the doorbell.

The doorbell procedure can be used for more than only ringing a doorbell. Because up to ten different custom mp3 can be played on the “-DB” speakers as doorbell sounds, it is possible to play various signals or speech messages on the “-DB” speakers.

2. **Procedure Security Alarm:** All Sonos speakers, regardless of their name, will play a custom .mp3 file in an endless loop if the security alarm is triggered. The security alarm will stop after lextend has sent a special “stop the security alarm” to all Sonos in the network.
3. **Procedure Lineln:** All Sonos speakers, regardless of their name, will play the Lineln signal of the Sonos device named “-LI” with the Sonos App. The Lineln Signal will be played until the Lineln stop signal is sent to lextend.
4. **Procedure commercial system:** If this procedure is started lextend will play custom .mp3 files every XY minutes. This procedure is looping until lextend is explicitly told to stop.
 - a. The commercial system procedure can be applied to all speakers.
 - i. The custom .mp3 files are played on every speaker which has a name between “-Z1” and “-Z9”.
 - b. The commercial system procedure can be applied to specific zones.
 - i. The custom .mp3 files are played on the speakers with the corresponding zone name (“-Z[0-9]”). For example if lextend applies the commercial system to zone 1 it plays the commercials to speakers named as “-Z1” in the Sonos App and to all speakers grouped with a speaker which is named “-Z1”.

3.1.2 Calls

All calls implemented in lextend have a zone specific and an all speaker option.

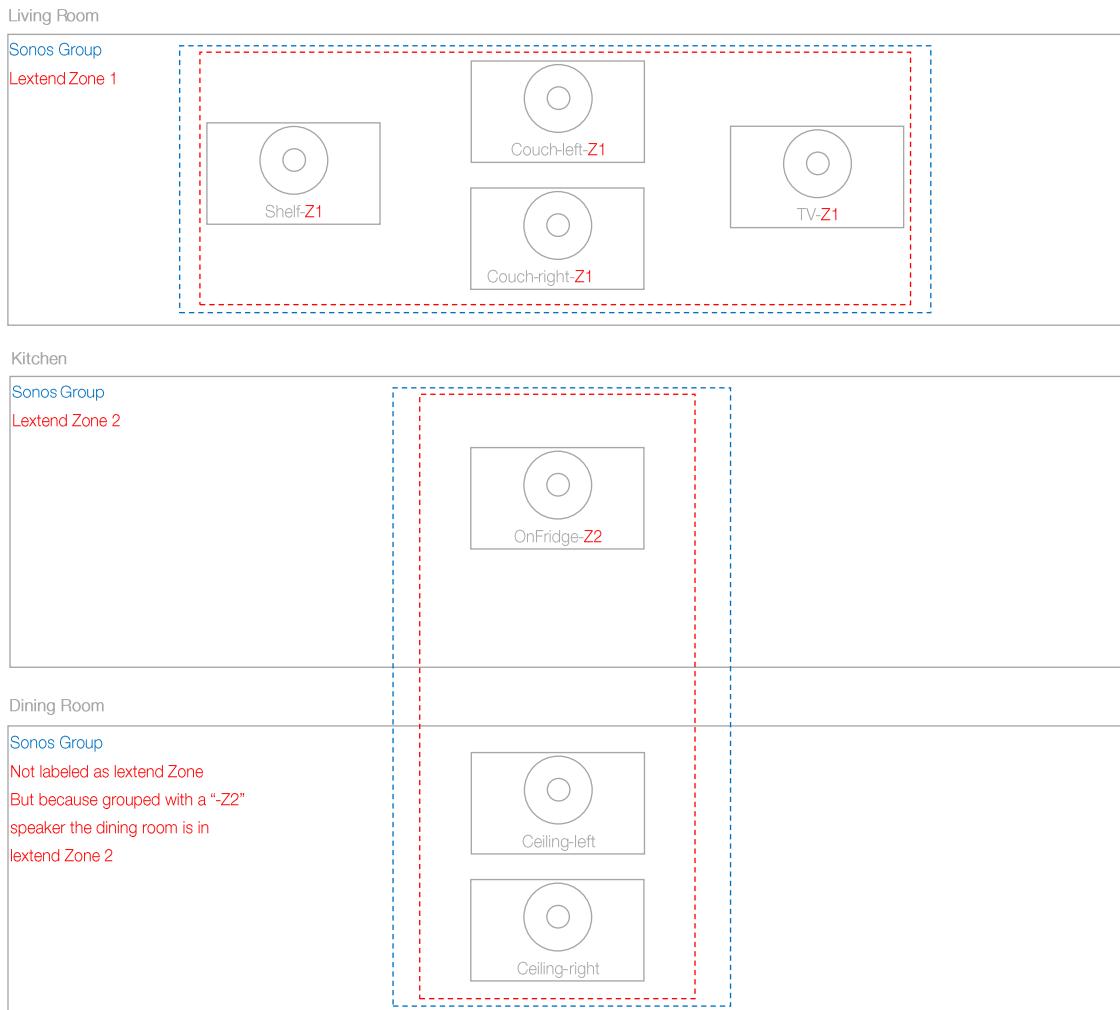
1. **Call Play:** This call plays the currently set stream.

- a. The Play call can be applied to all speakers.
 - i. The currently set audio stream is played on every speaker. If no stream is set, the radio station which has been saved in the memory station 1 on the lextend will be played.
 - b. The Play call can be applied to specific zones.
 - i. The currently set audio stream is played on the speakers with the corresponding zone name (“-Z[0-9]”). For example if lextend starts playing zone 1 it starts all speakers named as “-Z1” in the Sonos App and all speakers grouped with a speaker which is named “-Z1”. If no stream is set, the radio station which has been saved in the memory station 1 on the lextend will be played.
2. **Call Pause:** The Pause call pauses the currently played stream.
- a. The Pause call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Pause call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.
3. **Call Volume Up:** The Volume Up call raises the volume by five or one percent.
- a. The Volume Up call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Volume Up call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.
4. **Call Volume Down:** The Volume Down call decreases the volume by five or one percent.
- a. The Volume Down call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Volume Down call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.
5. **Call Track Up:** The Track Up call plays the previous track in the playlist.
- a. The Track Up call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Track Up call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.
6. **Call Track Down:** The Track Down call plays the next track in the playlist.

- a. The Track Down call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Track Down call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.
7. **Call Set Volume:** The Set Volume call sets the volume.
- a. The Set Volume call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Set Volume call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.
8. **Call Set Radio-Station:** The Set Radio-Station call sets a radio station which has been previously learnt with the lextend web interface.
- a. The Set Radio-Station call can be applied to all speakers.
 - i. Zone behavior see 1.a.i.
 - b. The Set Radio-Station call can be applied to specific zones.
 - i. Zone behavior see 1.b.i.

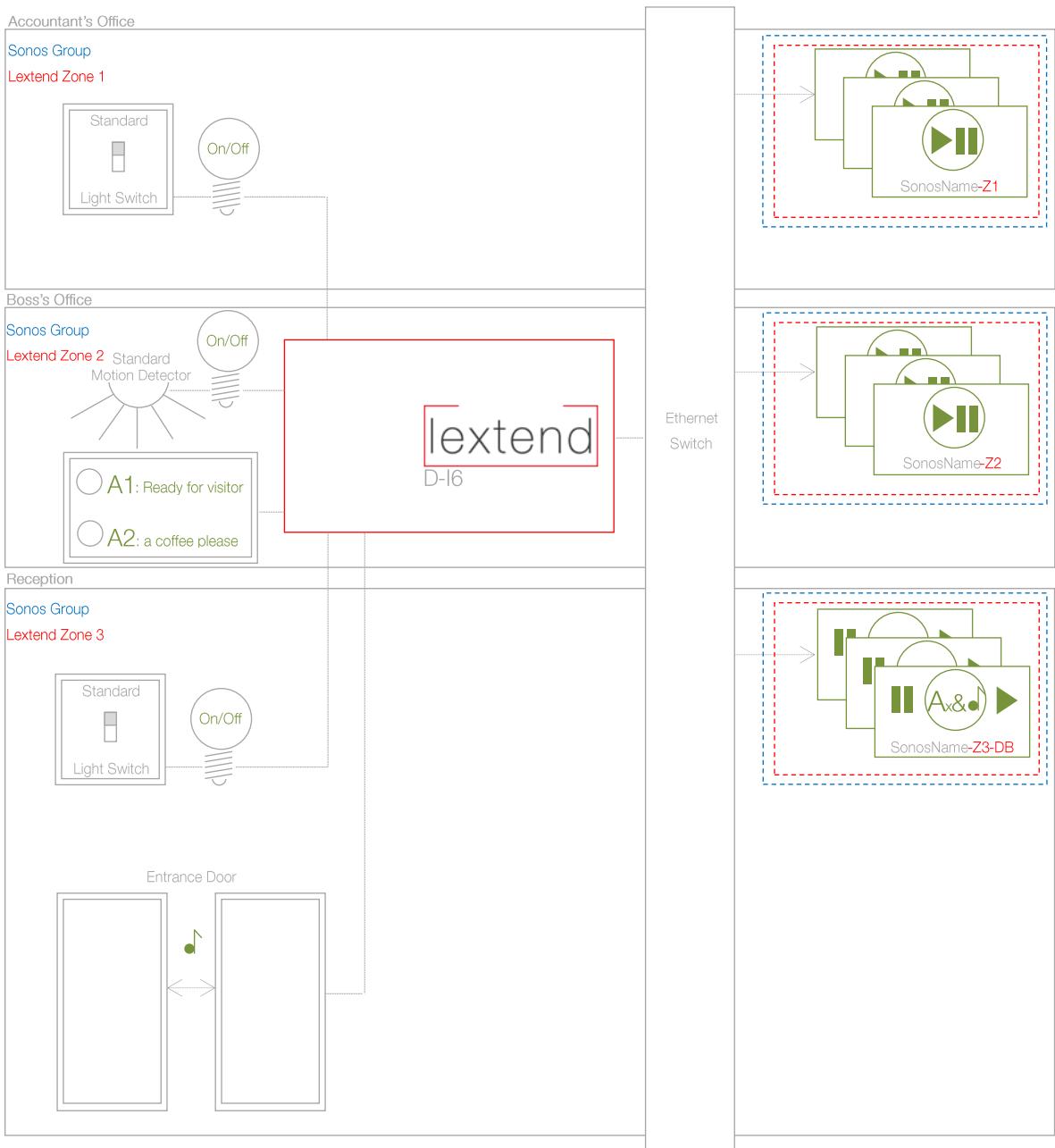
3.2 Multi-Zone application examples

The following section shows application samples on how lextend procedures and lextend calls interact with the Sonos Groups and the Sonos device names set in the Sonos App.



Setup 3: Group design with lextend

By naming the Sonos speakers as shown above, the **Zone 1** calls and procedures are executed on the speakers in the living room. The **Zone 2** calls and procedures are executed on the kitchen speaker. But because the kitchen speaker is grouped in the Sonos App with the dining room speakers, lextend's **Zone 2** calls and procedures are also executed on the dining room speakers.



Setup 4: Group design example with lextend D-I6

In the setup above, an example of an advanced lextend zone design is shown. The three Sonos speakers in the Accountant's office ("Z1"), which are grouped with the Sonos App, are started and stopped along with the light in the office. Also at the reception ("Z3"), the Sonos is started and stopped with the light switch. In the Boss's office ("Z2"), the Sonos is

switched on and off by a standard motion detector.

In addition, the setup uses the doorbell procedure (“-DB”) in the following way: The Sonos group at the reception stops the played radio station or playlist when somebody enters the building through the main door. After stopping, a special welcome sound is played for the visitor. After the welcome has been played the Sonos group at the reception will continue to play the previously played radio station or song of the playlist again.

The Boss has a two button switch in his office. With these buttons, he can play mp3 tracks on the receptionists Sonos group (“-DB”). One button could be to bring him a coffee and the other one to give a sign to the reception that he is ready to welcome the visitor.

4 Installation

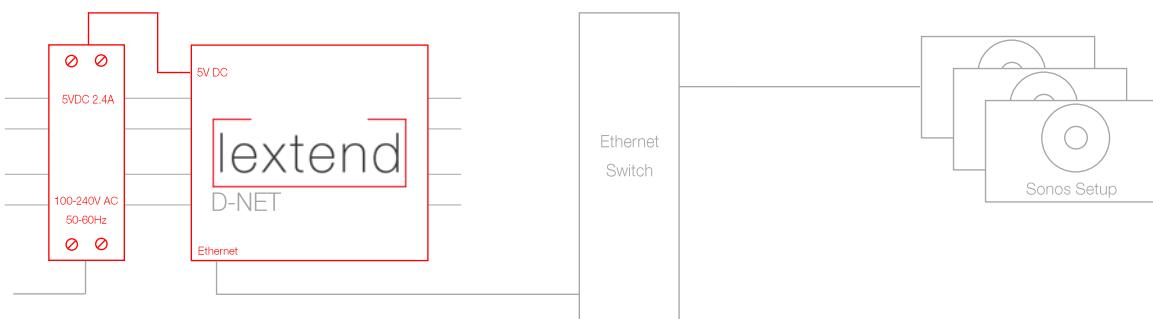
Lextend is an easy to deploy DIN-rail system. It is powered with a shipped 5VDC power supply. In most of the cases the D-NET installations are simple and take only a few minutes. But even if it is simple, we recommend that the installation is done by a professional, because in D-I6 deployments, a low voltage installation is involved.

Please contact your electrician or electrical engineer to assist you with the D-I6 installation.

4.1 Wiring lextend D-NET

The following setup shows the wiring of the lextend D-NET mounted on a DIN rail system.

The red items are shipped with lextend.

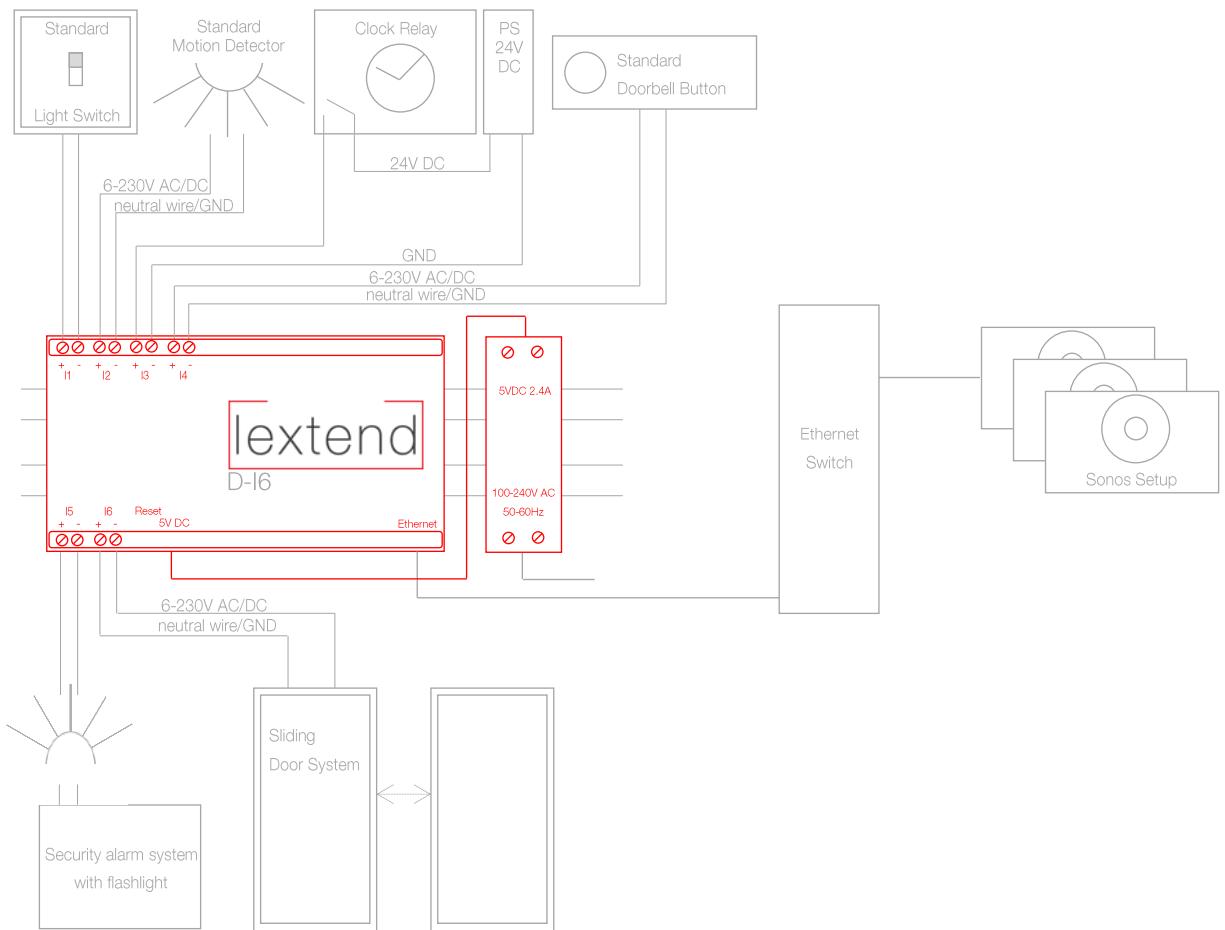


Setup 5: Wiring lextend D-NET

4.2 Wiring lextend D-I6

The setup below shows the wiring of the lextend D-I6, as the D-NET above on a DIN rail system. The red items are shipped with lextend.

The D-I6 appliance is equipped with six input clamps which detect the rising edge to 6 – 230V AC or DC as high and the falling edge from 6 – 230V AC or DC to GND.



Setup 6: Wiring lextend D-I6

5 Setup and configuration

After lextend has been wired as described under section 4 the appliance can be configured with a standard browser.

5.1 IP, user name and password settings

After unpacking or a factory reset (see section 5.7), the IP of lextend is 192.168.1.222/24 and the default gateway is set to 192.168.1.1.

If these settings do not fit your network you can change them with the web interface.

To change the IP settings please set the IP of your PC manually to any IP in the 192.168.1.0/24 network but not 192.168.1.222 (example 192.168.1.10/24) and connect lextend directly with the PC. Then you can access the lextend web interface by entering <http://192.168.1.222> in a standard browser.

Login with the default user name/password:

username: admin

password: admin

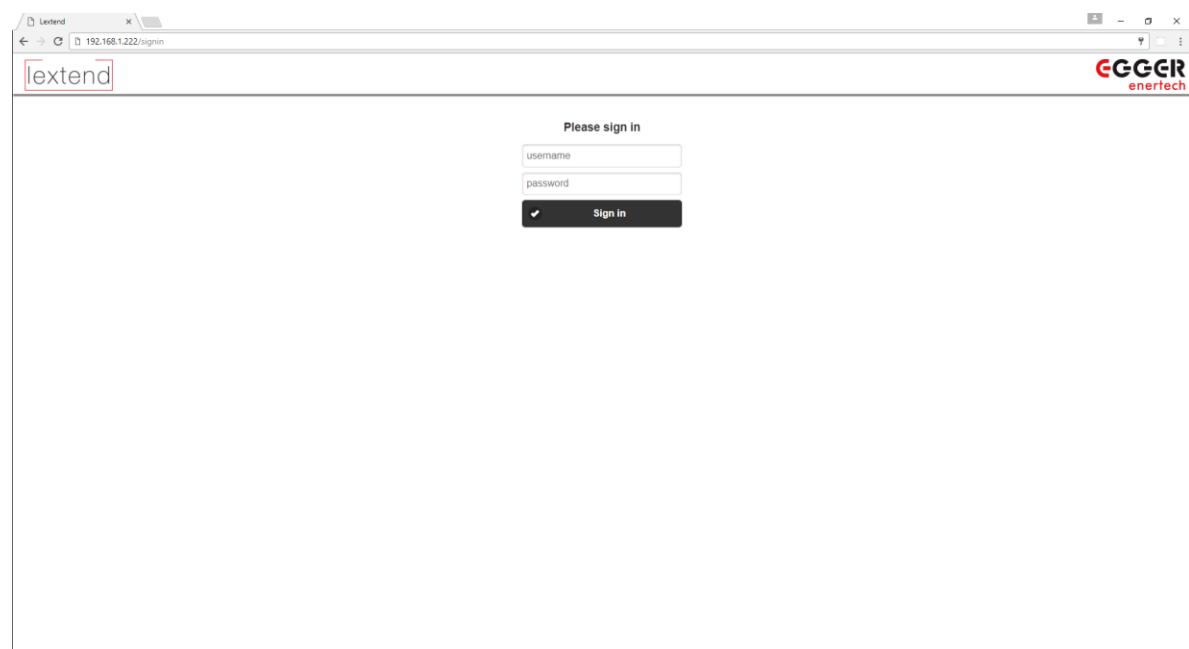


Image 3: lextend web interface - login

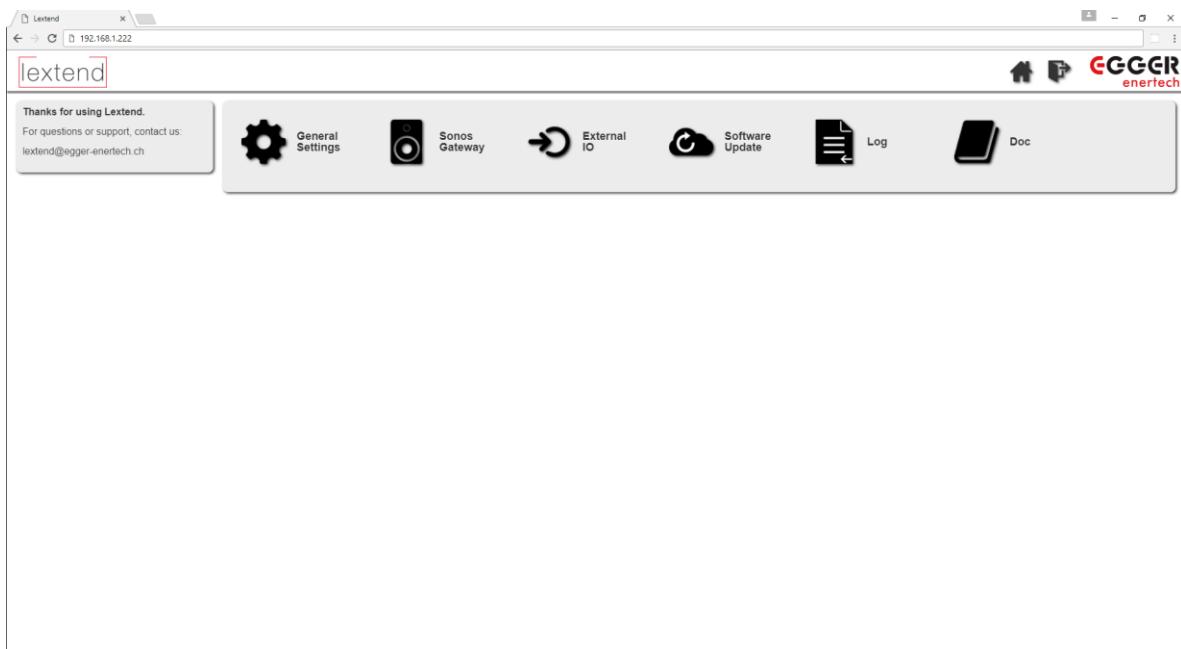


Image 4: lxtend web interface - overview

After successfully logged in, under **General Settings** the following settings can be changed:

- IP settings of lxtend
- For future use: IP setting of the UDP peer. (PLC, PC which communicates over UDP with lxtend)
- User name and the password
 - Important: Please note down the newly set user name and password

After you have changed the “General Settings”, click “Save” on the bottom of the page to save the settings. The device will reboot.

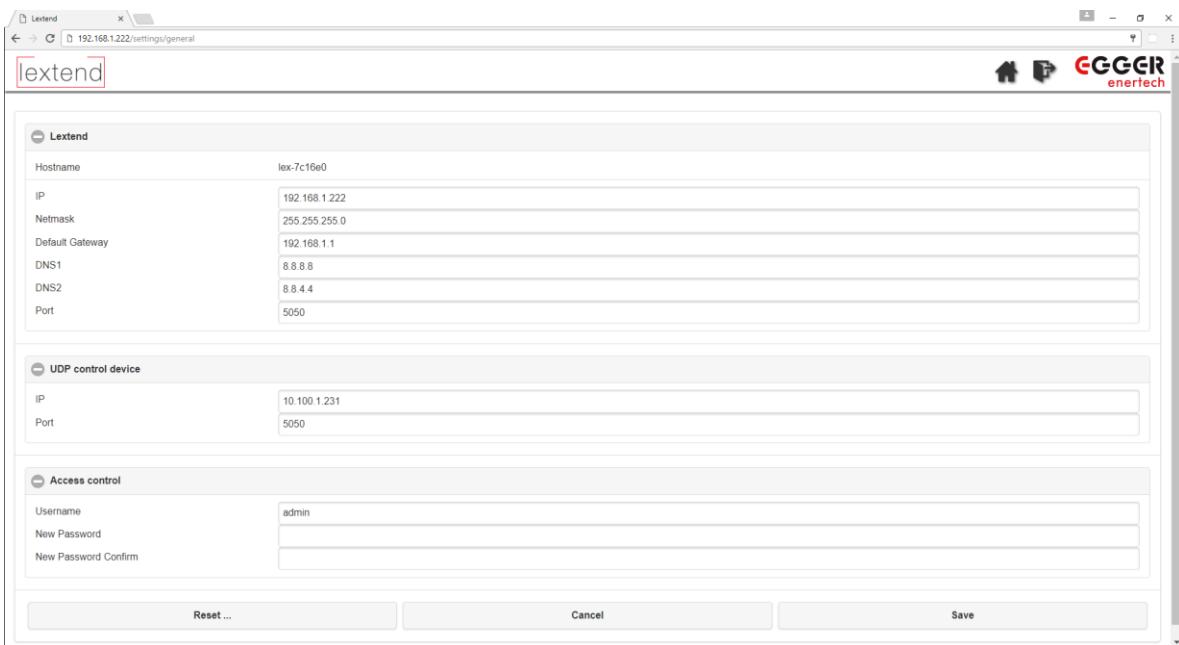


Image 5: lextend web interface - general settings

5.2 Software update

Under **Software Update**, lextend can be updated manually or with the auto update setting. When auto update is enabled, lextend will check every 24h for an update and installs it automatically when a new version is available.

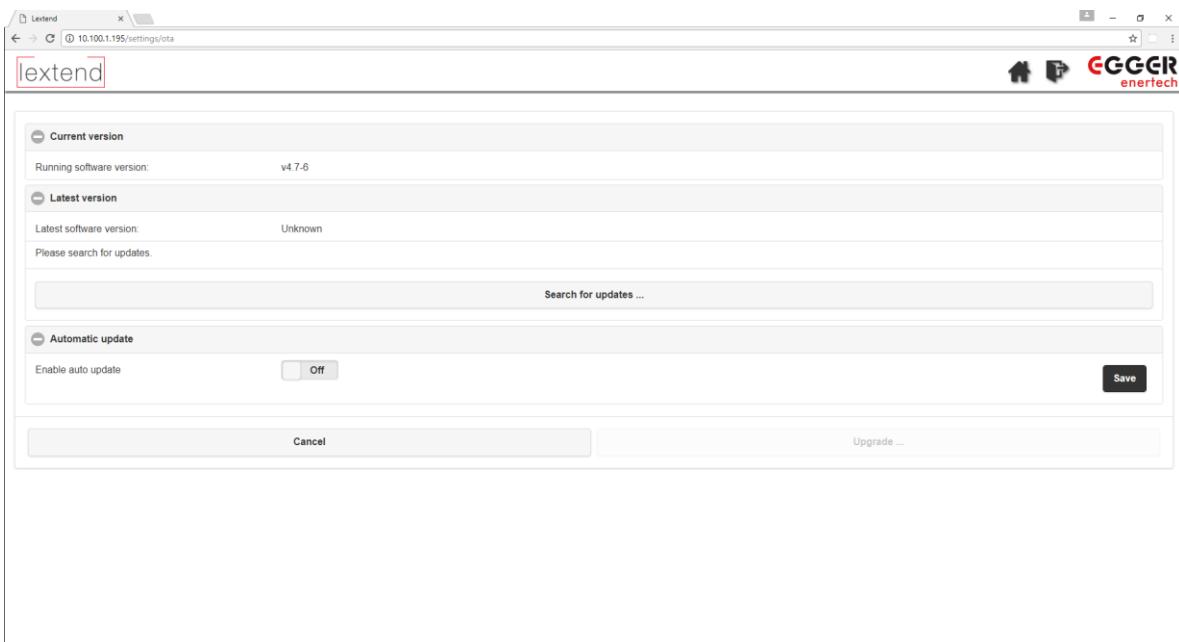


Image 6: lextend web interface - software update

5.3 Log

Under **Log**, the logs of the backend (lextend Engine Log) and frontend (lextend Webinterface Log) can be viewed and downloaded.

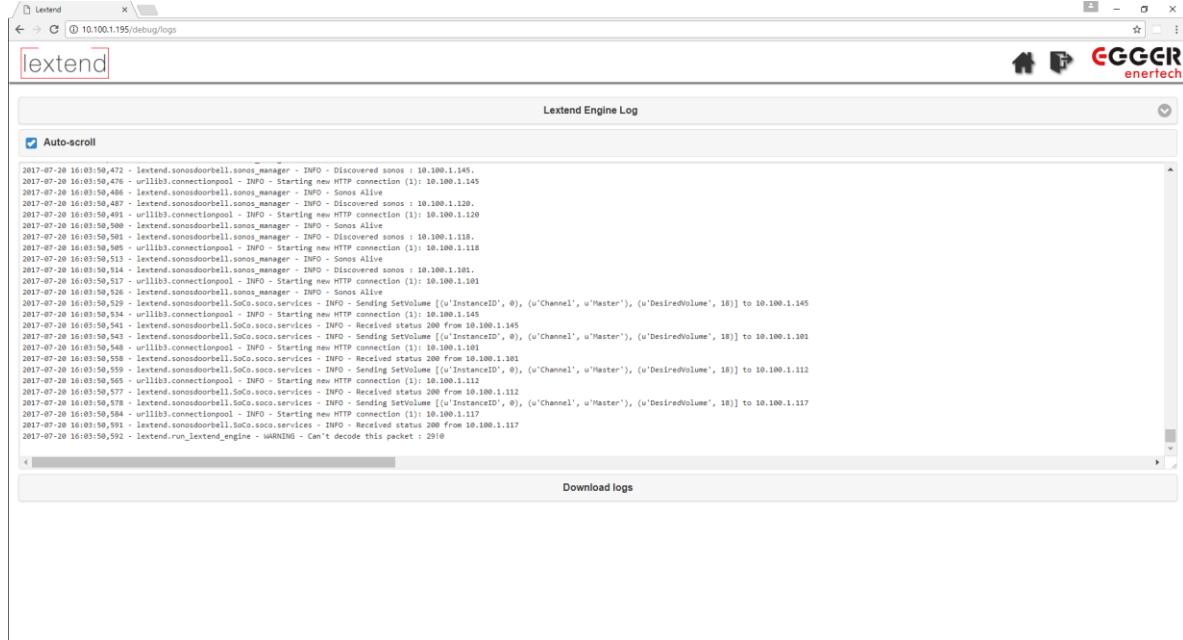


Image 7: lextend web interface - logging window

5.4 External IOs

The primary use of the **External IOs** feature is to assign a UDP command to the rising and falling edge of the six GPIO inputs of the D-I6.

However, a fast and easy way to test lextend's UDP commands and their effects on the Sonos setup is to put the command which should be tested in the text box. Then after Save has been clicked, the UDP command can be tested by clicking the Trigger button next to it.

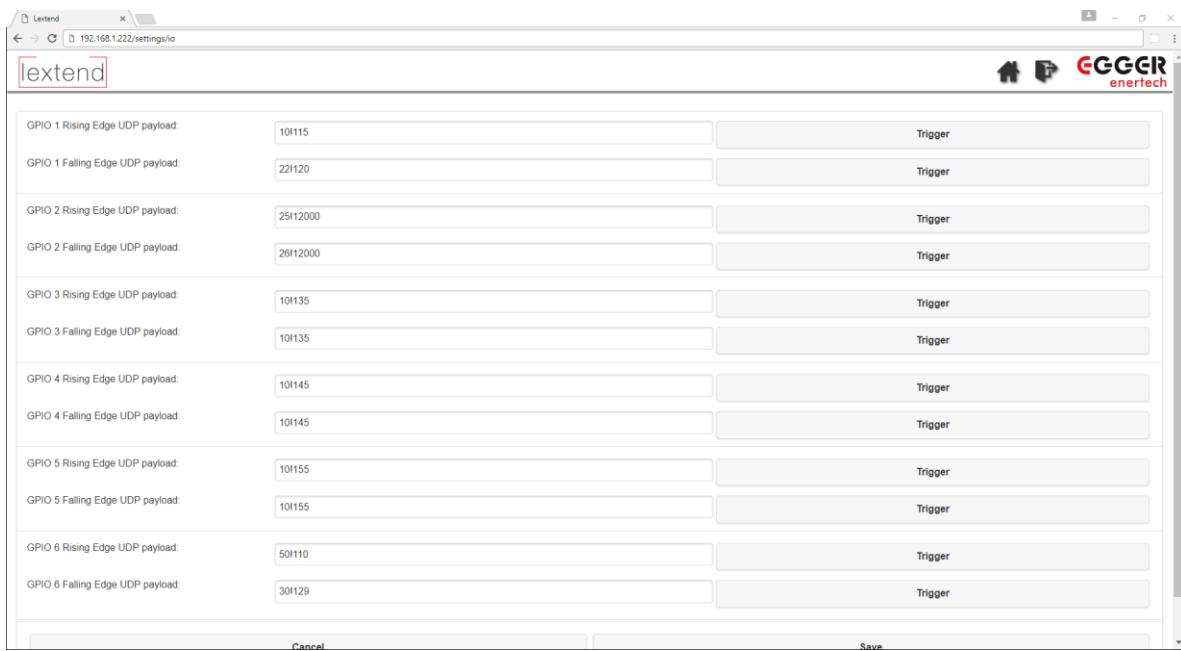


Image 8: lextend web interface - GPIO and trigger settings

5.5 lextend manual

By clicking the Doc icon, the most recent lextend manual will be opened (this document).

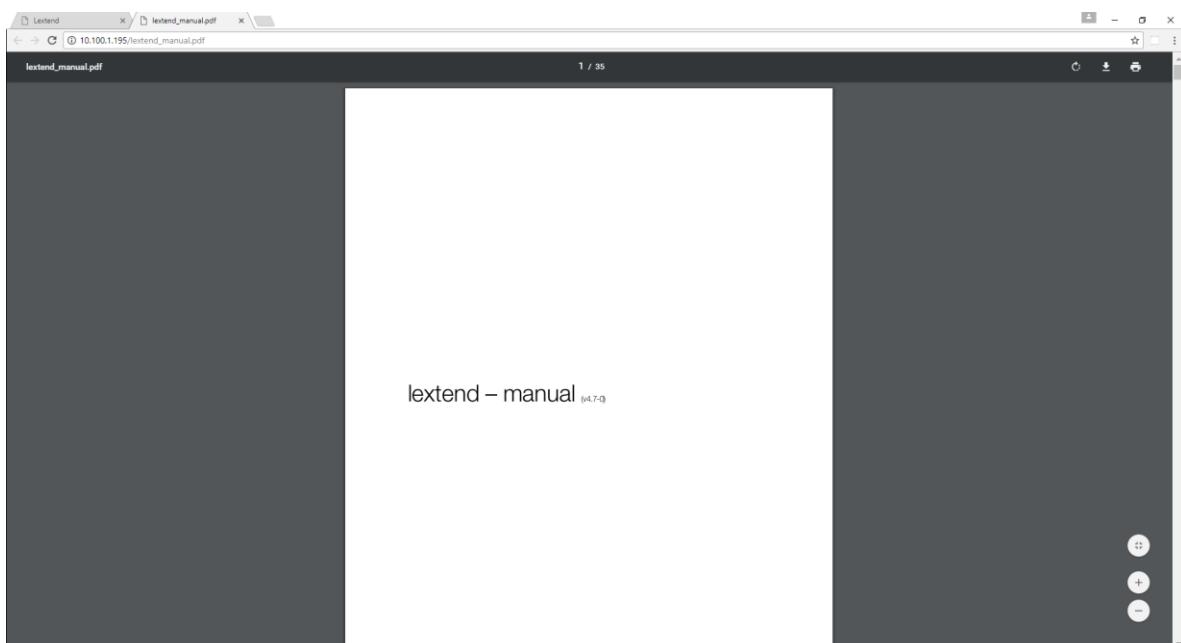


Image 9: lextend web interface - documentation

5.6 Sonos gateway

By clicking the **Sonos Gateway** icon, the Sonos Gateway features can be configured. As soon as lextend is plugged in the network, all Sonos devices in the IP subnet are automatically discovered with all their details. To show the discovered devices, expand the “Sonos devices discovery” menu. For a manual rediscovery of the Sonos speakers click the button “Discover devices ...”.

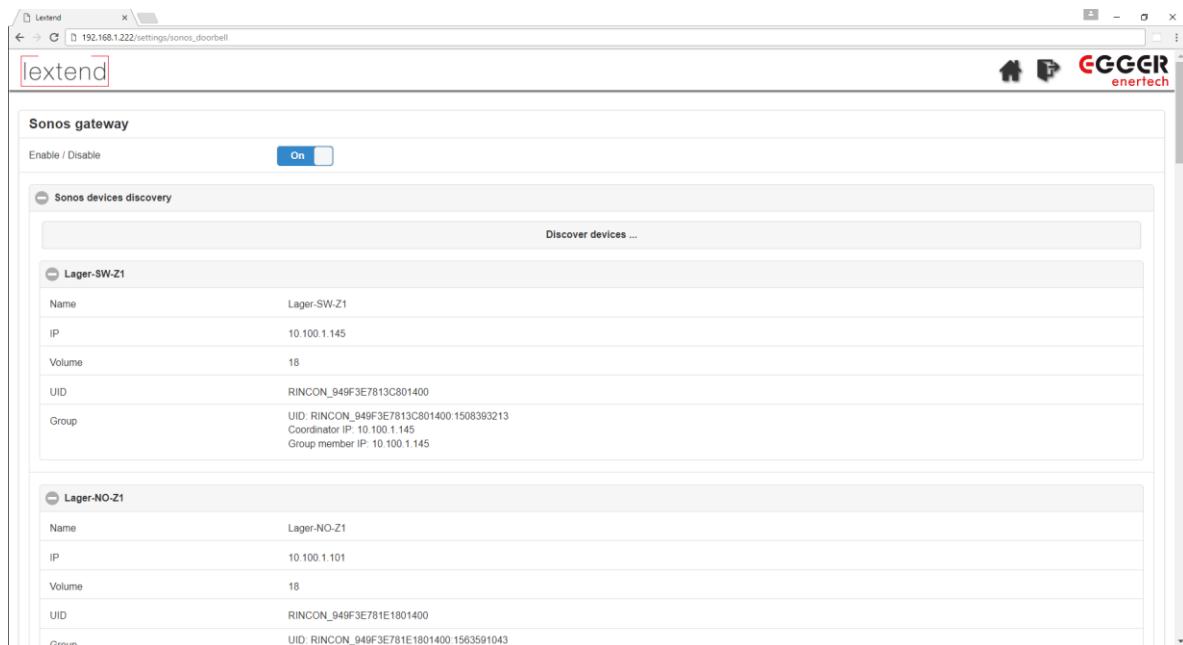


Image 10: lextend web interface – Sonos gateway auto discovery

The **Doorbell** procedure can be dependent on the on the name, which the user gives to the speaker in the Sonos App (see section 3.1). If **Ignore -DB Sonos name** is enabled, the doorbell is played on all Sonos speakers. If **Ignore -DB Sonos name** is disabled, the doorbell is played on the speakers which have a “**-DB**” in the speaker name. (see section 3.1.1) If **Volume override** is enabled, the volume set in the UDP protocol will be overridden with the volume set in the web interface.

If **Override sound** is enabled the doorbell sound which is set in the UDP protocol will be overridden by the one set in the web interface. Under the section **Custom sounds upload** up to ten custom mp3 tracks for the doorbell feature can be uploaded. The custom sounds can also be uploaded directly in the shared folder `\lexendsIP\SGW_CustomSounds` on lextend. When there will be a window asking for a login when connecting to the shared folder, the

lexend web interface login can be used.

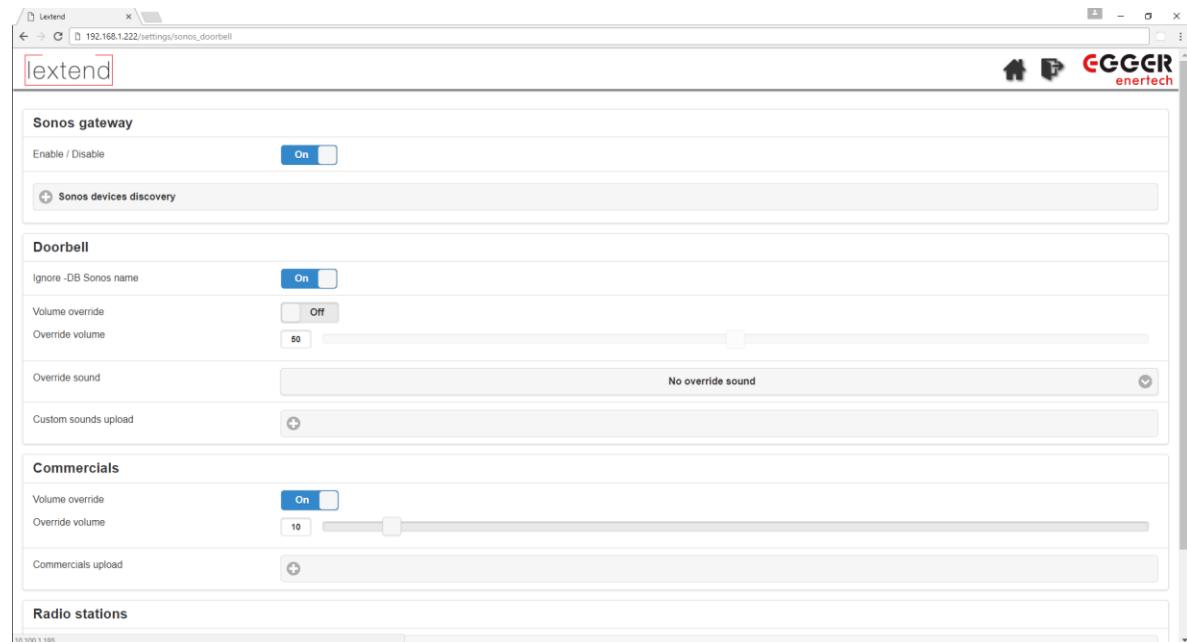


Image 11: lexend web interface – Sonos gateway doorbell

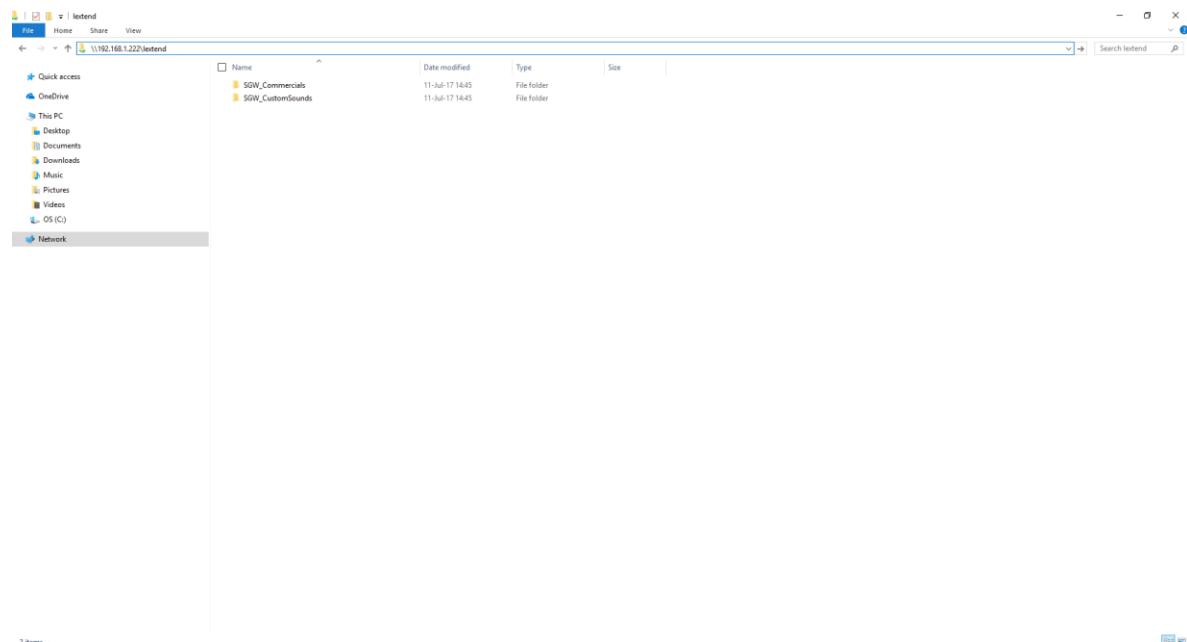


Image 12: lexend commercials and doorbell custom sounds shared folders

In the **Commercials** section of the web interface, the settings for the commercials procedure can be changed. The commercial procedure stops the currently played stream and plays a random .mp3 file out of the \\lexendsIP\\SGW_Commercials shared folder on lexend. The

mp3 files can either be uploaded with the web interface or directly in the shared folder. When there will be a window asking for a login when connecting to the shared folder, the lextend web interface login can be used.

Volume override is enabled the volume set in the UDP protocol will be overridden with the volume set in the web interface.

In the **Radio stations** section of the web interface the currently played radio station which is played on a Sonos speaker can be learnt. This station can then be started by the UDP protocol. It is possible to learn up to ten radio stations.

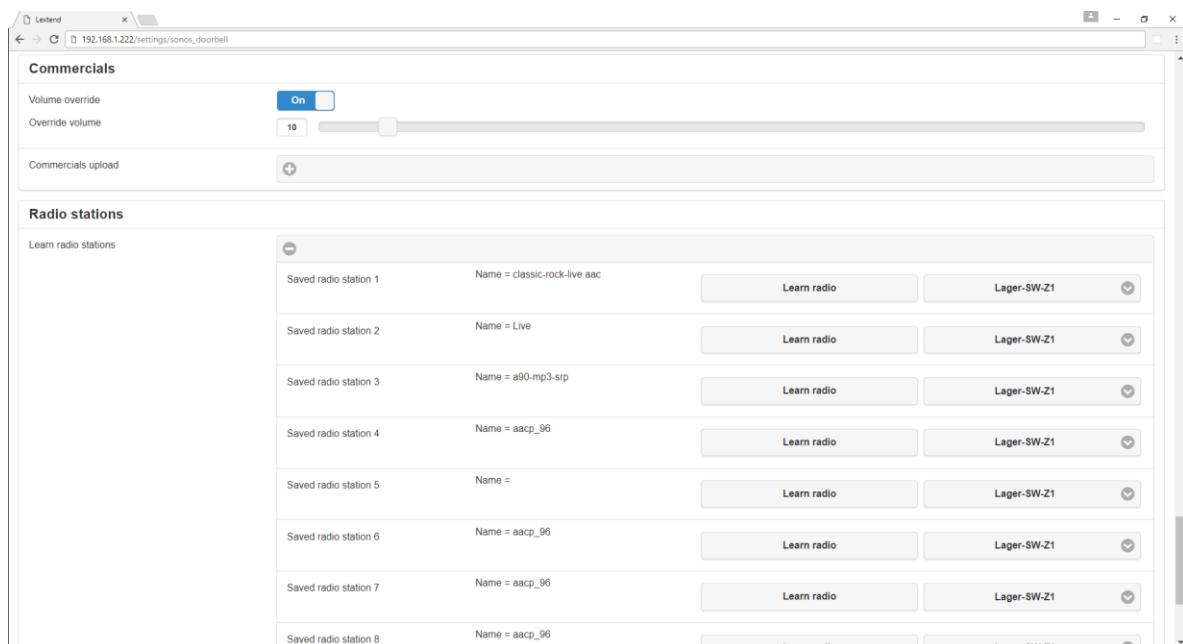


Image 13: lextend web interface – Sonos gateway commercials and radio stations

5.7 Factory reset

For setting the device back to its factory settings, lextend has a factory reset button and a blue status LED which is blinking when the factory reset is ongoing.

To start the factory reset, please locate the factory reset button.

The D-I6's factory reset button is located next to the 5V USB power socket.

The D-NET's factory reset button is located under the front cover. First remove the cover by firmly pushing and then moving back a thin screwdriver or a knife in the small slot located where the screwdriver is pointing to.

Then push the reset button for more than 5 seconds. When the status LED is blinking in an interval of one second, the reset button can be released. The factory reset was successful and lextend reboots with the default settings (see section 5.1).

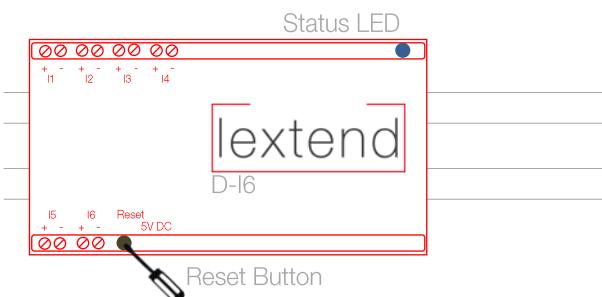


Image 14: lextend D-I6 factory reset

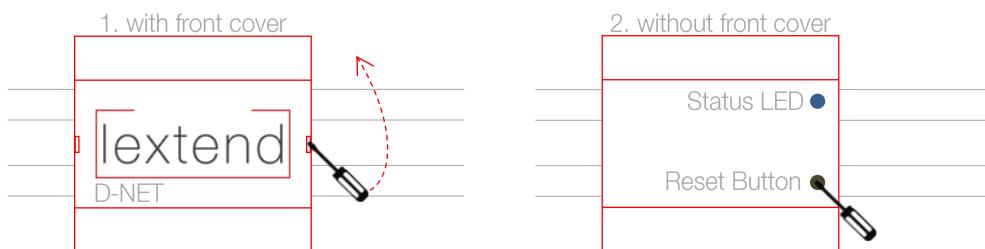


Image 15: lextend D-NET factory reset

6 Sonos Gateway UDP Protocol

6.1 Sonos Gateway procedures

The following section describes the procedures which are implemented to control a Sonos setup.

Feature	Feature Nr.	Type !set ?get +answer	Func	Args	Args	Args	Comment	Sonos App Settings
DoorBell	10	!	1	sound [1...9]	volume [1...9]		Plays the doorbell to to specially named speakers. Speaker Name contains “-DB”	Plays the doorbell to to specially named speakers. Speaker Name contains “-DB”
Alarm-Start	11	!	1	sound [1...9]	volume [1...9]		Plays the Sonos Alarm on all speakers. (Alarm can only be stopped with 11!2)	Either the default sounds are used or the custom uploaded mp3 files in the folder out of the folder SGW_Custom-Sounds.
Alarm-Stop	11	!	2				Stops the Sonos Alarm on all speakers.	
Lineln-Start	12	!	1	volume [1...9]			Enables the Lineln Lineln can only be stopped with 12!2	Speaker Name in the Sonos App with the Lineln contains “-L”
Lineln-Stop	12	!	2				Disables Lineln and restores the state before Feature 12!1 was executed.	

Commercial-Zone-Play	13 (depricated 31)	!	1	zone1 [1...9]	playing interval very X minutes [1..300]			Plays random mp3 files out of the shared folder SGW_Commercials every X minutes. Speaker Name in the Sonos App contains “-Z[1-9]” Plays the commercial on the speakers which contain in the name “-Z[1-9]” or on the speakers which are grouped with such speakers in the Sonos App.
Commercial-Zone-Stop	13 (depricated 31)	!	2	zone1 [1...9]			Stops playing mp3 files out of the shared folder SGW_Commercials..	
Play-Commercial-AllSpeakers	14 (depricated 51)	!	1	playing interval very X min- utes [1..300]			Plays random mp3 files out of the shared folder SGW_Commercials every X minutes on all speakers.	
Stop-Commercial-AllSpeakers	14 (depricated 51)	!	2				Stops playing mp3 files out of the shared folder SGW_Commercials..	

6.2 Sonos gateway per zone(s) calls

The following section describes the calls which are implemented to control specific zones of the Sonos setup.

Feature	Feature Nr.	Type !set ?get +answer	Func	Args	Args	Args	Comment	Sonos App Settings
PlayZones	21	!	1	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	<p>Plays the zone(s) with the playlist track or radio station etc. which it has been paused. If no stream (radio station, playlist etc.) is paused in the Sonos Group(s) with a containing “-Z[1-9]” speaker; the first radio station out of the saved radio stations is played.</p> <p>Speaker Name in the Sonos App contains “-Z[1-9]”</p> <p>Plays the previously paused track or the first radio station out of the saved radio stations, on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Start playing all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.</p>
PlayZones- SetVolume	21	!	2	zone1 [1...9]	volume [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	volum e [1...9]	<p>Plays the zone(s) with the playlist track or radio station etc. which it has been paused with the volume specified. If no stream (radio station, playlist etc.) is paused in the Sonos Group(s) with a containing “-Z[1-9]” speaker; the first radio</p> <p>Speaker Name in the Sonos App contains “-Z[1-9]”</p> <p>Plays the previously paused track or the first radio station out of the saved radio stations, on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Start playing all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.</p>

								station out of the saved radio stations is played with the specified volume.	
PauseZones	22	!	1	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	Pauses the zone(s)	<p>Speaker Name in the Sonos App contains “-Z[1-9]”</p> <p>Pauses the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Pausing all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.</p>
VolUpZones-1Percent	23	!	1	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	Increases the volume in the specified zones by 1 Percent.	<p>Speaker Name in the Sonos App contains “-Z[1-9]”</p> <p>Increases the Volume by 1 Percent on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Increasing the Volume by 1 Percent on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.</p>
VolUpZones-5Percent	23	!	2	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	Increases the volume in the specified zones by 5 Percent.	<p>Speaker Name in the Sonos App contains “-Z[1-9]”</p> <p>Increases the Volume by 5 Percent on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Increasing the Volume by 5 Percent on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.</p>
VolDown-Zones-	24	!	1	zone1 [1...9]	zone2 [1...9]	zone3 [1...9]	zone4 [1...9]	Decreases the volume in the specified zones by 1	Speaker Name in the Sonos App contains “-Z[1-9]”

1Percent					0 if no zone	0 if no zone	0 if no zone	Percent.	Decreases the Volume by 1 Percent on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Decreasing the Volume by 1 Percent on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.
VolDown-Zones-5Percent	24	!	2	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	Decreases the volume in the specified zones by 5 Percent.	Speaker Name in the Sonos App contains “-Z[1-9]” Decreases the Volume by 5 Percent on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Decreasing the Volume by 5 Percent on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.
TrackUp-Zones	25	!	1	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	Plays previous track in the playlist in the specified zones.	Speaker Name in the Sonos App contains “-Z[1-9]” Playing the previous track on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Playing the previous track on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.
TrackDown-Zones	26	!	1	zone1 [1...9]	zone2 [1...9] 0 if no zone	zone3 [1...9] 0 if no zone	zone4 [1...9] 0 if no zone	Plays next track in the playlist in the specified zones.	Speaker Name in the Sonos App contains “-Z[1-9]” Playing the next track on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Playing the next track on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.
SetVol-Zones	29	!	1	zone1 [1...9]	vol [0...100]			Set the volume in the specified zone.	Speaker Name in the Sonos App contains “-Z[1-9]” Set the Volume on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Set the Volume on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”.

								9].
SetRadio-StationZone	30	!	1	zone1 [1...9]	station [1...4]			Set a saved radio station in the specified zone. Then play the radio station. Speaker Name in the Sonos App contains “-Z[1-9]” Set the Radio Station on the speakers containing “-Z[1-9]” in the speaker name. If speakers are grouped in the Sonos App: Set the Volume on all speakers in the group which contains at least one speaker with a name containing “-Z[1-9]”. Then start playing the Radio Station.

6.3 Sonos gateway all zone calls

The following section describes the all speaker Sonos features of lextrnd.

Feature	Feature Nr.	Type !set ?get +answer	Func	Args	Args	Args	Comment	Sonos App Settings
Play-AllSpeakers	41	!	1				Plays the zone(s) with the playlist track or radio station etc. which it has been paused. If no stream (radio station, playlist etc.) is paused in the Sonos Group(s); the first radio station out of the saved radio stations is played.	
PlayAllSpeakers-SetVolume	41	!	2	volum e			Plays the zone(s) with the playlist track or radio station etc. which it has	

				[1...9]				been paused with the specified volume. If no stream (radio station, playlist etc.) is paused in the Sonos Group(s); the first radio station out of the saved radio stations is played with the specified volume	
Pause- AllSpeakers	42	!	1					Pauses all speakers.	
VolUp- AllSpeakers	43	!	1					Increases the volume in the specified zones by 1 Percent.	
VolUp- AllSpeakers	43	!	2					Increases the volume in the specified zones by 5 Percent.	
VolDown- AllSpeakers- 1Percent	44	!	1					Decreases the volume in the specified zones by 1 Percent.	
VolDown- AllSpeakers- 5Percent	44	!	2					Decreases the volume in the specified zones by 5 Percent.	
TrackUp- AllSpeakers	45	!	1					Plays previous track in the playlist on all speakers.	
Track-Down-	46	!	1					Plays next track in the	

AllSpeakers							playlist on all speakers.	
SetVol- AllSpeakers	49	!	1	vol [0... 100]			Sets the volume on all speakers.	
SetRadio- Station- AllSpeakers	50	!	1	stati- on [1...4]			Set a saved radio station on all speakers. Then play the radio station.	

6.4 Sending UDP packets to lextend – Example Loxone Miniserver

Lextend features can be triggered by receiving a UDP packet with a specific payload. The following example shows how to send UDP packets to lextend with the Loxone Miniserver. In the example, sending a UDP packet for triggering the doorbell feature of lextend is shown.

6.4.1 Basic configuration

1. Open Loxone-Config
2. Add a virtual output
3. Configure Virtual Input. Replace [lextends_IP] with the IP address of your lextend setup.
4. Add a virtual output command.

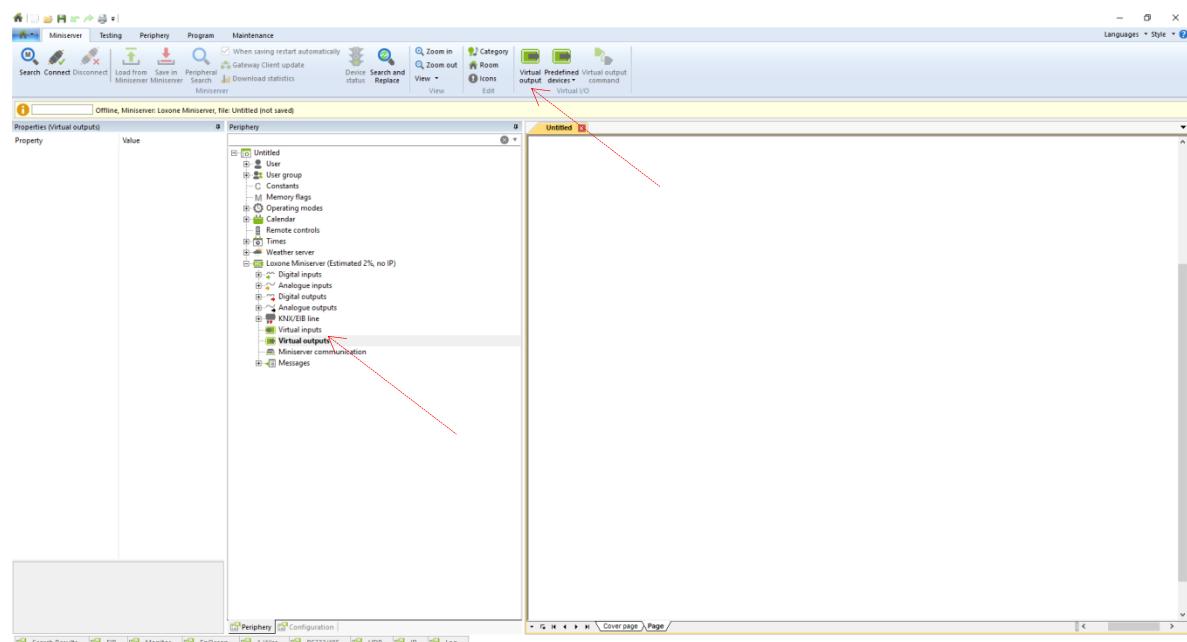


Image 16: Basic lextend doorbell setup – Adding virtual output

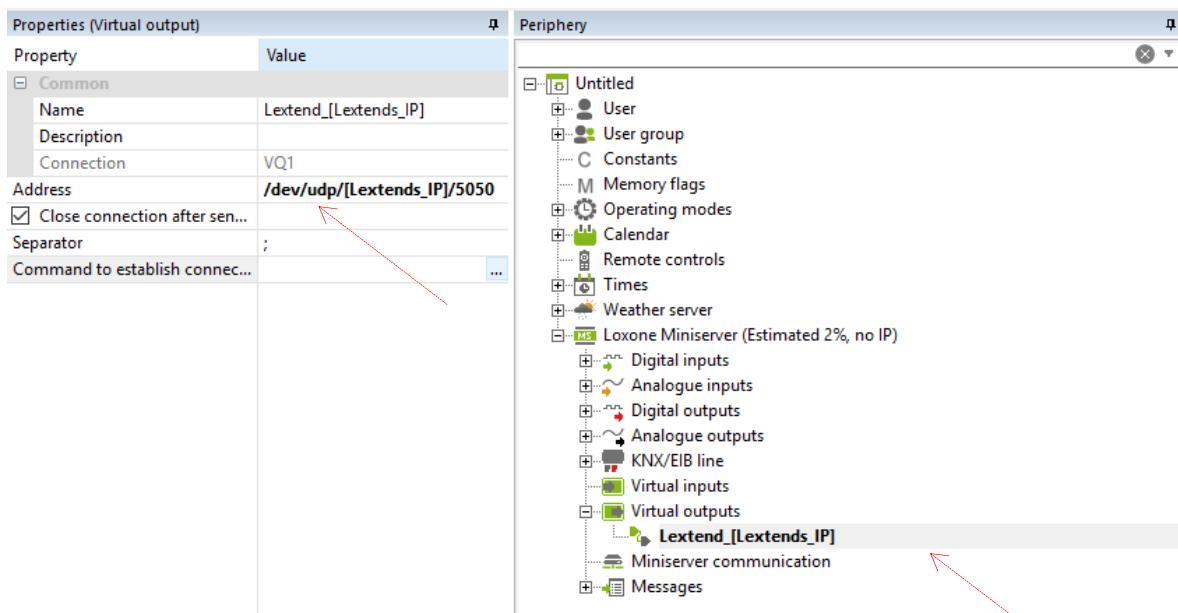


Image 17: Basic lxtend doorbell setup – Configuring IP settings of the virtual output

- Configure the virtual output. According to section 5.6 insert the command 10!115 for triggering the doorbell feature with door bell sound 1 and volume 5.

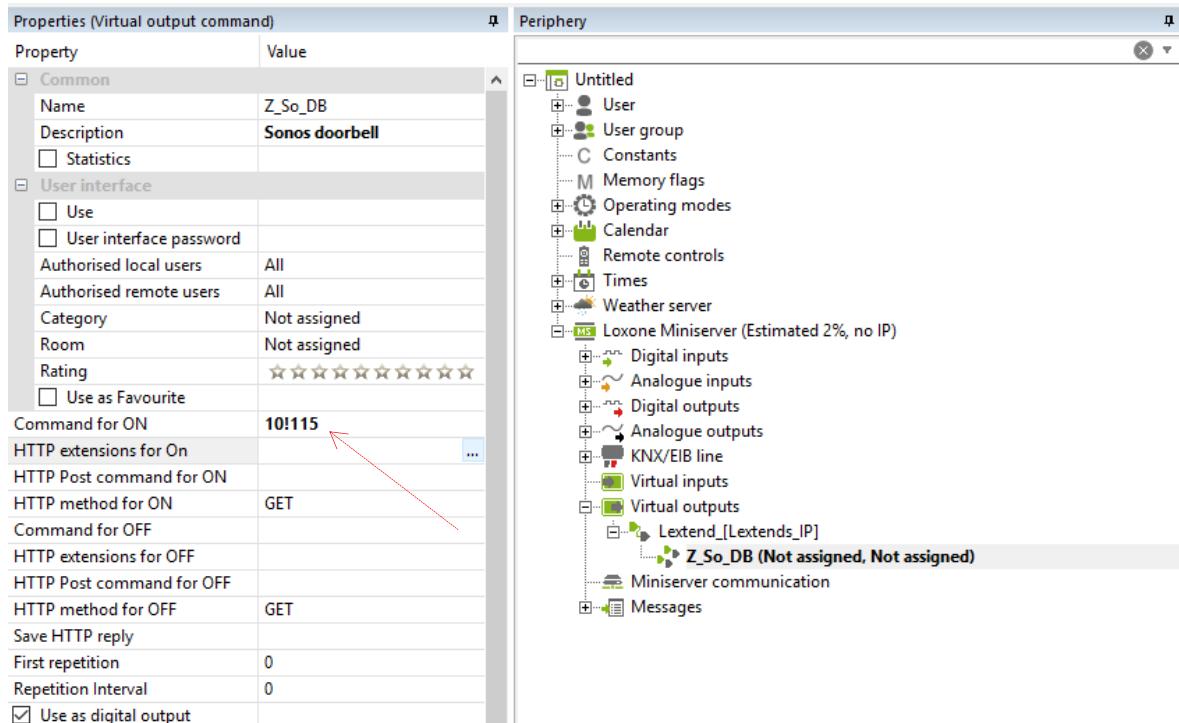


Image 18: Basic lxtend doorbell setup – Configuring virtual output details

6. Connecting the virtual output command to a Loxone Intercom Door controller.

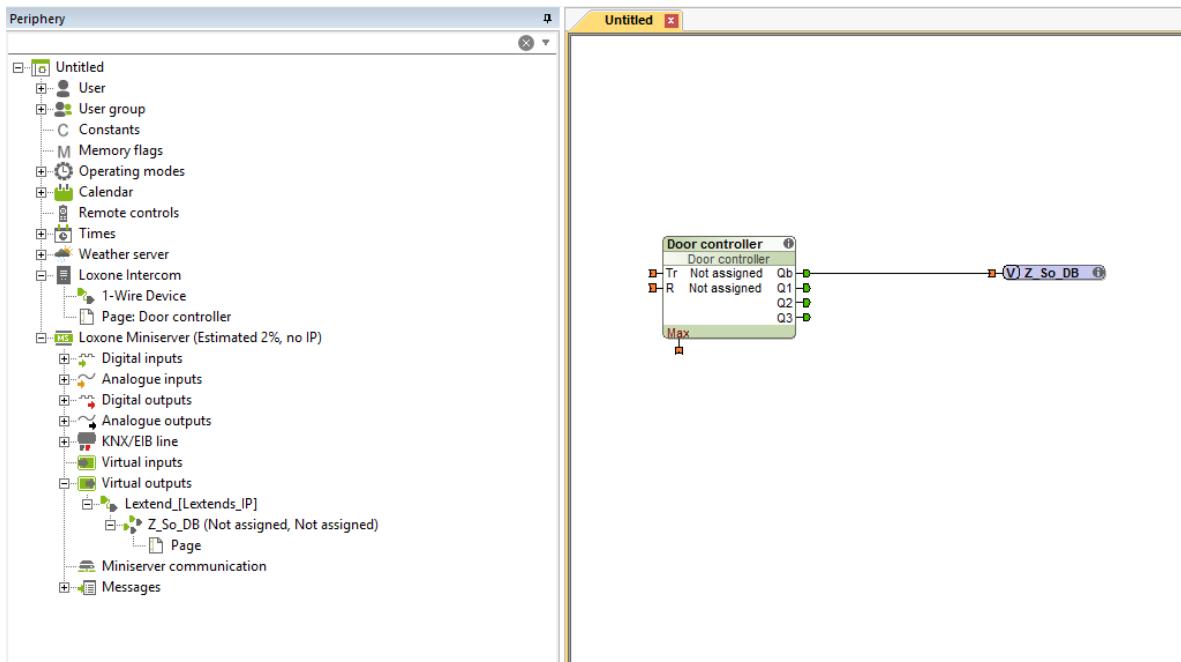


Image 19: Basic lextend doorbell setup – Connecting the virtual output

6.4.2 Advanced configuration

It is possible to configure more advanced features with Loxone, like choosing the doorbell sound or the volume directly in the Loxone GUI.

1. Implementing advanced features. Choosing the doorbell sound or the volume directly in the Loxone GUI.
2. You can put together a value for example 10!115 based on a concatenated string. 10!1 is fix, <v> the value generated out of the chosen bell sound on the radio buttons and on the chosen volume.

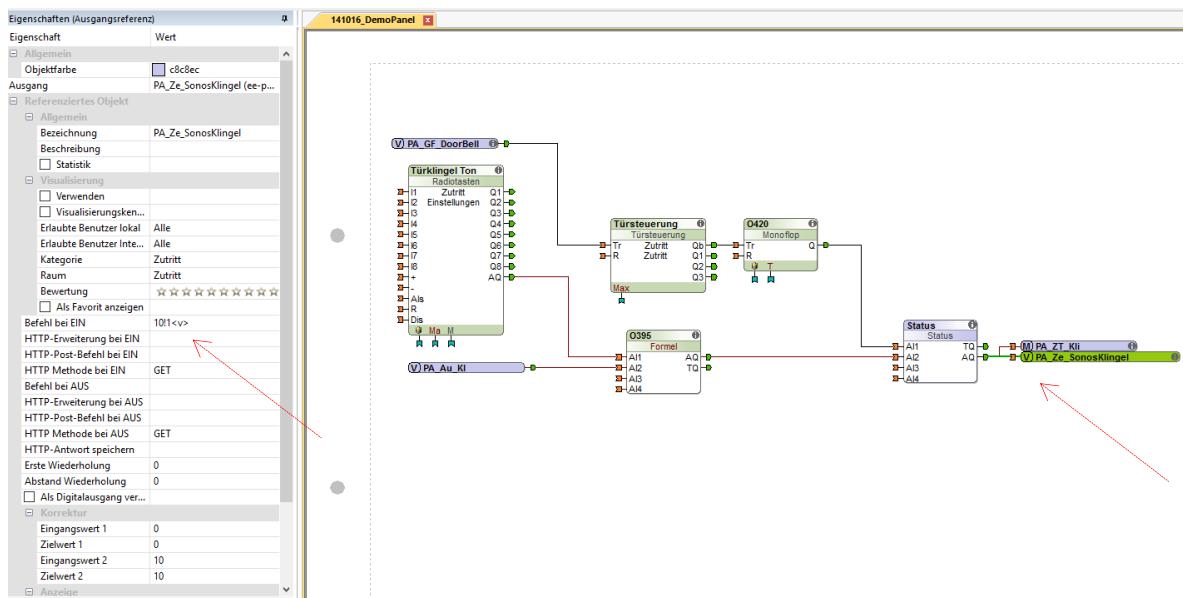


Image 20: Advanced extend doorbell setup - Loxone configuration

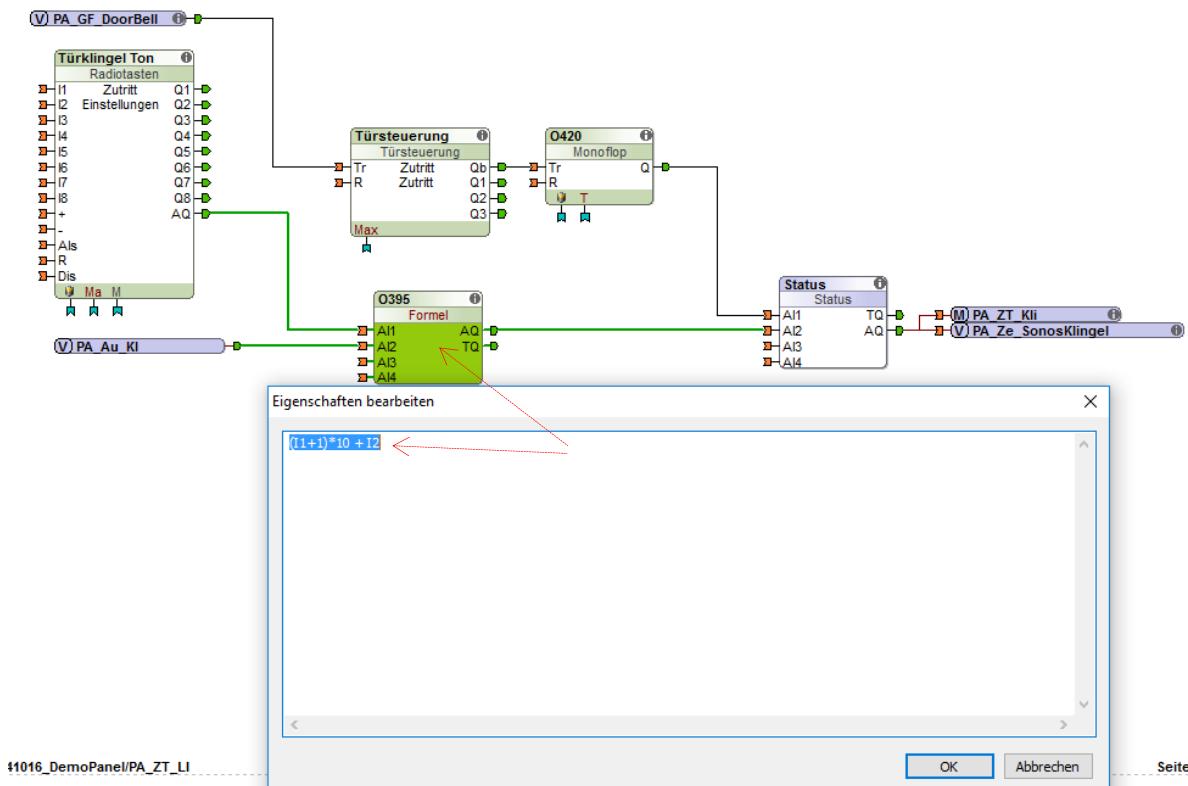


Image 21: Advanced extend doorbell setup - Loxone configuration

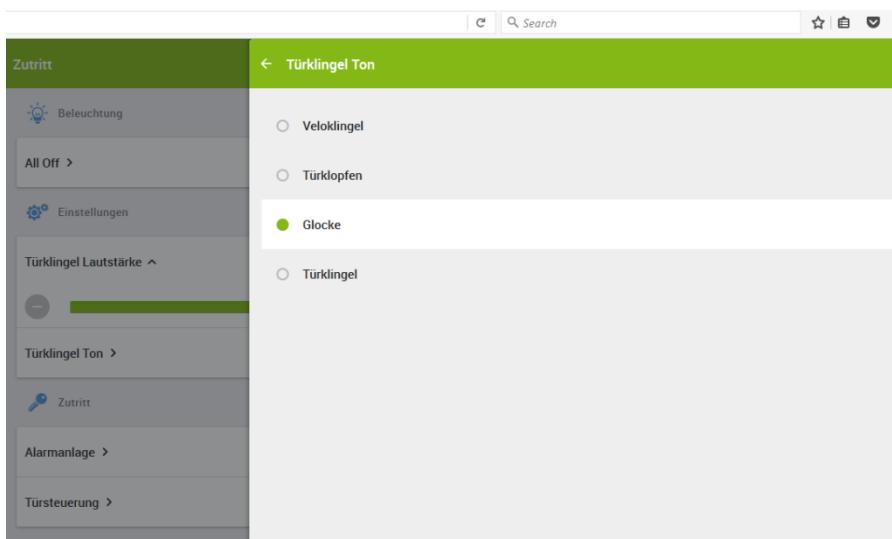


Image 22: Advanced lextend doorbell setup – Choose the doorbell sound in the Loxone App

7 Dimensions

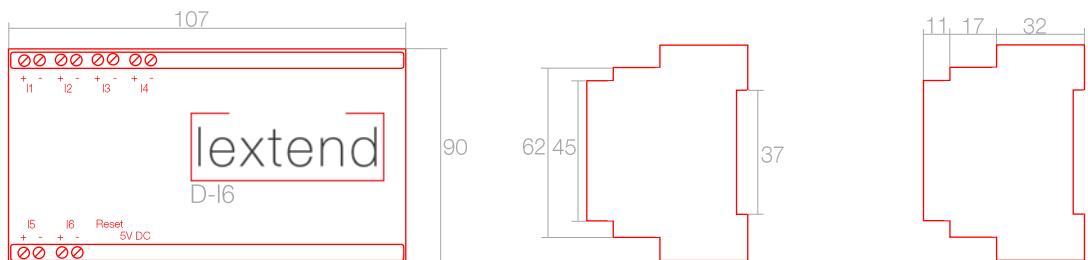


Image 23: lextend D-I6 dimensions

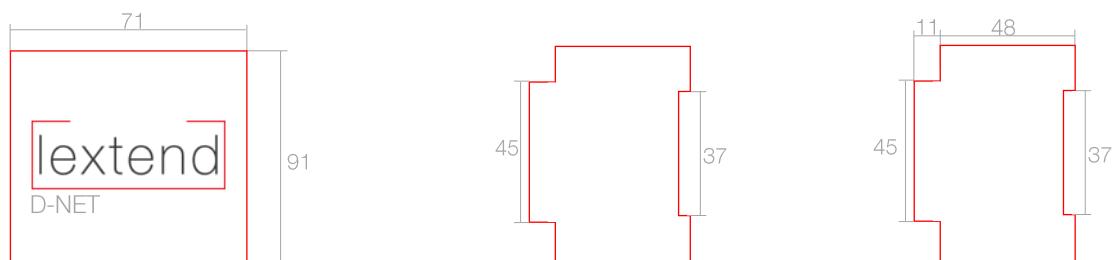


Image 24: lextend D-NET dimensions

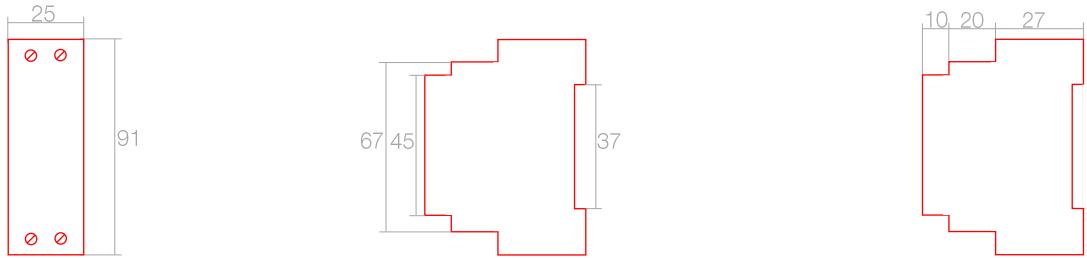


Image 25: DIN rail power supply dimensions

8 Technical specifications

extend D-I6 (DIN rail)

Power	5V DC with micro USB
Network	1x RJ45 FastEthernet
Inputs	6x 6 – 230 AC or DC
Certificates	CE, RoHs

extend D-NET (DIN rail)

Power	5V DC with micro USB
Network	1x RJ45 FastEthernet
Certificates	CE, RoHs

Power supply (DIN rail)

Input	100 – 240V AC, 0.88A, 50 – 60Hz
Output	5V DC, 2.4A
Certificates	CE