LIGHTWARE Smart IP Driver Instruction Manual

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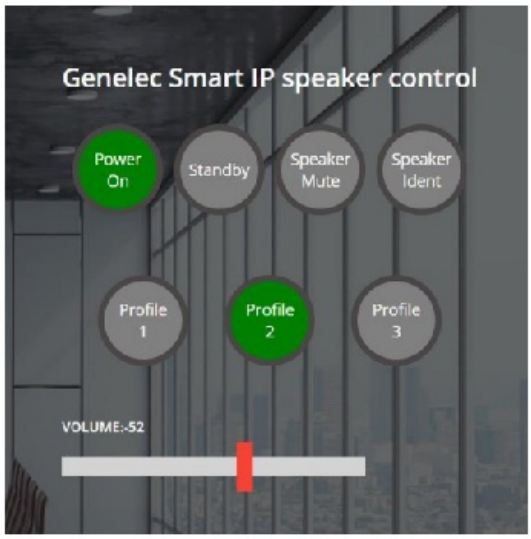
LIGHTWARE Smart IP Driver



Specifications

- Product: Genelec Smart IP driver for LARA
- Compatibility: Genelec Smart IP loudspeakers
- Communication Protocol: REST style with a reduced set of HTTP/1.1
- Minimum Equipment Requirement:
  - Lightware UCX series Universal Matrix Switcher (FW: v2.12.0b3) or UCX-BD series Universal Matrix Switcher (FW: v2.14.0b3) with built DSP
  - Smart IP device (e.g., Genelec 4410 loudspeaker FW: 44×0-1.4.0)
  - Ethernet network switch
  - Cables

Product Usage Instructions

Installation

To install the Genelec Smart IP driver for LARA, follow these steps:

1. Ensure you have the minimum equipment requirements.
2. Connect the Lightware UCX series Universal Matrix Switcher to the Smart IP device and the Ethernet network switch using cables.

Configuration

Starting LARA, Uploading Configuration

To configure the system, follow these steps:

1. Open a new browser window and type in: https://192.168.1.88/lara where the IP address is your UCX series matrix device.
2. Choose: UPLOAD CONFIGURATION.

For detailed configuration information, refer to the Lightware Advanced Room Automation (LARA) chapter in the user manual available at: **User Manual**.

Introduction

Smart IP LARA module is for controlling Genelec Smart IP loudspeakers using REST style communication with a reduced set of HTTP/1.1 protocol. Smart IP API documentation can be downloadad from here: **https://www.genelec.com/smart-ip-api**

Installation and Configuration

Installation

Minimum equipment requirement for the solution:

- Lightware UCX series Universal Matrix Switcher (FW: v2.12.0b3)
    - or UCX-BD series Universal Matrix Switcher (FW: v2.14.0b3) with built DSP
- Smart IP device, in this example: Genelec 4410 loudspeaker (FW: 44×0-1.4.0)
- Ethernet network switch
- Cables

Before you start, please setup Genelec active speaker as an audio device using Smart IP Manager.
Further information can be found here: **https://www.genelec.com/smart-ip-manager**
Before uploading any LARA module, or configuration, please download the latest Firmware from **https://lightware.com/**. Upgrade your UCX series Universal Matrix Switcher and activate LARA.

For further information please refer to the user manuals:

- **https://lightware.com/pub/media/lightware/filedownloader/file/User-Manual/Taurus_UCX_series_Users_Manual.pdf**
- **https://lightware.com/lara/**
- **https://lightware.com/pub/media/lightware/filedownloader/file/User-Manual/LARA_Users_Manual.pdf**

Configuration

Starting LARA, Uploading Configuration

Start a new browser window typing : https://192.168.1.88/lara where the IP address is : UCX series matrix device

Choose: UPLOAD CONFIGURATION

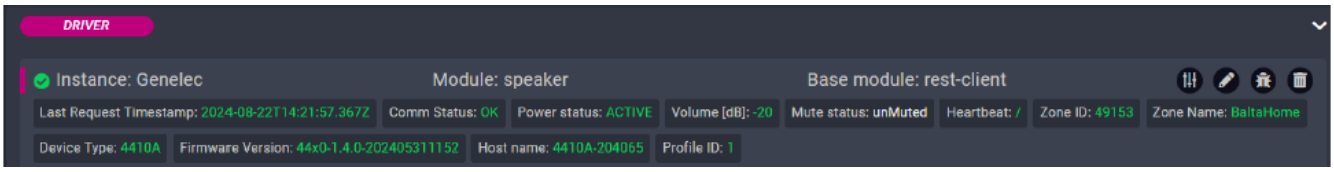
For detailed information please find chapter 5.7. Lightware Advanced Room Automation (LARA) in this document:
https://lightware.com/pub/media/lightware/filedownloader/file/User-Manual/Taurus_UCX_series_Users_Manual.pdf

Dashboard Content And Defined parameters

Dashboard Content

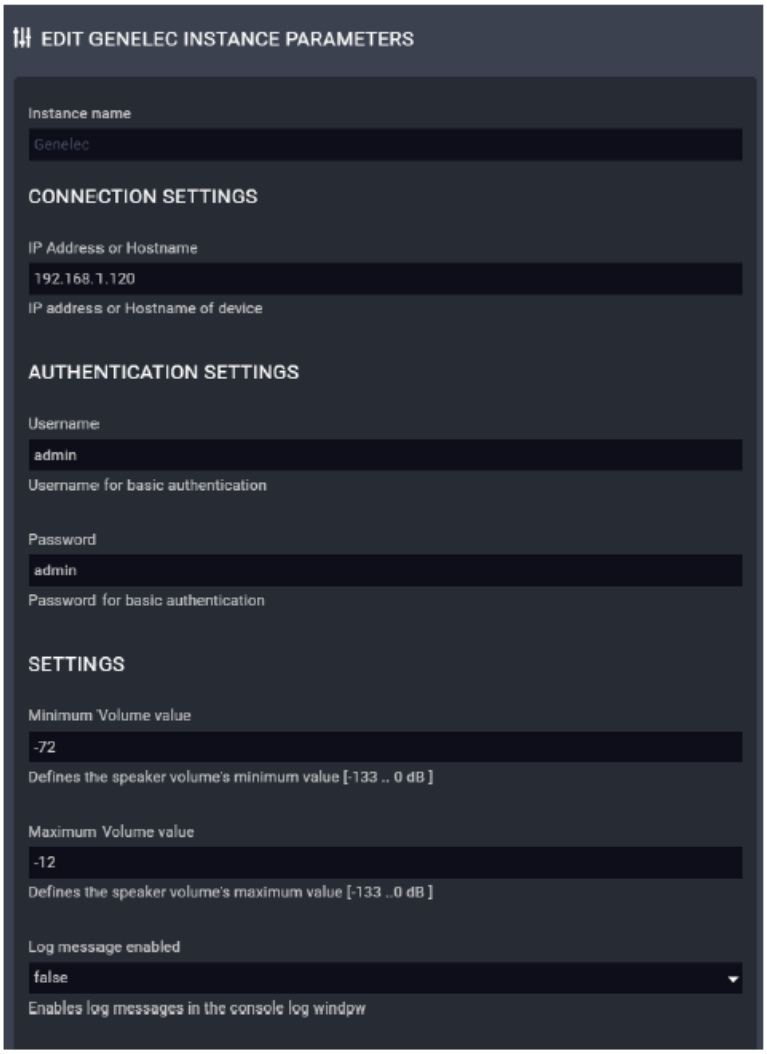
The following status indicator is displayed on the Status board in the row of the instance:

- Connection state of the device
- Product data (Device type, FW version)
- Power status, Mute status, Volume level, Zone information, Device information



Defined parameters

- ipAddressOrHost: The IP address or the host name of the Genelec Smart IP device, hereinafter loudspeaker in this example
- Username: defined in Smart IP Manager
- Password: defined in Smart IP Manager
- Min / Max Volume level can be defined. These are converted to status variables for future use in the logic module.
- Log messages can be enabled in the log section of LARA GUI.



Defined Events

Heartbeat_priod:

- This event is dispatched, after every 5000 ms. This means that the dashboard information is refreshed in every five seconds.

Speakererror:

- This event is emitted in case of connection loss between the UCX and the Genelec speaker.

error:

- e.g. Problem in the data transmission, e.g. wrongly set frame delimiter. `errormessage` parameter is defined in this event for the error code.

responseReceived:

- The received string; `string` parameter is defined in this event. It can be used to analyse the content of the response received from the device.

Defined Status Variables:

- maxVolume
- minVolume
- speakerCommunicationStable
- identificationActive
- profileList
- networkData
- measurementData
- audioInputData
- danteIPData
- danteIdentity
- versionString
- muteState
- volumeValue
- powerstate

Content of these status variables based on the Genelec Smart IP API interface's description. Please refer to this API manual, and find some examples in the next chapter.

Defined Methods

put, post, get, del

- Common rest api methods

heartbeat

- Periodically queries data for the dashboard of LARA from the loudspeaker.

setMute

- Sets the Mute State of the loudspeaker. It the parameter is "true" the speaker is muted, in case of "false" the

spekaer is unmuted.

setVolume

- Sets the loudspeaker's volume level via the "level" Parameter, wich can be within this range: -133 .. 0 dB

setPowerSate

- Sets the Power State of the loudspeaker. It the parameter is "ACTIVE" the device is powered on, in case of "STANDBY" the device is on standby mode.

getDeviceInfo

Gets the following device information:

```
Versionstring:  {
  fwId: '44x0-1.4.0-202405311152',
  build: '7f915d',
  baseId: '1.0.0',
  hwId: '',
  model: '4420',
  category: 'SAM_2WAY',
  technology: 'SAM_IP',
  upgradeId: 10,
  apiVer: 'v1'
}
```

getAoIPIdent

Gets the AV over IP (Dante) information:

```
Dante information:  {
  id: '001dc1fffe829b26',
  name: 'Genelec-829b26',
  fname: 'Genelec-829b26',
  mac: '00:1D:C1:82:9B:26'
}
```

getAoIPData

- Gets the AV over IP (Dante) network parameters:
  - Dante information: { ip: '192.168.5.70', mask: '255.255.252.0', gw: '192.168.7.254' }

getMeasurementData

Gets the measured parameters from the loudspeaker.

```
[2024-06-25 14:12:23.399] - TEST_logic - Measurement data:  {
  uptime: '23h 44m 6s',
  bsLevel: -197.900009,
  twCoilT: 53,
  twLevel: -185.5,
  inLevel: -116.800003,
  nwInKbps: 76,
  cpuLoad: 69,
  cpuT: 53.6000023
}
```

getProfileList

- Gets list of profiles stored in the loudspeaker
- Profile list: { selected: 0, startup: 0, list: [] }

setProfileID

- Restore profile from flash and set it as an active profile.

getNetworkConfig

Gets the network configuration.

```
Network data:  {
  hostname: '4420-200502',
  mode: 'auto',
  ip: '192.168.5.68',
  mask: '255.255.252.0',
  gw: '192.168.7.254',
  volIp: '0.0.0.0',
  volPort: 0,
  auth: 'admin:admin'
}
```

getAudioInputData

- Gets the list of selected inputs.
- Audio input information: { input: [‘A’, ‘AoIP01’, ‘AoIP02’] }

identification

- Identify the speaker by flashing front LED

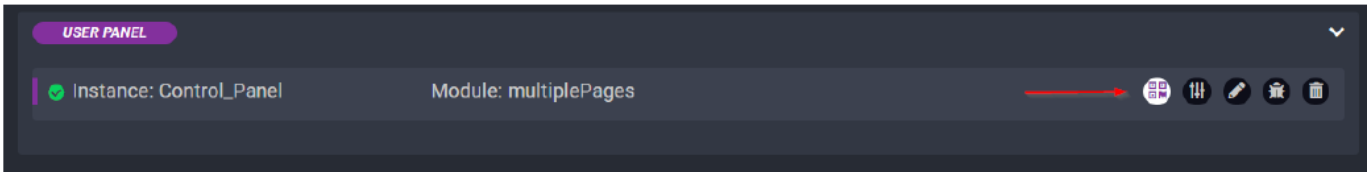
setLEDIntensity

- Sets the speaker’s front LED brightness

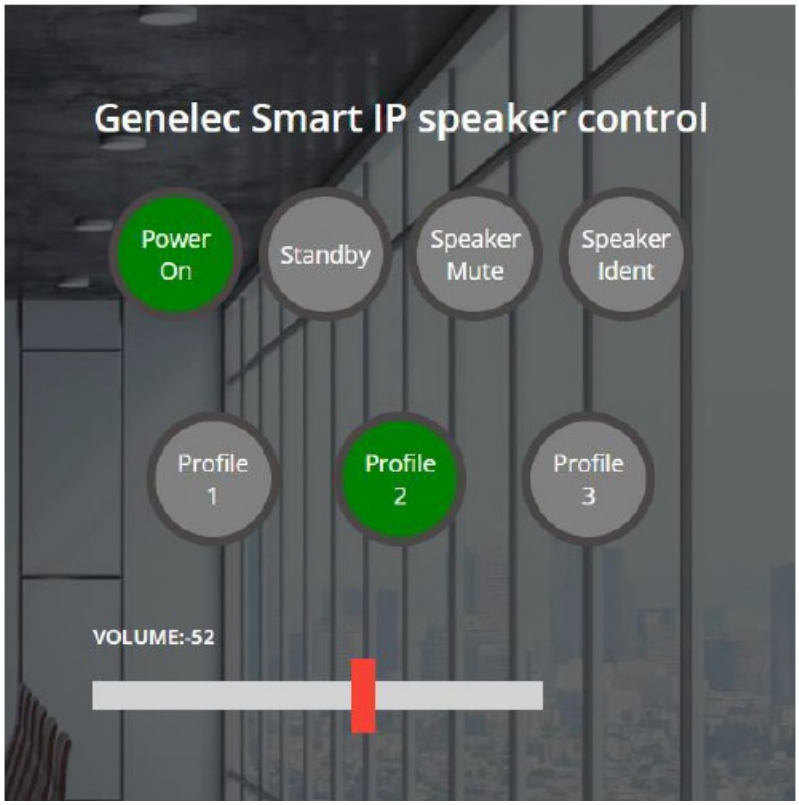
Defined Rules in the Test Logic Module

There are two kinds of Rules defined in the TEST logic module.

To test the system please find the QR code link button in the Control Panel section:



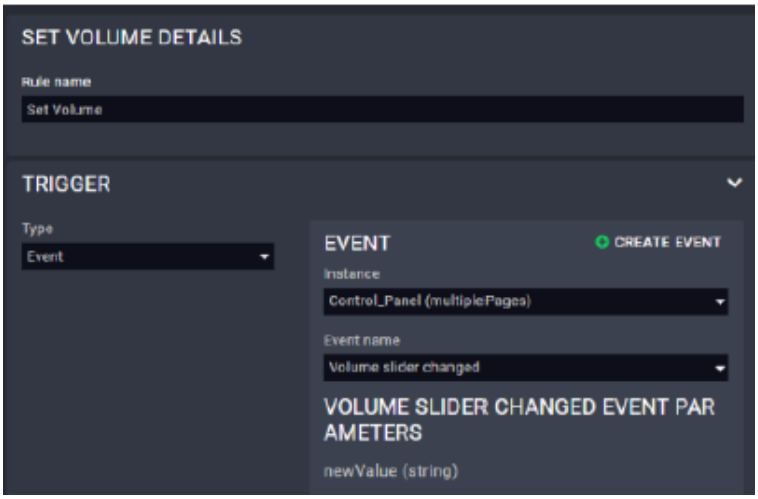
After pushing it the new browser window will open with a simple menu bar. In this menu bar Speaker Control submenu opens the operational panel:

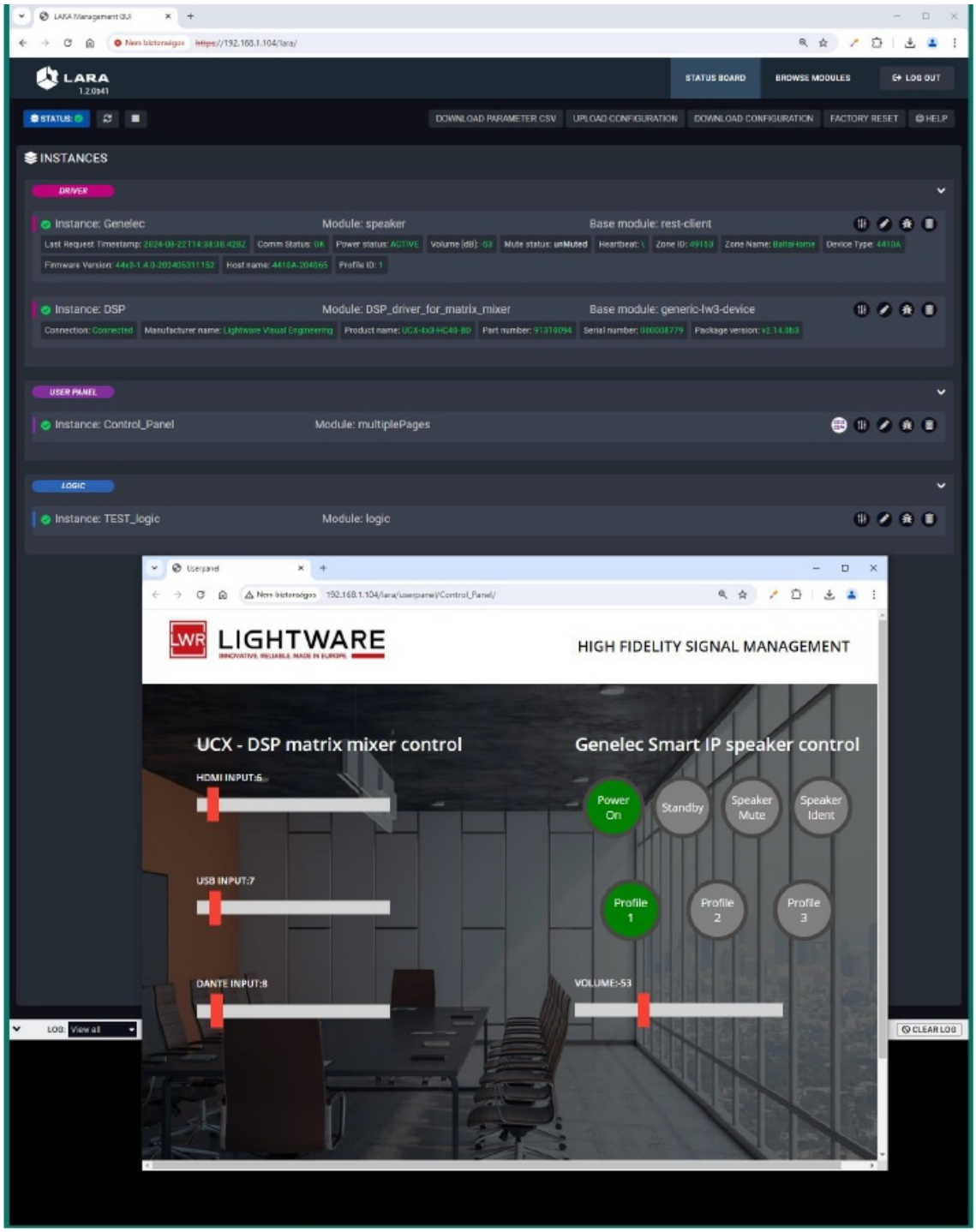


Rules for setting parameters of the loudspeaker:

- setVolume,
- Power On,
- Standby,
- speaker Mute pressed,
- profile button pressed

These Rules are triggered by events emitted by the Control panel (button press, slider move)





Rules for getting data from the loudspeaker

- Rules are triggered by changes of the corresponding Status Variables of Speaker Module e.g. gives feedback for changing the volume value for the speaker.
- The actions made in these Rules are very simple just they log out the content of the given Status Variable if the logging is enabled in the parameter section.

Rev.	Release date	Changes	Editor
v1.0.0	02-07-2028	Initial version	Péter Szabó 3
v1.1.0	22-08-2024	setLedIntensity, min/max Volume, UCX-BD series b uilt DSP control added	Péter Szabó 3

FAQ

What are the defined parameters for the Genelec Smart IP driver for LARA?

The defined parameters include:

- ipAddressOrHost: The IP address or host name of the Genelec Smart IP device.
- Username: Defined in Smart IP Manager.
- Password: Defined in Smart IP Manager.
- Min / Max Volume level can be defined and converted to status variables for future use.
- Log messages can be enabled in the log section of LARA GUI.

What are the defined events for the Genelec Smart IP driver for LARA?

The defined events include:

- Heartbeat_period: Refreshes dashboard information every five seconds.
- Speakererror: Emitted in case of connection loss between UCX and the Genelec speaker.
- Error: Indicates problems in data transmission, with an error code provided in the event.
- ResponseReceived: Provides the received string for analysis of the response from the device.

Documents / Resources

	LIGHTWARE Smart IP Driver [pdf] Instruction Manual Smart IP Driver, IP Driver, Driver

References

- Smart IP API Documentation - Genelec.com
- User Manual