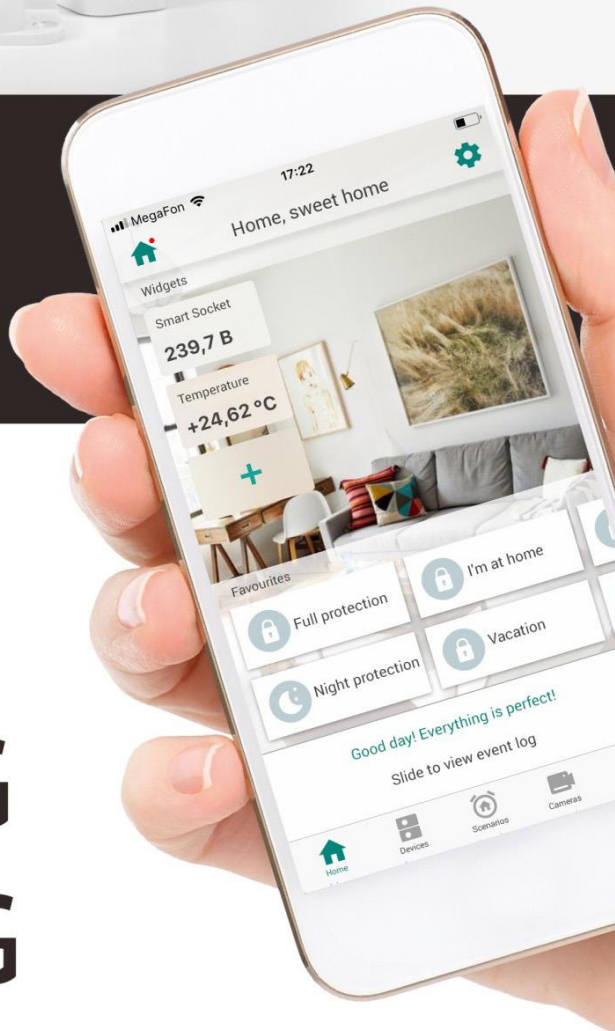
LIVICOM
YOUR SMART HOME

MANUAL



Livi Smart Hub
Livi Smart Hub 2G
Livi Smart Hub 4G

Contents

This Manual describes the operation principles and technical characteristics of Livi Smart Hub 4G, Livi Smart Hub and Livi Smart Hub 2G hubs (hereafter referred to as the hub). The Manual contains the information about the hubs functionality and the instructions required for their correct and safe tuning and operation, as well as for their intended use and maintenance.

Only persons who have studied this Manual are allowed to install, tune, operate and maintain the hub.

1 HUB DESCRIPTION

1.1 HUB DESCRIPTION

The hub is designed to combine Livi radio devices into a single ecosystem of the Livicom smart home.

Hub control functions are:

- ✓ receive data from sensors and endpoint devices installed at the site;
- ✓ automatically control endpoint devices when running scheduled, event-driven and click-driven scripts;
- ✓ transmit to endpoint devices all commands issued remotely by the user;
- ✓ transfer data about Livicom smart home to the Livicom cloud server (the cloud server notifies users about events at the site via push-notifications in the Livicom mobile app or by email);
- ✓ alert users (up to 8 users) by SMS or via voice calls in case of alarms at the site (if a SIM card is installed in the hub).

Users can control the hub using the Livicom mobile app, SMS-commands and the hub voice menu (if a SIM card is installed in the hub). Only the Livicom mobile app provides the complete set of hub control functions.

The hub can transmit notifications to the STEMAX server (if the security service is active) and to the users smartphones **simultaneously**, because the hub supports two active IP-connections for each communication channel.

256 Livi radio devices can be bound to one hub. **Exceptions**:

- Two-channel Livi radio devices.

Two-channel radio devices reduce the maximum number of bound devices, because they take place of two Livi radio devices when they are bound to the hub. Two-channel radio devices are Livi GS glass break sensor, Livi Key Fob control panel, Livi LS water leak sensor, Livi US universal sensor, Livi Light Control unit, Livi Water Control water leakage protection unit.

- Endpoint Livi radio devices.

One Livi Smart Hub can be bound up to 64 endpoint devices, such as Livi Relay, Livi Relay 12/24, Livi Socket, Livi Siren and Livi Roller Shutter unit.

- Endpoint two-channel Livi radio devices.

One Livi Smart Hub can be bound up to 32 two-channel endpoint devices, such as Livi Light Control unit and Livi Water Control unit.

- Livi RTRM repeaters

You can bind up to three repeaters to one hub according to the "star" scheme.

1.2 DIFFERENCES BETWEEN LIVI SMART HUB 4G, LIVI SMART HUB AND LIVI SMART HUB 2G

Livi Smart Hub 4G, Livi Smart Hub and Livi Smart Hub 2G differ by two main factors: supported communication channels and battery lives.

Supported communication channels:

- Livi Smart Hub 4G can transmit data via three channels simultaneously: via wired Ethernet, via Wi-Fi and via mobile Internet (a SIM card is required).
- Livi Smart Hub and Livi Smart Hub 2G transmit data via two channels: via wired Ethernet and via mobile Internet (a SIM card is required).

Supported cellular standards (to operate via mobile Internet):

- Livi Smart Hub 4G supports three cellular standards 2,5G – GSM / GPRS (900 / 1800 MHz), 3G – UMTS / HSPA+ (900 / 2100 MHz) and 4G - LTE (800 / 1800 / 2100 / 2600 MHz);
- Livi Smart Hub supports two cellular standards 2,5G – GSM / GPRS (900 / 1800 MHz) and 3G – UMTS / HSPA+ (900 / 2100 MHz);
- Livi Smart Hub 2G supports only one cellular standard 2,5G – GSM / GPRS (900 / 1800 MHz).

Embedded Ethernet Driver:

- Livi Smart Hub 4G can operate at speeds of 10 and 100 Mbps in Ethernet networks. The updated Ethernet driver provides high bandwidth, balanced distribution of resources in LAN, compatibility with the latest equipment of Ethernet operators.
- Livi Smart Hub and Livi Smart Hub 2G can only operate at a speed of 10 Mbps in Ethernet networks.

Battery life:

Battery will supply power to the hub in case of a power failure at the site. Livi Smart Hub 4G can operate on battery power for up to 11 hours, Livi Smart Hub can continue to operate on battery power for at least 12 hours and Livi Smart Hub 2G will operate for at least 15 hours.

There are no other differences between Livi Smart Hub 4G, Livi Smart Hub and Livi Smart Hub 2G: their functions, operating procedures and sets of settings are the same.

1.3 HUB APPEARANCE

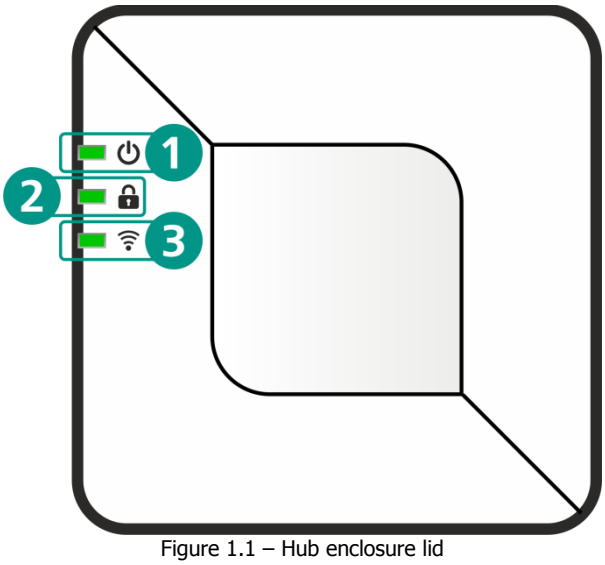


Figure 1.1 – Hub enclosure lid

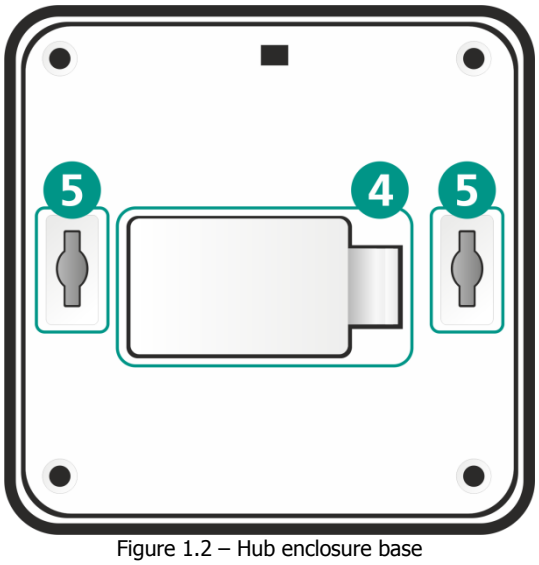


Figure 1.2 – Hub enclosure base

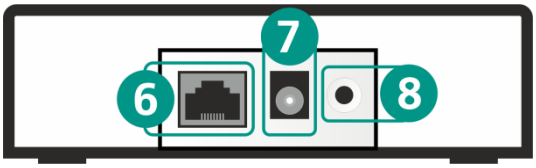


Figure 1.3 – Side view

1. Power indicator
2. Guard indicator
3. Connection indicator
4. Battery cover
5. Device installation holes
6. Connector for an Ethernet cable
7. Connector for a power supply unit
8. Button for confirming the hub binding

1.4 SPECIFICATIONS

Table 1.1 – Specifications

First communication channel	**LIVI SMART HUB 4G** Ethernet 10/100 Mbps
	Livi Smart Hub/Livi Smart Hub 2G Ethernet 10 Mbps
Second communication channel	**LIVI SMART HUB 4G** 2G – GSM / GPRS (900 / 1800 MHz) 3G – UMTS / HSPA+ (900 / 2100 MHz) 4G - LTE (800 / 1800 / 2100 / 2600 MHz)
	LIVI SMART HUB 2G – GSM / GPRS (900 / 1800 MHz) 3G – UMTS / HSPA+ (900 / 2100 MHz)
	LIVI SMART HUB 2G 2G – GSM / GPRS (900 / 1800 MHz)
Third communication channel	**LIVI SMART HUB 4G** Wi-Fi 2.4 GHz
Operating frequency	868 MHz
Radio communication range*	1000 m
Radio channel power	25 mW
Number of Livi devices number	up to 256**
** Number of endpoint Livi radio devices (Livi Relay, Livi Relay 12/24, Livi Socket, Livi Siren)	up to 64
** Number of two-channel endpoint Livi radio devices (Livi Water Control water leakage protection unit, Livi Light Control unit)	up to 32
Main power	230 V mains via the 5 V, 1 A power adapter
Backup power	battery BL-5C, 1020 mAh
Battery life	**LIVI SMART HUB 4G** up to 11 hours
	LIVI SMART HUB at least 12 hours
	LIVI SMART HUB 2G at least 15 hours
Supported radio protocols	Livi
Enclosure protection category	IP30
Operating temperature range	from 0 to +45 °C
Dimensions	130 x 130 x 35 mm

* Radio communication range is the maximum distance between the hub and the radio device in line of sight and without interference.

1.5 SUPPLY SET

The hub supply set is detailed in Table 1.2.

Table 1.2 — Supply set

Model	Quantity
Livi Smart Hub 4G/ Livi Smart Hub/ Livi Smart Hub 2G	1
Screws 3,5 x 19	2
Dowel 5 x 25	2
Rechargeable battery BL-5C (3.7 V / 1020 mAh)	1
Protective film for the battery (10x30) mm	1
Power adapter (5 V/ 1 A)	1
Cat.5e patch cord (2m)	1
Packaging	1

1.6 PACKAGING

The hub is delivered in an individual cardboard container designed to protect it from damage during transportation. The supply set is included in the container (see 1.5).

2 PRECAUTIONARY MEASURES

WARNING

To prevent electric shock or fire, do not operate the hub under the following conditions:

- outdoors;
- in places with high humidity or in wet places;
- in aggressive environments that can cause corrosion;
- in the presence of conductive dust.

The hub is not designed for operation in explosive areas.

Turn off the main and backup power sources before disassembling or maintaining the hub.

The operating conditions of the hub and the supplied voltage must comply with the values given in the Specifications table (see 1.4).

Hub maintenance may only be performed after it has been completely de-energized.

ATTENTION

The hub must be unpacked and allowed to reach room temperature for at least two hours before handling if it was transported or stored at low temperatures. The hub should operate at a room temperature (not exceeding the values specified in 1.4).

Please, make sure that the hub carries no voltage before installing the SIM in its slot.

3 HUB PREPARATION FOR INSTALLATION AND OPERATION

The hub requires connection to the mains (230 V AC network) through the supplied power adaptor and stable Internet access through a wired connection (Ethernet channel – see 4.1), wireless connection (Wi-Fi channel for Livi Smart Hub 4G – see 4.2) and / or through a mobile network (GSM/UMTS/LTE channel – see 4.3).

One Internet access channel is enough for the hub to operate. But if you connect wired internet to the hub, set the Wi-Fi network access settings (for Livi Smart Hub 4G) and insert a SIM card with active mobile internet into it, then the hub will continue to operate even if there are problems with Internet access through any connected channel.

Follow these steps when you turn on the hub for the first time:

1. Open the compartment on the back of the hub (4), remove the battery and remove a protective film from the contacts in the battery compartment.

2. Insert a SIM-card into a special slot, position it as indicated.

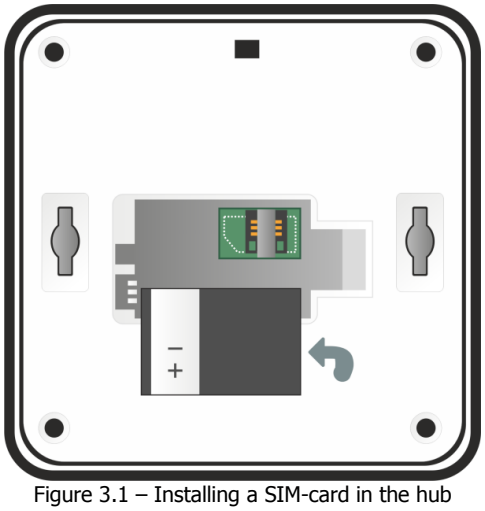


Figure 3.1 – Installing a SIM-card in the hub

3. Return the battery to the Hub, align the contacts on the battery with the hub contacts and close the compartment.
4. The hub package contains a power adaptor and an Ethernet-cable. Insert both wires in the connectors (6) and (7) on the side of the hub. Then plug the power adaptor into a 230 V power outlet and an Ethernet cable into an Internet outlet or a router.

The hub automatically switches to the intelligent power-on mode after power up. If the battery is discharged, the hub first charges the battery to the operating level and then the hub switches to the operating mode. The power indicator (1) blinks white while the battery is charging.

Wait until the power (1) and communication (3) indicators light green steadily (exception: if the hub operates only via the "mobile Internet", then the connection indicator will light yellow). If indicators light any different color, refer to the table "LED Indication" (see 5.7) to find out the reason.

5. Download the Livicom mobile app on Google Play and App Store and install it on your smartphone.
6. Sign up and then sign in to the Livicom system.
7. Follow on-screen instructions to register the hub and create your livicom site.

You can bind sensors and endpoint devices to the hub once your Livicom site is created. Invite family members to control the Livicom smart home together.

4 SETTING UP COMMUNICATION CHANNELS

4.1 CONNECTING ETHERNET CHANNEL

When an Ethernet cable is connected to the hub, the hub automatically sends a request to receive parameters for connecting to the LAN via DHCP. Wait a few minutes and look at the connection indicator on the hub. If the connection indicator lights green, then the hub has received the settings **automatically** and has successfully established the connection with the Livicom server.

If the connection indicator blinks red or lights yellow, then set the parameters for connecting the hub to the LAN manually using an SMS command (the command will be performed by the hub only if a SIM card is installed in it):

1. Ask your LAN administrator for the following settings:
   a. Local: a free local IP address that will be assigned to the hub.
   b. Mask: the subnet mask.
   c. Gateway: local IP address of the network device that organizes the LAN.
   d. Dns: DNS server IP address.
2. Record the following command as an SMS on your smartphone:

adaptor eth cfg=local mask gateway dns

Attention Do not put spaces before and after the "=" sign and respect the case of letters (uppercase and lowercase letters) when typing the SMS.

For example: adaptor eth cfg=192.168.0.10 255.255.255.0 192.168.0.1 8.8.8.8

3. Send the SMS to the phone number of the SIM card that is installed in the hub.

Attention The command will be accepted from any phone number if the hub has no registration on the Livicom cloud server (for example, if the hub is new). If the hub is registered on the Livicom cloud server, then the command will be accepted by the hub only if it's been sent from the phone of its site's owner.

If you use the SMS to set the parameters for the hub, then later you can switch the hub back to the operation via DHCP protocol by:

- sending an SMS command: adaptor eth cfg=auto,
- resetting the hub as described in section 7.3.

4.2 CONNECTING WI-FI CHANNEL

You can connect the hub to the Wi-Fi network only after registering it in the Livicom app. To register the hub, you will need to give it access to the Internet via "mobile Internet" or via Ethernet.

The hub can connect to a Wi-Fi network operating at 2.4 GHz. Open the hub settings in the Livicom app and go to the Wi-Fi connection settings to select the network. Tap the Refresh button and wait until the hub detects all available Wi-Fi networks. Select the preferred network from the list of available networks. If a password is required to connect to the network, enter it in the pop-up screen.

The preferred network and its password are stored in the hub's memory once the connection is established. Later after reboots, the hub will connect to the selected network automatically (if Wi-Fi is on).

You can always disconnect the hub from the Wi-Fi network using the "Disconnect" button on the Wi-Fi connection settings screen in the Livicom app and select another network from the "Available networks" list.

4.3 CHOOSING A SIM CARD FOR THE HUB

If you have decided to install a SIM-card in the hub, then select an operator according to the following criteria:

- Check the signal strength of the operator's mobile network at your site.

Make sure that the network of the selected mobile operator has a strong signal at the intended location of the hub before purchasing a SIM-card. Verify the signal strength with your smartphone: if you are at the site and you have no problems receiving voice calls, SMS or with Internet access, then purchase the SIM-card of the same mobile operator.

- Select convenient tariff

Select a tariff based on a reasonable ratio of cost and services. The hub requires no more than 150 MB of mobile Internet per month, voice calls and SMS (if at least one user should be notified by SMS and / or voice calls in case of alarms at the site).

Purchase a SIM-card for the hub, install it in any phone and turn off a PIN request for the SIM card. We also recommend to restrict the credit balance system and SMS commercials. Afterwards regularly check the SIM-card financial balance in order to avoid overspending due to wrong settings and to make sure that the hub is operated with minimal financial costs.

4.4 MOBILE INTERNET ACTIVATION

The mobile Internet on the SIM card will be **activated automatically**, if you install the SIM card of one of the telecom operators listed in the Table 4.1.

Table 4.1 — Supported telecom operators

Operator	Country
Beeline	Russia
MTS	Russia

Table 4.1 — Supported telecom operators

Operator	Country
Megafon	Russia
Tele2	Russia
Ucom	Armenia
ViVaCell-MTS	Armenia
Beeline	Armenia
life:)	Belarus
A1	Belarus
MTS	Belarus
Altel	Kazakhstan
Beeline	Kazakhstan
Tele2	Kazakhstan
AVEA	Turkey
Turkcell	Turkey
VODAFONE-TELSIM	Turkey
Beeline	Uzbekistan
UCELL	Uzbekistan
Uzmobile	Uzbekistan
CLARO	Ecuador
CNT INTERNET MOVIL	Ecuador
MOVISTAR	Ecuador
Telekom EMT	Estonia

If you have selected a SIM card from another operator, then install it into the hub and check whether the hub succeeded to connect to the Livicom server via mobile Internet. To check, disconnect Ethernet-cable from the hub, wait several minutes and look at the connection indicator (3). Mobile Internet is **automatically activate**d if the connection indicator lights yellow.

If the connection indicator blinks red, then follow these steps to activate mobile Internet:

1. Ask your mobile operator for access point information (APN) through which the hub can connect to mobile Internet:
    a. APN (for example: internet.beeline.ru);
    b. User name (for example: beeline);
    c. Password (for example: beeline);
    d. USSD balance request (for example: *102#).
2. Record the following command as an SMS on your smartphone:

apn=APN,user name,password,USSD balance request

Do not put spaces and change letter cases (upper and lower case letters) when typing the SMS. If a username and / or a password are not required to access the mobile Internet, then put commas in the SMS as in the example for the Yota SIM-card below.

For example:

- For Beeline SIM-card record the command: apn=internet.beeline.ru,beeline,beeline,*102#
- For Yota SIM-card record the command: apn=internet.yota,,,*100#
- For Kcell SIM-card record the command: apn=internet,,,*100#

- For Goodline M2M Express SIM-card record the command: apn=internet.emt.ee,,,*146*099#

3. Send the SMS to the phone number of the SIM card that is installed in the hub.

The command will be accepted from any phone number if the hub has no registration on the Livicom cloud server (for example, if the hub is new). If the hub is registered on the Livicom cloud server, then the command will be accepted by the hub only if it's been sent from the phone of its site's owner.

Wait several minutes and look at the connection indicator (3). Mobile Internet is activated if the connection indicator lights yellow. If the connection indicator continues to blink red, then specify the protocol by which the hub will request authentication from the mobile operator (PAP / CHAP / NONE):

- Record the following command as an SMS on your smartphone: ppp_auth=pap
- Send the SMS to the phone number of the SIM card that is installed in the hub. Wait a few minutes and look at the connection indicator on the hub. Mobile Internet is activated if the connection indicator lights yellow.
- If the connection indicator continues to blink red, then record the following command as an SMS on your smartphone: ppp_auth=chap.
- Send the SMS to the phone number of the SIM card that is installed in the hub. Wait a few minutes and look at the connection indicator on the hub. Mobile Internet is activated if the connection indicator lights yellow.

Note that if mobile Internet on the SIM-card was activated with an SMS and you decide to replace the SIM-card in the hub, then you will have to return the hub to the factory settings: as described in section 7.3, but without deleting the site from the app. If the site is not deleted, then the hub will automatically restore information about the devices, users, and scripts by downloading the site data from the Livicom cloud platform, immediately after returning to the factory settings.

4.5 USER NOTIFICATION ALGORITHM VIA VOICE CALLS AND SMS

The Livicom cloud platform notifies users about all events at the site via push-notifications and by e-mail. The hub performs user alerts about site alarms via voice calls or SMS if these notification methods are enabled in the site settings and if a SIM-card is installed in the hub.

The algorithm of the user notification performed by the hub is shown below (see figure 4.1). The implementation of the algorithm in each case depends on the site settings.

An SMS is a non-confirmable notification method, which means that the hub does not receive any confirmation from the user that the message was received. Therefore SMS are sent to users only once for each alarm.

A voice call is a confirmable notification method (with feedback from the recipient). The hub continues to call users until the alert is successfully received.

Attention Users should pick up the phone and press the **#** button to confirm that they have received a voice notification. Any user can stop notification algorithm by pressing button **5** on the phone after picking up (then the hub will stop making calls about the current alarm).

The hub can send only a limited number of SMS and make a limited number of voice calls (received by users) within a certain period of time. By default the hub can send 30 SMS in 3 hours and make 60 calls in 6 hours. If this amount has been exceeded, the corresponding notification function will be blocked for 30 minutes.

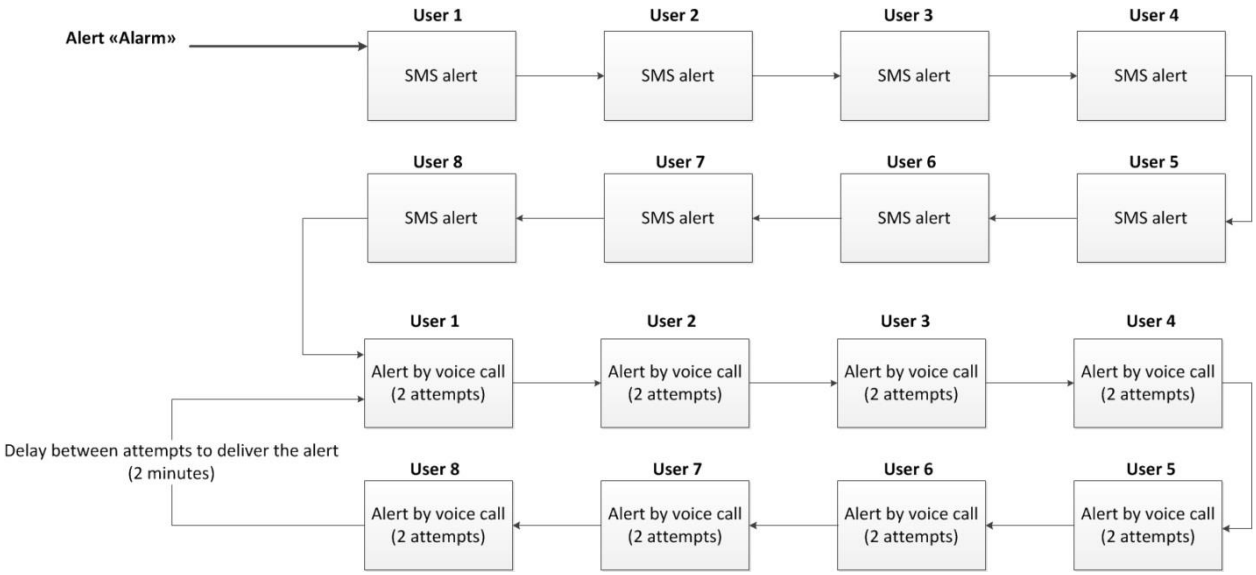


Figure 4.1 – User notification algorithm

If the site's guard is disabled, the hub will stop notifying users about an alarm by voice calls and SMS.

5 INTENDED USAGE OF THE HUB

5.1 CHOOSING LOCATION FOR THE HUB

The hub is designed to operate in heated apartments, city and country houses, commercial and office premises, etc.

It is recommended to install the hub in the area of stable radio signal reception and stable Internet access (via a mobile network, Wi-Fi and / or Ethernet). When choosing the place for the hub, keep in mind that one wire from the hub needs to be plugged into an electrical outlet and the other one might be connected to an Internet outlet or a router. Advice: hide the hub from guests and strangers. Security sensors won't be able to protect your property if it will be easy for intruders to disable the hub.

DO NOT install the hub:

- outdoors;
- in places with high humidity, or at temperatures exceeding the operating temperature range (see "Specifications" table in 1.4);
- in metal boxes and electrical panels;
- near massive metal objects that cause attenuation of the radio signal or shield it;
- near sources of radio interference (household appliances, etc.).

5.2 INSTALLATION OF THE HUB

The hub can be mounted on a wall, set upright on a shelf or lay down on a table.

Follow these steps to mount the hub on the wall:

1. Screw the supplied screws into the wall at the intended location of the hub.
2. Install the hub: align the screws with holes (5) on the back of the hub and pull the hub down to secure it.

5.3 OPERATION VIA ETHERNET

If the Ethernet channel is connected to the hub, the hub sends alarm alerts and other notifications through it to the Livicom cloud platform. The hub will also use Ethernet to send test events to the platform every 10 seconds in order to monitor the state of the Ethernet connection.

If the Ethernet cable is removed from the hub, then in 40 seconds the hub will generate the "Ethernet failure" event and notify users in the Livicom app. Once the Ethernet cable is reconnected, the hub will generate the "Ethernet restored" event 30 seconds after the connection is restored.

If the security service is active, then the hub will maintain two active IP connections over the Ethernet channel: all notifications and test events will be transmitted simultaneously to the Livicom cloud platform and to the STEMAX server of the security company.

Attention

The hub will automatically disable connections via Ethernet and Wi-Fi channels if there is a power failure at the site, in order to reduce the power consumption.

The hub will continue to use mobile Internet to connect to the Livicom server if any SIM-card is installed in the hub. If the SIM-card is not installed, data transfer between the hub and the cloud server will be temporarily terminated.

The hub will operate offline according to the settings recorded by users earlier. Users will be able to change the state of the site guard using Livi Key Fob control panel or Livi RFID security control panel.

5.4 OPERATION VIA WI-FI

When the Wi-Fi channel is activated, the hub sends test events over it every 10 seconds in order to monitor the channel's state.

If the hub cannot transmit test events via the Wi-Fi channel, then in 40 seconds the hub will generate the "Wi-Fi failure" event and notify users in the Livicom app. When test events transmission resumes, the hub will generate the "Wi-Fi restored" event 30 seconds after the connection is restored.

If the security service is active, then the hub will maintain two active IP connections over the Wi-Fi channel: all notifications and test events will be transmitted simultaneously to the Livicom cloud platform and to the STEMAX server of the security company.

Attention

The hub will automatically disable connections via Ethernet and Wi-Fi channels if there is a power failure at the site, in order to reduce the power consumption (see 5.3).

5.5 OPERATION VIA MOBILE INTERNET

When the GSM/UMTS/LTE channel is connected, the hub sends test events over it every 25 seconds in order to monitor the channel's state. The amount of Internet traffic that is required for the hub operation depends on the number of events at the site per month. The events number will be the greater, the more Livi devices are bound to the hub, the more scripts are active, and the more user commands the hub executes (for example, commands to enable/disable the guard, to turn on/off endpoint devices). With active hub operation, Internet traffic can reach 100-150 MB per month, of which about 30 MB will be spent on test events.

If the security service is active, then the hub will maintain two active IP connections over the GSM/UMTS/LTE channel: all notifications and test events will be transmitted simultaneously to the Livicom cloud platform and to the STEMAX server of the security company, which will lead to a doubling of the consumed traffic.

5.6 Connecting all channels simultaneously

The hub will use the Ethernet as a priority channel for data exchange with the Livicom cloud platform, if all communication channels are connected. For Livi Smart Hub 4G, the Wi-Fi channel will act as a backup for the Ethernet. The hub will automatically switch to operate via the GSM/UMTS/LTE channel if the connection via Ethernet and Wi-Fi channels interrupts.

Additionally, the GSM/UMTS/LTE channel can be used to control the hub using the hub voice menu and SMS commands.

The hub will always send test events via all connected communication channels.

If the connection between the hub and the Livicom cloud platform is lost completely, then in two minutes the platform will generate a "No connection with the Site" event and notify users about this in the Livicom mobile app.

If a security service is connected to the Site in the Livicom app and the connection between the hub and the STEMAX server is lost, then in five minutes the hub will generate the "Loss of connection with the monitoring station" event. The "Connection to the monitoring station is restored" event will also be generated by the hub in 5 minutes after the connection is restored.

5.7 LED INDICATION

Table 5.1 — LED Indication

Power indicator	
Main power supply 230 V is ok, battery is ok (hub receives power from the 230 V mains)	The indicator lights green
Main power supply 230 V is ok, battery is low (hub receives power from the 230 V mains, the battery is charging)	The indicator lights red
No power supply from the 230 V mains, the battery is ok (the hub receives power from the battery)	The indicator lights yellow
No power supply from the 230 V mains, the battery is low (the hub receives power from the battery)	The indicator lights red
Main power supply 230 V is ok, battery is extremely low (the hub can't turn on, the battery is charging)	The indicator quickly blinks white
Guard indicator	
Guard is disabled	The indicator is not lit
Full guard is enabled	The indicator lights green
Night guard is enabled	The indicator lights blue
Guard is enabled with some sensors exception ***	The indicator lights yellow
Loss of communication with one or more Livi radio devices (full guard or night guard is enabled)	The indicator lights red
Delay for entry	The indicator blinks red
Delay for exit	The indicator blinks green
Alarm	The indicator lights red
Connection indicator	
Connection to the cloud server is established via Ethernet and/or Wi-Fi	The indicator lights green
Connection to the cloud server is established via mobile network	The indicator lights yellow
Establishing a connection to the cloud server (connection failure)	The indicator blinks red

***Guard is enabled with some sensors exception is the guard mode that can be selected by the user if the full guard or the night guard is enabling at the moment when not all security sensors are ready to perform guarding functions. The sensors may not be ready for various reasons: e.g. any technical failure is detected, the Livi CS or Livi CSM opening sensor is in the *Open* state, or the Livi MS or Livi MSW motion sensor is in the *Motion detected* state.

If the user is enabling the guard and one or more of the security sensors are not ready to perform guarding functions, then the user can choose to cancel the action or to continue. If the user chooses to continue the guard enabling process, then only those sensors that are ready will switch to the guarding mode. The guard indicator of the hub will light yellow until all involved security sensors switch to the guarding mode. After that, the guard indicator of the hub will light green (for full guard) or blue (for night guard).

For all hubs, except those with the software version 1.12: If at least one sensor is not ready to perform guarding functions and it's not involved in the night guard, then when the user enables the night guard, the hub will perform the action regularly and the guard indicator will light blue. For the hubs with the software version 1.12: If at least one sensor is not ready to perform guarding functions and it's not involved in the night guard, then when the user enables the night guard, the hub will perform the action regularly while the guard indicator will light yellow until all security sensors are ready to perform the guarding functions. After that, the guard indicator of the hub will light blue.

6 Hub control

6.1 LIVICOM MOBILE APP

Livicom mobile app allows you to remotely control devices of the Livicom smart home, provide access to those you trust and automatically control home appliances using event-driven and scheduled scripts.

App features:

- connecting and configuring the Livicom smart home;
- enabling and disabling the site guard remotely ;
- notifying users instantly;
- checking the status of the entire system or specific devices;
- viewing the event log;
- inviting new site users and setting notification methods for them;
- collecting meter readings and controlling water and electricity consumption remotely;
- controlling home appliances remotely;
- connecting to security company.

Hub control through the Livicom mobile app is described in the app user guide and on the official Livicom website.

6.2 HUB VOICE MENU

Users can change the site guard status and get information about the hub using the hub voice menu if an active SIM-card is installed in the hub.

Attention Only registered users of the site get access to the hub voice menu. Authentication is performed by phone number (without password request).

Users should dial the phone number of the hub SIM-card and switch the phone to the tone dialing mode to use the hub voice menu.

The answering machine will respond with a suggestion to select one of the voice menu commands. Press buttons on the phone keyboard following instructions of the answering machine or the voice menu diagram presented below (see figure 6.1) to send commands to the hub.

Press the # button to return to the previous menu. Press the *Hang up* button to exit the voice menu.

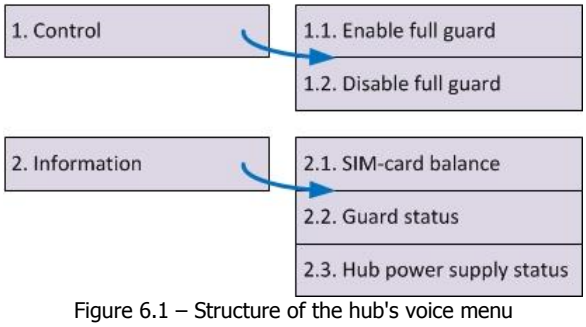


Figure 6.1 – Structure of the hub's voice menu

Let us take a closer look at the structure of the hub voice menu:

1. Control of the site's guard status

    1.1. Enable full guard of the site (or enable group guard[1])

Press buttons **1**, **1** to enable full guard of the site. The answering machine will report the result of the command execution: *Full guard is enabled*.

[1]If you have divided devices into groups in the Livicom app, you can enable both full guard and the guard of a specific group using the voice menu. In this case, press the buttons **1**, **1, 1 and** * to enable the full guard. The answering machine will report the result of the command execution: *Group 1, guard is enabled*. Press the buttons **1**, **1, group number and** * to enable the guard of the specific group.

    1.2. Disable full guard of the site (or disable group guard[2])

Press buttons **1**, **2** to disable full guard of the site. The answering machine will report the result of the command execution: *Full guard is disabled*.

[2]If you have divided devices into groups in the Livicom app, you can disable both full guard and the guard of a specific group using the voice menu. In this case, press the buttons **1**, **2, 1 and *** to disable the full guard. The answering machine will report the result of the command execution: *Group 1*, *guard is disabled*. Press the buttons **1**, **2, group number and *** to disable the guard of the specific group.

2. Information about the hub

2.1. SIM-card financial balance.

Press buttons **2**, **1** for information on the financial balance of the hub SIM-card. The answering machine will report the result of the command execution, for example: *First network balance is 560 point 6*.

Note that the hub sends a SIM-balance request after each reboot (in 5 minutes after the hub turns on) and then repeats the request once every 24 hours.

2.2. Full guard status

Press buttons **2**, **2** for information on the guard state of the site (enabled / disabled). The answering machine will report the result of the command execution, for example: *Full guard is disabled*.

2.3. Hub power supply status

Press buttons **2**, **3** for information on the status of the hub power sources (220 V status, battery status and current battery voltage). The answering machine will report the result of the command execution, for example: *220 OK, battery OK, battery voltage is 3 point 7 volts*.

The owner of the site can reboot the hub using the hub voice menu. Press buttons **1, 9**, **1** while listening to the hub voice menu (with 1 sec pause between button pressings) to reboot the hub. The answering machine will report the result of the command execution, for example: *The hub will be rebooted in 15 seconds*.

6.3 SMS-COMMANDS

Users can change the site guard status and get information about the hub using SMS only if an active SIM-card is installed in the hub. Note that only SMS sent by registered users of the site will be executed. Authentication is performed by phone number (without password request).

Users should send an SMS with the command code to the phone number of the SIM-card installed in the hub to control the hub[3]. Command codes are shown in the table below (see Table 6.1).

Table 6.1 — SMS-command codes

Code	Command description	SMS-reply from the hub (example)
11	Enabling the full guard[4]	(receipt) Full guard is enabled
11 group number (sequence number in the Livicom app)	Enabling the group guard if the devices on the site are divided into groups[4]	(receipt) Guard is enabled: Group name
12	Disabling full guard of the site[4]	(receipt) Full guard is disabled
12 group number (sequence number in the Livicom app)	Disabling the group guard if the devices on the site are divided into groups[4]	(receipt) Guard is disabled: Group name
21	Request for the hub SIM-card balance	(receipt) Balance SIM 1: 840,50
22	Request for information on the current guard status of the site	(receipt) Full guard is enabled (receipt) Full guard is disabled
23	Request for information on the hub power supply status	(receipt) 220 V OK, battery OK (receipt) 220 V OK, battery failure (receipt) 220 V failure, battery OK

Table 6.1 — SMS-command codes

Code	Command description	SMS-reply from the hub (example)
26 device serial number on	Turning on the Livi endpoint device. You can find the serial number of the device on its enclosure. Put the number in the middle of the command, separated by spaces [5]	(receipt) 14100284 on
26 device serial number off	Turning off the Livi endpoint device. You can find the serial number of the device on its enclosure. Put the number in the middle of the command, separated by spaces [5]	(receipt) 14100284 off
27	Request for temperature sensor readings[6]	(receipt) Temperature in hall: 25.7 / 5.3 / 23.9, Temperature in sauna: 22.0 / 60.4 / 0.0.
93	Request for the hub firmware version	(receipt) Hub firmware version: v.1.3
99	Request for the hub restart[7]	(receipt) The hub will be rebooted

[3] If the hub firmware version is lower than 1.8, then SMS should start with the serial number of the hub followed by a command code (separated by space).

[4] Commands 11 and 12 (Enabling and disabling full guard) will be accepted only from the phone number of the site user with the role *Owner* or of users with access to control the guard status of the site (the owner can grant access to users in the Livicom mobile app).

[5] Command 26 will be executed only if the hub firmware is updated to version 1.16 or higher. If you want to turn on/off a two-channel Livi radio device (for example, Livi Light Control or Livi Water Control), put a dot after the serial number of the device and write the number of the control channel. Example: 26 14100284.2 on (open the second valve connected to the Livi Water Control module with serial number 14100284).

[6] An SMS-reply will contain readings of all temperature sensors bound to the hub. The SMS-reply will contain the name of each Livi TS and readings of the internal sensor, first and second external sensors.

[7] Command 99 (Hub restart) will be accepted only from the phone number of the site user with the role *Owner*.

7 MAINTENANCE AND REPAIRS

7.1 MAINTENANCE

During operation of the hub, it is necessary to carry out its periodic inspection and maintenance.

The frequency of inspections depends on the operating conditions, but should not be less than once a year. **Periodic inspection** of the hub should be carried out for the following purposes:

- checking operating conditions;
- checking for the absence of external damage to the hub;
- checking the reliability of the connection between the hub and the power source.

Maintenance should be performed when the signal strength is low, notifications take a long time to arrive, etc.

Perform the following operations during maintenance:

1. power off the hub completely;
   1.1. remove dust from the surface of the hub;
   1.2. clean the SIM card contacts with alcohol;
   1.3. check the power cord insulation for breaks or damage;

1.4. check your radio devices for false alarms.

2. Supply the main or backup power to the hub:
   2.1. check the indication on the hub when radio devices are triggered;
   2.2. check the delivery of alarm notifications through various communication channels.

7.2 UPDATING THE HUB FIRMWARE

Firmware updates optimize the operation of the hub, add new features and improvements.

The Livicom system automatically checks firmware updates, so users will receive push-notifications as soon as a new version of the firmware becomes available for installation.

You can update the hub firmware in the Livicom mobile app on the hub settings screen.

Updating the hub firmware is described on the website of the Livicom system.

7.3 REPAIRS

Warranty service and repairs of the hub must be carried out by the Manufacturer - NPP Stels LLC.

7.4 HUB RESET

Hub reset allows you to delete all information about connected devices, user settings and created scripts from the hub's internal memory and reload it from the Livicom cloud platform.

Follow these steps to reset the hub:

1. Disconnect all power sources from the hub:
   a. disconnect the power supply unit from the 230 V power outlet;
   b. open the compartment on the back of the hub (4) and remove the battery from the hub.
2. Press and hold the button for confirming the hub binding (8).
3. Plug the power supply unit of the hub into the 230 V power outlet while holding the button (8).
4. Hold the button (8) and wait until the power indicator lights red. Release the button (8).
5. Press 10 times on the button (8). Three LED indicators on the hub will blink red together 8 times, and then the hub will be rebooted.

All data about connected devices, user settings and created scripts will be deleted from the hub's internal memory and reloaded from the Livicom cloud platform.

Note that you can only perform the hub reset within 1 minute after the hub restarted. If you have not succeeded to complete all steps in time, then disconnect all power sources from the hub again and repeat steps from 2 to 5.

8 TRANSPORTATION AND STORAGE

8.1 TRANSPORTATION

Hubs (packed according to 1.6) can be transported by all kinds of transport in covered vehicles, except for non-pressurized aircraft compartments. They should be handled in accordance with the transportation rules applicable to the chosen type of transport.

The protection of the shipping container from atmospheric condensation must be provided during transportation. Arrangement and fastening of cargo in vehicles must ensure a stable position of the container during transportation. Hubs are allowed to be transported within the city without packaging, but with mandatory protection against atmospheric condensation and shock during transportation.

8.2 STORAGE

Packaged hubs should be stored in warehouses at a temperature from minus 25 to plus 70 °C and a relative humidity of no more than 85%.

The presence of acids, alkalis and other aggressive impurities in the air is not allowed.

De-energize the hub before storing for a long period of time (remove the battery or insert a protective film between the contacts of the hub and the battery).

9 DISPOSAL

Disposal of all parts of the hub must be carried out in accordance with the local legislation. Please note that the device belongs to the 4th waste hazard class when disposing (with the exception of the battery). The battery of the hub belongs to the 2nd class of waste hazard.

The content of precious metals: does not require accounting during storage and disposal.

10 WARRANTY

The manufacturer LLC "NPP Stels" guarantees that the hub meets AGNS.421453.001 TU technical requirements, provided that the consumer complies with the conditions of transportation, storage, installation and operation.

The warranty period is 5 years from the manufacturing date. The warranty does not apply to batteries.

The warranty does not cover the following cases:

1) Non-compliance with the intended operating conditions for the hub;
2) Mechanical damage to the hub;
3) Repairs to the hub by a third party (a person or a company other than the Manufacturer).

APPENDIX A - EVENT GENERATION PERIODS

The Livicom system monitors the hub status and generates notifications if there are long-term interruptions in its operation. Events and delays in their generation are given in Table A.1.

Table A.1- Event generation periods

Event	Generation delay	Recovery event	Event-generating party
Ethernet cable is disconnected	40 sec	Ethernet cable is connected	Hub, if it continues to transmit data via another channel
Wi-Fi network is not available	40 sec	Wi-Fi connection is restored	Hub, if it continues to transmit data via another channel
220 V power failure	3 minutes	220 V power ok	Hub, if it continues to operate on battery power
Loss of communication with the site*	3 minutes	Communication with the site is restored	Livicom cloud server
Loss of communication with the Livicom cloud server*	3 minutes	Communication with the Livicom cloud server is restored	Hub

* If the connection is lost between the hub and the Livicom cloud server, all generated events are queued by the hub for sending. The hub will send all accumulated events after the connection is restored.

APPENDIX B - TECHNICAL SUPPORT CONTACTS

If you cannot find the answer to your question in this Manual, then contact our Technical support team:

by e-mail

support@livicom.ru

Technical Support Working Hours:

on weekdays from 8:00 to 20:00 Tomsk time (GMT + 7)

APPENDIX C - DOCUMENT CHANGE LOG

Table C.1 - Document change log

Date	Version	Description
24.09.2021	1.0	Design, operation principle and technical characteristics of the Livi Smart Hub and Livi Smart Hub 2G hubs are described.
27.09.2022	2.0	Information about the principle of operation, technical characteristics, intended use, transportation, storage, maintenance and disposal of Livi Smart Hub 4G hubs is added.