REAL SMART HOME

APPMODULE

Hue KNX Connect
Smart Home App Documentation

EN

REAL SMART HOME GmbH

Hafenpromenade 1 – 2
44263 Dortmund

Email: info [at] realsmarthome.de

Tel.: +49 (0) 231-586 974 -00
Fax.: +49 (0) 231-586 974 -15
www.realsmarthome.de

TABLE OF CONTENTS

1   INTRODUCTION

Thank you for your trust, and the purchase of the **HUE KNX CONNECT** -Smart Home App for the BAB **APP**MODULE. With **HUE KNX CONNECT** – Smart Home App you get one of the simplest integrations of your Philips® Hue lights into building automation.

This documentation will help you get started with the app and aims to improve your setup experience.

REAL SMART HOME GmbH

IMPORTANT INFORMATION ON THE OPERATING INSTRUCTIONS

We reserve the right continually improve the product. This entails the possibility that parts of this documentation might be out-of-date. You will find the latest information at:

www.bab-appmarket.de

This Smart Home App is an independent product, with no legal ties to Philips®. Neither **BAB** APPMARKET GmbH nor the developer of this Smart Home App take any claim in the trademarks owned by Philips®.

2   HUE KNX CONNECT FUNCTIONAL OVERVIEW

This Smart Home App connects your Philips® hue Bridge with KNX® so that you have access to all connected Philips hue lights through the building automation. The simple authorization process makes connection particularly easy. The 50 freely definable " Notifications" which the hue lights use to inform themselves about the desired conditions (e.g. light red if the doorbell rings) are a particular feature.

2.1   HIGHLIGHTS

- Simple authorization process (single touch on the Hue Bridge und Hue Bridge Pro)
- Control lights or groups
- Adjustable dimming duration (large or small steps)
- Duration of status transitions (color, brightness) dynamically adjustable via KNX®
- Control brightness absolutely or relatively (dimming)
- RGB color control through 3 group addresses, or through a (DPT232.600)
- Alternative color temperature control for white tones
- 50 freely definable " Notifications" (e.g.: RGB color x for y seconds when group address s == 1)

2.2   SMART SCREENS

This Smart Home App is suitable for »Smart Screens«

»Smart Screens« is an application for iOS® or Android® that allows you to control applications installed on the **APP**MODULE directly and on one interface via the touchscreen of your smartphone or tablet.

The setup takes only a few minutes and does not require any additional components.

»Smart Screens« is available free of charge in the Apple® AppStore® and on Google® Play.
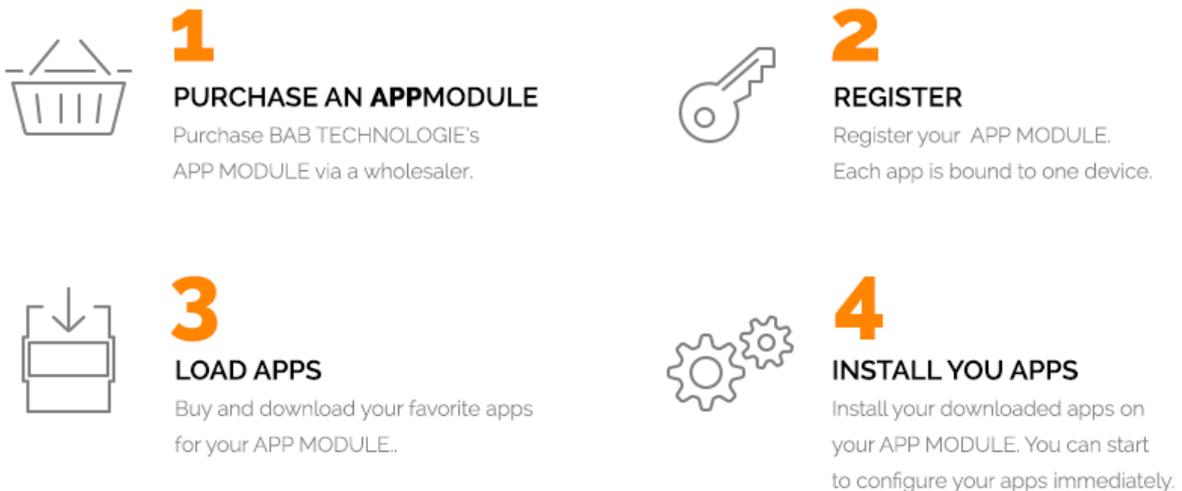
Further information on »Smart Screens« at Smart Screens APP - BAB TECHNOLOGIE GmbH (https://bab-technologie.com/products/smart-screens-app/?lang=en)

Download on the App Store   GET IT ON Google Play

3 THE INNOVATIVE, MODULAR SMART HOME APP CONCEPT FOR THE BUILDING AUTOMATION

The innovative, modular Smart Home App concept for building automation. The **APP**MODULE brings the innovative, modular Smart Home App concept into building automation. You can mix and match any of the diverse applications that are available to ingrate third-party solutions. With these Smart Home Apps from the dedicated **BAB** APPMARKET, the **APP**MODULE becomes a tailor-made integration unit for your building automation.

HOW IT WORKS

1 PURCHASE AN APPMODULE
Purchase BAB TECHNOLOGIE's APP MODULE via a wholesaler.

2 REGISTER
Register your APP MODULE.
Each app is bound to one device.

3 LOAD APPS
Buy and download your favorite apps for your APP MODULE..

4 INSTALL YOU APPS
Install your downloaded apps on your APP MODULE. You can start to configure your apps immediately.

Manufacturer of the **APP**MODULE [BAB TECHNOLOGIE GmbH](#)

Distribution of all Smart Home Apps for the **APP**MODULE [BAB APPMARKET GmbH](#)

Smart Home App developer [REAL SMART HOME GmbH](#)

3.1 INFORMATION ABOUT THE APPMODULE

Please refer to the separate product documentation of the **APP**MODULE for a detailed product description and setup instructions.

http://www.bab-tec.de/index.php/download_de.html

Product variants:
The **APP**MODULE is available in three variants:

- **APP**MODULE KNX/TP   – for stand-alone use on KNX/TP Bus
- **APP**MODULE EnOcean   – for stand-alone use in the EnOcean wireless network
- **APP**MODULE Easywave   – for operation in radio networks based on Easywave

4 SMART HOME APP INSTALLATION / UPDATE

Please proceed as follows to **install** a Smart Home App.

1. Open the **APP**MODULE web page: Enter <IP Address of **APP**MODULE > into your browser's address bar and press Enter. The **APP**MODULE web interface will appear.

2. Log in with your user credentials. Please refer to the **APP**MODULE documentation for login details.

3. Click on the menu entry "App Manager"

4. You are now on the page where already installed Smart Home Apps are listed. The list will be empty if no Smart Home Apps have been installed. Click "Install App" in order to install a new Smart Home App.

5. Now click on "Select App"; a file selector window will appear. Choose the Smart Home App » **HUE KNX CONNECT** « and click "OK".

The Smart Home App » **HUE KNX CONNECT** « must first be downloaded from the **BAB** APPMARKET (www.bab-appmarket.de).

After the message "Installation successful" appears, click "OK". You are ready to configure the Smart Home App.

To **update** a Smart Home App manually you have to proceed as follows

1. To update an already installed Smart Home App, click on the App icon in the "App Manager".

2. The detail view of the Smart Home App appears. Click on "Update App" to select the Smart Home App package and start the update. The update version must be downloaded from the **BAB** APPMARKET.

After the message "Installation successful" appears, click "OK". The Smart Home App has been updated. Your instance configurations will remain unchanged.

The Smart Home App can also be updated directly in the web interface. Without having to download the Smart Home App from the **BAB**APPMARKET first.
In the "App Manager" available Smart Home App updates are reported

Information
To configure the Smart Home App please use Google Chrome.

5 SMART HOME APP SETTINGS

This Smart Home App connects your Philips® hue Bridge and Hue Bridge Pro with KNX® so that you have access to all connected Philips® hue lights through the building automation.

The simple authorization process makes connection particularly easy. The 50 freely definable » Special Notifications « which the hue lights use to inform themselves about the desired conditions (e.g. light red if the doorbell rings) are a particular feature.

A maximum of 20 instances (100 instances with the PRO version) can be created.

Note Please note that the Hue Bridge is limited to
- a **maximum of 10 queries/second** for Hue participants
- a **maximum of 1 query/second** for groups/rooms/zones!

These limits apply to <u>all</u> instances configured on an APPMODULE together.

5.1 HUE KNX CONNECT

Note: The browser-session expires after a period of 60 minutes due to inactivity. Unsaved changes to the configuration will be lost.

As soon as the Smart Home app is installed, you can create so called "Instance". An Instance is one of several objects of the same class.

In order to create an instance, click on the following symbol "Create Instance".

Instance Name:
Choose a name for this new instance.

Comment:
Insert a description what this instance does.

5.2 HUE BRIDGE

Bridge Selection

Please make sure that the Philips® hue Bridge and Hue Bridge Pro is in the same subnet of the **APP**MODULE so that it can be found or to avoid possible connection problems.

The found hue Bridges are listed in the selection menu under "Reachable Bridges". If hue bridges are connected in other subnets of your network, they will not be found depending on the router configuration.

In this case, the option "**Show Bridges Reported by Cloud**" can be activated, the search results are displayed under "Unknown Bridges (Cloud Response)" in the selection menu.

If you have a DS-Lite connection, you share a public IPv4 address with other ISP customers, IP addresses of foreign hue bridges that use the same external IP address can be listed in this case.

Alternatively, you can enter the IP address of the hue Bridge manually.

Every 15 minutes, the Smart Home App updates the information of your bridges including luminaires, scenes and other information.

Note "*Delete authorisation data*" Please note that this function deletes all authorisation data of all taught-in HUE bridges. After activating this function, all bridges must be re-authorised.

This function is required if a Hue bridge need to be replaced.

5.3   GENERAL PARAMETERS

Control with this Instance

If your hue Bridge is connected, and you already have lights set up, a list of your lights, Smart Plugs or groups will appear here. Choose the item which this instance should control.

Note Smart plugs connected to your Hue Bridge are only configured with specific functions (general parameters and basic group addresses). Incorrect settings that do not correspond to the device type can lead to malfunctions. Make sure that your settings correspond to the respective Hue device type.

Instance Connection Status (EIS 1)

Enter the group address for the connection status of the app instance. A "1" indicates that this instance is running.
If it is terminated, a "0" is sent to this group address.

Bridge Connection Status (EIS 1)

Insert the group address of the connection status indicator. A "1" indicates that the selected bridge can be reached by this app instance.
If not a "O" will be sent to this group address.

Static Transition Time

Insert the transition time for state changes (in multiples of 100ms).
Default for hue bulbs is 4, i.e. 400ms.

Note This app has a hard-coded value of 1, i.e. 100ms, for changes to and from special notifications, as well dimming (see Dimming Time).

Variable Transition Time (EIS6)

Insert the group address for transition time (see comment on field Static Transition Time for more information).

Polling Interval

In some cases, the current status of Philips Hue lights must be queried (polling) in order to detect changes as soon as the lights are controlled by means other than KNX, e.g., using the manufacturer's apps. Enter an interval in seconds at which your device should be queried.

Note This option only affects Hue bridges with the old API version V1 or when colors are used in groups/rooms.

5.4 BASIC GROUP ADDRESSES

Depending on the device type, the following configuration fields must be edited. For Smart Plugs only the basic group addresses have to be configured (on / off, status, name). Depending on the lamp type, all of the following functions must be configured for the LED lamps.

Please note that the Smart Plug does not support dimming functions.

On/Off (EIS 1)

Insert the group address for the on/off switch-

On/Off Feedback (EIS 1)

Insert the group address on which to receive the actual switch state of the hue bulb

Item Name (EIS 15 14 Byte Text)

Insert the group address on which the name of your current bulb or group will be sent.

Query status values (EIS 1)

If a "1" is sent to this group address, all configured status addresses send their current value, regardless of whether this is already present on the bus or not.
In contrast, in normal operation, telegrams are only sent to the status addresses if there has been a change of status in the hue system. Use this function, for example, to initialize third-party devices after a power failure.

5.5 BRIGHTNESS

The following settings are only applicable if the Hue device is a lamp.

Absolute Brightness (EIS 6 0–100%)

Insert the group address to set absolute brightness (0 - 100%).

Note: Value 0 (in %) will turn off the hue bulb.)

Relative Brightness (EIS 2 relative Dimming)

Insert the group address for relative brightness (start/stop dimming)

Absolute Brightness Feedback (EIS 6 0–100%)

Insert the feedback address for the actual absolute brightness of the hue (1 - 100%).

Always send Brightness Feedback

Enable this option to always send the brightness value to the bus when the lamp is switched on or off. Some wall switches with a dimming function would continue to display the lamp as switched on without brightness status.

Dimming Time for Start-Stop-Dimming:

Insert the time (in multiples of 100ms) a full dimming process should take.

Note hue bulbs accept 10 commands per second, for groups the suggested rate is only 1 command per second. Each brightness has to be sent individually (there is no 'start dimming' command). This app will internally calculate how to set the individual increment in order to reach the desired value whilst contacting the hue every 110ms, or when in group mode every 1100ms.
If you wanted the smoothest possible dimming for a bulb, that is an increment of 1 sent every 110ms, you would have to set this to 280 (28s).

5.6 COLOR TEMPERATURE

Color Temperature (EIS 6 0–100%)

Insert the group address for color temperature. This is an alternative color control mode to RGB which focuses on whites. Hue bulbs support 2000K (warm) to 6500K (cold). This is an EIS6 value that gets mapped into the correct value range (0% = 6500K, 100% = 2000K).

Color Temperature Feedback (EIS 6 0–100%)

Insert the group address to receive the actual color temperature of your hue bulb.

Absolute Color Temperature (Kelvin) (EIS 10 0–65535)

Insert the group address for the absolute color temperature input for Kelvin values. This is an alternative color control mode to RGB which focuses on whites. Hue bulbs support values ranging from 2000K (warm) to 6500K (cold), albeit not all. In some cases, you may receive a value that differs slightly from the desired value.

Absolute Color Temperature Feedback (Kelvin) (EIS 10 0–65535)

Insert the group address to receive the actual absolute color temperature Kelvin of your hue bulb.

5.7 COLOR MODE

Color Output Type:

Choose whether the output of your color visualization element consists of separate values for RGB or HSB or a combined 3-byte RGB value. Please fill out the related address fields below for either the 3 byte RGB, 4 byte RGB or HSB depending on your choice.

- 4 separate byte values (R, G, B, Send)
- combined 3-byte value
- 4 separate HSB values (Hue, Saturation, Brightness, Send)

5.7.1   HSB

Hue (EIS 10 0...65535)

Insert the group address for HSB hue value.

Hue Feedback (EIS 10 0...65535)

Insert the group address to receive the actual hue value of your hue bulb.

Saturation (EIS 14 0...255)

Insert the group address for HSB saturation value.

Saturation Feedback (EIS 14 0...255)

Insert the group address to receive the actual saturation value of your hue bulb.

Brightness (EIS 14 0...255)

Insert the group address for HSB brightness value. Please note that bulbs will not be turned off when the brightness value is set to 0 via this address.

Brightness Feedback (EIS 14 0...255)

Insert the group address to receive the actual brightness value of your hue bulb.
Please note that the value of this address also changes if the brightness value is set by the group address for "Absolute Brightness" or "Relative Brightness".

Send HSB Value only on Submit Trigger

Choose this option if the HSB group address value should only be read and sent when a telegram is sent to the group address for "HSB submit".

HSB Submit (EIS 1)

Insert the group address for the HSB submit trigger. The color wheel visualization element will send this after the HSB values and only then will the device receive a new color update.
Please note that setting hue and saturation values may result in different colors depending on the device type which means that sending the same value to multiple lights may not result in the same color.

5.7.2   3-BYTE RGB

General note Philips Hue lights have special color spaces. Internally, your RGB values are converted to that space and checked against the limitations of your hue.
This will often lead to your color picker 'jumping' after you set a new color because the RGB color value you tried to set can be different from the closest value your device supports, and once the bulb reports back its actual current color, the visualization element gets updated.

RGB Submit (DPT 232.600)

Insert the group address for the RGB color (DPT 232.600)

RGB Feedback (DPT 232.600)

Insert the group address to receive the actual RGB color of your hue bulb (DPT 232.600).

5.7.3   3* 1-BYTE RGB

General note Philips Hue lights have special color spaces. Internally, your RGB values are converted to that space and checked against the limitations of your hue.
This will often lead to your color picker 'jumping' after you set a new color because the RGB color value you tried to set can be different from the closest value your device supports, and once the bulb reports back its actual current color, the visualization element gets updated.

Red (EIS 14 0...255)

Insert the group address for RGB red value.

Red Feedback (EIS 14 0...255)

Insert the group address to receive the actual red value of your hue bulb.

Green (EIS 14 0...255)

Insert the group address for RGB green value.

Green Feedback (EIS 14 0...255)

Insert the group address to receive the actual red value of your hue bulb.

Blue (EIS 14 0...255)

Insert the group address for RGB blue value.

Blue Feedback (EIS 14 0...255)

Insert the group address to receive the actual red value of your hue bulb.

Send RGB Value only on Submit Trigger

Choose this option if the RGB group address value should only be read and sent when a telegram is sent to the group address for "RGB submit".

RGB Submit (EIS 1):

Insert the group address for the RGB submit trigger. The color wheel visualization element will send this after the RGB values and only then will the device receive a new color update.

5.8   SCENES

Scenes

Up to 256 scenes, which have to be stored in the hue Bridge, can be set by telegrams. Please note: the scenes that come pre-installed in Philips hue Apps, and those that you create within Philips hue Apps, are not automatically also stored inside the bridge!
This only happens once you actually set a scene via your Philips hue Smartphone App. Also, a bridge can store up to 100 scenes. If you create 101 scenes in your smartphone app, the bridge will delete the scene that has not been used for the longest period from its internal memory. In such a case, this app can of course not trigger that scene anymore.

Comment

Insert a comment to describe the scene.

Scene to be started

Select the scene that is to be started by the trigger value at the trigger address. Please note that only scenes that belong to the "Control with this instance" selection can be displayed and controlled. Further information can also be found in the tooltip for »Scenes« in the overview!

Trigger Address (EIS 14 0…255)

Set the address that triggers this notification.

Trigger Value

Set the value that triggers this notification.

5.9 SPECIAL NOTIFICATIONS

Special Notifications:

Up to 50 special color notifications can be triggered by telegrams. Notification means that your hue will blink for the desired amount of time in the desired color. When a notification is stopped, this app will revert your hue it's the previous color.

Comment:

Insert a comment to describe the notification.

RGB value to set:

Set an RGB value (0-255 each, comma-separated as R, G, and B) for the notification.

Trigger Address (EIS 1):

Set the address that triggers this notification.

Notifications timeout in seconds (1-3600)

Set a timeout after which the light should stop the notification and revert to the old color (the notification will stop earlier if you send a 0 on the trigger group address).

6 ATTACHMENT

6.1 DATAPOINT TYPES

Function	EIS type	Data point type	Typical value	Data	Identifier
Switching	EIS 1	DPT 1.yyy	[0] = Off | FALSE; [1] = On | TRUE	1 Bit	1-bit
Relative Dimming	EIS 2	DPT 3.yyy	„Dimming steps": [[0],[2…7]] Darker [2, 4, 8, 16, 32, 64] -Steps and [[1],[2…7]] Brighter [2, 4, 8, 16, 32, 64]-Steps „Start/Stop Diming": [0,8] Stop; [1] Darker und [9] Brighter	4 Bit	4-bit
Time	EIS 3	DPT 10.yyy	hh:mm:ss	3 Byte	Time
Date	EIS 4	DPT 11.yyy	dd:mm:yyyy	3 Byte	Date
Floating point number (short)	EIS 5	DPT 9.yyy	-671 088,64 … 670 433,28	2 Byte	2-byte float value
Percent, Position, Brightness, …	EIS 6	DPT 5.yyy	0 … 100%	1 Byte	8-bit unsigned value
Blinds Drive/adjust	EIS 7	DPT 1.yyy	[0] = up; [1] = down When driving [0,1] = stop	1 Bit	1-bit
Priority	EIS 8	DPT 2.yyy	[0], [1] Switch on, off; [3] = Forced off; [4] = Forced on	2 Bit	1-bit controlled
IEEE Floating point number (long)	EIS 9	DPT 14.yyy	4-Octet float value; IEEE 754	32 Bit	4-byte float value
Counter 16 Bit Unsigned	EIS 10u	DPT 7.yyy	0 … 65.535	16 Bit	2-byte unsigned value
Counter 16 Bit Signed	EIS 10	DPT 8.yyy	-32.768 … 32.767	16 Bit	2-byte signed value
Counter 32 Bit Unsigned	EIS 11u	DPT 12.yyy	0 … 4.294.967.295	32 Bit	4-byte unsigned value
Counter 32 Bit Signed	EIS 11	DPT 13.yyy	-2.147.483.648 … 2.147.483.647	32 Bit	4-byte signed value
Access control	EIS 12	DPT 15.yyy	Access data	4 Byte	Entrance access
ASCII Character	EIS 13	DPT 4.yyy	Char	1 Byte	Character
Counter 8 Bit Unsigned	EIS 14u	DPT 5.yyy	0 … 255	8 Bit	8-bit unsigned value
Counter 8 Bit Signed	EIS 14	DPT 6.yyy	-128 … 127	8 Bit	8-bit signed value
String	EIS 15	DPT 16.yyy	14 Characters	14 Byte	Character string

EIB/KNX devices exchange fixed prescribed data formats with each other. These are defined in types.
The old designations of the types are EIS (EIB Interworking Standard). The new designations are DPT (Data Point Type)