



REAL SMART HOME

REAL SMART HOME GmbH

APPMODULE

HEOS Connect

Smart Home App Documentation

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1 INTRODUCTION

Thank you for your trust, and the purchase of the **HEOS Connect** -Smart Home App for the BAB **APPMODULE**. With the **HEOS Connect** -Smart Home App you get a comprehensive integration of DENON® HEOS devices into building automation.

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

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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 This entails the possibility that parts of this documentation might be out-of-date.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 DENON®. Neither **BAB APPMARKET** GmbH nor the developer of this Smart Home App take any claim in the trademarks owned by DENON®.

2 HEOS CONNECT FUNCTIONAL OVERVIEW

Connect your Denon® HEOS devices to the KNX or EnOcean world! You can enjoy the top-quality sound of Denon® in all rooms via WLAN and control the convenient functions via your existing visualization system or any number of push-button sensors. All HEOS devices can be installed in complex scenarios and are therefore particularly convenient to use. Playback, media selection, volume control including variable dimming time and configuration of groups are possible. The display of the current titles keeps you up to date. HEOS is a high-quality, wireless music system with support for many streaming services and local network streaming. With this version of HEOS Connect you can control up to 5 devices or HEOS groups.

2.1 HIGHLIGHTS

- Easy integration in KNX and EnOcean based home automation systems
- Comprehensive volume control for single loudspeakers and groups
- Playback control including shuffle and repeat
- Calling different group configurations
- Configure new HEOS groups without breaking down existing groups if their components become part of the new one

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 **APPMODULE** 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)
(<https://bab-technologie.com/products/smart-screens-app/?lang=en>)



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

The innovative, modular Smart Home App concept for building automation. The **APPMODULE** 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 **APPMODULE** 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 **APPMODULE** [BAB TECHNOLOGIE GmbH](http://www.bab-tec.de)

Distribution of all Smart Home Apps for the **APPMODULE** [BAB APPMARKET GmbH](http://www.bab-appmarket.de)

Smart Home App developer [REAL SMART HOME GmbH](http://www.real-smart-home.de)

3.1 INFORMATION ABOUT THE APPMODULE

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

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

Product variants:

The **APPMODULE** is available in three variants:

- **APPMODULE KNX/TP** – for stand-alone use on KNX/TP Bus
- **APPMODULE EnOcean** – for stand-alone use in the EnOcean wireless network
- **APPMODULE IP** – for use in an IP-based KNX installation (KNXnet/IP) or as extension for an EIBPORT

4 SMART HOME APP INSTALLATION / UPDATE

Please proceed as follows to install a Smart Home App.

1. Open the **APPMODULE** web page: Enter <IP Address of **APPMODULE**> into your browser's address bar and press Enter. The **APPMODULE** web interface will appear.
2. Log in with your user credentials. Please refer to the **APPMODULE** 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 » **HEOS Connect** « and click "OK".

The Smart Home App » **HEOS 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

Connect your Denon® HEOS™ devices with the KNX® world! Enjoy quality audio from Denon® in all rooms via WIFI and control the functions conveniently via the available visualisations or any tactile sensors. All HEOS™ devices can be installed in complex scenarios and can thus be used in particularly convenient way. Playback, Media selection, volume control including variable dimming time and the configuration of speaker groups are possible during the process. The display of the current track keeps you up to date.

5.1 HEOS CONNECT

Information

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 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 symbol "Create Instance".

Instance Name:

Choose a name for this new instance.

Comment:

Insert a description what this instance does.

5.2 CONNECTION PARAMETERS

HEOS Device Select:

Select the main Denon Heos device in your network that can be controlled by this app.

HEOS Account Username:

Insert the username of your HEOS account. If you wish to sign out of your previously signed in account, leave a blank space.

HEOS Account Password:

Insert the password of your HEOS account. Press the button below to sign in (or sign out) with the inserted user data (username & password). Once the sign in (or sign out) is successful, the user data is saved to be used on all instances. The result will be shown below.

Connection Status (EIS 14 0...255):

Insert the group address of the connection status indicator. The following values and their corresponding statuses are as follows:

- 0: No connection errors.
- 1: The selected device has not been added or has been removed.
- 2: No connection to the HEOS CLI.

5.3 VOLUME CONTROL ADDRESSES (ALL SETTINGS OPTIONAL)

Relative Volume Control (EIS 1):

Insert group address for the relative volume control (0: down, 1: up). The step level can be configured below.

Volume Step Level:

Insert an integer value (1 ... 10) which will serve as the step level of the relative volume control. The default value is one.

Absolute Volume Control (EIS 6 0%...100%):

Insert group address for the absolute volume control (e.g. for sliders).

Volume Start/Stop Dimming (EIS 2 relative Dimming)

Insert group address for the relative volume control (for start/stop-dimmers).

Volume Step Dimming (EIS 2 relative Dimming)

Insert group address for the relative volume control (for step dimmers).

Volume Dimming Time:

Insert the time in ms a full dimming process should take.

Note: Each volume level has to be sent individually (there is no 'start increasing volume' command). This app will internally calculate how to set the individual increment in order to reach the desired value whilst contacting your HEOS device every 110ms.

If you wanted the smoothest possible dimming, that is an increment of 1 sent every 110ms, you would have to set this to 11000 (11s).

Volume Display (EIS 6 0%...100%):

Insert group address for the volume display.

Mute (EIS 1):

Insert the group address for the mute switch (0: mute off, 1: mute on).

Mute Status (EIS 1):

Insert the group address for the mute status.

5.4 GROUP VOLUME CONTROL ADDRESSES (ALL SETTINGS OPTIONAL)

Relative Group Volume Control (EIS 1):

Insert group address for the relative group volume control (0: down, 1: up). The step level can be configured below.

Group Volume Step Level:

Insert an integer value (1 ... 10) which will serve as the step level of the relative group volume control. The default value is one.

Absolute Group Volume Control (EIS 6 0%...100%):

Insert group address for the absolute group volume control (e.g. for sliders).

Group Volume Start/Stop Dimming (EIS 2 relative Dimming)

Insert group address for the relative group volume control (for start/stop-dimmers).

Group Volume Step Dimming (EIS 2 relative Dimming)

Insert group address for the relative group volume control (for step-dimmers).

Group Volume Dimming Time:

Insert the time in ms a full dimming process should take.

Note: Each group volume level has to be sent individually (there is no 'start increasing volume' command). This app will internally calculate how to set the individual increment in order to reach the desired value whilst contacting your HEOS device every 110ms.

If you wanted the smoothest possible dimming, that is an increment of 1 sent every 110ms, you would have to set this to 11000 (11s).

Group Volume Display (EIS 6 0%...100%):

Insert group address for the group volume display.

Mute Group (EIS 1):

Insert the group address for the mute group switch (0: mute off, 1: mute on).

Mute Group Status (EIS 1):

Insert the group address for the mute group status.

5.5 PLAYBACK CONTROL ADDRESSES (ALL SETTINGS OPTIONAL)

Play/Pause (EIS 1):

Insert the group address of the play/pause control. Send a 1 to play and a 0 to pause (default).

Play/Pause Status (EIS 1):

Insert the group address of the play/pause status.

Swap Play and Pause Values:

Check this box if you want to swap the values which trigger and also indicate the Play/Pause control (0: play, 1: pause).

Stop (EIS 1):

Insert the group address of the stop control.

Stop Status (EIS 1):

Insert the group address of the stop status.

Playback Status (EIS 1):

Insert the group address of the playback status (0: either paused or stopped, 1: playing).

Repeat Mode (EIS 14 0...255):

Insert the group address of the repeat mode input. Send a 0 to stop repeating the current track, a 1 to repeat the current track and a 2 to repeat all tracks.

Repeat Mode Status (EIS 14 0...255):

Insert the group address of the repeat mode status (0: repeat off, 1: repeating current track, 2: repeating all tracks).

Shuffle On/Off (EIS 1):

Insert the group address of the shuffle on/off switch (0: shuffle off, 1: shuffle on).

Shuffle Status (EIS 1):

Insert the group address of the shuffle status.

Track Browse (EIS 1):

Insert the group address for the track browse button (0: backwards, 1: forwards).

Play Quick Select (EIS 14 0...255):

Insert the group address for play the quick select input. This function is supported only on HEOS AVR and HOES BAR devices.

Set Quick Select (EIS 14 0...255):

Insert the group address for the set quick select input. This function is supported only on HEOS AVR and HEOS BAR devices.



5.6 DISPLAY ADDRESSES (ALL SETTINGS OPTIONAL)

Name Display (EIS 15 14 Byte Text):

Insert the group address of the DenonHeos name display.

Group Name Display (EIS 15 14 Byte Text):

Insert the group address of the group name display.

Station Name Display (EIS 15 14 Byte Text):

Insert the group address of the station name display.

Artist Name Display (EIS 15 14 Byte Text):

Insert the group address of the artist name display.

Track Name Display (EIS 15 14 Byte Text):

Insert the group address of the current track name display.

Album Name Display (EIS 15 14 Byte Text):

Insert the group address of the album name display.

5.7 STREAM AND PLAYLIST SELECT ADDRESSES (ALL SETTINGS OPTIONAL)

Select Stream

Insert the group address with which to start streaming a station or an individual track. For details, see the tooltip of "Assign Music Source".

Assign Streams

Assign integers to up to 100 stations or individual tracks that can be accessed by the controlled device. Select one of the listed categories to view its contents, which may include further sub-categories, and repeat until you reach the desired station or track. By sending the assigned integer as a telegram, you will be able to begin streaming. If you wish to stream from an URL source, select "Stream URL", and insert the URL into the field that will then appear below. Please note that your current queue is going to be cleared completely whenever you select an individual track via the group address above.

Desired Stream

The stream to be started...

Corresponding Integer

...if this number is sent as a telegram value.

Select Playlist

Insert the group address with which to select a playlist for playback. For details, see the tooltip of "Assign Playlist".

Assign Playlists

Assign integers to up to 100 playlists that can be accessed by the controlled device. Select one of the listed categories to view its contents, which may include further sub-categories, and repeat until you reach your desired playlist. By sending the assigned integer as a telegram, you will be able to begin playing the playlist from your device. Please note that playlist selection via the group address above is going to clear your current queue completely.

Desired Playlist

The playlist to be played...

Corresponding Integer

...if this number is sent as a telegram value.

Select »Speech« App File (EIS 14 0–255)

Insert the group address with which to select a "Speech" App file. For details, see the tooltip of "Assign "Speech" App Files".

**Assign „Speech“ App Files**

Assign integers to up to 100 audio files created by “Speech” App and are available on your device.

Desired "Speech" App File

“Speech” App file to be played...

Corresponding Integer (0-255)

... if this number is sent as a telegram value.

Note that for example the repeat function for the audio files has the same functionality as for other audio files. Thus, for one-time announcements, the repeat function must be deactivated.

5.8 GROUP CONFIGURATION CONTROLS

Set Group (EIS 14 0...255):

Insert the group address of the KNX object which sets up a group. For details, see the tooltip of "Assign Group Configuration".

Current Group Configuration Name (EIS 15 14 Byte Text):

Insert the group address for the current group configuration name display. The names for each configuration can be set under "Assign Group Configuration". Please note that this name differs from the group name that is given HEOS.

Assign Group Configuration:

With this feature, you can assign integers from 1 up to 100 to several group configurations. The groups here will be automatically configured with the device controlled by this instance as group leader. Transmit the integer on the group address specified above so a group can be set up. If you want to dissolve a group that includes this device, transmit the value "0".

Name:

Name of this group configuration.

Group Configuration:

Check all DenonHeos devices listed here that you want to be included in this group.

Corresponding Integer:

Integer value to be sent in order to set up this group.

Party Mode On/Off (EIS 1):

Insert the group address of the party mode on/off switch. Send a 1 to build a group containing all evices found within the network with the device controlled by this instance as group leader. Send a 0 to end the party mode.

Party Mode Status (EIS 1):

Insert the group address of the partymode status indicator. A 1 indicates an active group with the device controlled by this instance as group leader and all other devices found in the network as members, while a 0 applies to all other cases.

Keep Other Groups?

Check this box if you want all other groups that include devices which will be part of a new group that is then going to be set up by this instance to remain without the devices mentioned before. Otherwise, these groups will all be dissolved.



6 COMMANDS

Select audio input (EIS 14 0–40)

Enter a group address for selecting the audio input, as on your HEOS device. Please refer to the HEOS device manual to find out which inputs your device supports. The following values are generally possible:

- 0-3: AUX IN (1-4)
- 4: AUX (single)
- 5-11: AUX (1-7)
- 12: AUX 8K
- 13-16: Line In (1-4)
- 17-18: COAX In (1-2)
- 19-20: Optical In (1-2)
- 21-24: HDMI In (1-4)
- 25: HDMI ARC
- 26: Cable SAT
- 27: DVD
- 28: BluRay
- 29: Game
- 30: Mediaplayer
- 31: CD
- 32: Tuner
- 33: HD Radio
- 34: TV Audio
- 35: Phone
- 36: USB Dac
- 37-38: Analog In (1-2)
- 39: Recorder In
- 40: TV

Allocation for SMART SCREENS

Here you can enter the sources of your HEOS device that are to be switched via SMART SCREENS as a combination of identifier and integer value. The inputs that can be selected in SMART SCREENS are derived from this list.

Name

Geben Sie einen Bezeichner für diesen Eingang ein, so wie er in SMART SCREENS erscheinen soll.

Value (0-40)

Please refer to the HEOS device manual to find out which inputs your device supports. The following values are generally possible:

- 0-3: AUX IN (1-4)
- 4: AUX (single)
- 5-11: AUX (1-7)
- 12: AUX 8K
- 13-16: Line In (1-4)
- 17-18: COAX In (1-2)
- 19-20: Optical In (1-2)
- 21-24: HDMI In (1-4)
- 25: HDMI ARC
- 26: Cable SAT
- 27: DVD
- 28: BluRay
- 29: Game
- 30: Mediaplayer
- 31: CD
- 32: Tuner
- 33: HD Radio
- 34: TV Audio
- 35: Phone
- 36: USB Dac
- 37-38: Analog In (1-2)
- 39: Recorder In
- 40: TV

7 ATTACHMENT

7.1 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 T