



Thorsten Reibel, Juergen Schilder, Ilija Zivadinovic – Global Application and Solution Team

December 2016

ABB GPG Building Automation Webinar “ABB-free@home[®] wireless”

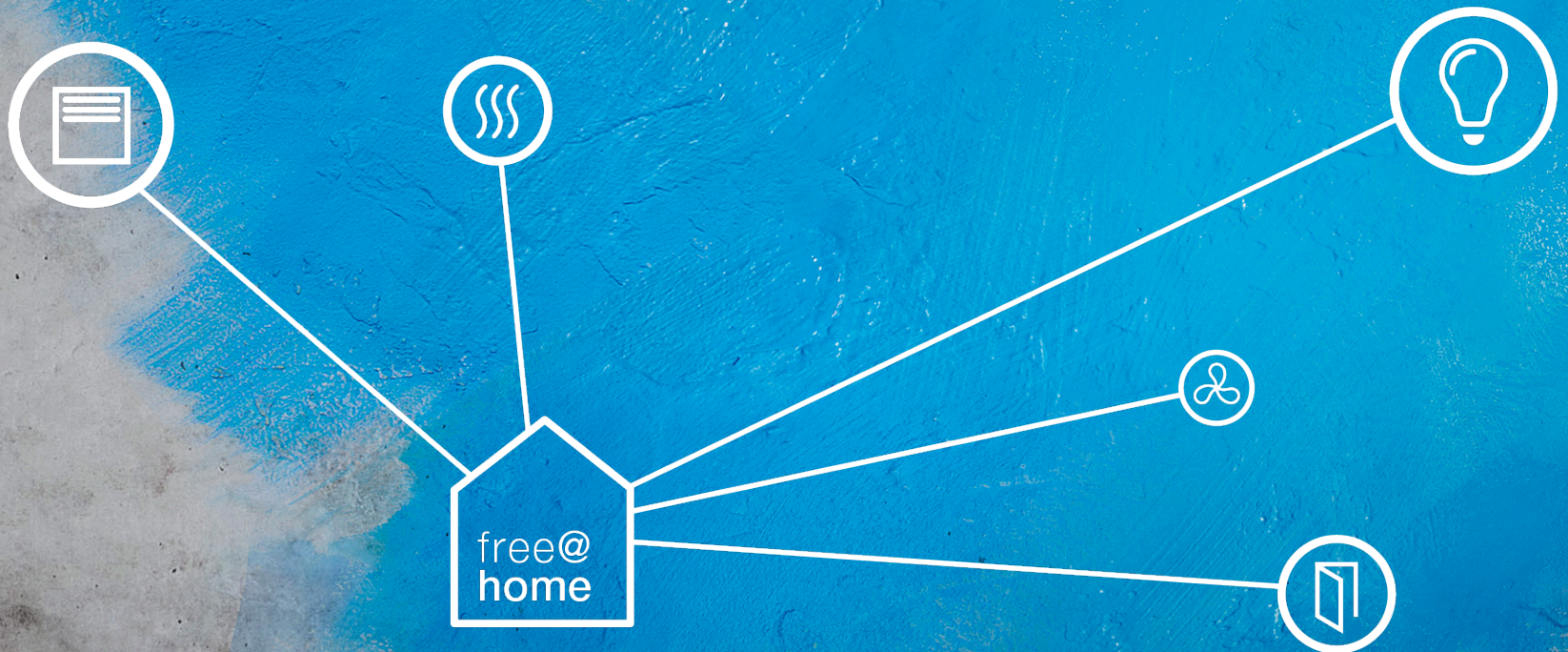


Webinar “ABB-free@home[®] wireless”

Introduction



ABB-free@home Wireless.Webinar



free@home Wireless Webinar

Presenter



- » **Christian Kruppa**
- » Product Manager **ABB-free@home®**

free@home Wireless Webinar

Agenda

- » Introduction
- » Technical Specification & Guidelines
- » Portfolio
- » Commissioning

Introduction



free@home Wireless Introduction

ABB-free@home USP's:

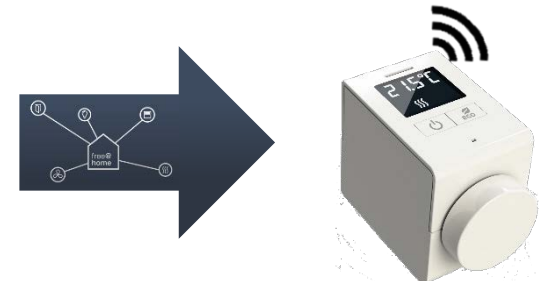
- Intuitive graphical programming
- Easy installation with ready-to-use preconfigured devices
- Strong integration with ABB-Welcome Door Entry System
- Programming & control with mobile devices
- Remote Access
- Push notifications & Email alerts
- Structured Bus wiring for new construction

New

Wireless communication for renovation

free@home Wireless Introduction

- » Applications:
Replacement of
existing conventional
switches, dimmers
and thermostats



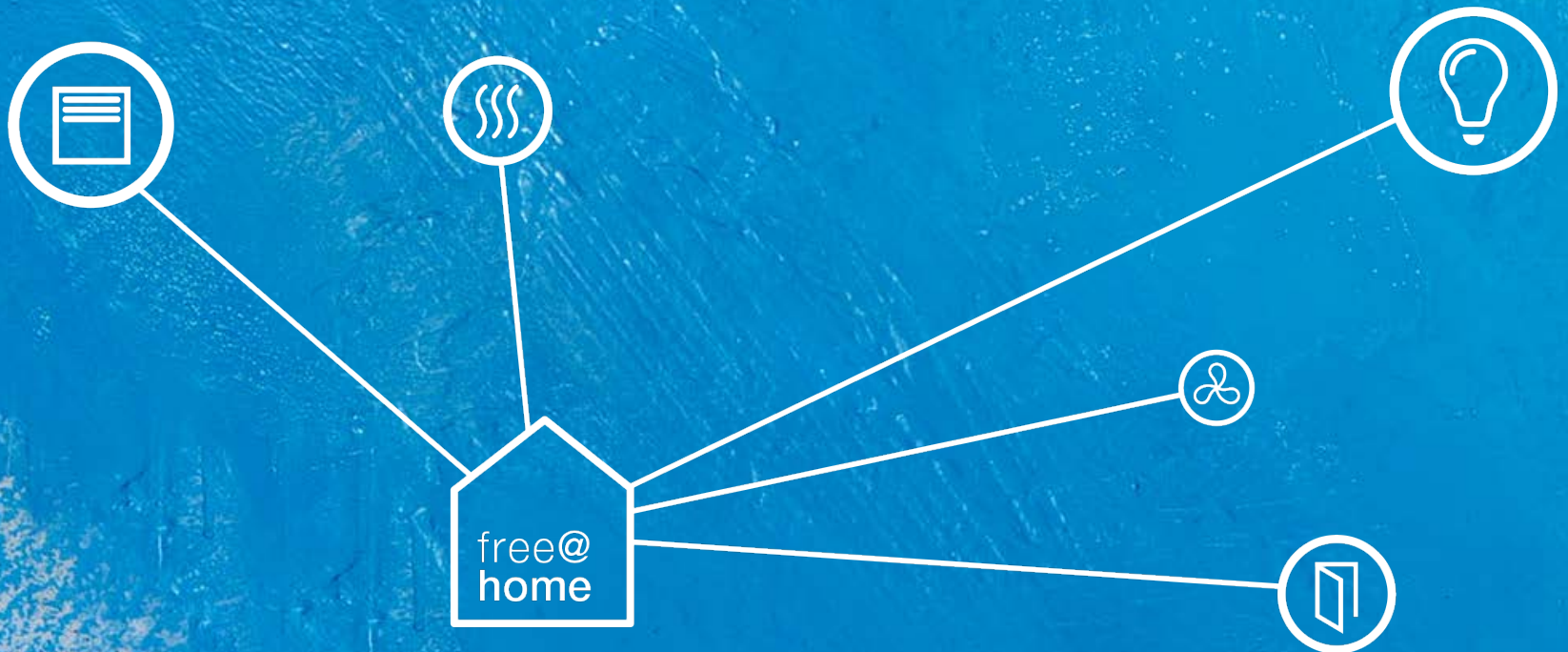
ABB

free@home Wireless

Introduction

- » All free@home wireless devices support the same feature set as the existing free@home wired devices
- » Existing conventional switches can be easily replaced by combined sensor/ actuator devices
- » Devices can be used out-of-the-box due to pre-configured functionality
- » One free@home system might include wired and wireless devices
- » Aesthetic integration in to a huge range of EWA switch ranges

Technical Specification & Guidelines

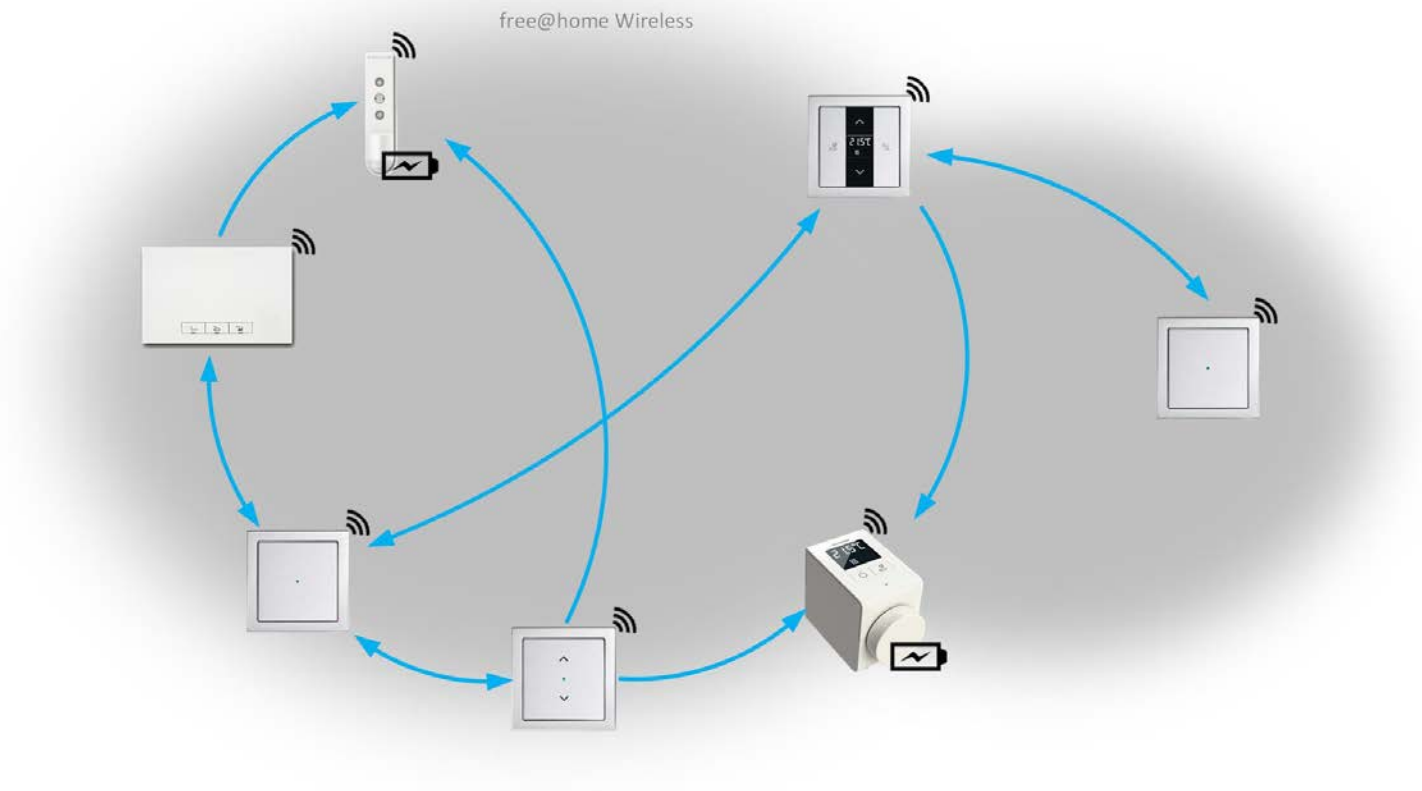


free@home Wireless

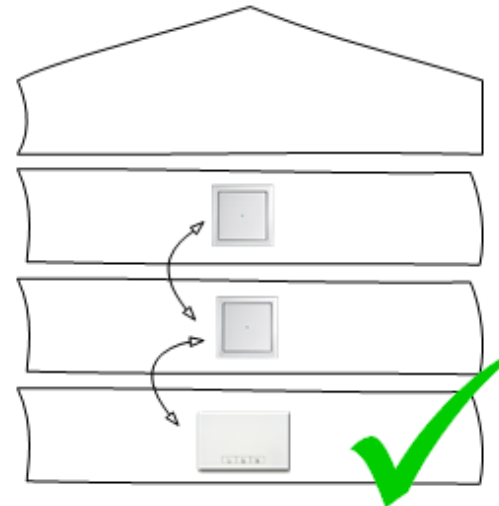
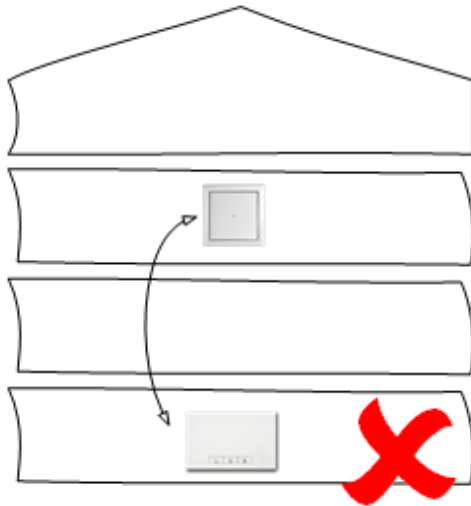
Technical Specification

ABB-free@home Wireless	
RF Protocol	2.4GHz Proprietary Protocol – Meshed Network
Encryption	AES-128
System size	64 wired + 64 wireless devices
RF Range	Up to 100m in line of sight

free@home Wireless Meshed Network

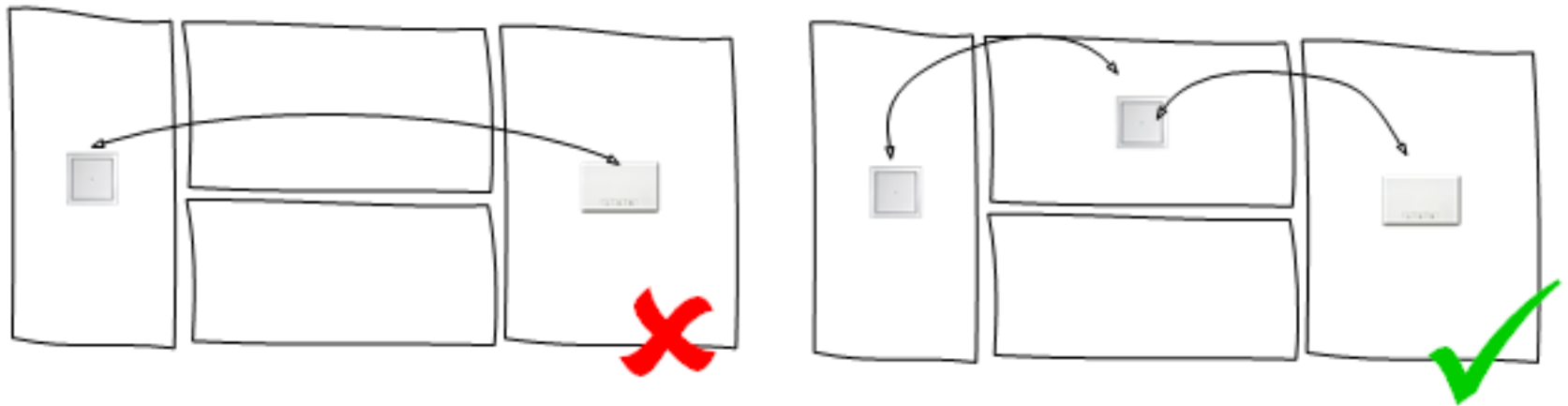


free@home Wireless Installation Guidelines



- » Two communicating devices should not be separated by more than one floor

free@home Wireless Installation Guidelines



- » Two communicating devices should not be separated by more than one room wall

free@home Wireless Installation Guidelines

General advice

- » free@home wireless devices should not be positioned in direct proximity to large metal surfaces (e.g. stainless steel refrigerators, mirrors, etc.)
- » Wet (e.g. recently plastered) walls are damping the signal stronger than dry walls
- » Concrete ceilings and brick walls are damping the signal stronger than wooden ceilings and drywall

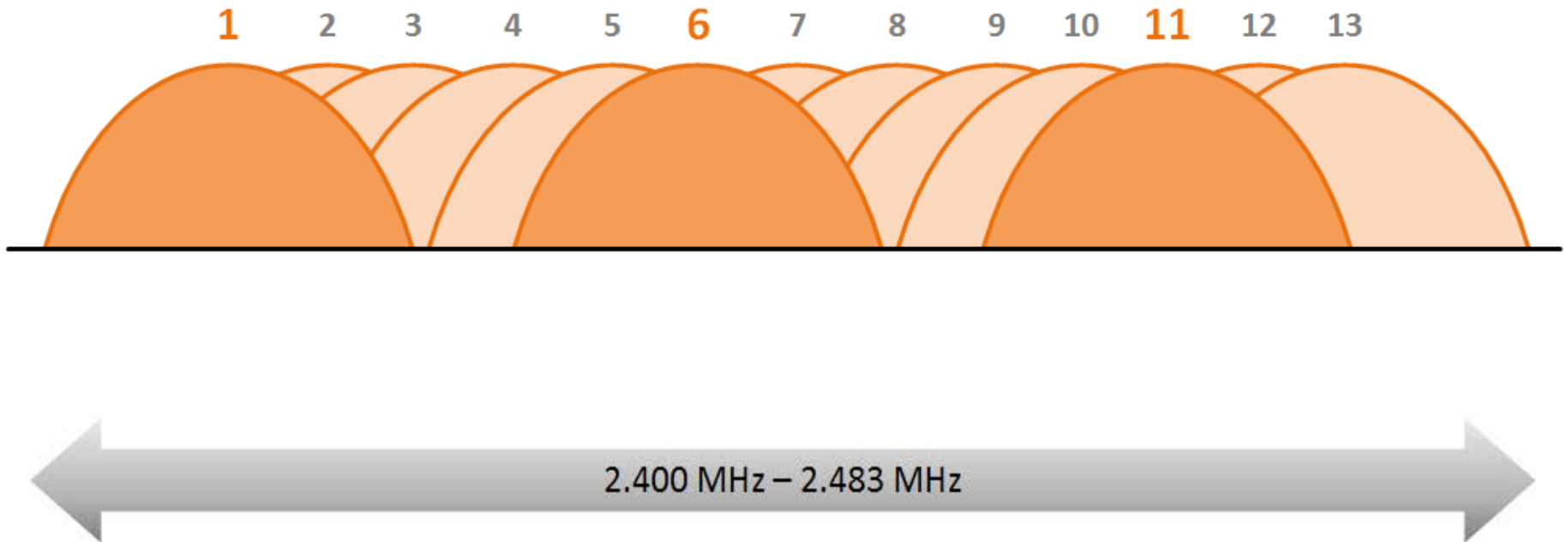
Potential sources for RF Interference

- » WIFI Router (2,4GHz)
- » Microwaves
- » Fluorescent lamps
- » Cheap or defective electronic products

free@home Wireless

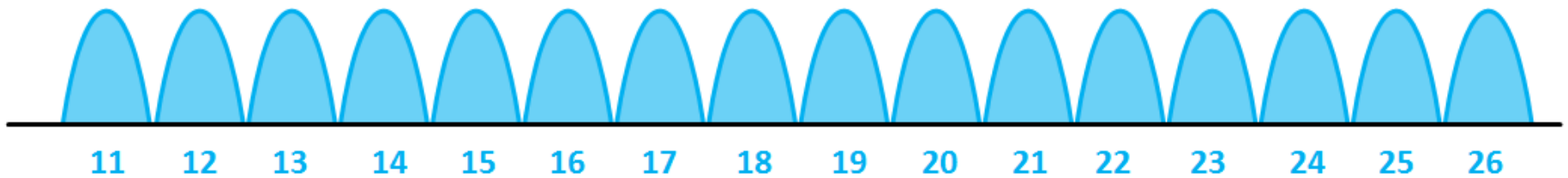
WLAN & free@home Wireless

Wifi Channels



free@home Wireless

WLAN & free@home Wireless

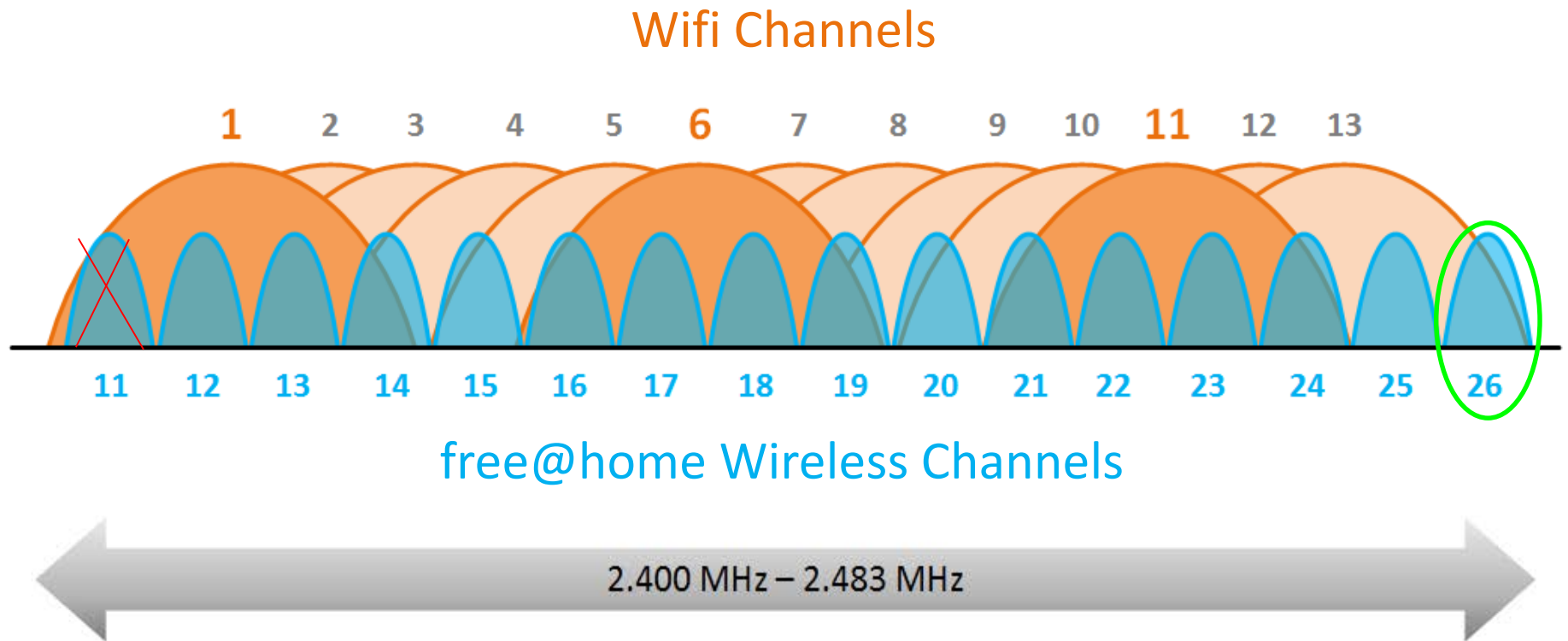


free@home Wireless Channels

2.400 MHz – 2.483 MHz

free@home Wireless

WLAN & free@home Wireless

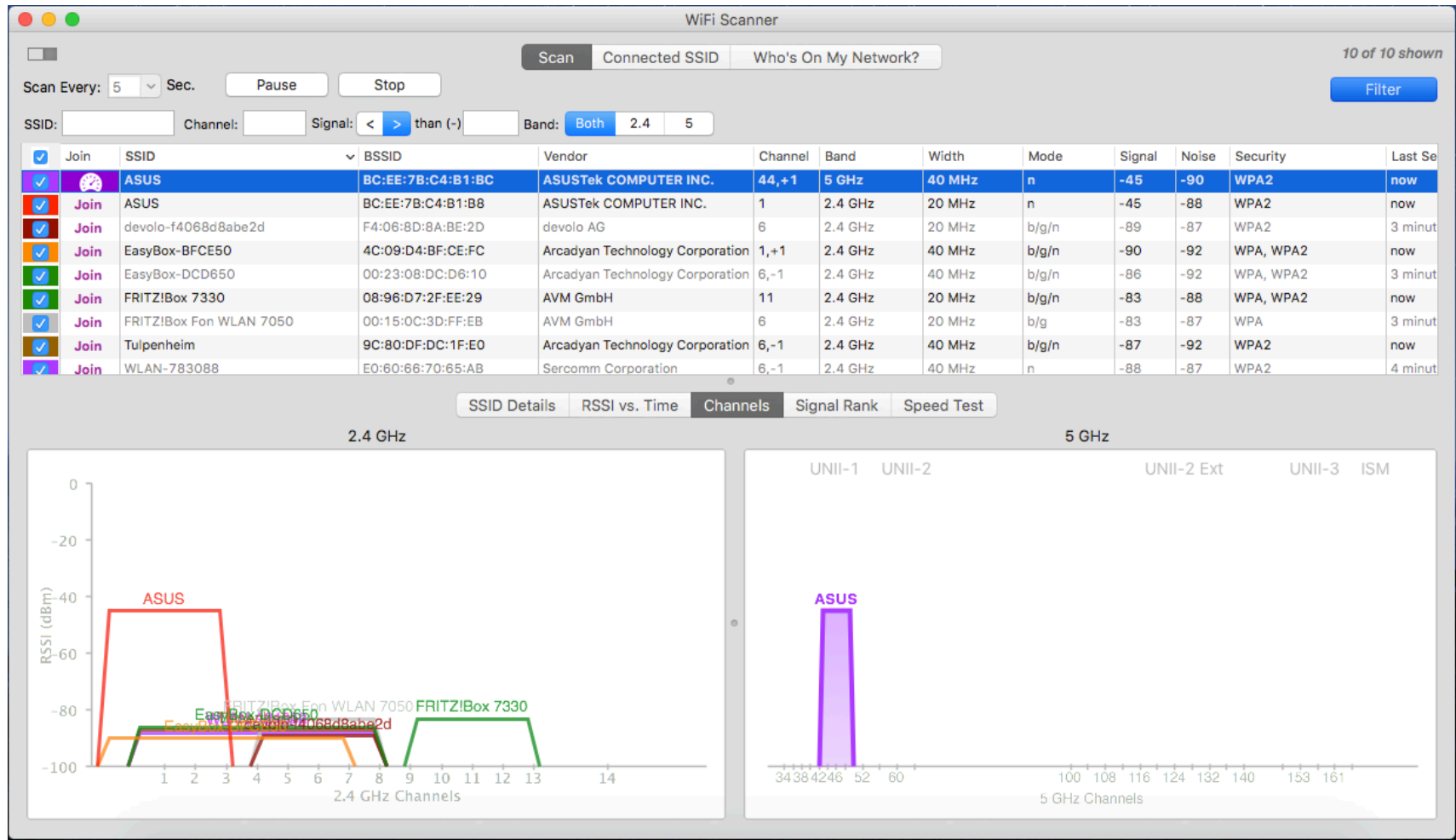


○ Default channel of System Access Point

✗ Restricted for ABB

free@home Wireless

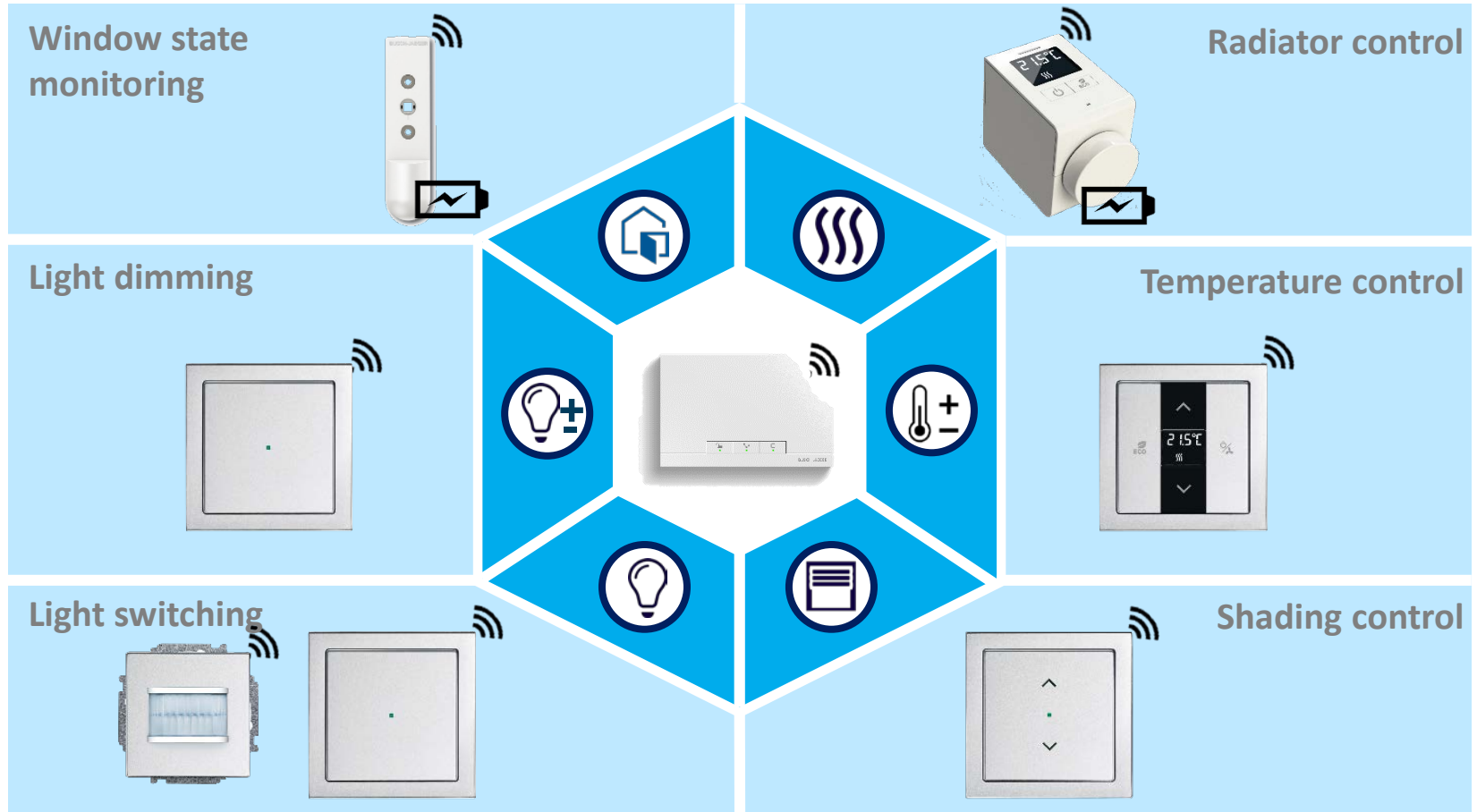
WLAN & free@home Wireless



free@home Wireless Portfolio

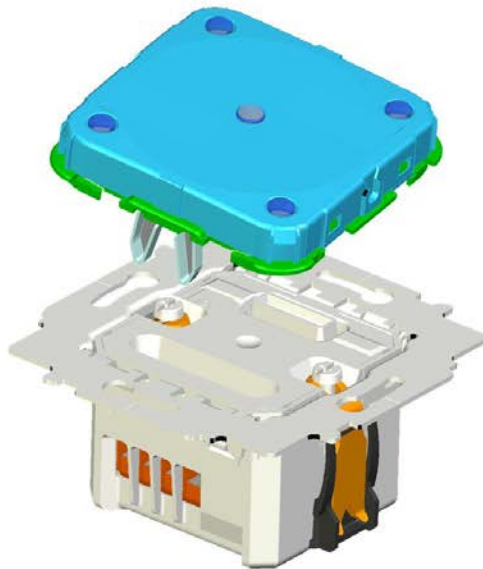


free@home Wireless Portfolio

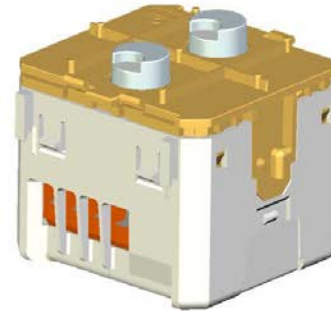


free@home Wireless Flush Mounted Inserts

Range60



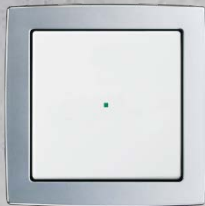
Range44



free@home Wireless Design Range Integration



future[®]
linear



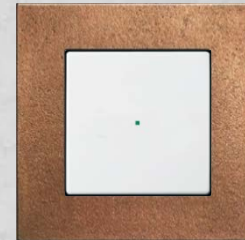
solo[®]



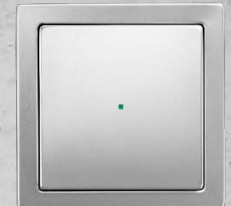
Busch-
dynasty[®]



Busch-
axcent[®]



carat[®]



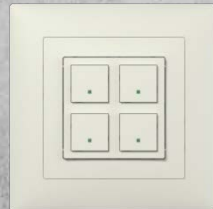
pure stainless
steel



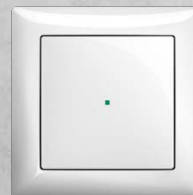
Zenit



Millenium



Sidus



Busch-
balance[®] SI



basic55[®]

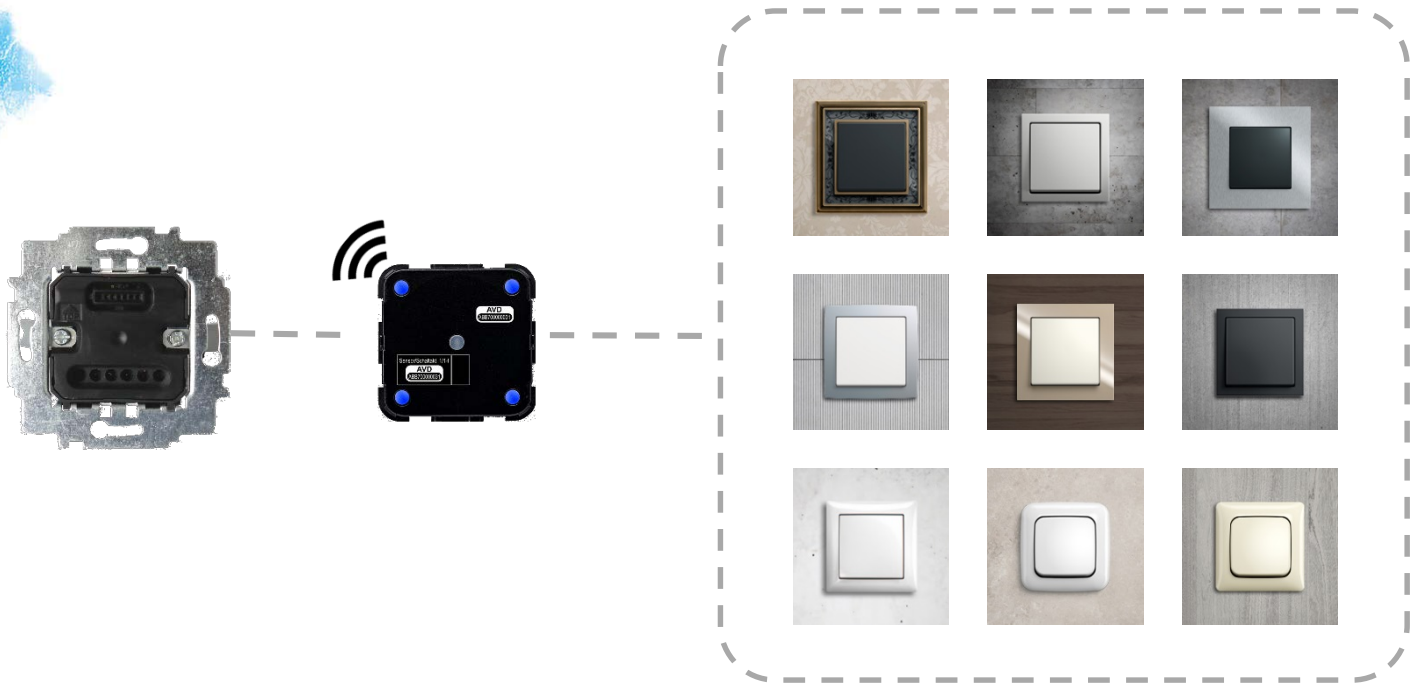


Reflex SI/
SI Linear

free@home Wireless

Design Range Integration

- » free@home wireless devices are compatible to all existing free@home cover plates*



*exception: Range44 free@home wireless Movement detector covers

free@home Wireless Portfolio

Article No.		Product	
SAP-S-2		System Access Point	
SAP-1-WL		External Antenna	
WBI-S-1-64-WL		Window sensor, Wireless	
WBI-S-1-65-WL		Window sensor, Wireless	
WBI-S-1-66-WL		Window sensor, Wireless	
BI-S-1-64-WL		Universal Sensor, Wireless	
BI-S-1-65-WL		Universal Sensor, Wireless	
HA-S-1-WL		Radiator Thermostat Basic, Wireless	
HA-S-2-WL		Radiator Thermostat Comfort, Wireless	
AC-HA-1		Herz Adapter	
AC-HA-2		Orkli Adapter	
AC-HA-3		Comap Adapter	
Range 60	Range 44		Colour
SU-F-1.0.1-WL	SU-F-1.0.PB.1-WL	Sensor unit 1gang, Wireless	-
SU-F-2.0.1-WL	SU-F-2.0.PB.1-WL	Sensor unit 2gang, Wireless	-
SSA-F-1.1.1-WL	SSA-F-1.1.PB.1-WL	Sensor/Switch actuator 1/1gang, Wireless	-
SSA-F-2.1.1-WL	SSA-F-2.1.PB.1-WL	Sensor/Switch actuator 2/1gang, Wireless	-
SSA-F-2.2.1-WL	SSA-F-2.2.PB.1-WL	Sensor/Switch actuator 2/2gang, Wireless	-
SDA-F-1.1.1-WL	SDA-F-1.1.PB.1-WL	Sensor/Dim actuator 1/1gang, Wireless	-
SDA-F-2.1.1-WL	SDA-F-2.1.PB.1-WL	Sensor/Dim actuator 2/1gang, Wireless	-
SBA-F-1.1.1-WL	SBA-F-1.1.PB.1-WL	Sensor/Blind actuator 1/1gang, Wireless	-
SBA-F-2.1.1-WL	SBA-F-2.1.PB.1-WL	Sensor/Blind actuator 2/1gang, Wireless	-
RTC-F-1-WL	RTC-F-1.PB-WL	Room thermostat, Wireless	-
RTC-F-2.1-1-WL	RTC-F-2.1-1.PB-WL	Room thermostat/actuator, Wireless	-
-	MSA-F-1.1.1-WL	Movement detector/actuator 1gang, Wireless	-
MSA-F-1.1.1-81-WL	-	Movement detector/actuator 1gang, Wireless	anthrazit
MSA-F-1.1.1-82-WL	-	"	elfenbeinweiß
MSA-F-1.1.1-83-WL	-	"	alusilber
MSA-F-1.1.1-84-WL	-	"	studioweiß
MSA-F-1.1.1-212-WL	-	"	weiß
MSA-F-1.1.1-214-WL	-	"	alpinweiß
MSA-F-1.1.1-803-WL	-	"	grau-metallic
MSA-F-1.1.1-815-WL	-	"	gelb
MSA-F-1.1.1-866-WL	-	"	edelstahl
MSA-F-1.1.1-884-WL	-	"	studioweiß matt
MSA-F-1.1.1-885-WL	-	"	schwarz matt
MSA-F-1.1.1-896-WL	-	"	chalet-weiß
MSA-F-1.1.1-92-WL	-	"	weiß
MSA-F-1.1.1-93-WL	-	"	champagner
MSA-F-1.1.1-94-WL	-	"	alpinweiß
MSA-F-1.1.1-95-WL	-	"	chateau-schwarz
MSA-F-1.1.1-96-WL	-	"	chalet-weiß

free@home Wireless

Portfolio Flush Mount Range 60



SU-F-1.0.1-WL Sensor unit 1gang, Wireless
SU-F-2.0.1-WL Sensor unit 2gang, Wireless



SSA-F-1.1.1-WL Sensor/Switch act. 1/1gang, Wireless
SSA-F-2.1.1-WL Sensor/Switch act. 2/1gang, Wireless
SSA-F-2.2.1-WL Sensor/Switch act. 2/2gang, Wireless
MSA-F-1.1.1-x-WL Movement detector/act. 1gang, Wireless



SDA-F-1.1.1-WL Sensor/Dim act. 1/1gang, Wireless
SDA-F-2.1.1-WL Sensor/Dim act. 2/1gang, Wireless



SBA-F-1.1.1-WL Sensor/Blind act. 1/1gang, Wireless
SBA-F-2.1.1-WL Sensor/Blind act. 2/1gang, Wireless

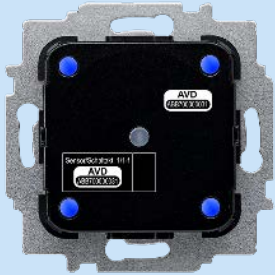
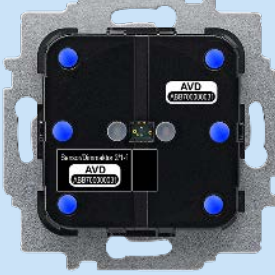
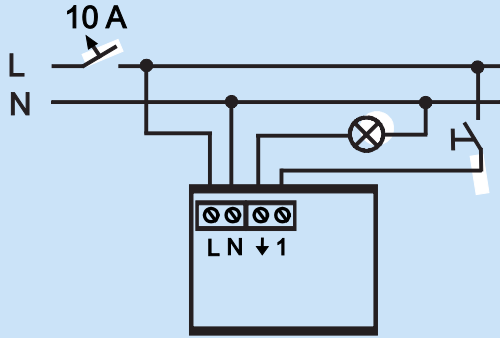
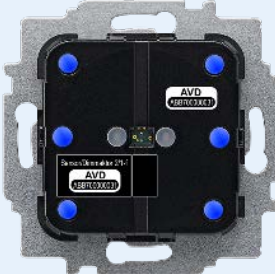
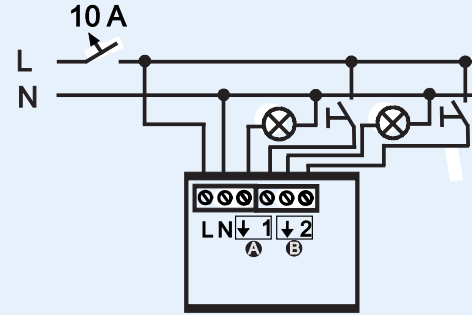


RTC-F-1-WL Room thermostat, Wireless
RTC-F-2.1.1-WL Room thermostat/actuator, Wireless

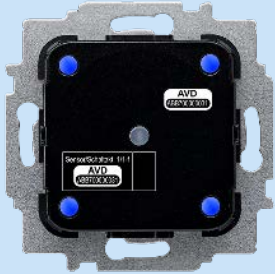
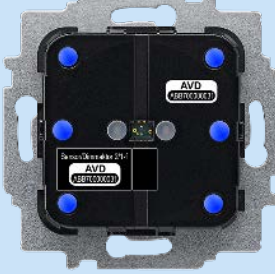
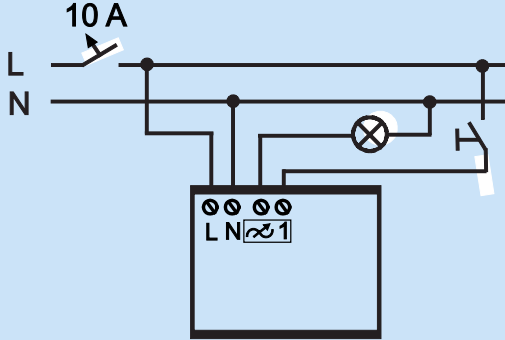
free@home Wireless Portfolio

Sensor unit	1-gang	2-gang	
	 <p>SU-F-1.0.1-WL 127V / 230V 50/60Hz</p>	 <p>SU-F-2.0.1-WL 127V / 230V 50/60Hz</p>	

free@home Wireless Portfolio

Sensor/Switch actuator	1-gang sensor	2-gang sensor	
1-gang actuator	 <p>SSA-F-1.1.1-WL 127V / 230V 50/60Hz 1 x 2300W @ 230V</p>	 <p>SSA-F-2.1.1-WL 127V / 230V 50/60Hz 1 x 2300W @ 230V</p>	
2-gang actuator	---	 <p>SSA-F-2.2.1-WL 127V / 230V 50/60Hz 2 x 1200W @ 230V</p>	

free@home Wireless Portfolio

Sensor/Dim actuator	1-gang sensor	2-gang sensor	
1-gang actuator	 <p>SDA-F-1.1.1-WL 230V 50/60Hz 1 x 180 W/VA</p>	 <p>SDA-F-2.1.1-WL 230V 50/60Hz 1 x 180 W/VA</p>	

free@home Wireless Portfolio

Sensor/Blind actuator	1-gang sensor	2-gang sensor	
1-fach actuator	 <p>SBA-F-1.1.1-WL 127V / 230V 50/60Hz 4A $\cos \phi=0,5$</p>	 <p>SBA-F-2.1.1-WL 127V / 230V 50/60Hz 4A $\cos \phi=0,5$</p>	

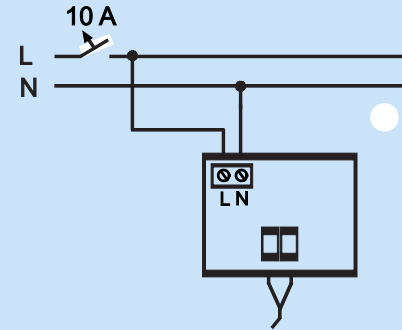
free@home Wireless Portfolio

Roomthermostat

Roomthermostat



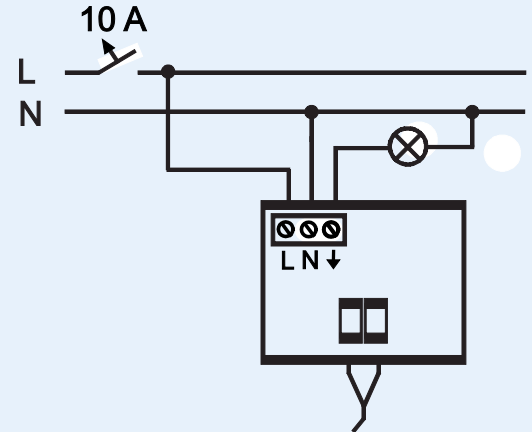
RTC-F-1-WL
127V / 230V 50/60Hz



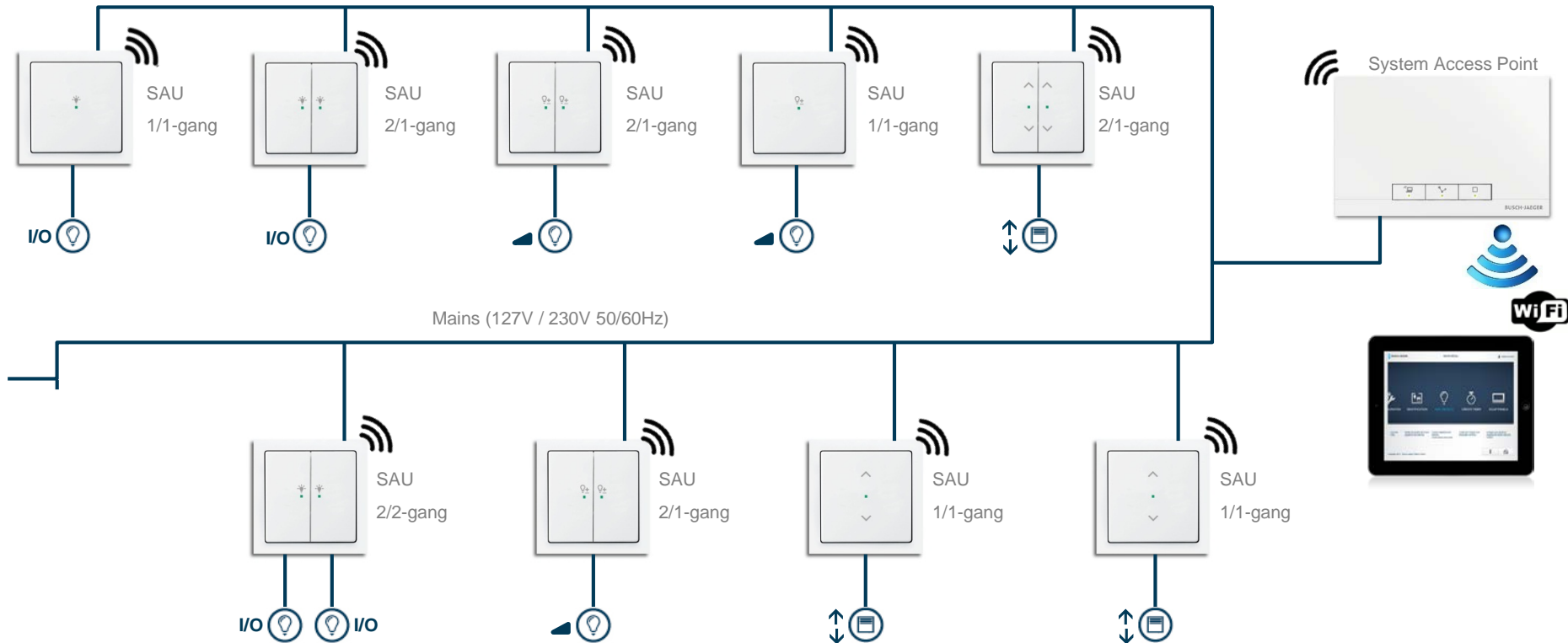
Roomthermostat/ actuator



RTC-F-2.1-1-WL
127V / 230V 50/60Hz
16A

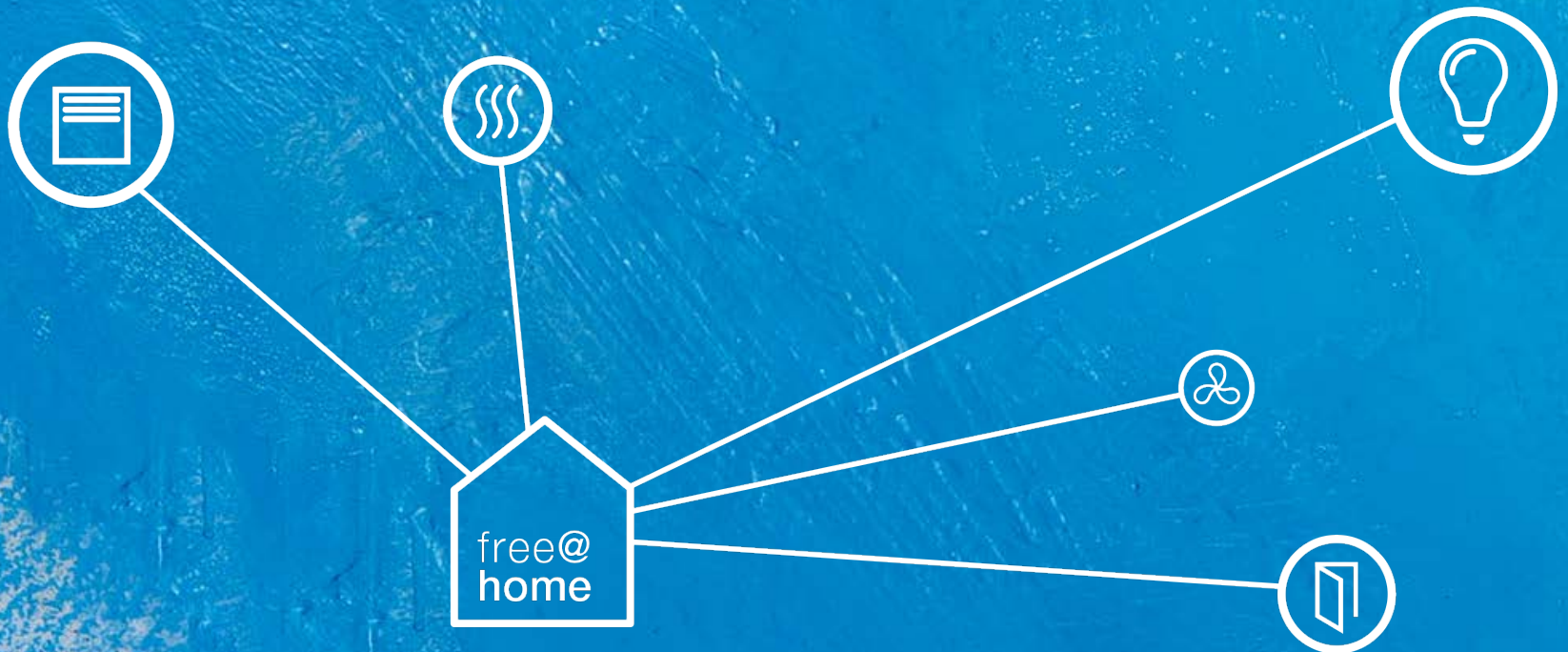


free@home Wireless System topology



*SAU: sensor/actuator unit

Commissioning

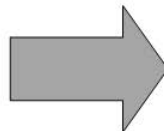
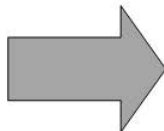


free@home Wireless Commissioning



free@home Wireless Commissioning

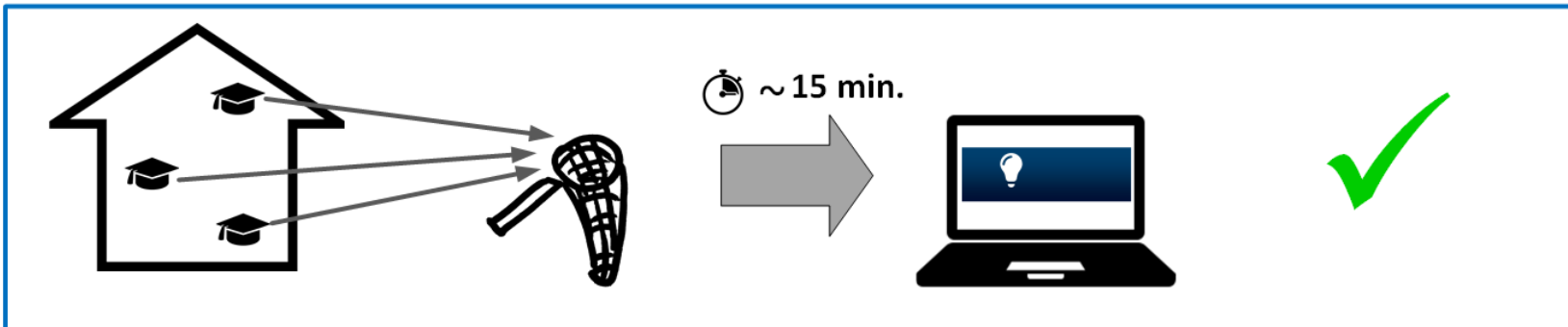
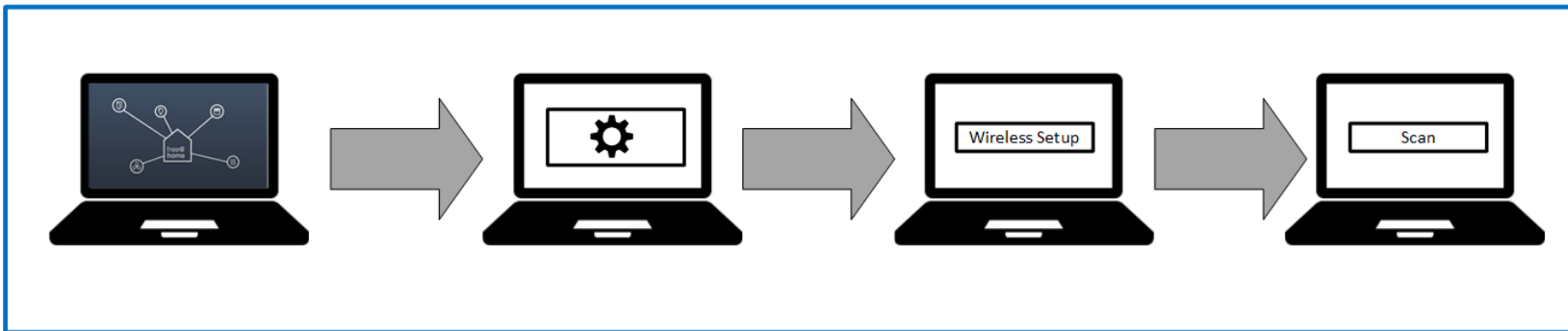
Teach-in Procedure Part I



 30 min.

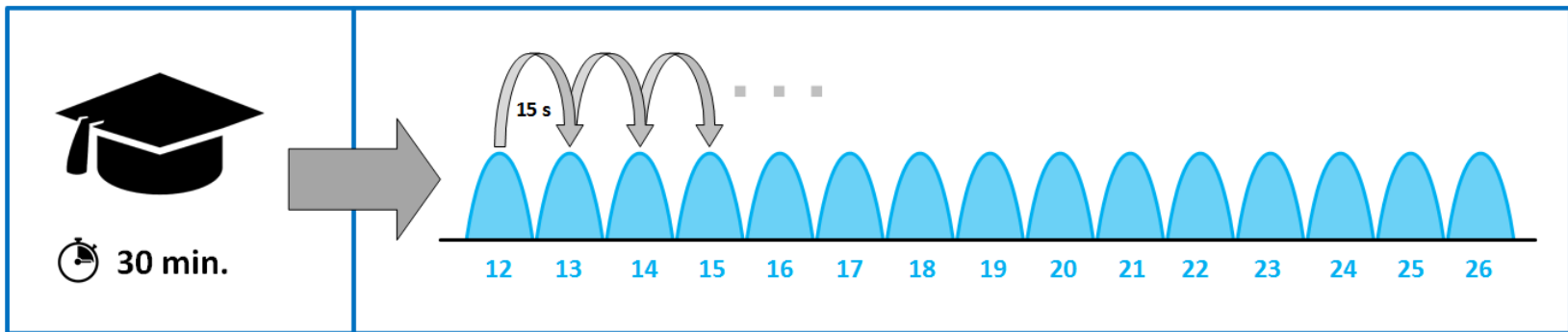
free@home Wireless Commissioning

Teach-in Procedure Part II



free@home Wireless Commissioning Basics

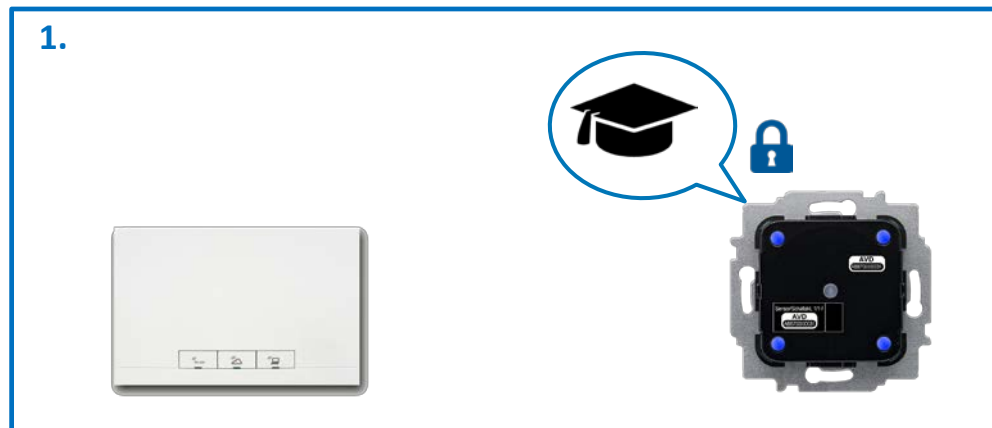
Teach-in mode



Devices in factory default mode will be in teach-in mode for 30min.
after power on.

free@home Wireless Commissioning Basics

Encryption



The initiate communication between devices is encrypted with the Master key

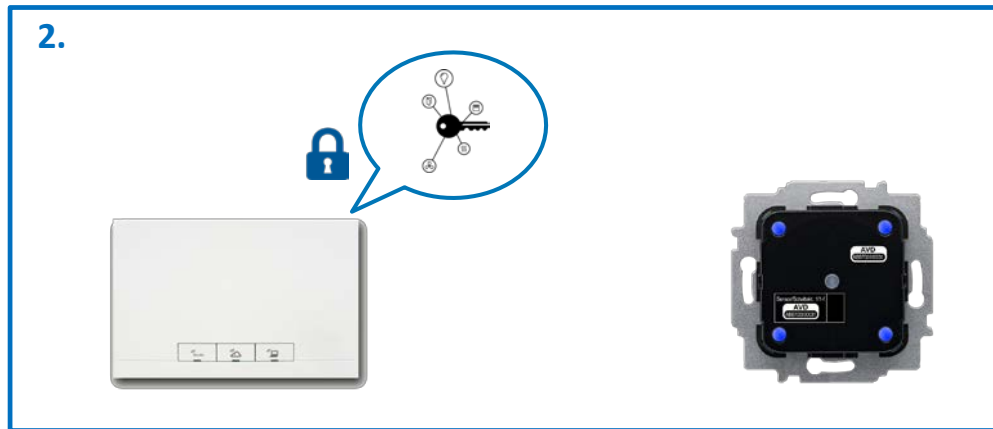


Master Key

Secret Key that is programmed during manufacturing of the device and is known among all free@home devices.

free@home Wireless Commissioning Basics

Encryption



The System Access Point answers with a unique free@home Key

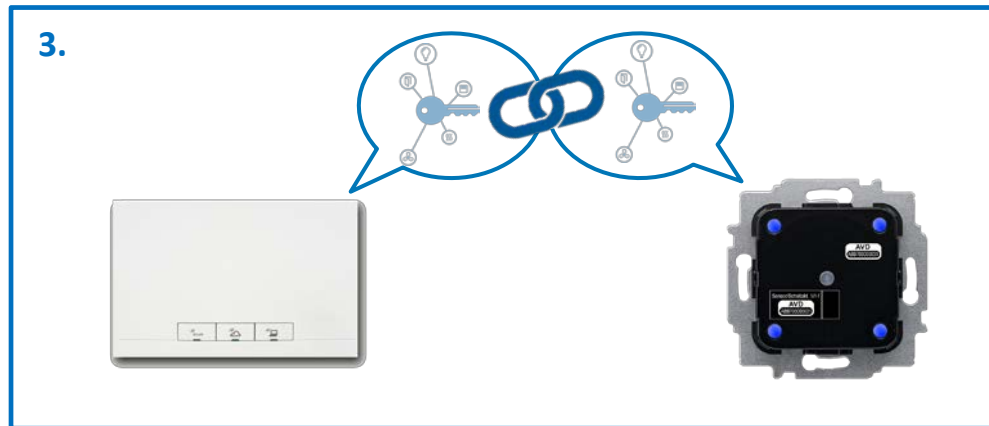


free@home Key

Unique Key for every free@home installation that is generated randomly during first setup by the System Access Point.

free@home Wireless Commissioning Basics

Encryption



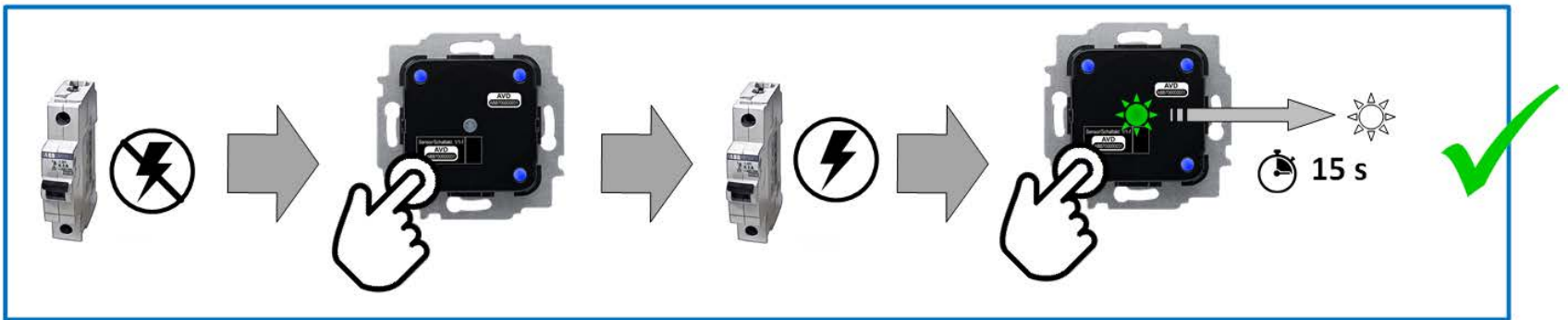
Once the free@home Key is exchanged the Teach-in mode is left.

The Teach-in mode can only be started again after reset to factory default.

The free@home Key is a must-have information in order to restore a System from a backup.

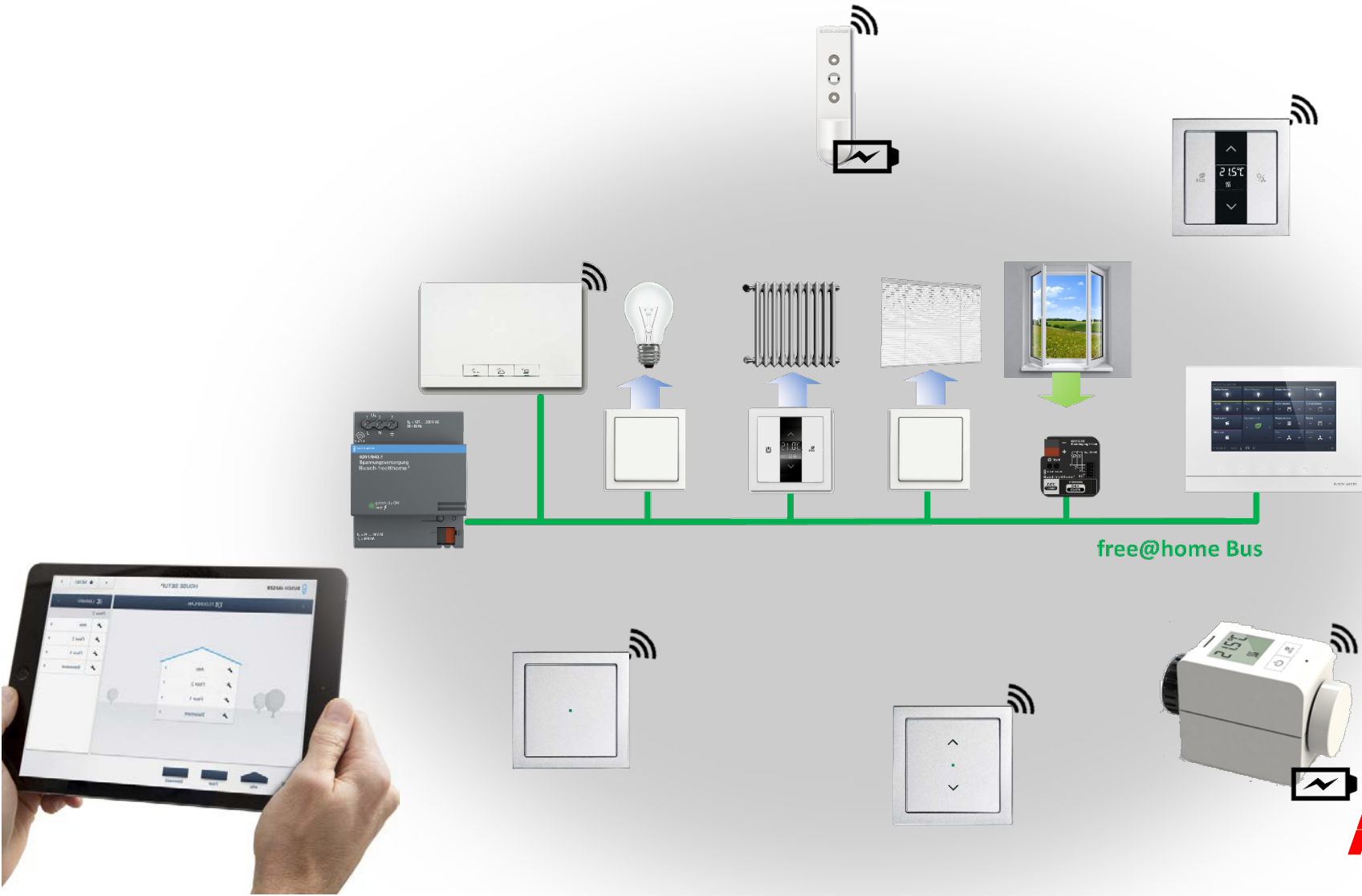
free@home Wireless Commissioning Basics

Reset to factory defaults



Once a device was added to a free@home system, it can't be added to another system. It has to be reset to factory defaults before.


free@home Wireless Overview



Webinar “ABB-free@home wireless”

Support: Engineering Guide Database

ABB HOME • OFFERINGS • LOW VOLTAGE PRODUCTS • HOME AND BUILDING AUTOMATION • ENGINEERING GUIDE DATABASE [GLOBAL SITE](#)



The Engineering Guide Database offers you a selection of detailed, technical information and documentation to support you during the design, installation and commissioning of ABB's Building Automation products and solutions.

To search the Engineering Guide Database, select the required search criteria. To make multiple selections press [Ctrl].

System	Application	Document type	Language
All i-bus KNX free@home Door Entry Systems	All Audio / Video Access Control Central Automation Commissioning	All Step-by-Step Guide Function Description Application Guide Video Tutorial	All English German Italian French

Application Manual Shutter Control	i-bus KNX	Function Description	English
Blind Actuators	i-bus KNX	Product Selection Guide	English
Blower and FanCoil Actuators	i-bus KNX	Product Selection Guide	English
DALI Gateways and Light Controllers	i-bus KNX	Product Selection Guide	English

The Engineering Guide Database offers a selection of detailed, technical information and documentation to support during the design, installation and commissioning of ABB's Building Automation products and solutions

Webinar “ABB-free@home wireless”

FAQ - Frequently asked questions

The screenshot displays the ABB website's FAQ section. At the top, the ABB logo is followed by a breadcrumb trail: HOME → OFFERINGS → LOW VOLTAGE PRODUCTS → HOME AND BUILDING AUTOMATION → FAQ - FREQUENTLY ASKED QUESTIONS. The main heading is 'FAQ - Frequently asked questions'. Below this, there are links for 'ADD NEW FAQ', 'ADD QUESTION', 'OPEN QUESTIONS', and 'DEUTSCH'. A search bar with a magnifying glass icon is present. On the left, a sidebar menu includes 'FAQ Home', 'All categories', 'Door Entry Systems', 'free@home', 'i-bus KNX', and 'Newron Solution', along with a status indicator '1 user online | 1 Guest and 0 Registered'. The main content area features a 'Search' bar, an 'Advanced search' button, and a 'Categories' section with radio buttons for 'Door Entry Systems', 'free@home', 'i-bus KNX', and 'Newron Solution'. To the right, a section titled 'Questions in IP-Router and Interfaces' lists several FAQs with their view counts. The page is labeled 'Page 1 out of 2 Pages'.

ABB HOME → OFFERINGS → LOW VOLTAGE PRODUCTS → HOME AND BUILDING AUTOMATION → FAQ - FREQUENTLY ASKED QUESTIONS

FAQ - Frequently asked questions

ADD NEW FAQ ADD QUESTION OPEN QUESTIONS DEUTSCH

FAQ Home
All categories
Door Entry Systems
free@home
i-bus KNX
Newron Solution

1 user online | 1 Guest and 0 Registered

Search
Advanced search

Categories

- Door Entry Systems
- free@home
- i-bus KNX
- Newron Solution

Questions in IP-Router and Interfaces

FAQs

Page 1 out of 2 Pages

- Where can the IP settings of Router IPR/S 3.1.1 and the IPS/S 3.1.1 be made in the ETS 4 or ETS 5?
(15 views)
- In which state, in terms of the IP side, is IP Router IPR/S 3.1.1 or IP Interface IPS/S 3.1.1 in the supplied state?
(12 views)
- What causes the green LED to flash on IPx/S 3.1.1?
(11 views)
- IPx/S 3.1.1: Which tunnel connection is visibly displayed in the Connection Manager in the ETS?
(10 views)
- IPx/S 3.1.1: Do the tunnel connections shown in the Connection Manager always correspond with the project?
(10 views)
- Which tunnel addresses are used for IP Router IPR/S 3.1.1?
(9 views)
- Can the IP devices be programmed like IP Router and Interface without auxiliary tension?
(9 views)
- How can I clearly identify IP Router IPR/S 3.1.1 of a project in the actual installation?
(8 views)
- Can an IP Gateway IG/S 1.1 be programmed with the EIBLIP protocol using the ETS 5?

With this service we offer an additional support function for our building automation product range


Webinar “ABB-free@home wireless”

Training&Qualification Database: Training Selector

ABB HOME + OFFERINGS + LOW VOLTAGE PRODUCTS + TRAINING SELECTOR GLOBAL SITE

Training & Qualification Database

Building Automation Content



To search the training module database, select the required search criteria. To make multiple selections press [Ctrl].

System
All
ABB i-bus KNX
ABB-free@home
ABB-Welcome

Application
All
Audio / Video
Access Control
Central Automation
Commissioning

Training type
All
Application Manual
E-Learning
Presentation
Videotutorial

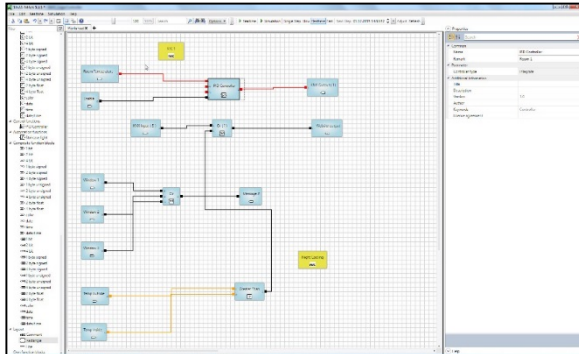
Language
All
English
German
Italian
French

Training content	System	Training type	Language
ABB i-bus Tool	ABB i-bus KNX	Webinar Video	English
ABB i-bus Tool	ABB i-bus KNX	Webinar Presentation	English
Application Units and Logic Module	ABB i-bus KNX	Webinar Video	English
Application Units and Logic Module	ABB i-bus KNX	Webinar Presentation	English
Basics and Product Overview	ABB i-bus KNX	Webinar Video	English

Training Database with complete Online-Training Portfolio for ABB Building Automation

Webinar “ABB-free@home wireless”

Next Webinar



- **Wednesday 25th of January 2017**
 - Morning 09:00 am Europe Time (Berlin, UTC + 1h)
 - Afternoon 03:00 pm Europe Time (Berlin, UTC + 1h)
- **Logic Controller ABA/S 1.2.1 – Part 2***
 - Practical demonstration of
 - Graphical programming interface
 - Function elements and blocks
 - Monitoring and simulation
 - Commissioning
 - WebUI
 - ...

* Topic is subjected to change

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