

JULY 2020

Webinar “KNX Radio Frequency (KNX RF)”

Webinar– Competence Center Europe – Smart Buildings

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Webinar – Competence Center Europe - Smart Buildings

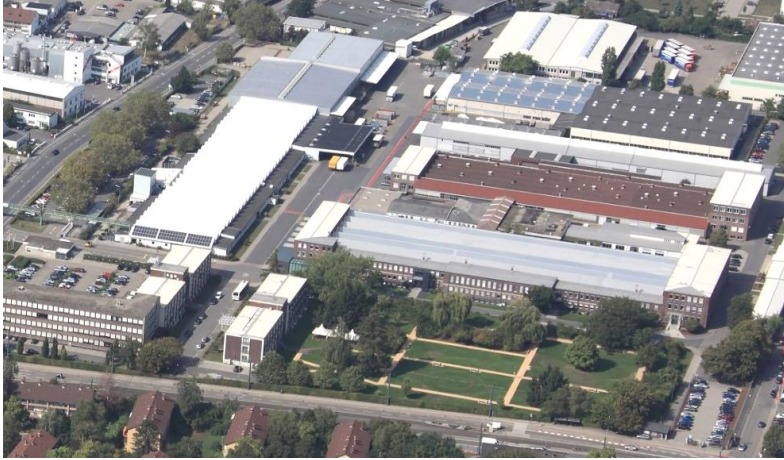
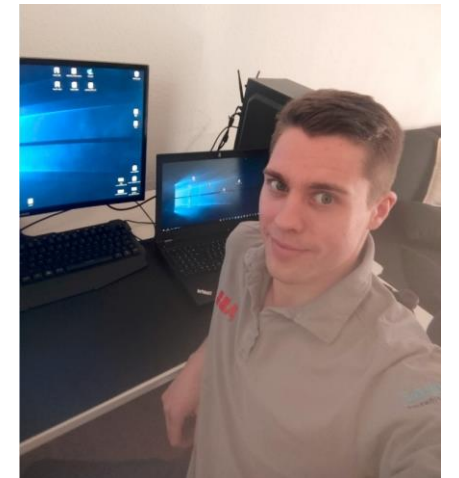


ABB STOTZ-KONTAKT GmbH
Heidelberg / Germany

From home office to home office



ABB Busch-Jaeger
Luedenscheid /
Germany



Agenda

Introduction

Advantages and applications

Transmission technology

Product overview

Topology

Commissioning

Further information (documentation, videos, brochures, ...)



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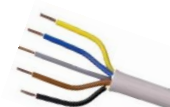
Introduction

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Introduction

Areas of application for the various media

- The exchange of KNX data between devices is typically done via a separate control cable (TP)
- KNX data can also be sent via
 - Ethernet/WIFI “KNX IP”
 - Wireless “KNX Radio Frequency transmission medium”
 - The existing 230 V cable “Powerline transmission medium”
- When connecting different media, media couplers have to be used (e.g. IP Router IPR/S 3.1.1)
- Via appropriate gateways, transmission of KNX telegrams is also possible on other media, e.g. optical fibre
 - Optical Fibre Interface LL/S 1.1
- KNX RF is mandatory for KNX training centres (Certified Basic Course)

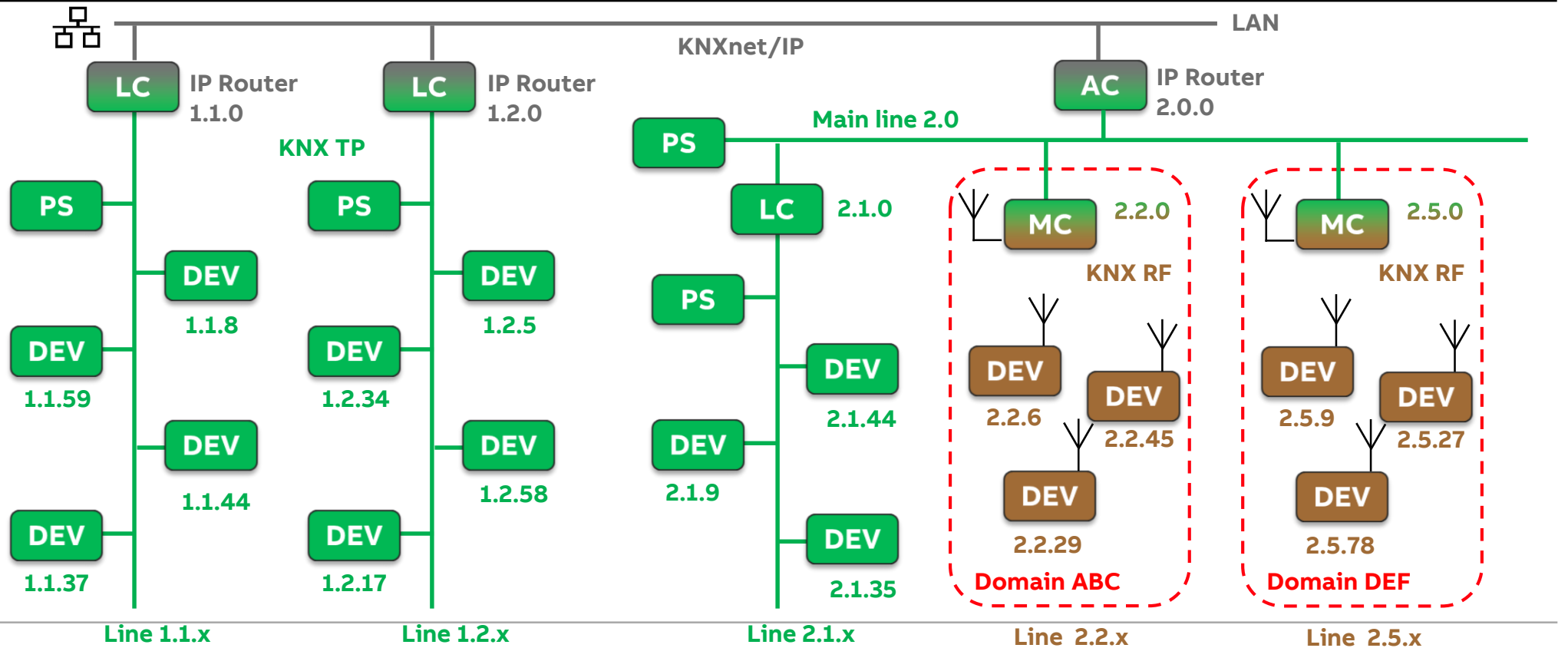


Medium	Transmission via	Preferred areas of application
Twisted Pair	Separate control cable	<ul style="list-style-type: none">- New installations- Extensive renovations- Highest level of transmission reliability
IP	Ethernet/WIFI	<ul style="list-style-type: none">- In large installations where a fast backbone is needed- For communication with mobile devices
Radio Frequency	Radio line	<ul style="list-style-type: none">- When no cables can be installed
Powerline	Existing network (Neutral and phase must be available)	<ul style="list-style-type: none">- If no additional control cable can be installed- When 230 V cable is available

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Introduction

Overview of the media “RF”, “TP” and “IP” in a KNX project



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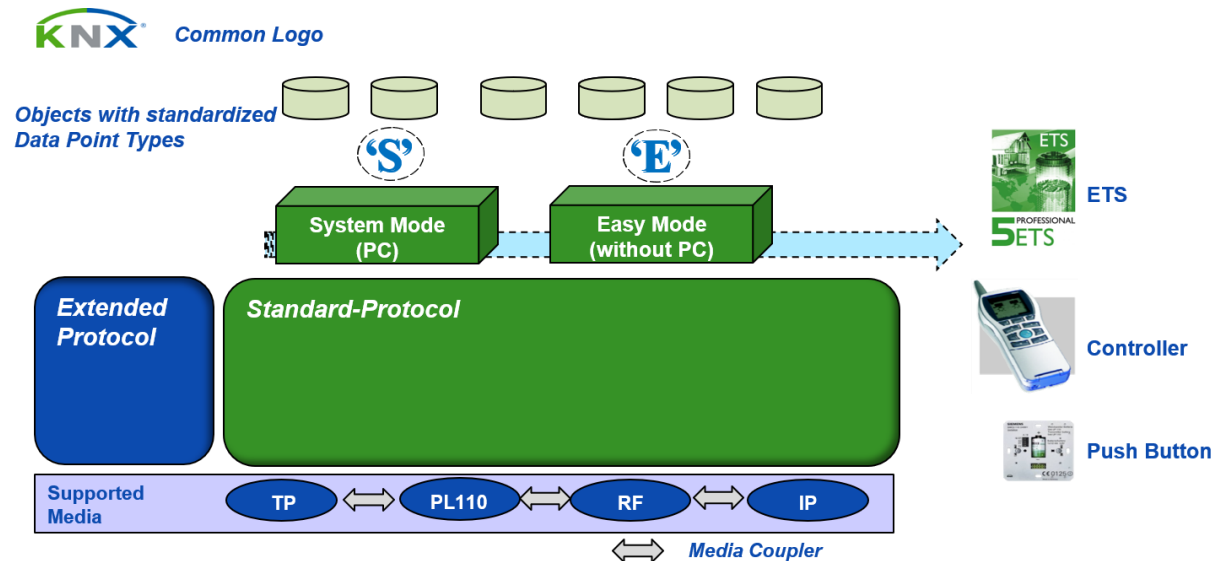
Introduction

Types of configuration

KNX can be configured (i.e. linked, setting of parameters) via S-Mode and E-Mode

KNX RF supports S-Mode and E-Mode

- System installation Mode “S-Mode” – all media
 - Design of the installation and configuration is done via a PC with the installed manufacturer-independent ETS software
 - This type of configuration is intended for KNX certified building designers and contractors and for installations of all sizes
- Easy installation Mode “E-Mode”
 - Configuration is done without the help of a PC but with a central controller, push buttons...
 - This type of configuration is intended for the skilled contractor with basic bus knowledge
 - Easy compatible products normally have limited functionality

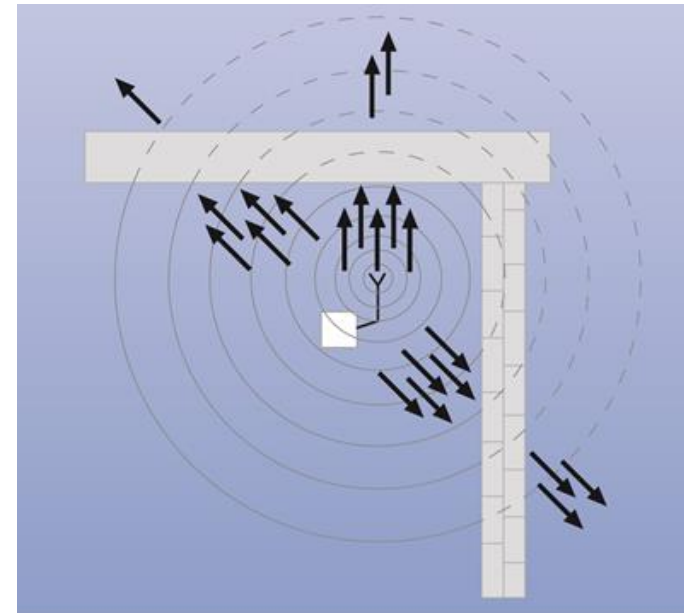


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Introduction

RF as transmission medium

- KNX RF allows the wireless transmission of telegrams by means of the medium radio frequency
- KNX-RF uses the frequency band 868 MHz
- A separate bus cable is therefore not necessary
- The range of KNX RF components is indicated as free-field range
- The free-field range is significantly higher than the achievable distance within a building
- Due to the maximum allowed transmission power and the limitation of available energy for the transmission in case of battery-operated or battery-free (e.g. operated by solar energy) devices the free-field range is limited to about 100 m



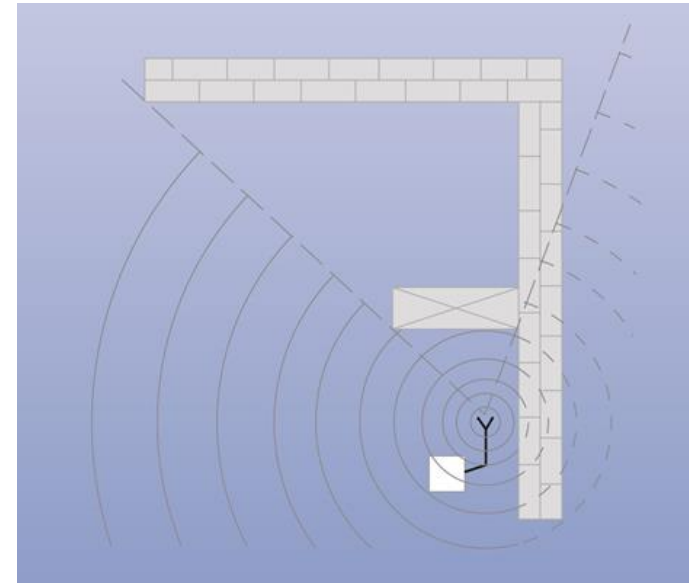
Attenuation by walls and ceilings depending on the material and the wall thickness

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Introduction

RF as transmission medium

- Radio frequency signals are attenuated on their way from the transmitter to the receiver by many factors
- The real operating range within buildings is therefore reduced
The radio signals do not pass through walls, ceilings and furniture without hindrance but are attenuated during penetration and also partially reflected
- Metallic objects shield or reflect the radio signals and radio shadows are produced on their reverse side, in which direct reception is not possible



Radio shadows by metal walls, doors or cabinets

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Introduction

RF as transmission medium

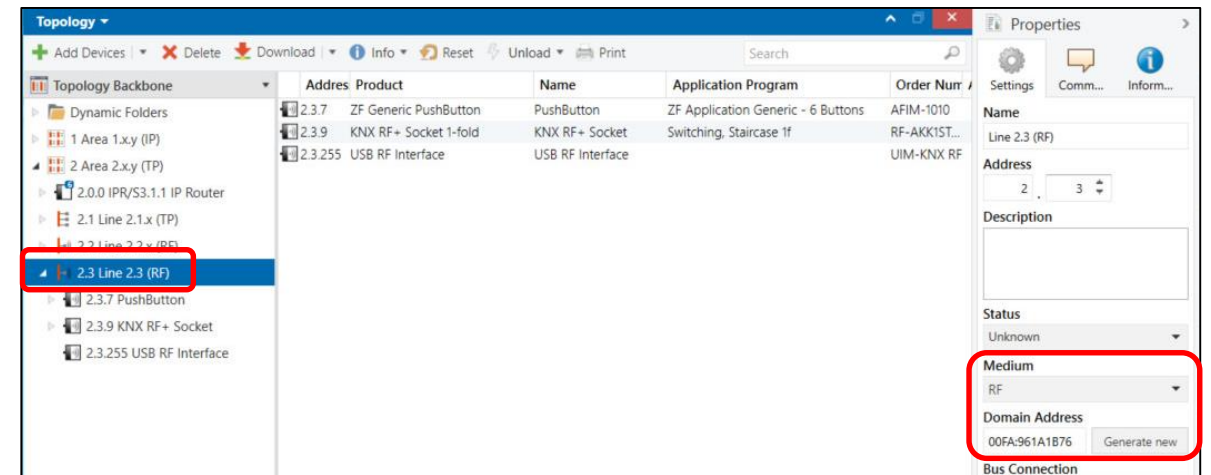
The radio transmission medium range cannot be determined precisely in spatial terms i.e. KNX RF telegrams can also be received by devices installed in adjacent KNX RF installations

KNX RF S-Mode devices send their domain address as device identifier

Only the receivers taught in to or linked to this transmitter or form part of the same domain, will evaluate its telegrams

In addition to the necessary separation from adjacent KNX radio installations, the range of the radio signals in buildings is also limited by structural conditions such as walls and ceilings

The range can however be extended with up to 2 repeaters, so that radio signals can also be transferred over several floors



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Introduction

RF as transmission medium

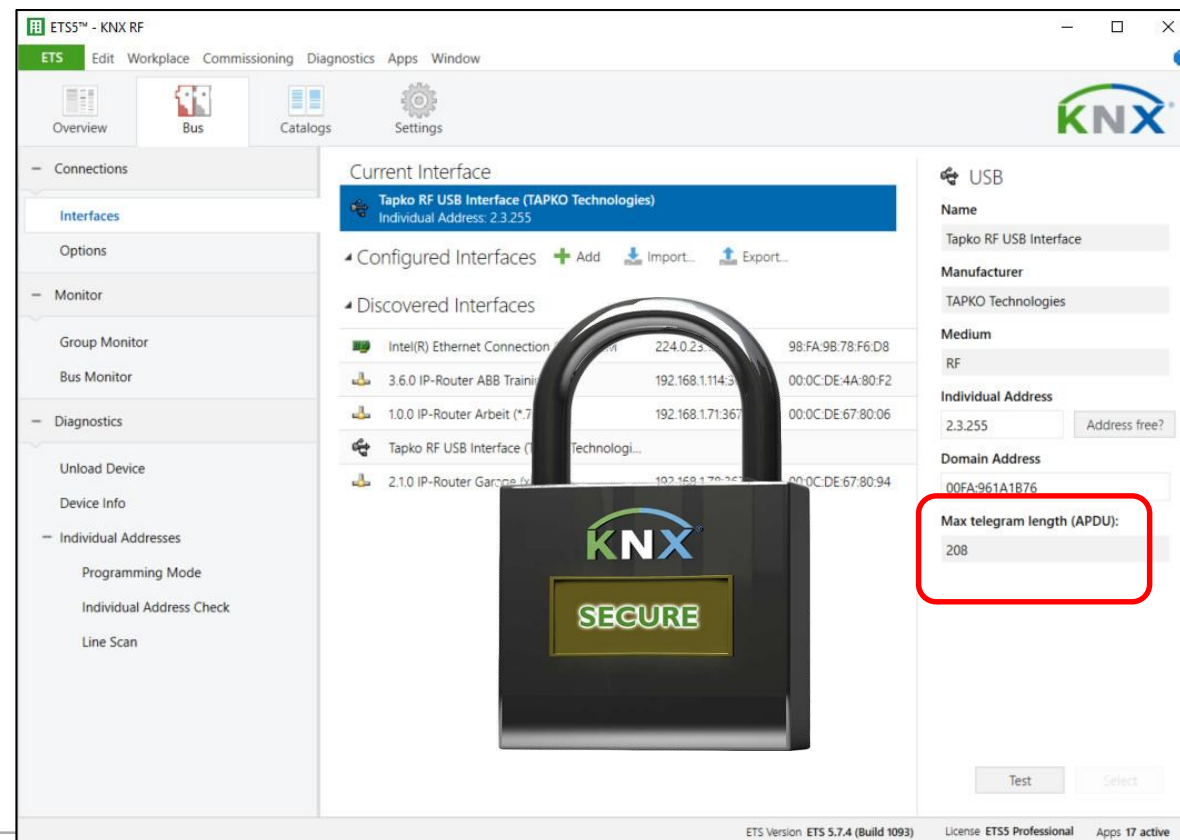
KNX RF in general natively supports long frame telegrams

This is necessary to be able to support the KNX Secure Application Layer (used for security applications), which can also be used by other KNX media

This allows authentication and encryption

Long frame telegrams (APDU > 15) are required to download Secure devices (e.g. IP Router Secure IPR/S 3.5.1)

In this way the media coupler does not constitute the weak point in the security concept



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Advantages and applications

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Advantages and applications

Advantages

- Based on KNX and supported by KNX organization
 - RF as official transmission media in the KNX world
 - Products from various manufacturer
 - Supports the trend of wireless communication
 - In case of extension of wired KNX installation consistent solution
 - Programming with the same software tool ETS
 - Allows to add missing or forgotten devices without cabling
 - Integration of different and also self powered push buttons, even with ABB Busch-Jaeger design
 - No complex programmable gateway needed
 - Easy handling
- a further option to enhance or optimize a project under the headline KNX, completes the system KNX

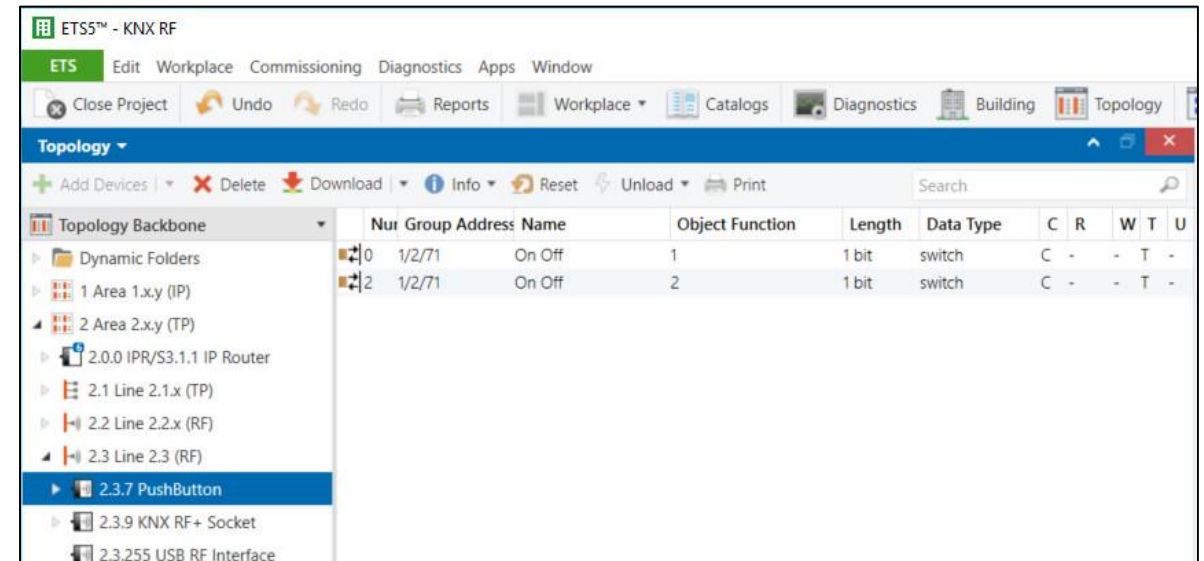


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Advantages and applications

It is KNX → The same rules apply as for TP and IP

- Different products from different manufacturers communicate with each other
- Commissioning with ETS5 - no additional software required
 - Add RF product from catalogue, set parameters, link group addresses, download individual address (press programming button) and application
- Media Coupler MC is a “real coupler” between TP and RF line (filter table entries,...) and no gateway
- An RF device has an individual address, parameters, group objects, ...

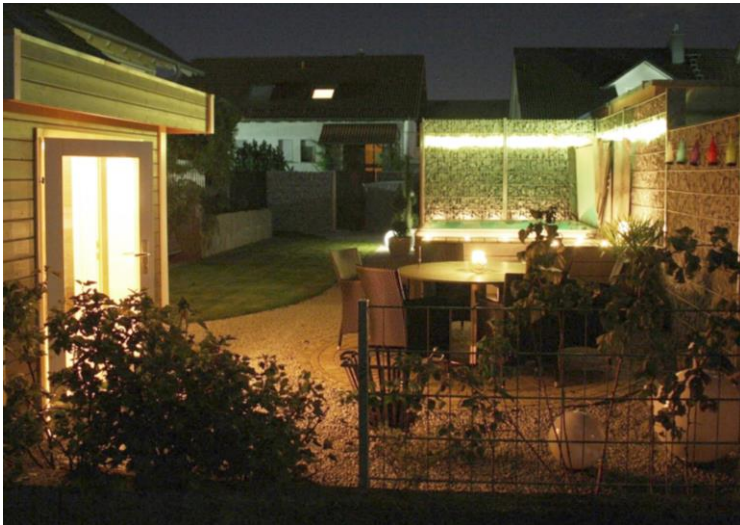


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Argumentation

Installation solutions

- Push button on glass or metal wall
- Outdoor installation e.g. garden house
- Walls which cannot be processed, e.g. in listed buildings



Component solutions

- Mobile push buttons, wireless remote control, e.g. for disabled people
- Socket adapter to integrate mobile lamps with simple installation
- Connection of decentral push buttons or contacts, e.g. motion sensor



Functional solutions

- Lighting control (switching/dimming) in a church, garage or any building both with wireless sensor and actuator
- Control of shutter, blinds or windows with wireless shutter actuator
- Decentralized valve control



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Transmission technology

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Transmission technology

Structure of the bus devices

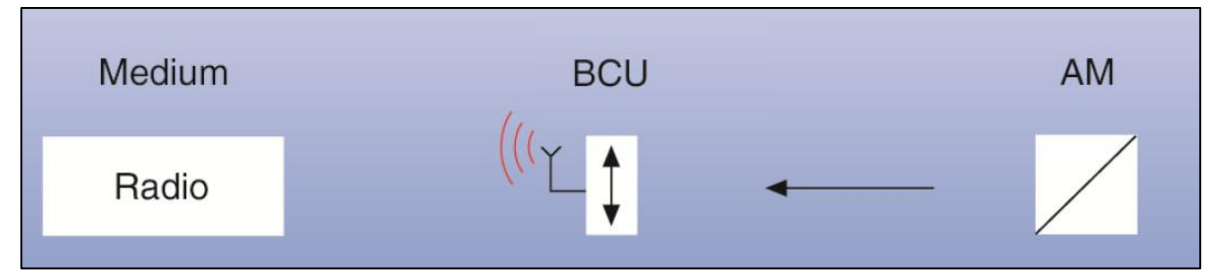
KNX RF components are available in flush-mounted, surface-mounted and built-in versions

The flush-mounted devices largely consist of equipment for switching or dimming lights, for controlling shutter drives or mains equipment on which push buttons for operation are clipped on

As surface-mounted or built-in versions, various sensors, actuators or combined devices are available, which can be mounted, glued or built into various locations and surfaces

The classic separation between bus coupling unit, application module and loadable application software in most cases does no longer exist

They are complete devices, in which the application software is loaded by the ETS



Principle structure of a KNX RF

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Transmission technology

Structure of the bus devices

Unidirectional devices

- Can either only send or only receive
- Send a telegram immediately if required
- Due to the duty cycle of 1 % it is nearly excluded, that collisions occur
- Only sending devices are mainly battery-operated sensors or detectors such as hand-held or wall-mounted transmitters, binary inputs and door/window contacts

Bidirectional devices

- Can both send and receive i.e. they can be sensors and actuators at the same time
- Check whether the radio channel is free before sending a telegram
- If the channel is occupied, the device waits until the radio channel is free and then sends the telegram



Push button
(energy harvesting)



Push button 2-fold
with actuator
(mains powered)

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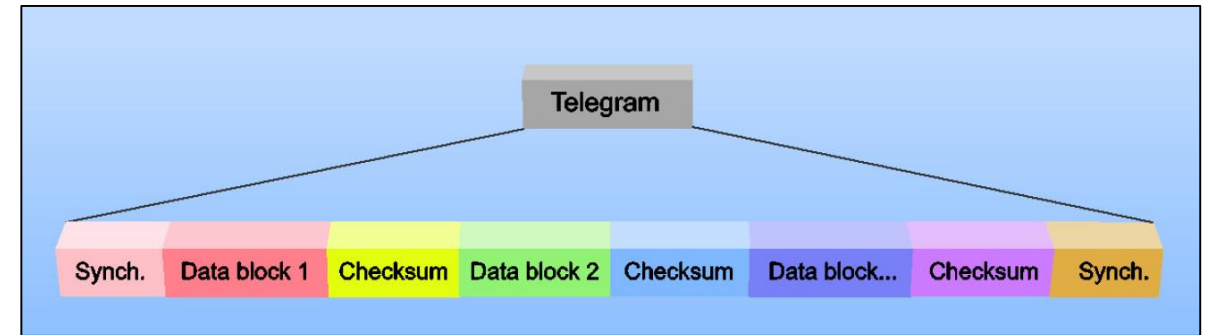
Transmission technology

Telegram structure and addressing

A KNX RF telegram consists of several data blocks separated by checksum bytes

The data blocks contain the actual useful information (e.g. a switching or dimming command) and bus-specific information used for addressing

The blocks at the start and end of the radio telegram are used to synchronize the receivers to the transmitter



Structure KNX RF telegram

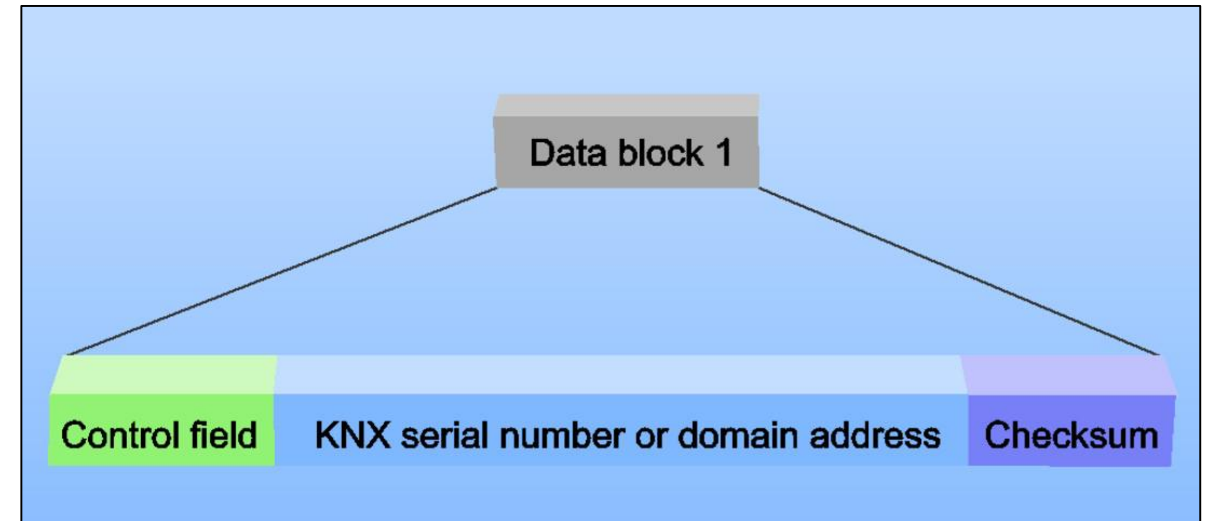
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Transmission technology

Telegram structure and addressing

The first data block consists of the

- Control field (4 bytes)
 - It contains information about the telegram length, type of device (uni- or bi-directional) the transmission quality (signal strength) as well as the battery status of battery-operated radio components
- Domain address to which the device is assigned (6 bytes)
 - The domain address is included in each telegram and stored in the receiver (done during commissioning with the ETS)
 - It is also used for separating from the devices in adjacent KNX radio installations
- Cyclic redundancy check (CRC 2 bytes)
 - The receiver detects via the cyclic redundancy check (CRC) whether a telegram has been transferred without any errors



First data block

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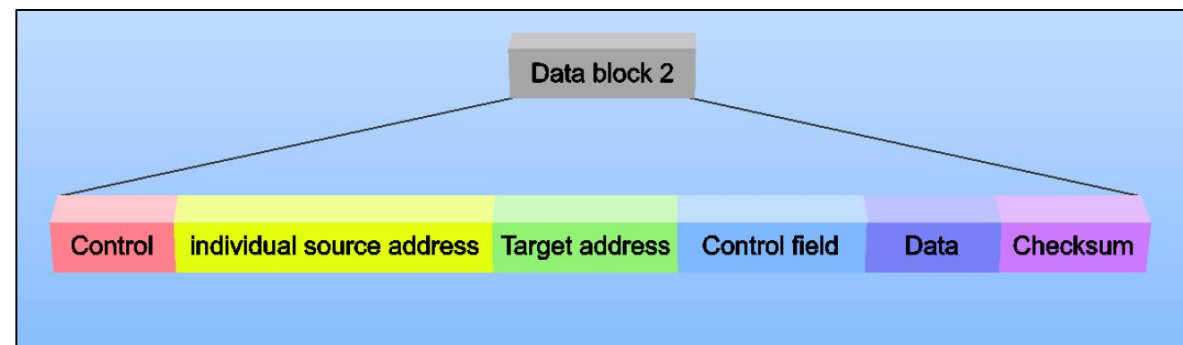
Transmission technology

Telegram structure and addressing

The second data block consists of the

- Individual source address
 - It is only required when programming the devices via ETS
- Target address
 - During normal operation (e.g. when transmitting a switching command), the target address contains the group address
 - In the case of physical addressing i.e. during download, the target address is the individual address of the device
- Data (useful information)
 - It contains the data to be transferred such as commands, messages, parameters, measured values etc.

Further data blocks can be transmitted in a KNX RF telegram depending on the length of the useful information



Second data block

Diagnostics

Monitor

Group...

Bus Monitor

Diagnostics

Device Info

Individual...

Start

Stop

Clear

Open

Save

Print

Search

Group Address

...

Data point type

1.001 switch

Delay time[sec]

0

Last received value

Value

Off

Send cyclically

#	Time	Service	Fla	Prio	Sour	Source Nam	Destina	Destination Name	Rot	Type	DPT	Info
1	14.0...from...	E	Low	2.3.7	PushButton	1/2/71	Light Socket on/off	6	GroupValueWrite	1.001 switch	\$01 On	
2	14.0...from...	E	Low	2.3.7	PushButton	1/2/71	Light Socket on/off	6	GroupValueWrite	1.001 switch	\$00 Off	
3	14.0...from...	E	Low	2.3.7	PushButton	1/2/71	Light Socket on/off	6	GroupValueWrite	1.001 switch	\$01 On	
4	14.0...from...	E	Low	2.3.7	PushButton	1/2/71	Light Socket on/off	6	GroupValueWrite	1.001 switch	\$00 Off	

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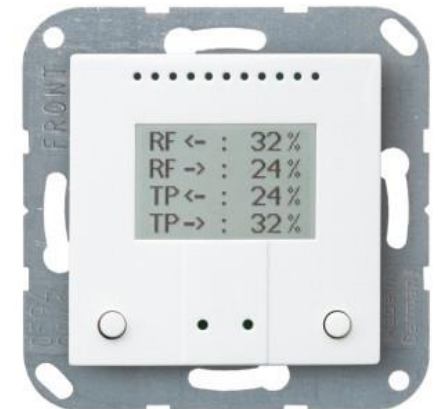
Product overview

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Product overview

Products (extract)

- System devices
 - Media Coupler (RF - TP)
 - Signal repeater
- Interfaces
 - USB RF Interface
- Sensors (battery, supply voltage or energy harvesting)
 - Push button
 - Binary inputs
 - Remote control
 - Temperature, brightness, ...
- Actuators
 - Switching, dimming, shutter control
- ... and more



Webinar “KNX RF”

Product overview

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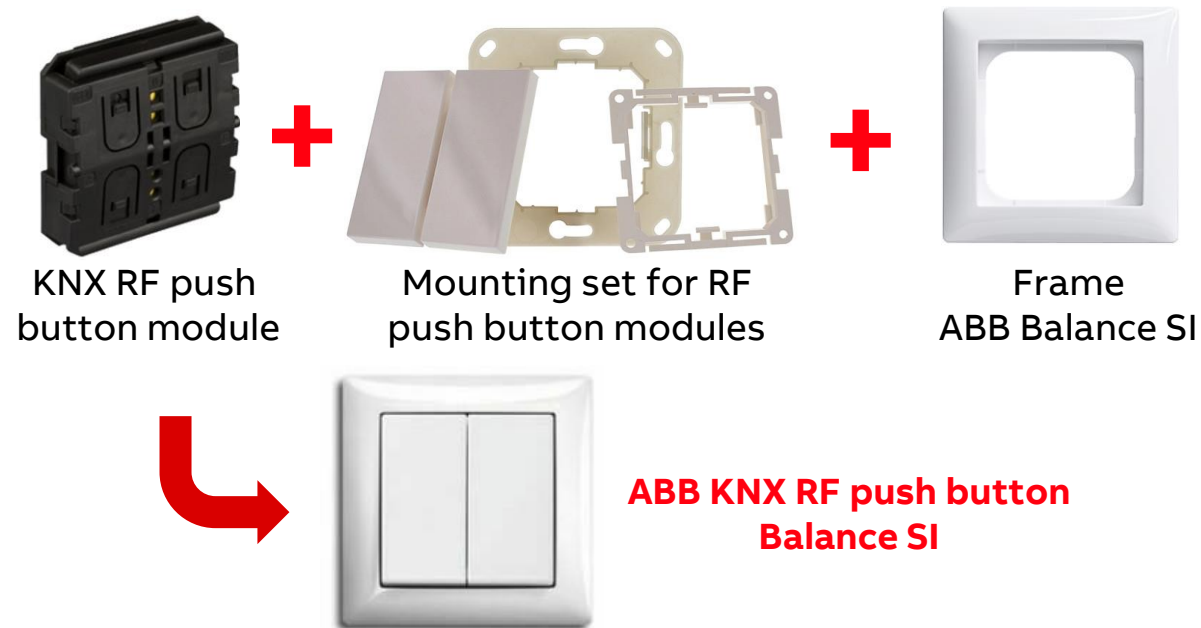


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- ... and more



- Thanks to the standardized 55mm dimension, the mounting set for RF buttons can be used to install an energy harvesting push button module (EnOcean, Zigbee, KNX RF) in the most common switch ranges
- It is compatible with the switch range ABB Balance SI

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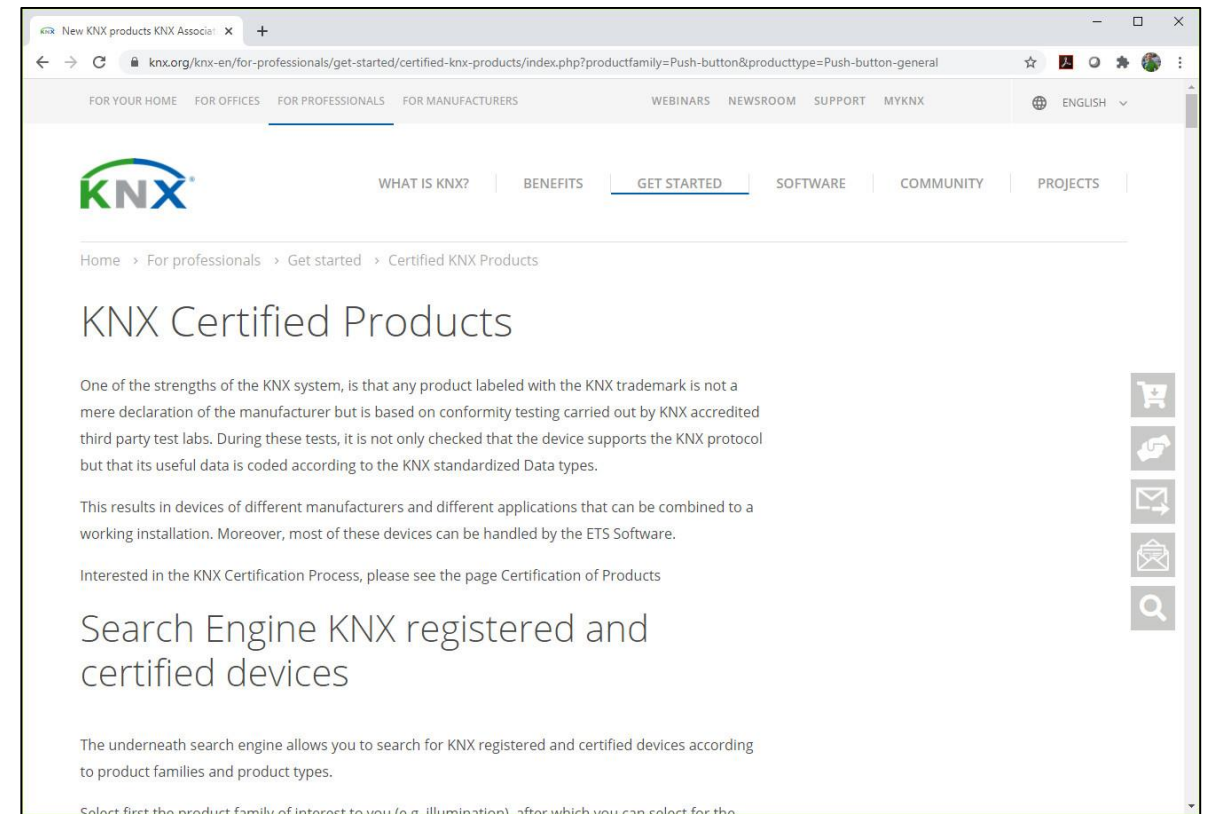


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- ... and more (KNX Association, www, ...)



Webinar “KNX RF”

Topology

Webinar “KNX RF”

Topology

General

A KNX system can consist of RF devices as well as a combination of RF with other media (e.g. KNX RF, KNX TP and KNX IP)

Each RF device has an individual address, parameters and group object

Each RF line has its own domain address

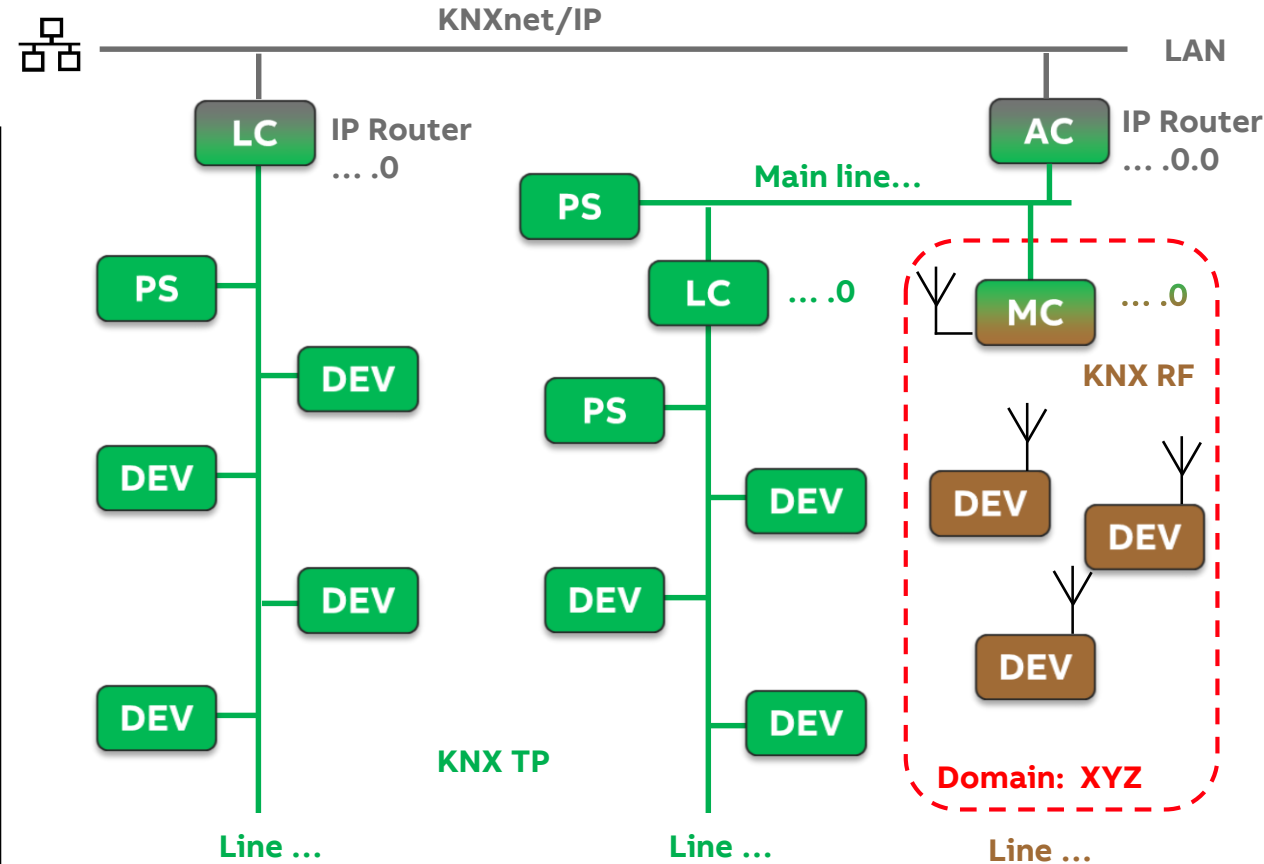
An RF Media Coupler can be used as an area or line coupler

Line repeater function is not yet supported

There is no limit to 64 bus devices in a RF line

A maximum of 256 RF devices can be installed in a RF line, including a RF Media Coupler

There can only be one RF Media Coupler in a KNX RF line



Topology

Pure radio network – only KNX RF

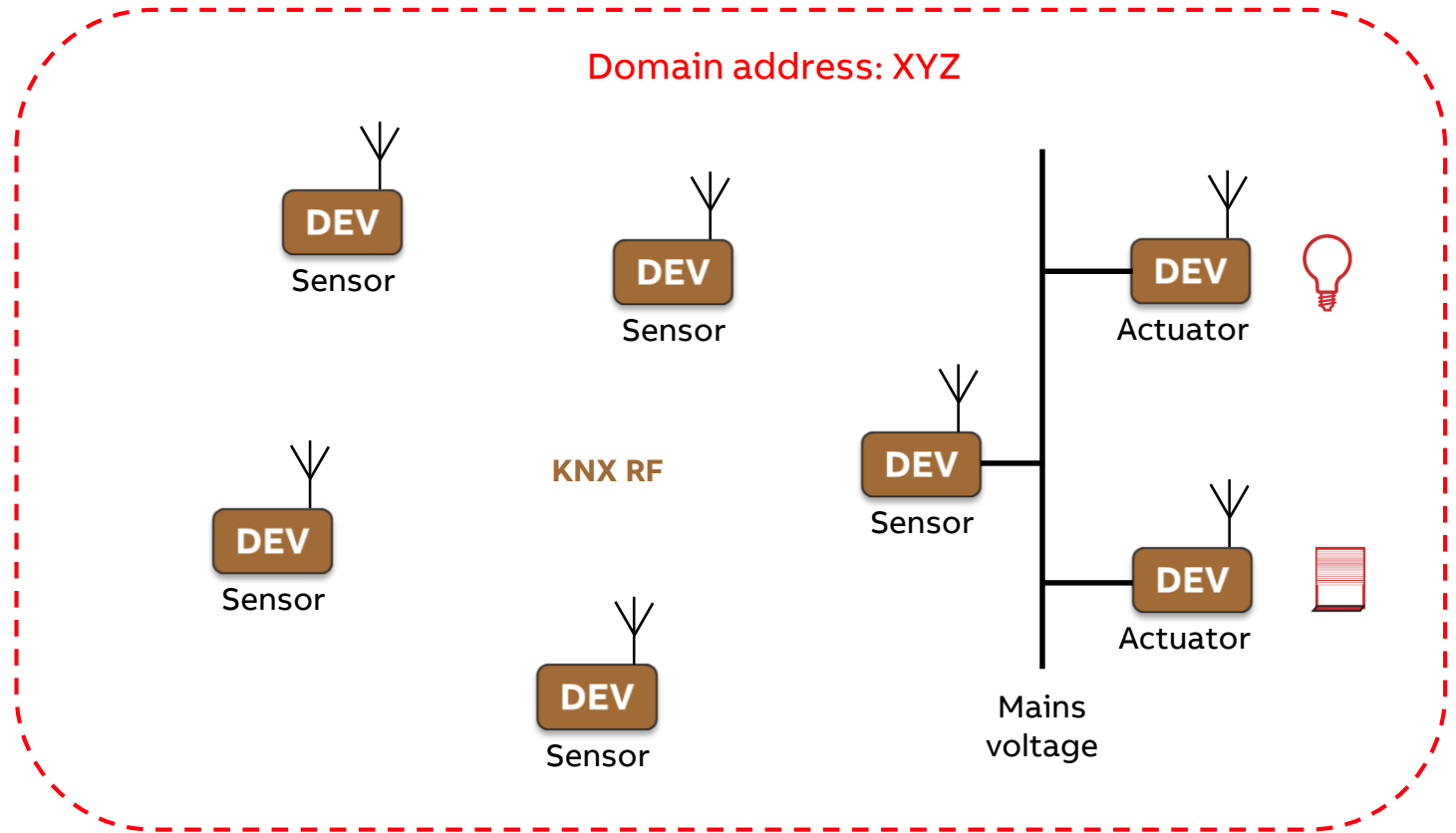
The KNX system consists only of RF devices

An RF line has its own domain address

Only RF devices with the same domain address can interact with each other within an RF network

Each RF device has an individual address, parameters, group object and domain address

A maximum of 255 RF devices can be installed in a RF line



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Topology

Pure radio network – only KNX RF

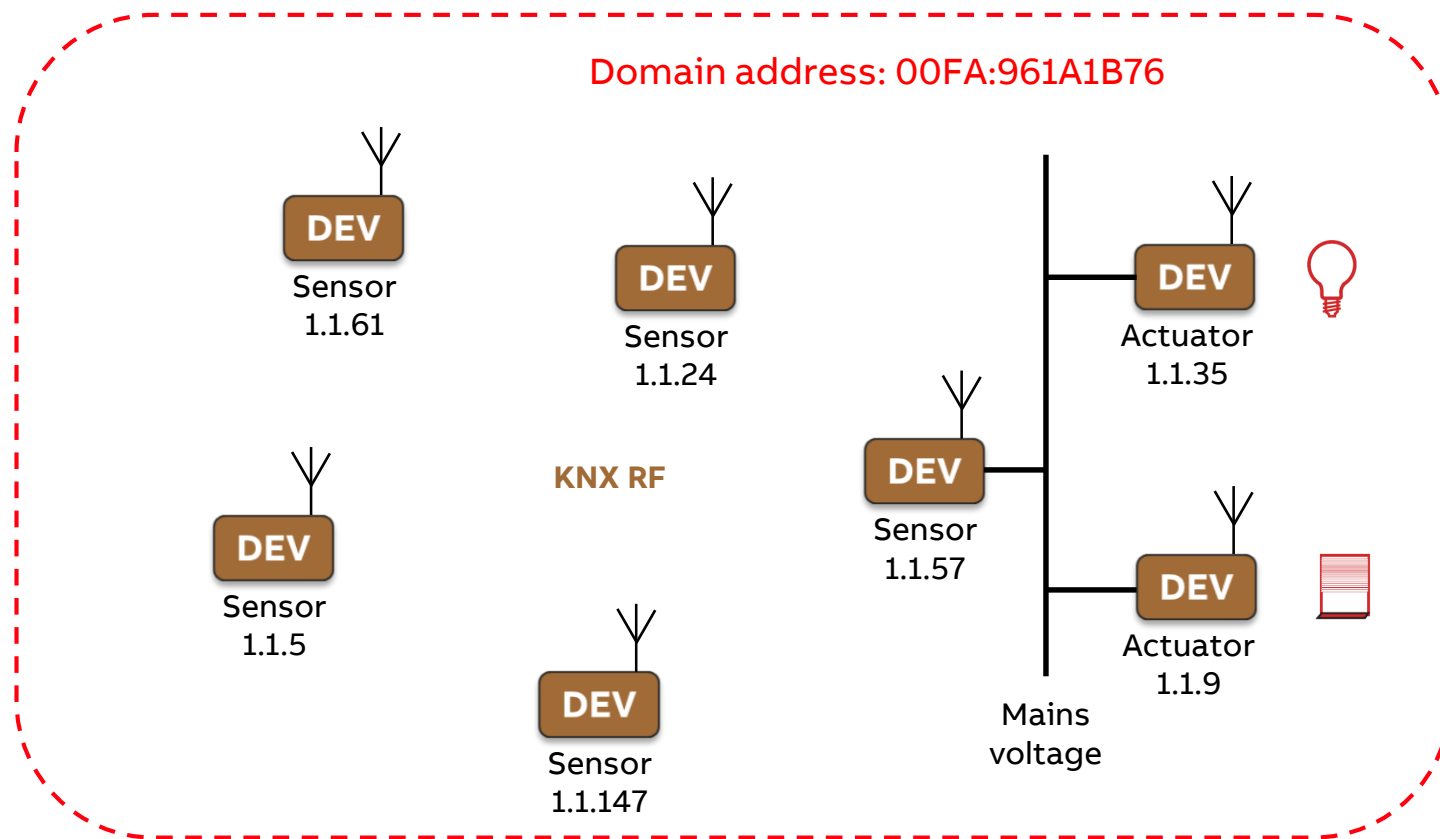
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Topology

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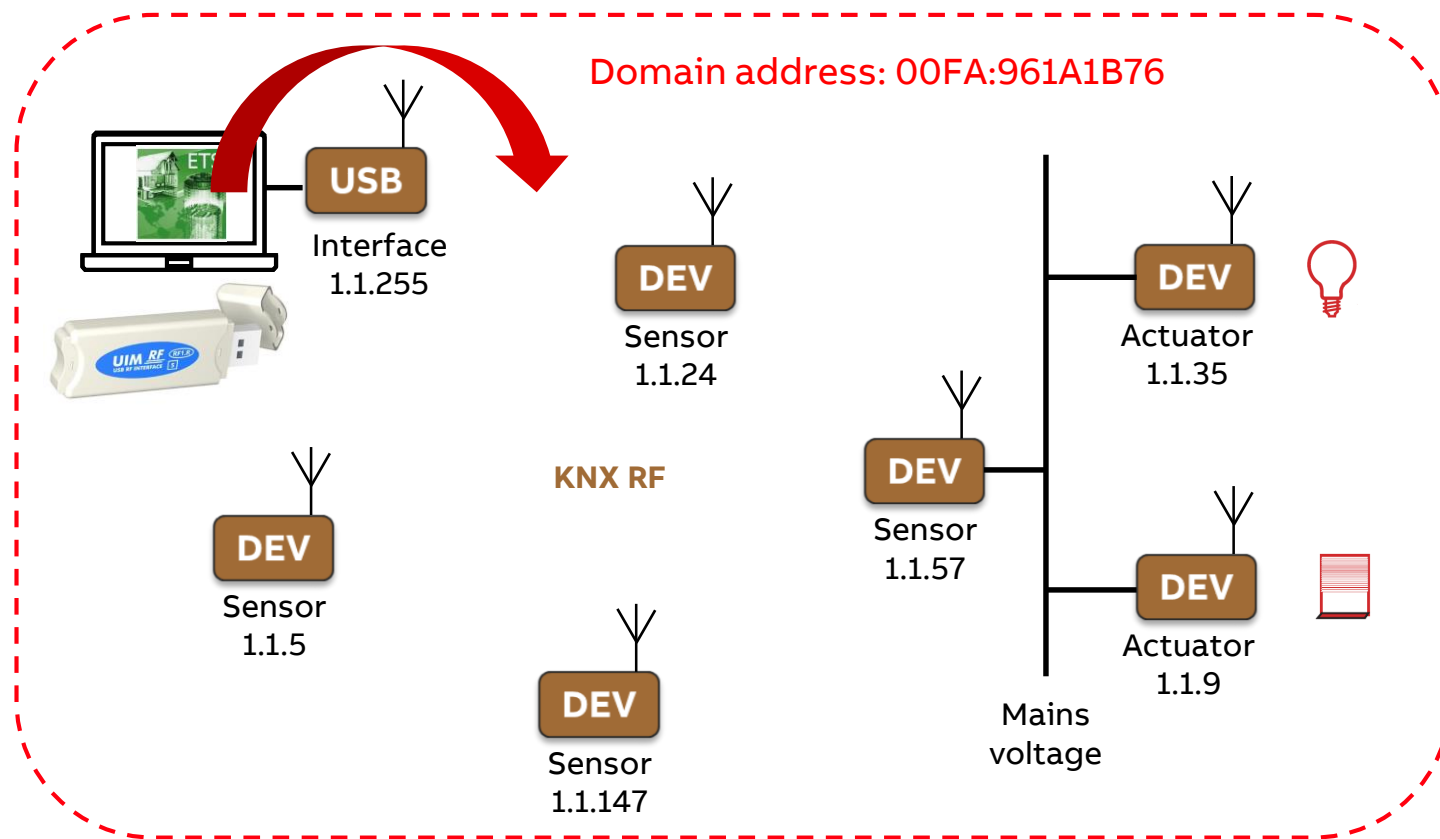
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Commissioning, diagnostic, etc. takes place with the ETS and USB RF Interface



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Topology

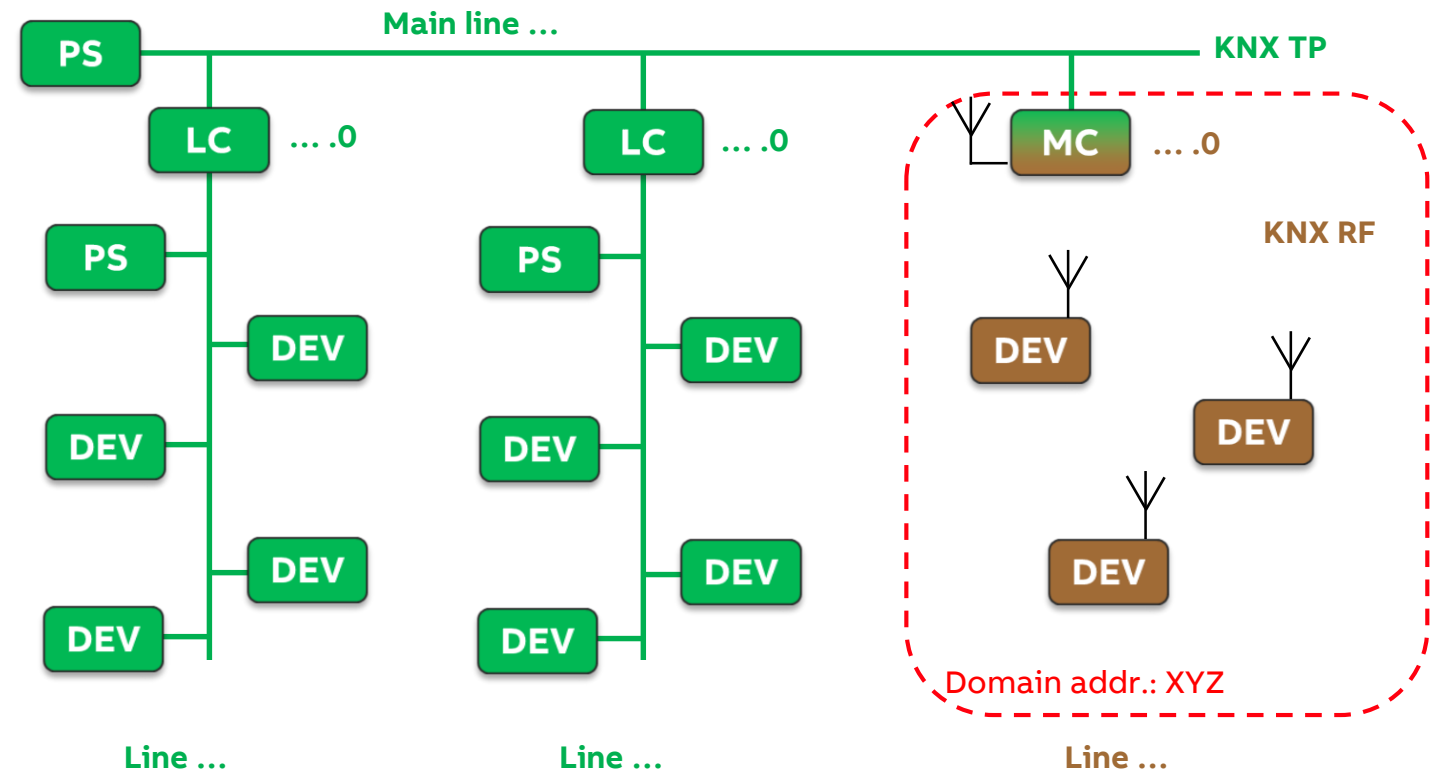
Mixed network with the media RF and TP

The KNX system consists as a combination of RF with TP

An RF Media Coupler can be used as an area or line coupler

Note: The Media Coupler has a coupler functionality and must be connected to a main or backbone line

Commissioning, diagnostic, etc. takes place with the ETS and USB RF Interface, USB TP Interface or IP Interface



Webinar “KNX RF”

Topology

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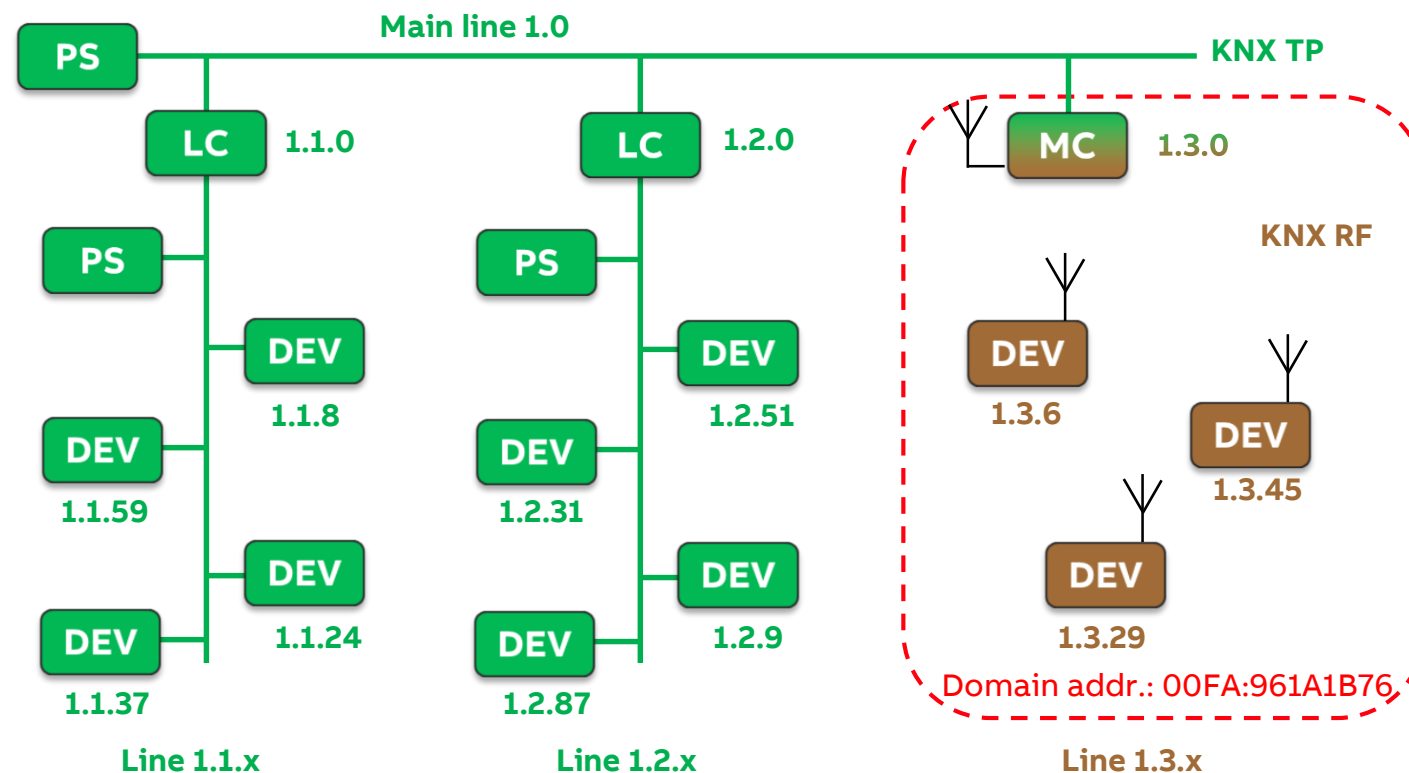
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Example:

- Area 1 and main line 1.0 → TP
- Line 1.1.x and line 1.2.x → TP
- Line 1.3.x → RF



Webinar “KNX RF”

Topology

Mixed network with the media RF and TP

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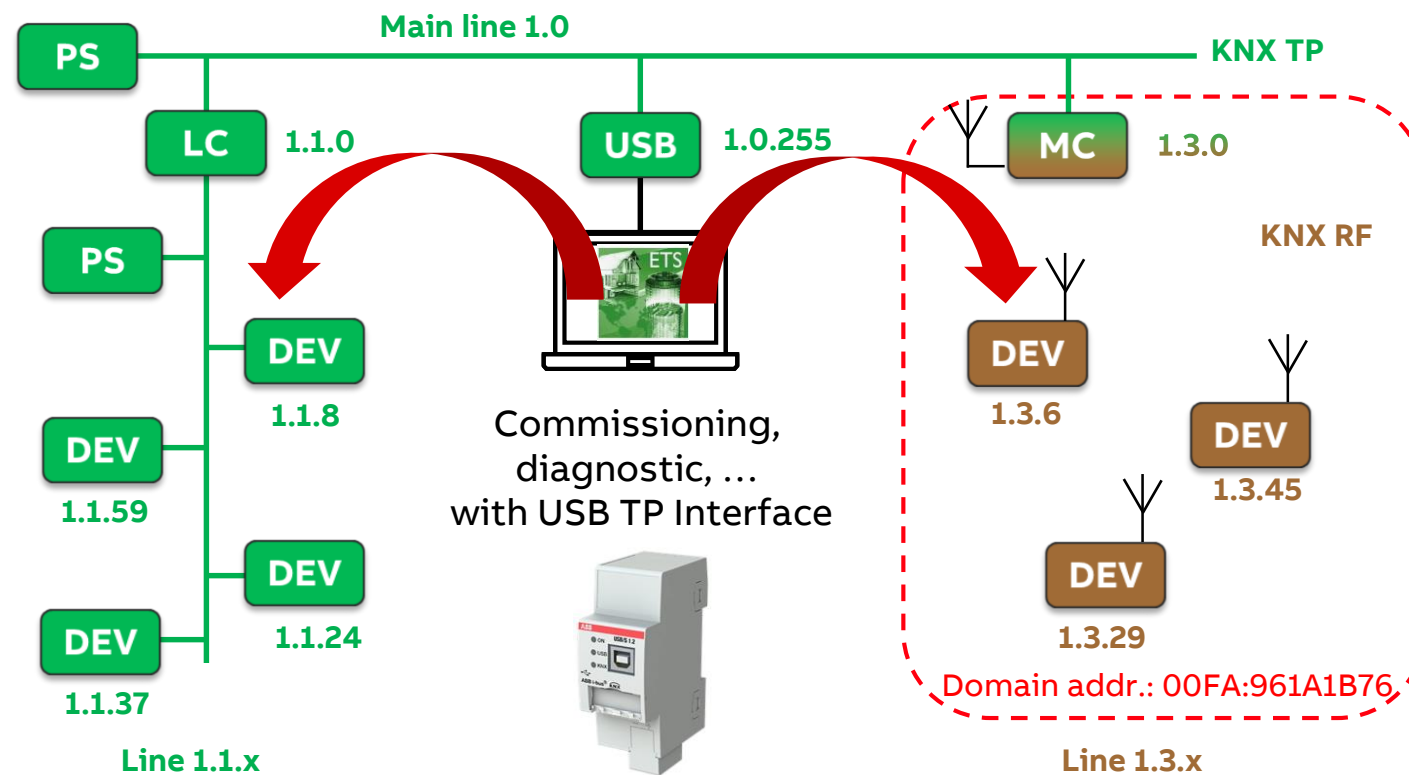
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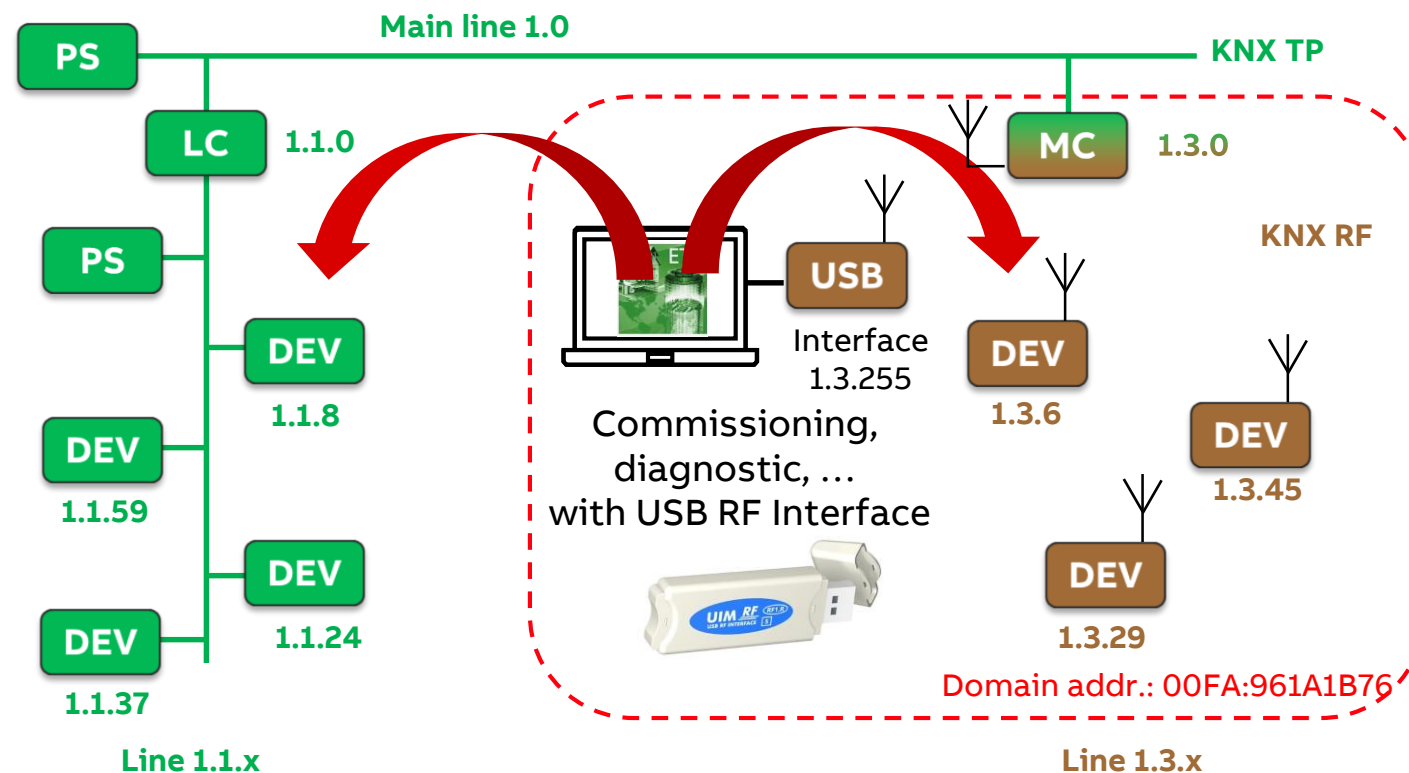
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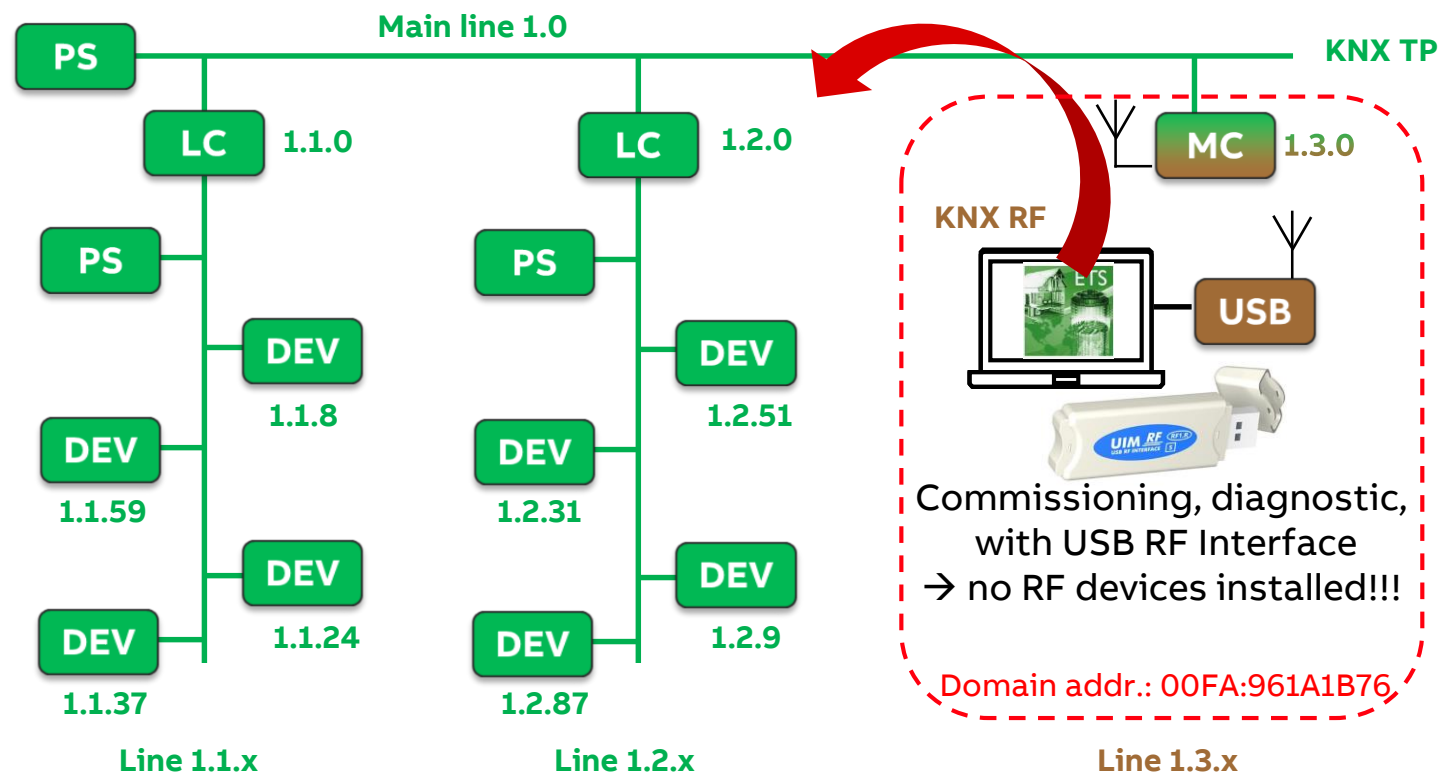
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- Line 1.3.x → RF – only for commissioning!



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Topology

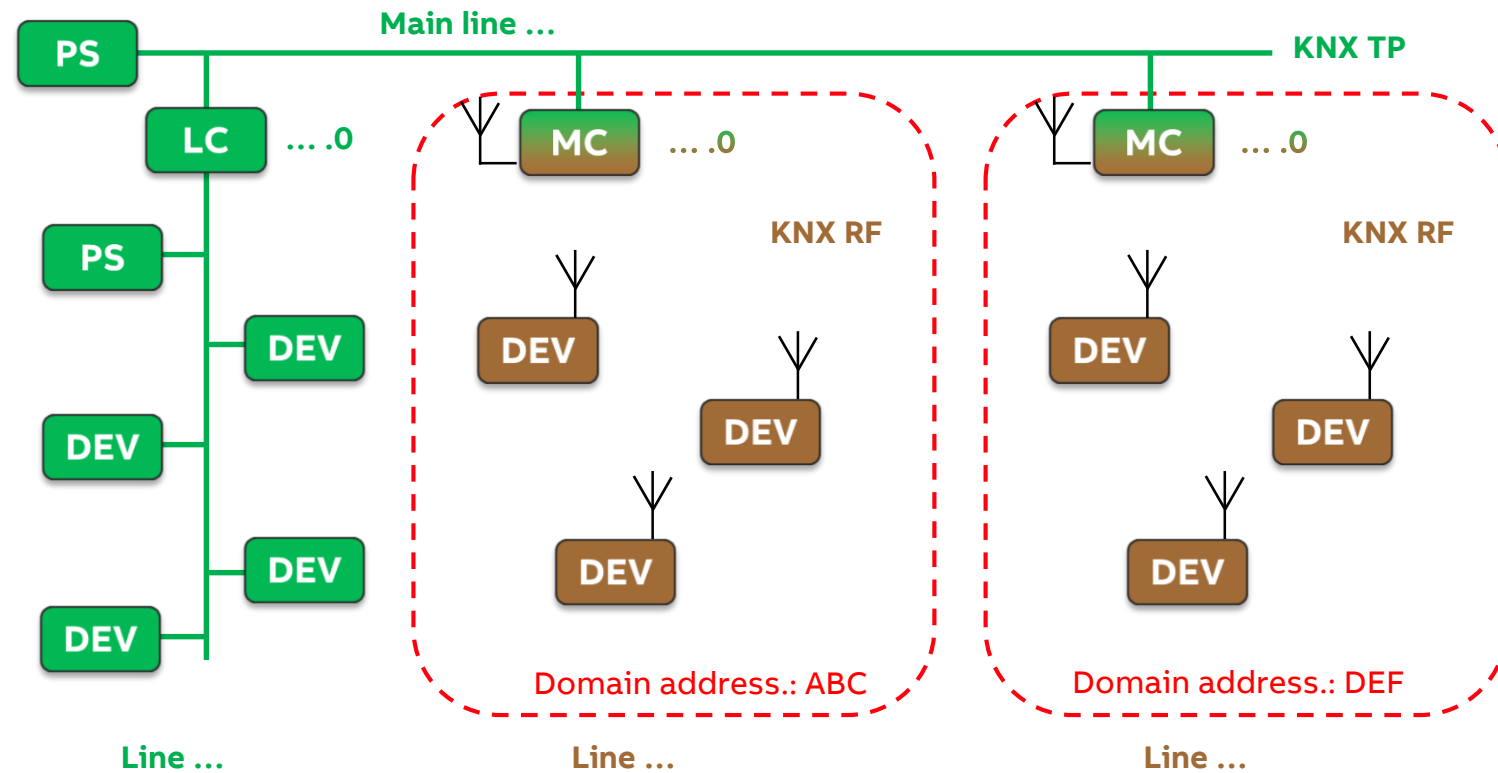
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Topology

Mixed network with the media RF and TP

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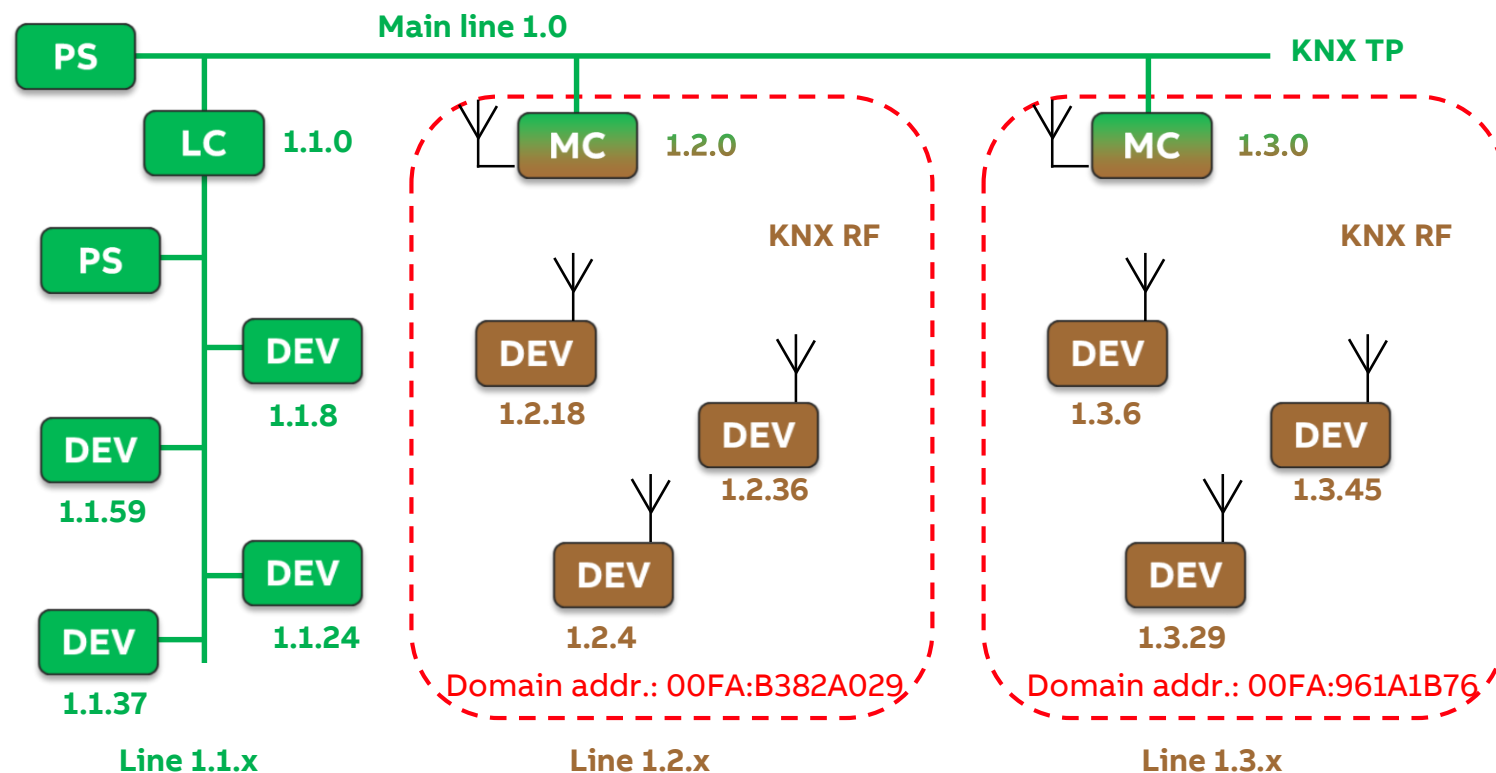
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Topology

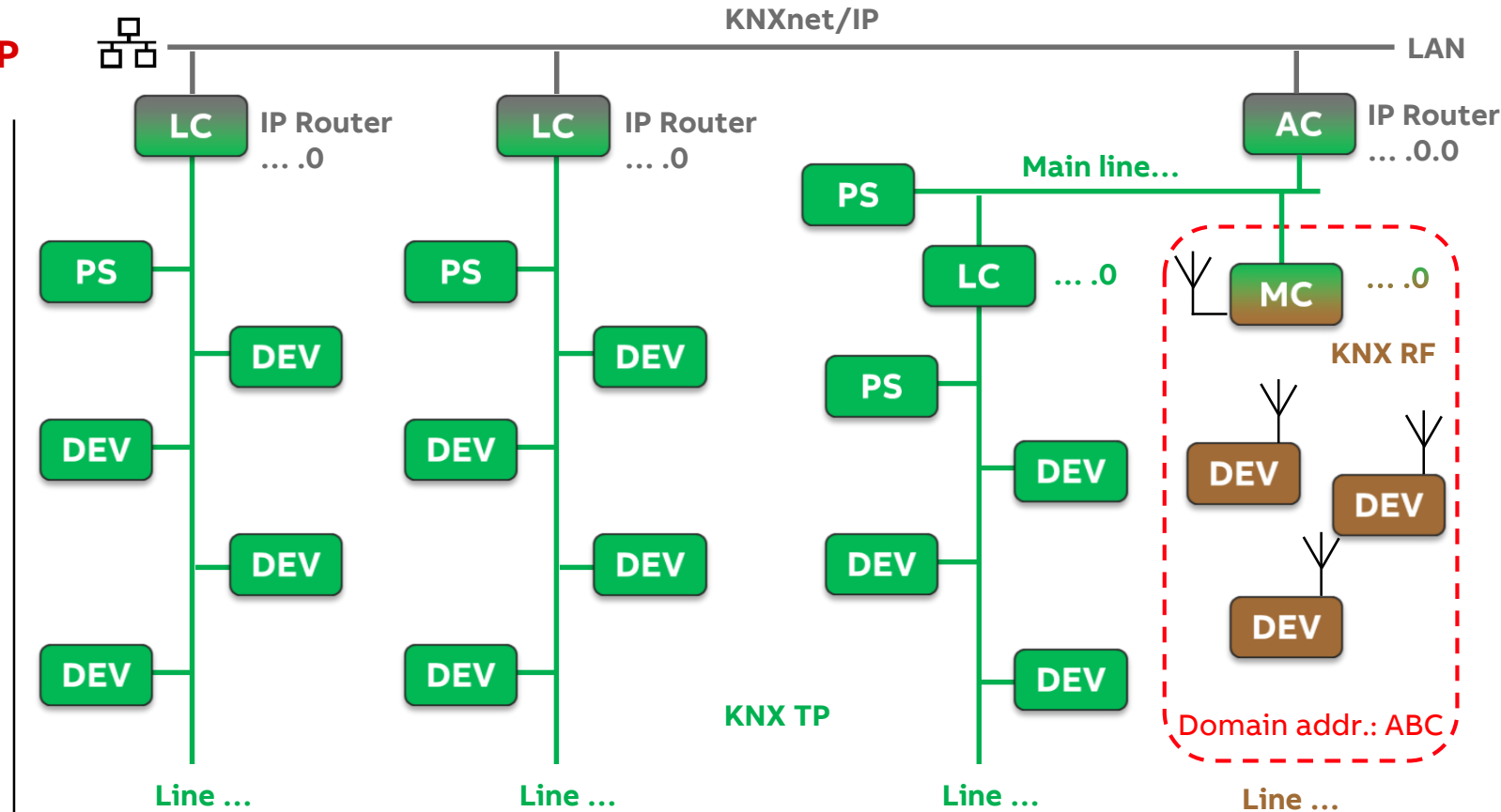
Mixed network with the media RF, TP and IP

The KNX system consists as a combination of RF with TP and IP

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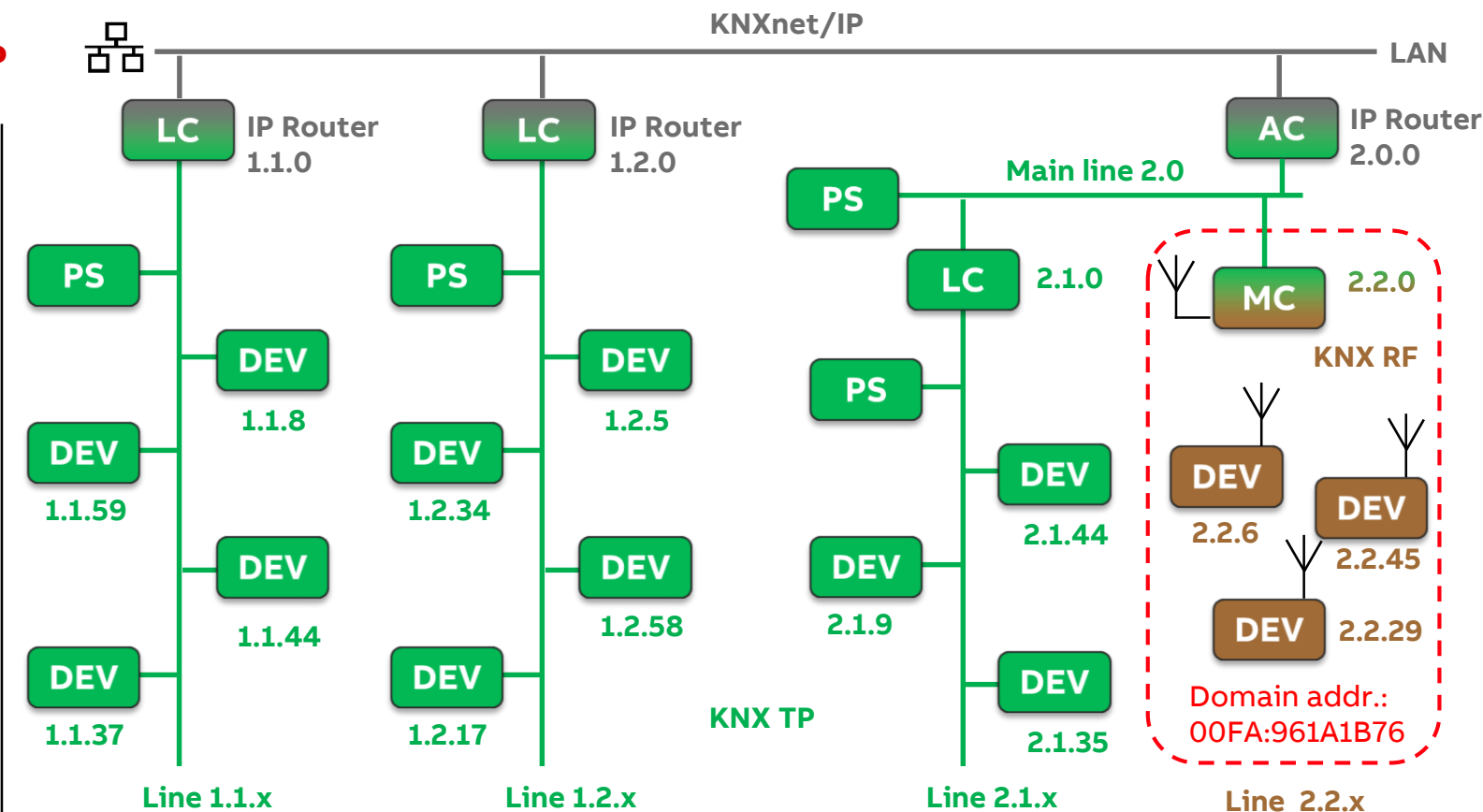
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Example:

- Area 1 → IP
- Line 1.1.x, line 1.2.x, main line 2.0 and Line 2.1.x → TP
- Line 2.2.x → RF



Webinar “KNX RF”

Topology

Mixed network with the media RF, TP and IP

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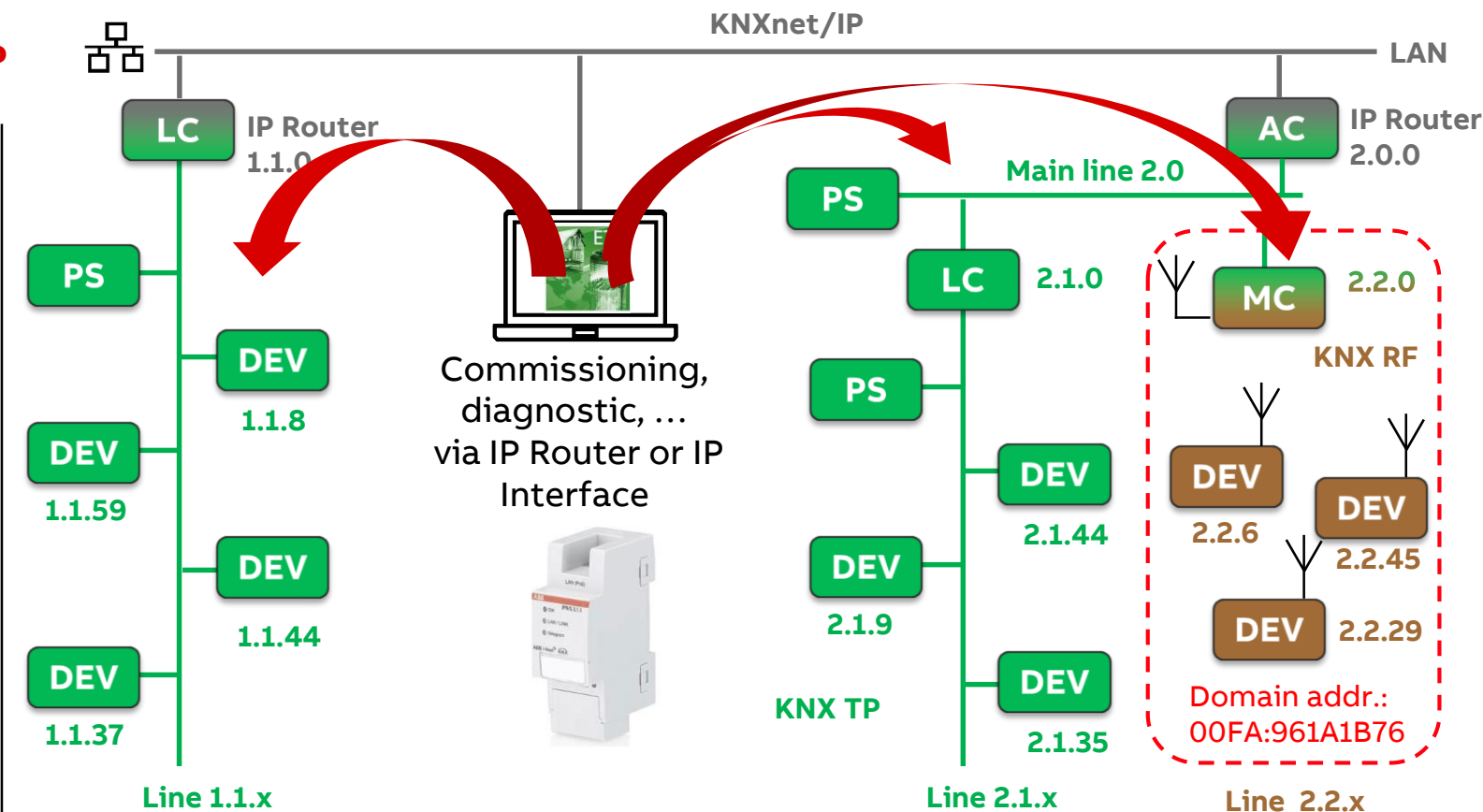
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Example:

- Area 1 → IP
- Line 1.1.x, line 1.2.x, main line 2.0 and Line 2.1.x → TP
- Line 2.2.x → RF

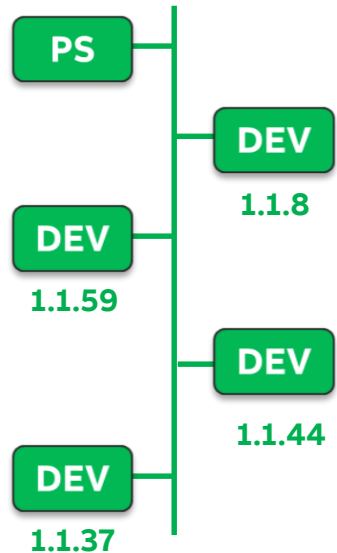


Webinar “KNX RF”

Topology

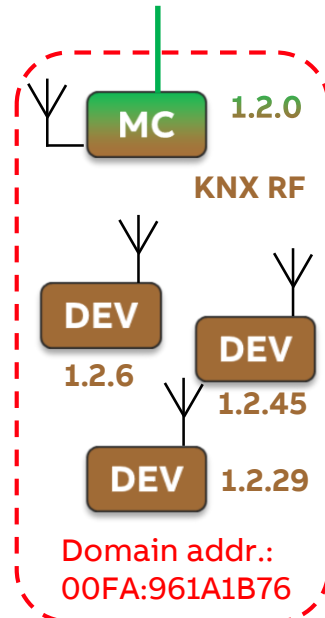
Extension of only one KNX line in an existing building (e.g. family home) with KNX RF

Existing KNX TP line 1.1.x



Line 1.1.x

Extension with KNX RF 1.2.x



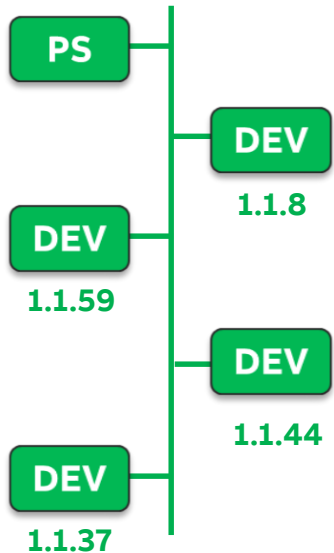
Line 1.2.x

Webinar “KNX RF”

Topology

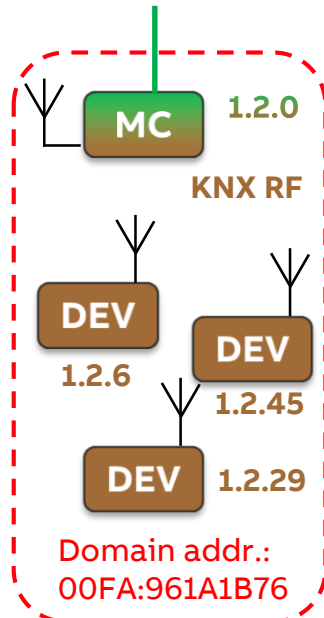
Extension of only one KNX line in an existing building (e.g. family home) with KNX RF

Existing KNX TP line 1.1.x



Line 1.1.x

Extension with KNX RF 1.2.x

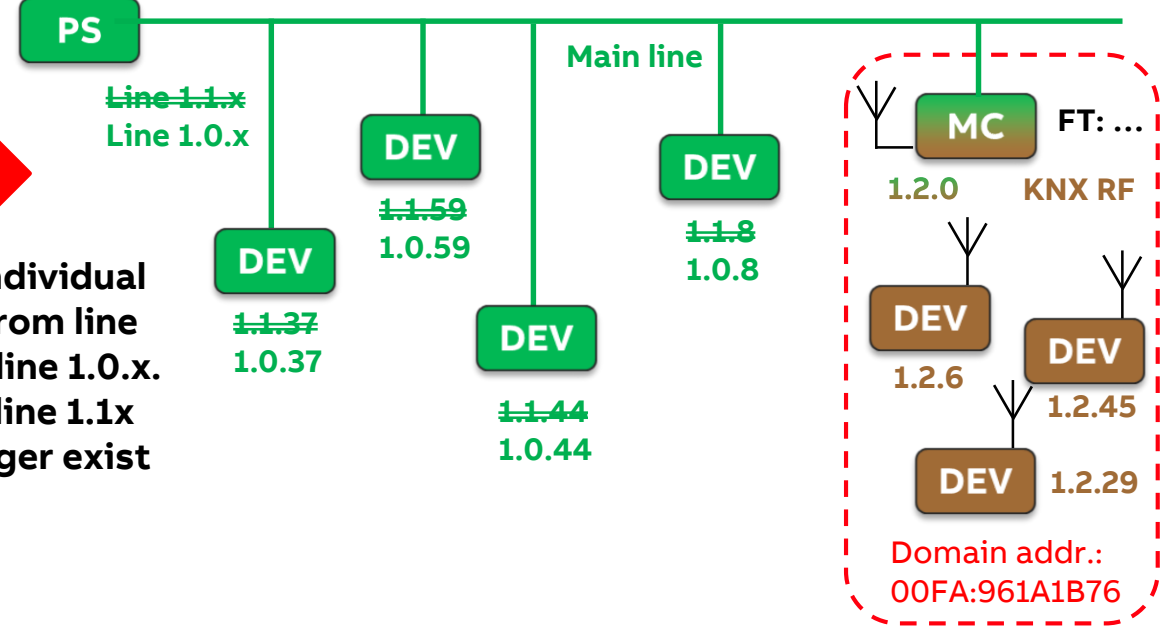


Line 1.2.x



Change all individual addresses from line 1.1.x to main line 1.0.x.
→ The KNX line 1.1.x does not longer exist

New KNX TP line 1.0.x and KNX RF 1.2.x



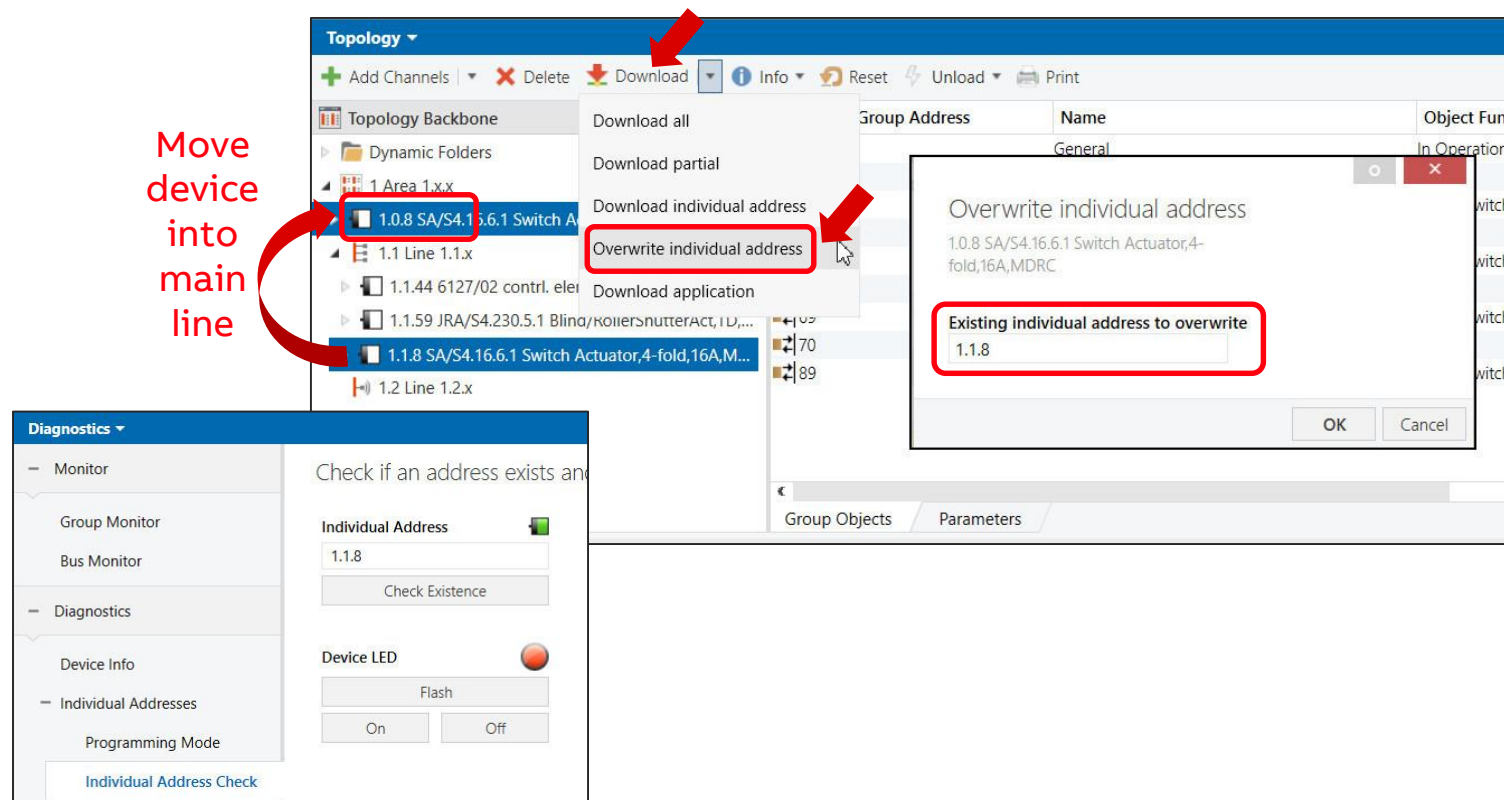
Line 1.2.x

Webinar “KNX RF”

Topology

Overwrite an existing individual address

- Move device from line 1.1.x into main line 1.0.x
- The individual address changes to 1.0.8
 - Go to the device, press programming button as usual and download new ind. address 1.0.8
- or
- Click on “Download” → “Overwrite individual address” and enter existing ind. address 1.1.8
- or
- Start diagnostics:
 - Enter ind. address 1.1.8
 - Click on “Device LED ON” → device goes into the programming mode
 - Download new ind. address 1.0.8



Webinar “KNX RF”

Commissioning

Webinar “KNX RF”

Commissioning

General

The commissioning procedure for RF devices is largely identical to that of TP mode devices

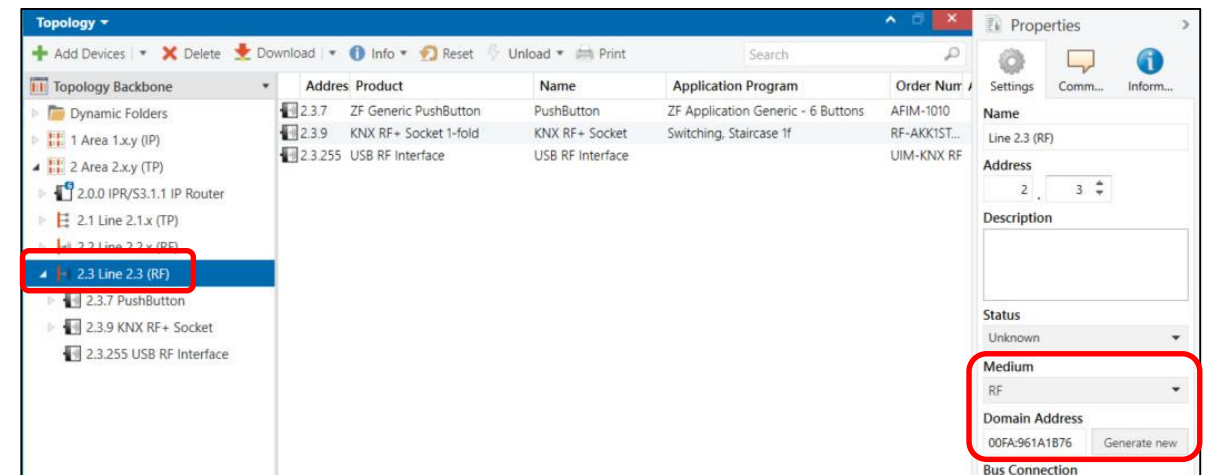
According to the topology defined in the ETS project, devices that are assigned to RF lines get not only the individual addresses also always a domain address

The ETS allocates each RF line a unique domain address

The purpose of the domain address is to avoid interference between neighboring RF lines

Therefore each KNX RF line gets an own domain address

RF interfaces are available for the configuration and commissioning of devices directly via PC/laptop



Media Coupler



USB RF Interface

Webinar “KNX RF”

Commissioning

Domain address

A Media Coupler must always have the same domain address as all devices in its subordinate RF line

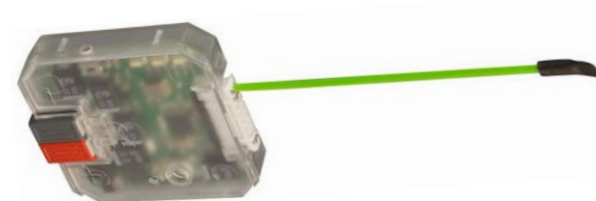
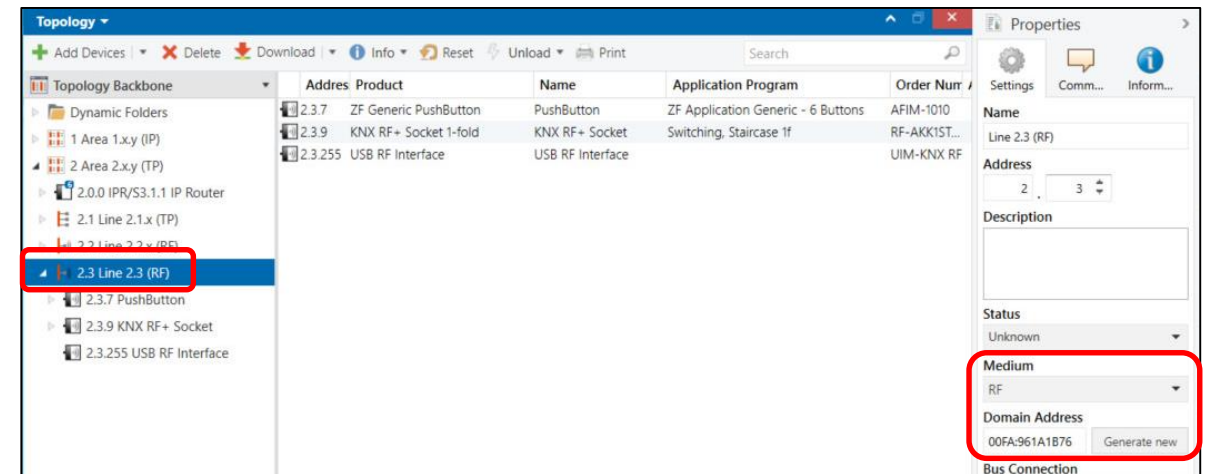
If a line is set to the media type “RF”, all RF devices automatically get the same domain address

The ETS automatically downloads the domain address into the RF devices if the physical address is programmed

A domain address is 6 bytes long and is entered in the ETS in hexadecimal notation or automatically generated (2 bytes manufacturer specific octets + 4 bytes random octets)

The input notation provides a colon (read from the left) after the first 2 byte

A domain address can look like this: “0011:22334455” or “00FA:4F5B3122”



Media Coupler



USB RF Interface

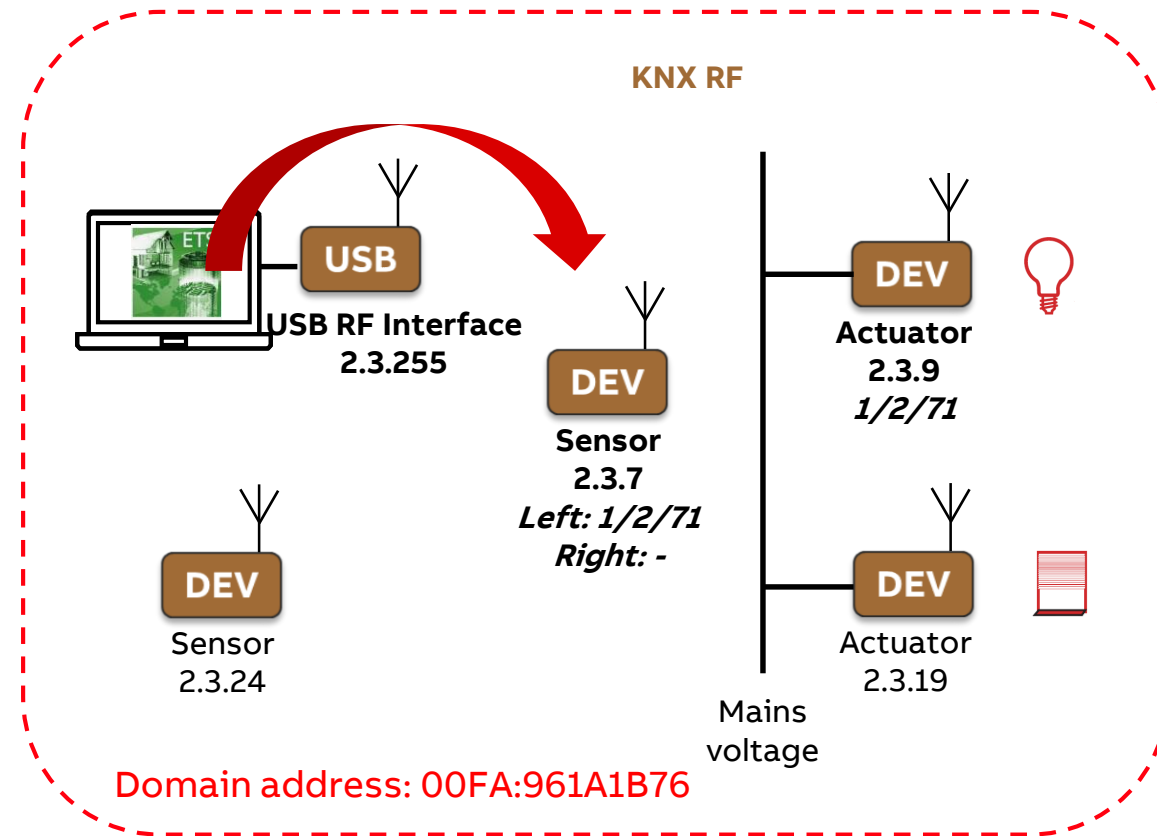
Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

The procedure for RF devices is largely identical to that for devices in TP mode

- Create a new project, add devices, set parameter, link group addresses, ...
- Set medium of the line to “RF”
- The ETS creates a unique domain address (e.g. “00FA:961A1B76”) and assigns it to each RF devices in the line
- Bus → Interfaces:
Set local address and enter domain address of USB RF Interface
- Download individual address and application (group addresses, program,...)



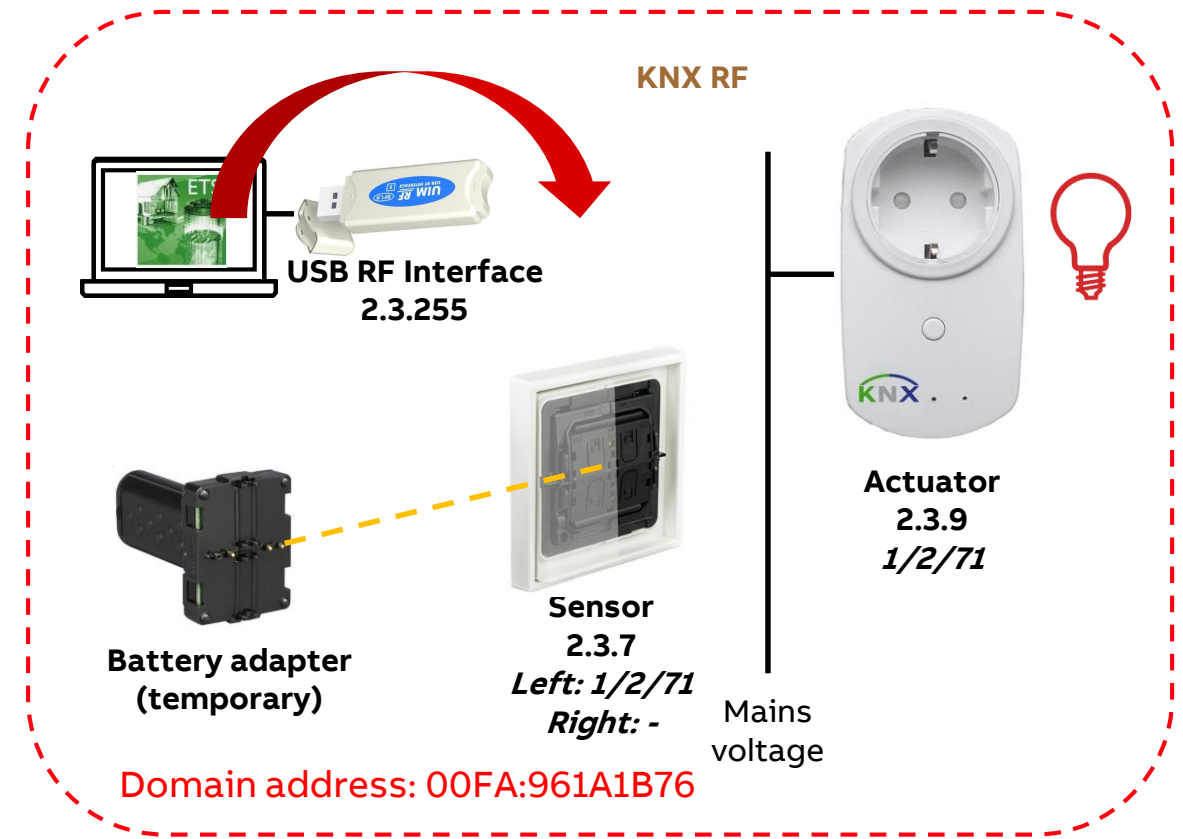
Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

- Push button (left/right), based on energy harvesting principle → A battery adapter is required to download
- KNX RF+ Socket (1-fold)
- USB RF Interface
Set local address and enter domain address



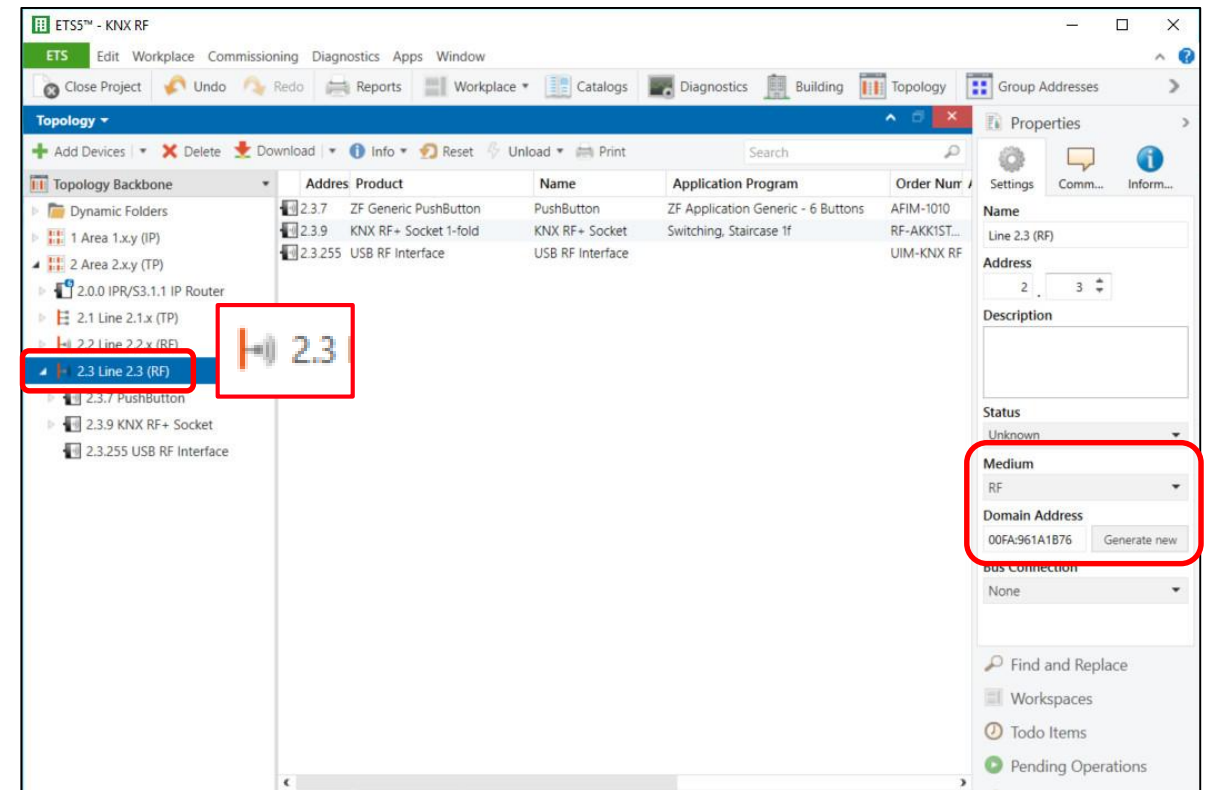
Webinar “KNX RF”

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Webinar “KNX RF”

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- USB RF Interface
Set local address and enter domain address

2.3.7 PushButton > Generic > General

Generic

ButtonType ☐ 2 Channel Switch ☒ 4/6 Channel Switch

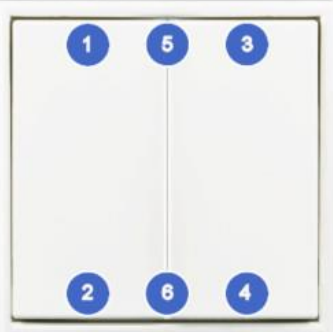
General

Left Rocker Top Single channels

Left Rocker Bottom not active

Right Rocker not active

Left+Right Rocker not active



1 5 3

2 6 4

	Nur	Group Address	Name	Object Function	Length	Data Type	C	R	W	T	U
2.3.7 PushButton											
2.3.9 KNX RF+ Socket	0	1/2/71	On Off	1	1 bit	switch	C	-	-	T	-
2.3.255 USB RF Interface	2	1/2/71	On Off	2	1 bit	switch	C	-	-	T	-

Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

- Push button (left/right), based on energy harvesting principle → A battery adapter is required to download
 - The battery adapter supplies the push button module with energy
 - After plugging the push button module changes automatically into programming mode
 - As long as the push button module is in programming mode the red LED on the battery adapter lights up
 - The individual address and application can be loaded
 - After disconnecting the battery adapter changes the push button module automatically back in operating mode



Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

- Push button (left/right), based on energy harvesting principle → A battery adapter is required to download
- KNX RF+ Socket (1-fold)
- USB RF Interface
Set local address and enter domain address

2.3.9 KNX RF+ Socket > Settings > Channel selection

Settings

Channel selection

Switch channel ☒ Switch ☐ Staircase

Mode ☒ normally open ☐ normally closed

On delay [s] 0

Off delay [s] 0

Behaviour when locked no change

Behaviour when unlocked no change

Logical functions not activ

Scene ☒ not activ ☐ activ

	Nur	Group Address	Name	Object Function	Length	Data Type	C	R	W	T	U
2.3.9 KNX RF+ Socket	0	1/2/71	Switch Channel	Switch On/Off	1 bit	switch	C	-	W	-	-
2.3.255 USB RF Interface	2		Switch Channel	Block	1 bit	enable	C	-	W	-	-
	5		Switch Channel	State	1 bit	state	C	R	-	T	-

Webinar “KNX RF”

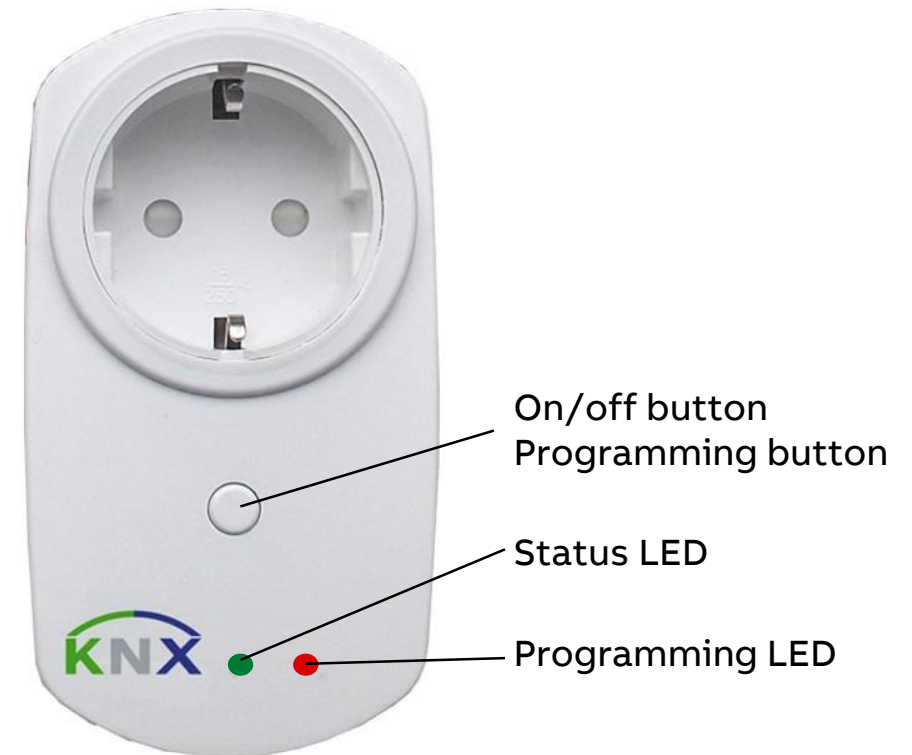
Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

– KNX RF+ Socket (1-fold)

- The RF socket can switch almost all electrical devices (230V 10A)
- The output can be switched via a short key press on the button
An active output is shown by the green status LED
- Via a long key press, the programming mode is activated/deactivated
An active programming mode is shown by the red programming LED



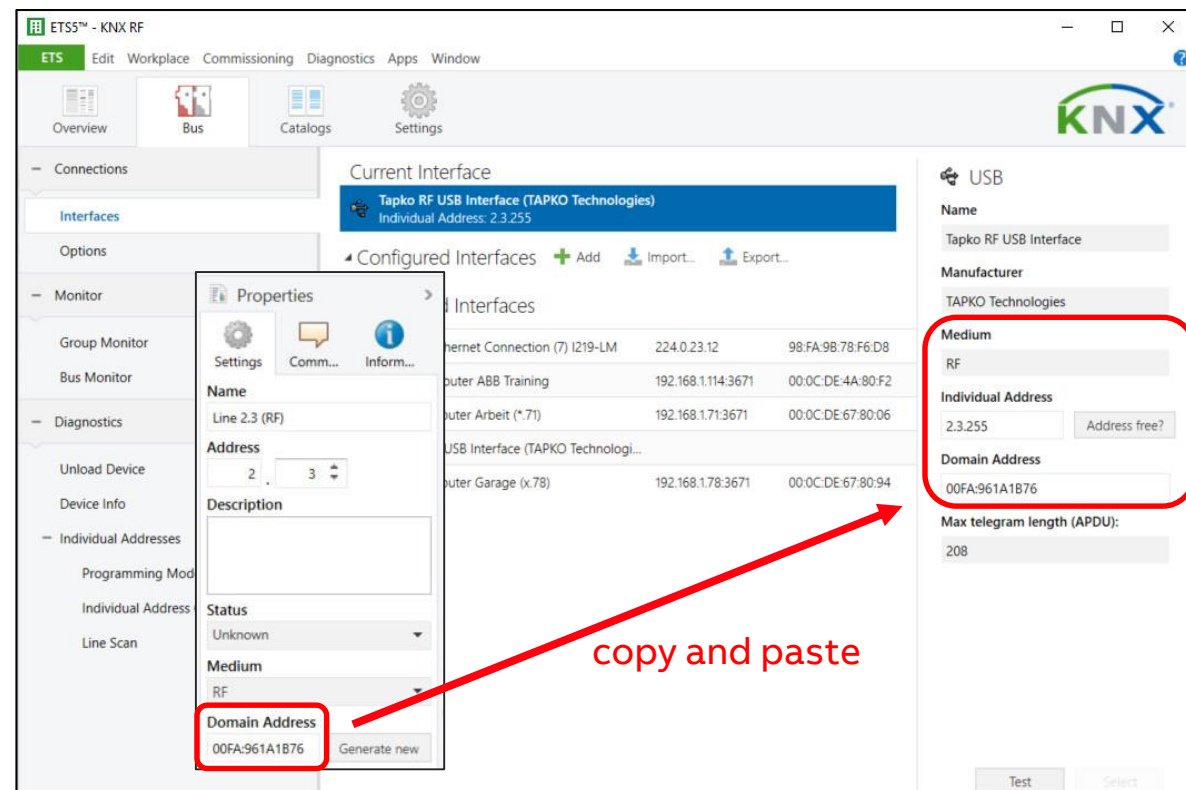
Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

- Push button (left/right), based on energy harvesting principle → A battery adapter is required to download
- KNX RF+ Socket (1-fold)
- USB RF Interface
Set local address “2.3.255” and enter domain address “00FA:961A1B76” (copy from topology view and paste)



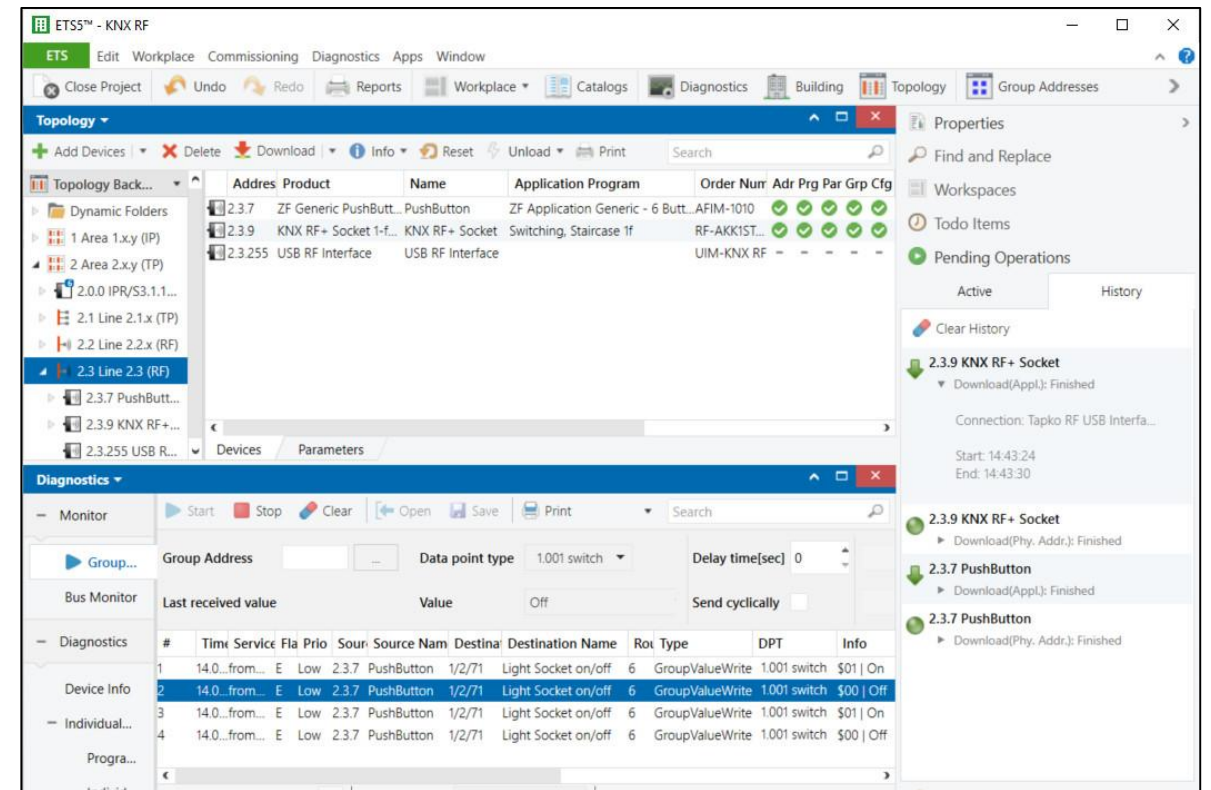
Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

- Download
 - Individual address
 - Application (group addresses, program,...)
- Diagnostics
 - Group and bus monitor



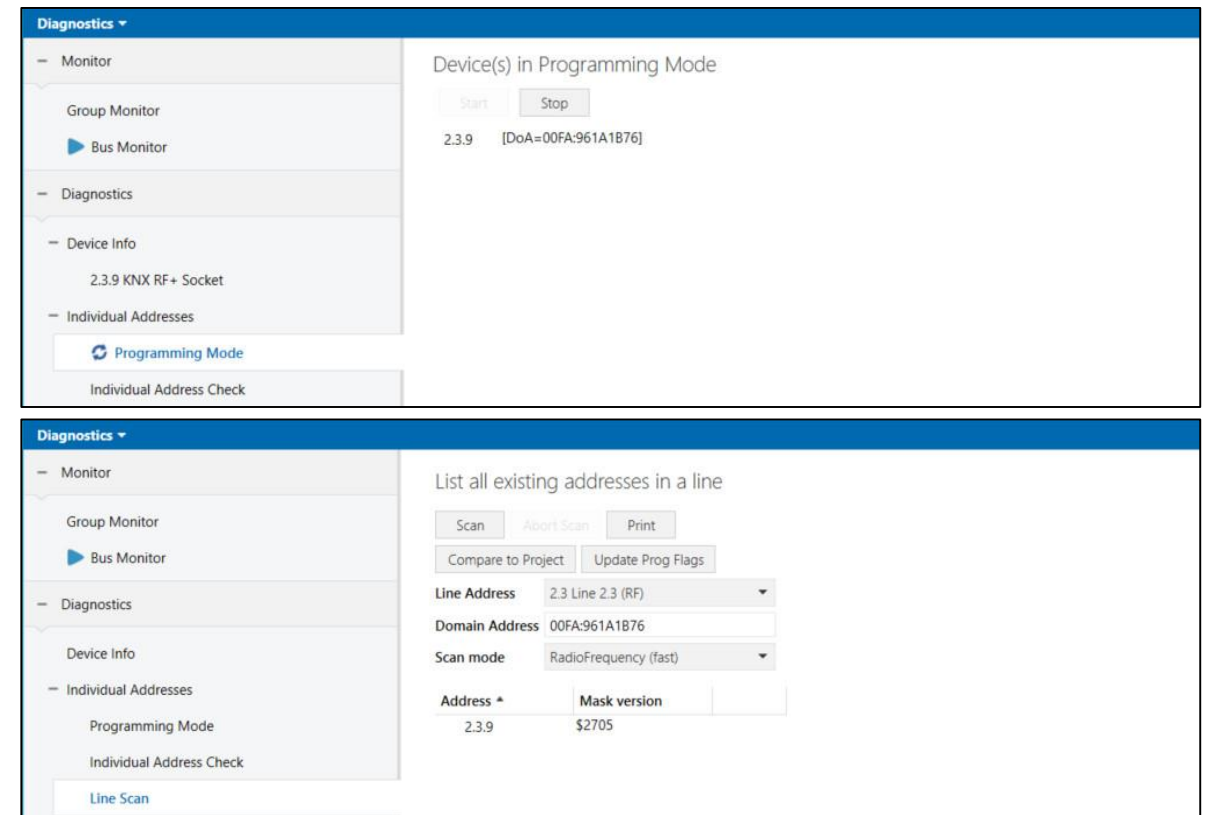
Webinar “KNX RF”

Commissioning

Commissioning of a pure KNX RF project

Example: RF Line 2.3.x

- Download
 - Individual address
 - Application (group addresses, program,...)
- Diagnostics
 - Group and bus monitor
 - Device in programming mode
 - Line scan
 - Device info
 - ...



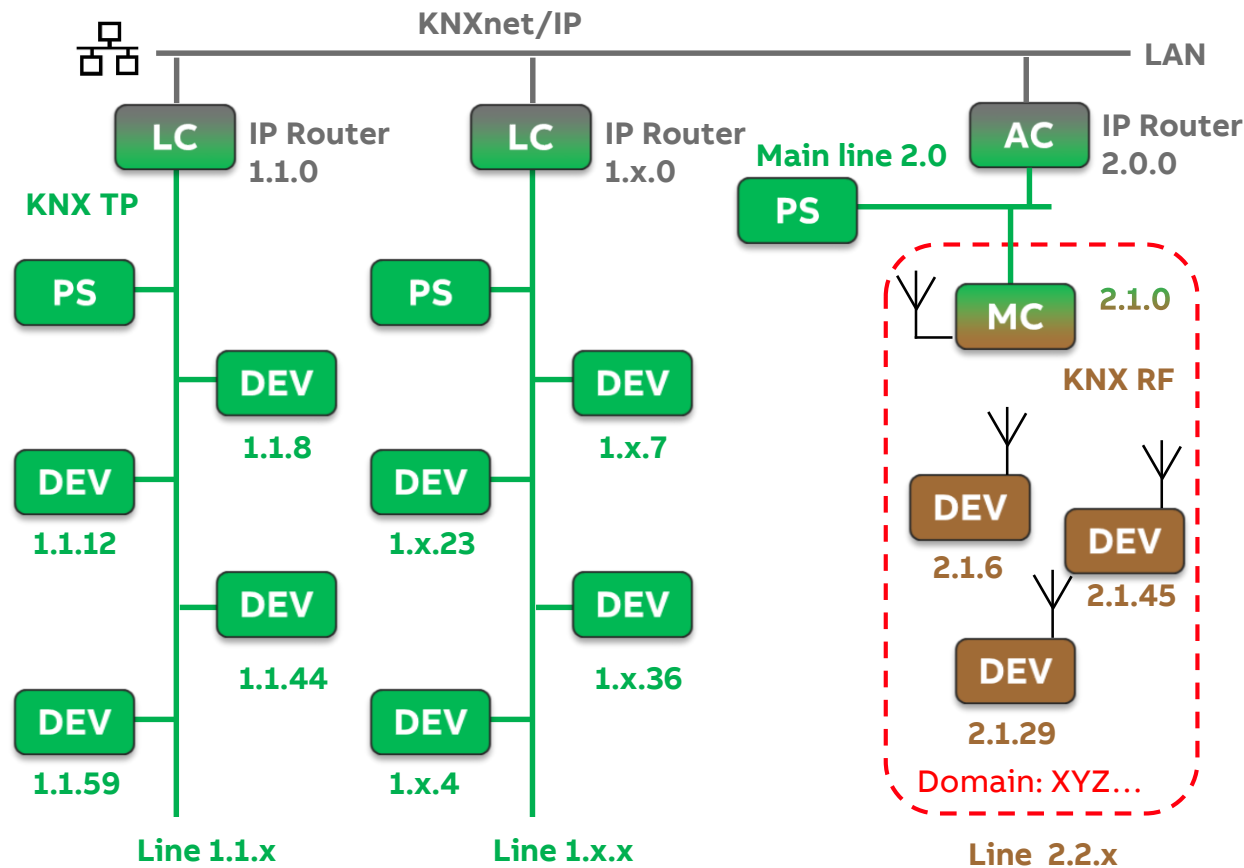
Webinar “KNX RF”

Commissioning

Commissioning of a mixed KNX RF, TP and IP project

An existing KNX TP / IP installation is expanded with an RF line

- The property of the Media Coupler is the same as that of a TP Line Coupler or IP Router (e.g. filter table entries)
→ only the media is different!
- An RF Media Coupler can be used as an
 - Area Coupler → Backbone and main line must be TP
 - Line coupler → Main line must be TP
 - Line repeater function is not yet supported
- There can only be one RF Media Coupler in a KNX RF line
- Regardless of the medium, all KNX devices (TP/RF/IP) can be downloaded using USB RF Interface, USB TP Interface or IP Router/Interface



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2.1.0 TP RF Media Coupler > Main Line (KNX TP)		
General	Telegram routing	<input type="text" value="configure"/>
Main Line (KNX TP)	Group telegrams: Main group 0...13	<input type="text" value="filter"/>
Subline (KNX RF)	Group telegrams: Main group 14...31	<input type="text" value="filter"/>
	Physical telegrams	<input type="text" value="filter"/>
	Physical telegrams: Repetition if errors on main line	<input type="text" value="up to 3 repetitions"/>
	Group telegrams: Repetition if errors on main line	<input type="text" value="up to 3 repetitions"/>
	Telegram confirmation on main line	<input checked="" type="radio"/> if routed <input type="radio"/> always
	Send confirmation on own telegrams	<input type="radio"/> yes <input checked="" type="radio"/> no

2.1.0 TP RF Media Coupler > Subline (KNX RF)		
General	Telegram routing	<input type="text" value="configure"/>
Main Line (KNX TP)	Group telegrams: Main group 0...13	<input type="text" value="filter"/>
Subline (KNX RF)	Group telegrams: Main group 14...31	<input type="text" value="filter"/>
	Physical telegrams	<input type="text" value="filter"/>
	Configuration from subline (KNX RF)	<input checked="" type="radio"/> allow <input type="radio"/> block

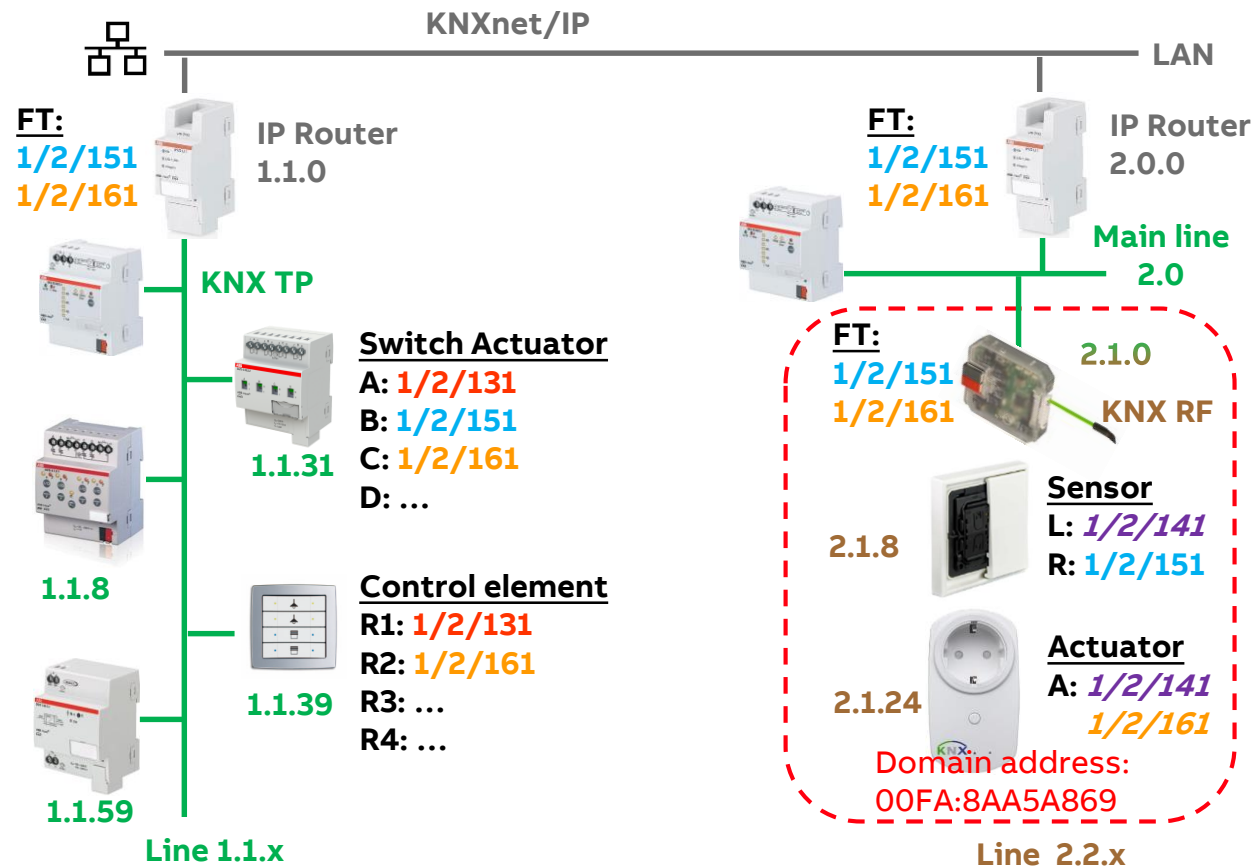
Webinar “KNX RF”

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Webinar “KNX RF”

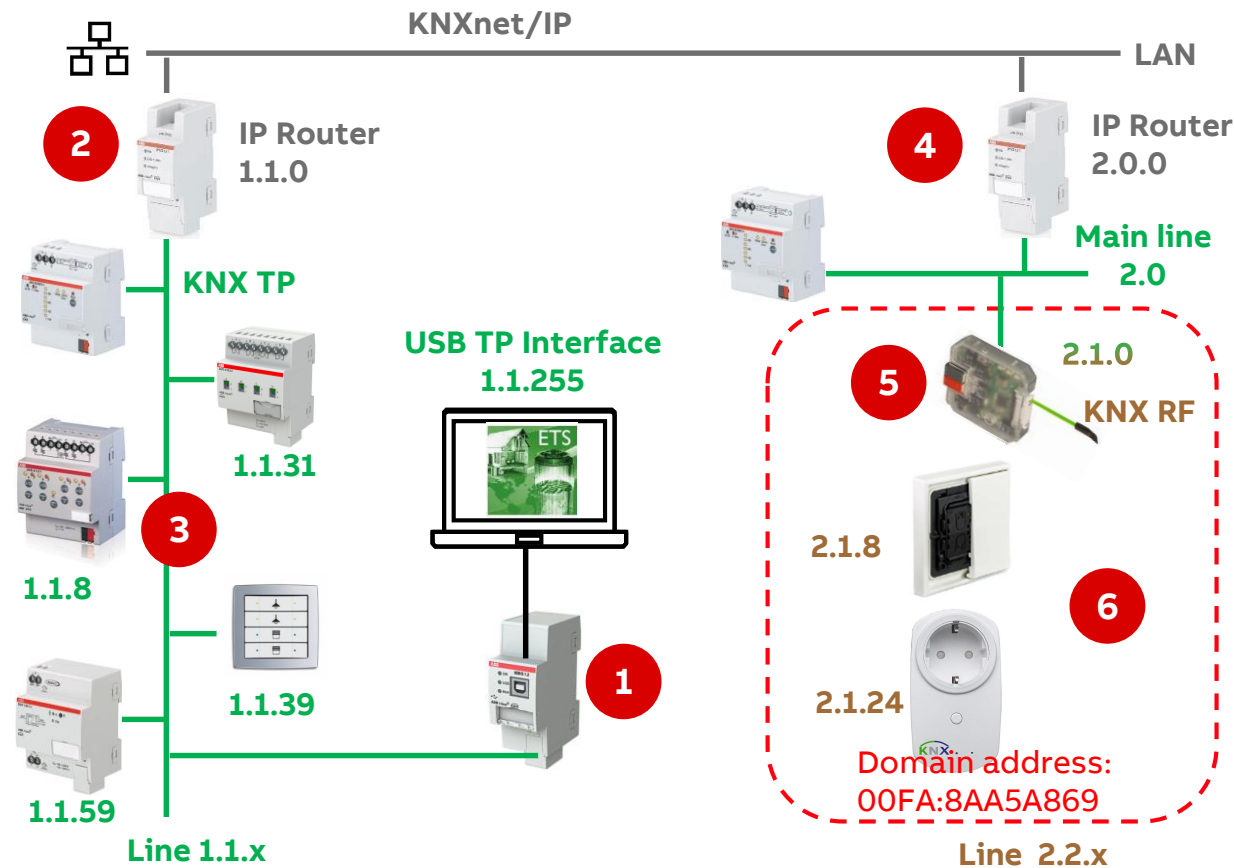
Commissioning

Commissioning of a mixed KNX RF, TP and IP project

Regardless of the medium, all KNX devices (TP/RF/IP) can be downloaded using USB RF Interface, USB TP Interface or IP Router/Interface

USB TP Interface

- ETS: Bus → Interfaces
Set local address to e.g. 1.1.255
- Download IP Router 1.1.0
- Download all devices in TP line 1.1.x
- Download IP Router 2.0.0
- Download Media Coupler 2.1.0
- Download all devices in RF line 2.1.x
- ...



Webinar “KNX RF”

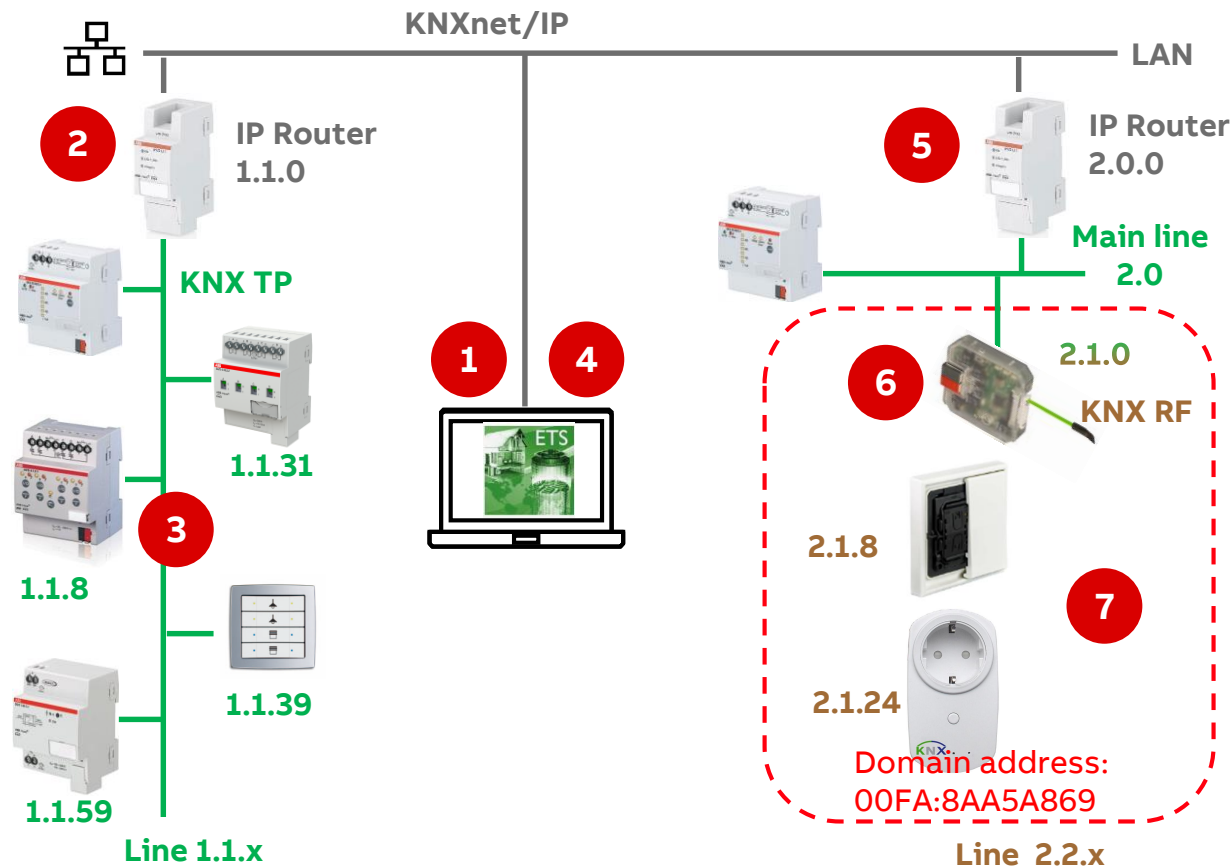
Commissioning

Commissioning of a mixed KNX RF, TP and IP project

Regardless of the medium, all KNX devices (TP/RF/IP) can be downloaded using USB RF Interface, USB TP Interface or IP Router/Interface

IP Router/Interface

- ETS: Bus → Interfaces
Select IP Router 1.1.0 and set local address to e.g. 1.1.251
- Download IP Router 1.1.0
- Download all devices in TP line 1.1.x
- Bus → Interfaces:
Select IP Router 2.0.0 and set local address to e.g. 2.0.251
- Download IP Router 2.0.0
- Download Media Coupler 2.1.0
- Download all devices in RF line 2.1.x
- ...



Webinar “KNX RF”

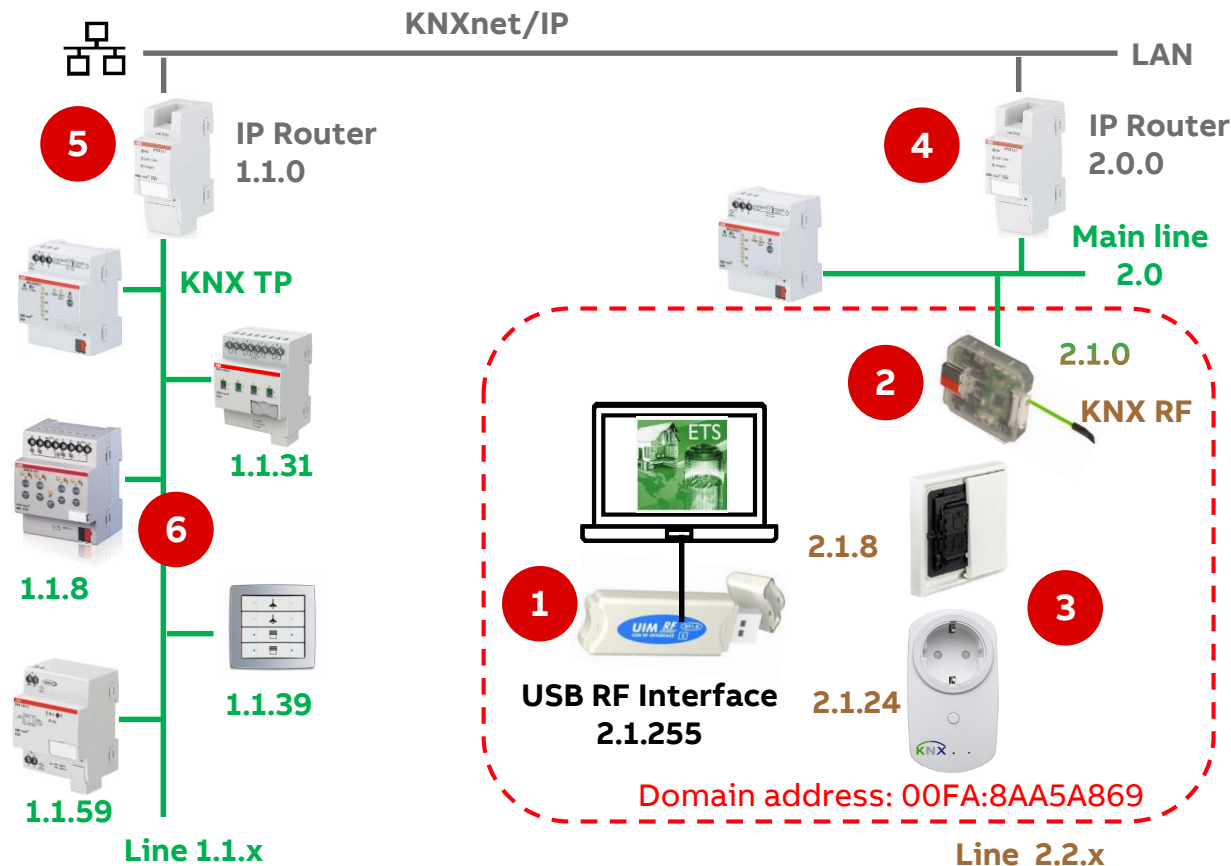
Commissioning

Commissioning of a mixed KNX RF, TP and IP project

Regardless of the medium, all KNX devices (TP/RF/IP) can be downloaded using USB RF Interface, USB TP Interface or IP Router/Interface

USB RF Interface

- ETS: Bus → Interfaces
Set local address to e.g. 2.1.255 and enter domain address of USB RF Interface
- Download Media Coupler 2.1.0
- Download all devices in RF line 2.1.x
- Download IP Router 2.0.0
- Download IP Router 1.1.0
- Download all devices in TP line 1.1.x
- ...



Webinar “KNX RF”

Commissioning

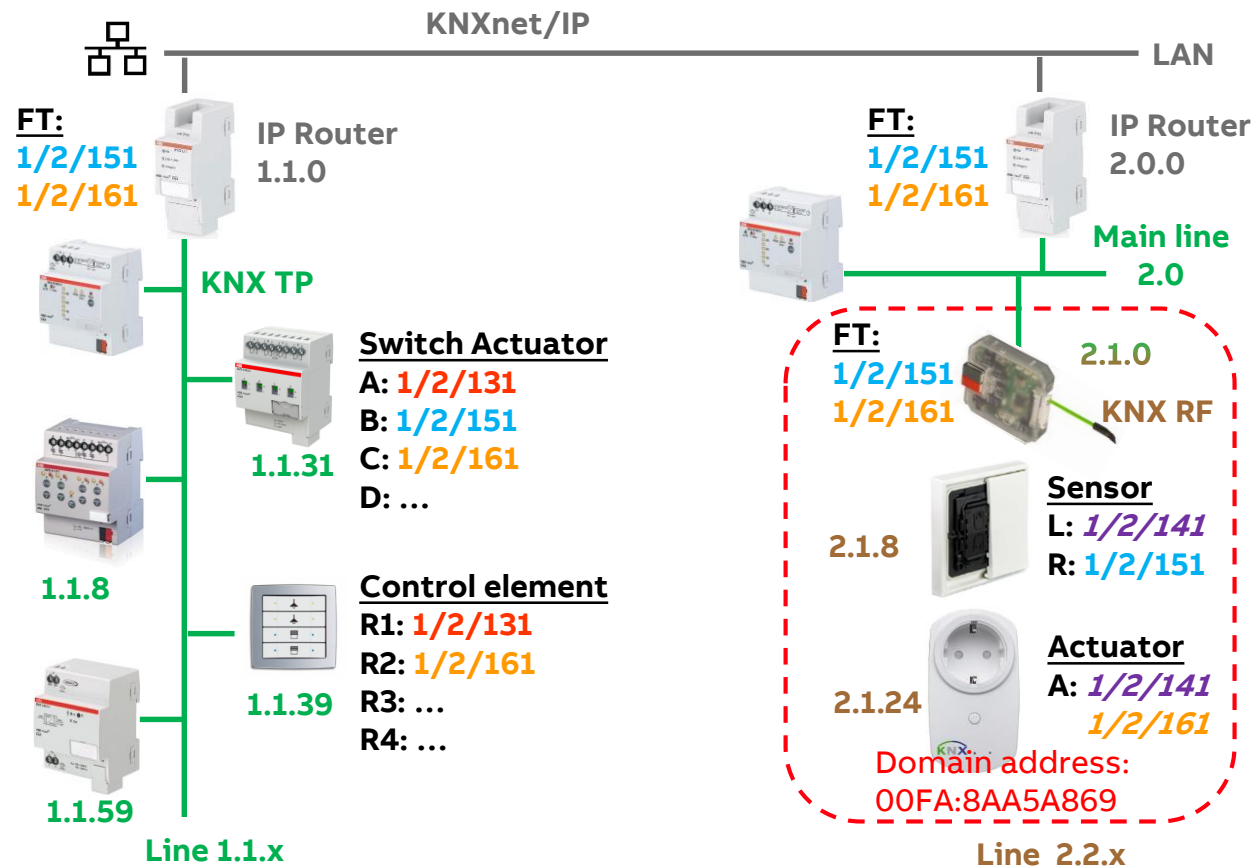
Commissioning of a mixed KNX RF, TP and IP project

Filter table entries

- Filter table (group addresses) automatically calculated by ETS
 - IP Router
 - Line Coupler
 - Media Coupler

Do not forget:

- The corresponding couplers must also be downloaded when changes are made
 - Update filter table entries



Webinar “KNX RF”

Commissioning

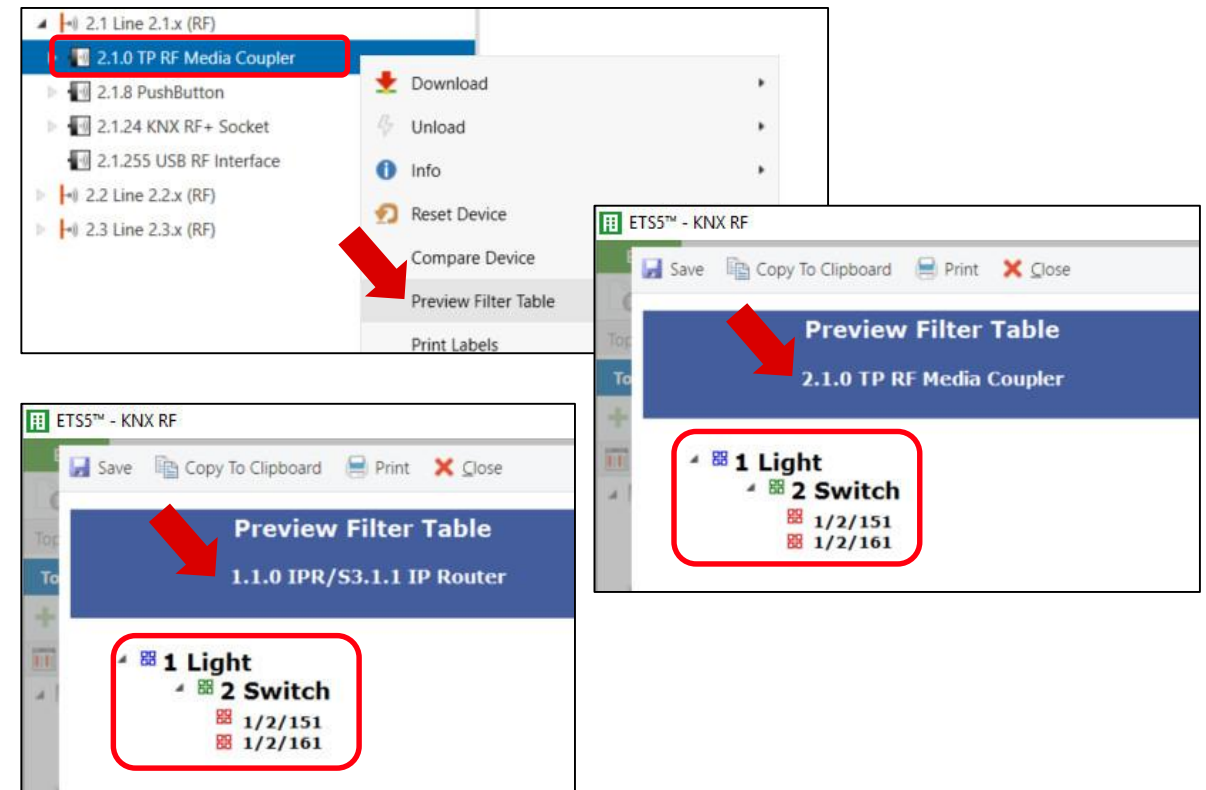
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Webinar “KNX RF”

Commissioning

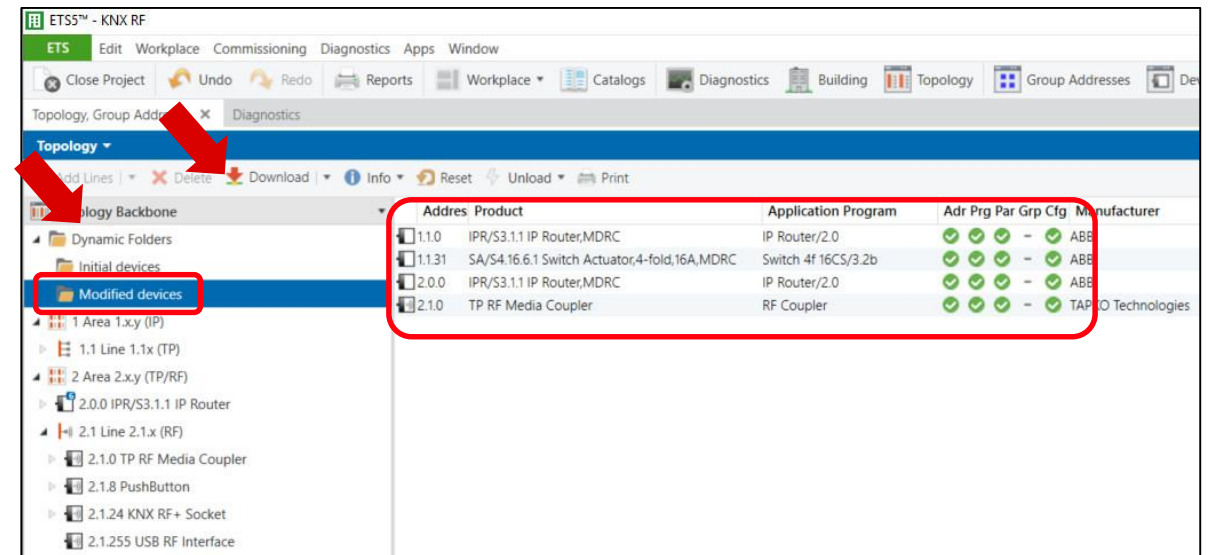
Commissioning of a mixed KNX RF, TP and IP project

Filter table entries

- Filter table (group addresses) automatically calculated by ETS
 - IP Router
 - Line Coupler
 - Media Coupler

Do not forget:

- The corresponding couplers must also be downloaded when changes are made
 - Update filter table entries
- ETS → Dynamic folders → Modified devices → Download ...



Webinar “KNX RF”

Commissioning

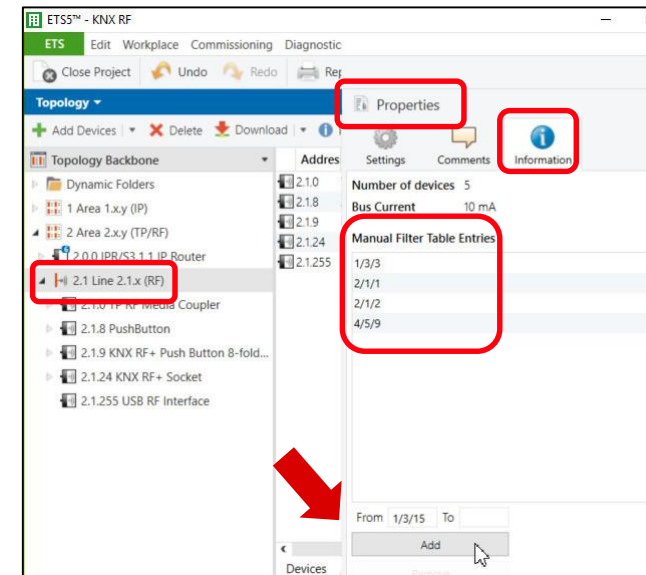
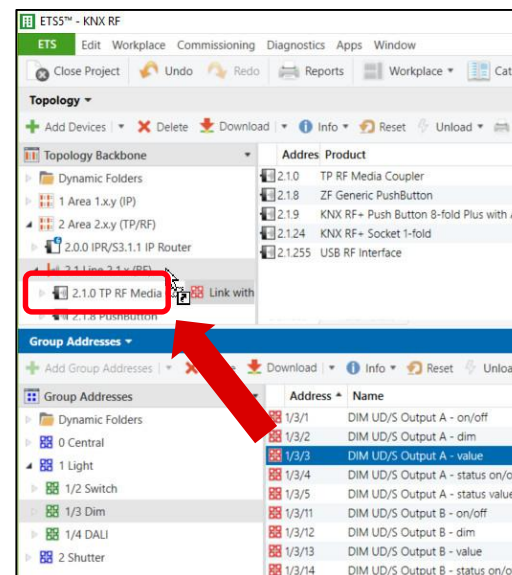
Commissioning of a mixed KNX RF, TP and IP project

Manual filter table entries

- As with the Line Coupler or IP Router, group addresses can also be added manually to the filter tables (e.g. visualization)
 - Drag and drop the group address(es) onto the Media Coupler or
 - Select Media Coupler → Properties → Information and enter the group address(es)

Do not forget:

- The corresponding couplers must also be downloaded when changes are made
→ Update filter table entries
- ETS → Dynamic folders → Modified devices → Download ...



Webinar “KNX RF”

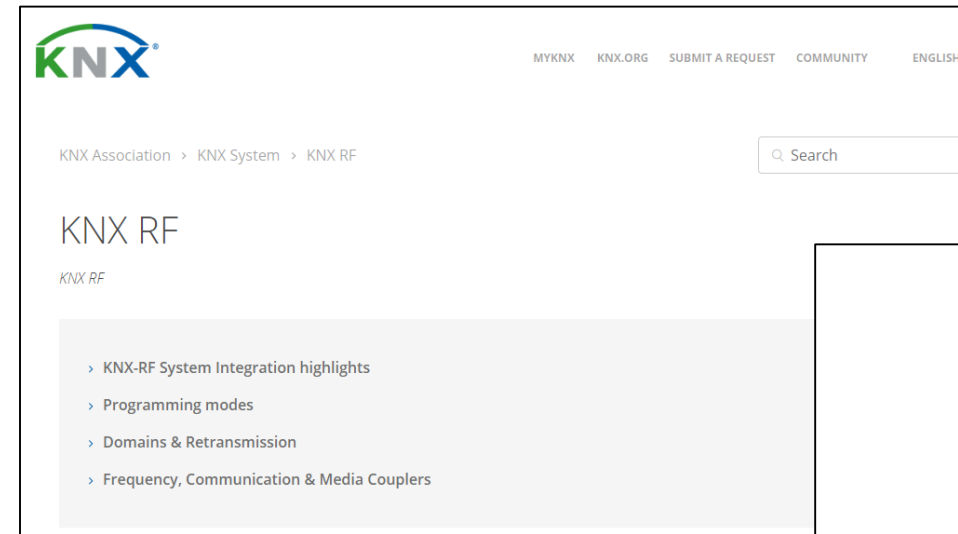
Further information (documentation, videos, brochures, ...)

Webinar “KNX RF”

Further information (documentation, videos, brochures, ...)

KNX Association

- www.knx.org → Support → KNX System → KNX RF ([Link →](#))
- Flyer “KNX Radio Frequency (KNX RF) Products”



Webinar “KNX RF”

Further information (documentation, videos, brochures, ...)

Webinar recordings on YouTube

- “KNX RF battery-less and seamless integration” ENG, KNX Assoc.
<https://www.youtube.com/watch?v=u9aeSnJ8hEE>
- „KNX RF Webinar“ ENG, KNX Association
https://www.youtube.com/watch?v=_RVWTOW2dzU
- „KNX RF & KNX Secure, the perfect symbiosis“ ENG, KNX Assoc.
https://www.youtube.com/watch?v=4H_Q5KHQ4EU
- “KNX RF Harvesting Webinar” ENG, KNX Association
<https://www.youtube.com/watch?v=5XzjVY312nU>
- “SMART FACTS | ZF AFIM-1010 KNX RF Tastsensor”, GER, Voltus
<https://www.youtube.com/watch?v=zpOh539vf-M>
- “ZF Energy Harvesting Wireless Switches” ENG ZF Group
<https://www.youtube.com/watch?v=AP8AY6xitpY>

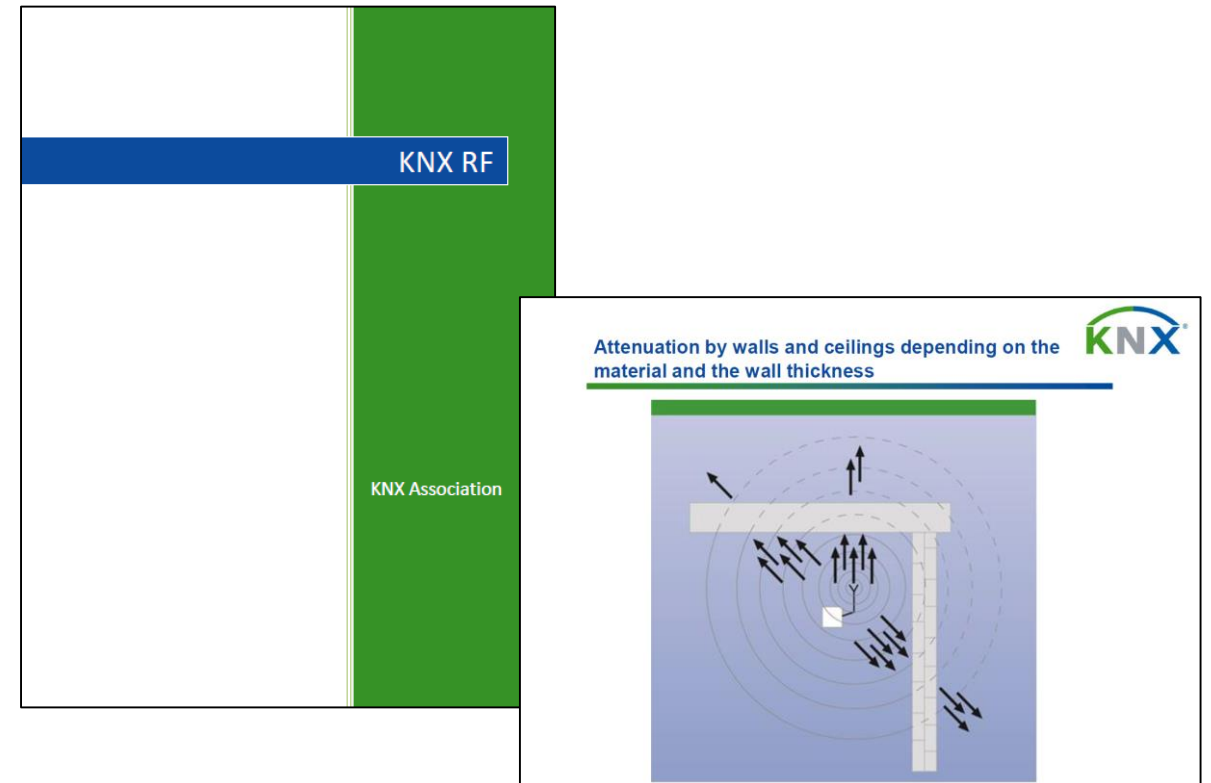


Webinar “KNX RF”

Further information (documentation, videos, brochures, ...)

Training documents for Certified Training Centers

- KNX RF is mandatory for KNX Training Centers (Certified Basic Course)
- The PowerPoint Presentation and Word Document can be downloaded from the Training Center account



Webinar “KNX RF”

Further information (documentation, videos, brochures, ...)

KNX RF Set for KNX Training Centers

- KNX RF becomes mandatory for certified KNX training centers (Mail “KNX Training Centre eNews - May 2020”)
- A certified KNX training centers must have at least one KNX RF S-Mode sensor and a KNX TP/RF Media coupler
- KNX RF is part of the certified basic course
- TAPKO Technologies GmbH offers a training set
 - All ABB certified KNX training will be informed shortly about a coordinated package
- Recommendation
 - KNX/RF media coupler to TP
 - KNX/RF-USB programming interface
 - 2-way push button module
 - Battery adapter for push button module
 - Mounting set for RF push button modules
 - KNX RF socket outlet adapter



Webinar “KNX RF”

Webinar “KNX RF”

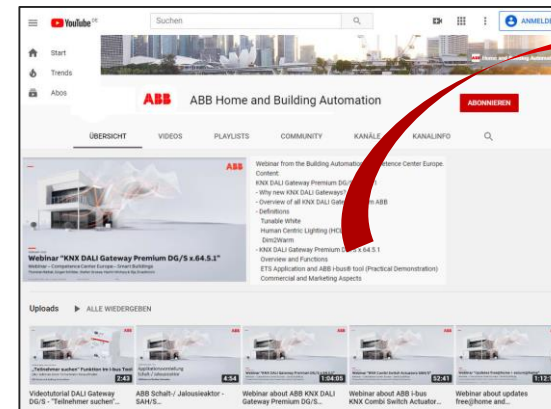
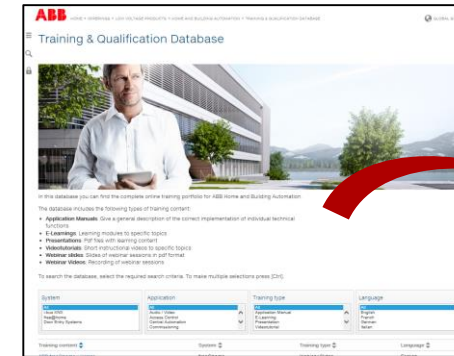
Training Material

Training & Qualification Database

- The database contains extensive training content
 - Presentations
 - Video tutorials
 - Webinar slides and videos
 - and more ...
- <https://go.abb/ba-training>
- www.abb.com/knx (→ Services & Tools → Training and Qualification → Training Database)

YouTube

- Channel “ABB Home and Building Automation”
 - <https://www.youtube.com/user/ABBibusKNX>



Webinar “KNX RF”

Training & Qualification Calendar

In addition to the online modules and the traditional training programs offered by your local ABB sales team, we offer a variety of on-site trainings conducted by our specialists at different ABB training facilities

In this Training & Qualification Calendar you can find the educational events that are taking place during 2020

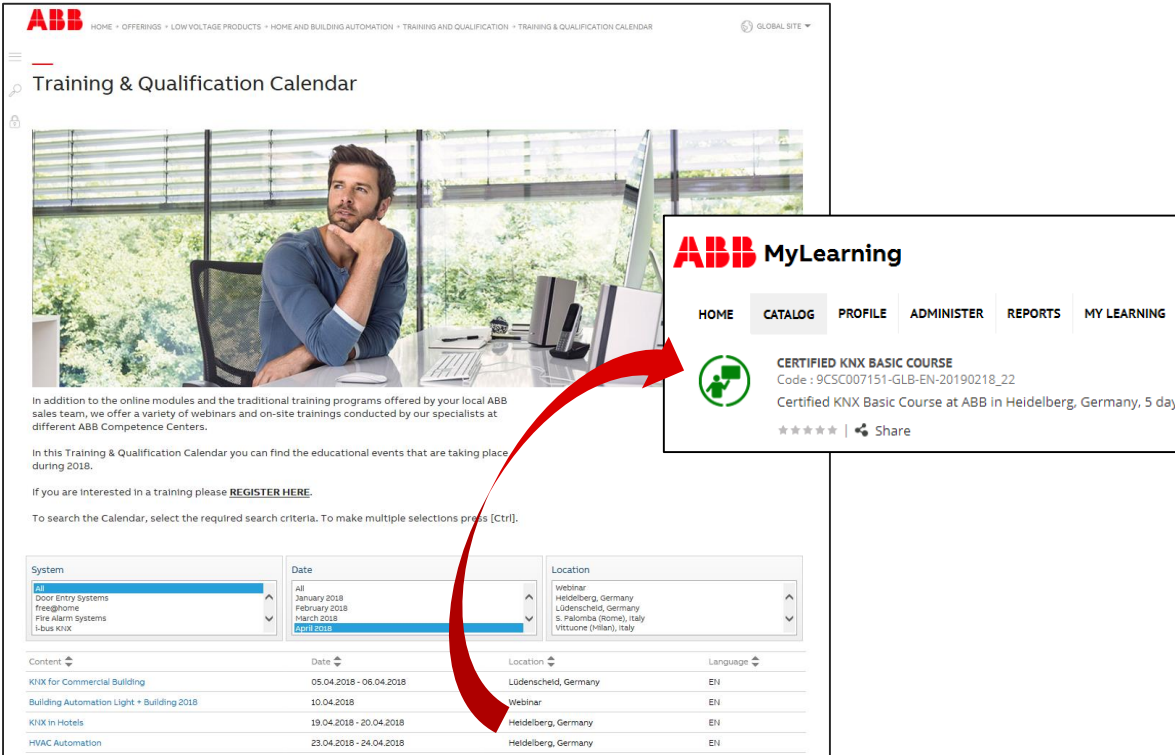
If you are interested in a training please click the training und you will be forwarded to register in “ABB MyLearning”

www.abb.com/knx or <https://go.abb/ba-training>

→ Services & Tools

→ Training and Qualification

→ Training Calendar



System	Date	Location
ABB	all	webinar:
Door Entry Systems	January 2018	Heidelberg, Germany
Fire alarm Systems	February 2018	Lödenscheid, Germany
I-bus KNX	March 2018	S. Palomba (Rome), Italy
	April 2018	Vittuone (Milan), Italy

Content	Date	Location	Language
KNX for Commercial Building	05.04.2018 - 06.04.2018	Lödenscheid, Germany	EN
Building Automation Light + Building 2018	10.04.2018	Webinar	EN
KNX in Hotels	19.04.2018 - 20.04.2018	Heidelberg, Germany	EN
HVAC Automation	23.04.2018 - 24.04.2018	Heidelberg, Germany	EN

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