



APRIL 2020

# KNX ETS5 and Group Addresses

Online Learning Session – Competence Center Europe – Smart Buildings

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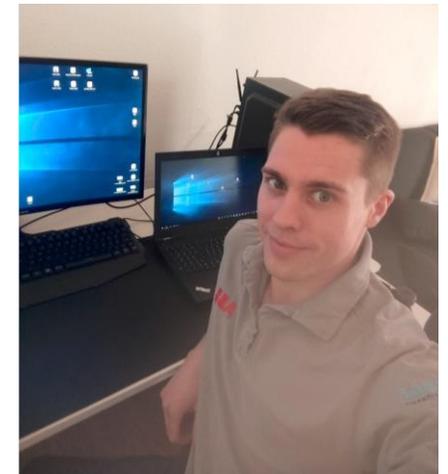
# Online Learning Session – Competence Center Europe - Smart Buildings

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**From home office to home office**



ABB STOTZ-KONTAKT GmbH  
Heidelberg / Germany



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# Agenda

Introduction group addresses

Free group address style in ETS

Conversion between levels

Export group address, generate conveniently outside ETS and re-imported again

Broadcast group address

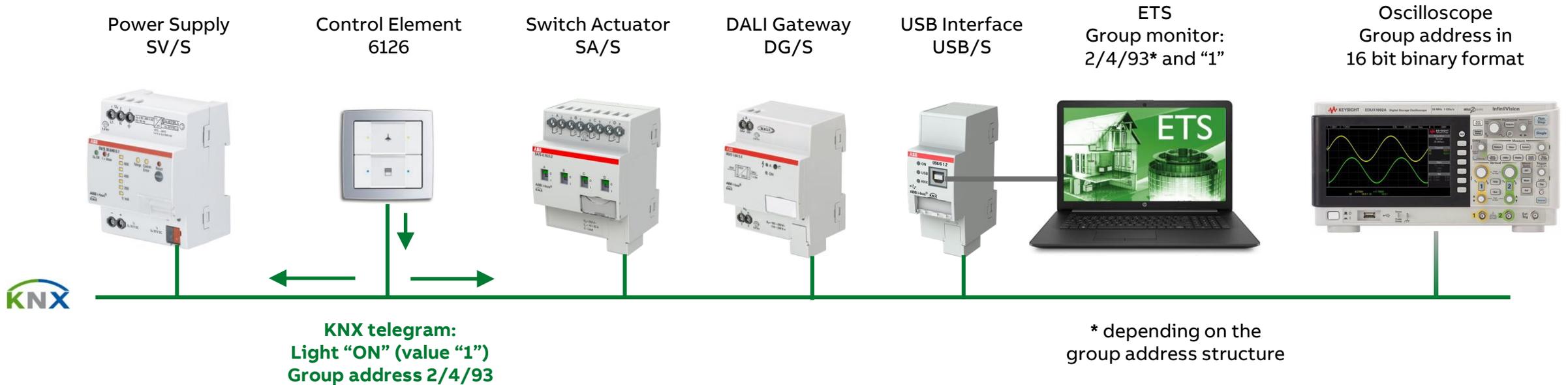
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# KNX ETS5 and Group Addresses

Online Learning Session

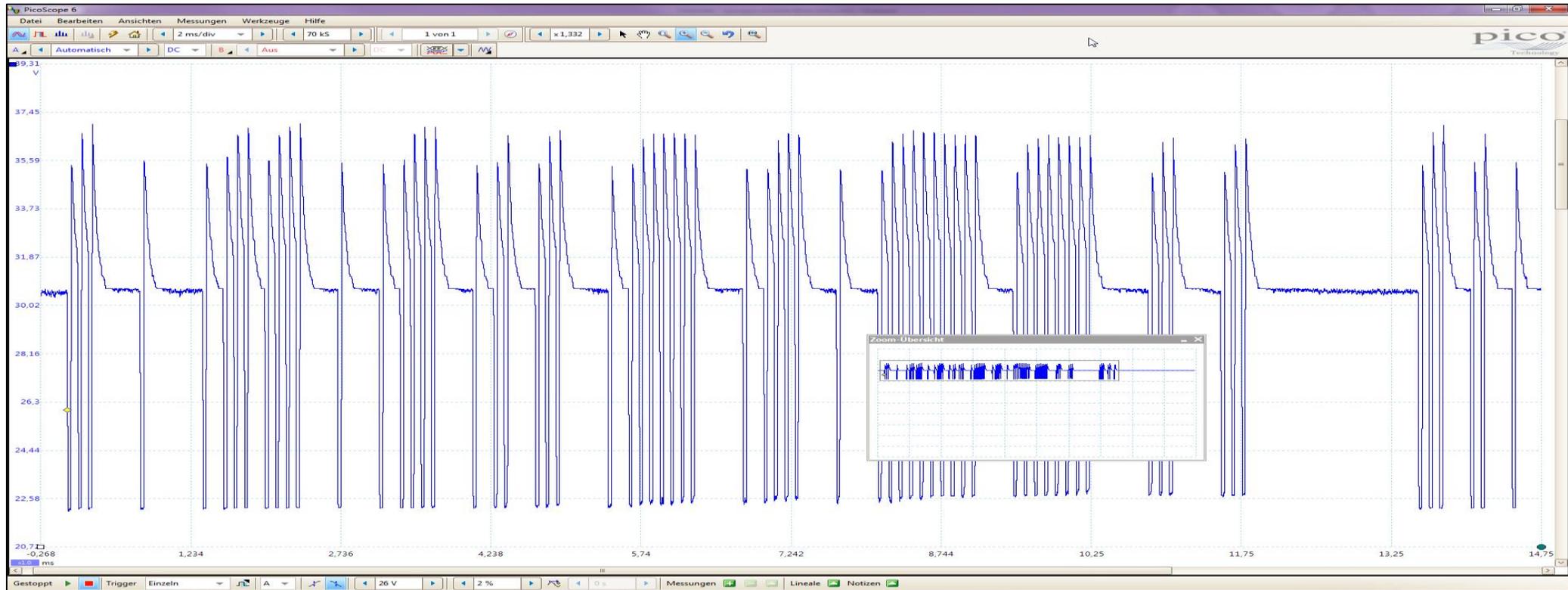
# KNX ETS5 and Group Addresses

## Sending a KNX telegram



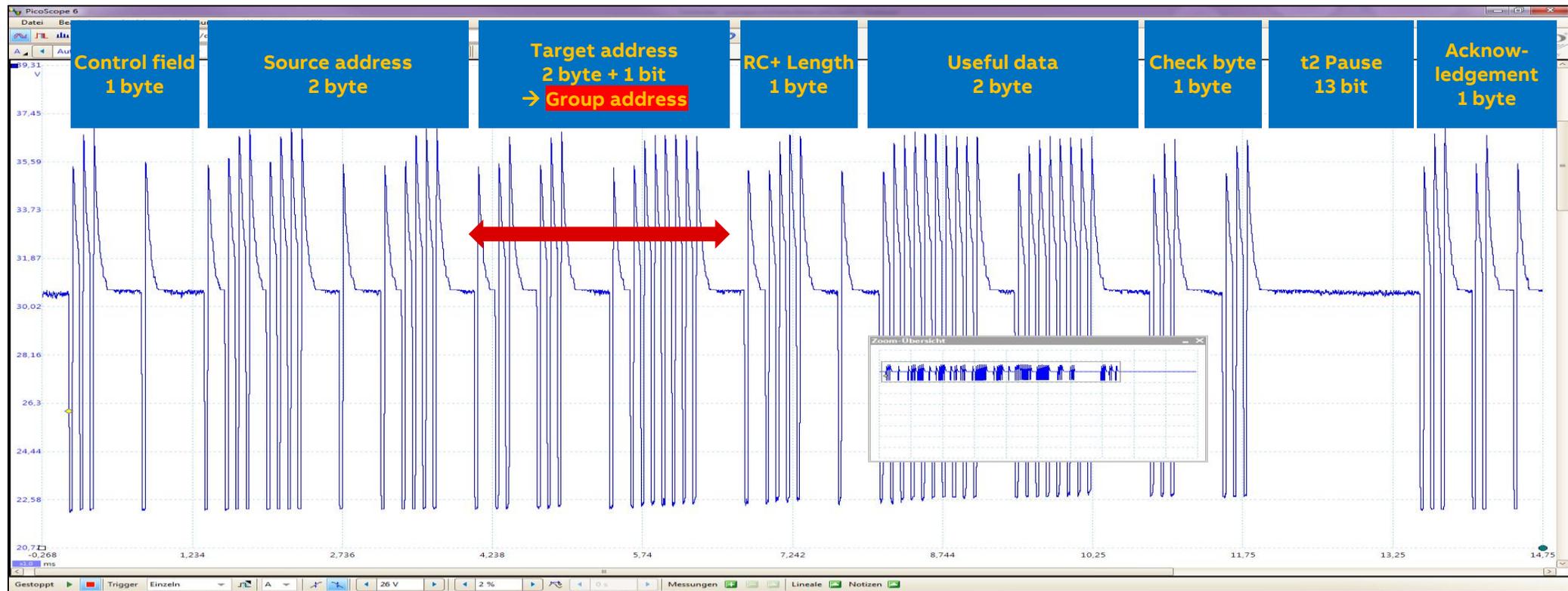
# KNX ETS5 and Group Addresses

## Complete KNX Telegram (sequence of characters)



# KNX ETS5 and Group Addresses

Complete KNX Telegram (sequence of characters) → Group address is transmitted in 16 bit binary format



# KNX ETS5 and Group Addresses

**Complete KNX Telegram (sequence of characters) → Group address is transmitted in 16 bit binary format**



Target address

- Normally a group address (connectionless)
- Bit after target address defines the type of the target address

Number of group addresses

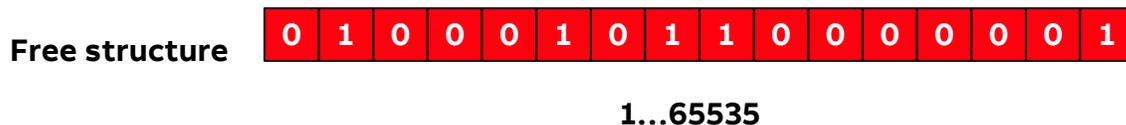
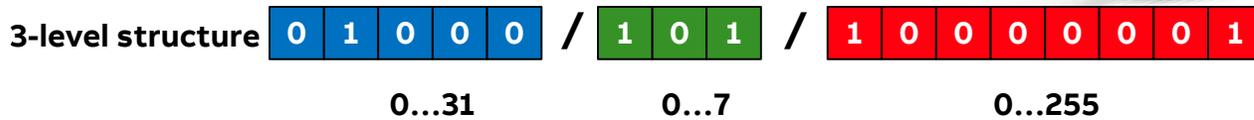
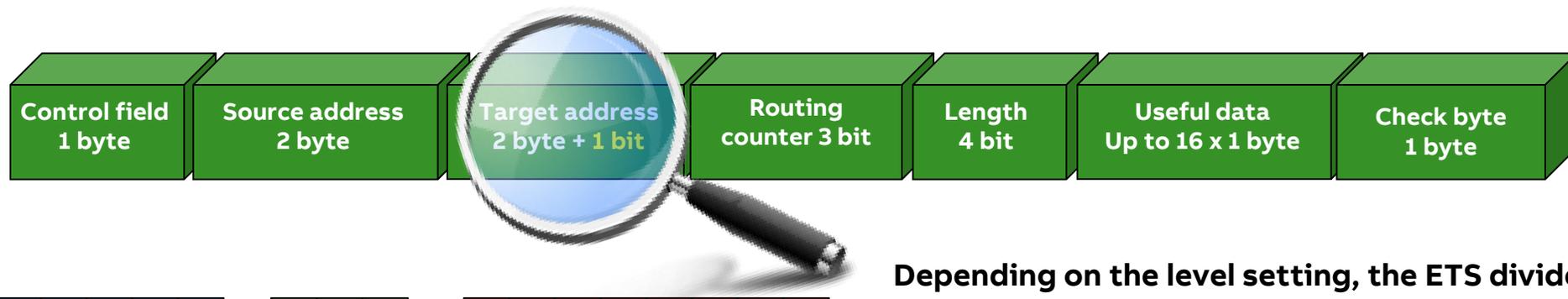
- 16 bit → max. 65,535 (as from ETS 4)

**Classification in levels (2-level, 3-level or free)**

- **For a better visual representation in ETS, Visu, ...**
- **Group addresses are always transmitted and stored in 16 bit binary format in devices (no levels!)**

# KNX ETS5 and Group Addresses

Complete KNX Telegram (sequence of characters) → Group address is transmitted in 16 bit binary format



Depending on the level setting, the ETS divides the 16 bits into:

- 3-level: Main group 5 bits / middle group 3 bits / group address 8 bits  
8/5/129
- 2-level: Main group 5 bits / group address 11 bits  
8/1409
- Free: 16 bits  
17793

# KNX ETS5 and Group Addresses

## General

Up to 65,535 different group addresses can be assigned in one project (ETS1 to ETS3 max. 32,767)

Almost always only the 3-level structure is used → fixed range

The levels can be divided as required

- Main group “floors”, middle group “trades” (light, shutter, ...)
- Main group trades (light, shutter,...), middle group floors

It should contain abbreviations with all the necessary information about

- Location of the function, e.g. Building-floor-room
- Controlled equipment or equipment group (e.g. Light 1)
- Type of function (e.g. dimming, switching, value, shutter)  
→ Example: ToWi\_FI3\_Guest\_3-021\_light bed on/off means “Tower Wing, 3rd floor, guest room 321, light bed on or off”

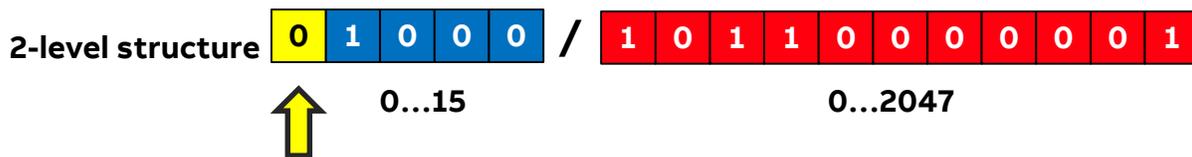
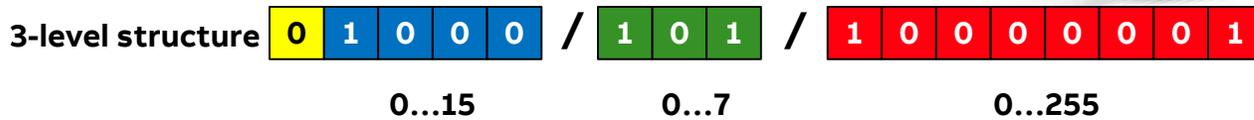
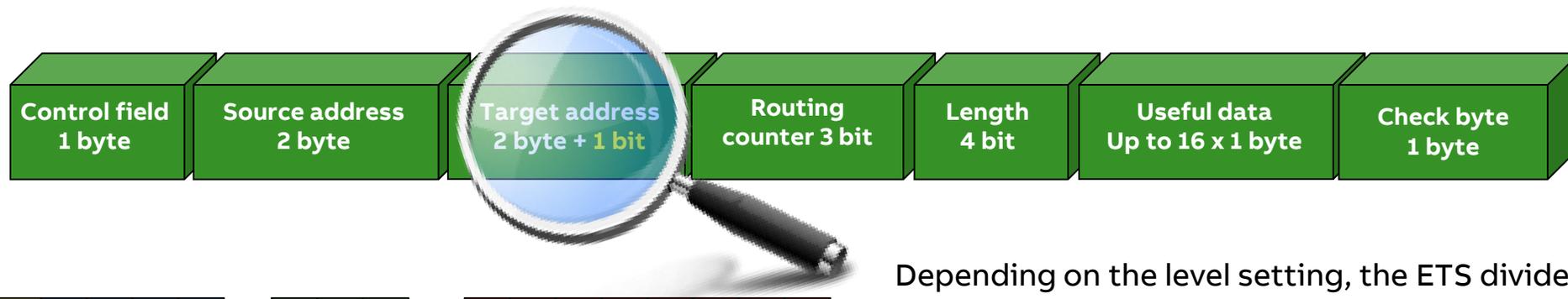
| Group Addresses               | Address | Name  |
|-------------------------------|---------|---|
| Dynamic Folders               |         |   |
| 0 Central Floor No. 01 - 26   | 3/1/1   | Tower/Floor No. 03 Guestroom 3-001 light main room on/off           |
| 1 Floor No. 01 - Basement     | 3/1/2   | Tower/Floor No. 03 Guestroom 3-001 light main room dim              |
| 2 Floor No. 02 - Ground floor | 3/1/3   | Tower/Floor No. 03 Guestroom 3-001 light main room value            |
| 3 Floor No. 03 - Guest rooms  | 3/1/4   | Tower/Floor No. 03 Guestroom 3-001 light main room status on/off    |
| 3/0 Central                   | 3/1/5   | Tower/Floor No. 03 Guestroom 3-001 light main room status value     |
| 3/1 Light                     | 3/1/11  | Tower/Floor No. 03 Guestroom 3-001 light bathroom on/off            |
| 3/2 Shutter and blinds        | 3/1/14  | Tower/Floor No. 03 Guestroom 3-001 light bathroom status on/off     |
| 3/3 Heating and cooling       | 3/1/21  | Tower/Floor No. 03 Guestroom 3-001 light bedside left on/off        |
| 3/4 Security                  | 3/1/22  | Tower/Floor No. 03 Guestroom 3-001 light bedside left dim           |
| 3/5 Energy management         | 3/1/23  | Tower/Floor No. 03 Guestroom 3-001 light bedside left value         |
| 3/6 ...                       | 3/1/24  | Tower/Floor No. 03 Guestroom 3-001 light bedside left status on/off |
| 3/7 Miscellaneous             | 3/1/25  | Tower/Floor No. 03 Guestroom 3-001 light bedside left status value  |
|                               | 3/1/31  | Tower/Floor No. 03 Guestroom 3-001 light bedside right on/off       |
|                               | 3/1/32  | Tower/Floor No. 03 Guestroom 3-001 light bedside right dim          |
|                               | 3/1/33  | Tower/Floor No. 03 Guestroom 3-001 light bedside right value        |

| Group Addresses                 | Address | Name  |
|---------------------------------|---------|---|
| Dynamic Folders                 |         |   |
| 0 Central                       | 1/3/1   | Tower/Floor No. 03 Guestroom 3-001 light main room on/off           |
| 1 Light                         | 1/3/2   | Tower/Floor No. 03 Guestroom 3-001 light main room dim              |
| 1/1 Floor No. 01 - Basement     | 1/3/3   | Tower/Floor No. 03 Guestroom 3-001 light main room value            |
| 1/2 Floor No. 02 - Ground floor | 1/3/4   | Tower/Floor No. 03 Guestroom 3-001 light main room status on/off    |
| 1/3 Floor No. 03 - Guest rooms  | 1/3/5   | Tower/Floor No. 03 Guestroom 3-001 light main room status dim       |
| 1/4 Floor No. 04 - Guest rooms  | 1/3/11  | Tower/Floor No. 03 Guestroom 3-001 light bathroom on/off            |
| 1/5 Floor No. 05 - Guest rooms  | 1/3/15  | Tower/Floor No. 03 Guestroom 3-001 light bathroom status on/off     |
| 1/6 ...                         | 1/3/21  | Tower/Floor No. 03 Guestroom 3-001 light bedside left on/off        |
| 2 Shutter and blinds            | 1/3/22  | Tower/Floor No. 03 Guestroom 3-001 light bedside left dim           |
| 3 Heating and cooling           | 1/3/23  | Tower/Floor No. 03 Guestroom 3-001 light bedside left value         |
| 4 Security                      | 1/3/24  | Tower/Floor No. 03 Guestroom 3-001 light bedside left status on/off |
|                                 | 1/3/25  | Tower/Floor No. 03 Guestroom 3-001 light bedside left status dim    |
|                                 | 1/3/31  | Tower/Floor No. 03 Guestroom 3-001 light bedside right on/off       |
|                                 | 1/3/32  | Tower/Floor No. 03 Guestroom 3-001 light bedside right dim          |

# KNX ETS5 and Group Addresses

ETS1, 2 and 3 – 15 bit address range → max. 32,767 group addresses



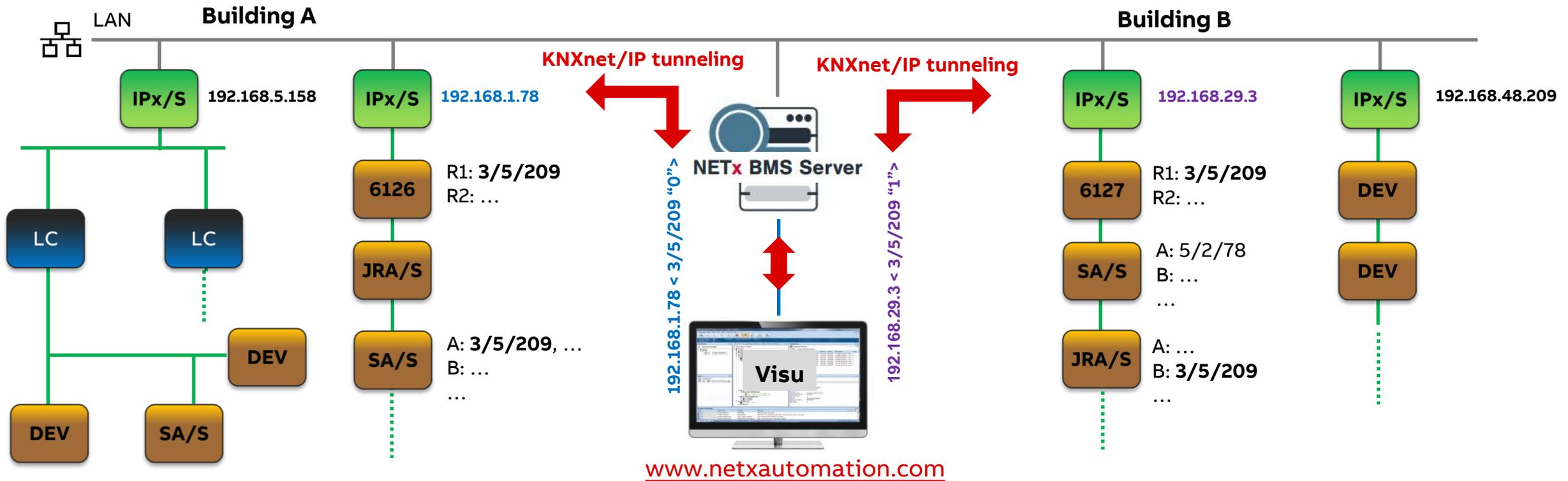
↑  
Bit not used – always “0”

Depending on the level setting, the ETS divides the 15 bits into:

- 3-level: Main group 4 bits / middle group 3 bits / group address 8 bits  
8/5/129
- 2-level: Main group 4 bits / group address 11 bits  
8/1409

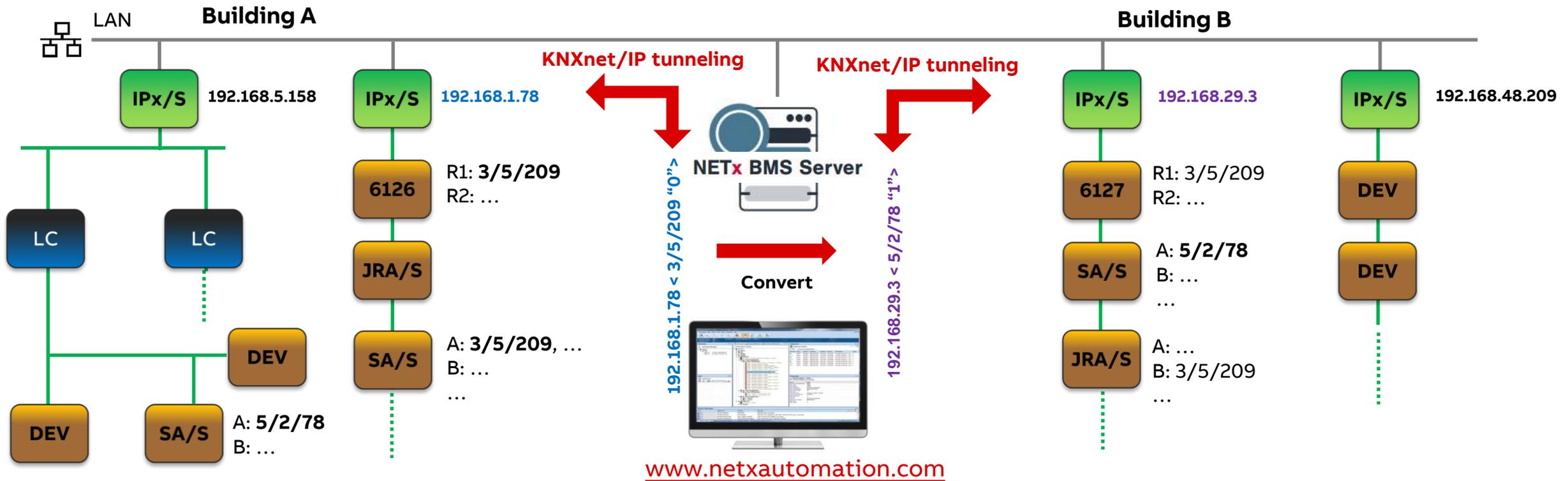
# KNX ETS5 and Group Addresses

More than 65,535 group addresses: BMS Server → Tunneling connections to IP Router IPR/S or IP Interface IPS/S  
Group address 3/5/209 is used in building A and B → The added IP address means that they do not influence each other



# KNX ETS5 and Group Addresses

More than 65,535 group addresses: BMS Server → Tunneling connections to IP Router IPR/S or IP Interface IPS/S  
“3/5/209 building A” is converted into “5/2/78 building B” → No influence to 5/2/78 “building A”



# KNX ETS5 and Group Addresses

## KNX Project Preparation of the KNX Assoc.

The project guidelines support KNX partners in realizing their systems in a clear and structured manner

They contain important basics and ideas for a successful project design

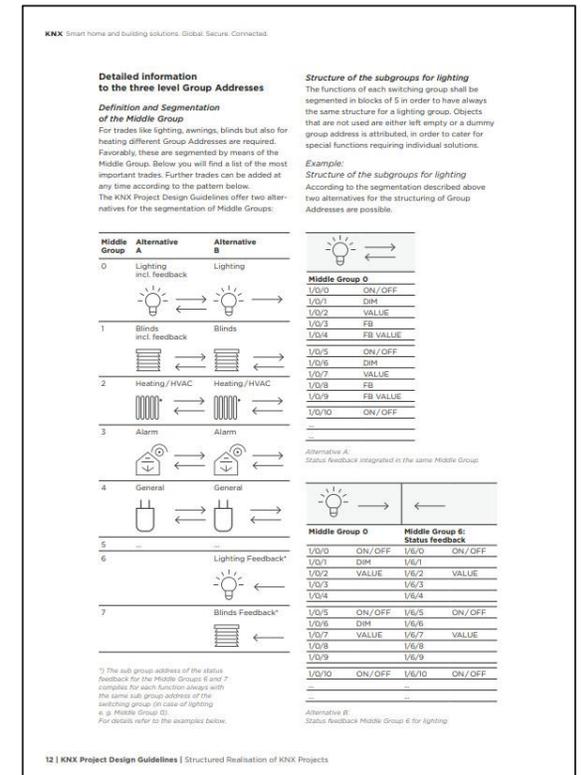
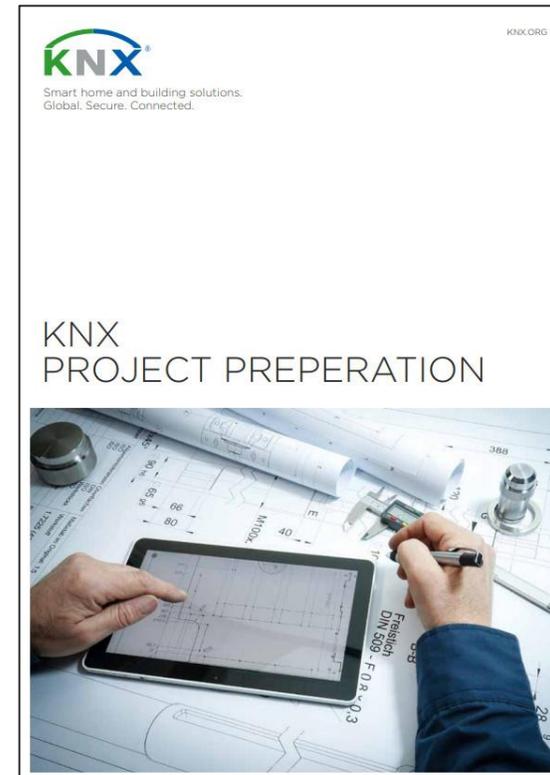
This helps newcomers as well as companies who are already familiar with system integration

The structuring of a KNX system is an important factor for the successful completion of a project

- Project structuring
- Structure of the group addresses
- Standardized description

[www.knx.org](http://www.knx.org) → For professionals → Downloads → Marketing → Flyers → KNX-Project-Preparation

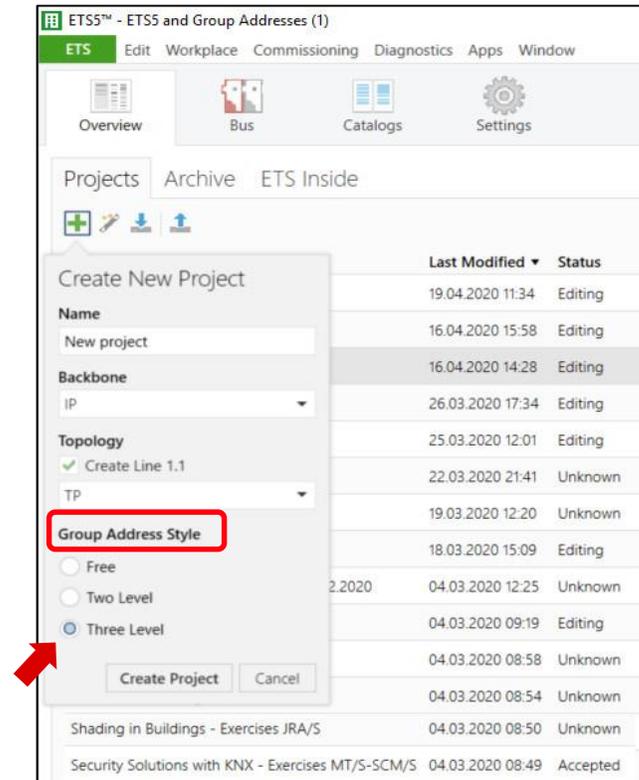
[https://www.knx.org/wAssets/docs/downloads/Marketing/Flyers/KNX-Project-Preparation/KNX-Project-Preparation\\_en.pdf](https://www.knx.org/wAssets/docs/downloads/Marketing/Flyers/KNX-Project-Preparation/KNX-Project-Preparation_en.pdf)



# KNX ETS5 and Group Addresses

## ETS – create a new project

- Name
- Backbone
- Topology
- Group address style
  - Free
  - Two level
  - Three level (default)



# KNX ETS5 and Group Addresses

## Free group address style

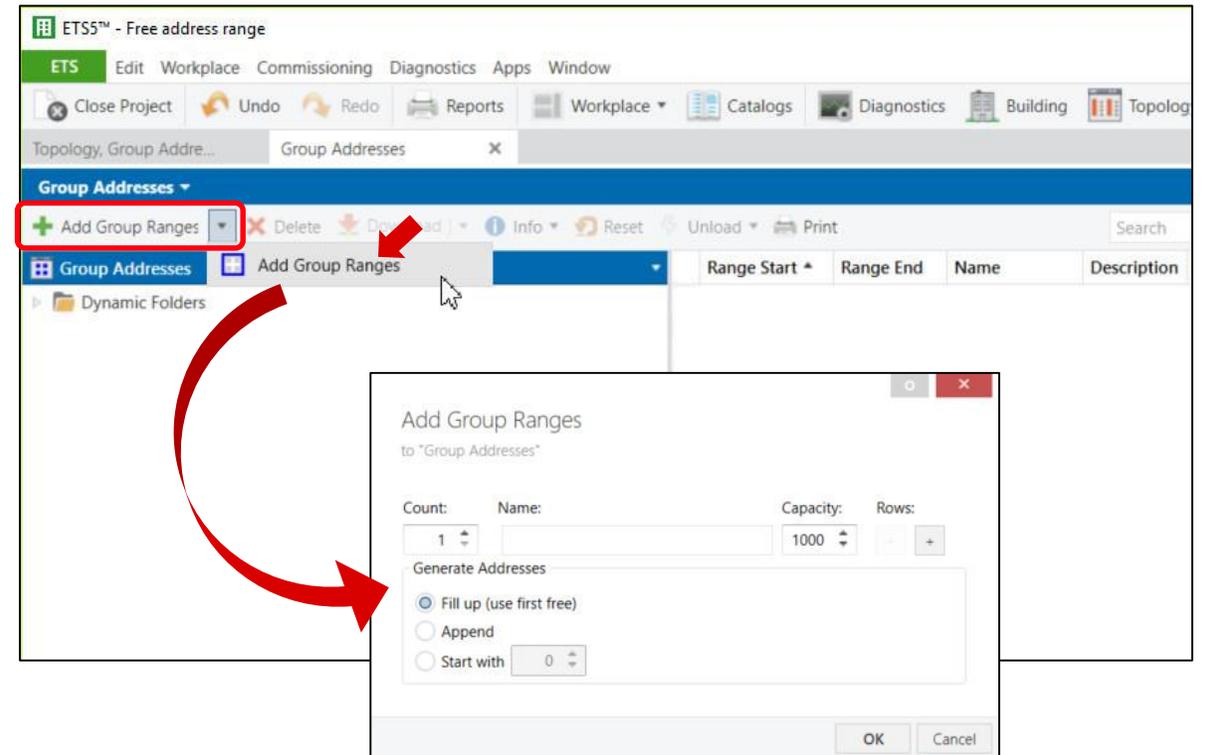
The free group address structure is not limited with regard to the number of levels

→ Possibility to structure group addresses completely free

Multiple levels with group address ranges can be added

Clear representation through a decimal division

Free group addresses are linked to the group objects just like three level group addresses

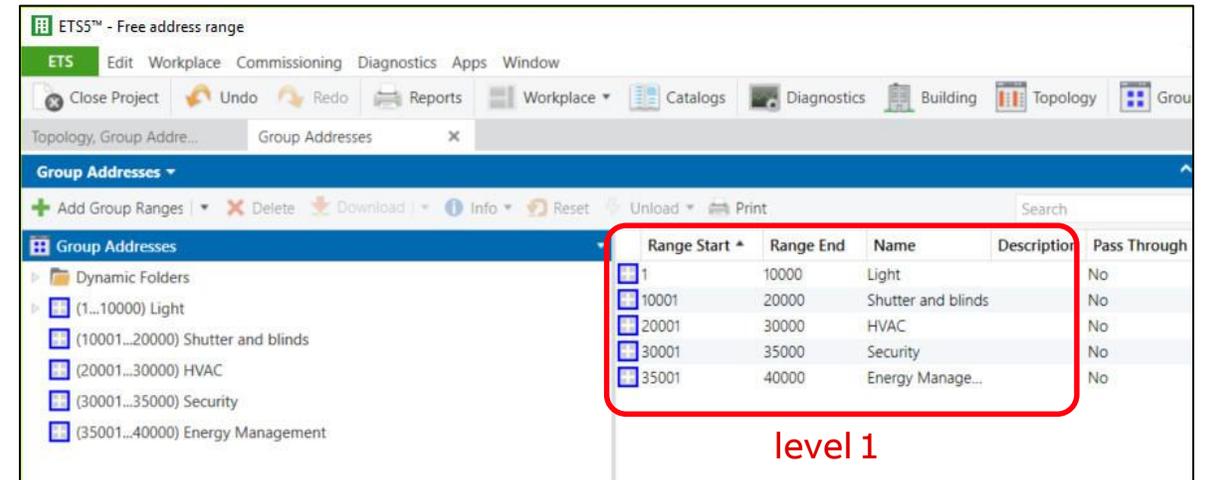


# KNX ETS5 and Group Addresses

## Free group address style

Group addresses from 1 to 65,535

- 1 to 10,000 Light
- 10,001 to 20,000 Shutter and blinds
- 20,001 to 30,000 HVAC
- 30,001 to 35,000 Security
- 35,001 to 40,000 Energy Management
- ... to 65,535 xxx

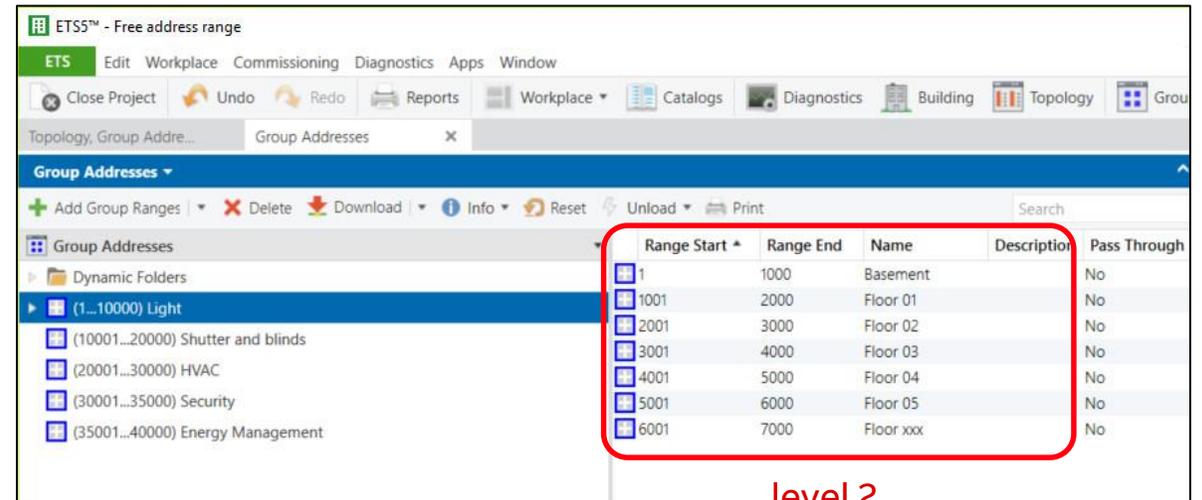


# KNX ETS5 and Group Addresses

## Free group address style

Group address range 1 to 10,000 Light (level 1)

- 1 to 1,000 Basement
- 1,001 to 2,000 Floor no 01
- 2,001 to 3,000 Floor no 02
- 3,001 to 4,000 Floor no 03
- 4,001 to 5,000 Floor no 04
- 5,001 to 6,000 Floor no 05
- ... to 10,000 xxx



level 2

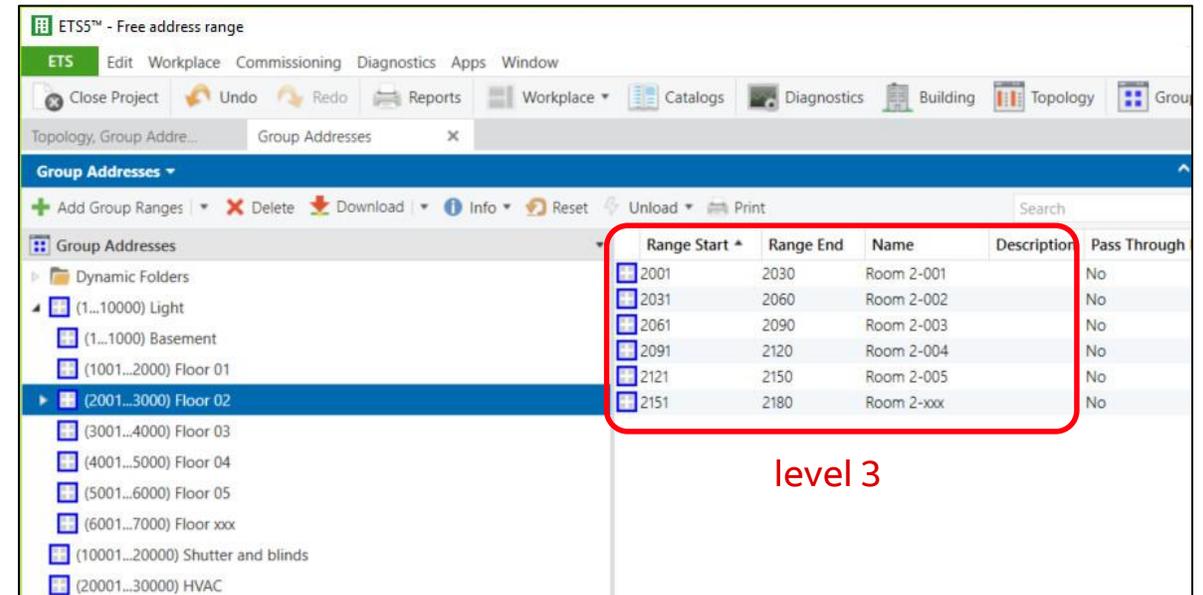
# KNX ETS5 and Group Addresses

## Free group address style

Group address range 1 to 10,000 Light (level 1)

→ 2,001 to 3,000 Floor no 02 (level 2)

- 2,001 to 2,030      Guestroom 2-01
- 2,031 to 2,060      Guestroom 2-02
- 2,061 to 2,090      Guestroom 2-03
- 2,091 to 2,120      Guestroom 2-04
- 2,121 to 2,150      Guestroom 2-05
- ... to 3,000        xxx



# KNX ETS5 and Group Addresses

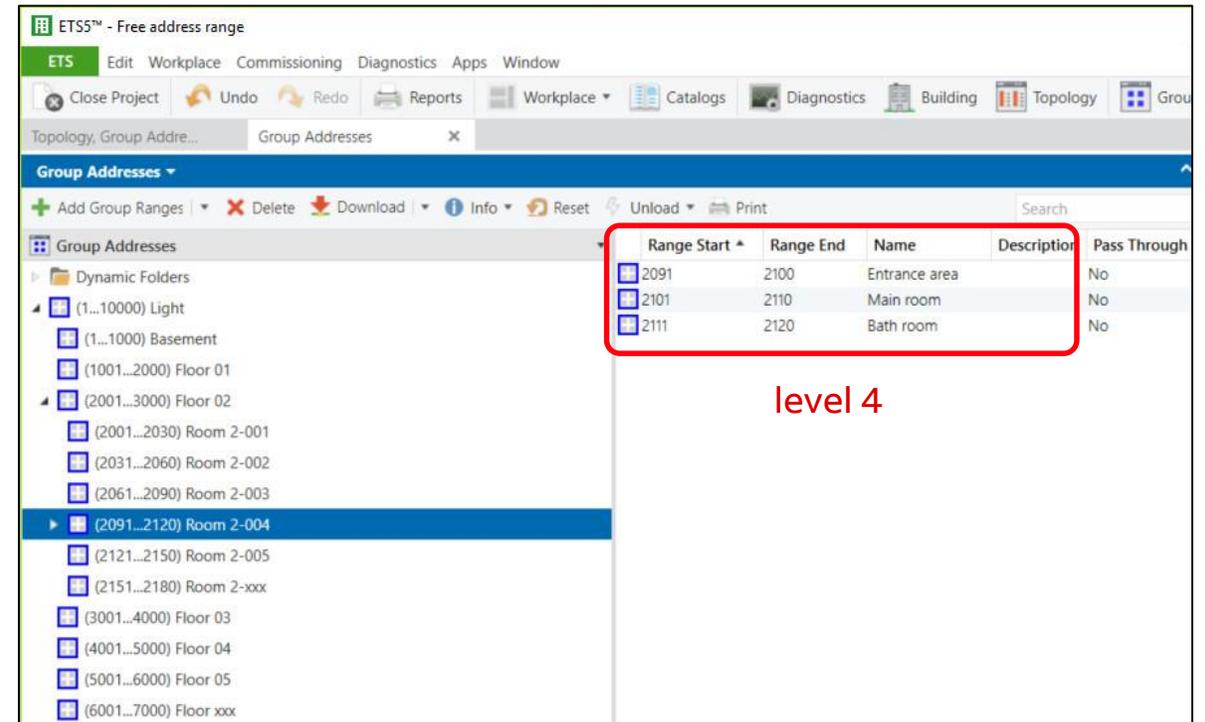
## Free group address style

Group address range 1 to 10,000 Light (level 1)

→ 2,001 to 3,000 Floor no 02 (level 2)

→ 2,091 to 2,120 Guestroom 2-04 (level 3)

- 2,091 to 2,100 Entrance area
- 2,101 to 2,110 Main room
- 2,111 to 2,120 Bathroom



# KNX ETS5 and Group Addresses

## Free group address style

Group address range 1 to 10,000 Light (level 1)

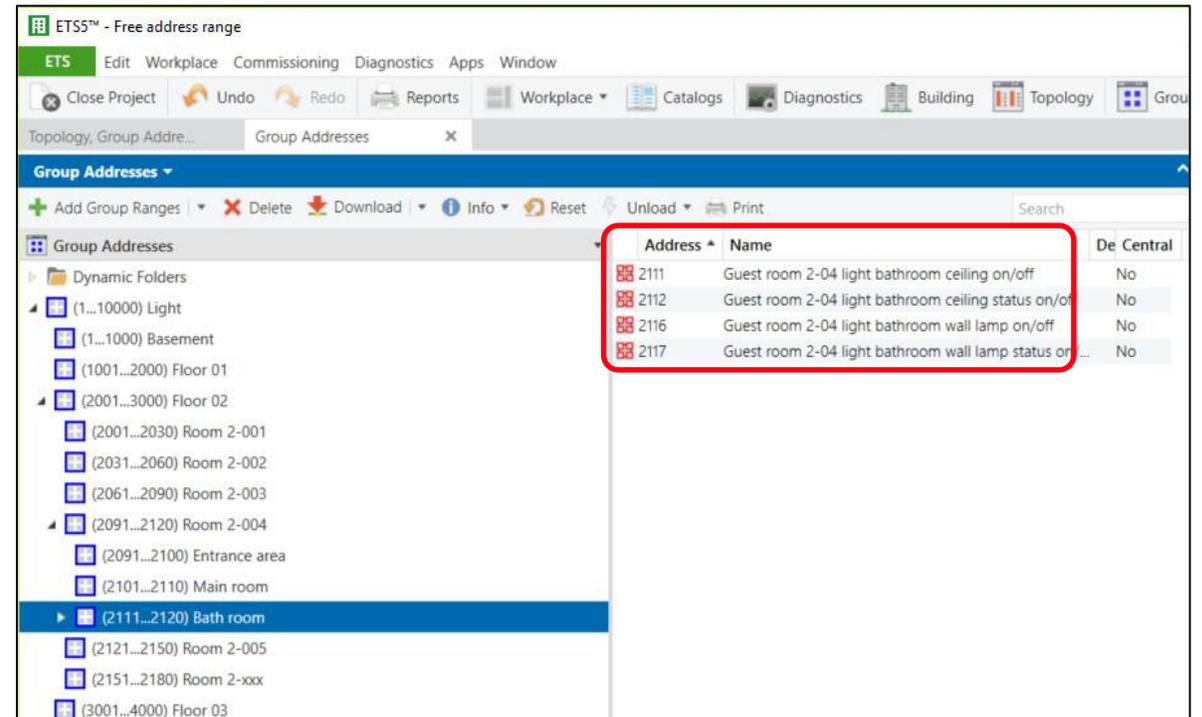
→ 2,001 to 3,000 Floor no 02 (level 2)

→ 2,091 to 2,120 Guestroom 2-04 (level 3)

→ 2,111 to 2,120 Bathroom (level 4)

Group address

- 2,111 “Guest room 2-04 light bathroom ceiling on/off”
- 2,112 “Guest room 2-04 light bathroom ceiling status on/off”
- 2,116 “Guest room 2-04 light bathroom wall lamp on/off”
- 2,117 “Guest room 2-04 light bathroom wall lamp status on/off”



# KNX ETS5 and Group Addresses

## Free group address style

Group address range 1 to 10,000 Light (level 1)

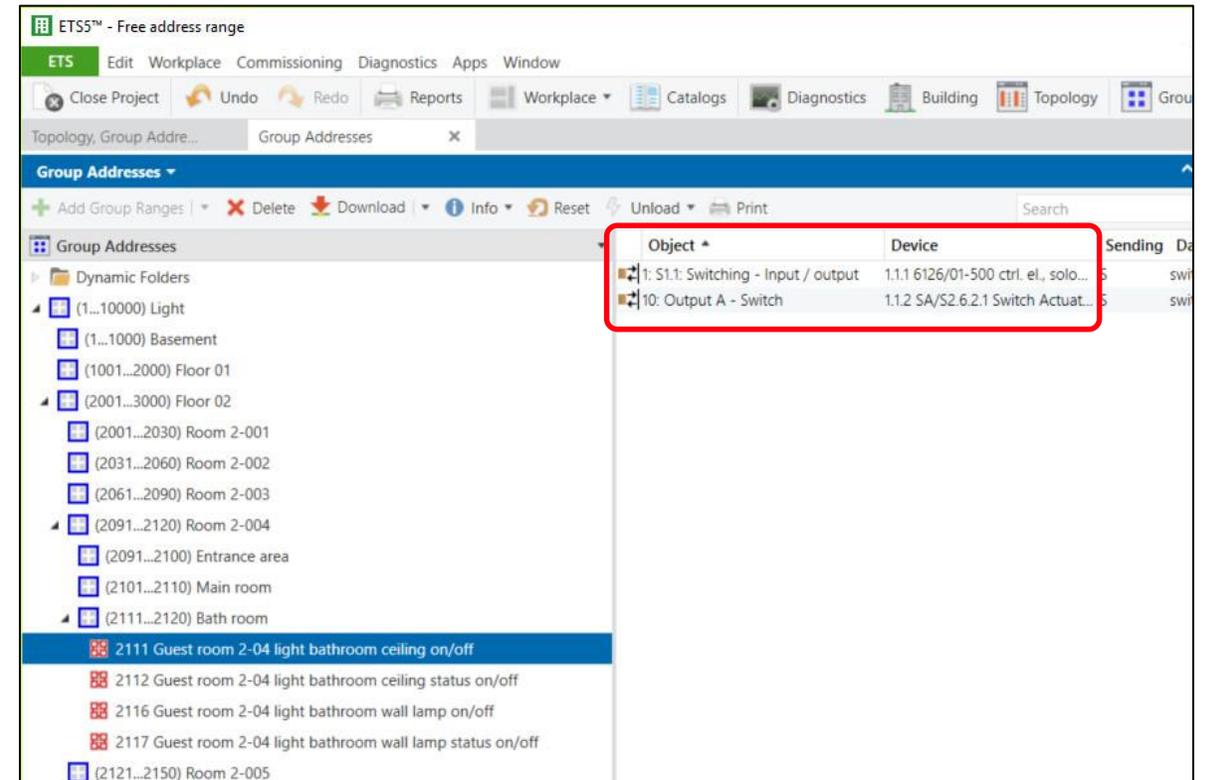
→ 2,001 to 3,000 Floor no 02 (level 2)

→ 2,091 to 2,120 Guestroom 2-04 (level 3)

→ 2,111 to 2,120 Bathroom (level 4)

Group address 2,111 “Guest room 2-04 light bathroom ceiling on/off”

- Control Element: Rocker 1
- Switch Actuator: Channel A



# KNX ETS5 and Group Addresses

## Free group address style

Group address 2,111 “Guest room 2-04 light bathroom ceiling on/off”

| Nur | Group Address | Name            | Object Function |
|-----|---------------|-----------------|-----------------|
| 1   | 2111          | S1.1: Switching | Input / output  |
| 5   | 2112          | LED1.1: Status  | Input           |
| 10  | 2112          | LED1.2: Status  | Input           |
| 15  | 2116          | S2.1: Switching | Input / output  |
| 19  | 2117          | LED2.1: Status  | Input           |
| 24  | 2117          | LED2.2: Status  | Input           |

Control Element: Rocker 1

| Nur | Group Address | Name     | Object Function |
|-----|---------------|----------|-----------------|
| 0   |               | General  | In Operation    |
| 10  | 2111          | Output A | Switch          |
| 29  | 2112          | Output A | Status Switch   |
| 30  | 2116          | Output B | Switch          |
| 49  | 2117          | Output B | Status Switch   |

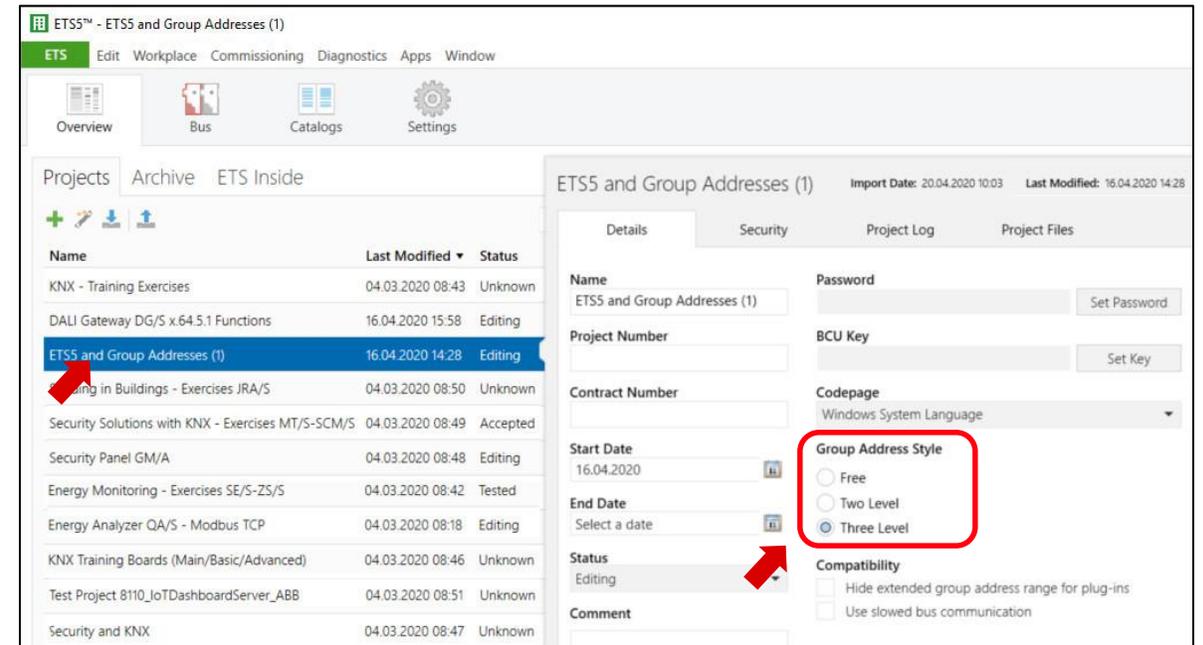
Switch Actuator: Channel A

# KNX ETS5 and Group Addresses

## ETS overview: Switch between levels

You can switch between the different levels in the project overview  
The change is limited!

- Three level to two level
  - All texts, properties and security settings from the middle groups are lost
- Two level to three level
  - All middle groups get the text “New middle group”
- Three level or two level to free
  - You can not switch back to two or three level
- Free to three level or two level
  - Not possible



# KNX ETS5 and Group Addresses

## Conversion between levels

|                    | 2 <sup>15</sup> | 2 <sup>14</sup> | 2 <sup>13</sup> | 2 <sup>12</sup> | 2 <sup>11</sup> | 2 <sup>10</sup> | 2 <sup>9</sup> | 2 <sup>8</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                    | 32768           | 16384           | 8192            | 4096            | 2048            | 1024            | 512            | 256            | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |
| Transmitted 16 bit | 0               | 1               | 0               | 0               | 0               | 1               | 0              | 1              | 1              | 0              | 0              | 0              | 0              | 0              | 0              | 1              |

# KNX ETS5 and Group Addresses

## Conversion between levels

| 2 <sup>15</sup> | 2 <sup>14</sup> | 2 <sup>13</sup> | 2 <sup>12</sup> | 2 <sup>11</sup> | 2 <sup>10</sup> | 2 <sup>9</sup> | 2 <sup>8</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 32768           | 16384           | 8192            | 4096            | 2048            | 1024            | 512            | 256            | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |

Transmitted 16 bit

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Free structure

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

$$16384+1024+256+128+1 = 17793$$

Depending on the level setting, the ETS divides the 16 bits into:

- Free: 16 bits  
17793

# KNX ETS5 and Group Addresses

## Conversion between levels

| 2 <sup>15</sup> | 2 <sup>14</sup> | 2 <sup>13</sup> | 2 <sup>12</sup> | 2 <sup>11</sup> | 2 <sup>10</sup> | 2 <sup>9</sup> | 2 <sup>8</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 32768           | 16384           | 8192            | 4096            | 2048            | 1024            | 512            | 256            | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |

Transmitted 16 bit

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Free structure

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

$$16384+1024+256+128+1 = 17793$$

| 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
|----------------|----------------|----------------|----------------|----------------|
| 16             | 8              | 4              | 2              | 1              |

| 2 <sup>10</sup> | 2 <sup>9</sup> | 2 <sup>8</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1024            | 512            | 256            | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |

2-level structure

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

8

$$1024+256+128+1 = 1409$$

Depending on the level setting, the ETS divides the 16 bits into:

- Free: 16 bits  
17793
- 2-level: Main group 5 bits / group address 11 bits  
8/1409

# KNX ETS5 and Group Addresses

## Conversion between levels

|                 |                 |                 |                 |                 |                 |                |                |                |                |                |                |                |                |                |                |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 2 <sup>15</sup> | 2 <sup>14</sup> | 2 <sup>13</sup> | 2 <sup>12</sup> | 2 <sup>11</sup> | 2 <sup>10</sup> | 2 <sup>9</sup> | 2 <sup>8</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
| 32768           | 16384           | 8192            | 4096            | 2048            | 1024            | 512            | 256            | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |

Transmitted 16 bit

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Free structure

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

$$16384 + 1024 + 256 + 128 + 1 = 17793$$

|                |                |                |                |                |                 |                |                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> | 2 <sup>10</sup> | 2 <sup>9</sup> | 2 <sup>8</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
| 16             | 8              | 4              | 2              | 1              | 1024            | 512            | 256            | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |

2-level structure

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | / | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

8

$$1024 + 256 + 128 + 1 = 1409$$

Depending on the level setting, the ETS divides the 16 bits into:

- Free: 16 bits  
17793
- 2-level: Main group 5 bits / group address 11 bits  
8/1409
- 3-level: Main group 5 bits / middle group 3 bits / group address 8 bits  
8/5/129

3-level structure

|                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> | 2 <sup>7</sup> | 2 <sup>6</sup> | 2 <sup>5</sup> | 2 <sup>4</sup> | 2 <sup>3</sup> | 2 <sup>2</sup> | 2 <sup>1</sup> | 2 <sup>0</sup> |
| 16             | 8              | 4              | 2              | 1              | 4              | 2              | 1              | 128            | 64             | 32             | 16             | 8              | 4              | 2              | 1              |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 0 | 0 | / | 1 | 0 | 1 | / | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

8

$$4 + 1 = 5$$

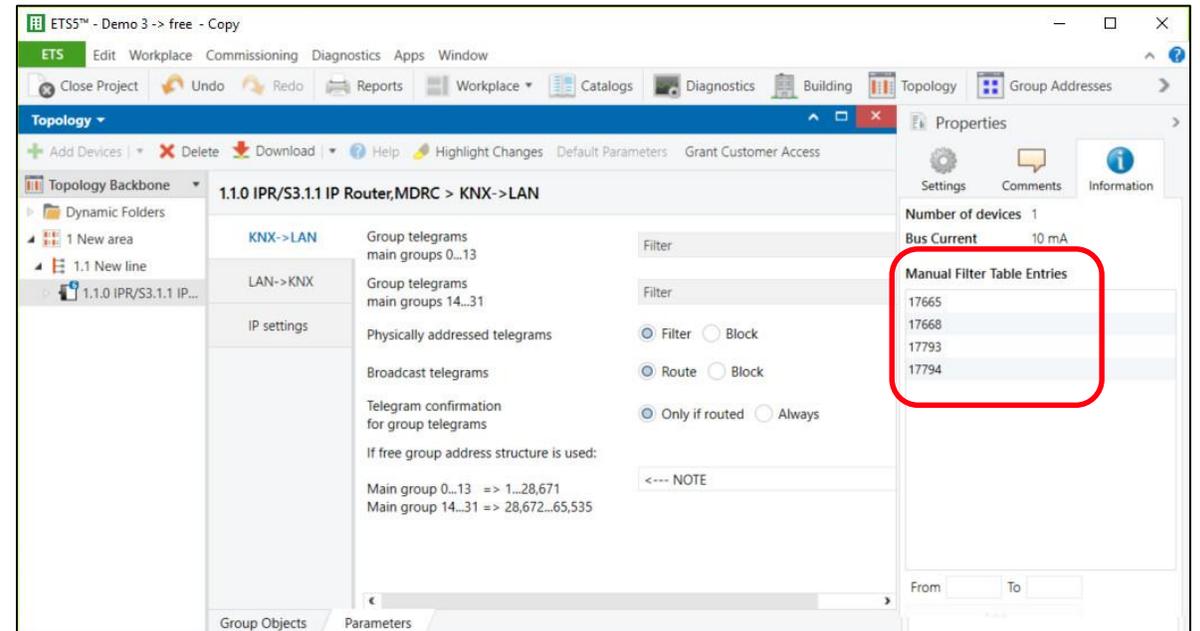
$$128 + 1 = 129$$

# KNX ETS5 and Group Addresses

## Free level notes

You can not switch back to two or three level group addresses and the export/import can only be done in the XML-format

The group addresses are stored in the filter tables of the Line Couplers LK/S and IP Routers IPR/S as 16 bits and are therefore independent of the levels



# KNX ETS5 and Group Addresses

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You can not switch back to two or three level group addresses and the export/import can only be done in the XML-format

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Some devices which use product specific software (plug in) to link group objects cannot display the free group address structure

- ABB PowerTool (e.g. 6136/07 Smart Touch 7)
- The free group address structure cannot be used and the group addresses are displayed in the three levels

The screenshot displays the ABB PowerTool interface for a 6136/07-8xx-500 Smart Touch device. The 'External addresses' tree shows a hierarchy: Main [0], Main [1], Main [8], Middle [0], Middle [4], Middle [5], and Middle [6]. The 'Function/device view' shows a 'Smart Touch' device with various pages and a 'Switch' object. A red arrow points from the 'Switch' object in the function view to the 'Group Objects' table below. The 'Group Objects' table lists the following objects:

| Nur Group Address | Name                            | Object Function         | Length | Data Type |
|-------------------|---------------------------------|-------------------------|--------|-----------|
| 14                | System settings.5 - Screensa... |                         | 1 bit  |           |
| 15                | System settings.6 - Screensa... |                         | 1 bit  |           |
| 16                | System settings.11 - Tempera... |                         | 1 bit  |           |
| 17                | System settings.13 - Outdoor... |                         | 2 byte |           |
| 18                | 17793                           | Switch.0 - Value [send] | 1 bit  |           |

The 'Group Addresses' view at the bottom shows a tree structure with dynamic folders and specific group addresses. The address 17793 is highlighted in blue, corresponding to the object in the table above.

# KNX ETS5 and Group Addresses

## Free level notes

You can not switch back to two or three level group addresses and the export/import can only be done in the XML-format

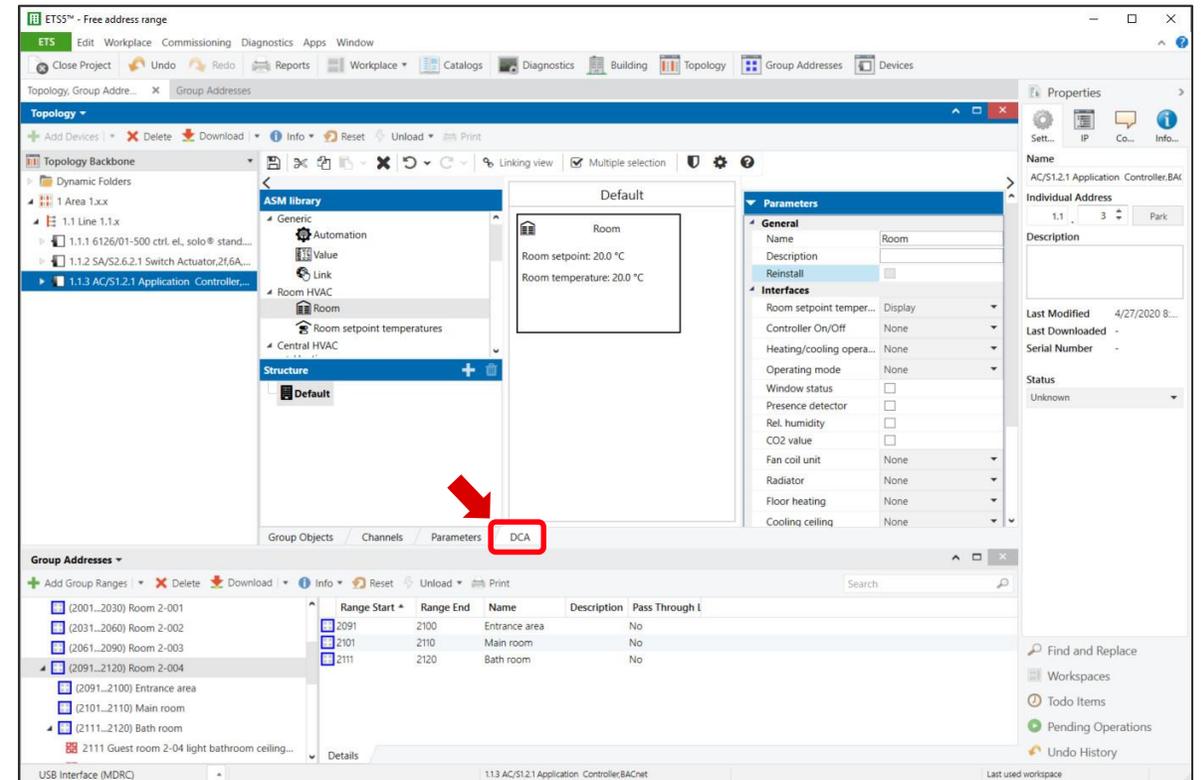
The group addresses are stored in the filter tables of the Line Couplers LK/S and IP Routers IPR/S as 16 bits and are therefore independent of the levels

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According to the KNX guidelines, since 2018 such devices may only be parameterized using the DCA concept (device configuration app), e.g. Application Controller AC/S

The ABB "MyBuildings Portal" only uses the 3 levels group addresses



# KNX ETS5 and Group Addresses

## Free level notes

You can not switch back to two or three level group addresses and the export/import can only be done in the XML-format

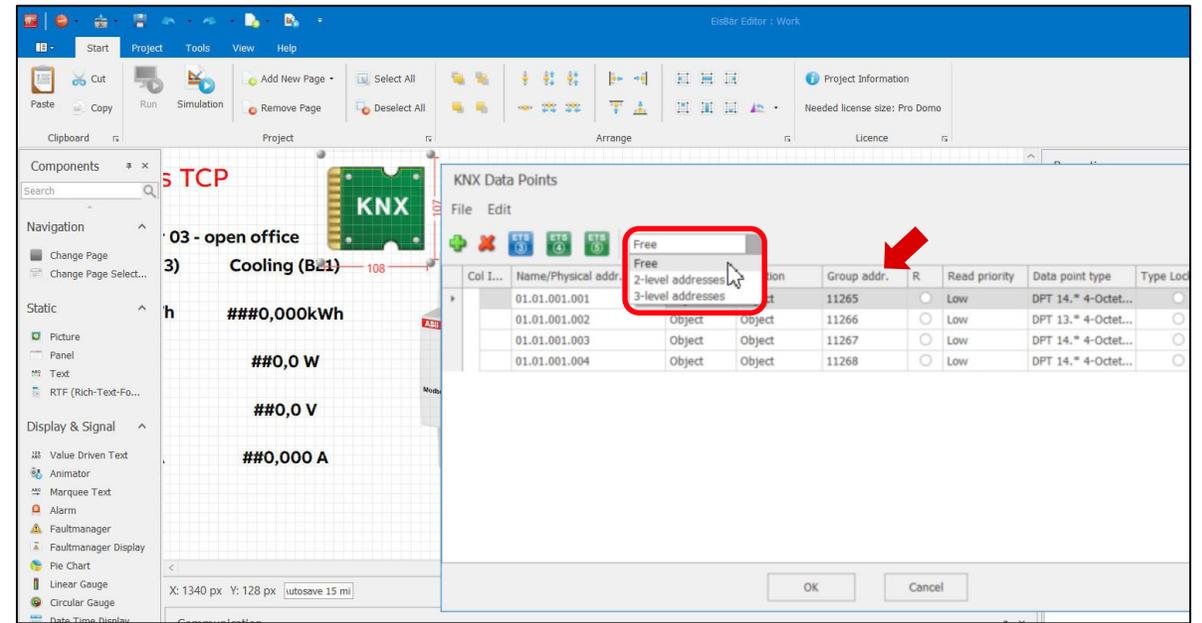
The group addresses are stored in the filter tables of the Line Couplers LK/S and IP Routers IPR/S as 16 bits and are therefore independent of the levels

Some devices which use product specific software (plug in) to link group objects cannot display the free group address structure

- ABB PowerTool (e.g. 6136/07 Smart Touch 7)
- The free group address structure cannot be used and the group addresses are displayed in the three levels

According to the KNX guidelines, since 2018 such devices may only be parameterized using the DCA concept (device configuration app), e.g. Application Controller AC/S

The ABB "MyBuildings Portal" only uses the 3 levels group addresses  
Common visualizations allow an import and the use of free level



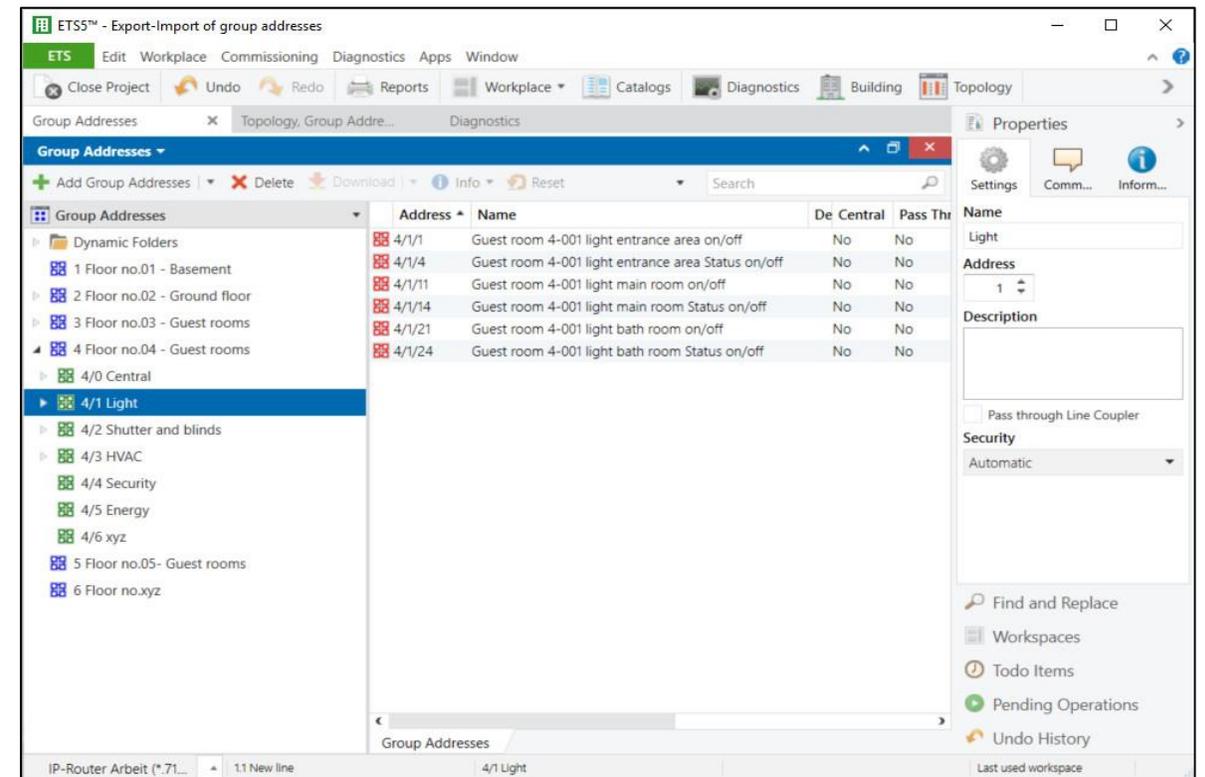
# KNX ETS5 and Group Addresses

## Creating group addresses

There are different ways to create group addresses

- Creating directly in ETS via the planning wizard
- Creating directly within ETS in the group address window
- Creating by export/import to/from a spreadsheet calculation

No strategy can be called “the best” for all cases, as its advantages and disadvantages are dependent on the project



# KNX ETS5 and Group Addresses

## Creating group addresses

There are different ways to create group addresses

- Creating directly in ETS via the planning wizard
- Creating directly within ETS in the group address window
- Creating by export/import to/from a spreadsheet calculation

→ The planning wizard is only suited for smaller projects

→ The building structure, group addresses, ... are created automatically

→ None of the standard addresses are lost

→ Typing errors are absolutely avoided

The screenshots illustrate the workflow in ETS5 for creating group addresses. The first screenshot shows the 'New Project (Assistant)' button in the 'Projects' window. The second screenshot shows the 'Functions' window with 'Add Floor' and 'Add Room' buttons highlighted. The third screenshot shows the 'Group Addresses' window with a table of addresses and a 'Properties' window on the right.

| Address | Name                                 | De    | Central |
|---------|--------------------------------------|-------|---------|
| 1/1/0   | Living room Ceiling light switching  | Li... | No      |
| 1/1/1   | Living room Wall light switching     | Li... | No      |
| 1/1/2   | Living room Desk light switching     | Li... | No      |
| 1/1/3   | Living room Effect light switching   | Li... | No      |
| 1/1/4   | Living room Socket switching         | Li... | No      |
| 1/1/10  | Kitchen Ceiling light switching      | Ki... | No      |
| 1/1/11  | Kitchen Working light switching      | Ki... | No      |
| 1/1/17  | Dining room Ceiling light switching  | Di... | No      |
| 1/1/18  | Dining room Dining table switching   | Di... | No      |
| 1/1/24  | Guest toilet Ceiling light switching | G...  | No      |
| 1/1/25  | Guest toilet Mirror switching        | G...  | No      |
| 1/1/31  | Hallway Ceiling light switching      | H...  | No      |
| 1/1/32  | Hallway Wardrobe switching           | H...  | No      |
| 1/1/38  | Store room Ceiling light switching   | S...  | No      |

# KNX ETS5 and Group Addresses

## Creating group addresses

There are different ways to create group addresses

- Creating directly in ETS via the planning wizard
- Creating directly within ETS in the group address window
- Creating by export/import to/from a spreadsheet calculation

→ Create each main and middle group and group address individually and assign a text

→ Copy an existing structure from a main or middle group into another

→ Copy and paste group addresses

→ The text must still be edited

→ The number may need to be adapted

The image shows three screenshots of the ETS5 software interface illustrating the process of creating group addresses:

- Add Main Groups:** A dialog box titled "Add Main Groups to 'Group Addresses'". It shows a list of groups with columns for Count, Name, and Rows. The "Generate Addresses" section has "Fill up (use first free)" selected, "Append" selected, and "Start with" set to 1.
- Add Middle Groups:** A dialog box titled "Add Middle Groups to '2 Floor no.02 - Ground floor'". It shows a list of groups with columns for Count, Name, and Rows. The "Generate Addresses" section has "Fill up (use first free)" selected, "Append" selected, and "Start with" set to 0.
- Add Group Addresses:** A dialog box titled "Add Group Addresses to '3/1 Light'". It shows a list of group addresses with columns for Count, Name, and Rows. The "Generate Addresses" section has "Fill up (use first free)" selected, "Append" selected, and "Start with" set to 0.

Red arrows indicate the flow of data from the "Add Main Groups" dialog to the "Add Middle Groups" dialog, and from the "Add Middle Groups" dialog to the "Add Group Addresses" dialog.

The bottom screenshot shows the "Group Addresses" window. It displays a list of group addresses with columns for Main Group, Name, and a context menu. The "2 Floor no.02 - Ground floor" group is highlighted. The context menu includes options like "Add Middle Groups", "Delete", "Copy", "Paste", "Paste Special", and "Paste Extended". Red arrows indicate the flow of data from the "Add Middle Groups" dialog to the "Group Addresses" window, and from the "Add Group Addresses" dialog to the "Group Addresses" window.

# KNX ETS5 and Group Addresses

## Creating group addresses

There are different ways to create group addresses

- Creating directly in ETS via the planning wizard
- Creating directly within ETS in the group address window
- Creating by export/import to/from a spreadsheet calculation

→ Group addresses can be directly exported from the group addresses window and then re-imported

→ Professionals can use this to generate the address lists conveniently outside ETS e.g. in a spreadsheet program such as Microsoft EXCEL

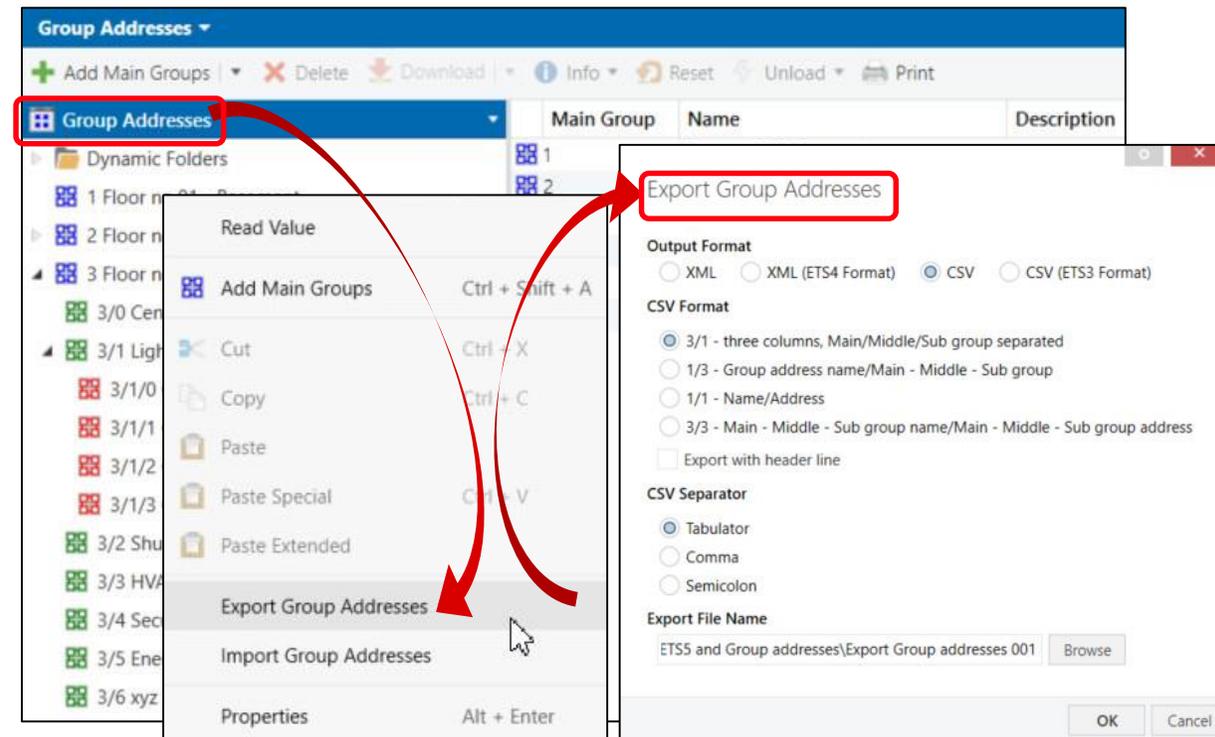
→ The group addresses can be exported in XML (editor, knowledge in XML,...) or CSV format (tabulator, semicolon,...)

|    | A                         | B                  | C  | D       |
|----|---------------------------|--------------------|--|---------|
| 22 | Floor no.04 - Guest rooms |                    |  | 4/-/-   |
| 23 |                           | Central            |  | 4/0/-   |
| 24 |                           |                    | Guest room 4-001 light central on/off              | 4/0/1   |
| 25 |                           | Light              |  | 4/1/-   |
| 26 |                           |                    | Guest room 4-001 light entrance area on/off        | 4/1/001 |
| 27 |                           |                    | Guest room 4-001 light entrance area Status on/off | 4/1/004 |
| 28 |                           |                    | Guest room 4-001 light main room on/off            | 4/1/011 |
| 29 |                           |                    | Guest room 4-001 light main room Status on/off     | 4/1/014 |
| 30 |                           |                    | Guest room 4-001 light bath room on/off            | 4/1/021 |
| 31 |                           |                    | Guest room 4-001 light bath room Status on/off     | 4/1/024 |
| 32 |                           | Shutter and blinds |  | 4/2/-   |
| 33 |                           |                    | Guest room 4-001 blinds up/down                    | 4/2/001 |
| 34 |                           |                    | Guest room 4-001 blinds sto/lamella                | 4/2/002 |
| 35 |                           | HVAC               |  | 4/3/-   |
| 36 |                           |                    | Guest room 4-001 current room temperature          | 4/3/001 |
| 37 |                           |                    | Guest room 4-001 set temperature                   | 4/3/002 |
| 38 |                           |                    | Guest room 4-001 control value                     | 4/3/003 |
| 39 |                           | Security           |  | 4/4/-   |
| 40 |                           | Energy             |  | 4/5/-   |
| 41 |                           | xyz                |  | 4/6/-   |

# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

- In order to obtain a suitable CSV file for further processing as a template, a small starting group address structure should first be generated
- Select “Group Addresses” (root), right mouse click and click on “Export Group Addresses”
- Set the parameter “CSV”, “3/1” format, export without a header line, “Tabulator” as CSV separator and enter a file name
- In EXCEL, it is important that separators are clearly recognized
- “Tabulator” being the most suitable, so that EXCEL also creates columns required for a 3-level group address structure
- The export file also contains information about data point types

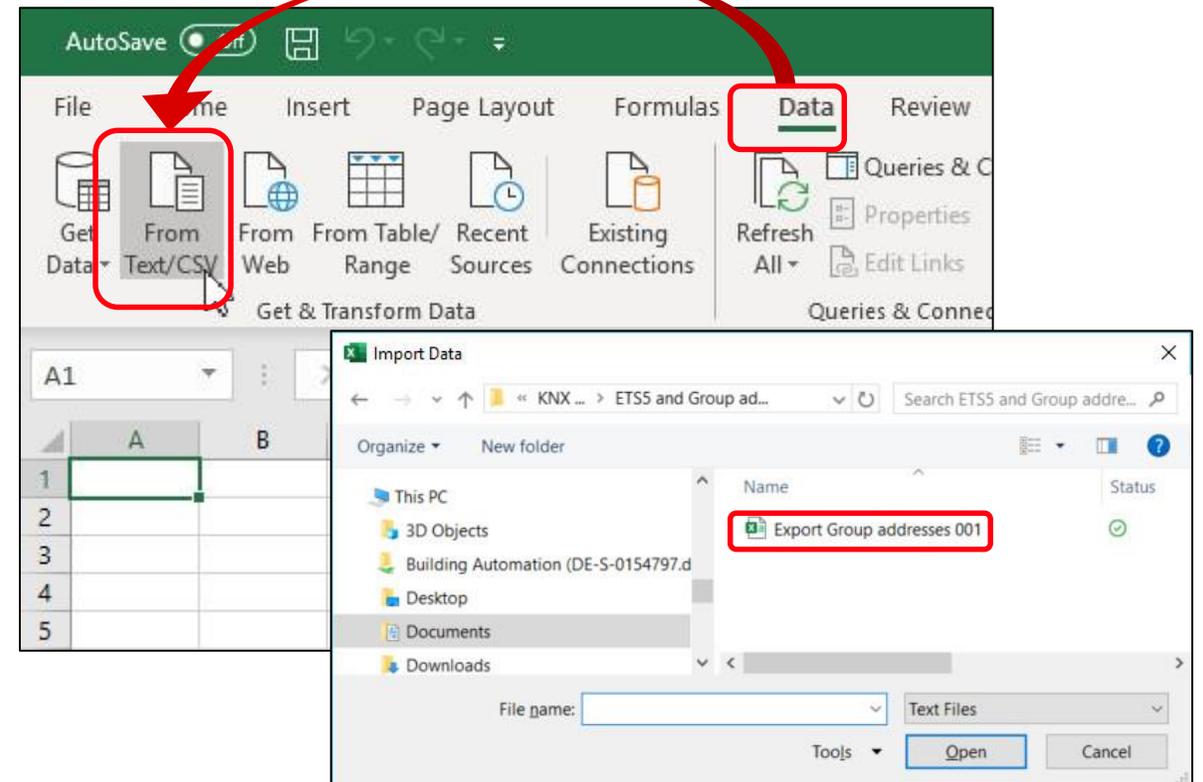


# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

The ETS export file must be imported in the correct format (tabulator, ...)

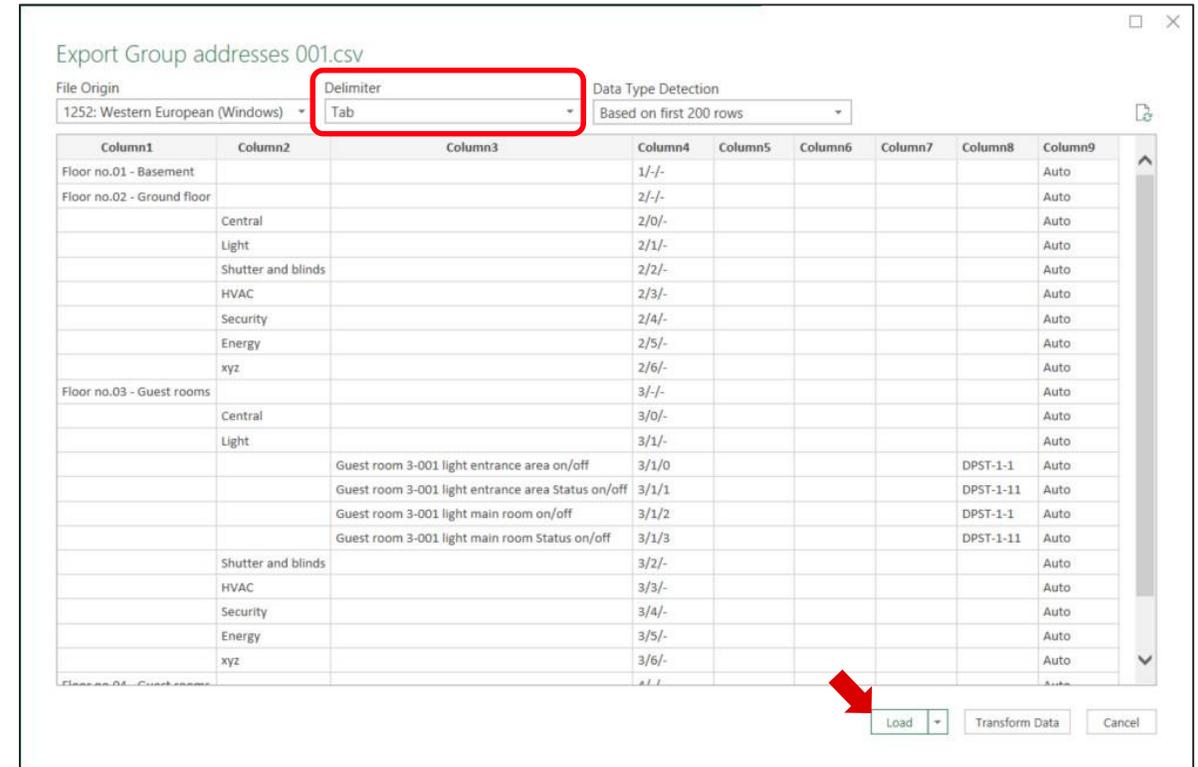
- Start Microsoft EXCEL
- Create and save a new blank workbook
- Go to “Data”
- Click on “From Text/CSV”
- Select the exported group address file and click on “Open”



# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

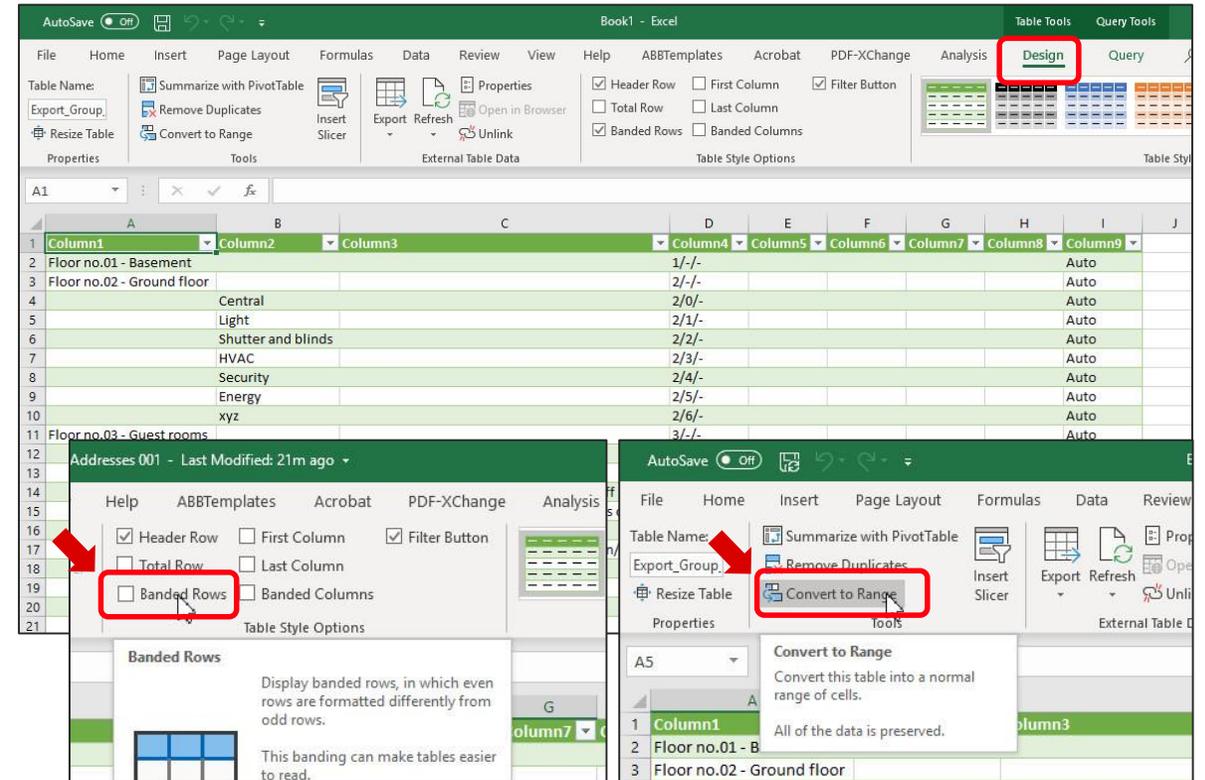
- The import wizard starts
- Select "Tab" as a delimiter
- Click on "Load" to import the data



# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

- The data is imported as a table with further information (header row, banded rows, filter buttons,...)
- Go to “Design”
- Remove the tick from “Banded rows”
- Click on “Convert to range”
  - The table is converted into a normal range of cells
  - Further information (header row, filter buttons,...) are removed



# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

- Some information has to be removed for later import
  - Delete row 1 “text column1”,...
  - Delete column “E” to “I”

The screenshot shows an Excel spreadsheet titled "ETS Group Addresses 001 - Last Modified: 27m ago". The spreadsheet has columns labeled "Column1" through "Column9" and rows numbered 2 through 26. Red arrows point to columns E, F, G, H, and I, indicating they should be deleted. A red box highlights the data area from row 2 to 26, column A to D, indicating this area should be preserved for import.

|    | Column1                    | Column2            | Column3  | Column4 | Column5 | Column6 | Column7 | Column8   | Column9 |
|----|----------------------------|--------------------|--|---------|---------|---------|---------|-----------|---------|
| 2  | Floor no.01 - Basement     |                    |  | 1/-/-   |         |         |         |           | Auto    |
| 3  | Floor no.02 - Ground floor |                    |  | 2/-/-   |         |         |         |           | Auto    |
| 4  |                            | Central            |  | 2/0/-   |         |         |         |           | Auto    |
| 5  |                            | Light              |  | 2/1/-   |         |         |         |           | Auto    |
| 6  |                            | Shutter and blinds |  | 2/2/-   |         |         |         |           | Auto    |
| 7  |                            | HVAC               |  | 2/3/-   |         |         |         |           | Auto    |
| 8  |                            | Security           |  | 2/4/-   |         |         |         |           | Auto    |
| 9  |                            | Energy             |  | 2/5/-   |         |         |         |           | Auto    |
| 10 |                            | xyz                |  | 2/6/-   |         |         |         |           | Auto    |
| 11 | Floor no.03 - Guest rooms  |                    |  | 3/-/-   |         |         |         |           | Auto    |
| 12 |                            | Central            |  | 3/0/-   |         |         |         |           | Auto    |
| 13 |                            | Light              |  | 3/1/-   |         |         |         |           | Auto    |
| 14 |                            |                    | Guest room 3-001 light entrance area on/off        | 3/1/0   |         |         |         | DPST-1-1  | Auto    |
| 15 |                            |                    | Guest room 3-001 light entrance area Status on/off | 3/1/1   |         |         |         | DPST-1-11 | Auto    |
| 16 |                            |                    | Guest room 3-001 light main room on/off            | 3/1/2   |         |         |         | DPST-1-1  | Auto    |
| 17 |                            |                    | Guest room 3-001 light main room Status on/off     | 3/1/3   |         |         |         | DPST-1-11 | Auto    |
| 18 |                            | Shutter and blinds |  | 3/2/-   |         |         |         |           | Auto    |
| 19 |                            | HVAC               |  | 3/3/-   |         |         |         |           | Auto    |
| 20 |                            | Security           |  | 3/4/-   |         |         |         |           | Auto    |
| 21 |                            | Energy             |  | 3/5/-   |         |         |         |           | Auto    |
| 22 |                            | xyz                |  | 3/6/-   |         |         |         |           | Auto    |
| 23 | Floor no.04 - Guest rooms  |                    |  | 4/-/-   |         |         |         |           | Auto    |
| 24 | Floor no.05- Guest rooms   |                    |  | 5/-/-   |         |         |         |           | Auto    |
| 25 | Floor no.xyz               |                    |  | 6/-/-   |         |         |         |           | Auto    |
| 26 |                            |                    |  |         |         |         |         |           |         |

# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

– The columns contain the following information

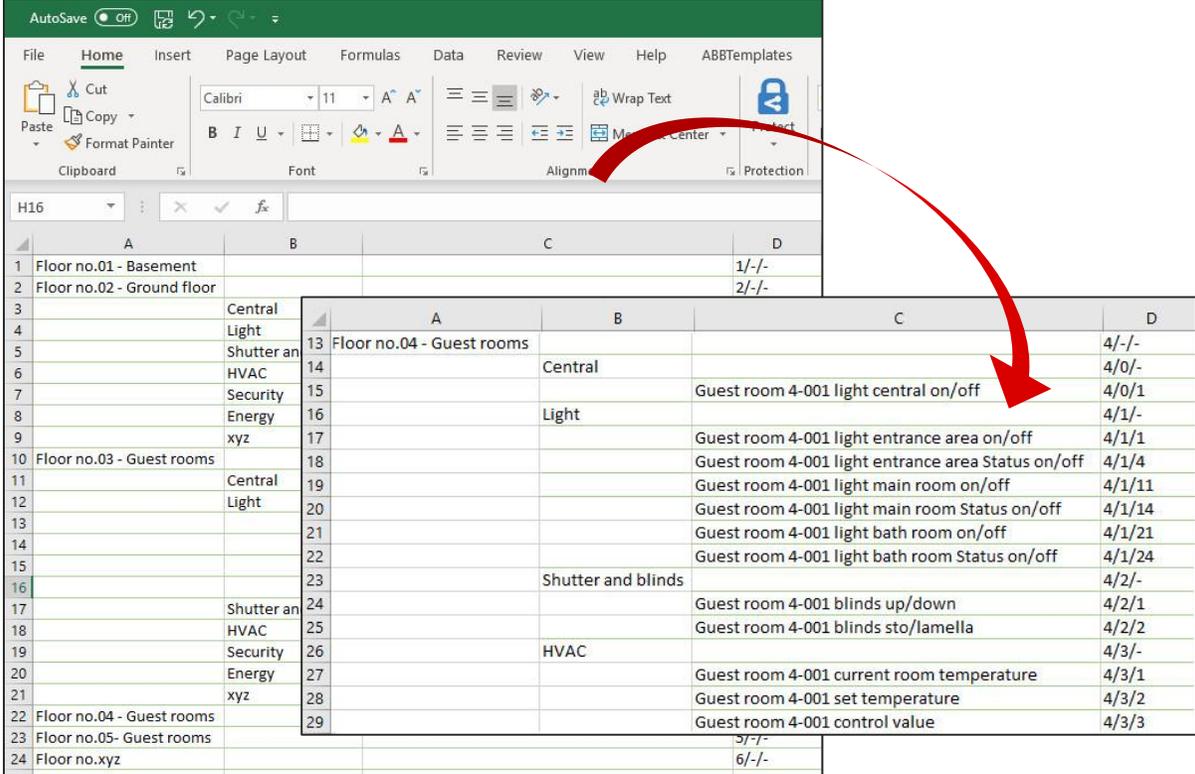
- A – Text “Main group”
- B – Text “Middle group”
- C – Text “Group address”
- D – Number group address

Note: The ETS import is limited to a maximum of 50 characters!

– Further main groups, middle groups and group addresses can now be created (insert, copy, paste, replace ...)

– The table format must be respected

- A – Text main group → D – group address “X/-/-”
- B – Text “Middle group” → D – group address “X/Y/-”
- C – Text “Group address” → D – group address “X/Y/Z”



|     | A                          | B          | C | D     |
|-----|----------------------------|------------|---|-------|
| 1   | Floor no.01 - Basement     |            |   | 1/-/- |
| 2   | Floor no.02 - Ground floor |            |   | 2/-/- |
| 3   |                            | Central    |   |       |
| 4   |                            | Light      |   |       |
| 5   |                            | Shutter an |   |       |
| 6   |                            | HVAC       |   |       |
| 7   |                            | Security   |   |       |
| 8   |                            | Energy     |   |       |
| 9   |                            | xyz        |   |       |
| 10  | Floor no.03 - Guest rooms  |            |   |       |
| 11  |                            | Central    |   |       |
| 12  |                            | Light      |   |       |
| 13  |                            |            |   |       |
| 14  |                            |            |   |       |
| 15  |                            |            |   |       |
| 16  |                            |            |   |       |
| 17  |                            |            |   |       |
| 18  |                            |            |   |       |
| 19  |                            |            |   |       |
| 20  |                            |            |   |       |
| 21  |                            |            |   |       |
| 22  |                            |            |   |       |
| 23  |                            |            |   |       |
| 24  |                            |            |   |       |
| 25  |                            |            |   |       |
| 26  |                            |            |   |       |
| 27  |                            |            |   |       |
| 28  |                            |            |   |       |
| 29  |                            |            |   |       |
| 30  |                            |            |   |       |
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| 80  |                            |            |   |       |
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| 82  |                            |            |   |       |
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| 90  |                            |            |   |       |
| 91  |                            |            |   |       |
| 92  |                            |            |   |       |
| 93  |                            |            |   |       |
| 94  |                            |            |   |       |
| 95  |                            |            |   |       |
| 96  |                            |            |   |       |
| 97  |                            |            |   |       |
| 98  |                            |            |   |       |
| 99  |                            |            |   |       |
| 100 |                            |            |   |       |

# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

- When entering the group addresses, Excel can interpret the 3-level structure as a date, e.g. 4/1/1 → 04.01.2001
  - The group address must be entered in three digits (with zeros)  
e.g. 4/1/1 → 4/1/001



|                    |  |            |
|--------------------|--|------------|
| Central            |  | 4/0/-      |
| Light              |  | 4/1/-      |
|                    | Guest room 4-001 light entrance area on/off        | 4/1/-      |
|                    | Guest room 4-001 light entrance area Status on/off | 04.01.2001 |
|                    | Guest room 4-001 light main room on/off            | 4/1/-      |
|                    | Guest room 4-001 light main room Status on/off     | 4/1/-      |
| Shutter and blinds |  | 3/2/-      |
| HVAC               |  | 3/3/-      |
| Security           |  |            |

|                    |  |         |
|--------------------|--|---------|
| Central            |  | 4/0/-   |
|                    | Guest room 4-001 light central on/off              | 4/0/1   |
| Light              |  | 4/1/-   |
|                    | Guest room 4-001 light entrance area on/off        | 4/1/001 |
|                    | Guest room 4-001 light entrance area Status on/off | 4/1/004 |
|                    | Guest room 4-001 light main room on/off            | 4/1/011 |
|                    | Guest room 4-001 light main room Status on/off     | 4/1/014 |
|                    | Guest room 4-001 light bath room on/off            | 4/1/021 |
|                    | Guest room 4-001 light bath room Status on/off     | 4/1/024 |
| Shutter and blinds |  | 4/2/-   |
|                    | Guest room 4-001 blinds up/down                    | 4/2/001 |
|                    | Guest room 4-001 blinds sto/lamella                | 4/2/002 |
| HVAC               |  | 4/3/-   |
|                    | Guest room 4-001 current room temperature          | 4/3/001 |
|                    | Guest room 4-001 set temperature                   | 4/3/002 |
|                    | Guest room 4-001 control value                     | 4/3/003 |
| Security           |  | 4/4/-   |

# KNX ETS5 and Group Addresses

Export/import to/from in CSV format: Work faster and merge cells with delimiters

|    | F          | G         | H              | I                   | J             | K   |
|----|------------|-----------|----------------|---------------------|---------------|---|
| 2  | Building   | Floor     | Room           | Function            | Feature       | Merged Name (max 50 characters)                                       |
| 3  | Tower Wing | 3rd floor | guest room 301 | light main room     | on/off        | Tower Wing 3rd floor guest room 301 light main room on/off            |
| 4  | Tower Wing | 3rd floor | guest room 301 | light main room     | Status on/off | Tower Wing 3rd floor guest room 301 light main room Status on/off     |
| 5  | Tower Wing | 3rd floor | guest room 301 | light entrance area | on/off        | Tower Wing 3rd floor guest room 301 light entrance area on/off        |
| 6  | Tower Wing | 3rd floor | guest room 301 | light entrance area | Status on/off | Tower Wing 3rd floor guest room 301 light entrance area Status on/off |
| 7  | Tower Wing | 3rd floor | guest room 301 | light bath room     | on/off        | Tower Wing 3rd floor guest room 301 light bath room on/off            |
| 8  | Tower Wing | 3rd floor | guest room 301 | light bath room     | Status on/off | Tower Wing 3rd floor guest room 301 light bath room Status on/off     |
| 9  | Tower Wing | 3rd floor | guest room 301 | blinds              | up/down       | Tower Wing 3rd floor guest room 301 blinds up/down                    |
| 10 | Tower Wing | 3rd floor | guest room 301 | blinds              | stop/lamella  | Tower Wing 3rd floor guest room 301 blinds stop/lamella               |

|    | A          | B            | C             | D              |
|----|------------|--------------|---------------|----------------|
| 2  | Main group | Middle group | Group address | Merged address |
| 3  | 3          | 1            | 1             | 3/1/001        |
| 4  | 3          | 1            | 4             | 3/1/004        |
| 5  | 3          | 1            | 11            | 3/1/0011       |
| 6  | 3          | 1            | 14            | 3/1/0014       |
| 7  | 3          | 1            | 21            | 3/1/0021       |
| 8  | 3          | 1            | 24            | 3/1/0024       |
| 9  | 3          | 2            | 1             | 3/2/001        |
| 10 | 3          | 2            | 2             | 3/2/002        |

# KNX ETS5 and Group Addresses

Export/import to/from in CSV format: Work faster and merge cells with delimiters

|    | F          | G         | H              | I                   | J             | K   |
|----|------------|-----------|----------------|---------------------|---------------|---|
| 2  | Building   | Floor     | Room           | Function            | Feature       | Merged Name (max 50 characters)                                   |
| 3  | Tower Wing | 3rd floor | guest room 301 | light main room     | on/off        | Tower Wing 3rd floor guest room 301 light main room on/off        |
| 4  | Tower Wing | 3rd floor | guest room 301 | light main room     | Status on/off | Tower Wing 3rd floor guest room 301 light main room Status on/off |
| 5  | Tower Wing | 3rd floor | guest room 301 | light entrance area | on/off        | T   |
| 6  | Tower Wing | 3rd floor | guest room 301 | light entrance area | Status on/off | =F3&" "&G3&" "&H3&" "&I3&" "&J3 on/off                            |
| 7  | Tower Wing | 3rd floor | guest room 301 | light bath room     | on/off        | T   |
| 8  | Tower Wing | 3rd floor | guest room 301 | light bath room     | Status on/off | Tower Wing 3rd floor guest room 301 light bath room Status on/off |
| 9  | Tower Wing | 3rd floor | guest room 301 | blinds              | up/down       | Tower Wing 3rd floor guest room 301 blinds up/down                |
| 10 | Tower Wing | 3rd floor | guest room 301 | blinds              | stop/lamella  | Tower Wing 3rd floor guest room 301 blinds stop/lamella           |

|    | A          | B            | C             |                        |
|----|------------|--------------|---------------|------------------------|
| 2  | Main group | Middle group | Group address | Merged address         |
| 3  | 3          | 1            | 1             | 3/1/001                |
| 4  | 3          | 1            | 4             | 3/1/004                |
| 5  | 3          |              |               |                        |
| 6  | 3          |              |               | =A3&"/"&B3&"/"&"00"&C3 |
| 7  | 3          |              |               |                        |
| 8  | 3          | 1            | 24            | 3/1/0024               |
| 9  | 3          | 2            | 1             | 3/2/001                |
| 10 | 3          | 2            | 2             | 3/2/002                |

# KNX ETS5 and Group Addresses

Export/import to/from in CSV format: Work faster and merge cells with delimiters

|    | F          | G         | H              | I                   | J             | K   |
|----|------------|-----------|----------------|---------------------|---------------|---|
| 2  | Building   | Floor     | Room           | Function            | Feature       | Merged Name (max 50 characters)                                       |
| 3  | Tower Wing | 3rd floor | guest room 301 | light main room     | on/off        | Tower Wing 3rd floor guest room 301 light main room on/off            |
| 4  | Tower Wing | 3rd floor | guest room 301 | light main room     | Status on/off | Tower Wing 3rd floor guest room 301 light main room Status on/off     |
| 5  | Tower Wing | 3rd floor | guest room 301 | light entrance area | on/off        | Tower Wing 3rd floor guest room 301 light entrance area on/off        |
| 6  | Tower Wing | 3rd floor | guest room 301 | light entrance area | Status on/off | Tower Wing 3rd floor guest room 301 light entrance area Status on/off |
| 7  | Tower Wing | 3rd floor | guest room 301 | light bath room     | on/off        | Tower Wing 3rd floor guest room 301 light bath room on/off            |
| 8  | Tower Wing | 3rd floor | guest room 301 | light bath room     | Status on/off | Tower Wing 3rd floor guest room 301 light bath room Status on/off     |
| 9  | Tower Wing | 3rd floor | guest room 301 | blinds              | up/down       | Tower Wing 3rd floor guest room 301 blinds up/down                    |
| 10 | Tower Wing | 3rd floor | guest room 301 | blinds              | stop/lamella  | Tower Wing 3rd floor guest room 301 blinds stop/lamella               |

|    | A          | B            | C             | Merged address |
|----|------------|--------------|---------------|----------------|
| 2  | Main group | Middle group | Group address | Merged address |
| 3  | 3          | 1            | 1             | 3/1/001        |
| 4  | 3          | 1            | 4             | 3/1/004        |
| 5  | 3          |              |               |                |
| 6  | 3          |              |               |                |
| 7  | 3          |              |               |                |
| 8  | 3          | 1            | 24            | 3/1/0024       |
| 9  | 3          | 2            | 1             | 3/2/001        |
| 10 | 3          | 2            | 2             | 3/2/002        |

|    | A                         | B       | C   | D        |
|----|---------------------------|---------|---|----------|
| 22 | Floor no.03 - Guest rooms |         |   | 3/-/-    |
| 23 |                           | Central |   | 3/0/-    |
| 24 |                           |         | Tower Wing 3rd floor guest room 301 light central on/off              | 3/0/001  |
|    |                           | Light   |   | 3/1/-    |
|    |                           |         | Tower Wing 3rd floor guest room 301 light main room on/off            | 3/1/001  |
|    |                           |         | Tower Wing 3rd floor guest room 301 light main room Status on/off     | 3/1/004  |
|    |                           |         | Tower Wing 3rd floor guest room 301 light entrance area on/off        | 3/1/0011 |
|    |                           |         | Tower Wing 3rd floor guest room 301 light entrance area Status on/off | 3/1/0014 |
|    |                           |         | Tower Wing 3rd floor guest room 301 light bath room on/off            | 3/1/0021 |
|    |                           |         | Tower Wing 3rd floor guest room 301 light bath room Status on/off     | 3/1/0024 |
|    |                           | Shutter |   | 3/2/-    |
|    |                           |         | Tower Wing 3rd floor guest room 301 blinds up/down                    | 3/2/001  |
|    |                           |         | Tower Wing 3rd floor guest room 301 blinds stop/lamella               | 3/2/002  |

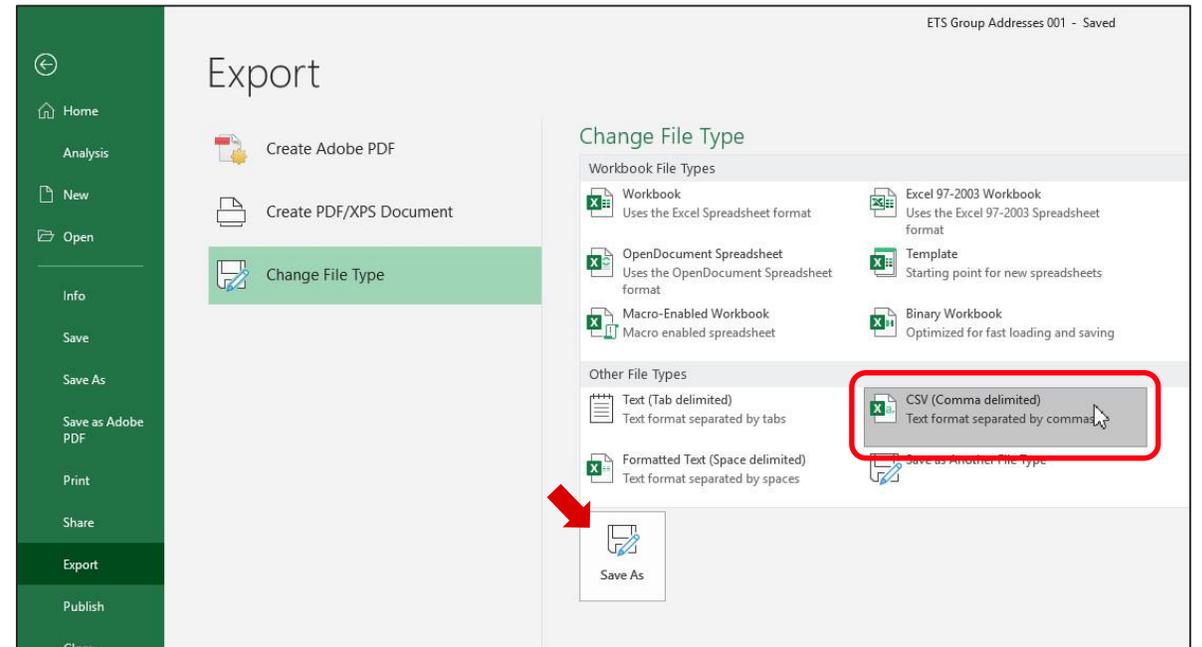
**Formulas:**  
 =F3&" "&G3&" "&H3&" "&I3&" "&J3  
 =A3&"/&B3&"/&"00"&C3

**Excel Screenshot:** Paste Values

# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

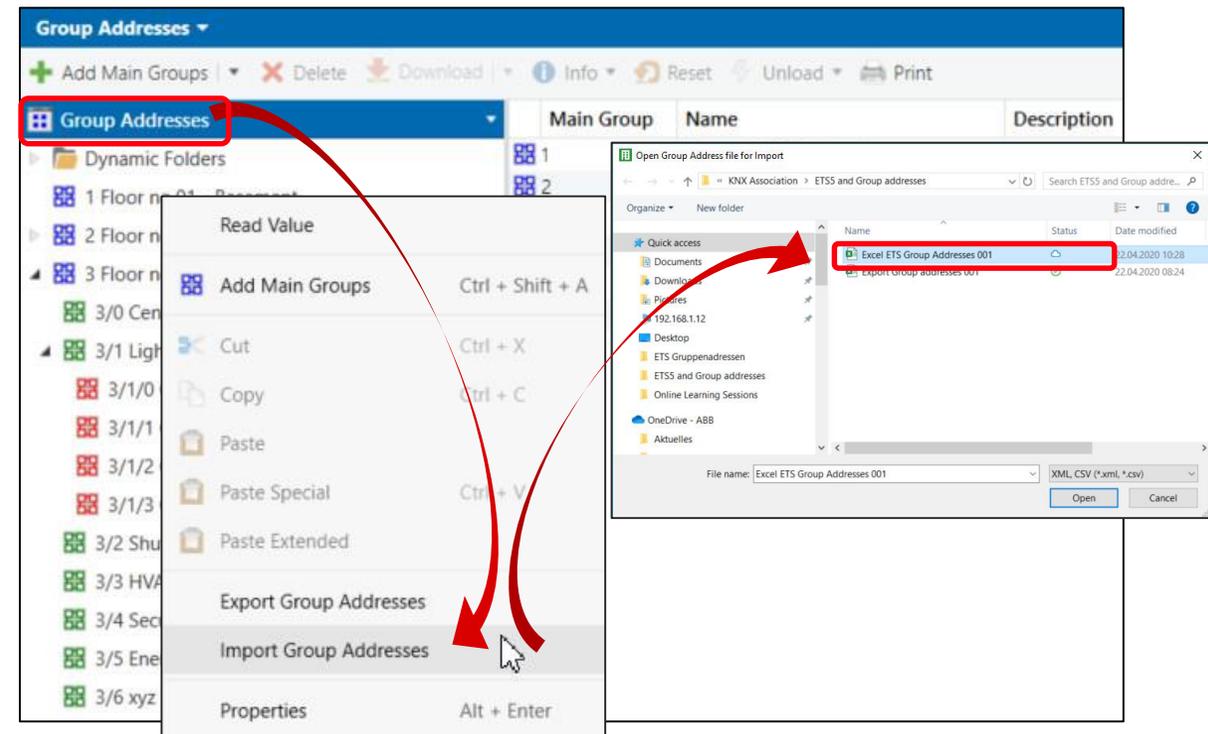
- Export the finished Excel sheet in “CSV – comma delimited” format



# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

- Select “Group Addresses” (root), right mouse click and click on “Import Group Addresses”
- Select the exported Excel file and click on “Open”



# KNX ETS5 and Group Addresses

## Export/import to/from in CSV format

Successful import of the group addresses created in Excel

The screenshot shows the 'Group Addresses' window in KNX ETS5. The left pane displays a tree view of dynamic folders, including '4 Floor no.04 - Guest rooms' with sub-folders like '4/1 Light', '4/2 Shutter and blinds', '4/3 HVAC', '4/4 Security', '4/5 Energy', and '4/6 xyz'. The right pane shows a CSV table with columns A, B, C, and D. A red arrow points from the table to the interface, indicating the import process.

|    | A                         | B                  | C  | D       |
|----|---------------------------|--------------------|--|---------|
| 22 | Floor no.04 - Guest rooms |                    |  | 4/-/-   |
| 23 |                           | Central            |  | 4/0/-   |
| 24 |                           |                    | Guest room 4-001 light central on/off              | 4/0/1   |
| 25 |                           | Light              |  | 4/1/-   |
| 26 |                           |                    | Guest room 4-001 light entrance area on/off        | 4/1/001 |
| 27 |                           |                    | Guest room 4-001 light entrance area Status on/off | 4/1/004 |
| 28 |                           |                    | Guest room 4-001 light main room on/off            | 4/1/011 |
| 29 |                           |                    | Guest room 4-001 light main room Status on/off     | 4/1/014 |
| 30 |                           |                    | Guest room 4-001 light bath room on/off            | 4/1/021 |
| 31 |                           |                    | Guest room 4-001 light bath room Status on/off     | 4/1/024 |
| 32 |                           | Shutter and blinds |  | 4/2/-   |
| 33 |                           |                    | Guest room 4-001 blinds up/down                    | 4/2/001 |
| 34 |                           |                    | Guest room 4-001 blinds sto/lamella                | 4/2/002 |
| 35 |                           | HVAC               |  | 4/3/-   |
| 36 |                           |                    | Guest room 4-001 current room temperature          | 4/3/001 |
| 37 |                           |                    | Guest room 4-001 set temperature                   | 4/3/002 |
| 38 |                           |                    | Guest room 4-001 control value                     | 4/3/003 |
| 39 |                           | Security           |  | 4/4/-   |
| 40 |                           | Energy             |  | 4/5/-   |
| 41 |                           | xyz                |  | 4/6/-   |

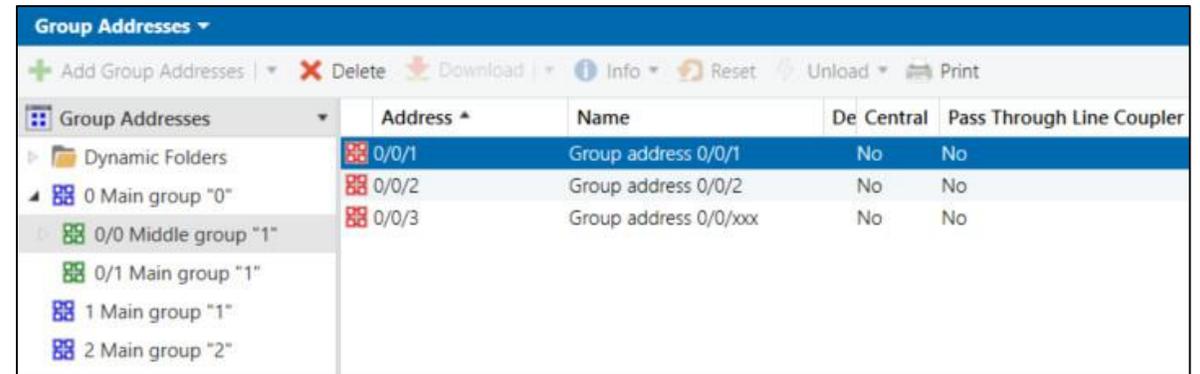
# KNX ETS5 and Group Addresses

## Broadcast group address “0/0/0”

The group address “0/0/0” is designated as a “broadcast group address” and has special properties

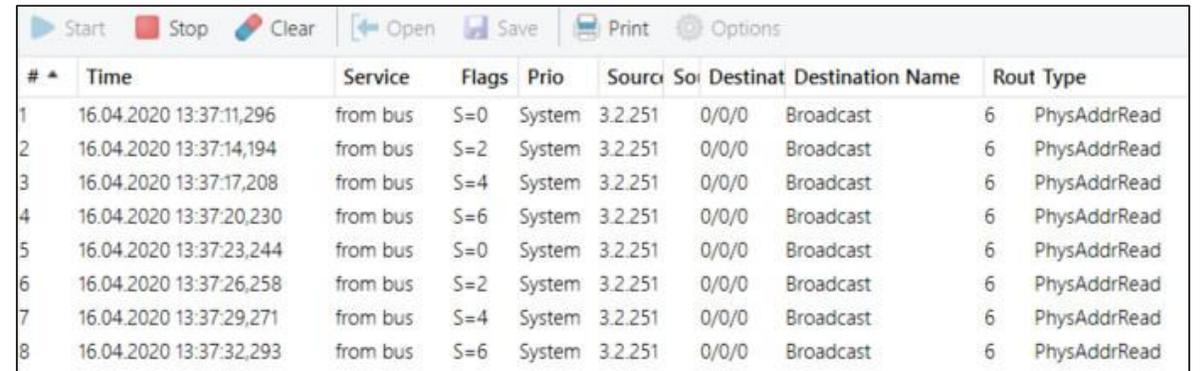
Broadcast group address “0/0/0”

- Cannot be created in the Group Address view and cannot be linked to a group object  
→ First possible group address is “0/0/1”
- Is sent with the highest priority “System”
- Passes all Line Couplers and IP Routers regardless of the filter tables entries and the value of the routing counter is not decremented
- ETS Diagnostics:  
“Device in Programming Mode”(PhysAddrRead)
- Used to download a individual address



The screenshot shows the 'Group Addresses' window in ETS5. It features a toolbar with options like 'Add Group Addresses', 'Delete', 'Download', 'Info', 'Reset', 'Unload', and 'Print'. Below the toolbar is a tree view on the left showing a hierarchy of group addresses: 'Dynamic Folders', '0 Main group "0"', '0/0 Middle group "1"', '0/1 Main group "1"', '1 Main group "1"', and '2 Main group "2"'. The main table displays the following data:

| Group Addresses | Address | Name                  | De Central | Pass Through Line Coupler |
|-----------------|---------|-----------------------|------------|---------------------------|
|                 | 0/0/1   | Group address 0/0/1   | No         | No                        |
|                 | 0/0/2   | Group address 0/0/2   | No         | No                        |
|                 | 0/0/3   | Group address 0/0/xxx | No         | No                        |



The screenshot shows the 'Diagnostics' window in ETS5. It features a toolbar with options like 'Start', 'Stop', 'Clear', 'Open', 'Save', 'Print', and 'Options'. Below the toolbar is a table displaying the following data:

| # | Time                    | Service  | Flags | Prio   | Source  | So | Destinat | Destination Name | Rout | Type         |
|---|-------------------------|----------|-------|--------|---------|----|----------|------------------|------|--------------|
| 1 | 16.04.2020 13:37:11,296 | from bus | S=0   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 2 | 16.04.2020 13:37:14,194 | from bus | S=2   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 3 | 16.04.2020 13:37:17,208 | from bus | S=4   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 4 | 16.04.2020 13:37:20,230 | from bus | S=6   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 5 | 16.04.2020 13:37:23,244 | from bus | S=0   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 6 | 16.04.2020 13:37:26,258 | from bus | S=2   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 7 | 16.04.2020 13:37:29,271 | from bus | S=4   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |
| 8 | 16.04.2020 13:37:32,293 | from bus | S=6   | System | 3.2.251 |    | 0/0/0    | Broadcast        | 6    | PhysAddrRead |

# KNX ETS5 and Group Addresses

## Broadcast group address “0/0/0”

The group address “0/0/0” is designated as a “broadcast group address” and has special properties

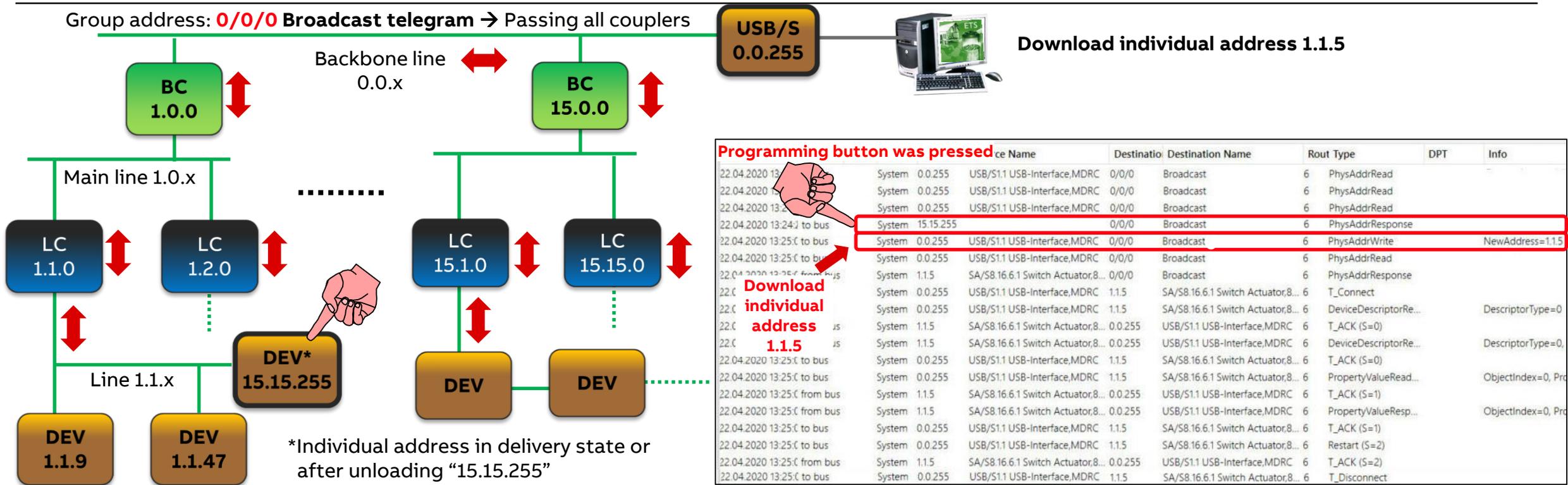
Broadcast group address “0/0/0”

- Cannot be created in the Group Address view and cannot be linked to a group object  
→ First possible group address is “0/0/1”
- Is sent with the highest priority “System”
- Passes all Line Couplers and IP Routers regardless of the filter tables entries and the value of the routing counter is not decremented
- ETS Diagnostics:  
“Device in Programming Mode”(PhysAddrRead)
- Used to download a individual address



# KNX ETS5 and Group Addresses

## Broadcast group address "0/0/0": Download a individual address

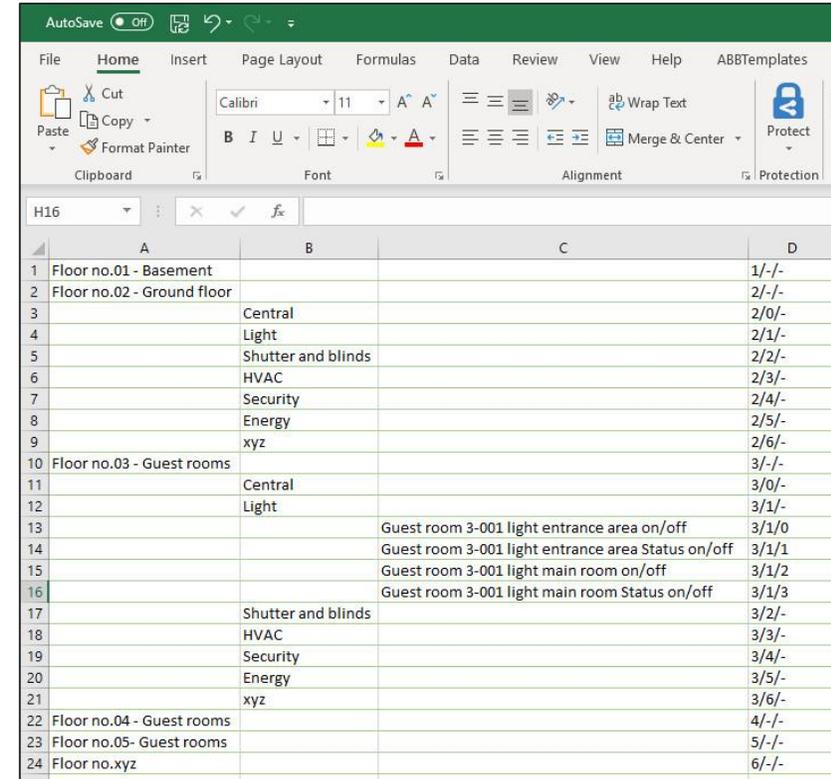
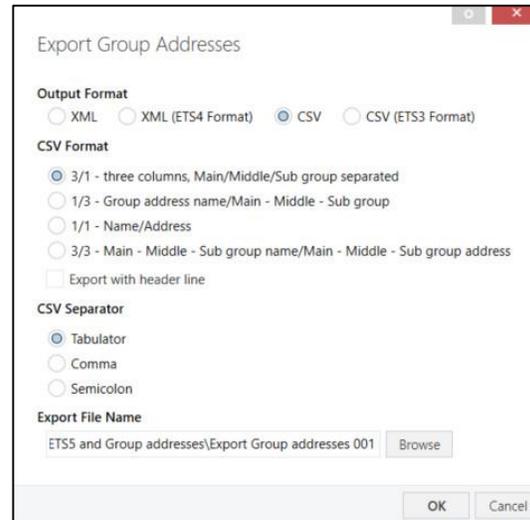
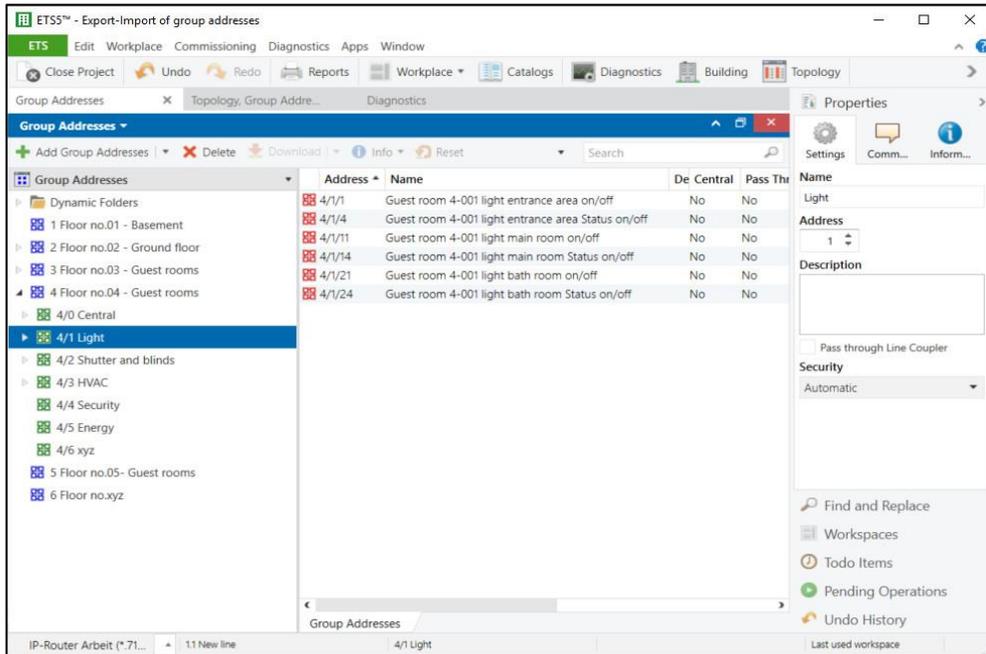


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# KNX ETS5 and Group Addresses

Online Learning Session

# KNX ETS5 and Group Addresses Questions



# KNX ETS5 and Group Addresses

## Online Learning Session

### Homepage

[www.abb.com/KNX](http://www.abb.com/KNX)

→ Products and Downloads

– Product Manual

– CAD Drawing

– Installation and Operating Instructions

– Specification Text

– ETS Application

– Selection Table

– CE & RoHS Declaration of Conformity

– •••

**ABB** HOME → OFFERINGS → LOW VOLTAGE PRODUCTS → HOME AND BUILDING AUTOMATION → ABB I-BUS KNX → LIGHTING CONTROL GLOBAL SITE

## Lighting Control

Modern light management

ABB i-bus® KNX ensures optimum lighting of industrial and office buildings as well as private dwellings. The lighting requirement is monitored and controlled. In addition, subsystems (such as 1-10 V lighting control, DALI) and their interfaces are supported.

**Main benefits**

- Increases energy efficiency by constant lighting and presence dependent control
- Improves comfort with light scenes
- More flexibility through reprogramming or adding devices while in operation to meet changing needs

**Main features**

- Universal dimming actuators for controlling loads of 210 VA up to 2400 VA
- Switch/dim actuators for switching and dimming electronic ballasts with 1-10 V control interfaces
- DALI Gateways for integration of DALI ballasts into KNX bus

**Products and Downloads**

|              |                                     |  |                         |             |                     |
|--------------|-------------------------------------|--|-------------------------|-------------|---------------------|
| All products | DALI Gateways and Light Controllers | 1-10V Switch / Dim Actuators and Light Controllers | Universal Dim Actuators | LED Dimmers | Light Level Sensors |
|--------------|-------------------------------------|--|-------------------------|-------------|---------------------|

Filters Search options

# KNX ETS5 and Group Addresses

## Online Learning Session

### Product Range Overview

Smarter Solutions for Home and Building Automation

ABB i-bus KNX

Product Range Overview 2019/2020

– Including KNX DALI Gateway Premium DG/S x.64.5.1

[LINK](#)



**Smarter Solutions for Home and Building Automation**  
**ABB i-bus® KNX**  
**Product Range Overview 2019/2020**

Product description, quick and easy selection of product codes

62 PRODUCT RANGE OVERVIEW 2019/2020 BAKK107492A3188 REV. B

### ABB i-bus® KNX Lighting Control – DALI



**DALI Gateway Basic, MDRC**  
The device is used to interface between DALI and KNX installations and incorporates the DALI power supply. One/Two DALI output(s) for up to 64/2x 64 DALI Slaves. Control and status feedback is carried out via KNX per DALI slave (64/2x 64), with lighting groups (16/2x 64), together in broadcast or per scenes (16/2x 16). Extensive fault and error messages are available. Self-contained emergency converter (64/2x 64) acc. EN 62386-202 will be supported. By means of KNX and emergency converter, different emergency tests (e.g. function and duration test) can be triggered. Feedback is sent. Slave-, staircase-, force-, block- and scene-function are integrated. DALI telegram rate can change. For diagnostic use and individual change of the DALI address or group assignment a separate ABB i-bus® Tool is available.

| Description | Mod. width | Order details |                | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|----------------|---------------|----------------|-----------|
|             |            | Type code     | Order code     |               |                |           |
| 1-fold      | 4          | DG/S 1.64.1.1 | ZCDG10199R0011 | 0.133         | 1              |           |
| 2-fold      | 4          | DG/S 2.64.1.1 | ZCDG10199R0011 | 0.15          | 1              |           |

**DALI Gateway Colour, MDRC** NEW  
For controlling DALI devices via the ABB i-bus® KNX. One/Two DALI output(s) for up to 64/2x 64 DALI slaves. DALI power supply is integrated. Control and status feedback is carried out via KNX per DALI slave (64/2x 64), with lighting groups (16/2x 16), together in broadcast or per scenes (16/2x 16). DALI devices type DTZ (Self-contained emergency converter acc. EN 62386-202) and type DT8 (colour temperature Tc / tunable white acc. EN 62386-209) will be supported. Extensive fault and error messages are available. By means of KNX and DTZ converter different emergency tests (e.g. function and duration test) can be triggered, test results are transferred back to KNX. With DT8 devices DimWarm, HCL, set and dim colour temperature are possible. Slave-, staircase-, force-, block- and scene-function are integrated. Feedback is sent. DALI telegram rate can change. For diagnostic use and individual change of the DALI address or group assignment a separate Software-Tool is available. Available January 2020.

| Description | Mod. width | Order details |                | Price 1 piece | Weight 1 piece | Pack unit |
|-------------|------------|---------------|----------------|---------------|----------------|-----------|
|             |            | Type code     | Order code     |               |                |           |
| 1-fold      | 4          | DG/S 1.64.5.1 | ZCDG10273R0011 | 0.133         | 1              |           |
| 2-fold      | 4          | DG/S 2.64.5.1 | ZCDG10274R0011 | 0.15          | 1              |           |

# KNX ETS5 and Group Addresses

## Online Learning Session

### Further information

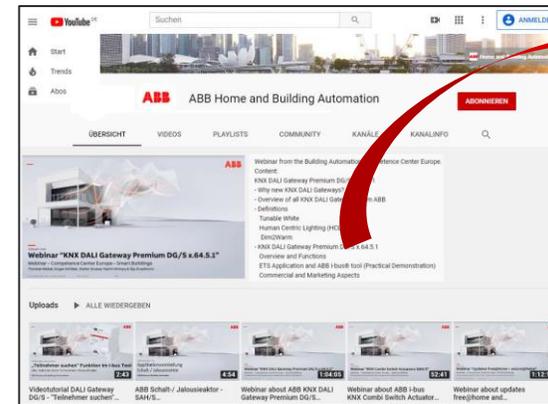
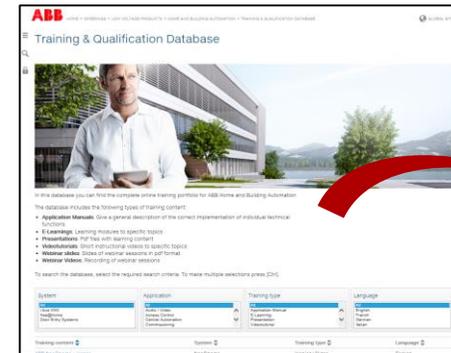
#### Training & Qualification Database

– The database includes the following types of training content:

- Application Manuals
- E-Learnings
- Presentations
- Video tutorials
- Webinar slides and videos
- [www.abb.com/knx](http://www.abb.com/knx) or <https://go.abb/ba-training>

#### Youtube

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



# KNX ETS5 and Group Addresses

## Online Learning Session

### 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](http://www.abb.com/knx) or <https://go.abb/ba-training>

→ Training and Qualification

→ Training Calendar



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### 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 webinars and on-site trainings conducted by our specialists at different ABB Competence Centers.

In this Training & Qualification Calendar you can find the educational events that are taking place during 2018.

If you are interested in a training please [REGISTER HERE](#).

To search the Calendar, select the required search criteria. To make multiple selections press [Ctrl].

| System             | Date          | Location                 |
|--------------------|---------------|--------------------------|
| All                | All           | Webinar                  |
| Door Entry Systems | January 2018  | Heidelberg, Germany      |
| Free@home          | February 2018 | Lödenscheid, Germany     |
| Fire Alarm Systems | March 2018    | s. Palomba (Rome), Italy |
| I-bus KNX          | 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       |

**ABB MyLearning**

HOME CATALOG PROFILE ADMINISTER REPORTS MY LEARNING

**CERTIFIED KNX BASIC COURSE**  
Code : 9CSC007151-GLB-EN-20190218\_22  
Certified KNX Basic Course at ABB in Heidelberg, Germany, 5 days  
★★★★★ | Share

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# KNX ETS5 and Group Addresses

## Online Learning Session

### KNX Certified Trainings 2020

Certified KNX Courses in Heidelberg

- Advanced Course: 13<sup>th</sup> to 17<sup>th</sup> Jul.
- Tutor Course: 19<sup>th</sup> to 23<sup>rd</sup> Oct.
- Basic Course : 16<sup>th</sup> to 20<sup>th</sup> Nov.
- Followed by two day application training

*Safe the date!!!*

And many more training courses in the calendar  
“International Training Dates 2020”

[www.abb.com/knx](http://www.abb.com/knx) or <https://go.abb/ba-training>



# KNX ETS5 and Group Addresses

## Online Learning Session

### Next Webinar

#### KNX DALI Gateway Premium DG/S x.64.5.1 – Special functions

- Human Centric Lighting (HCL) – Colour temperature curve following daylight
- Dim2Warm – Colour temperature changes proportionally to brightness with the effect like a light bulb
- Standby switch-off – Ballast voltage shutdown via additional switching actuator to save energy
- Scenes – 1 bit recall and 1 byte coded scenes
- ABB i-bus® tool – Search menu for a ballast with unknown address, operating hours, ...

#### Wednesday 6<sup>th</sup> May 2020

- Morning 09:00 am Europe Time (Berlin, UTC + 2h)
- Afternoon 03:00 pm Europe Time (Berlin, UTC + 2h)



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# KNX ETS5 and Group Addresses

## Online Learning Session

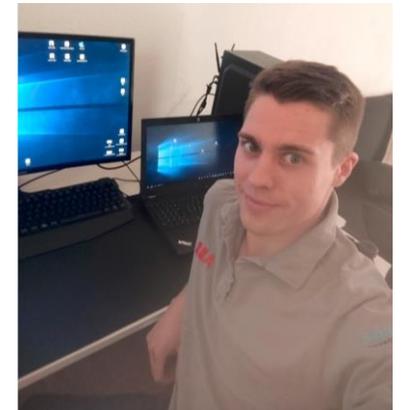
### Next online learning sessions

- Tuesday 28<sup>th</sup> April: ControlTouch – Basic Commissioning (Wizard)
- Thursday 30<sup>th</sup> April: ControlTouch – Sonos Linking
- Tuesday 5<sup>th</sup> May: ETS: Presence Detector – Zones, Calibration and Constant Light Control
- Thursday 7<sup>th</sup> May: Presence Detector – Master/Slave Concept

... and more will follow



*From home office to home office*



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