KNX

Setup Manual

About:

KNX is a system that does away with the problems of isolated devices by ensuring that all components communicate via one common language: in short, a system such as the manufacturer and application domains independent KNX Bus. This standard is based upon more than 24 years of experience in the market, amongst others with predecessor systems to KNX: EIB, EHS and BatiBUS. Via the KNX medium to which all bus devices are connected (twisted pair, radio frequency, power line or IP/Ethernet), they are able to exchange information. Bus devices can either be sensors or actuators needed for the control of building management equipment such as: lighting, blinds / shutters, security systems, energy management, heating, ventilation and air-conditioning systems, signalling and monitoring systems, interfaces to service and building control systems, remote control, metering, audio / video control, white goods, etc. All these functions can be controlled, monitored and signalled via a uniform system without the need for extra control centres.

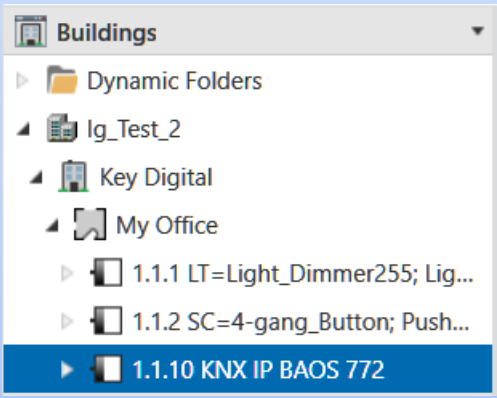
Setup Instructions:

1.)

To integrate a KNX System into Compass, please begin by ensuring that the KNX project is 100% complete and in working order. Otherwise, do not proceed with this manual.

2.)

Before we begin, please note that Compass does not support the multi-layered zone structure found in the KNX System. When the project is imported, Compass will only recognize the final zone and the devices found in each particular zone. For example, in our project found below, Compass will capture the zone “My Office” and ignore the layers found above:

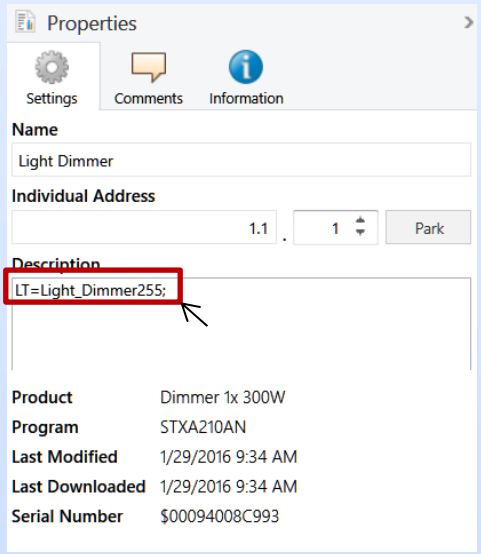


3.)

Start off by adding the KNX BAOS Controller. It is the only controller supported by Compass and is required for system integration. Make sure to set the data points and group addresses for every (function) variable that is to be controlled by the BAOS.

4.)

For each device, a type must be assigned in the description field on the properties section found on the right side of the screen. A figure is shown below.



The format for a description is as follows (without quotations): "*Type=Remote_Page_Name;*"

Possible *Type* values are listed in the table below.

Type	Value
VD	For Video Devices
AD	For Audio Devices
LT	For Lighting Devices
SH	For Shading Devices
CLI	For Climate Controlling Devices
SC	For Scene Controlling Devices
SE	For Security System Devices
AT	For Automation Devices
WB	For Web Control Devices

Name is the value of one of our predefined Remote Pages found within the KNX Module.

These pages contain the graphical controls/commands for the devices.

Possible *Remote_Page_Name* values are listed in the table below.

Name	Value
Dimmer255	For Any Device Where (function) variable is 0-255
Dimmer	For Any Device Where (function) variable is 0-100
Switch	For Any Device with Switch (function) variable is (On/Off)
Light_Dimmer255	For Light Dimmers Where (function) variable is 0-255
Light_Dimmer	For Light Dimmer Where Level is 0-100
Shade_Dimmer	For Shades (function) variable (Open/Close and Up/Down)
Shade_Blinds	Same as Shade_Dimmer Except Also Has Blind Controls
HVAC	For Climate (function)variable Devices
1-gang_Button	For 2x1 (function) variable Button Panel
2-gang_Button	For 2x2 (function) variable Button Panel
3-gang_Button	For 2x3 (function) variable Button Panel
4-gang_Button	For 2x4 (function) variable Button Panel
Sensor_Temperature	For Simple Graphics (function) variable Temperature State
Sensor	For Simple Display of a Sensor (function) variable State

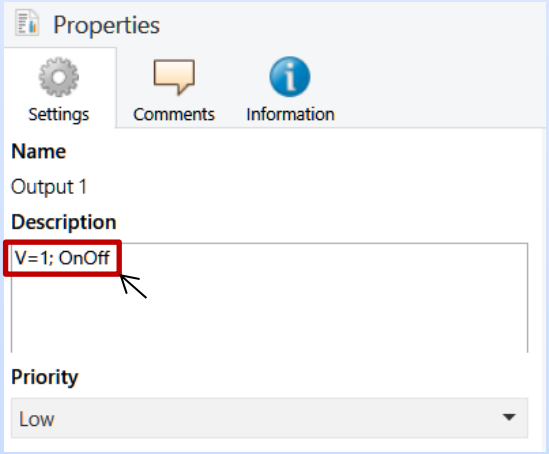
As an example, for a shade with blind controls, the description would be “SH=Shade_Blinds;”.

Continue this process for every device in the KNX system that you want to control within Compass.

Important: The device descriptions must be in this exact format (withiout quations): “Type=Remote_Page_name;”

5.)

Similar to the device descriptions, (functions) variables need to also be given a valid description. These descriptions are used to populate the list of Remote Pages for control. So each (function) variable that you intend to control/read must be given a description. An example is shown below.



The format for a description is as follows: *V=X; Name*

V for variable is a constant and is always included.
X, an index, is used for ordering the device Remote Pages when added to Compass.

Name can assigned the value of whatever the (function) variable operation is, On/Off, Dimming etc.

For example, if there is a dimmer device, the description for the dimming function that is ordered first would be “V=1; Dimmer” if there were a second function to set the light On/Off , the description would be “V=2; On/Off”.

Continue this process for every (function) variable in every device in the KNX system that you want to control within Compass.

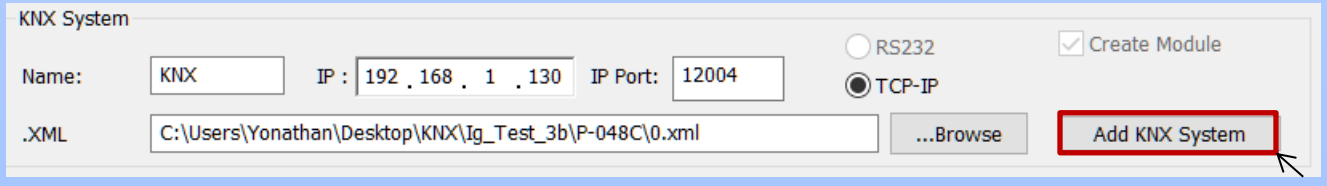
* Important: The device descriptions must be in this exact format (withiout quations): “V=X; Name”*

6.)

Make sure to have every description for devices/ (functions) variables correctly set. Save and then export the project as a .knxproj. The file is just a zip folder given the extension .knxproj. Right click on the .knxproj file and change the extension name to .zip. For example, if we had a project name “KNX_System.knxproj” the new name should be “KNX_System.zip”. Once done, right click the file and extract the folder contents. Once unzipped, there will be several folders and files. Locate the folder that begins with “P-” and ends with a sequence of 3 digits. Open that folder. There, you will find 2 files. One named “0.xml” and another “project.xml”. Copy and save the “0.xml” to somewhere on your computer. That will be the file used to integrate the KNX system into Compass.

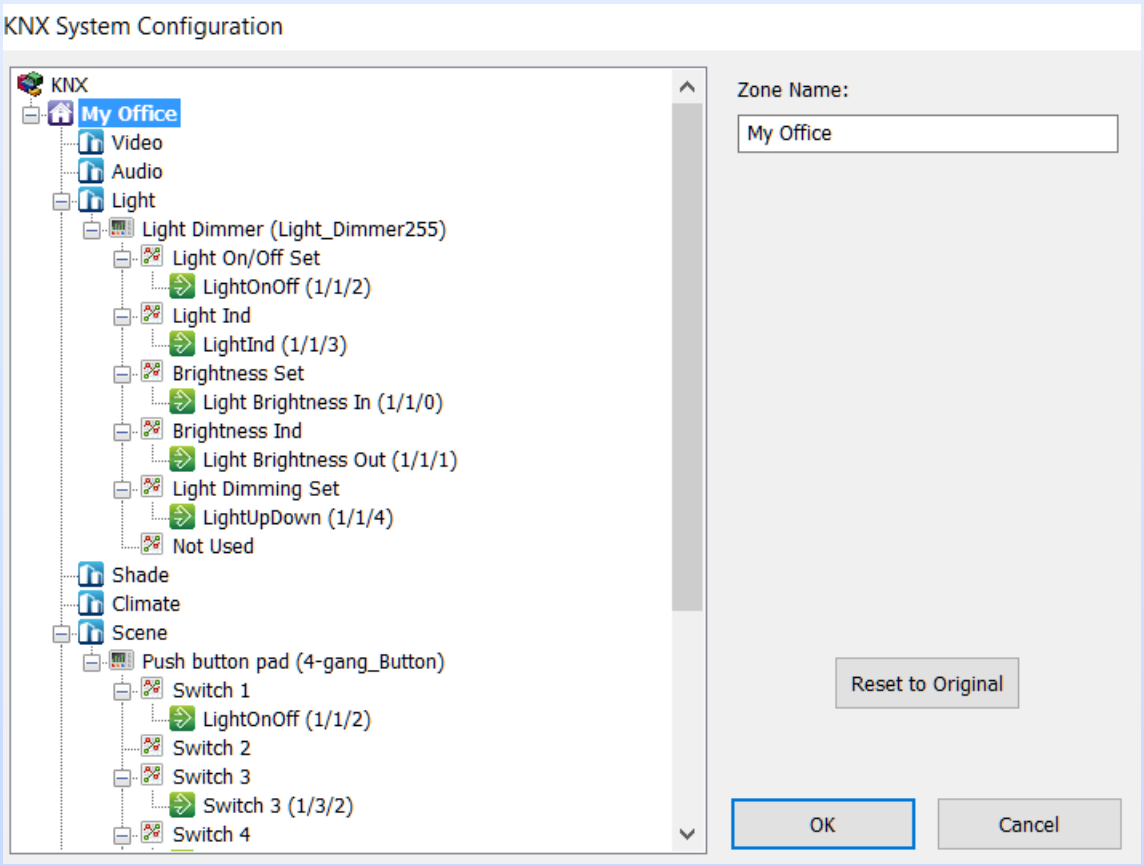
7.)

Open your Compass Control Project and under the “Program tab” in the “Setup Controllers” section there will be a field specifically dedicated for KNX Systems. First, enter the IP address of the BAOS Controller. Then click on the “Browse” button. Navigate to the location where you saved your “0.xml”. Do not change the IP Port setting. Click the “Add KNX System” button. An example is below.



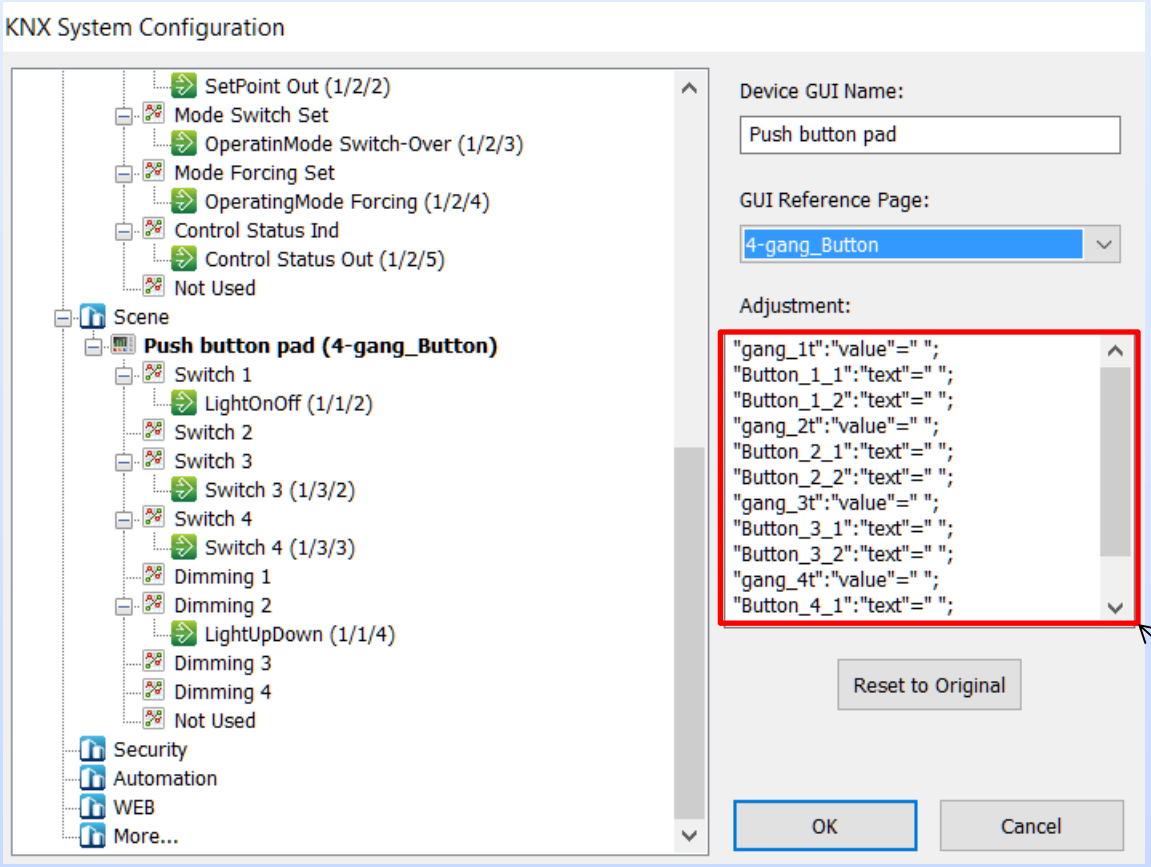
8.)

A window will appear like the one shown below.



This is the configuration populated in Compass based on the KNX xml file that was just imported. It begins with the Zones. Within each Zone are device categories. Within each device category devices are listed. Devices contain different (function) variables. Here, the order of (functions) variables for devices can be changed. For example, under the "Scenes", the positions for "LightOnOff(1/1/2)" and "Switch 3 (1/3/2)" can be moved on to positions "Switch 2" and "Switch 4", respectively. The same can be done for other devices and their functions (variables).

Scene (Push button pads) button panels are read into Compass with special adjustable text. The texts on these buttons are usually physically ingrained with no internal setting value in the KNX system. When integrated into Compass, the push buttons have text that can be configured by the programmer. For example, if a 2x4 button panel is added Compass will generate a configuration like the one shown below.



Here, "gang_1t" is the text that will be placed in the center of the 1st row of two buttons. "gang_2t" text will be placed in the center of the 2nd row of two buttons. That pattern follows through the remaining 2 rows of buttons. To edit the text field simply change the "value" = " " to "value"= "some_text." For example, if a programmer wanted to name the first 1 row of buttons "Noon Level", the "gang_1t" … line would change to ""gang_1t":"value"="Noon Level";". Text values for the actual buttons are listed as "Button_Row_Column: "text"= " " ". If a Programmer would want to add the text value "Evening" to the 2nd button on the first row, the line "Button_1_2": "text"= " " "would be edited to "Button_1_2:" "text"= "Evening " ". After ensuring everything is configured correctly click "OK".

10.)

Head over to "Controlling flow" under the "Program" tab, drag and drop the KNX Baos device into the Project. Then click on Compile Project. The project is now complete. Upload to the cloud and you may now update the IPad and/or other controllers.