Loxone Control of Systemline 7

Rev 1.0
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1.0 Introduction

The Loxone Mini Server allows any Loxone system to control S7, but also any KNX system using the built in KNX bus interface. It is possible to configure the Mini Server to map KNX telegrams by group address to output S7 TCP/IP commands.

S7 has been designed so that other control systems such as Loxone can connect to S7 and send some commands. All the control protocol to achieve this is published on the Systemline7 web page

http://www.systemline.co.uk/systemline/s7.htm

It is important to configure the appropriate type of control at each device to give a simple and reliable end user experience. KNX control panels usually have from 6 to 12 buttons that can be labelled with its function, such as 'Scene 1' or 'Off' for lighting control. The ideal audio function on these hard button keypads is to simply select a radio station or playlist and adjust the volume. Radio stations can be stored as Favourites on an S7 system with a server using the S7 App, and these are listed numerically on the App as shown below.
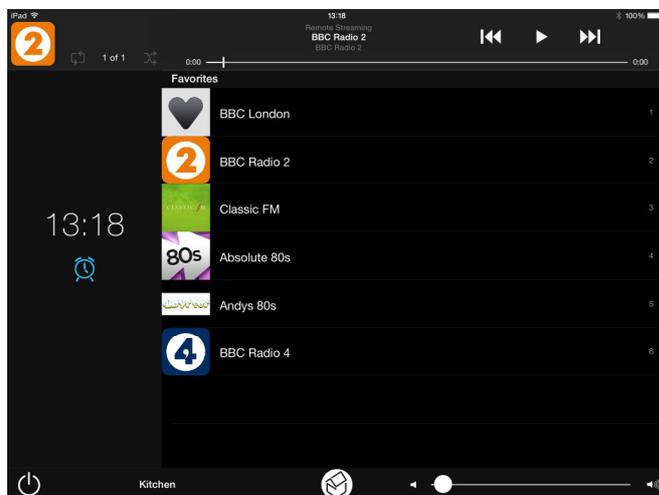
In order for the Loxone Mini Server to select a favourite in a zone, it only needs to communicate with the Netamp controlling the zone, as long as it has software 0004-0011 or 0003-0008 or higher. Netamps with this software have commands to select stored favourites on the server. If the Netamp has lower software, then you should perform a software update from the internet.

Favourites can also be playlists of music as stored by the end user, in which case you may also consider adding in play, stop, pause, and skip commands as button functions.

Once the Loxone system has been configured to include the Netamp as a virtual device, the commands to select favourites, sources and volume added to button presses, the end user

will be able to use KNX keypads to select favourites and adjust the volume without the need to open up an App.

A Loxone project titled 'Loxone Config - S7' is available to download from the Systemline7 website downloads section. This already has a Netamp with the command sets and mapping from a KNX group address configured for control.

2.0 Adding the Netamp as a Virtual Output

You should give all S7 devices fixed IP addresses to ensure consistent control from the Mini Server and make a note of these.

2.1 Open up the Loxone Config software and your project, select 'Virtual outputs' from the tree menu.

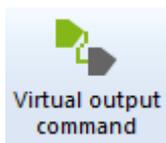**2.2** Press the 'Virtual Output' button at the top of the screen
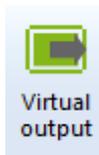
2.3 Edit the properties of the new virtual output, the Netamp requires port 9760 and you must enter the correct IP address of the Netamp, for example

tcp://192.168.1.131:9760

2.4 Add a virtual output command for the Netamp using the IP command set or the 1 way S7 command table. For example to set zone 1 to select favourite 1:
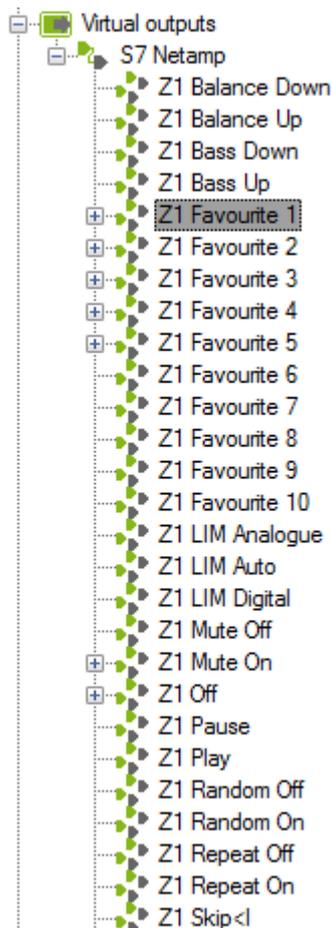
$s1fav1\r\n

Add this to the 'Command for ON' section, and label the command.

2.5 Add all other commands that you wish to use. The example project has 10 favourites and all other simple one way commands. You must also define commands for zone 2.


2.6 Add more Netamps as virtual devices, you will need one Netamp for every two zones you wish to control. Remember to put in the correct IP address for each.

3.0 Mapping a KNX Group address to a Netamp command

It is recommended that you set up an Audio tab and add a Radio buttons module to map favourites to inputs.

3.1 Use the program tab and select 'Radio buttons', add this to a tab labelled 'Audio'
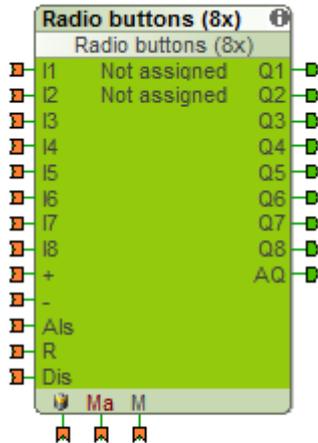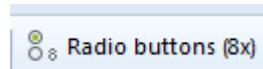
3.1 Drag the favourite commands from the Netamp Virtual device and map them to outputs on the Radio buttons module. Rename the module 'Z1 Favourites' or the zone you are configuring. Drag the off command to output 8.
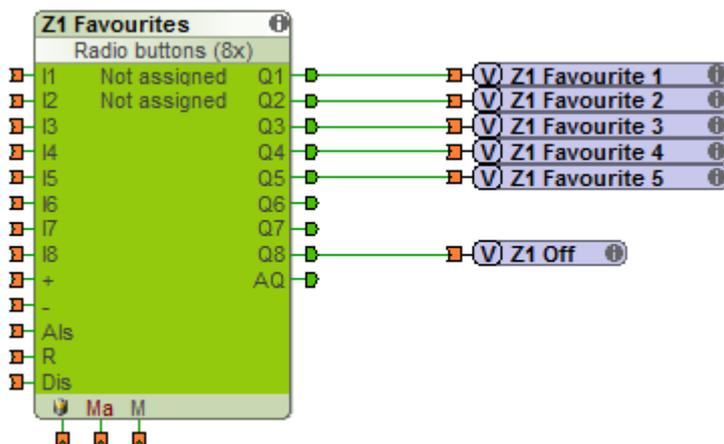
3.2 Add KNX Sensors for buttons activating S7 audio. You will need one for each button on a separate group address.
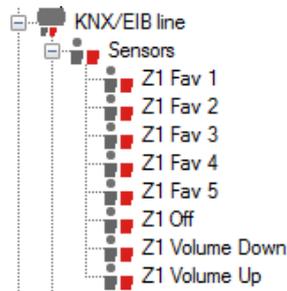
3.3 Insert the correct group address for each sensor, category as 'Audio' and Switch/Push-button. Repeat this for all sensors, using your KNX group addresses.

Property	Value
Common	
Name	Fav 1
Description	
Connection	KGB.0.4
☐ Statistics	
User interface	
☐ Use	
Authorized local us...	All
Authorized remote...	All
Category	**Audio**
Room	Global
Rating	☆ ☆ ☆ ☆ ☆
EIB address	3/0/4
Type	Switch/Push-butto ▼
☐ Do not send a resp...	
Query status	Never
☐ Use remanence	
Display	

3.4 Map the KNX sensors for favourites and off to inputs on the radio favourite's module
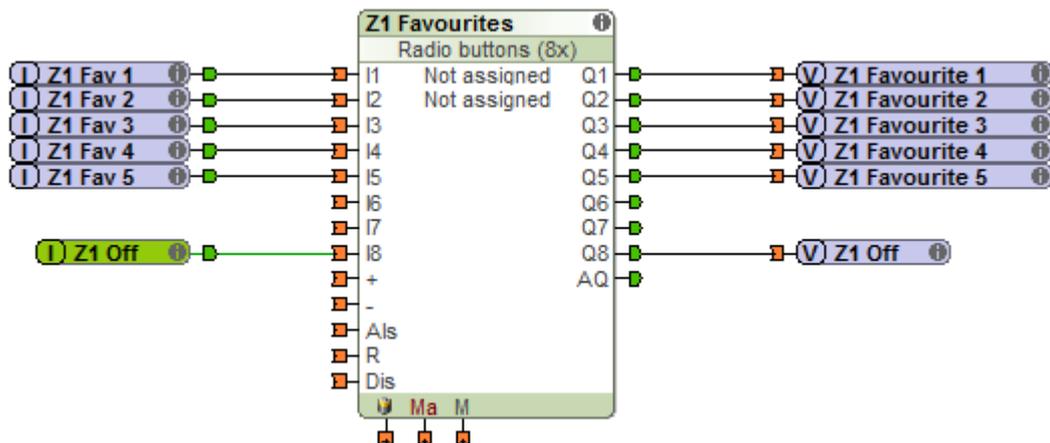
4.0 Creating press and hold volume

You can configure the mini server to give a press and hold function for volume.

4.1 Add a 'Pulse Generator' module to the audio tab.

4.2 Rename this 'Z1 Audio Up' or the zone you are configuring and set the ON and OFF duration at 0.1s

Property	Value
☐ Common	
Name	Z1 Volume Up
Object colour	☐ c8dcec
☐ Parameters Default value	
TH: ON Duration [s]	0.1
TL: OFF Duration [s]	0.1

4.3 Drag the KNX sensor for volume up to the input of the pulse generator and drag the S7 volume up virtual output to the output of the generator. Repeat for volume down. Make sure you invert the input by holding your mouse over the 'DisP' and right clicking to reveal the little red dot on the input line.
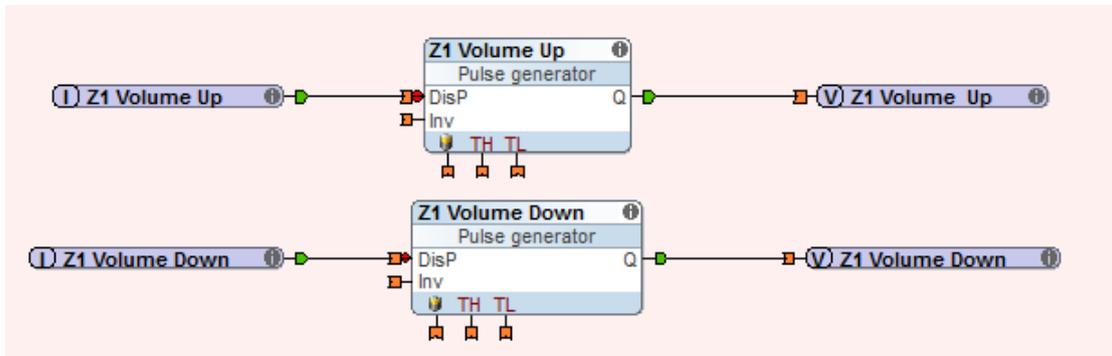
5.0 Assigning functions to the App

It is possible to display these functions on the Loxone App, so that the user can select favourites and alter the volume without needing to jump to the S7 App. It is then possible to create a button in the Loxone App that opens the S7 App, selects the correct zone and provide a return path back to Loxone.

5.1 Assign the Radio Favourite modules to a room in its properties and assign its category as 'Audio'

Property	Value
Common	
Name	Z1 Favourites
Description	
Object colour	☐ c8d8b3
User interface	
☑ Use	
☐ User interface p...	
Authorized local us...	All
Authorized remote...	All
Category	**Audio**
Room	Kitchen
Rating	☆ ☆ ☆ ☆ ☆
Edit outputs	Click here
Parameters Default value	
Ma: Max	8
⊞ Logging/Mail/Call/Track	

5.2 Create a virtual input for App volume, assign this to the room and audio category and also select 'Up-down buttons' as Input type.

Property	Value
Common	
Name	Z1 Volume
Description	
Connection	VI1
☐ Statistics	
User interface	
☑ Use	
☐ User interface p...	
Authorized local us...	All
Authorized remote...	All
Category	Audio
Room	Kitchen
Rating	☆ ☆ ☆ ☆ ☆
☑ Use as digital input	
Display	
Input type	Up-down buttons
☐ Show status only	
⊞ Simulation	
⊞ Logging/Mail/Call/Track	

5.3 Map this virtual input to the pulse generators for volume.
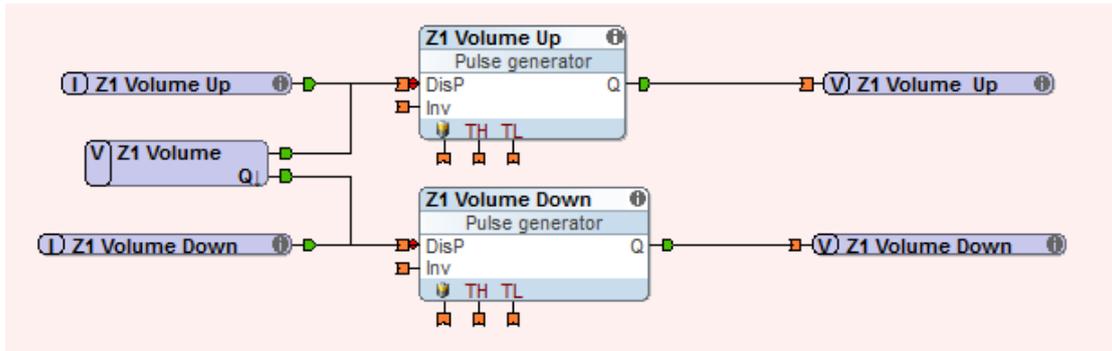
5.4 Create a virtual input for mute with the same room and category and map this directly to the mute virtual output for the Netamp

5.5 Name the favourites in the radio module so that they appear correctly in the Loxone App. If wish to use less than 7, then leave them blank but you must move the Off function to the first available slot with empty slots appearing after it.
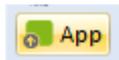

5.6 Create an App module and assign it to the same room and category. Enter the correct URL to call the S7 App, provide a return path to Loxone and also select the correct zone by entering the unique MAC address of the zone player, found from the Netamp web page.

Property	Value
⊟ Common	
Name	S7 App
Description	
Object colour	☐ c8c8ec
⊟ User interface	
☑ Use	
Authorized local us...	All
Authorized remote...	All
Category	Audio
Room	Kitchen
Rating	☆ ☆ ☆ ☆ ☆
URL	**Systemline7-x-callba...**
Icon	

URL example:

Systemline7-x-callback://x-callback-url/?x-source=Loxone&x-success=loxonehd%3A%2F%2F&sboxplayer=00:04:20:cb:2d:99

This will open the S7 app and provide a return path back to Loxone by using loxonehd://. It will also select the zone with unique MAC address 00:04:20:cb:2d:99. Refer to the document 'S7 App call & Callback Guide' or video 'S7 Callback URL' available from the S7 website for more detail.

Appendix 1

Command	Zone 1	Zone 2
On	$s1srcon	$s2srcon
Off	$s1srcoff	$s2srcoff
Source 1	$s1src1	$s2src1
Source 2	$s1src2	$s2src2
Source 3	$s1src3	$s2src3
Source Local	$s1srcloc	$s2srcloc
Source Previous	$s1srcpre	$s2srcpre
Vol+	$s1vol+	$s2vol+
Vol-	$s1vol-	$s2vol-
Mute	$s1volmute	$s2volmute
Mute Off	$s1volmoff	$s2volmoff
Bass +	$s1bas+	$s2bas+
Bass -	$s1bas-	$s2bas-
Treble +	$s1tre+	$s2tre+
Treble -	$s1tre-	$s2tre-
Balance +	$s1bal+	$s2bal+
Balance -	$s1bal-	$s2bal-
LIM Analogue	$s1lima	$s2lima
LIM Digital	$s1limd	$s2limd
LIM Automatic	$s1lim1	$s2lim1
Favourite 1	$s1fav1	$s2fav1
Favourite 2	$s1fav2	$s2fav2
Favourite 3	$s1fav3	$s2fav3
favourite 4	$s1fav4	$s2fav4
Favourite 5	$s1fav5	$s2fav5
Favourite 6	$s1fav6	$s2fav6
Favourite 7	$s1fav7	$s2fav7
Favourite 8	$s1fav8	$s2fav8
Favourite 9	$s1fav9	$s2fav9
Favourite 10	$s1fav10	$s2fav10
Play	$s1trn1	$s2trn1
Stop	$s1trn2	$s2trn2
Pause	$s1trn3	$s2trn3
Skip >I	$s1trn4	$s2trn4
Skip I<	$s1trn5	$s2trn5
Repeat On	$s1trn6	$s2trn6
Repeat Off	$s1trn7	$s2trn7
Random On	$s1trn8	$s2trn8
Random Off	$s1trn9	$s2trn9

All commands sent on port 9760, carriage return and line feed after each (0D 0A (\r\n)).