# Realix Evaluation Kit Instruction

Before using the evaluation kit, please read this document carefully.

## Introduction

This evaluation kit allows you to explore the capabilities of the Realix hardware and software. The kit consists of:

- Realix SBUS/DMX Box (used as an SBUS Box in this kit), including power supply
- Realix Control Pod
- Realix I/O Pod
- Realix RFID Pod
- Additional components to support the evaluation, including input and output devices, a lock, and a separate power supply for the lock

To get started, you'll need a valid license. You can order a license that includes a 60 days free trial period. If you cancel within this period, no charges will apply.

Although you can create your own project for the evaluation kit, it is recommended to first use the included demo project. This project demonstrates how to work with the Realix hardware and software and helps you get started quickly.

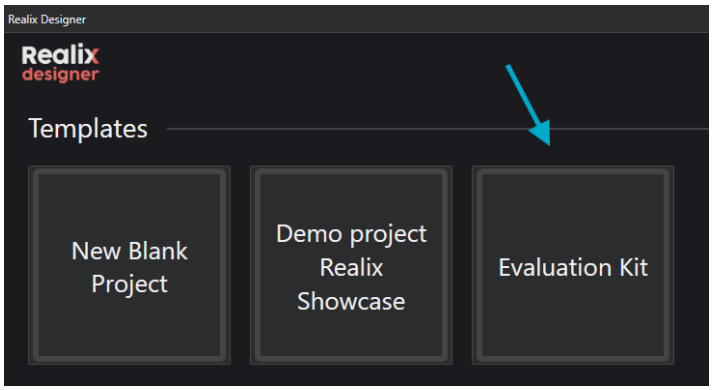
## Installing Software

Go to the Realix website (https://realix-erc.com/downloads/) and download and install the following applications

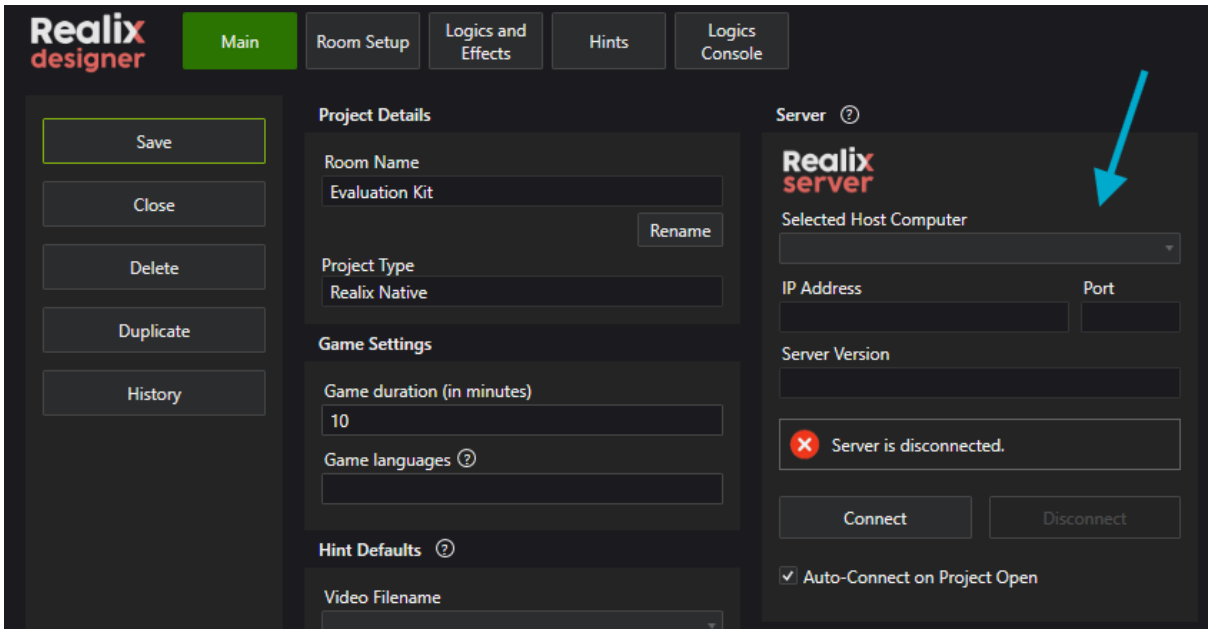
- Realix Core Server
- Realix Designer
- Realix Game Host
- Realix Audio Box

The Core Server runs as a Windows service and forms the heart of the system.

After installation of all applications, start the Designer and select the *Evaluation Kit* template to create a new project.

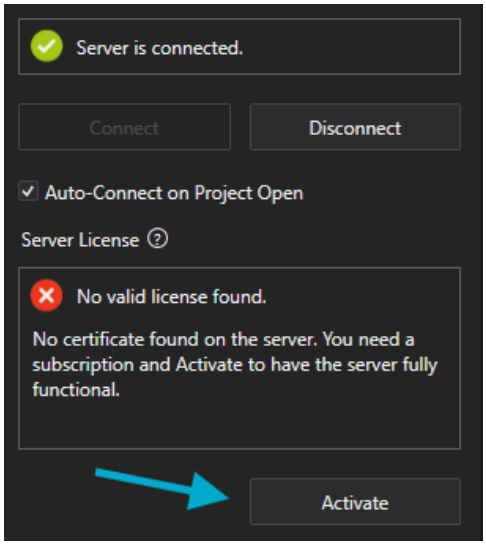


After creating the project, the first step is to select the server. This should be the computer on which the Core Server is installed. For this evaluation setup, this will typically be the same machine where you installed all applications.




When the server is connected, it will indicate that no valid license is present. Even without a license, you can review and edit projects and load the device configuration, such as I/O modules and RFID readers. However, the puzzle logic cannot be activated.

## Activating the License




To fully evaluate the system, a license is required. A 60 days free trial is included. If you cancel within this period, no charges will apply.

Visit (https://realix-erc.com/pricing/) and choose a subscription. Click *Subscribe* and follow the instructions.

You will receive an activation code by e-mail which you can use to activate.

**Note:** The license is assigned to the server running the Core Server. Supporting applications, such as the Designer, Game Host, and Audio Box, do not require a license.

After this steps you can start to connect with the Evaluation Kit.

# Components

Explanation of components of the Evaluation Kit

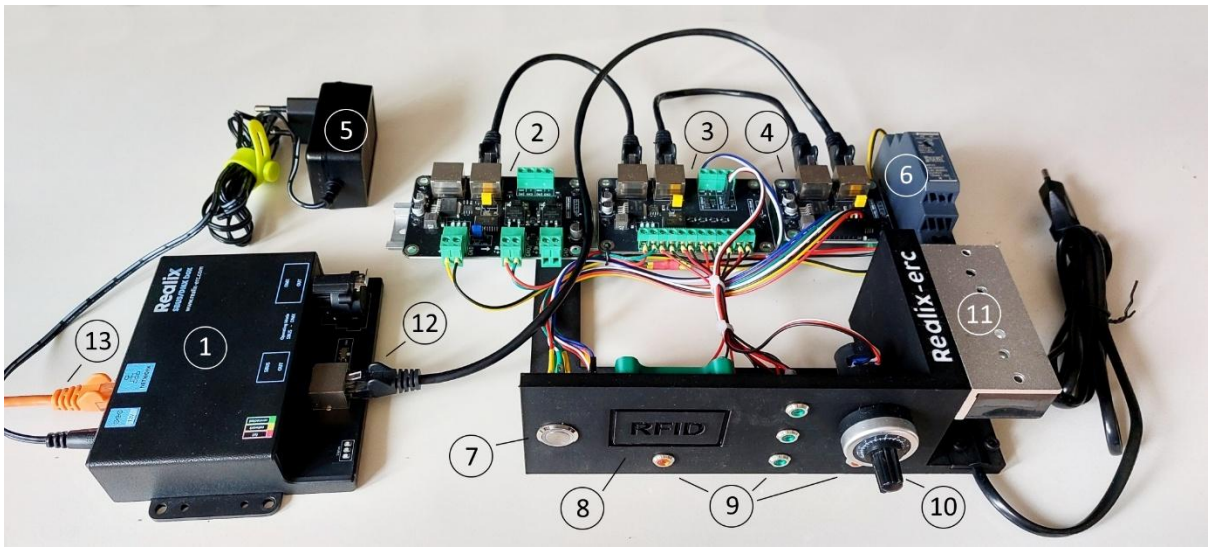



*Figure 1: Evaluation Kit components*

1. **SBUS / DMX Box**: Central unit that connects the system to the network and SBUS
2. **Control Pod**: Controls actuators like locks and manages power switching
3. **IO Pod**: Provides configurable inputs and outputs for buttons, LEDs, and sensors
4. **RFID Pod**: Reads RFID cards for player interaction
5. **Power Supply**: Main power adapter for the SBUS system and pods
6. **Control Power Supply**: Separate power supply for the Control Pod to drive the lock
7. **Push Button**: Button for testing digital input, the light is connected to a 5V output
8. **RFID Area**: Position where RFID cards are scanned
9. **LED Indicators**: LED Indicators connected to 5V outputs
10. **Rotary Knob**: Potentiometer for testing analog input
11. **Electric Lock**: Lock to evaluate Control Pod driving the lock
12. **SBUS Cable**: Cable carrying power and RS485 communication between box and pods
13. **Ethernet Cable**: Connects the box to the network

# Setup the Devices

The Realix hardware and software support full auto-discovery, with each component having a unique ID. The Evaluation Kit project already includes all required devices, but they are not yet assigned to the physical hardware, as the device IDs of your specific set are unknown at the time of project creation.

---

***Important:*** *Realix hardware and software devices rely on UDP for low-latency, real-time communication. For reliable operation, the Realix Core Server must be connected via a wired network. The use of Wi-Fi is strongly discouraged, as unstable connections can significantly degrade performance and may negatively affect the overall experience.*

---

Assigning the devices is straightforward and is explained in the following steps.

## Setup the hardware devices.

- Connect the SBUS cables from the SBUS Box to the RFID Pod, then to the I/O Pod, and finally to the Control Pod. **Note:** Although standard Ethernet cables are used, SBUS is not an Ethernet network. Do not connect SBUS cables to Ethernet devices.
- Connect the box to the network. The device uses DHCP to obtain an IP address, so a DHCP server must be available on the network.
- Finally connect the power using the 12V power supply.

If the network connection and DHCP are working correctly, the device will be assigned an IP address. The yellow status LED on the box will turn on. When connected, the pods will also indicate this by lighting their yellow status LEDs.

At this stage, the control power supply (the one on the DIN rail) does not need to be connected. It is only required to operate the electronic lock during gameplay.

## Setup the software devices.

Realix provides two software devices: the Audio Box and the Media Box. These can run on a PC or a Raspberry Pi.

For the Evaluation Kit demo, the focus is on the Audio Box. At a later stage, you can also use the Media Box, which supports video, audio, and text, and can be extended using HTML and JavaScript.

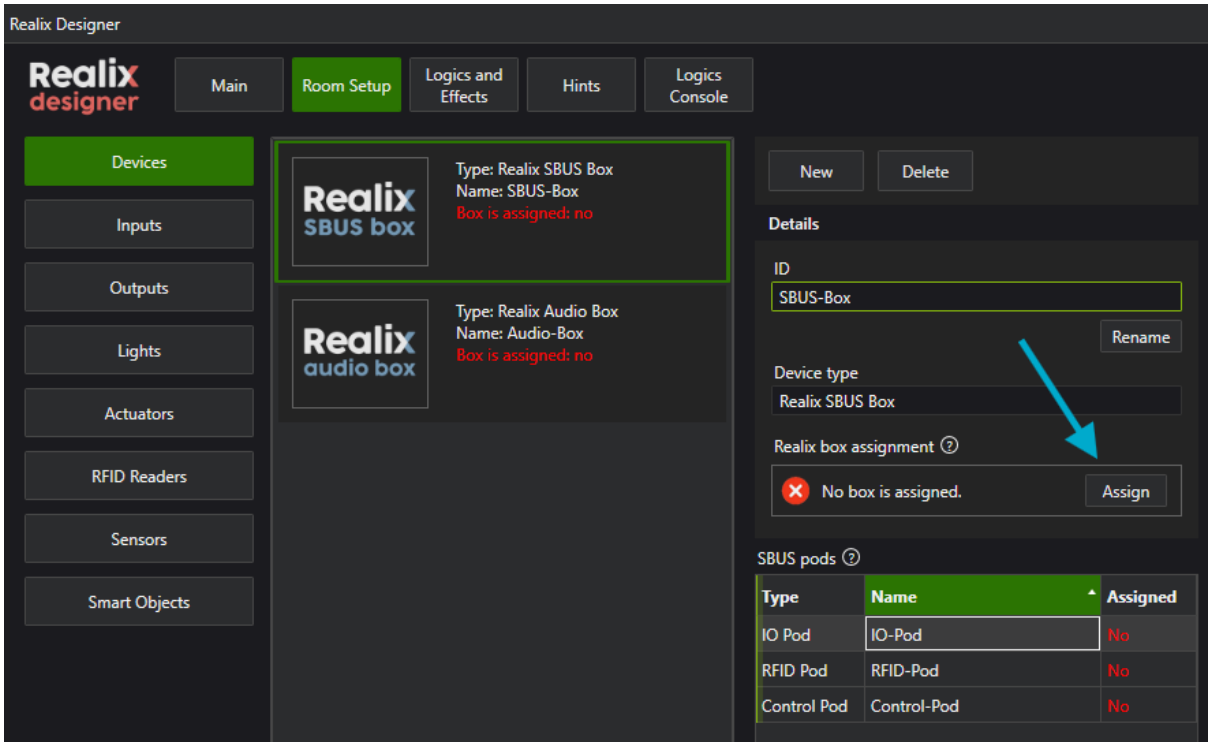
In this evaluation, the Audio Box is used in a basic configuration with the default Windows audio driver. However, it can be configured as a multi-channel audio device, supporting up to 20 output channels. This makes it suitable for multi-room escape room setups using a single device.

To continue with assigning hardware and software devices to the Evaluation Kit project , **start the Audio Box application** that you installed.

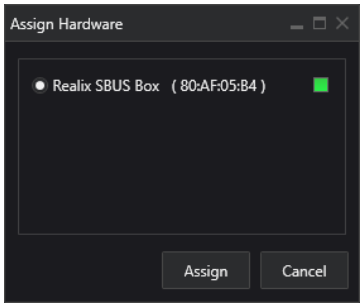
## Assigning devices

Start the Designer and open the Evaluation Kit project you created before (if not already open).

You will see both boxes and the three pods listed as *unassigned*. This means the device definitions are present in the project, but they have not yet been linked to the physical devices.




For both boxes (SBUS Box and Audio Box), click *Assign*. A dialog will appear showing the discovered devices. The dialog should look like this:




Select the device and click *Assign*. If no device appears in the dialog, verify that the network connections are correctly set up.

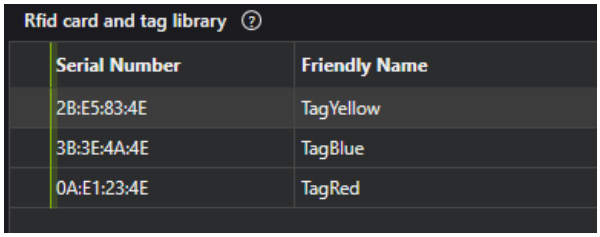
When assigning the Audio Box, its application window will open to indicate that it has been successfully assigned. Minimize this window again.

Next, select the SBUS Box and assign the pods one by one in the same way. Select a pod from the list and click *Assign* below the list.

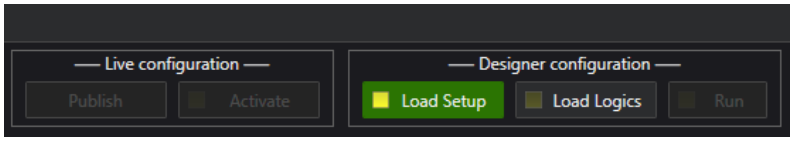
Now all devices are assigned and you ready for the next step running the game.

## Assigning Tags

**A very important step not to overlook** is setting up the RFID tags. In the ERC, each tag's serial number is linked to a logical name. Within puzzles, you use these logical names instead of the actual serial codes. This keeps your puzzles independent of specific tags, if a tag needs to be replaced, you simply assign the new tag's serial number to the same logical name without changing the puzzle logic.

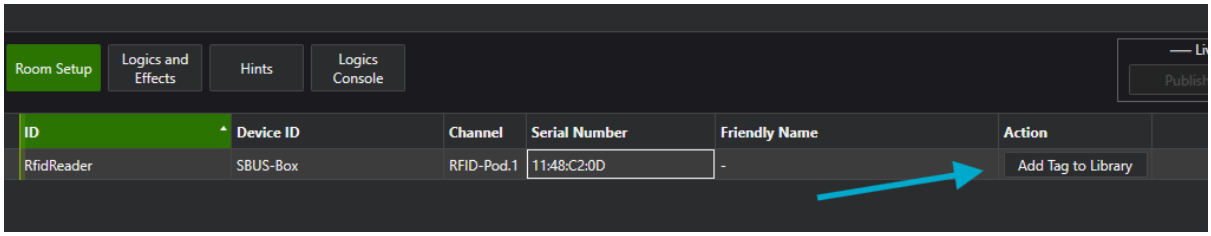



Go to the RFID Readers page under Room Setup and Load the setup.




Then hold a tag, such as the yellow tag, up to the reader and click **Add Tag to Library**. It will appear in the list below, where you can assign it the name *TagYellow*. You can then remove the original *TagYellow* entry from the library.

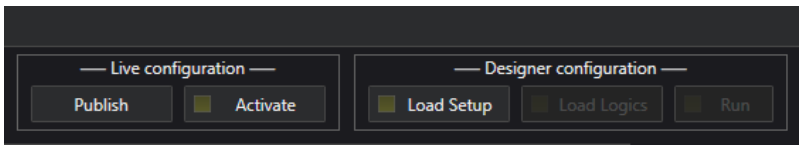
An alternative approach is to keep the original *TagYellow* entry and manually update its serial number by reading the tag and entering the value in the library.




Do this for all three tags.

# Loading and Running the game

To control the game the following buttons are important:



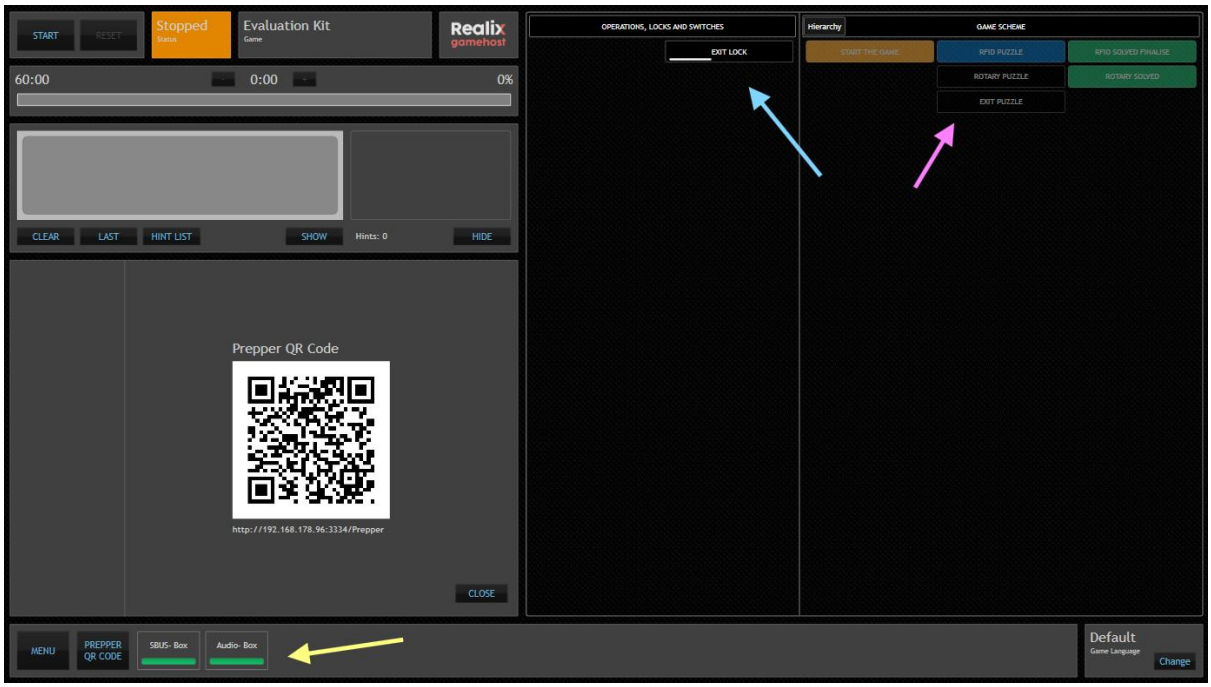

In the live configuration section, you have a button to Publish the project to the server which is automatically loaded and started on server start-up and. Once started the game is considered active which is reflected in the Activate button. But when you still in development phase you can already test the game from the designer without publishing. The live configuration needs to be de-activated and you can use:

- Load Setup. When pressed, your devices get configured making you able to test single input, output, lights etc.
- Load Logics. The game logics and effect sequences are loaded make your system ready to run the game
- Run. In this stage the game actually start to run.

## Starting the Evaluation game

For the Evaluation game to run, use the Live configuration:

- Press **Publish** and then **Activate**
- Leave or minimize the designer.
- Start the Game Host application. It should show the screen like below.

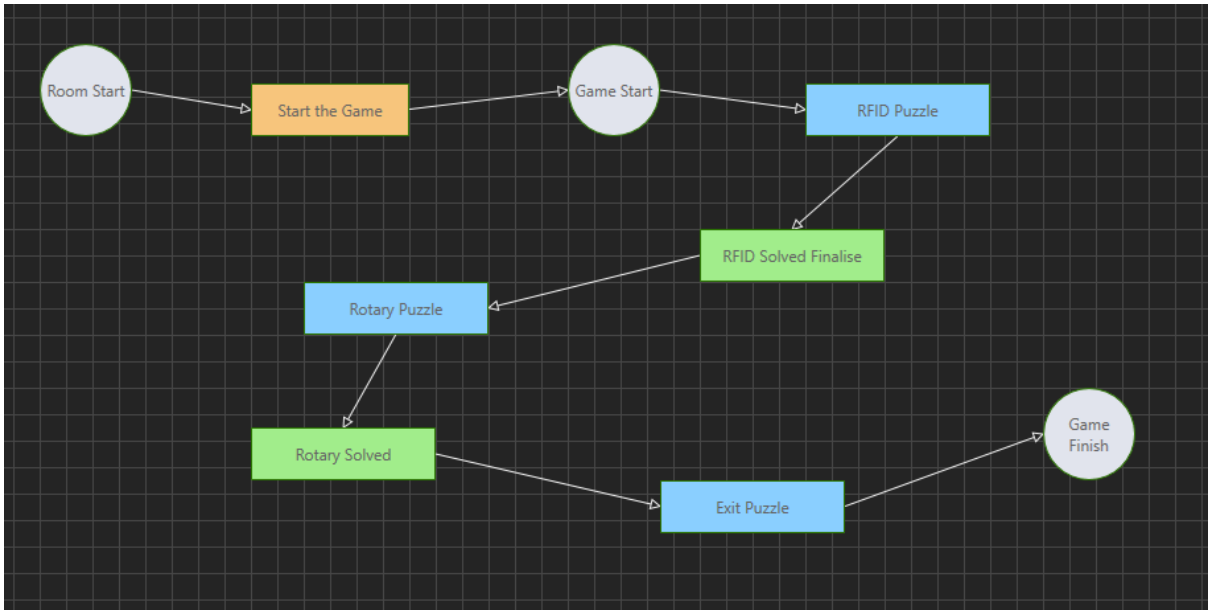



- Check the status indicators indicated by the yellow arrow, both devices should be green. If not, verify the connections and ensure the Audio Box is running. Both needs to be green before continuing.

- Start with the room preparation. This is guided by the Game Host software, or can be done using the Prepper web app via the QR code. The Prepper can be used from your phone, as long as it is connected to the same network. For this step, the preparation will be done directly in the Game Host software. In the right panel, components that are not yet properly prepared are shown as black boxes.
    - The lock is indicated by the blue arrow. If it appears as a black box, click it to activate the lock, then attach the magnet. Note: ensure the DIN-rail power supply is plugged into 230V.
    - The game flow components, indicated by the purple arrow, also require preparation when shown as black boxes. You can observe this by rotating the knob (10) on the front of the kit. For the correct starting state, it should be set to position 0. Any other position will cause one of the puzzles to be marked as not properly prepared.
- If all prepared well, the game can be started by pressing the Start button.

## The Evaluation Game

The evaluation game consists of one action (yellow), three puzzles (blue), and two experiences (green). Experiences do not require player interaction, they are intended to let players experience an effect, such as video, lighting, audio, or, for example, an automatic door opening.

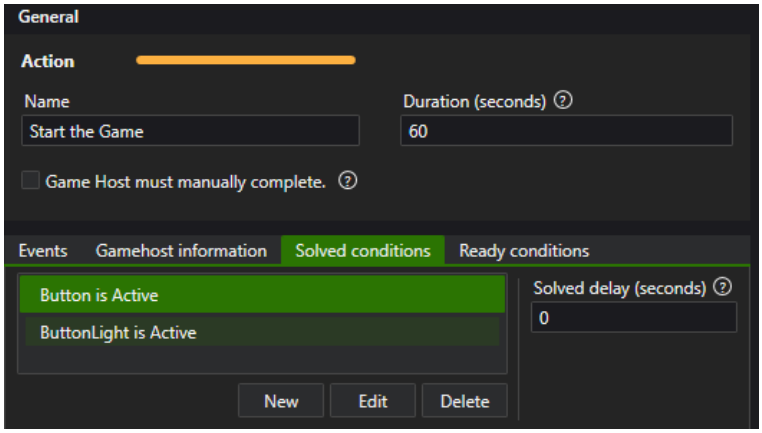



After starting the game from the Game Host, “Room Start” is executed and “Start the Game” becomes active. The game time has not started yet. You should hear music playing from the Audio Box, if not, check that the default audio device is available and not muted. Then press button (7) on the kit. This will execute “Game Start”, which starts the game timer and activates the first puzzle. Solving the puzzles will eventually lead to “Game Finish”.

### *Action: Start the Game*

Actions are a simplified type of puzzle, typically consisting of a single event. In this case, an effect sequence is used: lights blink in a circular pattern, and at certain moments the button light turns on, only then the button becomes active and can be pressed to continue.

The action is considered solved based on a defined condition: the output (light) must be active and the button must be pressed. See the screenshot below from the Designer, where this solved condition is configured.




### *Puzzle: RFID Puzzle*

The RFID puzzle requires the RFID tags to be presented to the reader in the correct order: Red, Yellow, Blue. This sequence cannot be validated using a simple solved condition, so additional logic is needed to track and verify the order.

For this purpose, a small script is used. The script handles both the sequence checking and determines when the puzzle is solved. Script writing is done in JavaScript. When creating a new script, a template is provided to help you get started, along with a function builder that simplifies interaction with the room objects.

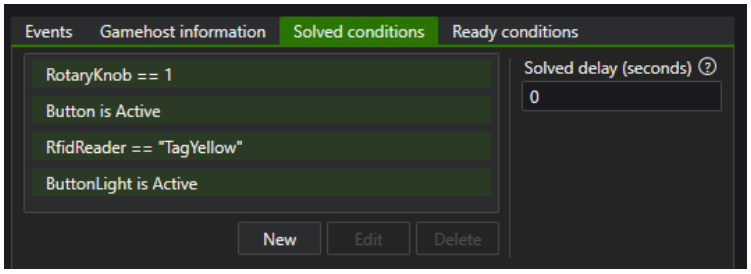
You can evaluate the script in the Designer.

### *Puzzle: Rotary Puzzle*

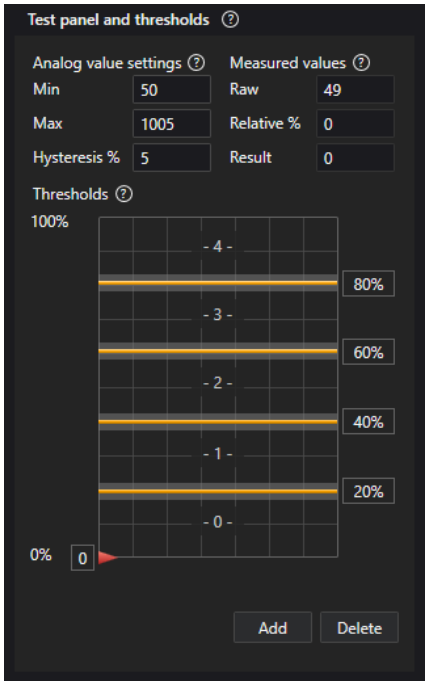
The Rotary Puzzle requires the knob to be turned in a specific sequence: from 0 to 7, then to 3, and finally to 10. Completing this sequence solves the puzzle. A small script is used to track and validate these steps.

### *Puzzle: Exit Puzzle*

The Exit Puzzle requires multiple conditions to be met at the same time. The rotary knob must be set to position 3, the yellow RFID tag must be presented to the reader, and while the button is lit, the button must be pressed. When all these conditions are satisfied simultaneously, the puzzle is solved. This puzzle does not require a script, as it can be handled with a standard solved condition.



Note: The condition *RotaryKnob == 1* may seem incorrect at first, since the expected position is 3. However, the rotary knob is an analog input that is divided into sections in the Designer. In this setup, it is split into five sections (0–4). The physical position 3 falls within section 1, so the condition is actually checking the section rather than the exact position. See below how the sensor is configured into five sections.




# Next steps and Knowledge Base

After completing the game, it is recommended to review and evaluate it in the Realix Designer. Take time to go through all aspects of the setup—devices, puzzle logic, scripts, and condition, to understand how everything works together.

Once you are familiar with the setup, try creating a new project and experiment with your own ideas. This is the best way to explore the possibilities and see how the system fits your specific needs.

For more in-depth guidance, an extensive knowledge base is available at Realix Knowledge Base: https://realix-erc.com/knowledge-base/

If you have any questions, feel free to contact Realix Support at **support@realix-erc.com**