



SIMON SAYS PUZZLE KIT

ESCAPE ROOM TECHS' "SIMON SAYS" PUZZLE BUILDS ON THE TRADITIONAL STANDALONE GAME OF THE SAME NAME CHALLENGING PLAYERS MEMORIES USING A COMPLEX PATTERN OF LIGHTS THAT MUST BE DUPLICATED TO SOLVE THE PUZZLE

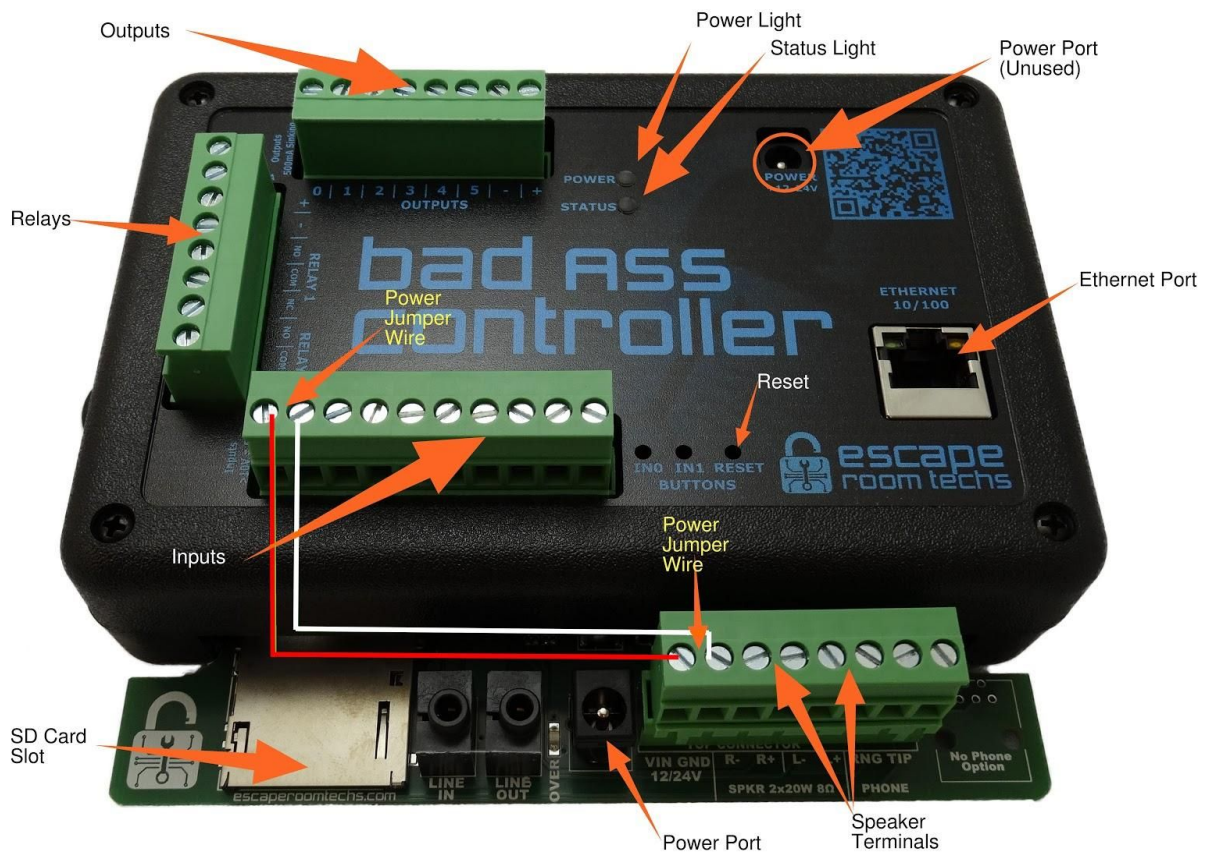
ESCAPE ROOM TECH'S SIMON PUZZLE KIT ADVANTAGE

- Bad Ass Controller
 - *Ultimate Flexibility and Easy to Install*
- Complete Kit
 - *Nothing else to purchase, everything is included*
- Prewired and Configured
 - *Hard work is done, install and play*
- Software Configurable
 - *Puzzle customization via Web Browser App*
- Remote Puzzle management
 - *Monitor, Solve and Reset from Game Master's Desk*

Included in the Simon Says Puzzle Kit	
1	Bad ASS Controller w/ Sound (2x20W Amp Outputs)
1	12V 5A Power Supply
5	100mm 12V Big Dome Shaped LED Illuminated Buttons, prewired with TBD ft of wire.
1	Electro Magnetic Lock (Maglock) w/130lb Holding
1	SD card with standard Simon audio files & BAM

2	3" 100 Watt Pyle Mini Cube Speakers with 10' speaker wire
1	2" 12V Amber LED Solve light
2	6' Maglock & Feedback Light 18/2ga Wire
4	Butt-Splice Crimps
1	Small blade screwdriver

SIMON BAC OVERVIEW



Simon's Bad ASS Controller Connections and Indicators	
Outputs	6 Configurable Outputs, Negative Connection (NPN)
Relays	2x 10A Relays w/ Normally Open or Closed Contacts
Power Light	Red Power Status LED

Status Light	Green Network Status LED
Power Port	Power connector for standard 2.1mm center positive power supply
Ethernet Port	Standard RJ45 connector for Ethernet Network
Inputs	8 Configurable Inputs, Positive Connection (PNP)
Reset	Reset Button
Speaker Terminals	20W Left & Right Speaker Outputs
SD Card Slot	Micro SD Card Socket for Audio Files
Power Jumper Wire	Audio power connection distribution wire

Ethernet Port	Standard RJ45 connector for Ethernet Network
Inputs	8 Configurable Inputs, Positive Connection (PNP)
Reset	Reset Button
Speaker Terminals	20W Left & Right Speaker Outputs
SD Card Slot	Micro SD Card Socket for Audio Files
Power Jumper Wire	Audio power connection distribution wire

SIMON SAYS INSTALLATION

1. Green output wire (3' between buttons)
2. Yellow input wire (3' between buttons)
3. Red power wire with inter button loops (2' between buttons)
4. Maglock wire (6')
5. Feedback LED wire (6')
6. Speaker wire (10')

[Simon Wiring Diagram Overview](#)

[Dome Light Switch Wiring Diagram](#)

[Maglock Wiring Diagram](#)

PUZZLE HARDWARE INSTALLATION

Preparation - Determine the Dome Buttons, BAC, speakers, maglock and solve light in the desired locations. Note to make sure there is enough slack in the wires for any prop considerations including hiding the wiring within the pre wired range. Wires may be extended when necessary to accommodate the game room. *Custom wire kits can be ordered from Escape Room Techs directly.*

Install Dome buttons - Cut a 1” hole into your mounting surface at each of the 5 predetermined locations, twist the switch off counterclockwise with the wires attached from the button, unscrew the lock nut and pass the threaded end through the hole. Reattach the lock nut and secure it with the adjustable wrench (do not over tighten). Replace the prewired switch back into the button locating the locking groove and twisting the switch clockwise to lock. Finally using a wrap tie, coil up any excess BAC wire as appropriate before reattaching.

Install solve light- Cut a 2” hole into your mounting surface at the predetermined location. Press the Feedback button into the hole and connect the red and black wires to the red and black wire of the 6’ 2 wire strand marked red wire to positive and black wire to #5 on the output terminal plug.

Install the Maglock - Use the two provided screws and attach to the desired device making sure that the 2 parts are aligned when mated and the spring button is on the bottom. The matching top should be affixed with some “play” to accommodate slight differences when the lock has been engaged. Extend the wire as appropriate crimping the butt connectors to the existing maglock wires. [Maglock Wiring Diagram](#)

Install the Speakers – Connect the speaker wire trimming as appropriate

Powering up the Simon Puzzle – Plug the power supply into the power port on the audio board and the power supply into your surge protector. The maglock will lock closed, the “wrong” sound will play and the 5 LED buttons will display the random puzzle pattern.

Congratulations your Simon Says puzzle is ready to Play!

PLAYING THE SIMON SAYS PUZZLE [\(VIDEO HYPERLINK\)](#)

The Simon puzzle comes configured with a 5 button “random pattern mode” enabled. When the puzzle begins, the “magicwand” startup sound is played followed by a pattern

of five lights. The player must duplicate the pattern by pressing the buttons to “solve” the puzzle.

After each button has been pressed, the button plays a button (Simon) sound and illuminates giving the player both audio and visual confirmation. If the player presses the correct button in the sequence, he moves on to the next button until all 5 buttons have been correctly pressed. If the player succeeds duplicating the sequence, the winning “unlock” sound will play, the feedback light will illuminate and the maglock will unlock. After several seconds, the puzzle resets, another sequence is randomly chosen and the puzzle is ready to play again. If the player fails to duplicate the sequence, the puzzle plays the “wrong” sound, resets and redisplay the pattern again giving the player another chance.

MODIFYING THE SIMON SAYS PUZZLE [\(VIDEO HYPERLINK\)](#)

**To modify the Simon Says puzzle’s configuration both the BAC and BAM must be connected to the same working Ethernet network.*

*****No internet connection is required.***

Required for Custom Configurations and Remote Management
Networked PC running Microsoft Windows and Google Chrome
BAC RJ45 Ethernet patch cable
DHCP router (IP Addressing) *This is standard on most networks.

Connecting your BAC to the network - With the BAC power connected, plug your RJ45 Ethernet patch cable into the ethernet port on the BAC. Look for the little green & amber lights on the Ethernet port. If there is a good connection to the network, the little green light will turn solid green and the amber light will begin to blink; if not your ethernet cable is not connected to a working network.

Next check the green status light for the BAC address from the network DHCP server. The green status light should remain solid for about 3 seconds followed by 1 blink for a valid network address connection. Thereafter the status light will blink green (heartbeat) about every second while connected. If after your BAC’s status light turns on it is followed by 3 short blinks, your BAC does not have a connection to a network with a valid DHCP server.



Connecting your BAM to the network - Copy the BAM from the SD card (or download from <https://www.escaperoomtechs.com/bad-ass-manager-software-p/e3001-001.htm>) to the Windows PC connected to IP network with DHCP. Click and run the BAM EXE software; the BAM software will open in a new tab on your default browser. On the home screen, click the Green Discover button to find the BAC. After a brief second, you will see the following basic BAC information on the Home screen:

SIMON BAM MENUS OPTIONS EXPLAINED

Bad ASS Manager Home Screen



- BAC Device Name (Default - BAC0001)
- Room Name (Default - MyRoom)
- IP Address (Provided by your network)
- Game (Puzzle) - SimonSays
- Network (Default - None)

On the left side will be information regarding your network

Click on the “settings box” (blue) and you are brought to the “General Screen”

General



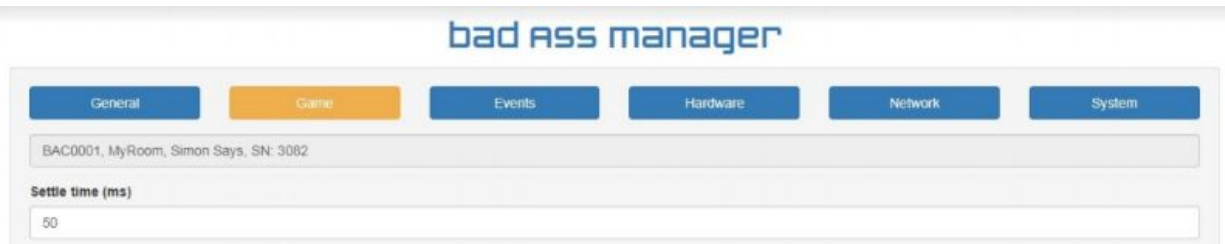
Informational Header Box

- Game (Puzzle) - SimonSays
- Selected Network (Default - None)
- Device Name (Default - BAC0001)
- Room Name (Default - MyRoom)

Click on the “Game (Puzzle) Screen” to modify the Simon Puzzle

Game (Configure & Monitor Simon Puzzle)

Settle Time (ms) User Input Box



The screenshot shows the 'bad ass manager' web interface. The 'Game' tab is selected. Below the navigation tabs, there is a text field containing 'BAC0001, MyRoom, Simon Says, SN: 3082'. Below that, the 'Settle time (ms)' is set to 50.

- Default (50ms) {Note - 1000ms = 1 second}
- Time it takes for the button to register with the software when pressed

Input Checkboxes



The screenshot shows the 'Input Checkboxes' section. There are eight input boxes labeled 'Input 0' through 'Input 7'. Each box has a 'Monitor' checkbox. Inputs 0, 1, 2, 3, and 4 have their checkboxes checked. Inputs 5, 6, and 7 have their checkboxes unchecked.

- Default (0-4 checked)
- Checked Monitor box enables LED button in the puzzle
- Total of 7 inputs (5, 6 & 7 not used)
- Less than 5 lights can be used in the puzzle sequence by unchecking the monitor box



The screenshot shows the configuration section for the Simon puzzle. It includes the following options and fields:

- Randomize On Solve
- Progressive Mode
- Progressive Speedup %: 0
- Show Duration: 1500
- Frame Interval: 500
- Sequence Interval: 3000
- Show Once
- Save button
- Begin Learning button

Randomize On Solve Checkbox

- Default (checked) - For the “Simon Says Pre Wired Kit”
- Selects random puzzle pattern after 1st time solved
- Random puzzle pattern uses the same level of complexity as original puzzle (ie monitoring only 3 buttons will result in a random 3 button pattern, etc)

Progressive Mode Checkbox

- Default (Unchecked)

- Repeats the pattern continuously by adding another button each time until the puzzle is solved. Starts with requiring players to press the first button in the pattern. Then two buttons in the pattern, then so on.

Progressive Speedup % User Input Box

- Default (0)
- Scale from 0 to 100%
- Each time the player succeeds in a sequence, the pattern speeds up when in progressive mode.

Show Duration User Input Box

- Default (1500ms)
- Pattern display timing after initial reset

Frame Interval User Input Box

- Default (500ms)
- Wait time between lights after reset

Sequence Interval User Input Box

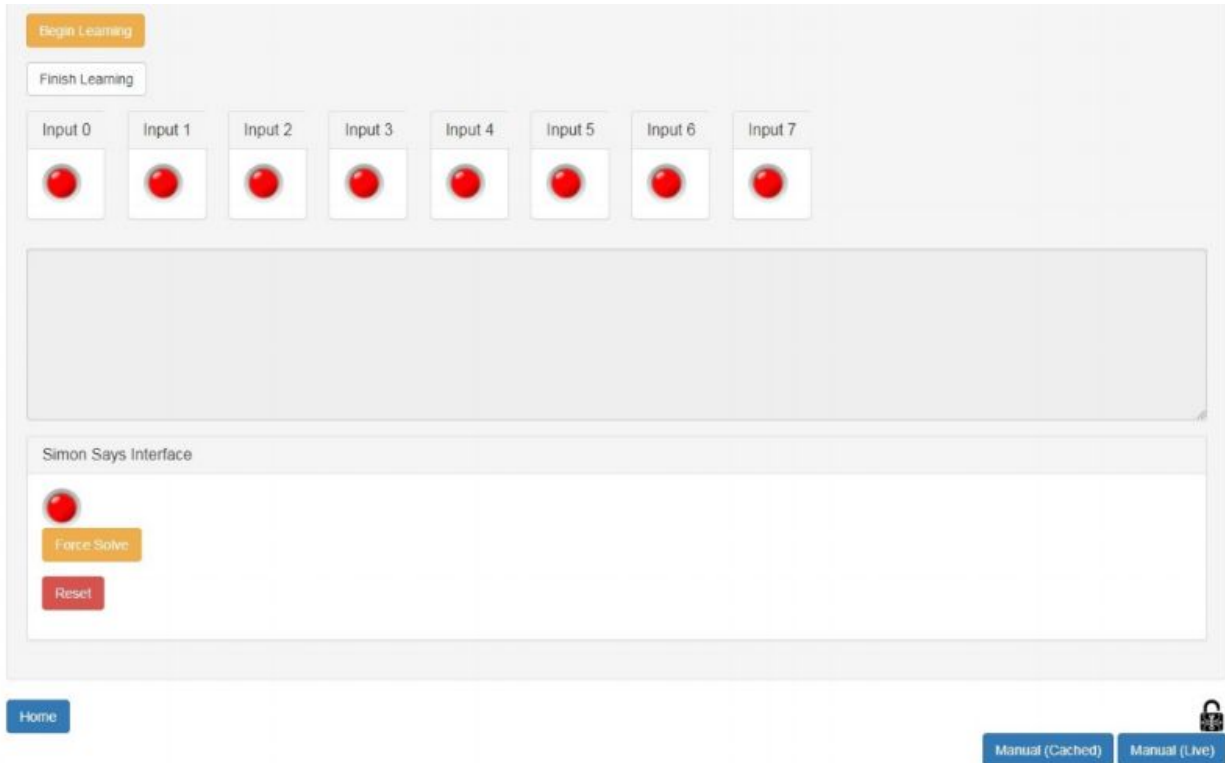
- Default (3000ms)
- Setup time before game is ready to play again

Show Once Checkbox

- Default (checked)
- Display pattern only once or display pattern continuously

Save Button (Blue)

- Saves all user changes



***** CREATING A “USER DEFINED” REPEATED PUZZLE (Video)** - A “user defined” puzzle pattern can be created by un-checking the “randomize on solve” option and using the 2 buttons below to create your own pattern. Click on the “Begin Learning” button, press the 5 LED puzzle buttons in whichever order is desired. After every LED button is pressed, a confirmation will appear in the “user feedback” box just below the “Input Button Status Display”. Complete the process by clicking on the “Finished Learning” button to save the puzzle’s pattern. This same pattern will repeat after every reset.

“Begin Learning” Button (Tan)

- Click this button start your “user defined” pattern

“Finish Learning” Button (White)

- Click this button to end your “user defined” pattern

Input Monitor Displays

- (Default - All Red)
- Display toggles from red to green when an input is triggered

User Feedback Box (Blank Box below “Input Button Status Display” area)

- All puzzle feedback and information are displayed here

Simon Says Interface

Solve Display

- (Default - Red)
- Display Red when puzzle is active and green when the puzzle has been solved

Force Solve Button (Tan)

- Click this button to “force” solve the puzzle

Reset Button (Red)

- Click this button to reset and restart the puzzle

Home Button (Blue)

- Returns to Originating home screen

Clicking on the “Events” Screen to modify the Simon Inputs & Outputs

Events (Configuring Inputs & Outputs)

Unless noted (Actions = None & Options = Are purposely left blank)
Individual events can be triggered (at the bottom of each event) for testing
Changing all Actions and Options are **required to be “saved”**

The “Events Screen” includes

1. **Main Events**
2. **Input Events (Blue Bar)**
3. **Custom Events (Blue Bar)**

Main Events (Default Settings)

The screenshot shows the 'bad ASS manager' web interface. The top navigation bar includes tabs for 'General', 'Game', 'Events' (highlighted), 'Hardware', 'Network', and 'System'. Below the navigation bar, the breadcrumb trail reads 'BAC0001, MyRoom, Simon Says, SN: 3082'. The main content area is divided into sections: 'Input Events' (blue bar), 'Custom Events' (blue bar), and 'Main Events' (green bar). Under 'Main Events', there are two event configuration panels: 'Init Event' and 'Reset Event'. Each panel has an 'Event Name' field, five 'Action' dropdown menus, and five 'Options' text input fields. The 'Init Event' panel has 'init' as the event name, 'Call Event' as Action 1, and 'enable' as the option for Action 1. The 'Reset Event' panel has 'reset' as the event name, 'Turn Off Output' as Action 1, and '0, 1, 2, 3, 4, 5' as the option for Action 1. Both panels have 'Save' and 'Trigger' buttons at the bottom.

Init Event

Begins the puzzle

- Action 1 - (Call Event) - Options (Enable)
 - Initializes the puzzle to begin again

Reset Event

Resets the puzzle for replay

- Action 1 - (Turn off output) - Options (0, 1, 2, 3, 4, 5)
 - Resets all inputs and displays puzzle winning sequence
- Action 2 - (Turn on Relay) - Options (0)
 - Turns on Maglock to locked position
- Action 3 - (Play Sound) - Options (wrong.mp3)
 - Plays reset sound

The image shows two side-by-side screenshots of event configuration interfaces. The left screenshot is titled 'Solve Event' and has an 'Event Name' field containing 'solve'. It lists five actions: Action 1 (Turn On Output) with option '5', Action 2 (Play Sound) with option 'unlock.mp3', Action 3 (Turn Off Relay) with option '1', Action 4 (Wait) with option '15000', and Action 5 (Call Event) with option 'event0'. The right screenshot is titled 'Unsolve Event' and has an 'Event Name' field containing 'unsolve'. It lists five actions, all of which are set to 'None' in the 'Action' dropdown and have empty 'Options' fields. Both screens have 'Save' and 'Trigger' buttons at the bottom.

Solve Event

Post solved puzzle actions

- Action 1 - (Turn on Output)
 - Turns on amber “solve” LED Light on output 5
- Action 2 - (Play Sound) - Options (unlock.mp3)
 - Plays puzzle solved, maglock released sound
- Action 3 - (Turn off Relay) - Options (0)
 - Releases Maglock
- Action 4 - (Wait) - Options (15000)
 - Wait 15 seconds before proceeding
- Action 5 - (Call Event) - Options (event0)
 - Calls more actions from ‘Custom Events’ screen “Event 0”

Unsolve Event

Auto Reset

- Not used in this puzzle

Hit Event

Event Name: hit

Action 1: None | Options:

Action 2: None | Options:

Action 3: None | Options:

Action 4: None | Options:

Action 5: None | Options:

Miss Event

Event Name: miss

Action 1: Play Sound | Options: wrong.mp3

Action 2: None | Options: laughbad.mp3

Action 3: None | Options:

Action 4: None | Options:

Action 5: None | Options:

Hit Event

Correct User Action

- Not used in this puzzle

Miss Event

Incorrect user action

- Action 1 - (Play Sound) - Options (Wrong.mp3)
 - Plays “wrong” sound when LED button pressed out of sequence

Enable Event

Event Name: enable

Action 1: None | Options:

Action 2: None | Options:

Action 3: None | Options:

Action 4: None | Options:

Action 5: None | Options:

Disable Event

Event Name: disable

Action 1: None | Options:

Action 2: None | Options:

Action 3: None | Options:

Action 4: None | Options:

Action 5: None | Options:

Enable Event

Runs game logic

- Not used in this puzzle

Disable Event

- Disables puzzle
- Not used in this puzzle

Fail Event

Event Name
fail

Action 1
None

Options

Action 2
None

Options

Action 3
None

Options

Action 4
None

Options

Action 5
None

Options

Save Trigger

Fail Event

Sequence failure ends puzzle

- Not used in this puzzle

Input Events (Blue Bar) - Below Information header

The screenshot shows the 'bad ass manager' web interface. The top navigation bar includes tabs for General, Game, Events (highlighted), Hardware, Network, and System. Below the navigation bar, the device information 'BAC0001: MyRoom, Simon Says, SN: 3082' is displayed. The main content area is titled 'Input Triggers' and contains two columns for 'Input 0 Event' and 'Input 1 Event'. Each column has a 'Trigger Once Per Reset' checkbox (unchecked), a 'Trigger On' dropdown menu (set to 'High'), an 'Event Name' text field (input0 and input1 respectively), and five 'Action' rows. Each action row consists of an 'Action' dropdown menu and an 'Options' text field. For Input 0, Action 1 is 'Turn On Output' with option '0', Action 2 is 'Play Sound' with option 'simon0.mp3', and Actions 3, 4, and 5 are 'None'. For Input 1, Action 1 is 'Turn On Output' with option '1', Action 2 is 'Play Sound' with option 'simon1.mp3', and Actions 3, 4, and 5 are 'None'. At the bottom of each column are 'Save' and 'Trigger' buttons.

This is the “Input Trigger” screen where every input & related output gets defined.

- Trigger Once Per Reset (Unchecked)
 - Allow the LED button to be pressed more than once to solve the puzzle
 - In Random mode the Simon puzzle can call for a LED button to be pressed several times
- Trigger On (High)
 - The LED buttons are normally an open switch that “triggers” when it’s closed. Triggering is what causes the output action
- Event Name (input0 - input4)
 - Action 1 - (Turn on Output) - Options (0)
 - When the LED button is pressed the LED illuminates on that button
 - Action 2 - (Play Sound) - Options (simon0.mp3)
 - Plays button specific sound
- Event Name { All inputs use the same format replacing the input number ie 1,2, etc}

Custom Events (Blue Bar) - Below Information header

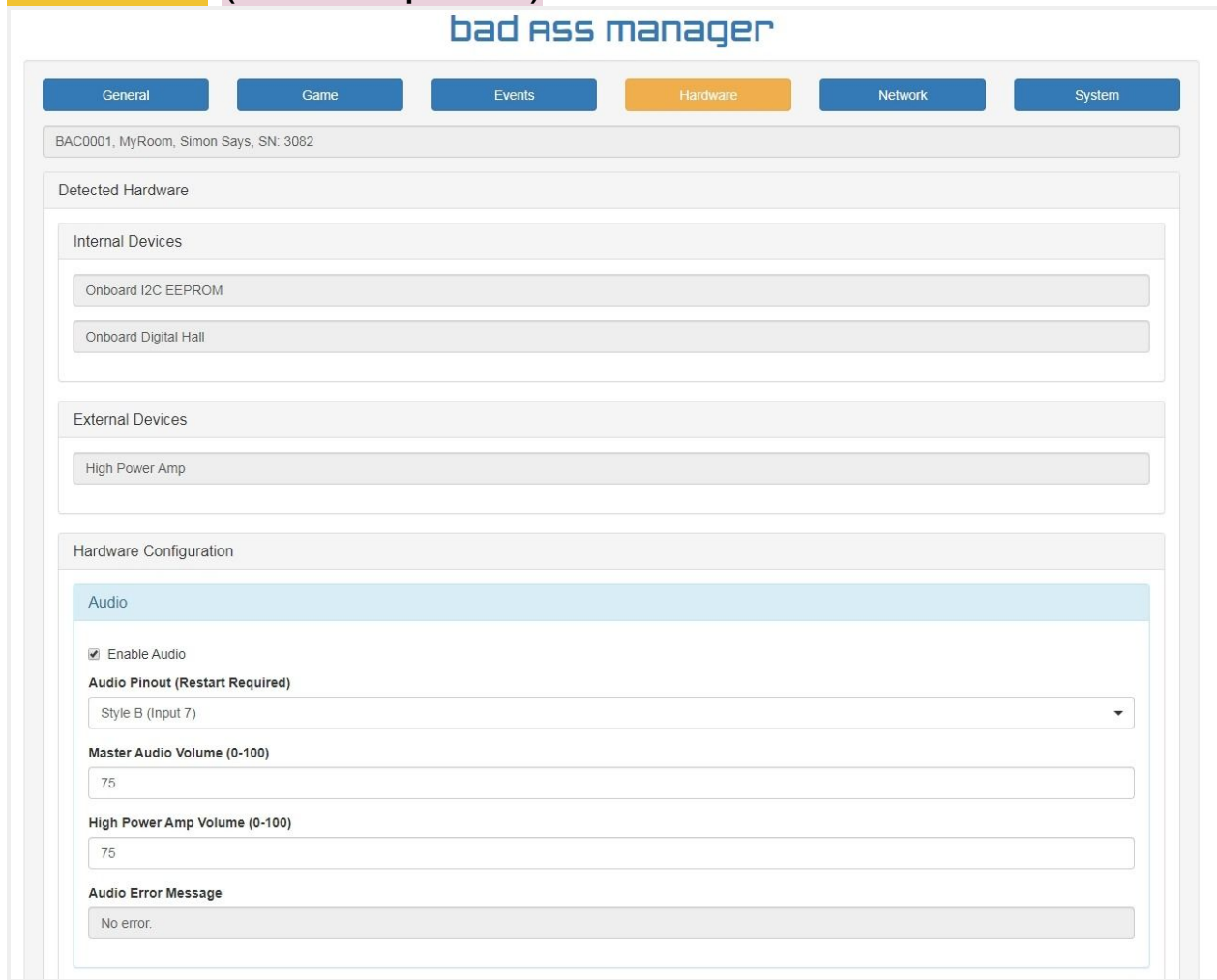
The screenshot shows the 'bad ass manager' interface. At the top, there are navigation tabs: General, Game, Events (highlighted in orange), Hardware, Network, and System. Below the tabs is a grey bar containing the text 'BAC0001, MyRoom, Simon Says, SN: 3082'. The main content area is titled 'Custom Events' and contains two event configuration panels: 'Event 0 Event' and 'Event 1 Event'. Each panel has an 'Event Name' field, five 'Action' rows with dropdown menus and 'Options' text input fields, and 'Save' and 'Trigger' buttons at the bottom.

Additional outputs

Event 0 Event

- Action 1 (Play Sound) - Magicwand.mp3
 - Plays game reset sound
- Action 2 (Wait) - 5000
 - Wait 5 seconds
- Action 3 (Call Event) - Reset
 - Calls automatic reset after game is resolved

Hardware (Audio Options)



Audio

Enable Audio (checked)

Audio Pinout (Restart Required) - Default (Style B (Input 7))

Master Audio Volume (0-100) - Default 75

- Increase / Decrease master volume

High Power Amp Volume (0-100) - Default 75

- Control the speaker volume

SD Card



- Audio file list contained on the card used in Simon Puzzle

Network (BAC Network Information)

The screenshot shows the 'bad ASS manager' interface with the 'Network' tab selected. The page displays the following configuration fields:

- Device ID: BAC0001, MyRoom, Simon Says, SN: 3082
- Selected Network: None
- Mac Address: 0200ae003082
- My IP: 10.0.1.106
- Gateway: 10.0.1.1
- Subnet Mask: 255.255.255.0
- DNS Server: 8.8.8.8
- DHCP Enable:

Buttons include 'Save', 'Home', 'Manual (Cached)', and 'Manual (Live)'.

DHCP - Default (Checked)

- Uncheck to create a static IP address

System (ERT Troubleshooting)

bad ass manager

General Game Events Hardware Network **System**

BAC0001, MyRoom, Simon Says, SN: 3082

Bootloader Version
v1.3

Build
Standard v1.7.2 Jun 5 2019

Firmware Updates

Update On Next Reset

ftp.escaperoomtechs.com

firmware_general_latest.bin

None

Storage Available:
23169 / 24253 bytes, 95% free

Reset All Settings

Save

Home

Manual (Cached) Manual (Live)

- BAC Hardware / Firmware information (Troubleshooting Information)
- Bootloader Version (Firmware loader Information)
- Build (Firmware)
- Firmware Updates (Firmware update file name, location and status)
- Storage Available (BAC memory availability)
- Reset All Settings (Reset BAC to Unconfigured default Settings)

FREQUENTLY ASKED QUESTIONS

Q. I want to make my Simon game less complex; do I need to use all 5 of the “push buttons” in my pattern?

A. No, the pattern can use anywhere from 1 to 5 “push buttons”; less “push buttons” can make the game simpler but this can also be accomplished by “teaching” the puzzle a less difficult pattern in the learn mode in the “Game” screen.

Q. I'm setting up a themed puzzle and plan on using different props, lights and buttons other than the ones provided in the kit, can I do this?

A. Yes, any 12v inputs and outputs will work with the BAC under 500mA. The benefit of using the "ERT push buttons" in the kit is they provide the solve pattern and feedback in the same device. However, the inputs can be separate from the outputs. Just keep in mind there needs to be a pattern to solve and a way to solve it. The wiring provided will more than likely need to be modified as well.

Q. I want to replace the default sounds with sounds that are directly related to my escape room theme, is this possible?

A. Yes, all sounds for the Simon game are on the SD card that was provided with the game. All sounds, music, etc are in standard MP3 format and can be added and removed from the card as necessary. As a rule of thumb, keep file names to 8 characters or less. After adding your files to the card, restart the BAC. After the BAC reboots, go to the "Hardware" screen on your BA Manager sw (BAM) and scroll down to verify your file names are registered there. Once the sounds have been added to the SD card, go to the "Events" screen. The sounds to change are in the "Events" screen and "Input Events" sub screen. When replacing a default sound make sure you spell the file name correctly and add .MP3 extension to the end of the file. Save the changes and restart the BAC

Q. Does the Simon puzzle provide an audio pattern as well as visual pattern for players to learn and replicate like the Simon game?

A. No not currently. The ERT Simon puzzle is strictly a visual puzzle to solve but does incorporate audio for strategic feedback. The puzzle's light pattern is replicated on the "push buttons" for players to remember. Once the pattern is divulged, the players push the buttons they believe will solve the puzzle. Audio and visual feedback through the speakers and the "push buttons" are provided after each button pushed helping to guide the player. A "wrong" button pushed, plays a "wrong" button sound followed by the reset sound. The game automatically resets and begin again.

Q. Can I manage the puzzle from inside my control room to monitor players responses, change the puzzle, or help the players by solving the puzzle so they can move on?

A. Yes, remote control functionality is available, but it does require that the BAM be attached to the BAC through the use of an Ethernet network and PC. Once the BAM software can "see" the BAC hardware in real time, the Puzzle can be controlled by the escape room master through the "Game" screen where the puzzle can be solved, monitored, reset and modified.

Q. I need more information on how to configure the BAC, where can I get that? Is there a complete BAC manual?

A. Yes, a comprehensive BAC/BAM manual can be found on our website at <http://manuals.escaperoomtechs.com/> and additional custom information can be found at <https://www.escaperoomtechs.com/>. Call for further technical support as required.