egnite

Codespot Pro Event Player Tutorial 1

This tutorial explains how to easily set up Codespot Pro projects.

A phantom in a haunted house shall interact with the visitors. Codespot Pro is used to teach it how to talk and to make its eyes glow.

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1 Introduction

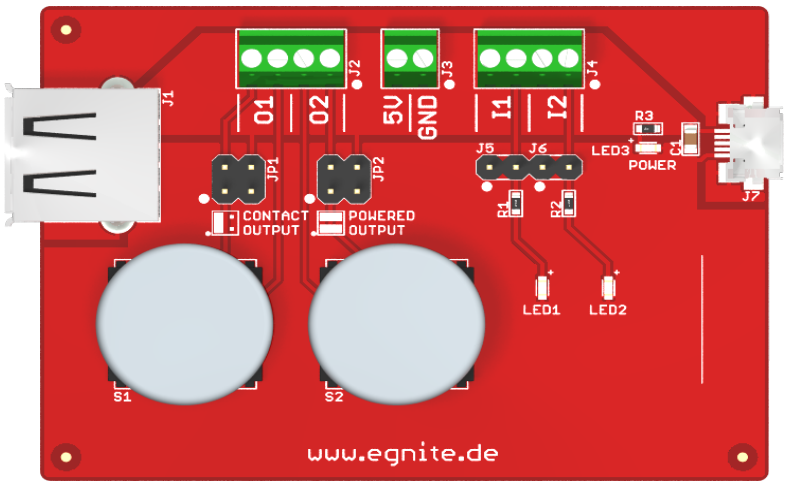
Codespot Pro is an event-controlled audio player. These Events can come from Codespot Pro itself. Examples are **Power on** at start-up or **Audio End** when the playback of an audio track has finished. External hardware, connected to Codespot Pro's two digital inputs or the RS 232-interface, can also notify the device of occurring events.

To configure Codespot Pro's response to those events, the configuration GUI is used. You can assign up to three different actions to a single event. These will be executed consecutively. It is possible to adjust the playback behavior, to toggle the external outputs, to send messages over the RS-232 interface and also to initiate delayed actions, making use of counters.

We want the phantom to interact with his surrounding as follows:
If a visitor approaches, it starts to hysterically laugh. A LED spot makes its eyes glow. After some seconds the LED spot is turned off again. When the visitor leaves, the phantom shouts: “You cannot escape!”.

2 Hardware Setup

This document only draws an outline on how to configure Codespot Pro. To follow the example no additional hardware, like light barriers or LED spots, is needed. Instead we are going to use the I/O testboard Bintest to simulate the setup.

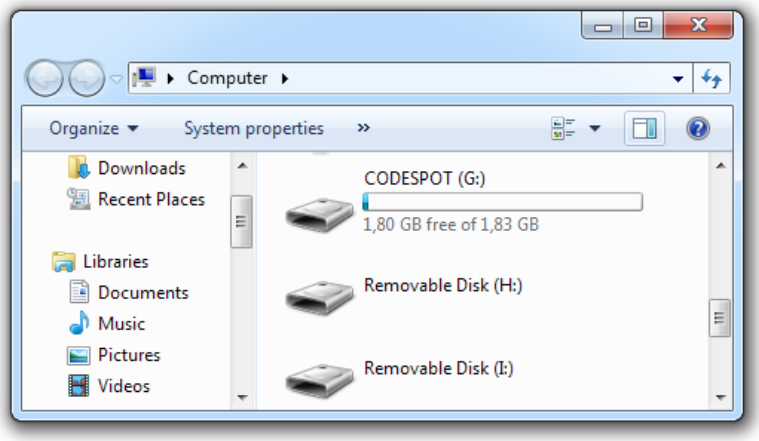


So you need:

- the Codespot Pro event player
- a microUSB-cable
- a RS-232 cable or a USB / RS-232 bridge
- the I/O testboard Bintest
- a pair of speakers or headphones

3 Getting Codespot Pro into operation

At first, you have to connect Codespot Pro to your PC, using a microUSB cable. Windows automatically recognizes a card reader and creates a new device. Copy all provided data to your hard drive.

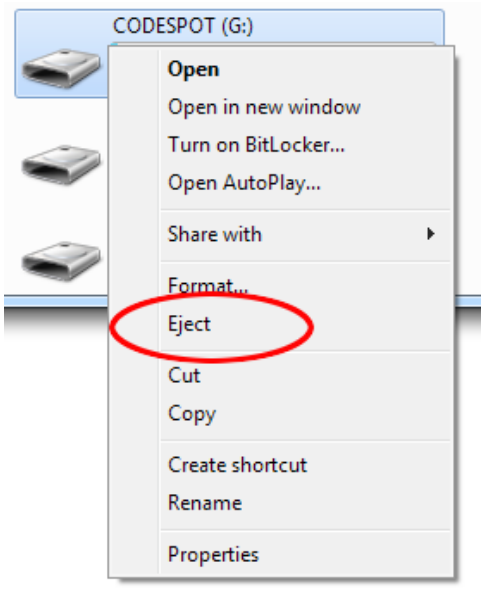


After installing Codespot Manager from the installation file, take any two audio files and save them on Codespot Pro.

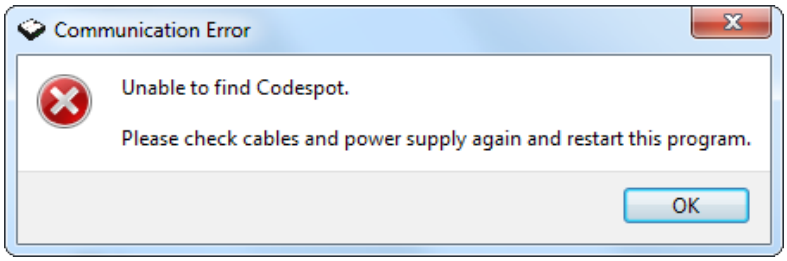
Caution

All media is played back in exactly that order it was copied to the devices. It is hence a good idea to copy all files one by one.

Don't forget to eject the device afterwards. Click on the device symbol and choose *Eject*.



Otherwise Codespot Manager won't be able to establish a connection to Codespot Pro and an error message is shown.



More information on how to put Codespot Pro into operation can be found in the manual.

4 Configuration of Codespot Pro

On the internal microSD card of your Codespot Pro are now two audio files that should be played after a signal from one of the connected light barriers indicates that a visitor is approaching or leaving.

In its basic configuration, Codespot Pro plays all stored audio files successively. You can check this behavior by connecting headphones or speakers to the line output.

Even if the light barriers and the LED-spot are never really connected to Codespot Pro, we need to outline the intended hardware setup:

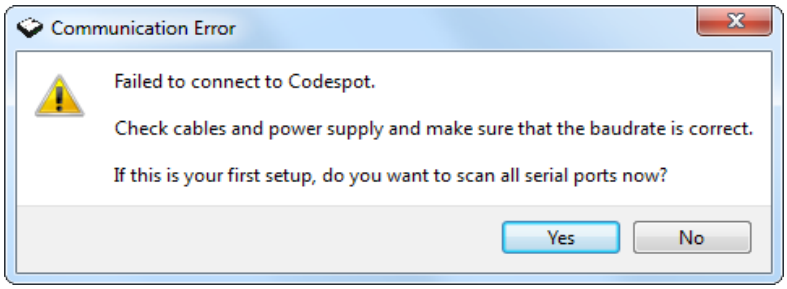
Input 1	Light barrier, indicating an approaching visitor
Input 2	Light barrier, indicating a leaving visitor
Output 1	LED spot for the glowing-eyes effect

4.1 Setup of Codespot Manager

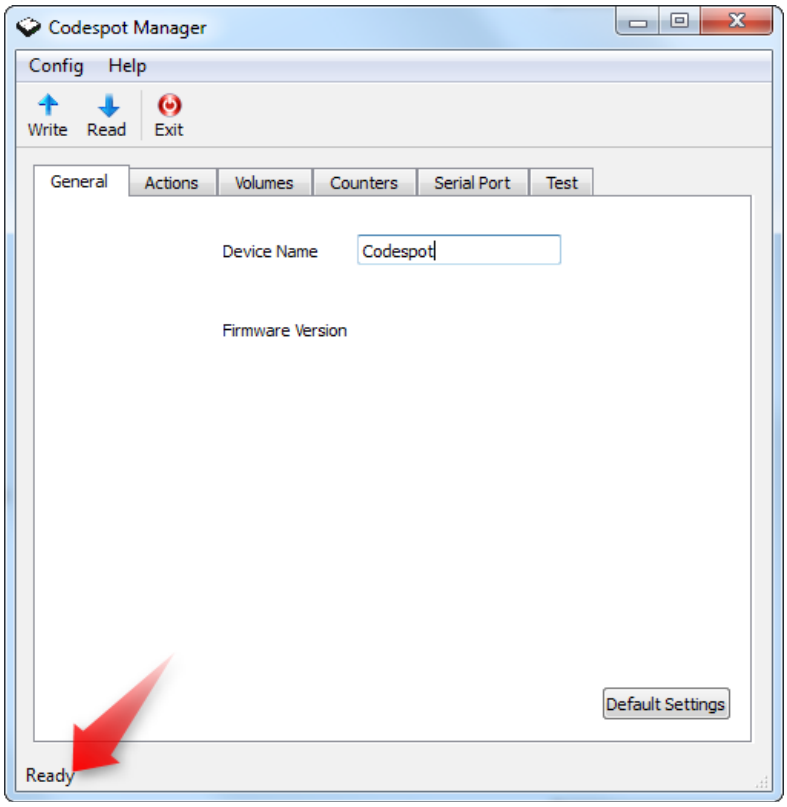
To configure Codespot Pro you need to connect it to your PC's RS-232 port using a serial cable. If you have no free serial port at your PC you can also use an USB / RS-232 bridge that you can get at the local computer store.

At first, start Codespot Manager. The program immediately tries to establish a connection to Codespot Pro.

If it is not connected to the pre-configured interface COM1, an error message shows up. If you click on *Yes,* the software searches the serial ports of your PC for Codespot Pro.

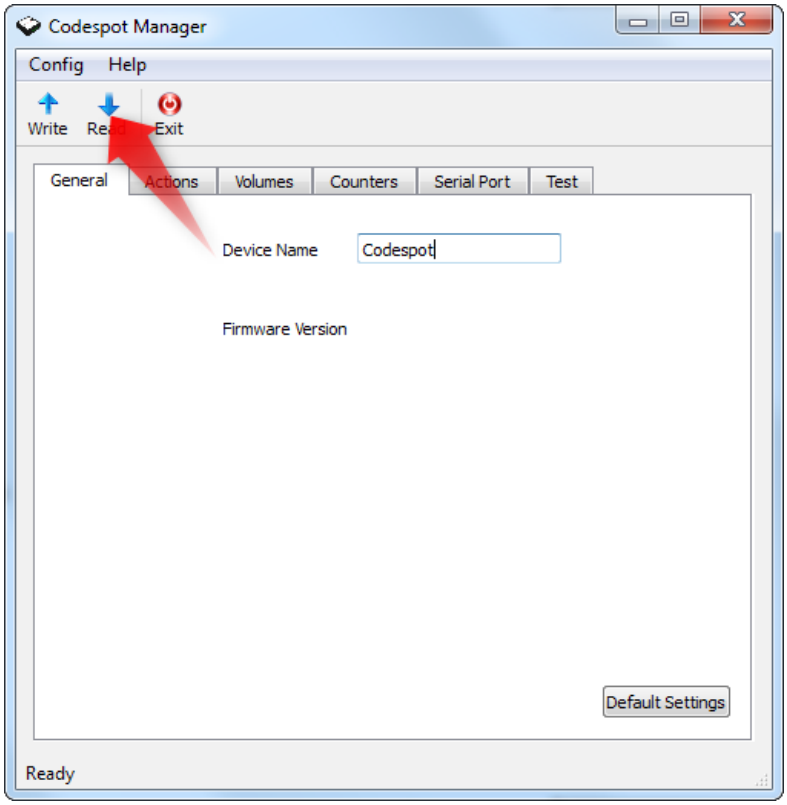


If everything works out, Codespot Manager will show the status *Ready* at the bottom left corner of the program window.



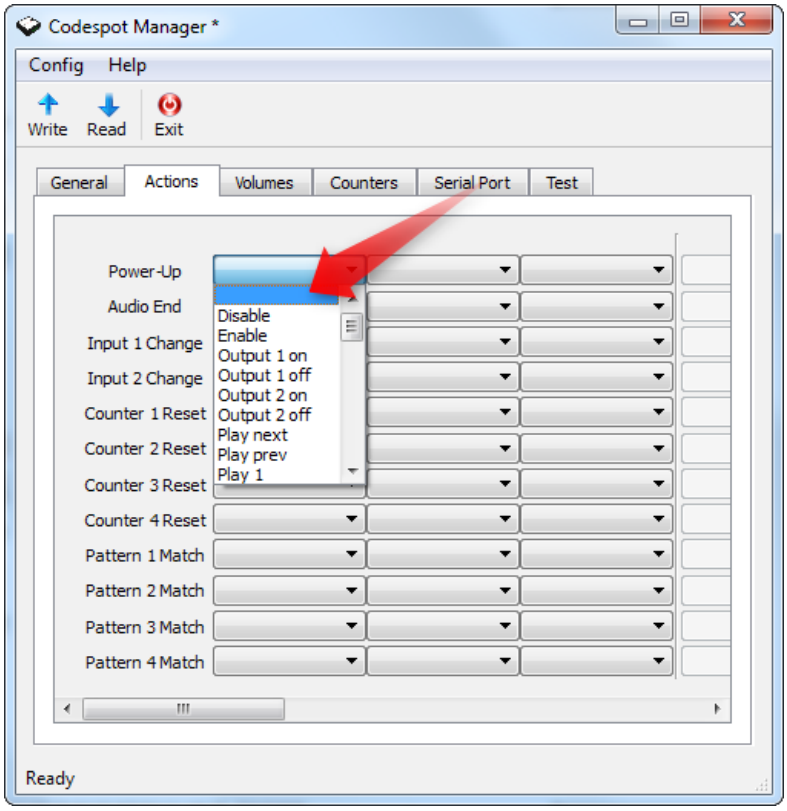
If this status is not shown, something went wrong. Have a look at the manual to learn how to resolve communication problems.

By clicking on the *Read* button you can import the current device configuration and check if everything is working properly.

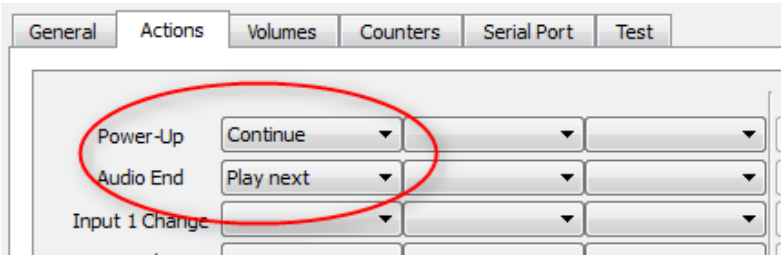


4.2 Configuration of the event player

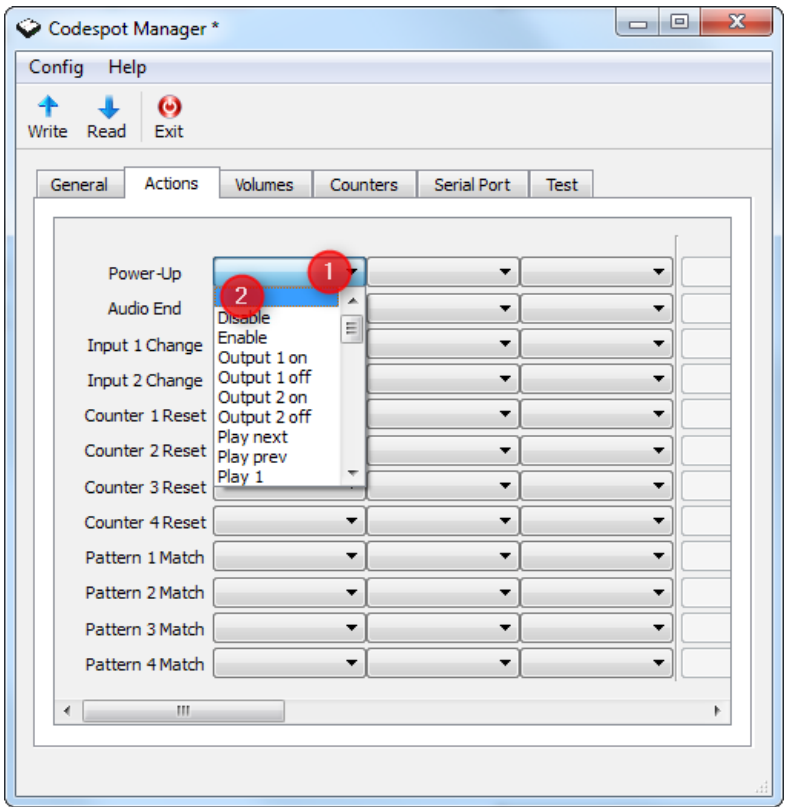
Click on the *Actions* tab. Here you can take control on Codespot Pro's behavior. On the left side you see the events, that Codespot Pro can react upon. With the list boxes on the right side you can assign up to three different actions to every event.



In its basic configuration, Codespot Pro responds to two different events, each with a single action. After **Power Up** the **Continue** action is performed, which instructs Codespot Pro to play the first audio file on the microSD card. The event **Audio End** is triggered after Codespot Pro has finished the playback of a track. Here, the action **Play Next** is executed.



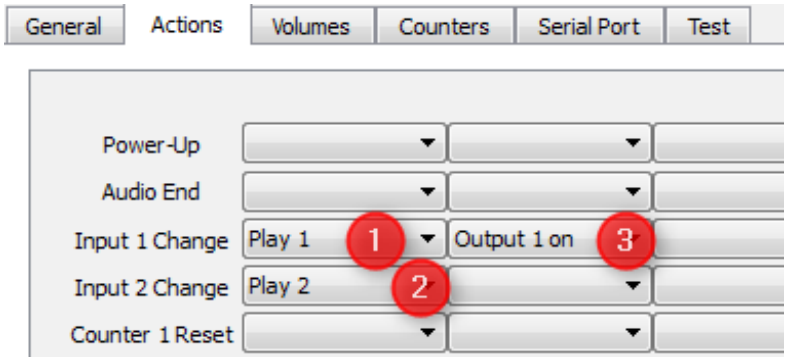
For the intended use in the haunted house we don't need the basic configuration and can hence delete it. Click on the list box just right of the event names (1) and choose the empty elements at the top (2).



When the first light barrier is interrupted, the first audio file is played. Furthermore the LED spot is turned on for 15 seconds. If the second light barrier indicates a leaving visitor, audio file 2 is played.

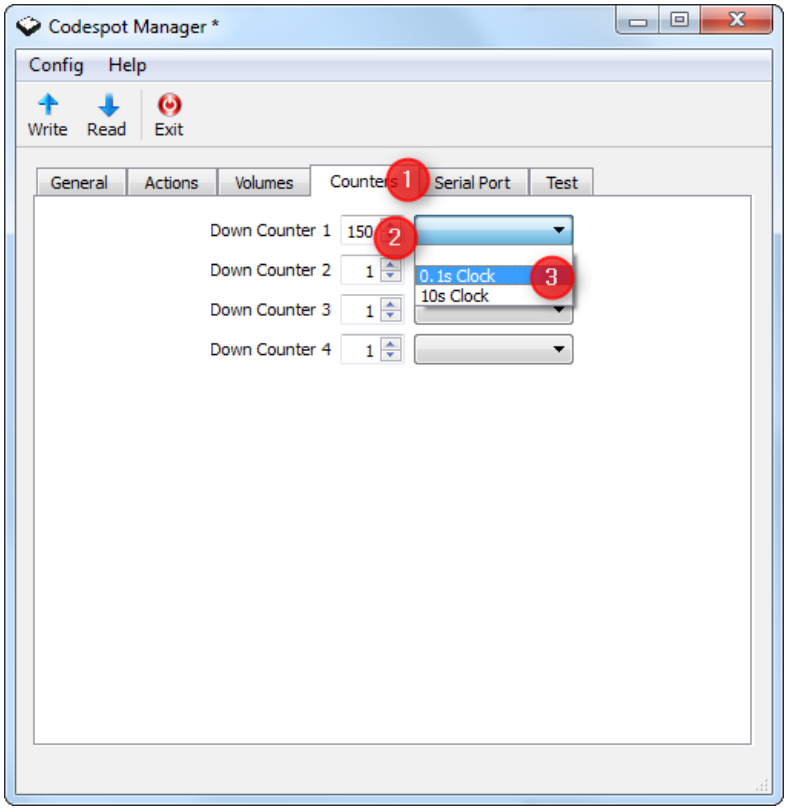
Playback of audio files is very simple. Just assign **Play 1** to **Input 1 Change** to play the first audio file on your Codespot Pro (1). Similarly assign **Play 2** to **Input 2 Change** (2).

The LED spot, that makes the phantom's eyes glow, is as well controlled by the first light barrier. Set the second list box right of **Input 1 Change** to **Output 1 on** (3).



A couple of seconds later we want it to be turned off again. This delay is implemented using counters. Such a counter gets an initial value from where it is continuously counted down. This can either be done automatically by a 0.1- or 10 second clock or manually by executing the action **Counter Decrement**. When a counter reaches 0, the event **Counter Reset** is triggered.

On the *Counters* tab page you can configure up to 4 counters (1) . For this example we will only use *Down Counter 1*. To set up a delay of 15 seconds, set the initial value to 150 (2). From this value, Codespot Pro should count down every 0.1 second. So choose *0.1s Clock* from the list box (3).

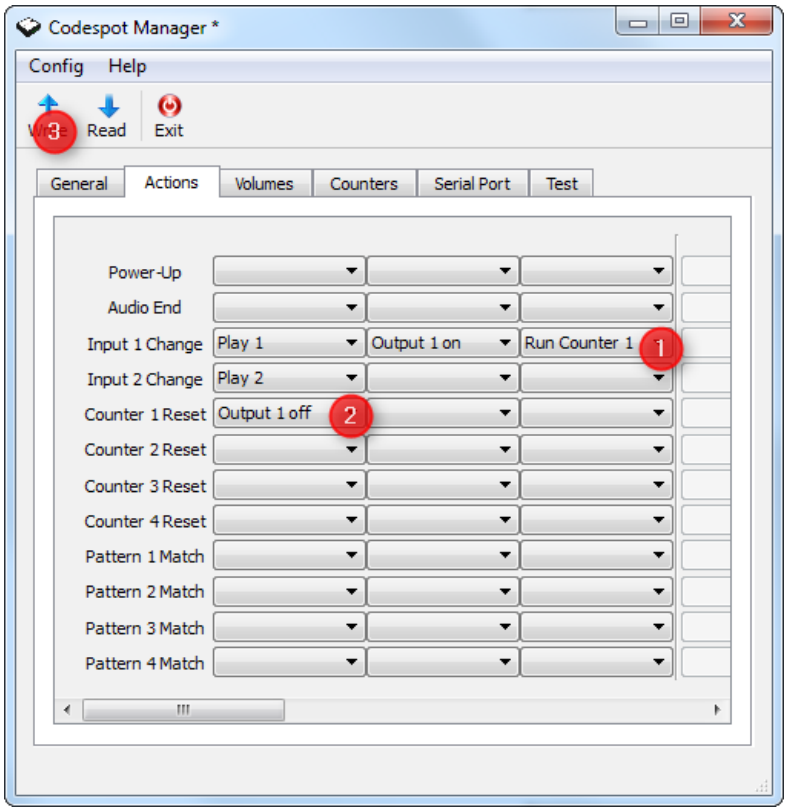


Now return to the *Actions* tab page. As third action assign **Run Counter 1** to **Input 1 Change** (1).

If a visitor passes the first light barrier, Codespot Pro runs Counter 1. Fifteen seconds later the event **Counter 1 Reset** is triggered. From the first listbox field right of this event you select the action **Output 1 off** (2) to turn off the LED spot.

Please note that due to hardware restrictions the clocks work with small inaccuracy. The intended delay can hence differ by a few milliseconds.

You have now finished setting up the phantom's behavior. A click on the button *Write* sends your configuration to Codespot Pro (3) .



5 Connecting and testing Hardware

If you were really up to implementing a phantom, now the time had come to connect the light barriers and the LED spot to Codespot Pro. But as we are just doing a tutorial, you only need to connect the I/O testboard Bintest instead. Please follow the instructions in the manual. Now check if Codespot Pro operates like you expect.

After pressing Button S1, audio file 1 plays and LED 1 should turn on for 15 seconds.

Button S2 starts the playback of audio file 2.

Did everything work out? Congratulations! You have successfully configured Codespot Pro.

You can find further practical examples in the Codespot Pro manual.

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