

# User's Guide

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# Table of contents

<b>Overview</b>	<b>3</b>
<b>Commissioning</b>	<b>5</b>
<b>User Interface</b>	<b>9</b>
Connection with the receiver .....	10
Controls.....	11
<b>Settings</b>	<b>15</b>
APP Settings.....	15
Switch Settings .....	16
Other Settings.....	17
Receiver Channel Reference .....	18
Transmitter layout.....	20

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# 1

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## Overview

The *btRC Android app*, in combination with a PiKoder/SSC RX Bluetooth receiver, offers the possibility to realize a remote control with up to eight channels divided into four or six digital-proportional channels and additionally two or four switching channels with an attractive user interface for an Android™ smartphone or tablet. Thanks to functions such as:

- Flexible assignment of receiver channels to control elements of the transmitter,
- Trim for the servo channels,
- the possibility of reversing the direction of the control channels (*reverse function*),
- Setting a safe position after a connection interruption (*fail safe function*) and
- *Mixing*

the app offers a high degree of practicality.

For wireless transmission, the Android end device connects to the previously "paired" Bluetooth module of the receiver. It should be noted that the range when using Bluetooth can only be a few meters in the worst case.

The user interface for using all eight channels is optimized for tablet display. To support operation with a phone, some user interfaces have been adapted to the different screen sizes.

The commissioning of the remote control is done in two steps:

- Installing the app via the Google Play Store and
- the establishment of a Bluetooth connection between the smartphone or tablet and the PiKoder/SSC RX receiver by "pairing" at the system level.

Both steps are described in section 2; after the one-time startup, the app can then be easily accessed. Section 3 describes how to operate the app on a tablet, and Section 4 explains how to operate it with a phone. Section 5 is devoted to the settings of the app.

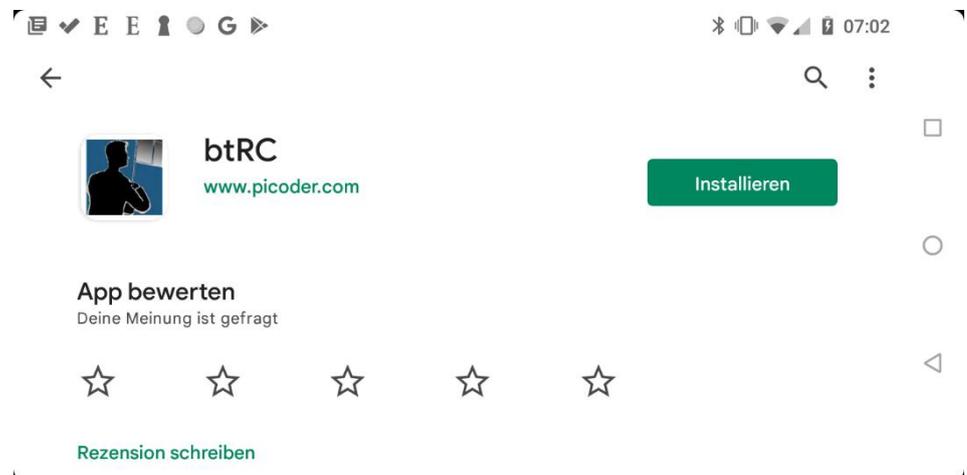
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# 2

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## Commissioning

The free *btRC* APP is distributed via the Play Store; the installation has no special features. Regarding the required permissions, access to Bluetooth is to be allowed.



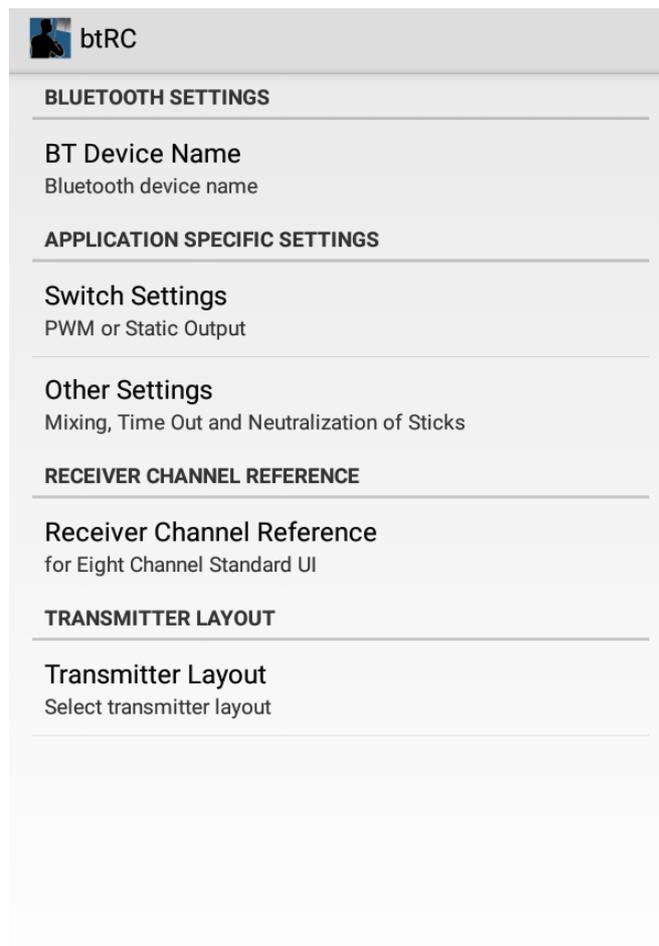
The second step is to pair the device with the Bluetooth receiver. The Bluetooth module HC-06 is factory set with the name "HC-06"; the pin code is 1234. So go to Settings -> Bluetooth in the Android device and search for devices there. Mark the found device with the name "HC-06" and "pair" it. Enter the pin code 1234. Now the apps on the smartphone/tablet can connect to the Bluetooth module.

**Note:** after a software update of the app, the existing Android Bluetooth settings should be removed to the previous program state to ensure consistent data.

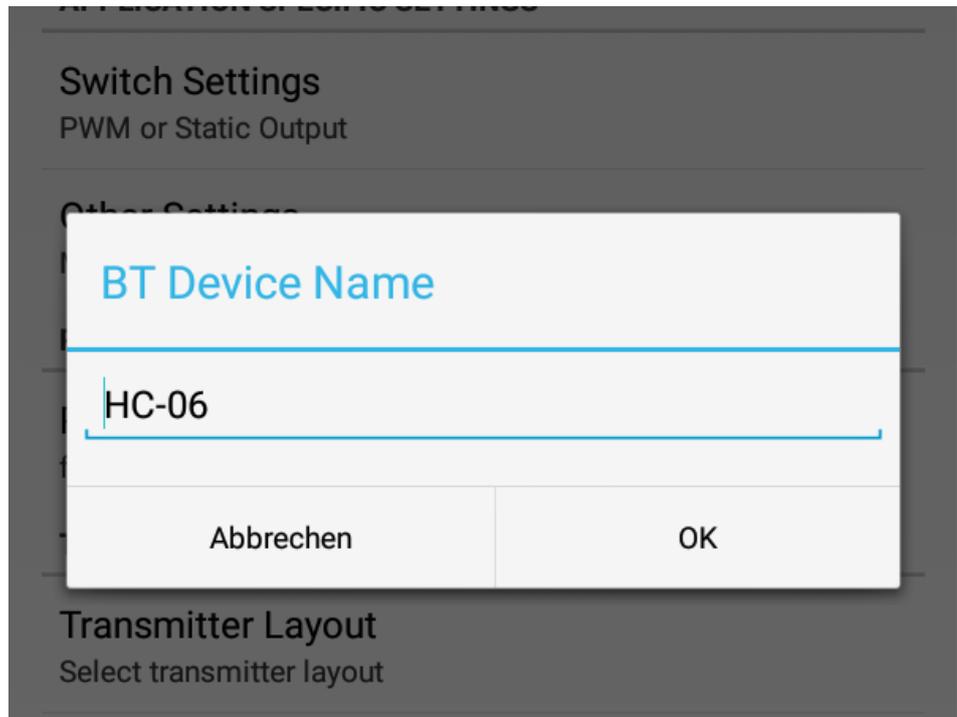
After pairing on the device side, the name of the Bluetooth module must now be entered in the app settings.



Selecting the preferences (see red arrow) you will get to the following sub-menu:



After selecting "BT Device Name", enter the device name here as well.





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# 3

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## *User Interface*

After startup, *btRC* offers a main screen from which the various user interfaces are started or settings are made. The operator interfaces for remote control always present themselves in landscape format to ensure easy operation.



The Connect button takes you to the standard user interface for the eight-channel remote control.

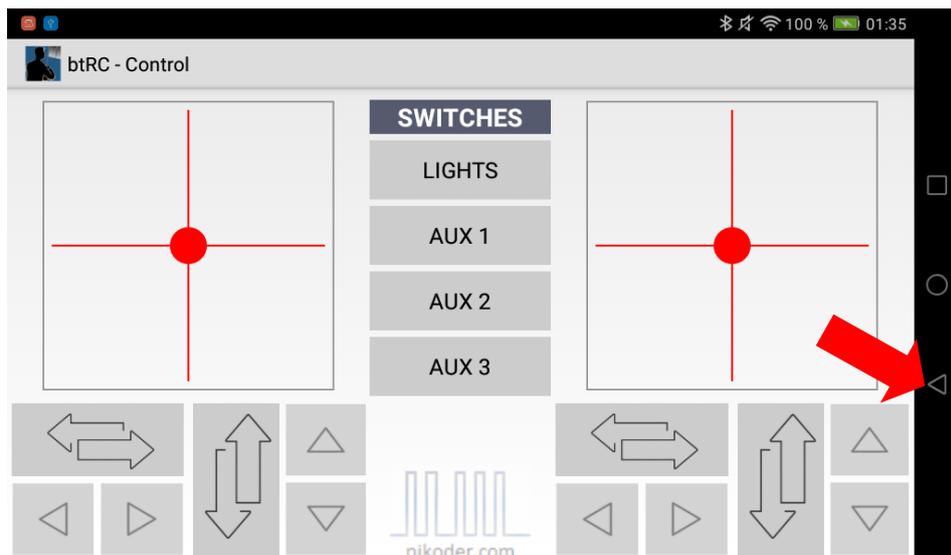
## Connection with the receiver

After you have selected "Connect", the connection to the receiver is established; this activity is indicated by a corresponding message "Connecting..." and the Connect button disappears.



It may take a few seconds to establish the connection. As soon as the connection is successfully established, the app switches to the selected user interface.

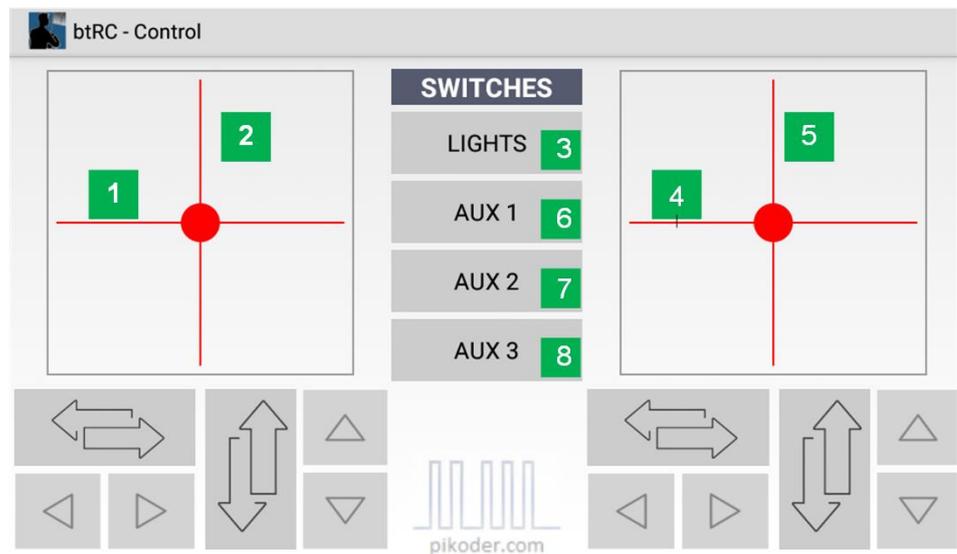
Returning to the initial menu is always done via the Home button (see red arrow in the picture).



## Controls

The app provides you with two virtual thumbsticks to control the model by touching and moving the red dot. All axes can be individually trimmed and their direction reversed. In addition, a total of four switching channels (LIGHTS, AUX1 - AUX3) are available to you, which output either PWM or static levels.

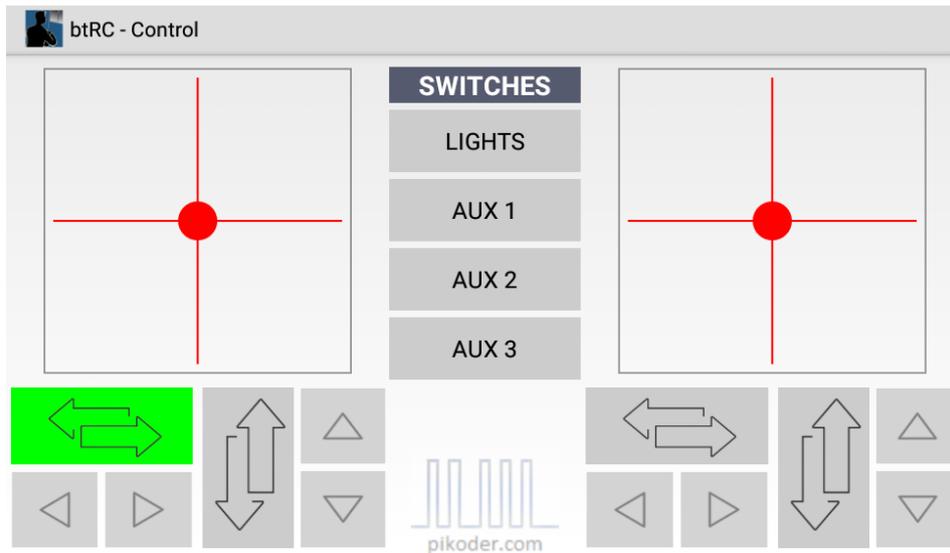
The default assignment of the individual channels of the PiKoder/SSC RX receiver to the control elements is shown in the following figure (the number in the green field indicates the channel number of the receiver). If you need a different assignment, you can set it in Settings.



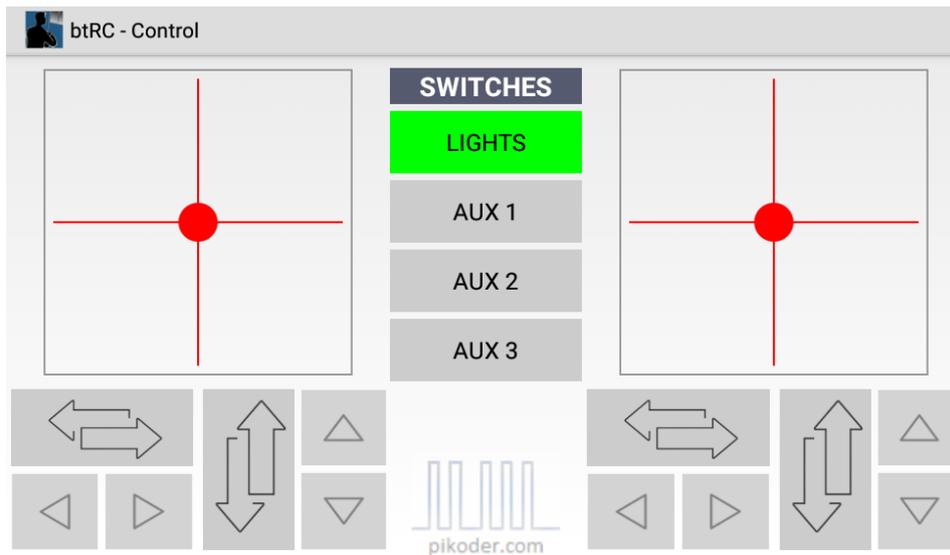
The Trim function is used to define the basic position for each channel. Each time the arrow key is pressed, the home position of the channel is adjusted accordingly until the maximum or minimum values are reached.

The set values are saved in the app and can be displayed in the settings. The values are then automatically applied the next time the program is started. This means that you do not have to reset the basic trim every time you switch on.

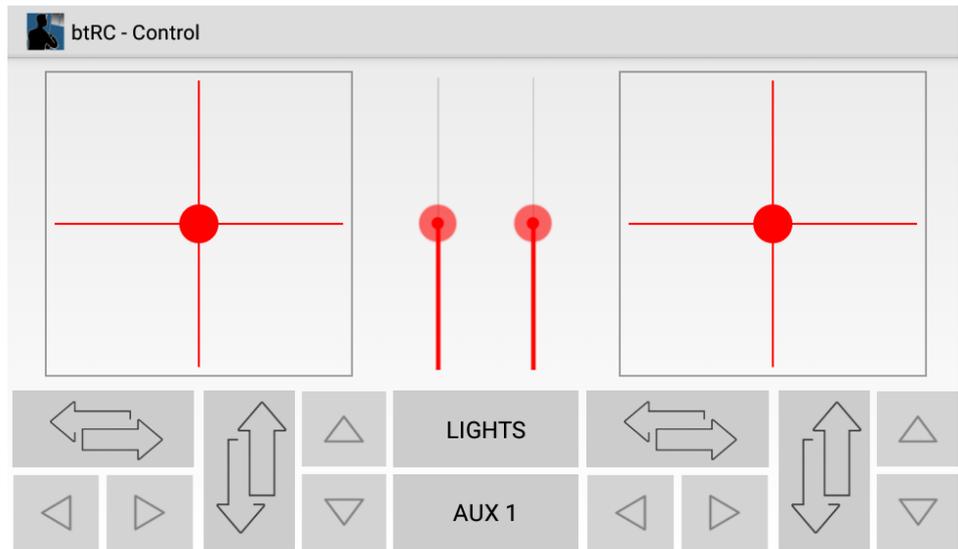
The direction reversal of the control sticks is switched on or off by pressing the buttons. The switched on state is indicated by a green background color of the button.



The switching channels are also switched on and off by pressing the buttons. The switched-on state is indicated by a green background color.



If six servo channels are required, then a modified user interface with two sliders can be activated; the activation is described in the Settings section.



The middle sliders are assigned to channels 7 and 8.



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# 4

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## Settings

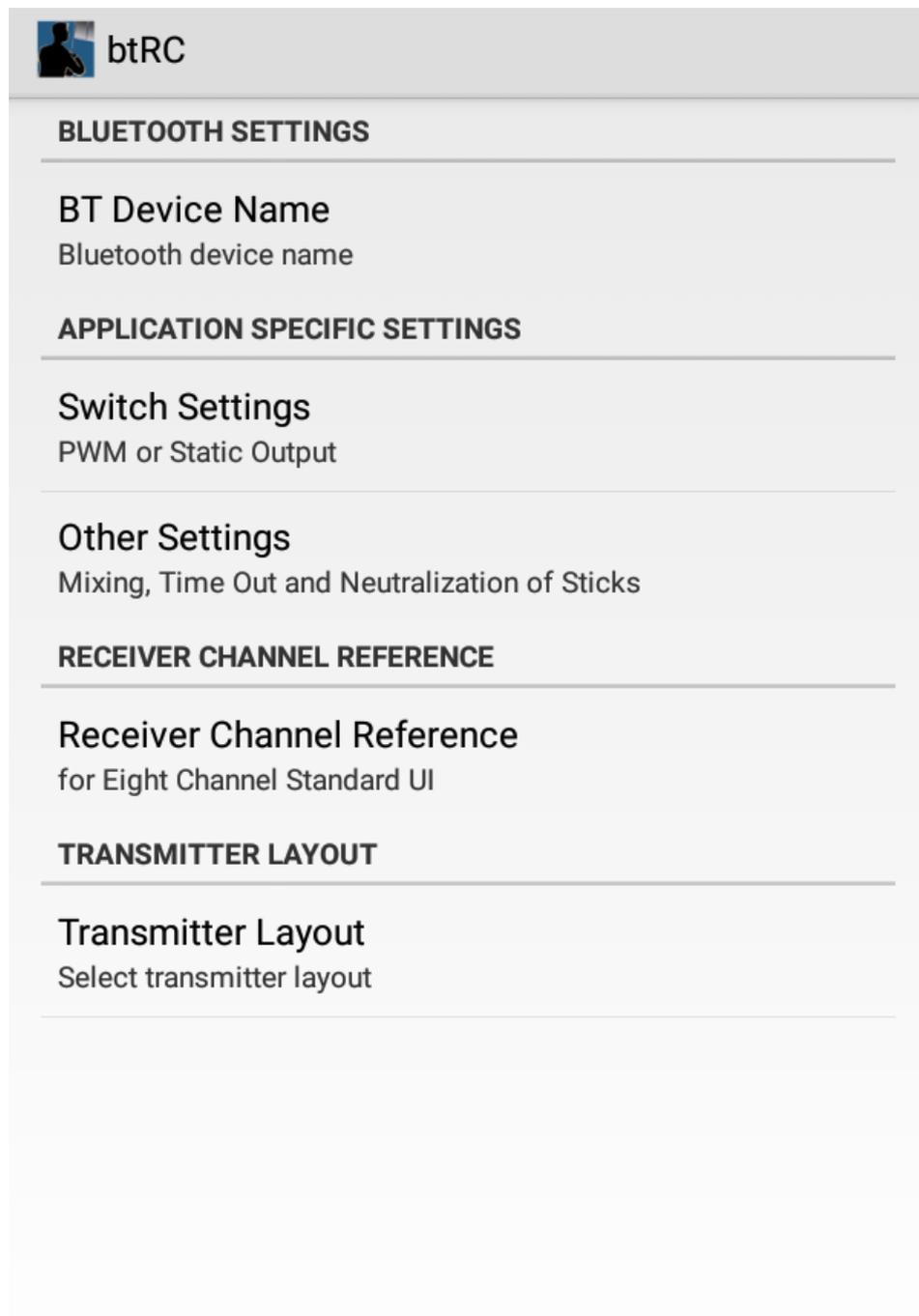
The settings are called up in the main menu. (see "Commissioning"). and are identical in content and procedure. After activating the preferences, a selection menu appears with APP Settings, SSC Settings and the general help information with the reference to the PiKoder homepage (see also picture on the following page).



### APP Settings

In this area, you make the general settings for the APP. These include the entry of the device name (see section "Commissioning"), the setting of the switching functions, timeout and mixing as well as the assignment of the

receiver channels to the control elements. The *Back button* takes you to the higher-level menu in each case.



## **Switch Settings**

*With the Switch Settings* you determine whether the four switch channels output a static on/off signal or a PWM signal.

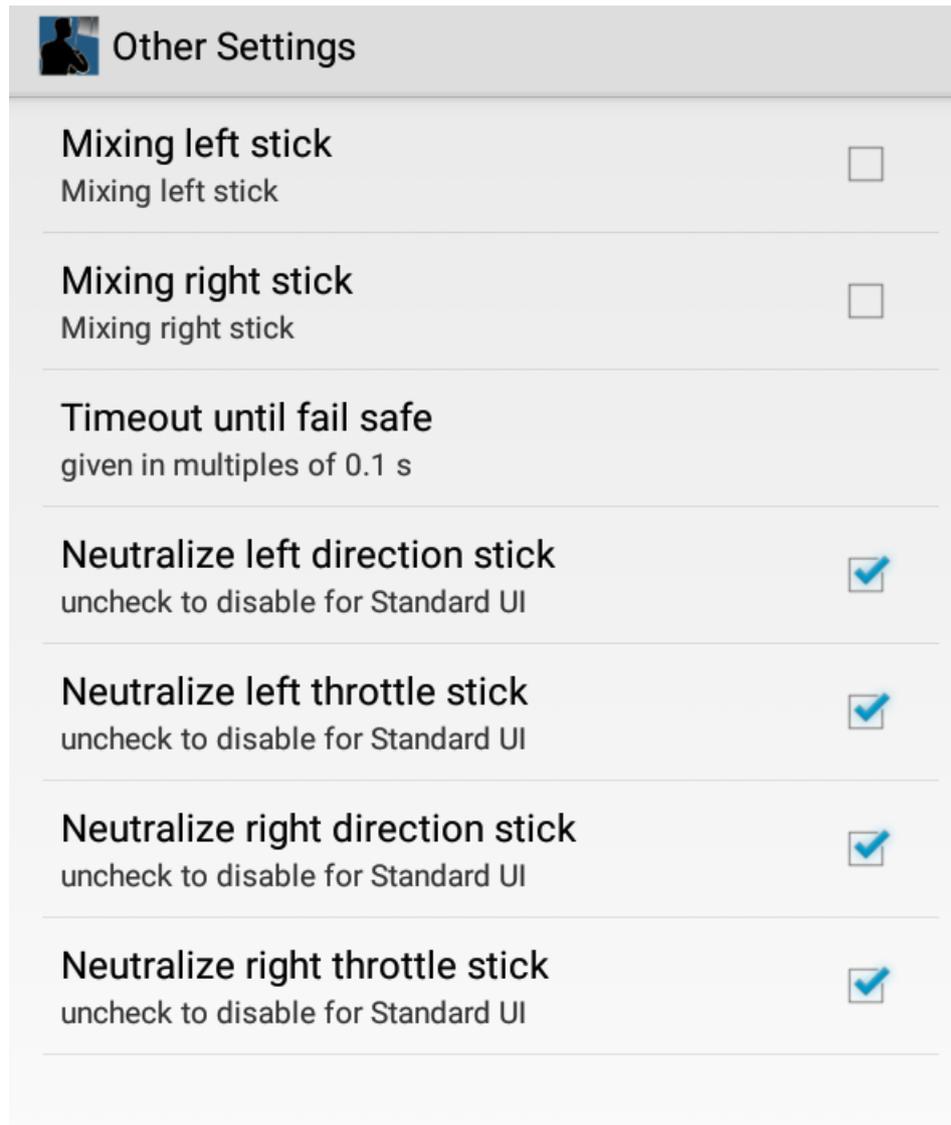
Switch Settings	
<b>LIGHT switch settings</b> PWM enable	<input type="checkbox"/>
<b>AUX1 switch settings</b> AUX1 PWM enable	<input type="checkbox"/>
<b>AUX2 switch settings</b> AUX2 PWM enable	<input type="checkbox"/>
<b>AUX3 switch settings</b> AUX 3 PWM enable	<input type="checkbox"/>

In the default setting (box not activated), the switching channels are configured as IO pin, i.e. statically switched on or off. If the box is checked, then a PWM signal is generated (on-state is mapped by PWM > 1800  $\mu$ s).

## Other Settings

Activation of the Mixing function is independent for each control stick and allows you to control a model with two motors (*Mixing Active*); for the traditional setup with one speed controller and one rowing machine, uncheck the box.

The *btRC-App* in connection with the PiKoder/SSC RX has a "Fail Safe" function: if no control commands are received within an adjustable period of 0.1 - 99.9 s, then the receiver outputs the neutral value on all servo channels. If this neutral value is programmed in advance for a specific model (see [PiKoder/SSC User's Manual](#)), then it is ensured that the model switches to a defined state if the connection is lost (e.g. switch off the motor or similar).



In the default configuration, all sticks are automatically set to neutral when 'released' (corresponding to the mechanical spring in a traditional remote control). By removing the checkmark, the spring is unhooked and the control stick remains in its last position. This function is useful for sailboat models, for example, to avoid having to hold the control stick all the time for sail adjustment.

## Receiver Channel Reference

In this menu, the receiver channels are assigned to the operating elements of the user interface.



## Receiver Channel Reference

### Stick left

left and right movement

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### Stick left

up and down movement

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### Stick right

left and right movement

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### Stick right

up and down movement

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### LIGHTS switch

assign to channel

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### AUX1 switch

assign to channel

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### AUX2 switch

assign to channel

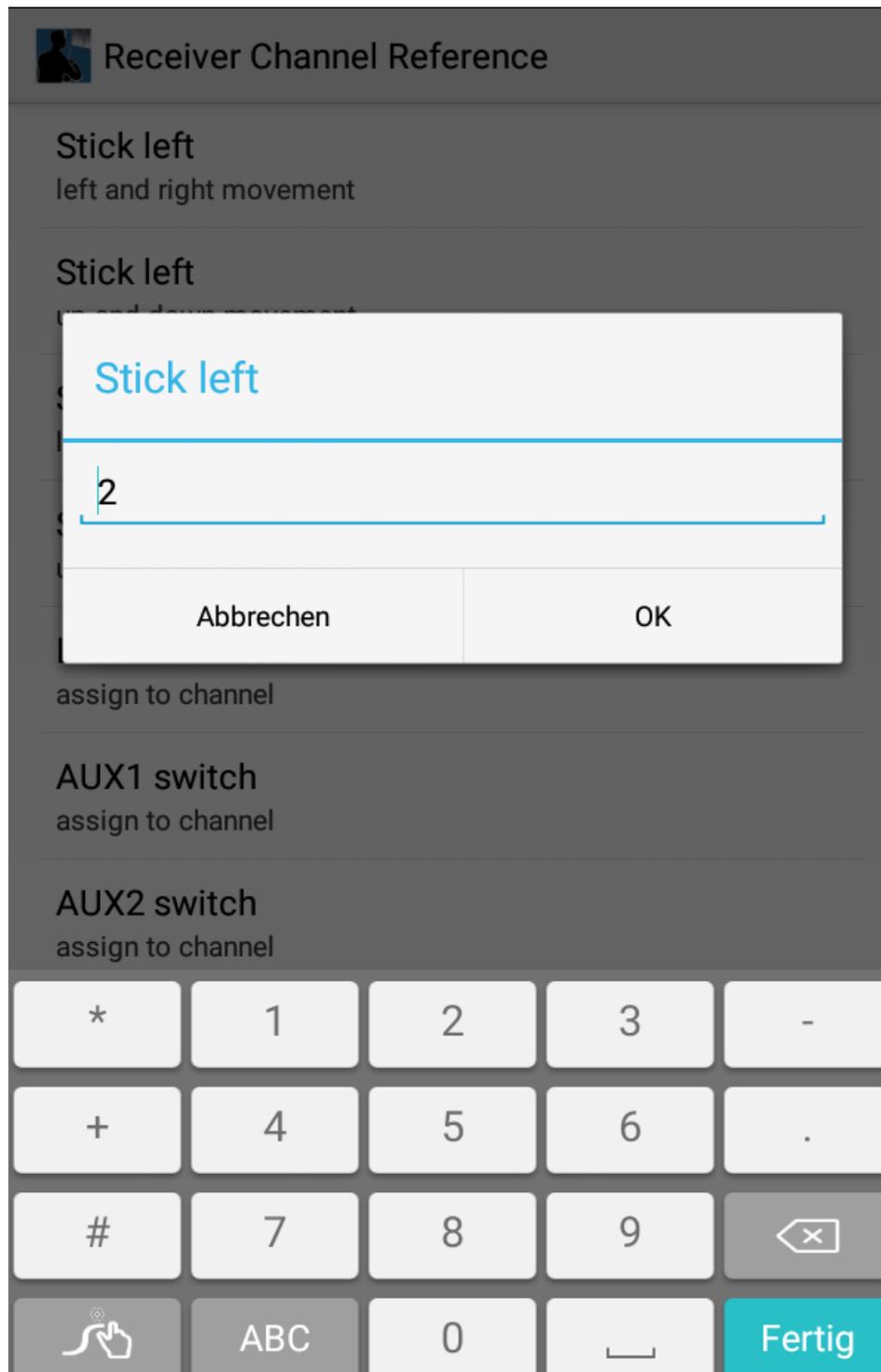
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### AUX3 switch

assign to channel

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Selecting an operating element opens an input option for the assigned receiver channel number.



## Transmitter layout

This menu item allows switching the switching channels 7 and 8 to a slider for servo control. Activation takes place via a checkbox.



## Transmitter Layout

**Enable central sliders**

check to enable central sliders