Operating Manual

App
SFR-1 Controller
V0.98

To control the
SFR modules
with Bluetooth

Only for

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Description

The "SFR-1 Controller" app was developed for mobile devices, such as smartphones and tablets with Bluetooth functionality, to control the modules of the SFR-1 series.

With the App, the model can be driven with an integrated position sensor or by finger steering on the control pad. In addition, all functions of the SFR-1 series (additional sounds, lights, servos, etc.) can be controlled via assignable buttons.

The Bluetooth app can be used parallel to a standard RC transmitter. The app is than like a graphical "multiswitch module" to switch 30 additional functions.

The reach of standard Bluetooth transmitters in smartphones is between 10 and 30 meters. The app is therefore only suitable for controlling models that do not exceed this distance from the transmitter.

The app is supported by the Android operating system. Android 5.1 or higher is required for this.

To receive bluetooth the module BTC-1 is required:
https://www.beier-electronic.de/modellbau/produkte/btc-1/btc-1.php

To use the app, following devices / modules are required:

- Module of the SFR-1 series
- Bluetooth module BTC-1
- Smartphone or tablet with Android 5.1 or higher

Additional information and help?

You have problems with your module and need additional information?
No worries, we are here to help you!

BEIER-Electronic forum
Check out our BEIER-Electronic forum on our website. In our forum you can ask questions and receive answers from us and from other forum user. Through an intensive exchange of expertise and experience, all forum users can benefit from the information, presented solutions and ideas. Maybe your question / problem has already been described and you can find immediately the solution (e.g. in the FAQ).

BEIER-Electronic on facebook
Also visit us on facebook. You can find news and additional information about our products there. Customers of us also founded a facebook group, where you can present your project and get help, just like in our forum.

YouTube tutorials
If you have questions about basic functions of the sound speed controller SFR, please watch our YouTube video tutorials with English subtitles. In these videos we explain for example how to connect the sound module and how to program and control different functions.

Installation

For installing the app an android version 5.1 or higher is required.

To download the app, open your Google Play Store and search for „SFR-1 Controller“. You can also find a download link on our website.

Click on "Install" and on "Accept" so the app can access the required functions of your mobile device.

When the installation is complete, you can start the app directly using the "Open" button.

Connection of BTC-1

The Bluetooth module BTC-1 is connected to the last proportional channel of the module. At SFR-1 it is channel #6 (X2/6) and channel #8 (X2/8) an the SFR-1-D and SFR-1-HL. The brown cable points always to the edge of the board.

Attention: A simultaneous use of a sum signal (S-BUS, SUMD or i-BUS) and the BTC-1 is not possible!

If the Bluetooth module BTC-1 and the SFR module are connected correctly, the red LED on the BTC-1 flashes.

If the app is connected to the Bluetooth module BTC-1, the red LED on the BTC-1 lights up continuously and the blue LED on the SFR flashes regularly.

A successful Bluetooth connection is displayed on the app's control panel.

Settings at mobil device

A transmission via Bluetooth (BLE) requires the location of your mobile device to find the Bluetooth module BTC-1.

The Bluetooth function on your mobile device must be switched on while using the app. If the Bluetooth function is deactivated, the app notifies and offers to activate the Bluetooth function.

An additional "pairing" of the Bluetooth module BTC-1 via the Bluetooth settings of the mobile device is not necessary! The connection is made directly via the app.

Connection with Bluetooth

As soon as the app is started, the last used BTC-1 module is connected. If only new BTC-1 modules are found, you will find a list of all detected BTC-1 modules.

If the connection has been successfully, the red LED on the BTC-1 lights up continuously. The connection status is also shown in the app.

Due to the relatively low transmission power of a smartphone or tablet, the range is between 10 and 30 meters. For reliable, controllable and therefore safe use, the model must always be in this area!

If the connection is broken, the model is automatically stopped. The detection of the connection breakdown occurs, however, with a certain delay.

As soon as the model is within range again, the connection is established automatically.

If this is not the case despite the close proximity of the mobile device and the BTC, the module must be restarted. To do this, the model's supply voltage must be interrupted and then reconnected.

This is especially necessary if the red LED on the BTC-1 lights up continuously, although no connection can be established.

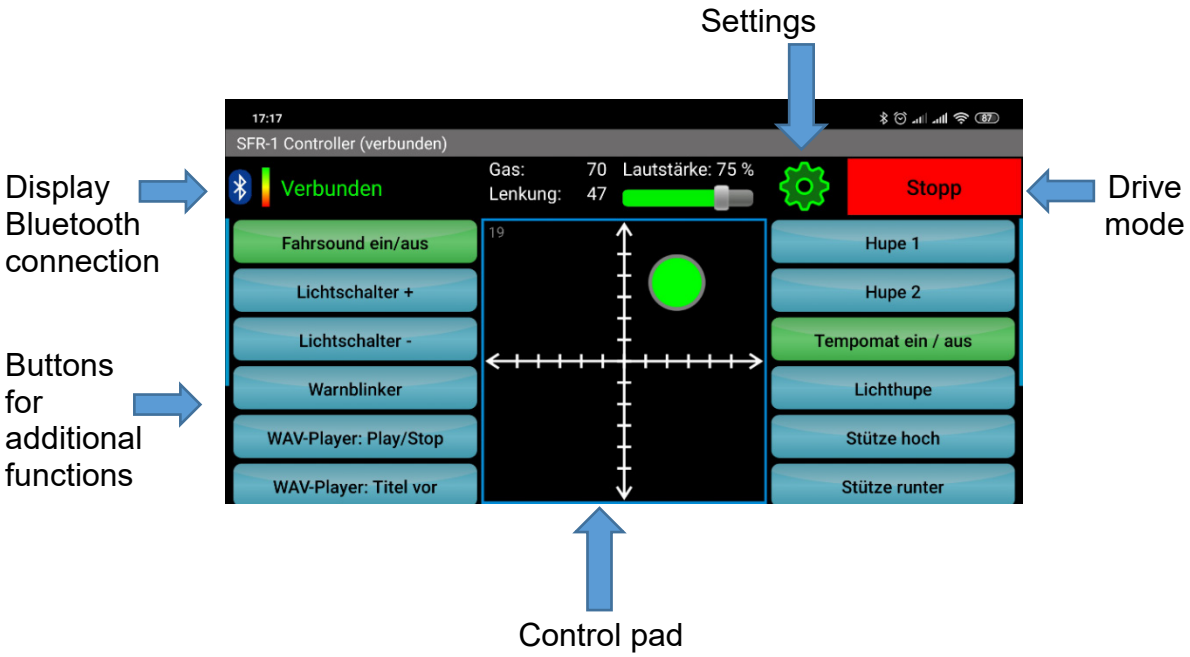
Control panel

The control pad is in the middle of the control panel. The y-axis (vertical) is the speed and direction of travel and the x-axis (horizontal) is the steering.

To the right and left of the directional pad are 10 buttons for additional functions. The buttons are freely programmable and scrollable up and down. Every additional function of the SFR can be selected for this (see page 12).

With the button "Drive / Stop" the driving mode is activated and the model can be driven.

The area of the Bluetooth connection shows whether there is a connection to the Bluetooth module BTC-1.



The volume of the model can be adjusted by moving the slider between 0% (silent) and 100% (loud).

Drive mode

The driving mode is activated with the "Drive" button. The red circle in the control pad turns green and the model is ready for driving.

As long as the driving mode is not active in the app (red circle in the control pad), the model can be controlled with an RC transmitter. If you switch to "Drive" in the app (green circle in the directional pad), the throttle and steering of the RC transmitter are deactivated and the model is controlled via the app.

In driving mode, the model can be driven by moving the green circle with your finger or with the help of the position sensor (tilting the mobile device). Which of these two variants should be used can be selected in the settings.

With sensor control, the current position of the mobile device is set as the neutral position when changing from "Stop" to "Drive". The device should therefore always be held in a position that corresponds to the neutral position. While driving, the neutral position can also be reset at any time by tapping the control pad.

The driving mode is ended with the "Stop" button.

By shaking the mobile device, the driving mode can also be changed from "drive" to "stop" (panic emergency stop).

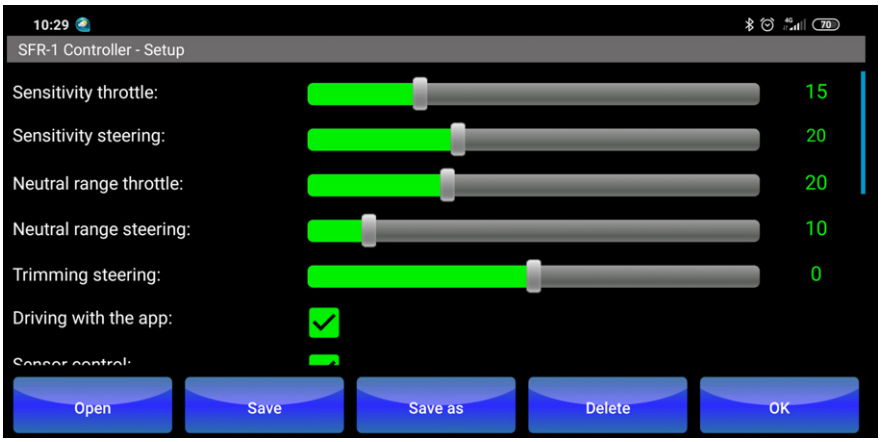
If the model is out of range, the driving mode is also changed to "Stop" and the model is stopped.

Settings

With various setting options, the driving behavior and the app can be adapted to your own requirements or to your mobile device.

The setting area is opened by clicking on the green gear on the control panel. The driving mode then always switches to "Stop". It is therefore not possible to change the settings while driving.

Setting options:



Sensitivity throttle:
Here it is determined how much the mobile device has to be tilted forwards or backwards in order to accelerate fully. The higher the value of the slide switch, the stronger the model reacts to the moves of the mobile device.

Sensitivity steering:
The sensitivity of the steering determines how much the mobile device must be tilted to the right or left for the steering to take place.

Neutral range throttle:
The zero point dead zone can be set here. The larger the value, the larger the area on the y-axis (around the zero point) in which the model does not start.

Neutral range steering:
The zero dead center of the steering can be set here. The larger the value, the larger the area on the x-axis (around the zero point) in which the model does not steer.

Trimming steering:
With the steering trim, misalignments of the steering axis are compensated so the model drives straight ahead with neutral steering.

Driving with the app:
The Bluetooth control is possible additional to an RC transmitter. The app does not necessarily have to be used to control speed and steering, but can be used as a pure (graphical) "nautical / multiswitch module" to trigger up to 30 additional functions.

To do this, the check mark for "Driving with the app" must be removed. Driving is then controlled with the RC transmitter. 10 more buttons for additional functions are then displayed in the control pannel.

Sensor control:
With activated sensor control, the position of the cell phone is used for driving (gas and steering). If the sensor control is not activated, the model can be controlled manually by moving the circle in the control pad.

Auto neutral:
If the finger is lifted from the control pad (no sensor control), this option can be used to determine whether the circle should automatically jump to the neutral position or whether the current position should be maintained.

Button setup:
In order to assign and label functions to the buttons (see page 12), the "Button Setup" must be activated here.

Button height:
The height of the buttons can be changed with this slider.

Button text size:
The text size of the buttons can be changed with this slider.

PIN (4 digits):
To protect the model from "third-party" control, the app can be "coupled" with the model using the PIN number. The PIN for the model is set in the Sound Teacher and is saved with the project data on the SD card.

Attention: The model can only be controlled with the app if both PINs match.

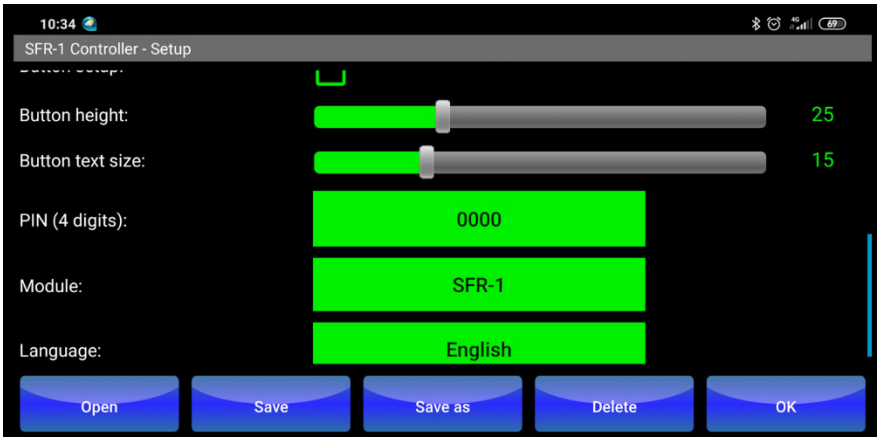
The standard setting for the PIN is 0000.

Module:
The app can be used to control all SFR modules. The SFR type can be changes here.

Language:
The app is also available in English. The language can be selected here.

Project memory

Any number of models with different settings can be saved in the app.



The project memory is also on the settings page:

Saved models are opened with **"Open".**

By clicking on **"Save",** changes can be saved in the current model.

If the settings should be saved with a new name, click on **"Save as".**

By clicking on **"Delete",** the currently loaded model is deleted.

With **"OK"** the area of the settings is left.

Note:
Saved files are stored in the folder "/ storage / emulated / 0 / Android / data / appinventor.ai_beierelectronic.SFR_1_Controller / files / ". The model files can also be transferred to other mobile devices by simply copying them.

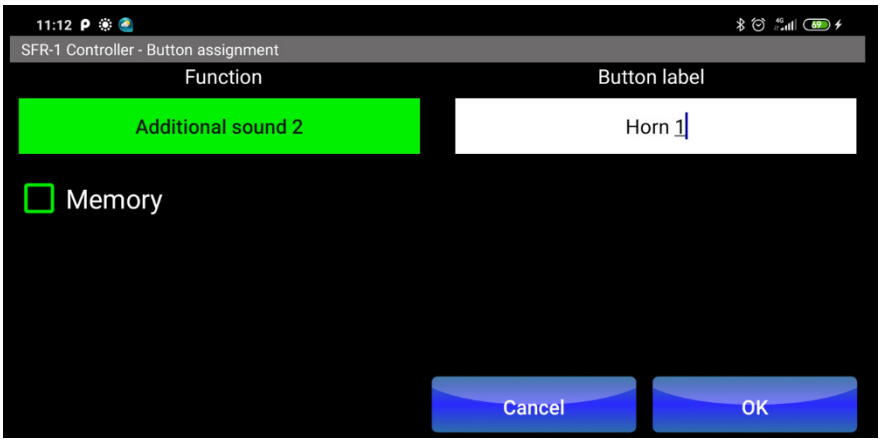
Setup

The 20 or 30 buttons in the control panel can be assigned and labeled with functions.

To do this, the "Button Setup" must be activated in the setting area. As a shortcut, you can also long click on the green gear to switch the button setup on or off.

If the button setup is active, the labeling of the buttons is white.

If you now tap on a button, the function and label of the button can be set:



With **"Function"** a new function of the button can be selected from all available SFR functions.

You can enter your own name for the function in the **"Button label"** field.

Depending on requirements, a **"Memory"** function can be activated for the button. The function then remains active until the button is clicked again.

The setting area is closed with **"OK"**.

At the end of processing, the "Button Setup" setting must be deactivated again.