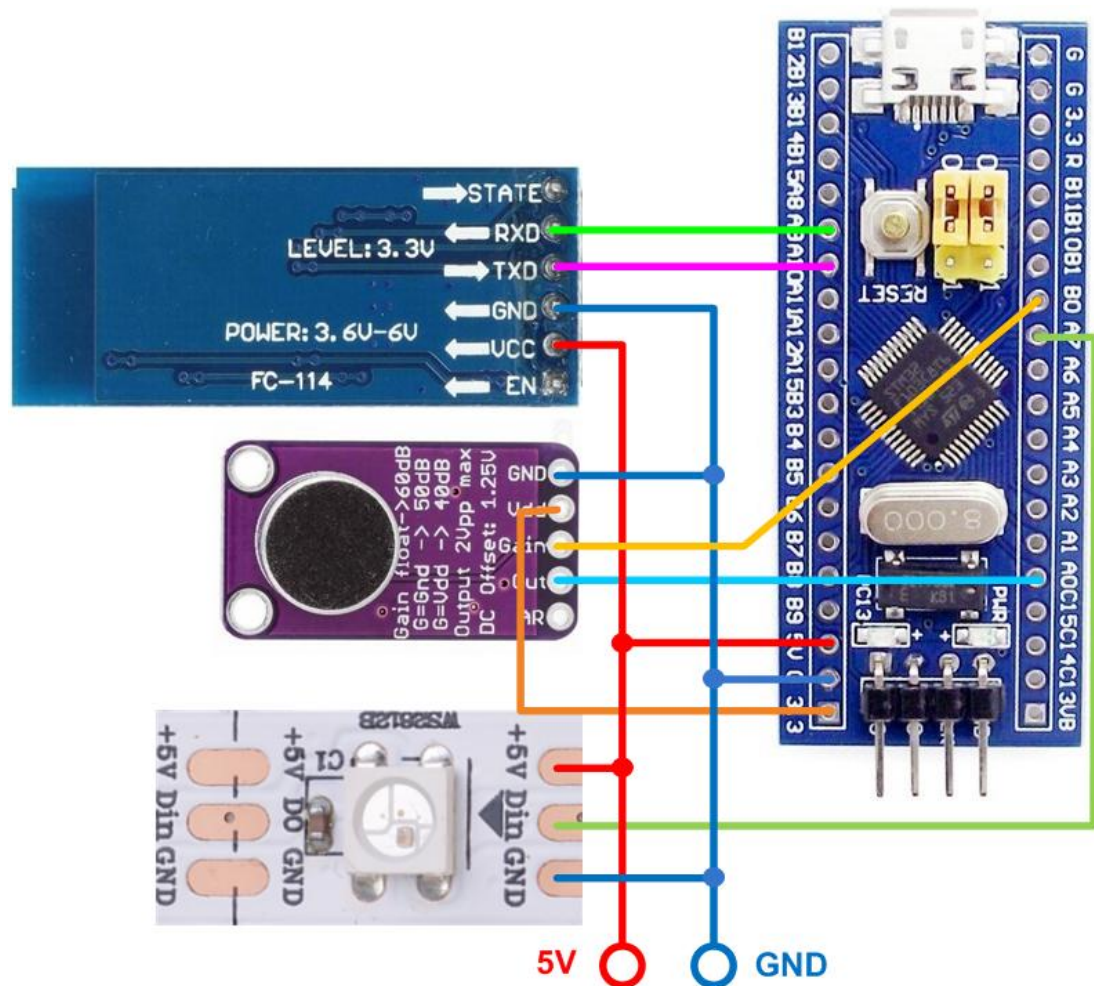


Hi!

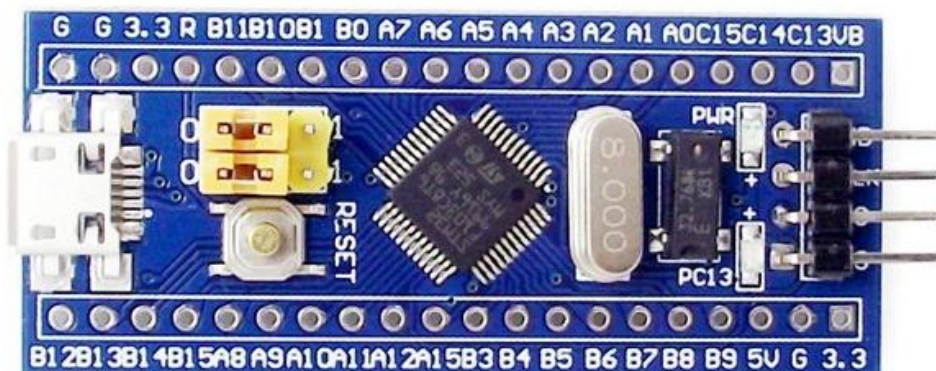
Here I present my autonomous musical lighting assembly instructions. STM32F103C8T6 microcontroller does all the processing of audio stream. You can change color and dynamical programs via Bluetooth using your smartphone and/or using hardware USB. You are welcome to download needed software for Android from the [Google Play Store](#).



Wiring diagram

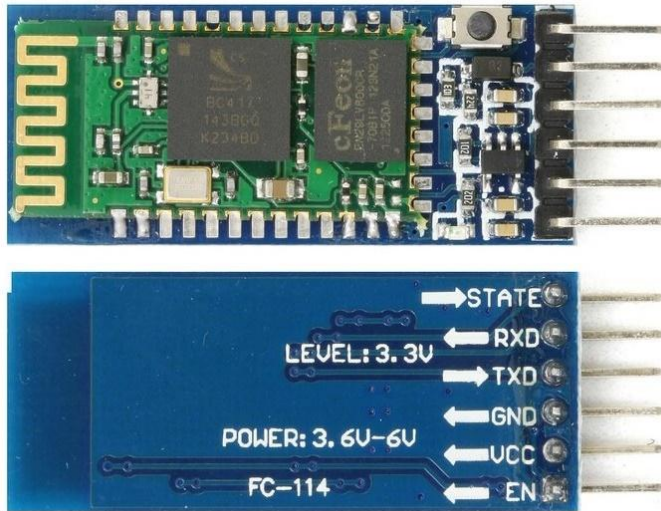
You will need:

1. **STM32 mini board**

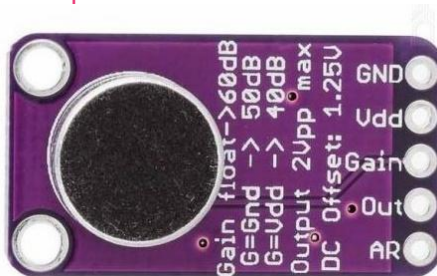


[Download Firmware](#)

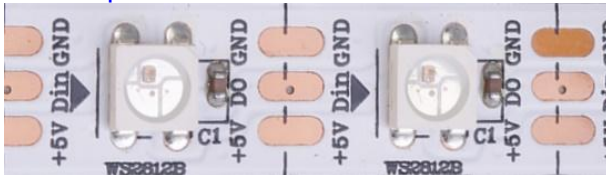
2. Bluetooth module



3. Microphone sensor module



4. LED strip



5. Power supply DC 5V min current= $\frac{((LEDsnumber*60)/1000)*1.2}{A}$

6. Connectors for strip and power supply. You can take one for connecting to the LED strip from its output end (Dout).

FIRMWARE PROGRAMMING

STM32 programming is done through the USB-UART adapter using the [Flash loader demonstrator](#) program. There are several descriptions of the STM32 programming process. You are welcome to choose the description you find clearer.

New firmware for the STM32 microcontroller is always available for download from [Google Drive](#).

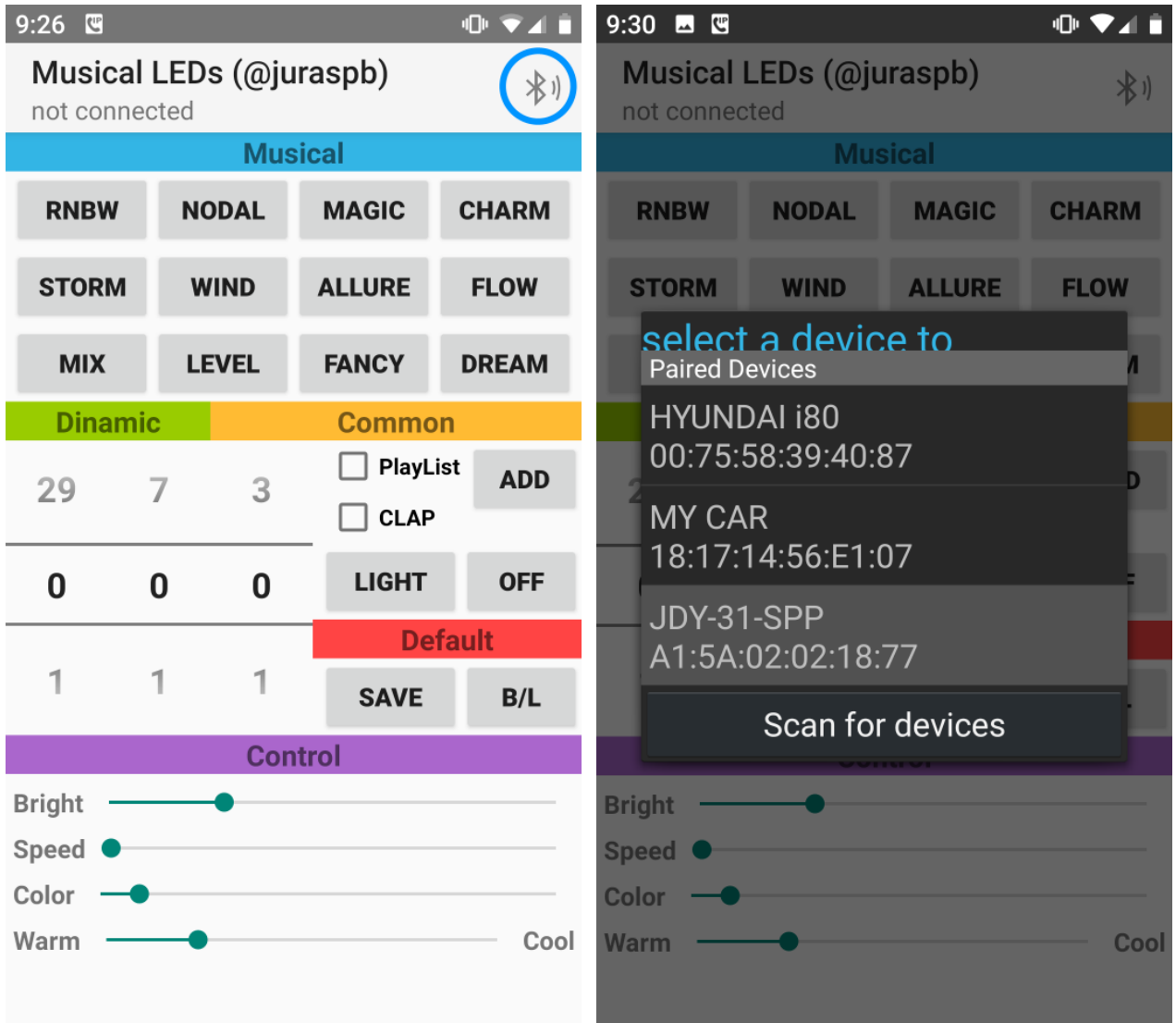
For controlling STM32, you may use the terminal program via the built-in micro USB, and the Android application.

MUSICAL LEDs USER MANUAL

Software [MUSICAL LEDs](#) is available for Android on Google Play.

1. Connection to the controller

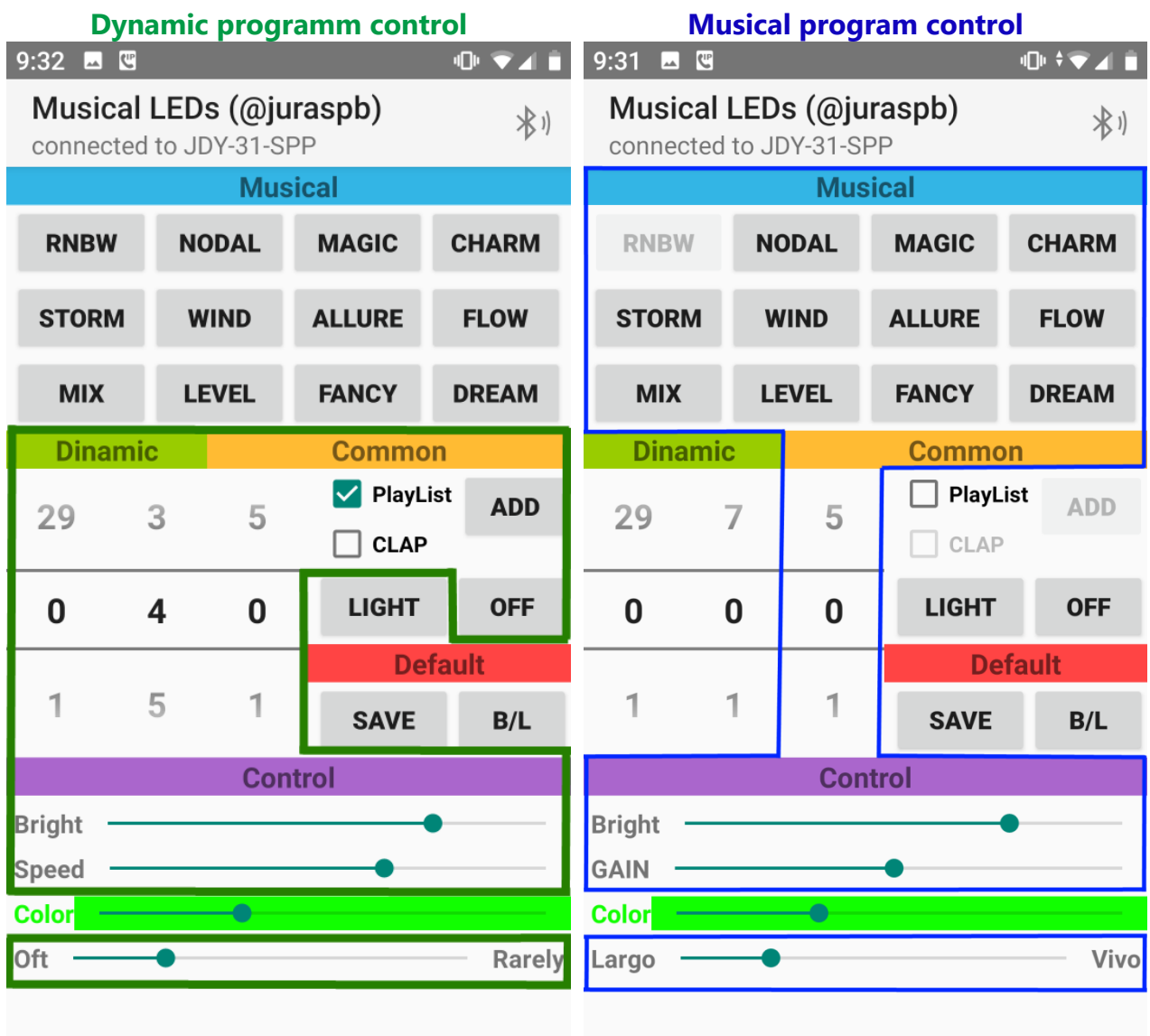
Touch the Bluetooth in the top right corner of the screen of your smartphone. Choose your Bluetooth controller from the list.



Wait for connection.

2. Selecting program, direction (mode), brightness, motion speed

Select musical program using buttons in the **Musical** part of the screen, or dynamic program using first two scrolling bars under the **Dynamic** label. Set comfortable brightness, gain, color and motion speed using sliders in the **Settings** part.



You can set the motion direction or performance mode for programs without directed LED light motion (not present in all programs so far) both for musical and dynamic programs using the third scrolling bar in the **Dynamic** part of the screen.

3. Creating your own dynamic programs playlist

You can create a list of dynamical programs that will be played in rotation. To do this, consistently select dynamic programs, subprograms, directions (modes), and motion speed, adding programs you like to playlist by hitting the **ADD** button. After you are done, save programs by hitting **SAVE**. Max. number of programs in the list is 80.

Further, you can add programs to playlist at any time by hitting **ADD**. Do not forget to save your new playlist by hitting **SAVE**.

To start playing your playlist check the box **LIST**.

To clear playlist hold the **ADD** button for more than 5 sec.

4. Включение белого света

Для включения белого света нажмите кнопку <LIGHT>.

5. Изменение количества музыкальных цветных полос

Для изменения количества цветных полос в музыкальных программах кратковременно нажмите кнопку <B/L>. Выполняйте нажатия до тех пор, пока количество полос не будет соответствовать вашим желаниям. Возможное количество полос 5, 6, 10, 15, 18, 20, 30. Если количество светодиодов не кратно числу светодиодов в ленте часть светодиодов может оказаться не задействованными.

6. Настройка количества светодиодов в ленте

Для изменения количества светодиодов в ленте, при настройке контроллера на количество светодиодов в вашей ленте, удерживайте кнопку <B/L> более 5 секунд. Выполняйте нажатия до тех пор, пока все светодиоды вашей ленты не будут задействованы.

Быстрее и проще выполнить настройку из [сервисной программы](#).

Have a nice time!