3 Channel LED PWM Controller

HomLiCon LCH3BT

Application

- Control groups LED, LEDs strips, LED modules.
- Color Organ, Sound Activated Light Show, Light Sequencer, etc.

Technical Specifications	
Number of Channels	3
Supply voltage	12 VDC (8 – 16 VDC)
Current consumption	15 mA
Maximum output current per channel	2 A
Maximum total output current	6 A
PWM steps for each channel	110
Color Organ bandwidth	LF 50−200Hz , MF 200Hz−7kHz , HF 7−14kHz
Line-in nominal level (set standart / high sensitivity)	0.3 V RMS / 0.15 V RMS
Line-in maximum level	1.5 V RMS
Mic-in range of sound level (with an added module MACL - not included in the kit)	60 - 120 dB (with additional module)(1)
Ambient temperature	5 − 40°C

Controller Features

- ✓ 16 Light Show programs : 2 - Color Organ, 6 - Sound Activated. 8 - Light Sequencer.
- ✓ Control of all settings and functions through one button
- ✓ Activation of Light Show controlled by sound from microphone(1), Line-in or unsynchronized
- ✓ Fully automatic Color Organ with digital division of the bandwidth in 3 range:
  LF 50 - 200Hz , MF 200Hz - 7kHz , HF 7 - 14kHz
- ✓ Automatic gain control (AGC) : Line-in > 9dB , Mic-in > 60dB (with module MACL - optional).\
- ✓ Save all settings and the last used program in the non-volatile memory
- ✓ Settings Sound Activated programs : Mic-in , Line-in standard sensitivity, Line-in high sensitivity
- ✓ Settings Light Sequencer : speed - 6 steps. Settings Strobe: speed - 6 steps
- ✓ Settings Lighting - 6 levels
- ✓ LED on each one of the channels connected to the microcontroller pins for indication and diagnostics
- ✓ Power MOSFET for the output of each channel
- ✓ 32 MHz microcontroller

1.0 Basic operations and wired diagram

1.1 Light Show basic operations

All operations and settings are performed via the button mounted on the board.

Table switching between programs

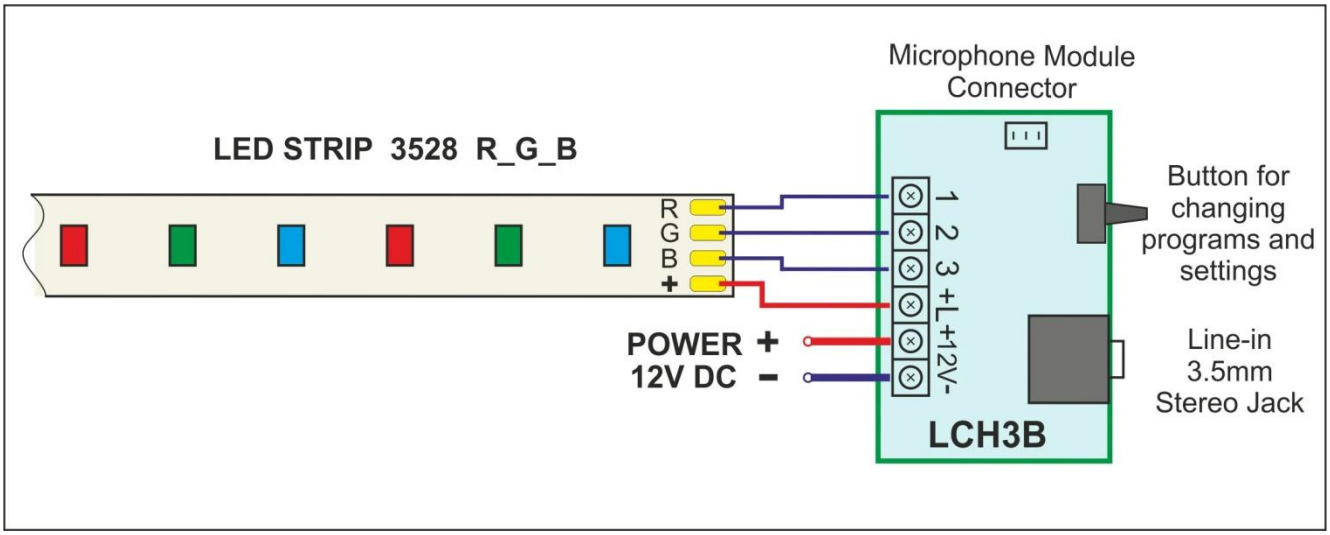
Single-click	**Next program**	Hold down the button for less than 0.3 seconds
Double-click	**Previous program**	Interval between clicks no more than 0.6 seconds Hold down the button for less than 0.3 seconds
Triple-click	**Sound activated programs group / Light sequencer programs group**	

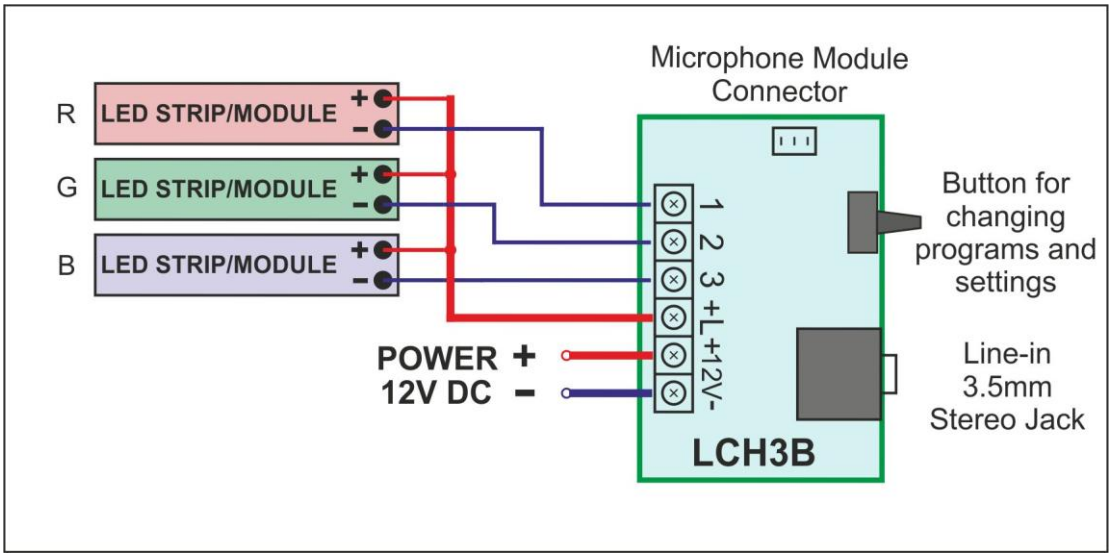
Table programs

№	Programs with sound control	Programs without sound control
1	Lighting mode 1	Lighting mode 2
2	Color organ with smooth transitions	Chaser –▶
3	Color organ classic	Chaser ◀–
4	Sound activated 1 - VU	Chaser –▶, ◀–
5	Sound activated 2	Fill –▶
6	Sound activated 3	Fill ◀–
7	Sound activated 4	Fill –▶, ◀–
8	Sound Activated - Strobe chase	Strobe chase
9	Sound Activated - Strobe all	Strobe all

Note: See section 2.0 for more details

1.2 Wiring diagram and description





The supply voltage 12VDC is connected to the terminal blocks marked **+** and **−** .

All **+** LED Strip / Module are connected together to the terminal blocks marked **+ L** , and all **−** LED Strip / Module, respectively to terminals **1**, **2**, **3**

Warning:

Outputs do NOT have protection from short circuit or overload.

Improper connection will lead to a damaged controller.

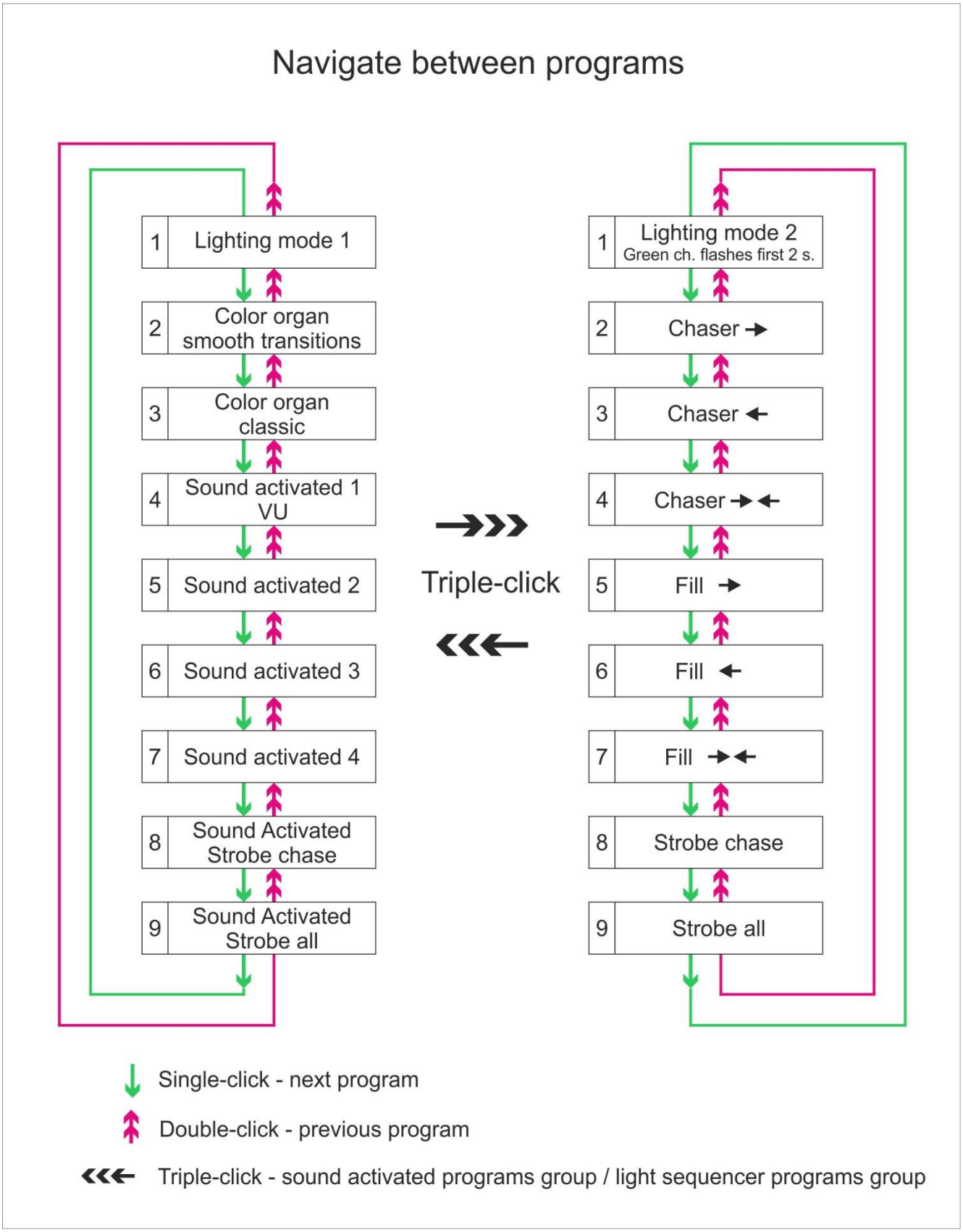
1.3 Hardware return to factory settings

1. Switch the power OFF.
2. Press and hold the button
3. Switch the power ON.

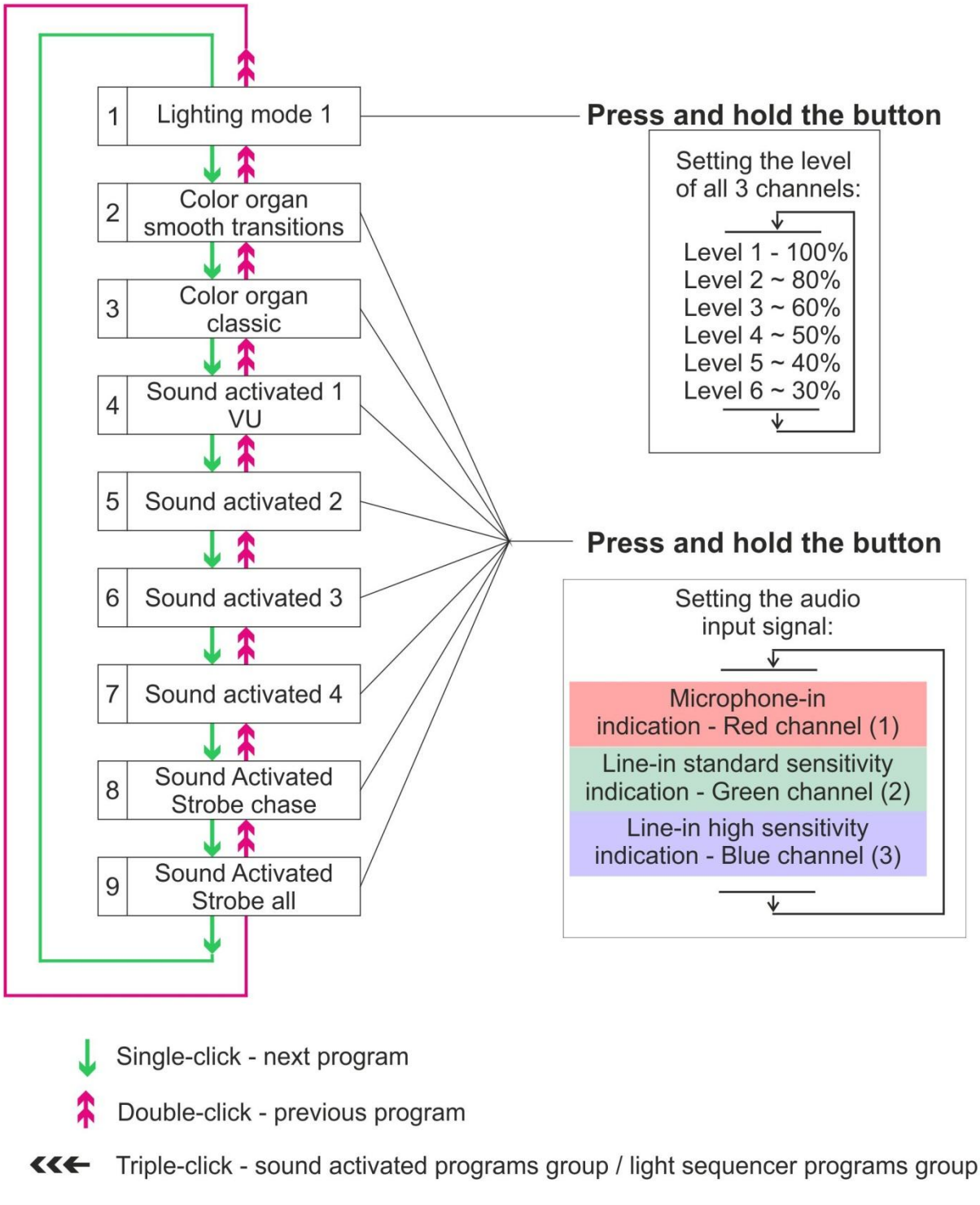
After 2-3 seconds when LEDs turns ON :

4. Release the button and restart.

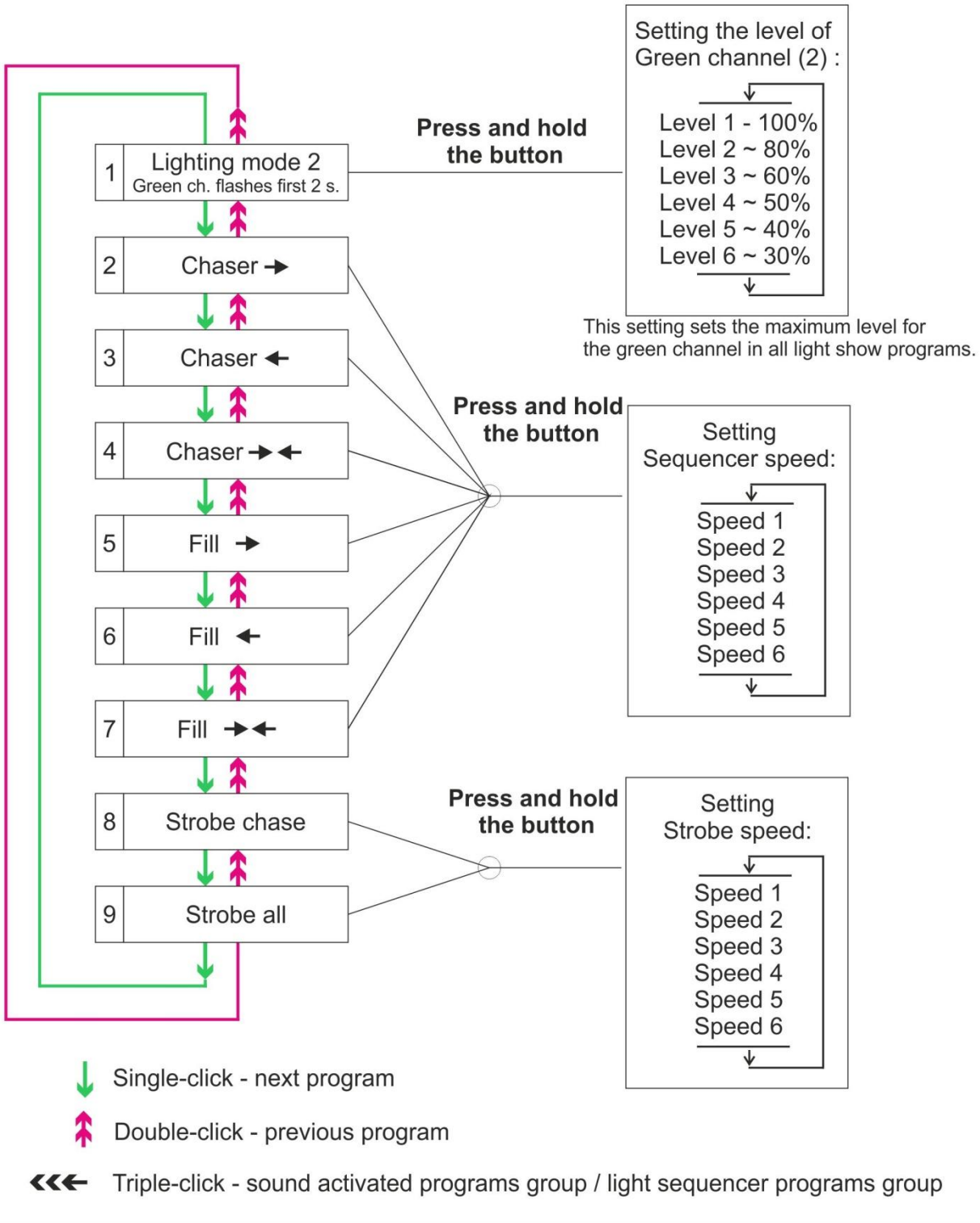
2.0 Light Show Control and Settings



Settings in group of sound activated programs:



Settings in group of light sequencer programs:



Note: When switch to **Lighting mode 2**, Green channel flashes first 2 seconds.
In this mode you can reduce the brightness of the green channel (often the green LEDs are much brighter).
This setting sets the maximum level for the green channel in all programs except Lighting mode 1.

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