ARC2-RF- Remote Controller

RC2-RF radio frequency remote controller

User's Manual

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Astera LED-Technology

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This instruction manual is part of the device and persons operating the device must have access to it at any time.
Safety precautions mentioned in the instruction manual have to be observed.
If the device is being sold, this instruction manual has to be included.

Translations

If the device is being sold, this instruction manual has to be translated into the national language of the destination country.
If discrepancies occur in the translated text, the original instruction manual has to be used to solve them tor the manufacturer has to be contacted.

1 Table of Contents

2 Safety

Before you operate the unit, read this manual carefully.
Make sure to keep the manual, in case you need to consult this manual again or you give the unit to another person.
Always make sure to include this manual if you hand out the unit to another person.

Do not operate the unit in areas where the usage of radio frequency or mobile phones is prohibited, like for example in airplanes, or when it may cause interference or danger.

Only qualified personnel may repair this product.
Don't open the case.

This device conforms to CE -or- FCC regulations, see type label!
It radiates in the 868 MHz or 915 Mhz bands. (See "Technical Data", page 11 for details.
Always make sure, that your national regulations allow the use of this device!

Keep batteries away from children. In case of a choking hazard go to the doctor immediately.
Make sure contacts are clean before you insert batteries.
Watch the polarity.
Only replace with same type of battery, otherwise EXPLOSION can occur.
Don't try to recharge batteries.

3 Quick Start

Astera RC2 radio frequency remote controller can be used to control light products of the Astera living lights series.

The basic concept behind the system offers a set of predefined programs (light effects), see "Overview of Programs", page 16.
For most event applications its necessary to customize the replayed colors, for example to suit a company logo.

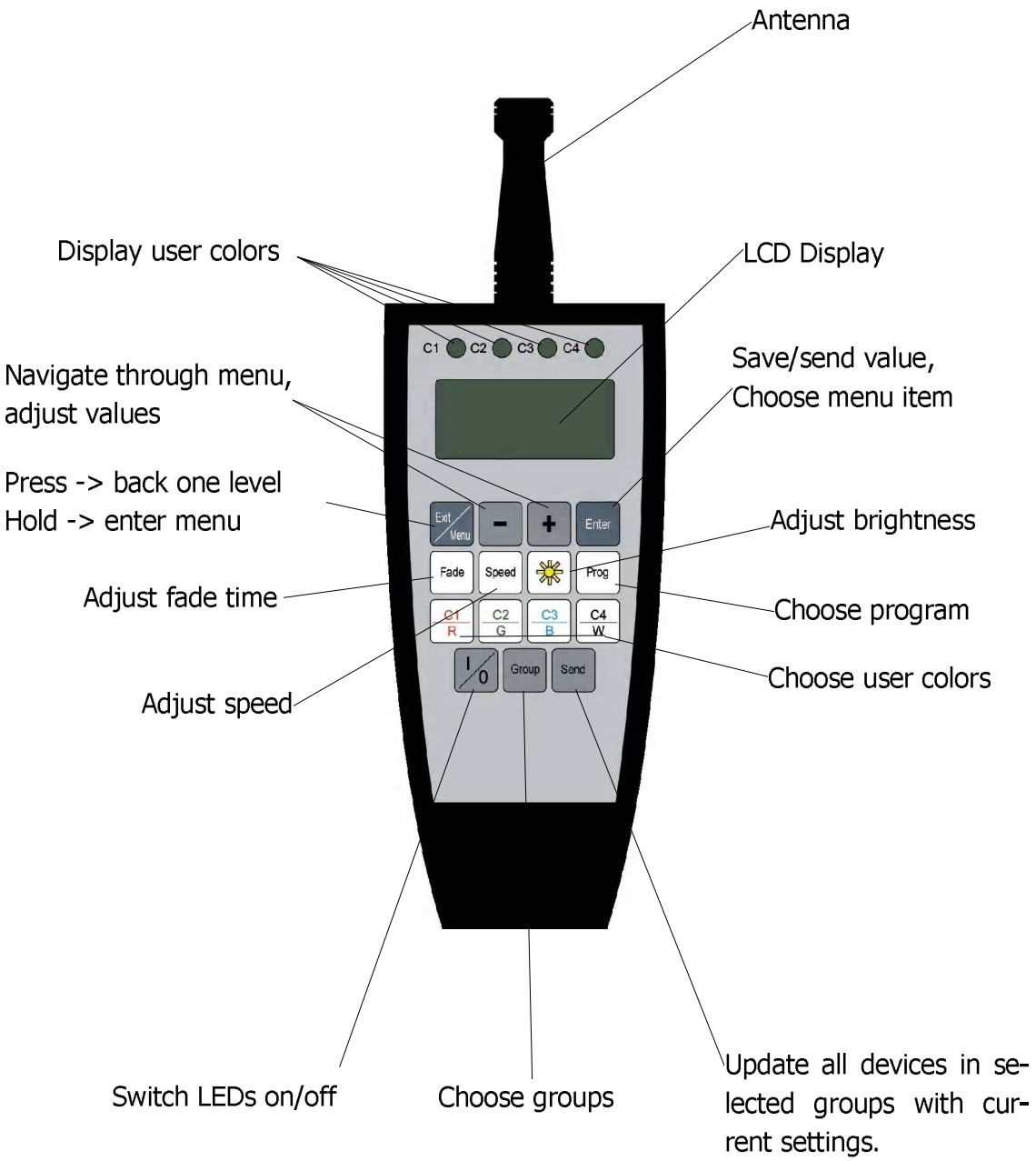
All predefined programs, except **RAINBOW** take the displayed colors from a four color palette. This palette can be defined by selecting the color C1, C2, C3 and C4.

Additionally, a lot of parameters, like **SPEED, FADE** and **INTENSITY** can be changed.

It is also possible, to synchronize all units, and to spread programs over several units. So for example the **RAINBOW** effect will be stretched over two or more units.

Most advanced settings can be accessed by holding down the *Menu* key.

3.1 Overview


Antenna
Display user colors
LCD Display
Navigate through menu, adjust values
Save/send value, Choose menu item
Press -> back one level
Hold -> enter menu
Adjust brightness
Adjust fade time
Choose program
Choose user colors
Adjust speed
Switch LEDs on/off
Choose groups
Update all devices in selected groups with current settings.
C1
C2
C3
C4
Ext. Menu
Enter
Fade
Speed
Prog
Group
Send

3.2 Buttons

Exit/Menu	Go back one level, or, if pressed for >1 second: enter the menu. For details on the menu, see page 23, "Menu Reference".
+ -	Step through the menu and adjust parameters, like fade, speed, brightness.
Enter	Choose menu item, save edited value or start sending a value if **TRANSMIT MODE** is set to **SEND ON ENTER.**
Fade	Sets fading between steps of the program in amount of the step-time. If set to 0%, there will be no fading at all, the color will be switched. If set to 100%, the color change will go smoothly from one to the other color. Any value in between will be a mix of these two settings.
Speed	Change the speed of the light effect. A time between 0,09 seconds and 9 minutes 21 seconds can be set. It reflects the duration of the selected program. ***Note:*** With the change of the **SPEED** you might get the units out of sync. In order to re-sync. One has to press the "SEND" key or change the program
 ***(INTENSITY)***	The brightness of the LEDs can be changed from 0%-100% in 10% intervals. By holding down the *INTENSITY* key for one second, **STROBOSCOPE** is entered.
Prog	Change the program (light effect). Programs are predefined, but the user can choose for most of them which colors they consist of.
C1 C2 C3 C4 ***USER COLORS***	All programs consist of one to four user colors (except in **RAINBOW** program, there colors are predefined and cannot be changed). For example, if **PROGRAM** is set to **SIMPLE RUNNING**, background color will be C1, and the color of the running pixel will be C2. The following standard colors are available: **RED**, **ORANGE**, **YELLOW**, **GREEN**, **CYAN**, **BLUE**, **MAGENTA**, **PINK**, **WHITE WARM**, **WHITE COLD**, **BLACK**. If a larger selection of colors is required, there are two possibilities: 1. choose from a predefined list of **INDEX COLORS** (hold down color key C1..C4 for one second). 2. enter the menu, and set colors by their RGB values (located under: "**AUTO SETTINGS**" -> "**USER COLORS**").

I/O Switch units into **BLACKOUT** mode.
While in **BLACKOUT** mode, the LEDs are turned off and the units are in standby mode.
Note: Battery life is maximized in standby mode.

Group It is possible to control four groups of devices. They can be controlled individually, or "linked" together. That means, programs will run over more than one group. For example, if two groups are linked together, the rainbow effect will stretch over both.

Group selection is done with the corresponding buttons:

G1 G2 G3 G4

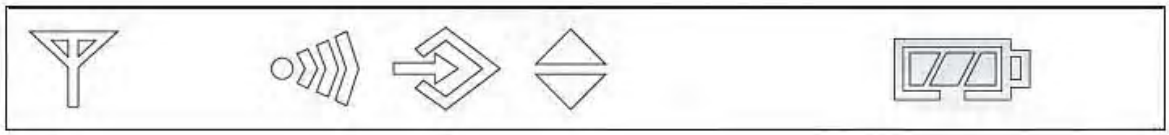
If more than one group is active, then these groups are linked. Only sequential groups can be linked, so it is for example possible to select: G1 G2 G3, but ***not*** G1 G3 G4.

Note: After changing the group setting, it is recommended to press the *Send* button, to make the change visible.

By holding down the *Group* key for one second, extended addressing is opened. Please see page 13, "Extended Addressing" for details.

Send Transmits all current settings of the remote control to the units.
Note: Only groups are addressed, that are enabled in *Group*.

3.3 LCD Display



Definition of symbols:

(1) - Receiving (on controller units only)

(3) - Transmitting (on RC-2 and RT-1 only)

(4) - Settings are stored in the internal memory. (this will be shown via a short blinking of this symbol)

(5) - Synchronization between units is active.

(8) - Battery status.

3.4 Technical Data

General	
Temperature (operation)	5 °C – 40 °C
Temperature (transport)	-25 °C – 55 °C (70 °C for 24h)
Altitude	up to 2000 m over sea level
Site	interior
Battery	2x 1,5V AA (LR6)

Radio Frequency	
RF coverage	50m up to 500m
Frequency	Europe: 868.000 MHz – 869.750 MHz US: 902MHz – 928 MHz

WARNING

The user must make sure, that the national regulations allow the operation of this RF device!

If this is neglected, serious harm may occur!

4 Advanced Operation

Astera living lights series offers a wide range of advanced settings, to suit the professional user.

As there are numerous settings, it is recommended to reset each unit, as well as the remote controller to **FACTORY DEFAULT** before they are set-up (again).

This can be done by entering the menu (hold *Menu* key for one second) and go to **FACTORY DEFAULTS**, and confirm with **YES.**

4.1 Extended Addressing

There are quite a few ways to control only a selection of units, not all units at once:

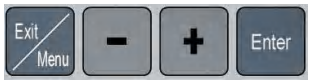
a) Group addressing
b) Chain mode
c) Type addressing
d) Serial number addressing

4.1.1 Group Addressing

Each unit can be a set up to be a member of one group. In total, there are four groups: 1, 2, 3 and 4.

Each group of units can be controlled individually, or groups can be "linked" together.
That means, programs will run over more than one group.
For example, if two groups are linked together, the rainbow effect will stretch over both.

To change the groups addressing, press the ***Group*** key.
The display will show which groups are active: G1, G2, G3 and G4.
To change the group selection, use these keys:



G1 G2 G3 G4

If more than one group is active, then these groups are linked.

Note: Only sequential groups can be linked, so it is for example possible to select: G1 G2 G3, but ***not*** G1 G3 G4.

Note: After changing the group setting, it is recommended to press the ***Send*** button, to make the change visible on the units.

4.1.2 Chain Mode

A similar way of grouping units together is the *chain mode*.
Using it, several units can form one virtual big unit.
For example, if three units are put together into a chain, programs will always stretch over all three.
Note: *It is required, that they all belong to the same group!*

Setup of chain mode is done like this:

1. Decide how may units should be put into a chain. Then set the **CHAIN SIZE** parameter on all relevant units to this number.
2. Define the order of the units inside the chain. Then set **POS IN CHAIN** to the corresponding number. For example, if we have three units in chain, for the first unit it is set to "1", for the second to "2" and the third to "3".

These settings can be entered into the unit directly, or remote configuration can be used, see page 20, "Configure Units remotely".

Example:
We have three units, that should form a chain. The units should setup like this:

Unit 1:
CHAIN SIZE = 3
POS IN CHAIN = 1

Unit 2:
CHAIN SIZE = 3
POS IN CHAIN = 2

Unit 3:
CHAIN SIZE = 3
POS IN CHAIN = 3

Note: *the maximum chain size it 32.*

4.1.3 Type Addressing

Additionally to the group addressing, it is possible to address all units of a certain type.
This can be setup in **SEND TO TYPE**.

Note: *This setting can be accessed by holding down the Group key or using the menu.*

4.1.4 Serial Number Addressing

If it is necessary to address only a single unit, this can be done by entering its serial number.
This is done in **SEND TO S/N**.
A serial number consists of five digits. Each digit can be adjusted separately with the + and – keys. To move the cursor between the digits, press the ***Menu*** key.

Note: serial number addressing is only possible, if a type in **SEND TO TYPE** is set first. This is necessary, because for each type of unit, the serial is counted again from "1" up.
If no type is selected, the **SEND TO S/N** will display **SELECT TYPE FIRST**.

4.2 Overview of Programs

Note: *If more units are grouped or chained together, the effects stretch over all those units.*

Name	*Light Effect*	*Used colors*
ONE COLOR STATIC	All pixels show the same color	C1
TWO COLOR STATIC	Same as **ONE COLOR STATIC**, but not all pixels show the same color, they are divided into 2, 3 or 4 parts.	C1 C2
THREE COLOR STATIC		C1 C2 C3
FOUR COLOR STATIC		C1 C2 C3 C4
ONE COLOR FADE	All pixels show the same color, but the color changes between all four **USER COLORS.**	C1 C2 C3 C4
TWO COLOR FADE	Same as **ONE COLOR FADE**, but not all pixels show the same color, they are divided into 2, 3 or 4 parts.	C1 C2 C3 C4
THREE COLOR FADE		C1 C2 C3 C4
FOUR COLOR FADE		C1 C2 C3 C4
SIMPLE RUNNING	All pixels have C1 color, except one, that is running over them with C2.	C1 C2
DOUBLE RUNNING	Same as **SIMPLE RUNNING**, but two pixels are running over the background, in opposite directions.	C1 C2
TWO COL RUNNING	Same as **DOUBLE RUNNING**, but the two pixels are of different color.	C1 C2 C3
FLAG RUNNING	A "flag" consisting of three color stripes is running over the background.	C1 C2 C3 C4
DOUBLE FLAG RUNNING	Same as **FLAG RUNNING**, but two flags are running in opposite directions.	C1 C2 C3 C4
SPIRAL 4 COLORS	The color of all pixels is changing pixel by pixel from one color to the next. If the geometry of the unit allows it, the direction is circular.	C1 C2 C3 C4
SPIRAL 2 COLORS	Same as **SPIRAL 4 COLORS**, but the movement starts at both and in opposite directions, and moves back after all pixels are changed.	C1 C2
RAINBOW	A moving rainbow is shown on the units.	none
FIRE	A flickering fire-like effect is displayed. C1 is the background color, randomly pixels flash and flicker with C2.	C1 C2
ROTOR	The rotor programs are much like the **FADE** programs, but if the units are of tower-like shape, then a clockwise running rotor can be seen.	C1 C2 C3 C4
ROTOR SPLIT 2	Same as **ROTOR**, but two rotors in opposite directions are running.	C1 C2 C3 C4

Name	***Light Effect***	***Used colors***
ROTOR SPLIT 4	Same as **ROTOR**, but four rotors in opposite directions are running.	C1 C2 C3 C4

4.3 DMX Operation

All products of the Astera Living Light series can alternatively be controlled by wireless DMX. Some products are also equipped with XLR connectors for standard wired DMX.

Note: *See* **INPUT SELECT** *on page 25 to see how the user can choose between the different sources and operation modes.*

When units are controlled by (W-)DMX, they can be setup to offer different number of channels/features to suit almost any application:

1. Normal mode: every pixel can be controlled by three or four DMX channels, RGB and optionally S(troboscope).
2. Effect mode: the build in effect engine, that is usually controlled by the remote control, can also be used with (W-)DMX. In this mode, the four user colors can either be controlled by three DMX channels each, RGB, or by only one channel by color. Then a set predefined set of colors can be accessed: "Index Colors", page 28.
   This might be useful as a scanner profile with 4 "gobo-wheels" can be defined in a light control desk.

4.3.1 Parameters for DMX Operation

DMX ADDRESS

Sets the DMX-address.

CHANNELS

ALL PIXELS

Every pixel can be controlled individually by DMX.

REDUCED PIXELS

Pixels are combined to archive a fewer pixel count for easier control. Please see manual of the specific device to see how many pixels will be present on DMX when this setting is chosen.

ONE PIXEL

The device can be controlled with only three DMX channels; all pixels are combined to one.

DMX TAB

Several different DMX tables can be chosen:

RGB RGB S S ..

All RGB channels are followed by all stroboscope channels.

RGB S RGB S ..

For each pixel, there are three channels RGB and one channel stroboscope.

EFFECT MODE FIX

EFFECT MODE RGB

The integrated effect generator can be controlled by DMX. Please see chapter xx for DMX table.

STROBE

SINGLE

One DMX channel is supplied for the control of the stroboscope function, all pixels will strobe identical. When using this setting, **DMX TAB** *should not be set to* **RGB S RGB S ..**

MULTIPLE

For each pixel, the stroboscope can be controlled individually.

OFF

Stroboscope is turned off globally.

DMX FAILURE

The behavior of the light in case of an interrupted DMX signal can be set.

HOLD

The output keeps unchanged, the last received DMX frame is displayed.

EMERGENCY LIGHT

If the DMX reception times out, the light turns white.

BLACKOUT

If the DMX reception times out, the light turns black.

4.3.2 DMX table for EFFECT MODE

Channel	EFFECT MODE FIX	EFFECT MODE RGB
1	INTENSITY	
2	STROBE	
3	PROGRAM	
4	SPEED	
5	FADE	
6	DIRECTION: 0..63: FFW+LOOP 64..127: FFW 128..190: REW 191..255: REW+LOOP	
7	SIZE: defines the virtual size of the program in groups. For example if SIZE is set to 2 groups, only half of the program is shown on the unit. 0..63: 1 group 64..127: 2 groups 128..191: 3 groups 192..255: 4 groups	
8	OFFSET: if SIZE is set to >1 group, the units pixels can be shifted within the virtually larger program. Increasing the OFFSET parameter scrolls the position of the unit within the virtual large program.	
9	RESTART PROGRAM: if value is changed, the program starts again from the beginning (useful if DIRECTION is not set to loop)	
10	INDEX COLOR 1	COL 1 RED
11	INDEX COLOR 2	COL 1 GREEN
12	INDEX COLOR 3	COL 1 BLUE
13	INDEX COLOR 4	COL 2 RED
14		COL 2 GREEN
15		COL 2 BLUE
16		COL 3 RED
17		COL 3 GREEN
18		COL 3 BLUE
18		COL 4 RED
20		COL 4 GREEN
21		COL 4 BLUE

4.4 Configure Units remotely

Usually all configuration settings, like changing the DMX address, chain configuration and so on is done directly on the units.
For some reasons, this might not be desirable:

1. Several units shall be configured with the same settings, then "Remote Setup" can be used.
2. The unit is not equipped with a LCD-display, then "Blue Setup" is recommended.

4.4.1 Remote Setup

Generally, all settings done in **REMOTE SETUP** are applied to all units that are powered up. The only restriction is, that they units must be configured to one of the active groups.
They are selected by pressing the ***Group*** key on the remote control.

Note: **REMOTE SETUP** *can also be used together with* "Type Addressing", *page 14, and* "Serial Number Addressing", *page 15. This way it is possible to setup a unit by only knowing its serial number.*

4.4.2 Blue Setup

For units without a LCD, **BLUE SETUP** is the way of choice. All settings that are usually done by directly on the units using LCD and buttons, can be setup remotely via **BLUE SETUP.**

Units will only accept changes that are done in **BLUE SETUP**, while they are in a special state, called the **BLUE MODE**. As long as the units are in **BLUE MODE**, they are flashing blue.

There are two ways to let a unit enter **BLUE MODE**:

1. By pressing their button and holding it. First the unit will switch power off, but if the button is held down, it will turn on again and flash blue.

- or -

2. Activating it remotely by **REMOTE-ACTIVATE** in **BLUE SETUP** menu.
   To do this, the unit has to be assigned to a "SET", see "Sets of Devices", page 21.
   Not all unit support this feature!

While in **BLUE MODE**, the units will accept any configuration changes done on the remote control.

Note: *care should be taken to really use* **BLUE SETUP** *to configure blue flashing units. This is indicated by a "B" in the upper right corner while in edit mode. Be aware, that using* **REMOTE SETUP** *instead will affect all powered on devices and might overwrite their settings!*

BLUE MODE can be left in three ways:

1. Hold down the unit's button until the device stops flashing blue.

- or -

2. Deactivate it remotely by **REMOTE-DEACTIVATE** in **BLUE SETUP.**

4.4.3 Sets of Devices

If a set of devices is always used together, like a set of AC3-S, they can be configured as a "SET".
This has two advantages:

1. They can be controlled as if they are a single device, similar to "Chain Mode", page 14. The programs will stretch over all members of the set.
2. All units can be made to enter and leave **BLUE SETUP** simultaneously without accessing them directly, see "*Blue Setup*", page 21.

To assign units to a set, and configure their position within, three parameters need to be setup:

- **NUMBER OF SET**

  In total 256 sets can be defined. By default, every unit belongs to set #0.
- **SET PIX SIZE**

  Similar to "Chain Mode", page 14, programs will stretch over all members of a set.

  *This parameter is the equivalent to **CHAIN SIZE.***

  The feature is only available for units that have only one pixel.
- **SET START PIX**

  Defines the position within the set, its the equivalent to **POS IN CHAIN**.

Example: *We have three devices with one pixel each. They should be setup to belong to set #12. The units shall be setup to form a virtual unit with three pixels in total.*
Setup the units like this:

Unit 1:

NUMBER OF SET = 12
SET PIX SIZE = 3
SET START PIX = 1

Unit 2:

NUMBER OF SET = 12
SET PIX SIZE = 3
SET START PIX = 2

Unit 3:

NUMBER OF SET = 12
SET PIX SIZE = 3
SET START PIX = 3

Note: *a* **FACTORY RESET** *does not clear the SET configuration! So it is possible, to reset units without loosing their SET configuration.*

4.5 Menu Reference

Hold MENU key for 1 second to enter menu

- **REMOTE SETUP**
  Change parameters for all light fixtures, that are powered up and listening to RF.
  - **DMX ADDRESS**
    Sets the DMX-address.
  - **CHANNELS**
    ALL PIXELS
    Every pixel can be controlled individually by DMX.
    REDUCED PIXELS
    Pixels are combined to archive a fewer pixel count for easier control. Please see manual of the specific device to see how many pixels will be present on DMX when this setting is chosen.
    ONE PIXEL
    The device can be controlled with only three DMX channels; all pixels are combined to one.
  - **DMX TAB**
    Several different DMX tables can be chosen:

    RGB RGB S S ..
    All RGB channels are followed by all stroboscope channels.
    RGB S RGB S ..
    For each pixel, there are three channels RGB and one channel stroboscope.
    EFFECT MODE FIX
    EFFECT MODE RGB
    The integrated effect generator can be controlled by DMX. Please see chapter xx for DMX table.
  - **STROBE**
    SINGLE
    One DMX channel is supplied for the control of the stroboscope function, all pixels will strobe identical. When using this setting, **DMX TAB** *should not be set to* **RGB S RGB S ..**
    MULTIPLE
    For each pixel, the stroboscope can be controlled individually.
    OFF
    Stroboscope is turned off globally.
  - **DMX FAILURE**
    The behavior of the light in case of an interrupted DMX signal can be set.

    HOLD
    The output keeps unchanged, the last received DMX frame is displayed.
    EMERGENCY LIGHT

If the DMX reception times out, the light turns white.

BLACKOUT

If the DMX reception times out, the light turns black.

– USE WHITE LEDs

ENABLED

The level of the white LEDs is calculated automatically corresponding to the RGB data. This setting usually reduces power consumption and so increases battery run-time.

DISABLED

The white LEDs are turned off. (for Mobilight: can be controlled separately/manually)

– LED POWER

Most of the available light fixtures support different LED-power levels. This is useful to influence the battery runtime.

MAXIMISE RUNTIME

Lowest available brightness. Should be used if extended battery life is needed. For details on runtime, see the unit's manual.

NORMAL

At this level, any unit should run about 8 hours on battery, displaying **COLD WHITE.**

HIGH BRIGHTNESS

For some applications this setting suits best: only short duration on battery is required, or only single colors like **RED, GREEN** *are displayed most of the time.*

– WHITE CORRECTION

It can be necessary to recalibrate a unit after some time, or to adapt it to other RGB sources. Then this should be set to **ENABLED**.

– WHITE CALIB RED / GREEN / BLUE

If **WHITE CORRECTION** *is enabled, then this three parameters adjust the calibration. If set to "***255***", factory calibration applies. Lowering the values reduces brightness for the specific colors.*

– AC FAILURE

Some units are capable of detecting a loss of AC power (if plugged in). It might be desirable to make the unit react on those conditions:

EMERGENCY LIGHT

LEDs turn white until AC power is restored.

NO ACTION

No reaction on loss of AC power.

BLACKOUT

LEDs turn dark in case of AC power loss.

– BLOWER SPEED

For units equipped with a blower, it's speed can be set here. (Also by holding down the Speed button).

– CHAIN SIZE

See page 14, "Chain Mode".

- **POS IN CHAIN**
  See page 14, "Chain Mode".

- **BLUE SETUP**
  Used for configuring units remotely, especially if they have no LCD display. Please see page 21 ,"Blue Setup" for details.

  Following, detailed explanation is only added to those menu items, that were not already explained in **REMOTE SETUP.**

  - **REMOTE ACTIVATE**
    Used to make units enter the BLUE SETUP mode remotely. This is not supported by all devices.
    A set number has to be entered. If **ENTER** *is pressed, all devices belonging to the set number will be switched to BLUE SETUP mode.*
  - **REMOTE DEACTIVATE**
    Same as **REMOTE ACTIVATE**, *but makes units leave the BLUE SETUP mode.*
  - **INPUT SELECT**
    The color displayed on the LED can be taken from several sources:

    DMX XLR
    Selects the XLR input. Control with DMX data is then possible. For details see page 17, "DMX Operation".
    WIRELESS DMX
    Only wireless DMX is accepted.
    REMOTE CONTROL
    The unit will replay auto programs. How to setup the programs is described on page 9, "Buttons".
    Changes can be made with the remote control, or in the menu **AUTO SETTINGS directly on the unit.**
    STANDALONE
    Same as **REMOTE CONTROL**, *but changes can only be made in menu* **AUTO SETTINGS** *directly on the unit, commands by the remote control will be ignored.*
    AUTO
    The unit chooses the input automatically. It starts into **REMOTE CONTROL**, *and as soon as DMX data is received wireless or on XLR, the input is switched over to this source.*
  - **DMX ADDRESS**
  - **CHANNELS**
  - **DMX TAB**
  - **STROBE**
  - **DMX FAILURE**
  - **USE WHITE LEDs**
  - **LED POWER**
  - **WHITE CORRECTION**
  - **WHITE CALIB RED / GREEN / BLUE**

- **AC FAILURE**
- **BLOWER SPEED**
- **CHAIN SIZE**
- **POS IN CHAIN**
- **SET PIX SIZE**
  See 20, "Configure Units remotely".
- **SET START PIX**
  See 20, "Configure Units remotely".
- **NUMBER OF SET**
  See 20, "Configure Units remotely".
- **REMOTE GROUP**
  This can be used to set the group, a unit belongs to.

- **GENERAL SETTINGS**
  - **TRANSMIT MODE**
    It can be chosen, if the transmission of a certain value is started as soon as it is changed, or only it the change is confirmed by pressing **ENTER.**

    This can be for example useful, if it is desired to change the color C1 from RED to BLUE without scrolling through the colors one by one (having all colors between visible on the units). So if the **TRANSMIT MODE** *is set to* **SEND ON ENTER**, *the new color* **BLUE** *can be selected offline, and be transferred to the units by pressing the* **ENTER** *key.*

    SEND ON MODIFY
    Transmission is started as soon as a value is edited. (By pressing **+** *or* **-** *keys)*
    SEND ON ENTER
    Transmission is started, if a value is confirmed by the **ENTER** *key. (Even it is was not edited)*
  - **SEND TO TYPE**
    See page 14, "Type Addressing".
  - **SEND TO S/N**
    See page 15, "Serial Number Addressing".

- **AUTO SETTINGS**
  The AUTO programs replayed by the units can be configured easily with the direct access buttons. In this menu the same settings can be done, but also some more advanced settings are possible.
  A basic description on how the AUTO programs work can be found on page 9, "Buttons".
  - **PROGRAM**
    Chooses the program.
  - **INTENSITY**
    Sets the brightness of the LEDs.
  - **SPEED**
    Speed of the programs.
  - **FADE**
    Fade between programs steps.

- **DIRECTION**
  Adjusts direction and looping of programs.

  FFW+LOOP
  Programs run in normal (forward) direction, when a program is finished, it starts again.
  REV+LOOP
  Programs run in reversed direction, when a program is finished, it starts again.
  FFW
  Programs run in normal (forward) direction, when a program is finished, execution is stopped.
  REV
  Programs run in normal (forward) direction, when a program is finished, execution is stopped.
- **USER COLORS**
  Here the four user colors can be adjusted.

  COLOR 1-4
  Choose from predefined basic colors.
  COLOR 1-4 RED / GREEN / BLUE
  Set the colors by their RGB values directly.
  INDEX COLOR 1-4
  Choose from large selection of predefined colors.
- **SOUND TRIG**
  Some device can be align their program speed automatically to the sound. This automatic alignment can be **ENABLED** *or* **DISABLED**.
- **STROBOSCOPE**
  Sets the stroboscope of the units. A larger number leads to faster flashing.

- **INFO**
  - **FIRMWARE VERSION**
    Displays information on the installed firmware.
  - **RF LINK**
    Displays the frequency which is used for transmitting.

- **FACTORY RESET**
  Here the remote can be reset to factory defaults.
  Confirm with **YES** *or* **NO**.

  Note: Only the remote itself is reset this way. This has no effect on the units! If needed, they should be reset separately.

4.6 Index Colors

5 Troubleshooting

Faulty condition	*Cause*	*Troubleshooting*
Units are out of sync	Adjustment of the SPEED parameter can cause deviation between the units; also the units will drift out of sync after a few hours.	Press SEND button or change PROGRAM.
Units behave incorrectly	Due to the vast number of settings, one can not always predict behavior of the units, if setup was already done earlier.	Do FACTORY RESET on units and/or remote control.
One/a few units don't play the correct program, even if it was set up earlier.	If a unit is powered up after the light scene was setup with the remote control, if will not work correctly.	Press SEND button on remote control to update the unit.
A unit is flashing in blue or other color all the time and not accepting any command.	It might be in BLUE MODE.	Hold down the button until the flashing stops.
One/a few units don't react on the remote control.	Its possible, that those units are set to a group, that is not activated in the remote control under *Group.*	Change *Group* setting or put unit(s) into another group.
Units will go out of battery after only 6 hours of operation.	Some units last only 8 hours with COLD WHITE, if the LED POWER is set to NORMAL. For HIGH BRIGHTNESS the runtime may be shorter than 8 hours.	Adjust LED POWER and/or see manual of the unit.
The display of a unit is showing BLACKOUT, and there is no light output.	Either the unit is set to BLACKOUT mode, or DMX-FAILURE/AC FAILURE is set to BLACKOUT and one of these conditions persist.	Press I/O on remote control and set to DISABLED. Check settings of DMX-FAILURE/AC FAILURE. Maybe do FACTORY RESET.

6 Disposal

Follow local ordinances and/or regulations for disposal!

PACKAGING:

The unit is shipped in protective packaging.
This packaging can be recycled!

UNIT:

Don't throw the unit into the garbage at the end of its lifetime.
Make sure to dispose is according to your local ordinances and/or regulations, to avoid polluting the environment!

BATTERIES:

Don't throw empty batteries into the garbage!

Bring them to a collecting point for used batteries!

FCC Statement:

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's
- authority to operate the equipment.
- NOTE:
- This equipment has been tested and found to comply with the limits for a
- Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are
- designed to provide reasonable protection against harmful interference in a
- residential installation. This equipment generates, uses and can radiate radio
- frequency energy and, if not installed and used in accordance with the
- instructions, may cause harmful interference to radio communications. However,
- there is no guarantee that interference will not occur in a particular installation.
- If this equipment does cause harmful interference to radio or television reception,
- which can be determined by turning the equipment off and on, the user is
- encouraged to try to correct the interference by one or more of the following
- measures:
- -- Reorient or relocate the receiving antenna.
- -- Increase the separation between the equipment and receiver.
- -- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- -- Consult the dealer or an experienced radio/TV technician for help.