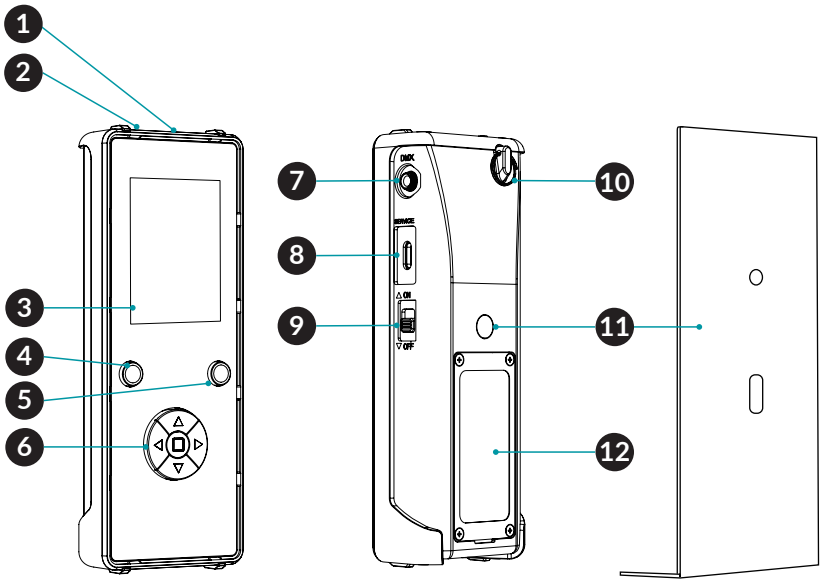
Kessil

RPU

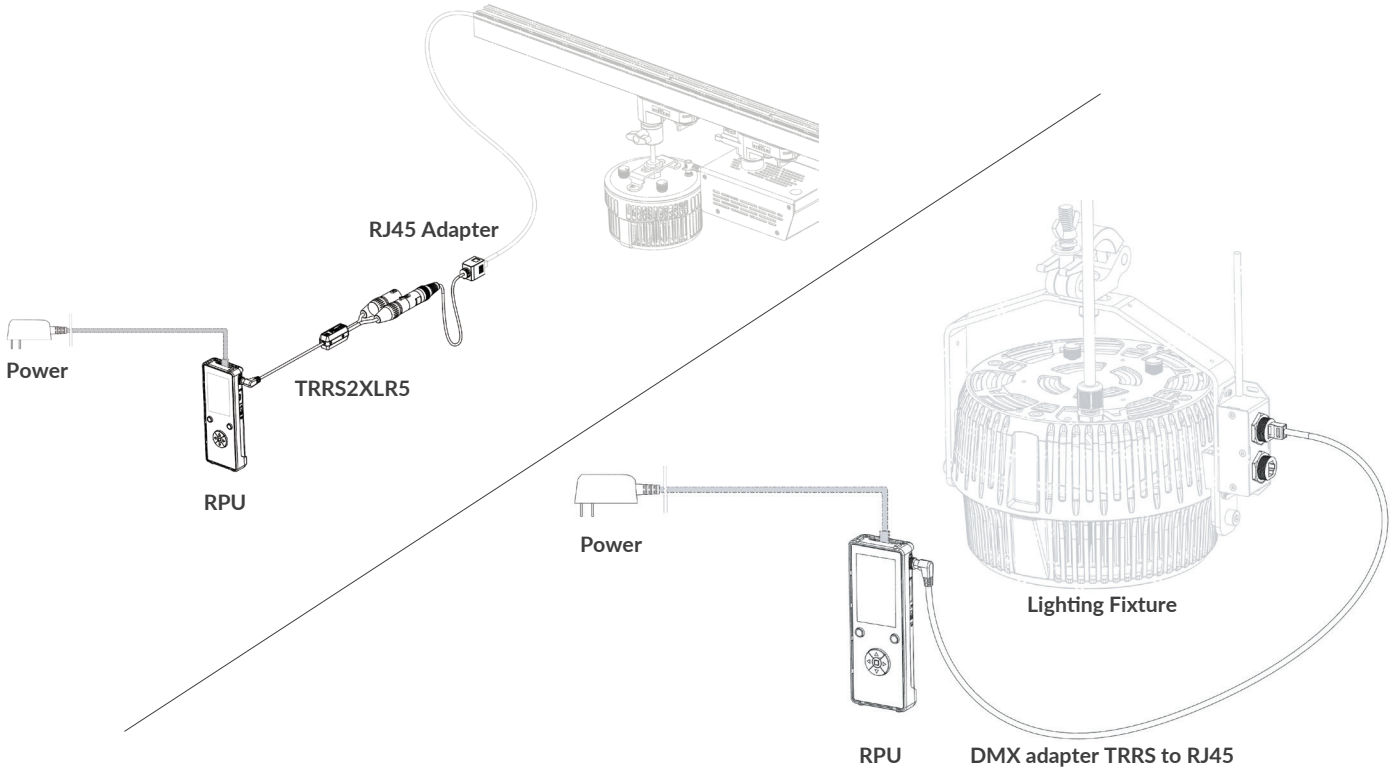
User Guide

Parts Diagram



1. USB Type-C Port (5V/1A Power)
2. Power LED Indicator
3. OLED Display
4. Back Button
5. Option Button
6. Navigation Pad
7. DMX Input port (TRRS)
8. USB Type-C Port (For updating firmware)
9. ON/OFF Switch
10. Rigging Ring
11. Magnetic Mounting Plate
12. Battery

Installation



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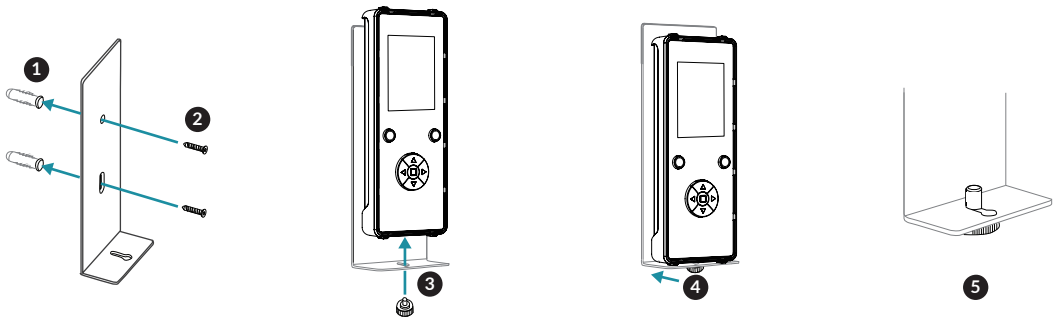
Magnetic Mounting Plate

Insert screw (1) into the wall. Align the holes of the metal plate and secure it to the wall using the cap screw (2). Once the plate is mounted, place the RPU onto the metal plate. From the bottom, insert the hand screw into the hole on the bottom of the RPU (3). Push the RPU and hand screw (4) inward to secure it in place. When the RPU is removed, the hand screw (5) will remain attached.



Button Functions

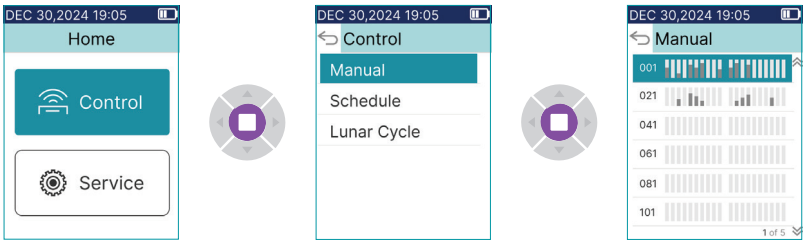
Knob				Back	Option
Actions	**Press** Up/Down Move	**Press** Left/Right Move	**Press** Confirm	**Press** Back	**Press** Undefined

Control

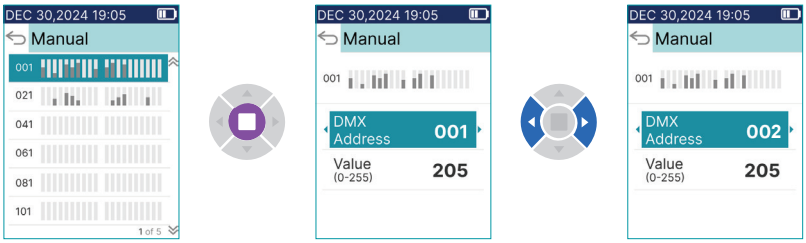
The Control section of the RPU covers DMX Control via Manual Mode and Schedule Mode.
*For explanations and examples of DMX, go to page 10.

Manual Mode

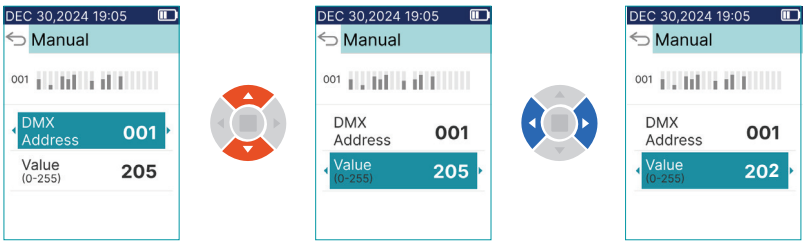
Manual DMX Control allows for manual control and output of 1 DMX Universe.
1) After powering on the RPU and the menu appears, select “Control” and press once. “Manual” will be highlighted, press again to enter.



2) Use up/down to navigate through available channels. Press once on “001” to enter, then use left/right to adjust the DMX address.



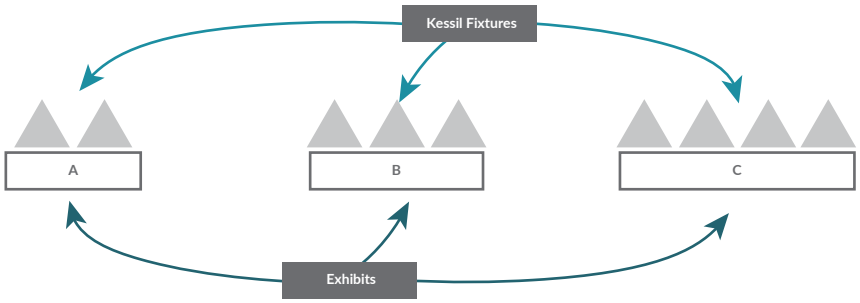
3) Navigate down to value, when “Value” is highlighted, navigate left/right to adjust channel parameters.



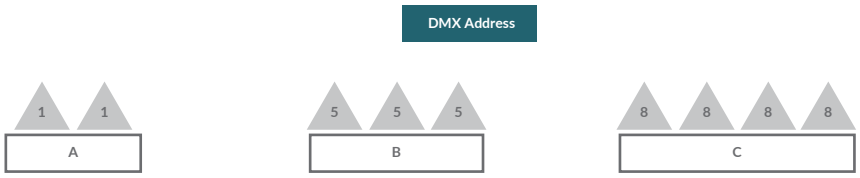
Schedules

Schedules allows users to create smooth, time-based changes in lighting
simulating natural cycles like sunrise, daylight, sunset, and moonlight in aquarium environments.
Schedules are divided into points, which define the desired light settings (color, intensity, etc.) at a specific time.
The RPU automatically fades between these steps, creating a natural progression throughout the day.

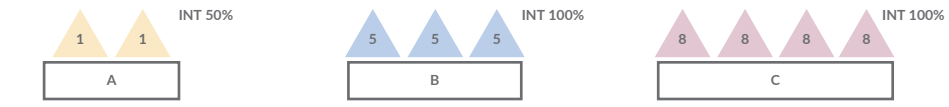
Here is an example of schedule implementation in a gallery with several exhibits.



To control them all with the same schedule, users can set each exhibit to have different starting addresses.

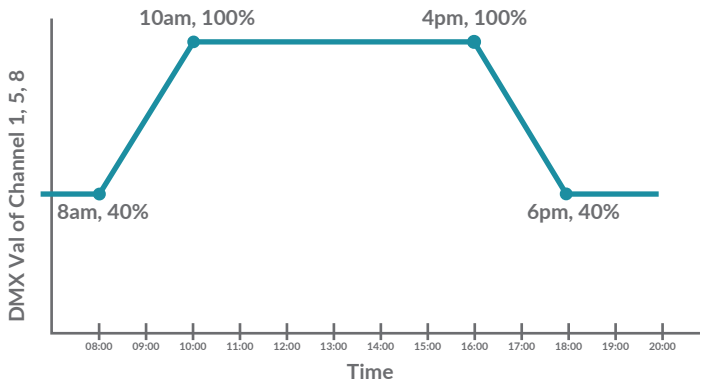


Then, different DMX outputs can be set at various points, allowing for dynamic and flexible schedules.



DMX Channel	1	2	3	4	5	6	7	8	9	10
DMX Value	127	0	0	0	255	0	0	255	0	0

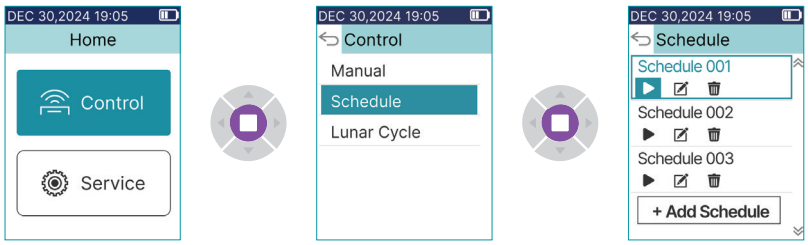
The RPU will ramp DMX values between points, maintaining a smooth output and gradual changes for looks.



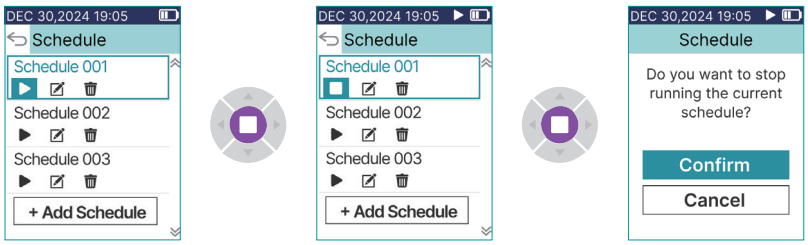
Schedules

RUN A SCHEDULE

1) When “Control” is highlighted, press once. Navigate down and select “Schedule”, then press once to enter.

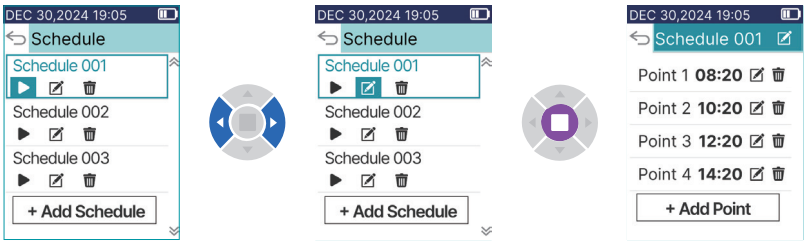


2) Select “Schedule 001” and press once to enter. Press again to confirm and run the selected schedule.

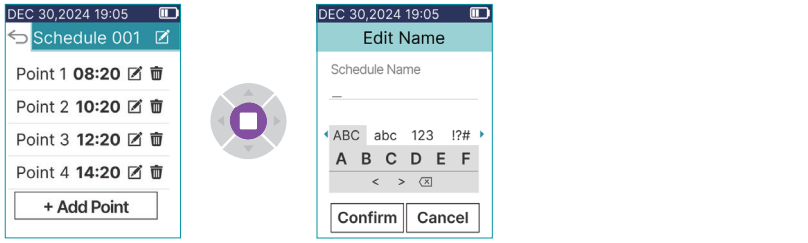


EDITING SCHEDULES

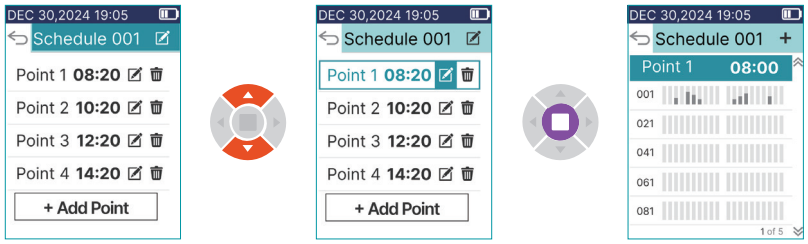
1) When a schedule is selected, navigate left to the edit icon, then press once to enter.



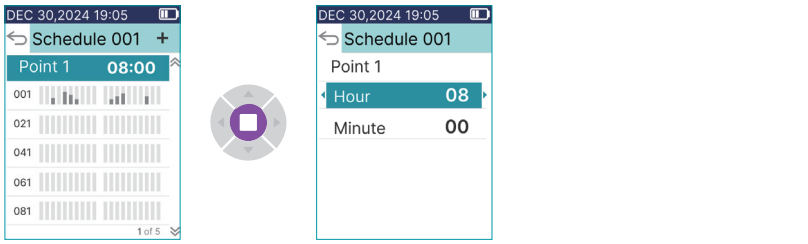
2) Select the schedule banner to edit the schedule name.



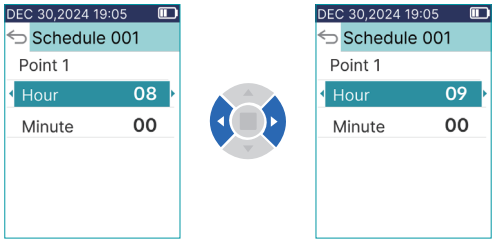
3) Navigate up/down to navigate to each point, then press once to enter.



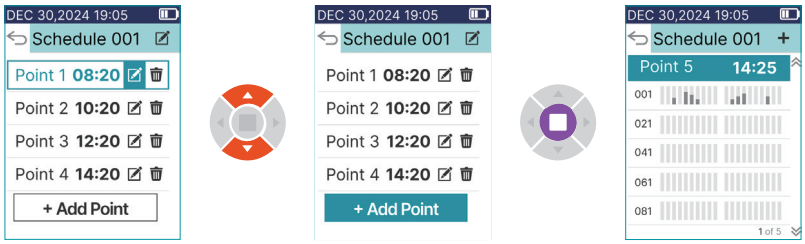
4) Navigate to the point banner, and press once to enter.



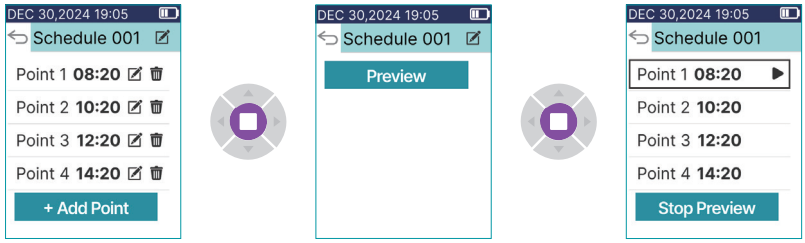
5) Navigate left/right to edit the time stamp of each point.



6) Navigate down to the bottom of the points list to add a new point.



7) Navigate down to the "Preview" button to preview the DMX Schedule. The RPU will scan through the DMX Schedule over 10 seconds.

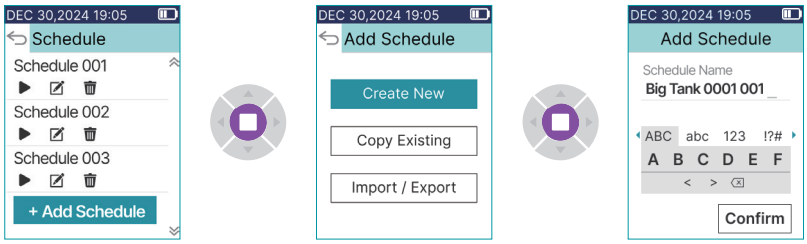


ADD/DELETE SCHEDULES

Users can Create a New Schedule, Copy an Existing Schedule, or Import/Export a Schedule.

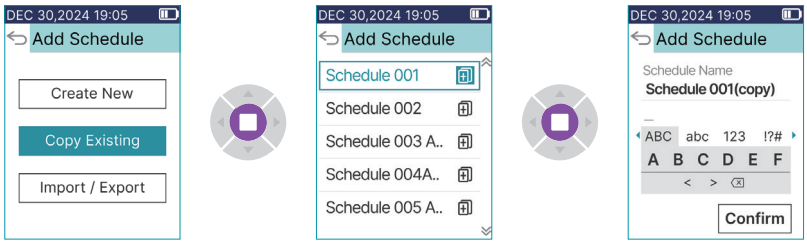
Create New

1) Select "+Add Schedule", select "Create New"
2) Create a name for the schedule being added, select "Confirm".
3) Create desired schedule and exit.



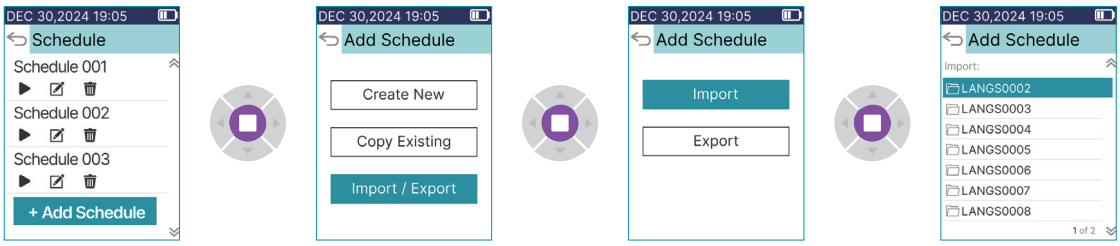
Copy Existing

1) Select "+Add Schedule", select "Copy Existing"
2) Navigate to schedule to be copied, select the copy icon.
3) Create a name for the schedule being added. Select "Confirm".

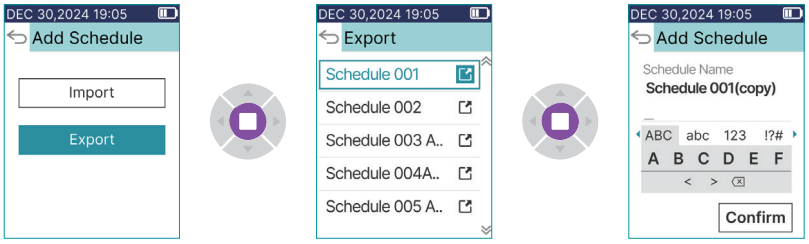


Import/Export

1) Plug USB Drive into the Service port of the RPU
2) Select "+Add Schedule", select "Import / Export"
3) If Importing, navigate to and select schedule to add, schedule will import automatically.

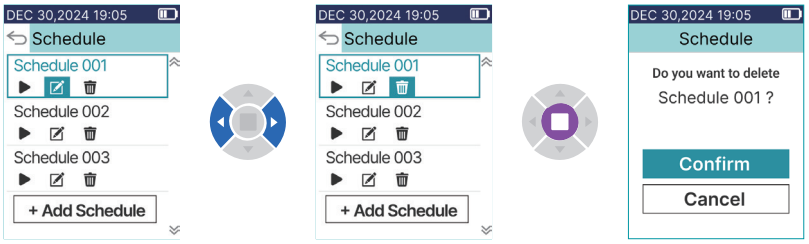


4) If Exporting, select schedule to export.
5) Enter name for schedule being exported.



Delete Schedule

1) Navigate to schedule to delete.
2) Navigate to Delete icon and press once.



Moonlight Settings

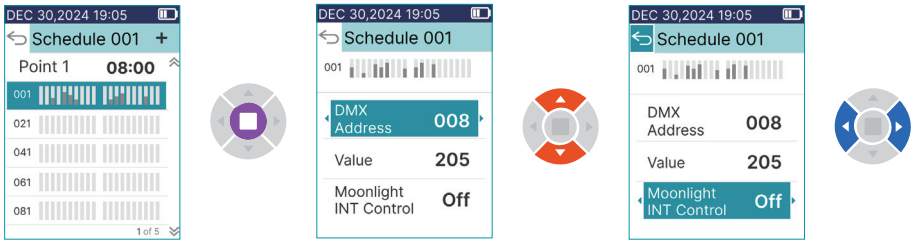
Moonlight settings allow users to mimic the lunar cycle in lighting setups. The RPU can take inputted Moon cycle timings and integrate them into existing schedules, creating natural lighting looks.

Set Up Lunar Cycle:

The Lunar Cycle values should only be used for intensity control in a schedule.
It will trigger fades in selected DMX channels (DMX Values 0 - 225) to mimic moonlight.

Add Moonlight Intensity

1) In Schedule being edited, navigate to DMX Address desired
2) Navigate down to "Moonlight INT Control"
3) Toggle On/Off by navigating left/right



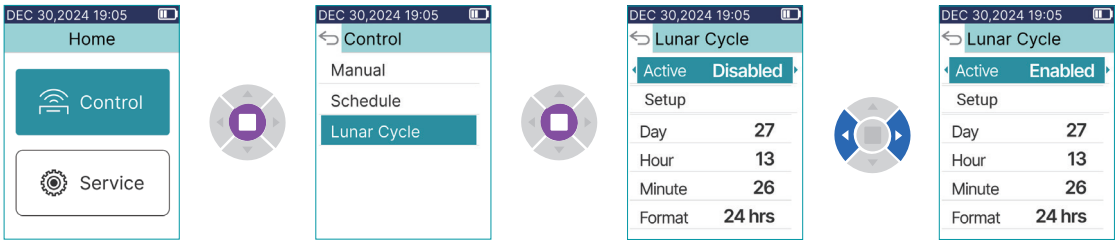
Toggling Moonlight INT Control in any Point will carry over throughout schedule*

****it is recommended to toggle Moonlight Control for channels controlling the Intensity parameters for a given Kessil Fixture.****

Lunar Cycle

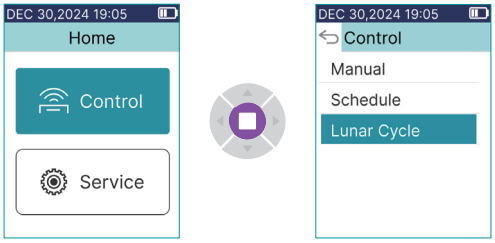
Toggling Lunar Cycle

1) Highlight “Control”, press once, navigate down to “Lunar Cycle”, and press again.
When “Active” is highlighted, use left/right to toggle its status.

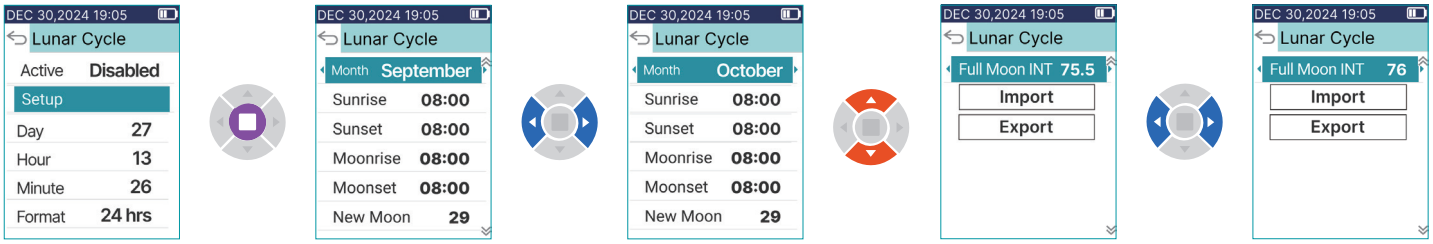


Editing Lunar Cycle

1) In Control, navigate to “Lunar Cycle”.
2) Select Lunar Cycle.



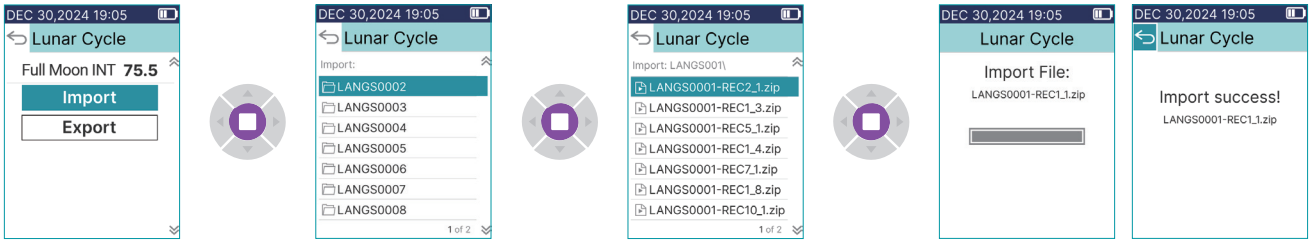
3) Navigate down to “Setup” and press once to enter.
4) Navigate left/right to scroll through months of the year.
5) In desired month, users can set:
Sunrise/Sunset and Moonrise/Moonset at the beginning of the month, New Moon date, as well as Full Moon INT*.



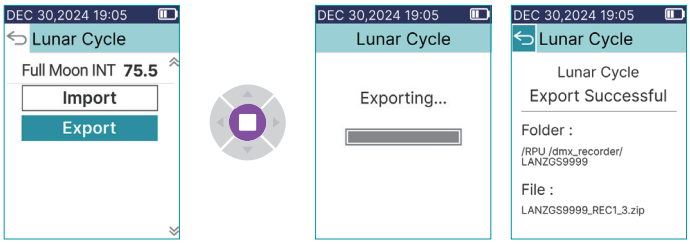
****Unless Channels in a schedule have Full Moon Control enabled, the Lunar Cycle will not trigger****

Import/Export Lunar Cycle

1) Under “Lunar Cycle” menu, navigate down to “Import,” press once, choose the folder and file, and press again.



2) Under “Lunar Cycle” menu, navigate down to “Export” and press once.



***Full Moon INT scales intensity of moonlight output. Intensity of Full Moon INT will be 0 - 10% of maximum Kessil Fixture Output.**

***Note* If Full Moon INT overlaps with schedule timing, the Schedule DMX output will take priority.**

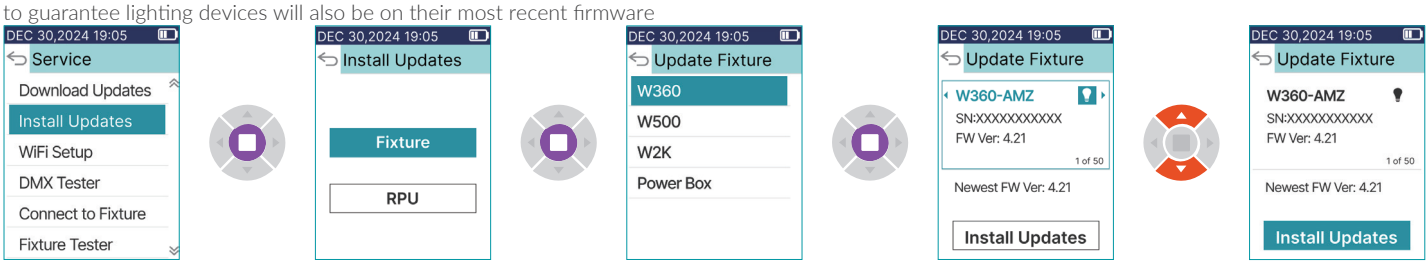
Service

Updates

Updates can be installed via Wi-Fi.
Alternatively, the latest FW of the RPU can also be downloaded from www.kessil.com/support/firmwareUpdates.php, and installed on the device via a USB Drive to the Service Port.

Wi-Fi

Connect to Wi-Fi to ensure RPU is on the latest FW. The RPU supports broadband and 5G networks.
Kessil lighting devices can also be updated via RPU. Make sure the latest firmware version of the RPU is installed to guarantee lighting devices will also be on their most recent firmware

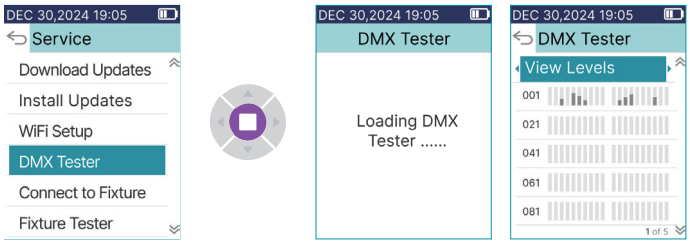


DMX Tester

The DMX Tester can interface with DMX for troubleshooting setups, fixtures, and any connections.
The tester can be set to View or Set Levels.

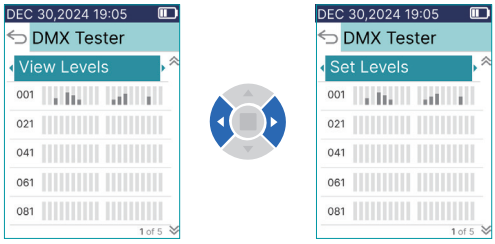
In View Levels:

Connect to an active DMX Signal via the DMX attachment. The RPU will show any incoming signal being read for the DMX Universe.



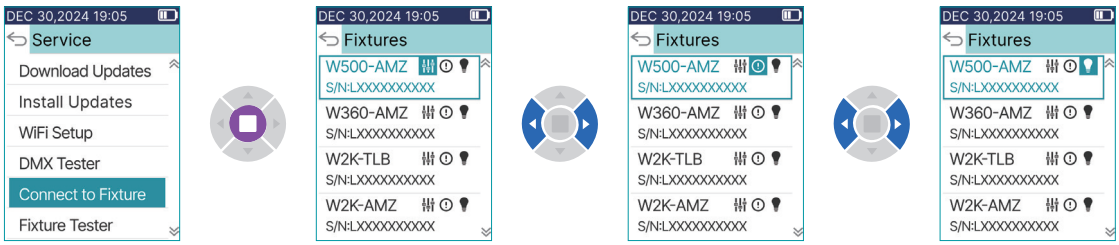
In Set Levels:

Connect to a lighting setup via the DMX attachment. Control for the Set Levels mode is identical to Manual Control.
Individual channel values can be controlled for any necessary testing.



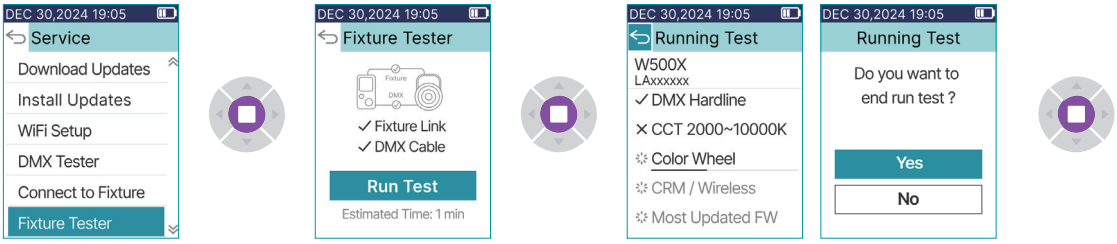
Connect to Fixture

Connect to Fixture directly connects to Kessil and Fiilex fixtures, allowing access to settings and any fixture information.
Connect to Fixture has three facets - Control, Information, and Flash.

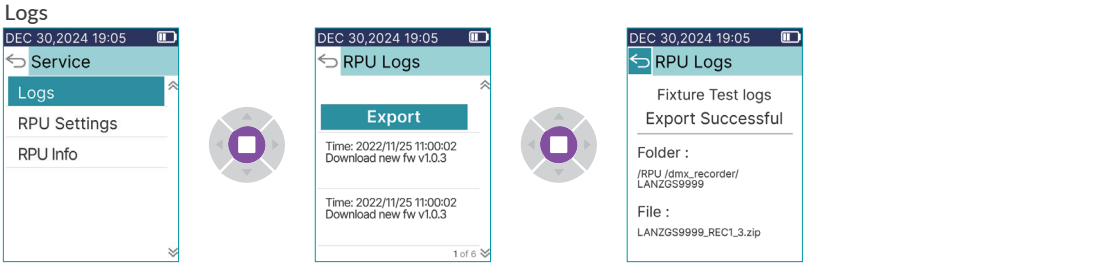


Fixture Tester

The Fixture Tester runs a quick diagnostic on a fixture for troubleshooting. Once connected to a fixture via DMX, the fixture will do an intensity and CCT scan, allowing for visual troubleshooting of any unexpected fixture behavior.

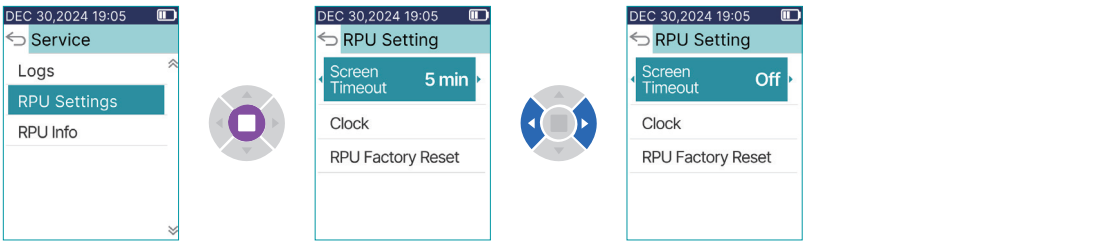


Logs

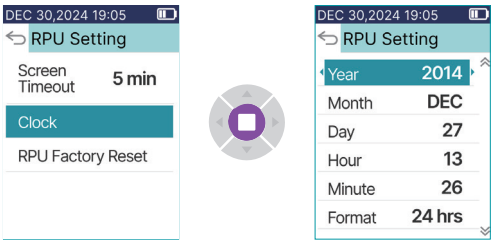


RPU Settings

Screen Timeout - Can be toggled to add a screen timeout, which will turn the screen off after an amount of time set by the user.



Clock - The clock setting sets the local time of the RPU, as well as toggle between the 12 and 24 hour clock, as well as toggling Daylight Savings.



RPU Factory Reset - The Factory Reset clears the RPU's memory and returns all settings and features to factory defaults.

RPU Info

The RPU Info section shows the RPU's firmware version, the serial number of the unit, and its MAC address.

Troubleshooting

Problems	Possible causes	Checks and remedies
Utility will not launch	• System incompatibility, missing updates	• Check system specs, update software
Light fixture not detected	• Connection error, wrong port, device off	• Confirm power, check cables/wireless, select correct port
Firmware update fails	• Unstable power, wrong firmware	• Confirm stable power, verify firmware file, retry or reset

Battery Operation

Items	Recommendations
Battery Type	• Use alkaline battery only.
Estimated Runtime	• 20-40mins

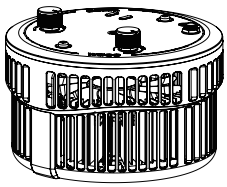
DMX Footprint

Here is the DMX footprint for a Kessil W500 Tuna Blue

DMX Channel	Parameter
1	Intensity 0-100%
2	CCT 2000K-10000K
3	Violet 0-100%
4	Red 0-100%
5	Blue 0-100%

DMX is a communication protocol used for theatrical lighting and effects. It is sent as a universe of 512 packets (called “channels”), each with a value of 0-255.

Lighting devices are addressed to channels, which means they read the values at a specific channel start, and act accordingly to the data received. Lights will have DMX footprints, which are the channels a light will “listen” to, and the parameters those channels will control.



Intensity 50%, Red 100%

If the Kessil W500 Tune Blue is set to address 2, it would read channels 2-6 to determine light output.
Here is an example of channels 1-10 of a DMX Universe, and the resulting light behavior:

DMX Channel	1	2	3	4	5	6	7	8	9	10
DMX Value	255	127	0	0	255	0	127	0	0	0
		Intensity	CCT	Violet	Red	Blue				