shadow-caster LED LIGHTING

SCM-MFD-LC-KIT

MFD LIGHTING CONTROLLER KIT

INSTALLATION & OPERATION MANUAL

shadow-net TECHNOLOGY ENABLED

WWW.SHADOW-CASTER.COM

TABLE OF CONTENTS

Shadow-Caster® LED Lighting | 2060 Calumet Street. | Clearwater, FL 33765
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SCM-MFD-LC-KIT BOX CONTENTS

- SCM-MZ-LC Multi-Zone Lighting Controller
- SCM-MFD-BRIDGE Multi-Function Display Bridge
- 8 x SS316 Pan Head 8 x ¾" Mounting Screws
- Installation & Operation Manual
- Warranty and Registration Information

PRODUCT SERIAL NUMBER

You can add your product serial number here for warranty and product registration purposes.

The serial number is located on a white label inside the housing of the SCM-MZ-LC.

My Serial Number:

COMPATIBILITY & OPTIONS

Manufacturer	Optional IP67 Shadow-Caster® Cable	Required Cable from Manufacturer
GARMIN	SCM-MFD-Cable Garmin	PN: 010-10550-00 (6ft Cable) PN: 010-10551-00 (20ft Cable) PN: 010-10552-00 (40ft Cable) PN: 010-10580-10 Isolator
SIMRAD	SCM-MFD-Cable Navico SCM-MFD-Cable Navico - SCM-MFD-Cable Navico	PN: 000-14552-001 (1.5m Cable)
LOWRANCE	SCM-MFD-Cable Navico	PN: 000-14552-001 (1.5m Cable)
B&G	SCM-MFD-Cable Navico	PN: 000-14552-001 (1.5m Cable)
Raymarine	-	PN: A80247 (2m Cable)
FURUNO	-	-

SCM-MFD-LC-KIT OVERVIEW

The Shadow-Caster® MFD Lighting Control Kit (SCM-MFD-LC-KIT) includes the Multi-Zone Lighting Controller (SCM-MZ-LC) and the MFD Bridge (SCM-MFD-BRIDGE).

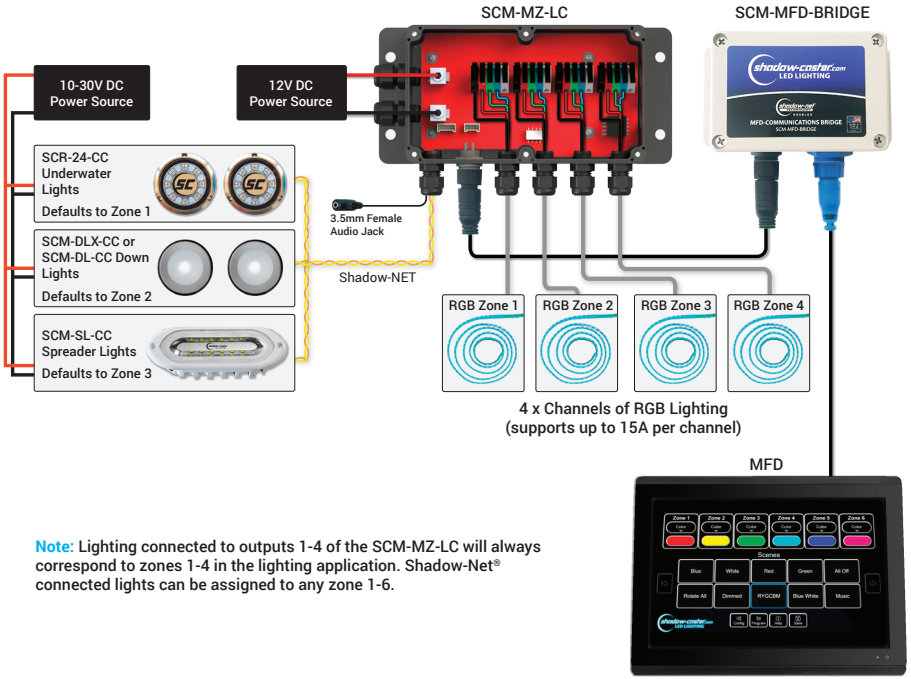
The SCM-MZ-LC Lighting Controller supplies fused power connection for up to 4 separate zones of user selectable RGB or RGBW lighting. It can receive an analog music input, and also broadcasts multiple channels of digital commands to other devices on the Shadow-NET® Bus (orange and yellow wires).

The SCM-MFD-BRIDGE provides a control interface to the Multi-Zone Lighting Controller through an Ethernet connected MFD (Multi-Function Display) or other connected device.

The control interface steps you through selecting and naming a desired number of control zones. The setup process will also identify all additional Shadow-NET® connected devices and assign them to the desired lighting zone. The zones can then be assigned to a desired color and brightness or even configured for an active lighting program. The program is saved as a unique 'lighting scene' for easy recall.

At initial power up the Shadow-NET® bus will broadcast messages to tell connected devices to turn off. This allows these devices to be used without a dedicated switch. When the SCM-MZ-LC controller receives a command to turn on, it will send a corresponding command to devices connected on the Shadow-NET® bus.

SCM-MFD-LC-KIT TYPICAL WIRING DIAGRAM



Note: Lighting connected to outputs 1-4 of the SCM-MZ-LC will always correspond to zones 1-4 in the lighting application. Shadow-Net® connected lights can be assigned to any zone 1-6.

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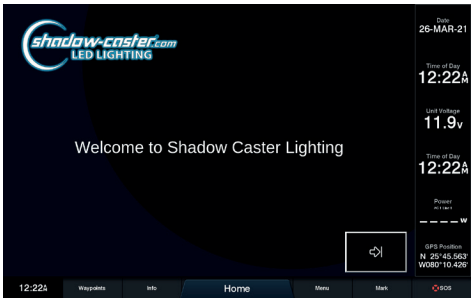
USING THE INTERFACE

INITIAL ONBOARDING STEPS

1. Select the Shadow-Caster Lighting app icon from your MFD home screen.

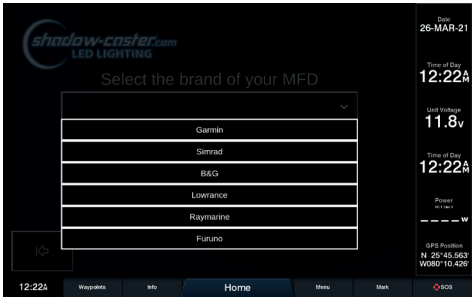
2. Upon opening the lighting app you should see the welcome screen.

Press the NEXT button to initiate the system and proceed through the onboarding process detailed in the following steps.



3. Select the brand/manufacturer of your chosen MFD as shown here.

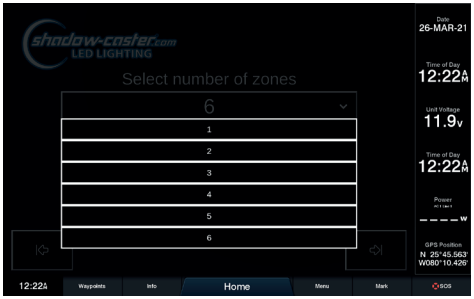
Once selected press NEXT button to confirm.



4. Select the number of lighting zones required for your system.

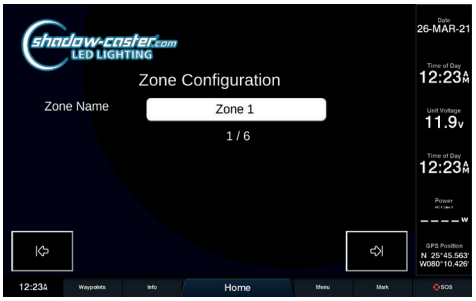
Once selected press NEXT button to confirm.

Note: RGB zones 1-4 are statically assigned to their corresponding zone but Shadow-NET® lights can be assigned to any zone number.



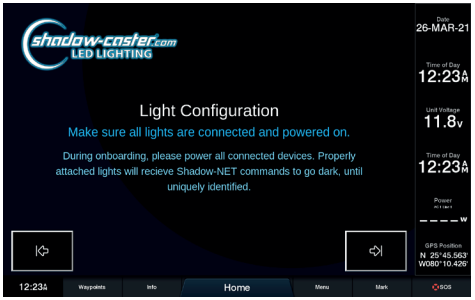
5. Step through the individual lighting zones and give a unique name. This can also be done later through the Config Menu.

Once selected press NEXT button to confirm.



6. Please make sure that all of the lighting devices on the network are powered and connected. The system will go through and identify everything that is connected.

Once selected press NEXT button to confirm.



7. Select the required Operation Mode:

Full Mode (Recommended)
Full Mode allows individual control of all devices connected to the Shadow-NET bus. This is the recommended setting.

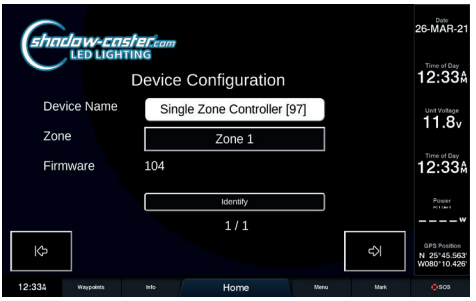
Global Mode
Global Mode only allows control of everything on the bus as one channel. This is only required for working with certain older technology underwater lights (pre 2018).

Once selected press NEXT button to confirm.

8. Once all the devices are found by the system, They can be identified by clicking "Identify". All connected lights will turn off, and the light being identified will flash white slowly.

Once identified, set the lights to their desired zones.

Once selected press NEXT button to confirm.



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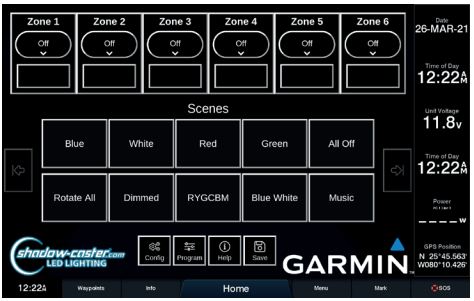
SHADOW-CASTER® LIGHTING HOME SCREEN

This is the default screen by clicking on the Shadow-Caster® app icon after the onboarding process has been completed.

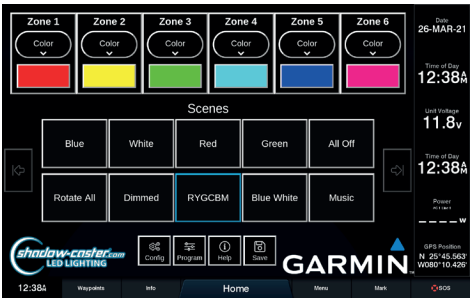
Scenes can now be easily recalled by pressing a scene button.

There are several preset scenes already configured.



An example of the Home Screen after the 'RYGCBM' scene is recalled is shown below.

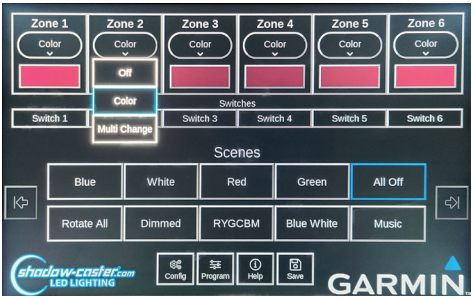
Note: 'RYGCBM' is short for Red/Yellow/Green/Cyan/Blue/Magenta.



CONFIGURING ZONES

In the zone control box, there are two buttons.

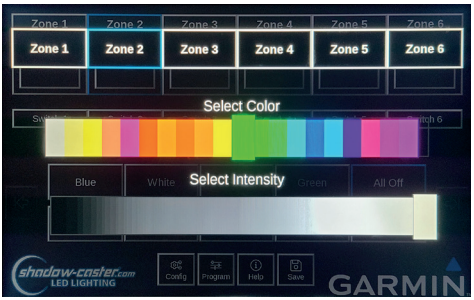
Pressing the top button reveals a drop down selection with three options: turn the zone off; select color and brightness control; or select the currently active program.



The lower button indicates the current color and brightness or the current program. To change the color, press the current color button and the color scroll bar will pop up.

Slide the color bar to select any color, or select the intensity slider to change the brightness.

Note: Multiple zones can be selected at the same time to allow multiple lighting zones to be controlled and and changed together.



USING SCENES

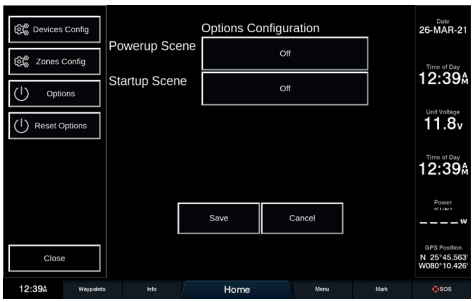
A 'Scene' is a way to have all of the zones in your configuration set to a predetermined color, intensity or lighting program.

New scenes can be saved and existing scenes can be customized or removed to fit your preferences.

SCENE OPTIONS CONFIGURATION

Assign a Powerup Scene for the lighting as soon at it receives power.

Assign a Startup Scene for the lights to go to as soon as the application opens up in the browser.



DELETING A SCENE

Press and hold a scene button to delete it.

Note: Long press functions are not supported in all Multi-Function Displays (MFDs).

UPDATING SCENES

Simply save over a scene name to update it.

SAVING A SCENE

Once all lighting zones are configured as desired, press SAVE and a window will pop up with a text box.

CONFIGURING PROGRAMS

These are accessible by clicking on the PROGRAM button 

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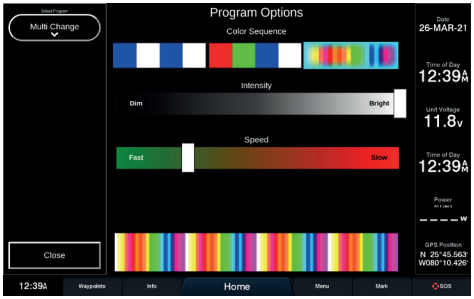
MULTI-COLOR CHANGE PROGRAM CONFIGURATION

Select Color Sequence pattern.

Select Intensity level.

Select the Speed of rotation.



STROBE PROGRAM CONFIGURATION

Select the desired color.

Then select Intensity (brightness) and Speed (rate of strobe).

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MUSIC SYNC CONFIGURATION

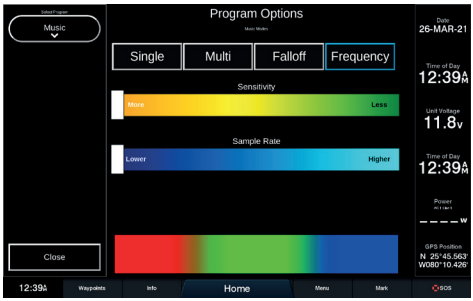
Select Type of Sync:

Single
Lights illuminate on a 'single' selectable color and pulse with the amplitude of the music.

Multi
Lights cycle through all available colors of at a fixed rate, but similar to Single mode, pulse with the amplitude of the music.

Falloff
Intensity of lights increases with the beat, and then falls off at a fixed rate.

Frequency
Drives colors based on the frequency content of the music. Provides the best music sync functions.



OPTIMIZING MUSIC SYNC

1. Turn music to typical listening volume, and press PAUSE on your stereo system. This will provide the lighting controller with an input signal representative of the audio system background noise.
2. Adjust the sensitivity down 1 step at a time until the lights do not blink or flicker - this sets the system sensitivity to just above the audio systems noise floor.
3. Resume music. The lights should now be changing in sync with the music input.

CONNECTING THE SCM-MFD-BRIDGE & INITIAL SYNCING

The SCM-MFD-BRIDGE is designed to automatically detect the brand of MFD it is connected to and establish a connection. Once the onboarding process is complete, and this information is verified, this step will not have to be repeated.

If the system does not establish a connection at initial startup:

CYCLE THE POWER OF JUST THE MFD BRIDGE, BY REMOVING THE 4 PIN CONNECTOR AND WAITING 10 SECONDS, AND THEN RECONNECT.

If the SCM-MFD-BRIDGE is moved from one brand display to another, a factory reset must be initiated on the screen prior to disconnecting.

Once the SCM-MFD-BRIDGE is properly connected, the Shadow-Caster® app icon will appear on the home screen or gauges accessories scene. Simply click on this icon to open the application.

Note: In the case of Raymarine MFDs, this icon is already there and not an indication of connectivity.

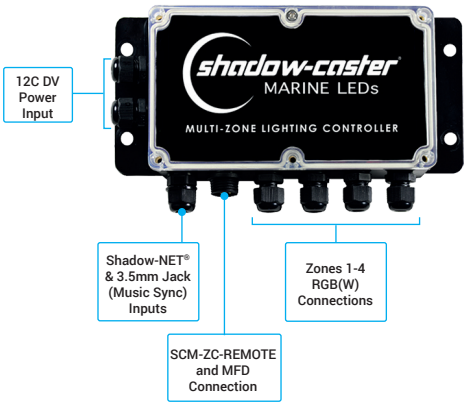
INSTALLATION

SCM-MZ-LC INSTALLATION

Central mounting locations under the helm areas or in the bilges are acceptable.

1. Orient the cable glands facing down or to the side so that they do not collect water.
2. Cinch cable glands as tightly as possible and fill unused glands so that the box is water tight.
3. Use the included four 8 x ¾" SS pan head screws for mounting.

SCM-MFD-BRIDGE CONNECTIONS



SELECTING RGB OR RGBW LIGHTING

Set the RGB(W) dip switch within the SCM-MZ-LC, depending on whether a zone is using RGB or RGBW lighting, from left to right, as follows:.

Switch	1	2	3	4
▲	ZONE 1 RGB	ZONE 2 RGB	ZONE 3 RGB	ZONE 4 RGB
▼	ZONE 1 RGBW	ZONE 3 RGBW	ZONE 3 RGBW	ZONE 4 RGBW

SCM-MZ-LC POWER REQUIREMENTS

See the Shadow-Caster® wire awg recommendations for detailed calculations. It is very important to have sufficient gauge wire feeds for RGB lighting.

It is recommended to separate feeds for lighting and for sensitive stereo power feeds with direct runs to the battery or a heavy gauge distribution point.

The SCM-MZ-LC will support 15 amps per zone. For a total of 60 amps in the entire box. The SCM-MZ-LC comes with 10 amp fuses installed.

The SCM-MZ-LC will work in 12V or 24V systems. Please note that 12V or 24 compatible RGB(W) products should be used depending on the application.

SCM-MFD-BRIDGE INSTALLATION

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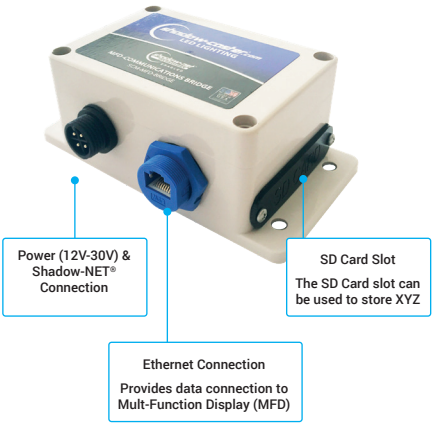
SCM-MFD-BRIDGE CONNECTIONS



RECOMMENDED WIRE GAUGES

Scan the QR Code or click **here** to view our recommended wire gauge chart.

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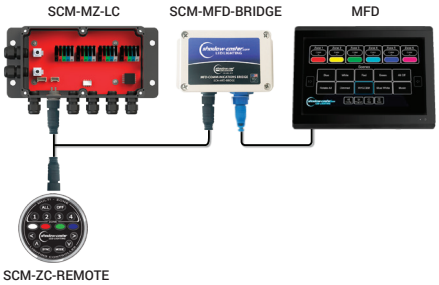
ADDING ADDITIONAL REMOTES AND MULTI-FUNCTION DISPLAYS

Additional SCM-ZC-REMOTES can be added to your installation with our Y-cable and 1m, 2m & 4m extension cables. See Optional Parts section below for details.



SHADOW-NET® DEVICES

Connect Shadow-NET® enabled devices to the orange and yellow Shadow-NET® wires coming from the Multi-Zone Lighting Controller.

As soon as the Multi-Zone Lighting Controller receives power, multiple channels of digital messages start broadcasting on these wires. These messages allow Shadow-NET® enabled devices to be connected without a switch. Initially these commands are for attached lights to turn off. As soon as a command is given to the Multi-Zone Lighting Controller to go to a color, these attached devices will receive a message to go to the corresponding color and brightness.

Please note that different products are pre-programmed to respond to a certain channel. For example, Underwater Lights respond to Zone 1, Down Lights respond to Zone 2 and Spreader Lights respond to Zone 3.

OPTIONAL PARTS

- **SCM-ZC-REMOTE** Additional Remote Control
- **SCM-SCNET-01** 1meter Cable
- **SCM-SCNET-02** 2 meter Cable
- **SCM-SCNET-04** 4 meter Cable
- **SCM-SCNET-Y** Y Cable

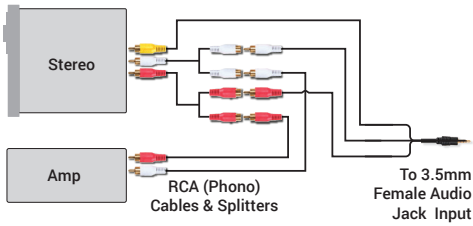
BEST PRACTICES FOR MITIGATING NOISE ISSUES

Noise interface is common in systems with RGB lighting controls and amplified stereo systems. The advanced circuitry in the lighting controller does everything possible to protect from this.

Utilizing installation best practices will further mitigate these issues.

1. Make sure to supply ample gauge power and separate distribution points from stereo power.
2. Run RGB power wires as far as possible from the speaker feeds for the stereo. Run separate bundles where possible.

CONNECTING STEREO INPUT FOR STEREO MUSIC SYNC INPUT



TROUBLESHOOTING

MFD CONNECTION TROUBLESHOOTING

MY SYSTEM IS NOT CONNECTING:

Remove 4 screws on top of SCM-MFD-BRIDGE. Verify that the blue power light is on. This indicates a bad connection on the 4 pin cable from the lighting controller

Verify that the red and green communication lights are coming on and blinking. This will verify that the Ethernet connection is good, and communication is established.

MUSIC SYNC NOT WORKING

Verify that an appropriate 3.5mm stereo jack is being used and that there is a usable signal.

If a separate output zone is used, verify that the output is enabled and the output is set to a usable volume.

It is not recommended to use a subwoofer output, as certain sync modes require the full audio range.

MY SYSTEM HAS A "BOOT LOADER ERROR"

This is typically a problem with multi-screen installation and indicates that a POE isolator is needed.

SCM-MZ-LC NOT LIGHTING UP

When power is first applied to the lighting controller, the box will flash blue very briefly.

Once it receives a valid control input from a connected controller it will stay blue continuously. If it is not lighting up please double check for correct orientation and reseat the SC-NET cable.

SHADOW-NET® LIGHTS WILL OCCASIONALLY LOCK UP AND STOP RECEIVING MESSAGES

This indicates that there is a noise issue on the Shadow-NET® communication lines. Typically this is caused by insufficient gauge wire feeding one or more Shadow-NET® connected lights.

MY SHADOW-NET® LIGHTS STAY ON

If the connected Shadow-NET® lights are not turning off at initial power up then there is a challenge with the Shadow-NET® connection.

Check the orange and yellow wire connections are not reversed and are fully connected.

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