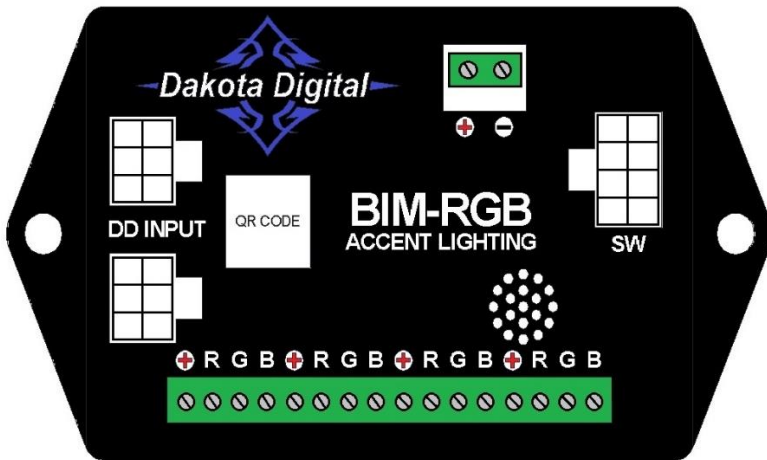


## BIM-RGB

### Accent Lighting



HLC harness, 394214 (x1)

### Introduction

- This module can be used to drive 12-volt DC, current limited, common anode, RGB LED accent lighting.
- The module has four separate outputs.
- Each output has one fused power connection and three connections for the RGB LED's.
- Each output power is fused at 1.85 amps with internal resettable fuses.
- We recommend using up to a 32-inch length of 12-volt RGB, 50/50, 60 LED/meter string lights.
- Different brands of LEDs may not exactly match colors between LEDs nor our HDX/RTX displays.

The module can be connected to a Dakota Digital HDX or RTX gauge and set up to match the faceplate color of the gauge. This is the default mode for the module from the factory.

If you do not have a gauge set or do not want to synchronize to the faceplate color the module can also be set up to run in standalone mode.

Note: If the BIM-RGB is in the synchronize mode it will switch to standalone mode if it does not see any messages from a gauge within 10 seconds.

The BIM-RGB also has a microphone-based music mode. In this mode the lights will flash with the beat of the music. Since this is a microphone-based circuit, it will pick up any sound that is loud enough to activate the microphone. Loud pipes, wind noise and road noise will cause the LEDs to flash as well.

Typically, road noise would not be an issue when you have music playing as any road noise picked up gets lost in the LED's flashing to the music.

All of the control and setup of the module can be done using the Dakota Digital Accessories application on a smart phone or tablet. A separate switch panel can also be purchased to control the module.

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## Installation

- The BIM-RGB module must be mounted inside the vehicle.
- The BIM-RGB module must be connected to switched power from the vehicle.
- The application of the unit will determine the current requirements.
- To run at full load, you would need a switched connection capable of supplying 7.4 Amps.
- LED strips must have built in current limiting resistors to operate correctly.

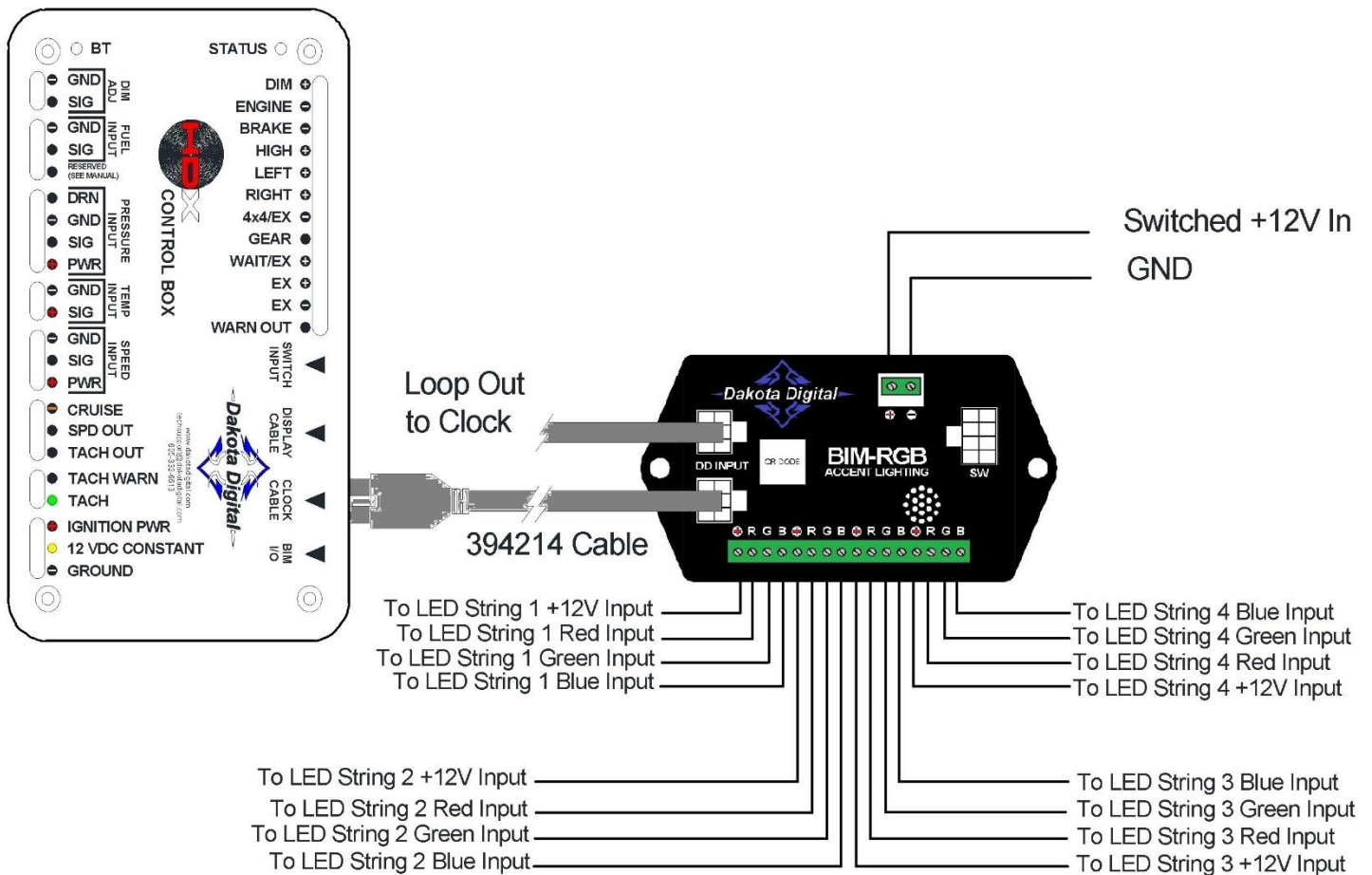
If a connection with the current capabilities is not available, a relay driven by the switched power could be used to control power to the module. When wiring up the power input be sure to use the appropriate gauge wire for your expected current draw.

The RGB LED's or LED strips to be driven, will need their +12V connection connected to the "+" output. Then the individual Red, Green, Blue connections from the LED or LED strip, should be connected to the corresponding outputs from the BIM-RGB module.

**Due to differences in parts, manufacturers, and quality: not all brands of LEDs will have the same color output. Do not mix brands and types of LED strips, but stay consistent with the same brand and model. Because of color variations, we offer a means to fine tune the bank of LED strip colors in our app (page 6).**

See Figure 1 for how to wire without a relay to switch power.

See Figure 2 to connect power using a relay.



**Figure 1 BIM-RGB Wiring No Relay**

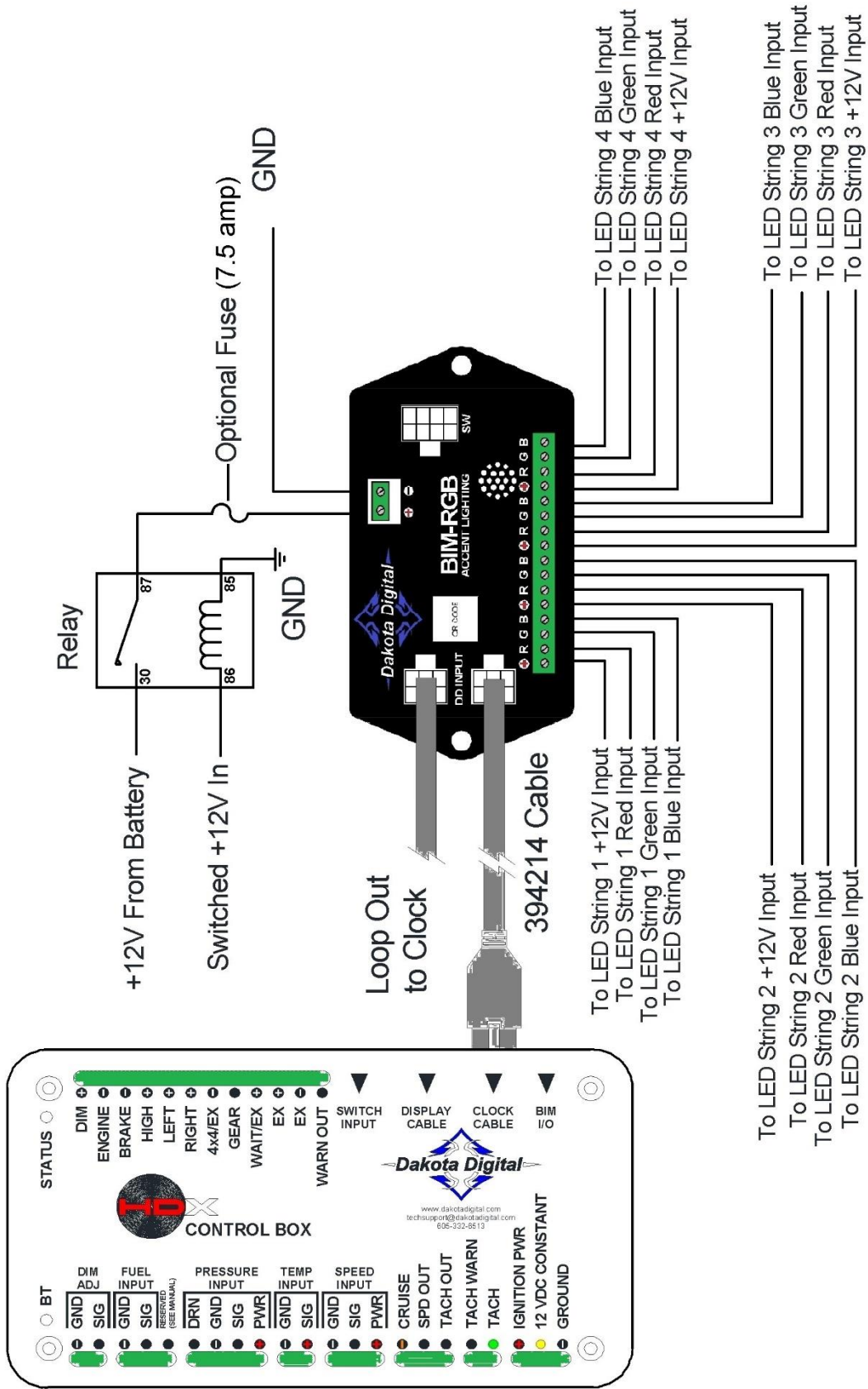


Figure 2 BIM-RGB Wiring with Relay

## **Music Mode**

If you intend to use the music mode feature: it is best to install the module somewhere near a speaker so music can be picked up by the microphone. Depending on how loud you like your music, proximity of the BIM-RGB module to the speaker can be adjusted to get the sensitivity you would like. If the music is too loud the LED's will appear to be on all the time since it can overload the microphone. If the music is too quiet the LED's may not flash at all. This may require some experimentation to get this to meet your individual taste.

Loud exhaust and convertible wind noise will affect the lighting making the LEDs appear on all the time, or the LEDs may flash when tapping the throttle.

## **Controlling the BIM-RGB with the Dakota Digital Accessories App**

The Dakota Digital Accessory App (green icon) can connect by Bluetooth to setup the BIM-RGB module.

The app is available from Google Play for Android/Google devices and the Apple Store for iPhones and iPads.

App Connecting and pairing:

- Apple devices do not need to be paired. Just have the BIM-RGB powered up and open the Dakota Digital Accessory App, as it will automatically pair in the background.
- Android devices must be paired prior to opening the Dakota Digital Accessory App. In Settings > Connections > Bluetooth, the scanning will find a device starting with DDX... Tap to pair and tap "Pair". Then open the app. Future connections will not require pairing as the BIM-RGB is in the list of Bluetooth devices.

App Operation:

Once the app is open, tap on the BIM-RGB from the list. Tap on "Setup" and then tap on "Lighting".

App Options:

LIGHTS	On or Off	Turn LEDs on or off
SYNC TO GAUGE	On or Off	Synchronize to HDX/RTX gauges for colors (Off = stand-alone mode)
MUSIC MODE	On or Off	Turn music mode on or off
INTENSITY	Slider	1 is dimmest, 31 is brightest
COLOR	Drop down options	Pick colors when not syncing to gauge
CALIBRATE COLOR	New screen w/sliders	Fine tune or reset color modifications*
SET TO CURRENT	Button	save current settings at power off, and to return when powered on.
RESET TO FACTORY	Button	Full reset of colors and options

**Any changes not saved with "Set to Current" are only temporary until the key is turned off.**

\*Calibrated Color Options:

RED / GREEN / BLUE sliders	Sliders: range from 0 to 31	Individually adjusts intensity of each color
RESET ADJ	Button	Resets the color sliders of current session
RESTORE COLOR	Button	Restore noted color back to default
RESTORE ALL	Button	Restore all colors back to factory default
SAVE & EXIT	Button	Saves calibrated settings and exits to "Lighting" screen

**Not tapping "SAVE & EXIT" will not save color changes when ignition is turned off.**

## Color Calibration

All visible color is artificially created by a combination of red green and blue colors.

Some LED manufacturers may have tricolor LEDs that tend to be a bit more blue or red than one would expect. As long as all LED strips used are from the same manufacturer the colors tend to remain consistent. If the color of all the LEDs seem to be off a little (more or less: red, blue or green) the Dakota Digital Accessory app can fine tune the color spectrum. Any color adjustments alter all LED outputs at the same time. Adjustment to only one output bank is not possible.

Though one may never exactly match our gauges, the color calibration mode could help get the colors closer.

In the Accessory app, the calibration shows the three primary colors Red / Blue / Green with a slider. The scale of each slider ranges from 0 to 31. The 32 steps have limited ranges of visible colors. Having only 32 steps in each color range limits the overall LED color adjustment range.

Each color one picks manually or from the HDX/RTX synced colors can be fine-tuned.

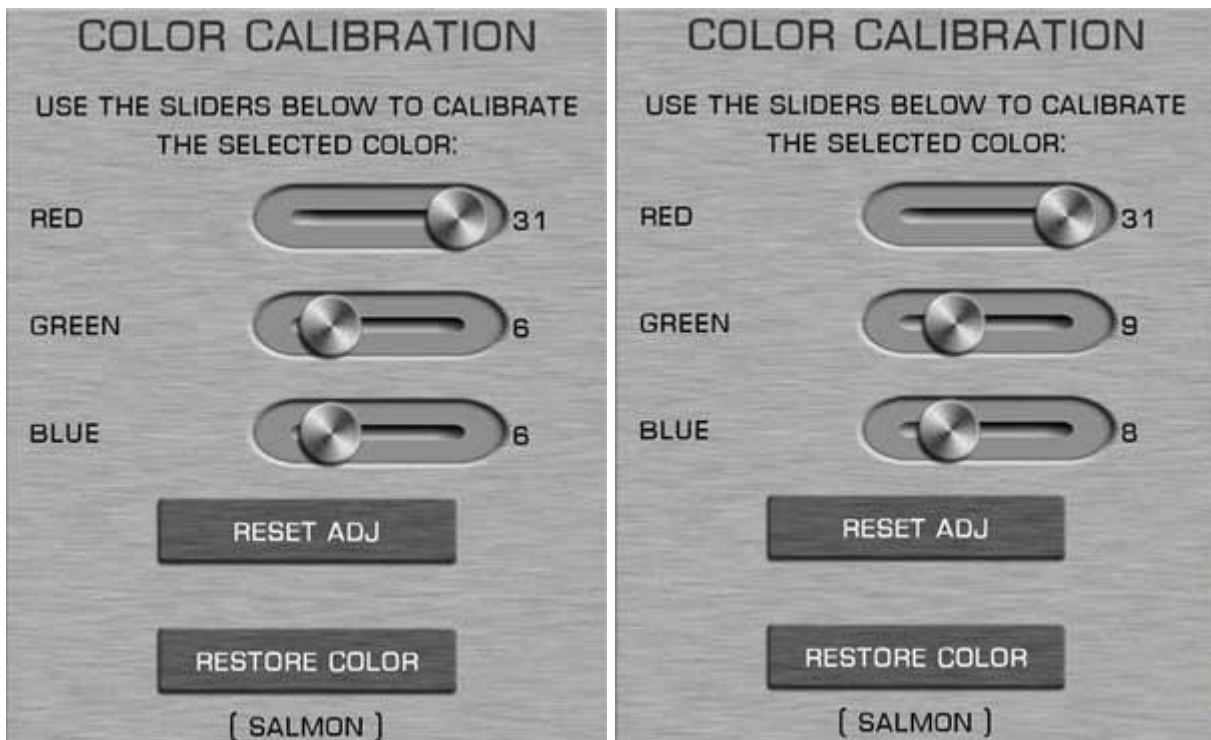
Increasing one color or another can increase that one shade, or with the right combination can create another color.

With visible light, an even combination of red and green will create yellow, with blue at zero.

If the color has a bit redder, either scale back the red or scale up the blue. Adjust in small amounts at a time.

Sample of factory "Salmon" color screen and an adjusted screen in the app.

Just the minor adjustment of Green to 9 and Blue to 8 changed the color to be less reddish / pink.

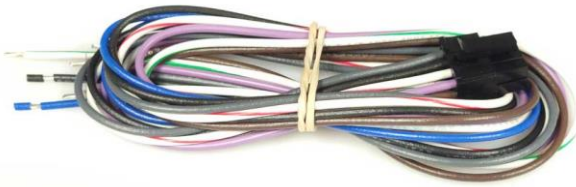


## **Optional Remote Switches**

The plug labeled SW is available to accept an optional harness for you to wire in momentary contact push button(s) to operate the RGB-BIM in a stand-alone mode without the need for an HDX/RTX system connected.

You can rig up a small panel with one, two, or all four buttons of your choice  
The switches are ground triggered.

The optional harness from sales is part number **394183**.



The switch harness can offer four operational modes:

1. Power On and Off
2. Color Change
3. Color Intensity
4. Music Mode On and Off

\*Note: When the RGB-BIM is synced to an HDX/RTX system, the color and intensity buttons have no affect.

### ***ON/OFF***

Tapping the On/Off switch can toggle the LED lights on or off, in stand-alone or synced modes.

If any color or intensity changes are made with optional switches, pressing and holding the On/Off switch for longer than 3 seconds will save those settings back to the RGB-BIM. The LED lights will go out indicating the changes were saved.

One can reset the RGB-BIM back to default settings, but this will also need the Music button wired up. Press and hold the On/Off button, wait for the LEDs to go out, then tap the Music button. Release the On/Off button and the RGB-BIM will be reset to factory colors and intensity. The factory mode will set the RGB-BIM to sync with an HDX/RTX system

### ***COLOR***

Tapping the Color switch will change the color through the different color options in stand-alone mode. When the RGB-BIM is connected to an HDX/RTX, the Color switch can only control syncing. Press and hold until the LEDs go out to toggle between syncing and stand alone. To keep the RGB-BIM in stand-alone mode at power up, the SYNC setting must be turned off and *saved*.

### ***INTENSITY***

Tapping the Intensity switch will change through the 31 levels of intensity. Holding the Intensity switch will automatically switch intensity every second. The intensity gets brighter until it reaches the end and restarts the cycle at the lowest intensity. The Intensity switch will not function when synced to an HDX/RTX control box.

### ***MUSIC MODE***

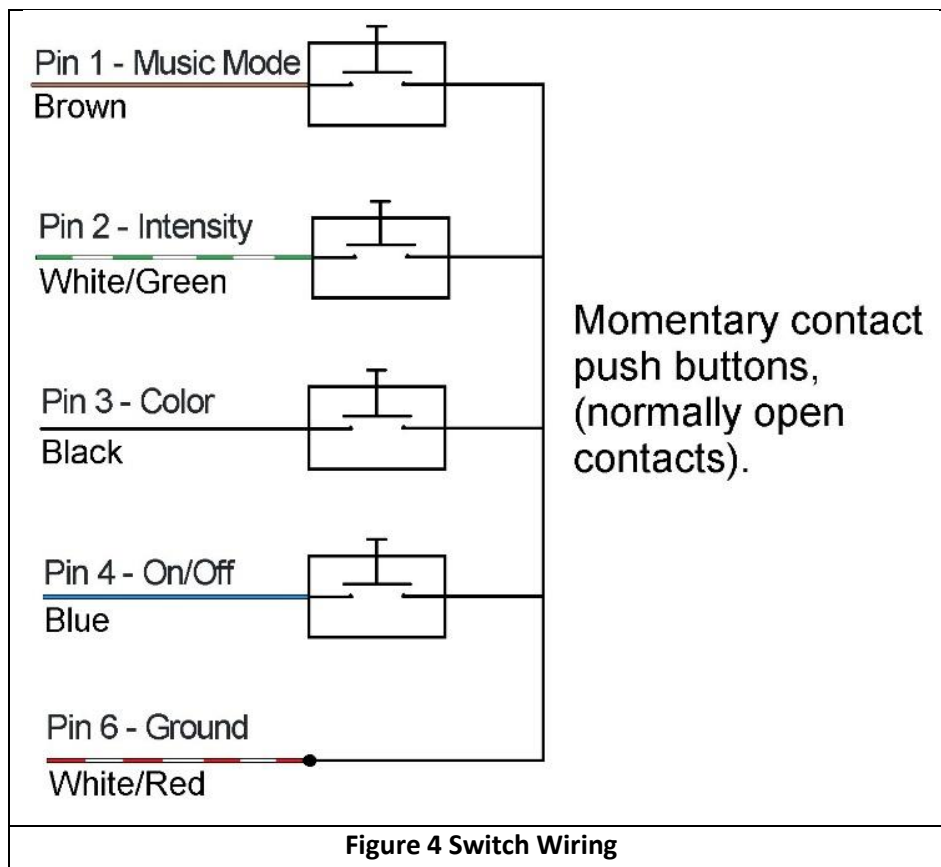
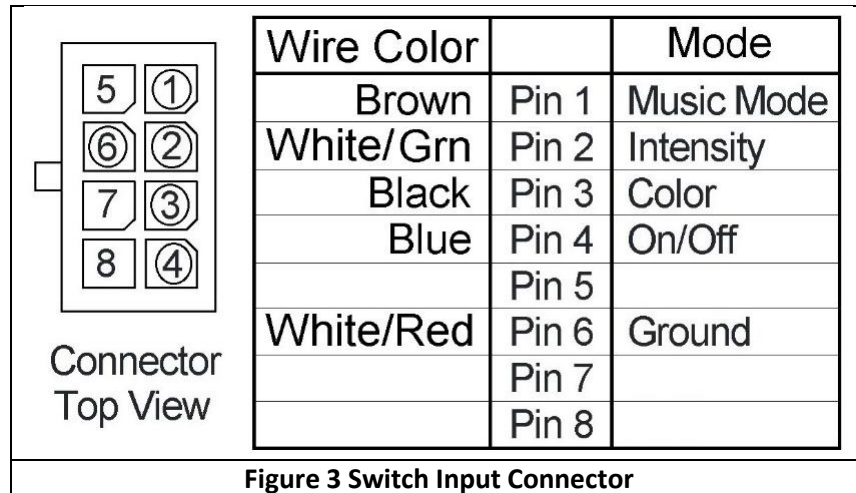
Tapping the Music button will enable or disable the music mode when synced or stand-alone.

### Connections for Custom Switch Option

Wire the number of switches you would like to use to the appropriate wire color and the other end of the switch to ground. You could wire up the On/Off switch and the Music Mode switch only, or all four switches. That is your choice.

Figure 3 shows the pin connections.

Figure 4 shows how to make connections from the harness to the switches.





## Troubleshooting guide:

PROBLEM	POSSIBLE CAUSE(S)	POSSIBLE SOLUTIONS(S)
LED's not lighting up	<p>No power to the BIM-RGB</p> <p>Poor connection on the +, R, G or B outputs</p> <p>BIM-RGB is in music mode</p>	<p>Check power and ground connections into the BIM_RGB</p> <p>Check the connections to the LED's</p> <p>In music mode the LED's will flash on with music. Go into the settings and make sure music mode is off. If you tap on the BIM-RGB case by the microphone input and the LED's flash this is most likely the problem.</p>
PROBLEM	POSSIBLE CAUSE(S)	POSSIBLE SOLUTIONS(S)
LED's not flashing in music mode	<p>BIM-RGB is not in a location where the microphone can pick up the music</p> <p>The LED outputs are not turned on</p>	<p>Be sure the BIM-RGB is located where it can pick up sound from a speaker. If you tap on the BIM-RGB case by the microphone input the LED's should flash. If they do this is most likely the problem</p> <p>Check the On/Off setting in the app, or toggle the On/Off switch if using the optional switch panel. If you toggle the music mode switch the LED's should turn on and off if no music is playing and the LED outputs are turned on.</p>
LED color not synchronized to the gauge	<p>Bad connection to the gauge</p> <p>Sync mode not enable</p> <p>Using constant power instead of accessory power to the BIM-RGB</p>	<p>Check the cable between the gauge and BIM-RGB. If LED's are white this is the default color and would indicate this may be the problem. The module defaults to standalone mode if no message from the gauge is detected after 10 seconds.</p> <p>Check the synch setting in the app, or if using the optional switch panel press the color switch for greater that 3 seconds to change modes</p> <p>Connect BIM-RGB to switched power. The modules defaults to standalone mode if no message from the gauge is detected within 10 seconds after key on power to the BIM-RGB.</p>

## Technical specifications:

**Output current + outputs:** 1.85 amps per output

**Input current:** 7.4 amps maximum

**Modes:** Synchronized, Standalone, Synchronized Music Mode, Standalone Music Mode

**Dakota Digital system colors:** Key Lime, Kryptonite, Coolant, Sage, Green Flag, Minty Fresh, Turquoise, Clear View, Road Trip, Quenched, Denim Jacket, Nightfall, Amethyst, Garnet Pink, Candy Store, Pink Slip, Salmon, Grenadine, Faded Red, Red Anodized, Red Lighted, Grapefruit, Trophy Gold, Traffic Cone, Staged, Log Book, Candle Light, Barn Find, Cool White, Warm White, White, Cast Iron

**Control Box Compatibility** - The following versions of software (or newer) are required to function with the BIM-RGB (Note: All RTX systems support this option):

Control Box / Dash	Minimum Software Version Required
HDX Control Box	<i>HX02 or RX01</i>
HDX Gauge Cluster	<i>Any</i>
RTX Control Box	<i>RX01</i>
RTX Gauge Cluster	<i>Any</i>

**Notes:**

## **SERVICE AND REPAIR**

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical support is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems.

For additional support, please visit [www.dakotadigital.com](http://www.dakotadigital.com). A "Product Support" link will be found at the bottom of the home page.

**Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number.**

- Package the product in a good quality box along with plenty of packing material.
- Ship the product by a common carrier with tracking abilities.
- Be sure to include the RMA number on the package.
- Include a complete description of the problem, with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day.
- Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase.
- Send no money. We will contact you for payment.

### **Dakota Digital 24 Month Warranty**

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship within 24 MONTHS FROM THE DATE OF PURCHASE, such defect(s) will be repaired or replaced at Dakota Digital's option.

This warranty does not cover nor extend to damage to the vehicle's systems and does not cover removal or reinstallation of the product.

This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.

This Warranty is in lieu of all other expressed warranties or liabilities.

Any implied warranties, including any implied warranty of merchantability, shall be limited to the duration of this written warranty.

Any action for breach of any warranty hereunder, including any implied warranty of merchantability, must be brought within a period of 24 months from date of original purchase.

No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

**⚠ WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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