

# Razer Chroma Addressable RGB Controller

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In 2021, the broad availability of Addressable RGB-enabled components, peripherals, and external illumination platforms enable system builders to create thematic builds which incorporate customizable lighting into the overall experience. Unfortunately, the approach and supporting software has not dramatically improved in most instances. Prior experience with Corsair's lineup offered the easiest method to unify the lighting within builds that leveraged their RGB and ARGB products. Stepping outside of Corsair's well-integrated tandem of controllers and software results in a potential hodgepodge of issues when trying to achieve a comparable outcome without the slight price premium involved in an all-Corsair setup.

Most motherboard manufacturers offer a software solution that aims to synchronize component and internal peripheral lighting schemes. Depending on your preferred vendor of choice, this may consist of ASUS Aura Sync, Gigabyte RGB Fusion, MSI Mystic Light, NZXT CAM, or AsRock Polychrome. Signals sent over the ARGB headers may differ from what the fan, cooler, SSD, case lighting, intends to show. These software suites have options which can be enabled to overcome potential mismatched illumination. However, these products may not control external peripherals such as the mouse, keyboard, or other third-party input or output devices. Heading down this path may require adopting a platform-neutral software solution, such as OpenRGB, to simplify the overall effort.

Whether you love them or hate them, Razer's Synapse 3 suite supports modern external peripherals produced by the company. The Connect element of this solution can interface with the motherboard-specific software to ease synchronization efforts. The Razer Chroma Addressable RGB Controller encompasses Razer's first attempt to get closer to parity with the Corsair experience. Based on some anomalous illumination challenges with a niche cooling solution contained within my 2021 gaming build, I purchased this controller to tackle the following objectives.

- 1.) Obtain the capability to support the total number of LEDs (56) present on the Cooler Master MasterFan SF240P on a dedicated ARGB channel.
- 2.) Reduce or eliminate the number of 1-to-x ARGB splitters which require cable management on the backside of the case.
- 3.) Minimize dependence on the motherboard manufacturer's ARGB solution. In this event, AsRock Polychrome is the software that I'm trying to avoid.

- 4.) Better utilization of the already-installed Synapse 3 for keyboard, mouse, mousepad, mouse bungee, and headphone stand.



*Source: Amazon*

While the \$39.99 USD price point is consistent across retailers, the question as to whether this controller is a worthwhile addition to systems with complex lightning needs will be answered by more than a reasonable price point. Diving into the build quality, capabilities, ease of installation, and functionality of the Razer Chroma Addressable RGB controller will determine if this may be a viable option for your lighting needs.

## Unpacking and Content Analysis

The controller arrives in a compact, brown cardboard box with large adhesive seals on the top and bottom flap. Opening this up provides the following contents:

- The Razer Chroma Addressable RGB Controller (pictured on the previous page)
  - Unit was wrapped in a protective grey plastic.
  - Controller provides (6) ARGB headers.
    - 3 ARGB headers per side.
    - Each port is numerically labeled and corresponds to labels presented in the Synapse 3 software suite.
- Power cable
  - Barrel connection for the end that connects into the controller.
  - Molex power connection for the end that connects to the power supply.
- Data cable
  - Micro-USB connection for the end that connects into the controller.
  - Motherboard USB 2.0 header for the end that connects to the motherboard.
- Black Razer logo sticker
- Instruction Manual
- 3M Adhesive Stickers (for mounting)

The front and sides of the controller consist of a matte finished plastic that feels very firm in the hand. The openings on each side for the three ARGB headers appear to be sized appropriately for traditional case or fan connections. The back side has a thin layer of rubber that protects the majority of the controller's backside. There are four screw holes present for mounting the controller in a location that may be traditionally occupied by a 2.5" drive within the case. For cases with one or two 3.5" drive trays, this would allow the controller to be hidden under a power supply shroud or in another non-visible location on the back of the case without using the adhesive pads.

## Installation Experience

Installing the controller within a Corsair 4000D Airflow case didn't provide any extended challenges. The two 2.5" drive caddies that mount to the back side of the case were relocated to the positions on top of the power supply shroud in this build. This provided ample room to place the controller out of sight while simultaneously accounting for the different lengths of the ARGB headers from the following components:

- Cooler Master MasterFan SF240P fan (mounted to the radiator of the next component in this list)
- EK 240mm D-RGB AIO cooler
- Cooler Master MasterFan SF360R case fan (mounted to the front of the 4000D Airflow)
- Cooler Master SickleFlow 120 ARGB exhaust fan

The adhesive strips included in the package are thin by design. The rubber backside of the controller requires proper installation of the strips. Applying the incorrect sides to the controller and the case will result in the adhesive rubbing off after one or two removals. Opting for traditional 3M double-sided adhesive tape will not provide a firm mount due to the lack of bonding with the rubber.

Cabling for power required connecting another cable into the modular power supply. No issues were encountered with poor pin alignment within the power cable. The USB cable header has sufficient length to support the backside mounting without inducing excessive stress on the Micro USB end of the cable. While the interfaces for power and data were non-eventful in nature, the ARGB connections demonstrate that this is a first-generation product with room for improvement.

The [2-pin, space, 1-pin] layout per header is visible by peeking into the side of the controller. Razer did not account for the lack of universal sizing for ARGB connectors from different manufacturers. EK's ARGB connections are wider and slightly taller than what may be found on a case connection or on a fan from a myriad of manufacturers. Insertion into the slot is a gamble; brute-force is required to properly seat the connector and a slightly erroneous entry will result in bent or misaligned internal pins that cannot be easily straightened out.

## Operational Experience

After all physical connections have been made and the system is powered on, the Synapse software automatically detects the Razer Chroma Addressable RGB controller. Selecting this item from the list of peripherals shows the channels that it detects as connected. Manually setting a channel to enabled cannot be done through the UI. This was exceptionally problematic for the connection between the ARGB header on a Sapphire Nitro RX 6700 XT and the controller. Two additional shutdown and reconnect efforts had to be completed without a successful outcome. During the POST and boot process, the lighting on the GPU matched everything else that was connected to the controller. Once Windows loaded, the lights would stop working and numerous rescans did nothing to correct the problem.

The workaround, at least in our experience, involved re-introducing the 1-to-3 ARGB splitter with a direct connection to the controller. This allowed relocation of the EK ARGB connection to interface with the controller as well as providing a partial resolution to the GPU lighting synchronization. After three scans, the channel connected to the GPU and pump block appeared in the software. Rescans were hit or miss on retaining the settings. Opting to manual refreshes after successful activation of four channels prevented the potential loss of lighting for the associated elements.

The auto-detection of number of LEDs per channel was also inaccurate. The MasterFan SF240P is a unique beast with 56 LEDs. The detection routines never reached this total. Manually adjusting

## Reztek Systems

the count within the software was possible. Setting a fixed value of 56 isn't a singular event. The software does not wait for completion of numeric entry before adjusting. Each keystroke in the field results in the lights flickering and subsequent rescan of the noted channel. The software also doesn't account for the MasterFan use case. Options consist of LED Strip and Fan. Selecting Fan for the channel will cap the number of LEDs at 40. Selecting LED Strip for the channel allows manual entry the total number of LEDs as well as setting the counts for more complex layouts which may have bends.

## Final Thoughts and Scoring

The Razer Chroma Addressable RGB Controller's price is offset by some suboptimal product design choices which need to be addressed in order to better position it against the Corsair ecosystem. With the disadvantage of standard uniformity for cables which may be plugged into the controller, Razer would benefit from modifying the controller to have a squid-like design that moves the connections between channels and internal components to the outside of the controller. These small, cabled arms would then be covered in a manner that's identical to a 1-to-X ARGB splitter. This would easily work around the disparity in connector sizes while simultaneously reducing the potential number of RMAs involved due to bent pins.

The Synapse 3 software (and possibly the controller firmware) will require further iteration to better enhance the accuracy, consistency, and reliability of detecting connected channels along with applicable lighting counts. Furthermore, the simple change for LED Strips to utilize a number entry -> Press Enter -> Apply modification workflow would make the customization process less jarring. The same holds true for using the up and down buttons to increment or decrement the light count total.

Support for up to 80 LEDs per channel is sufficient for many use cases. Placing the challenging SF240P on its own dedicated channel did solve the problems which manifested when it shared a connection with other devices using an ARGB splitter. There may be extreme configurations where 80 LEDs per channel is not enough. The user base for the controller will need to grow for Razer to make the determination as to whether this needs to be increased in a future revision of the product.

The Razer Chroma Addressable RGB Controller is a decent, albeit slightly flawed, first attempt for enabling tighter integration between various ARGB components and the Synapse 3 software. Existing bugs (as of this writing) cannot be overlooked, even at the \$39.99 USD price point. With further iteration, this may eventually become as indispensable as the Corsair Commander Pro is for customers within that ecosystem.

	<b>Score</b>
<b><i>Unpacking and Content Analysis</i></b>	<b>8.5/10</b>

Exterior packaging construction was very solid. Minimal risk of controller and accessories incurring damage in the worst-case shipping scenario. Interior separation of components instills further confidence in the potential for damage to content inside of the box. Pre-application of adhesive pads to the back side of the controller would be an area for improvement.

***Installation Experience***

**6/10**

Introduction of a Molex power feed from the power supply is recognized due to potential power draw of a heavily loaded configuration. Subpar space within channel openings to connect ARGB devices. Non-standard or wider plugs will not fit. Potential exists to bend pins within the controller.

***Operational Experience***

**7/10**

Use of Synapse 3 provides a consistent UI for those familiar with the Razer ecosystem. Noted caveats related to detection of connection and accuracy of LEDs in each chain present an opportunity for improvement. Partial lighting troubleshooting efforts compounded by slowness and re-scan for manual number entry when LED Strip is selected for the channel.

***Price***

**8.5/10**

The \$39.99 USD price point is consistent across retailers. When accounting for the caveats and challenges noted during installation and operation, the price is still fair.

**FINAL SCORE:**

**30/40**

This first attempt by Razer to better compete with Corsair is rough from the design perspective. It works well when connections can be properly seated into the controller. However, the concepts covered in the final thoughts section will need to be paired with software or firmware improvements to make this a "must buy" product. As it stands in its current design, there's more risk than reward present based on the overall experience. In the absence of non-standard connections to internal devices, this controller works well if you're heavily invested in the Razer ecosystem. For all other use cases, passive or powered splitters will provide a more consistent and reliable answer for ARGB connectivity use cases.