# Introduction

The Logitech Adaptive Gaming Kit provides 4 different styles of assistive switches that can be set up in a personalized way for those with limited mobility and dexterity. The kit includes a hook and loop pad for arranging buttons on a flat surface, but this may be less than ideal for some users.

The Camera Mount Adapters for the Logitech Adaptive Gaming Kit are a set of adapters that enable a user to mount the buttons from the Logitech Adaptive Gaming Kit using a standard mounting system for camera equipment. There is a huge variety of inexpensive solutions to mount camera equipment, so this adapter greatly increases the customizability options for the buttons in the Logitech Adaptive Gaming Kit.

# Requirements

## Goals

|  |  |
| --- | --- |
| G01 | To attach the assistive button from the Logitech Adaptive Gaming Kit to a standard ¼”-20 camera mounting system. |

## Functional Requirements

|  |  |
| --- | --- |
| F01 | The adapter must attach securely to the button. |
| F02 | The adapter must provide a female ¼"-20 UNC thread for mounting. |

## Non-functional Requirement

|  |  |
| --- | --- |
| NF01 | Any 3D printable components must be 3D printable using PLA. |
| NF02 | Must not deteriorate under daily use. |

## Constraints

|  |  |
| --- | --- |
| C01 | Single-build cost must be less than $10 |
| C02 | Design must only include easy-to-source commercial components. |

# Detailed Design

The Logitech Adaptive Gaming Kit consists of 4 types of buttons/triggers:

|  |  |  |
| --- | --- | --- |
| **Size** | **Photo of Button** | **Photo of Camera Adapter** |
| Large | Logitech Large button on wood background. | Camera mount adapter for Logitech Large Button on white background. |
| Small | Logitech Small button on wood background. | Camera mount adapter for Logitech Small Button on wood background. |
| Trigger | Logitech Trigger button on wood background. | Camera mount adapter for Logitech Trigger Button on wood background. |
| Light Touch | Logitech Light Touch button on wood background. | Camera mount adapter for Logitech Large Button on wood background. |

ATMakers created a set of four adapters. A few modifications were incorporated to improve the designs as described below:

* Changed the length of the hole for the screws so that all buttons can be attached with an 8mm machine screw. This was especially important as the variable trigger button suffered immediate, albeit repairable damage, and the light touch button was not functional once a longer screw was used.
* The width of the countersink of the screw holes were widened from 5.5mm to 6.5mm in diameter to accommodate screws with wider heads.
* All the depths of the T-Nut inserts were different, some too deep or too shallow, so all were changed to 2.4 mm. (T-Nut flush with bottom with some margin)
* All the heights of the mounts were different, and all heights were changed to 9.5 mm. (T-Nut flush with top of mount).

**Other important dimensions:**

Small:

A picture containing device, clock

Description automatically generated

A picture containing clock

Description automatically generatedLight Touch:

Large:

Diagram

Description automatically generated

Variable Trigger:

A picture containing electronics

Description automatically generated

# Opportunities for Improvement

* Support can be difficult to remove from the 3D printed part, a design which doesn’t involve support may produce a better-quality device and take less time to build. For example, a sacrificial bridge could be used to reduce the support required to print the T-nut recess.