

**Texas A&M University at Qatar**  
**Electrical and Computer Engineering Program**

**ECEN 403**  
**Senior Design Lab**

**Semester:** Fall 2017

**Benchmarking**

**Emergency Drone**

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**“On my honor, as an Aggie, I have neither given nor received  
unauthorized aid on this academic work.”**

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## 1.0 Introduction

In order to come up with a successful emergency drone that would benefit the community, we have to make up a benchmarking report that would help us in purchasing the most suitable items for our project. This report includes benchmarking table, criteria and analysis of the Emergency drone.

## 2.0 Benchmarking Criteria

Here is the comparison criteria for our emergency drone analysis.

<b>Criteria / products</b>	<b>GoPro-Hero5</b>	<b>GoPro-Hero6</b>	<b>Logitech V10</b>	<b>Pyle PLMR51W</b>
<b>Price</b>	\$499.99	\$499.99	\$76.71	\$12.44
<b>Quality and resolution</b>	4k60	1080p240	Clear and smooth audio by micro drivers	Quality protection from water and has a sound distortion-free
<b>Weight</b>	117g	117g	455 grams	900 grams
<b>Communication</b>	5Ghz Wi-Fi	3x5Ghz Wi-Fi	USB connection	Wired connection

### 3.0 Benchmarking Table

Here is a table showing the comparison between relevant items based on the above criteria.

Items Name	
<b>GoPro-Hero5</b>	<ul style="list-style-type: none"><li>• 4K video/12M photo</li><li>• Raw and EDR photo</li><li>• Exposure control</li><li>• Stereo audio</li><li>• GPS</li></ul>
<b>GoPro-Hero6</b>	<ul style="list-style-type: none"><li>• 4K video/12M photo</li><li>• Raw and EDR photo</li><li>• Exposure control</li><li>• Stereo audio</li><li>• GPS</li><li>• 5GHZ WIFI</li></ul>
<b>Logitech V10</b>	<ul style="list-style-type: none"><li>• Digital quality video</li><li>• Lightweight</li><li>• Clear smooth audio by micro drivers</li><li>• volume controls</li></ul>
<b>Pyle PLMR51W</b>	<ul style="list-style-type: none"><li>• Waterproof</li><li>• Full range speakers</li><li>• Rust proof</li><li>• Sound distortion-free</li></ul>

## 4.0 Benchmarking Study Analysis and Summary

Working in this report gave us a clear understanding on the items that we have to purchase for the emergency drone project. We were able to have an overview of the market and what can benefit our project the most.

For the speaker, Logitech was chosen for its multiple features. It was mainly chosen because of its voice quality and volume control also the drone could be noisy due to its wings. However, Logitech speakers are lighter in weight than the Pyle PLMR51W speakers which helps in balancing the drone. In addition, Logitech was chosen for its sound quality and the fact that it was available on campus, which helps with optimizing the budget and the time to work in the drone.

For the camera, GoPro Hero 6 was chosen as this version is better than the old one, which is GoPro Hero 5. The WIFI is faster in the new version and it has an advance stabilization. Also, the performance of the new version camera is twice better than the previous version. However, the new version has a good image and video quality compared to any other GoPro camera we can find these days.

## 5.0 References

<https://shop.gopro.com/EMEA/cameras/hero5-black/CHDHX-502-master.html>

<https://shop.gopro.com/EMEA/cameras/hero6-black/CHDHX-601-master.html>

[https://www.amazon.ca/PLMR51W-5-25-Inch-Marine-Speakers-White/dp/B000MCEKVG/ref=pd\\_sbs\\_107\\_1/137-3983314-2045850?\\_encoding=UTF8&psc=1&refRID=HDJF4JVJPBHNDHYNDDAF](https://www.amazon.ca/PLMR51W-5-25-Inch-Marine-Speakers-White/dp/B000MCEKVG/ref=pd_sbs_107_1/137-3983314-2045850?_encoding=UTF8&psc=1&refRID=HDJF4JVJPBHNDHYNDDAF)

<https://www.amazon.com/Logitech-V10-Notebook-Speakers-970194-0403/dp/B000G0JD0C>