



**GadgEon**  
Engineering Smartness



## KPAK - GoPro Flash Accessory

K-Pak is BLE enabled device which can be used to add LED flash to Go Pro cameras and can be controlled using an iOS App and a remote control device.

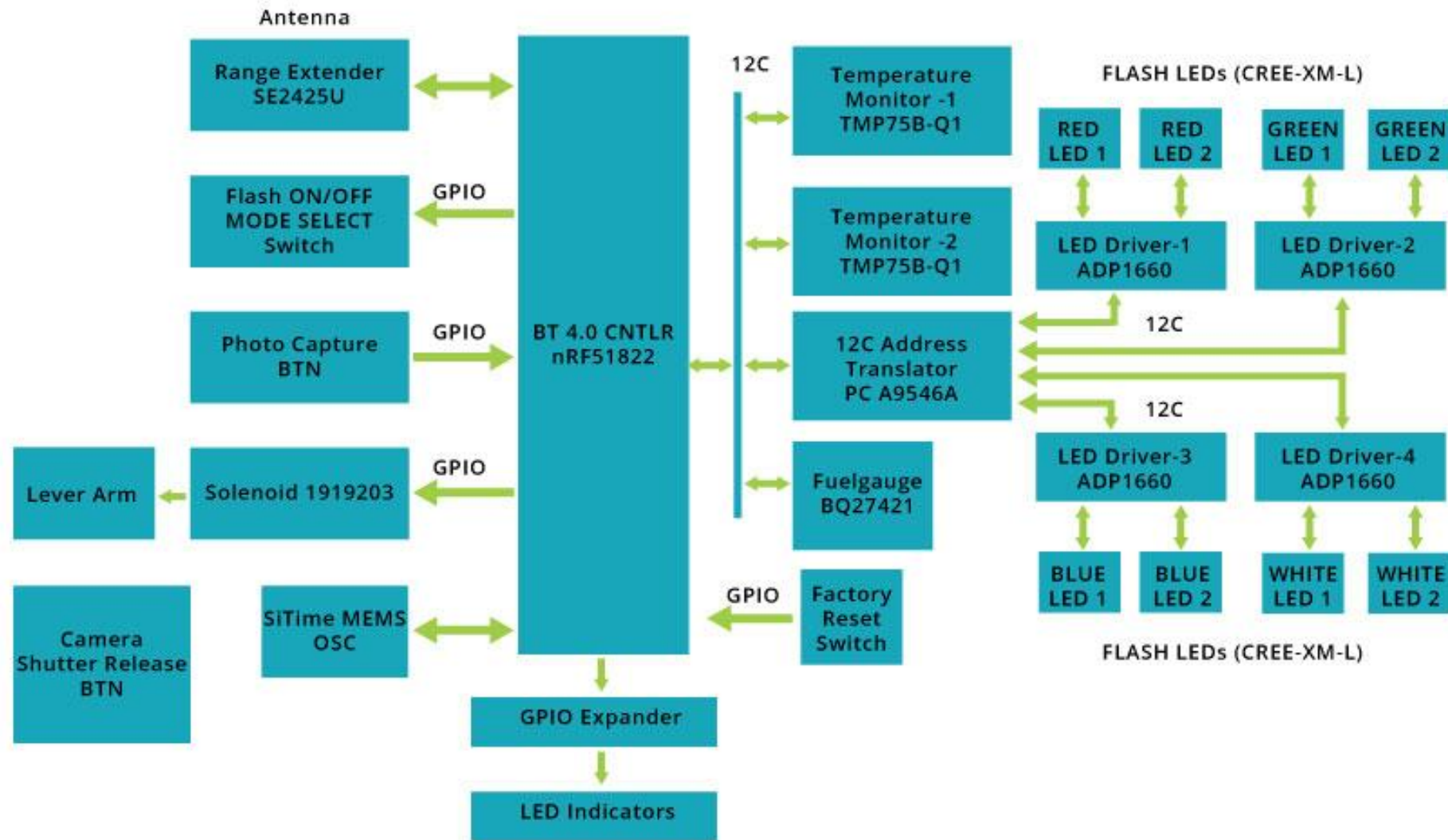
### Challenge

- Integrated solenoid and mechanical means, depresses the shutter release button on the GoPro camera
- Timing between flash and trigger to solenoid

### Outcome

- Development of complete device firmware
- Integration of Mechanical and electronics
- Native Android and iOS application to control the GoPro flash
- Device to be launched in USA

# KPAK – HW Architecture



WHAT DID GADGEON DO?	PLATFORMS/ TECHNOLOGIES USED
1) Architecture for complete system including BLE based ruggedized water proof camera flash system and IOS Mobile App to control the device.	Requirements Gathering & Analysis, Uses cases, Architecture development, identification of functional components.
2) Hardware design, prototyping, boardbring up for BLE based system.	orcad for schematics and allegro16.6 for layout
3) Embedded firmware BLE based system and its integration and testing on reference platform and on Target platform	<p>Nordic nrf51 BLE Stack and SDK , Keil IDE. The device has the following hardware peripherals</p> <ul style="list-style-type: none"> <li>a. TI's DUAL LED Flash driver - LM3643.</li> <li>b. ADEX 1919203 Solenoid</li> <li>c. Linear Technology's LTC2942 - Fuel Gauge .</li> </ul>
4) Mobile App design and development for controlling and managing the ruggedized water proof camera flash system	Followed the recommended design patterns from Apple. Custom Video moods , Photo modes and Strobe Options.



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