**I2C RGB light for UAV – project card**

**Card author: Jakub Mnich (**[**jakub.mnich@student.pwr.edu.pl**](mailto:jakub.mnich@student.pwr.edu.pl)**) Creation date: 01.11.2016**

**Sub-module to: Universal Flying Platforms (UFP)**

The aim of this project is to create a standalone RGB module which can be controlled via I2C. Its purpose would me mainly decorative. It would also allow for easier identification of UAV orientation in line of sight.

**Objectives:**

1. Single module weight < 15g (with mounting screws)
2. Adapted to universal mounting points in Enix copter.
3. Required input power no higher than 1W.
4. I2C bus at 5V for communication. Device is required to provide measured distance on demand.
5. Rigid construction due to possible hard landings.
6. Standby mode with minimal current consumption.
7. Simple PCB (one layer not two).
8. Cheap microcontroller.
9. Possible use of not more than 1 3D-printed part.
10. Colour set by a command with 3 arguments – intensities of R, G and B.
11. At least 10 ready-to-use light sequences which can be called by a special command and are infinite loops (for example: different colours, blinking sequences, smooth colour transitions etc.).

The constructor is required to provide a working prototype before the final set of parts for more than 10 such devices will be ordered.

**References:**

1. Enix physical design (in Autodesk Inventor) https://github.com/jmnich/UFP\_Enix\_Physical]