**Ultrasonic   
distance sensor – project card**

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

The aim of this project is to create a distance sensor for use in Enix copters and possibly other constructions to follow. The device should be able to communicate with higher-level systems via a standard serial bus.

**Objectives:**

1. Single module weight < 15g (without mounting screws)
2. Two M2 screws used for attaching to a copter
3. At least 400 cm effective range
4. Adapted to universal mounting points in Enix copter. It is required to allow installation of at least 2 sensors facing down, 2 – front, 1 - right and 1 - left.
5. Required input power no higher than 100mA at 5V.
6. Standard, cheap ultrasonic modules are acceptable as a part of a final solution.
7. I2C bus at 5V for communication. Device is required to provide measured distance on demand.
8. Rigid construction due to possible hard landings.
9. Standby mode with minimal current consumption.
10. High reliability – no makeshift solutions.
11. Simple PCB (one layer not two).
12. Cheap microcontroller.
13. Possible use of not more than 1 3D-printed part.

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]