Testing Commercial LIDAR Rangefinder on UxV/35 (04/30/24)

Introduction

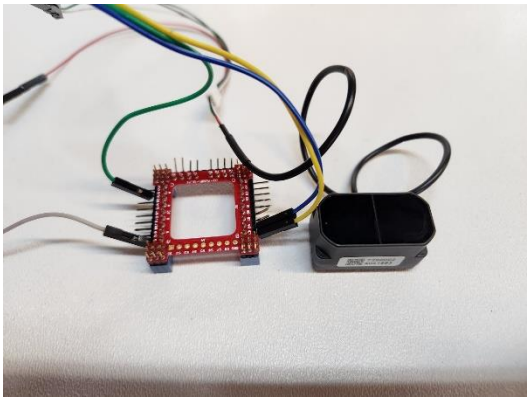
This testing was completed to evaluate LIDAR as a rangefinder source while also evaluating commercial implementation of I2C communications with the UxV/35 Mission Controller. The results of this test provided a benchmark to compare to UxV/35 rangefinders.

Sensor

Benewake TFMiniPlus I2C

Specs:

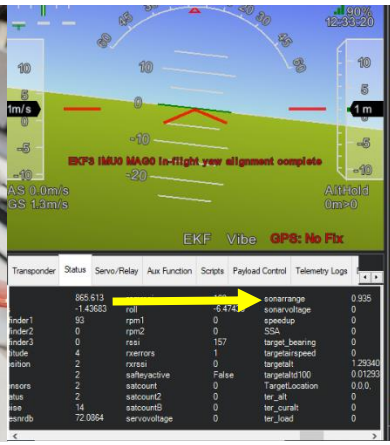
- Range – 0.1m to 12m
- Accuracy - +/- 5cm
- Frequency – 1Hz to 100Hz
- Wavelength – 850nm
- Communication protocol – I2C
  - 400kbps Max
- Power consumption – 140mA peak current



Testing

A TFMiniPlus rangefinder was integrated with a KA Microstack SUAS using the UxV/35 Small Wired Module. Power and connectivity to the primary I2C lines were provided through this interoperability board. Results found the drone to be responsive to the rangefinder when the drone was in altitude hold and using ground surface tracking functionality provided in Ardupilot Copter.

Connected UxV/35 Pins: 5V – C9, GND – C2, I2C CLK – B1, I2C Data – B2



Version History

Date and Signature	Revisions	Reasons for Revision
04/30/2024 Jack R.	Document was created. (v01.00.00)	

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