OnFlight Hub External AGL Altimeter Interface

Firmware v1.0, v2.0, and v3.0

Document Revision 1.0
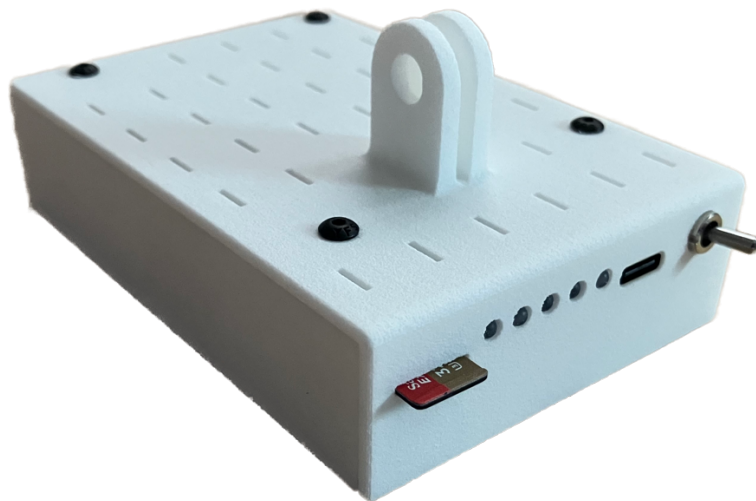
Table of Contents

1　Technical Documentation

The following documentation and support software are included with OnFlight and available from our website:

- **User Manual:** describes the OnFlight Hub, specifications, and operations.
- **CSV Data Log Description:** describes the fields available in the CSV formatted data logs.
- **Binary Data Log Description:** describes the binary data log format that OnFlight Hub uses to write data. This is useful for application developers who would like to natively read and use these data logs.
- **UDP Broadcast Description:** describes the real-time UDP broadcast packet format that is sent by OnFlight Hub.
- **External Air Data Interface:** describes the interface to send OnFlight Hub data from an external air data system.
- **External AGL Altimeter Interface (this document):** describes the interface to send OnFlight Hub data from an external Above Ground Level (AGL) altimeter.
- **Data Converter:** application for Windows or MacOS, which converts the data from OnFlight to CSV format.

2　Support

If you have technical problems or cannot find the information you need in the provided documents, please contact our technical support team by email at: support@bolderflight.com. Our team is committed to providing the support necessary to ensure that you are successful using our products.

3　Introduction

OnFlight Hub can wirelessly receive data from an external Above Ground Level (AGL) Altimeter sensor, which is time synchronized and saved in the OnFlight Hub data log and re-broadcast over the UDP interface. This is useful for incorporating the measured height above the ground and should be advantageous in measuring the performance of the rollout, flare, and landing. The message from the external air data sensor should be sent at a rate of up to 50 Hz, and no less than 1 Hz, over UDP port 2002. The message structure is described below. Data is formatted as little endian.

Byte Offset	Type	Name	Scale	Unit	Description
0	U1	version	-	-	Interface version number, currently 0.
1	U1	resv	-	-	Reserved.
2	U1	status	-	-	Status, see Section 4 for bit field description.
3	I1	die_temp_c	1	C	Module die temperature
4	I2	agl_alt_in	1	in	Height above ground level, inches

4　Status Bit Field

Status bits are used to efficiently encode data, below is the description and bit masking of these bytes. The description describes the case if a bit occupies that position.

Mask	Description
0x01	Warning that the power remaining is becoming low and should be charged.
0x02	Warning that the power remaining is critically low and the module will power down soon.
0x04	Module temperature is within limits.
0x08	New AGL altitude data is available.
0x10	The AGL altitude sensor is healthy and communicating at the expected rate.
0x20	The AGL altitude sensor is within range and the data is valid.