Data logging notes

This document outlines the structure of the binary data saved to flash memory. Binary data is preferred over ascii csv files due to write speed and storage use efficiency.

## Storage data format

The data stored in the flash memory is written in 512-byte fixed size sectors. The data in these sectors is filled up until the next write exceeds 512 bytes. At this point, the buffer filling is stopped, and the buffer is zero padded up to 512 bytes.

### Write sector format:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field | Header | Crc32 | Payload | Padding |
| Size (bytes) | 4 | 4 | Variable | variable |
| Values | 0xAA 0xAA 0xAA 0xAA | - | - | 0 |

### Payload format

Multiple payload fields are put into each packet. There are only a single header and crc for each 512 sector.

|  |  |  |
| --- | --- | --- |
| Field | Time stamp | Data |
| Size (bytes) | 4 | Variable |
| Values | - | - |