

## 1. Parsing Data

The radar altimeter outputs the data through the serial port, 115200bps, 8N1, and the data will be sent if there is. It won't be sent if there isn't . The specific protocol format is as follows:

Data Type	Number of bytes	Explanation
Byte header	1 Byte	Fixed, 0x48
Height Data	2 Bytes	The low 8 digits are in the front, the high 8 digits are behind; the unit is CM; there is a symbolic integrity. When obtaining the data, it should discard the highest bit of each byte.;

Radar altimeter 3 Bytes Protocol: 0x48, DataL, DataH; In order to adapt to open source flight control, the following method is used to calculate the actual distance:

$$\text{Actual Distance (cm)} = [(DataH \& 0x7F) * 128 + (DataL \& 0x7F)] * 2.5。$$

## 2.Open source platform

UAV-H31-1 is compatible with the open source flight control altimeter protocol and can be directly connected to general open source flight control platforms.

The following is a brief description of the integrated application settings on the APM flight control platform.。

Flight control hardware: PixhawkV3

Flight control software: ArduPilot Copter 4.3.8

Ground station software: MissionPlanner 1.3.81

## 3.Mission Planner Ground station flight control parameter settings

### 1. Open Mission Planner - CONFIG -Full Parameter List

2.Connect the **flight control UART** per the radar's request, Corresponding search Serial1/Serial2/Serial4, (Take SERIAL4 as example, Baud rate 115200bit/s) (SERIAL4\_BAUD set 115), The communication protocol is set to Rangefinder(SERIAL4\_PROTOCOL Set value 9), As shown below:





