

Data ID	Description	Unit	Offset
800	GPS LATLNG (1Hz)		
	Latitude	degrees	0
	Longitude	degrees	0
5000	Text messages		
	severity	N/A	
	text	N/A	0
5001	AP STATUS (2Hz)		
	Flight mode	N/A	0
	Simple & supersimple	N/A	5
	Land_complete flag	N/A	7
	Armed flag	N/A	8
	Battery failsafe flag	N/A	9
	EKF Failsafe	N/A	10
	failsafe	N/A	12
	Fence enabled	N/A	13
	Fence breach	N/A	14
	<b>FREE</b>		<b>15</b>
	Throttle	%	19
	IMU Temp	deg C	26
5002	GPS STATUS (1Hz)		
	Num sats	# of sats	0
	GPS fix	N/A	4
		10^x	6
	Horizontal dilution of precision	decimeters	7
	GPS extended status fix	N/A	14
	<b>FREE</b>		<b>16</b>
		10^x	22
		decimeters	24
	Altitude MSL	sign	31
5003	BATT 1 (1Hz)		
	Batt voltage	deci Volts (Vx10)	0
		10^x	9
	Current draw	deci Amps (Ax10)	10
	Total current draw since start-up	mAh	17
5004	HOME (2Hz)		
		10^x	0
	Distance between home loc and copter	meters	2
		10^x	12
		decimeters	14
	Altitude between home loc and copter	sign	24
	Angle from front of vehicle to the direction of home	3 degrees	25
5005	VELANDYAW (2Hz)		
		10^x	0
		decimeters/s	1
	Vertical velocity	sign	8
		10^x	~

Yaw	.2 degrees	17
frame contains airspeed	flag	28
<b>FREE</b>		<b>29</b>
<b>5006 ATTIANDRNG (Max Hz)</b>		
Roll	.2 degrees	0
Pitch	.2 degrees	11
	10^x	21
Rangefinder distance	centimeters	22
<b>5007 PARAMS (sent 3x each at init)</b>		
1. MAV_TYPE	N/A	0
2. battery 1 pack capacity	mAh	8
4. battery 2 pack capacity	mAh	8
5. capabilities	bitmask	8
<b>5008 BATT 2 (1Hz)</b>		
Batt voltage	deci Volts (Vx10)	0
	10^x	9
Current draw	deci Amps (Ax10)	10
Total current draw since start-up	mAh	17
<b>5009 CURRENT WAYPOINT INFO 1Hz</b>		
Current waypoint number		0
	10^x	10
Waypoint distance	meters	12
	10^x	22
	meters	23
Crosstrack error	sign	27
<b>FREE</b>		<b>28</b>
Waypoint bearing	45° sectors from COG	29
<b>500A RPM 2Hz</b>		
rpm1	int16_t	0
rpm2	int16_t	16
<b>500B TERRAIN DATA 2Hz</b>		
	10^x	0
	decimeters	2
Vehicle height above terrain	sign	12
terrain unhealthy (no data available)		13
<b>FREE</b>		<b>14</b>
<b>500C Wind estimate 2Hz</b>		
true wind direction	3 degrees	0
	10^x	7
true wind speed	decimeters/s	8
apparent wind direction	3 degrees	15
	10^x	22
apparent wind speed	decimeters/s	23
<b>FREE</b>		<b>30</b>
<b>500D CURRENT WAYPOINT INFO 1Hz</b>		
number		0
		11

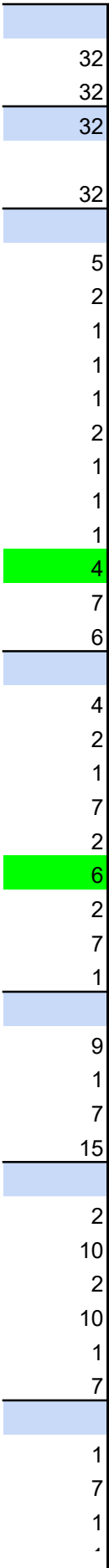
bearing

3 degrees

23

30

**Bits**



11
1
4
11
10
1
10
8
8
24
24
24
9
1
7
15
10
2
10
1
4
1
1
3
16
16
2
10
1
1
18
7
1
7
7
1
7
2
11
~

7  
2

## Comments

Alternating transmission of latitude and longitude

Sending 4 characters at a time

Severity on MSB of the last three bytes of the last chunk  $((\text{bit32.extract}(\text{VALUE}, 7, 1) * 1) + (\text{bit32.extract}(\text{VALUE}, \text{MSB of each character is ignored, we use 7 bit ASCII}$

signed throttle [-100,100] encoded as [-63,63], 7 bits, MSB is sign + 6 bits 0-63 (scale is 0.63)

0 means temp =< 19°, 63 means temp => 82°

Limit to 15 max

NO\_GPS = 0, NO\_FIX = 1, GPS\_OK\_FIX\_2D = 2, GPS\_OK\_FIX\_3D or GPS\_OK\_FIX\_3D\_DGPS or GPS\_OK\_

0: no advanced fix, 1: GPS\_OK\_FIX\_3D\_DGPS, 2: GPS\_OK\_FIX\_3D\_RTK\_FLOAT, 3: GPS\_OK\_FIX\_3D\_RTK

limit to 32767 (0x7FFF) since value is stored on 15 bits

Reserve first 8 bits for param ID

limit to 32767 (0x7FFF) since value is stored on 15 bits

Note:only implemented via scripting or MavToPT

only sent if RPM sensor is present

only sent if terrain is enabled

signed [-63,63], 7 bits, MSB is sign + 6 bits 0-63, 3 deg increments is -180,180

max 2048 waypoints

100% ...





15,1) \* 2) + (bit32.extract(VALUE,23,1) \* 4))

\_FIX\_3D\_RTK\_FLOAT or GPS\_OK\_FIX\_3D\_RTK\_FIXED = 3

\_FIXED