

P3AVR – COMMUNICATION PROTOCOL

Every message packet is ASCII formatted and the string packet starts with the character “#” (ASCII char. 35) and stops with Carriage Return (ASCII Char. 13).

All the values (Roll, Pitch, Yaw, Speed, etc.) have the Hexadecimal format, ie. a Roll of 20 degree is written 14.

The Simulator works with network packets with the following default values:

- SIMULATOR ADDRESS:PORT = 192.168.0.112:55555
- ClientPC ADDRESS:PORT = 192.168.0.100:55555

Message packet structure to be send to the Simulator:

PROGR.	DATA	DESCRIPTION
0	"#"	Start of string, Character “#”, ASCII char. 35
1	"0"	Number ZERO
2	"2"	Number TWO
3	ROLL(0)	Roll position with direction, 16bit number, Hexadecimal espression. Range from: -200 to +200 degrees.
4	ROLL(1)	
5	ROLL(2)	
6	ROLL(3)	
7	ROLL_SPEED(0)	Roll speed without sign, 16bit number, Hexadecimal espression. Range from: 0 to +99 value.
8	ROLL_SPEED(1)	
9	PITCH(0)	Pitch position with direction, 16bit number, Hexadecimal espression. Range from: -200 to +200 degrees.
10	PITCH(1)	
11	PITCH(2)	
12	PITCH(3)	
13	PITCH_SPEED(0)	Pitch speed without sign, 16bit number, Hexadecimal espression. Range from: 0 to +99 value.
14	PITCH_SPEED(1)	
15	YAW(0)	Yaw position with direction, 16bit number, Hexadecimal espression. Range from: -3600 to +3600 degrees. <i>MINUS VALUES are for CounterClockWise rotation direction and PLUS VALUES are for ClockWise rotation direction</i>
16	YAW(1)	
17	YAW(2)	
18	YAW(3)	
19	YAW_SPEED(0)	Yaw speed without sign, 16bit number, Hexadecimal espression. Range from: 0 to +99 value.
20	YAW_SPEED(1)	
21	NA	NOT USED
22	ACTIVE[0;1]	SET to “0” (number ZERO) for PASSIVE MODE (controlled by PC)
23	NA	NOT USED
24	NA	NOT USED
25	CHECKSUM(0)	SET TO “ABCD”, NOT USED AT THE MOMENT
26	CHECKSUM(1)	
27	CHECKSUM(2)	
28	CHECKSUM(3)	
29	<CR>	End of string. Carriage Return, ASCII Char. N. 13

Example Message

PASSIVE MODE selected;

Pitch = 20degrees with speed of 20; Roll = 20deg. with speed of 20; Yaw = 20deg. with speed of 20.

UDP Message = #02 0014 14 0014 14 0014 14 0 0 00 ABCD<CR>

NB. No spaces between each field, the ones in the above message example are for a better reading.