

Firmware output sample format

Output data order:

The serial data to be sent from the firmware to software must be in the below order in order for the software to receive and process the data properly. Ensure that the baud rate for the serial communication is 115200.

Parameter	Values to be sent	Datatype	Size	Sample data
Device ID	User-defined identifier provided during powertrain creation	String	1	REU-MTB-001
Current PWM value	Latest PWM value sent to ESC	float	1	1100
RPM	Latest RPM value of the motor	float	1	1500
Current	Current drawn by motor, in Amps	float	1	40
Voltage	Latest voltage of the battery, in Volts	float	1	50
Thrust	Latest thrust value measured	float	1	15
Torque	Latest torque value measured	float	1	5
Thermocouple 1	Temperature measured at the Setup	float	1	28.5
Thermocouple 2*	Temperature measured at the Setup	float	1	40.2
Thermocouple 3*	Temperature measured at the Setup	float	1	32.5
Thermocouple 4*	Temperature measured at the Setup	float	1	29.3
Thermocouple 5*	Temperature measured at the Setup	float	1	46.3
Thermocouple 6*	Temperature measured at the Setup	float	1	39.8
Ambient temperature	Ambient temperature at the setup area	float	1	30
Thermal data	An array of temperature values (image[height][width]) from a thermal camera	float	32 x 24 (or) 320 x 240 (or) 640 x 480	img[32][24]

An example of the data output:

[Note: Thermal data array is of size 32x24]

REU-MTB-

001,1100,1500,40.00,50.00,15.00,5.00,28.50,40.20,32.50,29.30,46.30,39.80,30.00,29.52,29.76,29.17,29.11,
28.98,28.90,29.32,29.10,29.03,28.71,28.27,28.58,28.42,28.40,28.26,28.30,28.25,28.40,28.39,28.23,28.38,
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29.49,29.29,29.01,28.83,28.43,28.57,28.33,28.40,28.41,28.30,28.27,28.28,28.50,28.47,28.30,28.31,28.42,
28.74,31.00,30.89,31.17,31.36,31.32,31.67,32.98,33.03,28.81,29.11,28.99,28.94,28.69,28.86,29.40,29.81,2
9.30,29.04,28.58,28.32,28.22,28.36,28.30,28.33,28.31,28.36,28.22,28.34,28.38,28.45,28.57,29.07,31.04,3
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