

Opcode	Data	Data Len (bytes)	Output	Output len (bytes)	Description
0x01	Byte with Mode Flags ¹	1	Result ²	1	Start of communications
0x02	-	0	0x00	1	Keep Alive. Connection will terminate if not sent every 5 seconds.
0x03	-	0	Result	1	End communications
0x04	-	0	32-bit float of wheel speed in m/s	4	Get Wheel Speed
0x05	32-bit Float with desired voltage to send to motor	4	Result	1	Set Motor Voltage.
0x06	8-bit unsigned int between 0 and 180 with servo degrees.	1	Result	1	Set brake servo degrees.
0x07	32-bit unsigned int containing the number	5	Null Terminated String with, \n newline,	Null Terminated String of Variable	Get Motor Voltage to Speed Lookup Table

¹ Mode Flags:

- 0x01: Creates a HID controller representing the exercise bike's state if true. This controller will need input to let it know how much to apply brakes/throttle; however, it will handle steering automatically.

² Possible Results:

- 0x00: Success
- 0x01: Unspecified Error
- 0x02: Connection Already Started
- 0x03: Bad Mode Flags
- 0x04: Input Out of Range
- 0x05: Motor Voltage LUT not found in Persistent Memory.
- 0x06: Brake Servo Degrees LUT not found in Persistent Memory.

	of voltage steps that should be measured. In addition, a Byte which is 0x01 if the result should be saved to persistent memory, else 0x00.		comma separated, headerless, CSV with wheel speed in m/s as the first column and voltage as the second column with input number of rows.	Length.	in CSV format. No Keepalives required while this is running.
0x08	8-bit unsigned int containing the number of servo steps that should be measured. Between 0 and 180. In addition, a Byte which is 0x01 if the result should be saved to persistent memory, else 0x00.	2	Null Terminated String with, \n newline, comma separated, headerless, CSV with acceleration in m/s^2 as the first column and servo degrees as the second column with input number of rows.	Null Terminated String of Variable Length.	Get brake servo degrees to acceleration Lookup Table in CSV format. No keepalives required while this is running.
0x09	32-bit float with desired acceleration	4	Result	1	Set acceleration (can be negative). Note that both the brake servo degrees and motor voltage lookup tables must have been generated and saved to persistent memory.

0x0A	Signed 16-bit int where the positive values are throttle and negative values are brake. Another Signed 16-bit int steering value.	4	Result	1	Set bike HID controller throttle/brake and steering. Mode Flag & 0x01 should be true.
0x0B	-	0	-	0	Emergency Brake (apply max braking) and End Connection.