**Manual**

**Commands bluetooth**“debug” lists the following parameters on the device:

1. Cycletime in microseconds. (how fast the loop will be run, example: 100000 will set the loop to run 10/s.)
2. P-Value: the P-Value of the PID parameters.
3. I-Value: the I-Value of the PID parameters.
4. D-Value: the D-Value of the PID parameters.
5. maxSpeed: the maximum speed that the program will allow the motors to turn (physical limit: 255).
6. baseSpeed: the base speed that the program will let the motors turn in a straight line (from testing the minimum speed that lets the motors turn is 35).
7. threshold: the value at which the program will determine if a line is present or not (used for different types of tracks with different illumination).
8. calculation time : the time the program takes to run a single loop in microseconds.

“set(space)(parameters)(space)(value)” sets the previous parameters to the desired value.

Example: set cycle 100000 will set the cycletime to 100000 microseconds  
commands: cycle, kp, ki, kd, max, base, threshold.

Calculation time is an indicator for errors and therefore cannot be altered.

“calibrate white/black”: this will calibrate the sensors for white and black surfaces in case the program can’t immediately detect the line.

“debug calibration”: this will list the calibrated values for black and white.