

[WLRP-264] Phase 1 Frame Dimension and Specification Created: 30/Mar/23 Updated: 31/Mar/23 Resolved: 31/Mar/23	
Status:	Done
Project:	Wireless Lawn Robot Pi
Components:	Firmware, Mechanical
Affects versions:	None
Fix versions:	Phase 1


Type:	Task	Priority:	High
Reporter:	Samson Chau	Assignee:	star
Resolution:	Done	Votes:	0
Labels:	None		
Remaining Estimate:	Not Specified		
Time Spent:	Not Specified		
Original estimate:	Not Specified		

Environment:

The diagram illustrates the mechanical layout of the robot chassis. It features a central rectangular frame with four wheels at the corners. A green dashed vertical line represents the center of gravity (CG), marked with a red dot. A red horizontal line passes through the CG. A coordinate system is shown with a green vertical Y-axis and a red horizontal X-axis. Dimensions are indicated with arrows: 'Track Width' for the distance between the left and right wheels, 'Wheel base' for the distance between the front and rear axles, and 'X' for the vertical distance from the rear axle to the CG. Labels include 'Front Axle', 'Rear Axle', 'CG', 'Y', and 'X'. A red text label at the bottom right reads 'Total Center of Gravity X-Y Axis Location'.

Parameter	Value	Unit
Chassis Size (Top Platform)	L540 X W320	mm
Wheel Position of the Joint relative to top left corner (0,0) present at XY coordination system when fully compress on a flat ground	Joint FL: (-59.6, -60) Joint FR: (379.6, -60) Joint RL: (-59.6, -480) Joint RR: (379.6, -480)	mm
Ground Clearance when Suspension fully compress on a flat surface (Platform to ground)	197.5	mm
Ground Clearance when Suspension fully expend on a flat surface	297.5	mm
Wheel radius with Tire	98.5	mm
Steering ARM Rotation Radius	111	mm

Steering Angle Range(MAX)	0<Ss<135	deg
Suspension Travel Range(MAX)	0<Td<100	mm
	0<Ts<91.17	deg
Suspension ARM Rotation Radius	70	mm
Track Width (Static)	438.8	mm
Track Width (Range)	438.8	mm
Wheel Base (Static)	420	mm
Wheel Base (Range)	377.8<420	mm
Operation Temperature (Max)	50	C

Attachments:	 image-20230330-022803.png
Issue links:	Relates relates to WLRP-261 Active suspension controller Firmware... In Review
Epic Link:	Firmware Phase 1
Sprint:	WLRP Sprint 23
Acceptance Criteria:	Fill the parameter in the Table

Description

Provide the basic information of the phase 1 chassis, for control kinematics and active suspension control.

Comments

Comment by star [31/Mar/23]
uploaded Samson Chau plz review

Generated at Tue Apr 11 06:07:56 UTC 2023 by Samson Chau using Jira 1001.0.0-SNAPSHOT#100221-sha1:9ff53d8a3710659ba778efaba006fdf1257f2e77.