

Automatic Pet Feeder

CPSC-6820 Deliverable #2—System Overview Document

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1 Executive Summary

It is not a good feeling to realize you did not feed your pet—whether it is because you were running late and were in a hurry or had too much on your mind and forgot about it. Times like these are when the Automatic Pet Feeder comes in handy. It comes with a nifty set of features to take care of your pet feeding needs including—the ability to set multiple food dispense times a day, on-device dispense schedule settings, Wi-Fi and Bluetooth connectivity to pair your mobile devices, a mobile app to receive notifications and view logs as well as to set the dispense schedule and the ability to set dispense quantities per each dispense time. Mobile device connectivity is fully optional and is intended for the user to check logs and remotely edit the dispense schedule.

2 System Description

2.1 Software

2.2 State Machine

2.3 Hardware

2.4 Parts

Title	Part #	Supplier	Price	Description
Rocker Switch	COM-11138	Sparkfun	0.55	On-off switch
Joystick with Select Button	512	Adafruit	5.95	Navigation and confirmation button combo
Buzzer	PS1240P02BT	TDK Corporation	0.55	
Graphic LCD Display	NHD-C12832A1Z-NSW-BBW-3V3	Newhaven Display Intl	12.82	
WiFi Module	ESP32-S2FH4	Espressif Systems	1.48	
Linear actuator	FIT0803	DFRobot	24.00	To open/close the dispenser
MSP430FR5994 Micro-controller	MSP-EXP430FR5994	Texas Instruments	20.39	
Force sensor	GHF-10	UNEO Inc.	5.86	
Optical sensor	VL6180V1NR/1	STMicroelectronics	3.37	
			74.97	

3 Resources, References and Appendix