

Executive Summary



Budget:

No Proposed Budget

Customer requirements and Engineering solutions:

- Actuators must be autonomous and able to perform different tasks
- Each actuator must be able to detect motion and read temperature
- Software Interface must be user friendly
- Actuators must have sensors for motion and line speed

- Major Constraints

- Learning curve on schematics and PCB design
- Pins within chip cannot be reprogrammed

- Benefits

- Environmental: New packaging line utilizes lightweight 15 grams/900ml Polyethylene terephthalate (PET) bottles, operating at 36,000 bottles per hour which in turn reduces carbon footprint by using less plastic
- Economical: The new design moves the HMI and PLC to single module which will reduce the overall control system cost by \$3,325.

Name	Serial No.	Quantity
OpenHMI nS02 Kit	AA000134P000363224AA	1
AC/DC Converter	RB91004269	1
AC/DC Converter	RB7A032777	1
AC/DC Converter	RB91004270	1
Breadboard	BB-32623	3

Parts List

Parts List Cont.

Molex	CONN MICRO SIM CARD PUSH-PULL	786463001	d,PushPull).pdf (digikey.com)
STMicroelectronics	EEPROM	M24C02-WMN6TP	1-Kbit and 2-Kbit serial I²C bus EEPROMs (st.com)
STMicroelectronics	EEPROM	M93C86-RMN3TP/K	Automotive 16-Kbit, 8-Kbit, 4-Kbit, 2-Kbit and 1-Kbit (8-bit or 16-bit wide) MICROWIRE™ serial EEPROM (st.com)
Analog Devices Inc.	Signal and Power Isolated CAN Transceiver with Integrated Isolated DC-to-DC Converter	ADM3053BRWZ-REEL7	ADM3053 (Rev. E) (analog.com)
Microchip	USB/COM1 bridge	MCP2200T-I/SS	20002228E.pdf (microchip.com)
New Parts Found			
Apacer	MicroSD	908-AP-MSD256ISI-1T	https://www.mouser.com/ProductDetail/Apacer/AP-MSD256ISI-1T?qs=ty6qhgyUUEsB90J9X9fSoA%3D%3D

Parts List Cont.

TDK	Ethenet Transformer	ALT4532H121T10G	XVTZiyrodA%3D%3D https://www.mouser.com/ProductDetail/Texas-Instruments/TPS22950YBHR?qs=eP2BKZSCXI6fK0QnQbX1cQ%3D%3D
Texas Instruments	Pwr distirbution switch	595-TPS22950YBHR	https://www.mouser.com/ProductDetail/Microchip-Technology-Micrel/MIC2003-05YMLTR?qs=Y3Q3JoKAO1TN00%2FcVKoW1A%3D%3D
Micrel	Pwr Distribution switch	998-MIC2003-0.5YMLTR	https://www.mouser.com/ProductDetail/Microchip-Technology/AC320004-5?qs=MLitCLRbWsxIVswJmXKc5w%3D%3D
Microchip technology	Ethernet Transceiver	579-AC3200045	https://www.mouser.com/ProductDetail/Texas-Instruments/ISO1042DWEVM?qs=W0yvOO0ixfEemfdpO4QRNA%3D%3D
Texas Instruments	CAN transceiver	595-ISO1042DWEVM	https://www.mouser.com/ProductDetail/Texas-Instruments/ISO1042DWEVM?qs=W0yvOO0ixfEemfdpO4QRNA%3D%3D

Phase 3

Video Demonstration

