Team Power Budget

Team Number:	103
Project Name:	Automatic Door Opener
Team Member Names:	Isaac Smith, Seth Merwin, Lakshanand Sugumar, Christo Jomon Joseph
Version:	1

All Major Components	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)
IR Emitters	940nm IR Emitting Diode	TSAL6200	N/A	2	200	400
Microcontrollers	Microchip microcontroller	PIC18F57Q43-CNANO	+1.8 - 5.5V	4	350	1400
Op Amps	Operational Amplifier	MCP6022-I/P	+2.5 - 5.5V	3	30	90
Potentiometer	PTA3043-2010CIB104	PTA3043-2010CIB104	+0 - 350V	1	0	0
H-bridge	L9110H H-Bridge Motor Driver for DC Motors - 8 DIP	4489	+2.5 - 12V	1	800	800
Motor	High Torque 12V DC Worm Gear Motor, 15 RPM	5840WG-555PM-590 12V	+0 - 12V	1	650	650
Rotary Encoder	PEC11R-4215F-S0024	PEC11R-4215F-S0024	+0 - 5V	1	10	10
Flex Sensor	Adafruit Long	Adafruit Long	0 - 5V	1	7	7
					Subtotal	3357
					Safety Margin	25%
					Total Current	4196.25
SOURCE	12V 5A switching power supply	352	110 - 220V	1	5000	5000
					Total Remaining	803.75
(+)12V Rail	**Component Name**	**Part Number**	**Supply Voltage Range**	**#**	**Absolute Maximum Current (mA)**	**Total Current (mA)**
Potentiometer	PTA3043-2010CIB104	PTA3043-2010CIB104	0-350	1	0	0
H-bridge	L9110H H-Bridge Motor Driver for DC Motors - 8 DIP	4489	2.5V-12V	1	800	800
Motor	High Torque 12V DC Worm Gear Motor, 15 RPM	5840WG-555PM-590 12V	0-12V	1	650	650
					Subtotal	1450
					Safety Margin	25%
					Total Current	1812.5
SOURCE	12V 5A switching power supply	352	110V-220V	1	5000	5000
					Total Remaining	3187.5
(+)5V Rail #1	**Component Name**	**Part Number**	**Supply Voltage Range**	**#**	**Absolute Maximum Current (mA)**	**Total Current (mA)**
IR Emitters	940nm IR Emitting Diode	TSAL6200	N/A	2	200	400
Microcontroller 1	Microcontroller	PIC18F57Q43-CNANO	+1.8 - 5.5V	1	350	350
Op Amps	Operational Amplifier	MCP6022-I/P	+2.5 - 5.5V	2	30	60
					Subtotal	810
					Safety Margin	25%
					Total Current	1012.5
SOURCE	+5V Regulator	LM7805	+5 - 35V	1	1500	1500
					Total Remaining	487.5
(+)5V rail #2	**Component Name**	**Part Number**	**Supply Voltage Range**	**#**	**Absolute Maximum Current (mA)**	**Total Current (mA)**
Microcontroller 2	Microcontroller	PIC18F57Q43-CNANO	+1.8 - 5.5V	1	350	350
Op Amp	Op Amp	MCP6022-I/P	+2.5 - 5.5V	1	30	30
Flex Sensor	Adafruit Long	Adafruit Long	0 - 5V	1	7	7
					Subtotal	387
					Safety Margin	25%
					Total Current	483.75
SOURCE	+5V Regulator	LM7805	+5 - 35V	1	1500	1500
					Total Remaining	1016.25
(+)5V rail #3	**Component Name**	**Part Number**	**Supply Voltage Range**	**#**	**Absolute Maximum Current (mA)**	**Total Current (mA)**
Microcontroller 3	Microcontroller	PIC18F57Q43-CNANO	+1.8 - 5.5V	1	350	350
Rotary Encoder	PEC11R-4215F-S0024	PEC11R-4215F-S0024	+0 - 5V	1	10	10

					Subtotal	360
					Safety Margin	25%
					Total Current	450
SOURCE	+5V Regulator	LM7805	+5 - 35V	1	1500	1500
					Total Remaining	1050

(+)5V rail #4	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)
Microcontroller 4	Microcontroller	PIC18F57Q43-CNANO	+1.8 - 5.5V	1	350	350
					Subtotal	350
					Safety Margin	25%
					Total Current	437.5
SOURCE	+5V Regulator	LM7805	+5 - 35V	1	1500	1500
					Total Remaining	1062.5

External Power Source 1	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)
Wall Power Supply	12V 5A switching power supply	352	110V-220V	1	5000	5000