

**PROTOTYPE
BILL OF MATERIALS**

P/N	PART NAME	DESCRIPTION	QTY	MANUFACTURER	MANUFACTURER P/N
A	FILTER LABORATORY	Entire product			
A1	LABORATORY_ACTIVITY_MANUAL	Laboratory activities manual	1	Design Team	N/A
A2	SUPPORT_MANUAL	Support manual for hardware and software	1	Design Team	N/A
A3	FILTER_MODULE	Hardware activity kit			
A3A	INTERFACE_MODULE	All materials used to interface between laboratory equipment and other pieces of the hardware kit			
A3A01	JACK_BANANA_F_WHT	Female banana jack, surface mount, white (for reference PS connection)	1	Emerson Network Power Connectivity Johnson	108-0901-001
A3A02	JACK_BANANA_F_YLW	Female banana jack, surface mount, yellow (for +9V PS connection)	1	Emerson Network Power Connectivity Johnson	108-0907-001
A3A03	JACK_BANANA_F_BLK	Female banana jack, surface mount, black (for Ground)	2	Emerson Network Power Connectivity Johnson	108-0903-001
A3A04	JACK_BANANA_F_RED	Female banana jack, surface mount, red (for FCN/DAQ connection)	2	Emerson Network Power Connectivity Johnson	108-0902-001
A3A05	JACK_3.5mm_FEMALE	Female mono headphone jack, 3.5mm,	2	Switchcraft Inc.	35PM2A
A3A06	HEADPHONES	Headphones to be included with hardware, connect to line out jack, mono/stereo capable	1	Califone	3068 Series
A3A07	ADAPTER_BANANA_M_BNC_F	Adapter male pos/gnd banana to male BNC (oscilloscope)	2	Pomora Electronics	3073
A3A08	CNCTR_BANANA_MM_WHT	Male banana to male banana patch cord, 24", white (for ground PS connection)	1	Pomora Electronics	B-18-9
A3A09	CNCTR_BANANA_MM_YLW	Male banana to male banana patch cord, 24", yellow (for +9V PS connection)	1	Pomora Electronics	B-18-4
A3A10	CNCTR_LINE_IN_3.5mm	Mono 2' 3.5mm phone plugs (male-male), for connection between audio player and line in/mic jack	1	Assmann WSW Components	AK203/MM-R
A3A11	CNCTR_SOCKET_WIRE_5_IN	Female-female socket wire connector used between boards and jacks, 5" long, sold in packs of 100	2	SchmartBoard	920-0009-01
A3A12	CNCTR_SOCKET_WIRE_7_IN	7" Female Jumpers and 40 Headers 28AWG, UL1007, 80 deg C, 300V.	4	SchmartBoard	920-0010-01
A3A14	INTERFACE_PANEL	Plexi-glass plate used for input/output jack support, 4"X1.7"X0.25" used, comes in 6"X12"	1	McMaster-Carr	8560K354
A3A15	CNCTR_24AWG_WIRE_RED	24AWG wire used between signal in/out (+) and audio jacks (red); also used for breadboard connections, sold in 100ft spools	1	OK Industries	R24R-0100
A3A16	CNCTR_24AWG_WIRE_BLK	24AWG wire used between signal in/out (-) and audio jacks (black); also used for breadboard connections, sold in 100ft spools	1	OK Industries	R24BLK-0100
*	CNCTR_SOCKET_WIRE_5_IN_MF	7" Female to male Jumpers and 40 Headers 28AWG, UL1007, 80 deg C, 300V., used for breadboard connection	4	SchmartBoard	920-0023-01
*	PAPER_LABELS	Labels for jacks on interface panel	4	Avery	5424
A3B	FILTER PCB ASSY	Assembly of the custom PCB and attached components			
A3B01	PCB_BLANK	Printed circuit board (no attached components), 4" x 3.3"X0.062", 13.2 sq. inches	1	Same	Custom, see PCB layout document
A3B02	U1	Integrated Circuit, LM7805, through hole, 3 pin, voltage regulator	1	Texas Instruments	LM7805CT
A3B03	R1	Resistor, through hole, 5% tol., 1W, (100 Ohm)	1	Yageo	FMP100JR-52-100R
A3B04	R2	Resistor, through hole, 5% tol., 1/4W, (330 Ohm)	1	Yageo	CFR-25JB-52-330R
A3B05	R3,R4	Resistor, through hole, 5% tol., 1/4W, (1.6K -Ohm)	2	Yageo	CFR-25JB-52-1K6
A3B06	R5	Resistor, through hole, 1% tol., 1/4W, (1 kilo-Ohm)	1	Stackpole Electronics Inc.	RNF14FTD1K00
A3B07	R6	Resistor, through hole, 5% tol., 1/4W, (100 Ohm)	1	Yageo	CFR-25JB-52-100R
A3B08	D1,D2,D3,D4	1N4001 diode, general purpose	4	Diodes Inc	1N4001-T
A3B09	D5	Red LED panel indicator light, through hole, 635nm, 1.8V	1	Dialight	550-1104F
A3B10	C1,C2,C3,C4	Capacitor, through hole, aluminum, radial, 50V rating, 20% tol., (1 micro-F)	4	Panasonic Electronic Components	ECA-1HM010
A3B11	C5,C6	Capacitor, through hole, tantilum, radial, 6.3V rating, 10% tol., (100 micro-Farrad)	2	Kemet	T356H107K006AT
A3B12	C7	Capacitor, through hole, tantilum, radial, 50V rating, 10% tol., (0.1 micro-Farrad)	1	Kemet	T350A104K050AT
A3B13	SW1	Slider switch, SPDT 2 position, 0.4VA@20V AC/DC, 0.098" pin spacing	1	TE Connectivity	SSA12
A3B14	JP1,JP2,J1,J2,J3,J4,J5	Connector to PCB, JP1 JP2 filter select/out select, J1, J2, J3, J4, J5 connectors to interface panel and voice recorder board, sold in pack of 80	32	Sullins Connector Solutions	PRPC040DAAN-RC
A3B16	T1	Test point, yellow	2	Keystone Electronics	5014
A3B17	T2_Signal_OUT, T2_Signal_IN	Test point, blue	2	Keystone Electronics	5127
A3B18	T2_+5V, T3_+	Test point, red	2	Keystone Electronics	5010
A3B19	T2_GND, T3_-	Test point, black	2	Keystone Electronics	5011
A3B20	VOLTAGE_REG_SCREW	Hex screw used to fasten U1 to board, 4-40x1/2" screw	1	Unknown	Unknown
A3B21	VOLTAGE_REG_WASHER	Washer to fasten U1 on board, for 4-40 screw	1	Unknown	Unknown
A3B22	VOLTAGE_REG_NUT	Nut to fasten U1 on board, for 4-40 screw	1	Unknown	Unknown
A301	BREADBOARD	Breadboard, 1 terminal strip, 2 bus strips, 270 contacts, 3.3" x 1.8", screw fastened	1	Electronix Express	03MB101
A302	RUBBER_SUPPORT	Rubber sheet used to support Voice Recording Board, adhesive back, comes in 1/2" X 1/8" X 36" bars	1	McMaster-Carr	93755K51
A303	VOICE_REC_BOARD	Separated PCB that contains the voice recorder circuit and various attachments ISD-COB	1	Nuvoton Technology	ISD-COB1760
A304	STAND_OFF	PCB stand off, 1.5" long, 4-40 threaded, aluminum	15	Keystone Electronics	3483
A305	MOUNTING_PLATE	Plexi-glass plate used to mount hardware in enclosure	1	McMaster-Carr	8560K354

**PROTOTYPE
BILL OF MATERIALS**

P/N	PART NAME	DESCRIPTION	QTY	MANUFACTURER	MANUFACTURER P/N
A307	STAND_OFF_SCREW	Slotted screw used to components to mounting plate, 4-40x1/2" screw, stainless steel, sold in pack of 100	30	McMaster-Carr	91792A110
A308	MOUNTING_PLATE_SCREW	Torx screw for mounting mounting plate to enclosure, thread forming, M4x10mm, stainless steel, sold in pack of 25	4	McMaster-Carr	96817A510
A309	IC_LM741_AUDIO_AMPLIFIER	Integrated Circuit LM741 through hole, 8 pin, audio amplifier, for use in breadboard	2	Texas Instruments	LM741CN/NOPB
A309	SPACER_PCB	Rubber grommet used between PCB and standoffs in order to raise the PCB to the same height as the interface panel, 1/8" ID x 7/32 high, sold in pack of 100	4	McMaster-Carr	9600K11
A310	JUMPER	2 position female-female jumper, 3A, .100 5GOLD, used for signal routing on PCB and voice recorder board	3	TE Connectivity	2-382811-0
*	RUBBER BUMPER	Rubber feet used to support mounting plate (sans enclosure)	4	Unknown	Unknown
A4	IMGPRO_TOOL	Assembly of product software scripts			
A401	MSD_HIGH_PASS	Returns 2 images. Orginial Image, HighPassed Image.	1	Design Team	N/A
A402	MSD_LOW_PASS	Returns 2 images. Orginial Image, LowPassed Image	1	Design Team	N/A
A403	MSD_EDGE_DETECTION	Returns 2 images. Orginial Image, Edge Detection Image.	1	Design Team	N/A
A404	MSD_GAUSSIAN_BLUR	Returns 2 images. Orginial Image, Guassian Blur image.	1	Design Team	N/A
A405	MSD_PHASE	Returns Two images, one with Magnitude response, one with phase response.	1	Design Team	N/A
A5	DAQ_VI	Data acqusition LABVIEW virtual instrument, same VI that customer uses in other System Dynamics lab activities	1	Customer	N/A
A6	ASSEMBLY_MANUAL	Instruction and operations manual	1	Design Team	N/A

* Only used in prototype