

Teensy 4.x Audio Shield BOM												
Ref	Description	Package/Mounting	Value	Quantity	Manufacturer	Manufacturer PN	Supplier	Supplier PN	Cost/Unit	Cost/Units	Stock	Notes
POTENTIOMETERS & ENCODERS												
R2, R4, R5, R6, R7, R8, R34, R35, R36, R37, R38, R39, R41, R42, R43, R44, R45, R46, R48, R49, R50, R51, R52, R53	Pot. vertical, Linear, 1B taper, 20%, D Flatted, 25 mm (L), 6mm (ø), 1 gang, 1 turn, no detent, -10°C +70°C, PCB mount	Through-hole	10k	25	Alps Alpine	RK09D130C2P	Mouser	688-RK09D130C2P	1.94€	43.00€	7625 (11-08-22)	
	SAME THAN ABOVE BUT ALTERNATIVE SUPPLIER						TME	8350D1130C2P	0.90€	20.44€	2932 (11-08-22)	
R1	Pot. vertical, Audio, 15A taper, 20%, D Flatted, 25 mm (L), 6mm (ø), 1 gang, 1 turn, no detent, -10°C +70°C, PCB mount	Through-hole	100k	1	Alps Alpine	RK09D13F25COA04	Mouser	688-RK09D13F25COA	1.79€	1.79€	704 (11-08-22)	
EN1	Encoder, 24 PPR, 25 mm (L), 6mm (ø), with switch, no detent, -30°C +70°C, Snap In	Through-hole	24PPR	1	Bourns	PEC12R-4025F-S24	Mouser	652-PEC12R-4025F-S24	2.04€	2.04€	1745 (11-08-22)	
RESISTORS												
R14, R20, R24, R26, R27, R40, R47	Thick Film Resistor, 1%, 1/8W, 150V, +- 200ppm/°C, -55°C--+155°C	0805	33R	7	UNI-ROYAL(Uniroyal Elec)	0805W8F330FT5E	JLPCB	C17634	\$0.002	\$0.014		
R3, R11, R36	Thick Film Resistor, 1%, 1/8W, 150V, +- 100ppm/°C, -55°C--+155°C	0805	100R	3	UNI-ROYAL(Uniroyal Elec)	0805W8F10000T5E	JLPCB	C17408	\$0.002	\$0.006		
R9, R15, R28	Thick Film Resistor, 1%, 1/8W, 150V, +- 100ppm/°C, -55°C--+155°C	0805	220R	3	UNI-ROYAL(Uniroyal Elec)	0805W8F2200T5E	JLPCB	C17557	\$0.002	\$0.006		
R22, R23, R32, R33	Thick Film Resistor, 1%, 1/8W, 150V, +- 100ppm/°C, -55°C--+155°C	0805	2.2k	4	UNI-ROYAL(Uniroyal Elec)	0805W8F2200T5E	JLPCB	C17520	\$0.002	\$0.008		
R10, R31	Thick Film Resistor, 1%, 1/8W, 150V, +- 100ppm/°C, -55°C--+155°C	0805	10k	2	UNI-ROYAL(Uniroyal Elec)	0805W8F1002T5E	JLPCB	C17414	\$0.0008	\$0.0016		
R12, R13, R17, R21	Thick Film Resistor, 1%, 1/8W, 150V, +- 100ppm/°C, -55°C--+155°C	0805	47k	4	UNI-ROYAL(Uniroyal Elec)	0805W8F4702T5E	JLPCB	C17173	\$0.002	\$0.008		
CAPACITORS												
C2, C8, C12, C13, C14, C16, C17, C18, C20, C21	MLCC, 50VDC, ±10%, X7R, -55°C--+125°C	0805	100nF	10	YAGEO	CC0805KRX7R9BB104	JLPCB	C49678	\$0.0035	\$0.035		50VDC maybe too high
CL1, C3, CL1, C15	MLCC, 50VDC, ±10%, X7R, -55°C--+125°C	0805	1uF	4	Samsung Electro-Mechanics	CL21B105K5RNNNE	JLPCB	C28323	\$0.0047	\$0.019		50VDC maybe too high
C6, C7, C9, C10, C19	Aluminum Electrolytic Capacitors, 10V, ±20%, -55°C--+105°C, 2000hrs@105°C, 20% DF	SMD_4x5.5mm	10uF	5	Capxon International Elec	HV100M016B055SETR	JLPCB	C59932	\$0.0416	\$0.208		ESR = DF / (2*π*120Hz*10uF) = 26
C4, C5	Aluminum Electrolytic Capacitors, 10V, ±20%, -55°C--+105°C, 2000hrs@105°C, 24% DF	SMD_6.3x5.5mm	220uF	2	Honor Elec	RYT1A221M0605	JLPCB	C3345	\$0.035	\$0.075		ESR = DF / (2*π*120Hz*220uF) = 145
INTEGRATED CIRCUITS												
U1	Teensy 4.1	Through-hole		1	JPRC		Many		30€ to 45€	30€ to 45€		
U2	Inverter, CMOS, 2V to 6V, -40 °C to +125 °C	S0RC-H_3.9x8.7x1.27P		1	Nexperia	74HC04D.653	JLPCB	C5590	\$0.18	\$0.18	39500 (11-08-22)	
U3	Audio Codec, 24bit, 96KHz, 1.8 V to 3.6 V, SNR 90 dB ADC/100 dB DAC, -40 °C to +85 °C	QFN-28		1	Cirrus Logic	WM8978C1SEFL	JLPCB	C265807	\$4.29	\$4.29	3383 (11-08-22)	
U4, U5	Multiplexer 16:1	S0RC-24_7.5x15.4x1.27P		2	Texas Instruments	C7374HC4067M96	JLPCB	C480123	\$0.67	\$1.34	72 (11-08-22)	
U6	EEPROM 12V -- 5.5V (2C 256kb) (32k x 8)	S0RC-8_3.9x4.9x1.27P		1	Microchip Tech	AT24C256C-SSHL-T	JLPCB	C6482	\$0.49	\$0.49	18355 (11-08-22)	
U7	Optocoupler, 4.5 V to 5.5 V, Vt 1.4V, If 10mA, open-collector output, -40 °C to +85 °C	8-SMD		1	Everlight Elec	6NE375N(TA)	JLPCB	C110020	\$0.3818	\$0.3818	23510 (11-08-22)	
POWER												
VR1	Linear Voltage Regulator (LDO), 3.3V fixed, 200mA, Low Noise, High PSRR, low dropout (112 mV at 200 mA)	SOT-23-5		1	Texas Instruments	TPS79333DBVR	JLPCB	C19840	\$1.04	\$1.04	1866 (11-08-22)	
D1	Switching Diode	SOD-123		1	ST(Semtech)	1N4148W	JLPCB	C81598	\$0.01	\$0.01	2M+ (11-08-22)	
D2	Led 3mm	Through Hole		1			Anywhere					
MECHANICALS												
J1, J2, J3, J4, J5	TRS jack, 3.5 mm	Through-hole		5	Kycon	STX-3120-5B	Mouser	806-STX-3120-5B	1.02€	5.01€	5900 (11-08-22)	Cheaper at LCSC
	STL Socket D24	Through-hole		3	Preci-dip	801-87-024-10-001001	Mouser	437-8018702410001001	2.40€	7.20€	729 (11-08-22)	Cheaper at LCSC
	SAME THAN ABOVE BUT ALTERNATIVE MANUFACTURER	Through-hole		2	Mill-Max	801-47-028-10-001000	Mouser	575-8014702810001000	3.70€	7.40€	3160 (11-08-22)	Cheaper at LCSC
	Headers, 1 row, 2.54 pitch, 40 positions	Through-hole		2	TE Connectivity	4-103327-0	Mouser	571-41033270	2.69€	5.38€	1500 (11-08-22)	Cheaper at LCSC
	Knob, Plastic, Black, 16mm, D-Shaft			1	Eagle Plastic Devices	450-BA600	Mouser	450-BA600	1.80€	1.80€	2480 (11-06-22)	For the encoder
	Knob, Plastic, Black, 16mm D-Shaft			25	Eagle Plastic Devices	450-BA761	Mouser	450-BA761	1.80€	45.00€	12000 (11-08-22)	For the pots. Too expensive, should buy elsewhere
DISPLAY												
TT1	TT1 IL9341, 2.8"			1	Hillego		Amazon or elsewhere		10€ to 30€	10€ to 30€		