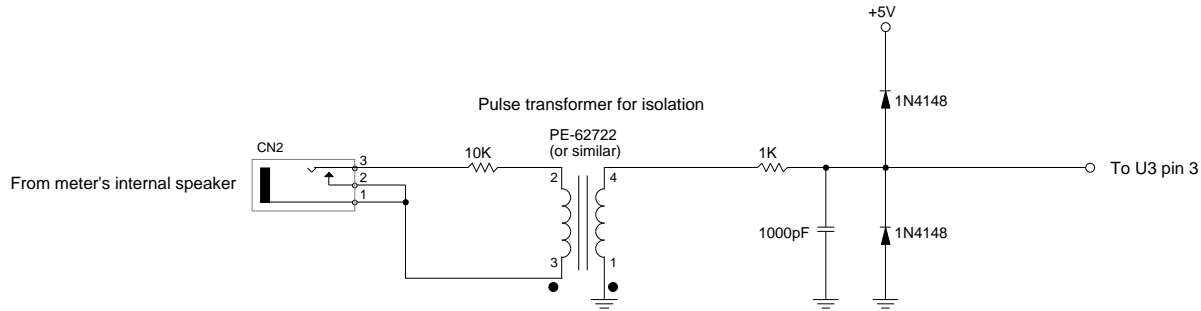


Alternate construction for hardwire interface. Eliminate amplifier front-end from page 1 and replace it with the circuit below. R10 and R11 may need to be adjusted depending on the turns ratio of the transformer.



Component list

Designator	Component	Type	Value	Designator	Component	Type	Value
C1	capacitor	tantalum	4.7 μ F	R1	resistor	1/4 watt, 5%	1M
C2	capacitor	ceramic	1 μ F	R2	resistor	1/4 watt, 5%	1M
C3	capacitor	ceramic	.01 μ F	R3	resistor	1/4 watt, 5%	51k
C4	capacitor	ceramic	1000pF	R4	resistor	1/4 watt, 5%	1k
C5	capacitor	ceramic	100pF	R5	resistor	1/4 watt, 5%	1k
C6	capacitor	ceramic	.1 μ F	R6	resistor	1/4 watt, 5%	1k
C7	capacitor	ceramic	.1 μ F	R7	resistor	1/4 watt, 5%	10k
C8	capacitor	ceramic	.01 μ F	R8	resistor	1/4 watt, 5%	33k
C9	capacitor	ceramic	100pF	R9	resistor	1/4 watt, 5%	1k
C10	capacitor	ceramic	1000pF	R10	resistor	1/4 watt, 5%	27k
C11	capacitor	ceramic	.1 μ F	R11	resistor	1/4 watt, 5%	68k
C12	capacitor	ceramic	.1 μ F	R12	resistor	1/4 watt, 5%	4.7k
C13	capacitor	ceramic	1000pF	R13	resistor	1/4 watt, 5%	47k
C14	capacitor	ceramic	33pF	R14	resistor	1/4 watt, 5%	10k
C15	capacitor	ceramic	33pF	R15	resistor	1/4 watt, 5%	2.2k
C16	capacitor	ceramic	.1 μ F	R16	resistor	1/4 watt, 5%	1k
C17	capacitor	ceramic	.1 μ F	R17	resistor	1/4 watt, 5%	1k
C18	capacitor	ceramic	.1 μ F	R18	resistor	1/4 watt, 5%	10k
C19	capacitor	ceramic	.1 μ F	R19	resistor	1/4 watt, 5%	22k
C20	capacitor	ceramic	.1 μ F	R20	resistor	1/4 watt, 5%	47k
C21	capacitor	ceramic	.1 μ F	R21	resistor	1/4 watt, 5%	1k
CN1	connector	DC adapter	2 pin	U1	voltage regulator	100mA	78L05
CN2	connector	1/8" phone	2 pin	U2	op amp	dual JFET	LF412
CN3	connector	3/32" phone	2 pin	U3	comparator	dual open collector	LM393
CR1	diode	general purpose	1N4148	U4	microcontroller	16 pin, programmed	68HC705K1
CR2	LED	T1 3/4	red	U5	RS-232 driver	16 pin, 5V only	MAX232A
CR3	LED	T1 3/4	red	Y1	crystal		4.000000MHz
Q1	transistor	NPN	2N2222A				

DataHolster schematic

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