

FROM THE BOOK BUILD YOUR OWN
LASER, PHASER, ION RAY GUN & OTHER WORKING SPACE-AGE PROJECTS
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Description: Briefly, the Infinity Transmitter is a device which activates a microphone via a phone call. It is plugged into the phone line, and when the phone rings, it will immediately intercept the ring and broadcast into the phone any sound that is in the room. This device was originally made by Information Unlimited, and had a touch tone decoder to prevent all who did not know the code from being able to use the phone in its normal way. This version, however, will activate the microphone for anyone who calls while it is in operation.

NOTE: It is illegal to use this device to try to bug someone. It is also pretty stupid because they are fairly noticeable.

Parts List:

Pretend that uF means micro Farad, cap= capacitor

Part	#	Description
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R1,4,8	3	390 k 1/4 watt resistor
R2	1	5.6 M 1/4 watt resistor
R3,5,6	3	6.8 k 1/4 watt resistor
R7/S1	1	5 k pot/switch
R9,16	2	100 k 1/4 watt resistor
R10	1	2.2 k 1/4 watt resistor
R13,18	2	1 k 1/4 watt resistor
R14	1	470 ohm 1/4 watt resistor
R15	1	10 k 1/4 watt resistor
R17	1	1 M 1/4 watt resistor
C1	1	.05 uF/25 V disc cap
C2,3,5,6,7	5	1 uF 50 V electrolytic cap or tant (preferably non-polarized)
C4,11,12	3	.01 uF/50 V disc cap
C8,10	2	100 uF @ 25 V electrolytic cap
C9	1	5 uF @ 150 V electrolytic cap
C13	1	10 uF @ 25 V electrolytic cap
TM1	1	555 timer chip
A1	1	CA3018 amp array in can
Q1,2	2	PN2222 npn sil transistor
Q3	1	D40D5 npn pwr tab transistor
D1,2	2	50 V 1 amp react. 1N4002
T1	1	1.5 k/500 matching transformer
M1	1	large crystal microphone
J1	1	Phono jack optional for sense output
WR3	(24")	#24 red and black hook up wire
WR4	(24")	#24 black hook up wire
CL3,4	2	Alligator clips
CL1,2	2	6" battery snap clips
PB1	1	1 3/4x4 1/2x.1 perfboard
CA1	1	5 1/4x3x2 1/8 grey enclosure fab
WR15	(12")	#24 buss wire
KN1	1	small plastic knob
BU1	1	small clamp bushing

Circuit Operation: Not being the most technical guy in the world, and not being very good at electronics (yet), I'm just repeating what Mr. Iannini's said about the circuit operation. The Transmitter consists of a high gain amplifier fed into the telephone lines via transformer. The circuit is initiated by the action of a voltage transient pulse occurring across the phone line at the instant the telephone circuit is made (the ring, in other words). This transient immediately triggers a timer whose output pin 3 goes positive, turning on transistors Q2 and Q3. Timer TM1 now remains in this state for a period depending on the values of R17 and C13 (usually about 10 seconds for the values shown). When Q3 is turned on by the timer, a simulated "off hook" condition is created by the switching action of Q3 connecting the 500 ohm winding of the transformer directly across the phone lines. Simultaneously, Q2 clamps the ground of A1, amplifier, and Q1, output transistor, to the negative return of B1,B2, therefore enabling this amplifier section. Note that B2 is always required by supplying quiescent power to TM1 during normal conditions. System is off/on controlled by S1 (switch).

A crystal mike picks up the sounds that are fed to the first two transistors of the A1 array connected as an emitter follower driving the remaining two transistors as cascaded common emitters. Output of the array now drives Q1 capacitively coupled to the 1500 ohm winding of T1. R7 controls the pick up sensitivity of the system.

Diode D1 is forward biased at the instant of connection and essentially applies a negative pulse at pin 2 of TM1, initiating the cycle. D2 clamps any high positive pulses. C9 dc-isolates and desensitizes the circuit. The system described should operate when any incoming call is made without ringing the phone.

Schematic Diagram: Because this is text, this doesn't look too hot. Please use a little imagination! I will hopefully get a graphics drawing of this out as soon as I can on a Fontrix graffile.

To be able to see what everything is, this character: | should appear as a horizontal bar. I did this on a] [e using a] [e 80 column card, so I'm sorry if it looks kinda weird to you.

Symbols:

resistor: -/\ \/-

switch: _/_

battery: -|!|-

capacitor (electrolytic): -|(-

capacitor (disc): -||-

Transformer:)||(_

transistor: (c) > (e)

)||(_

_ /

)| (

| (b)

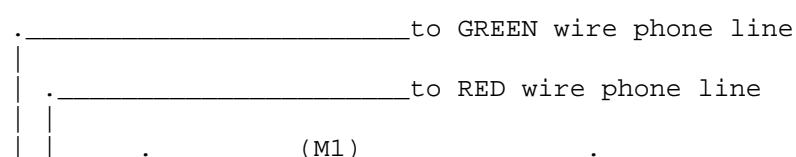
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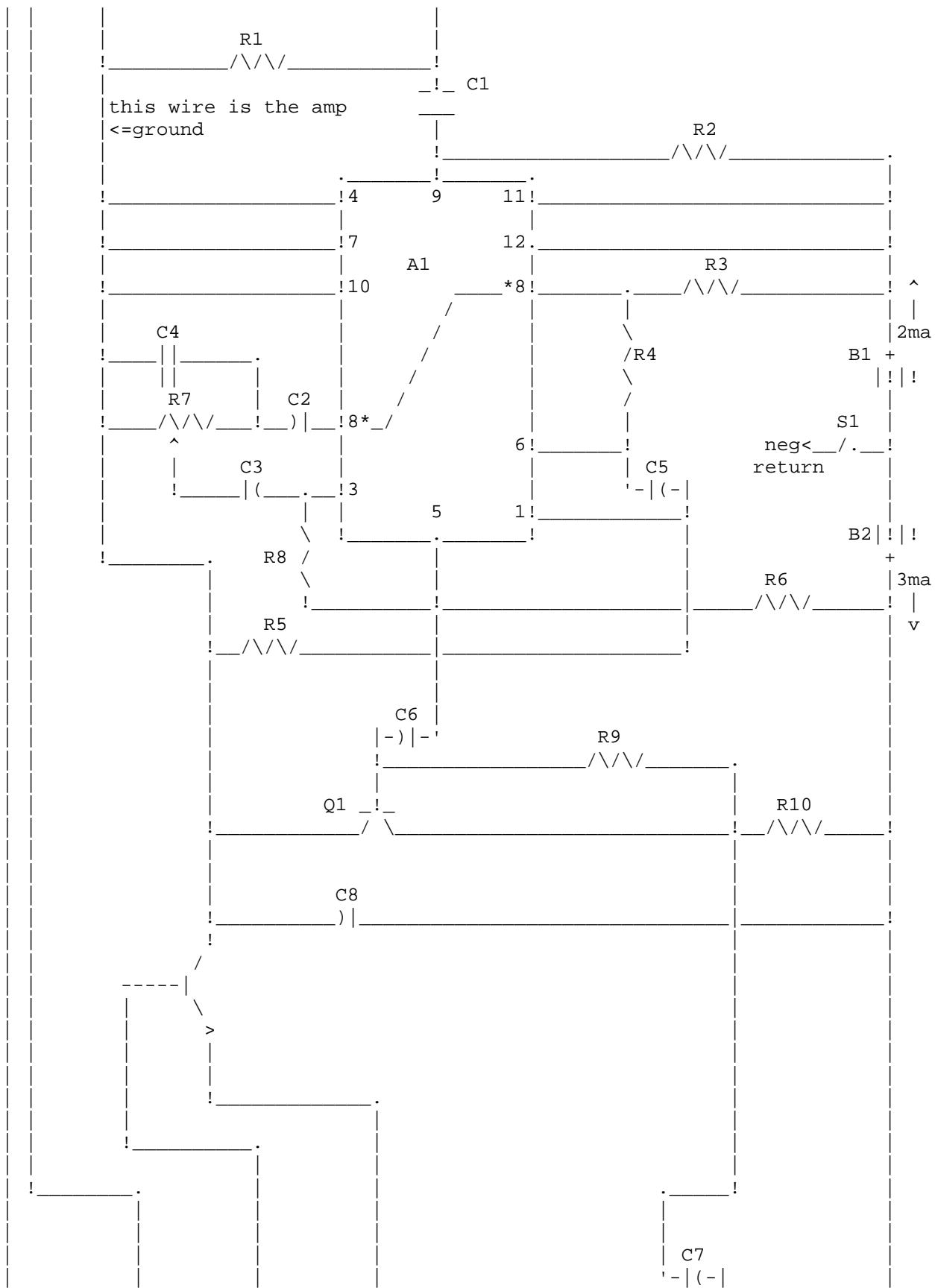
diode: | <

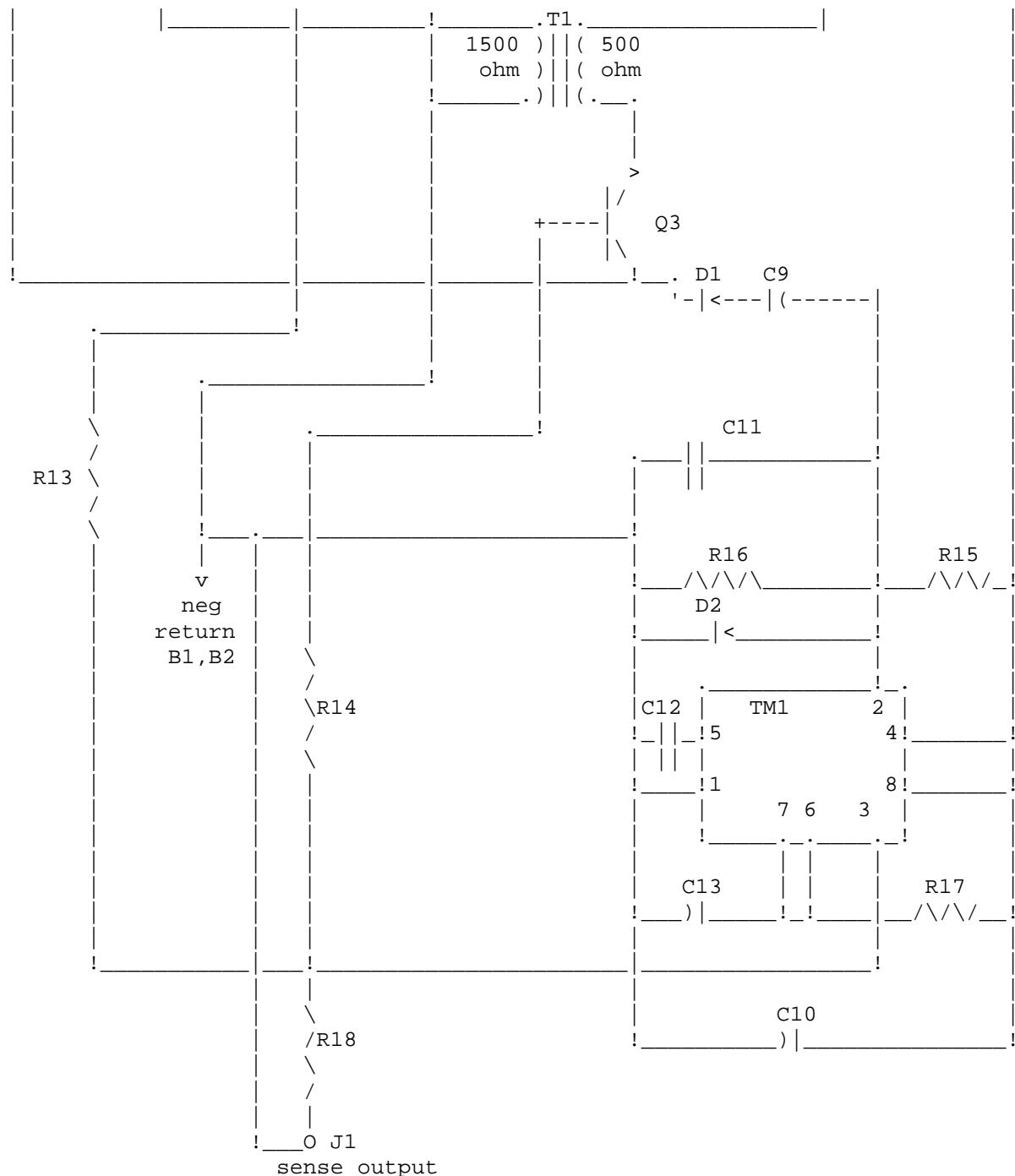
chip: ._____.

!_____! (chips are easy to recognize!)

Dots imply a connection between wires. NO DOT, NO CONNECTION.
ie.: _!_ means a connection while _|_ means no connection.





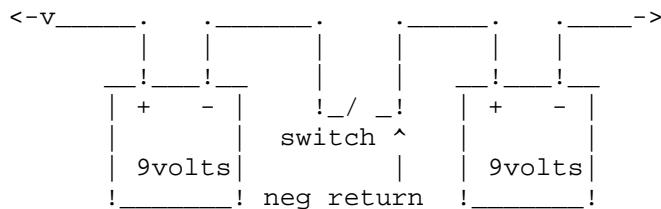


Construction notes: Because the damned book just gave a picture instead of step by step instructions, and I'll try to give you as much help as possible. Note that all the parts that you will be using are clearly labeled in the schematic. The perfboard, knobs, 'gator clips, etc are optional. I do strongly suggest that you do use the board!!! It will make wiring the components up much much easier than if you don't use it.

The knob you can use to control the pot (R7). R7 is used to tune the IT so that is sounds ok over the phone. (You get to determine what sounds good) By changing the value of C13, you can change the amount of time that the circuit will stay open (it cannot detect a hang up, so it works on a timer.) A value of

100 micro Farads will increase the time by about 10 times.

The switch (S1) determines whether or not the unit is operational. Closed is on. Open is off. The negative return is the negative terminals of the battery!! The batteries will look something like this when hooked up:



To hook this up to the phone line, there are three ways, depending upon what type of jack you have. If it is the old type (non modular) then you can just open up the wall plate and connect the wires from the transmitter directly to the terminals of the phone.

If you have a modular jack with four prongs, attach the red to the negative prong (don't ask me which is which! I don't have that type of jack... I've only seen them in stores), and the green to the positive prong, and plug in. Try not to shock yourself...

If you have the clip-in type jack, get double male extension cord (one with a clip on each end), and chop off one clip. Get a sharp knife and splice off the grey protective material. You should see four wires, including one green and one red. You attach the appropriate wires from the IT to these two, and plug the other end into the wall.

Getting the IT to work: If you happen to have a problem, you should attempt to do the following (these are common sense rules!!) Make sure that you have the polarity of all the capacitors right (if you used polarized capacitors, that is). Make sure that all the soldering is done well and has not short circuited something accidentally (like if you have a glob touching two wires which should not be touching.) Check for other short circuits. Check to see if the battery is in right. Check to make sure the switch is closed.

If it still doesn't work, drop me a line on one of the Maryland or Virginia BBSs and I'll try to help you out.

The sense output: Somehow or other, it is possible to hook something else up to this and activate it by phone (like an alarm, flashing lights, etc.)

As of this writing, I have not tried to make one of these, but I will. If you actually get it working, leave me a note somewhere.

I sure hope all you people appreciate this.