

Eminent Technology

Twenty

The Model Twenty Guitar Speaker

Congratulations on purchasing the Eminent Technology Model Twenty Guitar Speaker.

The Model Twenty is the most advanced loudspeaker technology available for an Acoustic or Electric Guitar. With proper care and use, the Model Twenty should last many years. To get the most out of the Model Twenty, please read the manual carefully. Do not forget to fill out the warranty form in the back of this manual so we can register your purchase.



Unpacking

The speaker will be surrounded by styrofoam and in a large bag. Open the large flaps on the top of the cardboard box (the shipping label side), then lift up the top layer of styrofoam.

Feel for the handle on a long edge of the cabinet perimeter, the grill cloth will be facing up, be sure that you do not push too far inward on the grill cloth while lifting the speaker out of the box.

Using the Model Twenty

The model Twenty has legs on each side that pivot out to tilt the speaker back.

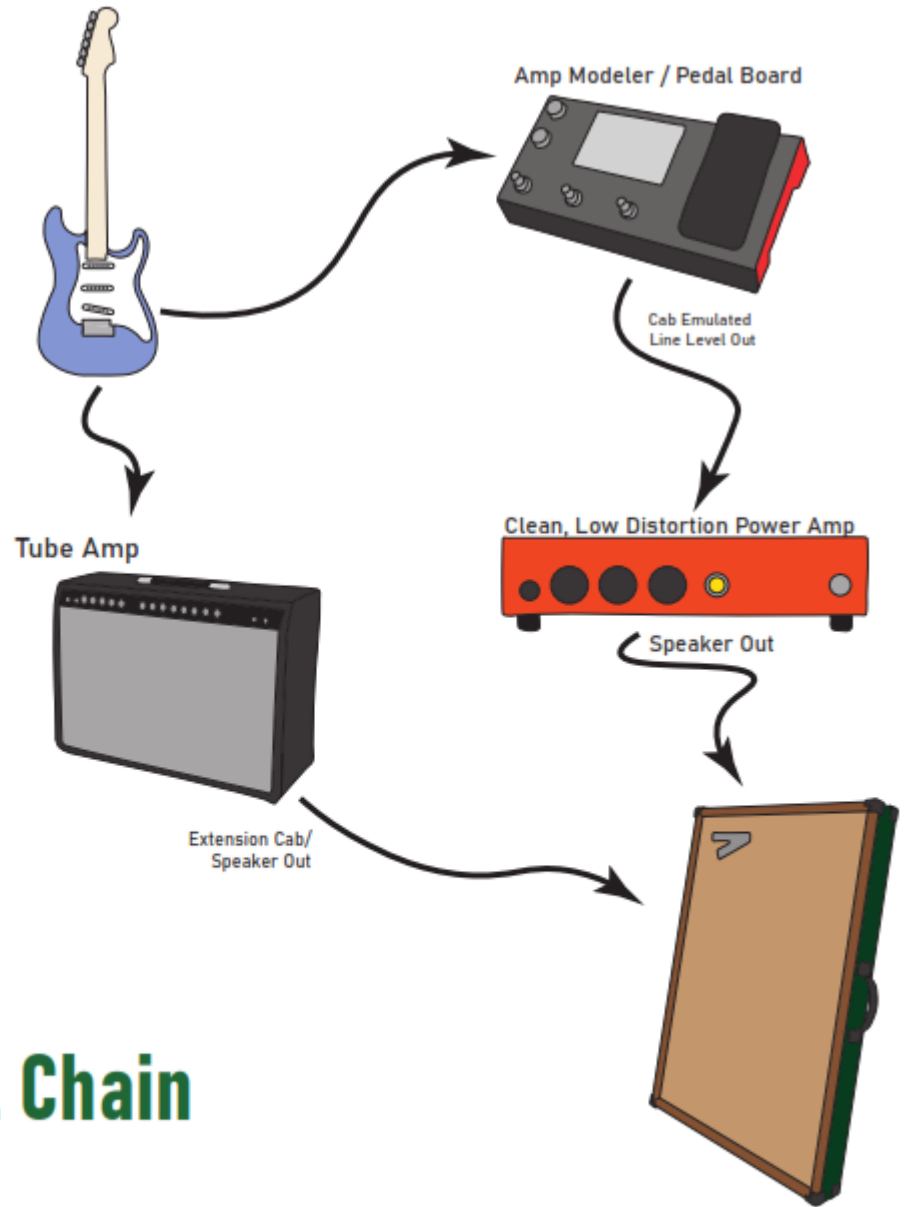
Loosen the thumb wheel on each side, move each leg back about 30 degrees and tighten the thumb wheels.



Amplification

The Model Twenty is designed to be used with amplifiers rated 20 to 100 watts and it presents an 8 ohm load to your electronics. Either tube, traditional class A or AB solid state, or Class D amplifier heads will work just fine. The inputs are ¼ inch phone jacks in parallel with dual binding post.





ET-20 Signal Chain

The Eminent Technology Model Twenty is a passive, full range, flat response guitar cabinet. The contour switches on the rear of the Model Twenty give multiple ways to narrow the frequency bandwidth to that of a more traditional guitar speaker. This allows the Model Twenty to be used with clean amplifiers designed to power traditional cabinets. When being used with amp modelers, the full range response of the Model Twenty affords the user accurate reproduction of any cabinet simulation.

Placement

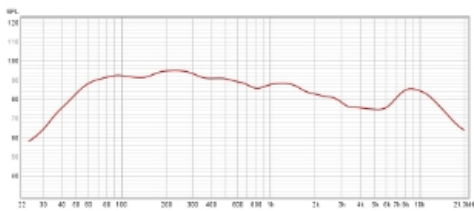
The Model Twenty can be used in any sized room or on stage. How well it projects sound around a room will be readily apparent to a new user. Because it projects sound so well, its placement is not that critical, it can be use against a wall or “open air” (free field) on a stage, if you are playing in a band it should point toward the audience since the high frequencies emanate from the front.

GETTING THE BEST PERFORMANCE FROM THE MODEL TWENTY

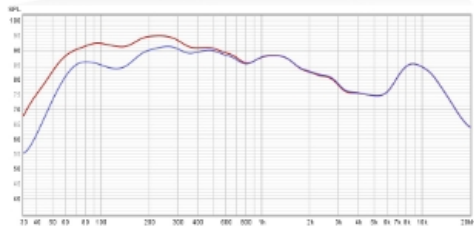
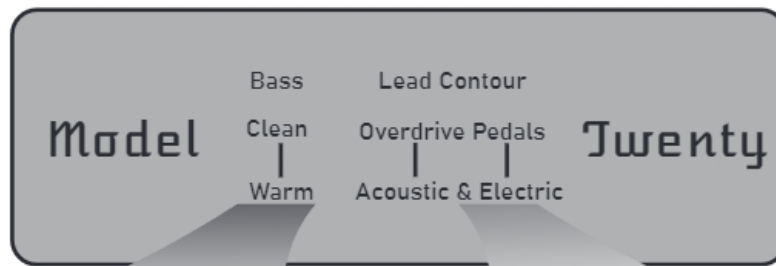
The Tone Contour Switches



ET-20 Contour Switches



With all of its switches in the down position, the Model Twenty operates in full range, flat response mode. This configuration is best suited for modelers or any signal paths utilizing cabinet simulation. It is also practical for use with acoustic guitar, keyboard, vocals, or other full range instruments.



When flipped into the up position, The bass switch attenuates the low frequency response of the Model Twenty. This is used to keep the Model Twenty from conflicting with other low frequency instruments (i.e. electric bass, keyboard) in a live performance environment.



The two Lead Contour switches on the Model Twenty attenuate the high frequency response of the cabinet. Included in the high frequency content are high order harmonics which are not heard through conventional guitar speakers. These harmonics become apparent and harsh through overdriven and distorted guitar tones. The right-most lead switch is cumulative to the first and only functions with the middle switch engaged.

There are three tone contour switches on the back. All are up = "on" and down = "off", we suggest that you start using the Model Twenty with all three switches down.

The switch closest to the edge, (labeled bass clean-warm) or right most switch as viewed from the front is the bass cut switch, "warm" means bass increased in level (switch down) and clean means bass decreased in level (switch up). For some applications and in small rooms there may be too much bass, more often indoors you might have too much bass as compared to using the speaker outside. The sound change should be very easy to detect.

The middle switch is the treble cut switch (labeled overdrive-acoustic). "Up" (overdrive) is the treble cut position, switch "down" is the flat position which provides significant treble or high-frequency output. Using the middle switch down would be best with acoustic guitars, clean electric guitars and other musical instruments.

This speaker has response to beyond 15Khz which will be immediately obvious. While you really want this high frequency response capability for an amplified acoustic guitar and even for a clean electric guitar, you may not want this when you are using pedals to add distortion to your electric guitar tone.

When you just start to clip tube or solid state amps, they produce the low order harmonic distortion and also high order harmonics, it is the high order harmonics you never hear with a conventional guitar speaker, but quickly become apparent with the Model Twenty. Generally these high order harmonics are objectionable, (not what we are used to hearing) and this switch "up" (or treble cut=lead) makes the speaker duplicate the response of a

conventional guitar speaker, but still retains the ability to spread the sound around.

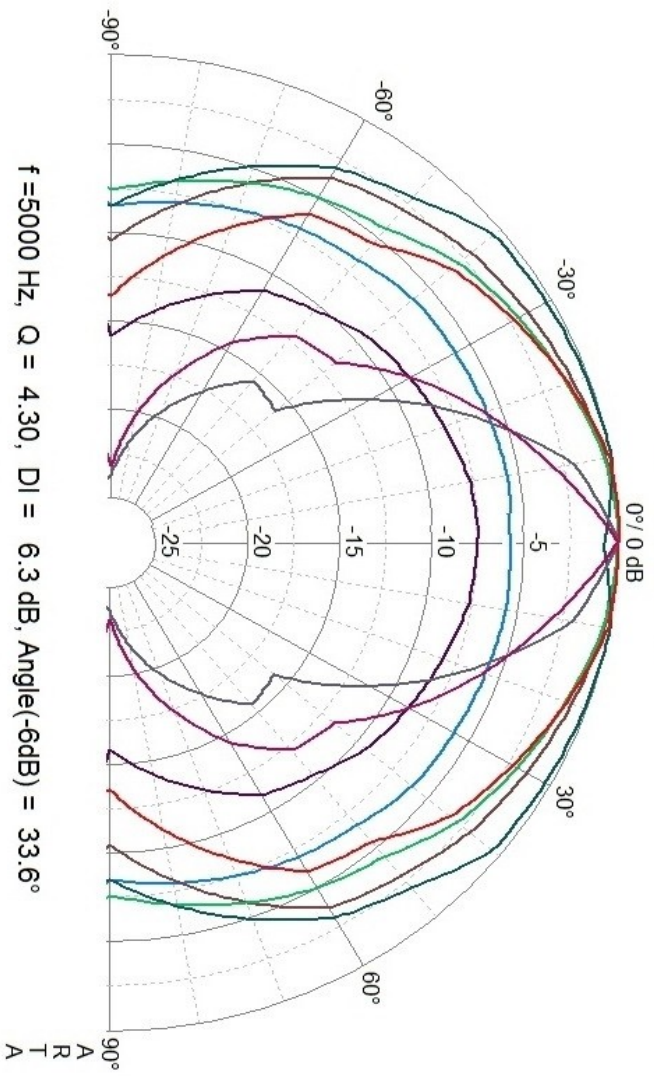
The sound change with the first two switches should be obvious, the third switch (labeled pedals - effects) is also a treble cut switch and cumulative with the second switch as above but about 1/3 as effective, it is delicate/subtle. You will have to experiment with these switch settings to find the tone you like, it will be the same all around your room or the audience

Why is the Model Twenty So Good (The technical section)

Polar Response, Frequency response, Distortion and Light Weight

The model Twenty has a huge advantage when it comes to low distortion (not adding it's own harmonic content) and dispersion, (or spreading the sound around a room). Looking from above of a speakers forward projection of sound, in a polar graph - The polar response of a speaker defines how it projects sound into space or how sound spreads around a room. This plot represents a different way to depict the problem above. Guitar players are accustomed to listening to their amplifier and speaker cabinets off-axis, more often than not, aimed at the backs of their knees while they're on stage. This means they are conditioned to a significantly attenuated high frequency response--they are missing hearing the high notes and overtones. This is the polar response of a typical guitar speaker:

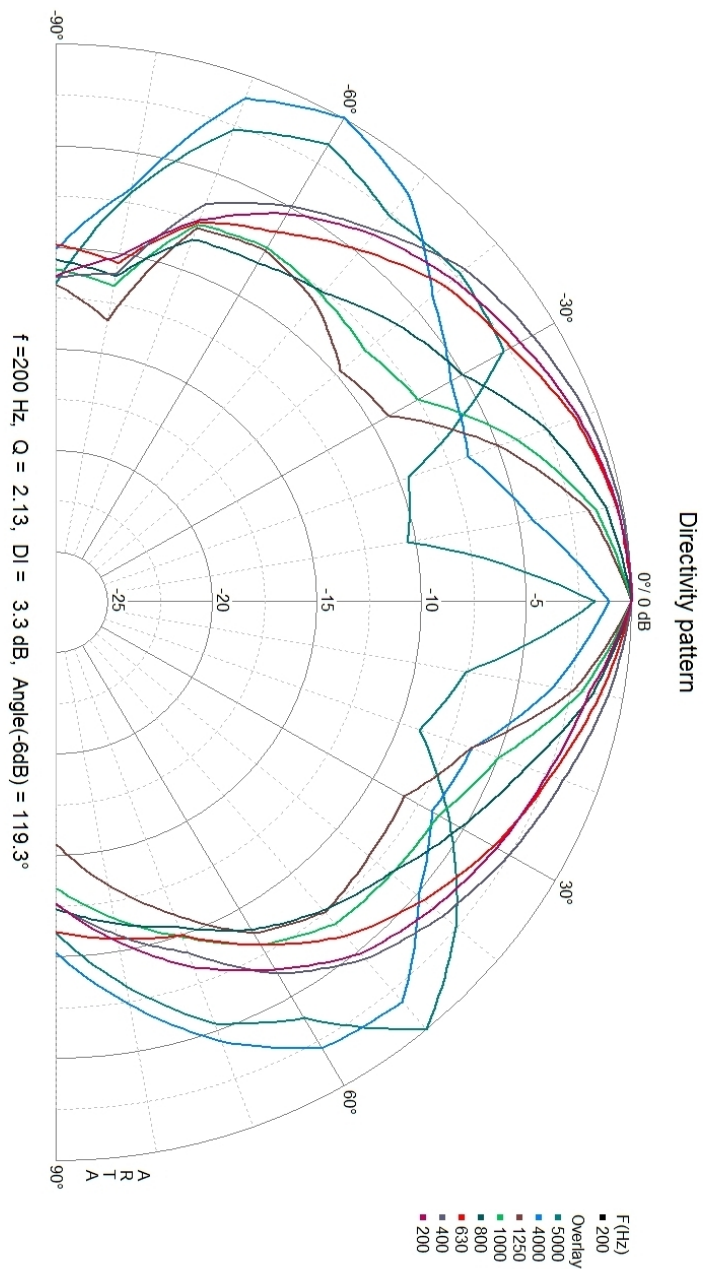
Directivity pattern



- F(Hz)
- 5000
- Overlay
- 1000
- 200
- 400
- 630
- 800
- 1000
- 1250
- 4000
- 5000

A R T A

Below is the polar response of the Model Twenty, note how the full range of frequencies are still projected even 60 degrees off axis!



Technical Section

Thigpen Loudspeaker Technology

The Model Twenty uses the patented Thigpen Loudspeaker (TL)

In the Model Twenty application, the Thigpen Loudspeaker Technology behaves mostly like a piston up to about 400Hz and then transitions to Distributed Mode Operation at higher frequencies. Both large front and back sides of the model twenty are active “diaphragms”. This allows good bass performance, good efficiency and high sound pressure levels in a thin lightweight package.

By applying such new techniques to planar loudspeaker construction, Eminent Technology has been able to eliminate many of the flaws inherent in earlier designs

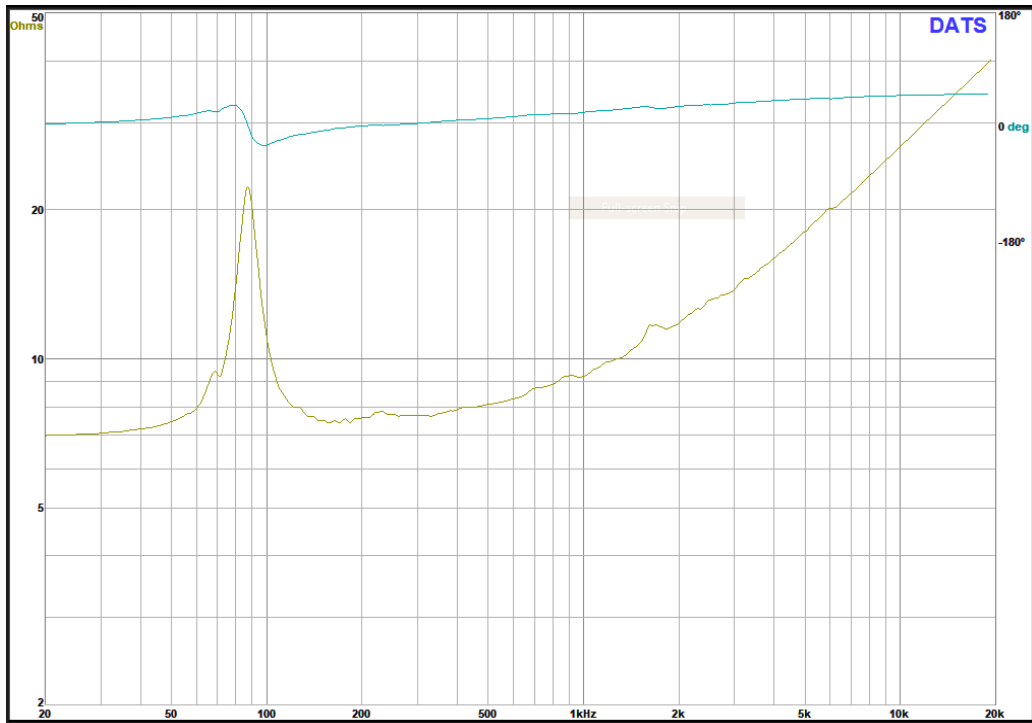
The back side of the speaker is perforated to resistively load the diaphragm. This lowers the Q of the diaphragms free air resonance (about 80hz) which can be seen in the impedance curve.

* Two utility patents have been issued for the Model Twenty

Impedance

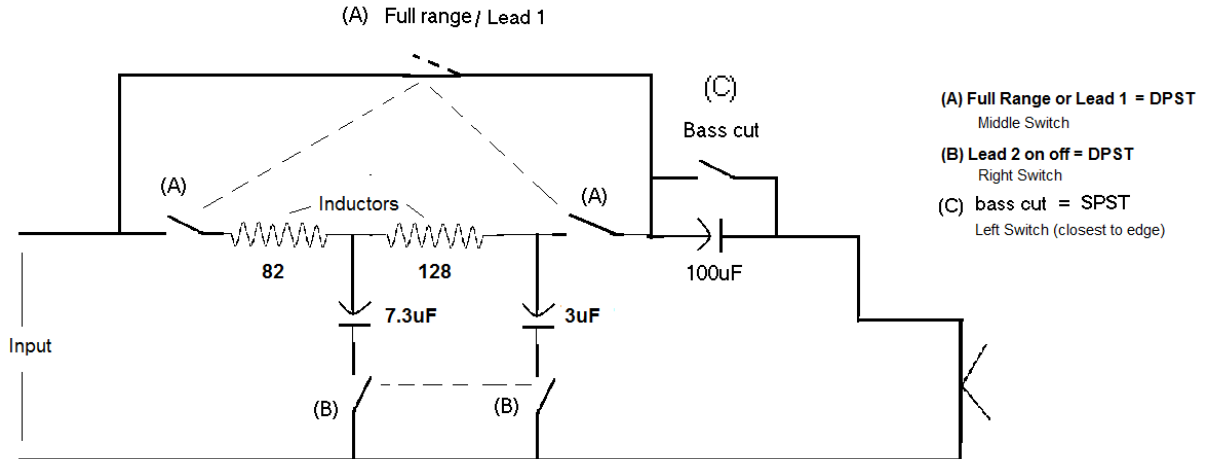
The Model Twenty presents a very typical 8 ohm load to an amplifier, any home or professional audio amplifier or guitar head amp should work fine.

Model Twenty impedance:



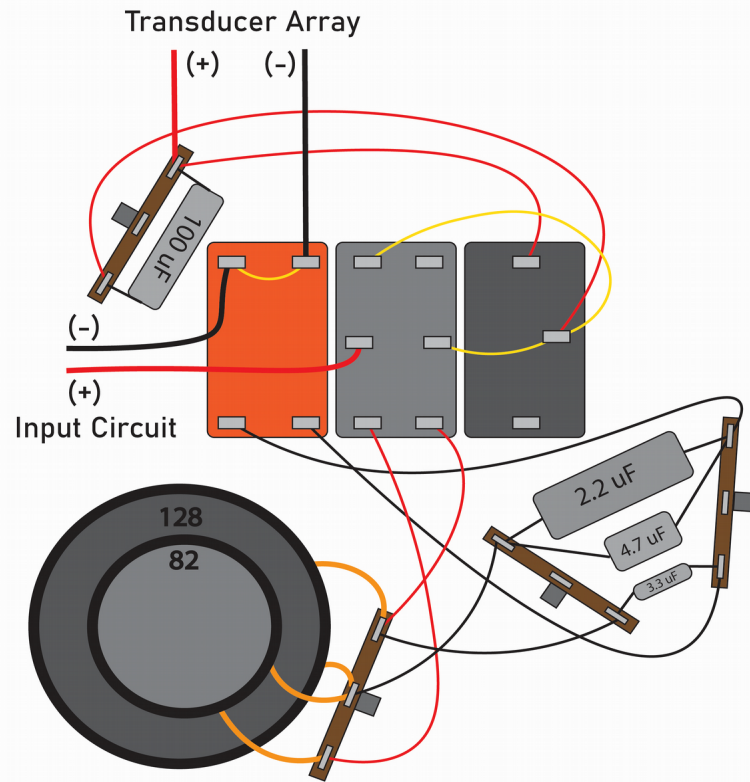
Service

Model Twenty Schematic



The model twenty has two access points for service on the back of the loudspeaker. Both the switch plate and the input connector plate can be removed. Four screws at the perimeter of each of these plates, they are designed to lift straight out. A small amount of caulk is used to hold the wire in place, the wires are long enough to allow removal of these plates. While removing these plates observe where the additional length of wire is attached glued to the walls of the enclosure and duplicate that on reassembly. The wire should be glued down to prevent contact with the moving front and back surfaces while in use.

Model Twenty Crossover Wiring Diagram



TECHNICAL SPECIFICATIONS

Impedance	8 Ohms
Recommended Power	20-100 watts RMS
Sensitivity	99dB at 1 meter (2.83 volts)
Weight	23 pounds
Dimensions	H - 32 inches, W = 22 inches Depth = 4 inches

WARRANTY

Eminent Technology, Inc. warrants the Model Twenty loudspeaker cabinet to be free from defects in materials and workmanship for a period of 30 days from the date of purchase. Within that period, any failure of the Model Twenty will be corrected without charge for parts, labor, or transportation from the factory. After this period, pending receipt of warranty form (filled out and mailed to Eminent Technology, and postmarked no later than one month after the date of purchase), the above warranty will be extended to three years for parts and one year for labor. This warranty is transferable to subsequent owners, pending notification from the original owner, in writing, within 10 days of the personal sale.

The obligation of Eminent Technology, Inc. under the terms of this warranty does not extend to:

- 1.) Any Model Twenty installed or operated without regard for the instructions contained in this manual.
- 2.) Any Model Twenty while under performance testing, or after being used in such a test, by any personnel or facility not authorized by Eminent Technology.
- 3.) Any other component or part connected to or operated in conjunction with the Model Twenty.
- 4.) Any traumatic, accidental damage, or damage incurred in shipping, or defects which upon examination by Eminent Technology and in its sole opinion have been caused by abuse, neglect, improper or abnormal installation, or operation for extended periods in industrial applications.
- 5.) Any personal injury occurred as a direct or indirect use of the Model Twenty.

This warranty is not applicable if any part of the Model Twenty has been removed or taken apart, repaired, altered, or modified by anyone without prior authorization in writing from Eminent Technology, nor if the serial numbers have been defaced or rendered illegible.

If an Eminent Technology product is removed from the country in which the original consumer purchase was made, Eminent Technology dealers and distributors in other countries are not obligated by the terms of this warranty. Eminent Technology reserves the right to incorporate design refinements and changes to its products without notice or obligation. If practical, such design modifications will be made available to owners of existing units for a reasonable charge.

Under the terms of this warranty, Eminent Technology expressly does not insure for loss of use of the Model Twenty due to failure or periods of repair. Warranty repairs will be carried out by the factory. The Model Twenty must be returned prepaid in its original factory carton to:

Eminent Technology, Inc.

225 East Palmer Street

Tallahassee, FL 32301

(850) 224-5999

Eminent Technology Model Twenty

WARRANTY FORM

Name _____

Address _____

City _____

State _____ Zip _____

Dealer Purchased From _____

Dealer Address _____

City _____

State _____ Zip _____

Date Purchased _____

Serial Number R _____ L _____

Please complete this form and return to:

Eminent Technology

225 East Palmer Street

Tallahassee, FL 32301

U. S. A.