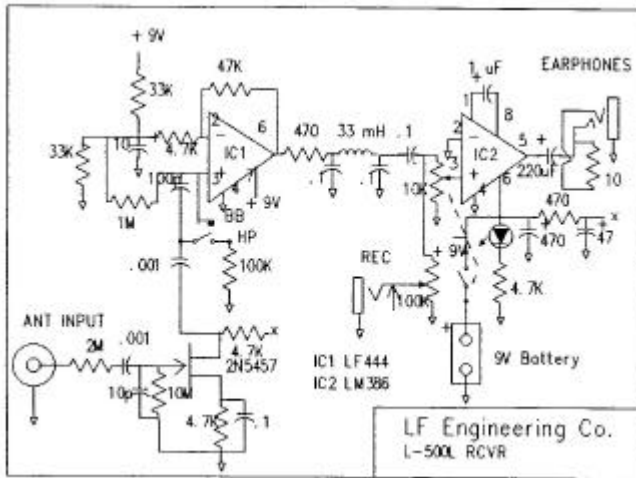


## L-500L ELF/VLF Longwire Receiving System



### Product Warranty

LF Engineering Co. warrants that, at the time of shipment the products manufactured by LF Engineering Co. are free from defects in material and workmanship. LF Engineering Co. obligation under this warranty is limited to replacement or repair of such products within 1 year from the date of shipment.

For sales or return authorization, contact LF Engineering Co. at (860) 526-4759.

For technical support call (203) 467-3590.

LF Engineering E-mail address: sales@lfengineering.com

Copyright 1992 & 2002 by LF Engineering Co.  
All rights reserved.

Printed in U.S.A.

LF Engineering Co.  
17 Jeffry Road  
East Haven, CT 06513

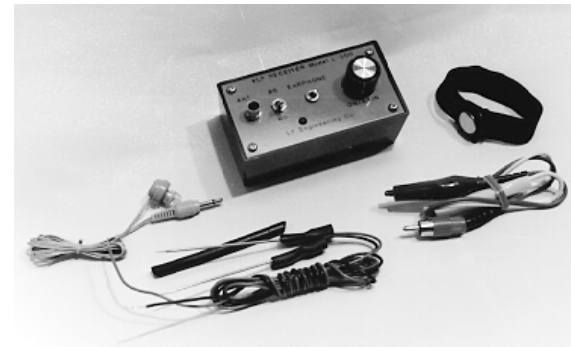
## L-500L ELF/VLF Longwire Receiving System

### Features

The L-500L Receiving System is designed for listening to VLF/ELF signals and Natural Radio phenomenon below 10 kHz. The system consists of the L-500L ELF/VLF receiver, tree tapping RF probes, input cables, belt loop, earphone and VLF listening manual.

The L-500L receiver is an enhanced 63 dB audio amplifier with a high impedance input (1- meg-ohm). Designed features include a three element L-C 5 kHz lowpass filter for reduction of 60 Hz (hum) harmonics and low frequency atmospheric. A recorder output jack is provided (< 10 k ohms) for use with most tape recorder inputs.

- < 300 Hz to 5 kHz broadband coverage (no tuner required)
- Receiver Gain 63 dB
- Broadband/Highpass filter switch
- Earphone and Tape Recorder outputs
- Tree tapping RF probes include
- Dual source power design: Internal 9 volt battery or external 120 vac / 12 vdc supply



### L-500L Specifications

Receiver Size	4.19" L x 2.74" W x 1.57" H
Frequency Response	300 Hz to 5 kHz broadband, -30 dB @ 10 kHz typical
Antenna Input Impedance	10 meg-ohm
Antenna Length Required	10 feet (3 m) or longer
Receiver 1 kHz HP Filter	-3 dB @ 1 kHz, > -60 dB @ 60 Hz
Receiver Gain	63 dB typical
Input/Output Jacks	RCA
Audio Output	300 mW maximum, 4-32 ohms (earphones)
DC Power:	9 Volt NEDA, 7 - 30 ma, typical

### Assembly:

Remove the 4 Philip head screws from the four corners of the front panel. Lift the panel/circuit board from the cabinet and install a 9 volt battery onto the battery clip. Reassemble the panel and cabinet. The battery life with normal intermittent operation is approximately one year. Turn the receiver on and the LED should light.

### Operation:

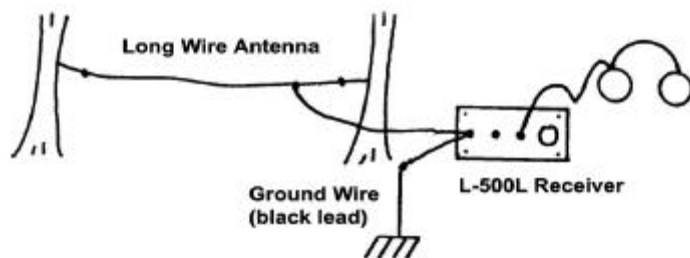
Connect a long wire, or your tree probes (see illustration) to the RCA input jack of the receiver. Plug in the supplied earphone and turn the unit on. We recommend an 8 ohm walkman type stereo earphones for best results, especially for extended listening. A small speaker may also be used.

Adjust the volume control to a comfortable level and use the "BB" broadband or "HP" highpass switch as required. In the broadband switch position, the full frequency bandwidth is used. Broadband operation is for quiet areas away from power lines. The highpass position is used to effectively attenuate 60 Hz harmonic noise.

When using the L-500L with a high volume setting, oscillation may occur. To reduce this effect, a "human" ground, or ground lead to a ground rod connected to the case will improve performance. Oscillation is normal with some earphones that do not have good shielding. Full audio gain is not usually required for normal listening levels.

If a noticeable drop in sensitivity occurs during operation, check your battery. Battery drain is approximately 7 - 30 ma. depending on listening levels.

Note: When listening, be careful not to raise the volume level too high for long listening periods to avoid ear injury. Because of the receiver's high sensitivity, do not use as a general audio listening device such as for telephone line monitoring, since there is no AGC protection to limit audio output.



### Accessories for the L-500L Receiver:

The belt clip is for the convenience of hand free operation. See illustration for details.

The tree tapping probes supplied with this kit should be used as illustrated. The probes help provide an interesting alternative to a wire antenna for VLF experimentation. Their use is not considered a substitute for a wire antenna nor is their use an exact science. The type of tree, size, foliage, soil conditions, and even time of year, will influence with varying degrees the sensitivity of the VLF reception.

