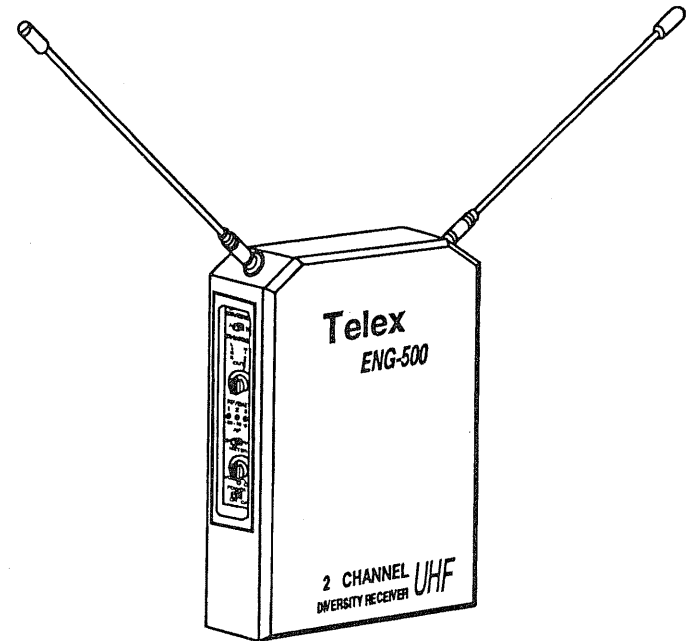


# Telex

## Operating Instructions



Professional UHF Wireless  
Microphone Receiver  
ENG-500

**TELEX**

TELEX COMMUNICATIONS, INC. • 9600 Aldrich Ave. So., Minneapolis, MN 55420, U.S.A.

PN 802865

20 Sept. 1995

Made in U.S.A.

**TELEX**

## ENG-500 Technical Information

### General Description

The ENG-500 is a wireless microphone receiver primarily intended for use in electronic news gathering and other, similar activities. It features 2 channel UHF operation with Telex's patented "Pos-i-phase" diversity system. It is small in size, lightweight and may be mounted to a camera in a variety of ways. The case is all metal for strength and durability. The antennas are at a 90° angle to maximize the diversity function that is normally compromised by close spacing.

### Specifications

RF Frequency range .....	524-608 MHz and 614-746 MHz
RF sensitivity .....	1.0 $\mu$ V for 20 dB SINAD
Image and Spurious Rejection .....	75 dB Typical
Squelch sensitivity .....	1 $\mu$ V
Squelched Hum and Noise Ratio .....	93 dB
Audio Signal-to-noise Ratio (at rated deviation) .....	94 dB
Signal-to-noise ratio (at max. deviation) .....	100 dB
Audio distortion .....	0.5%
Audio Frequency response .....	50 Hz to 15 kHz $\pm$ 1 dB
Line Level Output .....	+10 dBm, fixed
Mic Level Output .....	-15 to -55 dBV O.C.
Battery .....	9 Volt Alkaline <b>only</b>
External Power .....	9 to 17 volts DC
Current drain .....	65 ma nominal
Battery life (with new 9 volt alkaline) .....	Approx. 6 1/2 hours
Controls .....	See Figures 1 and 2

## ENG-500 Controls and Features

### Control Panel (See Figure 1)

- ① Diversity and Power ON Indicator Lights. One of the two lights will illuminate when the power is switched on. The lights will switch when the diversity circuit is active.
- ② Channel Selector Switch. Frequency of channel is printed in the battery compartment
- ③ Line/Mic Switch and Mic Output Level Control.
- ④ Meter and Meter Select Switch.
  - A. Switch set to "RF". Meter reads a relative scale of 1 to 4
  - B. Switch set to "AF". Meter reads a -20 to +5 dB scale
  - C. Switch held to "BAT". Meter reads a relative scale of 1 to 4 (Switch is momentary in the "BAT" position and will return to "AF" when released.)
- ⑤ Monitor Headphone Volume.
- ⑥ Power Switch

### Bottom of Unit (See Figure 2)

- ① "XLR" Output Jack. Connection for Line or Mic Level outputs.
- ② Headphone Monitor Jack. Mono or stereo, 8-500 ohm compatible.
- ③ External Power Input Jack.
- ④ Battery Compartment Door. To open, push in direction arrows.
- ⑤ Interior of Battery Compartment. Contains: Tone Squelch ON-OFF Switch, Serial No., Channel A and B frequencies.

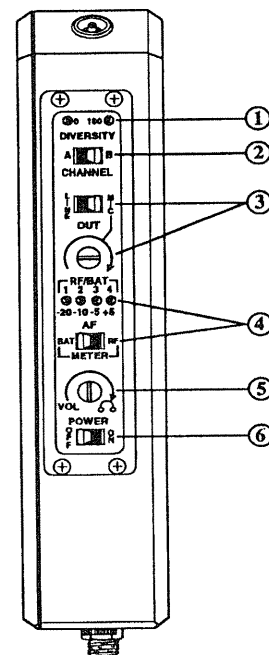


Figure 1  
Control Panel

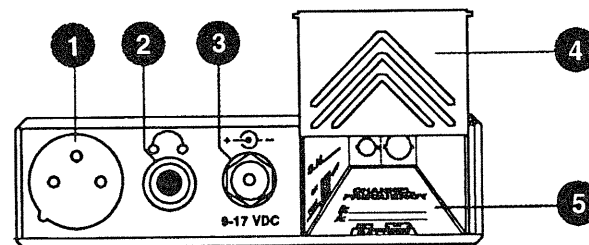
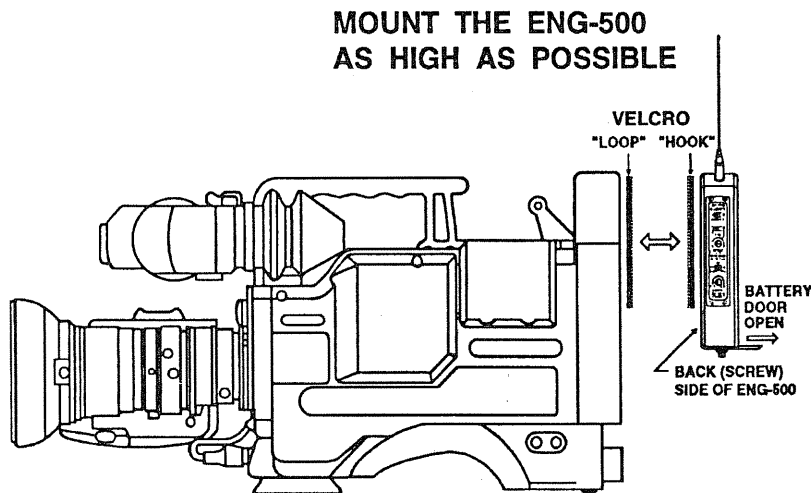


Figure 2  
Bottom View of ENG-500

## Mounting

The ENG-500 may be mounted to a camera in a variety of ways. Instructions are included with the various optional mounts listed in the back of this manual.

The "Velcro" brand hook and loop fastener included with the ENG-500 has a self adhesive backing and may be applied to any flat surface. be sure to apply the Velcro the the "back" (screw) side of the ENG-500 case so that the battery door may be opened with out interference. See Figure 3.



**Figure 3  
Velcro Mounting**

## Set Up

Once your ENG-500 is mounted to a camera or other device, connection and set-up may begin.


**Battery:** Open the battery door by pushing in the direction of the arrows. Insert a fresh 9 volt alkaline as per the symbols printed inside the battery compartment. close the door while holding the battery in place. **DO NOT USE ZINC/CARBON OR NICAD BATTERIES!**

### **CAUTION - TO AVOID DAMAGE:**

*REMOVE* the batteries from the ENG-500 receiver when an external power source is being used.

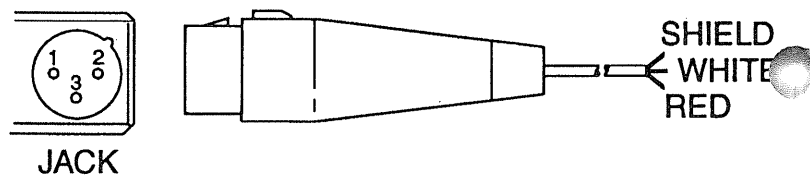
*DO NOT ATTEMPT* to recharge any type of battery through the power jack.

*DO NOT STORE* the receiver for any length of time with the battery installed and always store with the power switch in the OFF position.

**External Power:** The ENG-500 is supplied with a locking power plug. Hook up the plug in the following manor ( -  +). Wire and other connectors are to be supplied by the user. Connect the assembled power cord to a 9-17 volt DC source. Insert the plug into the power jack on the bottom of the ENG-500 and screw down the locking collet to prevent fall out.

**Monitor Headphone:** Insert your headphone plug (3.5 mm) into the jack on the bottom of the ENG-500.

**XLR Output Jack:** A 3 pin XLR plug with cable is supplied with the ENG-500. It is wired as follows:



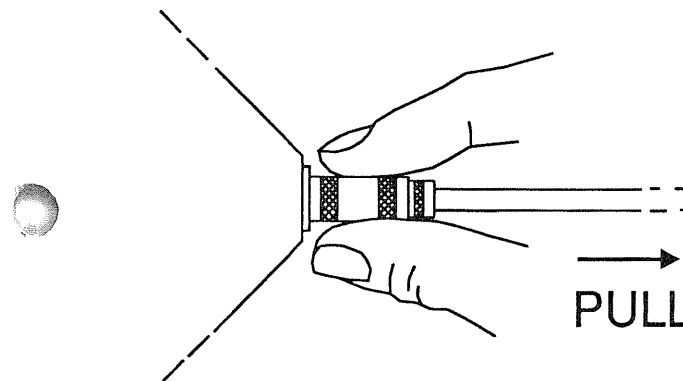
**Figure 4**  
XLR Wiring

Pin No.	Connection	Color
1	Common	Shield
2	Audio +	White
3	Audio -	Red

Attach the necessary plug (supplied by user) to fit the microphone or line jack of the equipment that the ENG-500 will be used with. Insert the plugs of the completed cable assembly into their respective jacks.

**Antenna Installation and Removal:** Install the antennas by aligning the antenna plug with the jack on the top of the ENG-500. Push the plug into the jack until the plug “snaps” into place.

To remove the antenna, grasp the antenna plug and pull as shown in Figure 5.



**Figure 5**  
Removing Antenna

**Controls:** Refer to Figures 1 and 2.

**Power:** Turn power switch (Item 6) on. Either the “0” or “180” diversity light (Item 1) should come on.

**Battery Check:** Hold the meter switch (Item 4) to the “BAT” position. A new battery will illuminate all 4 lights. When only 1 light comes on there are 60 minutes or less battery time remaining. We recommend that the battery be replaced at this point.

**Line/Mic Switch:** Set the switch (Item 3) to match the input of the equipment you are connected to. If Mic is selected, adjust the level control to suit the input range of the equipment you are connected to.

**Channel switch:** Set to match the channel of the wireless microphone (Item 2). If there is interference set both receiver and microphone to the other channel.

**Tone Squelch:** (Inside battery compartment) Turn on for use with transmitters such as the UT-500. Tone squelch prevents the ENG-500 from receiving unwanted signals that occur on the selected channel when the transmitter is turned off.

Turn off for use with transmitters not equipped with tone squelch such as the WT-450 and HT-450.

**NOTE:** If your transmitter is off, the Tone Squelch switch is on and there is an outside or interfering signal source, the RF meter will show a signal being received. However, no audio output will come from the ENG-500. If this situation exists, change the channel on both your receiver and transmitter to avoid interference.

**RF Meter:** Set the meter switch (Item 4) to "RF". With the transmitter on, you should see at least one light illuminated. More lights mean a stronger signal and less chance of interference and "drop-outs".

**AF Meter:** Set the meter switch (Item 4) to "AF". Adjust the transmitter audio gain until the -20 dB light just flickers during normal speech.

**Monitor Headphone Volume (Item 5):** Adjust to a comfortable level if you are plugged into the monitor jack on the ENG-500. Turn off (counter clockwise) if using some other source for monitoring.

## System Walk-Thru

**General:** Now that you have successfully "set up" your Telex Wireless System and turned on your equipment (amplifier/mixer, video cam etc.), you are ready to test the overall performance by "Walking" the Telex transmitter through the areas in which you will be using it.

The "system walk-thru" can detect the following RF problems:  
Weak signal strength caused by:

1. Poor antenna location
2. RF "Trouble Spots"
3. Operating distance beyond system capability
4. Malfunctioning system

**Carrier Indicator:** Under normal conditions with the meter switch in the "RF" position, the indication on the meter should be 2 or more lights with the transmitter on.

Weak signal conditions will result in low meter indication with the potential of distortion.

## Troubleshooting

PROBLEM:	SOLUTION:
<b>Distortion</b> - System's audio quality seems distorted at medium to high input levels.	Reduce audio gain on the transmitter by adjusting gain control.
<b>Hiss</b> - System seems to produce a "hiss" which is undesirable.	Check the gain settings on the transmitter and output level (MIC) on the receiver and adjust as necessary.
<b>Low Output</b> - System produces a lower output level than wired microphone in sound system.	Check the gain settings on the transmitter and output level (MIC) on the receiver and adjust as necessary.
<b>Dropouts</b> - When moving around performing area there seem to be locations where the signal "swooshes" or completely disappears.	Be sure both receiver antennas and transmitter antenna (if so equipped) are connected. Change the location of the ENG-500 or avoid the bad area with the transmitter.
<b>Interference</b> - System picks up signals other than wireless transmitter.	Be sure tone squelch is on. Make sure transmitter is turned on - this will usually eliminate the interfering signal. If problem persists with transmitter and tone squelch on, change channel on both units.

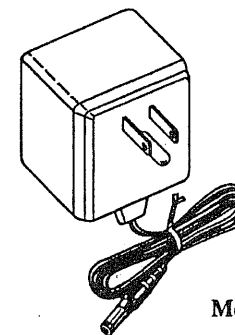
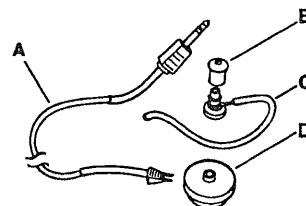
## Replacement Items:

Antenna:..... PN 870601-2  
 Power plug, external: ..... PN 650102 10-00  
 XLR plug w/18" cable: ..... PN 690404  
 Velcro Kit:..... PN 930039  
 Carrying Case with Foam insert:..... PN 870952

## Accessories:

**Earphone Assembly** - for monitoring incoming audio.  
 Four separate parts.

- A. Cord, CMT-98 ..... Order No. 60013-015
- B. Eartip, ET-1..... Order No. 35608-000
- C. Earloop, AEF-2..... Order No. 09252-000
- D. Earphone, RTW-04..... Order No. 60012-005



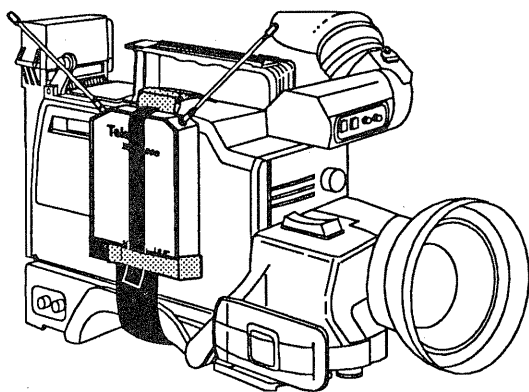
Model PA-1

**Model PA-1 Power Supply** - Powers the ENG-500 from a standard 115V 60 Hz Wall outlet.

Order No. 59702-001

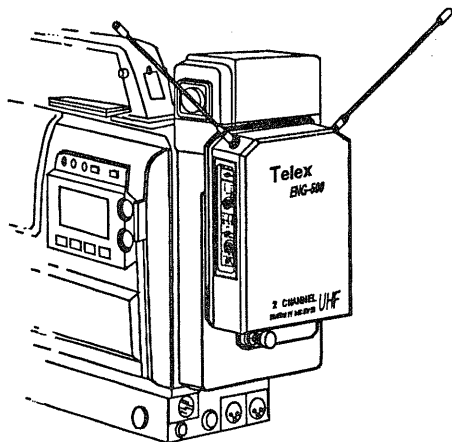
**Model DC-UM Strap mount** - Allows temporary attachment of the ENG-500 to camera utilizing an adjustable self locking strap.

**Order No. 71193-040**



**Model DC-NP1 Mounting Plate** - Attaches ENG-500 to NP-1 studs.

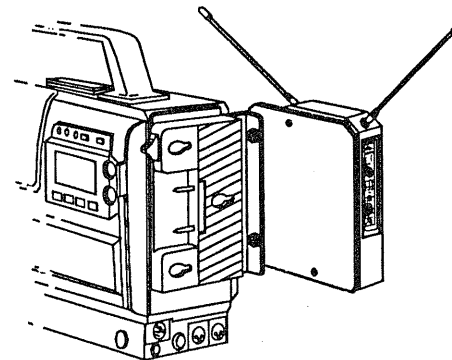
**Order No. 71193-010**



-12-

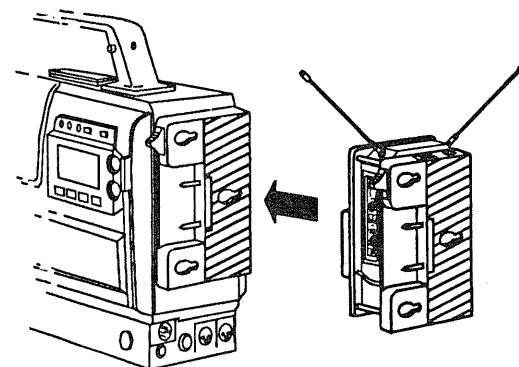
**Model DC-SM Anton/Bauer side mount plate** - Attaches ENG-500 to Anton/Bauer brand side mount accessory

**Order No. 71193-020**



**Model DC-GM Anton/Bauer "Sandwich" Mount** - Allows the ENG-500 to be sandwiched between the camera and an Anton/Bauer battery. Made with Anton/Bauer supplied parts. It is fully compatible with Anton/Bauer Gold Mounts and Digital Gold Mounts.

**Order No. 71193-030**

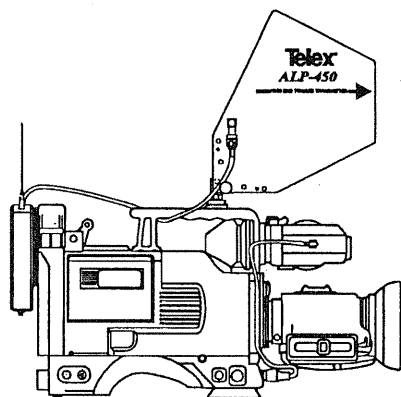


-13-



**Model ALP-TM Log Periodic Antenna with 5/8" stud clamp and cable** - Improves the range of the ENG-500 receiver. The antenna mounts on a standard 5/8 inch light stud and plugs in to one of the antenna jacks on the receiver.

**Order No. 71147-001**



### FCC Information

The TELEX Receiver ENG-500 is authorized under Part 15 of the Federal Communication Commission. Licensing of TELEX equipment is the user's responsibility and licensability depends upon the user's classification, and frequency selected. TELEX strongly urges the user to contact the appropriate telecommunications authority before ordering and choosing frequencies other than factory preset frequencies.

**Caution:** Changes or modifications made by the user could void the user's authority to operate the equipment.

### WARRANTY SERVICE INFORMATION

If your receiver or transmitter should need servicing under the warranty, please contact:

Warranty Service Department  
TELEX COMMUNICATIONS, INC.  
8601 East Cornhusker Highway,  
P.O. Box 5579,  
Lincoln, Nebraska 68505-5579 U.S.A.  
Phone: (402) 467-5321 or 465-7021

All claims of defect or shortage should be sent to the above address. When returning items for service, you must provide date and proof of purchase, such as a copy of the sales receipt, to establish warranty. A letter should be included outlining all symptoms and claimed defects. Information on how the equipment was installed and used is very helpful. Please include your phone number and return address in case our service technicians need to contact you.

Units that have been modified cannot be accepted for repair.

Include all information requested by the Service Center. Then pack the unit as follows:

Check the unit to see that all parts and screws are in place. Then wrap it in heavy paper or put it in a plastic bag. If the original carton is not available, place the unit in a strong carton that is at least six inches bigger in all three dimensions than the unit. Fill the carton equally around the unit with resilient packing material (shredded paper, excelsior, etc.). Seal it with gummed paper tape, tie it with a strong cord, and ship it by prepaid express, United Parcel Service or insured parcel post to the Hy-Gain Service Center.

It is very important that the shipment be well-packed and fully insured. Damage claims must be settled between you and the carrier and this can delay repair and return of the unit to you.

Telex reserves the right to make changes in design and improvement on its product without assuming any obligation to install the same on any of its products previously manufactured. Further Telex reserves the right to ship new and/or improved products