

# Operation Manual

## Tone Generator & Amplifier Probe

### **! WARNING**

Do not connect Tone Generator unit to live AC power line (220/110 VAC) or DC power line which exceed 120 VDC.

### **i IMPORTANT**

Tone Generator & Amplifier Probe must be installed 9V. battery before operation

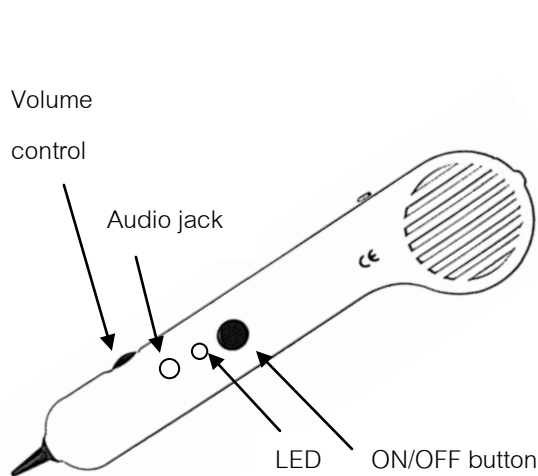


Figure 1 Amplifier Probe

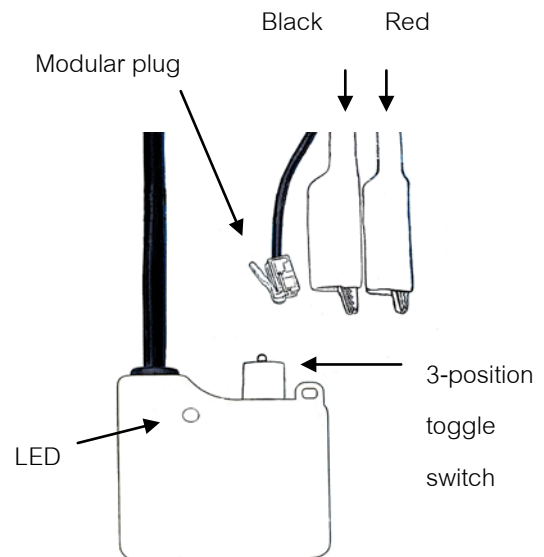


Figure 2 Tone Generator

### Amplifier Probe

#### **Features**

- Designed to identify and trace wires without necessary damaging the insulation.
- Works with any Tone Generator.
- Volume control for sensitivity adjusting to suit working environment.
- Recessed ON/OFF button switch to prevent battery drain while standby.
- Power supply by 9V battery with an average operating life of 100 hours.
- Audio earphone jack for operating in noisy environment such as server room, etc.
- LED for illustration of signal strength of tone receiving.

## Tone Generator

### Features

- Red and black alligator clip test leads for connecting in sending tone.
- A 3-position toggle switch for selecting mode of operation, a 3-colored LED for indicating line polarity, continuity, ring-in voltage, etc .
- A tone selector switch, located on PCB inside the case for selecting either a single solid tone, or dual alternating tone.

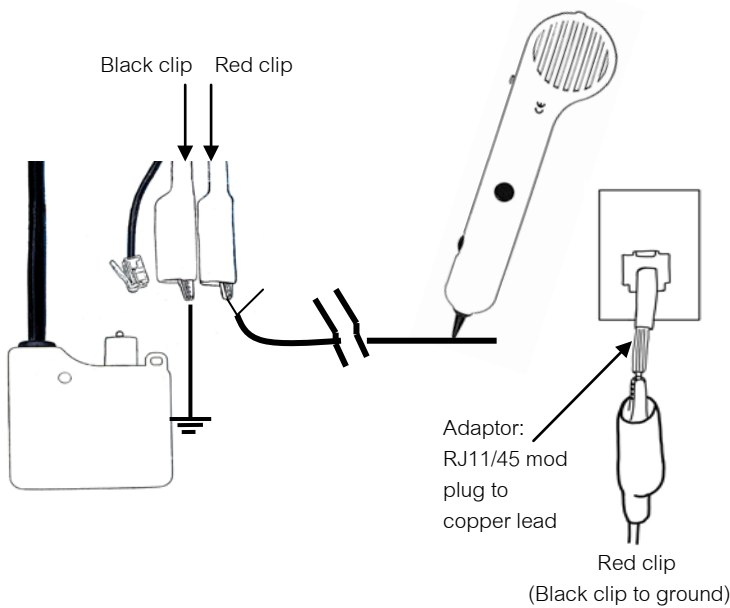


Figure 3 OFTEN USE METHOD (GROUNDED)

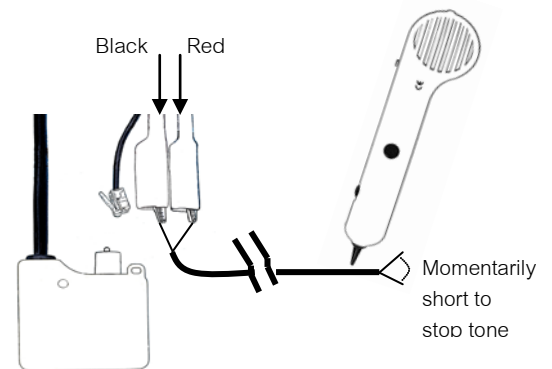


Figure 4 OPTIONAL USE METHOD (PAIRED)

## Operation

### A) WIRE TRACING

#### 1. SENDING TONE

Switch 3-position toggle switch on Tone Generator to "TONE" (selection for dual alternating tone or a single solid tone can be done by slide switch on PCB inside). Connection the tone generator to line pair has 2 methods.

#### **OFTEN USE METHOD (GROUNDED) :**

Connect red clip to a wire and connect black clip to ground or large metal part for example rack/ cabinet. (See figure 3) This method provide strongest tone and often use.

If connection point is RJ11/RJ45 jack, please use a self-made modular plug to copper adaptor (See figure 3) for connection with red clip. This adaptor made by stripping all wires and short together

the coppers (4/8 wires for RJ11/RJ45 ) one end, and terminating modular plug the other end.

**OPTIONAL USE METHOD (PAIRED) :**

Connect one clip to a wire and connect the other clip to the other wire of pair(See figure 4). This method can further verify if tracing pair is the target by momentarily shorting the pair at trace end and found that the tone is stop.

**2. PROBE TRACING**

- Press the round on/off spring-loaded button of the amplifier probe. The volume control switch can be adjusted to suit the environment. **Do not adjust volume with sound too high for better identifying target pair from crosstalk pairs .**
- Touch the tip of the amplifier probe to the insulation of each suspected pair.
- Speaker will receive tone which will be loudest on the target pair.
- Alternative using LED as visual tracing by observing its brightness. Brightest LED indicate receive of tone from the target pair. If using in high background noise or crosstalk ( other wires in group also have tones). It may needs to set volume to the level which cancel brightness of background noise or crosstalk from LED before tracing. Setting done by pressing button on probe, touch the tip to those wires which have background noise or crosstalk, and adjust volume down slowly from position high to low until LED brightness cut off or very fade. Then start tracing without adjusting volume, which a bright LED indicate receive of tone from the target.
- In noisy environment such as server room,etc., earphone can be connected to audio jack for better hearing.

**B) LINE TESTING BY TONE GENERATOR**

**IDENTIFYING PHONE TIP & RING (SWITCH TO “OFF”)**

1. Connect the RED clip to a wire and the BLACK clip to the other wire of pair.
2. The LED will glow “GREEN” when you connect the RED test lead to the RING SIDE.
3. The LED will glow “RED” when you connect the RED test lead to the TIP SIDE.

**VERIFYING PHONE LINE CONDITION (SWITCH TO “OFF”)**

1. Connect the RED clip to a wire and the BLACK clip to the other wire of pair.
2. Observe the LED:
  - A BRIGHT “GREEN” or “RED” LED indicates a CLEAR line.
  - No lamp indicates a BUSY line.
  - A BLINKING LED indicates a RINGING line.

### **IDENTIFYING PHONE LINES (SWITCH TO “OFF” THEN “CONT”)**

1. Dial the line to be identified.
2. While the line is being ring, connect the RED clip to a wire and the BLACK clip to the other wire of pair.
3. In the “OFF” position, the indicator LED will blinking “GREEN” or “RED” if connected to the target pair.
4. Further confirm by switch to “CONT”, that will terminate the calling .

### **TESTING LINE CONTINUITY(SWITCH TO “CONT”)**

1. Connect the RED clip to a wire and the BLACK clip to the other wire of pair
2. Shorting both wires at the other end of line
3. A bright “GREEN” LED indicates continuity of line is good. LED will not work if the line resistance exceeds 10K Ohms

### **TESTING LINE CONTINUITY WITH BUTT SET (SWITCH TO “TONE”)**

1. Connect the RED clip to a wire and the BLACK clip to the other wire of pair.
2. Connect a Butt set/ Telephone Test Set in monitor mode at the other end of line
3. Reception of clear tone on butt set, verify a continuity of the line is good.

All above line testing by tone generator of item B) are also can be done by connecting with RJ11 modular plug instead of test clips.

### **REMARK) COAX LINE CONNECTING**

1. Connect red clip to outer shield of coax and black clip to ground or large metal part for “grounded method tracing”.
2. Connect one clip to outer shield and the other clip to center conductor of coax for “paired method tracing” and “line testing by tone generator”.

### **MAINTENANCE**

The Tone Generator and amplifier probe is maintenance free except for battery replacement. Below is the Instruction for Battery replacement

#### **Probe Amplifier**

Remove the screw from the battery compartment, replace with new 9V battery and re-assemble screw DO NOT OVERTIGHTEN.

#### **Tone Generator**

Separate the case by removing a screw on back side, replace with new 9V battery and re-assemble screw DO NOT OVERTIGHTEN.

### **Warranty**

Warranty limited solely to repairing or replacement, Warranty will not cover for unit that was defected by accidental, improper uses and one repaired by other than manufacturer’s personnel.