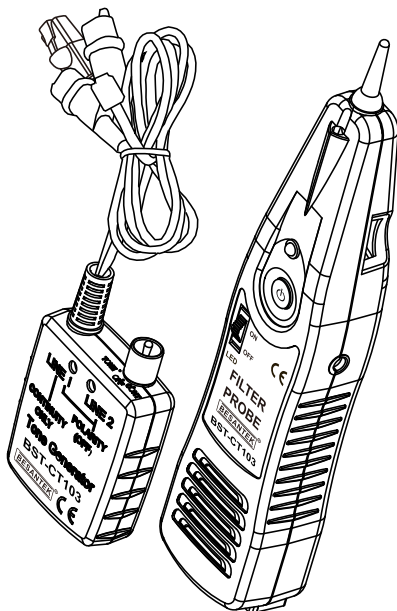


BESANTEK[®]

BST-CT103

CABLE TRACER

Filter Probe & Tone Generator



INSTRUCTION MANUAL

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1. INTRODUCTION

The BST-CT103 has been designed and tested according to CE safety requirements for electronic measuring apparatus, EN 61326-1 EN 61000-4-2 EN 61000-4-3 and other safety standard.

The BST-CT103 is designed to identify and trace wires or cables within a group without damaging the insulation.

2. FILTER PROBE

A. Features

- Works with any Tone Generator to identify wires.
- Volume control for increasing sensitivity and adjustable to suit work environment.
- 2 operation modes: Filter on / Filter off.
- The auto-off function (5 minutes) prevents battery consumption.
- Power supply is available in any 9V battery with a life of approximately 50 hours.
- A phone jack is designed for headset or handset.
- Flashlight function.

B. Instructions

- Connecting the tone generator.

In terminated working cables:

Connect one test lead to a terminated wire and the other test lead to earth or equipment ground. (See figure 1)

In unterminated or non-working cables:

Connect one test lead to an unterminated wire and the other test lead to another unterminated wire.

Press the round "⏻" button for more than 1 second to turn on the filter probe. You can hear a short beep

when you turn on the unit.

The red LED flashes every 4 seconds as a visual indicator and reminder.

This is the mode of " Filter off ".

- An instant press of the round " ⏻ " button to change into the mode of " Filter on ".

The green LED flashes every 4 seconds as a visual indicator and reminder.

This is the mode of " Filter on " which can avoid the AC power line interference of 50Hz/60Hz.

- The " Filter on " mode and the " Filter off " mode can be exchanged by an instant press.
- The volume control can be adjusted to suit the environment. The volume can be increased to overcome noise or decreased to reduce interference.
- Touch the tip of the filter probe to the insulation of each suspect conductor.
- Reception of tone will be loudest on the subject wire. The brighter the LED, the stronger of tone signal detected.
- Press the round " ⏻ " button for more than 3 seconds to turn off the filter probe.
You can hear a long beep when you turn off the unit. The filter probe also has the auto-off function (5 minutes).

C. Special Application

- Plug in the phone jack activates the filter probe automatically without a long press of the round " ⏻ " button. It is equipped for connecting a lineman's operation.

- The flashlight function for easier cable tracing in the dark.

3. TONE GENERATOR

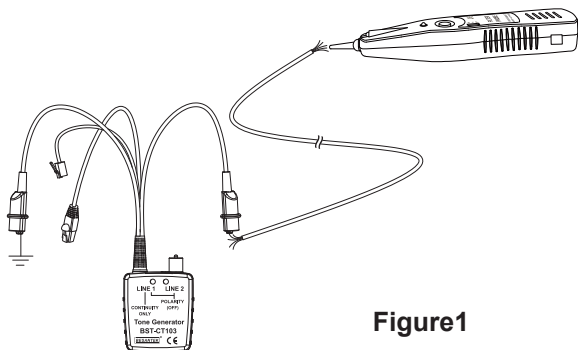


Figure1

A. Features

- Red and black test leads with a standard 4 conductor modular cord and plug.
- A 3-position toggle switch controls the modes of operation and two bi-colored LEDs display line polarity for Lines 1 and 2. (Figure 2)
- The tone and continuity (cont.) test functions are only applied to Line 1 using the modular plug.
- A tone selector switch located inside the test set is provided for choosing either a fast dual alternating tone or a slow dual alternating tone.

(CAUTION: DO NOT CONNECT TO AN ACTIVE AC CIRCUIT EXCEEDING 24V IN THIS MODE.)

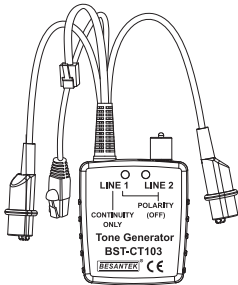


Figure 2

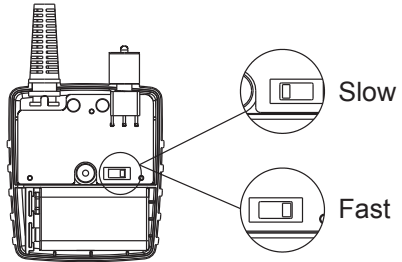


Figure 3

B. Instructions

All of the following tests can be performed by using the red and black test leads or the modular plug.

NOTE: When using the modular test plug, the polarity test function applies to Lines 1 and 2. The continuity and tone functions ONLY apply to Line 1.

● POLARITY TEST: IDENTIFYING TIP & RING (SWITCH TO "OFF")

- a. Connect the RED test lead to the side of one line and the BLACK lead to the side of another line.
- b. The LED will glow "GREEN" when you connect the RED test lead to the RING SIDE of the line.
- c. The LED will glow "RED" when you connect the RED test lead to the TIP SIDE of the line.

● IDENTIFYING LINE CONDITION (SWITCH TO "OFF")

- a. Connect the RED test lead to the RING SIDE of the line and the BLACK to the TIP.

- b. Watch the LED:
 - I. A BRIGHT "GREEN" LED indicates a CLEAR line.
 - II. A DIM "GREEN" LED indicates a BUSY line.
 - III. A BRIGHTLY FLICKERING "GREEN and RED" LED indicates a RINGING line.
- **VERIFYING LINES (SWITCH TO "OFF" THEN "CONT")**
 - a. Dial the line to be verified.
 - b. While the line is ringing, connect the RED lead to the RING SIDE of the line and the BLACK to the TIP.
 - c. In the "OFF" position, the indicator lamp will flicker "RED and GREEN" when the test leads are connected to the subject pair.
 - d. If you switch the test set to "CONT", it will terminate the call on the subject line.
- **SENDING TONE (SWITCH TO "TONE")**

CAUTION: DO NOT CONNECT TO ANY ACTIVE AC CIRCUIT EXCEEDING 24V IN THIS MODE.

 - a. Connect the test leads to the pair, or attach one lead to ground and one lead to either side of the line. (See figure 1)
 - b. A fast dual alternating tone, or a slow dual alternating tone can be selected from the switch inside the tone generator. (See figure 3)
 - c. Probe the suspected wires with the filter probe. Reception of tone will be strongest on the subject wire. In case of ready access to bare conductors, a handset may be used to receive the tone.

- **TESTING CONTINUITY (SWITCH TO "CONT")**
CAUTION: DO NOT CONNECT TO ANY ACTIVE AC OR DC CIRCUIT IN THIS MODE.

- a. Connect the test leads to the subject pair.
- b. Use "cont" position.
- c. A bright "GREEN" light indicates continuity. The LED will not glow if the line resistance exceeds 12k.

- **TESTING CONTINUITY USING TONE (SWITCH TO "TONE")**
CAUTION: DO NOT CONNECT TO ANY ACTIVE AC OR DC CIRCUIT IN THIS MODE.

- a. Connect the test leads to the subject pair.
- b. Use a handset at the remote end and touch the wire end(s) with the clip lead(s).
- c. Reception of tone is an indication of continuity.

- **MODULAR TESTING**

All above tests are available through the modular plug for line 1 only - red and green wires.

- **COAX TESTING**

- a. To test unterminated coax, connect red to outer shield and black to center conductor or red to outer shield and black to ground.
- b. To test terminated coax, connect red to connector housing and black to center pin or red to connector housing and black to ground.

4. SPECIFICATION

Filter Probe

Operation mode	Filter on (avoid the interference of 50Hz/60Hz)
	Filter off
Receiver distance	< 50 cm
Sensitivity control	√
Probe tip	Fixed
Power source	9V battery × 1
Dimensions	250(L) × 39(W) × 38(D)mm
Weight (battery included)	Approx. 180g

Tone Generator

Wave form	Square Wave
Frequency	1kHz ± 15%
Over voltage protection	80V DC
Alternating tone	Fast and Slow
Connection	RJ11 connector, alligator clip x 2, RJ45 connector
Power source	9V battery × 1
Dimensions	86(L) × 63(W) × 26(D)mm
Weight (battery included)	Approx. 130g

General

Operating Temperature & Humidity	0°C~40°C, 80% Max
Storage Temperature & Humidity	-10°C~50°C, 80% Max
Safety Standard	EN 61326-1 EN 61000-4-2 EN 61000-4-3
Accessories	Instruction manual Batteries Soft pouch

5. MAINTENANCE

A. Cleaning

Periodically wipe with a damp cloth and mild detergent; do not use abrasives or solvents.

B. Battery Replacement

- The filter probe is maintenance free except for battery replacement. Remove the screw from the battery compartment, replace the 9V battery and reassemble.
- Separate the case of the tone generator, install a fresh 9V battery and reassemble. DO NOT OVER TIGHTEN.

C. Warranty limited solely to repair or replacement; no warranty of merchantability, fitness for a particular purpose or consequential damages.