

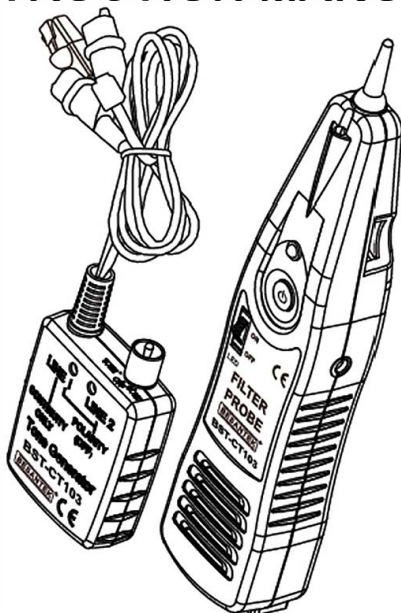
BESANTEK[®]

BST-CT103

CABLE TRACER

Filter Probe & Tone Generator

INSTRUCTION MANUAL



Test Equipment



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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

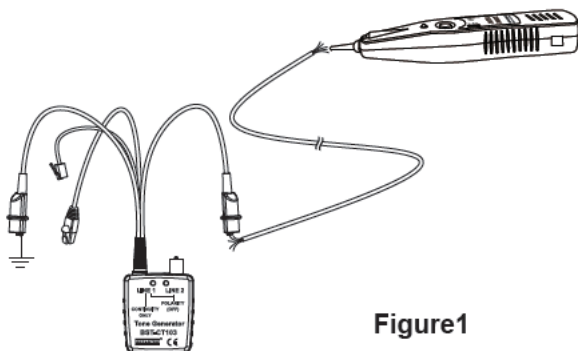


Figure1

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.)

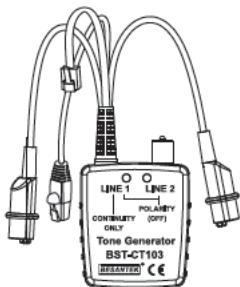


Figure 2

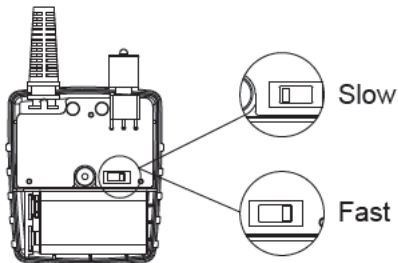


Figure 3

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.

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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.