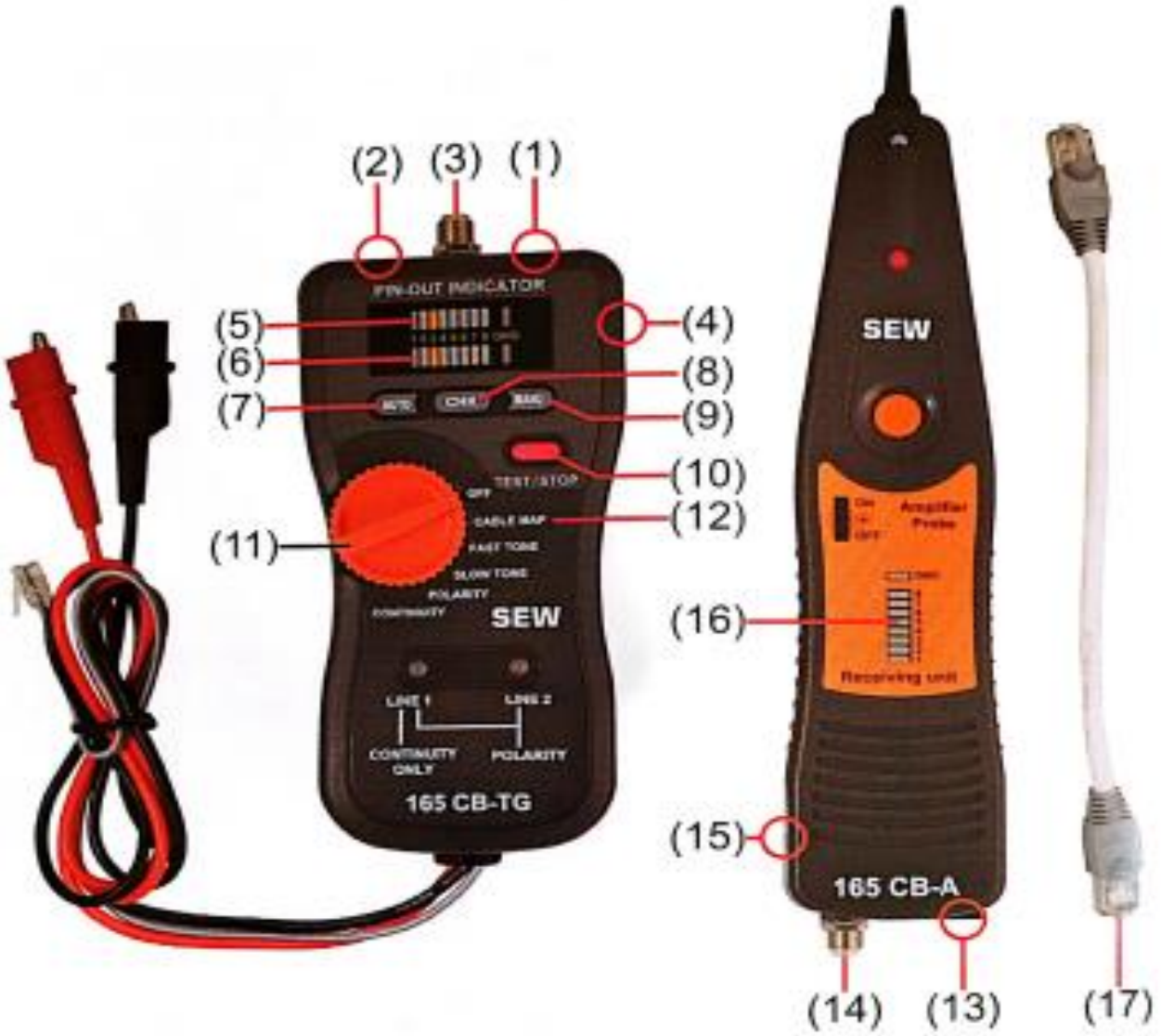
# SEW 165 CB

## All in One Multi-purpose Cable Tester and Cable Tracer


# INSTRUCTION MANUAL




1. RJ45 jack of sourcing end
2. RJ45 jack of receiving end
3. Coax connector of sourcing end
4. USB jack of sourcing end
5. LED indicator of sourcing end
6. LED indicator of receiving end
7. Auto scan control button
8. "CHK" Check button for manual test
9. Manual test control button
10. "TEST/STOP" button
11. Function rotary switch
12. Cable Map function
13. RJ45 jack of the receiving unit
14. Coax connector of the receiving unit
15. USB jack of the receiving unit
16. LED indicator of the receiving unit
17. Self-test cable

## OPERATION

### Loopback test

- Plug one end of the RJ45/RJ11 cable into the RJ45 jack of sourcing end (OUT) on the master unit and another end of the RJ45/RJ11 cable into the RJ45 jack of receiving end (IN) on the master unit.
- Select the "CABLE MAP" function with the function rotary switch. Press the "TEST/STOP" button to start a sequential scanning process if the master unit is in "auto-scanning" mode.
- Press the "TEST/STOP" button, the pin1 LED lamps of the LED indicators will be alight if the master unit is in "manual scanning" mode.

**Note:** When the battery power is low, the testing results may not be correct. Please replace with a new battery.

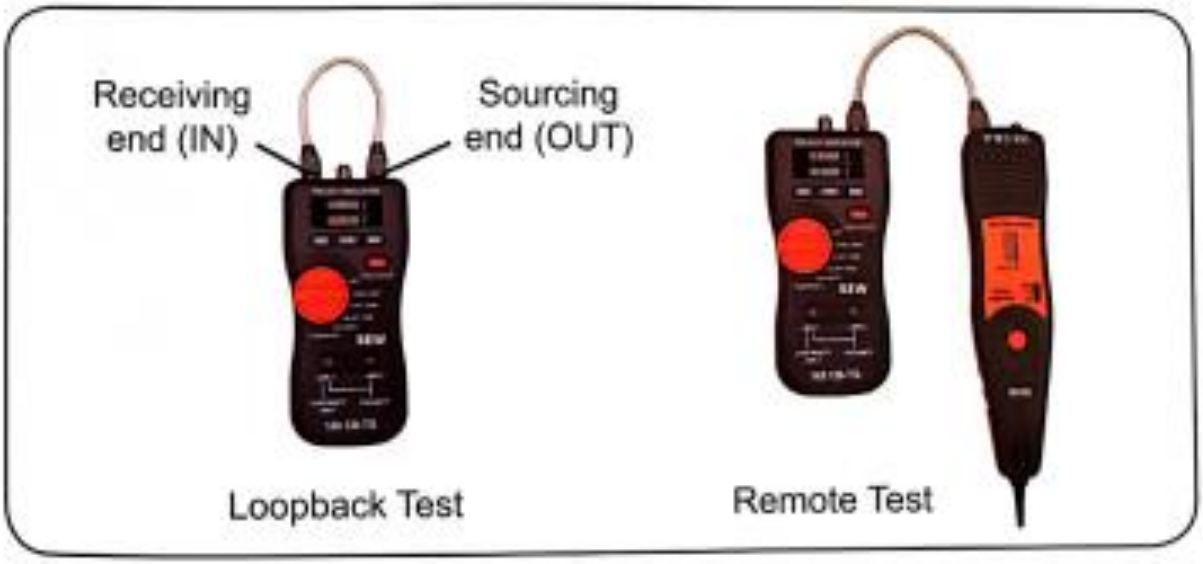
- You can choose a auto-scanning mode or a manual scanning mode by pressing the "AUTO" button or the "MANU" button.
- When the loop is "OPEN", you will hear the sound of the buzzer.

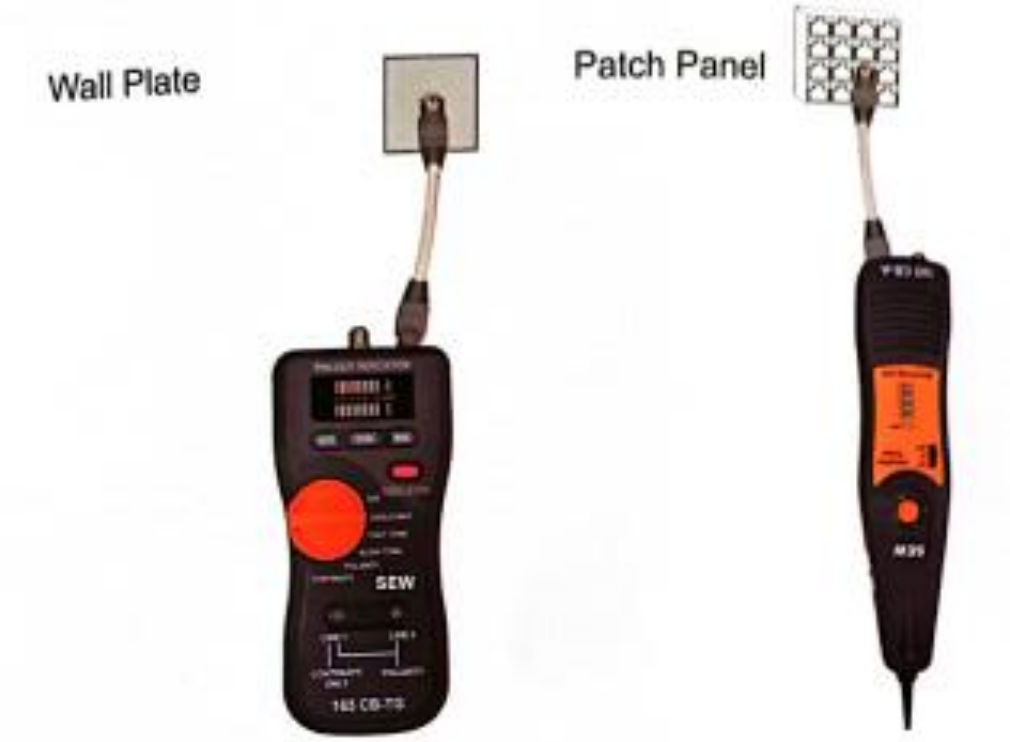
### Remote test

- Remote test is designed for RJ45/RJ11, Coax and USB cables. Users also can check BNC cables and multi-wire cables by using our optional accessories. (BNC testing cables, Multi-wire testing cables)
- Plug one end of your cable into the RJ45/RJ11 jack, Coax connector or USB jack of sourcing end on the master unit and plug another end of your cable into the RJ45/RJ11 jack, Coax connector or USB jack of the receiving unit, then make tests.
- Read the testing results from the LED indicator on the receiving unit.

## TEST PIN CONFIGURATION

### RJ45/RJ11

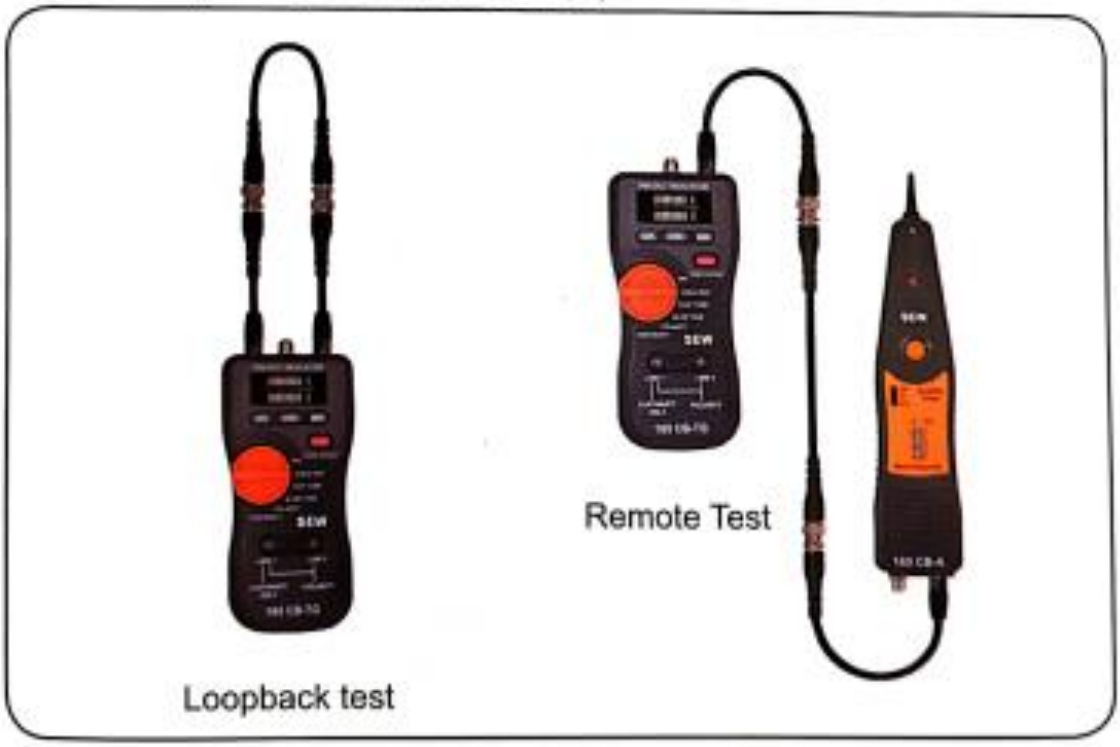




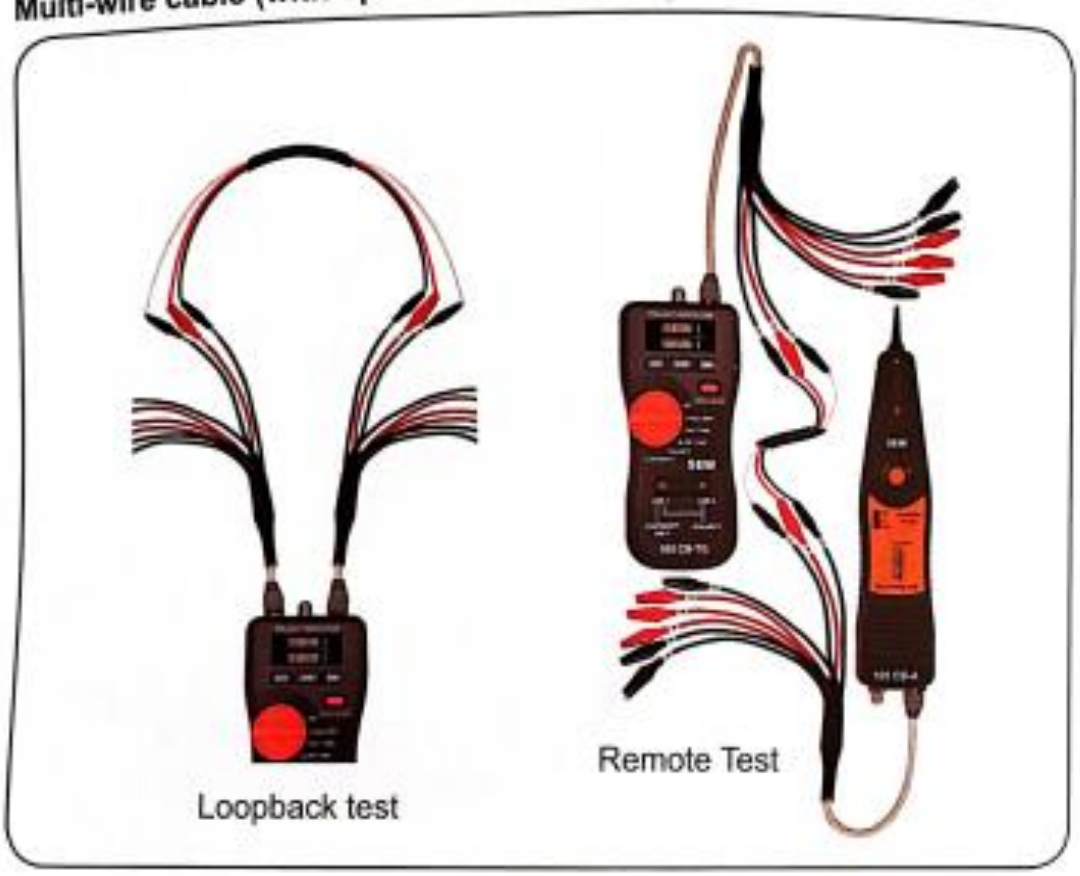

**Coax cable**

**USB cable**


**BNC cable (with optional accessories)**



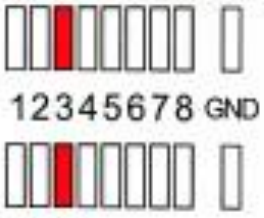
**Multi-wire cable (with optional accessories)**




**TEST RESULTS**

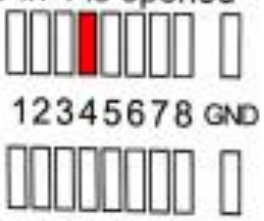
a. Continuity

Pin 3 is continued



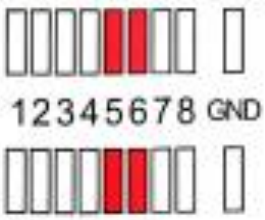

b. Open

Pin 4 is opened



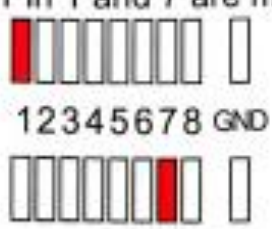

c. Short-circuit

Pin 5 and 6 are shorted




d. Miss-wired

Pin 1 and 7 are miss-wired



## Cable Tracer

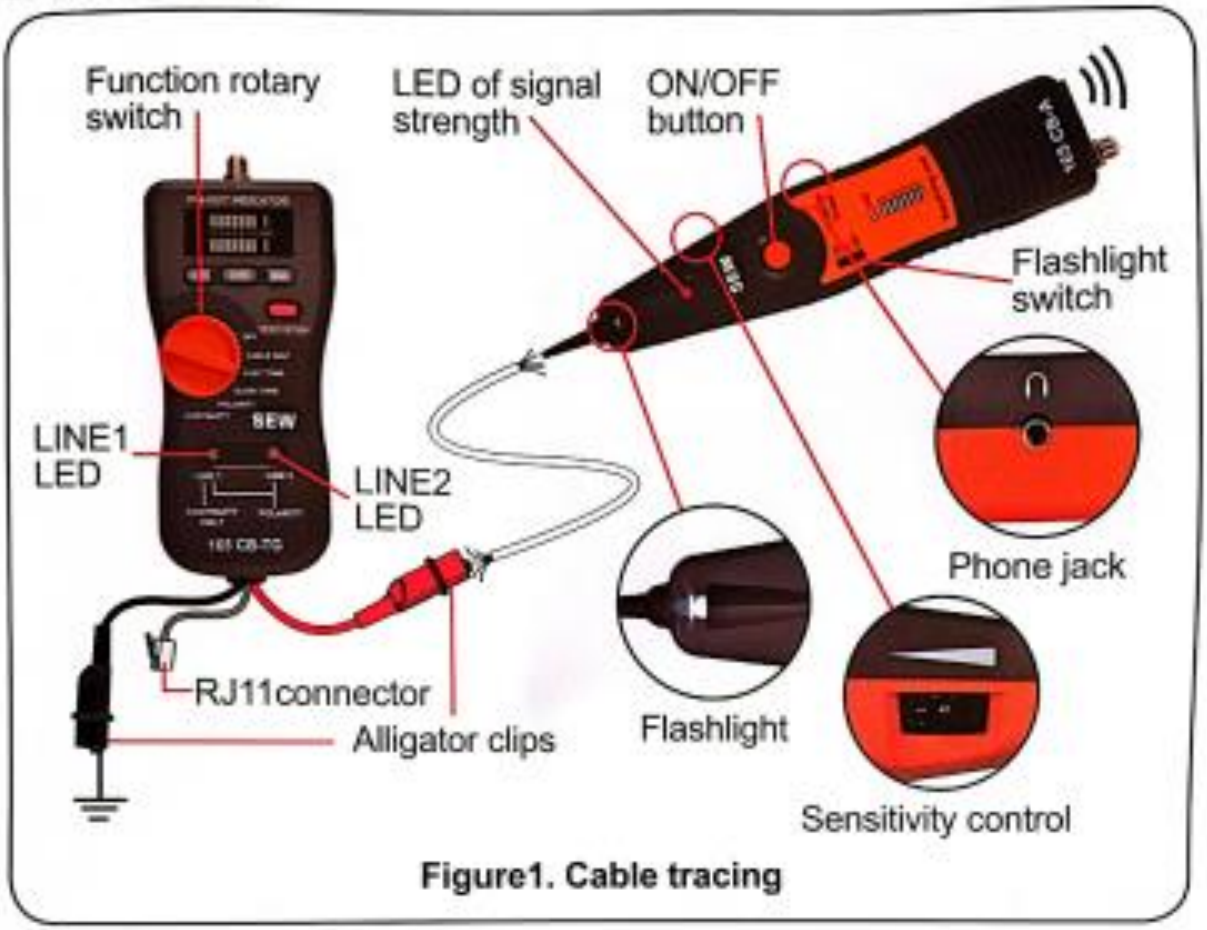



**Figure1. Cable tracing**

## AMPLIFIER PROBE

### FEATURES

- The Amplifier Probe is designed to identify and trace wires or cables within a group without damaging the insulation.
- The flashlight function for easier cable tracing in the dark.
- An LED indication for the signal strength
- Works with any Tone Generator to identify wires.
- Volume control for increased sensitivity and adjustable to suit work environment.
- Recessed ON/OFF button prevents battery drain.
- Power supply is from any 9V battery with a life of approximately 100 hours.
- An audio jack is provided for headset.

## 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.

## MAINTENANCE

The amplifier probe is maintenance free except for battery replacement. Remove the screw from the battery compartment, replace the 9V battery and reassemble.

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

## TONE GENERATOR

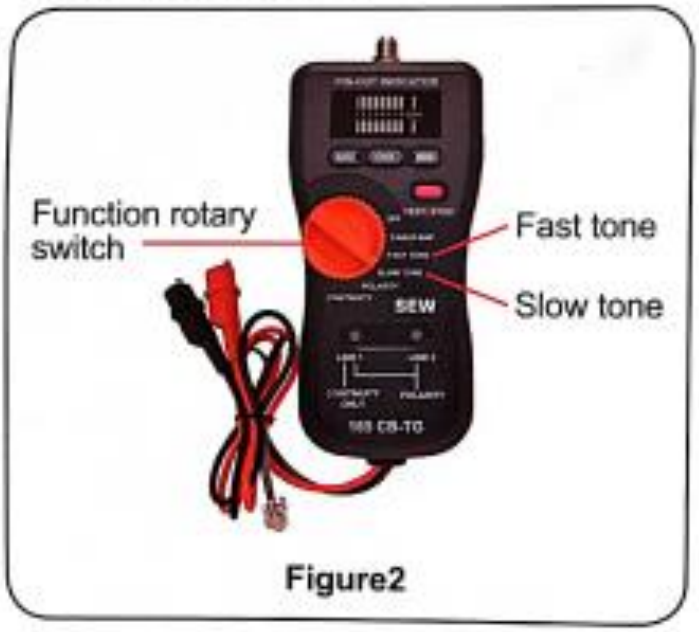



**Figure2**

## FEATURES

- Tone Generator is a great tool for locating and identifying cable pairs or individual conductors.
- Two bi-colored LEDs for Line1 and Line 2 indication of the polarities of the telephone lines.
- Identifying Tip and Ring of telephone lines.
- Identifying telephone line condition : Clear line, Busy line and Ringing line.

- 165 CB does not only serves as a tone generator, but it also serves as a continuity and polarity tester.
- Users can select a fast dual tone or a slow dual tone by the function rotary switch. (See Figure 2)
- The unit has red and black alligator type terminals, a modular cable of 4 conductors with a strong connector.
- The continuity function only applies to Line1.

**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 function ONLY applies to Line 1.


**Figure3**

- **POLARITY TEST: IDENTIFYING TIP & RING (SWITCH TO "POLARITY")**
  1. Connect the RED test lead to the side of one line and the BLACK lead to the side of another line. (See Figure 3)
  2. The LED will glow "GREEN" when you connect the RED test lead to the RING SIDE of the line.
  3. The LED will glow "RED" when you connect the RED test lead to the TIP SIDE of the line.

- **IDENTIFYING LINE CONDITION (SWITCH TO "POLARITY")**

1. Connect the RED test lead to the RING SIDE of the line and the BLACK to the TIP. (See Figure 3)
2. Watch the LED:
   1.1 A BRIGHT "GREEN" LED indicates a CLEAR line.
   1.2 A DIM "GREEN" LED indicates a BUSY line.
   1.3 A BRIGHTLY FLICKERING "GREEN and RED" LED indicates a RINGING line.

- **VERIFYING LINES (SWITCH TO "POLARITY" THEN "CONTINUITY")**

1. Dial the line to be verified.
2. While the line is ringing, connect the RED lead to the RING SIDE of the line and the BLACK to the TIP.
3. In the "POLARITY" position, the indicator lamp will flicker "RED and GREEN" when the test leads are connected to the subject pair.
4. If you switch the test set to "CONTINUITY", it will terminate the call on the subject line.

- **SENDING TONE (SWITCH TO "FAST TONE" or "SLOW TONE")**

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

1. 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)
2. A fast dual alternating tone, or a slow dual alternating tone can be selected from the function rotaty switch.
3. Probe the suspected wires with the amplifier probe. Reception of tone will be strongest on the subject wire. In case of ready access to bare conductors, a handset or headphone may be used to receive the tone.

- **TESTING CONTINUITY (SWITCH TO "CONTINUITY")**

**CAUTION:DO NOT CONNECT TO ANY ACTIVE AC OR DC CIRCUIT IN THIS MODE.**

1. Connect the test leads to the subject pair.
2. Switch to "CONTINUITY".
3. A bright "GREEN" light indicates continuity. The LED will not glow if the line resistance exceeds 12kΩ

- **TESTING CONTINUITY BY USING TONE (SWITCH TO "FAST TONE" or "SLOW TONE")**

**CAUTION:DO NOT CONNECT TO ANY ACTIVE AC OR DC CIRCUIT IN THIS MODE.**

1. Connect the test leads to the subject pair.
2. Use a handset or headset at the remote end and touch the wire end(s) with the clip lead(s).
3. Reception of tone is an indication of continuity.

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

- **COAX TESTING**
  1. To test unterminated coax, connect red to outer shield and black to center conductor or red to outer shield and black to ground.
  2. To test terminated coax, connect red to connector housing and black to center pin or red to connector housing and black to ground.

## Spicifications

**Master unit & Tone Generator** **165CB-TG**

| | |
|---|---|
| Display | LED Modules<br>Bi-colored LEDs |
| Waveform | Square wave |
| Frequency | 1kHz±15% |
| Over Voltage Protection | 80V DC |
| Single Tone | —— |
| Alternating Tone | Fast and slow |
| Connection | RJ11 connector |

**Amplifier Probe & Receiving unit** **165CB-A**

| | |
|---|---|
| Frequency Detection | 1Hz~12kHz |
| Receiver Distance | <50cm |
| Sensitivity Control | V |
| Flash light | V |
| LED for signal strength | V |
| LED module | V |

**General**

| | |
|---|---|
| Operating Temperature & Humidity | 0°C~40°C, 80% Max |
| Storage Temperature & Humidity | -10°C~50°C, 80% Max |
| Power Source | 165 CB-A : 9V battery<br>165 CB-TG : 9V battery |
| Dimensions | 165 CB-A : 263(L) x 55(W) x 37.3(H)mm<br>165 CB-TG : 180(L) x 82(W) x 43.8(H)mm |
| Weight | 165 CB-A : 210g<br>165 CB-TG : 280g |
| Safety Standard | EN 61326-1 EN 55011<br>EN 61000-4-2 EN 61000-4-3 |
| Accessories | Instruction manual<br>Batteries<br>Carrying case<br>Self-test cable |
| **Optional Accessories** | **BNC testing cables**<br>**Multi-wire testing cables** |

Carrying case

BNC testing cables
(optional accessories)

Multi-wire testing cables
(optional accessories)