



PHONE TRACER & REMOTE

USER MANUAL

R171053



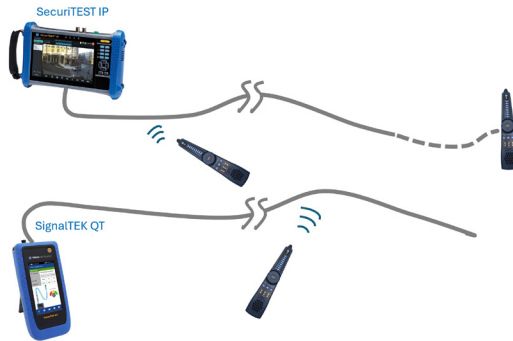
TREND NETWORKS

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Introduction

The Tone Tracer & Remote is a professional-grade diagnostic pair designed to overcome the limitations of traditional analog tracers. Using a high-frequency digital signal carrier, it enables technicians and engineers to perform accurate cable tracing and wiremap verification during network installation and maintenance.

The Digital Probe is compatible with both SecuriTEST IP (OS11) and SignalTEK QT for cable tracing. The Wiremap Remote is designed for seamless data-link testing with the SecuriTEST IP platform only.



Note

Please read this manual carefully before use.

Safety Notes

1.1 General Safety

- The Tone Tracer & Remote must NOT directly contact any bare wires connected to high AC voltage during the operation.
- All interfaces connected to the cable or other devices must NOT exceed 60V DC.
- Any voltage over 60V DC could cause the personal injury and damage to the unit.

1.2 Battery Disposal

- The battery must NOT be disposed of in the fire as this may cause explosion.
- Batteries MUST not be short-circuited as this may cause fire.
- Dispose of used batteries in accordance with local regulations.

1.3 Device Disposal

- Electronic devices and batteries must NOT be disposed of with general household waste.
- Improper disposal may cause safety hazards, environmental damage, and legal issues.
- Remove batteries from the unit before disposal and use approved collection facilities locally.

Battery

2.1 Battery Type

The unit requires two AA batteries. The battery type could be

- AA Li-ion or Li-Poly rechargeable batteries
- AA NiMH rechargeable batteries
- AA Zinc/Alkaline (dry cell) batteries

All rechargeable batteries must be fully charged before use.

2.2 Battery Status Indication

When the battery LED (top of the probe) flashes in red, it means the battery needs to be

- Recharged for rechargeable battery or
- Replaced for dry cell battery

Tone Trace & Remote layout

1. Sensitivity Dial / Power - Turn clockwise to power ON and adjust signal strength

2. Probe Tip - Used to detect the cable signal

3. LED 1-8 & S - Shows signal strength or wire pin number

4. Remote Port (UTP/STP) - Used for wiremap and pin tests

5. PoE Detect Port - Used only to check PoE voltage and pin use presence

6. Operation mode buttons - Wiremap scan, speaker mute, flash light control

7. Wiremap remote status - Indicating test results and operation mode

8. Audio Output - Used for ear phone (excluded) in noisy environment



Cable Tracing (supported tone generators only)

The Tone Tracer & Remote uses high frequency digital technology (-129KHz) to provide clear and interference free cable tracing.

Compared with analogue tone tracers, this digital system:

- Eliminates 50/60 Hz noise
- Does not require additional filtering
- Maintains high sensitivity with a clear tracing tone


4.1 Supported tone generators

- SecuriTEST IP Tone generator
- SignalTEK QT Digital 3 Tone generator

4.2 Operation of tone tracing

- Switch on the tone tracer by using sensitivity dial to clockwise with a beep sound.
- Place the probe tip near the cable connected with tone generator
- Trace along the cable by hearing audio sound with sensitivity adjustment accordingly.
- Note: The higher the frequency, the stronger the signal.
- The 1-8 & S 9 LEDs indicate the strength of the signal detected. The higher the number the stronger the signal. When the strength of the signal reaches No.8, the sensitivity needs to be reduced via dial anti clockwise.
- By comparing the individual pair signal strength to identify the right pair applied tone signal with strongest signal strength. This is only applied to the tone generator has the capability to apply individual pair tone generator such as SignalTEK QT or individual wires connected by crocodile clips.

4.3 Noisy environments

- When the environment is noisy, users can use 3.5mm earphone (not supplied) to replace the speaker or
- Press mute  to disable sound and rely on LED indication watching the signal strength LEDs 1-8 to trace the cable.

4.4 End of cable tracing

Once the end of cable is located, users can plug the end of traced cable to the remote port of the tone tracer to conduct the a wiremap test without returning back to the tone generator side change to wiremap mode.

Note

This function is only applicable to the SecuriTEST IP's Tone generator not for SignalTEK QT's Tone generator.

Cable Tracing (supported tone generators only)

This tone tracer has the capability to do the wiremap test by using built-in remote for STP or UTP data cable. It can detect cable wire status as well as the terminated plug pin status by connecting cable to built-in Remote UTP/STP port of the Tone Tracer.

Following two wiremap test modes selectable:

- Wiremap scan mode - sequential pin scanning (pins 1 to S)
- Plug pin check mode - identifies plug termination faults after failed wiremap scan.

Note

Most of the cable issues caused by poor termination on plug.

Warning

*Before plugging into the **Remote UTP/STP** port, make sure no voltage >60V DC present the cable under test such as live POTS phone line, ISDN phone line connected. These phone line ringing voltage and DC power supply could reach 90-110V and damage the remote circuit instantly!*

5.1 Wiremap test mode

After the far end cable connected to the supported tone generator and

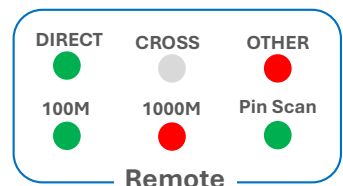
- Connect the near end into **Remote UTP/STP** port on the side Tone Tracer & Remote.
- The probe will start scanning the individual pin from 1 to S (S stands for shield) sequentially at 1s interval along the beep sound.
- After scanned 1 to S pin full cycle, all LEDs will illuminate once and three beeps indicate the next scan cycle.



During the wiremap scanning, the wiremap supported speed LEDs, status LEDs will illuminate in green or red colour accordingly based on measurement results. The Pin Scan LED will be flashing as well. The following LED status shows an example of UTP with pin 4&5 open fault. The cable is no longer to support 1000Mb/s only 100Mb/s now.

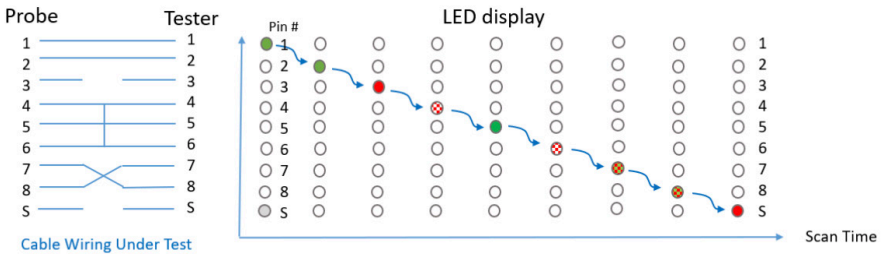
Any short, open pin detected will be illustrated in LED with different sound. This will alert users to see where the fault appearing on the cable under test.

The following table shows the different pin status of LEDs and audio related.



Pin Status	LED Lit Status	Sound
Correct	Yes lit in order	Normal tone
Open	No	No tone
Short	Yes each shorted pins lit at the same time	Low tone
Cross	Yes in wrong order	Normal tone

The following diagram illustrates the example of test principle of scanning each pin's wiremap test.



5.2 Plug pin check mode

As the most common fault of the cable termination is from the plugs or socket, this function gives you a quick identification the fault caused by the cable or wrong termination of plug after the wiremap scanning found the short, open or other fault.

a. For checking plug pins' termination correct or not, straight plug the terminated cable under test into the Remote UTP/STP port of the tone tracer.

b. Press scanning key  once into Plug pin check mode.

c. The **Pin Scan** LED changes from flashing to a steady green.

d. The connected remote pin status is displayed instantly as following table.



Pin Status	Pin 1-8 & S LED
Normal	On
Open	Off
Short	Flash, shorted pins flashing at the same time

e. If any pin shows open or short, re-terminate the plug

f. If all pins are normal (red LED), the plug termination is correct, and fault is elsewhere.

g. To resume wiremap scan mode, press scanning key again and **Pin Scan** LED will return to flashing.

5.3 Remote LED indication

Located at the bottom of the tone tracer:

DIRECT - Straight through cable detected (green)

CROSS - Crossover cable detected (green)

OTHER - Any other errors detected (red)

100M - Correct 4 wires (12 & 36 pairs) detected for 100Mb/s (green)

1000M - Correct 8 wires (4 pairs) detected for 1000Mb/s (green)

Pin Scan - Flashing (scan mode) / Steady (plug check mode)

PoE Detection

The built in PoE PD detector provides a quick check for:

- Presence of PoE
- Voltage pin assignment

Warning

Before plugging into the PoE test port, make sure no voltage >60V DC present the wires such as live POTS phone line, ISDN phone line connected. These phone line ringing voltage and DC power supply could reach 90-110V and damage the PoE detecting circuit instantly!

6.1 PoE detection results

When the cable plugged into the bottom of the Tone Tracer's PoE Detect port, the relevant pins' LED will light as following possible results:

Port LED Position	Bottom left (green LED only)	Bottom right (yellow LED) only	Bottom left and right
LED Status	Green flash or steady	Yellow flash or steady	Green and Yellow flashing or steady
Voltage on pins	12, 36	45,78	12,36 & 45,78
Possible PoE class	Class 1-4	Class 1-4	Class 5-8
Possible PoE type & standard	PoE, PoE+ (802.3af/at)	PoE, PoE+ (802.3af/at)	PoE++ (802.3bt)


Note

Flash LED usually indicates protocol based PoE (e.g. PoE switch). Steady LED usually indicates no protocol based passive PoE (e.g. mid span injector voltage directly).

6.2 Usage of PoE detection

- PoE port is independent of tone tracing and wiremap remote functions.
- No external power is required.
- This is a presence check only; it does not measure load or power level.

Flashlight

By pressing flashlight button , users can enable or disable the LED light as a torch for dark environment operation.

Troubleshooting

Symptom	Possible causes	Resolution
Could not detect any tone signal	Battery is flat	Replace or re-charge battery
	Tone signal is not applied to the target cable	Check the tone generator output is connected to the required cable correctly
	Sensitivity dial is in the lowest position	Increase the sensitivity by dialling in clockwise
	Put cable type in UTP while the cable under tracing is shield STP.	Change test mode to STP in tone generator side.
	Used old Tone Tracer & Remote (R171050) which is not compatible with R171053 unit.	Change SecuriTEST IP to OS 11 unit or SignalTEK QT
Wiremap does not work	The far end cable is not connected to the SecuriTEST IP tester.	Change far end connected tester to SecuriTEST IP
	The Remote is damaged by high voltage >60V	Change to a new Tone Tracer & Remote
	The cable is not plugged into remote port properly or the cable has a fault.	Check the test cable condition and the plugs are insert remote port mated properly or replace a new patch cable.
Could not detect PoE voltage	The test cable is not connected to the PoE port properly or wrong port.	Check the test cable plug into the PoE port properly or right PoE port
	The PoE source port (Switch, Mid span) is disabled with no PoE output	Enable the PoE port to supply PoE
	PoE port is damaged	Replace the new Tone Tracer & Remote.

Technical Specification

Tone Detection	Carrier frequency: 129KHz; Signal strength display: 8 LEDs ; Sensitivity adjustment, Audio: beep sound.
Wiremap test	Test STP, UTP 8 pins, each pin LED and shield LED; Connector termination error; straight; short; cross; Others; 100Mb/s & 1Gb/s.
Tone Generator supported	SecuriTEST IP (OS11), SignalTEK QT.
Audio	Internal: speaker; external: 3.5mm earphone jack; Mute: On/Off.
PoE	Voltage detection and pin usage assignment via LEDs.
Flash light	Dual white LED, 12 lm.
Built-in Remote	Active remote for wiremap testing Remote ID: 188; Works with SecuriTEST IP only.
Power supply	2xAA per unit; Battery type: Alkaline, NiMH rechargeable, Li-ion polymer rechargeable. Battery life: 16 hours typical.
Display	17 x LEDs for level, wiremap, PoE test.
Temperature & humidity	-10°C (14°F) to 45°C (113°F) operation, -20°C (-4°F) to 70°C (158°F) storage. (non condensing).
Vibration & shocking	Random, 2 g, 5 Hz - 500 Hz; Shock 1 m drop test still operational.
Dimension & weight	Size: 218x45x30mm/8.6x1.8x1.2in (max); Weight: 156g/5.5oz (net including battery).
Standard compliance	EN55032:2017 EMI, EN55035:2015 EMC, CE & UKCA.
Applications	Cable tracing: Copper cabling media, including shielded (STP) and unshielded (UTP) cable; coaxial cable; single pair control, security, generic cabling. 10/100/1000 Base-T datacom networks cables. Wiremap test (SecuriTEST IP only): pin connection & order, cable or connector termination error; ID remote.

Ordering Information

Part number	Item Description
R171053	1 x Tone Tracer & Remote, 2 x AA Alkaline batteries, 1 x Quick Reference Guide multi-languages

Associated Products

SecuriTEST IP: All-in-one installation and troubleshooting tester for digital/IP, HD-TVI, CVI, AHD, and Analog CCTV systems. (Compatible with Tone Trace & Remote R171053 for cable tracing and wiremap test).

SignalTEK QT: Copper and fiber cable qualifier with Wi-Fi and network test functions. (Compatible with Tone Tracer & Remote R171053 for cable digital tone tracing).





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