240 HAL : High quality Tone Generator with add on to test CATV / COA

CATV/Model1 : A perfect solution to tone CATV cables using conventional toners and probes

Galaxy Craft Test Set: A value for money product that meets the most demanding technical needs

Replacement cables for any product

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AINES

Advanced Testers Kit

User Manual

Congratulations!

You are now a proud owner of Aines Advanced Testers Kit.

A digital device kit designed for Professional testing of Voice, Data, Video and Security networks.

Aines Manufacturing Corporation has been servicing the telecommunications industry worldwide for over five decades. We are in The Hamptons in Long Island, New York. All our products are designed and manufactured to exacting standards and tolerances. Our customers cover the entire gambit of the telecommunications industry throughout the world.

350 FP: The best Noise Filter probe with all features that a technician can ask for - including a headset jack for use in both noisy as well as office environments.

1. All in one kit for Voice network, Data network, Video network and Security network
2. 23 different tests and more
3. 11 cables for various tests in Voice, Data, Video and Security networks
4. High quality noise-filter for better tone output
5. Integrated inductive tip on probe for tracing
6. Patch panel tracing
7. Concealed, overhead cable tracing using Groundblaster technology
8. Extension wand for buried and overhead cable tracing
9. Shielded cable tracing using Groundblaster technology
10. Eight cadence pattern for tracing
11. Digital volume control
12. Selectable high - low tone output
13. LAN continuity testing
14. Straight - Cross cable identification
15. Open - Short cable identification
16. Telephone polarity testing
17. PoE detection
18. Talk battery
19. Security tests in Instantaneous, Steady and Momentary modes
20. Smart Modular Adaptor for customised testing
21. Auto shutoff only after one hour to prevent nuisance shut off
22. Low battery indication
23. Special cable for grounding
24. Braided cables for longer life
25. Telecom grade bed-of-nails clip, three way
26. Hard plastic shell with rubber molding to protect from accidental falls
27. Splash proof, weather proof carry case
28. Spare battery storage provision in carry case
29. Lanyard for convenient holding and operation

ACRONYMS & ABBREVIATIONS

Smart **T**one **G**enerator

Smart **T**one **T**racer

Smart **M**odular **A**daptor

Local **A**rea **N**etwork

Power **o**ver **E**thernet

8Positions - **6C**ontacts

Normally **O**pen

Normally **C**losed

Talk **O**ff **T**est

Light **E**mitting **D**iode

Kilo **H**ert**z**

Kilo **Ω**hms

deci**B**el **S**ound **P**ressure **L**evel

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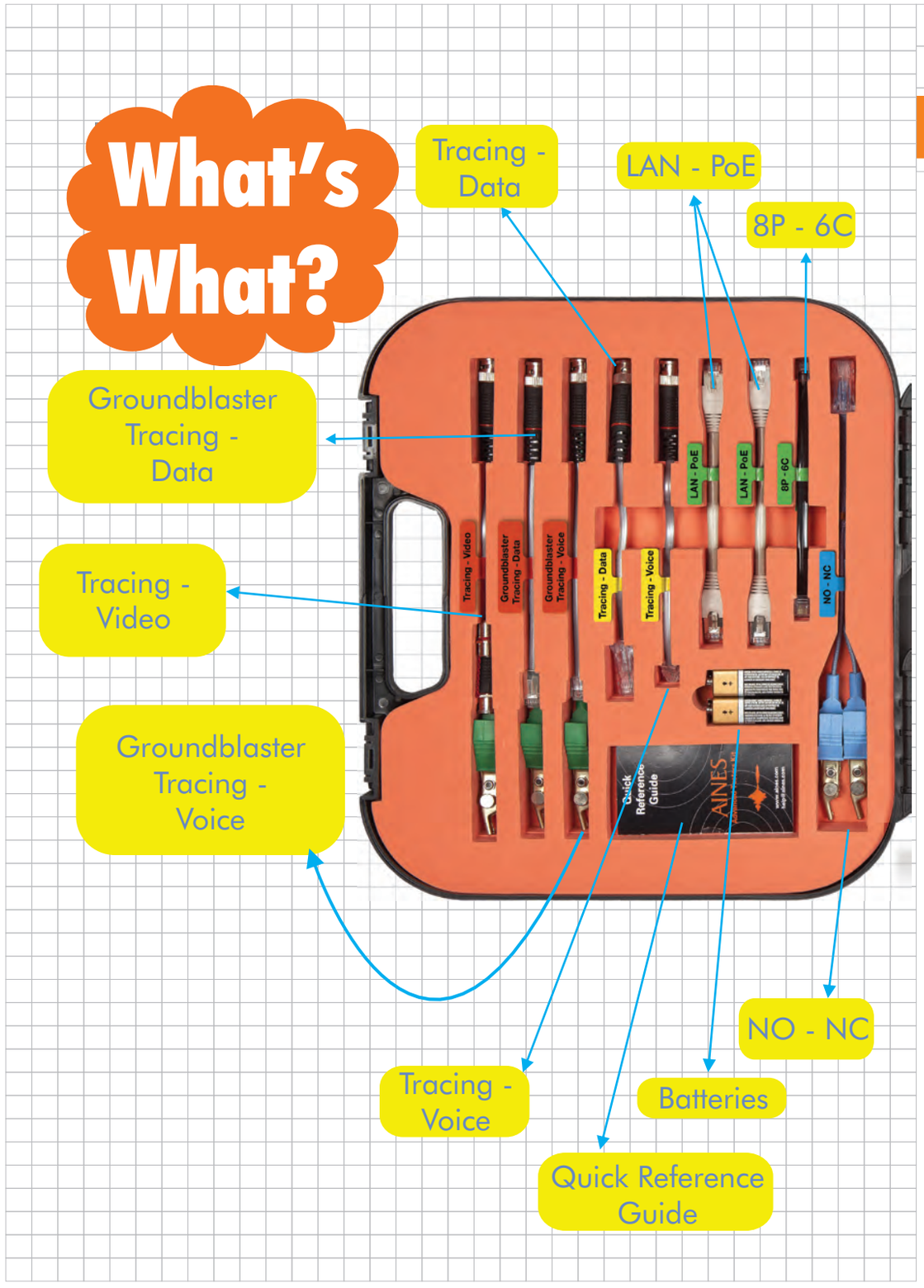
23 Warranty

Aines Advanced Testers Kit carries a 30 month WARRANTY.

Our products have been honed to achieve results and are thoroughly designed, engineered and tested by experts under real-world conditions.

If the Aines product fails due to a manufacturing defect or fails to give proper length of service, excluding normal wear and tear, it will be replaced at Aines discretion. Warranty does not cover cables, extension wand, battery, carry case, foam padding. Warranty does not cover parts or products that are improperly used, altered or repaired.

Contents



Warning

1. Never use the STG or STT on circuits of more than 60 V.
2. Never open the STG or STT except to change the battery. No user-serviceable parts inside.
3. Turn off STG and STT and disconnect all test leads before replacing the battery.
4. Use only a 9 V battery.
5. If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Caution

1. Avoid touching the probe tip to patch panel connections and using the tip to dig into cable bundles. Doing so regularly may damage the probe tip over time.
2. To avoid unreliable test results, replace the battery as soon as the low battery indication appears.

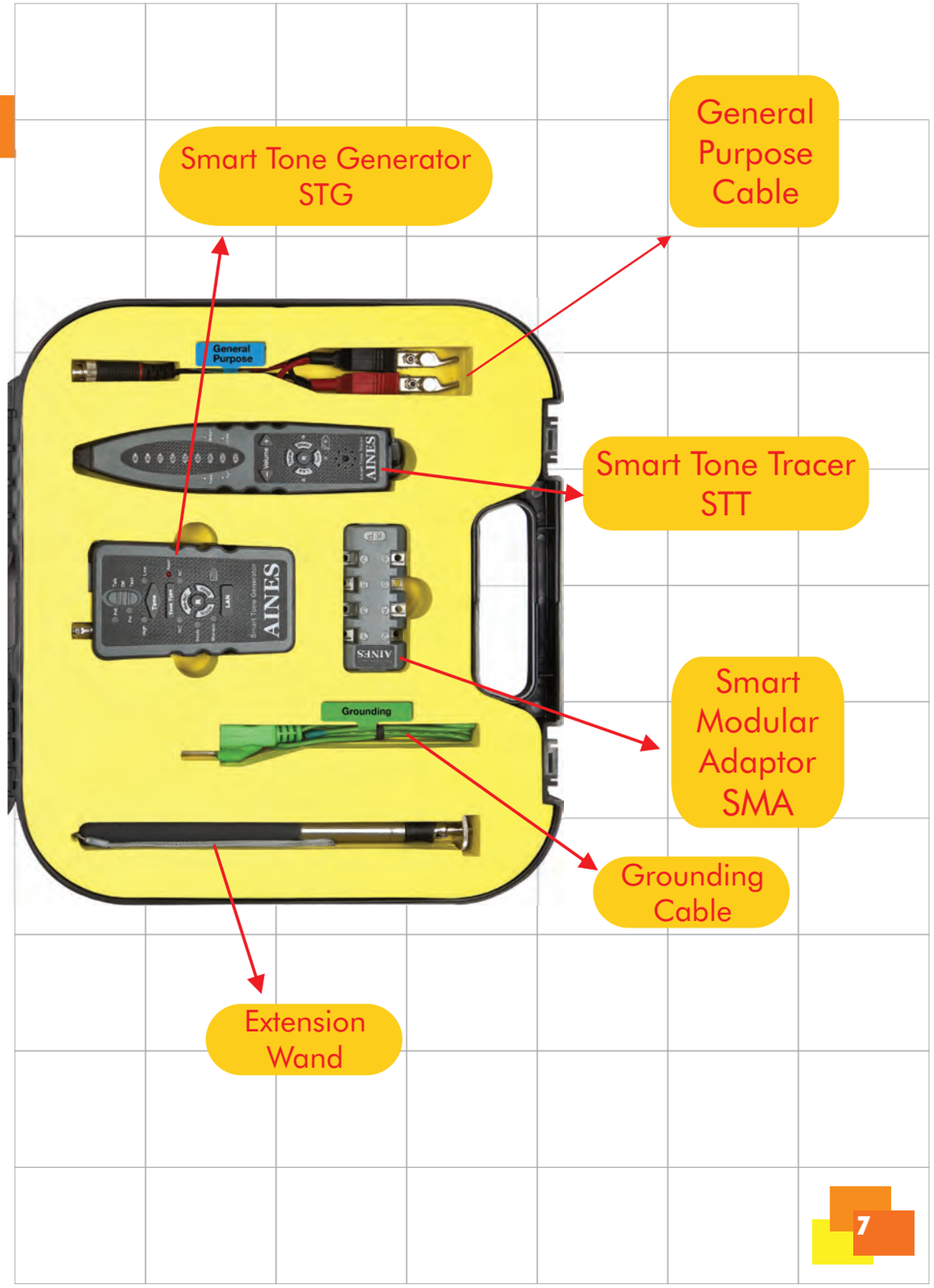
21 TIPS

Tracing	Groundblaster Tracing
Positive signal is injected on a wire and negative signal is injected on another wire of the cable from STG	Only a positive signal is injected on one wire from STG
When the cable to be traced is at a long distance the positive and negative cancel each other and no tone will heard	Other signal is connected to ground this increases the signal strength
When held close to the cable you will be able to hear an audible tone	A loud signal will be heard even when traced from a distance of up to 3 feet from the cable
Ideal for identification of port on patch panel, DP box or identification of a pair or cable in a bunch	Ideal for tracing cables that are concealed, buried and shielded

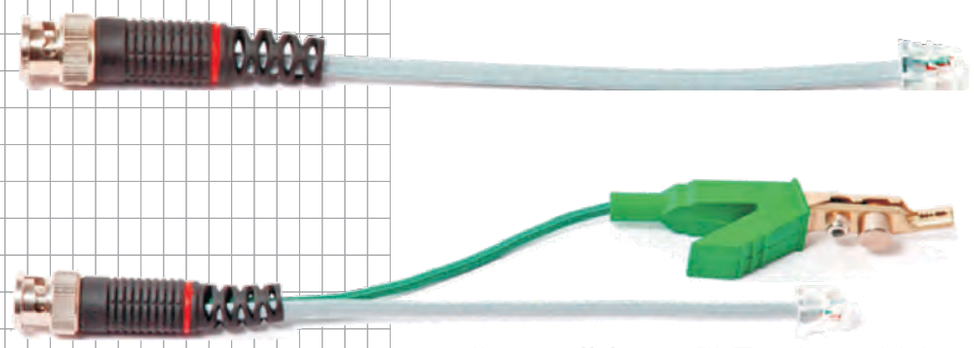
Tone Mode VS Shield Mode in STT

Most units in the market work only with open cable, not connected to any circuit. If the wire or shield of the cable is grounded on the distant end, the cable cannot be traced
The STT detects a tone in two ways - capacitive and inductive

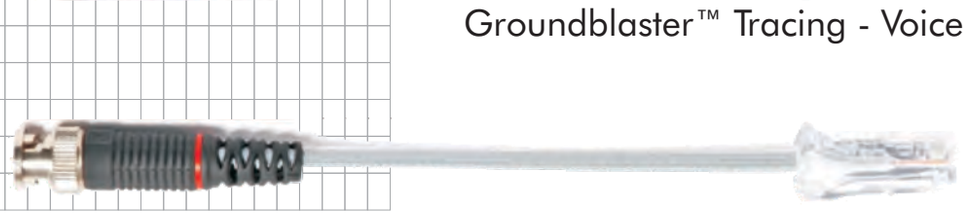
Tone (Capacitive)	Shield (Inductive)
When the distant end of the cable is not terminated or connected	When the wire or shield of the cable is grounded on the distant end



Tracing - Voice



Groundblaster™ Tracing - Voice



Tracing - Data

Groundblaster™ Tracing - Data

Tracing - Video

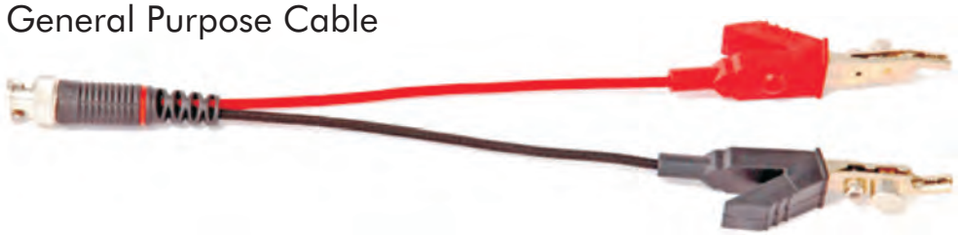
NO - NC test not working	1. Make sure the TOT switch is in test position. 2. Press the NO - NC button 3. Use NO - NC cable (Page 30)
Telephone polarity test	1. Make sure the TOT switch is in OFF position. 2. Use General Purpose Cable or Tracing - Voice cable (Page 18)
PoE detection	1. Make sure the TOT switch is in OFF position. 2. Use the LAN - PoE cable (Page 28)
Talk Battery	1. Make sure the TOT switch is in Talk position 2. Use general purpose cable (Page 19)

Unit is dead	1. Check if the battery is installed properly 2. Replace battery and check
1. Check if low battery indication is on. Change batteries 2. Switch off the unit and turn it on again	Buttons not working
No tone while tracing	1. Make sure the TOT switch is in test position 2. Select high tone in STG and switch between tone/shield modes in STT 3. Use the right cable (Page 16)
1. Make sure the TOT switch is in test position 2. Select LAN mode. 3. Use the LAN - PoE cable (Page 29)	LAN continuity test not working

LAN - PoE Cable

NO - NC Cable

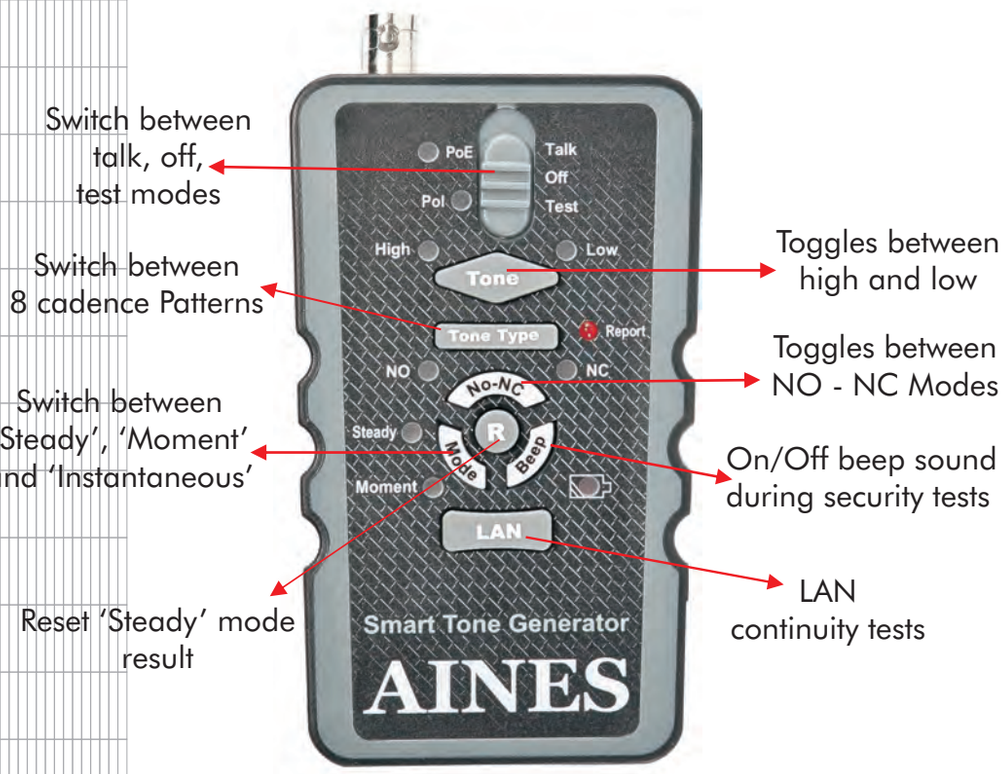
General Purpose Cable



Grounding Cable

8P - 6C Cable

STG Controls



STG - Electrical

	FEATURE	SPECIFICATION
1	Power requirement	Standard 9V battery
2	Tone frequency	1 KHz
3	Tone cadence	8
4	High Tone Output	30V peak to peak
5	Low Tone Output	15V peak to peak
6	Talk battery into 600 Ω	5.5V DC
7	Auto shutoff	After 1 hour
8	NC circuit testing	<1.5 KΩ
9	NO circuit testing	>1.5 KΩ

STT - Electrical

	FEATURE	SPECIFICATION
1	Power requirement	Standard 9V battery
2	Tone frequency detection	1 KHz
3	Auto shutoff	After 1 hour
4	Tone Output level	>125 dB SPL
5	Provision for wand	Available

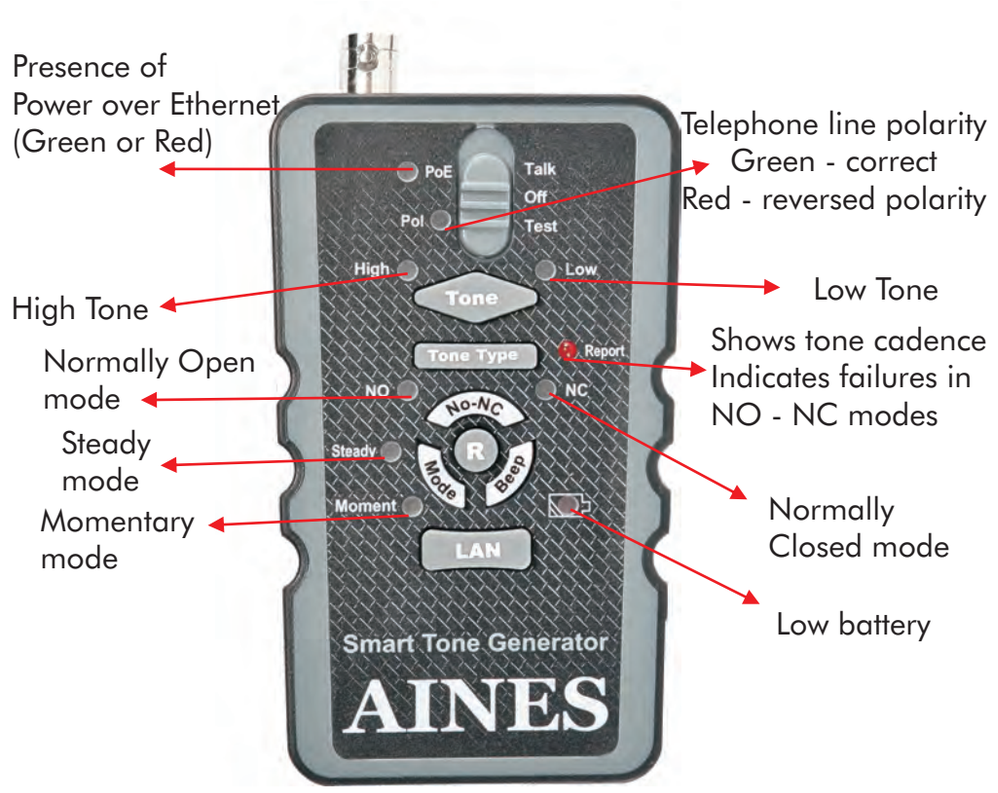
STG And STT - Physical

	DIMENSION	STG	STT
1	Length	125 mm	182 mm
2	Width	68 mm	42 mm
3	Height	26 mm	33 mm
4	Weight	160 gm	150 gm

The Modular Adapter is useful if you want to connect to certain pins of a Modular Plug or Outlet.

1. Connect the cable (under test) to either of the RJ-45 socket on the SMA.
2. One side of the adapter is numbered 1-6 and the other side 1-8.
3. If you are testing a 6 pin connector then use the 1-6 side. Use the 1-8 side for RJ-45 8 pin connectors.
4. The terminals are easy to connect with the supplied Alligator clips.
5. You may also connect any other device that has Alligator clips.

STG Indicators



Note: While testing a LAN, the indicators NO, NC, Steady and Moment blink in sequence continuously

STG Connectors

2. Keep the TOT switch in Test position in STG
3. Low Tone LED will be ON in STG by default. Press the 'Tone' button to change to high tone output

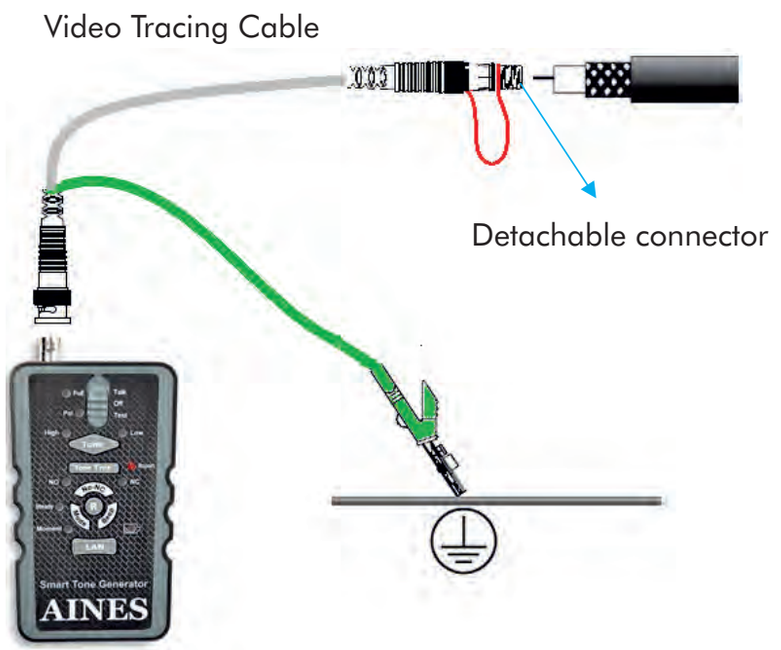
4. Press the 'Tone Type' switch in STG to change the tone cadence
5. Turn ON the STT
6. Tone LED will be ON in STT by default
7. If the shield of the coaxial cable is grounded put the STT in Shield mode by pressing the Shield button
8. If the shield is not grounded put the STT in Tone mode
9. Move the STT near the cable being traced. Tone will high when the STT is close to the pair being traced
10. Use the Extension wand for tracing the path of buried or overhead cables

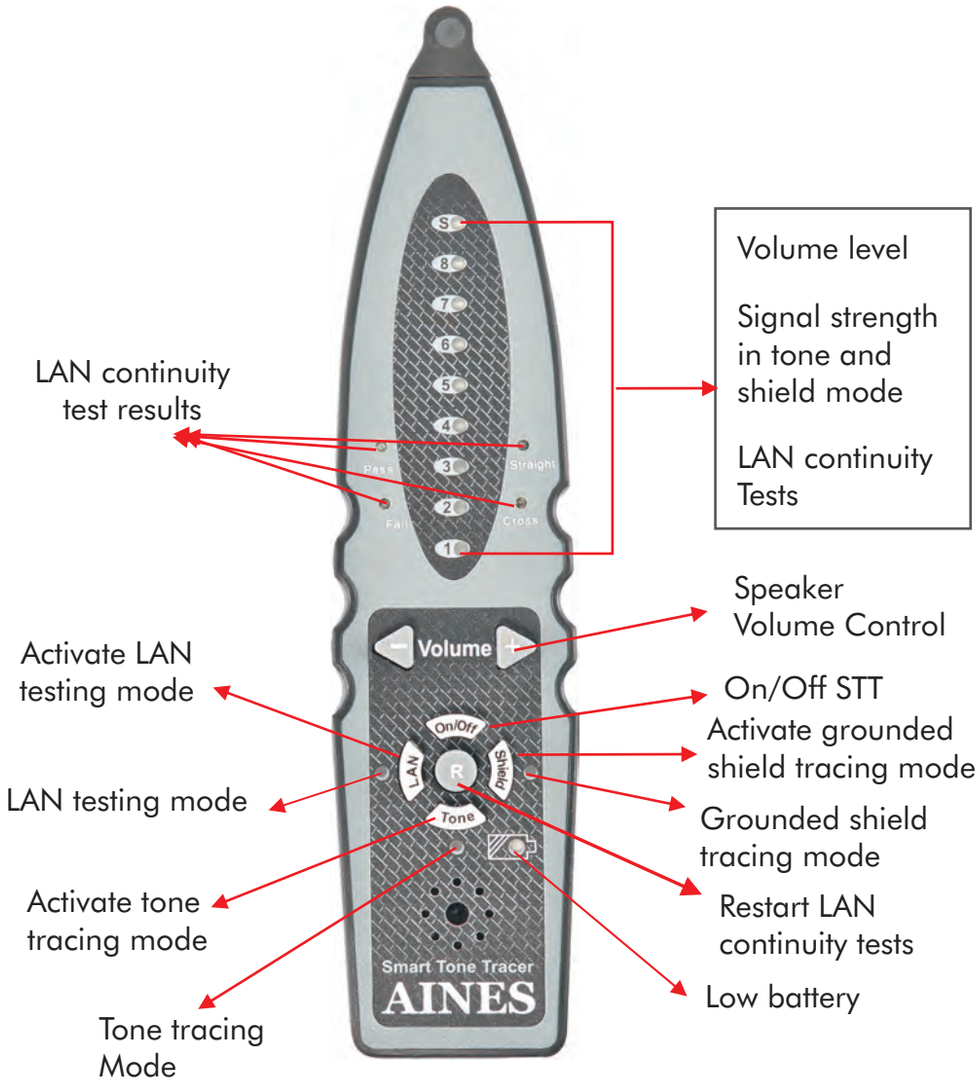

Low Signal Strength

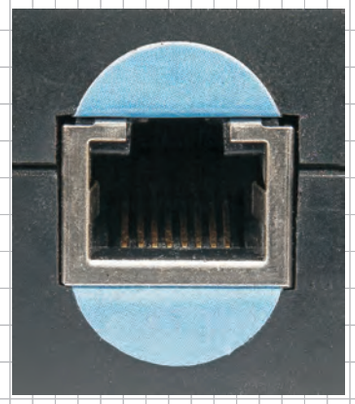

High Signal Strength

Coaxial Cable Tracing

1. Connect the STG to the co-axial cable to be traced using the Video Tracing Cable (F - connector, detachable female connector)





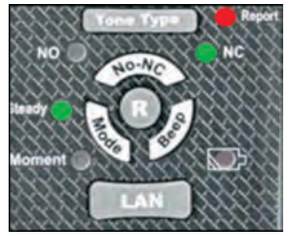


RJ45 connector - LAN continuity tests

Provision for Extension Wand for checking buried or overhead cables

Normally Closed (Steady)

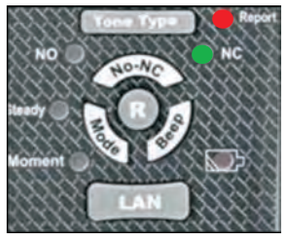
1. Keep the TOT switch in 'Test' position in STG
2. Press the 'NO - NC' key twice
3. Press the 'Mode' key twice
4. If there is an open circuit, the “Report” LED will glow along with the beep till the reset key is pressed



Note: The beep sound can be switched On/Off by pressing the beep key

Normally Closed (Instantaneous)

1. Keep the TOT switch in 'Test' position in STG
2. Press the 'NO - NC' key twice
3. Report LED will glow along with beep if there is an open circuit



Normally Closed (Momentary)

1. Keep the TOT switch in 'Test' position in STG
2. Press the 'NO - NC' key twice
3. Press the 'Mode' key, the 'Moment' LED will glow
4. If there is an open circuit, the "Report" LED will glow for 2 seconds along with the beep and then resets automatically

Battery installation – STG/STT

Open the battery cover

Fix the 9V battery in the battery holder and close the battery cover

STG - To Check Battery Installation

Push the TOT switch to Test mode

All LED's (Low, High, Report, NO, NC, Steady and Moment) will blink and a beep sound will be heard

STG will be in 'Tone' mode by default

STT - To Check Battery Installation

After battery installation press the ON/OFF switch

All LED's (In the LED indication bar, Pass, Fail, Straight and Cross) will blink three times (takes about 3 to 5 seconds).

STT will be in tone tracing mode by default

Low Battery Indication

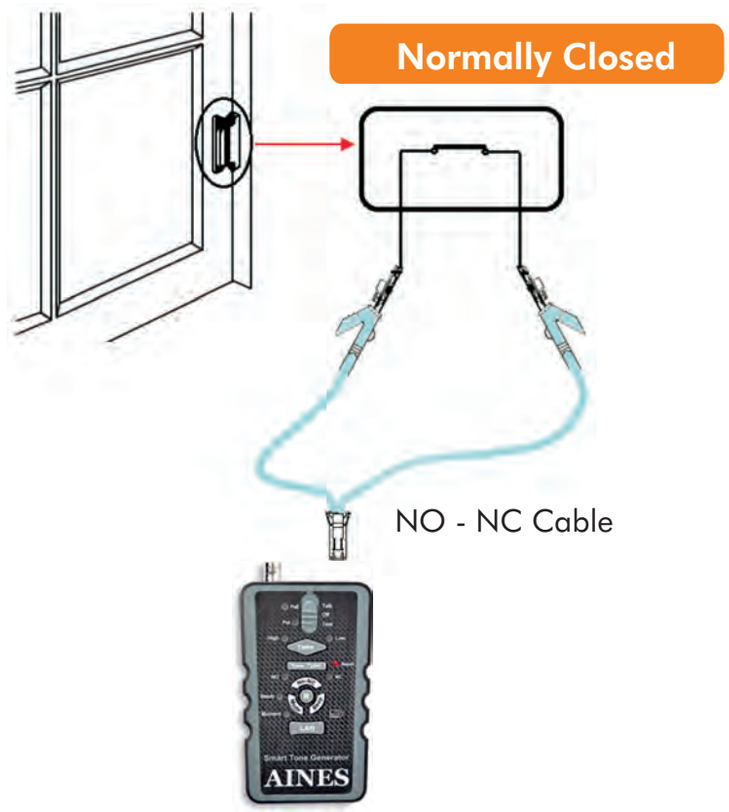
Low battery indication in STG glows when the voltage goes below the required talk battery power

Low battery indication in STT glows when voltage goes below the required power for tracing

Auto Shutoff

STT and STG will auto shut off only after an hour of inactivity to avoid any nuisance shut off

	CABLE	TESTS
1	Tracing - Voice	Patch panel tracing (Page 21) Identifying the correct pair Polarity testing (Page 18)
2	Groundblaster Tracing - Voice	Concealed, buried, overhead cable tracing
3	Tracing - Data	Patch panel tracing Identifying a cable in a bunch
4	Groundblaster Tracing - Data	Shielded, concealed, buried, overhead cable tracing
5	Tracing - Video	Coaxial cable tracing
6	LAN - PoE	LAN continuity testing - Straight, Cross identification PoE detection
7	NO - NC cable	Security, alarm network testing
8	General Purpose Cable	Talk battery Unterminated cable tracing Polarity testing on unterminated telephone lines
9	Grounding Cable	For grounding during Groundblaster tracing
10	8P - 6C Cable	Continuity tests to be used with SMA

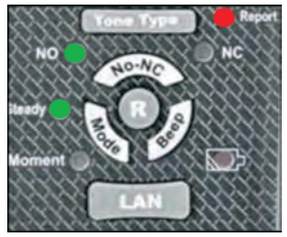


1. Connect the STG to the points to be tested using the NO-NC cable
2. Connect the alligator clips to the end-points to be tested

16 Normally Open (NO)

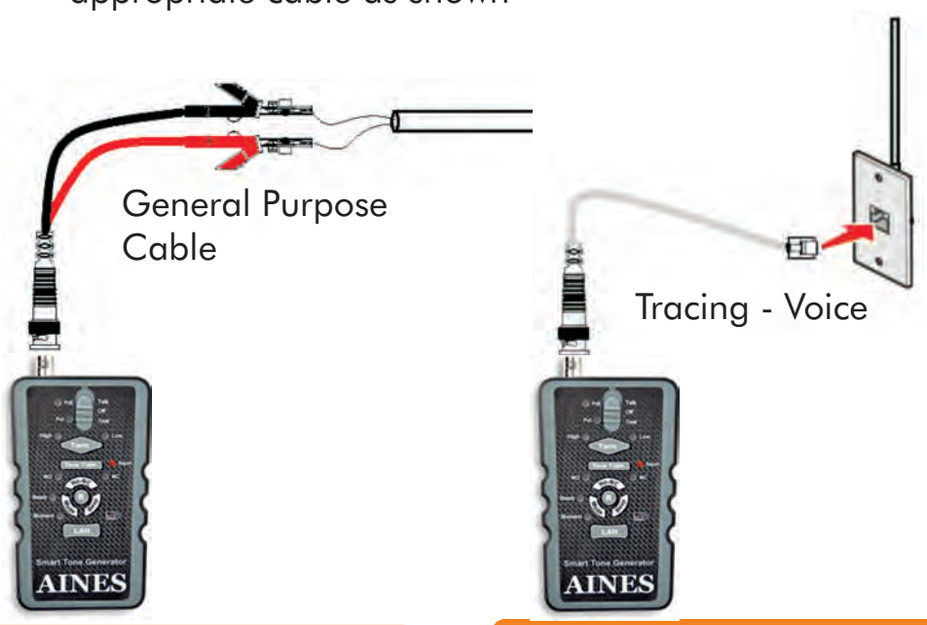
Normally Open (Steady)

1. Keep the TOT switch in 'Test' position in STG
2. Press the 'NO - NC' switch
3. Press the 'Mode' button twice to activate 'Steady' Mode
4. If there is closed circuit, the “Report” LED will glow continuously along with the beep till the reset key is pressed



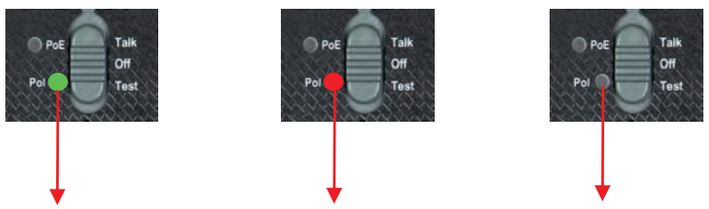
Note: Press the mode key to go back to Normally Open (instantaneous) mode. The beep sound can be switched On/Off by pressing the Beep switch

1. Keep the TOT switch in OFF position
2. Connect the STG to the telephone line using the appropriate cable as shown



Unterminated Cable Testing

Terminated Cable Testing



Correct Polarity

Polarity Reversed

Cable Dead

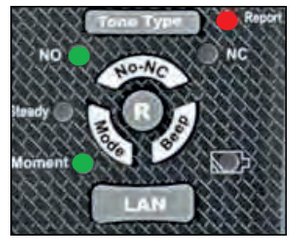
Normally Open (NO) 16

Normally Open (Instantaneous)

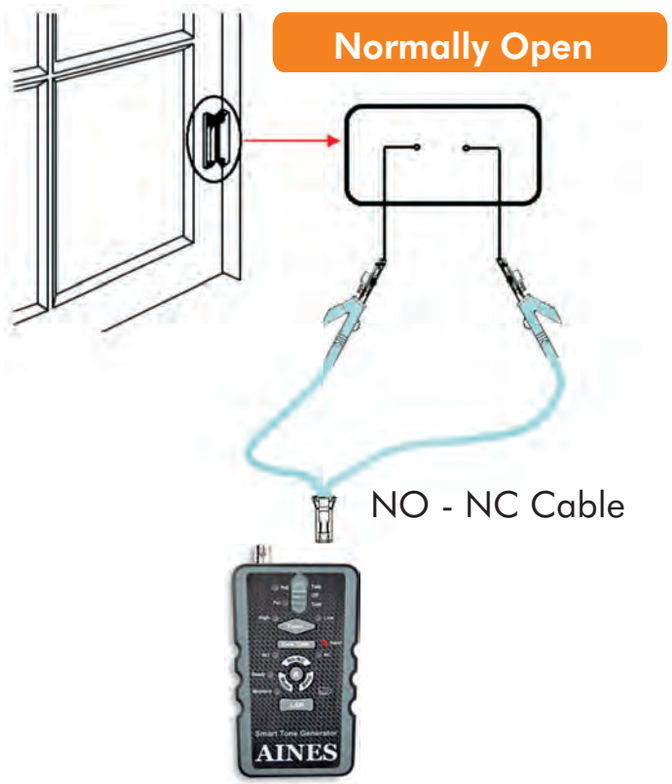
1. In STG, keep the TOT switch in 'Test' position
2. Press the 'NO - NC' switch
3. The unit is ready for testing
4. Press the 'Beep' switch in STG to enable audible reporting
5. The Report LED will turn off and the beep will stop when the circuit become open

Normally Open (Moment)

1. Keep the TOT switch in 'Test' position in STG
2. Press the 'NO - NC' key
3. Press the 'Mode' key
4. If there is a closed circuit, the “Report” LED will glow for 2 seconds along with the beep



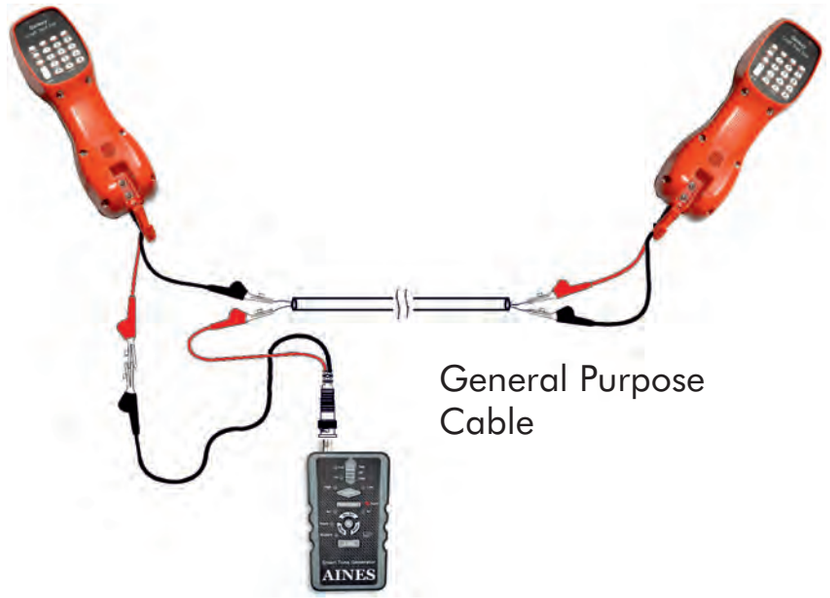
16 Normally Open (NO)



1. Connect the STG to the points to be tested using the NO-NC cable
2. Connect the alligator clips to the end-points to be tested

Talk Battery 9

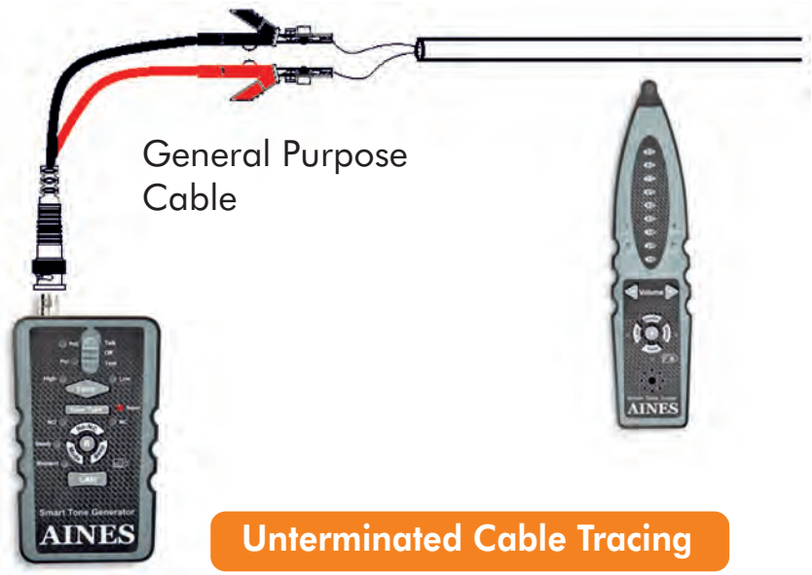
1. STG can power the telephone cable. This enables technicians to test the cable using a Buttset
2. Connect the STG to the dead cable using General Purpose cable as shown below
3. Keep the TOT switch in talk position
4. Now the technicians can go off-hook and talk to each other



Note: This operation consumes more battery power

Unterminated Cable Tracing, Patch Panel Identification

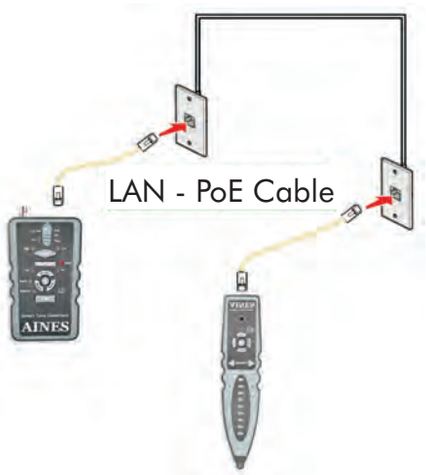
1. Connect the STG to the cable to be traced using an appropriate cable as shown

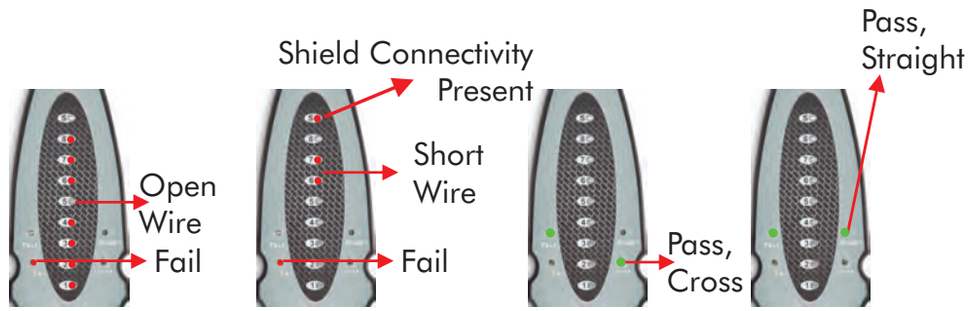


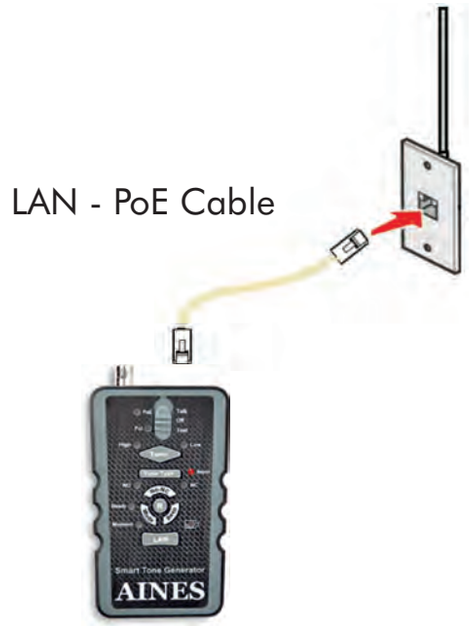
Unterminated Cable Tracing

2. Keep the TOT switch in Test position in STG
3. Low Tone LED will be ON in STG by default
4. Press the 'Tone Type' switch in STG to change the tone cadence

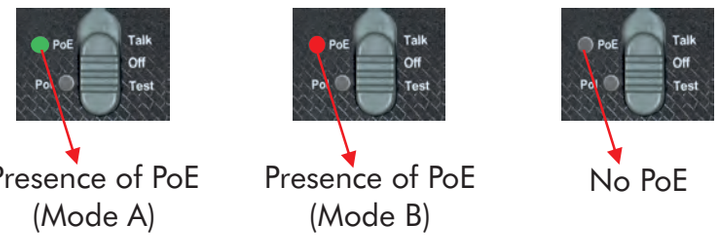
1. Connect the STG to the wall jack using the LAN - PoE cable
2. Keep the TOT switch in "Test position" and press LAN switch
3. Connect the STT to the other end of the cable from the wall jack using the other LAN - PoE cable
4. Turn on the STT and press the LAN switch
5. In STG, the NO, NC, Steady and Moment LED's will blink in sequence
6. To repeat the continuity test, press the 'R' key in the STT. At the STG end, no operation is needed



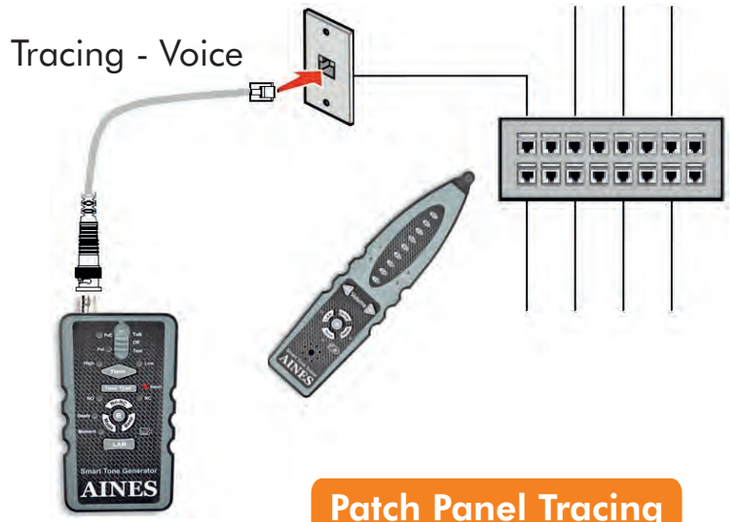




1. Connect the LAN cable under test to the STG
2. If you need to connect to a wall jack, use the LAN - PoE cable
3. In STG keep the TOT switch in “Off position”

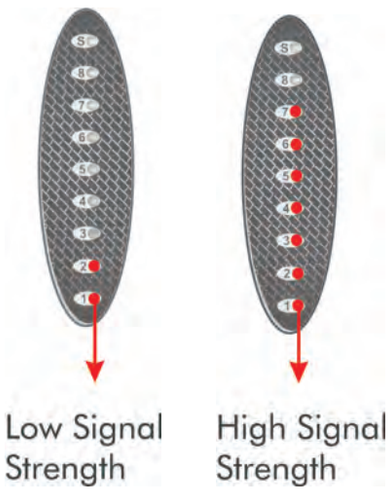


Note: Mode A - Power in Data pair (Lines 1,2 & Lines 3,6)
Mode B - Power in Spare pair (Lines 4,5 & Lines 7,8)



Patch Panel Tracing

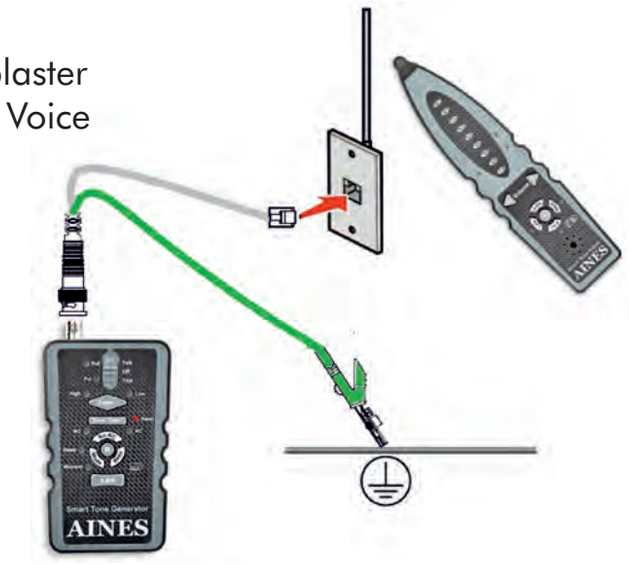
5. Turn ON the STT
6. Tone LED will be ON in STT
7. Move the STT over the patch panel or the bunch of cables. Tone will high when the STT is close to the pair being traced



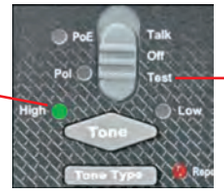
Concealed Cable Tracing

1. Connect the STG to the cable to be traced using the Groundblaster Tracing - Voice cable as shown

Groundblaster Tracing - Voice



2. Keep the TOT switch in Test position in STG



High Tone Output

TOT Switch in Test position

3. Low Tone LED will be ON in STG by default. Press the 'Tone' button to change to high tone output
4. Press the 'Tone Type' switch in STG to change the tone cadence
5. Turn ON the STT. Tone LED will be ON in STT by default
6. Move the STT near the cable being traced. Tone will high when the STT is close to the pair being traced
7. Press the Shield button on STT if the shield of the cable is grounded
8. Use the Extension wand if you are tracing the path of buried or overhead cables

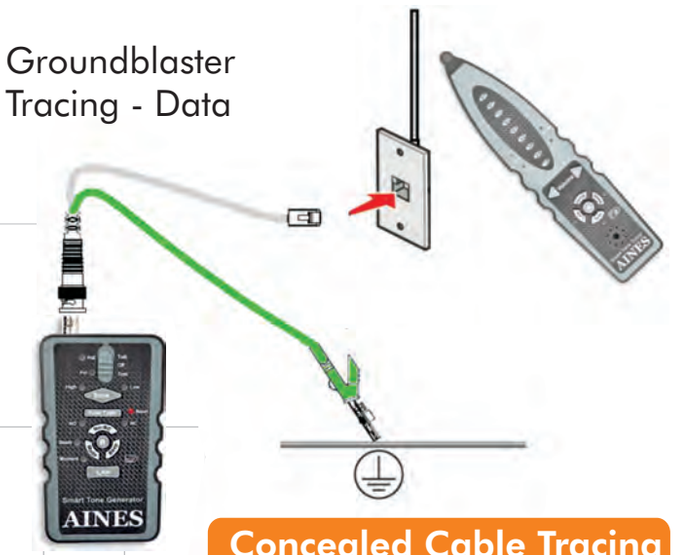
Default Mode

Low Signal Strength

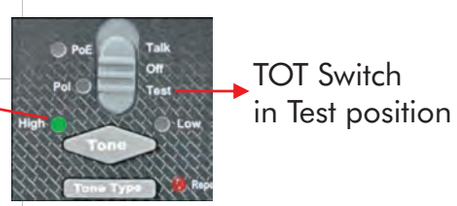
High Signal Strength

Shielded, Concealed Cable Tracing

1. Connect the STG to the cable to be traced using the Groundblaster Tracing - Data cable as shown

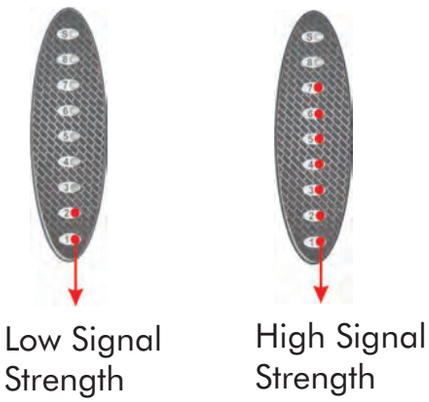


2. Keep the TOT switch in Test position in STG



3. Low Tone LED will be ON in STG by default. Press the 'Tone' button to change to high tone output
4. Press the 'Tone Type' switch in STG to change the tone cadence
5. Turn ON the STT
6. Move the STT near the cable being traced. Tone will be high when the STT is close to the pair being traced

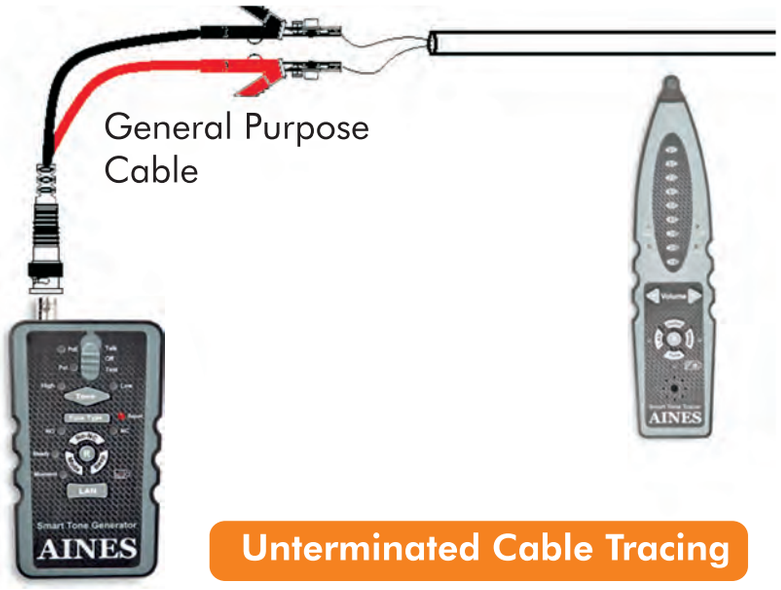
7. Use the Extension wand if you are tracing the path of buried or overhead cables



Tracing - Data 12

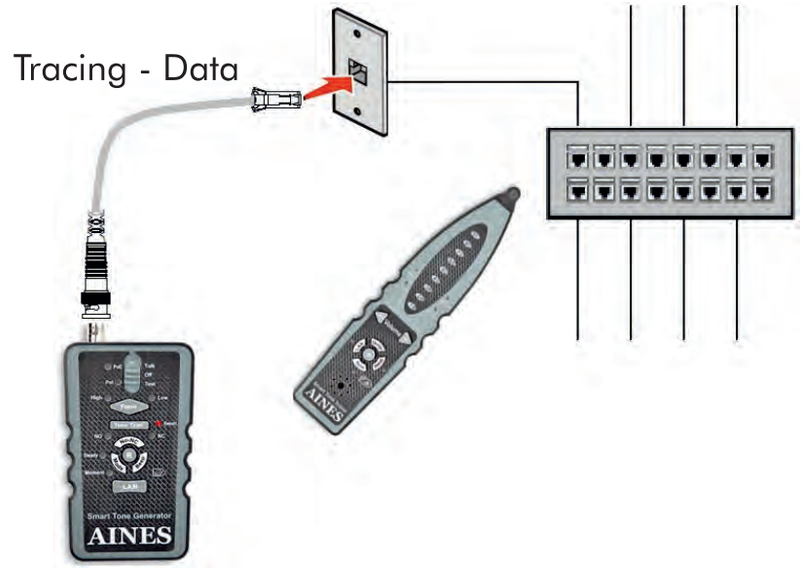
Unterminated Cable Tracing, Patch Panel Identification

1. Connect the STG to the cable to be traced using an appropriate cable as shown



Unterminated Cable Tracing

2. Keep the TOT switch in Test position in STG
3. Low Tone LED will be ON in STG by default. Press the 'Tone' button to change to high tone output



Patch Panel Tracing

4. Press the 'Tone Type' switch in STG to change the tone cadence
5. Turn ON the STT
6. Tone LED will be ON in STT
7. Move the STT over the patch panel or the bunch of cables. Tone will high when the STT is close to the pair being traced

Low Signal Strength

High Signal Strength