NET TONER AND PROBE KIT
USER MANUAL
MODEL 515566

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N E T W O R K   S O L U T I O N S

Thank you for purchasing the INTELLINET NETWORK SOLUTIONS™ Net Toner and Probe Kit, Model 515566.

With testing leads and modular cables for individual wire tests or modular jack tests, this handy device helps you attain the quick, reliable results you need in order to get — and keep — your wired systems up and running.

Additional features:
- Tests datacom, telecom, security, video and audio networks
- Two-position switch for single or multi-tone signal
- LEDs for line polarity, continuity and voltage
- Enhanced talk battery mode provides power for voice communications over inactive pairs
- Replaceable plastic tip to prevent accidental shorts
- Trace or identify wire or cables in a bundle or group
- Alligator clips, RJ45 jack, RJ12 plug, optional F-connector
- Lifetime Warranty

Electric Shock Risks & Precautions
- Avoid using this device in wet, damp or excessively humid environments.
- Before using the test lead or accessory, check that it is clean and dry, and that the insulation is in good condition.
- Do not open the battery compartment when test leads are connected to a live circuit, or when the unit is switched on.
- Never connect the Toner or Net Probe to a live wire from a non-compatible telephone/network system. Doing so may damage the tracer and/or the equipment.

Live Circuit Warnings
Acceptable voltage – The tester is designed to bear voltage conditions commonly found on live telephone wires: It can safely be connected to wires carrying 48 V DC or less at less than 80 mA, or 24 V AC.

Unacceptable voltage – Do *not* connect the tester to wires bearing over 48 V DC or at 80 mA or 24 V AC, or higher. Do not connect to live AC circuits: Doing so causes an extreme shock hazard and damages the tester. When connecting the tester to a previously untested circuit, the tester should always be in OFF/VOLT mode (the middle switch on the top switched to the middle position).

OPERATION

Sending/Tracing a Tone

1. Set the toggle switch on the Net Toner to the TONE HI-LO position.
2. Plug the cable to be checked into the Tone/Cont jack of the tester, or plug the cable with alligator clips into the Tone/Cont jack.
3. Connect the tester to the cable to be traced using the RJ45 jack, the red alligator clip on the RJ45-to-RJ11 patch cable, or the coaxial F connector. To strengthen the tone signal, connect the black alligator clip to a ground (however, if using the RJ45 jack to connect to the cable being traced, this will not be possible).
4. Use the Net Probe to find the cable you have connected to. When the tip of the Net Probe touches the right cable, the tone will be at its loudest and the Signal LED will light. (You can turn the volume down as the tip gets nearer to the right cable to make it easier to distinguish between the cables the Net Probe tip touches.)
5. Use the Tone button on the Net Toner to change the tone to the HI (down) or LO (up) position.

CAUTION: Do not connect to an active AC circuit over 24 V in this mode.

Supplying Talk Power

The Net Toner has a feature that allows users to communicate using telephone test sets, even when a circuit is dead.

1. Using the test leads, connect the Net Toner and a telephone test set to the inactive circuit, in series, as illustrated.
2. Flip the toggle switch on the Net Toner to the Cont/Talk position.
3. Set the TALK BATT button to the Enhanced (down) position. This provides additional battery power to enable voice communication over the inactive circuit. You should now be able to communicate using the telephone test sets.

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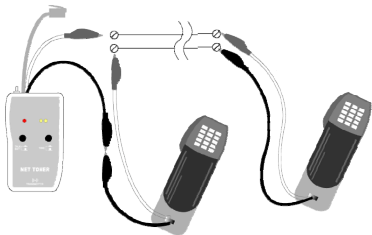
Testing Cable Continuity

NOTE: Before testing for continuity, check line polarity to ensure that the line is not powered.
1. Connect the red and back alligator test leads to the cable you want to test.
2. Flip the toggle switch on the Net Toner to the CONT/TALK position.
3. The Continuity LED will light green:
    • Bright green indicates a low-resistance path.
    • Faint green indicates a high-resistance path.
    • Unlit indicates an open circuit.

When installed cables are too long to test using alligator clips —
1. Place a termination device on the far end of the cable, connecting the two wires you want to test; or simply connect the two wires manually.
2. Attach the alligator clips to the two wires you want to test.
3. Read the results on the Continuity LED:
    • A lit LED indicates that the cable is continuous.
    • An unlit LED indicates that it has a break at some point.

Testing Terminated Coax Cables

1. Connect the red test lead to the connector housing.
2. Connect the black test lead to the center pin or to ground.

Testing Un-terminated Coax Cables

1. Connect the red test lead to the outer shield.
2. Connect the black test lead to ground or to the center conductor.

Testing Polarity: Identifying the Tip and Ring

1. Flip the toggle switch to the OFF/Polarity position.
2. Connect the red alligator test lead to the Ring (–) connection; connect the black test lead to the Tip (+) connection. Or connect a test cable with RJ12 or RJ45 plugs into the RJ45 modular jack on the Net Toner.
3. To check Line 2 polarity, use the RJ45 jack or RJ11 modular plug connection.
    • Green indicates normal polarity.

- Red indicates reversed polarity.
- Flickering red and green indicates the presence of AC power or a ringing line.
- A faint LED indicates a busy or faulted line.

Verifying the Line

1. Flip the toggle switch to the OFF/Polarity position.
2. Connect the black lead to the Tip (+) connection (usually green or blue); connect the red lead to the Ring (–) connection (usually red or labeled "R"). Or insert the 4-pin modular cable into the wall jack, or plug the line into RJ45 jack on the Net Toner.
3. Dial the line to be verified. If the tester is connected to the correct line, the Line 1 LED will flicker green and red.
4. Monitor the line and flip the toggle switch to the Continuity position. This will terminate the call to confirm the identification.

Net Probe — Tone Tracing

1. Set the TEL/TRACE selector to the TRACE (down) position.
2. Push the TRACE button to make the probe end active.
3. Hold the TRACE button down to trace a line, or plug the tracer's RJ45 jack into a wall outlet using a jumper cable, or connect the clip leads to test pins.

Tracing for unknown cable path/termination – Adjust the gain (volume) control to the desired level. Begin tracing from the tone generator. Slowly maneuver the tone tracer away from the source, taking caution to avoid any high-voltage sources. Adjust the gain control whenever necessary to maintain constant (or regain) audio contact with the tone from the tone generator. Trace over the entire path of the test cable or until the cable end is located.

Locating termination verification/general area of termination – Adjust the gain (volume) control to the maximum level. Begin tracing in the general area of the cable termination. Slowly maneuver the tone tracer in a zig-zagging fashion carefully and methodically over the entire area until the generated tone is found. Take caution to avoid any high-voltage sources.

Adjust the gain control whenever necessary to maintain constant (or regain) audio contact until the test cable is located.

Locating conductor break/discontinuity – Adjust the gain (volume) control to the Medium – Low level. Begin tracing the break, starting from the tone generator. Continue tracing along the path of the cable until the tone disappears/diminishes. Adjust the gain control as necessary to pinpoint/isolate the area of the break. *TIP:* The tone is loudest when the tip of the tracer is near and parallel to the cable carrying the tone signal. In noisy environments, 2.5mm headphones can be plugged into the jack on the right side of the Net Probe.

Line Testing

Use this function only on a compatible analog telecom and network system.
1. Set the TEL/TRACE selector to the TEL (up) position.
2. Connect an RJ12 or RJ45 plug into the modular jack on the Net Toner or connect the tracer to a wall jack using a jumper cable or connect the clip leads to test pins.

Identifying telephone line polarity and verifying telephone lines —
- NRM LED lighted – The analog telephone patch cable or the outlet is installed properly (normal). It indicates the telephone line carries proper voltage and correct polarity.
- REV LED lighted – The analog telephone patch cable or the outlet is improperly wired. It indicates the telephone line's polarity is reversed.
- Both NRM and REV LEDs lighted – The voltage is AC, which is not normal. Disconnect from the line and proceed with caution. *NOTE:* Just one of these LEDs lighted indicates the presence of DC voltage.
- Both NRM and REV LEDs flashing – The line is ringing for phone number verification.
  NOTE: If one or both NRM and REV LEDs are on, voltage is present on the center pair of connectors on the RJ jack (4-5 on RJ45s; 3-4 on RJ11s and RJ12s).
- No LEDs lighted – The cable is most likely not connected.

Checking low voltage (less than 24 volts DC or AC only) —
- NRM LED lighted – The black test lead is connected to negative (–) DC voltage.
- REV LED lighted – The black test lead is connected to positive (+) DC voltage.

OTHER FUNCTIONS/COMPONENTS

Over-current Indicator
The over-current indicator lights when current on the line exceeds 90 (mA). Current over 90 mA means that you may have connected to a digital line or an unusually configured analog line. ***NOTE:*** If the line is digital, plugging an analog modem into it will damage the modem. Disconnect the tester from the line within 10 seconds to avoid damage to the tester.

Testing the Dial Tone
1. Switch the TEL/EAR switch to the EAR position.
2. Plug the phone line into the tester's RJ jack.
3. Push the LISTEN button to the down position. This takes the phone line off the hook and plays sound on the phone line through the tester's speaker.
4. Check for a good dial tone.

Testing a phone line without an RJ11 plug — Connect the phone line to the test pins on the tester's reverse side with an alligator clip (not included), then carry out the test as described above. ***NOTE:*** As soon as the dial tone check is complete, return the TEL/EAR switch to the TEL position and push theLISTEN button to the up position to avoid unnecessary drain on the battery.
WARNING: If the Over-Current LED lights, the line being tested has more than 90 mA of current and is probably a digital phone line. Turn off the Listen switch or unplug.

Replacing the Tip
1. To replace the tracer tip, hold the probe with the tracer tip pointing

toward you.

2. Grasp the tip and gently turn it counterclockwise until it separates from the probe body.

3. Replace the old tip with a compatible new tip (included) and reverse Steps 1 and 2. ***NOTE:*** Do not overtighten the tip.

Replacing the Battery

Net Toner – When battery power runs low, the LOW BATT LED on the Net Toner will light.

Net Probe — When the battery needs to be replaced, the LED indicators will dim and the speaker sound will weaken or fail.

NOTE: When a low battery is indicated on either unit, change the battery immediately, as continuing to test with a low battery may produce inaccurate results. Both units require one standard alkaline 9 V battery. Slide back the battery cover to replace new battery.

SPECIFICATIONS

Net Toner
- Toner frequency:
  - High: alternating 500-781 Hz
  - Low: alternating 446-657 Hz
- Talk battery: 9 V into a 600-Ohm circuit
- Voltage protection: 50 V DC or 24 V AC
- Battery: 9V DC standard or alkaline
- CE approved: EN 55022 Class B for ITE and EN 55024
- Size: 125 (L) x 68 (W) x 26 (H) mm (4.9 x 2.7 x 1.2 in.)
- Weight: 120 g (0.37 lbs.)

Net Probe
- Gain: 30 db
- Tip resistance: 30 Ohms (plastic tip)
- Battery: 9 V DC standard or alkaline
- CE approved: EN 55022 Class B for ITE and EN 55024
- Size: 210 (L) x 40 (W) x 28 (H) mm (8.1 x 1.6 x 1 in.)
- Weight: 140 g (0.30 lbs.)

Environmental
- Operating temperature: 0 – 40°C (32 – 104°F)

Package Contents
- Net Probe
- Net Toner with alligator clips and RJ12 connector
- Female F connector to RJ45 adapter
- Carrying pouch
- User manual

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