ENGLISH

VDV501-770

INSTRUCTION MANUAL

VDV Scout® Pro Max

- VOICE, DATA & VIDEO TESTING
- FAULT DETECTION
- TDR CABLE LENGTH MEASURING
- ACTIVE AND PASSIVE PoE DETECTION AND MEASURING
- ACTIVE NETWORK TESTING
- DIGITAL* AND ANALOG TONE GENERATION
- HUB BLINK
- POTS (PLAIN-OLD-TELEPHONE SERVICE) TESTING
- IDENTIFY CABLES WITH ID REMOTES
- TEST RESULT AND REPORT GENERATION
- FULL COLOR MATRIX DISPLAY

**Requires Klein Tools VDV500-223 Digital Tracing Probe, sold separately*

KLEIN TOOLS® EST. 1857

CE UK CA

GENERAL SPECIFICATIONS

The Klein Tools VDV Scout® Pro Max is a portable voice-data-video cable tester. It tests and troubleshoots RJ11, RJ12, RJ45, and F-connector terminated cables and provides analog and digital tone generation for cable tracing (digital toning requires KT VDV500-223.) The VDV Scout® Pro Max also measures cable lengths (via TDR), tests for shielded cables and unshielded cables, traces up to 20 locations with included remotes, performs short and open fault detection, performs hub blink testing, measures active and passive Power over Ethernet (PoE), tests POTS (Plain-Old-Telephone-Service), and tests advertised active network speeds.

- **Environment:** Indoors
- **Operating Altitude:** 6562 ft. (2000 m)
- **Relative Humidity:** <90% non-condensing
- **Operating Temperature:** 32° to 122°F (0° to 50°C)
- **Storage Temperature:** -4° to 140°F (-20° to 60°C)
- **Input Protection:** 60V peak 50/60Hz AC or DC
- **Common Cable Length Ranges: Coax:** 0 to 2000' (0 to 610 m) **Data:** 0 to 3000' (0 to 914 m) **Electrical:** 0 to 1000' (0 to 305 m)
- **Measurement Method:** TDR (Time Domain Reflectometry)
- **Measurement Units:** Feet, meters
- **Velocity of propagation (VoP) Range:** 0 to 99.9%
- **Accuracy:** ± (2% + 3 ft. or 1 m) with known VoP and consistent cable parameters
- **Tone Generation:**
  Constant: 800 Hz, 1000 Hz, 1200 Hz & 1500 Hz
  Alternating: 800 Hz/1200 Hz, 1000 Hz/1500 Hz
  Digital: Requires Klein Tools VDV500-223 Digital Tracing Probe sold separately
- **PoE (Power over Ethernet):** Tests for IEEE 802.3af (PoE). 802.3at (PoE+) and 802.3bt (PoE++), Types 1-4 and tests for Passive PoE up to 60V. Identifies Mode A, B and 4-pair.
- **Active Network:** Indicates advertised speeds of 10/100/1G/10Gbase-t. Half or Full duplex
- **POTS (Plain-Old-Telephone-Service):** Test tip and ring voltages
- **Batteries:** 3× AA alkaline
- **Battery Low Level:** Approx. 3.3V
- **Battery Life: Active:** Approx. 15 hours **Standby:** Approx. 1 year
- **Auto Power Off (APO): Test Mode:** 10 to 60 minutes (default = 20 min.)
  Tone Mode: 5 to 60 minutes, or OFF
- **Dimensions:** 4" × 7.2" × 1.6" (10.16 × 18.29 × 4.06 cm)
- **Weight:** 15.8 oz. (448 grams) with batteries

Specifications subject to change.

⚠ WARNINGS

To ensure safe operation and service of the tester, follow these instructions. Failure to observe these warnings can result in severe injury or death.

- The RJ45 port (15) is the only jack designed for PoE energized cables. Connecting AC energized cables to any port may damage it and pose a safety hazard to the user.
- Always wear approved eye protection.
- Improperly terminated RJ plugs have the potential to damage the jacks on the VDV Scout® Pro Max. Visually inspect an RJ plug before inserting it into the tester. The contacts should always be recessed into the plastic housing of the plug. Plugging 6-position plugs into the 8-position jack on the tester has the potential to damage the outer-most contacts of the jack unless the plug is specifically designed for that purpose.

SYMBOLS ON TESTER

⚠	Warning or Caution	⚡	**Risk of Electric Shock.** Improper use of this meter can lead to risk of electrical shock. Follow all warnings and instructions detailed in this manual
📖	Read instructions		
CE	**Conformité Européenne -** Conforms with European Economic Area directives	UKCA	**UKCA** - United Kingdom Conformity Assessment
	This symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal		

FEATURE DETAILS

1. Self-Storing Test + Map™ ID Remote (VDV770-770)
1A. Remote's RJ11/12 Port
1B. Remote's RJ45 Port
1C. Remote's Coax F-Connector Port
2. Full-Color LCD Display
3. Power Button
4. "Soft Key" Button #1
5. "Soft Key" Button #2
6. "Soft Key" Button #3
7. "Soft Key" Button #4
8. Up Arrow Button
9. Down Arrow Button
10. Left Arrow Button
11. Right Arrow Button
12. Enter Button
13. Back Button
14. Home Button
15. RJ45 Port*
16. Coax F-Connector Port
17. RJ11/12 Port*
18. Battery Cover
19. RJ45 CAT6 to RJ45 CAT6 Cable (T658B) (×2)
20. RJ11 to RJ11 Cable (×2)
21. RJ12 to RJ12 Cable (×2)
22. Female Coax-F to Angled-Bed-of-Nails Cable
23. RJ45 LanMap™ Location ID Remotes (1-20)
24. F-Connector CoaxMap™ Location ID Remotes (1-20)
25. Female F-Barrel Connector
26. USB-C Port
27. USB-C to USB-A Cable
28. Main Alkaline Batteries (3× AA)
29. Internal Clock Battery Cover
30. Internal Clock Battery (CR2032)

PORT, REMOTE, AND CONNECTOR OVERVIEW

RJ45 Port (1B), (15): Data cable (Shielded or unshielded), Ethernet cable, Cat5e, Cat6, Cat6a, Cat7, Cat7a.

F-Connector Port (1C), (16): Video cable, coaxial cable, RG6/RG6Q cable, RG59 cable.

RJ11/12 Port (1A), (17): Voice cable, POTS (Plain-Old-Telephone-Service) cable, 4-wire cable, 6-wire cable, 2 twisted pair cable, 3 twisted pair cable, Cat3.

Self-Storing Test + Map™ ID Remote (1): Use for cable identification, mapping and/or continuity testing. Displays on tester as Remote ID #1.

LanMap™ Location ID Remote (23)**:** Use for cable identification and/or mapping. Includes remotes #1 – 20.

CoaxMap™ Location ID Remote (24)**:** Use for cable identification and/or mapping. Includes remotes #1 – 20.

Barrel Connector (25): Female-to-female F-connector for use with F-connector port (1C), (16).

**The RJ ports share internal connections so only one RJ cable can be connected at a time for accurate cable test results. However, an RJ cable and a coax cable may be connected at the same time. In ID mode, all connectors on the VDV Scout® Pro Max may be connected at the same time.*

***Cannot be used to perform wire map or cable length tests.*

OPERATING INSTRUCTIONS

POWERING ON/OFF

Power ON: Press the Power Button ③ to turn the unit on.

Power OFF: Press the Power Button ③ for two seconds to turn the unit off.

Auto Power-OFF (APO): The Meter will automatically turn off after a period of inactivity in order to conserve battery power. The time until auto power off depends on which mode the unit is in:

Test Mode: User-adjustable from 10 to 60 minutes (default is 20 minutes).

Tone Mode: User-Adjustable 5 to 60 minutes, or OFF.

In either mode, the screen will dim after 90 seconds of inactivity to conserve battery power.

"SOFT KEY" BUTTONS ④, ⑤, ⑥, ⑦

Some modes will display up to four icons along the bottom of the LCD display. These icons correspond to additional functionalities available in that mode. To select one of these functions, press the "Soft Key" button directly beneath the icon.

HOME SCREEN

The Home Screen will appear upon powering on the tester. Icons representing all available modes will appear on this screen. To select a mode, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the desired mode's icon and press the Enter Button ⑫. Press the Home Button ⑭ to return to this screen from any other screen.

A. Current date
B. Current time
C. Currently Active Function/Screen
D. Battery Status
E. Mode Icons:

E1. Data (RJ45) Wiremap / Testing / Length
E2. Voice (RJ11/RJ12) Wiremap / Testing / Length
E3. Coax Testing / Length
E4. POTS (Plain-Old-Telephone-Service) Testing
E5. POE (Power Over Ethernet) Testing
E6. Analog Toning
E7. Digital Toning
E8. Hub Blink
E9. Active Network Testing
E10. Recall
E11. Settings

OPERATING INSTRUCTIONS

SETTINGS

1. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Settings Icon E11 and press the Enter Button ⑫.
2. Use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the desired setting and press the Enter Button ⑫.
3. Use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to make adjustments. Press the Enter Button ⑫ when finished.
4. Use the Page Up/Down button ("Soft Key" Button ⑥) to access page 1 and 2 of the Settings menu.

PAGE 1

A. DATE: Month/Day/Year
B. UNITS: Feet (ft) or meters (m)
C. TIME: Hours:Minutes
D. BRIGHTNESS
E. LANGUAGE: English, Spanish, French, or German
F. T568: Selectable between T568A and T568B
G. Page Up/Down Button (press "Soft Key" Button ⑥ to navigate)

PAGE 2

H. DIM TIMER: ON or OFF
I. APO (Auto Power-Off): Selectable between 10, 20, 50, and 60 minutes
J. ABOUT: Hardware and software information (for reference only, cannot be changed)
K. FACTORY RESET: Deletes all saved data and reverts all settings back to factory defaults
L. Page Up/Down Button (press "Soft Key" Button ⑥ to navigate)

LANGUAGE SELECTION

The tester can display screens in English, Spanish, French or German (default language is English). It is strongly recommended that you set the tester to the appropriate date, time, units, wiring configuration, and language of choice at this point, before proceeding:

1. Use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Settings Icon E11 and press the Enter Button ⑫.
2. Use the Up ⑧ and Down ⑨ Arrow Buttons to navigate to the LANGUAGE field F and press the Enter Button ⑫.
3. Use the Up ⑧ and Down ⑨ Arrow Buttons to select the desired language and press the Enter Button ⑫.
4. Press the Home Button ⑭ to return to the Home Screen.

OPERATING INSTRUCTIONS

SELECT PRESAVED CABLE TYPES PRIOR TO TESTING:

1. From the Home Screen, use the arrow buttons ⑧, ⑨, ⑩, ⑪ to navigate to any test mode (Data, Voice, Coax)
2. Press the soft key Button #2 ⑤ to select Velocity of Propagation (VOP)
3. Use the arrow buttons or soft keys buttons #2 ⑤ and #3 ⑥ to navigate between default wire types and press the enter button ⑫ to select the type of cable you are testing for the most accurate results

CREATE CUSTOM CABLE TYPE PRIOR TO TESTING:

NOTE: *Must have cable connected to data tester to create custom cable type accurately*

1. From the Home Screen, use the arrow buttons ⑧, ⑨, ⑩, ⑪ to navigate to any test mode (Data, Voice, Coax)
2. Press the soft key Button #2 ⑤ and #3 ⑥ to navigate to the bottom page of default wire types and press the enter button ⑫ to select "ADD NEW"
3. Select Soft Key Button #2 ⑤ to edit the name
4. Use the arrow buttons to navigate to TYPE and select by hitting Enter ⑫. Use the up and down arrow buttons to scroll between Data, Voice, and Coax and hit Enter to confirm selection.
5. Use the arrow buttons to navigate to PAIR and select by hitting Enter ⑫. Use the up and down arrow buttons to scroll between pair options depending on cable type being tested. NOTE: When Testing Data cables, select PAIR 4-5 for best results. When Testing Voice Cables, recommended PAIR 2-3 for best results. When Testing Coax Cables, recommended PAIR 7-8 for best results.
6. To Enter Known Velocity of Propagation (VOP) Percentage or Length Value, use the arrow buttons to navigate to Velocity of Propagation (VOP)/Length field and select enter.
7. Use the up or down arrow buttons to scroll over either Velocity of Propagation (VOP) or LENGTH, the selected value will be highlighted ORANGE, and hit soft key button #2 ⑤ to edit. Use arrow button keys to change values and select soft but key #4 ⑦ to save values.
   NOTE: *Changing either the Velocity of Propagation (VOP) percentage or Length may change the other value as they are linked.*
8. Select Soft key Button #4 ⑦ to Save Custom Cable Type

OPERATING INSTRUCTIONS

RJ45 WIREMAP TESTING AND LENGTH MEASUREMENT

1. Plug one end of an RJ45-terminated cable into the RJ45 port ⑮, and the other end into the RJ45 port ⑱ on the Test + Map™ ID Remote ①.
2. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Data Mode Icon ㉑ and press the Enter Button ⑫.
3. The tester will automatically begin testing and the LCD screen will display the results.
4. Press the Enter Button ⑫ to test again.

MEASURING LENGTH TO FAULTS (CATEGORY, TWISTED PAIR, DATA CABLE)

If fault is a SHORT:

5. While measuring a twisted pair cable, if there is a short between twisted pairs (i.e. a short between wires 1-2, 3-6, 4-5 or 7-8), the tester will display “SHORT” and show a red line between the shorted wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the short location.
6. If there is a short between non-twisted pair wires, the tester will indicate and display “SHORT” on all affected wire pairs. For example, if there is short between wire #1 and wire #3, the tester will display “SHORT” on both wire pairs 1-2 and 3-6 and show a red line between the shorted wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the short location.

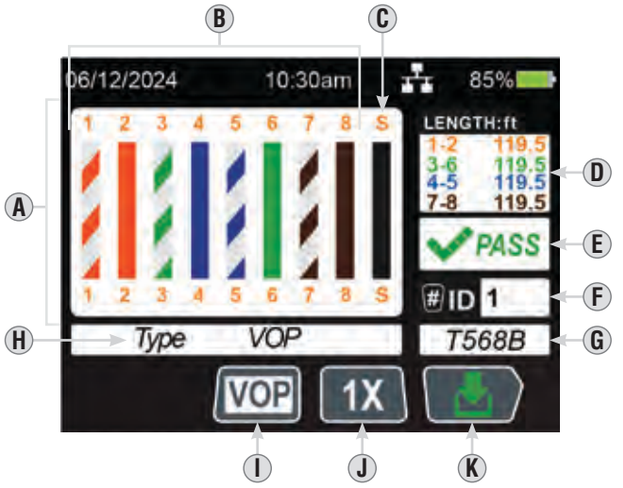
If fault is an OPEN:

1. While measuring a twisted pair cable, if there is an open wire pair, the tester will display “OPEN” and show a red **X** for the affected wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the open location.

If there are MULTIPLE faults:

1. If more than one type of fault is encountered, the tester will display “MULTI” and show the appropriate fault icons for the corresponding wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the first fault encountered.

NOTE: *Cable length is determined by the Velocity of Propagation (VoP) of the cable. Ensure the correct VoP is entered for accurate length measurements. See VoP section for more detail.*

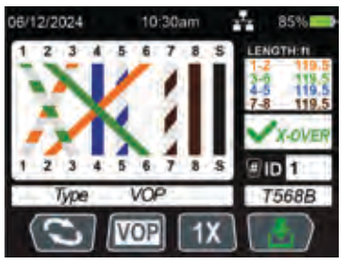


A. Wiremap (will also display any faults detected)
B. Individual wires of cable being tested
C. Shield Indicator
D. Length measurement (pairs)
E. Test result
F. Remote ID number
NOTE: *ID number recognition is achieved through wire pair 3-6. If wires 3 and 6 are short circuited, or one of them is open circuited, the ID number cannot be recognized.*
G. Wiring standard being tested (changeable in SETTINGS)
H. Cable Type Indicator
I. Cable Type Button (press "Soft Key" Button ⑤ to change)
J. One-Time / Continuous Test Button (One-Time mode shown, press "Soft Key" Button ⑥ to change)
NOTE: *in One-Time Test mode, press Enter Button ⑫ to repeat test*
K. Save Button (press "Soft Key" Button ⑦)

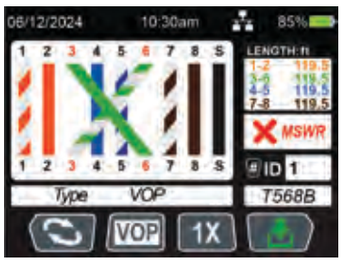
WIRE MAP AND DISPLAY EXAMPLES

NOTE: *Test + Map remote must be used for wire map testing.*

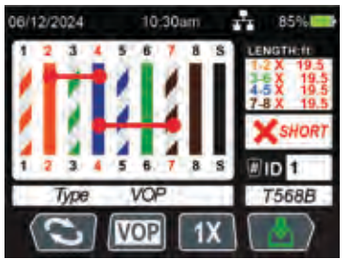
RJ45 CROSSOVER:



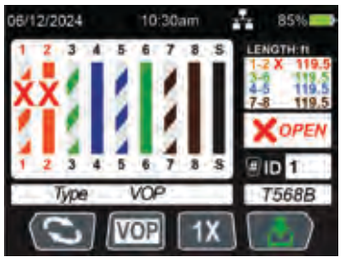
RJ45 MISWIRE:



RJ45 SHORT:



RJ45 OPEN:



RJ11/RJ12 WIREMAP TESTING AND LENGTH MEASUREMENT

1. Plug one end of an RJ11 or RJ12-terminated cable into the RJ11/RJ12 port ⑰, and the other end into the RJ11/12 port ⑱ on the Test + Map™ ID Remote ①.
2. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Voice Mode Icon E2 and press the Enter Button ⑫.
3. The tester will automatically begin testing and the LCD screen will display the results.
4. Press the Enter Button ⑫ to test again.

MEASURING LENGTH TO FAULTS (VOICE CABLE)

If fault is a SHORT:

5. While measuring a voice cable, if there is a short between pairs (i.e. a short between wires 1-6, 2-5, 3-4 for RJ12 type or 1-4, 2-3 for RJ11 type), the tester will display "SHORT" and show a red line between the shorted wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the short location.
6. If there is a short between non-pair wires, the tester will indicate and display "SHORT" on all affected wire pairs. For example, if there is short between wire #4 and wire #5 (RJ12), the tester will display "SHORT" on both wire pairs 2-5 and 3-4 and show a red line between the shorted wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the short location.

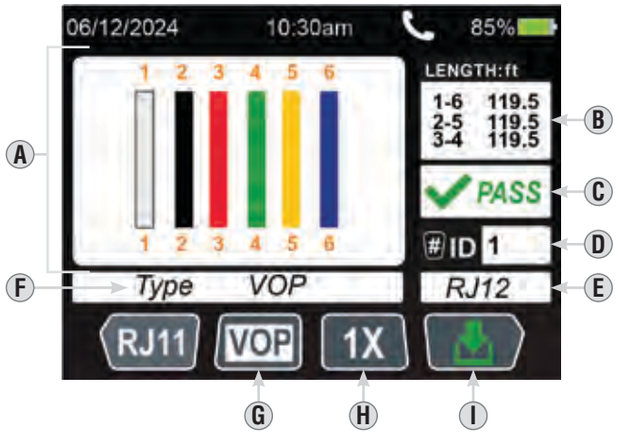
If fault is an OPEN:

1. While measuring a voice cable, if there is an open wire pair, the tester will display "OPEN" and show a red **X** for the affected wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the open location.

If there are MULTIPLE faults:

1. If more than one type of fault is encountered, the tester will display "MULTI" and show the appropriate fault icons for the corresponding wires in the Wiremap section Ⓐ. The tester will also indicate the approximate distance to the first fault encountered.

NOTE: *Cable length is determined by the Velocity of Propagation (VoP) of the cable. Ensure the correct VoP is entered for accurate length measurements.*



A. Wiremap (will also display any faults detected)
B. Length measurement (pairs)
C. Test result
D. Remote ID number
NOTE: *ID number recognition is achieved through wire pair 2-5 for RJ12, and wire pair 1-4 for RJ11. If wires 2 and 5 (RJ12) or wires 1 and 4 (RJ11) are short circuited, or one of them is open circuited, the ID number cannot be recognized.*
E. Port Type
F. Cable Type Indicator
G. Cable Type Button (press "Soft Key" Button ⑤ to change)
H. One-Time / Continuous Test Button (One-Time mode shown, press "Soft Key" Button ⑥ to change)
NOTE: *in One-Time Test mode, press Enter Button ⑫ to repeat test*
I. Save Button (press "Soft Key" Button ⑦)

COAX TESTING AND LENGTH MEASUREMENT

1. Insert the Female F-Barrel Connector ㉕ into the Coax F-Connector Port ⑯, then connect one end of a coax-terminated cable to the Barrel Connector, and the other end to the Coax F-Connector Port ⑯ on the Test + Map™ ID Remote ①.
2. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Coax Mode Icon E3 and press the Enter Button ⑫.
3. The tester will automatically begin testing and the LCD screen will display the results.
4. Press the Enter Button ⑫ to test again.

MEASURING LENGTH TO FAULTS (COAX CABLE)

If fault is a SHORT:

5. While measuring a coax cable, if a short is encountered, the tester will display "SHORT" and indicate the approximate distance to the short location.

If fault is an OPEN:

1. While measuring coax cable, if an open is encountered, the tester will display "OPEN" and show a red X and indicate the approximate distance to the open location.

NOTE: *Cable length is determined by the Velocity of Propagation (VoP) of the cable. Ensure the correct VoP is entered for accurate length measurements. See VoP section for more detail.*

A. Length measurement (pairs)
B. Test result
C. Remote ID number
D. Cable Type Indicator
E. Cable Type Button (press "Soft Key" Button ⑤ to change)
F. One-Time / Continuous Test Button (Continuous Mode shown, press "Soft Key" Button ⑥ to change)
NOTE: *in One-Time Test mode, press Enter Button ⑫ to repeat test*
G. Save Button (press "Soft Key" Button ⑦)

OPERATING INSTRUCTIONS

IDENTIFYING INSTALLED RJ45 CABLE (FIG. 1):

FIG. 1

1. Insert a numbered LanMap™ Location ID Remote ㉓ into the RJ45 port of each room that needs to be identified. Write down numbers and room names for later reference.
2. Take the VDV Scout® Pro Max to the wiring closet or router (the source of the internet connection).
3. Connect an unknown cable to the RJ45 port ⑮.
4. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Data Mode Icon Ⓔ1 and press the Enter Button ⑫ to begin the ID test. The LCD will read "**ID#**" Ⓕ, where "#" is the ID number of the LanMap™ Location ID Remote ㉓ connected to the other side of the cable. Compare this number to the number/room pair list you made in Step 1 and mark the cable with a piece of labeled tape.
5. Repeat the process for each unknown cable until all have been labeled. You can use these labels to determine which rooms should be connected to the router, or to troubleshoot intermittent connections in the future.

IDENTIFYING INSTALLED RJ11/RJ12 VOICE CABLE (FIG. 1):

1. Insert a numbered LanMap™ Location ID Remote ㉓ into the RJ11/RJ12 port of each room that needs to be identified. Write down numbers and room names for later reference.
2. Take the VDV Scout® Pro Max to the wiring closet or router (the source of the internet connection).
3. Connect an unknown cable to the RJ11/RJ12 port ⑮.
4. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Data Mode Icon Ⓔ1 and press the Enter Button ⑫ to begin the ID test. The LCD will read "**ID#**" Ⓕ, where "#" is the ID number of the LanMap™ Location ID Remote ㉓ connected to the other side of the cable. Compare this number to the number/room pair list you made in step 1 and mark the cable with a piece of labeled tape.
5. Repeat the process for each unknown cable until all have been labeled. You can use these labels to determine which rooms should be connected to the router, or to troubleshoot intermittent connections in the future.

IDENTIFYING INSTALLED COAX CABLE (FIG. 2):

FIG. 2

1. Insert a numbered CoaxMap™ Location ID Remote into the F-connector port of each room that needs to be identified. Write down numbers and room names for later reference.
2. Take the VDV Scout® Pro Max to the wiring closet or cable splitter (the source of the cable connection).
3. Insert the Female F-Barrel Connector ㉕ into the Coax F-Connector Port ⑯, then connect one end of a coax-terminated cable to the Barrel Connector.
4. Use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Coax Mode Icon Ⓔ3 and press the Enter Button ⑫ to begin the ID test. The LCD will read "**ID#**" Ⓕ, where "#" is the ID number of the CoaxMap™ Location ID Remote ㉔ connected to the other side of the cable. Compare this number to the number/room pair list you made in step 1 and mark the cable with a piece of labeled tape.
5. Repeat the process for each unknown cable until all have been labeled. You can use these labels to determine which rooms should be connected to the router, or to troubleshoot intermittent connections in the future.

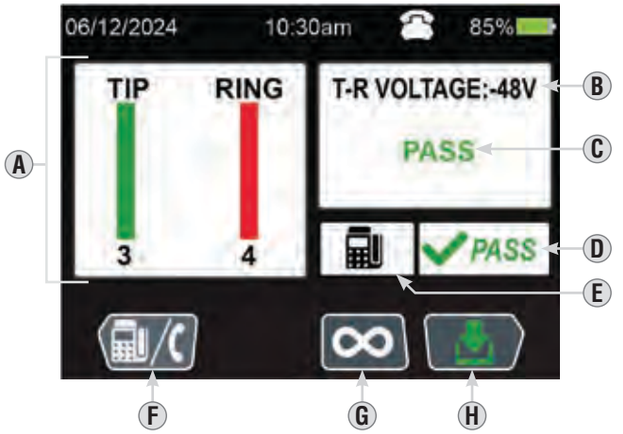
OPERATING INSTRUCTIONS

POTS (PLAIN-OLD-TELEPHONE-SERVICE) TESTING

1. Insert one end of the RJ11 ⑳ or RJ12 ㉑ cable into the RJ11/RJ12 port ⑰, and the other end into the receptacle to test.
2. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the POTS Mode Icon Ⓔ4 and press the Enter Button ⑫.
3. The tester will will measure the Tip and Ring voltages.
4. The LCD screen will display the results.

NOTE: *Ensure the proper Testing Indicator Ⓔ is displayed for the type of test being performed. The test type can be changed by pressing the Normal/Reverse "Soft Key" Button ④. Testing with the incorrect test type selected will cause inaccurate test results.*

NOTE: *On a standard two-wire telephone line, POTS voltage is measured between RING (RJ11 Red wire, position 4) and TIP (RJ11 Green wire, position 3) connections. In the NORMAL configuration, RING has a nominal -48VDC potential with respect to TIP, with an acceptable range of -42 VDC to -54 VDC. This is reversed for the REVERSE configuration.*



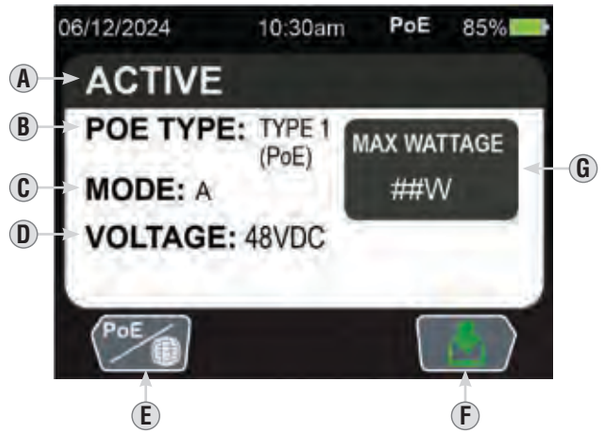
A. Wiremap (will also display any faults detected)
B. Measured voltage
C. Test result
D. Test result
E. Normal (Phone) or Reverse (Fax) Testing Indicator
F. Normal/Reverse Testing (press "Soft Key" Button ④ to change)
G. One-Time / Continuous Test Button (One-Time mode shown, press "Soft Key" Button ⑥ to change)
NOTE: *in One-Time Test mode, press Enter Button ⑫ to repeat test*
H. Save Button (press "Soft Key" Button ⑦)

PoE (POWER OVER ETHERNET) TESTING

The VDV Scout® Pro Max can detect IEEE standards 802.3af, 802.3at, and 802.3bt

1. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the PoE Mode Icon E5 and press the Enter Button ⑫.
2. Plug one end of an RJ45-terminated cable into the RJ45 port ⑮, and the other end into the receptacle to test.
3. Press the Enter Button ⑫ to begin testing.
4. The LCD screen will display the results.

VDV SCOUT® PRO MAX DETECTABLE STANDARDS				
PROPERTY	802.3af (802.3at TYPE 1) "PoE"	802.3at TYPE 2 "PoE+"	802.3bt TYPE 3 "4PPoE"	802.3bt TYPE 4
Power available at PD	12.95W	25.50W	51W	71.3W
Maximum power delivered by PSE	15.40W	30.0W	60W	90W
Voltage range (at PSE)	44.0V to 57.0V	50.0V to 57.0V	50.0V to 57.0V	52.0V to 57.0V
Voltage rant (at OD)	37.0V to 57.0V	42.5V to 57.0V	42.5V to 57.0V	41.1V to 57.0V

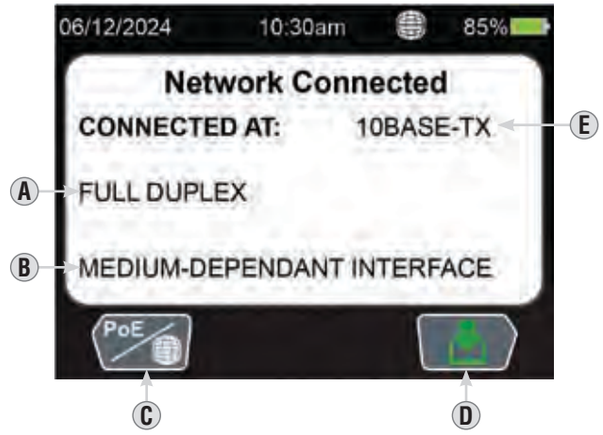


A. Connection type
B. Detected PoE type
C. Wiring mode: • "A" (Pairs 1/2 and 3/6) • "B" (Pairs 4/5 and 7/8) • "4-Pair"
D. Measured voltage
E. PoE / Active Network Test Button (One-Time mode shown, press "Soft Key" Button ④ to change)
F. Save Button (press "Soft Key" Button ⑦)
G. Maximum wattage for detected PoE

ACTIVE NETWORK TESTING

The VDV Scout® Pro Max can detect ethernet standards 10Base-T, 100Base-TX, 1000Base-T, and 10GBase-T.

1. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Active Network Testing Mode Icon E9 and press the Enter Button ⑫.
2. Insert one end of the RJ45 ⑲, RJ11 ⑳ or RJ12 ㉑ cable into the appropriate port ⑮ or ⑰, and the other end into the receptacle to test.
3. Press the Enter Button ⑫ to begin testing.
4. The LCD screen will display the results.



A. Connection type
B. MDI detected indicator
C. PoE / Active Ntework Test Button (One-Time mode shown, press "Soft Key" Button ④ to change)
D. Save Button (press "Soft Key" Button ⑦)
E. Ethernet standard

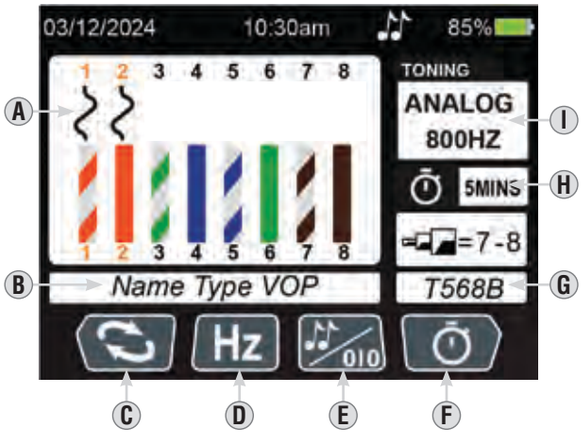
OPERATING INSTRUCTIONS

ANALOG TONE TRACING ON INSTALLED RJ45/RJ11/RJ12 (FIG. 3) OR COAX CABLE (FIG. 4)

Use an analog tracing probe (Klein Tools VDV500-123 or VDV500-223 recommended) when performing analog tone generation.

1. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Analog Toning Icon E6 and press the Enter Button ⑫.
2. If toning RJ45, RJ11, or RJ12 cable: Insert one end of the RJ45 ⑲, RJ11 ⑳ or RJ12 ㉑ cable into the appropriate port ⑮, ⑯ or ⑰, and the other end into the receptacle to test.
   If testing coax cable: Insert the Female F-Barrel Connector ㉕ into the Coax F-Connector Port ⑯, then connect one end of a coax-terminated cable to the Barrel Connector, and the other end into the receptacle to test.
3. Select the appropriate settings for the cable being toned. ***NOTE:*** *The Coax F-Connector Port ⑯ transmits tone on pins 7-8 only. If toning coax cable, ensure that the tone is being generated on pins 7-8.*
4. Use the probe to determine the wire(s) on which the tone is being transmitted (see tone probe instruction manual for details). ***NOTE:*** *If the cable being toned is in close proximity to other cables and tone is detected on multiple cables, the tone will be loudest on the cable connected to the tester.*

For best results wire should NOT be energized



- **A.** Wire(s) being toned
- **B.** Cable type & VoP
- **C.** Toned wire selector (press "Soft Key" Button ④ to change)
- **D.** Toning frequency (press "Soft Key" Button ⑤ to change)
- **E.** Digital/Analog toning select (press "Soft Key" Button ⑥ to change)
- **F.** Auto Power-Off settings (press "Soft Key" Button ⑦ to change)
- **G.** Wiring standard being tested (changeable in SETTINGS)
- **H.** Auto Power-Off time
- **I.** Toning type and frequency

FIG. 3

FIG. 4

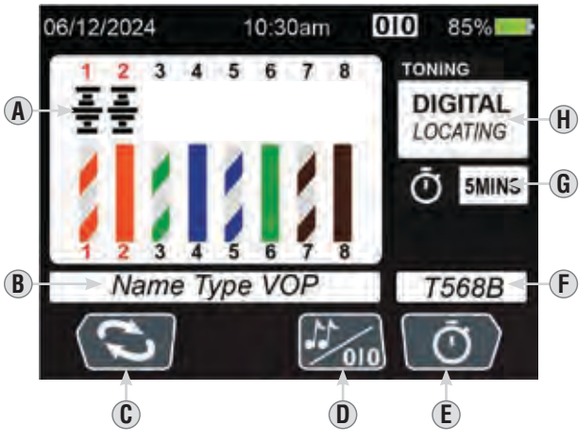
OPERATING INSTRUCTIONS

DIGITAL TONE TRACING ON INSTALLED RJ45/RJ11/RJ12 (FIG. 5)

Digital toning requires Klein Tools VDV500-223 Probe; other probes are not compatible with this function.

1. Press the Power Button ③ to turn on the tester.
2. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Digital Toning Icon E7 and press the Enter Button ⑫.
3. If toning RJ45, RJ11, or RJ12 cable: Insert one end of the RJ45 ⑲, RJ11 ⑳ or RJ12 ㉑ cable into the appropriate port ⑮, ⑯ or ⑰, and the other end into the receptacle to test.
4. Select the appropriate settings for the cable being toned.
5. Use the probe to determine the wire(s) on which the tone is being transmitted (see tone probe instruction manual for details). ***NOTE:*** *If the cable being toned is in close proximity to other cables and tone is detected on multiple cables, the tone will be loudest on the cable connected to the tester.*

For best results wire should NOT be energized



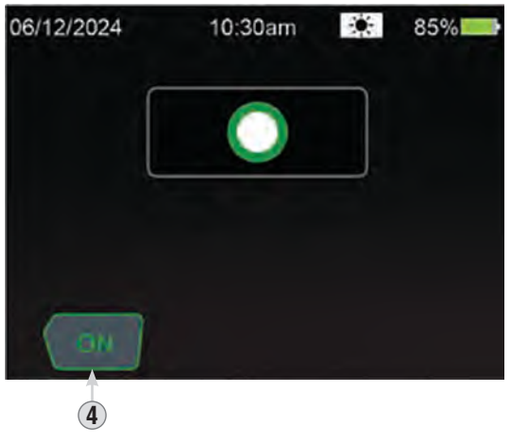
- **A.** Wire(s) being toned
- **B.** Cable type & VoP
- **C.** Toned wire selector (press "Soft Key" Button ④ to change)
- **D.** Digital/Analog toning select (press "Soft Key" Button ⑥ to change)
- **E.** Auto Power-Off settings (press "Soft Key" Button ⑦ to change)
- **F.** Wiring standard being tested (changeable in SETTINGS)
- **G.** Auto Power-Off time
- **H.** Toning type

FIG. 5

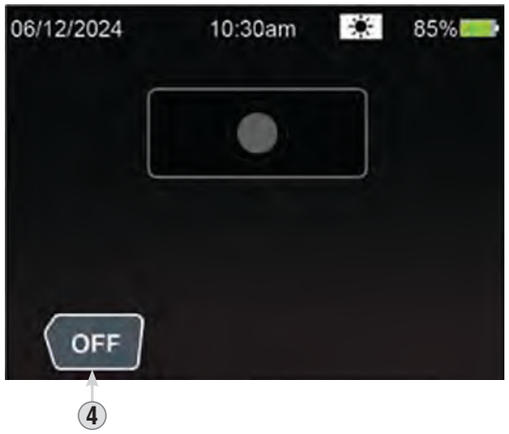
HUB BLINK

1. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Hub Blink Icon E8 and press the Enter Button ⑫.
2. Insert one end of the RJ45 ⑲, RJ11 ⑳ or RJ12 ㉑ cable into the appropriate port ⑮ or ⑰, and the other end into the receptacle to hub blink.
3. Toggle "Soft Key" Button #1 ④ to enable Hub blink on and off.

Hub Blink On



Hub Blink Off



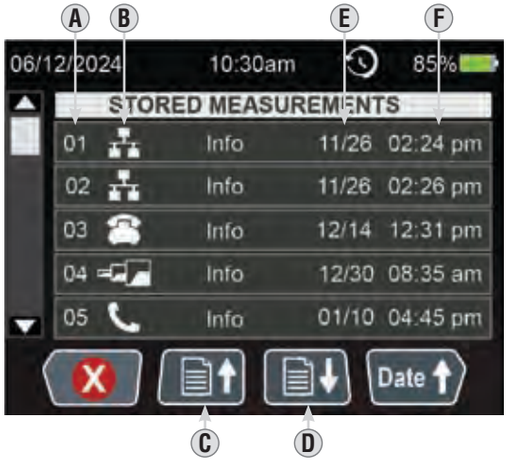
SAVING TEST RESULTS

1. After performing a test from either the Data, Voice, Coax, POTS, POE, or Active Network functions, press "Soft Key" Button ⑦ to save.
2. To save with default naming, press "Soft Key" Button ⑦ (green check mark).
3. To edit file name before saving, press "Soft Key" Button ⑤ ("Edit"). A keyboard will show on the display. Navigate the keyboard using the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to enter a new file name.
4. To save with the new file name, press "Soft Key" Button ⑦ (green check mark).

RECALLING SAVED TEST RESULTS

Saved results can be retrieved and reviewed with the RECALL function.

1. From the Home Screen, use the Arrow Buttons ⑧, ⑨, ⑩, ⑪ to navigate to the Recall Icon E10 and press the Enter Button ⑫.
2. Use the Up and Down Arrow Buttons ⑧, ⑨ to navigate to the desired test results and press the Enter Button ⑫.



A. Record number
B. Type of test performed
C. Page Up Button (press "Soft Key" Button ⑤ to navigate)
D. Page Down Button (press "Soft Key" Button ⑥ to navigate)
E. Date of Test
F. Time of Test

EXPORTING SAVED TEST RESULTS

Saved results can be retrieved in the RECALL section.

1. Connect the USB-C end of supplied USB cable ㉗ to the USB-C port ㉖, and the USB-A end to a computer .
2. Open the computer's file explorer and locate the "VDV501-770" folder. The saved data will be named "SPM_EXPORT", saved in .CSV format.
3. Copy/save the "SPM_EXPORT" from the "**VDV501-770**" folder to a permanent location.
4. Disconnect the tester from the computer when finished. The "**VDV501-770**" folder will no longer appear in the file explorer.

OPERATING INSTRUCTIONS

DELETING SAVED TEST RESULTS

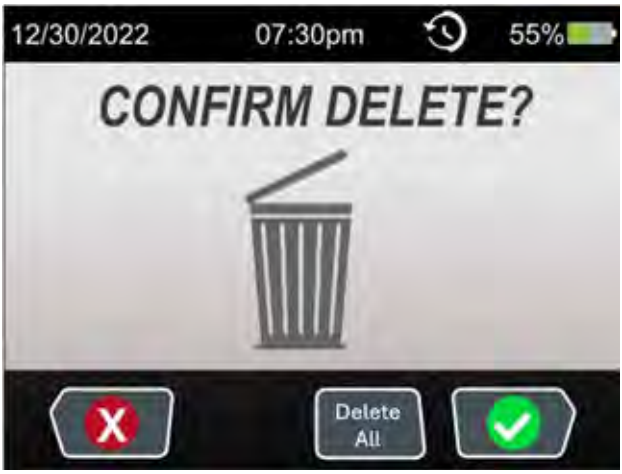
To Delete Individual Results:

1. From the Home Screen use the Arrow Buttons ⑧ ⑨ ⑩ ⑪ to the Recall Icon and press the Enter Button ⑫
2. Use the Up and Down Arrow Buttons ⑧ ⑨ to navigate to the desired test result and press the soft key ④ to start delete process.

When prompted to "Confirm Delete" use either soft key ① or ④ to confirm deletion.

TO DELETE ALL RESULTS

1. From the Home Screen use the Arrow Buttons ⑧ ⑨ ⑩ ⑪ to the Recall Icon and press the Enter Button ⑫
2. Press soft key ④ to start the delete process. Press soft key ③ to prompt delete all.
3. When prompted to "CONFIRM DELETE ALL" use either soft key ① or ③ to confirm deletion.



BATTERY INSTALLATION / REPLACEMENT

Loosen the screw in the battery cover ⑱ with #2 Phillips screwdriver and remove cover. **THEN:**

MAIN BATTERIES (3× AA, REQUIRE INSTALLATION BEFORE FIRST USE)

1. If replacing batteries, remove and recycle spent batteries.
2. Install three AA alkaline batteries ㉘, noting proper polarity.

INTERNAL CLOCK BATTERY (CR2032, PRE-INSTALLED)

1. Using a flathead screwdriver, rotate Internal Clock Battery Cover ㉙ to the unlock position 🔓 to remove.
2. Pry out exhausted CR2032 battery ㉚ with a flathead screwdriver, using the pry slot next to the 🔓 icon.
3. Install new CR2032 battery, noting proper polarity.
4. Replace cover and rotate back to the locked position 🔒 until it clicks into place. Do not overtighten.

THEN: Replace main battery cover and tighten screw. Do not overtighten.

REPLACEMENT PARTS

- **VDV770-770 Replacement Self-Storing Test + MapTM ID Remote**
- **VDV999-770 Replacement Lead Set**
- **VDV770-129 Replacement Case**

CLEANING

Turn instrument off and disconnect any cables. Clean the instrument by using a damp cloth.
Do not use abrasive cleaners or solvents.

STORAGE

Remove the batteries when instrument is not in use for a prolonged period of time. Do not expose to high temperatures or humidity. After a period of storage in extreme conditions exceeding the limits mentioned in the Specifications section, allow the instrument to return to normal operating conditions before using it.

FCC & IC COMPLIANCE

See this product's page at **www.kleintools.com** for FCC compliance information.
Canada ICES-003 (B) / NMB-003 (B)

WARRANTY

www.kleintools.com/warranty

DISPOSAL / RECYCLE

Do not place equipment and its accessories in the trash. Items must be properly disposed of in accordance with local regulations. Please see **www.epa.gov/recycle** for additional information.