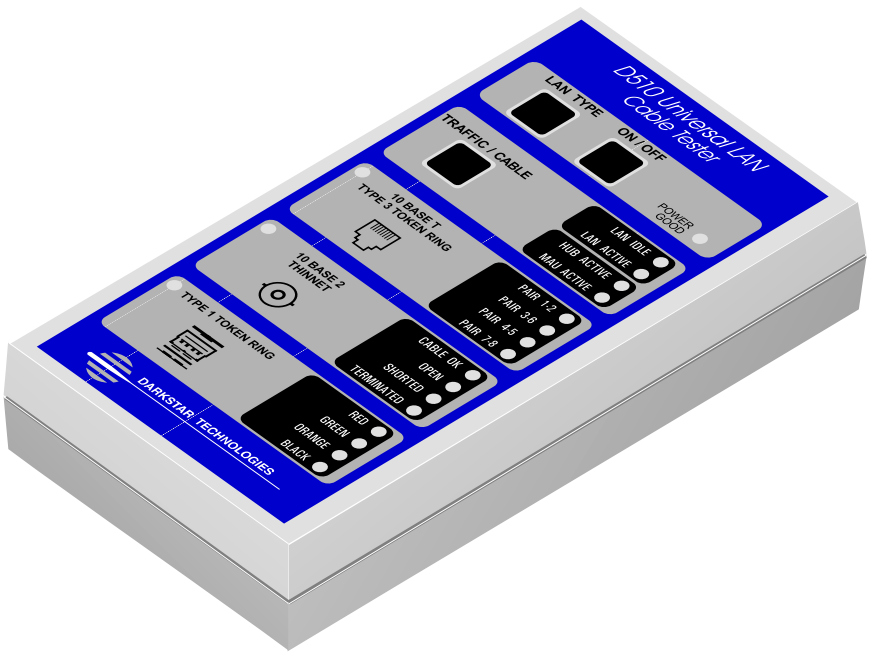


D500 / D510

LAN Cable Tester

GUIDE TO OPERATION



DARKSTAR TECHNOLOGIES

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Features

The D500 and D510 LAN Cable Testers were designed to address the needs of network installers, maintainers and administrators who support multiple cable types. They are affordable, easy-to-use and their unique set of features make them a valuable addition to everyone's troubleshooting kit. In addition to testing your LAN cables for proper continuity and termination, you also have the option of checking for the presence of actual network traffic.

The D500 supports Thinnet and 10BASE-T. The D510 adds support for Type 1 Token Ring networks. They also give you the choice of two operational modes; The CABLE MODE allows you to test for cable integrity using the REMOTE CABLE WRAP MODULE, which is included. Cables wired for T568 schemes can also be tested. The TRAFFIC MODE allows you to check an installed cable, hub or MAU for the presence of actual network activity.

Operation

The D500/D510 function is controlled with the three buttons near the top of the main unit. The ON/OFF button simply switches the unit on and off. If the unit fails to turn on, replace the 9-volt alkaline battery in the rear of the enclosure.

The LAN TYPE button lets you select the type of network (and type of connector) that you wish to test. The first selection is for testing 10BASE-T or type 3 Token Ring (RJ45-8 connector). The second selection is for testing Thinnet (BNC connector). The third selection is for testing type 1 Token Ring (IBM connector). The tester will default to the 10BASE-T setting on power-up and the led indicators along the left-hand side of the tester always indicate which LAN type is currently selected.

The TRAFFIC/CABLE button allows you to switch between the CABLE mode and the TRAFFIC mode. On power-up, the tester will recall the mode setting which was last selected. When the CABLE mode has been selected, all traffic indicators should be dark. These are the block of four leds next to the TEST MODE button. In order to test cables, the REMOTE CABLE WRAP MODULE must be connected at the other end of the cable. In the TRAFFIC mode, the main unit is used by itself to check for network activity. In this mode, you will always see either a LAN IDLE or a LAN ACTIVE indication at the top of the tester. All tests run continuously as long as the unit is switched on.

Note: Both the main unit and the REMOTE CABLE WRAP MODULE have a POWER GOOD indicator on the front panel. If POWER GOOD fails to light during normal operation, replace the 9-volt alkaline battery in the rear of the enclosure.

D500/D510 MAIN UNIT

D510 Universal LAN Cable Tester


LAN TYPE ON / OFF POWER GOOD ●

TRAFFIC / CABLE LAN IDLE ●
LAN ACTIVE ●
HUB ACTIVE ●
MAU ACTIVE ●

10 BASE T TYPE 3 TOKEN RING PAIR 1-2 ●
PAIR 3-6 ●
PAIR 4-5 ●
PAIR 7-8 ●

10 BASE 2 THINNET CABLE OK ●
OPEN ●
SHORTED ●
TERMINATED ●

TYPE 1 TOKEN RING RED ●
GREEN ●
ORANGE ●
BLACK ●

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D510 ONLY

D500/D510 REMOTE UNIT

D510 Universal LAN Cable Tester

Remote Cable Wrap Module

POWER GOOD ●

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Testing 10BASE-T or Type-3 Token-Ring Cables

Select the RJ45 type connector and select the cable mode. Connect the cable under test to the unit's RJ45 connector and connect the REMOTE CABLE WRAP MODULE to the opposite end of the cable. The four pairs are considered to be grouped as shown on the front panel, even if you don't use all four pairs. The testing of the pairs will progress in sequence from top to bottom, this allows you to verify that wires have not been swapped between different pairs. If the lamp for a particular pair does not light, then that pair is either open or shorted. A GREEN lamp means that the pair is wired correctly and a RED lamp means that the polarity of that pair is reversed. If lamps appear to light out of sequence, then check for wire swaps between pairs.

Note: For 10BASE-T cables, you need to use at least PAIR 1-2 and PAIR 3-6.

Note: For type 3 Token Ring cables, you need to use at least PAIR 3-6 and PAIR 4-5.

Testing Thinnet Coaxial Cables

Select the BNC type connector and select the cable mode. Connect the cable under test to the unit's BNC connector and connect the REMOTE CABLE WRAP MODULE to the opposite end of the cable. The CABLE OK lamp will flash when a good coax is connected. The OPEN lamp will flash if either the cable is an open circuit or if the REMOTE CABLE WRAP MODULE is not connected. The SHORTED lamp will flash if the center conductor is shorted to the shielding. If one or two 50 Ohm terminators are detected on the cable, then the TERMINATED lamp will flash.

Note: Terminators must be removed to fully test a cable segment. Do not run this test on a live network; use the TRAFFIC mode to verify that installed cables are not in use.

Testing Type-1 Token-Ring Cables (D510 Only)

Select the IBM type connector and select the cable mode. Connect the cable under test to the D510's IBM connector and connect the REMOTE CABLE WRAP MODULE to the opposite end of the cable. For this test, the REMOTE CABLE WRAP MODULE will accommodate either an IBM connector or a 9-pin "D" connector which allows you test both station cables and trunk cables. Since this type of cable is shielded, there is a separate indicator for each wire. The test will proceed in sequence from top to bottom. If all four lamps light in sequence, then the cable is wired correctly. If a single lamp fails to light, then that wire is either open or is shorted to the shield. If no lamps function, then either the shield is open or the remote module is not connected. If lamps appear to light out of sequence, then two or more wires are somehow swapped. If two indicators light

at the same time, then either those two wires are shorted together or the shorting bars have been damaged in one of the IBM connectors under test.

Note: The LAN TYPE leds on the left-hand side of the tester will light continuously while you are in the CABLE mode and will flicker while you are in the traffic mode.

Note: Please do not attempt to test more than one cable type simultaneously as this may damage the tester or yield erroneous results.

Testing for 10BASE-T Network Traffic

Select the RJ45 type connector and select the traffic mode. Connect the tester to the cable or hub that you wish to monitor. The tester will automatically search for an active hub and if none is found, you will continue to see only a LAN IDLE indication. Once communication with a hub has been established, you will see a HUB ACTIVE lamp as long as there is valid link-bit status between the tester and the hub. Next, you will also see a LAN ACTIVE indication while receive traffic is reflected back to you from the hub. This test does not interfere with the traffic or the operation of the hub. Most hubs also have an indicator which will acknowledge link bits from the tester.

Note: The “polarity” led on the D500 will light if the polarity of the 10BASE-T receive pair is reversed. Some hubs will automatically compensate for this type of error.

Note: Please do not attempt to insert 4-position RJ11 style plugs into the tester as this will damage the modular connector and may void your warranty. If needed, an adapter can be obtained from your local dealer.

Testing for Thinnet Traffic

Select the BNC type connector and select the traffic mode. Connect the tester to the coaxial cable that you wish to monitor. The tester will indicate LAN IDLE if the cable is “dead” or LAN ACTIVE if Ethernet frames are detected. The tester will look like a high impedance to the network and does not transmit or act as a terminator. CAUTION! Do not disconnect coaxial cables or remove terminators if you think the network might be in use. Normally, there are “T” connectors installed ahead of time so that new stations may be added without disrupting the network and that’s the best place to connect the tester for traffic testing.

Testing for Token-Ring Traffic (D510 only)

Select the type 1 connector and select the traffic mode. Connect the tester to the cable or MAU that you wish to monitor. The D510 will automatically insert itself into the ring for a brief period of time (less than 15ms) and will then light the LAN ACTIVE indicator and beep twice if there is traffic in the ring. If no frames are detected, then you will only see the LAN IDLE indication. This test will function in both 4 Mbit and 16 Mbit Token Ring configurations. The MAU ACTIVE indicator lights when the tester is sourcing phantom current to the relay in the MAU. If you never see the MAU ACTIVE lamp come on then either you are not plugged in correctly or the MAU is defective.

Note: The Token Ring traffic mode will periodically interrupt traffic in the ring but does not exceed the maximum bit outage time allowed for in the 802.5 specification. Your server may or may not log this type of recoverable error in a file. This data interruption is transparent to users on the network. More intelligent hubs may “wrap” around the D510 which will disable traffic detection.

Note: The D500 and D510 testers are not a TDR or Time Domain Reflectometer. If advanced cable analysis or precision impedance testing is what you require, contact your distributor for more a sophisticated type of test instrument.

Specifications

<i>Power Requirement</i>	9-volt alkaline battery
<i>Unit Size</i>	4 X 7.5 X 1.3 inches 10.2 X 19.1 X 3.3 centimeters
<i>Unit Weight</i>	2.0 lb / 0.91 kg
<i>Operating Temperature</i>	0 to 45 degrees centigrade non-condensing
<i>Networks Supported in Traffic Mode</i>	10BASE-T (IEEE 802.3) 10BASE-2 (Thinnet) Token Ring (IEEE 802.5) D510
<i>Cable Types Supported</i>	UTP 10BASE-T (RJ45) UTP Token Ring (RJ45) T568A and T568B Thin Ethernet (RG-58/U) STP Token Ring (IBM)
<i>Maximum Cable Length</i>	200 meters

Technical Assistance

Customer support is obtained through the distributor from which you purchased your tester. If you still have problems or cannot locate your distributor, you may reach us via fax at (765) 775-4073 or via our website at www.darkstar.crowecorp.com/

Warranty

Darkstar Technologies warrants its products against defects in materials or workmanship for a period of one year from the date of purchase. Any product that is returned shipping prepaid will be inspected and tested, and items meeting warranty conditions will be repaired or replaced free of charge. Please contact your distributor if repair or replacement is required.

