

# CableEye® APPLICATIONS GUIDE

*A Step-by-Step Introduction*

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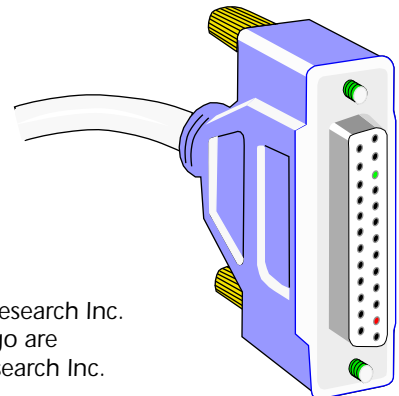
*For a COLOR hypertext version of this Applications Guide, go to our web site!*

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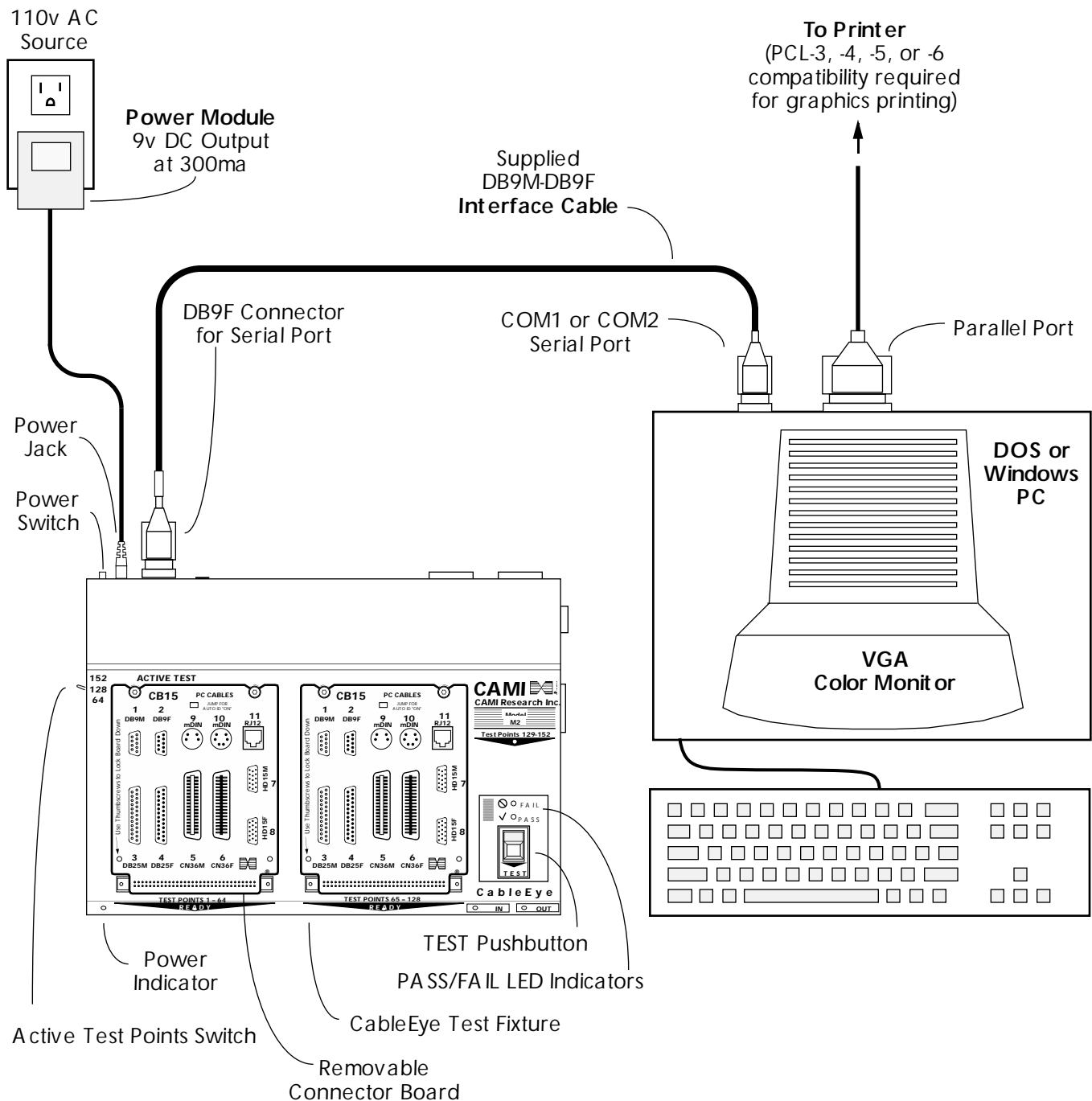
On our web site you will find:

- Product Description, New Product Releases
- Large Color Photos of the Various CableEye Models
- Sample Graphic Wiring Display (*full-size color screen shot*)
- Sample Laserprinter Output of Wiring Report and Log Report
- Types of Cables You Can Test (*newly released connector boards included*)
- CableEye's Unique Benefits (*a summary*)
- Detailed Product Catalog (*with a full-scale drawing of every connector board*)
- Guide to Finding the Right Cable Tester
- A Copy of Our Latest Advertisement
- International Sales Information
- Reference Guide on Data Communications and the RS232 Interface
- A *color* Hypertext Version of This Applications Guide!

# Connecting CableEye to Your Computer

**NOTE:** Several CableEye models are available, all using the same software and following the same operating principles. The drawing below illustrates Model M2 (Item 811). The software will operate on Windows 95/98 or Windows NT systems.

**Connector Boards** – Instantly attach connector boards to the top of the tester. Mix and match boards as needed to accommodate the connectors on your cables. You may attach a cable between any left connector and any right connector. Expand the system to over 1000 test points by connecting additional test modules. See p.18 for a description of how to test wire harnesses and multi-headed cables.



# Connector Boards Available

<b>Connector Type</b>	<b>Board</b>	<b>Item</b>
CN50 male and female – <i>Centronics-style, 50-pin, Telco, SCSI-I</i>	CB1	731
DB15 male and female – <i>networks, video, control</i>	CB1	731
RJ45 Modular – <i>networks, data communications</i>	CB1	731
BNC (coaxial) – <i>video, networks, RF</i>	CB1	731
Dual-Row Headers (60, 50, 40, 34, 26 pin) – <i>IDC flat cable</i>	CB2	732
Dual-Row Headers (24, 20, 26, 24, 10 pin) – <i>IDC flat cable</i>	CB2A	732A
DB37 male and female – <i>RS449, data communications</i>	CB3	733
DB50 male and female – <i>telephone, data communications, control</i>	CB3	733
v.35 male and female – <i>data communications</i>	CB4	734
MD50 male – <i>SCSI-I,II</i>	CB5	735
MC50 male – <i>SCSI-I,II</i>	CB5	735
MD68 male – <i>SCSI-III</i>	CB5	735
DB26HD male and female – <i>data communications, control</i>	CB6	736
DB44HD male and female – <i>data communications, control</i>	CB6	736
DB62HD male and female – <i>data communications, control</i>	CB7	737
DB78HD male and female – <i>data communications, control</i>	CB7	737
Circular connectors – <i>CPC, military, 62-pin max, accepts many styles</i>	CB8	738
Prototyping board – <i>62-pin max, same as circular connector board</i>	CB8	738
Molex pin strip, Mate-n-Lock – <i>power distribution, motors, control</i>	CB9	739
VME and Europadon 64- and 96-pin flat cable/backplane connector	CB10	740
High-density IDC Flat Cables (0.025 wire spacing, 0.05x0.1" grid)	CB12	742
2mm dual- and single-row headers – <i>European-style connectors</i>	CB13	743
Molex 60-pin LFH male and female, MD26 – <i>network applications</i>	CB14	744
DB25 male and female – <i>RS232, generic data and control</i>	CB15	745
DB9 male and female – <i>RS232, generic data and control</i>	CB15	745
CN36 male and female – <i>Centronics printers</i>	CB15	745
HD15 male and female – <i>video monitors</i>	CB15	745
RJ12 6-position, 6-conductor modular plug – <i>modems, telephone</i>	CB15	745
miniDIN4, miniDIN6, miniDIN8 – <i>mouse, keyboard, ADB, RS232</i>	CB15	745
13W3, 5W5, BNC – <i>professional video, workstations</i>	CB16	746
CN14 male and female – <i>telecom applications</i>	CB17	747
CN24 male and female – <i>IEEE 488/HPIB cables</i>	CB17	747
CN64 male and female – <i>telecom applications</i>	CB17	747
RJ45 Octopus (eight connectors) – <i>telecom applications</i>	CB18	748
MC68, MC80, MC100 mini Centronics – <i>SCSI, custom control applications</i>	CB20	750

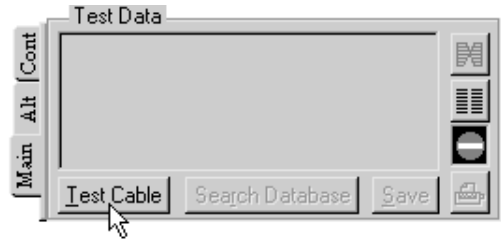
We constantly develop new boards. Call us if you need something not on this list to see if it has been recently introduced, or to make a request.

Note that with the PinMap program (Item 708), you can adapt CableEye for use with custom fixtures you may already have. Our complete connector library may then be linked to your existing fixtures or new ones you may build for special applications. You may also connect directly to the industry-standard 64-pin dual-row headers on the front of CableEye to link to a custom fixture, bypassing the connector boards completely. If you wish to develop your own boards for CableEye, we will gladly provide you with board routing dimensions and pinouts; contact us for this information.

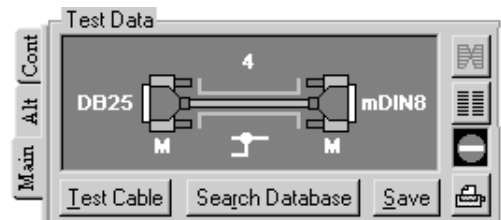
# Measuring a Cable

**1** – Attach a cable of choice between the left CB board and the right CB board. Use only one connector on each board. You may mix and match CB boards in any manner to obtain the right combination of connectors for your cable.

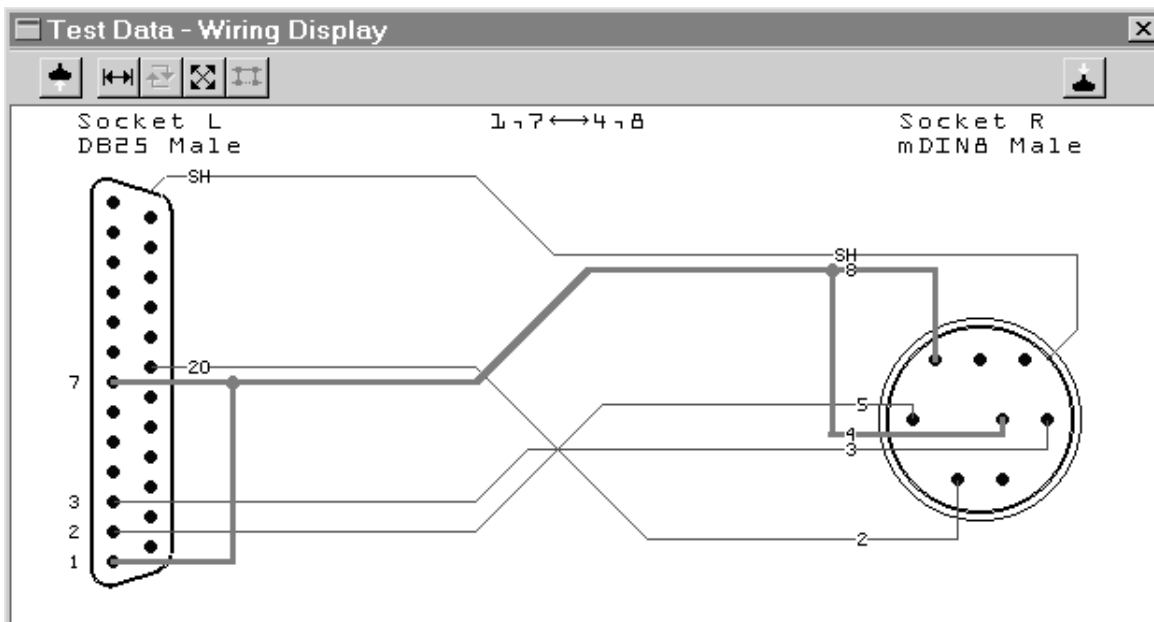
**2** – Click Test Cable in the Test Data summary box, or press the TEST pushbutton on the tester, to make a measurement. Most cables are measured in less than one second.



**3** – When the measurement finishes, a simplified diagram appears in the summary box giving characteristics of the cable. In this case, we have a DB25 male connector on the left, a miniDIN8 male connector on the right, a shield is present, four wires connect the left side of the cable to the right, and internal jumpers connect two or more pins together on the same side of the cable.



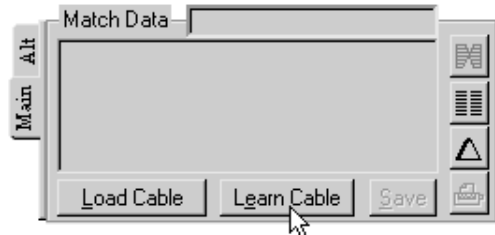
**4** – To examine the wiring of the cable in detail, click the "View Wiring" button (looks like a bow tie). You will see the complete schematic of the cable along with connector and pin information. Use the  $\uparrow$  and  $\downarrow$  keys to highlight a specific wire in the cable as shown below. This is helpful when reviewing the wiring of complex cables.



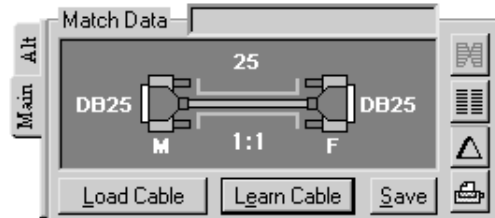
# Learning a Good Cable

You may learn a cable that you know is good and use it as a model. The program stores wiring data from a learned cable in the "Match Data Buffer". Wiring data from a cable under test is stored in the "Test Data Buffer". By comparing Match and Test data, the program finds differences between cables.

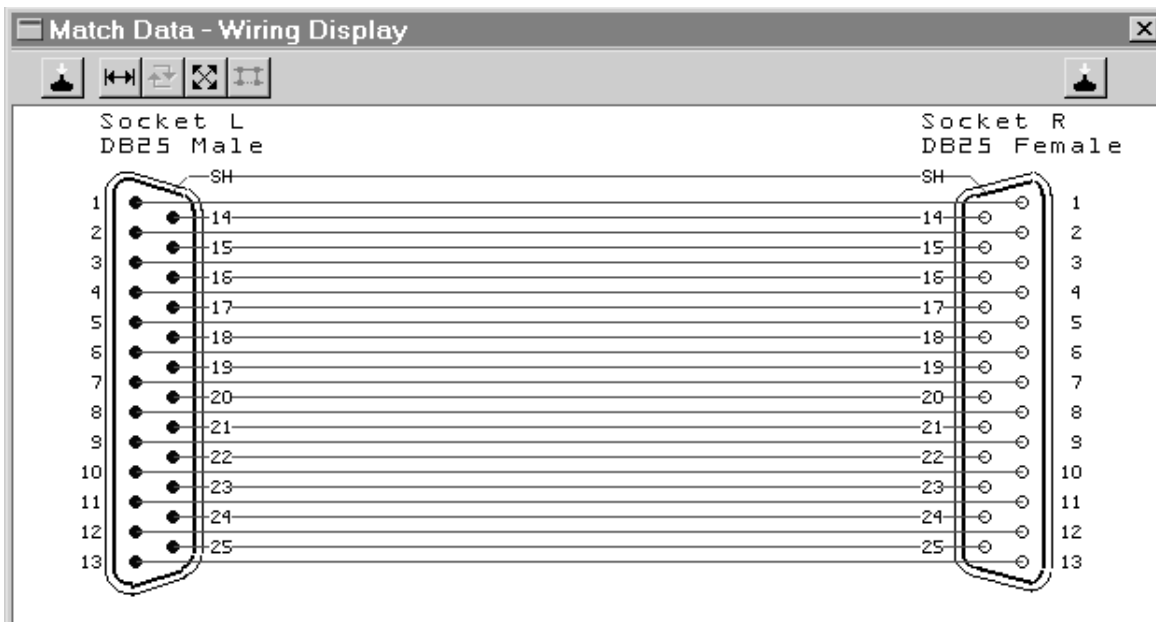
**1** - Click "Learn Cable" in the Match Data summary box (located below the Test Data summary box you used in the last example).



**2** - When the measurement is complete, cable data moves into the Match Data Buffer, and a simplified diagram appears in the Match Data summary box. Try to identify this example cable using just the information in the summary box shown here.



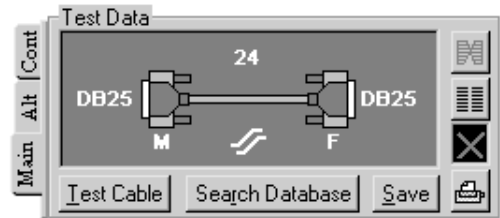
**3** - As before, you may view the actual cable wiring by clicking the "View Wiring" button (see below). Use the  $\uparrow$  and  $\downarrow$  keys to highlight a specific wire in the cable.



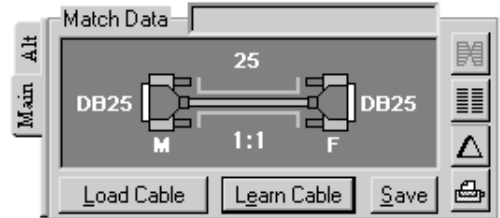
# Comparing Two Cables

After you have learned a good cable and measured a test cable, summaries of both will appear.

**1** – If there are no differences, you will see a green checkmark just above the "Print" button in the Test Data summary box. In the example shown on the right, however, the cables do not match and a red "X" appears instead.



What can you tell about the differences between these two cable using just the information in the summary boxes?



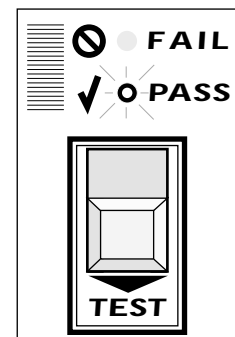
**2** – Click on the "triangle" button (Greek letter Delta) to see a detailed list of all wiring differences (shown below).

In the left column, a "+" indicates an extra connection (a short), while a "-" indicates a missing connection (an open). In this case, we see a miswire between pin 7 on the left and pin 15 on the right, and that the shield is missing.



+/-	DB25M-LEFT	DB25F-RIGHT
+	7	15
-	SH	SH
-	7	7
-	15	15

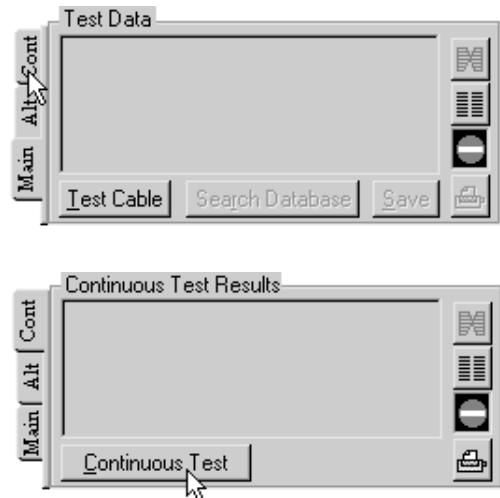
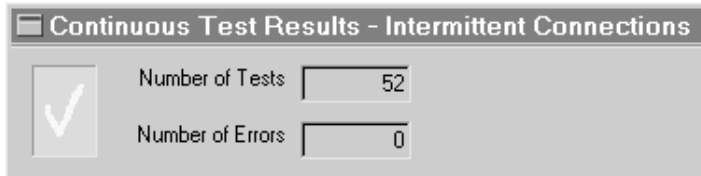
**3** – For batch testing of cables, *this entire process may be automated* by using a Macro (described later on page 12). In that case, you would press the TEST pushbutton on the test fixture and read the PASS/FAIL result on LED lamps.



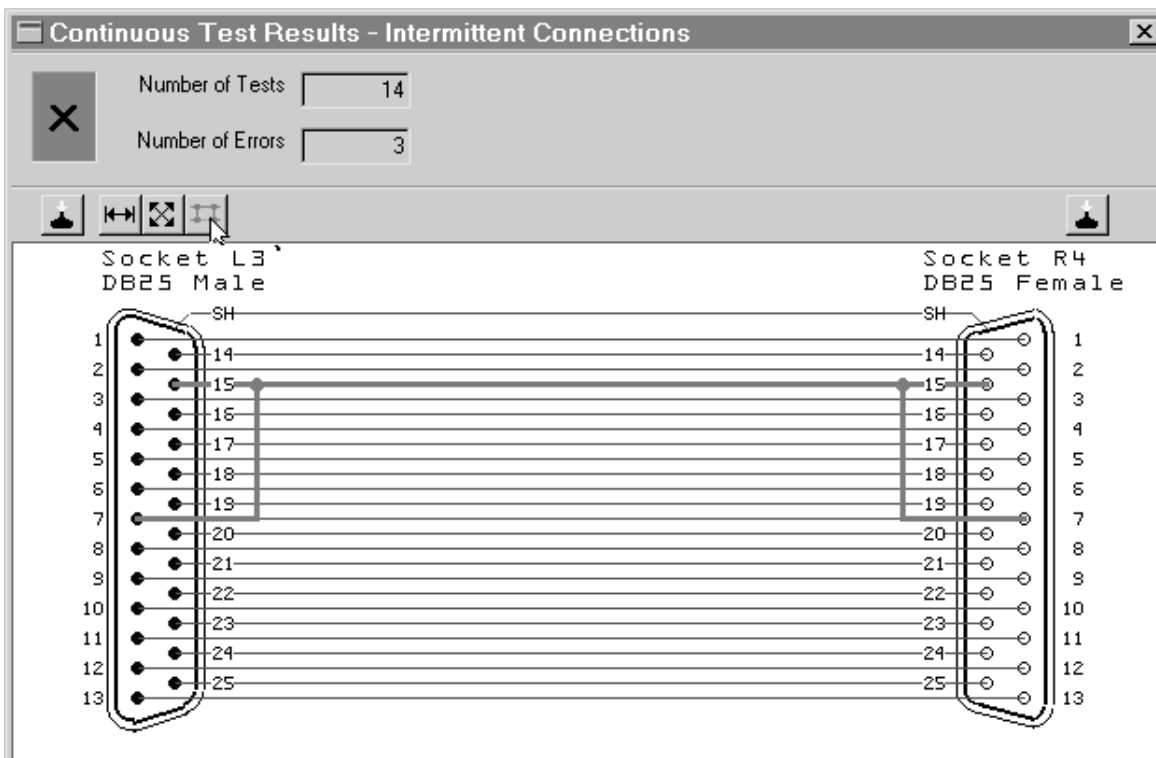
# Checking for Intermittent Connections

Bad crimps and broken wires, among other things, may cause intermittent connections. CableEye tests for this with the "Continuous Test" function. Test signals are passed through the cable continuously while you flex the cable and connectors. Changes in continuity cause a warning tone to sound and a wiring diagram to appear with intermittent connections highlighted.

**1** - Click the "Cont" tab on the left side of the Test Data summary box to reveal the Continuous Test function (right). With the test cable attached, click "Continuous Test" to start testing (lower right). As the test runs, you see the test results in a wiring display screen. A large green checkmark indicates that no intermittent connections have been found.



**2** - Flex the cable and connectors to locate intermittent connections. If any are found, a tone will sound, the error count will increment, and you will see a display with the intermittent connections highlighted. In this case, we see a short between pins 7 and 15.





## Saving Cable Data in the Database

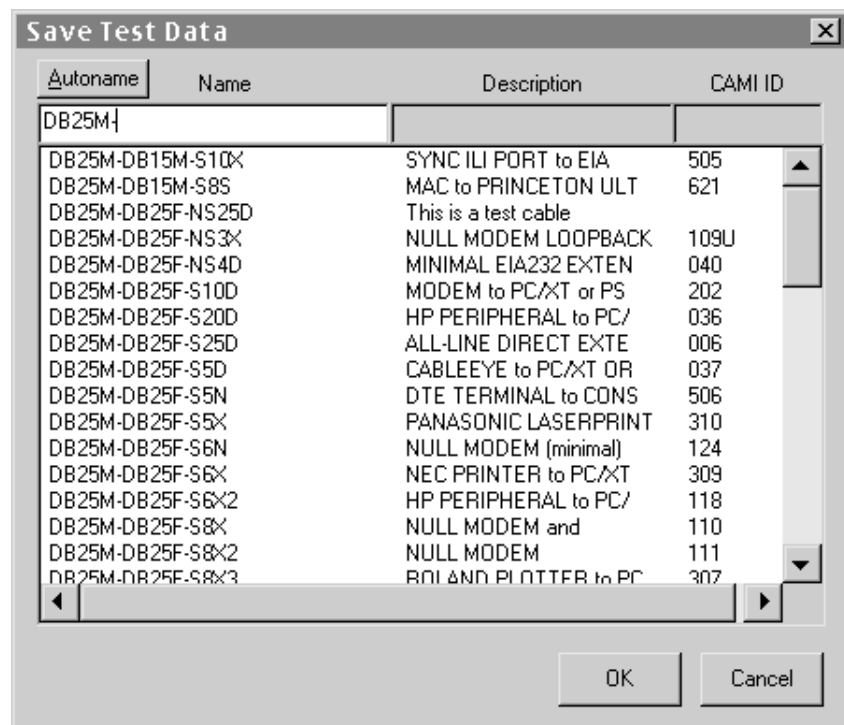
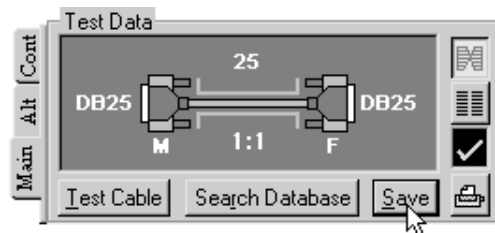
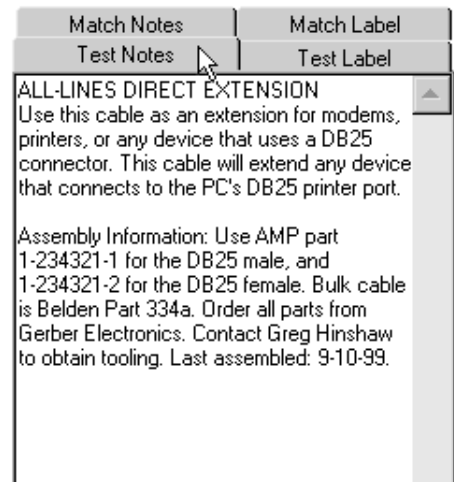
After measuring a good cable, you may wish to annotate it with descriptive notes and save it in the database using a name or part number of your choice. Later, you may reload the cable, or search the database for a match to the cable's wiring.

**1** – Measure a cable using Test Cable and click on the "Test Notes" tab. Then, type in descriptive notes, part numbers, names, dates, color codes, or any other information you deem important. You may also copy notes from another cable to the clipboard and paste them here using standard Windows methods, and then edit the notes as necessary.

Click the "Test Label" tab and enter any notes that you wish to appear on a printed label. Note that the first line of these notes appears in the title block of printed reports.

**2** – Click the "Save" button when you are ready to save the cable and notes in the database, and the "Save Test Data" entry box will appear (below).

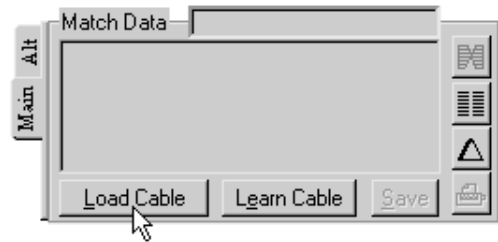
**3** – Use up to 19 characters to name the cable. You may use spaces, dashes, and other special symbols in the name. To have CableEye automatically create a name for you based on the connectors and wiring, click "Autoname". As you type the name, the file list below shows all other cable files that begin with the characters you have typed so far. Continue typing until no other files appear, indicating that you have selected a unique name. Click "OK" to save the cable.



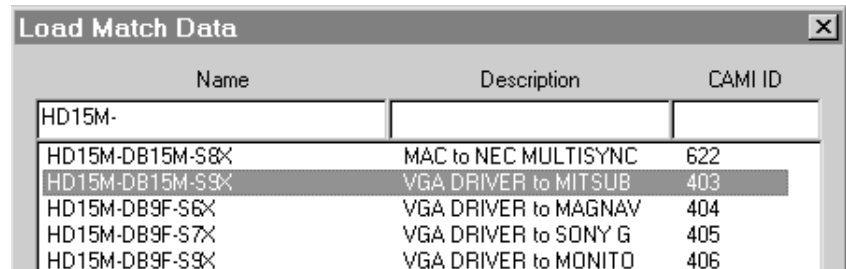
# Loading Cable Data from the Database

You may wish to recall previously saved cable data to read the descriptive notes, view its wiring, print a label, or compare the wiring to a test cable.

**1** – Click "Load Cable".

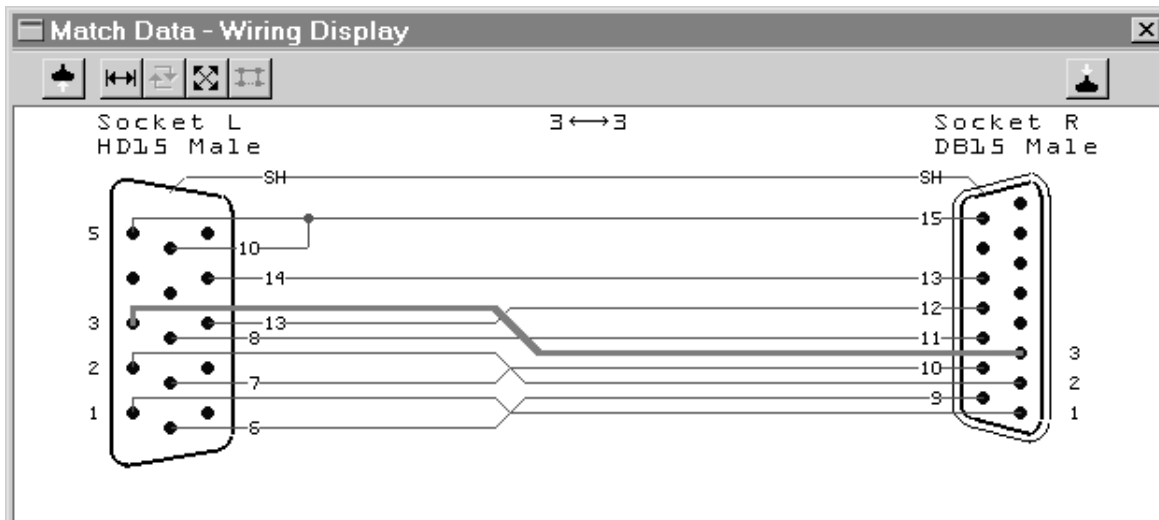
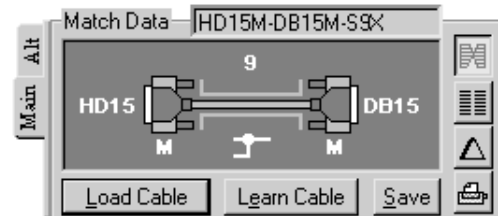


**2** – Select the cable by its *Name*, by its *Description*, or by the *CAMI ID*. Click in the desired field and begin typing. As you type, the file list below the entry box



gives all files that begin with the characters you have typed. At any time, you may scroll into this list with the ↓ key to choose a file, or double-click directly on a cable of interest. Click "OK" (not shown) to load the cable, or "Cancel" to dismiss this window.

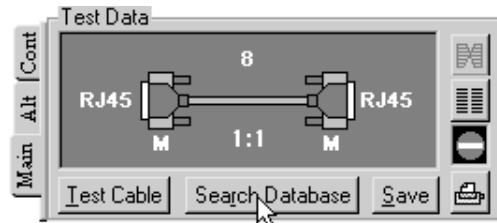
**3** – The Match Data summary box describes the cable just loaded. Note that the cable's database name appears at the top. Click the "View Wiring" button ("bow tie") to see the cable's schematic (below), or the netlist button to see a wire list.



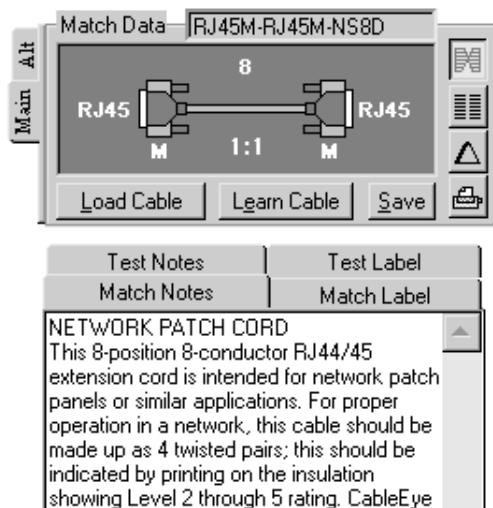
## Searching the Database for a Match

Unlabeled or unknown cables with complex internal wiring may cause damage if connected to inappropriate equipment, or may go unused or be discarded. To avoid problems like these, you may measure an unknown cable and search the database for a match to its wiring. If CableEye locates a match, it loads it and displays the descriptive notes to give you the cable's name and some information about it.

**1** – Measure a cable using Test Cable. Then click "Search Database".



**2** – If a matching cable is found, it loads immediately for your review.



**3** – If an *exact* match is not found, a "Search Type" window appears (right) allowing you to repeat the search with different conditions set. Click the desired button to search again. This window will reappear if that search fails too. Continue trying conditions until you find a match, or click "Cancel" to stop.

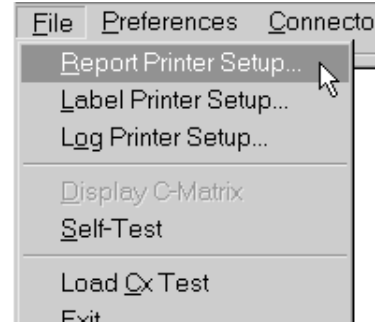


**4** – If you would like to *automatically* search the database after Test Cable, turn on the "Auto Search after TEST" option in "Preferences/Control". With this option on, the database will be searched silently after each test. If an exact match is found and the match buffer is empty, the new match will be loaded.

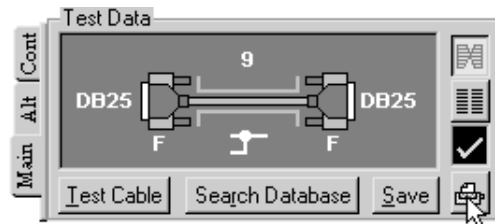
# Printing Schematics

Print complete documentation on any cable you test, or any cable in the database. Each page includes the wiring schematic with connectors and pins labeled, the wire list, and your descriptive notes and label text.

**1** – Before printing, choose the printer you wish to use with the "Report Printer Setup . . ." menu item. Any PCL-compatible laser or inkjet printer will work. It may be connected directly to your computer or attached to your network. You may define different printers for Reports, Labels, and Logs.



**2** – Obtain the data you wish to print by either measuring a cable or loading a cable from the database. Then click the appropriate "Print" button (looks like a small printer).



**3** – Printing normally requires about 15 seconds but could take as long as 3 minutes on older printers (like the HP Laserjet II, circa 1989). Two or more pages may be printed for long wire lists or extensive notes.

You may change the orientation of the connectors by clicking the connector button on the wiring graphic tool bar. In this way you may depict the cable as a technician would see it while wiring with the hoods off. Choose the desired orientation before printing.

CableEye Wiring Report		TEST DATA	8-10-99 7:50PM
Name: DB25F-DB25F-S10X		RS232 Switchback Cable	CAMI ID 317
made by Centerline Cable Corp., (800) 776-0414			
<b>NETLIST</b>		<b>NOTES</b>	
L3-SH	R3-SH	<b>RS232 Switchback Cable</b> This female-to-female cable is used in any application where two EIA232 devices are connected, such as two PCs via their COM ports.  This cable is intended for EIA232 asynchronous communications (most PC-based systems). If you are using synchronous communications, the null modem will have additional connections for timing signals.  NOTE: Not all null modem cables connect handshaking lines the same way. In this cable, the DTE Ready (Pin 20) on one side asserts the Request to Send (pin 5), DCE Ready (pin 6), and Carrier Detect (pin 8) on the other side.  Part # RG-EYN254C	
L3-1	L3-7 R3-1 R3-7		
L3-2	R3-3		
L3-3	R3-2		
L3-4	R3-5		
L3-5	R3-4		
L3-6	L3-8 R3-20		
L3-12	R3-23		
L3-20	R3-6 R3-8		
L3-23	R3-12		
<b>LABEL</b>			
NULL MODEM SWITCHBACK			
Part # RG-EYN254C			

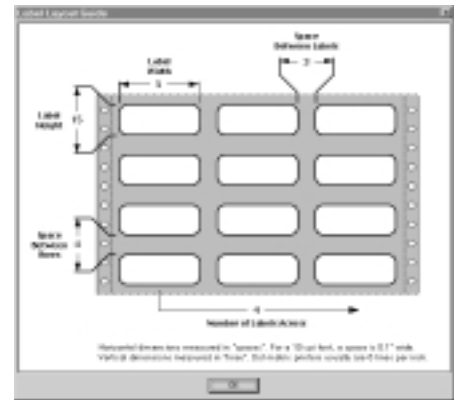
# Printing Labels

Connect a tractor-feed dot matrix or thermal printer to your computer for label printing, or use a sheet-fed laser printer with the proper label paper. Individual label and report printers may remain connected at the same time in which you use label stock with one printer and standard 8.5x11" paper with the other.

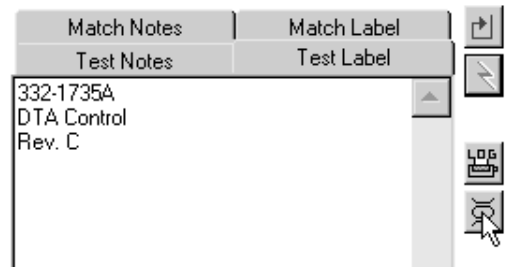
**1** – From the "Preferences" menu, select "Labels". Then choose the desired label format. One-wide or multi-column labels may be printed. Type in the measurements shown. All units are in "spaces" except for the number of labels across. Be sure to set your printer for a fixed-width font like Courier (each character takes the same amount of space).



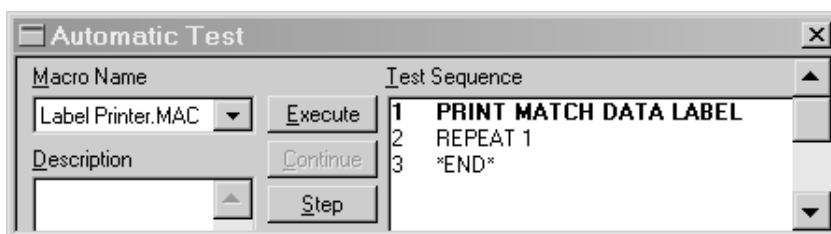
As with Report Printing (previous page), you need to select a label printer in the File menu. You will not need to set the Preferences and Label Printer settings again unless you are making a change.



**2** – With appropriate label text available in the Label Notes buffer, click the "Print Label" button to start printing.



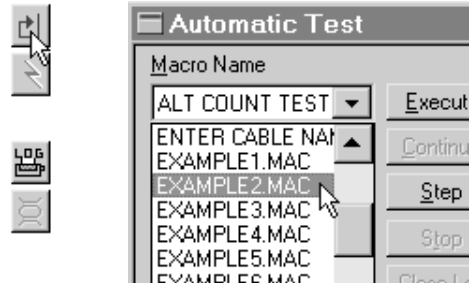
**3** – You may print labels manually as in this example, one at a time as you test, or all at once in a large batch by making a simple endless loop Macro (see below). When you've printed enough labels and wish to stop the endless loop Macro, click the "Stop" button (not shown).



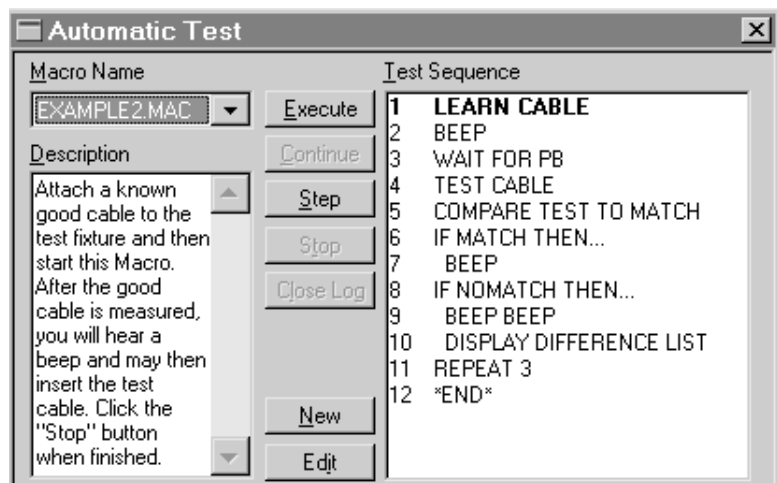
# Batch Testing of Cables

Production testing requires only that a PASS/FAIL result be obtained. You may set up CableEye so that the operator needs only to press the TEST pushbutton on the fixture and read results on nearby LED lamps. Using the mouse or keyboard, or reading the screen, becomes unnecessary. The test engineer would initially create a "Macro" (also called a "Script") to specify a desired test procedure. Then the operator loads the Macro and may immediately begin testing without any knowledge of the set-up procedure.

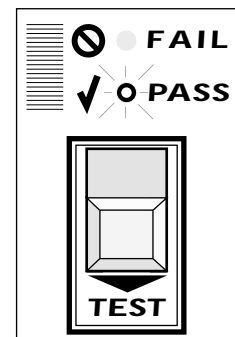
**1** - Click the Macro button to open the "Automatic Test" window. Then choose the Macro to load from the menu. You may create any number of Macros for different jobs. You will find the example shown here on your distribution disk.



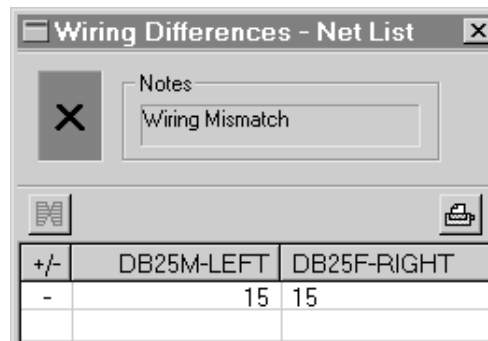
**2** - The Macro specifies the test operations you need for a particular job. Easily create Macros by just choosing commands from a menu (not shown here). You may modify the Macro at any time with the "Edit" function, and save the final Macro on disk for future use.



**3** - Press the TEST pushbutton on the fixture, or click the "Execute" button on the screen, to begin testing. Results are shown on bright LED lamps. The PASS lamp is green, and the FAIL lamp is red.



**4** - If CableEye detects a fault, this Macro shows the problem in a "Differences List" (see Line 10). The problem found here is a missing connection between pin 15 on the left and pin 15 on the right.



# Data Logging

You may wish to record the result of every test when testing a batch of identical cables. Then, at the end of the batch, print a summary report showing exactly the test results you've obtained. CableEye will do this automatically when you employ *Data Logging*. Several new commands need to be added to a standard Macro to engage Data Logging. You may either print the log cable-by-cable as you go, or save the result to a disk file for printing at a later time.

Initialize the "Count" value seen in the drawing below at a number other than "1" if desired, print labels as you test each cable, and use the count value as a serial number for either labels or reports. You may end the log after a fixed number of cables, or at an arbitrary time. You may also interrupt the batch test to check a cable for someone else, and resume the batch test later without disrupting the data log.

**1** – Convert a standard Macro to a data-logging Macro by adding several new instructions: at the beginning, add the command OPEN LOG FILE to create a new data log (you will be asked to supply a log file name when this executes). To insert the title block, use the command LOG HEADER. Then add the instruction LOG TEST RESULT in the main test loop to record the result of every test. Finally, at the end, add LOG SUMMARY to print a summary at the end of the test. If you wish to print the result from within the Macro, add PRINT LOG FILE before the Macro ends. As an example, have a look at the Macro "LOGTEST1" included with your software.

**2** – Execute this Macro like any other (as described on the previous page).

**3** – When you finish a batch test, the results are printed as shown on the right. You can print any log file at any time by clicking the "Print Log" button. CableEye stores log files as comma-delimited ASCII, so you may import them into other programs if desired.

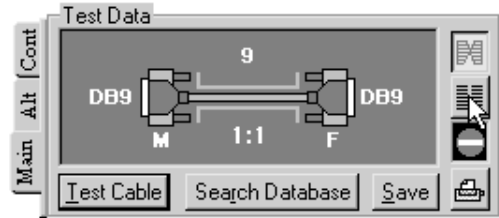


CableEye Log Report		TEST SUMMARY		9-11-99 8:48 AM
Log File Name: TESTLOG1.LOG ALL LINE DIRECT EXTENSION				
Made by Corrian Cable Company, West Bridgewater Division, Tel: (512) 345-6789, G.B. Selmer Sales Agent				
CONNECTORS		CABLE NAME		
	LEFT	RIGHT		
MATCH DATA	DB25 Male	DB25 Female	DB25M-DB25F-S25D	
COUNT	RESULT	PROBLEM	TIME	
1	PASS		8:23:42 AM	
2	PASS		8:24:15 AM	
3	PASS		8:24:55 AM	
4	PASS		8:25:10 AM	
5	F A I L	L-13 R-13 OPEN	8:25:40 AM	
6	PASS		8:26:20 AM	
7	PASS		8:26:55 AM	
8	PASS		8:27:22 AM	
9	F A I L	L-9 R-9 SHORT, L-10 R-10 OPEN, . . .	8:27:48 AM	
10	PASS		8:28:41 AM	
Total Units Tested: 10		Total Test Time: 4 min 59 sec		
Total Units Failed: 2		Average Time per Unit: 30 sec		
Accuracy: 80%				
CableEye™ by CAMI Research Inc.				

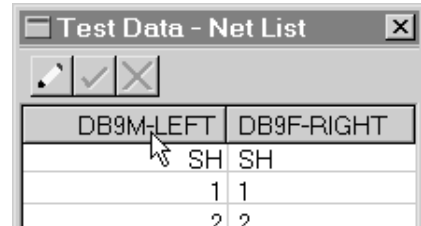
# Editing a Wire List

Modify the wire list of a cable at any time. You may add or delete wires, or change the connector types using CableEye's netlist editor.

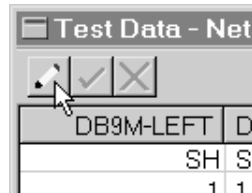
**1** – Measure a cable, or load a cable from the database, and click the "View Netlist" button to see a wire list.



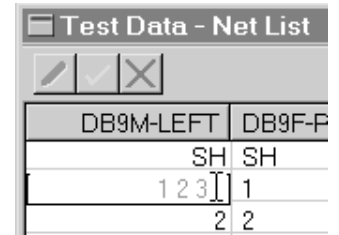
**2** – If you would like to change connectors, click the connector name and make a new selection from the pop-up window that appears (not shown).



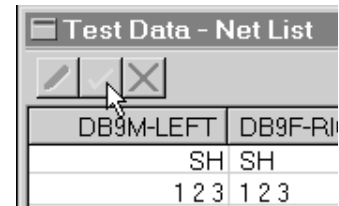
**3** – To edit the wiring, click the "Pencil" button.



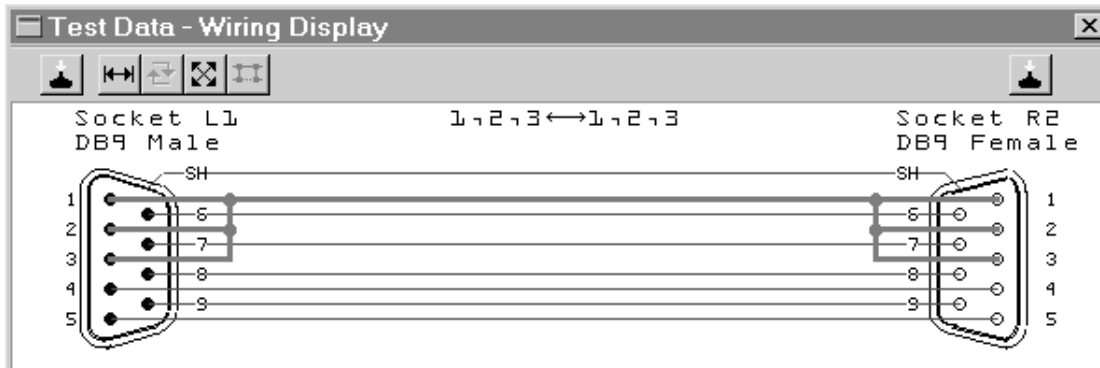
**4** – Then click on the cell you wish to edit and type in the new numbers. In this case, we have started to create a jumper between pins 1, 2, and 3 on the left and 1, 2, and 3 on the right.



**5** – When you have finished editing, click the green "Checkmark" button to save your changes, or the red "X" button to discard them.



**6** – Finally, view the wiring of your edited cable (below) by clicking the "View Wiring" button.

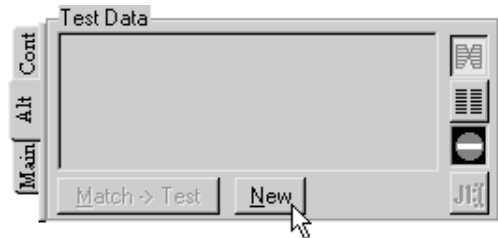




# Designing New Cables

You may design a completely new cable while at the same time creating test data against which the first prototype can be measured. You will use the same netlist editor as was used to add or delete wires from an existing cable.

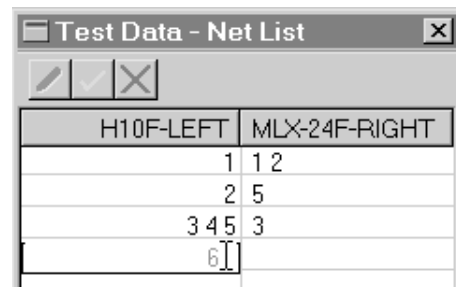
**1** – Click the "Alt" tab in the Test Data summary box, and then click the "New" button to open a new design.



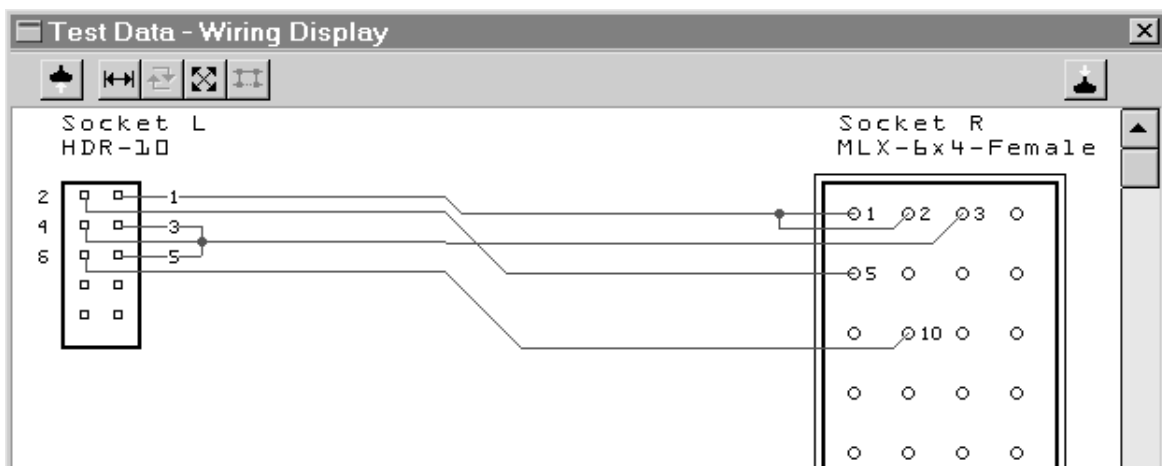
**2** – Choose the connectors you need and click "OK" (not shown) at the bottom of the window.



**3** – Enter the wire list in the same way you edited connections previously. Press the green Checkmark button when all connections have been entered.



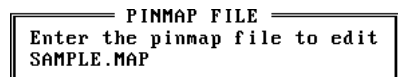
**4** – Review the cable's wiring to confirm the design (see below). You may add or remove wires at any time or, if necessary, change the gender or type of the connectors. Annotate the final result with descriptive notes, and save it in the database before finishing.



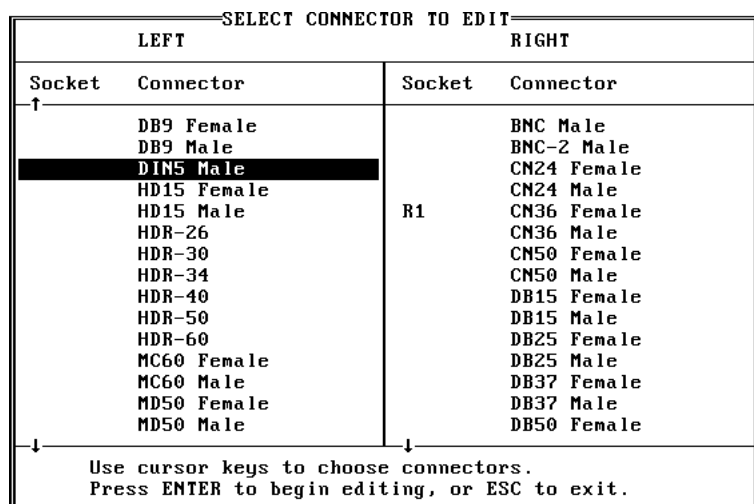
# Adapting to Custom Test Fixtures

CableEye can adapt to custom test fixtures, or fixtures originally built for other cable test equipment. By using the optional PinMap™ software (Item 708) from CAMI Research, you may redefine the test points to match the connector pins on your custom fixtures. This allows you to use CableEye's connector graphics, database, and printing capabilities without requiring retooling for your special connector needs. PinMap is currently available only as a DOS application but will be replaced soon with Windows software. In any case, the file format produced by PinMap works with both the Windows and DOS versions of CableEye, and the DOS software runs nicely on any Windows machine.

**1** – To create a new Map table, start PinMap and specify the name of the Map file you wish to create or edit.



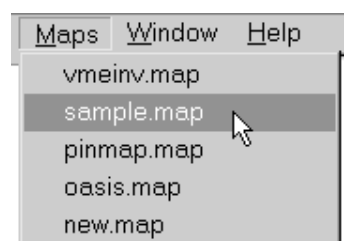
**2** – Choose a connector graphic you wish to use and press ENTER. You may employ as many different connectors as you wish in a single MAP file, or as few as one connector for the left and one for the right.



**3** – Enter the pin assignments for the chosen connector.

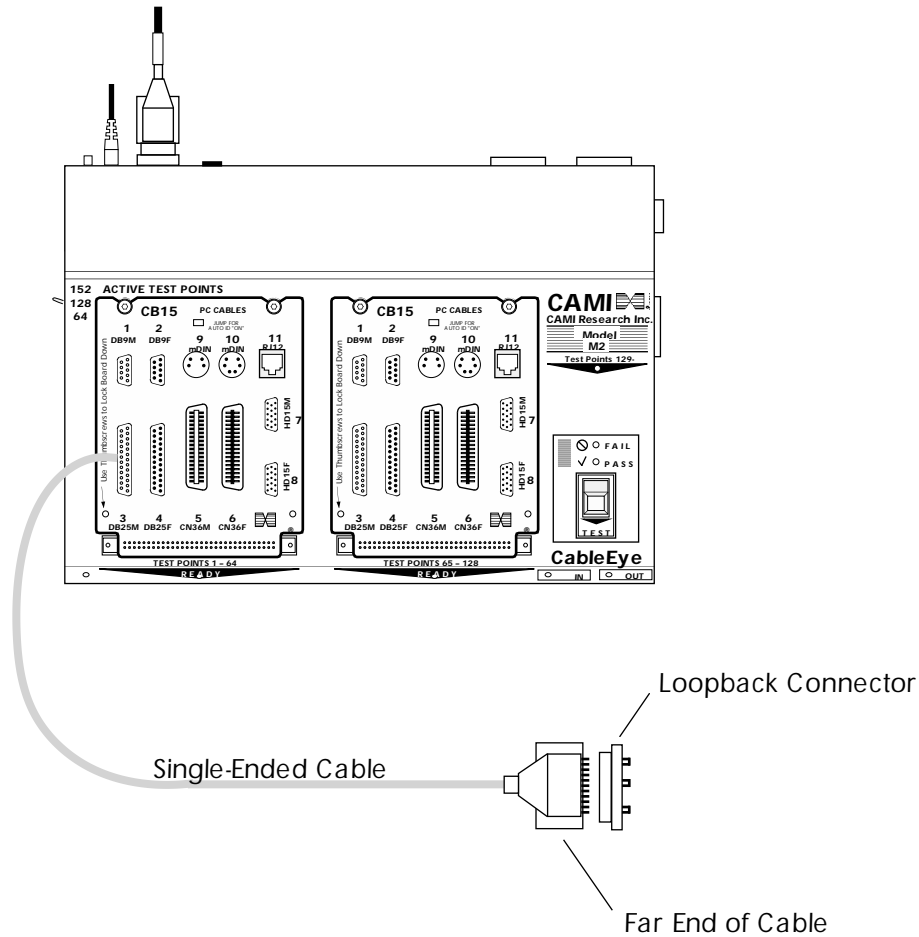
PIN ASSIGNMENT	
Pin Number	Test Point
Shield	15
1	5
2	12
3	6
4	13
5	<b>18</b>
ID1	U
ID2	U

**4** – When you start CableEye, choose Custom Pinmap from the "Connectors" menu, and then select the map you created from the "Maps" menu.



# Testing Single-Ended Cables

When you need to measure a cable that has only one end available, attach it to the left side of CableEye (marked "L"). After you click "Test Cable", the program will ask you what kind of connector is used. Select the appropriate one for the left. On the right, where there will be no connections, the program inserts a dummy Centronics 36-pin connector which can be ignored.



If you use a loopback connector at the far end, put jumpers in the loopback connector that bridge all the conductors you are testing and expect to be present. This will establish a closed-circuit loop between the CableEye end and the far end of the cable. If you find the connection present, you know that both conductors that make up the bridge are functioning.

In any case, be sure any installed cables are completely disconnected from any signal sources before testing with CableEye.

Of course, you can always route a return cable from the far end back to CableEye. If possible, this is the best solution since no loopback is necessary. We have tested cables as long as 2000 feet with no problems, and the upper limit is likely to be even longer.

# Testing Wiring Harnesses

You may easily check continuity in wiring harnesses using CableEye and take advantage of almost all of the benefits available when testing two-ended cables. Specifically, you may connect a model harness to CableEye and learn the correct wiring. You may then add descriptive notes and label text, and store the wiring information on disk for future reference. The wire list may be printed, and a wiring diagram may be viewed on the screen as well as printed. Finally, a test harness may be connected, measured, and directly compared against the model. Differences in wiring will immediately be detected when you compare wiring (the triangle button), and such differences will either be graphically displayed or shown in a wire list. These results may also be printed.

## 1 – Build a Mating Harness

For harnesses terminating in individual connectors, one side of the mating harness consists of a series of opposite-gender connectors that exactly mate to the harness under test. The other side consists of transitioning connectors that link to CableEye.

*At the Harness End of the Mating Harness:* As an example, if a harness contains a DB25 male, a DB9 female, and two male molex power connectors, the mating harness would consist of a DB25 female, a DB9 male, and two female molex power connectors. These mating connectors directly extend pins from the harness under test to the test points in CableEye, *simply a 1:1 direct extension.*

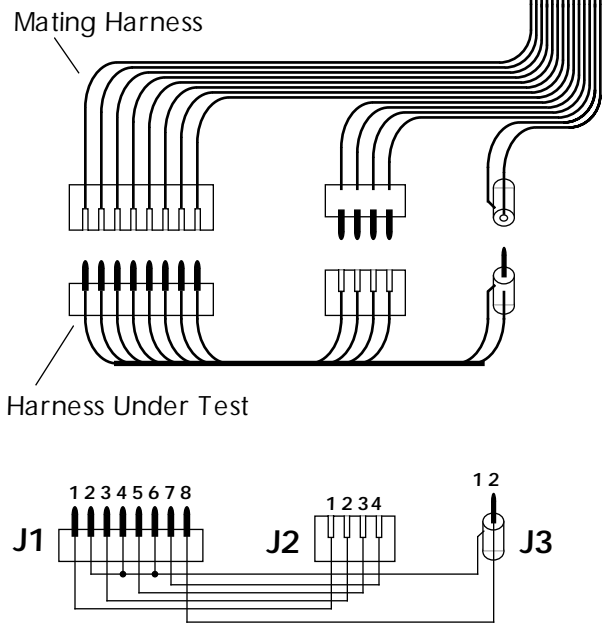
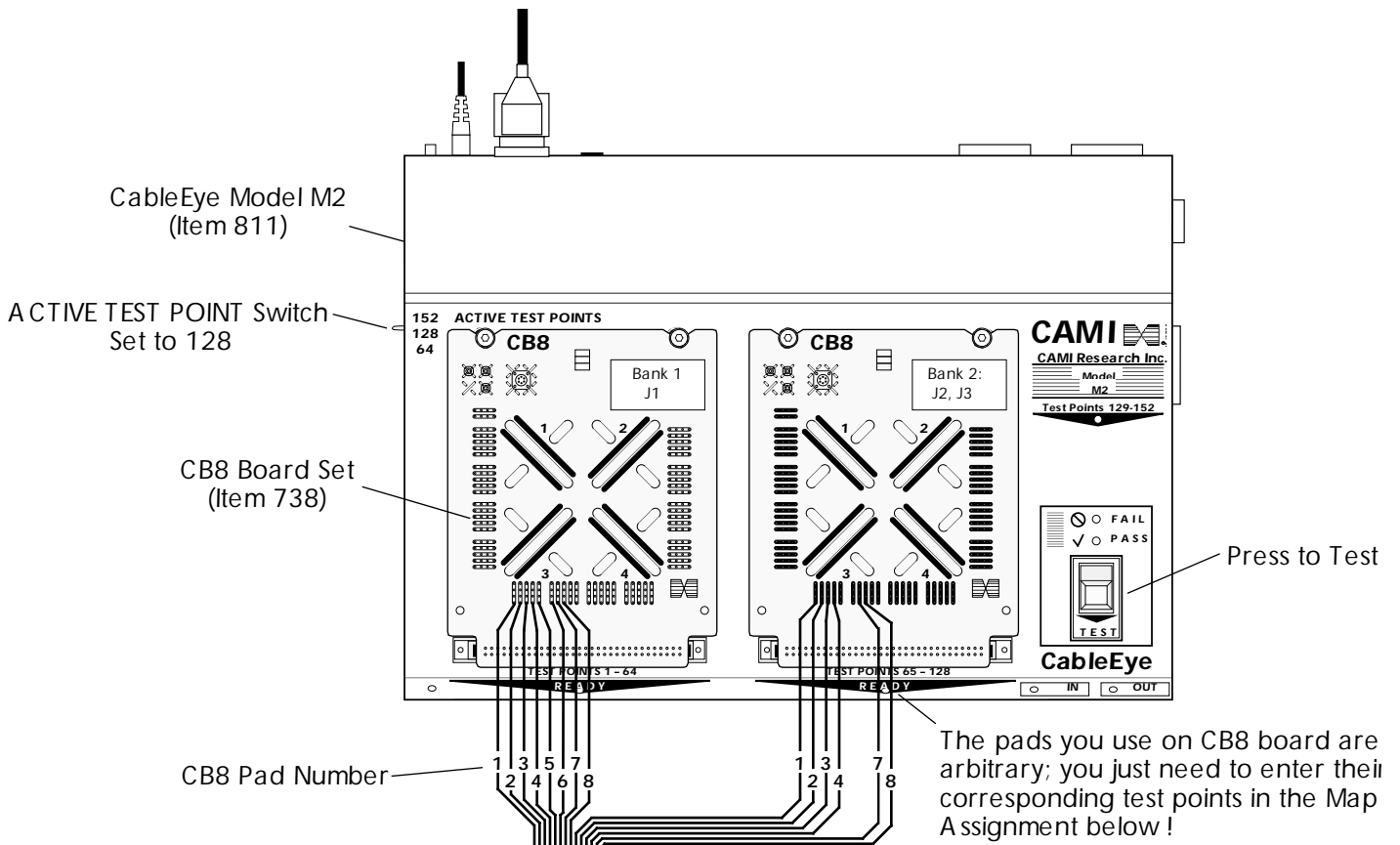
*At the Tester End of the Mating Harness:* You may link to the tester in several different ways, as follows:

- a** – wire the mating harness directly to CB8 boards, as shown on the next page. This is the basis of the following example.
- b** – wire the mating harness to a standard connector that then joins to one of the standard CAMI CB boards. For example, terminate the mating harness in two DB50 male connectors, and connect them to two CB3 boards (which have DB50 female connectors on them). In this case, you will need the pin map for CB3, which CAMI Research will gladly provide, to create the harness's .MAP file.
- c** – if the mating harness can be constructed strictly from IDC flat cable, then you can use two 64-pin wiremount sockets (such as 3M #7964-6500EC with strain relief 3448-7964) that connect directly to CableEye's 64-pin latch headers.

## 2 – Create a Custom Pin Map for the Harness (PinMap Software required, Item 708):

Once you determine how the mating harness is wired to CableEye, you will create a list showing which test point is assigned to which connector pin on the harness. With this information, you can make a pin map.

The drawing on the next page summarizes the complete setup for this example using the CB8 board set. We provide the map information for CB8 (telling you which test point corresponds to which pad), and you add the labels you like.



Harness Schematic

NOTE: Screen image and wire list are viewed only when locating errors. Normally, it is not necessary to examine them.

### MAP ASSIGNMENTS

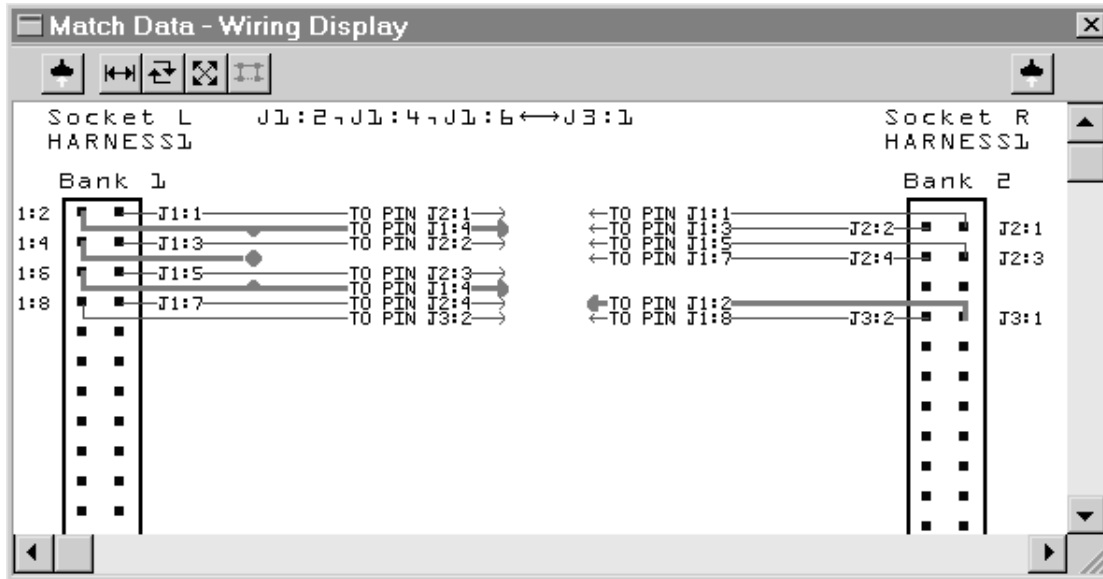
BANK 1 CB8			BANK 2 CB8		
Pad	Test Point	Label	Pad	Test Point	Label
1	11	J1:1	1	11	J2:1
2	13	J1:2	2	13	J2:2
3	15	J1:3	3	15	J2:3
4	17	J1:4	4	17	J2:4
5	19	J1:5	5	U	
6	23	J1:6	6	U	
7	25	J1:7	7	25	J3:1
8	27	J1:8	8	27	J3:2

### WIRE LIST

From	To
L-J1:1	R-J2:1
L-J1:2	L-J1:4 L-J1:6 R-J3:1
L-J1:3	R-J2:2
L-J1:5	R-J2:3
L-J1:7	R-J2:4
L-J1:8	R-J3:2

HARNESS1-LEFT	HARNESS1-RIGHT
J1:1	J2:1
J1:2 J1:4 J1:6	J3:1
J1:3	J2:2
J1:5	J2:3
J1:7	J2:4
J1:8	J3:2

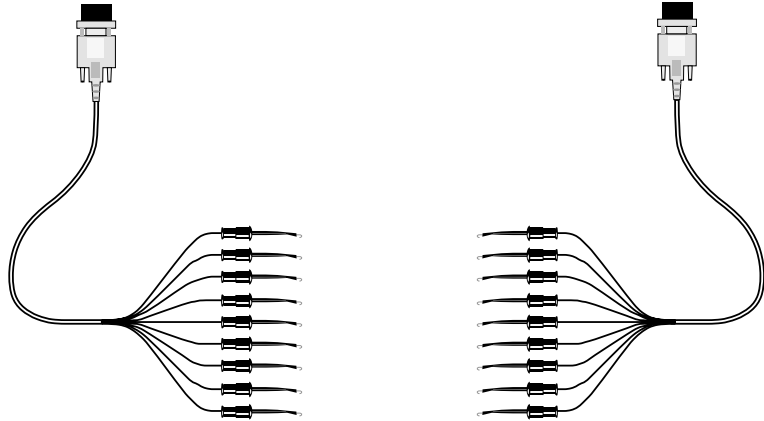
Based on the harness schematic shown on the previous page, CableEye will produce the above netlist for a correctly wired harness. You may also view the wiring diagram and highlight connections of interest, as shown below.



# Testing Unterminated Cables and Harnesses

When a cable or harness terminates in bare wires (no connector), you need a probe with which to hold each wire during measurement. CAMI Research supplies Minihook cables (Item 710) as an option for CableEye for just this purpose. In this case, each test point terminates in a minihook grabber which you clip to a bare wire.

The Minihook cables supplied by CAMI Research consist of a set of two cables, each of which has ten color-coded hooks (black, brown, red, orange, yellow, green, blue, violet, gray, white). Thus, a total of twenty test points can be accommodated. Each Minihook cable joins to CableEye via a DB9 male connector.



When wiring is scanned using the Minihooks, all standard CableEye features are available. If you display wiring, ten discrete color-coded hooks are shown on each side of the screen and wiring drawn between them to depict the cable's wiring (see below).

