CR

Performance Verification Manual

For the Signature CR using Easy-Wire™ software

Version 2019.2.0

CIRRIS® SYSTEMS

CR Performance Verification Manual

Version 2018.2.0

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Salt Lake City, UT 84116
USA

To Verify the Performance of the CR

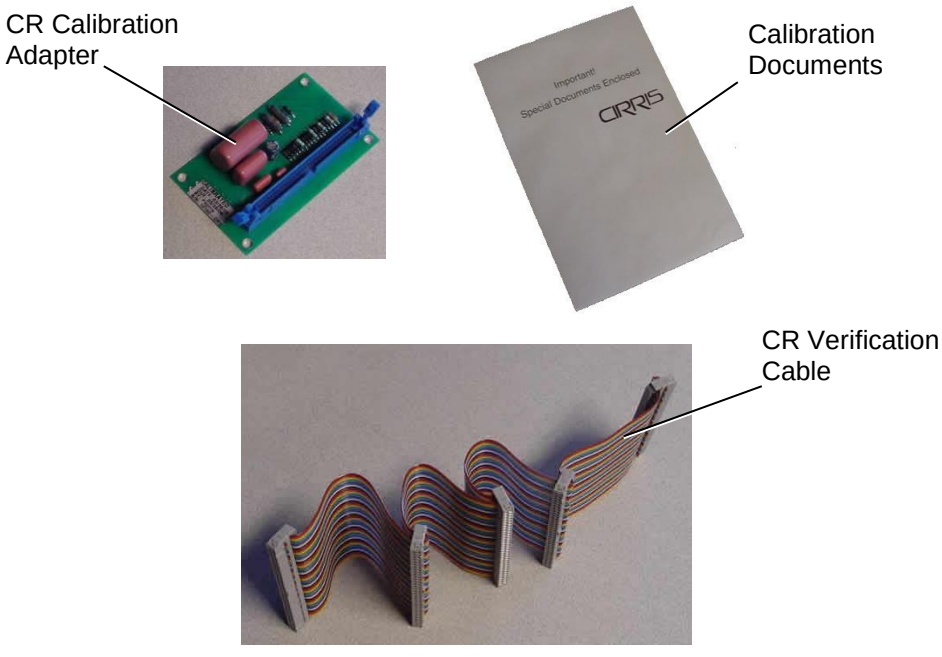
Understand This First

The *CR Performance Verification Kit* allows you to verify calibration and proper operation of the Cirris CR tester. Each *CR Performance Verification Kit* has a calibration date of two years from the time of purchase. At the end of two years the kit should be replaced. Each of the components of this performance verification kit is tested with instruments traceable to the NIST.

You should use the performance verification kit to verify the calibration of the CR at least annually. However, you can also use the kit whenever you suspect there could be a problem with the CR. Note that there are no adjustments made to the CR tester during the performance verification process. If the CR fails any step in the performance verification procedure, the tester must be sent back to Cirris for repair.

For helpful information on setting up a calibration system to meet national calibration standards such as ANSI/NCSL Z540-1, and ISO 10012-1 see *Setting up a Calibration System* in the appendix of this manual.

You Should Have Received:



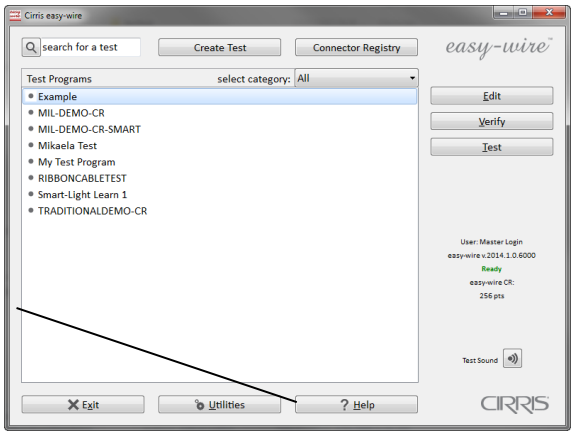
Note: *Before performing any of the tests in this manual, remove all adapters from the tester (including from the add-on boxes) except for the adapters needed for verification. Failing to remove unnecessary adapters could result in the wrong signature and cause a failure even when the tester is functioning correctly.*

Import the Test Files

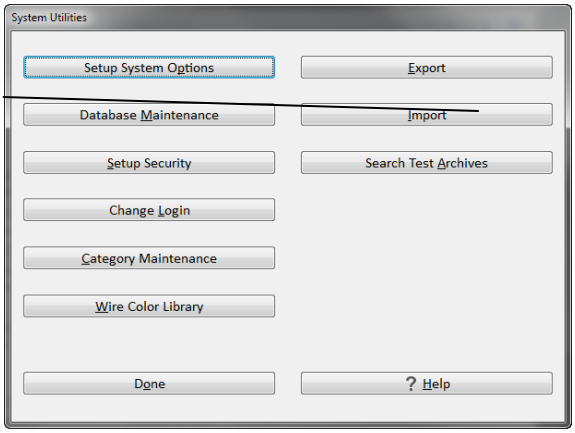
Before performing the calibration procedure, you must import the test files to the station(s) or network where the performance verification procedure is being performed.

1. Start the Easy-Wire software.

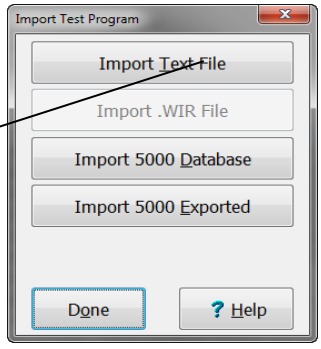
2. In the Main Menu, click *Utilities*.



3. In System Utilities, click *Import*.



4. Click *Import Text File*.



5. Browse to the path where the Calibration files are located.

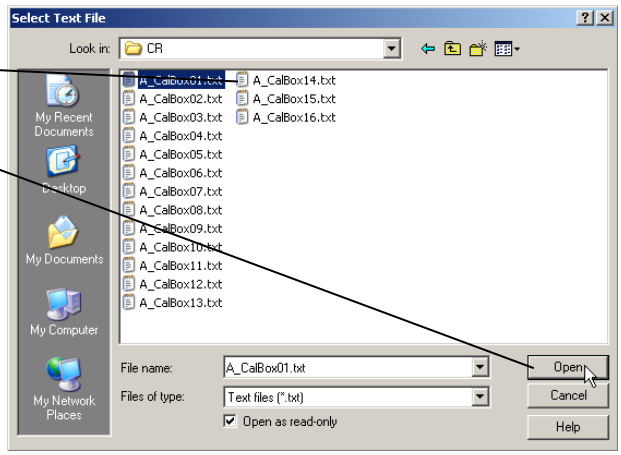
   The file path for Easy-Wire version 2008 or higher is:
   `C:\Users\Public\Documents\Cirris\easywire\calfiles\CR`

   Note: The file path for older versions changes depending on your software.

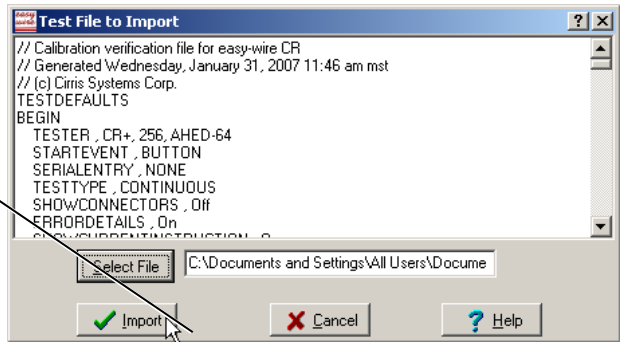
   The file path for older versions of Windows (ie XP) is:
   `c:\Documents and Settings\All Users\Shared Documents\Cirris\easywire\calfiles\CR`

   The file path for Vista is:
   `c:\Users\Public\Public Documents\Cirris\easywire\calfiles\CR`

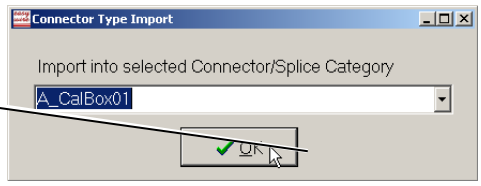
6. Click on *A_CalBox01.txt*, then click *Open*.



7. Click *Import*.



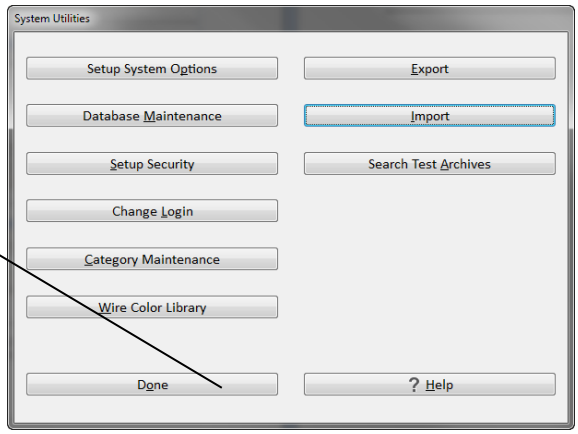
8. Click *OK*.



9. If you have more than one *CR Scanner Test Point Box*, repeat the import process to import the test files for each scanner.

For Box 2, import: A_CalBox02.txt
For Box 3, import: A_CalBox03.txt

10. When you have imported the files you need, click *Done* to return to the main menu.



Making Calibration Records

Depending on your calibration system requirements, you may need to prepare forms to record the performance verification tests. At the end of the appendix you will find a *CR Certificate of Calibration* and a *CR Calibration Data Report*. If using these forms, make a photocopy of each so you can maintain clean masters for the next time you perform the test procedure.

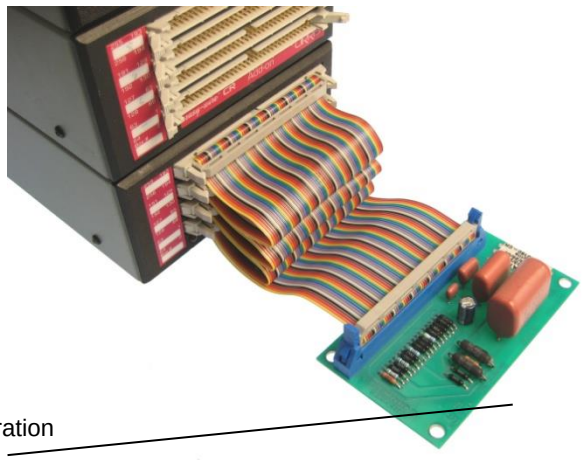
To fulfill more detailed test reporting requirements, you can use the test reporting capabilities of the CR system. To setup this capability see *Creating Test Reports* in the appendix.

Test Procedure

You need to perform a test to verify the calibration and proper operation of the CR base unit and first scanner.

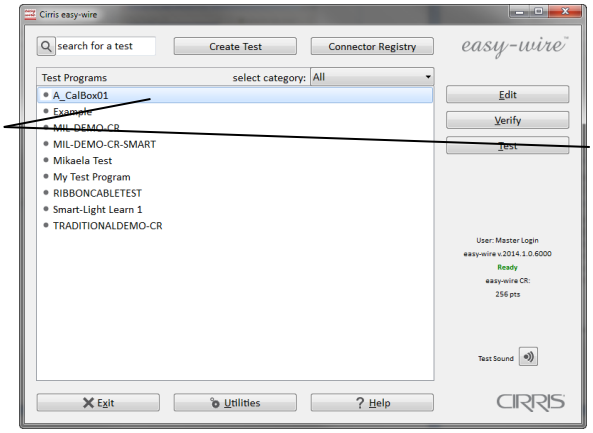
Set Up for Test

1. Install the *CR Calibration Adapter* on the first *CR Test Point Scanner*.

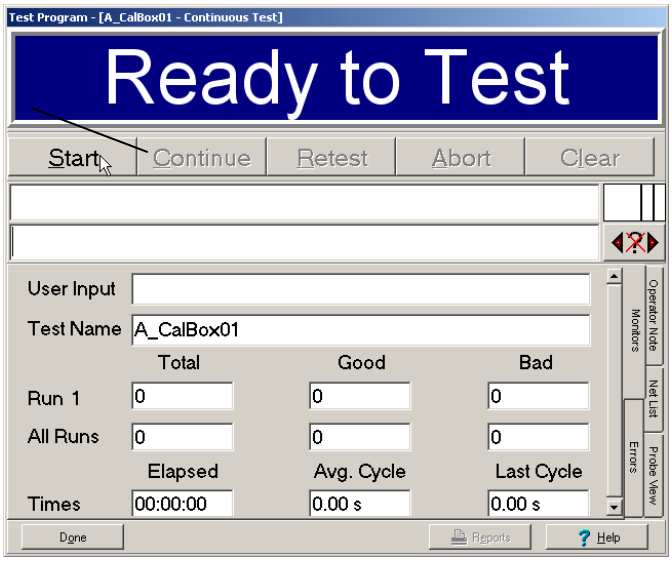


CR Calibration Adapter

2. Click on the test program *A_CalBox01,* then click *Test*.



1. When the information bar at the top says “Ready to Test,” click *Start*.

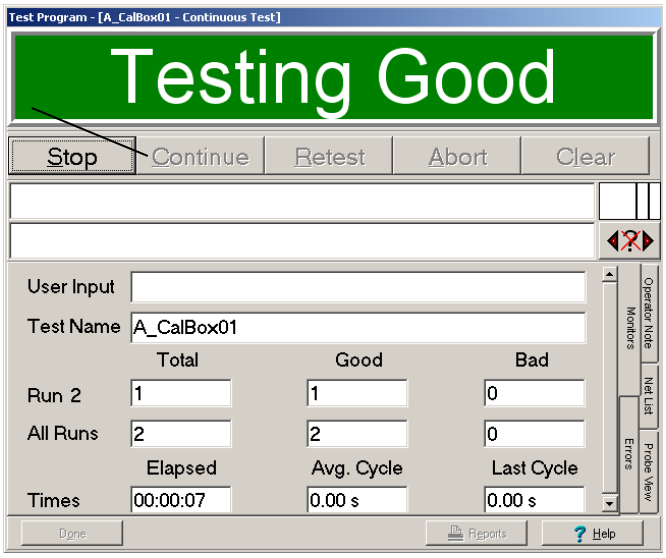


Note: If required, mark the results of this test test on the CR Calibration Record form.

Also remember: If the CR fails to pass any step in the performance verification procedure, the tester must be repaired. There are no adjustable parts in the CR tester.

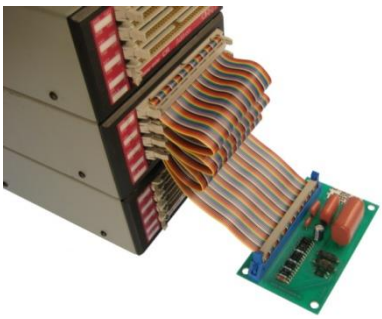
2. If the information bar says, “Testing Good,” click *Stop* to record the test results and skip to the next step.

   If the test reports errors, document the error(s) and call Cirris customer service at 1-800-441-9910 for assistance.



3. Complete the performance verification by doing the corresponding test for each of the remaining *CR Test Point Scanners.*

Example: for a three box system, run test *A_CalBox01* with the adapter in the Base Unit, then run test *A_CalBox02* with the adapter in the second scanner, then run the test A_CalBox03 with the adapter in the third scanner.

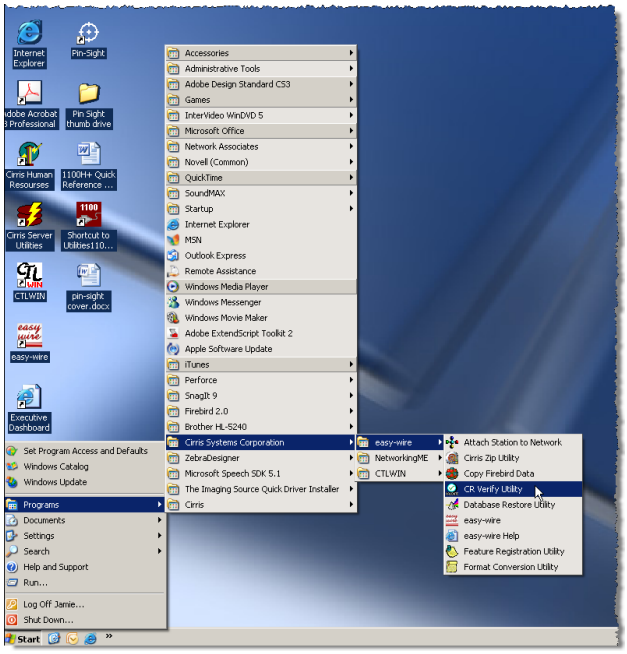


Change the Calibration Date

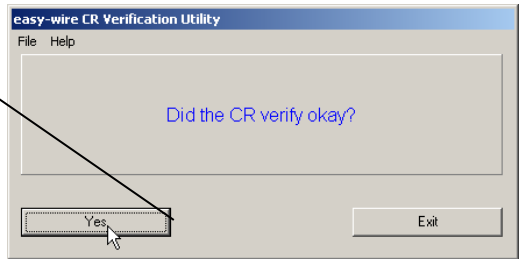
You need to perform a test to verify the calibration and proper operation of the CR base unit and first scanner.

1. Exit the Easy-Wire software.

2. From the Windows task bar, click *Start, Programs, Easy-Wire,* and *CR Verify Utility.*

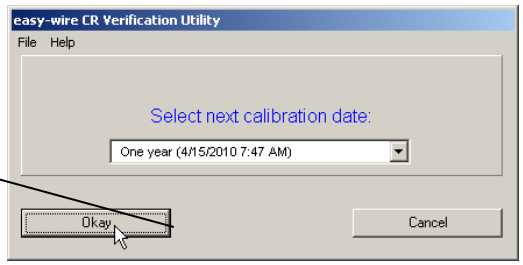


3. If the system passed all of the calibration steps, click YES.

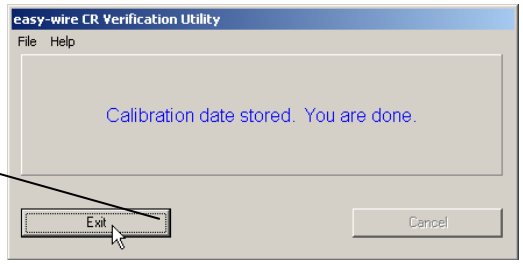


4. When the **Select Next Calibration Date** window appears, select a date and then click **Okay**.

We recommend a one-year interval. Choose the interval that best suits your needs.



5. Click **Exit** to finish the calibration process.



Appendix:

Setting Up a Calibration System

The information below is meant as an introduction to setting up a formal calibration system in your organization.

Calibration Standards

Calibration standards refer to written quality system requirements for organizations that perform calibrations and use calibrated equipment. Establishing a quality system according to calibration standards helps insure calibrations are done competently, and lends credibility to the calibration organization. In the United States common calibration standards include ANSI/NCSL Z540-1, ISO/IEC Guide 25, ISO 10012-1, and the former MIL-STD 45662A.

The ANSI/NCSL Z540 standard refered to above, as well as other helpful metrology information, can be obtained from the National Conference of Standards Laboratories International (NCSL) at 1-303-440-3339 or www.ncslinternational.org. You can obtain the ISO standards from the International Standards Organization (ISO) at their web site www.iso.net/.

Good Calibration Practices

The calibration standards, such as ANSI/NCSL Z540-1 and ISO 10012-1 require several good practices for the calibration industry, including the following areas:

Establish a recall system

How do you insure that you don't forget to send an instrument in for calibration? A recall system can be a card file, or a computerized database, which includes calibration dates, due dates, calibration sources, and other instrument records. The recall system ensures calibrated instruments are recalibrated in a timely manner.

Calibration Labels

How does someone know if an instrument has been calibrated without looking for the paperwork in a filing cabnet drawer? When an instrument is calibrated, the calibration standards require the instrument to be labeled as such. The calibration labels which are applied to instruments have fields for the instrument serial number, calibration date, calibration due date, and by whom. A good source of inexpensive calibration labels is United Ad Label at 1-800-992-5755.

Test Accuracy Ratios

Can you use a ruler to calibrate your digital calipers? Of course not! Where ever possible calibration standards require an accuracy ratio of at least four to one. In other words, the insturment being used to measure the calibrated instrument be at least four times as accurate as the calibrated instrument.

Certificate of Calibration

How does everyone *know* you had an instrument calibrated*?* The calibration certificate is the record of who, when, and by what equipment the instrument was calibrated. A CR Certificate of Calibration which you can photocopy for your calibration is provided following this section.

Calibration Data Report

So just how accurate is the calibrated test instrument in relation to its published

specifications? Some organizations require that the measured values of a calibrated instrument are written down when an instrument is calibrated. Calibration laboratories typically charge extra to create a calibration data report. However when a calibrated instrument is found to be out-of-tolerance, the calibration standards require that the out-of-tolerance data be recorded in relation to the instruments specifications. A calibration data report can fill this requirement. A calibration data report you can photocopy to use for your CR calibration is provided following this section.

Traceability
Did qualified personnel perform the calibration procedure under controlled conditions, using correctly calibrated instruments with the correct test accuracy ratios? To maintain *traceability* the answer to all these questions must be *yes*. Traceability refers to each unbroken link of valid calibrations going back to national standards such as those maintained by the NIST in the United States.

Several years ago NIST numbers (ie. reference numbers issued on NIST reports) were commonly copied on successive calibration certificates as a means of showing traceability. This practice has been discontinued. Therefore, if you are writing a calibration procedure, do not require NIST numbers be copied on reports to show traceability. NIST numbers are sometimes confused with other numbers that calibration laboratories create for reference such as “asset numbers”, “NIST trace numbers”, “ID numbers”, and report numbers. For more information regarding the discontinued use of NIST numbers Cirris can provide a copy of the position paper from the National Conference of Standards Laboratories.

Creating Test Reports

The test measurements made during the verification tests are made internally to the test software, and are not inherently visible to the calibration technician. If required, you can turn on the test reporting capabilities of the CR system to output more detailed report data.

To turn on the test reporting capability of a test do the following steps:

Before running the test,

1. From the Easy-Wire Main Menu click on the test program for which you want to turn on the report printing options.
2. Click on the Edit button.
3. At the top of the Test Program Editor screen, click on the *Set Test Defaults* Tab.
4. Change the Test Method to *Single Test*.
5. Check in the *Store Measured Test Values* box.
6. Click the *Done button* at the bottom of the screen.
7. Click to check *Yes, save changes and return to the main menu*.

After the test program completes,

1. Click on the *Reports* button at the bottom of the test program screen.
2. Click on the *Print In Process Report* button.
3. To print the report to a printer connected, click on *Print* in the upper left corner.

Customer Service

If you need any assistance with this performance verification please call Cirris customer service toll-free at 1-800-441-9910.

CIRRIS®

Cable/Harness testing made easy®

CR Certificate of Performance Verification

Organization performing the verification:	**Organization Address:**
Certificate Number:	**Verified by:**
Calibrated:	**Due:**
Applicable Calibration Standard(s):	**Procedure:** CR Performance Verification
Temperature:	**Relative Humidity:**

Serial Numbers:
Wiring Analyzer Base Unit:
Test Point Scanner(s):

Instruments used:	Serial Number	Cal Date	Due
CR Calibration Adapter			

Statement of Traceablility:

Certified by:

CR Verification Data Report

Report Number:	Verification by:
Base Unit Serial Number:	Verified date:

Test / Serial Number		Recorded Value
Scanner 1		Pass / Fail
Scanner 2		Pass / Fail
Scanner 3		Pass / Fail
Scanner 4		Pass / Fail
Scanner 5		Pass / Fail
Scanner 6		Pass / Fail
Scanner 7		Pass / Fail
Scanner 8		Pass / Fail
Scanner 9		Pass / Fail
Scanner 10		Pass / Fail
Scanner 11		Pass / Fail
Scanner 12		Pass / Fail
Scanner 13		Pass / Fail
Scanner 14		Pass / Fail
Scanner 15		Pass / Fail
Scanner 16		Pass / Fail
Scanner 17		Pass / Fail
Scanner 18		Pass / Fail
Scanner 19		Pass / Fail
Scanner 20		Pass / Fail
Scanner 21		Pass / Fail