

Format Conversion Utility

Introduction

Where to use the Format Conversion Utility

The Easy-Wire software run on a Cirris tester allows you to auto-learn a sample device or to manually program test instructions. Easy-Wire also allows you to import test information defined outside of the software. Often, test information is provided in an Excel file. Test information is also sometime exported from schematic capture or harness documentation software in a delimited text format.

When you install Cirris Easy-Wire software, the Cirris Format Conversion Utility is also installed. This Utility allows you to use delimited text data exported from a spreadsheet program like Microsoft Excel to make part of an Easy-Wire test program. If you receive test information in a delimited text file format, you generally import it first into the spreadsheet software, where it can be manipulated if needed, and the column order viewed. Using the Format Conversion Utility, you identify the order of the spreadsheet columns, import the delimited text file, and then export the data fully formatted so it can be imported into an Easy-Wire test program.

Overview of creating a test program in Easy-Wire

There are four main steps involved in generating a test program using the Cirris Easy-Wire software. These steps correspond to the Tabs in the Easy-Wire test editor. The steps are (1) Define Connectors, (2) Attach Connectors, (3) Set Test Defaults, and (4) Define Instructions. The Format Conversion Utility will help define the instructions (Step 4), but you will still have to do steps 1 through 3. Each of the steps are summarized as follows:

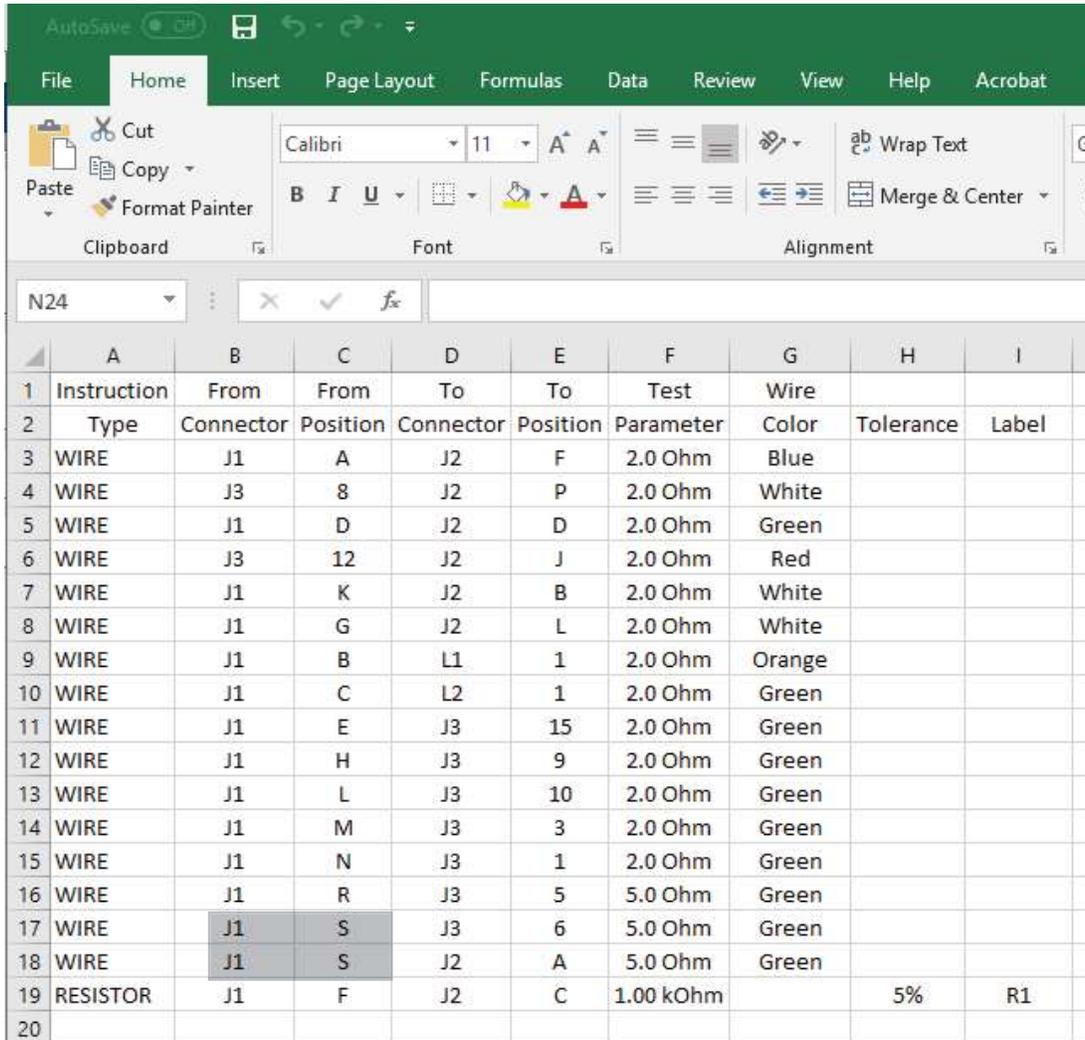
1. Define Connectors: Define the connectors on your product by using the software's graphical interface to select connectors from the connector library. If the connector does not exist in the library, creating a new connector for the library is a straightforward process. A graphical representation of the connector can be created at this time, but it is not required.
2. Attach Connectors: The process of "attaching connectors" maps positions in the product connectors to their corresponding test points. This allows the tester to show programming instructions and report messages using product terminology. The process can be accomplished using the probe or by entering the points manually using the graphic user interface. Importing this data is not readily accommodated or recommended.
3. Set Test Defaults: Setting the test defaults is easily accomplished using the graphical interface of the Easy-Wire software. This step sets various pass/fail thresholds, test methods, data logging options etc.
4. Define Instructions: Test instructions can be auto learned, manually inserted, or imported from a delimited text file using the "Import Instructions from File" button. Once the data is created and saved in a delimited text format, the Cirris Format Conversion Utility is used to convert the data to a format that can be imported into the Easy-Wire software.

From-To versus a netlist format

A spreadsheet or text delimited file may most commonly have the data in a from-to list format. However, data can also be represented in a netlist format. The Format Conversion Utility can utilize data in either of these formats. The next section first describes the process for importing from-to data.

Importing Point-To-Point Information

Below is the view of Point-to-Point test information as it might look in an Excel file. Notice that each row includes only one “From” point and one “To” point. One reference, “J1 S”, highlighted in gray, is repeated on two lines. This will create a three point net. Note also that all the columns shown, do not need to be there. The column Test Parameters, Wire Color, Tolerance, and Label are all optional.



	A	B	C	D	E	F	G	H	I
1	Instruction	From	From	To	To	Test	Wire		
2	Type	Connector	Position	Connector	Position	Parameter	Color	Tolerance	Label
3	WIRE	J1	A	J2	F	2.0 Ohm	Blue		
4	WIRE	J3	8	J2	P	2.0 Ohm	White		
5	WIRE	J1	D	J2	D	2.0 Ohm	Green		
6	WIRE	J3	12	J2	J	2.0 Ohm	Red		
7	WIRE	J1	K	J2	B	2.0 Ohm	White		
8	WIRE	J1	G	J2	L	2.0 Ohm	White		
9	WIRE	J1	B	L1	1	2.0 Ohm	Orange		
10	WIRE	J1	C	L2	1	2.0 Ohm	Green		
11	WIRE	J1	E	J3	15	2.0 Ohm	Green		
12	WIRE	J1	H	J3	9	2.0 Ohm	Green		
13	WIRE	J1	L	J3	10	2.0 Ohm	Green		
14	WIRE	J1	M	J3	3	2.0 Ohm	Green		
15	WIRE	J1	N	J3	1	2.0 Ohm	Green		
16	WIRE	J1	R	J3	5	5.0 Ohm	Green		
17	WIRE	J1	S	J3	6	5.0 Ohm	Green		
18	WIRE	J1	S	J2	A	5.0 Ohm	Green		
19	RESISTOR	J1	F	J2	C	1.00 kOhm		5%	R1
20									

Checking the Data in the Spreadsheet Software

Before saving data for the Format Conversion Utility, check your data and edit it if needed.

- The columns do not need to be in the order shown above. Some columns are optional.
- The spelling on instruction names, such as WIRE, must match exactly that used in Easy-Wire, though capitalization as shown is not required.
- The capitalization or lack thereof for each connector and pin reference *must match precisely* what will be used for the Define Connectors/Adapters (Tab 1) of the Easy-Wire software. All references must be as shown with no special characters.
- All test parameters, wire color, and tolerances must match defined values available in Easy-Wire. The case of the letters is not significant. Tolerance must be specified with the % symbol as shown.

Save Spread Sheet as a .CSV file, then Save as to the original file type

Using the spreadsheet software, Cirris suggests saving the data in a text delimited format such as a comma delimited (.csv) format. Then save the file back to the spreadsheet software's native file type (.xlsm for Excel).

By saving the file back to it's native file type, the text delimited file will no longer be open in the spreadsheet software. You will then be able to open the text delimited file in the Format Conversion Utility, while still being able to view the spreadsheet file's rows and columns.

Open Format Conversion Utility

The Cirris Format Conversion Utility is installed when you install the Cirris Easy-Wire software. Start the Format Conversion Utility in one of two ways:

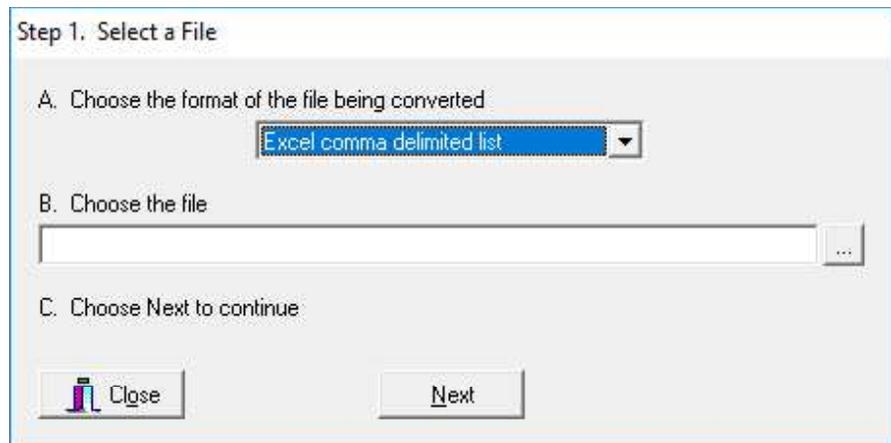
- Click the Windows Start Button to see the installed programs. Under **Cirris Systems Corporation**, select **Format Conversion Utility**.
- Using Windows 7 or 10, use file explorer to navigate to and run C:\Program Files (x86)\Cirris\Common\FormatConversion.exe.

Important: Make sure the text delimited file is not open in the spreadsheet program, otherwise the Format Conversion Utility will report an error and need to be reopened.

Use the Format Conversion Utility

Six screens guide you through the conversion process.

Step 1 Choose the text delimited file format and the file location, then click Next.



The screenshot shows a dialog box titled "Step 1. Select a File". It contains three sections: "A. Choose the format of the file being converted" with a dropdown menu set to "Excel comma delimited list"; "B. Choose the file" with an empty text field and a browse button (...); and "C. Choose Next to continue". At the bottom, there are "Close" and "Next" buttons.

Step 2 View your spreadsheet file to count the number of rows to skip before the data. Enter this number for lines to skip. If needed, specify where the processing should stop, then click Next.

In the example Excel file on page two, you see the first two rows are simply titles. Therefore, you would enter 2 for the skipped rows before processing. Also, since no other data follows the from-to information, you could leave the option “at the end of the file” checked. See below.

Step 2. Select Processing Area

```
Instruction,From,From,To,To,Test,Wire,,
Type,Connector,Position,Connector,Position,Parameter,Color,Tolerance,Label
WIRE,J1,A,J2,F,2.0 Ohm,Blue,,
WIRE,J3,8,J2,P,2.0 Ohm,White,,
WIRE,J1,D,J2,D,2.0 Ohm,Green,,
WIRE,J3,12,J2,J,2.0 Ohm,Red,,
WIRE,J1,K,J2,B,2.0 Ohm,White,,
WIRE,J1,G,J2,L,2.0 Ohm,White,,
WIRE,J1,B,L1,1,2.0 Ohm,Orange,,
WIRE,J1,C,L2,1,2.0 Ohm,Green,,
WIRE,J1,E,J3,15,2.0 Ohm,Green,,
WIRE,J1,H,J3,9,2.0 Ohm,Green,,
WIRE,J1,L,J3,10,2.0 Ohm,Green,,
WIRE,J1,M,J3,3,2.0 Ohm,Green,,
WIRE,J1,N,J3,1,2.0 Ohm,Green,,
WIRE,J1,R,J3,5,5.0 Ohm,Green,,
WIRE,J1,S,J3,6,5.0 Ohm,Green,,
WIRE,J1,S,J2,A,5.0 Ohm,Green,,
RESISTOR,J1,F,J2,C,1.00 kOhm,,5%,R1
```

A. Enter the number of lines to skip before processing begins

B. Select where processing should end, either

at the end of the file - or - a number of lines from the bottom of the file

Step 3 With “Point to point connection information” selected, click Next.

Step 3. Select the Type of Information

A. Select the type of information stored in the file

Point to point connection information

Net list information

Step 4 Looking at your spreadsheet file, identify each of the columns. Enter the columns numbers, then click Next.

For example, looking back at the spreadsheet program on page two, you would fill out this form as shown below.

Step 4. Select Field Locations

Sample Line
WIRE,J1_A,J2,F,2.0 Ohm,Blue,.

A. Enter the instruction type column	1	Verify	If missing, leave blank	Default: WIRE
B. Enter the from connector column	2	Verify	If missing, leave blank	Default:
C. Enter the from pin column	3	Verify	If missing, leave blank	Default: 1
D. Enter the to connector column	4	Verify	If missing, leave blank	Default:
E. Enter the to pin column	5	Verify	If missing, leave blank	Default: 1
F. Enter the parameter column	6	Verify	If missing, leave blank	Default: 5.0 Ohm
G. Enter the wire color column	7	Verify	If missing, leave blank	Default:
H. Enter the instruction label column	9	Verify	If missing, leave blank	Default:
I. Enter the tolerance	8	Verify	If missing, leave blank	Default: 10 %

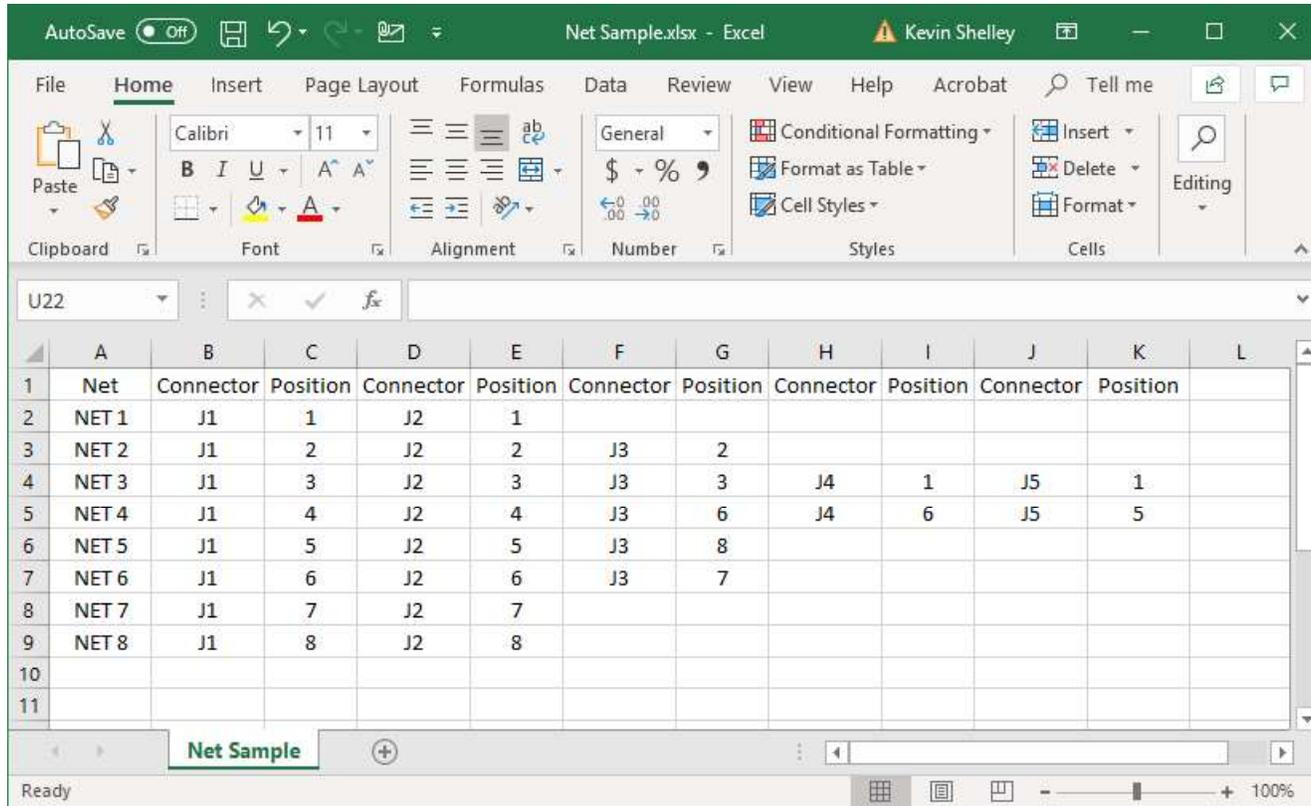
Step 5 If desired, review the test Instruction to be saved, then click the “...” button to select a save location and enter a file name, then click Next. When you click Next, the file is saved.

Step 6 If desired, review the statistics of the saved file.

You can now import the formatted test instructions into Easy-Wire. See the *Importing Formatted Test Instructions into Easy-Wire* on page 8 for this process.

Importing Net List Information

Below is net list information as it might look in Excel. In this case the Format Conversion Utility will use the first point in the net information as a “From” point, and then repeat this “From” point to each of the “To” points in subsequent test instructions.



	A	B	C	D	E	F	G	H	I	J	K	L
1	Net	Connector	Position									
2	NET 1	J1	1	J2	1							
3	NET 2	J1	2	J2	2	J3	2					
4	NET 3	J1	3	J2	3	J3	3	J4	1	J5	1	
5	NET 4	J1	4	J2	4	J3	6	J4	6	J5	5	
6	NET 5	J1	5	J2	5	J3	8					
7	NET 6	J1	6	J2	6	J3	7					
8	NET 7	J1	7	J2	7							
9	NET 8	J1	8	J2	8							
10												
11												

Using the Format Conversion Utility

As with from-to information, Cirris suggests saving the file in a text delimited format such as csv, then save the file back to it’s native spreadsheet format. This will allow you to reference the spreadsheet format while using the Format Conversion Utility. Also as with from-to data, make sure to review that all connector references and pin labels exactly match those that will be used for the defined connectors in Easy-Wire. Use the Format Conversion Utility as follows:

Step 1 Open the Format Conversion Utility and navigate to the delimited file.

Step 2 Select the number of rows to skip before the net list data will begin.

In the example Excel file shown above, the first row includes only titles; the net list information starts on row two. Therefore, you would enter “1” for “Number of rows to skip before processing begins”.

Step 3 Select “Net list information” for the data type.

Step 4 You are prompted to “Select the net start indicator position.” This is simply the column number you will use to reference all other columns.

In the example Excel file on page six, you could use the first column to reference other columns. Therefore, you could enter a “1” for the net start indicator position.

Also in Step 4 you are prompted to “Select the connector position” and “then the pin position.” This allows you to enter the column number for a connector reference, and the corresponding column number for a pin. For the “if missing” drop down box, select “Skip line”.

In the example Excel file on page six, you can see the first connector column is column B. The corresponding pin column is column C. If “1” were entered to reference column A, you would start by entering “2” for “Select the connector position,” and “3” for “then the pin position.” For the “if missing” drop down box, you would choose “Skip line” from the drop down box. Then you would click the “Add Connector/Pin location to the List” button. You would then complete this same process to add each of the other connector and corresponding pin columns. When complete the form should look like this:

Step 4. Select Net Connector/Pin Locations

Sample Line
NET 1,J1,1,J2,1,.....

A. Select the net start indicator position: 1 [Verify]

B. Select the connector position: 10 [Verify] if missing: skip line

then the pin position: 11 [Verify] if missing: skip line

C. [Add Connector/Pin Location to the List] Note: As many connector/pin pairs as necessary may be added [Delete]

Connector Location	If Missing Connector	Pin Location	If Missing Pin
2	skip line	3	skip line
4	skip line	5	skip line
6	skip line	7	skip line
8	skip line	9	skip line
10	skip line	11	skip line

[Close] [Next] [Prior]

Step 5 Review the file, then choose the file save location and name. When you click Next the file will be saved.

Step 6 If desired, review relevant file statistics.

The test instructions for the example Excel net list file would look as shown on the next page. Note, the Format Conversion Utility converts the data to single line from-to test instructions, which can be used by Easy-Wire.

 Step 5. Save the Converted File

```
Converted Instruction List
INSTRUCTIONS
BEGIN
WIRE, J1-1, J2-1, 5.0 Ohm, LABEL, NET 1
WIRE, J1-2, J2-2, 5.0 Ohm, LABEL, NET 2
WIRE, J1-2, J3-2, 5.0 Ohm, LABEL, NET 2
WIRE, J1-3, J2-3, 5.0 Ohm, LABEL, NET 3
WIRE, J1-3, J3-3, 5.0 Ohm, LABEL, NET 3
WIRE, J1-3, J4-1, 5.0 Ohm, LABEL, NET 3
WIRE, J1-3, J5-1, 5.0 Ohm, LABEL, NET 3
WIRE, J1-4, J2-4, 5.0 Ohm, LABEL, NET 4
WIRE, J1-4, J3-6, 5.0 Ohm, LABEL, NET 4
WIRE, J1-4, J4-6, 5.0 Ohm, LABEL, NET 4
WIRE, J1-4, J5-5, 5.0 Ohm, LABEL, NET 4
WIRE, J1-5, J2-5, 5.0 Ohm, LABEL, NET 5
WIRE, J1-5, J3-8, 5.0 Ohm, LABEL, NET 5
WIRE, J1-6, J2-6, 5.0 Ohm, LABEL, NET 6
WIRE, J1-6, J3-7, 5.0 Ohm, LABEL, NET 6
WIRE, J1-7, J2-7, 5.0 Ohm, LABEL, NET 7
WIRE, J1-8, J2-8, 5.0 Ohm, LABEL, NET 8
END
```

Importing Converted Instructions into Easy-Wire

Before importing the test instructions, complete Tab 1, Define Connectors/Adapters, in the Easy-Wire test program editor. Every reference designator and pin label of the defined connectors match exactly those used in the imported test instructions.

For example, the Excel file on page 2 shows from-to information for J1, J2, J3, L1, and L3. The reference designators for defined connectors in Easy-Wire must be exactly the same. Also, pin labels for the J1 start at A and sequence through valid characters to S. Therefore, the defined connector or adapter for J1 in the Test Editor Tab 1 must support these exact pin labels.

When ready to import the instructions, go to the Define Instructions tab, and select the “Import Instructions from File” button. This button will only be active if there are no existing instructions in the window.

In the file select box, navigate to the location for the from-to file, and select Import. The test instructions will be imported into the test program.