IEEE 488

APPLICATION BULLETIN

Saving, Viewing and Scaling HPGL FILES
With ICS's Model 4872 GPIB-to-LAN Printer Interface

INTRODUCTION

Most of the 4872's applications involve connecting the 4872 between an instrument, such as an analyzer or oscilloscope, and a printer so the user can directly print or plot the instrument's output without the use of a computer or a GPIB Bus Controller. However in many cases, the user wants a copy of the HPGL data printout so that the test results can be included in a report.
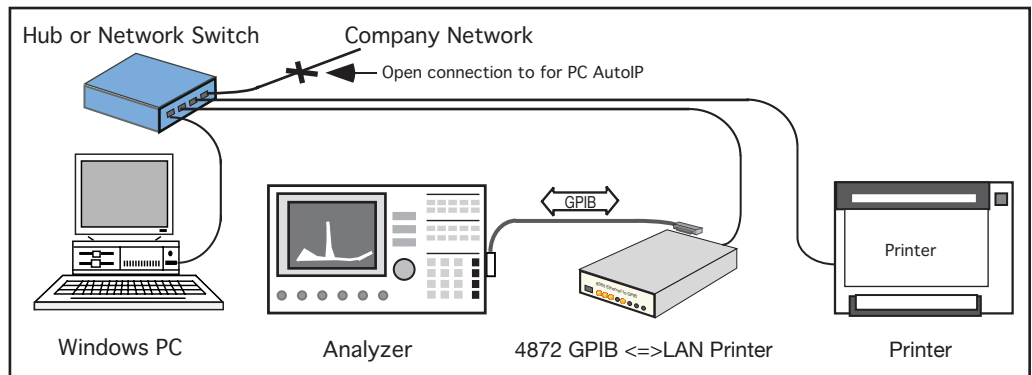

Figure 1   4872 connected to a printer and to a PC

A second problem to overcome is scaling the printout. In many cases, the printed image is too small to be legible in a report. This Application Note describes how to save the instrument's HPGL data output and convert it to a jpg image which is then easily scaled.

PRIOR SOLUTIONS

Earlier solutions involved scanning the printed image and then using that image in the report. Another solution was to use a freeware program to capture the instrument's data and then find a HPGL conversion program. The first method requires that you have already printed the instrument data and that you are willing to spend the time to print and scan an image each time you do a test. The second method uses an unknown freeware program that only works with a couple of GPIB Controllers.

THE 4872 SOLUTION

ICS's Model 4872 GPIB-to-LAN Printer Interface has the ability to route the instrument's HPGL data both to a printer

and to a secondary network device. If the secondary network device is a PC, the HPGL data, can be captured while being printed, and saved as a file on the PC. Figure 1 shows how this setup might look on the engineer's test bench.

The printer is not required unless a hard copy of the HPGL data file is desired. If the printer is eliminated, the 4872's primary output is then set to output the instrument's HPGL data to the PC's IP address.

ICS DATA LOGGER PROGRAM

ICS supplies a Data Logger utility program with the 4872. The Data Logger program captures and saves the HPGL files as binary files. When capturing data, the recommendation is to turn off the 4872 added commands such as plotmode, formfeed and idle. This saves the file just as it is outputted by the instrument.

The steps to just capture the instrument's data file are:

1. If no printer, set the 4872's Printer IP setting to the PC's IP address. If the PC is disconnected from the network, it will default to an AutoIP address that is in the same 'B' range with the 4872's AutoIP address.

   If there is a printer, then set the 4872's Secondary IP address to match the PC's AutoIP address[2]. If not connected to the network, both the printer and PC will default to an AutoIP address that is in the same 'B' range with the 4872's AutoIP address.

   Detailed instructions are in the Readme file accompanying the Data Logger program.

2. Run the Data Logger program in the PC. Press the 'Start Read' button. The 4872's RDY LED will be steady on once the 4872 has linked to the PC at port 9100 and the Data Logger progam will display "Connected"

3. Setup up the instrument and press the appropriate 'Print', 'Plot' or 'Copy' button to capture the data and send it to the 4872. The 4872 will then send it to the PC.

4. Use the Data Logger 'Save File' button to save the file

VIEWING AND CONVERTING THE HPGL DATA

ICS has reviewed most of the HPGL viewing/conversion programs available on the Internet. Most programs either don't work, are way too expensive or produce poor images which are not suitable for scaling.

Coolutils' Total CAD Converter program does a good job. There HPGL conversion files are crisp images that can be saved as .jpg files. The program can be purchased for $99.00 from http://download.cnet.com/Total-CAD-Converter/3000-10743_4-10666299.html. Coolutils also has a free drop and save utility on their website that can convert your file. See http://www.coolutils.com/Online-CAD-Converter.php#.

Users have reported good results with RedTitan's HPGL viewer. See the RedTitan website for more information on their conversion programs

Use either progam to save the HPGL data as a .jpg image. The .jpg image can be scaled when it is added to a word processing program such as Indesign or Word. It can also be scaled by most graphical programs.

SUMMARY

This application note has described a proven way to capture, save, view and save HPGL data files using an ICS 4872 GPIB to LAN Printer Interface. The files are saved in .jpg format so they can be easily scaled when included in a report.

NOTES

1. For information on 4872 compatible printers, see Application Bulletin AB48-45.

2. Assumes that the PC and printer are set to DHCP