

Question:

Is there an outline for configuring my HP Basic to communicate with the Agilent ENA analyzer via SCPI-LAN?

Answer:

The following is a method to establish remote communications via HP Basic to the ENA SCPI-LAN interface on the ENA.

- 1) Configure the HP Basic AUTOST to recognize the ENA's LAN Configuration.
 - a. On the PC with HP Basic installed, locate the file HPIBS.
 - b. Make a copy of the HPIBS driver and rename as desired. For this example the driver was renamed HPIBS2 and stored in the same directory. HP Basic MUST have an individual copy, with a unique name, for each access of the HPIBS driver.
 - c. Near line 330 of the HP Basic AUTOST program, add a new LOAD BIN. Within this LOAD BIN statement configure the HPIBS2 driver to access the ENA's SCPI-LAN. Below is a copy of the configuration utilized for this example.

```
335 LOAD BIN "HPIBS2;DEV lan[AGILENT-E45B822]:hpib9 ISC 9 TIME 5"  
350 LOAD BIN "HPIBS;DEV hpib7 ISC 7"          ! SICL driven GPIB boards
```

- d. Line 335 is the additional GPIB configuration added to communicate with the ENA via SCPI – LAN. Note the use of the following within this command line.
 - i. Call to “HPIBS2” for the driver
 - ii. “DEV” or device is “lan”
 - iii. Use of the alias, or computer name, “AGILENT-E45B822”. You may choose to substitute the ENA's IP address here. If your information technology group assigns IP addresses dynamically the use of a direct IP addresses may cause problems if the ENA's IP address is reassigned.
 - iv. Reference to “hpib9” – This is a MUST. The default SCPI server in the ENA is GPIB2 and the SICL name is “gpib9”. The entry in the HP Basic AUTOST LOAD BIN must match exactly. To check the ENA configuration select
 1. SYSTEM (hark key – HK)
 2. Misc Setup (soft key – SK)
 3. GPIB Setup (SK)
 4. System Controller Configuration (SK)This now results in the I/O Configuration window for the Agilent I/O Libraries (at the ENA).

For VISA Name "GPIB2" the SICL Name is "hplib9", ensure this is true. Within the I/O Libraries configuration window at the ENA, select the GPIB2 interface and press the EDIT button. The title bar should indicate "Internal Instrument Configuration", Logical Unit "9", and SICL Interface Name "hplib9".

Exit up two levels and ensure the Talker/Listener Address is 17.

- v. The "ISC" or interface select code in line 335 is "9", which matches the "Logical Unit" in the ENA's I/O configuration.
 - e. Note that LINE 350, referenced above, is a fully functional call to the original HPIBS driver for communications to the Agilent 82350A PCI card embedded in the PC. It has no relation to the ENA configuration. The reference is intended to illustrate that HP Basic can support multiple GPIB interfaces. In this example line 335 for a LAN based SCPI device, the ENA, and line 350, an embedded Agilent GPIB card.
 - f. Ensure you "RE-SAVE" or "RE-STORE" your HP Basic AUTOST file so that the modifications are stored.
- 2) The sample below is an HP Basic program that communicates with both the configured ENA via SCPI-LAN and to and Agilent 8753ES via the embedded Agilent 82350 PCI-GPIB interface. The program is a test to ensure the LOAD BIN statements are defined correctly and GPIB communications exist between both configured interfaces.

```
10 RE-SAVE "ENA_SCPI_LAN"
20 CONFIGURE SAVE ASCII OFF
30 DIM Myid$(40)
40 OUTPUT 716;"outpiden"
50 ENTER 716;Myid$
60 PRINT "This is my ID 1 :",Myid$
70 OUTPUT 917;"*IDN?"
80 ENTER 917;Myid$
90 PRINT "This is my ID 1 :",Myid$
100 END
```

Note the call to the 8753 is via the PCI-GPIB at select code 7 and device address 16. The call to the ENA via SCPI-LAN is at select code 9 and device address 17.

Below is a screen snapshot of the resultant program execution.

HP BASIC for Windows - ENA_SCPI_LAN

This is my ID 1 : HEWLETT PACKARD,8753ES,US39175118,7.74

This is my ID 1 : Agilent Technologies,E5071B,JP1KK00224,A

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