

In Case of Difficulty

Introduction

Although the HP 85071 materials measurement software has been designed for convenience and ease of use, problems can arise. This chapter contains three sections to deal with possible problems:

- Common problems and solutions
- MS-DOS error messages
- HP BASIC error messages

Listed below, in alphabetical order, are some common problems and their solutions. To deal with problems associated with a specific instrument (like the computer, printer, or network analyzer) refer to its manual.

Common Problems and Solutions

Bad filename entered, press any key to continue results from trying to enter an improper title for a file. File names must be eight (8) letters or less without digits or special characters.

Cables should be held in the same position during measurement as during calibration. They should be given time to stabilize prior to calibration. Excessive flexing can result in measurement inaccuracies. With waveguide systems, allow the test port (usually port 2) to waveguide flange cable to maintain the same position (don't flex or bend it) long enough to minimize phase changes.

Hardware problems should be resolved by referring to the manual of the instrument (network analyzer, printer, computer) at fault.

Non-repeatable measurements may be the result of excess cable flexing, poor or inconsistent contact of the MUT with the surfaces of the waveguide or coaxial sample holder, non-perpendicular sample faces, or changing location of the sample within the sample holder.

Plotter won't plot. See "Printer won't print," below.

Printer won't print. Make sure the printer is plugged in and turned on. With the HP BASIC version, make sure the printer is connected to the computer and set to address 01 (plotter address is 05).

Program won't run usually results from improper installation.

For the MS-DOS version, details appear in "System Requirements" in section 1 of chapter 2. Considerations include the following:

- Minimum amount of RAM
- Type of flexible disk drive
- Size of hard disk drive
- Graphics requirements
- Required MS-DOS and Windows versions

For the HP BASIC version, details appear in "System Requirements" in section 2 of chapter 2. Considerations include the following:

5: Measurement Example

- The computer is not one of the unsupported exceptions
- Minimum amount of RAM
- Type of flexible disk drive
- BASIC version and required binaries
- HP-IB interface card

Before You Contact HP ...

If problems persist and you want to contact HP, *first*

- Save a copy of the setup file

Then log this information:

- Product: HP 85071B
- Software revision:
- Computer:
 - If DOS, type of HP-IB card:
- Network analyzer (and test set):
 - network analyzer revision:
 - network analyzer options:
- Problem description:
 - Is the problem intermittent?
 - How can one duplicate the problem?

Section 1: MS-DOS Error Messages

This section alphabetically lists the error messages of the MS-DOS version of the program. The error messages are in **bold**; explanations (if any) in normal type.

A calibration has not been performed. The attempt to make a measurement failed. You must perform a calibration or recall a setup file containing a calibration first.

A copy of HP 85071 is already running. You can run only one copy of the HP 85071 application at a time.

A full two port calibration is not on. Recall or perform a calibration. You must recall or perform a two-port calibration for any of the "Refl/Tran" models before making a measurement.

An error occurred allocating memory during the measurement. Reduce the number of points and close any other application programs immediately. There is not enough system memory to perform calculations with the specified number of frequency points. This is usually due to having several other Windows applications running at the same time as the HP 85071. Either reduce the number of points and recalibrate the system, or close the other applications.

An HP-IB error has occurred. No space for new cal; delete a cal set. This error will occur with the HP 8510 network analyzer if there is no space to store a calibration. Use the CAL menu on the HP 8510 to delete a previous calibration to make room for the calibration just performed.

A one port calibration is not on. Recall a setup file that includes a calibration or perform a new calibration. Before making a measurement, you must recall or perform a one port calibration for any of these models:

- Reflection-only ϵ short-backed
- Reflection-only ϵ arbitrary-backed
- Reflection-only μ and ϵ single/double thickness

A one port calibration is not on. Recall or perform a calibration. You must recall or perform a two-port calibration for any of the "Refl/Tran" models before making a measurement.

Calibration does not match the current setup. A measurement was triggered but the frequency range of the calibration in the network analyzer does not match the setup in the software. The software will not allow measurement.

Calibration does not match the current setup. The setup will be modified. A measurement was triggered but the frequency range of the calibration in the network analyzer does not match the setup in the software. The software will change its frequency range to match the calibration.

Cannot find plotter or Problem with plotter. The program is unable to communicate with the hardcopy device when performing a plot operation. Recheck the cabling to the hardcopy device or make sure that it is properly installed in the Windows Control Panel. Try to communicate with this device with another Windows application.

MS-DOS Error Messages

Cannot find printer or Problem with printer. The program is unable to communicate with the hardcopy device when performing a print operation. Recheck the cabling to the hardcopy device or make sure that it is properly installed in the Windows Control Panel. Try to communicate with this device with another Windows application.

Can not write to 'filename'. This error typically occurs when the disk is removed from the drive. **Data does not exist.** The attempt to save data to memory failed because no data trace exists.

Error number xxx opening 'filename'. These errors are generated by the DOS system. Refer to DOS documentation for the nature of this particular error.

Illegal FILENAME. Illegal characters were specified in the filename. Only alphanumeric characters are allowed in the filename.

Illegal number of points. Must be at least 11 and a multiple of 10 + 1. For the LOG sweep mode, the number of points must be 11, 21, 31, . . . , 101, etc.

Illegal number of points. Must be 3 or more. A minimum of 3 points must be specified.

Illegal start frequency. Start frequency is either (1) less than minimum allowed by network analyzer, (2) more than maximum allowed by network analyzer, or (3) greater than stop frequency.

Illegal step frequency. Step frequency is smaller than the minimum resolution of the network analyzer source.

Illegal stop frequency. Stop frequency is either (1) less than minimum allowed by network analyzer, (2) more than maximum allowed by network analyzer, or (3) less than start frequency.

Instrument log sweep is not supported by this program. An attempt to recall a calibration performed using the network analyzer's internal log sweep mode failed. This mode of operation is not supported.

No filename specified. An attempt was made to load or store a file without specifying a filename. This would occur if no entry was made in the dialog box.

Sample thickness must be greater than zero. Sample thickness must be defined in the setup menu as a positive value greater than zero.

Selected model requires a one port measurement. The attempt to recalculate materials parameters for the Refl e model failed because a full 2-port calibration had been performed, not the required one port cal.

Selected model requires a two port measurement. The attempt to recalculate materials parameters for the one of the Refl/Trans models failed because a one port cal had been performed, not the required full two port calibration.

The cutoff frequency must be less than the start frequency. Change one of the frequencies as indicated.

The IEEE-488 card is not responding as configured. Please check and correct configuration. The HP or National Instruments IEEE-488 card is not operating properly. Try repowering the computer to see if this cures the problem. If not, refer to the card's operation manual to run diagnostic routines to insure that the card is properly installed. Run the HPIBSTAT.EXE program to troubleshoot the problem.

The Network Analyzer is not responding as configured. Please check and correct configuration. The software is unable to communicate with the network analyzer. Check HP-IB connections or press **PRESET** on the network analyzer and select the RETRY software function.

There is not enough memory to run HP 85071. Close all other applications and try again.

There is no valid measurement.

The selected filename is too long. Only eight characters are allowed. DOS filenames can only be eight characters long.

The sample holder must be defined before a measurement can be taken. Select "Holder . . ." in the setup menu, define sample thickness, sample holder length, and cutoff frequency. Then measure again.

The selected frequency list mode not supported by the program. The software cannot recall calibrations performed using frequency list mode.

This revision does not support more than xxx pts. The entered number of points is greater than the software and network analyzer allow.

The single point mode is not supported by this program. The software cannot recall calibrations performed using single point mode.

This software does not support the HP 8510A. Only the HP 8510B and HP 8510C are supported by the software. Upgrade the HP 8510A to a C with the upgrade kit (see "Network Analyzer and Test Set" in chapter 2).

Section 2: HP BASIC Error Messages

This section alphabetically lists the error messages of the HP BASIC version of the program. The error messages are in **bold**; explanations (if any) in normal type.

Bad filename entered. Enter a filename with these limitations:

- Eight characters maximum
- Only letters, numbers, and underline (-)
- Software adds prefix (D_ or S_)

Calibration does not match the current setup. A measurement was triggered but the frequency range of the calibration in the network analyzer does not match the setup in the software. The software will not allow measurement.

Cutoff frequency >= start frequency not allowed. Select the Holder . . . choice in the Setup menu to define the cutoff frequency as less than the start frequency.

Drive not found or bad address. The software cannot find the disk at the currently defined mass storage specifier. A new mass storage unit specifier can be entered by executing another Save (data or setup) command and entering the new MSUS, ex. : ,700,1 (see the HP BASIC documentation for more details on the syntax of mass storage specifiers), when prompted for the filename.

Entered frequency above network analyzer source range. The frequency entry is outside the range of the network analyzer source. Enter the value again and make sure that you are terminating the entry with the desired terminator (GHz or MHz).

Entered frequency below network analyzer source range. The frequency entry is outside the range of the network analyzer source. Enter the value again and make sure that you are terminating the entry with the desired terminator (GHz or MHz).

File 'Filename' already exists! Do you wish to overwrite it? An attempt was made to save a file on disk when a file with the same name already exists. Press the OK softkey to replace the old file, press the Cancel softkey to abort the save process, then use a different filename.

Mass storage medium overflow (no space left on disk). There is not enough space on disk to save the file. Insert another initialized disk and press **Try Again** or press **Exit** to abort.

Maximum string length of entry is xx characters. The string entry (filename, display title) has exceeded the maximum length allowed. The software will present this message. After any key is pressed, the string will be presented again. Use the back space key or left arrow key to delete characters.

Media is not in drive. The software can find the disk drive but a disk is not in the drive. Put the disk in and press **Try Again** or press **Exit** to abort the process.

Media is not initialized. An attempt was made to save or recall a file from an uninitialized disk. Only disks which have been initialized with the BASIC operating system can be used. This initialization must

be done outside the HP 85071 software with the BASIC INITIALIZE command. See the BASIC manuals for more information.

Media is write protected. An attempt was made to save a Setup or Data file to a write-protected disk. Use another disk or move the write protect tab on the current disk to enable the storage and press the Try Again softkey. Press the Exit softkey to abort the storage process.

No active traces. An attempt was made to autoscale the data with no active data or memory traces.

No current data trace. An attempt was made to save data to a memory trace without having a valid data trace.

No current memory trace. An attempt was made to save a memory to data without having a valid memory trace.

No room for calibration in HP 8510. Delete a calibration set manually. There is no more room inside the HP 8510 for the calibration just performed. Use the CAL menu in the HP 8510 to delete a cal set to make room for the new calibration.

No valid calibration. An attempt was made to take a measurement without performing a calibration. Calibrate the system.

No valid data trace to save. An attempt was made to save a data file without a valid measurement data trace. Turn data on in the Traces Displayed choice of the Display menu if a Data trace exists or perform the desired measurement.

No valid reference trace. An attempt was made to perform trace mathematics without a valid reference trace. Save a trace to the reference trace and try again.

Number of frequencies in log mode must be 11 or greater. A minimum of 11 frequencies must be specified for the LOG sweep setup.

Number of frequencies must be greater than 1. A minimum of 2 frequencies must be specified for the setup.

Number of points must be (multiple of 10) + 1 for log mode. The number of frequencies must be 11, 21, 31, . . . , 101, etc. for the LOG sweep mode.

Sample holder is not yet defined. The attempt to trigger a measurement failed. First return to the Holder . . . choice in the Setup Menu to define the sample holder.

Sample thickness ≤ 0 not allowed. Redefine the sample as thicker than 0 using the Holder . . . choice in the Setup menu.

Setup file is incompatible with current network analyzer. An attempt was made to recall a setup file that was created with the software using a different model network analyzer.

Specified file 'Filename' is not a valid HP 85071 data file. An attempt was made to recall a data file that was not created using the HP 85071 software. This error will also occur if an attempt is made to recall a Setup file and the specified file was not created by the software.

HP BASIC Error Messages

Step frequency is too small for current span. The entered value of step frequency would result in a number of frequencies greater than that supported by the network analyzer.

Step frequency of 0 Hz not allowed. The step frequency must be greater than 0 Hz. This entry would cause a calculation error.

Stop frequency must be greater start frequency. The specified start frequency is greater than the specified stop frequency . Change the frequencies to correct this situation.

Stored data (1 to 2 GHz, 51 pts., log) does not match setup. The frequency setup in the software must exactly match the frequency range of any stored data to bring the data trace back into the software. The frequency range of the data is presented in the error message so that you can go back to the Set frequency ... choice in the Setup menu to change the frequency setup.

The 'Refl e' model requires a one port calibration. Perform a one port cal and remeasure.

The 'Refl/Tran' measurement models require a two port calibration. Perform a two port cal and remeasure.

Y-max and Y-min can not be the same value. The maximum and minimum values for the graphical display were specified to be the same value. Enter new, different values.