

Errata

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HP References in this Manual

This manual may contain references to HP or Hewlett-Packard. Please note that Hewlett-Packard's former test and measurement, semiconductor products and chemical analysis businesses are now part of Agilent Technologies. We have made no changes to this manual copy. The HP XXXX referred to in this document is now the Agilent XXXX. For example, model number HP8648A is now model number Agilent 8648A.

About this Manual

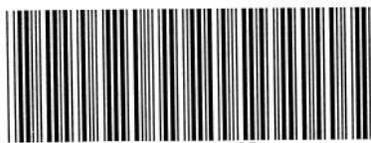
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08757-90155



Agilent Technologies

Program Note for Agilent p/n 08757-10002**INSTRUCTIONS FOR USING THE HP 8757 OPT 002 CALIBRATION PROGRAM**

This program is designed to calibrate or verify the performance of the HP 8757D Option 002 50 MHz calibrator. In addition to calibrating the Option 002 portion of the instrument, it also contains the logger calibration routine that is used with the HP 11613/B calibrator.

The following test equipment is recommended. (This program is designed to run on a PC with HP BASIC for Windows, Version 7.0 or higher.¹)

- HP 8902A Measuring Receiver (Option 050)
- HP 8482A Power Sensor or equivalent (8481A, 8485A, etc. Used only at 50 MHz.)
- HP 432A Power Meter with HP 478A Option H76 Thermistor Mount (H76 is calibration data.)
- Digital voltmeter HP 3456A (or 3457A¹, or 3458A¹)
- 20 dB attenuator (HP 8491A/B Option 020)
- Printer (Optional, uses Windows default printer¹.)
- HP 11613A/B Calibrator (Required only if testing the loggers.)
- Type-N cable, miscellaneous cables and adapters, as required.

The Option 050 on the HP 8902A is required to guarantee specifications. Non-option 050 instruments can be used with only a slight degradation of specifications.

¹Only if using Calibration Program Revision A.02.00.

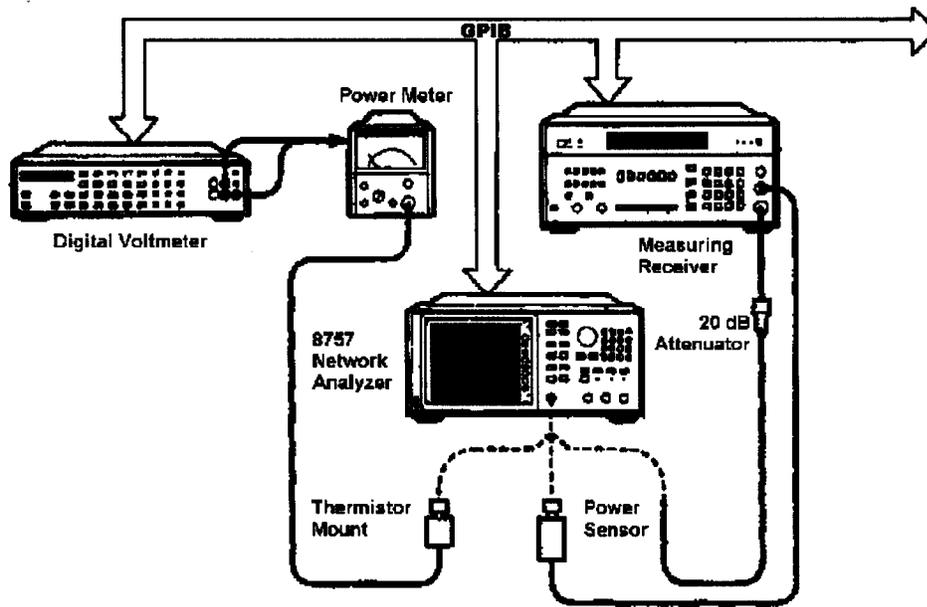


Figure 1-1. Set up for the HP 8757 Option 002 calibration

Set up the equipment as shown above in figure 1-1. **The 20 dB attenuator should always be connected to the RF input of the HP 8902A!** Do not connect the DVM leads until directed to do so by the program.

Note: To make valid measurements, all equipment should be warmed up for at least 1 hour.

Connect all HP-IB cables and ensure the addresses are set properly. The addresses can be modified in the program if necessary; type: EDIT HPIB_ADDR. The factory default addresses are:

HP-IB Interface Select Code: 7
 HP 8902A: 14
 DVM: 22
 HP 8757: 16

Load the program. The program name is 'CAL-57'. Run the program. After the initial welcome screen, you will be presented with a menu of choices and a "Help" softkey. The help key summarizes some of the information presented here. A printout of all tests can be made by selecting the softkey labeled **Prt All**. This feature can be turned On/Off by selecting the softkey.

- ◆ To calibrate the Option 002 portion of the instrument, simply select OPTION 002 CALIBRATION.
- ◆ To verify performance of the Option 002, select OPTION 002 0 dBm VERIFY. When done with this portion, select OPTION 002 LINEARITY VERIFY. Both are required for a complete verification. The linearity test also includes both 50 MHz frequency accuracy and modulation duty cycle tests.
- ◆ To calibrate or verify the loggers using the 11613A/B, select LOGGER CALIBRATION. Refer to the HP 11613A/B manual if any additional information is required.

These are the only selections from this menu that need be performed. The other tests are provided for service related purposes or are automatically performed during one of the above routines. For example, calibrated measurements cannot be performed with the HP 8902A until it has been calibrated. If one of the above tests are selected that requires the use of the HP 8902A, the program will force an internal calibration of the HP 8902A. Once performed, it will not be done again unless it is specifically requested. An indicator next to the label "8902 Calibration" will show whether or not the calibration is still required.

The following Option 002 tests and utilities are available:

- ◆ **Frequency Accuracy:** This tests the frequency accuracy of the 50 MHz calibrator output.
- ◆ **Duty Cycle:** This tests both the frequency accuracy of the 27.778 kHz modulation drive signal and also the duty cycle of the modulated 50 MHz calibrator output.
- ◆ **Range Check:** This is a quick functional check that the 50 MHz calibrator can change its output level over a wide range of power levels. It is performed automatically before a calibration, or verification.
- ◆ **8902 Calibration:** Performs an internal calibration of the tuned RF performance of the HP 8902A and also zeroes and calibrates the power sensor used with the HP 8902A. Though the Power sensor is not used during the Option 002 tests, it is used during calibration to assure that the relative measurements that the 8902A makes are actually referenced to 0 dBm.
- ◆ **Save Opt 002 (to file):** Service Utility. Saves all Option 002 calibration data from the computer to a disk. This is useful for later recall if the CPU board is replaced and the calibration data needs to be restored.

- ◆ **Load Opt 002 (from file):** Service Utility. Loads Option 002 data from disc into the computer.
- ◆ **Store Opt 002 to EEPROM:** Service Utility. Transfers the Option 002 calibration data from the computer to the 8757 A3 CPU EEPROMS.
- ◆ **Load Opt 002 from EEPROM:** Service Utility. Transfers the Option 002 calibration data from the 8757 EEPROMS to the computer.
- ◆ **View Opt 002 Cal Data:** Service Utility. Allows user to view each element of the Option 002 Cal table.

The program provides all instructions. Press **ENTER** on the computer's keyboard, or one of the softkeys when the program execution pauses.

The approximate test times are as follows:

Calibrate or Verify all 3 or 4 loggers	15 min.
Verify Option 002 Performance (includes 0 dBm and Linearity)	1 hour
Calibrate Option 002	2.5 hours

Note: If calibrating after replacement of the 8757 CPU board, always perform the Logger calibration *first*.