

Table 1-1. Specifications and General Requirements (1 of 2)

### HP 8757C/E SPECIFICATIONS

Specifications describe the instrument's warranted performance over the temperature range of 0°C to +55°C (+32°F to +131°F) except where noted.

**Function:** Four (two in the HP 8757E) independent display channels process signals from the HP 85025, 85026, or 11664 Detectors and the HP 85020/27 Bridges. The data is logarithmically displayed, in single input or ratio mode, with respect to frequency, on the internal CRT. Three detector inputs (A, B, and R) accept AC or DC detected signals from detectors or bridges.

The Option 001 has four detector inputs (A, B, C, and R).<sup>1</sup>

**Modulator Drive:** The modulator drive output of the analyzer provides the circuitry to drive the HP 8340 and 8341 Synthesized Sweepers and the HP 11665B Modulator. Modulator drive may be turned on and off via the front panel or HP-IB. In the OFF state the modulator drive signal turns the HP 11665B fully on for minimum insertion loss.

**Frequency:** 27.778 kHz  $\pm$  12 Hz

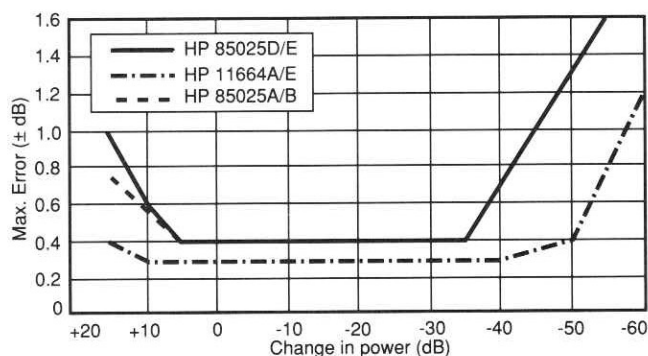
**Symmetry:** 50%  $\pm$  1%

**Dynamic Range, Dynamic Power Accuracy, Absolute Power Accuracy:** These are system specifications and depend on the detector being used. The following examples show frequently used Hewlett-Packard detectors.

#### Dynamic Range:

Detector	Dynamic Range
HP 11664A/E (AC mode):	+16 to -60 dBm
HP 85025-series (AC mode):	+16 to -55 dBm
(DC mode):	+16 to -50 dBm

**Dynamic Power Accuracy** (50 MHz, 25  $\pm$  5°C, 0 dBm reference):

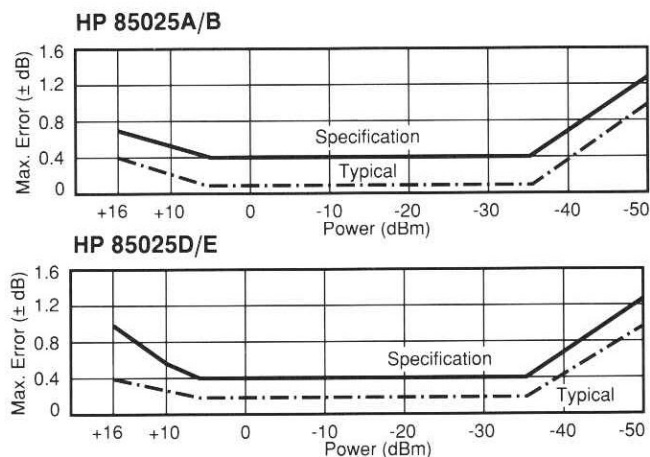


**Note:** For  $\leq 20$  dB change of power within +10 to -40 dBm the specification for the HP 8757C/E with the HP 11664A/E is  $\pm(0.1 \text{ dB} + 0.01 \text{ dB/dB})$ .

1. HP 8757C only.

Table 1-1. Specifications and General Requirements (2 of 2)

**Absolute Power Accuracy** (50 MHz,  $25 \pm 5^\circ\text{C}$ , DC mode):



**GENERAL REQUIREMENTS**

General requirements identify specifications required of the source in order for the analyzer to operate properly.

**Sweep Time:** Minimum sweep time and maximum number of displayed traces on the CRT depend on the horizontal resolution, (number of points):

Number of Points	Minimum Sweep Time (ms)			
	1 Trace	2 Traces	3 Traces <sup>1</sup>	4 Traces <sup>1</sup>
101	40	50	60	70
201	50	75	90	100
401	100	100	150	200
801 <sup>1</sup>	200	250	NA	NA
1601 <sup>1</sup>	400	NA	NA	NA

Modulation Requirements (for use with HP 11664 Detectors, HP 85025/26 Detectors, and HP 85020/27 Bridges in AC mode):

Square-wave amplitude modulation.  
 Frequency:  $27.778 \pm 20$  Hz.  
 $\geq 30$  dB on/off ratio.  
 45% to 55% symmetry.

**Sweep Voltage Requirements** (Sweep In): Horizontal sweep voltage, from 0 to 10 volts, provided by the source through the SWEEP IN 0-10V input on the rear panel of the analyzer. Other sweep voltages can also be accepted by using the non-standard sweep mode of the analyzer.

**Marker and Blanking Requirements** (Pos Z Blank): Blanking and marker signals are provided by the source through the POS Z BLANK input on the rear panel of the analyzer.

Voltage levels:

Blanked	+5V typical
Unblanked	0V typical
Marker	-4V typical
Active Marker	-8V typical

1. HP 8757C only.

Table 1-2. Supplemental Performance Characteristics (1 of 3)

Values in this table are *not* specifications, but are intended to provide information useful in applying the instrument by giving typical but non-warranted performance parameters.

## DISPLAY CHARACTERISTICS

<b>Horizontal Resolution:</b>	Number of Points
	101
	201
	401
	801 <sup>1</sup>
	1601 <sup>1</sup>

**Display Modes:** All analyzer channels can display any one of the detector inputs or any ratio combination of detector inputs. Data can be displayed on the CRT in one of the following modes.

### LOG MAGNITUDE:

dBm: single channel power measurement.

dB: relative power measurement (ratio or relative to trace memory).

SWR: Relative measurements; channels 1 and 2 only; 401 points or fewer.

AUX: The rear panel BNC input ADC IN can be measured and displayed in volts (–10 to +10 volts). Typical maximum error is 60 mV.

Display Mode	Scale Resolution	Display Range	Vertical Resolution
dBm	0.1 to 20 dB/div (1/2/5 sequence)	–70 to +20 dBm	0.003 dB <sup>2</sup>
dB	0.1 to 20 dB/div (1/2/5 sequence)	–90 to +90 dB	0.006 dB <sup>2</sup>
SWR	0.02 to 10 units/div (1/2/4 sequence)	1.0 to 37.0	See figure below
AUX	0.025 to 5 V/div (1/2.5/5 sequence)	–10 to +10 V	0.001 V

**SWR Resolution and Accuracy:** Data is converted to SWR using an internally generated look-up table. The resolution in SWR mode varies with the SWR being measured as shown.



**Averaging:** 2, 4, 8, 16, 32, 64, 128, or 256 successive traces may be averaged.

**Smoothing:** Provides a linear moving average of adjacent data points. The smoothing aperture defines the trace width (number of data points) to be averaged, and ranges from 0.1% to 20% of the trace width.

**Normalization:** Traces are stored and normalized with the highest resolution, independent of display scale/division or offset. Calibration data can be saved and recalled with the instrument states.

Calibration data is interpolated when the frequency span is decreased with adaptive normalization engaged.<sup>1</sup>

1. HP 8757C only.

2. 0.01 dB for display cursor.

Table 1-2. Supplemental Performance Characteristics (2 of 3)

**Graticules:** 8 vertical x 10 horizontal divisions.  
1 division = approximately 11 mm.

### **CRT AND GRAPHICS CHARACTERISTICS:**

**CRT Scan Rate:** Raster scan with 60 Hz vertical refresh rate and 25.5 kHz horizontal scan rate.

**Graphics Resolution:** 1024 horizontal by 400 vertical pixels.

### **REAR PANEL CONNECTORS**

**Stop Sweep:** Used with the HP 8350B Sweep Oscillator, and the HP 8340- or 8341-series Synthesized Sweeper when it is controlled by the 8757 system interface, to stop the sweep at band crossings and at end of sweep.

**DAC Out:** An output connector for use in troubleshooting.

**ADC IN:** An input connector for auxiliary voltage input in the  $-10$  to  $+10$  volt range. This voltage can be displayed (in volts) on any channel.

**Video Output:** Three BNC connectors used to drive external monitors with the following characteristics:<sup>1</sup>

R, G, B with sync on green.  
75 ohm impedance.  
1 V p-p (0.7 V = white; 0 V = black;  $-0.3$  V = sync).

### **HP-IB CHARACTERISTICS**

**Interface:** HP-IB operates according to IEEE 488-1978 and IEC-625 interface standards.

**Interface Function Codes:** SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP0, DC1, DT0, C0, E1.

**Transfer Formats:** Data may be transferred either as ASCII characters or as 16-bit integers (most significant byte first). Readings may be taken at a single point, or an entire trace may be transferred at once.

**Transfer Speed** (includes command to initiate output):

ASCII format, 401 point trace:	500 ms typical
ASCII format, single point:	10 ms typical
Binary format, 401 point trace:	30 ms typical
Binary format, single point:	7 ms typical

**Programmable Functions:** All front panel functions, except power on/off, are programmable. The HP 8757C/E is compatible with all appropriate HP 8757A Scalar Network Analyzer programming codes.

**User-Accessible Graphics:** The user can generate on-screen graphics using a subset of HP-GL commands.

**Interrupts:** HP-IB service interrupts (SRQs) are generated for the following conditions:

Front panel key pressed	Numeric entry completed
Soft key only pressed	Limit test failed
Operation complete (sweep or plot)	Action requested not possible
Syntax error	Knob activity
Instrument self-test error	

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*Table 1-2. Supplemental Performance Characteristics (3 of 3)*

## **SYSTEM INTERFACE**

**Description:** The 8757 System Interface is a dedicated HP-IB port used exclusively by the analyzer to control and extract information from a swept source, digital plotter, printer, or other devices.

## **GENERAL SPECIFICATIONS**

### **Temperature Range:**

OPERATING: 0° to +55°C (+32° to +131°F).

STORAGE: -40° to +70°C (-40° to +158°F).

**Power Requirements:** 48 to 66 Hz, 100/120/220/240V  $\pm 10\%$ , typically 155 VA.

**Dimensions:** 178 x 425 x 445 mm (7.0 x 16.75 x 17.5 in.). Does not include handles.

**Weight:** NET: 22 kg (48 lb).

SHIPPING: 28 kg (61.5 lb).