

## SECTION I

### GENERAL INFORMATION

#### 1-1. DESCRIPTION.

1-2. The Hewlett-Packard Model 5254C Frequency Converter is a plug-in unit which extends the frequency measuring capability of an HP Electronic Counter from .15 to 3.0 GHz (150 MHz to 3000 MHz).

1-3. The stability and accuracy of the basic counter are retained by multiplying a 10-MHz signal, derived from the 1-MHz internal time base of the counter, to 50 MHz and selecting a harmonic frequency between 200 and 2950 MHz. This known harmonic of 50 MHz is then heterodyned with the INPUT signal. The resulting difference frequency, if between 1 MHz and 53 MHz (bandwidth of amplifier in plug-in) is counted and displayed by the counter. The frequency of the INPUT signal is then indicated by the combination of the MIXING FREQUENCY control (in gigahertz; front panel of plug-in) and the digital display of the counter (in megahertz).

1-4. A front panel meter, by monitoring the difference-frequency output of the plug-in to the counter, aids in selecting the desired MIXING FREQUENCY and also in determining if INPUT signal amplitude is adequate for accurate frequency measurement.

#### 1-5. SPECIFICATIONS.

1-6. Table 1-1 contains all technical specifications for the Model 5254C when operated in the HP Electronic Counter.

#### 1-7. INSTRUMENT IDENTIFICATION.

1-8. Hewlett-Packard uses a two-section serial number mounted on the rear panel. Earlier instruments use an 8-digit serial number (000-00000). The first three digits are a serial prefix number; the last five digits refer to the specific instrument. Later instruments use a 9-digit serial number (0000A00000). The first four digits are the serial prefix and the last five digits refer to the specific instrument. If the serial prefix of your instrument differs from that listed on the title page of this manual, there are differences between this manual and your instrument. Lower serial prefixes are documented in Section VII, and higher serial prefixes are covered with manual change sheets included with the manual. If the change sheet is missing, contact the nearest Hewlett-Packard Sales and Service Office listed on the inside rear cover of this manual.

#### 1-9. COOLING.

1-10. The Model 5254B is cooled by the ventilation system of the counter in which it is installed. See the service manual of counter for cooling system and maintenance instructions.

Table 1-1. Specifications

**OPERATING FREQUENCY RANGE:** 0.15 to 3 GHz (0.2 to 3 GHz for 5254B).

**MIXING FREQUENCIES:** 0.15 to 3 GHz in 50 MHz steps (0.2 to 3 GHz for 5254B).

**INPUT VOLTAGE RANGE:** 50 mV (-13 dBm) to 1 V (+13 dBm) (min. to max. rms).

**MAXIMUM INPUT OVERLOAD:** 2.2V rms (+20 dBm) 125 V dc.

**NOMINAL INPUT IMPEDANCE:** 50 ohms.

**INPUT COUPLING:** AC.

**RESOLUTION:** 1 Hz in 1 sec., 10 Hz in 0.1 sec., etc.

**ACCURACY:** Maintains counter accuracy.

**REGISTRATION:** Counter display in MHz is added to converter dial reading.

**LEVEL INDICATOR:** Meter aids frequency selection and indicates usable signal level

**AUXILIARY OUTPUT:** 1 to 50 MHz on front panel.

**INPUT CONNECTOR:** Type N female.

**WEIGHT:** Net, 5 lbs (2,3 kg). Shipping, 7 lbs (3,2 kg).