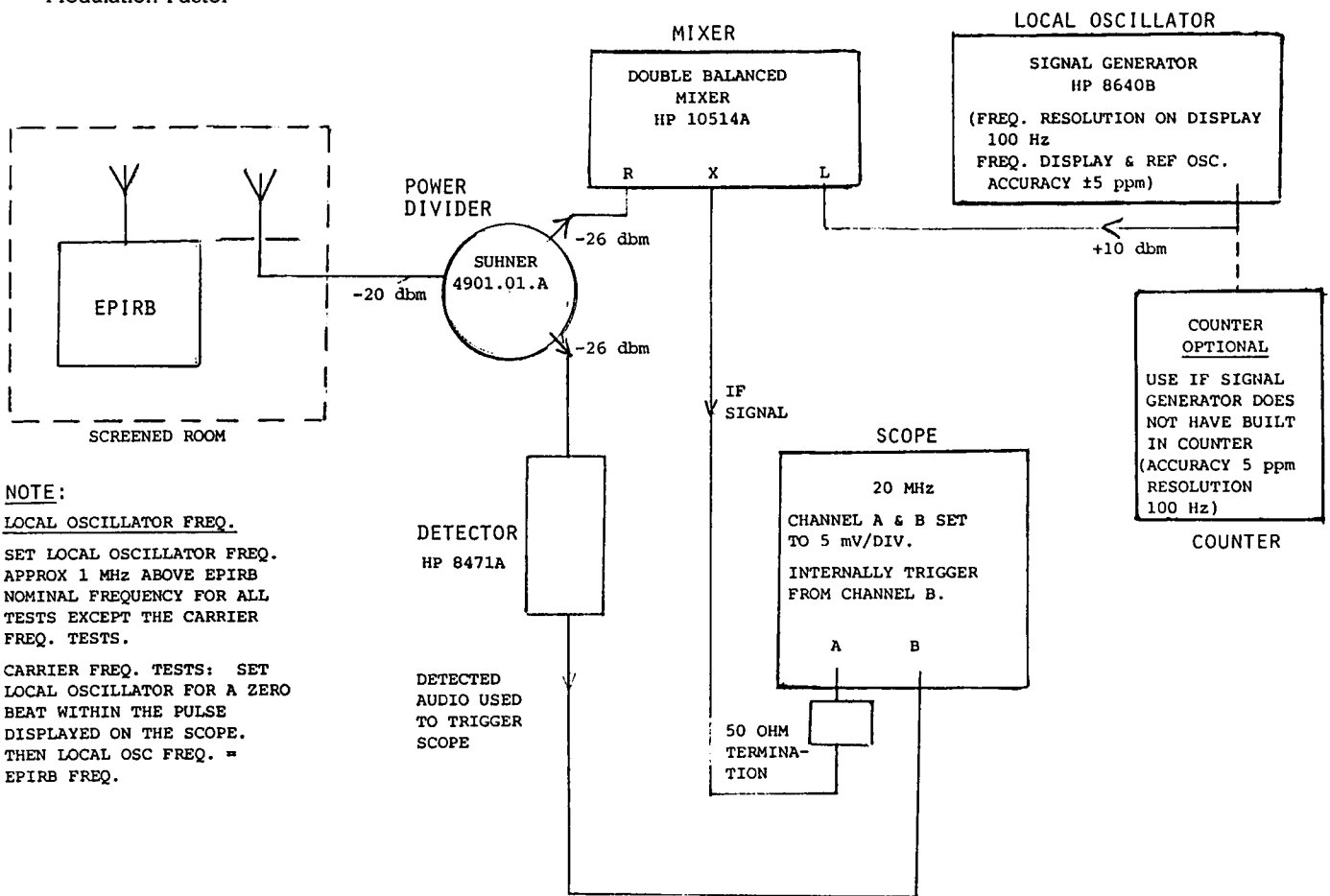


maximum and minimum amplitudes of the modulation envelope by the following formula:

Modulation Factor =

$$\frac{V_{PEAK} - V_{TROUGH}}{V_{PEAK} + V_{TROUGH}}$$



**NOTE:**  
LOCAL OSCILLATOR FREQ.  
 SET LOCAL OSCILLATOR FREQ. APPROX 1 MHz ABOVE EPIRB NOMINAL FREQUENCY FOR ALL TESTS EXCEPT THE CARRIER FREQ. TESTS.  
 CARRIER FREQ. TESTS: SET LOCAL OSCILLATOR FOR A ZERO BEAT WITHIN THE PULSE DISPLAYED ON THE SCOPE. THEN LOCAL OSC FREQ. = EPIRB FREQ.

FIG 1 CARRIER FREQUENCY AND MODULATION PERFORMANCE - TYPICAL TEST SET UP.

(3) Measurement procedure : Frequency and modulation

(a) Operating frequencies (clause 32 (1) and (2))

Connect the equipment as shown in Figure 1. Operate the equipment using its own power supply. Measure the frequencies of the carrier emissions, with an accuracy of at least five parts per million. Frequency measurements shall be recorded at one minute intervals over a period of five minutes.

(b) Modulation characteristics (clause 32 (3) and (4))

Operate the equipment as in sub-clause (3) (a) of this clause. Observe the modulation envelope on the oscilloscope and determine the upper and lower audio frequency sweep limits, sweep rate and modulation factor.

(c) Transmitter duty cycle (clause 32 (6))

Operate the equipment as in sub-clause (3) (a) of this clause. Observe the modulated signal and determine that the carrier is not interrupted between sweeps.

(4) Measurement procedure : Radiated peak envelope power (clause 32 (7)).

(a) Test conditions

(i) The test site should be on level ground which has uniform electrical characteristics. The site should be clear of metal objects, overhead wires, etc, and free as possible from undesired signals such as ignition noise or other RF carriers. The distance from the transmitter under test, or the field strength meter, to reflecting objects should be at least 100 metres. The EPIRB under test shall be located on the ground with a supplementary ground plane.

(ii) Measurement of radiated or received signals should be

made at a point 30 metres from the antenna. For each frequency measurement, the Field Intensity Meter should be adjusted to the correct length for the frequency involved.

(b) Method of measurement

The basic method of measuring of radiated peak envelope power is that of direct substitution as detailed below:

(i) Place the standard quarter-wave monopole antenna on a ground plane. Connect a calibrated signal generator set for the power required in clause 32 (7). Account for all losses in transmission lines and impedance mismatch at the antenna to ensure that the transmitted signal is not less than that specified in clause 32 (7).

(ii) Place the FIM antenna in a vertical position with the lower element tip at least a quarter wavelength above the ground.

(iii) Measure the field strength with the FIM in "peak position". The FIM antenna may be rotated about its centre axis for a maximum reading (vertical to horizontally polarised reception).

(iv) Replace the standard quarter-wave antenna and its calibrated source with the EPIRB.

(v) Measure the field strength with the FIM in "peak" position. The FIM antenna may again be rotated for maximum signal. The height of the FIM antenna may also be adjusted for maximum signal. The EPIRB under test should be rotated to obtain field strength measurements at least every 60 degrees of azimuth. The pattern should be essentially omnidirectional in the horizontal plane. The pattern deviation shall not be greater than 6 dB from the reference signal at any selected point. The