

- 1.5.12 A 50- Ω oscillator is attached to the high-impedance input of an oscilloscope ($C_{in} = 47$ pF, $R_{in} = 1$ M Ω ; see Fig. 1.10). The source is tuned to 100 MHz and the level set to -30 dBm. Determine the voltage level (peak) of the sinusoid seen on the oscilloscope face.

Table 1-5 Quasi-peak

- 2.1.4 The conducted emission limits for Class A digital devices in Table 2.2 are given in voltage measured across a 50- Ω resistor, as we will see in Section 2.1.4.2. Determine those levels in μ A and in dB μ A.

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- 2.1.7 A product is tested for FCC Class B radiated emission compliance as shown in Fig. P2.1.7. The distance between the measurement antenna and the product is 20 ft. The spectrum analyzer is connected to the measurement antenna with 30 ft of RG58U coaxial cable that has a loss of 4.5 dB/100 ft at 100 MHz. The receiving antenna provides an output voltage at 100 MHz of 6.31 V for each V/m of incident electric field. If the spectrum analyzer indicates a level of 53 dB μ V at 100 MHz, determine the level of received electric field at the antenna. [38.35 dB μ V/m] Determine whether the product will pass or fail the FCC Class B test, and by how much.

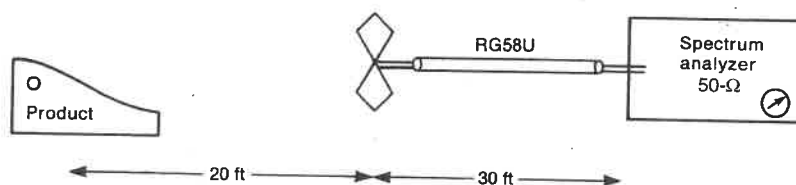


FIGURE P2.1.7