

DEMONSTRATING SPECTRA
AND RADIATION

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PREFACE

Our project is to build a circuit that can be used for demonstrating electromagnetic compatibility (e.m.c) and radio - frequency interference (r.f.i) .

It is becoming increasingly important for engineers to understand how and why a circuit radiates.

The signal through the various stage of the circuit can be analysed using the spectrum analyser and its characteristics explained.

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1.0 INTRODUCTION .

It is becoming increasingly important for engineers to understand ~~how~~ and why a circuit radiates. Electromagnetic compability (e.m.c) and radio-frequency interference (r.f.i) have in the past been something of a dark art. Increasingly, however, e.m.c/r.f.i theory and problem solving techniques become more widely disseminated .

With the aid of a suitable circuit and spectrum analyser, some basic concepts of waveforms in the frequency domain can be shown which many people have difficulty visualizing as well as illustrating the problems of e.m.c and r.f.i.

1.1 OBJECTIVES.

The objective of this project is to build a circuit that can be used for demonstrating e.m.c and r.f.i .

The circuit to be built must be able to radiate a good spread of frequencies and connectors will be placed at strategic points in the circuit to allow signals to be tapped as it passes through the various stages of the circuit.

These signals can then be analysed using the spectrum analyser and its characteristics explained.

A circuit which has the block diagram as shown in Figure 1 was then constructed to fulfill the above objective.