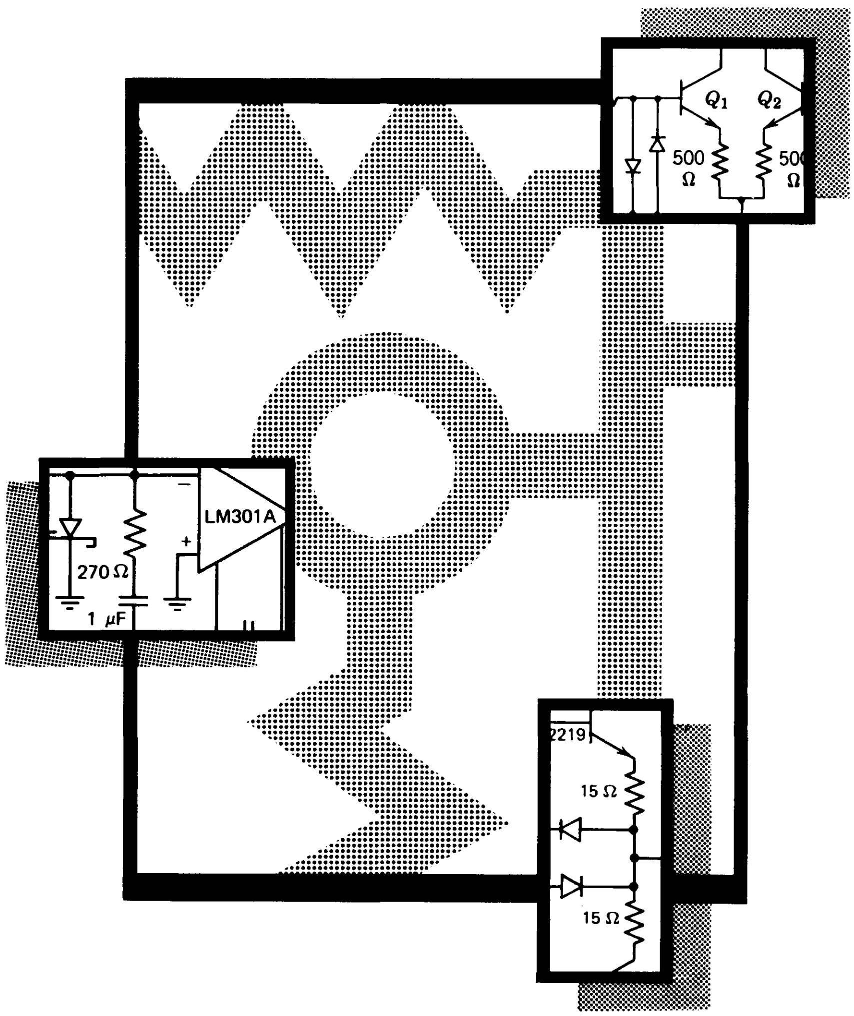
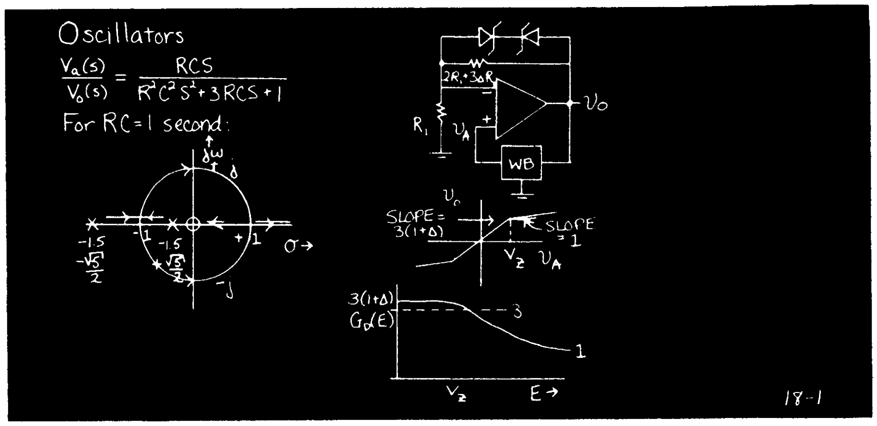
VIDEO COURSE MANUAL

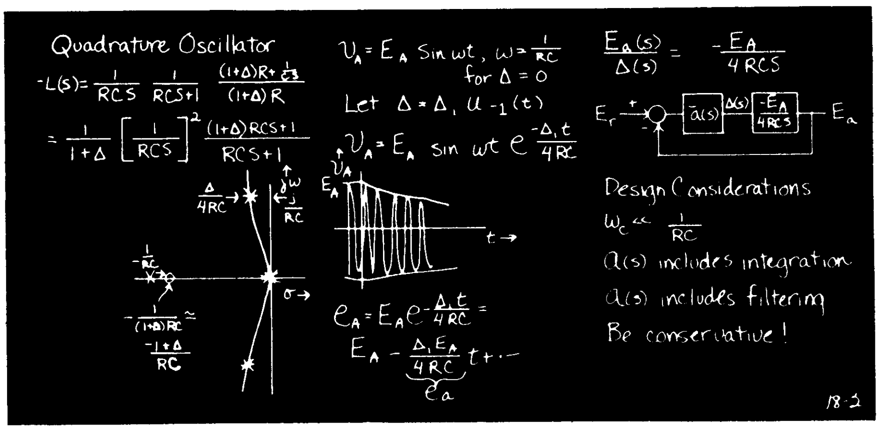
Oscillators (Intentional) 18



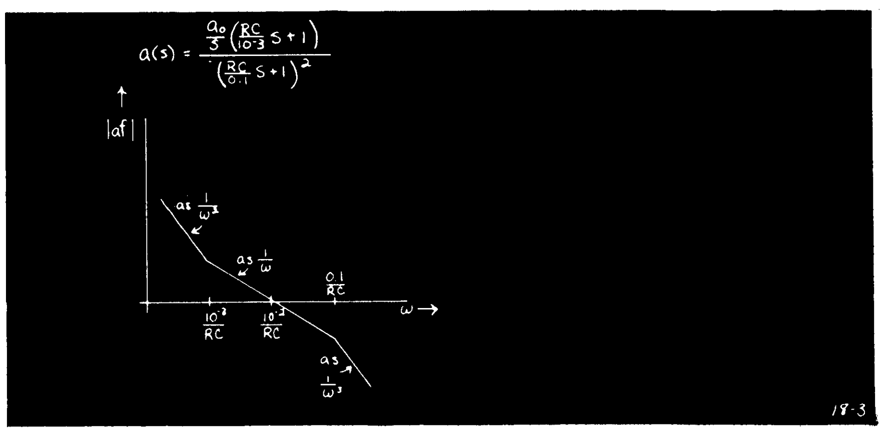
Blackboard 18.1



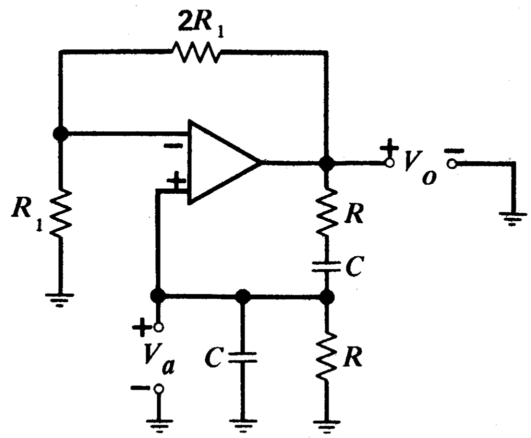
Blackboard 18.2



Blackboard 18.3

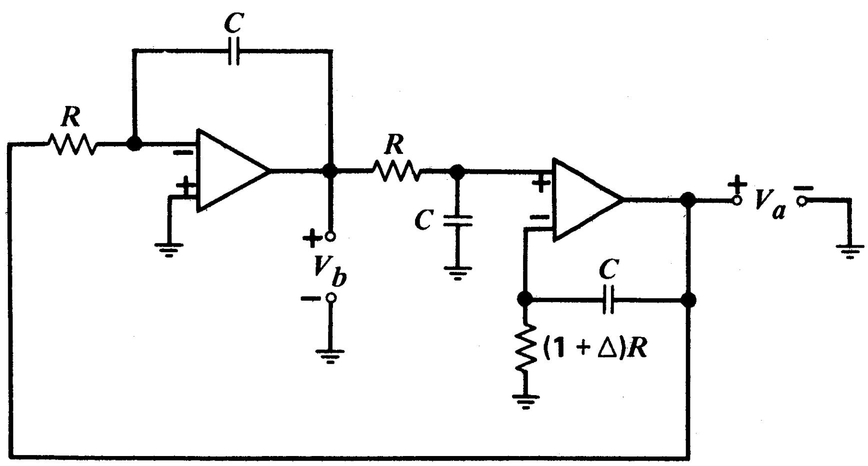


Viewgraph 18.1



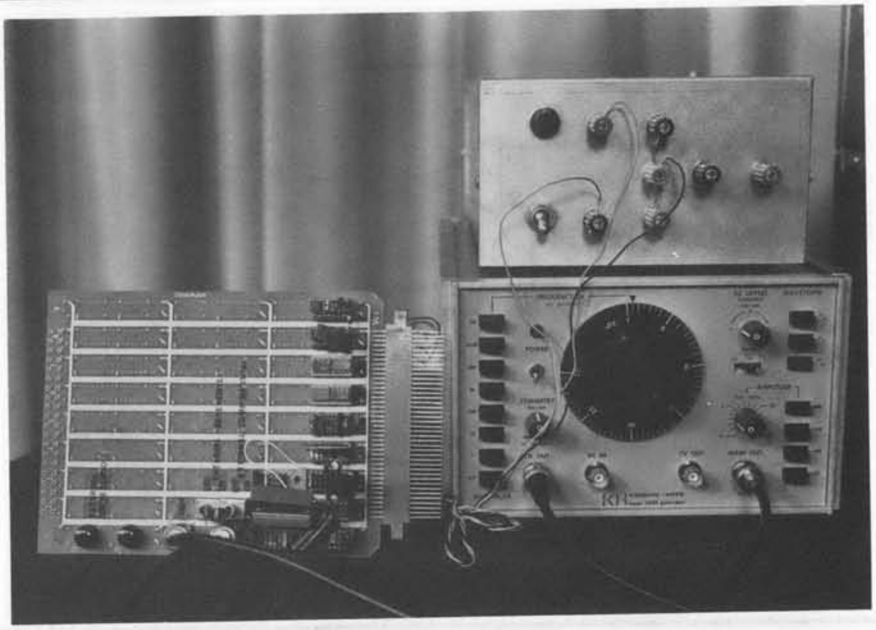
Wien-bridge oscillator

Viewgraph 18.2

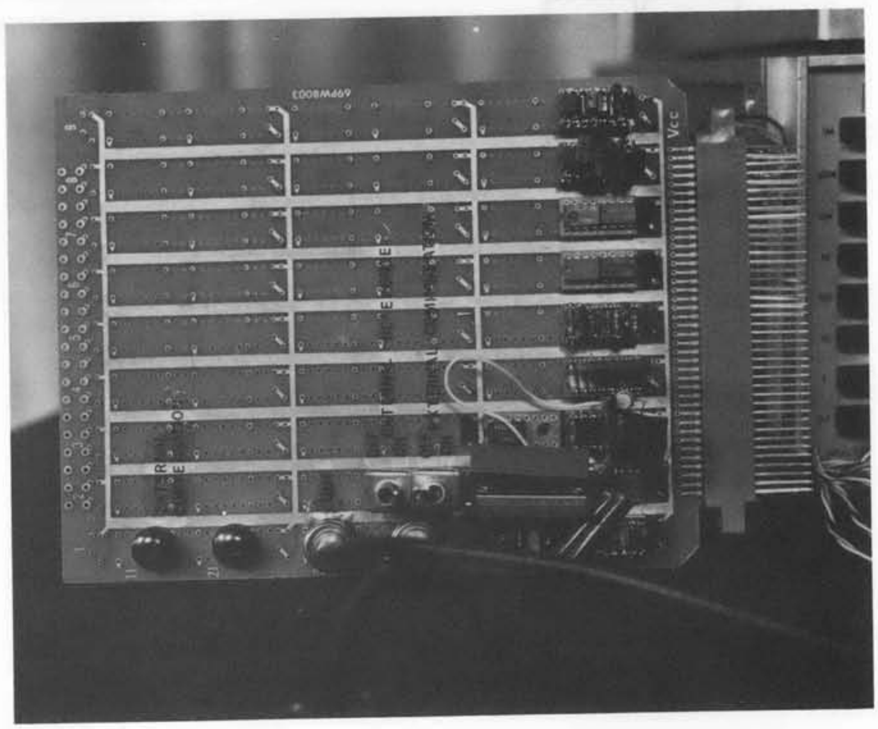


Quadrature oscillator

Demonstration Photograph
18.1 Amplitude-stabilized oscillator demonstration



Demonstration Photograph
18.2 Amplitude-stabilized oscillator close-up



Comment

To this point in the series our effort has been directed toward designing feedback systems with acceptable stability. In this lecture we look at how we might use the techniques we have learned to design oscillators that provide outputs with high spectral purity.

The basic approach is to use a very slow (compared to the frequency of oscillation) feedback loop to hold a closed-loop pair of poles of the oscillator circuit exactly on the imaginary axis. The validity of this approach is illustrated with a demonstration system.

Reading

Textbook: Section 12.1.

Problems

Problem 18.1 (P12.1)

Problem 18.2 (P12.2)

Problem 18.3 (P12.4)

RES.6-010 Electronic Feedback Systems
Spring 2013