

WAVE MODULATION

ed by using a process  
ion process.  
ntinuous-wave (CW)  
le modulation. In  
ier wave is varied in  
on, the angle of the  
band signal. Sections  
tude modulation and  
ision multiplexing for  
t users. The four sub-  
ated issues.

(3.1)

quency. To simplify the  
onclusions reached, we  
in Eq. (3.1). Let  $m(t)$   
n of the message. The  
the source responsible  
l as a process in which the  
linearly with the baseband  
has been described, in its

(3.2)

e modulator responsible  
lly, the carrier amplitude  
which case the amplitude

s. 3.1b and 3.1c show the  
tude sensitivity  $k_a$  and a  
slope of  $s(t)$  has essentially  
hat two requirements are

that is,

(3.3)

nsures that the function  
e is a positive function, we  
q. (3.2) as  $A_c[1 + k_a m(t)]$ .  
or is large enough to make  
overmodulated, resulting in  
 $m(t)$  crosses zero. The mod-

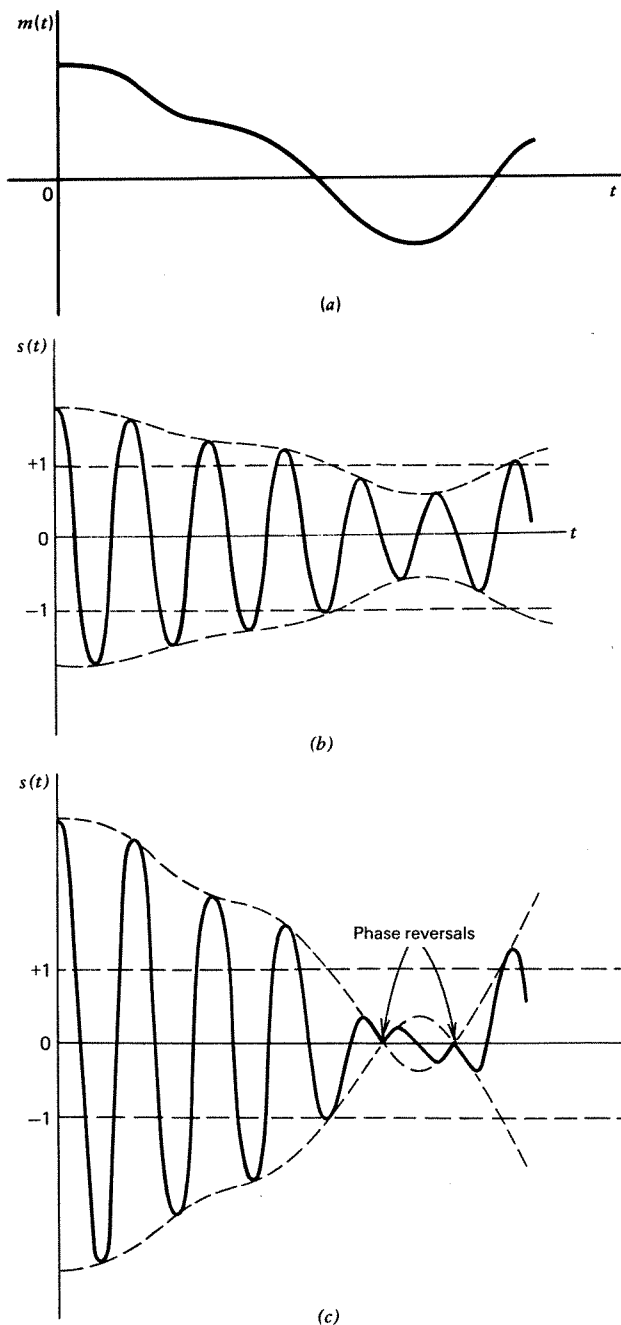


Figure 3.1 Illustrating the amplitude modulation process. (a) Baseband signal  $m(t)$ . (b) AM wave for  $k_a m(t) < 1$  for all  $t$ . (c) AM wave for  $|k_a m(t)| > 1$  for some  $t$ .