AMPLITUDE MODULATION

...ed by using a process ion process.

ntinuous-wave (CW) e modulation. In am

ier wave is varied in. on, the angle of the band signal. Sections

tude modulation and ivision multiplexing for st users. The four sub

ated issues.

(3.1)

pency. To simplify the inclusions reached, we in Eq. (3.1). Let \( m(t) \)
on of the message. The source responsible l as a process in which the

linearily with the baseband hus be described, in its

e modulator responsible, 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 that two requirements are

that is,

(3.3)

ures 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 modulated, resulting in \( m(t) \) crosses zero. The mod-

\begin{align*}
\text{(a)} & \quad m(t) \\
\text{(b)} & \quad s(t) \\
\text{(c)} & \quad s(t)
\end{align*}

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 \( t \).